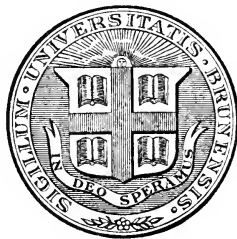


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THE LAND OF THE AMAZONS

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BARON DE SANTA-ANNA NERY



TRANSLATED FROM THE FRENCH OF  
BARON DE SANTA-ANNA NERY

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HONORARY CORRESPONDING MEMBER OF THE ROYAL GEOGRAPHICAL SOCIETY OF  
LONDON, ETC.

BY

WITH NUMEROUS ILLUSTRATIONS AND A MAP

*Suberbo Tejo, nem padrião ao menos  
Ficará de tua glória? Nem herdeiro  
De teu renome?... — Sim: recebe-o, guarda-o,  
Generoso Amazonas, o legado  
De honra, de fama e brio: não se acabe  
A língua, o nome portuguez na terra.*  
(Almeida Garrett: *Camões*, x. 21).

LONDON

12 BURLEIGH STREET, W.C.

1901



## PREFACE TO THE FIRST EDITION

MUCH has been written upon the subject of the King of the Rivers of the World and the Queen of the Provinces of Brazil. A new work on these regions might at first sight appear superfluous; this, however, is not the case, and we will endeavour to prove its utility.

M. Renan states that in order to speak with any authority on religion, one must have believed and then lost one's faith—and we may say that to describe well the enchanted land of the Amazons, it is necessary to have seen much of it and to have left it for some time.

In order to be able to describe with any fidelity the marvels of this country, a writer must have an intimate knowledge and a vivid remembrance thereof, and these can hardly be attained unless he has been born and bred in the midst of these vast solitudes, so as to have their natural magnificence engraved, as it were, upon his very soul.

For a man to describe and sing the praises of his country he must penetrate to the very depths of his being, and probe, as it were, to his very soul. And when our destiny has removed us far from the land of our birth, with what vividness do we not recall across great intervals of time and space the places and people associated with our childhood! With what powerful emotion do we not feel the need of reproducing the scenes of the past and the beautiful visions of days gone by!

Travellers who simply journey across a country have not these advantages. They remain cold or one-sided. If they write with enthusiasm, it is imaginary rather than heartfelt. They then misrepresent facts either by diminishing or by enlarging

them beyond measure, and what happens to have struck them absorbs all their attention.

Such are most of the authors who have written books about Amazonia. The *savant* only registers certain peculiarities of the fauna or the flora; the geographer records topographical details; the merchant attends but to the phenomena relative to production; the man of letters contents himself with exploring the picturesque for the benefit of his descriptions. None of them study the country in its entirety and its harmonious unity.

After reading these books, some of which are written by illustrious men, I asked myself if nothing remained to be done, and then I conceived the idea of collecting my own reminiscences, and of giving in a few pages the most exact records furnished by both foreigners and the most competent of my fellow-countrymen.

I believe this to be the best means of making known to Europe this Province of the Amazons, which some of our acquaintance still consider as a fantastic land, and they are apt to confound it with that ancient and mysterious country where female warriors, mounted upon mares from Tartary, rode along the banks of the Tanais.

We want it to be known throughout Europe where we live, what we are, and how we employ our powers of mind and body. We wish to teach our friends in England and France what happens beyond the frontiers of their Guianas, and what treasures await their work and enterprise if they consent to unite their force to our force and their capital to our capital, in order to cultivate the land of the Amazon and share with us the *glorious climate* of which the Englishman Bates speaks with envy.

De La Condamine and Humboldt, De Castelnau and Agassiz, Coutinho and Barbosa-Rodrigues, Crevaux, Wiéner, and many others, have written in several volumes what it is my aim to condense into one, in the hope of thus awakening interest in our country, and of inducing men boldly to visit and to colonise the most beautiful, the richest, and the most fertile land in the world—the *land of indiarubber*—the legendary “*El Dorado*,” the virgin soil which awaits the seed of civilisation.

Such is my object in writing a book which is at once an appeal and a homage rendered by my gratitude to the Province which has deigned to entrust me officially with the mission of making known to Europe her admirable resources. It is to her and to her Legislative Assembly, where I have so many friends, that I dedicate "*Le Pays des Amazonas*."

F. J. DE SANTA-ANNA NERY.

PARIS, 5th September, 1884.



## PREFACE TO THE SECOND EDITION

WHEN this book appeared for the first time during the winter of 1884-85, two members of the French Institute were good enough to present it to the public: one is no longer alive, namely, Count von Hübner, Foreign Associate of the Academy of Moral and Political Sciences, and formerly Ambassador representing his Apostolic Majesty the Emperor of Austria, accredited to the Emperor Napoleon III. ; but the other, M. Emile Levasseur, the *doyen* of the same Academy, Professor at the Collège de France, continues to honour science with his works, and bears a name well known in Brazil.

Count von Hübner wrote to me from Pesth on the 18th November, 1884, as follows:—

“Your book, entitled ‘*Le Pays des Amazones*,’ of which, thanks to your kindness, I have received an advance copy, has interested me most deeply.

“Being yourself a native of these privileged regions which you describe so well, you have accumulated in your work a mass of valuable information, arranged with great care and order and detailed with admirable lucidity.

“Your book naturally shows the predilections of a patriot, but the love you bear your native soil in no way prejudices the liberty of your judgment.

“It is admirably written, and has the merit of appearing at an opportune moment, as Brazil, in return for the immense resources she opens to Europe, now invites the labour, the spirit of enterprise, and the capital of the Old World, while Europe, on her side, seeks new fields of activity for those of her sons who leave her.

“By presenting to the public of both hemispheres so well drawn a picture of the magnificent basin of the Amazon, you render a service to the entire world, and you have a special claim to the gratitude of your compatriots.

“My short stay in Brazil made a very pleasant and lasting impression upon me. Whenever my mind reverts to it, I am amazed at the boundless wealth lavished upon her by nature. . . .”

M. Emile Levasseur wrote to me in 1884 as follows:—

“I have read with great interest the proofs of your work on ‘*Le Pays des Amazones*’ which you sent me.

“Patriotism has happily inspired you.

“Your intention was to benefit the province which gave you birth, and the book which you have just written will not only be welcomed by your compatriots, but will be most profitable both to the country whose resources you have brought to light and to foreigners, French or otherwise, who will know how to take advantage of your information.

“Thanks to its luxuriant vegetation and to the immense extent of its navigable rivers which penetrate the whole continent to the foot of the Cordilleras, the basin of the Amazon is one of the regions of the world where nature appears most liberal. The basin of the Congo is the only one placed in a similar position, and however much encouragement the efforts to colonise it may receive, you are right, Monsieur, in saying that under existing circumstances the Amazon promises to commerce a success easier and more immediate.

“The way is open. The Brazilian Government acted in a spirit of wise commercial policy when it admitted foreign traders, and the provinces have so well understood how greatly they would benefit by developing the natural riches of their soil, that they have given grants to foreign companies in order to ensure to themselves the advantage of rapid inter-communication.

“Steam, by changing the conditions of transport by sea and land, has produced one of the greatest and most beneficial economic revolutions ever known in history, and the latter half of the nineteenth century has already in part reaped the benefit of it. The use of steam has diminished distances and



brought continents nearer together by making voyages shorter. Steamers make their way along all navigable rivers, and railways have been constructed far into the interior of the country, so that colonists can now profitably carry on agricultural, mining, and other pursuits in regions which formerly were closed to all commercial enterprise by the excessive cost of transit.

“ Besides Europe, the United States, Canada, Mexico, in North America: the Australasian Colonies, in Oceania; India, in Asia: the two extremities of Africa, that which is washed by the Mediterranean, and that near the Cape of Good Hope; the States of La Plata and Chili, in South America, have understood that steam is to-day necessary for the proper development of their natural resources. These countries have all constructed railways which not only facilitate the export of their goods, but also the still more important immigration of colonists by whose work the land is brought under cultivation.

“ Brazil could not afford to neglect this indispensable adjunct to progress in our century.

“ Brazil knows what institutions, what habits of work and thrift, what political and social customs are favourable to the peaceable development of a great nation.

“ Thirteen years ago it did not fear to decree by an act of spontaneous liberality, which was at the same time an act of careful forethought, the gradual suppression of slavery, which in other places had only been obtained by the power of the mother country or as the result of terrible struggles, and it has ever since been making generous efforts to hasten the moment of final emancipation.

“ Over a vast extent of country the forests of the *Serras* along the coast have been cut down to make way for the cultivation of coffee. Notwithstanding the agricultural crises, and the difficulties of commercial competition, Brazil has succeeded in half a century in increasing tenfold the amount of the harvests and the export of coffee.

“ It does not ignore the fact that if it has taken the front rank in the production of this article of commerce, it owes this result in a great measure to the facilities due to improved

navigation, which enables its products to be carried to the markets of Europe and the United States. The success which has followed has stimulated production, and the abundance of the merchandise offered has contributed in its turn to extend the market.

“It is necessary to the future greatness, as well as to the present fortunes of Brazil, that it should still more increase these facilities of communication to which it already owes so much.

“It is one of the greatest States in the world in extent of territory; but the northern part of it is the only one which nature has endowed with a regular system of navigable rivers. In other parts railways have to take their place, and scale the sides of mountains and carry one beyond the rapids into the valleys of great rivers, thus bringing life to the agricultural or mining districts of the interior by connecting them with the trading centres along the coast, and with the seaports which give them issue to the entire world.

“Brazil understood this and set to work energetically, so that we may justly compliment her and encourage her to pursue with perseverance an enterprise which is, as it were, still in its infancy, notwithstanding the 3438 miles already constructed; but prudence requires a careful use of the capital at her disposal. When these lines have penetrated into the vast interior of Brazil they will do for its provinces what the railways in the United States have done for the Far West, or those in New South Wales for the basin of the Darling: they will attract population and propagate civilisation in regions which await but the hand of man to become rich in cattle and even in cereals—where man himself is ready, perhaps, to work the soil, awaiting only the certainty of finding a market for his goods and the possibility of living honestly on his work in full security, without giving up his connection with the rest of the civilised world.

“Between the French and the Brazilian nations there are old and close commercial relations and ties of sympathy. It is good to maintain these and to strengthen them by mutual interest. That is why I am glad that you have written your beautiful work in French, and my pleasure in reading it was increased by

my finding in the advice which you give as the fruit of your own experience to your compatriots near the Amazon, regarding the peopling of the province and the exploitation of its navigable rivers, the confirmation of the ideas which I myself had conceived upon the means of developing the riches of Brazil."

At the same time eminent critics such as MM. Auguste Vacquerie, Jules Claretie, Emile Bergerat, *servants* such as Doctor François Franck and Doctor Richet, were good enough to add their tribute to these unmerited praises, and imposed upon me by so doing the duty of persevering in my efforts on behalf of this part of Brazil.

More than fourteen years have elapsed since then.

The first edition of this book was promptly exhausted, and it required to be almost entirely rewritten, as numerous events have very much modified the situation of the country which we propose to study.

In the first place, since the 15th of November, 1889, the Republic has taken the place of the empire which existed in Brazil for sixty-seven years without succeeding in taking firm root in this part of America. The new form of government, by transforming the old provinces of the empire into autonomic States, gave them at the same time the means of self-administration, and especially of disposing of their own revenues, instead of consuming the best of their resources in supporting the central power at Rio de Janeiro.

Again, thanks to the Federation, the State of the Amazon was able to organise itself as it chose, developing its foreign trade in an extraordinary manner, thus gaining amongst the twenty States of the Brazilian Union a most important position.

Lastly, industrial developments themselves have greatly contributed to the prosperity of the land of indiarubber, by considerably augmenting its consumption, and daily increasing the number of purposes to which it is applied.

Fifteen years ago the Province of the Amazon was a child attempting to walk in spite of the hindrances due to administration; one single line of steamers put it once a month in communication with Europe, and friendly explorers started for

this far-away land as though they were going to discover it for the first time.

To-day the State of the Amazon is a youth who directs his own affairs without supervision, and who has learnt how to employ his fortune. Four regular lines of steamers afford communication with Europe and North America, and it is now only twenty days' journey from Havre.

It has two striking peculiarities: *that of having a production of indiarubber representing £15 per inhabitant, and that of having no debt of any sort.*

Its progress in every way is solid, and this book, composed in accordance with official data, strictly examined in the course of three voyages made since the publication of the first edition—the last of these expeditions having taken place only a few months ago—will show that time has tended to confirm the opinions previously expressed.

SANTA-ANNA NERY.

CHATEAU DE VOUZAY,  
PRES BOURGES (CHER), *April*, 1899.





*Panoramic View of Mantos*

## INTRODUCTION

BRAZIL is a gift of the sixteenth century offered by chance to the future.

Whilst the Renaissance movement directed the thoughts of scholars towards antiquity, one small nation, actuated by different aspirations, was engaged in extending the domain of civilisation. Whilst the old Universities of Italy, France, Spain, and Germany made progress by means of the improved mechanism of printing, and thus rendered accessible the master-pieces of Greece and Rome, the Nautical Academy of Sagres in Portugal, under the impulse given by the Infante Dom Henrique, devoted itself to the discovery of islands and continents hidden beyond the seas:

*“Jacet extra sidera Tellus, extra anni solisque vias.”*

Before the discoveries made by Gutenberg and Faust, *seavants* spent their lives pouring over one manuscript after another. Before the use of the caravel, the compass, and the astrolabe, sailors used to coast along the shore, going from cape to cape in continual dread of the waves of the sea. The rate of progress was slow. The sailor in his skiff, like the student with his manuscript, died without having gone far. In order to make the tour of the world and of history, to navigate the open sea with safety, other resources were necessary—and they were found. Printing and the compass conquered the universe.

The Portuguese had for a long time thought of utilising the recent discoveries towards crossing those unknown seas and reaching India by a new route. During the preparations for

this enterprise, which the poet Luiz de Camões has immortalised, they learned, on the 6th of March, 1493, that a Ligurian pilot, whose services they had refused to accept, had forestalled them, and was returning from Cathay (China) and the islands of Zipangri (Japan).

Christopher Columbus was actually persuaded that he had been as far as India—indeed, eighty men of his crew swore to this on oath. As a matter of fact, he had discovered America without knowing it.

Queen Isabella of Castille and King Ferdinand of Aragon supplied him with means to embark on a new voyage, and when he started again on the 27th September, 1493, he was the bearer of letters to the Great Khan of Tartary.

Whilst Columbus was thus unwittingly presenting a new continent to the old world, the Portuguese Vasco da Gama returned from the real India on the 29th August, 1499, after having rounded the Cape of Tempests (Good Hope).

Scarcely had five months elapsed since the return of Vasco da Gama, when one of the former companions of Christopher Columbus, Vicente Yañez Pinzon, a Spaniard whose brilliant services have been too much forgotten, began to reconnoitre on the 26th January, 1500, all the northern coast of Brazil, and discovered the mouth of that sea of fresh water—*Mar Dulce*—afterwards called the river of the Amazons.

It was only three months after the voyage of Pinzon that another Portuguese, Pedro Alvares Cabral, sailing for India, was driven by the wind on to the shores of Brazil (22nd April, 1500).

The news of this happy discovery was brought to the king, Dom Emmanuel of Portugal, by two letters:<sup>1</sup> the one from Pero Vaaz de Caminha, the other from the Bachelor of Science, Master Johan, physician and surgeon to the King of Portugal, both written from Porto-Seguro in the "Island of Vera Cruz," the primitive name of Brazil, on the 1st May, 1500. But it is only necessary to read the letter of the astronomer to the expedition to understand that Brazil, then believed to be only

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<sup>1</sup> *Alguns documentos do Archivo Nacional da Torre do Tombo acerca da navegação e conquistas Portuguezas.* Lisboa, 1892, pp. 108 and 121.



an island, was already indicated on a map<sup>1</sup> then existing and comparatively ancient.

At any rate it is to Pedro Alvares Cabral and the Portuguese that the honour is due of having first taken possession of the new country.

However, the fever of adventurous conquest had taken a firm hold of all Europe. It has been cleverly said that "every one, even including tailors, was seized with the desire of starting off to discover new lands." All this threatened to end in discord, as every nation in the old continent coveted the big prize. As was then the custom, the Pope was appealed to, and it was agreed to submit to his arbitration.

Alexander VI., Rodrigo Borgia, tried to conciliate Portugal and Spain by the celebrated Bull *Inter cetera* of 4th May, 1493. He traced an imaginary line of demarcation from one pole to the other, passing through the Azores and the Islands of Cape Vert. It was agreed that all the country situated east of this meridian should belong to Portugal, and that Spain should possess the territory situated west. Had this been respected, only a very small portion of Brazil would have become Portuguese possession.

Later on the line of demarcation was pushed further west to the extent of three hundred and seventy leagues by the Treaty of Tordesillas of 7th June, 1494, with the approval of Julius II. in his Bull dated 24th January, 1506. Thus did a large part of Brazil, through pontifical authority, pass into the hands of the Portuguese. But they were far too busily occupied both in Asia and in Africa to devote any serious thought to this new discovery made by one of their admirals. The desire for distant conquests did not, however, slacken.

At that time the Portuguese were spreading everywhere in the East. They possessed five thousand leagues of coast, and, as Voltaire has said, "Tout ce que la nature produit d'utile, de rare,

<sup>1</sup> "Quanto, señor, al sytyo desta tierra, mande Vosa Alteza traer un napamundj que tjene Pero Vaaz Bisagudo, e por ay podra ver Vosa Alteza el sytyo desta terra ; en pero, aqnel napamundj non çertyfica esta tierra ser habytada, o no. *Es napamundj antiguo* ; e ally fallara Vosa Alteza escripta tanbyen la Mina. Ayer casy entendjmos por aseños que esta era ysla, e que eran quatro, e que de otra ysla vjnen aqui almaljas a pelear con ellos, e los llevan catjvos."—*Ibid.* p. 122.

d'agréable, fut porté par les Portugais en Europe à bien moins de frais que Venise ne pouvait le donner. La route du Gange au Tage devenait fréquentée : Siam et le Portugal étaient alliés."

The King of Portugal contented himself with dividing his new possessions beyond the seas into twelve provinces, which he gave to some of his vassals whom he wished to reward (1532-35).

Amazonia was not included in this category, and it was not until one hundred and thirty years later that Dom Affonso made a present of it to Antonio de Souza de Macedo, a noble of his household, naming him Commander of the Isle of Joannes,<sup>1</sup> now called the Isle of Marajó (charter, 23rd December, 1665). Fearing, however, that their South American dominions might become detrimental to the rich colonies of the Indies, the Portuguese sovereigns took measures to prevent this. Up to the middle of the seventeenth century it was forbidden to cultivate in Brazil<sup>2</sup> those spices which grew in the Portuguese colonies in Asia and supplied the whole commerce of Lisbon, at that time the centre of the entire European trade. Until the end of the eighteenth century a royal charter forbade the breeding of mules<sup>3</sup> and an edict prohibited the establishment of manufactories of any kind with the exception of those for making the commonest of cotton fabrics.<sup>4</sup>

Brazil had not the right to engage in any trading enterprise except by way of the ports of the mother country, and by means of Portuguese ships which sailed at certain fixed times of the year forming a convoy, escorted by men-of-war. No foreigner was allowed to own land in the colony, or even to reside there. The severity on this point was so great that at the time of the voyage of Alexander von Humboldt, a Minister of State who has the reputation of being a superior man sent orders for the arrest of "a certain Baron von Humboldt."

<sup>1</sup> *Annaes da Bibliotheca do Pará*, tom. i., 1897 (?), Pará. Excellent publication under the direction of Mons. Bertino de Miranda Lima.

<sup>2</sup> Decision of the Colonial Council, dated 20th April, 1642, allowing the inhabitants of Brazil to cultivate only ginger and indigo in the soil which would not lend itself to the culture of sugar-cane (L. 4, de Prov., fol. 211. Torre do Tombo).

<sup>3</sup> Royal charter of the 19th July, 1761. Published by the Royal Academy of Sciences in Lisbon.

<sup>4</sup> *Alvará* of the 5th January, 1785.—*Ibid*

To these barriers to commerce and to industry imposed by the customs of the times were added barriers to intellectual progress.

Portugal took care to isolate the colony from all contact with civilisation. Here and there were to be found elementary schools. The Jesuits, who had been sent there as early as 1549, had established a few classes for the teaching of Latin and grammar, but the governors of the colony viewed all education with suspicion.

At the end of the eighteenth century, certain *servants* had the idea of founding at Rio a "Philosophical Association." The Count de Rezende, who became viceroy in 1790, immediately put a stop to the meetings of this harmless "Areopagus" by having the principal members arrested and tried.

Previous to this, another of the Portuguese governors, Gomes Freire d'Andrada, had authorised the use of printing in the same town (1707). As soon as the news of this reached Lisbon, the Portuguese authorities ordered the printing works to be stopped, and forbade the opening of any others.

Never had a country enclosed its colony with such veritable Chinese walls. England allowed her colonies in America to have printing presses and newspapers. Even Spain permitted newspapers to be published at Buenos Ayres, and founded schools for superior education at Lima, Caracas, Santiago, Santa-Fé, and Mexico.

It was not until 1808, when the Regent of Portugal, Dom João, established himself in Brazil, that printing works were set up in Rio de Janeiro. Even then only one small newspaper, containing merely official matter and scraps of foreign news which had been previously subjected to the severest scrutiny, was published twice a week.

In 1821, the year which preceded the proclamation of Brazilian independence, there were but three newspapers in the entire colony.

Yet however strictly guarded Brazil may have been, foreigners managed to find their way thither.

The Portuguese nationality had been crushed out on the battlefield of Alcazar-Quivir, where Dom Sebastian perished

(1580). The Spaniards became masters of Portugal and her colonies, and the gloomy Philip II. reigned over this chivalrous nation. The Dutch, then at war with Spain, attacked her colonies, and went to Brazil, where they succeeded without much difficulty in establishing their dominion from the Rio San Francisco to the Maranhão (1624-54).

The French had been there before and were destined to follow them, and their colonies were settled to the north and south of Brazil at Maranhão and in Rio de Janeiro. Sailors from Dieppe claim to have known the northern coasts from the year 1524 onwards, and it is certain that they did traffic with the Indians as early as 1504, and that in 1550 a map, drawn by Pierre Desceliers,<sup>1</sup> discovered at Padua in 1847 by M. de Challaye, and now in the British Museum, shows the "Baye Brasille" and the river of the Amazons.

However, the French did not settle there until much later. Jacques Riffault and Charles des Vaux, then Daniel de la Touche, Seigneur of La Ravardière, Admiral de Razilli and his brother, MM. de Harlay-de-Sancy, du Prat, Louis de Pezieux, and others founded the town of São-Luiz-do-Maranhão, and tried to reach the Amazon, and remained several years until forcibly expelled by the Portuguese (1594-1615).

Some years beforehand, in 1553, the chevalier Nicolas Durand de Villegaignon, under the patronage of Henri II., went to Rio de Janeiro, landed in the Isle of Sery-Gipe,<sup>2</sup> which to this day bears his name, built the fortress of Coligny, and reigned supreme there for five years, during which he commenced the foundation of Henriville.

In 1710, under Louis XIV., the naval captain François Du Clerc essayed the capture of Rio, and Duguay-Trouin succeeded in a similar attempt the following year.

But all these conquests were futile, for Brazil always remained Portuguese. Portugal found most faithful subjects in the aborigines of the country, who disputed the soil with all

<sup>1</sup> Bibliotheca Lindesiana, Collections and Notes, No. iv., *Facsimiles of Three Mappes-Mondes*, London, 1898. Pierre Desceliers was a native of Arques, a town of Seine-Inférieure, near Dieppe.

<sup>2</sup> *Sery-Gipe*—"Sery hy," water of crabs in "Tupi" language.

those who were not Portuguese, whether they were French, Dutch, or Spaniards.

This fidelity of the natives is sufficient to prove that if at that time the Portuguese guarded Brazil jealously, and deprived her of all those institutions which our modern ideas teach us to regard as the basis and essentials of the life of civilised people, at least they knew how to win the affection of the natives and to interest their own settlers in the existence of Brazil as part of the domain of the crown of Portugal.

Gradually also Portugal began to treat her great South American possessions with more consideration. Her days of glory had passed. She was losing her colonies one by one, as they were torn from her by powerful rivals, and it was necessary to make good their loss.

In 1640, when the national revolution succeeded in expelling from Portuguese soil the Spaniards, who had ruled there since 1580, and in putting on the throne the dynasty of Bragança, the Portuguese diminished their severity towards the colony. They gradually allowed the cultivation of spices and plants which were formerly confined to their possessions in Asia. Cotton, sugar-cane, woods used in dyeing began to be exported from Brazil. The discovery of gold in 1663 gave a new value to the colony. When diamond mines were found there in 1727 the enthusiasm in Portugal knew no bounds, and the event was hailed with *Te Deums* and processions of general thanksgiving. A swarm of adventurers then invaded Brazil, the interior of which was explored by these hardy *bandeirantes* who have become celebrated in the history of the country.

Other causes also contributed towards populating the Portuguese colony in South America.

The Portuguese element had already spread itself along the coast. The Indian element represented by the natives was not slow in furnishing its valuable contingent. The Portuguese had at first looked upon these savages as nothing more than beasts of burden to be used for their own advantage. They were taken and reduced to slavery; in case of any revolt they were massacred. A royal decree, dated 20th April, 1702, in consequence of a few incursions made by them into villages, ordered

that they were to be hunted down and treated without mercy. All those who resisted were to be killed, and those who were taken to be sold as slaves, the profits of the sale being destined to cover the expense of the expedition, and any surplus to be distributed amongst the chief officers and soldiers.<sup>1</sup>

Paul III. had been forced to declare in two Bulls (1537) that these Indians were like other men, created in the image of God.<sup>2</sup> A century later Urban VIII. was also obliged to issue a Brief in favour of their liberty.<sup>3</sup>

The Portuguese settlers, however, carefully avoided any regular union with the native women, and it was only in the middle of the eighteenth century that a royal edict,<sup>4</sup> issued at the instigation of the Marquis of Pombal, made it known that marriage between white people and Indians would be considered no longer infamous, and that husbands of Portuguese nationality, notwithstanding such a *mésalliance*, would retain their rank and nobility.

The Indians not being in sufficient number to furnish enough hands for all the works that were then being carried on, nor to man the boats that were used to explore the interior, it was found necessary to import Africans from the Black Continent. It is owing to this fact that slavery was legal in Brazil until 1888, and this has greatly delayed the economic progress of the country.

In the beginning of the nineteenth century the events resulting from the wars of Napoleon I. changed the destinies of Brazil.

Portugal had hesitated between making a British alliance and yielding to the proposals of that powerful emperor. Vengeance was not long delayed. On the 27th October, 1807, France and Spain signed the Treaty of Fontainebleau against Portugal, and General Junot was at once sent off at the head of a division to occupy the refractory State. On the 25th November, 1807,

<sup>1</sup> Published by the Royal Academy of Sciences in Lisbon.

<sup>2</sup> The first Bull is of the 23rd May, 1537—" *Pastorale Officium erga oves nobis colitus creditas.*" The second is of the 2nd June of the same year—" *Veritas ipsa, quæ nec falli.* . . ."

<sup>3</sup> Brief of the 20th April, 1639.

<sup>4</sup> *Alvará* of the 3rd April, 1755.

Lisbon learned that the French General had passed the night at Abrantes, within twenty-two leagues of the capital. Dom João, Regent of the kingdom since the 10th February, 1794, became panic-stricken and gave way, less to fear than to the counsels of Lord Strangford, who represented Great Britain, decided to abandon his position, and with Dona Maria I., who had been insane for some time, and his whole family, and accompanied by the Court, the *Fidalgos*, the high officials and rich *bourgeois*, making in all about 15,000 people, he fled towards South America, escorted by a few English ships, leaving heroic Portugal to her unhappy fate.

The noble emigrants landed solemnly at Rio de Janeiro on the 8th March, 1808, to the accompaniment of salvos of artillery.

Thus did Brazil give shelter to the sovereign of her mother country, and Rio de Janeiro become the centre of the fugitive Government. Portugal became to all intents and purposes the colony of Brazil.

This new situation rendered necessary the establishment of elementary political institutions in this improvised capital, and this was done without delay.

The maintenance of this crowd of distinguished parasites who had accompanied the Court, and whose numbers increased every day, made the complete transformation of the political economy of the country a matter of urgent necessity. It is then that Brazil entered seriously into that phase of agriculture and industry which she has ever since pursued to her great advantage.

Rewards were given to all those who took up the culture of spices. Foreigners were permitted to obtain grants of land and to commence the work of planting, and the soil was found to be as fertile at the surface as it was rich underneath it. The same ardour was now devoted to cultivating the earth as had been previously expended in digging it up in search of its hidden treasures.

At the same time the harbours of Rio de Janeiro, Bahia, Pernambuco, Maranhão, and Pará were opened to the ships of friendly nations. The taxes on imports were diminished, and

a great number of barriers which had hitherto prevented business transactions were removed. Centres of produce were gradually springing up, and activity appeared where complete inertia had reigned before. A bank for the deposit, discount, and circulation of money was started in the capital, and trade was greatly increased. In a few years the colony had assumed a totally different aspect.

In the meantime England had sent her troops to Portugal to repulse the invaders. General Wellesley (afterwards Duke of Wellington) defeated General Junot at Vimieiro, and forced Kellermann to sign the Convention of Cintra (23rd August, 1808). When Maréchal Soult arrived shortly after he met with the same fate as Junot. In vain did Masséna endeavour in the Third Campaign to recover Portugal with the assistance of Drouet; he was forced to retreat in the face of the English forces. Events succeeded each other with rapidity. Napoleon's star was on the wane and disappeared below the horizon.

Louis XVIII. replaced Bonaparte on the French throne.

The fall of the *César en redingote grise* was hailed in Rio de Janeiro with illuminations and public thanksgivings. The Portuguese Regent did more than recognise Louis XVIII.; he opened all the ports of Brazil to the commerce of the whole world, even to the French (18th November, 1814). Portugal was admitted to the Congress of Vienna amongst the great allied nations (18th June, 1814), and after Napoleon's return from the Island of Elba she furnished her contingent to the fighting armies who compassed his downfall.

Brazil benefited by the services rendered by Portugal to the cause of Europe; and on the 16th December, 1815, she was elevated to the rank of a kingdom, and recognised as such by the Powers.

However, the Court of Portugal still continued to reside in its dominion beyond the seas. The poor exiled Queen-mother, Dona Maria I., died in Rio de Janeiro on the 16th March, 1816. The Regent succeeded her four days later, and in that same year he married his two daughters—one to Ferdinand VII. of Spain, and the other to Don Carlos, his brother. The following year his eldest son and heir-presumptive, Dom Pedro de Alcantara



(later on Dom Pedro I. of Brazil), married the Archduchess of Austria, Maria Leopoldina, daughter of Francis II. (23rd May, 1817). On the 6th February, 1818, the Prince Regent was solemnly crowned at Rio de Janeiro as Dom João VI., King of the United Kingdom of Portugal, Brazil, and the Algarves.

After the wars and despotism of the First Empire, the spirit of liberty awakened by the French Revolution again commenced to spread over the world.

Portugal rose up in arms, demanding a Constitution, a Parliament, and extension of rights.

In Brazil itself, Pernambuco rose in revolt and proclaimed the Republic (1817). Pará and Bahia followed suit, and it became necessary to take measures to crush the rebellion or to admit the claims of the people. Dom João VI. did neither. On the 26th April, 1821, he embarked from Rio de Janeiro after a stay of thirteen years, and on the 3rd July he re-entered Lisbon, his old Portuguese capital. His eldest son, Dom Pedro de Alcantara, remained in Brazil as Regent.

The Portuguese Cortès did not understand the metamorphosis that Brazil had undergone since 1808. They conceived the mad plan of reducing the South American kingdom to its former state of a simple colony depending upon Portugal. They urged the Prince Regent to return to Europe (10th December, 1821), and hoped thus to regain supremacy over a young and vigorous people which was now strong enough to dictate terms to them. Dom Pedro was preparing to obey, but was prevented from doing so by the agitation which spread over the whole country. All the Brazilians, whether by birth or by adoption, leagued together, and before coming to an open resistance, energetically declared to the Cortès, through the intermediary of the Senate of Rio de Janeiro, that their country "wished to be treated as a sister and not as a daughter of Portugal, as a sovereign and not as a subject."

Seeing the firm attitude and the just claims of the country, the Prince Regent no longer hesitated to embrace the cause of the people amongst whom he had grown up. On the 9th February, 1822, in the presence of the multitude which had

gathered to hear his decision, he pronounced the following words, which have become celebrated:—"As the good of all and the general happiness of the nation is in question, I am ready—Tell the people I will remain!"

Dom Pedro kept his word. He sacrificed all his family ties to the country of his adoption. If ambition had anything to do with his decision, it must be admitted that it saved his country from immense disasters.

On the 7th September, 1822, Dom Pedro, by proclaiming the independence of Brazil, heralded at the same time an era of prosperity for his people. When he pronounced on the banks of the Ypiranga, a small river in the Province of São Paulo, the words of freedom: *Independence or Death!* he secured for a long time the liberty and the life of one of the greatest empires in the world.

Since then Brazil has daily gained in importance. Her interior administration has developed; her exterior relations have extended; her public education, agriculture, commerce, finance, means of communication, have never ceased to progress.

What was Brazil in 1822? What is Brazil to-day?—We can sum that up in a few words.

The first years of Dom Pedro I's reign were disturbed. Proclaimed Constitutional Emperor and Perpetual Defender of Brazil, and crowned as such on the 20th December, 1822, the new sovereign found the country in a very unsatisfactory condition, divided by numerous factions. The Provinces of Pará, Maranhão, Ceará, Piahy, Rio-Grande-do-Norte, Parahyba, Pernambuco, Bahia, Rio-Grande-do-Sul, and the Cisplatine (taken from the Spaniards) were in a state of struggle, and refused, for the most part, to recognise the new order of things. Even at Rio de Janeiro the agitation was extreme, and the minds of the different factions excited to the utmost degree. Had it not been for the extreme prudence of the newly-elected emperor, and for the patriotism of the "patriarchs" of our independence, Brazil would have fallen into a state of the most complete anarchy, and her provinces would have been broken up into independent Governments, without organisation and without hopes of future prosperity.

After two years of wise and firm government Dom Pedro I. succeeded in imposing his authority in every part of his immense empire, and in bringing his subjects to peace and respect for law.

In 1825, the year after this pacification, the independence of Brazil was recognised by all the great foreign Powers, and accepted by Portugal herself, thanks to the mediation of England.

The young empire had established her place in the world, but she was forced to pay for the favour which had been granted to her at the cost of certain sacrifices. England was the first to impose most onerous conditions in the treaty of the 18th October, 1825, which reinforced the clauses of 1810 so favourable to British commerce. France became exacting in her turn, and on the 8th January, 1826, took advantage of the difficulties of the new empire to sign a treaty of commerce ruinous to Brazil. During these negotiations war broke out in La Plata. Brazil had to fight for the defence of the Cisplatine Provinces, which, in spite of all efforts, she was forced to relinquish, and by the convention of 27th August, 1828, they were constituted as an independent State, which forms to-day the Oriental Republic of Uruguay.

With regard to the administrative organisation of the State Dom Pedro found the situation equally deplorable. The educational department, which had never been of much account with the Portuguese authorities, could scarcely be said to exist. At the time when the Court of Dom João VI. was in residence at Rio de Janeiro, the fine arts were introduced to some extent in the capital, and a number of French artists were entrusted with the formation of a fine art academy (1816) in a country where the people scarcely knew the alphabet. A naval school was also founded, but when the king returned to Europe he recalled to Lisbon his "professors of naval art" and his "masters of official painting." As to the press, we know already what its situation was—The newspaper can only prosper in places where people know how to read.

The culture of the soil had met with good results. In 1820, 15,000,000 lbs. of coffee, 100,000 cases of sugar of 15 cwts. each and 150,000 bales of cotton, each weighing a hundredweight and

a half, were exported from Rio de Janeiro. The port of the capital had harboured 3400 ships of all nationalities, including those engaged in the coasting trade. There were at this time several houses inhabited by foreigners.

For the last three centuries the population of this vast territory had but slightly increased. According to the census published in 1820, the inhabitants were not more than 3,797,900, and were classified as follows:—

Whites, - - - - -	1,043,000
Domesticated Indians ( <i>Mansos</i> ), - - - - -	259,400
Freed Men of Colour, - - - - -	505,500
Slaves of African Descent, - - - - -	1,728,000
Half-caste Slaves, - - - - -	232,000

Not only were the means of education wanting for the mind, but the number of hands did not suffice for the agricultural and industrial works that had to be carried on, whilst the Government finances were inadequate to support the great enterprises that had been commenced.

When the king Dom João VI. abandoned Brazil, the Bank partly failed, and was obliged to lower the value of its notes. The national debt was considerable, and not only were the Government officials unable to obtain their salary, but the troops had received no pay during the past two years.<sup>1</sup> The annual budget of expenses rose to fourteen million *crúzados*, while the receipts of the Treasury scarcely amounted to seven millions. The deficit was crushing. The state of isolation in which the Provinces were on account of the want of lines of navigation and of practicable roads contributed to increase the difficulties of production and commercial exchange, and augmented the acuteness of this economic crisis.

Such was the state of Brazil when she emerged from colonial servitude in the year 1822.

Since then many changes have taken place, and at the present day, after seventy-six years of independence and self-government, the old possession of the kings of Portugal has become the first

<sup>1</sup>Castro Carreira, *Historia Financeira do Imperio do Brazil*. Rio, 1889. Pp. 62, 63.

State of South America through its riches, its political power, and the ever increasing growth of its population, and the progress made daily in science and literature. Dom Pedro I. was succeeded on the throne by his son, Dom Pedro II., in whose favour he abdicated. A peaceful revolution dethroned the latter on the 15th November, 1889, and now having adopted, without any resistance or bloodshed, a federal form of Republican Government, Brazil enjoys a profound peace which certain unimportant movements, due to and inseparable from political transformations, have hardly succeeded in disturbing for any length of time. Quiet prevails in the interior. The Government has no wish for conquest or aggrandisement, whilst it is attentive to all measures introduced in both worlds in so far as they tend to increase the moral and material welfare of the people. Brazil is gathering the fruits of her wisdom, and through the gradual abolition of slavery, realised finally amidst universal acclamation on the 13th May, 1888, as well as through the exploitation of her natural riches by means of free labour, she is preparing for herself a future of grandeur and prosperity which will astonish the world a few centuries hence.

In less than eighty years the number of her inhabitants has been more than quadrupled, being now about 16 million souls.

The receipts of the Federal Union for the year 1898 have been estimated at 342,653 *contos* of *réis*. The proceeds of import duty in 1897 amounted to 244,000 *contos*, which at the rate of exchange of 8d. per 1000 *réis* makes the sum of £3,066,656. The exports have not ceased to increase regularly. In 1895 the two ports of Rio de Janeiro and Santos alone exported 6,300,000 sacks of coffee—378,000,000 *kilogrammes*—the value of coffee exported from Santos amounting to 294,295 *contos*. In the course of this work attention will be drawn to the increase in the production of indiarubber, which has been very considerable since the publication of the first edition of this book.

It is especially to the establishment of rapid means of transit both by sea and by land that the marvellous development of the resources of Brazil must be ascribed.

The first railway there was constructed in 1854; to-day the network of the iron road stretches over about 6000 miles.

The telegraphic service extends over 23,000 miles, starting from Belem, the capital of the State of Pará, and ending at Jaguarão, in the State of Rio Grande do Sul, branching off to Matto-Grosso. Brazil has since 1874 formed telegraphic communication with Europe, the United States, and the Republics of La Plata and Chili on the Pacific Coast. The submarine telegraph also joins the rest of the world to Brazil by means of cables having stations at Fernando de Noronha, in the State of Pernambuco, and Vizeu, in the State of Pará, not to mention the cable carried below the river between Belem and Manaós.

Steamers run all along the coast and penetrate the principal rivers. Steamers bound for Brazil start regularly from the ports of Havre, Pauillac, La Pallice, Marseille, Genoa, Naples, Trieste, Bremen, Hamburg, Liverpool, Southampton, New York, etc. Companies, of which several are subsidised, have been formed for the navigation of the rivers, the most important of them being that of the Amazon (The Amazon Steam Navigation Company, Limited), which possesses thirty-four ships, covering 320,000 miles per annum.

The sea coast of Brazil, stretching over 4000 miles from the Oyapock to Chuy, is studded with lighthouses and signal lights.

The progress of public education has followed the same course as that of the material improvements. Elementary education, which is at the expense of the municipalities and of the autonomic States, is everywhere gratuitous, and for the most part obligatory. According to the latest statistics the number of public schools is now more than 7800, to which must be added more than 1000 private elementary schools; these schools are attended by over 250,000 pupils. Lycées and colleges for more advanced teaching exist in all the capitals of the different States, and in Rio de Janeiro the *Gymnasio Nacional* is a veritable "faculty of letters." Several establishments for higher or technical instruction have been organised in the Federal District as well as in the States. At Rio de Janeiro there is a polytechnic school with classes for physical and natural science, for mathematics, for geographical, civil, and mining engineering, museums

of arts and manufactures, besides the faculty of medicine, two free faculties of law, and a military school with superior classes, such as are possessed by the naval school. At Bahia there is a medical faculty; at Recife and at Sam Paulo are faculties of law, and in the former town a school of military engineering; at Ouro Preto is a school of mines and a pharmaceutical college; at Pará is a school for pilots, etc. The Portuguese classical college in Rio de Janeiro and the *lycées* of arts and manufactures are unrivalled. An agricultural institute, to which is annexed a botanical garden, a national museum possessing a vast library and valuable collections, a national library numbering over 150,000 volumes, 7900 MSS., and more than 20,000 old prints; and other institutions, which it would take too long to enumerate in detail, including the Institute of History, Geography, and Ethnography, whose *Review* has appeared regularly since 1839 complete the scientific and literary organisation of the country.

Administratively Brazil is divided into twenty autonomic States, each having its president or governor elected by universal suffrage, and, according to requirements, one or two legislative assemblies—Senate and Parliament, or Parliament alone under the name of *State Congress*. Each State has its own laws, militia, and budget. The town of Rio de Janeiro and its suburbs form a special territory known as the Federal District, which is independent of any State. The President of the Republic is elected for four years.

The two States of Pará and the Amazons, with which we are more particularly concerned, together are often designated by the new name of Amazonia. They are situated at the extreme north of Brazil, and cover an area of 3,046,732 square kilomètres. They are, therefore, almost six times as large as the whole of France, whose superficial area is 520,076 square kilomètres.

These preliminary remarks seem necessary in order to enable the European reader to follow the statements contained in the course of this work.

In order to study in all its details the Land of the Amazons, the *Amazonas*, and to put in logical order the numerous documents that we possess, we have adopted a system of classification which

embraces all the information on the nature of the country, its inhabitants, and the position of foreigners in their dealings with them.

The work will therefore be divided into three distinct parts—

1. The Nature of the Country;
2. The Inhabitant;
3. The Foreigner and his relations with the Inhabitant.

If, according to the opinion of an ancient author, all books have their destiny, may it be the lot of this work—not to return to the beloved places by which it was inspired—but to create in the minds of those who read it a desire to bring their energy into the *Land of the Amazons*.



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Map of *The State of the Amazon*



# THE LAND OF THE AMAZONS

## FIRST PART

### THE NATURE OF THE COUNTRY

#### CHAPTER I

*General Observations.*—Whence comes the name of the Amazons?—How this name was invented and how it spread—A page of Herodotus transposed—Did the Amazons really exist?—A new version of the legend—First travellers on the river of the Amazons: Cousin, Orellana, Pinzon, Diego de Lepe, Ordaz, Aguirre, Quesada, Berrio, Palacios, Pedro Teixeira, etc.—Modern and contemporary travellers—A Bismarck in Amazonia.

EVERY one knows Hoffman's story, in which a harmless eccentric amuses himself by building a house. The means he employs are too transcendental in their idealism to result in the production of a simple work of common masonry. This good man, a veritable Balzac from the borders of the Rhine—begins

#### ERRATA

On page 43, line 20 from top, "priaries" should read "prairies."

On page 228, line 5 from foot, "delapidated" should read "dilapidated."

On page 300, line 6 from foot, "exists" should read "exist."

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EVERY one knows Hoffman's story, in which a harmless eccentric amuses himself by building a house. The means he employs are too transcendental in their idealism to result in the production of a simple work of common masonry. This good man—a veritable Balzac from the borders of the Rhine—begins to cut up the air high and wide, to measure a field of grass, and to evoke from various directions walls and doors, windows and pinnacles—in short, everything necessary for the erection of a "Castle in Spain," in which to lodge the pure imagination of a poet.

We shall be on our guard against following this example, and trying to construct houses from mist—We have traced the outlines of our plan—The materials are collected—Let us begin at the foundations—Let us dig up the past of this country.

The first question that presents itself at the commencement of a work of this sort is that of etymologies.

Whence comes the name of the Amazons?

A Hellenist of our acquaintance has kindly given us his views on this curious point in linguistics.

Grammarians, he said, are divided as to the origin of this word *Ἀμαζών*: *grammatici certant*. Some, basing their opinion on what Diodorus of Sicily reports on the subject of the Asiatic Amazons, who, at the age of eighteen, underwent the removal of the right breast as being an impediment to the use of their weapons, derive the name from *a*, *without*, and *μαῖστος*, *breast*. This idea cannot be accepted unless the expression Amazon, *i.e.*, *without breast*, be taken figuratively as designating women who have sacrificed the natural functions of their sex. As a matter of fact, all the figures of Amazons which we possess upon antique vases, as well as on the bas-reliefs of the sarcophagus in the Capitoline Museum, represent the Sarmatian warriors as perfectly-shaped women, with their breast in no way inferior to that of other women: on the contrary, its curves are plainly seen under the chlamys, and the pelta scarcely covers it.

Queen Penthesilea, who succoured the Trojans in their distress; Antiope, the mother of Hippolytus, who attacked Theseus, king of Athens; Thalestris, who visited Alexander; Thomyris, who caused the death of Cyrus, and many other most beautiful and courageous women, were not impeded by their double burden. They used the bow, the sword, the spear, and the battle-axe as vigorously as did Joan of Arc or Jeanne Hachette. This version must therefore be put aside, and we must seek elsewhere for the origin of the name. . . . .

Certain historians maintain that long before the heroines of Cappadocia, who lived on the borders of Thermodon—*i.e.*, long before the year 1600 B.C.—there flourished in Africa a conquering race of women who fought *in pairs, bound together* not only by oaths but by belts. These Amazon negresses subjugated the Numidians, the Ethiopians, and the Atlantes of Africa, America, or Oceania. They were called *Amazons, i.e.*, *bound or joined*, from *ἀμα*, *together*, and *ζώνη*, *a belt*. The *zōna* which they wore was also the protection of virginity, to which they were pledged by oath. This bit of stuff, this article of dress, gave them their

reputation in history. . . . I prefer this explanation to the former, as it has the advantage of making us better acquainted with the primitive customs of these women, whom the Scythians called *Oiorpata*, killers of men. . . . In my opinion your Amazonia owes her name to the African Amazons, who invaded and peopled her at some pre-historic epoch, unless it comes simply from the great river which unfolds itself after the fashion of the *zona* of the ancient Greeks. . . .

However learned this explanation, it did not content us, and we continued our quest.

This is what seems to us absolutely authentic.

In the sixteenth century the love of the marvellous was still very great, and the supernatural haunted the imagination of all. Throughout Christendom men were dreamers, the misery of the times causing the soul to take refuge in Thebaïds—"full of delight." Sorcery had invaded everything, and hallucinations mingled with the inspirations of genius, and it is to that we owe the wonderful discoveries of the Renaissance. As alchemy led to the science of matter, so day-dreaming led men finally to set foot upon continents of which some vague knowledge existed as early as the time of Plato.

Even the peasants under their thatched roofs loved to recount fantastic stories of the Crusades, and without leaving the fire-side, to set off on imaginary voyages in search of far-distant lands.

"There was beyond the seas in Ethiopia a kingdom full of sunshine. There lived, on mountains of gold, resplendent with purple—a friend of God—a pontiff powerful as David—and as full of glory as Solomon. This extraordinary man was Prester John, one of the baptized who was to spread Christianity over the whole universe. This pope *in partibus* had for a neighbour a great sovereign, a catechumen who was anxious to embrace the doctrine of the Gospel. This was the Great Khan of Tartary, strong as Charlemagne." . . .

Such tales were credited as unqualified truth. As we have seen, Christopher Columbus himself became enthusiastic over

them. With brain teeming with these chimeras which served him in place of geography he wished to explore these "hidden lands." His itinerary was about as rational as a scholastic argument. He would traverse the country of Veragua till he reached the state of this mysterious monarch. Then he would return from Cuba by land by way of Ethiopia, Jerusalem, and Jaffa—nothing could be more simple! . . . . .

However, America happened to be on his way, and so he discovered it. . . . .

Prester John was found to be a poor kinglet of no importance—and men consoled themselves with other legends. . . . .

There existed somewhere or other a country traversed by a "white sea," whose waves rolled over sands of gold and beach of diamonds. Its capital, Manoa (of which, let it be said in parenthesis, one cannot fail to remark the similarity with the name of the Indian tribe Manao or Manoa which gives its name to the actual capital of the State of the Amazons), was a great city full of palaces, some built of stones riveted with silver, whilst the roofs of others were tiled with plates of gold—One trod everywhere on most precious metals—Manoa was the storehouse of all the riches of the earth. There reigned a man who was called "*The Golden One*"—*El Dorado* in Spanish—for his body scintillated with golden sequins even as the sky with stars. . . , . . . .

The gold fever invaded Europe, taking the place of mystic hysteria, and this new folly seized upon many.

Gonzalo Pizarro,<sup>1</sup> the brother of the conqueror of Peru, Alonso Pizarro, could not resist the temptation. In 1539, at the head of a band of adventurers armed to the teeth, and with an ample supply of stores, he started from Peru, bent on the capture of the golden bucklers and cuirasses which, according to tradition, were worn by the warriors of El Dorado. On his way, and at about a hundred leagues from Quito (which is to-day the capital of Ecuador), he enlisted a soldier of fortune whom he had the

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<sup>1</sup>See Levini Apollonii, *de Peruvior, regionis inter Nori Orbis provincias celeberrime, inventione et rebus in eadem gestis libri v.*—Antverpiæ, J. Bellerus, 1567.

bad luck to make his lieutenant. This man was Francisco de Orellana.

They travelled day and night across forests and on great rivers, eating what food they could find—game, herbs, and wild fruit. Fatigue, fever, and privation decimated the number of these eager explorers. After several months of struggles and terrible sufferings, Pizarro and his companions had not yet succeeded in discovering the enchanted city which contained the golden fleece. They had to be content with picking up a few small nuggets of the precious metal along the road (others assert that they found upwards of 100,000 pounds of gold).

Francisco de Orellana was entrusted with this treasure. He stowed it away in a small ship, took with him fifty men, and started.

By chance he sailed down the C6ca,<sup>1</sup> which brought him into a great river. He naturally imagined he was sailing on the "white sea" over the silvery waves of *El Dorado*.

His plans were made forthwith. The unfaithful treasurer considered himself as the legitimate proprietor of his golden cargo, and his one idea was to make all possible speed to outdistance his chief. The course of the river was very rapid, but he abandoned himself without hesitation to its current. Two of his companions observed to him that they were perhaps advancing too quickly, and that Pizarro would never be able to follow them. Orellana easily got rid of these good people, who were not capable of understanding him—he cast them on the first shore they touched at, without provisions or arms, and in the midst of a virgin forest. One of these unfortunate men was a Dominican monk named Gaspar de Carvajal and the other was an hidalgo of Badajoz, by name Hernando Sanchez de Vargas.

But other obstacles met him on his way. The riverside tribes plied their arrows without ceasing, but Orellana came victorious out of all these attacks. At last, on the 26th August,

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<sup>1</sup> "The Napo, formerly Naapo, fed by the snows of the Antisana and the Catopaxi, has two great Ecuadorian affluents, on the north the C6ca, on the south the Curargy : to judge by the direction of the principal valley from north-west to the south-east, the C6ca should be considered the main river. But the Napo has taken the name as far as the Amazon, thanks to the neighbourhood of Quito. . . ."—Elis6e Reclus, *Nouvelle G6ographie Universelle*, tome xviii. p. 431.

1541, he left the "Fresh Water Sea," which he baptized with his own name, and which has since been called the river of the Amazons.

While the too-confiding Pizarro, deprived of his gold, returned empty-handed to Quito, his more lucky associate succeeded in landing his treasures in Spain. He made his compatriots believe that he had been attacked by savage women, fair-haired Amazons, who had continuously assailed him on the way, telling them mythological stories, which went the round of the peninsula.

The germ of the legend thus sown on good soil was very soon to bear fruit.

Orellana left Spain again for the New World on 11th May, 1544. He was not so lucky this time, for he died there, as he deserved.

The English, at the time of James I. (1603-1625), believed in the legends, as they so well know how to believe in anything that does not too much disturb the equilibrium of their well-organised interests, and Sir Walter Raleigh helped to increase this belief.

It was during the reign of Elizabeth (1558-1603) that Sir Walter Raleigh<sup>1</sup> began to attract attention. Every one knows the adventure which won him the good graces of the Queen, and his brilliant rôle in North America, where he founded the first settlements in Virginia, and whence he brought back to England tobacco and potatoes. During the reign of James I. he was mixed up in a conspiracy with Lord Grey and Lord Cobham, which has remained celebrated under the name of "The Main." His two companions were executed; Sir Walter Raleigh was tried, and, notwithstanding his eloquence and the brilliancy of his defence against the Attorney-General, Sir Edward Coke, was found guilty of treason and condemned to death. He was imprisoned in the Tower of London, where he remained for thirteen years, employing his leisure time as a prisoner of State in writing his *History of the World*. The Duke of Buckingham endeavoured to obtain his pardon, and in 1617 Raleigh was set free on the condition that he should equip an expedition at his

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<sup>1</sup>See *Descriptio Itinerum Francisci Draaken, Thomæ Candisch, Gualtheri Raleigh.* Francofurti et Oppenheimii: De Bry et Merian, 1599-1625.



own cost and start on the discovery of *El Dorado* for the benefit of the king. He was, however, enjoined to respect the Spanish Settlements there, as negotiations for the marriage of his son Charles, the Prince of Wales, with the Infanta of Spain, were being made. Sir Walter Raleigh started for South America. He did not discover *El Dorado*, but he quarrelled with the Spaniards and captured the town of Saint Thomas, saw his men rise up in revolt against him, and finally returned miserably to England. The Spanish Ambassador demanded his punishment. James I. revived the former verdict which had condemned him to death, and on the 29th October, 1618, he mounted the scaffold and died as a brave man and a wit, hurling epigrams at the headsman as he had done at the Attorney-General.

But in order to account for his failure, and to endeavour to save his head, he, too, had spoken of the squadrons of Amazons who kept guard over their treasures. All those who later on were seized with the desire to go there, Jean de Léry<sup>1</sup> and Gandavo<sup>2</sup> in particular, never dared to cast doubt upon the general belief in the existence of those terrible women. Those travellers were obliged to tell a great many lies to keep up the pretence of having gone very far, and they did not hesitate to add their romantic fancies to the already much exaggerated versions of their predecessors.

Gandavo, who had a few reminiscences of ancient history, thus translated Diodorus of Sicily:

“There are amongst the native tribes some Indian women who make the vow of chastity. They have no intercourse with men, and prefer to die rather than break their vow. They abandon all usual feminine occupations, and perform only virile work. They wear their hair cut short like men, they go to war, and hunt with bows and arrows. Each of them has a woman who serves her, to whom she is said to be married. These couples have between them the same intercourse and the same liberty as exist between husband and wife. . . .”

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<sup>1</sup>See Lerii, *Historia navigationis in Brasiliam, que et America dicitur.*—Genevæ, E. Vignon, 1594.

<sup>2</sup>See *Collecção de opusculos reimpressos relativos á historia das navegações dos Portuguezes, publ. pela Academia das sciencias.*—Tome I., 3 vol., Magalhães de Gandavo. Lisboa, 1844-1858.

These are, without doubt, the "Inseparables of Africa," the creatures united by a belt which has nothing in the nature of chastity about it; in fact, the *Amazōnai*.

How could such testimonies as these be resisted? Evidently such precise details could not be invented. They were too incredible not to be true.

However, these fantastic rumours would probably have sunk into oblivion had not a grave historian supported them by the authority of his testimony. Father Pedro Cristóbal de Acuña, rector of Cuenca,<sup>1</sup> who accompanied Captain Pedro Teixeira on his return from a great journey of exploration of the Amazon, of which we shall speak later, really spread the legend.

His good faith misled the most incredulous; his *naïveté* seemed exempt from any intention of imposture. Having made researches *de veracitate facti*, this is what he relates in the most serious manner in his *Nuevo Descubrimiento*:

"At thirty-six leagues beyond the last village of the Tupinambás,<sup>2</sup> going down the River Amazon, one meets on the north side a river which comes from the Province of the Amazons, and is known amongst the natives of the country by the name of Cunuriz<sup>3</sup> This river takes its name from the Indian tribes near its mouth. Above these are the Apotos, who speak the *general language* (the Tupy-Guarany). Beyond these are the Tagaris, then the Guacaris, the happy tribe which enjoys the favour of the valiant Amazons. The Guacaris have built their village on mountains of a prodigious height (the Cordilleras of Guyana). Amongst these there is a peak named Tacamiába, the summit of which towers very much above the others, and which is sterile on account of the constant winds.

"This is the dwelling of the Amazons.

"These women live alone, and protect themselves without the help of man. But at certain stated times they receive the

<sup>1</sup> Acuña: *Voyages into South America, up the Amazon to Quito*, 1698.

<sup>2</sup> Tupinambás, Toupinambours, Tououpinambaultios, Toueoupinambaults. Their name derives, according to Baptista Caetano, from *Tupinambae*, those who are firm on earth, the valiant men of the earth, deriving from *ambae*, participle, meaning that which is upright; whence *t-ibi-ri ambae*, *tubini-ambae*, *tupinambae*.

<sup>3</sup> Cunuriz—*cmàh-ry*, river of women, in Tupi language. The Cunuriz is the actual Jamundá.

visits of their neighbours the Guacaris. When they arrive the Amazons first fly to their weapons in fear of a surprise, but as soon as they recognise their friends they all rush towards the canoes of the visitors. Then each one takes an *itumúca* (a hammock) and proceeds to hang it up in her own hut, and awaits the visit of one of the men.

“After a few days the guests of the Amazons return to their dwellings and never fail to come back the following season. The daughters who are born of these unions are brought up by their mothers, and taught to work and to handle weapons. As to the boys, no one exactly knows what becomes of them. I have heard it said by an Indian, who in his youth had accompanied his father on one of these visits, that the Amazons give up to the fathers in the following year the male children to which they have given birth. But the general belief is that the male children are put to death. I am unable to decide this question.

“However this may be, these women possess treasures enough to enrich the entire world. The bar of the river on the shores of which they live is situated  $2\frac{1}{2}^{\circ}$  of southern latitude.”<sup>1</sup>

The good Father de Acuña wrote history in his own way, mixing it up with a few of his classical souvenirs, which was rather the fashion of the time. To find the key to all these wonderful romances we need but refer to Herodotus. This is what was written by the historian of Halicarnassus,<sup>2</sup> who unwittingly gave its name to the largest State of Brazil—

“Towards the hour of noon the Amazons left the camp singly or in couples. . . . The Scythians having noticed this did the same thing. One of them approached one of these solitary women, and she, far from repelling him, accorded him her favour. . . . The young Scythian on his return to the camp related his adventure, and the following day he returned with one of his comrades to the same place, where he found the Amazon waiting for him with one of her companions. The other young men on hearing of this, tamed in the same way the remainder of the Amazons, and having thus united the two camps, they

<sup>1</sup> Chanoine Bernadino de Souza, *Pará e Amazonas*.

<sup>2</sup> Melpomène, *Histoire d'Herodote*, book iv. p. 321. Edition Charpentier.

remained together, and each one took for his wife the one whose favours he had first obtained. . . . Thence comes the fact that the wives of the Sauromatæ have kept their ancient customs: they ride on horseback and go out hunting, sometimes alone, at other times with their husbands. They also accompany them in time of war and dress in the same manner. . . .”

Therefore the Greek legend served as the foundation upon which Orellana, Sir Walter Raleigh, and Father de Acuña built up the Amazonian legend.

These fables had even reached the inhabitants of Amazonia, and De La Condamine<sup>1</sup> spread them over the whole of Europe during the eighteenth century.

It appears now absolutely certain that the Amazons of Brazil as described by these ancient travellers never existed. The stories of Francisco de Orellana, and of those who came after him, may have originated in the habit that has been preserved by a great number of Indian women of accompanying the men in war, of urging them to fight, and even of taking part themselves in the assaults made upon hostile tribes. These Indian customs help us to understand what in olden times the women of Thermodon did.

As early as the year 1774 Ribeiro de Sampaio observed that the Muturicús, then in open hostilities with the centres of population founded on the Tocantins, took their wives with them into war, and the women not only furnished them with arrows during the fight, but they bore most bravely the fire even of white men. The Otomacas did the same, with this difference—that the wives picked up the enemy’s arrows, poisoned them then and there, and gave them back to their husbands to shoot off again at their opponents. He wittily added that this fable suited the minds of the Spaniards, so taken up with their love of the marvellous.

However, as history always tries to explain legend, it is most gravely asserted, even to the present day, that the Amazons really existed, and, in order to prove their existence, people refer to inscriptions on stones and to the mask of the *Jurupary*.

<sup>1</sup>De La Condamine, *Relation d'un Voyage dans l'intérieur de l'Amérique méridionale en descendant la rivière des Amazones*. Paris, 1743-1744.

The Jurupary that the present Indians have made their evil genius—their personification of the devil—is supposed to have been in pre-historic times a foreign warrior who came probably from the Antilles into Amazonia. At the mouth of the river, thus goes the story, he began to fall in with bands of female warriors, who attacked him all along its banks. The inscriptions that can be seen at the present day upon stones and rocks that are laid bare at the seasons of very low water, notably at the mouth of the Oyapock or the Vicente Pinzon<sup>1</sup> at Itacoatiára and in the Rio Negro, are the accounts which no one has yet been able to decipher of his victories and the ultimate defeat of the Amazons.

Having utterly destroyed them, the Jurupary, pursuing his triumphal course, arrived at the extreme end of the Rio Negro. The descendants of these Amazons adopted as the symbol of their terrible defeat the cuirass of the conqueror, which, by a slow transformation, has become the *Sacred Mask* which no Indian woman dare look upon under pain of death. That is why, even to the present time, they run away and hide in the depths of the forests whenever the ancient reminder of their destruction is exhibited.<sup>2</sup>

So much for the name.

Let us come to facts.

Who was the happy mortal who made the first attempt in a small boat to go up or down the river Amazon?

Who had the audacity, led on by love of adventure and greed of gold, to dare to penetrate into this nest of savages—eaters of men as they were then supposed to be—and to discover the greatest river on earth? The annals of geography have not registered his name.

Long before Francisco de Orellana (1540) the existence of the Amazonian fresh water sea was absolutely known.

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<sup>1</sup> Termo de vistoria que mandou fazer o capitão commandante Diogo Pinto da Gaia das pedras (esculpidas) do Monte d'Arjan (the Silver Mountains) que se acha na Bocca do rio de Vicente Pinson, 1728 (MSS. with an old print at the Bibl. Nat. de Rio).

<sup>2</sup> F. J. de Santa-Anna Nery, *Folk-Lore Brésilien*. Paris, 1889. Librairie académique Didier, p. 243 and following.

The French claim for themselves the glory of this discovery.<sup>1</sup> Cousin, they say, started from Dieppe in the beginning of the year 1488. Descelier,<sup>2</sup> who was to him what the Florentine Paolo Toscanelli was to the Genoese Christopher Columbus, had recommended him not to hug the coast, as all his predecessors had done, but to start boldly across the ocean. Once arrived in the Atlantic, Cousin is supposed to have followed this advice, and to have found himself impelled by the equatorial current which, as we know, runs westward. After a two months' voyage he touched an unknown land, near the mouth of an immense river. The memoirs of Dieppe do not hesitate in declaring that this unknown land was South America, and that the great river was the Amazon, to which Cousin is supposed to have given the name of *Maragnon*.<sup>3</sup>

What is certain is that the honour of the first authentic discovery of these regions is due to a Spaniard, Vicente Yañez Pinzon, one of the three brothers who helped Christopher Columbus so powerfully to organise his first journey, and who were his companions in the great enterprise. Vicente Yañez Pinzon had the never-to-be-forgotten merit not only of being the first to recognise the mouth of the great river and the surrounding coast, but also of landing in Brazil before the Portuguese squadron, destined for India under the command of Pedro Alvares Cabral, had even left the port of Lisbon (9th March, 1500). Vicente Pinzon, who had taken part in the discovery of America, went over the whole northern coast of

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<sup>1</sup> Desmarquets, *Mémoires chronologiques pour servir à l'histoire de Dieppe*. Paris, 1785, 1 vol. in 12. Estancelin, *Recherches sur les voyages et découvertes des navigateurs normands*. Paris, 1832, 1 vol. in 8vo. Paul Gaffarel, *Histoire du Brésil Français*. Paris, 1878, 1 vol. in 8vo, etc.

<sup>2</sup> French writers always write *Desceliers*, and L. Vitet has written a *résumé* of the biography of this learned father of the sixteenth century. We know now after the publication, in facsimile, of the maps of Lord Crawford and the British Museum, that his real name was Pierre *Desceliers*. The second map has indeed this inscription—"Faites à Arques par Pierre Desceliers, presb. 1546." (Bibliotheca Lindesiana, Collations and Notes, No. iv. *Facsimiles of Three Mappemondes*. London, 1898.) We have already spoken of the indications in two of these mappemondes.

<sup>3</sup> L. Vitet, *Histoire des anciennes villes de France*, Première Série: Haute Normandie, Dieppe. Paris, 1833, 2 vols. in 12, t. ii. pp. 56, 57.

Brazil, from the cape to which he gave the name of Santa Maria de Consolacion, now the Cape of Santo Agostinho (26th January, 1500), to the cape which he called by his own name—Cape of San Vicente. By some unhappy fancy it is now called the Cape of Orange, on the right bank of the Oyapock. He then recognised the mouths of the Amazon, which he called by the very appropriate name of the Fresh Water Sea (*Mar Dulce*), and proceeded along the South American coast as far as the Gulf of Pária, in Venezuela. This event caused such a sensation at the time that the Pinzon family obtained patents of nobility and a coat of arms: three caravels sailing on the ocean and an arm extended across an unknown island, with the famous device already taken by Columbus—

*A Castilla y a León  
Nuevo Mundo dio Pinzón.*

In the same year, 1500, another Spaniard, Diego de Lepe, arrived also at the Cape of Santo Agostinho, visited the Brazilian coast as far as the river San-Giano, which is supposed to be the Rio das Contas, and followed the same course as that already taken by his compatriot Pinzon going towards the north, *i.e.*, towards the Amazon.

Shortly after Diego de Ordaz (1531), to whom Charles V. of Spain had given the right to explore the legendary country of *El Dorado*, Lopez de Aguirre (1560), the murderer of Pedro de Ursua, Gonzalo Iménez de Quesada (1569), Governor of Santa Marta in Columbia, who gave these old Spanish possessions the name of New Granada, in memory of the country of his birth, Antonio de Berrio (1591), and many others travelled along several of the affluents of the Amazon without ever entering that river itself.

One of these explorers deserves special mention: a Portuguese miner who in 1567 discovered at Huancavelica, in Peru, an unexpected treasure in a stream of mercury, from which has been made the gross sum of over 500,000,000 francs (£20,000,000). The town, called at the time of its foundation Villarica de Oropesa, is situated at an altitude of 3798 *mètres*, “not far from

the peaks of the Cordilleras,<sup>1</sup> which form the watershed: on the one side the Rio de Chinha runs into the Pacific, and on the other the torrents which join the Mantaro and the Ucayali and flow into the Amazon."

A century later Juan de Palacios went down from Quito to the place where the Napo joins the Amazon. There he was abandoned by part of his crew, and he sailed along the Amazon accompanied by two lay brothers and a small escort, but when he arrived at the Rio Negro he was massacred by the natives of the country, and his companions escaped and succeeded in reaching the mouth of the Amazon at Belem. The Captain-General, Francisco Coelho de Carvalho, and the *provedor* of royal finances, Jacome Raymundo de Noronha, received them with kindness, and resolved to organise an expedition to reconnoitre the entire course of the Amazon.

Before the end of the same century Samuel Fritz and a great number of other missionaries, Jesuits, and Franciscan monks visited all the tribes, went up all the rivers, and utilised every mode of transit; yet no traces of those numerous itineraries are left. As Reclus happily expressed it—"Their footprints have vanished like the wake made by ships upon the ocean."

The failure of Juan de Palacios, whose surviving companions, as we have seen, arrived at Belem, had at least one advantage: it decided the famous voyage of Captain Pedro Teixeira, a voyage which marks a memorable date in the annals of geographical discoveries, and which was due to the intelligent efforts of Coelho de Carvalho and Raymundo de Noronha.

These two Portuguese officials neglected nothing to bring the enterprise to a successful end, and acted with the great activity that at that time characterised their nation. When all was ready, Pedro Teixeira chose his companions—Pedro Bayão de Abreu, Pedro da Costa Favella, Bento Rodrigues de Oliveira, and Bento de Mattos Cotrim, all experts in the art of navigation, and men of dauntless courage; the escort being composed of 70 soldiers and 900 friendly Indians.

On the 8th October, 1637, these thousand Argonauts started from Cameté, a town in the Province of Pará.

<sup>1</sup> Elisée Reclus, *Nouvelle géographie universelle*, xviii. p. 597.



After many really epic adventures, in comparison with which the most fantastic tales of our modern pseudo-travellers pale into insignificance, they reached Payamina, whence they started by land for Quito, where they arrived on the 20th October, 1638, after more than a year's travelling. They had traversed South America from east to west, from the Atlantic to the Pacific.

At that time Portugal was under Spanish dominion, so that the heroic Portuguese, themselves subjects of the father-in-law of Louis XIV., were received at Quito with the greatest marks of honour. The Viceroy of that region, the Comte de Chinchon, whose wife had the honour of giving her name to Quinquina, received them with open arms as fellow-countrymen.

Pedro Teixeira soon started again for Belem, taking with him two learned monks—the Rector of Cuenca, Christopher de Acuña, who, as we have just seen, made himself the historian of this voyage, and André d'Artieda, professor of theology at Quito. On his arrival at the mouth of the Napo, Teixeira caused a wooden monument to be erected in memory of his journey. The expedition returned to Belem on the 12th December, 1639, having been absent twenty-six months.

Other explorers followed Teixeira. Adventurers of every nation tried to penetrate after him into the mysterious regions, where, according to tradition, gold came out of the earth as if by magic. Pedro da Silva and Serpa arrived with three ships from Spain, but both perished at the mouth of the Orinoco without touching the "promised land." Their failure did not discourage others who came in search of *El Dorado*, nor did the misadventure of Sir Walter Raleigh stop the enterprise of Europeans in their greed for wealth.

In the seventeenth century the Dutch in their turn visited South America. In 1625 they had built the fortified town of Marinuassú, "the great town" as it was called by the Indians, between the rivers Pery and Acaixy, affluents of the Xingú, which falls into the estuary of the Amazon. They were thus in a position to explore the Amazon. Father Roch Hunderpfundt entered it by the Xingú in the middle of the seventeenth century. In 1741 Hortsman started from Paramaribo, in Dutch Guiana, and arrived by the Rio Branco at Belem of Pará.

These voyages had at least the effect of making known some of the chief affluents of the Amazon. The Portuguese soon became the jealous guardians of the beautiful river and its rich regions, and reserved the navigation of these waters for themselves alone. It was only in 1867 that Brazil, after a brilliant and successful struggle on the part of Tavares Bastos, allowed ships of all friendly nations to enter the river.

In the first edition of this work the list of the voyages undertaken with a view to the exploration of the Amazon ended with the expedition which Prince Adalbert of Prussia, the Count Oriola and Count Bismarck, made on the Xingú in 1842-43. In accordance with the opinion current in Brazil, and accepted by M. Severiano da Fonseca in his *Voyage Round Brazil*, it was stated<sup>1</sup> that the companion of the Prussian Prince was the future "Iron Chancellor." Since then we have read the voyage of Prince Adalbert,<sup>2</sup> translated into English by Sir Robert H. Schomburgk and John Edward Taylor, and it proves that the traveller of 1842-43 was not the great Bismarck, but only one of his relations.

It will not be necessary to consider in detail the voyages and works of the Comte de Pagan (1655), of Father Manuel Rodriguez (1684), of Father Samuel Fritz (1717), of Don Juan de Ulloa (1752), of Humboldt (1799), of Spix and Martius (1817-20), of L. Maw (1828), of E. Pappig (1832), of W. Smyth and F. Lowe (1835), of W. H. Edwards (1846), of G. Osculati (1847-48), of A. R. Wallace (1848-49), of H. W. Bates (1848-59), of Paul Marcoy (1848-60), of Comte de Castelnau (1850-51), of R. Avé Lallemand (1859), of Morrize Barras (1864), of Louis Agassiz (1865-66), of W. Chandless (1866-70), of J. Orton (1867), of Keller Leuzinger (1874), of Rafael Reyes (1876), of Charles Wiener (1879-82), of Jules Crevaux (1878-80), of Father Illuminato Giuseppe Coppi (1885), of Henri Coudreau (1883-85), of E. Stradelli (1889), and of Her Royal Highness the Princess Theresa of Bavaria, honorary

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<sup>1</sup> Dr. João Severiano da Fonseca, *Viagem ao redor do Brazil*. Rio de Janeiro, 1880, vol. 10 p. 83.

<sup>2</sup> *Travels of H.R.H. Prince Adalbert of Prussia*, in the south of Europe and in Brazil, with a voyage up the Amazon and the Xingú, translated by Sir Robert H. Schomburgk and John Edward Taylor, 2 vol. London: David Bogue, 1849.

member of the Academy of Science at Munich, the account of whose voyage, made in 1888, is a scientific work of great interest. In the course of this book the reader will be able to appreciate its value.

It must, however, be pointed out that these travellers owed very much to Portuguese and Brazilians; and that if foreigners claim the honours of successful exploration, it must not be forgotten that men of our nation have by their labours greatly contributed to their success.

## CHAPTER II

*Geographical Position.*—Extent, limits, and configuration—General advantages of the geographical position—How to get to the State of the Amazon—Voyage from Belem to Manáos—New skies and new lands—Parintins and Itacoatiara—The Rio Negro—Arrival at Manáos.

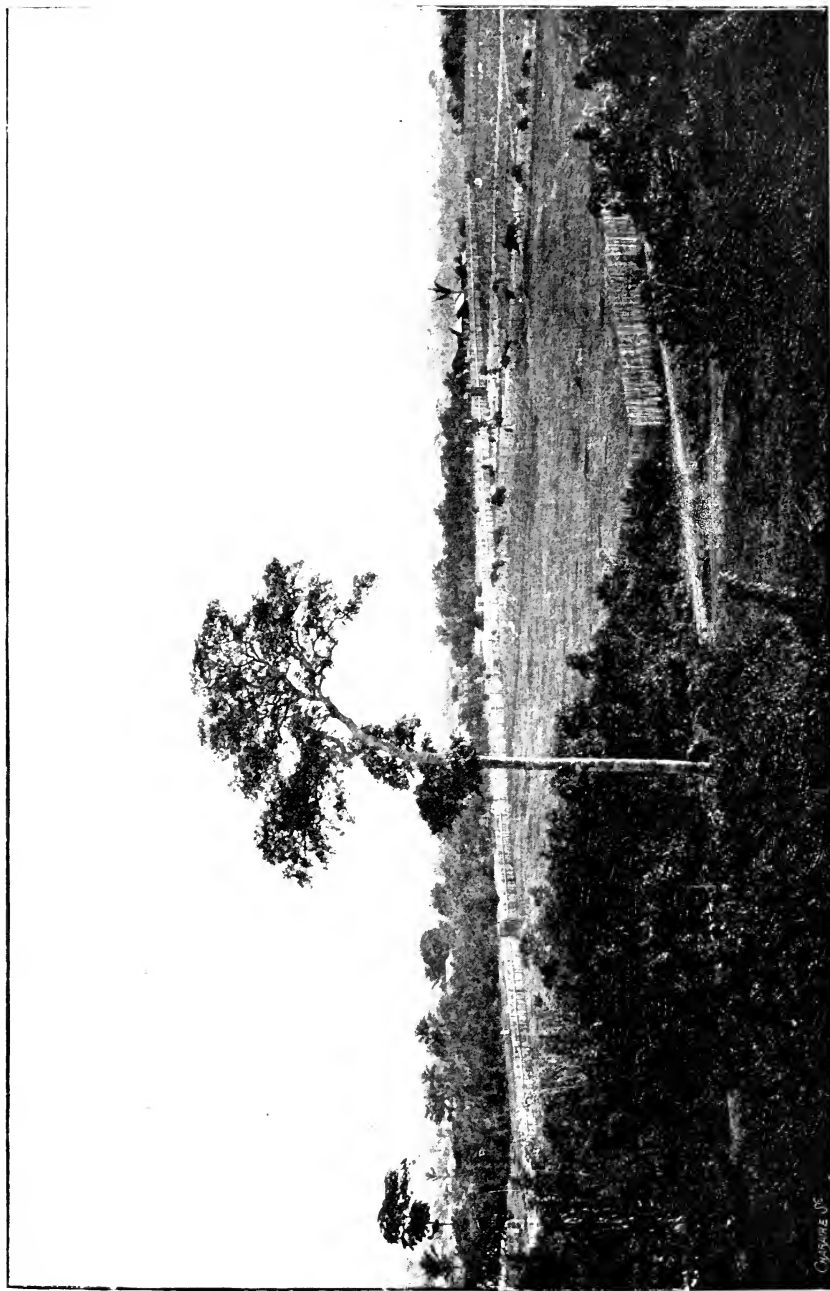
FOR some time past it has been customary to give the name of Amazonia to the north-eastern region of Brazil watered by the river Amazon and composed of two States—*Pará*, capital Belem, and the *Amazonas*, capital Manáos.

Amazonia is bounded by the Atlantic Ocean, by the three Guianas—British, Dutch, and French—by Venezuela and Columbia, and by the Republics of Ecuador, Peru, and Bolivia.

Thus surrounded by five independent States and by the Guianas, Amazonia has an area of 3,044,732 square kilomètres, being nearly six times as vast as France (528,876 square kilomètres) or Germany (540,483 square kilomètres), or 183 times as large as the small kingdom of Belgium (29,457 square kilomètres). It is equal, therefore, in extent to nearly one-third of Europe, which has an area of 10,000,000 square kilomètres.

The State of the Amazon (*Estado do Amazonas*) is the largest of the twenty States which compose the Brazilian Union. It extends northwards to latitude  $5^{\circ} 10'$ , and southwards to  $10^{\circ}$ . Measured from east to west it stretches from longitude  $59^{\circ}$  to  $75^{\circ}$ . It measures, therefore, 360 leagues from north to south, and 300 leagues from east to west. The total superficial area is 1,897,020 square kilomètres. It is, therefore, three and a half times larger than France, and it constitutes by itself more than a fifth of Brazil. Its form is an irregular pentagon.

The State of the Amazon is bounded on the north by British Guiana, Venezuela, and Columbia; on the south by Bolivia and



*View of Matatos, taken from the top of the Reservoir*

*Chapman & Co.*



the Brazilian State of Matto-Grosso; on the east by the Brazilian State of Pará and Dutch Guiana, and on the west by the Republics of Ecuador and Peru.

This privileged position makes the State of the Amazon a natural centre of communication between the rest of Brazil and the greater number of the Neo-Spanish States of South America.

In the Brazilian State of Matto-Grosso there is practically communication between the Amazon and the great basin of La Plata, for near Villa Bella, the sources of the Guaporé, the principal tributary of the Rio Madeira, are only a few hundred yards distant from the small rivers Aguapehy and Estiva, which run into the Jaurù, a considerable affluent of the Paraguay, so that, by means of a short canal which the Portuguese tried to make in the eighteenth century, light barges could pass from one to the other and thus a most wonderful voyage might be made from the mouth of La Plata to that of the Amazon right across the interior of the country.<sup>1</sup>

Ecuador and Peru connect the Amazon with the Pacific Ocean.

Columbia lies between the Amazon and the Isthmus of Panama.

The Cassiquiare connects the Amazon and the Orinoco, which flows into the Atlantic, near the Antilles; and lastly, the beautiful river Amazon itself crosses the State of that name and terminates in the Atlantic Ocean.

The reader need only be reminded of these facts and he will at once see how great a future lies before this highly favoured region, which only awaits the commerce and the industry of the entire world to become what the ancients believed it to be—“*El Dorado*, where gold flows in streams.”

As a ship sails from south to north along the 4125 miles of Brazilian coast, at the extremity of the curve made by the land, almost under the Equator, it passes a very deep inlet—as it were, a breach of continuity between the shores. This is the great estuary of the river Amazon. “The name of Rio Pará has been given to this enormous estuary, which extends

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<sup>1</sup> *Le Brésil en 1889*. Paris, 1889, p. 25.

from the Bay of Marajó to the Atlantic Ocean, covering a space of 206 miles, and is formed by the Tocantins, increased by the waters of the river Mojú and the river Guajará.”

Let us penetrate into the State of the Amazon, ascending the river, which, besides the name, gives it the inexhaustible fertility of its soil.

We can start from Liverpool, Havre, Genoa, Marseilles, Barcelona, or Lisbon, for the English liners sailing from Liverpool call at Havre, Lisbon, and Madeira, whilst the Italian liners starting from Genoa call at Marseilles, Morocco, Lisbon, and the Azores; consequently, without leaving the ship, we could go direct to Manáos. But we prefer to make fuller acquaintance with the country; we wish to enjoy the picturesque views of these wonderful regions, and therefore on arriving at Belem, the capital of the State of Pará, we leave our European steamer, in order to be able to stop at all the small ports which are scattered along the shores of the Amazon.

After having taken a berth on one of the numerous steamers of the Amazon Steam Navigation Company, Limited, we make arrangements for our comfort on board. As the heat is intense, all the passengers desert the cabins, where they would be stifled without seeing anything, and hammocks are slung on deck or on the poop, where everything is conveniently planned. We will imagine that we are in March, in full tropical winter. The thermometer stands about 82° Fahr., but the heat is tempered by the fresh breezes from the forests and the seas, which render the night and the early hours of the morning absolutely delightful.

The river is in all its splendour; its waters being high give it the appearance of an immense lake. Without fear of mosquitos, which are scarce at this season, we can abandon ourselves in an enchanting *far niente* to the undisturbed contemplation of the marvellous scenery which unfolds itself before us.

We are carried through a region of whose beauty a European can have no idea. We seem to penetrate into the mysteries of nature, and new lands, beautiful as the heavens, reveal themselves at each moment.

Unwittingly we find ourselves repeating the words written



by Amerigo Vespucci in 1504—"E se nel mondo è alcun paradiso terrestre, senza dubbio dee esser non molto lontano da questi luoghi"—If there is a paradise in this world, without doubt it cannot be far from here.<sup>1</sup>

Deep forests extend afar; through the sombre foliage of palm trees, sometimes isolated, sometimes massed together in great numbers, appears the glowing blue of the sky. The shores are bordered with luxurious vegetation, which makes a dark framework to the greyish mass of the waters. Here and there in an interval of fresh green, the eye is caught by some rustic dwelling—it is the *sítio* of the Amazonian *sertão*, the solitary dwellings of men engaged in the cultivation of the cocoa-tree and the sugar-cane, or in quest of the valuable products of the forests. A great number of these houses are no longer covered by miserable thatched roofs, but by red tiles that shine in the sun or by zinc roofs. Near them are swarms of children, either naked or scantily clothed with the long Indian shirt, playing in the fine and glistening sand. A few *montarias* and *igarités*—native boats—are moored in a bend of the river. We pass several villages, but without stopping, leave Bôa-Vista and Curralinho on our right. After thirteen hours of uninterrupted travelling, we halt opposite the Island of Breves, 150 miles from our starting-point. Breves appears now a poor, decayed townlet, but formerly the natives about here worked at a lucrative and most curious industry. Their potteries, very original in shape and ornamentation, were much esteemed by amateurs; and civilisation has taught these clever workers nothing in the way of ceramic art—on the contrary, they can no longer succeed in making such perfect vases as in years gone by.

After a short time spent in coaling we resume our journey. We are now travelling on a narrow arm of the Amazon, on the left bank of which islands succeed each other in wonderful variety—Aturia, Monsaràs, Mucujubim, Jabirú, Boiossù, Mutumquara, Limão, Ituquàra, Juruty, and Pucuruhy. After twelve hours we arrive at Gurupá—formerly Mariocay—at 102 miles from Breves on the right bank of the Amazon.

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<sup>1</sup> *Le Brésil en 1889*, p. 107.

We are now entering the main arm of the great river, and find ourselves at its confluence with the Xingù. This river, which Prince Adalbert of Prussia partly explored, and which three German travellers<sup>1</sup> have quite recently carefully studied, receives fourteen tributaries on its right and sixteen on its left.

“The Xingù,” says Ferreira Penna, “has its source in the 15° south latitude. Its principal affluent or confluent (for all descriptions represent it as equal in size to the Xingù) is the Iriri. It flows from south to north, widening often in its higher and middle course, and resembling then a lake studded with numerous islets. When it receives the Iriri, it rapidly changes its course, thus forming a large curve. In the beginning of that line the Xingù doubles back as it were upon itself, turning to the south-east, and then forms such a large lake that Prince Adalbert compared it to the sea. Then it changes its course towards the north-west until it almost attains its previous longitude, and then flows onward in the direction of the Amazon.”

We do not turn into the Xingù to visit Porto-de-Moz, situated on its right bank within twelve miles of its mouth; but we call at Prainha—“the little beach”—a pretty townlet on the left of the Amazon 123 miles from Gurupà. The climate there is excellent and the position most agreeable. But this town also is falling into decay, the inhabitants preferring to penetrate into the *mattas* in search of the valuable products of the forests.

Beyond Prainha the panorama changes. The Amazon follows a regular course and extends as far as the eye can reach. We have now been travelling for nearly three days, and we touch at Monte-Allegre—the Joyous Mountain—which really deserves its name. The town lies about 1000 feet above the level of the river, and is built up the side of a hill. Quite near it are the *serra* of the Ereré, Lake Macurù, and the river Gurupatùba.

Monte-Allegre is one of the healthiest and most picturesque spots of this region.

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<sup>1</sup> Messrs. Karl and Wilhelm von den Steinen and Otto Clauss, whose works appeared in 1886 and 1894 at Brockhaus's in Leipzig, and at Hoefer's in Berlin.

Soon we perceive the Tapajoz, whose name is, they say, a corruption of the words Tapayù-paranà in the native dialect, or of the words Tapanhon-hù in the dialect of the Mundurucù Indians. A few inhabitants of the country call it also Paranà-pixùna—the Black River—on account of the colour of its waters. In reality it is not much darker than an infusion of tea, but their depth makes them appear very much blacker. Nothing is more curious than to see the conflict of these waters with those of the Amazon. After having met the greyish flood of the great river, the long black streak does not mingle with it nor entirely disappear until several miles from its mouth.

The Tapajoz, formed by the union of the Arinos and the Juruena, has its source in the fields of the Parecis, in the State of Matto-Grosso. Its course is 812 miles in length, but is interrupted by numerous cataracts. Although its width is from 10 to 12 miles, by the time we see it at Santarem it is only  $1\frac{1}{2}$  miles.

At about 60 miles from Monte-Allegre we find, on the right shore of the Tapajoz, Santarem, an ancient village of the Tapajoz Indians. The town, dating from the beginning of the seventeenth century, appears graceful and picturesque with its beautiful sands, which give it from a distance the appearance of a watering-place. It has between 5000 and 6000 inhabitants. The climate is good and the soil fertile. The forests which surround it furnish abundance of Brazil nuts (*Bertholletia excelsa*), oil of copaiba, vanilla, and other valuable products. Its commerce is extensive, consisting principally of fish, cattle, and cocoa; and it is, next to Belem, the most important town in Pará. Santarem gives itself the airs of a large city; civilisation is fairly well advanced, and people there read political papers.

We leave it and pass on our right two islands, one of which is very large. The river here becomes narrower as we continue our journey, passing near the outlet of the great lake of Villa-Franca, which is supposed to be the deepest of those drained by the Amazon. Villages become more frequent, and rustic houses are to be seen built in piles as a safeguard against the high tides of the river: these are the *palafittes* of this country.

Ten hours after our departure from Santarem we arrive at Obidos, at 875 miles from Belem, and even at this distance from

the sea the tide is still felt. Obidos is an ancient village of the Epauche or Epauache Indians, now called Pauxis or Pauchis.<sup>1</sup> It dates back to the seventeenth century, and is a small, sleepy town situated upon a steep promontory on the left side of the Amazon. Upon the point stands a citadel which should command the Upper Amazon, but in its actual state it is useless.

The town of Obidos is the last belonging to the State of Pará, which we leave to enter the State of the Amazon. It is here that the river is at its narrowest—6310 feet, although still very deep—250 feet.

After passing near the river Jamundà or Nhamundà—the Cunuriz or *river of women* of C. de Acuña, where Francisco de Orellana said that he saw the Amazons, and which to-day serves as the boundary between the two great States of Amazonia—we pass the *serra* of Parintins, and land at the town of that name.

Parintins is the first centre of population belonging to the State of the Amazon at which a ship sailing up the river arrives. At the time of the Portuguese dominion this townlet (*villa*, as it is called in Portuguese) was pompously called the “Villa-Nova-da-Rainha.” After the independence of Brazil had been declared it took the still more important title of “Villa-Bella-da-Imperatriz,” and finally its present name.

Parintins is a charming little town situated on the right bank of the Amazon and to the left of the river Maués, which flows from the great river Madeira. Towards the end of the eighteenth century, in 1796, Captain José Pedro Cordovil placed there an encampment of Indians of the Maués and the Sapupés tribes. Some years after, a Carmelite monk, Father José das Chagas, went there on a mission and converted the friendly tribes, which were soon after joined by European colonists.

Through its geographical position Parintins is destined to become a commercial centre of great importance, as it has easy communication both with the other riverside towns and with the Madeira, and the town of Maués (formerly Lusea) on the island

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<sup>1</sup> Dr. von Martius, however, is of opinion that this name is not *tupi*, and that there is no tribe of that name. The name comes, according to him, from that of a bird of the country (*Craz tuberosa*) of the genus *mutám* (hocco).

of Tupinambarana. The inhabitants of Parintins trade in cocoa, tobacco of remarkably fine quality, roucou, oil of copaiba, guarana, dried fish (*pirarucú*), and of course indiarubber. During the year 1895-96 the Government of Parintins (*Meza de Rendas*) registered an export of 10,082 cwt. of cocoa of an official value of 424 *contos*; 3395 cwt. of dried pirarucú valued at 146 *contos*; 82 cwt. of guarana, valued at 40 *contos*; and other products, the whole representing a sum of 635 *contos* or millions of *réis*.<sup>1</sup>



*View of Parintins*

All these riches might be rapidly increased tenfold if hands in sufficient number could be found to exploit them, and if capital were forthcoming.

Some hours from Parintins, but upon the other side of the river, is Urucurituba, a little village where the *seringueiros*, the extractors of indiarubber, and the cocoa planters about there,

<sup>1</sup> At par exchange, which is 27 pence per 1000 *réis*, the conto or million *réis* is worth £112 10s.

obtain their supplies of provisions. This name of Urucurituba (*urucuri*, the palm tree, *Attalea* species, and *tuba*, place of abundance, the site of the Urucuri) was that of a large island which existed about there in the middle of the river, and which became submerged towards 1840, completely disappearing in 1850. This is a phenomenon which frequently occurs in these parts: islands spring up and vanish as if by magic. The river, like the God of mythology, devours its children.

The further one journeys along the Upper Amazon the more one's interest increases and nature becomes more sublime. Cyperaceæ with long rhizomes abound and intertwine their roots like writhing serpents, while borantaceæ and cuscutæ hang down their long tendrils from the high branches of the trees like flowing tresses. Canarànas and murys fill the river, spreading, like streams of green, right into the middle of its waters, and on these floating islands spring up little plantations of small trees whose seeds are carried thither by the winds. Gigantic trees, bignoniaceæ, mimosæ, guttiferæ, myrtaceæ, aristolochiæ, and apocynæ bend over the river, and one sees hanging between the forks of their branches the nests of the japys or chechéos (*Oriolus*), resembling bags, over a yard long. An infinite number of birds of most dazzling plumage—aras, parrots, and parrakeets of all sorts, eujubys (*Penelope cumanensis*), inambùs (*Crypturus*), aracuan (*Ortalia motmot*), mutúns (*Craux*), toucans (*Rhamphastos discolorus*)—add bright splashes of colour to the sombre foliage of the woods, whilst on the banks the magoary (*Ardea maguari*), the socó (*Ardea brasiliensis*), the ema (*Rhea americana*), and the pink ibis (*Ibis rubra*) look on astonished, and the carará (*Colymbus ludovicianus*) and the patury (*Anas brasiliensis*) dive into the water side by side with the aguapeaçóca (*Parra jaçana*) which runs along the nympheaceæ in company with the saracura (*Gallinula plumbea*). The strident cries of the ciganas (*Opistocomus*) pierce the depths of these solitudes, and flocks of unicorn (*Palamedea cornuta*) fly on the distant horizon.

We do not stop at Silves, the ancient village of Saracà, advantageously situated in an island of this lake. Nor do we

visit Borba, the old village of the Trocano, on the eastern bank of the grey waters of the Madeira, which was for a long time the centre of commerce with Matto-Grosso. We cast anchor at Itàcoatiàra, on the left shore of the Amazon, 130 miles from Parintins, and founded in the middle of the eighteenth century, in 1759. This townlet, composed of the remains of the village of the Abacaxis Indians, who came from the east side of the Madeira, was first called Itàcoatiàra, which signifies "painted stone"; the origin of this name is due to some rocks, visible only at low water, on which are traced hieroglyphics, which are attributed to the primitive inhabitants of these parts, perhaps the warriors of the Jurapary of whom we have spoken. Later on the Indian name of Itàcoatiàra was replaced by the Portuguese *Serpa*, but of late years the old name has been restored.

Itàcoatiàra will become a most important commercial centre, thanks to its position opposite the mouth of the river Madeira, within easy distance of the confluence of the Rio Negro with the Amazon. When the "Madeira-Mamoré" railway, spoken of for so many years, is at last constructed, all ships coming from the starting point of that line will touch at Itàcoatiàra.

In 1895-96 Itàcoatiàra exported products of an official value of 371 *contos* of *réis*, viz., 274,468 lb. of cocoa, value 109 *contos*, 183,692 lb. of dried pirarucú, value 80 *contos*, 25,466 lb. of indiarubber, value 77 *contos*, and other products (oil of copaiba, Tonka beans, guarana, toucas, deer skins, sarsaparilla, etc.) of a value of 105 *contos* or millions of *réis*.

A little beyond this place, further up the river, a North American, Mr. Stone, has been settled for over twenty years, as though to show what the energy and activity of one man can do in these almost unknown parts which only await human enterprise. The house built by this stalwart pioneer is surrounded by beautiful trees; the cattle grazing in the pastures and the various plantations yield the proprietor a goodly source of income.

The whole of this country in fact is of an unequalled fertility, and lends itself admirably to the cultivation of cotton, coffee, indigo, manioc, cocoa, and to the extraction of the essences, resins and balsams which are obtained from the plants which grow wild in all the surrounding forests.

At ten hours' distance from Itacoatiara we arrive at the mouth of the Rio Negro, whose waters are blacker still than those of the Tapajoz. From this point onward the Amazon loses its name, and becomes the Solimões, from an ancient Indian tribe—the Sorimões—which formerly inhabited its banks, and of which a few survivors still lingered at Alvellos in 1774, at the time of the voyage of the *ouvidor* Francisco-Xavier Ribeiro de Sampaio.

Very soon after, we land at Manaus, the capital of the State of the Amazon. Our voyage from Belem has lasted six days (the transatlantic steamers coming from Europe hardly take more than four), and we have travelled almost 1000 miles—927 to be accurate—on the largest and most beautiful river in the world.

Now that the reader is introduced to the valley of the Amazon, we will proceed to describe its geographical, geological, and climatic features.



### CHAPTER III

*The Basin of the Amazon.*—Its extent and the mass of its waters—Its sources : Its affluents—The navigability of the Amazon—Its principal affluents : the Madeira and its valley ; the Rio Negro—The Upper Amazon or Solimões—The Purús and its affluents ; the Juruá ; the Jutahy and the Javary—The Portuguese on the Rio Negro and in the Cassiquiare ; the Rio Branco ; the Içá—The Amazon and the Andes.

THE valley of the Amazon forms the most vast river basin in the world. Its area has been roughly estimated at 4,000,000 square kilomètres, but Maury gave it as 2,048,480 square miles, and M. Elisée Reclus at 5,594,000 square kilomètres. Dr. Alois Bludau, struck with the difference in these figures, undertook to make new calculations, and, according to him, the basin of the Amazon, including the Tocantins—but excluding the Cuyuni, the Essequibo, the Corentyne, the Maroni, and the Oyapock, forming an area of 190,500 square miles—has a superficial area of 2,722,000 square miles.

These figures speak for themselves if compared with those furnished by the principal river basins of America. According to Dr. Alois Bludau—

The basin of the Amazon, with the Tocantins only, is	2,722,000 sq. m.
The basin of the Mississippi with the Ohio, the Saint Louis, the Missouri, the Arkansas, etc.	1,253,000 ,,
The basin of the La Plata with the Uruguay	1,198,000 ,,
The basin of the Orinoco	364,500 ,,

The basin of the Amazon is therefore almost equal in itself to those of the Mississippi, La Plata, and the Orinoco combined.

The mass of its waters is extraordinary. Martius has estimated that 499,584 cubic feet of water flow downward per

second, and that at its mouth—where the river is 158 miles wide—it pours into the Atlantic Ocean, flowing at the rate of three miles an hour, no less than 250 millions of cubic metres of water in that time. The Mississippi, says E. Reclus, pours into the ocean from four to five times less water and mud, and, according to the same geographer, no river brings down such vast alluvial deposits into the ocean. The enormous quantity of debris which it washes down would form a solid mass with a surface of at least 110 square kilometres and a thickness of ten metres.

However vast may be the bulk of its waters, it is greatly increased when the river is in flood. We may therefore rightly consider the Amazon as a versatile ocean of fresh water (the *Rio Mar*, the River-Sea of the Brazilians, the *Mar Dulce* of Pinzon) studded with floating islets, and containing huge islands, such as Marajó, at its mouth, which has a surface of 5328 square kilometres and is very much larger than the Azores, Madeira, Heligoland, and Malta put together; and the island of Tupinambarána, which extends over 2453 square kilometres, and is almost as vast as the Grand Duchy of Luxembourg.

We must now trace this gigantic river to its source, which must be sought in the higher regions of Peru, that deceptive Birú of the golden legends, between the Andes and the Cordilleras.

The Andes, as was lately explained by Elisée Reclus,<sup>1</sup> constitute the *eastern* projection or ridge of the great plateau between Pasto at the south of Columbia and Cochabamba in Southern Bolivia. The *western* ridge forms the Cordilleras, the chain which the Spaniards, coming from the sea, designated by that name, as being the “string” (of mountains) running along the continent from north to south.

The mountains form a ring, at the bottom of which, like silent spectators, are enormous schistose rocks surrounding a lake about three miles across. This is the ancient Lake Yauri-Cocha, which is called now the Lauri-Cocha, and is the source of the mighty Amazon, although it is not yet known by that sonorous name, but by the Spanish title of Upper Marañon (Maranhão in Portuguese). Formerly it was known there as Tunguragua.

<sup>1</sup> Elisée Reclus, *Nouvelle Géographie Universelle*, tom. xviii.

At first a modest rivulet, it humbly descends the mountainous slopes, disappearing here and there to reappear further, and receiving unnamed rivulets which flow down the mountain glens. Gradually on its way it receives, right and left, more or less abundant streams, and in ever increasing bulk it crosses "pongos" or defiles, of which the most celebrated is the pongo of Manseriche.

Of these watercourses one alone deserves mention, for it seems destined, in a nearer future than one would at first think possible, to become the principal thoroughfare between the Bay of Guayaquil and the Amazon. This is the Paute, Santiago, or Canusa-Yaco.

"Were there a railway crossing the mountains of Southern Ecuador from the coast of the Pacific to the point where the Paute or the Zamora becomes navigable, one could cross the continent in a week by the descent of the Amazon."

The river, leaving the Peruvian Andes, runs through South America from west to east, covering about 3750 miles, of which 2500 are in Brazilian territory. It waters the States of the Amazon and Pará, and is increased all along its course by very numerous affluents, which in their turn have affluents and sub-affluents divided into *furos*, *paraná-mirins*, and *igarapés*. Lastly it meets the Tocantins, which, according to Orton, flows "over a bed of diamonds, rubies, sapphires, topazes, opals, and petroleum," and near the town of Belem, just below the Equator, it finally throws itself into the Atlantic, its greyish waters penetrating with such violence into the ocean that they still retain their freshness and resist the salt water for over 125 miles.

The depth and width of its course vary greatly, according to places and the character of the soil. The depth varies from 240 to 325 feet, and attains at certain spots 1625 feet. As to the width, it attains fabulous proportions in the lower parts of the river. There is one part, studded with islands, where the banks are at least sixty miles apart. At Jaen de Bracamoros, where the river is still called the Tunguragua, it is only 1500 feet,

after having received the Huallaga it increases to 2100 feet; in the lower course the narrowest part is at Obidos, where it measures nearly  $1\frac{1}{2}$  miles across.

Navigation is easy for all the largest steamers along almost the whole river; they can without danger sail over 3250 miles. Boats of light draught can go up to about 150 miles beyond Huallaga. The only obstacles that are met with, and which can be easily surmounted, are the rapids of Guzman and of the Achial, about two miles in length: then the gate of the river, the famous *pongo* of Manseriche, an open defile in the Andine Cordilleras, where the river becomes narrow and very deep, and flows like a torrent through a gorge of from five to six miles long, well-nigh covered by overhanging rocks.

The whole of the river system of the Amazon, comprising its affluents and sub-affluents, lends itself at all times to free navigation over a stretch estimated at more than 31,250 miles. During the periodical floods this distance would be perhaps doubled. It is by thousands of miles that one counts the development of navigation on the Purús, the Rio Negro, the Madeira, the Acre, the Japurá, the Juruá, the Javary, the Jutahy, the Rio Branco, and their various tributaries.

The system of waters is such that at the moment when the affluents on one side of the Amazon swell, the tributaries on the other decrease gradually, so that one can go up to the furthest points of the interior at almost all seasons.

It would be needless to enumerate here the long list of all the tributaries of the Amazon. We will content ourselves with mentioning the affluents and sub-affluents, offering some interest either from an historical point of view or from that of commercial transactions.

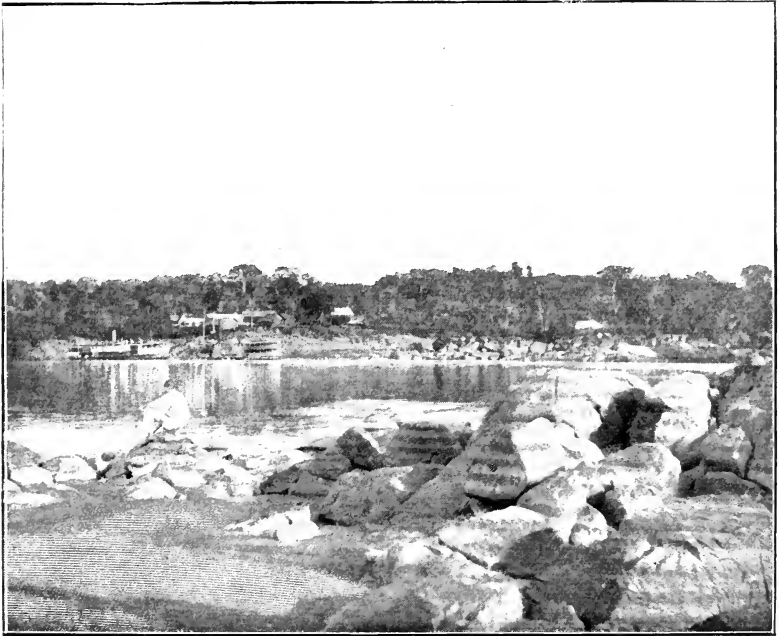
In its lower course, previous to its confluence with the Rio Negro, where it takes the name of Solimões, the Amazon receives—on the left side the Jamundá,<sup>1</sup> Yamundá or Nhamundá, the Cunuriz, the *river of women* of C. de Açuña; the Uatamá, into which flow, amongst others, the Capucapú and the Jatapú;<sup>2</sup>

<sup>1</sup> J. Barbosa Rodrigues, *Exploração do rio Yamundá*. Rio, 1875.

<sup>2</sup> J. Barbosa Rodrigues, *Exploração dos rios Urubú e Jatapú*. Rio, 1875.

the Aniba; the Urubú;<sup>1</sup> and the Matary: on the right side—the Tupinambarána;<sup>2</sup> the Andirá: the Maçary; the two Maués: the Maués-Merim and the Maués-Assú: the Apauquiribó; the Ramos: the Abacaxis;<sup>3</sup> the Canumá, increased by the waters of the Sucunday and the Mamiá; the Madeira and the Autaz.

The Rio Urubú was formerly the centre of a great number of Indian tribes. It was there that in 1664 the stern Pedro da



*View of Santo-Antonio (rio Madeira)*

<sup>1</sup>Theodozio Constantino de Chermont e Ignacio de Moraes Bitancourt, *Diário da Navegação do rio Urubú*, 1787: Manuscript of the National Library at Rio. (Sub-lieutenant Bitancourt, director of the village of Silves, made the voyage, and the engineer de Chermont directed it, by order of the captain-general João Pereira Caldas, Portuguese commissary.)

<sup>2</sup>J. Miguel Ribeiro Lisboa, *Exploração do furo de Tupinambaranas, do Ramos, e rios Saracá e Atrennan*. Rio, 1870 (Relat. do Minist. da Agric.).

<sup>3</sup>João Rodrigues de Medeiros, *Relatório sobre a exploração do rio Abacaxis, Pará*, 1853 (Falla do cons. H. F. Penna, pres. do Amaz). W. Chandless, *Exploração dos rios Jurúá, Mauéassá e Abacaxis*. Rio, 1870 (Relat. do Minist. da Agric.).

Costa Favella burned 300 villages, killed 700 Indians, and made 400 prisoners, in order to punish a revolt against the Portuguese dominion.

The Madeira,<sup>1</sup> whose primitive name was Cayary, the white river, which was erroneously changed to Ucayali, owes its Portuguese name of Madeira, the river of wood, to the enormous quantity of trunks of uprooted trees which float along on its course. At low water these trees are sometimes thrown up on sand banks, where they accumulate in great masses, and often form real forest islands with sufficient solidity to resist the violence of the stream. This river, entirely Brazilian, is formed by the meeting of the Beni<sup>2</sup> with the Mamoré. The numerous rapids which obstruct part of its upper course render navigation very difficult for about 250 miles, for which distance it abounds in cataracts as dangerous as they are picturesque. To avoid the difficulties of navigation, several attempts have been made to construct a railway, of which we shall have to speak later on. The valley of the Madeira, the most beautiful, perhaps, of all the affluents of the Amazon, is one of the largest in the world. It begins in the rocks of the Andes and ends in the valley of the Amazon. The river has a course of about 3125 miles, of which 625 are navigable to ships of fairly high tonnage. The Madeira, was already known by the Portuguese at the time of the explora-

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<sup>1</sup> *Notícia abreviada (mas vardadeira) que se dá do rio Madeira*, etc.: Man. at the Inst. Hist. and Géog. at Rio., without date or name of author. *Descrição dos rios Madeira e Tapajoz*: Man. of the end of the eighteenth century: Inst. Hist. and Géogr. at Rio. José Gonçalves da Fonseca, *Navegação do rio Madeira, principiada em 25 de Setembro de 1749*: Man. at the Inst. Hist. and Géogr. at Rio. Alex. Rodrigues Ferreira, *Memória para em seu lugar se inserir quando se ordeuar o Tit. da antiguidades do rio Madeira*: Man. 1786, collec. of D. Ant. R. de Carvalho. Francisco José de Lacerda e Almeida e Antonio Pires da Silva Pontes, *Informações sobre as latitudes geographicas da foz do rio Madeira*, 1789: Man. at the Nat. Lib. at Rio. Charles Wilkes, *Exploring Expedition during the Years 1838-1842: Madeira-Brazil*: New York, 1858. J. M. da Silva Coutinho, *O rio Madeira*: Manaós, 1861. Quintino Quevedo, *O rio Madeira e suas cabeceiras*: Rio, 1861. J. M. da Silva Coutinho, *Relatorio da Exploração do rio Madeira*: Rio, 1865 (Relat. do Minist. da Agric.). J. e F. Keller, *Relatorio da Exploração do rio Madeira*: Rio, 1869 (Relat. do Minist. da Agric.). L'abbé Durand, *Le Madeira et son bassin*: Paris, 1875, Bull. de la Soc. de Géogr. 6<sup>me</sup> s., X.

<sup>2</sup> Alex. Rodrigues Ferreira, *Descrição de varios rios (Beuy, Mamoré, etc.)*: Man. from the Coll. of D. Ant. R. de Carvalho.

tion of Pedro Teixeira (1637-39). In 1716 Captain João de Barros Guerra made an expedition there against the Torás Indians, and the *Sargento-Mór* Francisco de Mello Palheta explored it entirely in 1725. De la Condamine arrived at its mouth in 1743.<sup>1</sup> This river has recently been explored by a great number of Brazilians and a few foreigners, such as Colonel Earl Church, Pinkas and Keller Leuzinger. The Madeira receives on both sides a great number of affluents, amongst which may be mentioned the Carapanatuba (spot abounding in mosquitoes), the Capaná, the Baêtas, the Aripuaná, the Aráras (the river of *aras*), the Manicoré, the Marmellos, the Machado or Gyparaná (the river of the axe), the Jacaré (the river of alligators), the Tucunaré (the river of the tucunaré fish, *Erythrini sp. major*), the Jamarý (the river of the great *calabash*), the Mutum (the river of the *hocos*), etc. Another of its affluents, the Rio Abuná (the river of black men), has lately acquired great importance on account of the indiarubber trees along its banks. The Beni and the Marmoré—the latter receiving the Guaporé<sup>2</sup>—form the Madeira, as we have seen; but after having joined the Marmoré, the Guaporé loses its name, and it is the Marmoré which, united to the Beni, becomes the powerful River of Wood.

After having received the Rio Negro, near the town of Manáos, the Amazon, as we have already said, changes its name and becomes the Solimões or Upper Amazon.<sup>3</sup> A canal, known as the Uúquiry, branches off from the great river a little above its confluence with the Rio Negro and joins the Madeira, whilst another canal, the Guariba (shrieking monkey) connects the Solimões also with the Rio Negro.

Under its name of Solimões, the Upper Amazon has numerous tributaries. On the left, going up the river on leaving Manáos, one finds the Manacapurú (the river of the most beautiful people), the Jarupary-Pindá (the river of the fish-hook of the Indian

<sup>1</sup>De la Condamine, *Relation abrégée d'un voyage dans l'intérieur de l'Amérique méridionale*, p. 132. Paris, 1745.

<sup>2</sup>Alexander Rodrigues Ferreira, *Rio Guaporé*: Man. of 1786, collec. of D. A. R. de Carvalho.

<sup>3</sup>Keller Leuzinger, *Voyage d'Exploration sur l'Amazone*, Paris, 1874, "Tour du Monde." L'abbé Durand, *Le Solimoes ou haut Amazone*, Paris, 1873, *Bull. de la Soc. de Géog.*, 6<sup>e</sup> s., v.

devil), the Codajaz, the Japurá, the Copeá, the Tonantins, the Itaquy, the Maniatuba, the Tabatinga, etc.; on the right, the Purús, the Mamiá, the Coary, the Urucuparaná (the river of roucou), the Taruá, the Giticaparaná, the Caiamé, the Tefé, the Juruá, the Jutahy, the Jundiatuba, the Comatiá, the Jurapary-Tapéra, the Capacete, the Javary, the Curuçá, the Xiquirána increased by the Rio Preto, and many others.

The Japurá, Yapurá, Yapurù or Hyupurá<sup>1</sup> serves as the boundary between the United States of Brazil and Columbia. The *Igarapé*<sup>2</sup> of Avatiparaná or Auatiparaná (the river of maize), which unites this river to the Amazon, marks the political line of demarcation, which is continued along an imaginary line from the Japurá to the Rio Negro. One of its arms, which goes from the Guaviare or Guaibero, puts it in communication with the Orinoco. It was through this natural passage that Felipe d'Utre gained the Orinoco in 1541, in his search for the deceptive "El Dorado." A great part of the course of the Japurá, whose length is 1750 miles, is obstructed by rapids, which do not prevent it from being navigable by steamers to the extent of at least 940 miles. It has a great number of tributaries, of which more than thirty are known.

The Purús,<sup>3</sup> called also Pacajá or Pacayá by the Canamery Indians, and Beni, Inim, or Wayni by the Pamary Indians, has a course of 2280 miles and measures 2200 yards at its mouth. Explored principally by Colonel Labre, a Brazilian, it has gained greatly in importance since the country near it has been found very rich in indiarubber. It has numerous affluents and is easy

<sup>1</sup> Henrique João Wilkens, *Diário da Viagem que fez . . . ao antecipado exame do Rio Japurá, partindo da villa da Ega no dia 23 de Fevereiro de 1781*: Man. at the Inst. Hist. and Geogr. at Rio. Raymundo Mauricio, *Participação em forma de itinerário . . . acerca da diligência que fizera para descobrir comunicação pelos rios Capory e Piquiá para o Japurá., 1787*: Man. at the Nat. Lib. at Rio. J. M. da Silva Coutinho, *Exploração do rio Hyupurá*, Rio, 1865. (Relat. do Minist. da Agric.).

<sup>2</sup> *Igára*, small boat, canoe; *pé*, way: way of small embarkation; the Igarapé of the Amazon is the Bayou of North America.

<sup>3</sup> Serafim da Silva Salgado, *Relatório sobre a exploração do rio Purús*: Manaus, 1853 (Falla do Cons. H. F. Penna, presid. do Amaz.). J. M. da Silva Coutinho, *Relatório da exploração do Rio Purús*, Rio, 1862 (Relat. do Minist. da Agric.). W. Chandless, *Notes on the river Purús*, London, 1866, Journ. of the R. G. S., XXXVI. A. R. P. Labre, *Rio Purús*, Maranhão, 1872. Lopo Gonçalves Bastos Netto, *Rio Purús*, Rio, 1897 (Relat. do Minist. das Relaç. Ext.).



of navigation in all seasons, as even when the water is low over 950 miles of its course are navigable. Canutama and Labrea, whose very names were unknown less than twenty-five years ago, have become important commercial centres. Amongst the affluents of this river may be mentioned: on the left shore, the Macahañ, increased by the Tapanhá, which itself receives the Cainahã; the two Mamoriá, *merim* and *assú* (small and large), of



*Street and Printing Works at Labrea (rio Purús)*

which the one has a course of 870 and the other of 745 miles: the Pauhinhy of 978 miles, and the Inauhiny of 1073 miles: on the right shore the Jacaré, 360 miles; the Mucuin, 590 miles; the Mary, 653 miles; the Passiá; the Ituxy, 692 miles, swollen by the Aputary; the Sepatiny, 762 miles; the Ariaman; the Turuhã; the Aquiry<sup>1</sup> or Acre; the Searihan; and, in the Upper Purús,

<sup>1</sup> W. Chandless, *Apontamentos sobre o rio Aquiry*. Rio, 1866. (Relat. do Minist. da Agric.).

the Haycú or Iaco, the Macapá, the Paysandú, and the Bom-Jardim.

The Juruá, whose length is 1250 miles, was already known in the middle of the sixteenth century. It was along its course that Pedro de Ursua, in 1560, sailed down by the order of the Marquis de Castañete, viceroy of Peru, and he was assassinated there by two of his officers, who were attracted as much by the spoils he was taking back with him as by the beauty of his unfortunate wife Inez. This river had been somewhat neglected until some thirty years ago, but since then it has become one of the most prosperous, and, as we shall see further on, it has now a regular service of steamers on 938 miles of its length. Its tributaries—the Andirá, the Taraucá, and the Môa or Mù—are much frequented.

The resources of the Jutahy, another affluent of the Solimões, whose course is 406 miles, have also been developed, and there is a regular service of steamers along about 300 miles of it. It has many affluents, the chief being the Maçarahy, the Rio Preto, and the Maruhás.

The Javary, Yavary, or Hiauary, whose length is 590 miles, serves to mark the frontier between Brazil and Peru. This river is one of the greatest centres for the production of indiarubber.

The Rio Negro,<sup>1</sup> the Black River, on which is the town of Manáos, is called also Quiary, Gurigua-Curù, Urùna, and Guaraná-Guasáma in its lower course, whilst in its upper course, above the rapids, it bears the name of Uéneyá or Uéneassù; it is one of the principal arms of the river Amazon, as it is also one of the largest rivers in this basin, where great rivers abound, its length being not less than 1060 miles.

It is joined to the Amazon near Manáos by four channels, the chief of which is a mile and a quarter in width.

<sup>1</sup> Ignacio Semartoni, *Sequentes noticias do Rio Negro*, Man. end of the seventeenth century at the Nat. Lib. at Rio. *Synopse de algumas noticias geographicas*, . . . Barcellos, 1764. Man. at the Nat. Lib. at Rio. *Segunda Parte da Historia dos rios*, . . . Man. end of the eighteenth century at the Nat. Lib. at Rio. Antonio Pires da Silva Pontes e Francisco José de Lacerdae Almeida, *Catalogo de algumas das observações astronomicas feitas nos lugares do Rio Negro*, 1780 (Man. at the Nat. Lib. at Rio.) Alfred R. Wallace, *On the Rio Negro*, 1853, Journ. of the R. G. S., XXIII. L'abbé Durand, *Le Rio Negro et son bassin*, Paris, 1872, *Bull. de la Soc. de Géogr.*, 6<sup>e</sup> sér. iii.

Its water as it flows along appears black as ink, but it is seen to be not darker than strong tea when it is poured into a glass.

The first navigator of the Rio Negro seems to have been Pedro da Costa Favella in 1668-69, who went there in company with Father Theodosio, of the Order of Mercy or Redemption, and entered into communication with the Tarumá Indians by means of the Aruaquys, and with their assistance founded the first town on this river. Pedro Teixeira, in his voyage in 1637-39, had previously seen the channel of the Rio Negro. The General of the State of Pará, Antonio de Albuquerque Coelho, caused the fortress to be built there by Francisco da Motta Falcão, and the first commander of it was Angelico de Barros. Guilherme Valente, one of the sergeants of the fortress, ventured to go up the river and enter into friendly intercourse with numerous native tribes, such as the Caburicenas, Carayais, and Manáos, and finally married the daughter of a *Tucháua* or Cacique of the Manáos Indians. The Carmelites later on established missions amongst these Indians. From 1725-43 Portuguese expeditions (*tropas de resgate*) went along the Rio Negro and its affluents as far as the Yaitá, "which rises above the high sources of the Rio Negro at twenty days' journey (in canoes) beyond the mouth of the Cassiquiare" up to the Yaitá and the Iniridá. In 1744 Francisco Xavier de Moraes, at the head of a troop of Portuguese, entered the Cassiquiare and discovered the Parauá. Near the Orinoco he met with a Spanish Jesuit, Father Manuel Roman, the superior of the Castilian Mission on the Orinoco; F. X. de Moraes took the Jesuit back with him to the Rio Negro, of which the Spaniards had no knowledge,<sup>1</sup> and this missionary showed them the River Cassiquiare, that natural canal which puts the Rio Negro into communication with the Orinoco, and of which the Spanish Jesuit Gumilla had denied the existence in these haughty terms<sup>2</sup>—"Ni yo ni Misionero alguno de los que continuamente navegan costeando el Orinoco hemos visto entrar ni salir al tal Rio Negro." M. E. Reclus is

<sup>1</sup> F. X. Ribeiro de Sampaio, *Diario da Viagem*, . . . Lisbon, 1825, pp. 88-95.

<sup>2</sup> Gumilla, *Orinoco Illustrado*, 1st part, chap. 2, p. 17.

not therefore justified in saying<sup>1</sup>—"The Spanish missionaries knew the Cassiquiare, and boats from San Carlos, on the Amazon side, had often penetrated into the Orinoco through the junction of the two rivers."

In reality the Spaniards only knew the Cassiquiare through the Portuguese in 1744, and they only established themselves in San-Carlos, on the Lusitano-Brazilian territory, after 1759, at the time when Don José de Iturriága, the commissary of his Catholic Majesty for arranging the division of America between Portugal and Spain, sent to the Rio Negro, under pretext of marking the frontiers, Sub-Lieutenant Domingo Simón López and Sergeant Francisco Fernando Bobadilla.<sup>2</sup>

When, therefore, at the beginning of this century, Alexander von Humboldt announced the discovery of the Cassiquiare, thereby winning for himself the applause of the entire learned world, he did nothing but lend the fame of his great name to the discoveries made by the Portuguese one hundred years back.

Amongst the principal tributaries of the Rio Negro are, on the left side, the Cuieiras, the Anna Vilhena, the Canamaù, the Cureué, the Mapauas, the Uarihù, the Jauapery,<sup>3</sup> the Rio Branco, the Amajahù, the Buibui, the Paratary, the Uaracá, the Uereré, into which the Xuriuny flows, and which rejoins the Atauhý, the Padauari, which receives the Mariry, the Hihiaá, the Cababory, the Uriù, the Ineuhý, and many others; on the right side, the Timbira or Tombira, the Jahù, the Uniny, the Cabory, the Uatamary, the Barury, the Quiiny, the Uarirá, the Xibarù, the Uanauéne or Anauéne, the Uenenexy, the Xiuára, the Mariá, the Uaupés, which is itself fed by other rivers, as the Tiquié, etc., etc.

The country near the Jauapery or Yaupiry, which flows near the townlet of Moura, is still inhabited by the Jauapery or Crichaná Indians, who have remained intractable although

<sup>1</sup> Elisée Reclus, *Nouvelle Géogr. univ.*, t. xviii. p. 125.

<sup>2</sup> Official letter from the Governor and Captain-General of the State of Pará, Manoel Bernardo de Mello de Castro, dated 26th August, 1763, to Dom José de Iturriága, reproduced by F. X. Ribeiro de Sampaio in the work named.

<sup>3</sup> Pedro Afonso Gato, *Discrção. Noticia secular que dou dos Rios Jauapari, e Curerá, E do Rio Aranaçuá*, 1787, Man. at the Nat. Lib. at Rio.

M. Barbosa Rodrigues announced more than fifteen years ago<sup>1</sup> that he had succeeded in civilising them. Of this lay missionary there remains no trace: even the white wooden crosses have disappeared which were planted by the distinguished naturalist to mark the sites of the future towns which he called in advance by Greek names such as Theodoretopolis.

Of the affluents of the Rio Negro, the most remarkable without doubt is the Rio Branco,<sup>2</sup> the White River, also called Queceuéne, Paraviána, or Paravilhána, from the name of an Indian tribe living on its banks. Throughout its length, partly intercepted by rapids, but nevertheless navigated by a regular service of steamers, it is increased by a great number of affluents, of which the principal are—on the left, the Agua-Bôa, the Curiacù, the Uricura, the Cuitamaù, the Unaùau, and the Tacutù, which receives amongst others the Maho, fed itself by the Pirára; on the right, the Quareny, the Cairimany, the Mocajahy, the Cauamé, the Urariquára or Uraricuéra, into which the Párimé or Parimé flows, with its waters increased by those of half a dozen other streams. The Rio Urariquára, with its beautiful priaries, was explored by the Portuguese during the early part of the eighteenth century. On the borders of the Párimé was situated the fairy town, the long-sought but never-found Manoa del Dorado, whose chimerical splendour attracted Spaniards, English, French, Dutch, and Belgians up to the end of the eighteenth century. In 1773 Ribeiro de Sampaio, the *ouvidor* of the captaincy of the Rio Negro, found still at Cameté, a town in the state of Pará, a Dutchman named Nicholas Horstman, who in 1741 had travelled all over the Essequibo and the Rio Branco in search of the country of the "Golden One," and in March, 1775, he encountered at Barcellos, then chief town of his district, a poor native of Liége named Gervais Leclerc, who had deserted

<sup>1</sup> J. Barbosa Rodrigues, *Rio Jauapery, Pacificação dos Crichanás*, Rio, 1885.

<sup>2</sup> Francisco Xavier Ribeiro de Sãopaio, *Relação Geographico-Historica do Rio Branco*, 1775, Rev. Trim. do Inst. Hist. e Geogr., 2<sup>o</sup> S., vol. vi., Rio, 1859.—Antonio Pires da Silva Pontes e Francisco de Almeida Serra, *Breve Diário ou Memoria do Rio Branco*, 1781, Rev. Trim. do Inst. Hist. e Geogr., vol. vi., Rio, 1844.—Manoel da Gama Lobo de Almada, *Descrição relativa ao Rio Branco e seu territorio*, 1787, Rev. Trim. do Inst. Hist. e Geogr., vol. xxiv., Rio, 1861.

from Dutch Guiana, where he was on garrison duty, evidently bent on the same aim and object.

The Hihiaá or Hiyaá, which flows below Santa Isabel, was the favourite dwelling place of the famous *Tucháua* of the Manáos Indians, Ajuricaba, whose name has remained celebrated on account of his courage and his heroic death.

The river Iça, the Putumayo of the neighbouring Republics,<sup>1</sup> has numerous affluents—over thirty are known—and two natural channels connect it with the Japurá. Its length is 1028 miles, of which 935 are regularly navigated by steamers, being the ordinary route between the Amazon and the Republic of Ecuador.

Lastly, the Rio Acre has become, at a relatively recent epoch, one of the most active centres for the production of that vegetable gold—indiarubber.

But we do not wish to weary our readers. We have made mention of about 130 affluents and sub-affluents of the Amazon, which, like a Spanish *hidalgo*, bears three names in its immense course: Maranhão, Solimões, and Amazonas, and we are far from having exhausted the list, which would however become tedious.

If we added to these rivers an infinity of others of less importance, but which in Europe would pass for being very considerable, we should still have only a very slight idea of this phenomenal network of water, the extent of which is far beyond human imagination.

The Amazon is the offspring of the Andes, and it has been observed by others that these high mountains and this king amongst rivers of the earth have as near as possible the same extent.

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<sup>1</sup> Francisco Xavier Rodrigues de Souza, *Do Pará á Colombia ou Apontamentos sobre o rio Içá ou Putumayo*, Maranhão, 1880.

## CHAPTER IV

*General Notions.*—The great plain of the Amazon—Its aspect—Its geological conformation—The perpetual summer of the Amazon—The distribution of mountains—Climatic conditions—Opinions of foreign travellers upon the climate of the Amazon—Meteorological observations—Demographic data—Why this climate is salubrious.

THE great plain of the Amazon, one of the four great plains of the Brazilian plateau, lies horizontally or nearly so, the three others being those of the basins of the Paraná, of the San-Francisco, and of the Parnahyba.<sup>1</sup> It not only includes a part of the State of the Amazon but embraces the greater part of the States of Matto-Grosso, Goyaz, Pará, and even Maranhão. The Tocantins-Araguaya, the Xingù, the Tapajoz, and the Lower Madeira, with its affluent the Guaporé, all descend from this plateau by a series of rapids at a distance of 100 or 200 miles from the Amazon. Its southern edge is an escarpment of from 2600 to 3250 feet above sea-level, opposite the depression of the Paraguay and of the Guaporé. This declivity, where the *divortium aquarum* or watershed of which we have just spoken is situated, bears the name of the *Serra dos Parecis*.

The great plain of the Parnahyba, which occupies the entire State of the Piauhy, part of the south of the State of Maranhão, and a part of the west of the State of Ceará, forms perhaps an uninterrupted whole with the great Amazonian plain, along the line of the watershed between the Tocantins and the Parnahyba.

On the other side, although the Brazilian part of the plateau of the Guianas is as yet but imperfectly explored, along the line

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<sup>1</sup> *Le Brésil en 1899* gives *résumés* of the studies by Mr. Orville Derby on all these points.

of the watershed between the rivers which flow respectively towards the Sea of the Antilles and towards the Amazon, mountains are known to exist which attain to a height of 6500 feet and even more, and these elevations are in several places very near the river, between the mouth of the Rio Negro and the Atlantic Ocean. This region is watered by the Rio Negro, which passes Manáos by its tributary the Rio Branco, and by a great number of other water courses, one of which is the Jamundá, which serves as the boundary between the two States of the Amazon and Pará.

The great valley of the Amazon is relatively narrow in the lower parts of the river below the mouth of the Rio Negro, in what we call the Lower Amazon; in that part the average width runs from 100 to 200 miles. In the upper part, on the contrary, between the Rio Negro, the Madeira, and the spurs of the Andes, it widens considerably, taking the form of a Florence oil-flask.

In general, the river is bordered by low, alluvial plains, sometimes of considerable extent, and subject to inundations during the season of the periodical floods—*igapós*<sup>1</sup>—and there are a great number of deep lakes and lateral canals (*igarapés*, *furos*,<sup>2</sup> etc.).

The most elevated ground is of two kinds. In some places are plains not more than 3000 feet in height, formed by deposits peculiar to the Amazon valley: in other places are hills with bare and rounded summits, which are spurs of the great eastern plateau on both sides, or the plateau of the Andes at the head of the river basin.

The greater part of the country is covered by gigantic forests.<sup>3</sup> On the right border, these penetrate further towards the centre, and stretch some 360 miles towards it, the line of forest being broken here and there by small clearings. After the forest comes the region of the *campos*. On the left the forest zone which borders the river is not so large, and this brings the *campos* nearer. Along the Amazon and its affluents are a great number of lakes communicating with each other. The flood of water during the rainy season in winter is extra-

<sup>1</sup> Inundated land: *Igapó* in nheengatú, or Tupi.

<sup>2</sup> Lateral canal: literally, pierced.

<sup>3</sup> Silva Coutinho, *As Epidemias no Valle do Amazonas*, Manáos, 1861.



ordinary, as it rises from 36 to 65 feet even in ordinary years, and the lands bordering these rivers, commencing with the Amazon, are inundated. The rainy season begins about December, when the sun is in the southern tropic, and lasts until July. During this time storms are frequent, often very violent, and almost invariably attended by lightning.

From the point of view of geological conformation the Amazonian plain of the Brazilian plateau is for the most part composed, according to M. Orville Derby, of sandstone and clay-slate, resting upon metamorphic rocks, which appear in the valley of the great river and its affluents. The geological age of these strata is unknown, for no fossils have been found as yet in this region. Alcide d'Orbigny assigns to the carboniferous age, the layers adjacent to the bar of the Guaporé, apparently because they resemble the carboniferous layers of Eastern Bolivia, where fossils have been found.

The Devonian formation is also represented along the Amazonian border of the plateau. It is very probable that these strata extend across it, and constitute part of the plain of which we are now speaking; the apparent resemblance between the plains of the Amazon and the Paraná favours this theory. On the other hand, one might suppose that the strata of the secondary age in the basins of the Parnahyba and the San Francisco extend across the watershed of the Tocantins and form part of the Amazon zone.

The little that is known of the Brazilian part of the plateau of Guiana leads one to suppose that, as regards geological structure, it probably differs but little from the regular Brazilian plateau. The fundamental rocks are Laurentian and Huronian, and the highest of the mountains are covered by a thick layer of sandstone of unknown age. Along the southern borders of the plateau the strata of the Amazon valley lie above crystalline rocks, but it is not yet known how far they reach in the more elevated parts of the plateau.

In the Amazon valley, higher Silurian, Devonian, and carboniferous formations, each with its characteristic fossils, are very abundant, and in the two latter show many varieties. These are to be found again in the narrow part of the valley

below the Rio Negro. They are composed of sandstone and clayslate, to which is added limestone of carboniferous formation. One part of the clayslate is aluminiferous. Banks of diorite are numerous, and of considerable extent. The layers of these three formations are somewhat disturbed, and present, as a rule, slight inclinations on each side towards the central line of the valley.

Above these older formations are to be found horizontal layers of soft sandstone, and bright clay of divers colours, forming low hillocks of about 1000 feet in height, which seem to belong to the tertiary period. The low plains adjacent to the mouth are probably more recent formations of the same period.

In the region of the Upper Amazon<sup>1</sup> there appears a cretaceous formation in which are to be found fossil reptiles characteristic of the Purús, and tertiary deposits with lignites and a great many fossil molluses of the salt water species. These formations prevail for a considerable distance along the Amazon on both sides of the Peruvian frontier.

Lastly, vast tracks of low-lying lands are formed by deposits in the quaternary and perhaps the later tertiary periods. They are elevated barely a few yards above the level of the river, and are subject for the most part to periodical inundations.

An eminent astronomer of the Observatoire de Paris who has devoted much attention to Brazil<sup>2</sup> tells us what should be the climate of such a region:

“The quantity of solar rays which reach at a given moment a similar extent of the earth’s surface differs greatly according to whether the points under consideration are at the centre of the illuminated hemisphere or on the edge of the same. . . . Notwithstanding the rotation of the earth the Polar regions can never attain the centre: they are always near the edges, so that during the six months of the year that the sun shines on them it gives them but very little warmth. . . . The countries, on

<sup>1</sup>C. Barrington Brown, “Tertiary Deposit of the Solimões and Javary Rivers, in Brazil,” *Quarterly Journ. of the Geolog. Soc.*, Feb., 1879.

<sup>2</sup>Emmanuel Liés, astronomer at the Observatoire de Paris, *L’Espace Céleste et la Nature Tropicale*, Paris (undated), page 85.

the contrary, situated near the Equator pass daily through the centre of the illuminated hemisphere or in its vicinity, and there receive the sun's rays under an incidence approaching the perpendicular. *In these countries there is perpetual summer*, under the influence of which the vital forces develop their maximum activity. The words 'perpetual summer' which I have just employed do not, however, signify that the seasons are not distinct in the mid-tropical zone. On the contrary, they are in general very marked and pronounced; but, as during the whole of the year, and even during the period which corresponds to winter, the temperature remains high, one can say rightly that all the seasons are of the nature of summer.

"The maximum intensity of heat in the inter-tropical zone depends greatly upon the nature of the soil. It is in arid deserts like those of Africa that the thermometer attains its greatest height during the day. On the ocean it is lower, but more steady. *The American soil, covered as it is with vegetation, lies between the two extremes.* Evaporation there is abundant, and the vapours take away the excess of heat in the form of latent caloric. . . . There is a great difference between the aspect of those beautiful tropical lands, animated with scenes of life under a thousand different forms at the moment of the greatest solar action, and the idea of the ancients on the subject of the equatorial regions, which they looked upon as being burnt up by the scorching rays of the sun. From this fantastic belief comes the expression *torrid*, given to the terrestrial zone comprised between the tropics. But everywhere where there is moisture in the atmosphere, the rays of the sun, far from being destructive, are productive of life.

"Let us assume, to give an exact idea of the seasons in the tropics, that the temperature in winter equals that of the summer in France, with the exception only of the few stifling days occasionally met with. The temperature of the summer is distinguished by an intense heat, which continues for a long time without interruption unless the storms from time to time moderate it."

Science considers as very probable the existence of an inland sea in the centre of South America. By one of those cataclysms

frequent at epochs anterior to our own, this sea is supposed to have been replaced by the upheaval of the elevated uplands of the American soil. It is probable that the Madeira is one of the ways by which this Mediterranean emptied itself into the Atlantic Ocean, dashing a way through those deep valleys which now serve as channels for the affluents of the Amazon. These channels are supposed to have been enlarged by the water falling during the rainy season. We may regard it as tolerably certain that the valley of the Amazon was at one time the bed of a sea, an immense gulf of the Atlantic. On this point De la Condamine, Humboldt, Agassiz, Silva Coutinho, Fred. Hartt and Orville Derby are nearly all of one accord. The revelations of Nature herself daily confirm their assertions. The presence of innumerable foraminifera, nummulites, and other *formers of worlds* in the sedimentary rocks, assign to this inland sea an epoch which does not seem to date back further than the secondary cretaceous period. It is to be supposed that more than one telluric disturbance has since made itself felt in that region. Finally, the foundation of the Andes seems to have determined the present aspect of this continent. It coincides with certain depressions produced by the decomposition of gneiss which MM. Agassiz and Coutinho have observed.

Agassiz, having also noticed that the sides of the *serras* of Pacaraïma and Tumucumaque, which face the Amazonian basin, are arid and bare, whilst the northern and western slopes are covered with luxuriant vegetation, concluded that the valley of the Amazon was not an arm of the sea, nor a gulf like that of Mexico, but simply a lake formed by the melted ice of a cosmic winter at the time when Amazonia extended to the middle of the Atlantic, and when the Parnahyba and the rivers beyond it that now run down to the coast, were all tributaries of the Amazon.

This theory of the illustrious *savant* is part of his system of the glacial formation of continents, but it cannot be accepted without great restrictions. The almost complete absence of erratic boulders in the valley of the Amazon seems to condemn it. As to the scarcity of any traces of marine origin upon the slopes of the Tumucumaque, this can be explained by the existence of brackish water which must have stagnated in places where was

once the salt water of the Amazon Gulf, and by the destructive ravages of torrents and heavy rains. The second part of Agassiz' hypothesis is quite admissible. It may be that Amazonia really extended to the east and west, and formed the famous Atlantis of the ancients which has remained shrouded in eternal mystery.

Quite recently,<sup>1</sup> Colonel George Earl Church, whose name is associated with the first serious attempt at the construction of the Madeira-Mamoré Railway, has promulgated a new theory, based upon an extraordinary abundance of facts and observations.

He thinks that, at a not very distant geological period, the basin of La Plata occupied a much more considerable surface than at present, and that almost all the rivers which to-day combine to form the Madeira, flowed towards a sea situated in the region of the Pampas, and watered the lands where the Argentine Republic is now situated.

But this has little to do with our subject.

Let us proceed to study in its details the mountain system of this region which we have just described in its general outline.

The valley of the Amazon is, as we have already said, not very hilly. The few mountains that it contains rise between the Rio Negro and the Ocean. Upon the entire vast zone situated west of this river, cartographers register no remarkable undulations of ground. However, on the borders of the Amazon extend the delightful hills of Sam-Paulo-d'Oliveira; at the mouth of the Japurá run the chains of the Cupaty; on the boundary of what was formerly known as New Granada is a small branch of the Cordilleran Aracuára, named Apaporis, and no more than 875 feet in height. Amongst the elevations that are found between the Rio Negro and the Atlantic the chief is that of Parintins, which lies to the right of the Jamundá, on the confines of the States of the Amazon and Pará. Less important are the Acarahy, which is merely a spur of the Tumucumaque, between the Guiana and Pará, and the chain and small hills on the east of the Rio Branco.

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<sup>1</sup> *Presidential Address* to the Geographical Section of the British Association, Bristol, September, 1898, in the *Geographical Journal*, vol. xii., No. 4, Oct. 1898, p. 386 *et seq.*

However, the valley of the Amazon, to speak correctly, can really be considered as a geognostic horizon, whose characteristic facies is found in the cretaceous lands on the banks of the rivers. Rocks, more or less crumbling and subject to decomposition, numerous clays, pudding-stones, galls, granulations, and argillous and talcous schists mark the geological age of this region. The rather shallow beds of the valleys are interspersed with the



*The Hills of Parintins*

sediments and eysmic matter of the drift, a kind of red diluvium resulting from the trituration of crystalline and transport rocks. One may say that the basis of the Amazonian soil is of the secondary period, and that argil and drift,<sup>1</sup> rich in humus, are the principal components of the soil.

<sup>1</sup>Reddish, homogeneous clay, called by this name by Agassiz, who attributes it to deposits from glaciers descended from the Andes.

These rich lands, mixed with vegetable and mineral detritus, are fit for every kind of cultivation, and produce the luxuriant vegetation which characterises the regions bordering on the Amazon.

The climatic conditions of the State of the Amazon result from what we have just described. The geographical position of this country, which extends under tropical latitudes, the orientation of the valleys, the abundance of water, the mountain system, and the extent of the forests are so many co-efficients acting on the climate of this immense territory. The dampness of the lower lands, the fermentation due to decay of luxuriant vegetation, and the difficulty in obtaining labourers to bring the soil under proper cultivation might at first lead one to regard this region as being unhealthy. Such, however, is not the case as a rule.

Intermittent fevers are only endemic in the northern estuary of the great delta of the river. They sometimes appear also towards the end of the summer, when the season is dry, on a few of the affluents of the Amazon; otherwise this climate may be pronounced excellent and perfectly salubrious, and with a very much more moderate temperature than is generally supposed, as has been stated by Agassiz.

Emigrants from Europe have avoided Amazonia because of the generally spread prejudice on this side of the Ocean which regards these beautiful lands as uninhabitable, or, at least, very dangerous to foreigners. Ignorance has attributed to them an unbearable temperature, and an atmosphere laden with pestilent miasma.

There is no doubt that several swampy lowlands of the basin of the Amazon, several corners of forests where the sun never penetrates, are no more attractive than certain parts of the Roman Campagna. But what has given rise to all these errors is the fact that people are accustomed to reckon the temperature of these regions by one factor only, viz., its geographical position in the neighbourhood of the Equator, neglecting other very appreciable factors which upset the calculations of those who reckon only by latitude and mathematical zones.

There are along the borders of the Amazon continual sea breezes, due to air currents, which tend to diminish the heaviness

of the atmosphere. M. Th. Lavallée has remarked<sup>1</sup> that Europe, exposed to the colds of the pole, would be almost uninhabitable were it not that the winds blowing from Africa across the Mediterranean diffuse over the European continent the heat accumulated in the Sahara. The opposite phenomenon is what occurs in the Amazon region, and Maury has already explained how, thanks to those atmospheric currents, "the climate of Amazonia is one of the most remarkable in the world."

As no one can be a prophet when speaking of his own country, especially if that country be far distant, we will refer to the opinions of two men who cannot be accused of partiality.

Lieutenant Herndon,<sup>2</sup> in speaking of the climate, has expressed himself as follows:—"I have always been very reserved on the subject of the salubrity of this country, notwithstanding which I fear that a great number of persons will consider the way I have praised it to be somewhat exaggerated. These persons should see the report of Mr. Wallace, an English naturalist who happened to be in this country whilst I was there: 'The climate,' he writes, 'as we have experience of it hitherto, is delicious. The thermometer has never risen above 87° Fahr. in the afternoon. It falls to 74° during the night. The mornings and the evenings are most pleasantly cool, and we generally have a shower and a light breeze in the afternoon, which greatly refresh and purify the air.' Furthermore, he speaks of the marvellous softness and transparency of the atmosphere and the balmy sweetness of the evenings, adding 'that they are equalled in no other countries visited by him, and that one can work there as well as one can during the hottest months in England.'"

According to the meteorological observations supplied to the Statistical Office by the Sanitary Commission of Manáos<sup>3</sup> the mean temperature of that town is 27°37 cent. The coolest month is December, with an average of 26°70, and the hottest is August, with an average of 27°98. The thermometer has

<sup>1</sup> *Harmonie des Continents et des Mers.*

<sup>2</sup> *Exploration of the Valley of the Amazon.* Washington, 1854.

<sup>3</sup> *Relatorios das Repartições de Estatística e Archivo Publico do Amazonas,* 1898.



never risen beyond  $31^{\circ}75$ , which was registered in the month of August. The lowest reading was  $22^{\circ}25$  in the month of September. Observations were taken at 7 a.m., at 2 p.m., and at 9 p.m.

“All hot countries,” says a French traveller,<sup>1</sup> “are too readily assumed to be unhealthy. . . . We see a neighbouring country—French Guiana—where the foolish enterprises of the most formal, the most incapable, and the most conceited of all administrations cost the lives of thousands of European colonists. Such is not the case, however, in Amazonia. Neither the Portuguese nor the Brazilian administrations have been guilty of these criminal absurdities. Individual initiative has been here as capable and as happy in its results as it was incapable and unlucky in the small neighbouring colony. All the white colonists introduced into Cayenne died there; all those introduced into Amazonia became acclimatised, prospered there, and multiplied. Cayenne is a small district, with a very bad reputation, and every one avoids it. Amazonia, although identical in its climate and surroundings, is a vast world which offers riches and happiness, and it will shortly be one of the most attractive centres for European emigrants.”

After such positive testimonies, there can remain no doubt as to the excellence of the Amazon climate, and we believe that it would never have received its evil reputation had it not been so frequently confounded with that of the Guianas.

The statistics of mortality also support our opinion.

In Paris, during the reign of Louis Philippe, the number of deaths yearly was more than 30 per 1000 inhabitants. Later on—between the years 1855-65—at the time of the great works undertaken by the Empire to allow air, water, and light to circulate in Paris, the annual death-rate fell to 27 per 1000. Since 1882, according to the *Annuaire Statistique de la Ville de Paris*, there are hardly 26·2 deaths per 1000 in the great capital.

The year 1897 was one of exceptional mortality for Manáos, for that town was struck at the same time by an epidemic of small-pox, imported by a steamer, and by an outbreak of malaria,

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<sup>1</sup> Henri A. Courdeau, *La France Equinoxiale* t. i. p. 355-56. Paris, 1886.

principally due to the removal of earth occasioned by the great public works then being undertaken. Notwithstanding that, the report presented by Dr. Gouveia, the Director of Hygiene,<sup>1</sup> is still reassuring. The number of deaths during that year (1897) rose to 1323 in a population which is no less than 45,000. The death-rate was therefore 29·40 per 1000, but if from this number we deduct 232 deaths from small-pox, there remains only a death-rate of 24·25, which may be regarded as the annual average death-rate of the capital. The average deaths per month for 1897 were 110·25. The months of least mortality were those of January and May (87 deaths each). The death-rate was highest in September (158) and August (162). At the Portuguese hospital there were during that same year 576 patients under treatment and only 39 deaths. That is at the rate of 6·6 per cent. Amongst these patients were to be counted, however, individuals of all nationalities not yet quite acclimatised: Portuguese, French, Italians, Spaniards, Peruvians, Venezuelans, Arabs, etc.

But our readers will ask: What about the interior of the country?

Here, again, let us leave facts to speak for themselves.

In January, 1883, M. José Paranaguá, who then governed the province of Amazonia with no less zeal than intelligence, sent Dr. Aprígio de Menezes to the Purús, whence reports of a threatening epidemic had been received. This doctor addressed to the president of the province a report, of which we give a few extracts: "During the last period of the preparation of india-rubber, the regions bordering on the Rio Purús and its affluents, contrary to what has been said, have suffered from no epidemic whatever. The disease which was prevalent was a mild form of fever, an affection endemic in marshy regions.

"To my knowledge, no serious case of this fever declared itself. Improvidence and the want of care and excessive ambition on the part of the inhabitants are answerable for the five hundred deaths that occurred near the Rios Acre, Inaubiny, Paulhiny, and Tapanhá, affluents of the Purús. The Purús itself

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<sup>1</sup> *Relatórios* already cited.

was not affected. In other places the *seringueiros*, being unable to obtain medical advice, continued to extract indiarubber instead of combating from the first the fever by which they were attacked. The disease was thus intensified; serious affections of the liver followed, and dropsy, from which they died."

Notwithstanding these statements, the president of the province affirmed, in a report presented by him on the 25th March, 1883, to the provincial Legislative Assembly, that during the year 1882 the number of deaths in a population of 50,000 souls inhabiting the Purús and its affluents did not attain the proportion of 2 per cent. Nay more—on the river Pauhiný, during the two preceding years, only twenty persons died, and yet more than 1000 people are employed there at all times for the extraction and preparation of indiarubber.

These happy results must be attributed to the conformation of the land.

The almost complete absence of mountains allows free passage of air on almost all the branches of the river Amazon. The constant currents of winds which circulate in these large exposed river basins take away and disperse all the harmful emanations suspended in the atmosphere. Also the large rivers which water the country dissolve and carry the vegetable detritus far away, neutralizing the evils that it might produce and removing sources of infection. On the other hand, the immense forests, although they prevent the free circulation of aerial currents, compensate for this by setting free vast quantities of oxygen and decomposing the carbonic acid gas with which the atmosphere is charged.

To the learned M. Maury we owe some valuable information on this matter, confirming the opinion expressed by Dr. J. Severiano da Fonseca which we have just cited:—"In all tropical regions," he writes, "in India, in West Africa, in New Holland, in Polynesia, there are two seasons. During the dry season there is little or no rain; springs and sources dry up, cattle die, and their dead bodies contaminate the air. It is then that that terrible evil the plague breaks out on these shores. This does not happen in the Amazon valley. In this valley abundant rains fall, but not only during a small number of

months: they are unaccompanied by those terrible storms and hurricanes of wind which rise in India at each change of season, but in America gentle and refreshing rains fall in every month throughout the year, and the winds are rarely violent. A great number of people believe that this region, being situated in the tropics, must have a climate analogous to that of other tropical countries, such as India, for example; but, for the reasons just mentioned, there exists no more resemblance between the climate of India and that of the Amazon, than between those of Rome and Boston. Should any one imagine that the climate is identical in Rome and in Boston because these two cities are in the same latitude, he would fall into as great an error as if he confounded the two climates of India and Amazonia for the reason that both are tropical. What should be the condition of a tropical country whose soil is watered by frequent rains and where there is no burning drought throughout the perpetual summer? Evidently such a country must be fertile and salubrious, for in a climate like this everything sprouts up and grows rapidly. The intense production and the decomposition of vegetable matter during a space of thousands of years cannot but have enriched the surface of the country with deep layers of vegetable earth. The vegetation there is in perpetual activity; there is no interval of rest, for as soon as a leaf falls and begins to rot others appear which absorb the gases emitted. All these conditions render the climate of the Amazon valley one of the most salubrious and delightful in the world."

Let us add that, when the stream of emigration which is now turned towards North America, swerves towards the Amazon valley, and when its population increases, it will be without doubt the Vale of Tempe of South America. *Locis, homines; et homines locos faciunt sanos.*

## CHAPTER V

*The Animal Kingdom.*—Rôle of the Naturalist in the valley of the Amazon—Difference between the fauna of the Amazon and that of other parts of the globe—Mammals—Birds—Legends of the *Urubù*—Reptiles—Fish—The *Pirarucù*.

ONE reads in the legends of the saints that a venerable hermit, who was not a learned man before the Lord, was in the habit of representing the world to himself as being a huge table served by God. Animals of all kinds, plants of every species productive of luscious fruits, and all the treasures disseminated over the earth, were the dishes and ornaments of this table, Man being the guest.

It is impossible not to remember this naïve cosmogony when one has to describe the wealth of the valley of the Amazon, where the three kingdoms of Nature are offered in profusion to mankind.

We have tried to give some idea of that immense "table," which measures 1080 miles from north to south, and 900 miles from east to west, and all in one unbroken expanse. We have shown that the liquid element is not wanting on that truly regal board. We will now present our *menu* of the feast, after which we will give our attention to the guests.

The Amazon valley is indeed a marvellous table, which lays and renews itself. It furnishes in abundance the smallest wants of that lord of creation, Man. The variety of its fauna is infinite, of its flora, inexhaustible; and its mineral riches remain hidden in mystery, which *savants* will exhaust themselves in their vain attempt to fathom. Amazonia is the despair of naturalists, and many years will elapse before they succeed in making an inventory of all its wealth. This work can only be

accomplished by legions of pioneers; and it is to be feared that it will be accompanied by plunder—civilisation being so often synonymous with destruction. Man only subdues nature by mutilation. He exterminates to reign. Instead of training animals to his service, he kills them haphazard, without dreaming of making use of them. Instead of taking out of the forests, by intelligent means, that which is necessary to supply him with food, lodging, furniture, means of navigation and medicine, he cuts everything down at random with prodigal improvidence, and annihilates what might be, in the future, precious sources of revenue. It would be desirable that men of science should precede colonists in those virgin lands, in order to determine the resources of the country and to watch over their preservation. The work of the naturalist nowadays must, above all, be one of economy. He must instruct those who exploit the soil in the different properties of the natural products, and make them well understand that it is to their own interest to be careful of them. The explorer is not the man to incite others to spoliation, but rather to invite them to take a simple share of his discoveries in order to benefit by them. He willingly takes the advice of the poet:

*Inserere Daphni pyros, carpent tua poma nepotes.*

It is inspired by these sentiments that we have set about the task of making known the treasures of the Amazonian El Dorado.

It is far from our intention to attract adventurers and immigrants by offering them easily acquired wealth. We wish to attract serious workers, men of determination and intelligence, who are resolved to make this country their home, and to build up their fortunes, not by ruining and plundering this beautiful region, but by the development of its agricultural and industrial resources. With this end in view, whilst revealing the numerous advantages offered to such settlers, we shall not fail to point out the obstacles which will be opposed to them by nature.

At the outset, the intending colonist may be assured that he will not find in the impenetrable forests which border all the rivers of Amazonia, any gigantic animals, useful or ferocious, such as are found in certain parts of Europe, in the steppes and in the

jungles of Asia, in the deserts of Africa, and in the heart of the islands of Oceania. He will not see herds of elephants nor caravans of camels. He must not expect to see the rhinoceros in the deep grass, nor the hippopotamus amongst the rushes in the rivers. He will have no opportunity of indulging in lion or tiger hunts. The buffalo will not drag along his waggon with slow and solemn step. He will not see the zebra and the giraffe, with their coats glistening in their rapid and unchecked race, nor will the eagle dispute with him his possession of the sun. In the solitudes of the Amazon he will not meet with his presumptive brothers, the great apes: the orang-outang, the gorilla, or the chimpanzee.

But, in compensation, he will live in the company of the last representatives of the tertiary age. The sloth, the armadillo, the tapir, and the river cow will remind him of the megatherium, the smilodon, the megalonyx, the paleotherium, and the dinotherium, long ago swallowed up in the deluge.

Amongst the mammals, birds, fish, and reptiles, he will make many new acquaintances.

To aid him in this intercourse we give here an abridged list, according to zoological classification, of the principal inhabitants of the valley of the Amazon.

*A tout seigneur, tout honneur.*

Let us commence with the monkey, who is without doubt the original inhabitant of the virgin forest.

Among the mammals, the order of the quadrumana offers us a few very interesting specimens.<sup>1</sup>

First come the *Guaribas*, gouribas or ouarines (*Simia Mycetes*), the howling monkeys, belonging to the species *Alouate* or *Stentor*, of the family of the sapajous, *i.e.*, monkeys with prehensile tails. The guaribas are the largest and most remarkable monkeys of the Brazilian forests. They are found also in the Guianas and in Paraguay. Naturalists, Spix especially, have described a great number of species without agreeing upon their

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<sup>1</sup> J. von Spix, *Simiarum et Vespertilionum brasiliensium species novae*, Monachii, 1823.—Alex. Rodrigues Ferreira, *Relação dos animaes quadrupedes, silrestres, que habitam nas matas de todo o continente do Estado do Gram-Pará*, 1786, Manusc. at the Nat. Lib. at Rio.

distinctive characteristics, for these depend upon the colour of their skin, which varies according to their age and sex. The *Alouates guaribas* are distinguished from the other *sapajous* by their pyramidal head and oblique face, due to the enormous development of the hyoid bone. The average height of these monkeys is about two feet. Their limbs are supplied with five well-developed fingers, and their very long tails serve them as an extra hand, the holding part of which is destitute of hair, but is horny underneath and hairy only above. The *guariba* has a thick beard "à la Yankee," in the form of a collar, is gifted with a surprising loquacity, and the power of his voice is such that it can be heard at a distance of some miles. When, during the rainy season, they howl in chorus, all the echoes of the woods are awakened. They seldom go in bands, but are generally in couples, feeding on fruits, and the females carry their young on their backs after the fashion of Indian women. Their flesh is said to resemble that of the hare. They perch on the tops of trees, and in order to secure their bodies one must kill them outright, as when they are only wounded they remain suspended by the hook of their tails.

The *Platyrrhiniens* of the New Continent still number in the family of the *sapajous*, a few species and varieties of the *Ateles*, *Lagothriches*, and *Cebus*.

The *Coatás* or *Coaitas* of the Amazon belong to the *Ateles Marginatus*, and the *Ateles Paniscus*. These monkeys have large heads and a facial angle of 60°. They are quiet, melancholy, timid, easily tamed, lazy, and slow. Their hair is long and silky: their limbs thin and of inordinate length, terminating in four-fingered hands, with a rudimentary thumb.

The *Barrigudos* form part of the *Lagothrix* tribe. These animals were discovered and described by Humboldt; they are woolly, paunchy, and have five fingers. They have large, round heads, well-proportioned limbs, and stand upright.

The *Saïs*, hooded or crying monkeys, belong to the *Cebus* or *Sapajou* kind. Their hair varies between brown and an olive grey. A skull-cap or hood of black hair adorns their head. Their plaintive and melancholy cry betrays their soft and timid disposition.



All these monkeys represent the serious members of the family.

Next to them come the amusing kind, the *enfants terribles* and ungainly, represented by the Ouistitis and the Sagouins of the Jacchus, Midas, Callithrix, and the Pithecia kinds. We must mention in these different classes the silver-grey backed Sagouin (*J. humeralifer*); the hairy Sagouin (*M. hirsutus*), whose body is covered with black hair, with reddish undulations on the back; the red Sagouin (*C. moloch*), and the pretty black monkey Pará-uassú (*P. hirsuta*).

The order of the Carnivora is as well represented as is that of the Quadrumana. The feline race has many representatives, to whom the Brazilians have given the generic name of Onça, and the Indians that of Jaguára. The American Tiger or Jaguar is sometimes called the *Ounce*.

The Common *Ounce* (*Felis onça*) is an animal almost as large and ferocious as the royal tiger of Asia. Its coat is bright tan on the back, marked along the sides by four rows of black rings, in the centre of which are black spots, and white underneath, with large, irregular black patches. It is sometimes over 6 ft. in length, exclusive of the tail, which measures nearly 2 ft.

The Black *Ounce* (*Felis onça nigra*), called Jaguereté or Jaguára-pixuna by the Indians, presents a double aspect—the female is quite black, and the male reddish, with black spots.

The Red-haired *Ounce* (*Felis concolor*) is the Susuarána of the Indians, and the Cougar or Puma of naturalists. It is also commonly called the American lion and the red tiger, and attains to about 4 ft. in length, exclusive of the tail, which measures sometimes 2 ft. His coat is of a uniform tan without spots; the end of his tail and his ears are black.

The Grey and White *Ounce* (*Felis pardalis*), called the Pacova-Sororoça by the Indians, is of small size.

The Onça Maracajá (*Felis tigrina*) is smaller still than the preceding, with his hair shaded in black, white, and grey.

The Jaguar proper or *Felis onça* of which we have spoken is stronger and more ferocious than the four other kinds. It attacks larger animals, and often man himself.

Let us pass to the order of the Rodents, the sixth order of *Mammalia*, characterised, as one knows, by the absence of canine teeth, by long incisors, and by four pairs of molars uniform in each jaw.

The Amazonian region possesses the largest rodents known: the Capivára (*Hydrochoerus capibara*), whose name is derived, according to Martius, from two words in the Tupy language—*caupi* and *uára*, signifying “*master of grasses*,” an allusion to the grasses and weeds on which it feeds in the rivers and lakes. The capivára is of the size of the boar, with a scanty coat of greyish colour, and its flesh serves as food to some of the natives of the country, who esteem especially the lard it furnishes.

The next to be mentioned is the *Páca*, of which two kinds are more generally known—the *Coolegenys fulva* and the *C. subnigra*. The páca belongs to one of the seven families of rodents described by G. Saint-Hilaire. Its teeth resemble those of the agouti, but it possesses one more claw than the latter, which has only four. Another differential characteristic is the skin of its cheeks, which fold back under the very salient zygomatic arch, and forms a sort of pocket opened at the base and from the outside. The páca is about the same size as an ordinary sucking-pig, being a little over half-a-yard in length; the stomach is big and like a weasel's, the paws short, the muzzle rather long and round at the snout, with long moustaches, small ears, and they have no tail. Their skin is whitish or red, with longitudinal stripes formed by a series of white or black spots or marks. They grunt like small pigs. Fruits and roots compose their ordinary food. They are small, clean, and gentle animals, fit for domestication. Their flesh is of a most exquisite delicacy, and is a treat for the gourmet.

The *Agouti* is a species apart in the order of rodents. It has four claws in front and three behind, with hind legs much longer than the fore, like those of the hare. It has a rough coat, sometimes brown and sometimes red, of which the hair is easily pulled out. It slightly resembles the European rabbit, but the ears are round and the nose more pointed. Its tail is rudimentary. The agouti, which Brazilians call the cotia, is known by naturalists as the *Dasyprocta Agouti*. It prefers living in

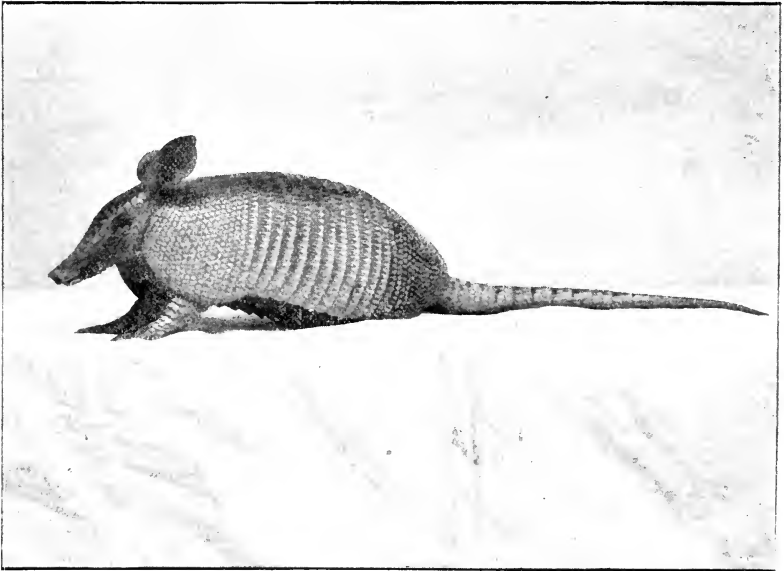
wooded hills, and makes its home in the hollows of trees and rocks, and is essentially a nocturnal wanderer. It can see in the dark, is omnivorous, and not particular in the choice of its food. It is easy to rear, and can furnish a very fair revenue to any one who cares to breed it, as its flesh is not to be despised, and its skin, when tanned, is much sought for by shoemakers.

The order of the Pachyderms offers us the *Tapir* or *Anta* (*Tapirus Americanus*), which is certainly the largest of the mammals of this region, and no better game can be found by travellers in these vast forests. The Indians call it the *Icury* or *Tapiyereté*.

The American tapir is very similar to the pig, but is much larger in size, measuring 6 ft. in length and 3 ft. in height. The nose is prolonged to a small flexible proboscis, the tail very short. It has four horny toes on the fore feet and three on the hind feet, a thick brown skin with a few silky hairs, round and hairy ears. Such are the principal characteristics of the tapir, which is found everywhere from the Orinoco to La Plata, but more especially in the valley of the Amazon. The young of this pachyderm are spotted with white, like young fawns. The tapir is wild but not ferocious, and causes damage like the boar. Hidden in the woods during the day, he comes out at night to feed on fruits and roots. He swims well, and crosses the rivers with the greatest facility; he loves to lie down and keep cool in the marshes, and none knows better than he how to make his way through the great woods, where he rushes along head downwards through the trees with his trunk pointed before him. His voice is shrill and out of proportion to the size of his body; his cry is merely a short shrill whistle. "Amongst the pachyderms," writes A. Saint-Hilaire, "there is one whose domestication ought, in my opinion, to be immediately attempted. This is the tapir, and especially the American species, which would be easy to procure in the Guianas and Brazil. The utility of the tapir would be twofold. Its flesh, improved by suitable feeding, would furnish a wholesome and agreeable article of food and its skin would make excellent leather; and, at the same time, it would render important service as a useful beast of burden." We quote these remarks for the benefit of the colonist of the

future, adding only that several tapirs, taken young, have already been tamed. Any one can touch and even scratch them, and this gives them great pleasure. They walk about houses quite freely and eat everything they can find, even down to raw meat.

The *Peccary* or *Caététù* is another sort of pachyderm, and smaller than the tapir. The best known species are the *Dicotyles labiatus* and the *D. torquatus*, which is the *Tajassú* of the Indians, and is the Amazonian boar or pig. Peccaries go in herds, and furnish excellent game, and the way they are killed



*The Tatou*

by the natives is most original. The hunter seats himself on a tree in the neighbourhood of a clump of palm trees, the fruit of which is much liked by the peccary. When he sees a herd of these animals he fires his gun and imitates the barking of a dog. The *Caététùs* become furious, and throw themselves against the tree, which they endeavour to overthrow: the hunter then slips down, and holding on to a branch with one hand, he knocks them down with blows of the stick which he holds in the other,

aiming at their snouts, and thus kills sometimes a large number of them.

To the order of Ruminants belong various species of stags or *vealos*. We need only mention the *Cervus campestris*, *palustris*, the *C. nemorivagus*, and the *C. rufus*. These stags are numerous in the forests; their flesh is exquisite, and their skins are beginning to be sought after for exportation.

As belonging to the order of the Edentata must be named the *Tatous*, varieties of the *Dasybus* family, the *Ant-bears*,



*The Tamanoir*

*Tamandúas*, or *Tamanoirs*, belonging to the race of *Myrmecophaga*, and the *sloths* of the *Bradypus* family.

The *Tatú-assú* (*Dasybus gigas*) is almost the same size as the sucking pig; its legs are short, and covered with scales; its snout very long, and protected by a sort of morion; its scaly shell is composed of mosaic-like divisions, formed by hairs stuck together. This armour consists of three parts; those of the neck and buttock are fixed, and between them are several parallel and moveable

strips, which give easy movement to the middle of the body. The tail is round and irregularly covered with scales. The stomach is warty and reddish, and the breasts are pectoral. Its paws have five claws, which are armed with very long and strong nails. Its cry is a kind of grunt: it is timid, and always tries to hide itself, running very fast, and travelling only at night; it lives on carrion, fruit, and worms, and burrows underground. When attacked it shrinks into its shell, where it feels itself impregnable, and when, like a man in heavy armour, it has the misfortune to fall on its back, it is with the greatest difficulty that it regains its feet. The tatou is easily tamed, and most curious habits are attributed to it; it appears that several of them live together in the same hole, whilst one of them goes out in search of food, and brings back to the small community the provisions of tucuman (*Astrocaryum tucuman*) and mucajá (*Aerocomia sclerocarpa*) on which they all feast. However, when once the searching tatou arrives at the palm trees, it begins its hunt by first eating a copious repast itself.

The order of the Cetaceans is represented in the basin of the Amazon by two strange types, which carry us back to mythological legends and primeval epochs.

The first is the *River Cow*,<sup>1</sup> the *Ox-fish* of the Brazilians, the Goarába of the Indians, known to naturalists under the Latin name of *Manatus Americanus* or *Australis*. This is the Manatee, the Lamantin, or Dugong.

The second is the Bôto, the *Dogfish* or Pira-Jaguára of the Indians, the *Dolphin of the Amazon*, the *Phocœna Brasiliensis*.

The Lamantin or Manatee of the Amazon is none other than the Siren *voce canorâ* of the ancients. It has indeed the pisciform body, terminating in an oval-shaped fin or tail. The front fins, although flat and membraneous, are composed of five claw-like fingers, which might be mistaken under the skin for human hands. It is probably from this peculiarity that the name manatee is derived. They often attain a length of over 15 feet. The females have a well-developed, human-shaped breast, and the flesh of this fish is very delicate. A preserve called

<sup>1</sup>Alex. Rodrigues Ferreira, *Memória sobre o peixe boi*, 1786. Manusc. at the Nat. Lib. at Rio.

*mixira* is made from it, and the fat makes excellent burning oil. The lamantin is reputed to possess a wonderfully acute sense of hearing, which renders it very difficult to catch, except by the natives, who know all its habits. Agassiz seems to consider it as the actual representative of the deinotherium order.

If the *peixe boi* is the antique siren, the *bôto* appears to be one of those fabulous dolphins

Per maria humida nantes.

Amazonia, moreover, has inherited a few of the Greek legends on the subject of the dolphin (*Delphinus rostratus*). Many are persuaded that the *bôto* is the friend of man, and that if a navigator is wrecked this devoted preserver helps him to escape the dangers of the waves by taking him on his back. The dolphin, indeed, is really found in these rivers breathing heavily by the side of the boats. Its great body often exceeds 6 feet in length. It plays about in all the water courses without any apparent fear of man.

Next to the mammals come the birds, the brilliantly-coloured inhabitants of the great sombre forests. Alfred R. Wallace has made a collection of over 500 species. We are here in fairy-land, in an ornithological paradise.<sup>1</sup>

In the order of birds of prey, among the diurnals is the *Urubù*, the gloomy bird, whose name is taken from the mysterious Tupi language; *uru* signifying bird, and *bù, vá, uá*, to eat: the voracious bird. Its beak is larger than that of the European crow, and its bald head resembles that of the domestic hen. Several species are known: the *Cathartes fœtens*, the *C. aura*, the *C. jota*.

The urubú-tinga or white urubú is the rarest kind, and is considered by the natives as the king of the urubús. They say that the black or common urubú only eats when the urubú-tinga has satisfied his hunger, that he soars above the clouds, that an arrow adorned with his feather will never miss its aim, and that a prayer written with a pen made from its wing-feather is always granted, and so on. The white urubú represents good, and the

<sup>1</sup> Frei. J. M. da Conceição Velloso, *Ariario brasílico*, Lisbôa, 1800.—J. B. von Spix, *Avium species nove*, Monachii, 1824.

black, evil. The Indians have invented innumerable stories about the latter, in which ideas derived from their own naturalism and from Christianity are intermingled. Let us listen to a few of these tales, which lovers of popular legends will recognise, as having heard before in the misty land of the Minnesinger, where grandmothers, with shaking heads, still tell them to the sentimental gretchen of the borders of the Rhine.

One day (thus runs the story) there was a fête in heaven in honour of the Holy Virgin. Every animal in creation had been invited. The Land Turtle (*Jaboty*), which only travels by short stages, did not see her way to going so high, so requested the Urubú to take her with him. The vulture consented to do so, and started on his journey upwards with the turtle on his back, but on reaching a certain height the cruel bird purposely dropped the poor little turtle, which was broken upon a rock into a thousand pieces. The Holy Mother then descended from heaven, and picked up the pieces of the turtle, restored her to life, and blessed her at the same time, bestowing a curse for ever on the black urubú. Since then the jaboty has been covered with a mosaic-like shell made of several pieces, and the urubú brings misfortune to all it touches. The tree on which it perches loses all its leaves. The gun which aims at it bursts in the hand of the hunter. Its body, after death, remains abandoned, even ants refusing to touch it.

On another occasion the Urubú was invited with the Toad (*sapo*) to a second feast in heaven. To make fun of him, the urubú went to see the toad, and said to him:

"Well, neighbour, I hear you are going up to heaven. Suppose we go there together?"

"I am quite ready to follow you," said the Toad, "but please go and fetch your guitar."

"Very well," said the urubú, "and you may as well take your tambourine." . . .

On the day fixed, the urubú called for the toad, who received him most amicably, bidding him come in and see his wife and children. Whilst the vulture was talking with them, the toad called out to him from the door: "You know I walk very slowly, so will you allow me to go on first?"



With these words, he jumped into the urubú's guitar, and settled himself very quietly. Soon after the urubú took his leave of the good lady and his children and slinging his guitar on his back, started off on his upward journey. On his arrival in heaven, he was asked for news of the toad.

"What a joke!" answered he, "do you imagine that he would ever allow himself to take such a very long walk? Why, he can hardly drag himself along on land. How could you expect him to venture through the air?"

With these words, he put down his guitar, and went off to the feast. When every one was at table, eating and drinking, the toad jumped unseen out of the guitar, and called out, "Here I am!" to the astonishment of all assembled. They began dancing and enjoying themselves, and at last, the ball being finished, every one went away. The toad, seeing that the urubú was not looking, slipped back again into the guitar. The urubú started for home. At a certain moment, however, the toad moved, whereupon the urubú, without making any noise, turned over his guitar and emptied it. The poor toad fell headlong from the clouds.

"Out of my way," cried he to the stones and rocks as he came rushing down nearer to the earth, "or I shall crush you."

"Never you fear," said the urubú with a sneer, "you know you fly far too well to do that."

This, however, did not prevent the toad from falling down and considerably hurting himself. This is the reason why ever since the toad's back is a mass of bumps and his skin is full of wounds.

If the urubú lends himself to poetic fables, the *Jacurutú* (*Strix nacurutu*), with the cat's head, a bird of the family of nocturnals, casts terror and superstitious fear into the soul of the Indian, who dreads his lugubrious croak.

But the *Caraxoé* or *Sabiá* and the *Japiym* or *Chechéo* (*Oriolus icterus gam.*) enchant him with their melody, and plunge him into those vague dreams which are his sole mental enjoyment. These two kinds of birds are of the *Turdus* family, of the sparrow order. The *sabiá* has the soft and melancholy note of the European nightingale, but less varied and of smaller compass. The *japiym*,

yellow and black, imitates the songs of all the other birds. He is the orchestra-bird of the Brazilian forests, of which he might also be called the carpenter. His nests, in great numbers, are suspended in most trees, resembling long hanging money-bags. The japiyms are fond of gay chattering, and are always in groups.

The family of Climbers offers us diverse species of *Toucans* (*Rhamphastos discolorus*). The name which has been given to them is an attempt at reproducing their cry. These birds have an enormous white and yellow beak, in the shape of a scythe, which is often larger than their entire body. This beak is light and cellular in the interior, and sometimes ragged at the edges and bent in towards the extremity. The head is small, the eyes round, and the tongue long, narrow, and barbed like a feather. The face is bare, the tail of medium length, the feet short, and the wings small. The toucan is about the same size as the European crow. The plumage is very bright in colour, the back being of an azure blue, the wings and tail bluish, and the breast of a rich yellow with a metallic lustre. They live in the woods in little groups of from six to ten, and are by nature very shy. They are continually in motion, and scarcely ever alight on the ground. They feed on fruit and insects. At the nesting season they devour the eggs and the young birds, which they swallow whole after sending them up into the air until they arrive at a convenient position for being swallowed down. Their cry is hoarse and piercing. They live in the holes of trees, and lay only two eggs.

To this same order of Climbers belong a great variety of *Parrots*, *Parroquets*, and *Aras*, amongst which must be mentioned the *Maracanú* (*Conurus*), a pretty yellow parrot. The natives maintain that, in order to render a parrot's plumage yellow, it is quite sufficient to feed it on the fat of the *Pirarára* or fish-ara (*Phractocephalus hemiliopterus*).

Of the Gallinaceous order the most remarkable varieties are: the *Jacús* (*Penelope*), the *Mutáns* (*Crax*), the *Agamy* or *Jacamy* (*Psophia crepitans*), the *Unicorn* (*Palamedea*), the *Nhambú* (*Crypturus*), the *Cigana* (*Opisthocomus*), which is something between the pheasant and the peacock, and several species of pigeons and turtle-doves. It has been remarked by others

that "with the exception of a few gallinacæ resembling the partridge, all the representatives of this family in Brazil, and especially in the valley of the Amazon, belong to types which do not exist in other parts of the world."

The varieties of Mutúms or Hocos are numerous. The smallest is the mutúm-pinima (*Crax discors*). There are also the mutúm-miri (*C. tuberosa*), the great mutúm (*C. globulosa*), and the beautiful mutúm, the poranga (*C. rubrirostris*). These are large birds, whose back is jet black, with wings and breast frequently of pure white. Their head is surmounted by a beautiful hood, curled like that of the peacock. They sing at night, and the Indians affirm that they can be heard regularly at intervals of exactly two hours.

There are several species of Nhambú. The nhambú-quiá or pixúna (*Crypturus cinereus*) has a dark, ash-coloured plumage, and lays red eggs. The nhambú-toró or toré (*C. serratus*) is supposed to sing from hour to hour, and, with the mutúm, serves as a clock to the natives. His song consists of one sharp and piercing cry, which the savages imitate to perfection when from the depths of the forest they want to call each other without exciting the notice of the civilised inhabitants. This bird lays blue eggs. The sururina must also be mentioned; it resembles the preceding, though much smaller.

In the family of the Columbæ there are a great number of species, amongst which are the Juruty, which is the *Columba cabocolo* of Dr. Spix. It is a turtle dove, with grey plumage, with a greyish breast and an almost bald head.

In the order of the Waders, as numerous as they are varied, we may note—the Peaçoca, or rather the Aguapéaçóca (*Parra (jaçana)*), of a brown colour, whose long claws, even longer than its thin body, enable it to run over the floating vegetation on the rivers as though it were on *terra firma*; the Jaburú-moleque or Marabout (*Mycteria Americana*), the largest of the waders on the borders of the Amazon; the Magoary (*Ciconia maguari*), inferior in size to the marabout; and the Nandú or Ema (*Rhea Americana*), often called the ostrich of America. All these birds have long beaks and necks, and they live in bands on the borders of the lakes and affluents of the great river.

The family of the Longirostrals is represented by a truly splendid bird, the pink-feathered Ibis or Guará (*Ibis rubra*), the extremities of whose webbed feet are black. The Indians, admirable observers of the natural phenomena by which they are surrounded, named him well, Guá or Guira, the bird of the changing colour, for when quite young it is white, when adult it becomes blackish, and later on entirely pink.

We will not speak of the Divers for fear of lengthening this already long chapter. We will also pass over the trochilidæ, humming birds, and colibris with the shimmering wings, as well as the butterflies with their dazzling colouring.<sup>1</sup>

The majority of the birds just mentioned are edible. A few species would easily lend themselves to domestication, and furnish excellent food. Industry and commerce have already benefited by the extraordinary beauty and lightness of the plumage of several of these tropical birds.

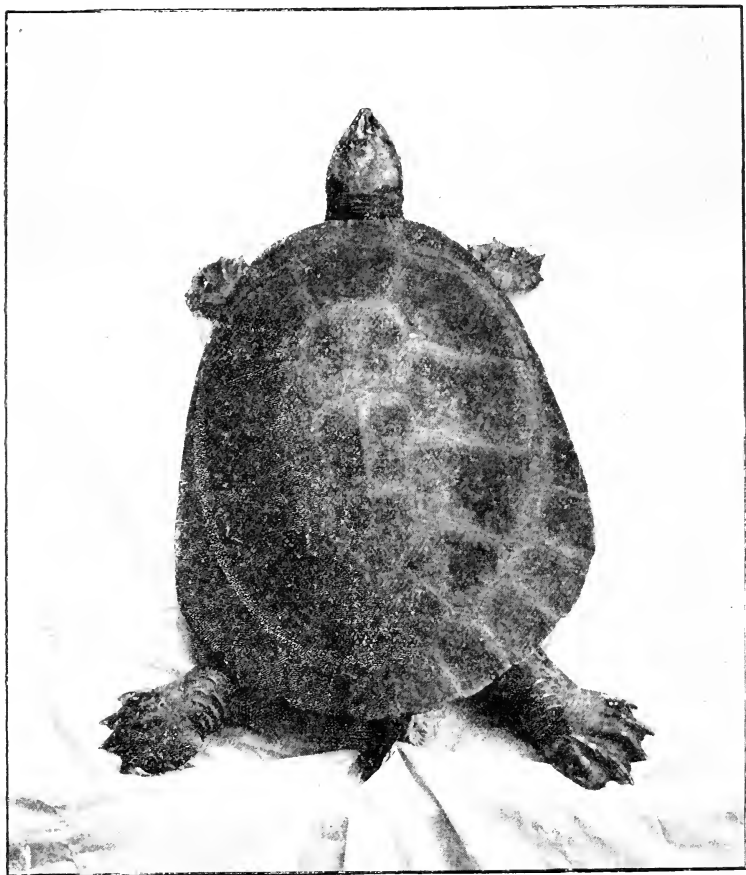
Let us rapidly examine the class of Reptiles, or rather, three of its orders—the Chelonians, the Saurians, and the Ophidians.

To the order of the Chelonians<sup>2</sup> belong all the land and water turtles—the Tartarúga or fresh-water turtle (*Emys dumeriliana*), the Matámatá (*Testudo Chelys fimbriata*), the Cabeçudo, the Capitary (supposed to be the male of the turtle), the Aiassá, the Aperema (*Testudo plana sapida*), the Uayanury, the Tracajá, the Jaboty (*Testudo terrestris*), and many others, all of which can be used as food. The flesh of the turtle is most nourishing and succulent; the shell, which, however, has not the value of the sea turtle, is used by the people. Of its eggs, which can also be eaten either fresh or smoked, is made a sort of fat (*manteiga*, butter), which is employed in the winter as an illuminant, and is beginning to be exported. M. Jules Verne imagined this grease to be butter good enough to be eaten on bread, but this turtle butter never served for any other than the literary “*turtines*” of the fanciful writer of the *Jangada*.

<sup>1</sup>J. Théodore Descourtilz, *Oiseaux brillants du Brésil*. Paris, 1832.—E. J. da Silva Maia, *Memória sobre os beija-flores*. Rio, 1851, “Trab. da Soc. Vellos.”

<sup>2</sup>Alex. Rodrigues Ferreira, *Memória sobre as Tartarugas*, 1876. Man. at the Nat. Lib. at Rio.—J. B. von Spix, *Animalia Nova sive species novae testudinum et ranarum*. Monachii, 1824.

The Saurians offer us a multiplicity of species of Caymans or Alligators, Amazon crocodiles, called Jacarés in Brazil.<sup>1</sup> The common Cayman (*Alligator cynocephalus*) often measures over 9ft. in length. The *Alligator palpebrosus* is smaller, but no less



*The Amazonian Turtle*

ferocious. The *Crocodilus sclerops*, or spectacled cayman, is a really terrible animal; his eyes, of a reddish colour, form a very

<sup>1</sup>Alex. Rodrigues Ferreira, *Memória sobre os jacarés*, 1786. Man. at the Nat. Lib. at Rio.

salient protuberance on his elongated snout. The alligator or cayman is indigenous to America. The name of cayman comes from the Galibi (*cayman*), and the name of alligator from the Portuguese *lagarto*, derived from the Latin *lacerta*, lizard. Naturalists give the name of Monitor to a certain species of cayman, and the North Americans borrowed that name for their first ironclad turret-ship. The spectacled or goggle-eyed alligator, which attains the length of from 12 to 15 feet, lays its eggs in the sand, covers them with straw or leaves, and watches constantly over them, always ready to defend them. It rarely attacks man, and there is nothing to prevent the Amazonian alligator from being bred in captivity, as is already done in the United States, where their skins are prepared and used, either in their natural colour or after the application of an aniline dye, for making pocket-books, etc.

This same order of saurians also contains several species of Lizards and Chameleons,<sup>1</sup> the Senemby of the Indians, amongst which latter the *Agama picta* and *Agama catenata* are specially known.

Like every Eden, the Amazon hides serpents in its shades.<sup>2</sup> The order of Ophidians, instead of playing the part of the tempter, would be far more likely to drive away from the Amazonian Paradise those who might be tempted to venture within did they not know that, in the first place, these serpents are not in the habit of frequenting inhabited parts, and also that injections of permanganate of potash, as prescribed by Dr. Lacerda, will cure all their wounds. We cannot deny, however, that the forests and rivers of this beautiful country are in many places infested by these horrible reptiles, of which a certain number are venomous. There is the Sucurijú, Sucurujú, or Sucuriú (*Boa Scytale*), the largest water snake of these regions, which often attains to over 60 feet in length;<sup>3</sup> the Jararaca (*Trigonocephalus J. et Cophias atrox*), which is about 7 feet in length,

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<sup>1</sup> J. B. von Spix, *Animalia Nova sive species novæ lacertarum*. Monachii, 1825.

<sup>2</sup> J. Wagler et J. B. von Spix, *Serpentum brasiliensium Species Novæ*, Monachii 1824.

<sup>3</sup> F. L. C. Burlamaque, *O Minhocão, o Sucurnhyú, a Giboia*, Rio, Trab. da Soc. Vellos.

and whose bite is excessively dangerous;<sup>1</sup> the Jaquiram-boya or little winged snake (*Fulgora lanternaria*), whose sting also is most terrible; the coral serpent or Elaps; and different kinds of Boas or Giboyas (*Boa Cenchria*). But the European reader can be reassured. In the midst of these forests, where venomous serpents abound, the Indian goes barefoot like the lazzaroni on the golden sands of Capri, and he rarely receives a wound like that of the valiant Achilles.

We will not discuss the class of the Batrachians, which have interest only for the *savant*, but will pass on to the class of Fishes, which are almost as innumerable as the stars. It is quite impossible to give even an approximate idea of the richness of the waters in this country.<sup>2</sup> Agassiz, who went to Brazil in 1865 with the intention of devoting himself to the study of ichthyology, wrote these words after six months' exploration in the basin of the Amazon:

“The Amazon nourishes about twice as many species as the Mediterranean, and a more considerable number than the Atlantic Ocean from one pole to the other. . . . All the rivers of Europe combined, from the Tagus to the Volga, do not feed more than 150 species of fresh water fish, and yet in one little lake in the neighbourhood of Manáos, called Lago Hyanuary, which has an area of 500 square yards, we have discovered more than 1200 distinct species, the greater part of which have not yet been observed elsewhere.”

These few lines from a *savant* devoted to this especial study suffice to show the impossibility of giving any idea, however imperfect, of the truly fabulous ichthyological riches of this region.

However, we must say a few words about the Pirarucú, the *Sudis gigas*, for it is the most important fish of the river,—the fish which, according to the same *savant*, replaces cattle as the staple article of food of the riverside population. Its name comes

<sup>1</sup> J. Bap. de Lacerda, *Investigações experimentaes sobre a acção do veneno da Bothrops jararaca*, Rio, 1877, Arch. do Mus. Nac., ii.

<sup>2</sup> Spix, Agassiz et Martius, *Selecta genera et species piscium*, Monachii 1879.—L. Agassiz, *Lettres relatives à la faune ichthyologique de l'Amazon*, Ann. des Sc. Nat. iv, v, 5 série.

from two Tupi words—*pira*, fish, and *urucú*, red, on account of its colour. It is found in almost all the rivers, and in every lake of the Amazon. Its flesh is savoury, and very superior to cod. The natives salt and dry it, and in that form it serves as food for the population of the interior, and for some time past it has been exported into the other states of Brazil, especially Pará. Of its rough tongue, when dried, a very useful rasp is made. The Pirarucú is often over 7 feet in length.<sup>1</sup>

In the budget of 1895-6, the financial agent of Manáos registered an export in coasting vessels of 553,118 *kilogr.* of dried pirarucú, of an official value of 468 *contos* or millions of *réis*. During that same period its exportation from Parintins was of 169,782 *kilogr.*, of a value of 146 *contos*; that of Itacoatiára of 91,846 *kilogr.*, of a value of 80 *contos*; and that of Mauès of 52,252 *kilogr.*, of a value of 44 *contos*.

The Molluscs, the Crustaceans, and the insects, so well studied by Bates,<sup>2</sup> have not been mentioned, and we forbear to do so. A long account of them would be out of place in a work to which we wish to give a practical character.

Besides, as has been said by a celebrated traveller who had just visited these regions, "A few hours passed in the contemplation of that marvellous world of the tropics, if one only opens one's eyes to the treasures of animal and vegetable life, will teach more of the distribution of life than a whole month of indoor study." It must be seen to be believed.

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<sup>1</sup> Alex. Rodrigues Ferreira, *Memoria sobre o peixe piraurucú*, 1787, Man. at the Nat. Lib. at Rio.

<sup>2</sup> Henry Walter Bates, *Contributions to an Insect Fauna of the Amazon Valley*. London, 1862, Trans. of Linn. Soc., xxiii.



## CHAPTER VI

*Vegetable Kingdom.*—Timber for civil and naval construction—Woods for carpentry and cabinet-making—Alimentary plants—Spices and aromatics—Textile fibres—Dyeing and tanning matter of vegetable origin—Oleaginous matter—Medicinal substances—Gums, gum-resins, oily-resins, balsams and essences—Vegetable ivory—India-rubber.

THE *flora of the Amazons?* Does this not resemble a redundancy of words? Are not all the marvels of vegetation exhausted, as it were, in that immense hot-house of the valley of the Amazon? Is there a country in the world that can rival this Brazilian region in the riches, grandeur, brilliancy, and utility of its vegetable products?

In this valley there is not a plain in the interior, not a hill, not a bank of a river, rivulet, lake, or *igarapé*, where we do not find the splendour and the superabundance of an extraordinary vegetation. On all sides are exhaled the most varied perfumes. Everywhere is to be found the most highly-esteemed timber for civil and shipbuilding purposes, together with the most beautiful and precious specimens of woods used in carpentry and cabinet-making. Medicinal plants rival in value the kinds of woods used in dyeing and those which produce essences and gums. Trees bearing luscious fruits rise by the side of others whose sap transforms itself into india-rubber, or whose seeds become vegetable ivory. Everywhere there is a profusion of branches, verdure, flowers, fruits, seeds, and vital sap.

These forests, extending over thousands of miles, cannot be described with any absolute degree of scientific accuracy. The works of Spix and Martius, of Edward Poeppig, of Barbosa Rodrigues, of Monteiro Baena, of the brothers Rebouças, of Trail, and of Fusée Aublet only give an incomplete idea of the

multiplicity of plants they contain. The Amazonian flora is still very far from being entirely known. As a very large number of specimens have been neither classified nor described scientifically, for very many years to come botanical investigation will have free scope in a field which is practically unlimited, and where most curious discoveries may be made.

We do not wish to play here the part of the *savant*, but to introduce others to our country, and it seems advisable to follow a method that will be specially useful to the European desirous of exploiting the resources of the Amazonian forests.

We will therefore treat as briefly as possible with the following vegetable products:—

- 1st. Timber for building purposes, whether for ordinary use or for Government and naval contracts.
- 2nd. Woods for carpentry, cabinetmaking, and fancy goods.
- 3rd. Plants supplying articles of food.
- 4th. Spices and aromatic plants.
- 5th. Textile fibres.
- 6th. Dyeing and tanning substances of vegetable origin.
- 7th. Oleaginous substances.
- 8th. Medicinal substances.
- 9th. Gums, gum-resins, resins, oily resins, balsams, and essences.
- 10th. Vegetable ivory and thickened saps.

From this simple enumeration it is easy to see that the Amazonian forests contain riches which should attract colonists, and which can insure them the first basis, as it were, of agricultural settlement.

In the region of the Amazon men have until now lived upon nature and the spontaneous products she affords. The time of cultivation is at hand; it must be the work of man to make the earth increase his wealth a hundredfold.

Amongst the timber most employed and esteemed for naval and Government purposes mention may be made of the following which have already been, or are suitable for being, taken up by commerce:—

The *Parcouri* or *Bacury* (*Platonia insignis*), of the family

of the Guttifers, has a greyish wood of resisting tissue, with very apparent pores. It grows to a height of from 60 to 80 feet, its trunk measuring from 5 to 8 feet in diameter, according to its age and the locality in which it grows, and it produces indiarubber.

The *Sucopira-assù* (*Bowdichia virgilioides*), of the Leguminous family, has also a grey wood of beautiful grain, which is used particularly for the keels of ships, and is a tree of the same height and size as the preceding.

The *Ipé* or Bow-wood (*Tecoma chrysantha*) belongs to the Bignonia family. The wood is of dark colour, with its pores rather marked. It is of middle height, and abounds in the whole valley of the Amazon. Its numerous varieties are used for all kinds of purposes. It attains the height of about 36 feet, with a diameter of 20 inches.

The *Pequiá* or *Piqui* (*Caryocar Brasiliensis*), of the family of the Rhizoboles, has hard wood of a beautiful yellow colour. This thick-set tree measures from 60 to 80 inches in diameter, and from 34 to 36 feet in height, and bears a large, spherical-shaped fruit, with one or more cavities containing stones, and a large quantity of a greasy or oleaginous matter, which is used by the Indians either as food or a condiment.

The *Massaranduba* (*Mimusops balata*) belongs to the Sapotacæ, and has wood of a dark-red colour, with but few veins, and very fine grain; its tissue is hard and compact, and it can be used for railway sleepers and for ships' timbers. The tree attains a height of from 60 to 75 feet, and is from 4 to 10 feet in diameter. This tree may be considered as one of the most valuable products of the valley. It discharges a kind of gutta-percha; its milk, which is pleasant and sweet, can, it is said, replace cows' milk; and from its bark, which is very fine, is extracted tannin and a certain dyeing matter.

The *Páo-ferro* or iron wood (*Swastria tomentosa*) is too well known to need description.

The White Cedar (*Cedrela odorata*) is also called bitter or female mahogany. Its texture is very similar to that of the preceding, but of a lighter pink in colour. The Potato Cedar (*Cedrela sp.*) is that immense tree from 60 to 75 feet in height,

and from 6 to 9 feet in diameter, which one meets with floating on the great river, carried away by the strength of its current. These two species of cedar are of inferior quality, and are seldom used for anything but second-rate work.

Laurels grow also in great abundance in the Amazonian marshes, where they attain dimensions quite unknown elsewhere. The black laurel (*Cordia sp.*), the common laurel, the yellow, the scented, the white, and the red are all distinct varieties.

There exists a certain wood called *Itaúba* (*Acrodielidium itauba*) which has the truly marvellous property of never decaying, even when exposed to every variation of the weather. This is the famous stone-wood peculiar to these regions. The tree attains the height of about 60 feet, and has a diameter of from 7 to 9 feet.

The *Sapucaia* (*Lecythis ollaria*), the *Cumari-mucaque* of the French colonies, is a timber tree of no less value for Government and naval building purposes. It grows to between 60 and 75 feet in height, and is from 6 to 8 feet in diameter. Its wood is very compact and of a reddish colour, which grows paler with age. It also yields a tow which is used for caulking, a blue ink for dyeing cotton fabrics, and an edible, oily almond which is also valuable as a drug. There exist several other species of the sapucaia which it would be tedious to enumerate.

The *Guarabá* or *Pávo-roxo* (*Peltogyne macrolobium*), of the Leguminous family, yields a wood of the first quality, of a beautiful purple colour, and of very dense tissue. The diameter of the trunk varies from 3 to 4 feet, and the height from 60 to 70 feet.

As belonging to the family of the Sapotaceæ, we may mention the *Abiurana* (*Lucuma lasiocarpa*), which is much esteemed for all kinds of building, and for its pleasant fruit. Its height seldom exceeds from 30 to 45 feet, and it has a diameter of from 2 to 3 feet.

The *Acapú* (*Andira Aubletii*) is a first-class grey wood of great value. This is the same as the *Ear of Corn* or the *Dacomaballi* of Guiana, and is from 60 to 75 feet in height, and from 3 to 5 feet in diameter.

The *Guariúba* (*Galipea sp.*), of the Rutacean family, has,

like the stone-wood, great power of resisting the action of air and damp. It is a tree of a yellowish wood, of from 25 to 30 feet in height, and from 8 to 12 inches in diameter.

Lastly, we may mention the *Umiri* or *Niéri* of the colonies (*Humirium floribundum*), which, besides its use for building purposes, produces a clear, yellow, perfumed balsam, which is employed like the balsam of Peru. It seldom exceeds 46 feet in height and 5 feet in diameter.

The complete enumeration of all the woods suitable for building purposes would be too long. We should have to make a long list of the trees in the forests of the Amazon, which cover, as we have already stated, several million acres. It will be simpler to refer the reader to the engravings of Aublet, and to the recent works of the naturalists of both hemispheres—

Segnius irritant animos demissa per aures,  
Quam quæ sunt oculis subjecta fidelibus...

The woods used in carpentry, cabinet-making, and the manufacture of fancy goods are no less numerous than those we have just mentioned. The most remarkable and most generally employed, which would offer to European industry the best working material, are as follows:—

The *Andira-uixi* (*Andira sp.*), somewhat resembling palisander or rosewood, grows to a height of from 25 to 30 feet by 7 or 8 inches in diameter.

The *Cajaseiro* (*Spondia dulcis*) is the well-known white wood. It produces an excellent fruit, to which is given the pretty name of “the apple of Cythera.”

The *Genipapo* (*Genipa Brasiliensis*) is superior to the preceding in its proportions, which exceed 42 feet in height and 6 inches in diameter, and in the quality of its pearl-grey wood, which is one of those most esteemed for artistic cabinet work and for wood-carving. Its fruit is delicious, and most useful in medicine.

The *Ingá-rana* (*Inga sp.*) is a tree of from 30 to 37 feet in height and from 18 to 22 inches in diameter; its wood is of a very light red colour.

The *Jacarandú Cabiána* (*Dalbergia nigra*), a species of

palisander (*palosanto*), has a wood that is almost black in colour, with dark-brown veins and longitudinal pores, filled with a pink substance. It measures from 36 to 45 feet in height and from 4 to 5 feet in thickness, and its roots, which are very beautiful, deserve admiration. Certain other species of Jacarandá are found in the centre of Brazil, but are unknown in Amazonia.

The *Muiracotiára* (*Centralobium* sp.), a magnificent tree of 30 to 36 feet in height and 3 feet in diameter, has a speckled yellow wood, striped with black.

The *Muirapinima* (*Centralobium Paraënse*), or Turtle Wood tree, is so called from the black spots upon a brown ground which are not unlike the turtle: it measures from 10 to 30 feet in height and from 2 to 4 inches in diameter, and is exceedingly valuable. It is also known as the Letter Wood tree.

The *Muirapiranga* or *Boromé* of the Guianas is much higher, growing to a height of from 60 to 75 feet, the trunk being between  $7\frac{1}{2}$  and 8 feet in diameter. The colour of the wood is a reddish purple; it is of a close tissue, resembling the palisander, and produces a sort of gutta-percha.

The famous *Rosewood tree* or *Pá-o-de-rosa* (*Dicypellium* sp.), which emits the perfume of the rose, is a fine tree of from 25 to 35 feet in height by 20 to 24 inches in diameter.

The *Mulatto Wood*, *Pá-o-mulatto* (*Pentaclethra filamentosa*), is from 30 to 40 feet in height, and between 30 and 40 inches in diameter.

The *Precious Wood*, *Pá-o-precioso* (*Mespilodaphne preciosa*), is still used in chemistry and perfumery for the sake of its bark and its odorous seeds. Its wood is very tough, of even consistence, and with veins of great beauty.

The *Violet Wood*, *Pá-o-ro-ro-do-Amazonas* (*Peltogyne venosa*), is of a purple colour, with a yellowish tinge. The trunk, which is almost always hollow, is from 20 to 24 inches in diameter, and about 45 to 60 feet in height.

The *Satin Wood*, *Pá-o-setim* (*Aspidosperma* sp.), is of a light yellow colour, like shining amber, with nearly invisible pores. The tree seldom grows beyond 32 feet in height, with a diameter of between 20 and 24 inches.

The *Tapiquarína* is a large climbing plant, of which rather

uncommon walking sticks are made. There are also the *Umury* (*Geffroya superba*), the *Iury*, and thousands of others.

The Colonial Museum of Paris contains specimens of the woods of the Guianas, which are almost all to be found in the State of the Amazon.

Until Brazil, as a sequel to its exhibitions of coffee, makes known to Europe the incomparable riches of its forests, we recommend those who wish to obtain information regarding them to inspect these beautiful products of the flora of the tropics. Wood is becoming scarce in Europe, which has been stripped of its ancient forests. The time is not far distant when she will have to call upon the New World to encroach upon its forest reserves. Amazonia holds in deposit a stock of wood capable of supplying for centuries all local and foreign industries. There are there collected millions awaiting the arrival of enterprising pioneers. That these will soon be forthcoming is our firm belief. Man always goes where money is to be made and strength to be expended.

Alimentary Products are one of the greatest sources of revenue to be exploited in the Amazonian solitudes.

To be placed apart, and in the front rank, are coffee, cocoa, coca (which is the substitute for tea), sugar, and guarana, not to mention tobacco. Then come the feculents and ordinary fruits.

The Arabian coffee plant grows almost wild in Amazonia, but its culture has been more and more neglected, so that now all coffee consumed in that State is imported from the south of Brazil, which alone furnishes three-quarters of the total production of the world.

The *Cacao Tree* (*Theobroma*) is much less neglected. This tree, whose seed is cacao (cocoa), is indigenous to America. It has the appearance of the European cherry tree, and grows to a height of 40 feet. Its fruit, called *cabosse*, is egg-shaped, and yellow or red in colour in its fresh state, blackish brown and of an irregular pentagonal form when dried; pear-shaped at its base, and with a stumpy point at its free extremity; it measures from 6 to 8 inches in length by about 4 inches in thickness. The interior is divided into five compartments, containing from twenty-six to forty seeds. A central placenta retains and

nourishes these, which lie flat, one over the other, in the middle of a pulp of bitter flavour. The pericarp, ligneous and indehiscent, is furrowed in its interior by more or less rough longitudinal ribs.

Three species of cacao grow in the valley of the Amazon—the *Theobroma speciosa*, the *Theobroma bicolor*, and the *Theobroma sylvestris*. The first of these species is cultivated in the state of Pará, that is to say, on the lower Amazon; the second is abundant on the borders of the Rio Negro, where, however, it is not utilised; and the third grows freely on the right shore of the Amazon, from the Madeira onwards, and on the left in the lands lying between the river Içá and the Japurá. Cacao is, in fact, so abundant on the borders of the latter river that it can easily be gathered from the boats without landing, for the branches which overhang the banks can be plucked while the boat sails along, according to the testimony of M. Coutinho.

If the south of Brazil possesses one of the most important substitutes for tea, the *Maté-Tea*; the north, and Amazonia in particular, can offer the Ipadú (*Erythroxylon coca*)—the coca, whose leaves the Indians chew as sailors do tobacco. Experience has proved to the natives that this chewing allays hunger, and reduces the stomach to a state of inertia. Europeans sometimes use an infusion of coca in place of tea, but more frequently as a tonic and stimulating specific.

The *sugar cane*, from which is extracted crystalline sugar, grows in great quantities in this region, but, for reasons to be given later, has not been cultivated as it should have been. In the month of June, 1883, a provincial enactment guaranteed 7 per cent. interest on a maximum capital of £300,000 for the establishment of three central sugar factories in the province. By another enactment of the 30th May, 1884, bearing the number 642, the President of the province was authorised to sign, with Messrs. Domingos-Olympio Braga-Cavalcanti, B. Caimary, and A. Leamont, a contract for the establishment of three colonial groups, with central sugar factories, with a guarantee of 8 per cent. interest for thirty years on a capital of 250 *contos* for each group, and of 750 *contos* for each sugar factory, the exchange being calculated at par, *i.e.*, at the rate of



2s. 3d. per 1000 *réis*. Notwithstanding these grants, no works have been undertaken.

*Guarana* (*Paullinia sorbilis*), although less known than the preceding products, is as useful. It is produced by a small climbing plant of the Sapindacean family. The seeds are used in the preparation of a stimulating drink, whose efficacy against dysentery seems to be incontestible. It is prepared by



*Plantation of Sugar-Cane*

slightly roasting the seeds after they have been dried in the sun, and reducing them by means of the addition of a small quantity of water to a paste, in which are introduced more seeds, either whole or ground, *ad libitum*. This Guarana paste is exported in the form of very hard sausages, of a dark, reddish brown colour. MM. Chastellux and Bertemond have discovered in Guarana an alkaloid identical to caféine, and, like tea and coffee,

serving to stimulate the intellectual faculties.<sup>1</sup> The natives prepare it by grating it upon the dried tongue of the pirarucú. In his monograph on Matto-Grosso, published in 1869, M. Joaquim Moutinho relates that in this State the use of the guarana absolutely replaces that of coffee or of maté tea, and he calculates that by transporting there 50 *arrobes* (about 1200 lbs.) of good guarana, one can be sure of realising a profit of from 8 to 10 *contos*.

Among the feculents which are extracted from the fruits, seeds, or the underground parts of a great number of vegetable species, one must distinguish the cereals and the leguminous plants.

In Amazonia, bread is made entirely from flour imported from abroad, for no corn, barley, rye, oats, or buckwheat are cultivated there. The cultivation of European crops is unknown, and, without doubt, will not be adopted for some time to come.

*Maize* can replace a few of these cereals, and it gives surprising results. When one thinks that the quantity of maize grown in the United States of North America (\$360,680,878 in 1869 and \$646,106,770 in 1887) sufficed to nourish the entire population of the United States and allowed for an exportation of almost \$12,000,000 in 1886-7; that more than two million farmers are there employed in growing it, and that they realize several millions sterling per annum; when one thinks that rice from Carolina produces over a million sterling a year (1886-7), and that the Italians readily buy its straw for the manufacture of hats which compare favourably in fineness and price with the best panamas, one cannot but foresee a future of riches and prosperity for this Amazonian region where rice and maize grow almost without culture in an untilled soil.

Leguminous seeds are no less abundant, and might equally be a source of revenue.

Beans or *feijões* and broad beans of several kinds grow without any complicated manual labour, and yet the carelessness of the inhabitants is such that they are obliged to supply themselves from other quarters with these feculents.

Bananas or fruits of the *Musa sapientum*, *paradisiaca*, etc.,

<sup>1</sup>J. M. da Silva Coutinho, *Notícia sobre o uraráú*. Rio, 1866.

hang in enormous clusters from thousands of large plants of the palm family. They are picked for daily consumption only, and yet Sagot and Raoul mention that  $2\frac{1}{2}$  acres planted with a certain variety of the banana produce 400,000 lbs. of bananas, whilst on the same area only 10,000 lbs. of potatoes and 3000 lbs. of corn could be grown.

*Bread-fruit trees* (*Artocarpus incisa*), with incised leaves, are met with in great numbers. They are from 30 to 40 feet in height, and yield annually from 60 to 80 fruits, each as large as a man's head and containing as much as 17 per cent. of feculent substance.

The roots of other plants supply articles of food. They are—the bitter *manioc* (*Manihot utilissima*), the sweet manioc (*Manihot aypi*) or *macaréva*, the arrowroot, the sweet potato, very varied (*Convolvulus batatas*, *Sponaria batatas*, *Batatas edulis*), and the different kinds of *yam* or *caras* (*Dioscorea*).

Manioc (*Mbai-ymbai*, tree of heaven) is a plant of the family of the Euphorbia. Its root furnishes the yellow or white flour, fine or granular, upon which the greater number of the inhabitants of this country live in place of bread. The flour of this plant, perhaps the richest in amylaceous fecula, is the staple food of the greater number of people, not only in Amazonia, but in nearly the whole of Brazil. It has even been calculated that the number of individuals in the world who live almost exclusively on manioc flour in diverse forms exceeds that of the consumers of wheaten flour. It is used in Europe in making soup.

M. Payen has analysed the manioc roots, and has arrived at the following results:—

Water, -	- 63.21	{	21.10 of farina, 6.25 of farina transformed in glucose, 7.75 of substances dissolved in water, 1.69 of cellulose, pectic acid, silica, and oleaginous matter.
Dry Matter, -	- 36.79		
100.00			

The profits derived from the extraction of the farina and its transformation into glucose and alcohol, and the wide use made of all products derived from manioc, says M. de Villafranca in

his *Note sur les Plantes utiles de Brésil*, prove the immense utility of this precious plant, which needs only to have a more extensive cultivation and improved machinery applied to the extraction of its flour.

The Count de Posos Dulces, in his interesting work, *Ecrits sur l'agriculture de l'île de Cuba*, collecting in a table the applications of starch, dextrine, and glucose, has displayed in an incontestible manner the future in store for this plant, whose products seem destined to take a prominent part in the industrial evolution of the world.

According to Payen and Martius, the manioc flour, mixed in equal parts with that of wheat, makes very good bread, although its nutritious value is somewhat inferior to that made entirely from the latter.

A plot of land planted with manioc produces in flour and in tapioca as much as, and even more than, a field of sugar-cane of the same size can bring in by the sale of the sugar manufactured by the machinery generally employed in the country. According to P. Sagot and E. Raoul,<sup>1</sup> manioc produces more than 200 tons per hectare (2½ acres).

In the analysis made by M. Peckolt, he found in manioc:—septicoltyne, manihotine, manihotic acid, hydrocyanic acid, in addition to fecula, dextrine, and glucose derived from the roots of this very interesting vegetable.

Dr. Carneiro da Silva, in his *Etudes Agricoles*, has made a *résumé* on all that has been written upon the subject of manioc.

There are two different preparations of the thick and fleshy root of manioc. The first, called *moussache*, is a fine powder of a dirty-white colour, obtained by simple washing and dessication in the open air; the second, called *tapioca*, is obtained in its granular state by a sort of roasting process upon hot plates. The root of the sweet manioc can be eaten like the potato. It is not poisonous. That of the bitter manioc, however, contains, besides the farine, a milky sap, which is one of the most virulent vegetable poisons known, its active principle being hydrocyanic acid, but as the sap is volatile, it is easily removed from the

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<sup>1</sup> *Manuel Pratique des cultures tropicales*. Paris, 1893, p. 27.

farine by means of pressure and evaporation. It then becomes the *tucupy*, from which are prepared the excellent fish sauces used in Amazonia. It is also from manioc that the Indians prepare their intoxicating beverage, the *cauim*.

Manioc, so indispensable to the Indian, has furnished its legend. This is how, according to tradition, the natives learned how to utilize it:<sup>1</sup>

One day, a very long time ago, the daughter of an Indian chief, who inhabited the region where is now situated the town of Santarem, found herself *enceinte*. The father swore to revenge himself on the man who had brought dishonour on his dwelling. He questioned his daughter—prayers, threats, chastisement, were of no avail, for she maintained that no man had violated her. Her father had finally decided to kill her when a white man suddenly came forward and told the Indian that he was not to kill his daughter, for she was innocent and that no man had ever approached her. The father believed and waited. At the end of nine months the young Indian gave birth to a little girl-child, beautiful and white as the water-lily. All the neighbouring tribes were struck with astonishment. From far and near they came to see the little white one, the sweet offspring of a new and unknown race. She was given the name of *Mani*. She was able to walk and to talk from the first day, and she smiled sadly upon every one. At the end of a year she died without either illness or suffering, and they buried her in the garden of the hut, and, according to ancestral custom, each day the tomb was uncovered and watered. One day the tomb was found half opened, and in it was seen growing a little plant which no one knew and which none dared to pluck. The plant grew, and bore flowers and fruit. The birds of the forest who ate them became inebriated. Then suddenly the earth split and a beautiful root appeared in the opening thus made. This root resembled the beautiful body of *Mani the White one*, and it was called *Mani-oc*.

Let us now leave poetry and return to food.

The *Arrow-root* (*Maranta Arundinacea*), which comes from

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<sup>1</sup> *Revista Anthropologica*, Rio de Janeiro, 1882, article by M. Couto de Magalhaes.

the Indian words *aru-aru*, flour of flour, of which the Portuguese have made *araruta* and the English, arrowroot, is produced in Brazil from the roots of the *Maranta* with shot leaves, a plant of the family of the *Cannaceæ*. The rhizomes are pulled up at the end of the year.

*Sweet Potatoes* are produced by numerous herbaceous and perennial plants, with tuberous roots and diversely coloured red, yellow, pink, and purple. They are abundant in Amazonia.

Lastly, the *Yam* or *Cará* is produced by climbing and creeping plants of the family of the *Dioscoreæ*. Its long and floury tuber forms an excellent food for man, and its leaves serve as fodder for cattle.

We may mention amongst the edible fruits the *Popunha* (*Gaillietia speciosa*), which makes an excellent dessert fruit and from which an oil is extracted. The spatula of the leaves and, in general, all its fibrous tissue furnish good textile material. Travellers in these parts consider, it is said, the sight of this palm as an indication of an inhabited neighbourhood, for in the *sítios* and farms men never fail to plant the *Popunheiros*.

There are also the *Cupá-assá*, which serves to make jams, chocolate, and a liqueur; the delicious *Pine-apple*, of which a few species are wild, and grow without cultivation; the *Mangaba* (*Hancornia speciosa*); the *Sorra* (*Collophora utilis*), with its delicate and savoury fruit, whose milky sap is employed as varnish; the *Cubio*, a smooth, yellow fruit; the *Injá* (*Inga dulcis*); the *Cajou* (*Anacardium occidentale*), which is eaten fresh, and from which is made a good rose-coloured wine; and very many others, surpassing in flavour the most succulent fruits of Europe.

Amazonia produces almost all our groceries, India alone being able to compete with her. Certain products of a hot and piquant taste, or of a suave and penetrating odour, utilised in the culinary art, pharmacy, and perfumery are known as *Spices* and *Aromatics*. It has been said of spices that they are domestic poisons. These substances, which are making the fortune of a very intelligent portion of mankind, consist of fruits, seeds, rinds, barks, and rhizomes of all kinds. The principal spices

of Amazonia are—the *Clove* (*Licaria guyanensis*), so vastly spread in the forests; the *Guinea-Grains* (*Amomum granum paradisi*), a capsicum whose taste is acrid and burning; *Cayenne pepper* (*Capsicum frutescens*); *Vanilla* (*Vanilla sativa*), easily discoverable on account of its odour; *Nutmeg* (*Myristica tomentosa*); *Cinnamon* (*Geore cinamomum*); *Ginger*, which is the fleshy rhizome or underground stem of the *amomum zinziber*, used as a condiment employed in medicine, without mentioning the



The *Cumarú* tree which produces Tonquin beans

excellent preserve and the well-known English beverage, ginger beer; and the *Cumarú* (*Dipterix odorata*), whose seeds, extremely aromatic, are known under the name of *Tonka beans*, and contain between the husk and the kernel the *Coumarine* in a state of crystallisation; they are used to perfume tobacco; there is also extracted from them an oil which is much appreciated for toilet purposes and medical uses.

The *Textile fibres* are no less interesting than the spices and aromatics.

The textile fibre of the vegetable kingdom which surpasses all others is, without doubt, the light down which envelopes the seeds of the *cotton* plant, which grows very well in Amazonia. There was even a time, before the indiarubber fever, when the production of cotton exceeded the wants of the local population. The Indians, who call it *amama*, have always used it for the manufacture of their nets, hammocks, and other objects. Besides the ordinary kind there is a small Amazonian cotton plant (*Algodoim*), from which is made a yellow fabric, which might easily be made use of.

A great number of woodbines or *cipós* are utilised as rope, and others are employed in the making of various articles, such as hats, baskets, matting, etc.

From one of these *cipós*, called *Timbú-assá*, are derived certain fibres, which, when worked, produce a cloth of fine quality.

The Palm tree *Tucamã* (*Astrocarym tucuma*) also supplies material for making rope, hammocks, and nets, and has become, although on a very small scale, an article of exportation.

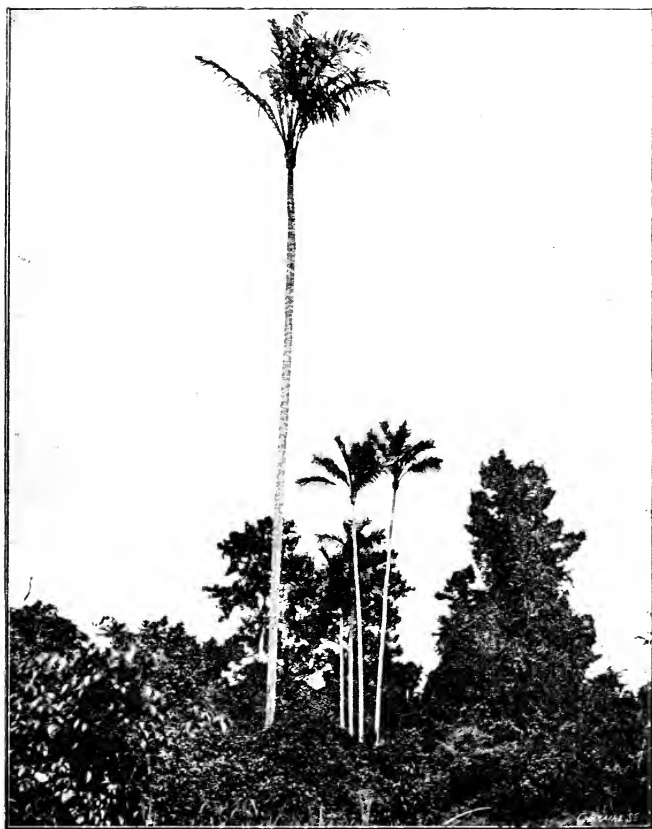
The Piassaba or Piassava (*Attalea funifera*), another palm, is well known in the European markets, where it is bought for rope-making, and also for the circular street-sweeping machines. In 1895-96 Manáos exported 582,262 lbs., having a value of 78 *contos*. The same can be said of the Mirity (*Mauritia flexuosa*), of the Uaissima (*Urena lobata*), of the Tururi (*Sterculia Ipira*), of the Embira (*Xylopiá funifera*), of the Pineapple (*Bromelia ananas*), and of a quantity of others which abound near the Amazons, and of which Dr. Von Martius, Alfred Wallace and Barbosa Rodrigues, amongst others, have given detailed accounts.<sup>1</sup> Let us mention, however, in conclusion, the Curauá (*Bromelia Sugeneria*), similar to the pine-apple, whose fibres

<sup>1</sup> Martius, *Genera et species palmarum quas in itinere per Brasiliam...collegit, descripsit et iconibus illustravit*. Monachii, 1823. Wallace, *Palm trees of the Amazon and their uses*. London, 1853. Barbosa Rodrigues, *Enumeratio palmarum novarum quas valle fluminis Amazonum inventas et ad sertum palmarum collectas descripsit et iconibus illustravit*. Sebastianopolis, 1875. Other works have been published on the same subject since then by the same author.



can be woven like flax, and of which have been made cloth, lace, and even violin strings.

A certain number of trees which we have already mentioned have numerous uses. There are some amongst them which, though of value for other purposes, are more particularly noted for the colouring matters which give them their commercial



The *January Palm*

importance. Amongst them are the Roucou (*Bixa orellana*), a small tree of from 13 to 16 ft. in height, which abounds in the Amazon, and is utilised in Europe. It has a resinous pulp of a

vermilion red, which completely covers its ripe seeds, contained, to the number of about twenty, in a purple-red capsule, bristling with long, soft hairs. This colour is fast even against soaps and acids.

The *Acari-cuíra*, of the leguminous family, gives an olive green ink, and grows to a height of nearly 50 ft.

The seeds of the *Cicaíté* also yield a writing ink, which is indelible against nitric acid and alum.

The green fruits of the *Macacú* (*Macubea guyanensis*) secrete a blood-red colour, which is much valued, and which turns black if exposed to the vapour of urine.

The *Tatajuba-de-Tinta* (*Maclura tinctoria*), or fustic, is a tree of from 45 to 65 ft. in height, which gives a much sought after yellow colour.

Lastly, the Red Mangrove (*Rhizophora mangle*), whose bark serves for tanning leather; the Barbatimão (*Pithecolobium avaremotemo*), whose astringent bark is used in dyeing; the Logwood (*Hæmatoxylon campechianum*), a great, thorny tree, of the leguminous family: the Massaranduba (*Mimusops balota*), which we have previously described, and which contains a large quantity of tannin; the Jaraúba (*Leopoldinia pulchra*), of a yellow colour; and the Brazil wood (*Cæsalpinia echinata*), a great tree from 30 to 50 ft. in height, which is much used in dyeing.

We pass now to oleaginous substances.

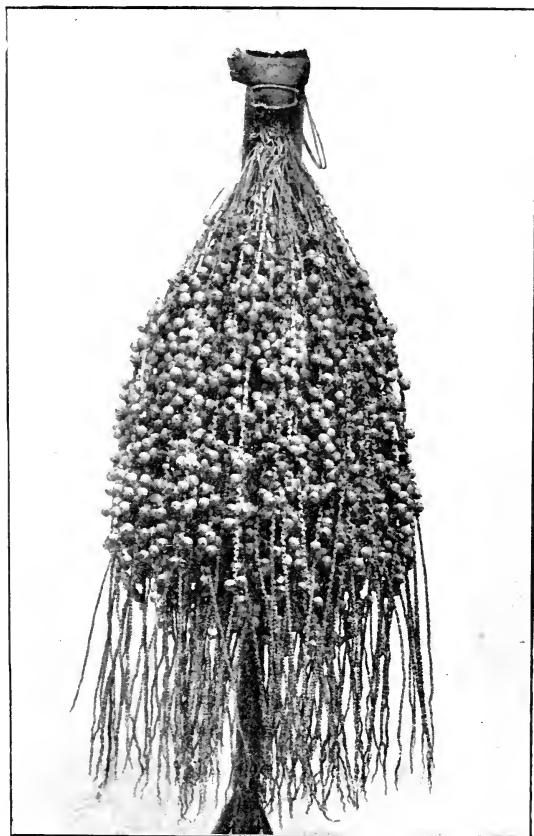
The number of vegetable products, whose seeds and the fleshy part of whose fruit are oily, is considerable in these regions.

The drupes of the Tucum (*Astrocaryum vulgare*) yield an oil of a beautiful cherry colour.

The palm oil of the *Cuiaué* (*Elæis melanococca*), a congener of the *Dendé*, is edible, and the kernel of this palm furnishes a great quantity of it.

The Bacába (*Enocarpus Bacaba*), as well as its congener, the Pataná (*Enocarpus Batana*), gives an oil which can be used in cooking, and its mucilaginous fruit is eatable, and serves also for the preparation of a native drink. Such also is the case with the Jauary (*Astrocaryum jauary*): the Coco (*cocoa-nut*) of Jussára

(*Euterpe Oleracea*); the Mirity, of which we have already spoken; the Murumurú (*Astrocaryum murumuru*): the Umiry (*Humirium floribundum*); the Piqui, already mentioned, and the Guanandi or Lantim (*Calophyllum Brasiliense*), from the trunk of which is extracted a fine oil of a dark-green colour.



Cluster of Fruit of the *Bacíba* palm

The Papayer (*Carica Papaya*) or Mamoeiro is the beautiful tree of which M. Emile Vinson has said that the fruit, before it quite attains maturity, possesses to the highest degree worm-destroying properties, which render it the most powerful

anthelmintic and the most unfailing and efficacious vermicide yet discovered.

The fruit of the papayer, in shape, forms a link between the melon and the cucumber. When unripe its exterior is of a dull-green colour, and when ripe a beautiful wax yellow. In smell and taste it reminds one of the apricot.

From the Seringueira (*Siphonia elastica*), or Indiarubber tree, is extracted also the "oil of seringa," which is used in soaps and in printing ink. Several nutmeg trees, amongst others the Bicuhiba (*Myristica bicuhiba*) produce a buttery substance used for medicinal and lighting purposes.

The nut of the common chestnut (*Bertholletia excelsa*) produces a sweet edible oil. The produce in oil from the seeds of this myrtacean is 67 per cent. The myrtaceans of the *Lecythis* genus are also very rich in oleaginous matter.

The Cocoa tree (*Theobroma cacao*) yields the cocoa butter which is used in medicine and perfumery. The Cajueiro (*Anacardium occidentale*) bears the mahogany nut, which contains 30 per cent. of caustic vesicant oil, and the kernel, 40 per cent. of a sweet oil of agreeable flavour. We must also make special mention of the nut and the oil of the Carapa or andiroba (*Carapa guyanensis*). The oil is yellowish and very bitter, but is perfect for lighting and for soap-making. The nut yields about 35 per cent. of oil.

We have not yet exhausted the list of the vegetable riches of this marvellous country, nor is it our intention to do so, as we should have to compose a veritable pharmacopœia, and we have no wish to supplant the *Officine* of Dorvault.

We will content ourselves with mentioning a few names:

Firstly, there is the Ipecacuanha or Poaya (*Cephuëlis ipecacuanha*), which furnishes that expectorant and diaphoretic emetic so well known in purgative medicine; the Ratanhia (*Krameria argentea*), a strong astringent; the Sarsaparilla (*Smilax salseparilla*) and its divers species, which will form a large source of income to the country. The use of the slender roots of the small sarmentous climbing plant is sufficiently known. Then we have the Geneuna (*Cassia Brasiliana*): the Pará watercress (*Spilanthes oleracea*), an energetic antiscorbutic,

equally efficacious against toothache and intermittent fever: the *Strychnos toxifera* or Urary, from which the Indians extract a poison, the "*carare*," in which they dip their arrows; the *Spigelia* (*Spigelia anthelmintica*), poisonous when fresh, and used only as a vermifuge when dried.



The *Andiroba* or *Carapa*

The bark of the *Carapa* is a bitter febrifuge and tonic, as is also that of the *Credrela guyanensis*. The bark of the *Buranhem* (*Chrysophyllum glycyphloeum*) is sweetish, and has numerous medicinal properties. The root of the *Canella Sassafras*

(*Mespilodaphne sassafras*) is very aromatic and is used in therapeutics.

The bark of the *Bignonia Copaia* is useful as an emetic and purgative, whilst its fruit is antisyphilitic. The root and the leaves of the Guava (*Psidium pomiferum*) are astringent, and are used in cases of dysentery. The Ringworm wood (*Vateria guyanensis*) has seeds which, when grated and mixed with vinegar, are employed as a cure for ringworm. The sweet and acid pulp of the Tamarind (*Tamarindus indica*) is laxative. The Jeratacacá (*Brunfelsia Hopeana*) is a valuable remedy for snake bites.

The virtues of the oil of Copaiva or Copaiba (*Copaifera guyanensis*) are well known: this tree, which measures from 60 to 67 ft. in height, is plentiful in the forests of the Amazon, as is also the Cumarú (*Dipterix odorata*), whose very odoriferous seeds are known in pharmacy and perfumery under the name of Tonka or Tonquin beans. The strong-smelling seeds of the Cumary (*Tydemdron cuyumary*); and those of the Embyra (*Xilopia sp.*), oily and purgative, are also frequently employed in medicine. The Gamelleira (*Ficus doliaria*) distils an acrid sugar which is used as a vermifuge. The Genipapo (*Genipa Brasiliensis*) has medicinal fruits. The root of the Piripirióca is of an exquisite perfume and acts as an aphrodisiac.

The bark of the White Ipé (*Teconia sp.*) is purgative; that of the *Teconia insignis* has the same properties, and, moreover, this variety gives a yellow dust which induces sneezing and has earned for it the name of "Ipé-Snuff." The Murta (*Eugenia lucida*) has an astringent bark.

The Mururé yields a red sap, having depurative and anti-syphilitic properties. The seeds of the Pajurá (*Pteraginea sp.*) when rasped are administered as an astringent. The bark of the Sucupira-perola (*Bowdichia virgilioides*) is equally recommended in certain pathological cases.

And, lastly, comes Tobacco, which grows admirably in this country.

Let us mention now the *gums* and the products in that category.

We have the mahogany gum from the Cajú (*Anacardium occidentale*): the gum of the mango tree; that of the cocoa-nut tree; the Amapa, a large tree, from 25 to 35 ft. in height; and that of the Sucuúba (*Myristica*), which is a vernifuge.

Amongst the vegetable products which yield those opaque saps, strong smelling, and with a pungent taste, which are called gum resins, we will only make mention of Pao-de-lacre or Blood Wood (*Vismia guyanensis*), which secretes a red gum resin having the appearance of sealing wax.

The resins, as is well known, are, in the plant, held in solution by essences. They are solid, fragile substances, which break in a way similar to glass. They are inflammable, and when burning emit a great quantity of smoke.

The most remarkable of the resins in the Amazonian valley are: the resin of the Icariba (*Icica icariba*), the so-called elemi resin, although it is, properly speaking, an oleo-resin, and is very white and highly perfumed. The tree itself is of the Terebinth family, and is from 25 to 40 ft. in height.

The resinous products, known under the name of Copal or Mani resin, are derived from several trees of the hymenocæan genus, of which one, the Jatobá (*Hymenocæa courbaril*), furnishes the soft copals from which the natives used to make ornaments resembling amber. The Jatobá grows to the height of 115 ft. Another tree which also yields copal is the Unany (*Siphonia globulifera*), one of the Clusiaceæ.

The resin Tacamahac animé is specially produced by the Paó-de-breu (*Icica glabra*) of the Terebinth family, and by the Sorveira (*Collophora utilis*), whose milky sap is employed as varnish by the natives.

Amongst the balsams, we may name the Benjoin (*Benzoin officinale*), which flows naturally, or by means of incision, from a large tree of the Styrax family; the Beribá (*Rollinia sp.*), whose sap is also employed as a balm; the Jacaré-uba (*Calophyllum Brasilense*), a tree of from 80 to 90 ft. in height, whose trunk of 10 ft. in thickness distils a yellowish aromatic balsam of a bitter acrid taste; the Tamaquaré, of the family of the Laurineæ, whose balsam is of value against skin diseases; and, lastly, the Umiry (*Humirium floribundum*), from 40 to 50 ft., from

which drops a yellow balsam, limpid and sweetly perfumed, which replaces the "balm of Peru."

*Essences* are immediate products which are either mixed with resins or balsams, or are found in a state of purity in certain special organisms.

The essential oils best known in Amazonia are the Essence of sassafras (*Mespilodaphne sassafras*), which is obtained by the



*The Calabash Tree*

distillation of the root of this lauracean: the Essence of orange flower, etc.

Without stopping to notice the vegetable waxes, which indeed are numerous, we will mention a product which nowadays frequently takes the place of animal ivory.

This ivory is taken from the seeds of a small palm



(*Elephantusa macrocarpa*) which is frequently found in these regions. The nuts of vegetable ivory, irregular in form like some chestnuts, are enclosed four at a time in a large bristly fruit, and are composed of an external yellowish white tegument, hard and brittle, of an internal brown one, and of an albumen which is at first milky and edible, but later on forms itself into cells whose walls become so thick that the tissue assumes the consistency, appearance, and polish of ivory. Like animal ivory, it serves for the fabrication of small fancy goods, such as tops for walking sticks, buttons, etc., it can be stained to different colours and is easily worked.

Without attaining to the same degree of solidity, there exist certain thickened saps which are very useful in modern industry.

From a great number of trees there runs by means of incision a milky liquid which hardens in process. This is *indiarubber* or elastic gum.

The very great importance that this product has assumed during the past few years, the riches which it has put in circulation in the valley of the Amazon, the number of hands it employs, the part it plays in modern industry are the many reasons that have caused all other cultivation to be almost entirely abandoned in its favour. The inhabitants of this State scatter more and more, and forsake, for the profit derived from this industry, the real economic traditions and the regular cultivation of the soil.

We devote a special chapter to indiarubber in the second part of this work.

## CHAPTER VII

*Mineral Kingdom.*—The real riches of the Amazon—The best means of exploiting the mineral kingdom—The transformation that iron and coal would produce in Amazonia—The way to bring about this transformation—The traditional goldfields—Agate, diorite, trap, syenite, jade, feldspar, schist—Clay—Lime—Coal—Porphyry—Rock crystal—Salt—Pumice stone—The future of these riches.

ALMOST all the riches of the Amazon are on the surface, and consist, as we have said, in those varied and innumerable products of a fertile and almost virgin soil.

The valley of the Amazon is destined to become an agricultural centre of the first importance. Let but a strong current of emigration be directed towards it; let but intelligent and rich men bring thither a large number of energetic labourers; let families of well-to-do artisans go and settle there with the fixed purpose of making their fortunes—and those immense forests will soon be partly cut down, the banks of the huge rivers drained, the plains in the interior transformed into cultivated fields, and all this space, which is now almost a desert, will be made productive.

It is therefore principally the two kingdoms which we have already studied which must for the moment draw the attention of emigrants. The age for “gold-seekers” is over in these parts; it is either too late, or too soon to resuscitate it:

Huc omnis turba ad ripas effusa ruebat,  
Tendebantque manus, ripæ ulterioris amore.

Those who aspire to independence must be attracted, not by any fantastic El Dorado, nor by the hope of inexhaustible *placers*, but by the prospect of making money by means of the productions of the earth.

The treasure which emigrants will go out to discover on the banks of the Amazon, they will be sure to find in the fruits of their work. We advise them therefore to remember the very sensible fable of the good La Fontaine, and to rid themselves of all spirit of adventure before starting on their way. The millions over there show themselves in the form of thickened sap, forest produce, and beautiful plantations. It is not necessary to dig underground to unearth them: it suffices to barely till the soil, or to take from the trees what they bear, without fatigue and without culture.

We do not mean to say, however, that the State of the Amazon is absolutely devoid of all mineral riches. We only insinuate that it would be imprudent to count too much upon this unknown quantity, which has hitherto not yet been disclosed. It may be that chance will put certain pioneers on to the direct road that leads to fortune by showing them in an unlooked-for way the entrance to the mysterious caverns where Nature hides her riches. But it will be more often the drive of the pick, or the thrust of the ploughshare that will reveal the hiding-places of the real treasure.

Whatever happens, wealth will always be arrived at more surely by way of continued efforts and regular trade.

It would be rash to assert off-hand that the Amazonian sub-soil contains precious minerals; it would be still more so to raise capital in order to discover them. All that we can hope for is that the Government of this country will soon occupy itself with this source of probable revenue. It is much to its interest to facilitate all studies which aim at ascertaining the geological and mineralogical features of the different soils which make up the country.

A body of engineers who would explore the principal points of this country methodically and scientifically; who, by exploration, excavations, borings, and soundings would determine the geological constitution of the soil; who would then set forth on topographical maps the outcrops, the different deep and surface strata and mining localisations—such a body of specialists would render the most eminent services to the country.

Before entering in the labyrinth a clue is necessary, and this

can only be furnished by mining engineers. Let them therefore be sent forth as soon as possible to attempt the discovery of these lands of gold, silver, and coal, lost in the bowels of the earth. Let these new *Cabiri* plunge into the retreats of iron, into the obscure depths where repose all the metals; let them bring back with them those earth-born pearls that are so much more precious than those found at the bottom of the sea.

The day when we shall be able to say: In such and such a spot are to be found beds of chalk and clay for our building purposes; metallic and carboniferous accumulations for our industries; salt-pits, sulphurs, and slates—on that day we shall have found the veritable El Dorado, and all the diamonds, all the nuggets of the entire world will not equal the treasure we shall then possess.

In order that a normal and regular economic development may be made in the State of the Amazon, it is necessary that the raw materials, so rich and so abundant, which can be produced by agriculture, should find such improved instruments as would transform them at little expense. By the side of the *sítio*, the *seringal*, and the *fazenda*, should the workshop and the factory be erected. When we have iron and coal with us, we shall be able to look forward to the day when we shall become the first producers in the world. Perhaps this future is not very far distant, and it would be easy to pave the way to it by setting at once to work and turning to profitable account that which we already possess, by making use of the gifts and knowledge we have acquired in order to achieve new conquests.

The position is fairly well known of the famous El Dorado, which turned more heads during the sixteenth, seventeenth, and eighteenth centuries than the beautiful Helen of Troy caused hearts to beat amongst the warriors of ancient Greece. It is by the springs of the Paitili, an affluent of the Rio Branco; between the *Serras* Parime and Pacaraïma, upon the confines of the Amazon, that this favoured Paradise is situated.

It was by the Jutahy that the celebrated Ursua descended from Peru in his search for the Golden Fleece. It is known also that the ancients gathered some nuggets of the precious metal in

the Rio Madeira, and that certain bands of gold-seekers turned in preference towards the banks of the Rio Machado or Gy-paraná (River of the Axe). In 1749 there were found in the Rio Tiquié an affluent of the Rio Uaupés, in the region of the Rio Negro, some stones which were observed to contain a quantity of silver, according to Monteiro de Noronha. In 1757—as the naturalist Alex. Rodrigues Ferreira relates—João Fortes Aragão (called by others Arzão) found near the cataract of the Ribeirão Preto, in the Madeira, gold and “crystalline stones.” The news was transmitted to Lisbon, and the Portuguese Government had the good sense to forbid the pursuit of these researches, fearing that the discovery of the mines would ruin the country.

When the craze for indiarubber abates, it will be possible to commence the work of exploration in those parts which were formerly believed to contain mineral wealth.

If, from the indications furnished either by history or tradition, we pass to more recent observations, we can see for ourselves that the mineral kingdom is not absolutely unrepresented in this part of the Amazon valley.

In fact, discoveries have been made, by means of excavations here and there in the State, of numerous arrowheads made of chipped agate; axes of diorite, trap, syenite, and jade; green ornaments of foliated feldspar, and a quantity of slate grindstones, as well as *tembetás* or lip ornaments of nephrite, beryl, hyaline, green orthose, etc.

Many of these objects are made, as will be seen, of matter which undoubtedly points to crystalline formation, and which belongs to composite rock of igneous or plutonic origin. Diorite is composed of amphibolite and feldspar; black trap is very similar to prismatic formations of basalt, and generally reveals the neighbourhood of coalfields; syenite is a sort of granite made from feldspar, quartz, and amphibole; green jade is only silica, alumina, magnesia, and oxide of iron: the schists are earthy layers, hardened by the action of heat, and which border on coalpits. As to feldspar, it is the fundamental element of composite rocks of crystalline formation. Those aluminous silicates are never met with in beds of sediment.

It can therefore be inferred, from the character of these

different geological specimens, that the Amazonian subsoil and some of the mountain chains are of igneous formation, and should consequently contain the principal minerals that usually accompany rocks of this nature.

The objection cannot be raised that the Indians of the Amazon provided themselves with such instruments from their more favoured neighbours in the Andine Cordilleras, where crystalline formations abound. The numerous varieties of *tabatinga*,<sup>1</sup> which are met with in the Brazilian valley of the Amazon, seem to sufficiently prove that this valley possesses composite rocks of igneous formation. In fact, the tabatinga appears to be only due to the decomposition of orthose and albite, which are both of the nature of feldspar: that is to say, they consist of the conglomeration of silica, alumina, chalk, and soda in the clay mud of the rivers.<sup>2</sup>

Common plastic clay is still more in evidence there. The builders of our future towns are therefore certain to find on the spot their raw materials, viz.: wood and clay. Mortar also and lime will not be wanting. Sand is everywhere under foot. Lime will be obtained by burning the accumulations of shells, and the artificial deposits of *sambaquays* or *sernambyss*,<sup>3</sup> which are nearly as frequent in the Amazon as the *Kjoekkoenmodings* at Denmark.

But Coal—the sinews of industry—the black diamond!—does that exist in this beautiful country? Is not the sun of the tropics too rich in his own fires to have buried away underground, like a miser, a portion of his treasure? Do those forests, which actually expand upon virgin soil, live like the rest of us upon the ashes of their ancestors? Are there at the feet of these huge trees the dead bodies of others that have become mummified by the action of centuries? Has the Amazonian flora its black necropolis anywhere?

Why not? Is the fire, which has melted stone, made slate, this earthy coal-bed, likely to have respected the gigantic trees? Such an event, moreover, is all the less probable now that

<sup>1</sup> From two Indian words, *tani*, clay, and *tinga*, white.

<sup>2</sup> Agassiz and Coutinho: “Upon the *Géologie de l'Amazonie*”. Paris, 1867.

<sup>3</sup> From two Indian words: *serye*, ebb of the tide, and *nembyr*, remains.

carboniferous deposits have been discovered along the Guaporé and the Mamoré.

Moreover, in 1860, at the International Exhibition in London, a specimen of coal found on the Upper Amazon was shown. In a report written at that time on this subject, Mr. John Miers, a Fellow of the Royal Society, announced in the following terms the great discovery which would some day revolutionise the district of the Amazon:—

“The interesting fact,” said he, “of the appearance of a piece of coal coming from the river Solimões could not pass unperceived. If it were possible to establish the fact of the existence of extended beds of coal of good quality in the Province of the Amazon, in the immediate neighbourhood of navigable rivers, and with economical means of transport to every part of the empire, the importance of such a discovery would be incalculable in the future . . .”

These words cause us to dream of great things for our country. Coal in Brazil and in the Amazon! This would indeed be a force put at the service of civilisation: this would be the black element to replace the black labour of the quite recent past: this would be the freedom of Brazil from English importation. It is not only the lines of river steamers and city tramways that would benefit by this great power, but all the centres of industrial and agricultural production; sugar factories would be erected, spinning mills constructed, machines without number set in motion from one end to the other of this vast territory, and we should secure a prosperity equal to that of the United States and the European nations who are provided with the best machinery. Although nothing further has been heard of the discovery made in the Solimões since 1862, we may hope that the next generations will see the dawn of this mechanical revolution.

In fact, a North American geologist, who became director of the mineralogical section of the National Museum at Rio, and was afterwards in charge of the works at San Paulo, Mr. Orville Derby, has enlightened us in his turn upon the splendid future of the era of coal in this part of Brazil. He has studied principally the fossils from the carboniferous earth of the lower

Amazon, that is to say in the State of Pará.<sup>1</sup> In his work he describes more than a hundred specimens. After having carefully compared the Brazilian collections with those of the National Museum at Washington, he has succeeded in establishing the almost complete identity of the carboniferous fauna of Pará with that which characterises the deposits in the Mississippi valley, whose coalfields are well known.

The conclusions arrived at by Mr. Orville Derby can undoubtedly be equally applied to the regions of the upper Amazon, that is to say to the State of which we are writing, in as much as, according to Agassiz, the geological structure of those two parts of the valley is the same, and the large island of Marajó, from which Mr. Derby unearthed his fossils, probably once formed part of the main valley.

In order to continue and complete this work, the local Government would do well to follow the example of England, and, after careful study, to make maps showing the precise limits of the different formations, and the points of junction of all the known beds of coal.

If that were done, it would be possible to sell at a very high price the land that was known to be rich in minerals. The capital would be promptly forthcoming, powerful companies would lose no time in being formed, pits would be opened, and thousands of workmen would be able to draw out riches by the ton. According to the saying, that "everything that can be worked finds a worker," it is only necessary to guarantee the existence of the material to be worked. It is to that end that all the efforts of those who have the care of our public affairs should turn. Private individuals, acting alone, would run the risk of wasting their substance, which would be better employed elsewhere, were they to be the first to launch forth on this gigantic enterprise. The State would give every facility to those who are free to profit by that which is so liberally offered. The revenue from the taxes could not be better employed than by thus assuring new sources of prosperity and remunerative labour.

<sup>1</sup> Orville A. Derby, *The artificial mounds of the Island of Marajó*. 1879. "Americ. Natural." *Contribuição para a geologia do Baixo Amazonas*. Rio, 1878. "Arch. do Mus." ii.



Of the numerous affluents of the Amazon, two in particular, viz., the Madeira and the Rio Negro, have been studied from a geological and mineralogical point of view. This is what Dr. J. Severiano da Fonseca says of the cataracts of the Madeira, which are found in great number in the upper part of this river:—

“The rocks in these cataracts are of plutonic formation, and reveal at first sight their volcanic origin, modified perchance by metamorphism. Some of them appear difficult to class on account of the uncertainty of the signs they present: others, on the other hand, offer a mineralogical facies which removes all doubt. The great slabs of trachytic stone, nearly smooth and of the colour of iron, or the shiny black of tar, are formed in many places of layers more or less undulating with rounded edges: one would suppose that they were formed from matter in a state of fusion, flowing in broad streams, and covering wide tracts, and then cooling before the last slabs appeared at the place occupied by the first. Here and there spring up great rocks, some prismatic, others rounded, now in the form of dykes<sup>1</sup> of diorite and elvan, now as detached blocks. Some are split in the middle by a single crack, which sometimes measures more than a fathom in width. Elsewhere are encountered huge excavations (chaldrons), perfectly round holes hollowed out in the rock by the friction of rolling flints.”

According to this traveller, these rocks are of amphibolic porphyry, syenite, petro-silex, that is to say, feldspathic rocks produced by the subterranean fires of relatively recent volcanic eruptions. The obsidians of the Madeira have a vitreous and opaque structure, and resemble those at Peru that are known by the name of the “*Mirrors of the Incas*,” and from which the Indians still make knives.

The petro-silex observed in this same valley are the aggregate of feldspar and of foreign matter, and in some of them are to be found tale and amphibole.

According to Beudant, petro-silex are only found in the earths lower than the coal strata.

<sup>1</sup> Veins of igneous origin, set free by atmospheric agency from the rocky coverings which enveloped them.

Dr. Severiano da Fonseca brought back from his investigations a piece of vegetable charcoal, lamellated, having clearly-defined parallel scales. It was completely petrified, and thus proved of very great antiquity. This specimen is now in the collection at the Museum of the Archæological Institution in Maceió, the principal town of the State of Alagoas.

Various kinds of porphyry, much varied in colour, form a great part of these rocks in the Madeira, and are composed of albite, surrounding amphibolic crystals. They would give a beautiful effect if employed in architecture, and if it were possible to transport them cheaply into Manáos, they would probably rival the most beautiful specimens of green porphyry drawn from Mount Taygète by the ancients who made their vases, and the soles of their statues from it.

As regards rock crystal, Mr. W. Lewis Herndon, who was commissioned to explore Amazonia by the United States Admiralty Office, states that he has seen in Manáos, the capital of the Province, "beautiful specimens taken from the highlands which separate the Rio Branco from the Essequibo."

Let us conclude this brief survey by stating two rather curious facts:

In the Rio Negro, the river which waters Manáos, salt is extracted in a great quantity from certain plants which grow upon rocks standing in the midst of the strongest of fresh water currents. It is obtained by burning plants of the genus *Lacis*, and its presence may be attributed to the absorption by the plant of the saline principles from the water, which has encountered in its course banks of rock salt.

On the banks of the Rio Solimões, or Upper Amazon, are found deposits of pumice stone, carried there, no doubt, by the river currents which descend from volcanoes of the Andine chain.

Such are the principal observations which allow us to encourage geologists in their work, and yet force us to deter emigrants from leaving their substance for the shadow.

It is for a future generation to unearth and exploit these mineral riches, which are as yet but little known.

In 1851 Lieut. W. Lewis Herndon, of whom we have just spoken, after having explored this region, said:

“I have no hesitation in saying that I believe that in fifty years Rio de Janeiro, without losing any of its riches and grandeur, will be but a village compared to Pará; Pará will be what New Orleans became long ago, without the turmoil or the bad climate of New York—that is to say, the greatest city in the New World; Santarem will be the Saint Louis, and Manáos, Cincinnati.”

And, he adds in conclusion of his lengthy report, which was sent to Congress by the Executive Power:

“In a few years we shall be able, without any great hyperbole, or stretch of imagination, to apply to this river Byron’s beautiful verses:

The castled crag of Drachenfels  
Frowns o’er the wide and winding Rhine,  
Whose breast of waters broadly swells  
Between the banks which bear the vine,  
And hills all rich with blossom’d trees,  
And fields which promise corn and wine,  
With scatter’d cities crowning these,  
Whose far white walls along them shine.”

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*From a photograph by F. A. Fianza, Paño*

*Colonel Silverio J. Nery*



## SECOND PART

### THE INHABITANT

#### CHAPTER I

*Organisation of the Federal Union, and the twenty States of Brazil.*—Political Organisation of the State of the Amazon—The Constitution of 17th August, 1895—The Legislative Power—The Judicial Power—The Municipalities—Administrative and legal divisions—The Police—The Church separate from the State.

WITHOUT taking an exaggerated view of the importance of man's surroundings, and while ascribing to them a secondary part only in the formation, the development, and the moral nature of free and intelligent beings, we have nevertheless been obliged to begin this work upon the Amazon with a description of the country inhabited by the people that we wish now to make known.

After the surroundings have been described, it becomes an easier matter to consider the inhabitants, with their life, domestic and social, their means of livelihood, their commerce, the industries in which they are engaged, and the means of communication at their disposal.

We are far from assuming that Amazonia, considered with reference to its geological formation, its climatic conditions, its strange fauna, its exuberant flora, must *a priori* disclose to us the biological and sociological characteristics of the population. We leave such ingenious feats to theorists, and prefer to adhere to the old descriptive methods, which at any rate have the

advantage of not depending upon mere hypothesis, but of being based upon the strict truth, duly proved. There are before all, certain data, precise and actual, that we are proud to present to the European reader.

In Europe little is known of the State of the Amazon, less now perhaps than during the sixteenth century. There are many, even enlightened people, who readily confound this country, with its mythological name, with certain savage lands where the natives still eat missionaries. There are some who have made out that it is the retreat of a tribe of naked Indians, eaters of human flesh, who pass their days in practising with their bows and arrows in the midst of impenetrable forests. Those who are not absolutely ignorant of Brazil believe that on the other side of Rio de Janeiro, and a few other market towns of which they have heard, there are no buildings except huts occupied by slaves, Indian wigwams, and rows of coffee plants, and that the immense regions bordering on the Guianas contain only cayenne pepper trees, and are considered by the Brazilian Government as a kind of torrid Siberia whither they send politicians in disgrace.

However, this country, which is even more misunderstood than unknown, is in possession of every instrument, and political, administrative, and social institutions which are supposed to be the greatest benefits of modern civilisation.

Although this may surprise Europeans, it must be well understood that we possess a regular Government, a police force, magistrates, military forces, and officials of every degree. As regards bureaucracy, alas! we have no reason to envy any of the best organised States of Europe.

We form, in Brazil, a Federal Republic of twenty States, created by the Constitution of 24th February, 1891. This was voted by the Constituent Congress that the Provisional Government, established by Marshal Manoel Deodoro da Fonseca, had convoked after the fall of Dom Pedro II., 15th November, 1889, the members of it being elected by universal suffrage 15th November, 1890.

The Constitution established three Powers: Executive, Legislative, and Judicial.



The chief of the Executive Power is the President of the Republic. He is elected for four years by universal suffrage. The Legislative Power is represented by the National Congress, which is composed of a Senate and a Chamber of Deputies. The Senate consists of sixty-three members (three per State and three for the Federal District), elected for a period of nine years. A third of the members are elected every three years, the Vice-President of the Republic, elected at the same time, and in the same manner as the President, is by right the President of the Senate. The Chamber of Deputies is composed of 205 members (a member for each 70,000 inhabitants), elected for three years, each State not having less than four representatives. The Judicial Power is exercised by the Supreme Federal Tribunal and by Federal judges.<sup>1</sup>

The Autonomic State is the microcosm of the Federal Union, and the Municipality, the model of the State: it is a living cell, corresponding with the formation of the entire organism, and, although independent, has the power of harmonious action.

The State of the Amazon is governed, at the present time, by the Constitution that its representatives voted, and promulgated on the 17th August, 1895, under the presidency of M. Joaquim A. Serejo, having as secretaries MM. Silverio J. Nery and J. B. Borges Machado.

According to this Constitution, the State of the Amazon, as an integral part of the Brazilian Federal Union, is the political association of the inhabitants of the territory of the former Province of the Amazon, and under the Republican *régime* it

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<sup>1</sup>The election of the new Governor and Vice-Governor for the period of four years until the 25th July, 1904, was held on the 25th March, 1900, when Colonel Silverio Nery was elected Governor, and Monsignor Coutinho, Vice-Governor.

Colonel Silverio J. Nery is a native of the State he has been called upon to govern, after having served it for the past twenty years in the various offices to which he has been elected. He has been in turn Provincial Deputy under the Empire, Deputy at the State Congress under the Republic, Deputy at the National Congress at Rio de Janeiro, and he had just been elected Federal Senator when the confidence of his fellow citizens called him to the post of Governor.

Monsignor Coutinho, a native of Borba, on the Rio Madeira, is a veteran of the Amazonian Legislative Assemblies, and until lately filled the seat of Vice-President of the State Congress.

enjoys the free exercise of its autonomy, according to the terms of the Federal Constitution.

“Every act and measure relative to its own private interest of whatever kind is under its own exclusive control, the intervention of the Government of the Union being only admitted in the cases specified by Art. 6 of the Federal Constitution; all that is not explicitly reserved to the Powers of the Union according to the terms of Art. 65 of the Federal Constitution is equally under local control” (Art. 4).

“The expenses of Government and its administration will be borne at its own cost from the revenues, taxes, and other contributions decreed by the competent Power, save in the event of a public calamity, in which case the aid of the Government of the Union may be demanded, according to the provisions in Art. 5 of the Federal Constitution” (Art. 6).

“The Government of the State has for its instruments the Legislative, Executive, and Judicial Powers, which work independently of each other, and harmoniously in the sphere of their respective competence, established in this Constitution. It is forbidden for any one of them to delegate to another the exercise of its functions” (Art. 7). “The basis of the organisation of the State is the Municipality, and for the purposes of the administration of justice, it is divided into *comarcas*, which are subdivided into *terms*” (Art. 5).

1.—“The Legislative Power is delegated to a Congress, named *Congress of Representatives of the State of the Amazon*, which exercises its power with the sanction of the Governor” (Art. 8). “This Congress is composed of twenty-four members, elected by universal suffrage throughout the entire State, the representation of minorities being guaranteed” (Art. 9). “The Congress meets every year, in the capital of the State, without being summoned, on the 1st March, and sits during three months from the date of opening; it may be convoked for an extraordinary session” (Art. 10). “Upon deliberation of the Congress proper, and to guarantee the liberty and independence of its work, it can be held out of the Capital, after due notice has been given, provided it is held in a public place which is accessible to the people, and the Executive Power is informed of the same” (Art.

11). "The Congress cannot be dissolved in any case" (Art. 13). "The representatives are elected for three years" (Art. 14). "Brazilian citizens by birth or naturalisation may be elected representatives, provided they are over twenty-one years of age, that they know how to read and write, that they are in a fit position to be registered as electors, and have enjoyed for at least five years the rights of citizens, if they are naturalised, and have resided a year at least in the State" (Art. 15). "Except in the case of crimes *in flagrante delicto*, in which bail is inadmissible, representatives can be neither arrested nor prosecuted as criminals without the previous sanction of the Congress, in which event—the case having been inquired into up to the point of committal for trial—the prosecution must send the brief to Congress so that it may decide as to the validity of the charge, unless the accused prefers an immediate judgment. If Congress pronounces against the validity of the charge it falls to the ground and cannot be brought up again" (Art. 19). "Members of Congress cannot be called to answer for their words, opinions, and votes in the exercise of their duty" (Art. 25). "Congress verifies and recognises the powers of its members, composes its cabinet and its commissions, organises its interior rules of procedure, decides upon the manner in which it enters into relations with the Governor of the State, upon the ceremony of opening and closing its sessions. These Acts are under its exclusive control, and require no sanction" (Art. 26).

"It is also in the power of Congress, in addition to the privileges conferred upon it by the present constitution, to make, alter, suspend, or repeal the laws, to fix every year the expenses, and to estimate the receipts of the State, acting either upon information or proposals made by the Governor, or independently. It can declare null and void the acts and resolutions of the Municipalities in the event of their being opposed to the constitution, and to the laws of the Union or State, and to the economy of the Municipality. It can authorise the Governor to raise loans and to make other credit operations by fixing the maximum annual charges which are to be met by the State. It can grant credit for the administrative departments already credited, and authorise the creation of new departments when they are

liable to entail an increased expenditure. It can sanction arrangements and treaties with other States, and approve those made by the Governor if deemed advantageous; or it can proceed against the Governor, the Vice-Governor, or their representatives in office, and take part in their judgment, as is determined by Art. 49, on charges for which they are answerable, or sanction their trial in cases of common law. It can raise money by the issue of stamped paper for documents of non-federal character for the bearing upon the Government of the State, as well as by postal and telegraphic charges when these services are established. It can augment or suppress contributions, taxes, and duties, or impose the same without contempt of the restrictions imposed by the Federal Constitution and by the Constitution of the State" (Art. 29).

"It belongs exclusively to Congress to levy taxes on the transfer of property, on heritages, bequests, titles of nomination, and appointments of State officials, *exportation*, rural property, industries, and professions" (Art. 30). "Congress can impose taxes upon the *importation* of foreign merchandise destined for consumption on State territory, but the money raised by these taxes must be paid into the Federal Treasury whenever they have the result of placing on an equal footing as regards fiscal charges, the products of Amazonian industry and similar foreign products" (Art. 31).

"It belongs to Congress to legislate upon electoral disqualifications; the proceedings to be taken in the election of suitable State and municipal officials always following the principle of the representation of minorities and the vote by show of hands: the utility of public services: the public debt: the collection, control, and distribution of the revenues of the State: the legal and civil division of the State: the form of procedure of the State control: the pension fund (contributions to which are not obligatory) for the benefit of the families of State officials: the acquisition of property for public purposes; the public lands of the State: mines and the industries connected with them; means of rendering effective the responsibility of officials who are entrusted with the collection, control, and application of the public revenues of the State and Municipality, and of those who have committed

such misdemeanors and crimes as are named in the present Constitution; public works, roads, railways, telegraphs, postal service, and interior navigation, board of health, and support of the poor; the incorporation of the territory of any other State with that of the Amazon, and the division or the breaking up of the latter conformably with the terms of Art. 4 of the federal Constitution; the means of developing gratuitous lay instruction, immigration, agriculture, commerce, arts, colonisation, instruction of the Indians in religion and the arts of civilisation; the nomination, suspension, and dismissal of public employés, having always in view the competition for admission to posts and permanency of tenure after five years of good service; retiring pensions for those proved to have been invalided in the State service, those having thus retired not being able to occupy any other post under Government; the alienation, acquisition, and letting out of the properties of the State in accordance with the prescription of the present Constitution; the penitentiary, criminal, and detention system; the houses of public relief; scientific, artistic, and industrial establishments; the forest, rural, and fishery code; the institution of the mortgage, loan, and agricultural society (*Crédit Foncier*), and the mobilisation of the soil; the loan fund for the municipalities in case of public calamity; the statistical service and the land survey" (Art. 32).

2.—"The supreme governmental and administrative direction of the State is entrusted to a citizen, bearing the title of *Governor of the State of the Amazon*, who will freely exercise it, conformably to the public welfare as in accordance with the laws" (Art. 34). "The governor will take the responsibility of every act that he performs in the exercise of his duties, to which he will give the greatest publicity, so that the public may be able to form an adequate judgment regarding his actions" (Art. 35).

"He will hold office during a period of four years, and cannot be elected either governor or vice-governor for the following period" (Art. 36). "During his absence or inability to discharge his duties, he is replaced successively by the vice-governor, elected at the same time and in the same manner as himself; in case of absence or other hindrance on the part of

the vice-governor, by the President of Congress; then by the vice-president of that assembly; then by the President of the Superior Tribunal of Justice; and lastly by the superintendent of the capital or mayor" (Art. 37). "If the vice-governor takes the government for some time during the last year of the governmental period he can neither be re-elected nor elected governor" (Art. 38). "If the vice-governor undertakes the government on the ground of the resignation, death, loss of office, or the physical incapacity of the governor, he will continue to exercise those functions until the end of the governmental period,<sup>1</sup> provided that the vacancy occurs after the two first years of the governmental period; in the other case the election of a new governor of the State will be proceeded with" (Art. 39).

"For the offices of governor and vice-governor, it is necessary that candidates, besides the general conditions of eligibility, should be Brazilians by birth, that they should be in the enjoyment of their political rights, that they should be at least thirty years of age, and that they should have had their residence in the State for at least three years" (Art. 40). "The governor will have his residence in the capital of the State, and will not be able to leave it without the permission of Congress, under pain of losing his office. . . . This order does not apply to absences of less than thirty days caused by illness" (Art. 44). "The governor and the vice-governor will be chosen by direct universal suffrage and by an open vote in the whole State at the same time. The election will take place 120 days before the end of the governmental period. The counting of the votes will take place in Congress, which will have an extraordinary meeting for that purpose fourteen days before the end of the governmental period, and will act whatever may be the number

<sup>1</sup> In the case which has lately happened, M. Fileto Pires Ferreira had taken possession of the office of governor on the 23rd July, 1896, and the two first years of his governmental period came to an end on the 24th July, 1898. On the 1st August, 1898, the Congress of State received his resignation, sent from Paris on the 27th of June. The vice-governor, Colonel José Cardoso Ramalho, junior, legally replaced him, and exercised the power until the 23rd July, 1900, without which it would have been necessary to have proceeded to the election of a new governor.

of members present . . . ” (Art. 46). “Those will be ineligible for the posts of governor and vice-governor who are related by birth or marriage, up to the second degree inclusively,



*Colonel José Cardoso Ramalho, Jr.*

with the governor or vice-governor who happens to be in office at the time of the election, or who may have quitted it three months previously” (Art. 47).

“To the governor of the State, in his capacity of supreme head of the government and administration, it belongs exclusively under his full responsibility: to direct, control, promote, and defend all the interests of the State, in accordance with the laws; to sanction and promulgate laws, conformably with the rules established by this Constitution; to organise, reform, or suppress the services in the administrations whilst keeping within the limits of the public financial credit; to issue decrees, rules, and instructions for the faithful and proper carrying out of the laws: to convoke an extraordinary meeting of Congress when necessary for the public good, explaining always the reason for such convocation; to report annually to Congress the situation of the affairs of State; and to suggest measures arising from this situation in a very detailed minute; to prepare all the data for the Budget of the receipts and expenses of the State, so that they may be presented to Congress at the commencement of the session; to contract loans and to realise operations of credit in accordance with the express authorisation of Congress given in special enactments or in the Budget, accounting for such expenditure as is not given in detail in the Budget; to authorise, in accordance with the law, any compulsory sales of property which are necessary for the public good; to organise the public force of the State within the limits of the supplies voted for this purpose, proceeding on the lines of voluntary enlistment; to distribute or mobilise the public force of the State, as it is immediately subordinate to the governor, and to dispose of it as may be necessary for the maintenance of the order, security, and integrity of the territory; to mobilise and utilise, in exceptional cases, the guard of the municipal police; to provide proper officials to hold the civil and military appointments within the limits of the Budget, with power to appoint, suspend, or remove such officers in accordance with the constitution and the laws; to furnish, in writing, all information, data, and explanations that Congress may demand of him; to organise the judiciary and civil division, in accordance with the law; to maintain friendly relations with the other States of the Union; to make with them any arrangements, conventions,



and treaties that have no political character, and to render an account of them to Congress; to suspend, in the absence of Congress, to which he will render a detailed account at its first meeting, the execution of the resolutions and acts of the municipal authorities when they violate the Federal laws or those of the State and the bye-laws of the municipality; to settle any questions of jurisdiction and privilege that may arise amongst the administrative authorities; to take measures relative to the administration of the State property, and to consent to the alienation of such property only according to regular methods; to organise, in accordance with the laws, and to direct the management of lands belonging to the State, road-making, interior navigation, and public lay teaching; to accept resignations and grant leave of absence to officials, in accordance with the laws; to pardon or to commute the sentences imposed upon criminals under the common law and subject to the jurisdiction of the State, after having taken the advice of the Superior Tribunal of Justice; to arrange for the collection of taxes and revenues of the State, and to apply them in accordance with the Budget; to nominate members of the Superior Tribunal of Justice and the other officers of justice; to raise forces in the State in case of an invasion on the part either of a foreign Power or of another State, and in case of riots or of imminent danger, rendering a detailed account of the same to Congress; to call upon the intervention of the Federal Government in cases provided for by Arts. 5 and 6 of the Constitution of the Union, explaining to Congress the motives for this requisition; to cause the elections of the Federation, State, and Municipalities to be held according to the laws; to send to the National Congress, and to the President of the Union, all the legislative enactments; to send to the judicial authority every document concerning the prosecution of State officers; to develop, with the means voted by Congress, the civilisation of the Indians, immigration, and colonisation; to represent the State in its official relations with the Government of the Union and that of other States; lastly, to apply to the service of the State the funds voted

by Congress without being able to draw from the Treasury any sum which the application has not been determined by law" (Art. 48).

"For crimes that the governor or his substitute in office may have committed he will be prosecuted by Congress, and as soon as the validity of the charge is recognised by two-thirds of the members present he will be judged by a special tribunal, composed of seven members of the Superior Tribunal of Justice and of seven members of Congress chosen by ballot. All the votes of this tribunal will be given openly, and the public ministry will be represented by the Attorney-General of the State" (Art. 49). "For the crimes coming under the common law, the Governor of the State will be tried and judged by the Superior Tribunal of Justice, after the Congress of Representatives has brought in a true bill for the prosecution" (Art. 51).

"The Governor will be held criminally responsible for treason, corruption, bribery, and embezzlement, for having made an attempt against the Constitution and the duly promulgated laws, against the enjoyment of political liberty, or against the legal action of Congress, magistrature, and municipal government, against the financial laws voted by Congress and the scrupulous application of the funds entrusted to it, and for any attempt to disturb the tranquillity and the security of the State" (Art. 52). "As soon as the justice of any such accusation is recognised, the governor will be suspended from office" (Art. 53).

3. "The judicial power has as its instruments a tribunal called the Superior Tribunal of Justice, having its headquarters in the Capital, and having jurisdiction throughout the whole State; some 'Judges of common law,' municipal Judges, and jurors in the *comarcas* (parishes). The Superior Tribunal of Justice will be composed of seven members, having the title of Counsellors (*dezembargadores*), nominated by the Governor of the State" (Art. 72). "In no case will Magistrates be elected" (Art. 83). "In order to defend the interests of the State and the public justice before the judges and tribunals, a public ministry is appointed. This is to be composed of an Attorney-General of the State . . . and of public agents, one per *comarca*, the

Capital being entitled to have a greater number . . .” (Art. 89).

4.—“The State will continue to be divided into departments under the denomination of Municipalities, each having its own administration, rights, and interests. The territory of the Municipality will be divided into districts” (Art. 92). “The Municipality will be autonomic in the administration of its affairs; its deliberations are absolutely independent of all State control, excepting the restrictions placed upon them by the present Constitution” (Art. 93). “The house tax in the towns is under the exclusive control of the Municipality, which may, moreover, devise other sources of revenue provided they are not prohibited implicitly or explicitly by the present Constitution” (Art. 94).

“In the seat of each Municipality the municipal government is exercised by a corporation having simply deliberative authority, and by a Superintendent who will preside over that corporation and carry out all its resolutions. This deliberative corporation, called the *Municipal Administration*, will be composed of eight members in the Capital, six in the towns, and four in the boroughs, elected by direct universal suffrage, the voting to be open, every three years. The Executive Power will be free to choose the Superintendent” (Art. 95).

“The members of the administration cannot be re-elected, and the Superintendent cannot be nominated again to continue to hold office during the period of three years subsequent to the expiration of his term of office” (Art. 119).

The State of the Amazon is thus divided for administrative purposes into Municipalities, which are themselves sub-divided into districts, having at their head a Superintendent nominated by the governor, and municipal administrative bodies elected for a period of three years and not re-eligible.

The principal Municipalities are those of Manáos, Canutama, Barcellos, Manicoré, Fonte-Bôa, Sam-Paulo-d’Oliveira, Sam-Gabriel, Sam-Felippe, Humaythá, Labrea, Manacapurú, Codajaz, Coary, Tefé, Borba, Itácoatiára, Uruará, Bôa-Vista, Maués, Uruçuritúba, Silves, Moura, Parintins, Barreirinha, and Floriano-Peixoto.

For the administration of justice, Amazonia is composed of "*comarcas*," and "terms," having at their head, with jurisdiction throughout the whole State, a Superior Tribunal of Justice.

There are sixteen *comarcas*: Manáos, with the term of the capital, which in itself comprises two districts, and that of Manacapurú; Itácoatiára, with the terms of Itácoatiára, Urucará, and Silves, upon the Amazon; Parintins, with the terms of Parintins and Barreirinha, upon the Amazon; Maués, with the term of the same name, upon the Rio Maués; Moura, with the terms of Barcellos and Sam-Gabriel, upon the Rio Negro; Rio Branco, with the term of Bôa-Vista, upon the river of that name; Coary, with the term of Codajaz, upon the Solimões; Teffé, with the term of Fonte-Bôa upon the Solimões; Sam Felipe, with the term of that name, on the Juruá; Sam-Paulo-d'Oivença, with the term of that name, on the Solimões; Labrea, with the term of that name, on the Purús; Canutáma, with the term of that name, on the Purús; Antimary, with the term of Floriano-Peixoto, on the Rio Acre; and, lastly, Humaythá, with the term of that name, upon the Madeira. There are then four upon the Solimões, or Upper Amazon; three on the Madeira; two on the Lower Amazon, the Rio Negro, and the Purús; and one on the Rios Branco, Juruá, Acre, and Maués—one of these, that of Manáos, being partly on the Rio Negro and partly on the Solimões. Each *comarca* has at its head a "judge of law," and each term a municipal judge.

The Police comprises a "head of the public safety," prefects, and sub-prefects (commissioners and sub-commissioners of police). There are sixty-two prefectures in the whole State, and a very great number of sub-prefectures.

The ecclesiastical authority is confided to a bishop, who resides at Manáos, the Pope having created this new diocese since the proclamation of the Republic. It is well known, moreover, that the Federal Constitution of the 24th Feb., 1891, has proclaimed the separation of the Church and State in Brazil, and that the bishops are now nominated there without the intervention of the civil power. Neither Church nor

State is any the worse for this. The present Catholic bishop is Dom José Lourenço da Costa-Aguiar.

All this harmonious organisation has been the work of time, events, and men, and the history of this formation is not without interest. Let us, therefore, give here a rapid sketch of it in order to enable the reader better to appreciate the character of the inhabitants of the Amazon and the perseverance with which they have toiled to acquire the rights that they now enjoy.

## CHAPTER II

*Political History of the Amazon.*—The Amazon before 1889—What this territory was in 1852—Description of Manaós in 1774 and in 1852—What Manaós has become—The population of the State—Elements which compose it—Brazilians, Indians, and Foreigners.

So long as the whole of vast Brazil was only a Portuguese colony, from 1500 to 1822, sharing all the vicissitudes of the mother country, the territory which now forms the State of the Amazon remained under the immediate control of the Government of Pará. On the 3rd March, 1755, a Royal Charter,<sup>1</sup> countersigned by the Marquis de Pombal, created the Capitania of San José do Rio Negro subordinate to that of Pará. Joaquim de Mello das Póvoas was named governor of this new department, by a royal decree, on the 18th July, 1757.

The seat of administration was at Barcellos, a small town on the banks of the Rio Negro. The Portuguese representative had under his authority a few villages scattered here and there, that the missionaries had founded since the middle of the preceding century, of which the chief were: Saracá or Silves, founded in 1660; Jahú, in 1666; Barra (Manaós), in 1669. . . . Póvoas remained at the head of his far-distant Capitania up to 1771, at which time he was replaced by Joaquim Tinoco Valente, who held the administration for seventeen years.

The third governor, Colonel Manoel da Gama-Lobo de Almada, took office in 1788, and in 1791 transferred the seat of

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<sup>1</sup> *Charta régia* de 3 de março de 1755, dirigida a Francisco Xavier de Mendonça Furtado, governador e capitão-general do Grão Pará e Maranhão, creando a capitania de S. José do Rio Negro, com govêrno político e civil. *Manusc.*, copied from the Nat. Lib. at Rio.

Government from Barcellos to Barra do Rio Negro or Manáos; but in August, 1798, the Government of Lisbon restored it to Barcellos.

Colonel da Gama-Lobo's successor, Commodore José Joaquim Victorio da Costa, gave his name to a vast botanical garden near the cataract of Taruman where more than five hundred Indians were occupied for several years at this work of embellishment and incontestable public utility. We regret to say that the barbarous successors of this governor allowed the garden to be ruined by weeds and brambles.

The last governor was Major Manoel Joaquim do Paço, who held office from 1818 to 1821.

Under the direction of these foreign prefects, the territory of the Capitania made material progress, the credit of which was claimed by the Portuguese Government and its agents. We owe to the Portuguese the four magnificent voyages of discovery which were made in the seventeenth and eighteenth centuries, and which in their results as well as in the information which they furnished regarding the country, were of far greater importance than all those useless excursions made by the majority of modern travellers. The voyage of Pedro Teixeira (1637-1639), of which we have already spoken; that of José Monteiro de Noronha (1770); that of Francisco Xavier Ribeiro de Sampaio (1774, 1775); and, lastly, that of the naturalist Alexandre Rodrigues Ferreira (1786) rendered alike to science and to our nation services never to be forgotten.

Let us, moreover, say at once that the first thirty years after the proclamation of the independence of Brazil, and its organisation as a self-governing State, were a cruel deception for this far-off region, which steam did not put into direct communication with Rio-de-Janeiro until 1883.

When the patriotic spirit of independence invaded the whole of Brazil at the end of the year 1822, the Amazonians hoped, and with good reason, to have their share in the new liberty. They were kept, however, in flagrant violation of the conceded constitution, under the protection of the Province of Pará, against which they protested energetically, and instituted a temporary Government.

During the next ten years<sup>1</sup> they struggled step by step to make good their claim to their rights, to take their proper place in the world, and to govern themselves like the neighbouring provinces, but they were unable to succeed in their legitimate attempt. Their resistance was overpowered, and in 1832 they were placed again under the power of Pará: the territory of the Amazon was reduced by the central authority to the humble position of a "*comarca*."

It was not until later, by the law of the 5th Sept., 1850, that it obtained justice. However, the Comarca of Rio Negro, as it was then called, never really became an independent province in regular working order until the 1st Jan., 1852.

The central position of Manáos, built upon the banks of the Rio Negro, near the confluence of that river with the Amazon, and at a nearly equal distance from two of the most important affluents, viz., the Madeira and the Purús; its healthy though hot climate, and the extraordinary richness of the soil which surrounds it, caused this town to be chosen as the seat of the newly established Government.

Manáos, however, had been transformed since the end of the eighteenth century.

In 1774, when the Governor-General Ribeiro de Sampaio visited the Capitania of Saint-Joseph on the Rio Negro, this town was still only a poor straggling village. He arrived there on the 1st December, and he thus described it:

"On this day at 9 a.m. we arrived at the fortress of the Bar of our Rio Negro, where I stopped all day in order to give a little rest to the Indians (who rowed my boat). Near this fortress there is a small Indian town, where live also several whites. It is situated on the east bank of the river, on a dry and elevated spot, although uneven here and there. The native tribes are those of the Banibas, the Barés, and the Passés, of which the latter have come down there lately from the Japurá. The Mura Indians infest the neighbourhood, and the opposite

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<sup>1</sup> *Representação* dirigida a S. M. o Imperador por Joaquim Antonio de Macedo por si, e na qualidade de procurador de alguns cidadãos da provincia do Rio Negro. Pará, 1828.



side of the river is dangerous, so that, thanks to these savages, the most fertile lands remain uncultured."

The first president of the province of the Amazon was M. João Baptista de Figueiredo Tenreiro-Aranha, and the Capital of the new province was definitely fixed at Barra-do-Rio-Negro, which took thenceforth the name of Manáos.

A report,<sup>1</sup> written at this time by two United States naval officers, Lieutenants Wm. Lewis Herndon and Ladner Gibbon, informs us exactly what this poor town was, which was thus invested with the prerogatives of a capital. Their description of the Amazonian Lutetia in her cradle, written 6th Jan., 1852, is as follows :

"The president, M. J. B. de Figueiredo Tenreiro-Aranha, arrived at Barra on the first of this month by a Government ship which is moored in front of the town. He has brought with him several officials of the new Government, and the sum of two hundred *contos of réis* (about £20,000) taken from the funds of the Custom-House at Pará, to pay the expenses of the establishment of the new order of things, until their own local customs begin to bring in money. This territory, as long as it remained a simple comarca, has always been a burden to the public Treasury, and will probably continue so for some years to come."

"The town of Barra is built upon elevated and uneven land, on the left bank of the river, at about seven miles from its mouth, and, according to my calculations, is 1475 ft. above sea-level. It is intersected by two or three ravines, containing more or less water, according to the height of the river, with fairly strong wooden bridges across them. The houses are, for the most part, low, only three or four having two storeys. They are made of wood and mud, with tiled roofs and floors, and their walls are plastered with a coloured earth which abounds along the banks of the Amazon.

"The official returns for the year 1848 give the population of the town as 3640 free persons and 234 slaves. In that year there were 150 marriages, 25 deaths, and 250 births, and there were 470 inhabited houses, and 32 foreigners."

<sup>1</sup> *Exploration of the valley of the Amazon*, 2 vol. Washington, 1854, t. 1. p. 263.

M. Tenreiro-Aranha completes this table by saying that the receipts of the comarca hardly reached £300 per annum!

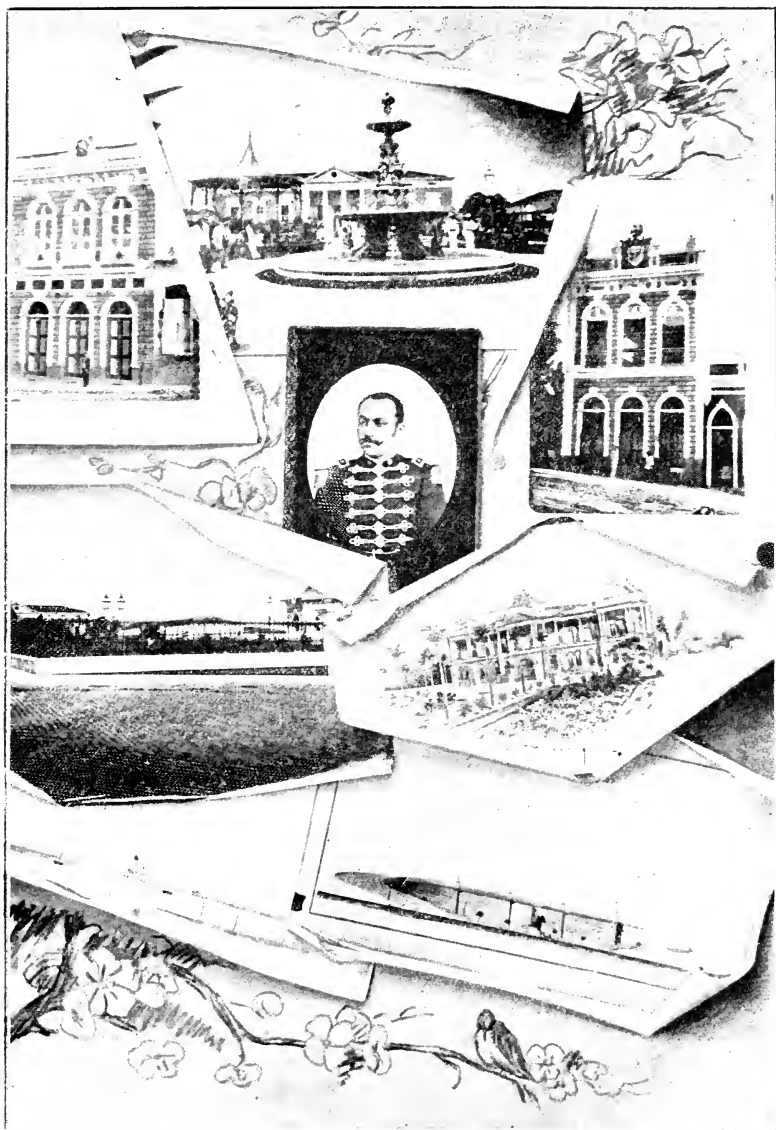
The description is certainly not flattering! It only accentuates the more the enormous progress made in less than half a century. Manáos, it is true, has not made the giant strides of certain great towns in the United States, which seem to be able to run directly they are born; it has not seen its population increased all at once by a considerable influx of foreign immigrants. Its riches have not mounted in one night like the waters of the huge rivers that surround it; but its prosperity has always been progressive, increasing, and sure since it has become the business centre of the greatest part of the valley of the Amazon, the focus of life, and the activity of a great autonomic State, and the seat of a local Government which is no longer obliged to beg for crumbs from the Central Power.

To-day Manáos, thanks particularly to Dr. Eduardo Gonçalves Ribeiro, who has been at the head of the State for nearly six years, has become a beautiful town with about forty-five thousand inhabitants, and its sole desire is to continue to grow and become more beautiful.

Petroleum lighting has been replaced by the electric light, in which even London and Paris are very much behindhand. Nearly 600 posts have lamps of 2000 candle power, which burn for eleven hours.

The telephone service is also installed there in virtue of a concession, dated the 3rd April, 1897, by a company with a capital of 200 *contos* fully paid up. It has 300 subscribers, and has installed 335 telephones in private houses and public offices.

A line of steam tramways, which has been lately replaced by the electric railway, runs in the town and neighbourhood. In 1897 sixteen kilomètres were in working order and two in construction. The way is sixty-one centimètres in breadth, the maximum declivity is three per cent., and the minimum radius of curve thirty-eight millimètres. Three locomotive engines, ten carriages for passengers, and twenty-five waggons for the transport of merchandise and luggage are on the line, which has two main stations and twenty-four stopping-places. The trams have made



*Portrait of the Military Engineer, Eduardo Ribeiro, former Governor of the Amazon, and his works.*



during the year 15,132 journeys, covering a distance of 67,512 kilomètres, and carrying 171,783 passengers, on an average of rather more than 476 a day, and the total receipts were nearly 43 *contos*.

Splendid avenues, planted with trees, will become in time fine boulevards intersecting the central quarter, fountains are commencing to cool the town, and two beautiful gardens have been planted. The streets are being paved by degrees, and it would be easy to give a trial, if not to the wood pavement, which in hot countries is expensive to keep in order, at any rate to cork pavement, which would not be dearer than the stone actually in use, and would have the great advantage of being noiseless, and of not becoming burning hot to the same degree as the stone blocks that are now employed.

Some fine bridges, some of which are of iron, have succeeded the poor primitive things spoken of by Herndon and Gibbon.

The water supply has been organised, and is in course of completion upon a very grand scale. Such as it is, it ensures the distribution of 2,700,000 litres in twenty-four hours, which represents 60 litres per head per diem for a population of 45,000 inhabitants, which is evidently insufficient.

Some years ago were established a market-place, with iron buildings, near the port; wash-houses upon the right shore of the *igarapé* of the grand cascade; and a nursery-garden. Three churches, of which one is very spacious, built upon a hill and surrounded by a picturesque garden, have been erected for Roman Catholic worship.

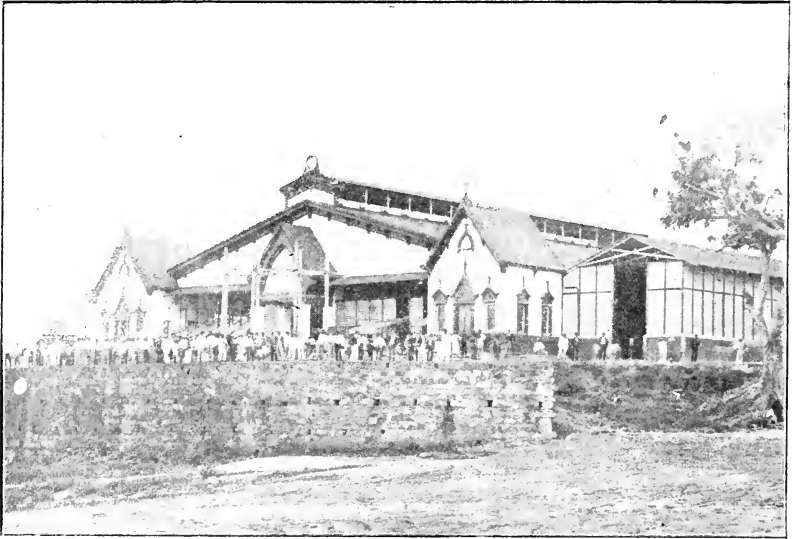
Most of these recent improvements are due to the administrative ability of Dr. Eduardo Gonçalves Ribeiro, who can say with legitimate pride: "I found a village—I have made of it a modern city."

The city also possesses a fine theatre, which has been magnificently decorated by De Angelis, the Italian painter, and in which three companies of opera, operetta, and drama gave very successful representations in 1897.

The State did not only lend the theatre to these travelling companies, but it paid their travelling expenses, and gave them free use of the electric light, and a large subsidy, which was

really excessive, as this lavish expenditure cost the Treasury during the season of 1897-98 nearly 344 *contos*.

There are also an office of hygiene, having at its head Dr. M. C. de Gouveia, junior; a hospital; a quarantine hospital upon the left bank of the Rio Negro, on a spot called Umirizal; and a lunatic asylum in connection with the Santa Casa de Misericordia. Provision is thus made for the protection of the



*The Central Market at Manaus*

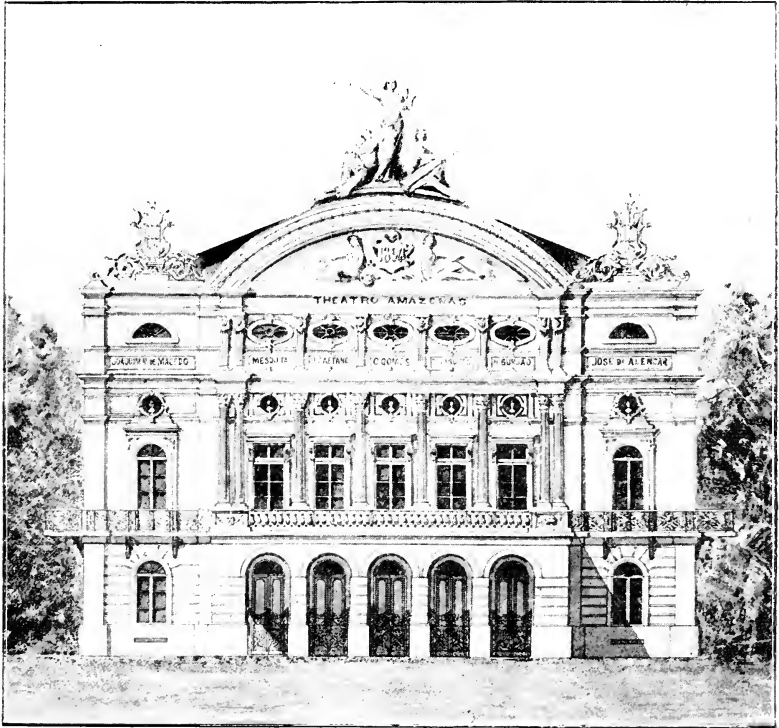
public health and for giving help to the poor in case of illness: there is, moreover, a Portuguese hospital, open alike to natives and foreigners.

There has just been constructed under the very able direction of Mr. Macfarlane, a Scotchman, an electric furnace, for burning all the detritus and sweepings of the town.

In addition to the above there are an establishment for professional instruction (*Instituto de artes e officios*); an orphanage; a public school, known as the Amazonian Gymnasium: a small seminary: ten colleges and private schools, with 644 pupils; twenty-six elementary public schools, of which

six are in school-houses specially built, with 1409 pupils, and a State library, founded 25th March, 1883, and reorganised 1st Jan., 1898, containing 3165 volumes and 131 maps. The Education Department has at its head M. Joaquim Teixeira, who is as intelligent as he is zealous.

We may also mention the Savings Bank, established on the 23rd Feb., 1893, which in 1896 held deposits of more than



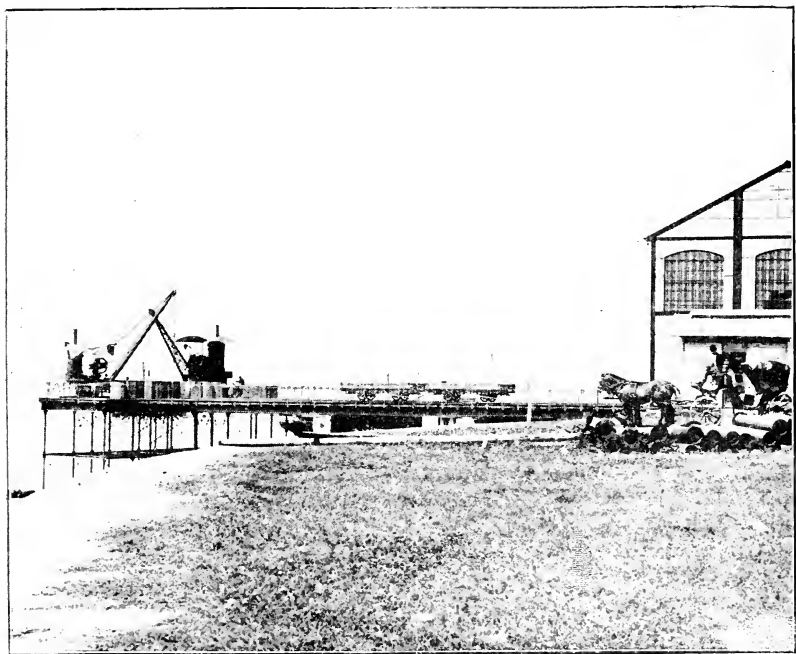
*The Grand Theatre at Manaus*

738 *contos*; two banks; an entirely Amazonian assurance company and a museum, where can be seen the Talberg and Payer collections, which have been acquired by the State.

There is already a wharf with the necessary appliances for landing and shipping goods, and others are in course of erection. Some portions of the quays have very much im-

proved the port, which is being furnished with every modern requisite.

The Federal Union maintains a navy and a small military garrison, whilst the State supports a body of police, which owes its fine organisation to Colonel Affonso de Carvalho, and is composed of two battalions of infantry and a squadron of cavalry. The first battalion consisted, on the 31st Dec., 1897, of 225 men, and the second of 225 men, each



*Depôt and Landing Stage for Merchandise at Mondos*

under the command of a lieutenant-colonel. The cavalry at that date only numbered sixty horse.

This police force has a glorious page in the annals of the nation. In 1897 a fanatic, who had settled in the almost inaccessible interior of the State of Bahia, by name Antonio Maciel, a native of Ceará, and better known under the name of Antonio Conselheiro, succeeded in collecting some hundreds of



poor ignorant men around him and forming a band somewhat similar to the famous *Réductions* of the Jesuits of Paraguay. The Federal Government sent several expeditions against him, but all were obliged to retreat or acknowledge themselves powerless. A great effort was made towards the middle of the year 1897. Numerous troops marched against the madman's fortress under the command of General Arthur Oscar. The States of Sam-Paulo, Bahia, Pará, and the Amazons wished to help the Federal Government in this act of repression. The Amazon police force started, under the command of the lieutenant-colonel in charge, Candido Mariano, and performed prodigies of valour, and the colonel, as well as one of his officers, the valiant Raphaël Machado, were mentioned in despatches by the General-in-Chief.

We can only just mention the National Guard, which hardly exists except on paper, but which on occasion would be able to render good service, as it did during the campaign of Paraguay.

Lastly, sixteen steam navigation companies have their offices or agencies at Manáos; two nations, Germany and Venezuela, have consulates there; four have vice-consuls: France, Great Britain, Portugal, and Uruguay; and two have consular agents, the United States and Italy.

Such are the results achieved by the activity and intelligence of the inhabitants of this city with a great future, helped by the State authorities.

If from the Capital we pass on to glance rapidly at the State as a whole, we see the same elements of success are awakening. The population of the towns has not increased in a very rapid manner, with the exception of that of the capital, for reasons to be discussed later; but the interior is rapidly filling with hardy extractors of indiarubber, and it is calculated that from a single Brazilian State, viz., that of Ceará, the Amazon has had 100,000 immigrants of late years.

It is impossible, however, to calculate with certainty the exact number of people who live in this immense territory. Ordinary returns give but very incomplete data.

In his excellent Report, presented on the 25th March, 1883, to the Provincial Legislative Assembly, M. José Paranaçuá was

right in saying: "The information that we possess is very imperfect, so much so that we must acknowledge that all the calculations on the subject of the total population of the Amazon only depend upon vague inductions and are purely fanciful."



*Capt. Raphael Machado and Lieut.-Col. Candido-Mariano  
of the Amazonian Police Battalion*

However, from information that he has been able to gather, he arrives at results regarding certain regions from indications

which seem to us very plausible. Thus in the Rio Solimões, or Upper Amazon, from Codajaz to S. Paulo-d'Oliveira there were then 3908 inhabitants, of which number 2021 were males, 1917 females, 3664 natives, and 294 foreigners. The population of Rio Branco at the same time seemed to be only 384. It has been considerably increased since this river has been navigated by a regular line of steamers. The population of the Rio Purús was 50,000.

In 1852 it was calculated that there were barely 30,000 inhabitants in the province that had just been organised, including friendly Indians. In 1872 the official census of the whole of Brazil showed already, incomplete though it was, that the number of inhabitants of the province was nearly doubled, being 57,611. The official census of the 31st Dec., 1890, gives the population of the State of the Amazon as only 147,115, representing 0·08 inhabitant per square kilometre.

Even if we admit the accuracy of these official returns of 1872 and 1890, the population of the Amazon has increased in eighteen years by more than 156 per cent., that is to say, 8·66 per annum.

These figures seem to us below the truth. But even taking them as a basis and admitting that the annual increase furnished by the excess of births over deaths and by immigration is only 8·66 per cent., it would show an increase of 12,811 inhabitants per annum. Consequently, at the end of the year 1898, the population of the Amazon could not be less than 250,406 inhabitants ( $147,915 + 12,811, 43 \times 8$ ).

The civilised population of the State of the Amazon is composed of three principal elements—Brazilians of various origin, converted Indians and foreigners of all kinds, not reckoning the Indians still in a savage state.

In the course of this work we have to study each of these three groups. We need only give here general ideas which will serve to make what we are going to say later on, about the inhabitants of the country, more easily understood.

The main part of the population is formed, naturally, of Brazilians—pure whites or nearly so; hybrids of negro and white, mulatto, quadroons, etc.; hybrids of negro and Indian,

*cafuzos*;<sup>1</sup> hybrids of white and Indian, *curibocas*;<sup>2</sup> hybrids of white and curiboca, *mamelucos*;<sup>3</sup> descendants of Indians, *caboclos*, *tapuyos*,<sup>4</sup> etc.

What is meant by the denomination Brazilian? We think with M. Sylvio Roméro that the Brazilian is neither the descendant of pure Portuguese race, nor the unmixed descendant of the aboriginal Indians, nor the uncrossed product of African importation. The true Brazilian cannot lay claim to the white race exclusively, nor to the copper coloured, nor to the black. He is a mixture, in the etymological sense of the word; that is to say, he is the product of these three races, the result of their intimate and perpetuated crossing. Each of these three races has contributed more or less to the settling of the actual type. However, it is quite certain that in the Amazon State, the African blood is only an extremely feeble contingent.

The mixture of these three elements has given birth to a multiplicity of combinations, of which the three principal are the cross between the black and the white, that between the white and the Indian, and that between the Indian and the black. "The cross breed between the negro and the white, called mulatto," says Agassiz, "is too well known for me to have to describe him; he has fine features and a clear complexion, is full of self-confidence, but is very indolent. The cross breed between the Indian and the negro, known as *cafuzo* (or better, as *carafuz*), is very different; his features have none of the delicacy of those of the mulatto, his complexion is dark, with hair long and curly, and his temperament presents a happy combination of the playful humour of the black with the rustic energy of the Indian. The cross breed between the white and the Indian, called *mammaluco* (or better, *mameluco*), in Brazil is pale

<sup>1</sup> *Cafuzo*, *cafuz*, *carafuzo*: Moraes makes this word out to be derived from two Portuguese words: *cara*, face, *fusco*, dark.

<sup>2</sup> M. José Verissimo says this word comes from the tupi: *carina*, white, *oca*, house, to extract, to draw: that which issues from the whites.

<sup>3</sup> M. Baptista Caetano says this word comes from tupi-guarani: *membyruca*, son of an Indian mother.

<sup>4</sup> *Caboclo*, in tupi-guarani, means bald, and this word has been applied to Indians in general on account of their scarcity of beard.—*Tapuyo*, *Tapuya* is a word now applied as a term of disdain and contempt to the descendants of Indians: it is the *caboclo* still rough and half wild.

and effeminate, feeble, lazy, and rather obstinate. It seems that the Indian influence has been just powerful enough to eradicate the higher attributes of the white without imparting any of the Indian energy."

The Indians are still very numerous in the forests of the Amazon, where they live in small tribes. Some of them have been civilised by traders in the interior, by extractors of india-rubber, and by pedlars who trade along the rivers, with whom these nomads come in contact. Amongst these Indians, the *mandurucús* are distinguished by their love of work and their agricultural tastes.

As to the foreigners established in Amazonia, they live the same life as the natives of the country, without allowing any old-world prejudices to interfere with their mutual goodwill.

These general explanations will allow us now to undertake the study in greater detail of the inhabitants of this country.

### CHAPTER III

*Domestic and Social Life.*—European prejudices—Houses—Amazonian hospitality—Furniture—Clothing—Food—Stimulants—Manners and customs—Public charity—A venture of the Fathers of the Congregation of the Holy Ghost.

THE character and temperament of a people not only appear in the civil and political institutions, the administrative organisation, and its own particular legislation; but, above all, in an *ensemble* of external facts that denote its true features. Literature and the arts show the degree of culture in a nation; its domestic life reveals more intimately its traditions, customs, and tendencies.

Until we study the intellectual life of the Amazonian population, it is under this new aspect that we must look at it.

Of the three groups that compose it, we need only occupy ourselves with the two first: that is to say, with the Brazilians proper and with the half-civilised Indians. We reserve the third group, which comprises foreigners established in this State, for a special chapter in the last part of this work.

In the schools of Europe, and even in the most renowned academies, the Greeks and Romans of two thousand years ago are far better known than the actual inhabitants of certain regions not very far from London, Paris, or Berlin.

In spite of geographical societies, which are on the increase; in spite of numerous accounts written by travellers exploring the world; in spite of all the progress made by a certain very instructive form of literature, which moreover does its utmost in every way to make known the marvels and curiosities without number to be found on our globe; in spite of the ethnological collections made everywhere, thanks

to the use of photography; in spite of the frequent exhibitions, where are shown most varied and picturesque specimens of the principal races of man, there remains much to be done before Europe arrives at a true knowledge and precise idea of the different nations who live in the four corners of the earth.

This study was begun badly, and it is difficult now to begin it again. Those who first discovered the mysterious solitudes of the New World, either through ignorance or enthusiasm, falsified the truth. Their observations are incomplete, and only bear, for the most part, upon peculiarities or oddities of but moderate interest. These puerile accounts, in which the marvellous holds a large part, are wanting in the most elementary criticism, and are not enough to satisfy us.

The reports made by conquerors and governors only have in view questions of exploitation and colonisation. The works emanating from missionaries are sometimes tainted with pre-conceived ideas, in spite of the good faith of their authors.<sup>1</sup> The philosophical fancies of Voltaire are no longer admissible. As to the picturesque style, inaugurated by the exotic imagination of Chateaubriand, and expanding with luxuriant vigour in the romances of Fenimore Cooper, Gustave Aymard, Jaccoliot, and many other well-known writers, it appears to have served its purpose and passed away.

The result of these attempts, which had perhaps some *raison d'être*, has been to transmit false ideas upon all the points that are supposed to have been elucidated and placed at the disposal of science.

According to the deplorable habit we have of generalising everything and reducing it to an abstract synthesis, we form a decided and almost uniform opinion upon all backward nations,

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<sup>1</sup> We have found in the Public Library at Lisbon two unpublished letters from Father A. Christovam de Lisbóa, who was guardian of the Franciscans at Maranhão, and brother of the celebrated antiquary, Manoel Severim de Faria. In one of them he writes from Maranhão in 1627. He says to his brother, "However, I ought to give you some advice: it is that amongst the people that are not of our country, you should be upon your guard in accepting their reports, for most of them are false, especially those of the Fathers of the Company." As a good Capuchin, he evidently did not like the Jesuits.

whoever they may be. It suffices to call them primitive, native, indigenous, or autochthonous, and men at once ascribe to them, without further inquiry, the customs answering more or less to the adjectives by which they are described.

Thus it is understood that all Indians do without tailors, and that they cannot live otherwise than in a state of nature—a phrase that Stoics themselves, with all their arsenal of complicated logic, could not understand and define.

It seems, however, that it would be very simple to apply analytical process to these studies as is done in the other sciences. It is certainly not an easy thing to submit to rigorous and systematic investigation tribes difficult of access. It is easier to throw the dredger and to descend to the bottom of the sea in a diving suit in search of living beings than to serve a campaign amongst tribes of redskins or copper-coloured Indians.

However, for the past few years, individuals belonging to the different races of Asia, Africa, America, and Oceania have been seen in all the principal capitals of Europe. These specimens of the human race have been subjected to the examination of savants, and it is certain that they have done more towards the advancement of scientific knowledge than the ossuaries of museums or the fanciful estimates of drawing-room travellers.

For the Amazon it is not necessary to have recourse to these importations of a new genus. The natives of these regions have been studied in their own country by first-rate specialists; but it must be admitted, in spite of this, they are not very much better known.

How many times have we not been asked, during our long stay in Europe, in colleges and universities that we have frequented, if we always slept in the open air, if we drew water from springs in human skulls, and if we made our clothes from the feathers of blue birds? We have had to answer these silly naïve questions by acknowledging that we have allowed prosaic European civilisation to affect us; that we have exchanged the time-honoured bow for the Minier carbine; that we have installed home comforts in our savage dwellings, and that towns and villages in our Amazonia have advantageously replaced the huts



of dried mud and leaves which Europeans love to imagine in their dreams of the "Swiss Family Robinson."

Our centres of population, because they are few and scattered along the river banks, are no less beautiful in their situation on the borders of the virgin forests, between the burning azure of the sky and the golden sheen of the rivers, in the midst of enchanted islands glowing with verdure and light, and redundant with plenty.

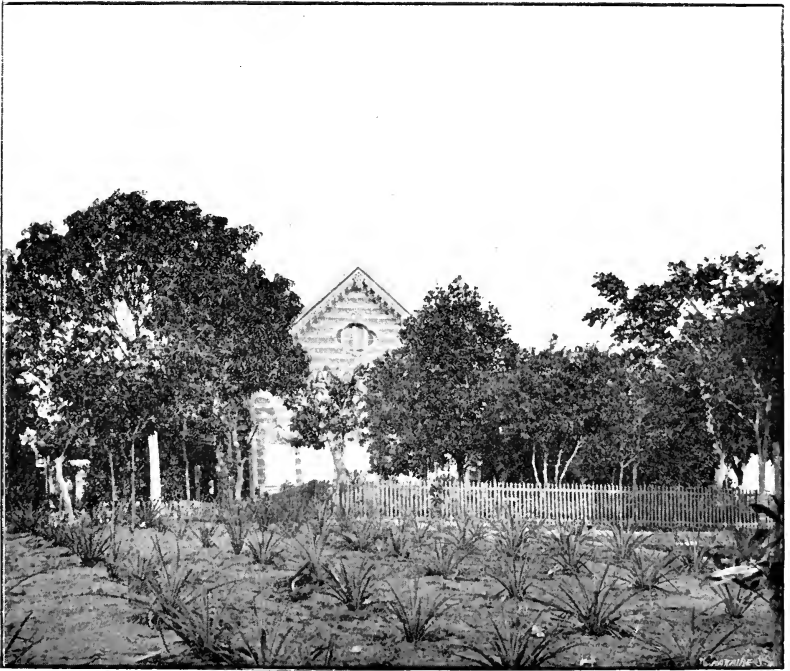
Our little Amazonian cities are like nests under the great trees, but spacious nests where we live in comfort.

There in this beautiful country the houses are large, and able to accommodate large families of children. The houses are large because the country is large, and hospitality is unbounded. Moreover, the Amazonian loves to have plenty of room to move about in, and cannot understand the crowded human hives of London or Paris where we buzz out our existence, walled up and piled one on the top of the other as in a family vault. He cannot limit his wants to a few square feet—*angulus ridet*.

His abode is relatively spacious, consisting of only a few rooms, but each of these rooms is as large as an entire modern flat in London or Paris. In building them a large cutting is made in a corner of the forest, and the sawn timbers of the gigantic trees are used to build the walls, which are nearly as solid, although perhaps less elegant, than the masonry of stone and brick and mortar with which they are generally made in Europe. They are covered with limewash as a protection from the fierce rays of the sun. The houses are mostly adorned with verandas, and are usually built on a level with the ground, or they have at most one upper storey. It is seldom if ever that they have not a garden, be it ever so small. The interior garden, the *quintal*, and the veranda are the two oases for repose during the hot hours of the day, where the inhabitants talk whilst swinging in their hammocks or in rocking chairs.

And besides, although those habitations in the interior (for at Manáos there are already well-built houses, picturesque chalets, and many-storeyed mansions), cannot compare in any way with the modern buildings in the first capitals of the Old World, they

offer many other advantages. Although modest and simple in appearance, they are always open (we are not speaking figuratively), like the house of the wise man, and every one who brings a letter of introduction from a friend, or even a mere acquaintance, is received with open arms. Scotch hospitality is nothing compared with that of Brazil in general. When a stranger crosses the threshold of a house he is at once made at home. These ancient customs are particularly maintained in these parts



A Villa at Manáos (*Chacara Eduardo Ribeiro*)

where it is impossible to find, especially in the smaller towns and villages, any decent hotels for travellers accustomed to European comfort.

Even in the rooms of the richest, luxuries in furniture or decoration are never to be found, nor any display of those knick-knacks which are the delight of refined civilisation.

The stranger is at once struck by the simplicity of the furniture. It consists of a few light rocking chairs of unstable equilibrium, seats of perpetual movement which beguile the want of bodily activity by a rhythmic indolence; then some cane chairs and sofas, and a hammock, either plain or adorned with costly fringes, is slung in the corner of an alcove.

For clothing, the inhabitant of the Amazon thinks he is obliged to sacrifice himself to the exigencies of European fashion. The black cloth frock coat and the top hat are both *de rigueur*, which is an absurd custom in such a hot climate. But ladies are more practical in wearing as a rule light stuffs, whilst keeping withal a certain Parisian style; and costumes of light cloth and toilettes of Madras muslin, Surah silk, and foulard are in favour with those in society.

If the inhabitants of the Upper Amazon obeyed the freaks of fashion a little less, and regarded simple considerations of health a little more, they would dress only in flannel or in silken stuffs, and wear the same head-gear as the English do when in India.

“Tell me what you eat and I will tell you what you are.” This axiom, which might serve as a motto for cooks, is the nearly infallible criterion of the moral character of a people. Without wishing to decide here between the respective merits of vegetarians and meat-eaters, we cannot but regret that vegetable diet is not more in favour in our hot country.

The rich classes of Amazonia can compete with the rest of the world as regards food. Their fare is as abundant as their soil is prolific. Agassiz has left us the description of a banquet to which he was invited at Manáos, about 1600 kilomètres from the mouth of the great river. He says, “There was, in truth, neither ice (*a thing not easy to obtain in this climate*), nor champagne; but the absence of these two things was more than compensated for by a variety of tropical fruits which could not have been procured elsewhere at any price—enormous *pine apples*, green and red *abacates*, purple *pitangas*, the *attas* or *fructas do conde*, *abios*, *sapotilles*, choicest kinds of *bananas*, and a great variety of *maracujás*, the fruit of the passion flower.” If he could but come to life again he would be sur-

prised to find two manufactories of artificial ice at Manáos and the best brands of champagne drunk at all the banquets.

The Romans would have paid with a province for such wonderful desserts as those of which the great naturalist speaks. In Amazonia one has only to shake the trees to obtain them.

The everyday diet of the middle classes is less extravagant. Their food, however, is wholesome and abundant, their favourite dishes being the savoury flesh of the turtle and various kinds of fish. Bread is often replaced by manioc flour, which is very nourishing and suitable to the climate where mastication is fatiguing. These provisions are in abundance everywhere, although living is by no means cheap at Manáos.

We have already said that the valley of the Amazon is an immense larder, well stored with victuals, from which one has but to help one's self. Butcher meat is more scarce, but costs relatively less than in London—about 1.5 000 réis the *kilogramme*—therefore the raw materials are not wanting. The isle of Marajó, at the mouth of the Amazon, is the earthly paradise of oxen. In other parts of the State herds of cattle roam and breed freely. The Federal Union and private individuals possess also in the plains watered by the Rio Branco and its affluents 59 *fazendas*, which contain no less than 56,775 head of cattle. In spite of this, however, meat is not abundant at Manáos, for the means of transport are still insufficient. Those who live in the interior are more favoured and have recourse to hunting, and a good shot can always fill his larder and lay by as much as he wants for salting.

The son of Noah not having considered it convenient to emigrate into Amazonia, it follows that the country is deprived of that divine liquor in which the brave patriarch drowned his griefs after the Deluge. There are no vines, therefore no phylloxera; but this does not prevent the gifts of Bacchus from being enjoyed. On great occasions precious bottles from France, Italy, or Portugal are opened, and the nectar of European civilisation is poured out in streams. Those who gather india-rubber from the depths of the forests willingly exchange the milky sap for the sparkling beverage which gave his wit to the good Champenois La Fontaine. The working class and a great

part of what may be called the lower middle class maintain the freshness of their complexion by drinking copious draughts of cold water, and thrive very well on this *régime*, free from all unwholesome adulteration.

In order to combat miasmata they have recourse to frequent fumigation of nicotine. Tobacco is now almost a necessity in these countries, and that of Borba enjoys a great reputation.

Coffee is likewise in constant use.

We caution Europeans newly arrived at Manáos not to depart too hastily from their old ways of life. They should only adopt little by little, and by almost insensible transitions, the usual food of the country. Let them also guard against the seductive attraction of certain fruits.

The Amazonian population of white origin, the Brazilians proper, have kept a few remains of old customs, which have been either transmitted by the first colonists, or have come from certain local traditions, modified by Christian influence.

But all these customs of the good old times are fast disappearing and giving way to newly-introduced foreign modes of life.

In our childhood, birthdays of relations and friends were still celebrated in a very original manner. On the eve of the day on which a Brazilian used to fête his patron saint, his friends never left his side in their endeavours to tie a ribbon round his arm, and if they succeeded, he who was the object of this delightful attention had to give a good dinner, or at least a little present to whoever had thus decked him.

A few local fêtes are the occasion of rejoicings somewhat similar to those at certain of the same kind in various parts of France.

There are the evening *neuvaines* in the parish church; little open-air stalls are erected in streets by vendors of cheap goods, and the sacred element mixes itself with the unhallowed with most charming freedom. The Brazilian in those parts does not believe that God should be excluded from his amusements.

The festivals of Saint Anthony, the 13th June, of Saint John, the 24th June, and of Saint Peter, the 29th June, are still celebrated with bonfires and evening amusements. Here the

Latin origin and the Aryan descent reveal themselves. The cult of Agni, the creator of fire, is associated with that of the venerable saints in this month of the summer solstice

But, we repeat, the levelling effects of civilisation are causing all these customs to disappear; and very soon there will remain no trace of any of our ancestral traditions.

The picturesque or the unexpected in the Amazonian country must be sought amongst the *people*, amongst the race descended from the Indians.

This class of the population has remained more faithful to its traditions, and has preserved features which distinguish it from the pure Brazilians of whom we have just spoken. The food, stimulants, manners and customs retain some marks of their origin.

The people have still their *poqueca*, *ribé*, *beijú*, and *moquém* for food, and have remained faithful to the *tucupy*, *caxiry*, *cachaça*, and to wine from the *cajú* and fermented fruits.

In the midst of simple and traditional surroundings, the Christian festivals are celebrated with all the outward show of fetichism, and all the beautiful legends inherited from their ancestors still find credence.

Let us recall briefly, then, some features in the life of these people of the Amazon, who dwelt in the midst of the descendants "of those Portuguese colonists who, by uniting themselves in marriage with the natives of this country, have propagated that new race of white men who are known by the name of *Mamelucos*, and are distinguishable from the savage tribes by their colour and their taste for agriculture and the mechanical arts." (*Tenreiro-Aranha*.)

We will follow in this short sketch the same division as before.

Amongst the dishes loved by the *Mamelucos*, the *poqueca* holds the first place. This tupi word signifies covering. The *poqueca* is prepared with all the care and attention that are usually given to a national dish. Even the English themselves are not more anxious about the success of their plum pudding at Christmas. A large, thick, glistening leaf is chosen, on which is

placed some fish or venison with some condiments. The whole is fastened up with string and put under the hot embers until it is cooked to a turn. This, it appears, is so good that it makes men lick their fingers—which, by the way, amongst these people, still serve for forks.

This poqueca is eaten with every preparation of manioc, with the *xibé* or flour steeped in water, with the *beijú*, a kind of cake kneaded with water, and accompanied with a few glasses of *cachaca*, or tafia made from sugar-cane, and bumpers of strong *caxiry*, which is made from *beijús*. When these manioc cakes are cooked, they are kept for several days in green leaves, then placed in a vessel full of water, when they are shaken until they dissolve, and are then left to ferment.

A more useful dish than the poqueca is the *moqué*m, a sort of smoked meat prepared by a simple and speedy process. The sauce that is used in almost every dish is called *tucupy*, and is a liquid drawn from manioc, grated and compressed in the *tipity*, an elastic tube made from the stalks of the *jacitára* (*desmonchus*) or the *guarumú* (*maranta arouma*, of Aublet). This milky sap contains a violent vegetable poison, of which the active principle is cyanhydric acid, but this is volatile, and after boiling, the sap forms an excellent sauce for fish and other dishes.

To complete these few notes upon the food of the real native class, we must still mention the *pira-cuhy* or the fish flour, and the *pirarucú*, the fish we have already described.

The *pira-cuhy* is a very useful food in these parts, and is made of grilled fish which is crushed in a mortar after the bones have been removed, and then dried upon earthen plates, and the flour thus obtained is excellent and agreeable to the taste.

The *pirarucú* attains to over seven feet in length. When caught, it is taken to wooden huts where the skin is removed, it is then cut in two, salted, and the pieces are piled up one on the top of another. There they remain for some hours, after which they are exposed to the sun, well spread out, and dried.

Let us pass quickly now to the customs of the half-civilised Indians.

It has been said that a creed changes but never dies. The truth of these words is most apparent in the customs and singular traditions that the descendants of the Indians have preserved of their primitive origin.

Truly, one instinctively feels that the deep thoughts of Christianity have adapted themselves to these untutored souls, and that the more advanced conceptions are grafted upon primitive belief: but one may say that the wild stock which bears them still remains alive.

Just as the European guards in the depths of his soul a trace of ancient naturalism, so do the inferior populations of the Amazon remain unconsciously attached to Indian fetishism.

Heredity has accumulated in the deep strata of this race of men every instinct, every superstition which characterised the ancient possessors of the soil. The festivals and the Christian ceremonies are modifications, or rather improvements, of ancient heathen customs.

We shall describe further on the fête of the *saïvé*, which sums up in its allegories and in symbolism that is deep although coarse, the principal points of the Catholic faith.

The marvellous legends of the *Curupira* and the *mãi-d'agua* satisfy the imagination of these people, and fill them with poetic emotion. They are like the voices of the two great genii who hide themselves in Amazonia: the genius of the forests and the genius of the waters. They interpret the impression that the immensity of nature implants in the depths of these melancholy souls.

The *Curupira* is a sylvan genius who haunts the wooded solitudes. If a woman loses her way in the forest, he appears out of the trees in the form of an Indian, and if a man should go astray the genius shows his presence under the guise of a beautiful woman. Those who know the evil disposition of the *Curupira* try to divert him on the way. They lie down in the shade and begin to weave little baskets of woodbine or of *guarumá* stalks. The *Curupira* arrives, and takes the baskets, examines them, then, as if to learn how to make them equally well, he proceeds to pull them to pieces in the same manner as a little *wistiti* would if it were given a lace



bonnet. During the time he is thus occupied they make their escape and find themselves on the track again.

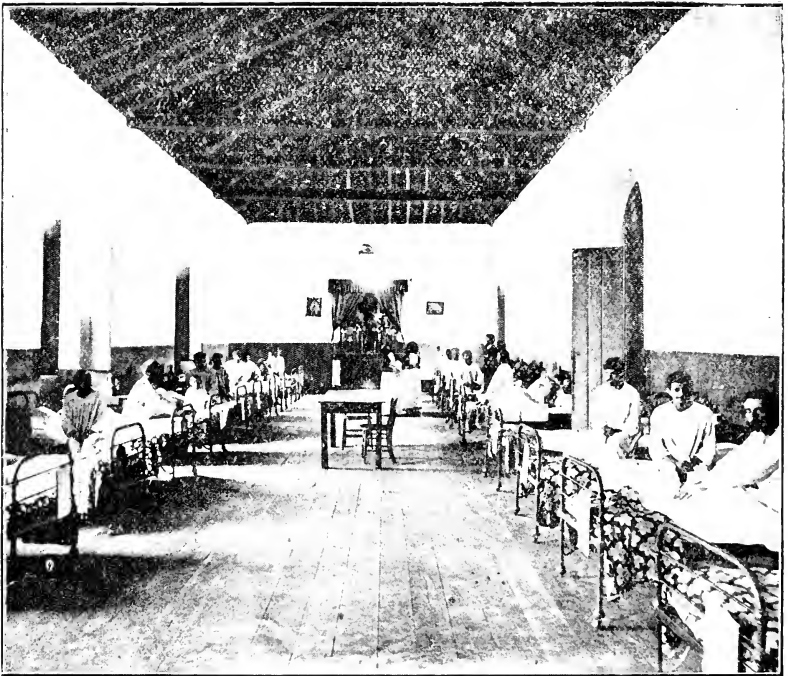
The legend of the *mãi-d'agua* is still more artless; this fairy enchantress frequents the rivers and the sombre *igarapés*. She waylays young couples and brings them bad luck. During the calm, warm nights she sings her magic chants. Ill luck to the smitten Indian or to his beloved should they be attracted by these sounds! The Indian who tries to see the "Mother of the Waters" is struck with delirium. Scarcely have his eyes gazed upon her beauty than he is deprived of his senses and thrown into transports of delight that burst forth in fits of wild laughter; the vision torments him and entreats him to return with her to the spot where she first appeared to him; and if he lets himself be thus drawn away and looks for her on the banks of the river, the fairy opens her beautiful arms among the weeds, twines them round him and makes him die of love in the bed of the river. Moral:—Water is as fascinating as woman; but perhaps less inebriating.

There exists in Amazonia another fairy, but she is a good spirit, and always ready to open her arms to the unfortunate.

We must not leave unnoticed the organisation of charity, which has its headquarters at *Manáos*, and is called by the name of *Santa Casa da Misericórdia*. The good it does is considerable. It has under its charge a hospital, a lunatic asylum, and since October, 1897, a lazaretto for smallpox patients. A committee of devoted men collect the subscriptions of the members of this charitable association, distribute the sums allowed by the State, and watch over the administration of relief. During 1897 the *Santa Casa* numbered 475 members. Its receipts have been raised to about 255 *contos*, and the expenses to nearly the same amount. The hospital, asylum, and lazaretto are under the care of the Sisters of Saint Anne, an Italian religious sisterhood. Its modest patrimony consists of barely three *contos* of *réis* and two houses, in spite of which, thanks to the help of the State, the hospital received no less than 1836 patients in 1897, of whom 1117 left cured, 270 died, and 113 remained under treatment. It also furnishes medicines and provides gratuitous advice to poor patients. The custom of the country forbids that any

inhabitant of the Amazon should die of hunger and poverty. In 1899, the State signed a contract with M. Januzzi, an Italian, for the erection of a splendid building for the *Santa Casa*.

There is, however, we regret to say, a department that the State has neglected for too long, in which the vice-governor now in office, Colonel José Cardoso Ramalho, jun., as a true son of his country, is deeply interested, and which he has just reorganised.



Men's Infirmary at the *Santa Casa da Misericórdia*

We refer to the protection of the still savage Indians, a subject to which we shall return later. Suffice it to say now that the sums of money employed to this end up to quite recently were ridiculously inadequate, and that no really methodical attempt had been made to set about this work.

The Franciscans, under the direction of P. Gesualdo Macchetti, have established three missions in this vast State—one on the

Rio Uaupés, with 400 Indians; another, the oldest and most prosperous, at Sam-Francisco; and the third at Sam-José de Maracajú.

At the end of 1897 the Fathers of the Congregation of the Holy Ghost, under the direction of Father J. B. Parissier, founded an agricultural institute of arts and crafts on the Rio Teffé, at the point of junction of that river with the Solimões. Although so recent, the establishment is in full prosperity, and it is to be hoped that the concurrence of the State will not be wanting, for this work is of such a nature as should recommend itself. Instead of trying to civilise adult Indians—a task which appears even more ephemeral in its results than difficult in its application—the Fathers of the Holy Ghost seem decided to undertake a more rational work: they open schools for modern practical teaching in order to form the minds and hearts of young Indians who will eventually propagate sound and healthy methods among their own people. The project is noble, and worthy of the intelligence of the great prelate who has inspired it, Monsignor Alexandre Le Roy, titular Bishop of Alinda, Superior-General of the Congregation of the Holy Ghost, with residence at Paris.

However, the conclusion to be drawn from all reports of the authorities is that, although there exist some intractable Indians who rebel against any intercourse with civilised beings, such as the Parintintins, there are others of gentler habits who appear to lend themselves very readily to a settled mode of life, and upon whom the moralising action of the Gospel can be efficaciously brought to bear, to the very great profit of the State and of humanity.

These Indians might form an agricultural nucleus, around which European colonisation would gather.

## CHAPTER IV

*Means of Livelihood.*—Ichthyological riches—An exceptional site—Privileges granted to fishery companies—Turtle fishing—Shore fishing: law on this subject—Turtle *butter*: its exportation—The Ox-fish: its exportation in a preserved form—The Pirarucu: quantities exported—Destructive fishing—Cacao—Cattle—Laws in favour of agriculture—The colonisation “*cearense*.”

THE means of livelihood of a people are due in general to fishing, hunting and agriculture.

These three sources of food will be rapidly studied in this chapter. The details that we have given elsewhere allow us for the future to be very brief upon these matters.

Any one looking at a map of the State of the Amazon, and seeing the immense and inextricable network of forests, rivers, lakes, *igarapés*, *paraná*s, and *furos* which cover the greater part of this region would say at once that the population should find inexhaustible resources, first in fishing and the chase, and secondly in agriculture.

Those who have read the chapter on the animal kingdom will form the same opinion, and they should, moreover, remember these words of Agassiz, in a letter written to the Emperor Dom Pedro II:—

“All the rivers of Europe combined, from the Tagus to the Volga, do not feed more than 150 species of fresh water fish, and yet in one small lake in the neighbourhood of Manáos, called Lago Hyanuary, which has an area of barely 500 square yards, we have discovered more than 200 distinct species, the greater part of which have not yet been observed elsewhere. . . .”<sup>1</sup> (Letter of 23rd Feb. 1866.)

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<sup>1</sup> *Voyage au Brésil*, édit. franç. Paris, 1869, p. 380.

By reading the reports of the different presidents of the province, especially those portions which treat of the ichthyological riches of this country and the abundance of game, and by thinking of the favours that the Government has decided to accord to fishery companies, one's first opinion regarding the ability of this country to support a large population is confirmed. As early as 1852, in fact, the first president of this province, M. Tenreiro-Aranha, described in these terms a spot situated a few miles from Manáos:—

“Upon the northern bank of the Amazon, at the mouth of the Rio Negro, opposite that of the Solimões, upon the highlands and mountains, one finds a central spot called *das Lages* (the Rocks), so named from certain natural walls which rise from the fine sand on the shore. Upon these high lands, so well suited to the culture of coffee, cotton, manioc, and all the other products of this province, there are dense forests furnished with excellent timber for ordinary and shipbuilding purposes. In certain parts is also natural pasture, which it would be easy to extend so as to form cattle farms. On the top of some of these high hills are natural and permanent reservoirs, from whence water flows with such force that it could be easily utilised to supply motive power. A little higher up there is a small watercourse, of which the banks abound in wood which might be cut down and exported, and lower down, at a distance of about  $1\frac{1}{2}$  miles, one finds the beautiful Lake Aleixo, very abundant in fish. In this place, therefore, are highlands, stone quarries, and vast beds of sand, whilst opposite, upon the other shore of the Amazon, at the mouth of the Solimões, and upon the isthmus between this river and the Rio Negro, there are lowlands suitable to the culture of cacao and vanilla, which is already found there in abundance in its wild state. These lands, fertilised every year by the periodical rising of the waters, lend themselves admirably to the cultivation of the sugar-cane. There are also pasture lands and natural plains covered with wild rice which serves only as food for the birds and fish. And along these same rivers, from the Rio Madeira, on both sides, to the mouth of the Solimões, are those immense lakes called the Autaz, the Rei (King), the Manaquiry, and the Manacapurú, where,

during the entire year, but particularly during the six months when the waters are low, millions of turtles, ox-fish, *pirarucás*, *tambaquis*, and many other fish may be caught in such great quantities that they should be the source of greater profit than all the fisheries of Newfoundland."

The Central Government, by the law No. 876 of 10th Sept. 1856, guaranteed a five per cent. interest during five years on the



*Seeking for Turtles' eggs*

capital effectively employed by the three first fishery companies founded in Brazil; and decree No. 8338 of 17th Dec. 1881, approved the measures taken in conformity with this law.

In spite of all these advantages, not a single fishery company has ever been organised in this State, and we regret to say that the market at Manáos is sometimes very badly provided with fish.

This state of things is all the more deplorable when the fabulous sums that many European countries derive from salt and fresh water fisheries are taken into consideration. Only a short time ago (May, 1873) there was held in London a magnificent international exhibition of fisheries, where could be seen the riches produced by this branch of industry. In 1881 France employed 80,876 fishermen, with 22,125 boats of a total of 150,000 tons, besides 56,000 persons who fished along the river banks and the seashore, and during this same year this industry brought in no less than 87 millions of francs to France.

In the State of the Amazon it is not the same. Every labourer is employed in the forests at the extraction of india-rubber and other products. Fishing and hunting do not yet form a lucrative and regularly exploited industry there. However, the people of the country love fishing and pursue it actively enough, but mostly on their own account. Fishing for turtle, *peixe-boi*, and *pirarucá* occupy some thousands of hands during certain seasons.

Turtles are caught in two different ways.<sup>1</sup>

On the rivers they are taken with arrows, which sometimes have *tucuman* stone fixed near the point. They are shot from the bow with the velocity of a ball, and the arrow, in cleaving its way through the air, produces from the pierced stone of this fruit a noise similar to a bird's cry, so that the turtle, who is floating on the water, is not frightened; the point of the arrow, shot with marvellous skill, penetrates the shell of the turtle, and fixing itself there becomes detached from the arrow, but remains attached by a very long line which is rolled round it. The turtle, feeling himself wounded, dives rapidly, and the line unrolling itself from the arrow, turns round and round on the water and enables the fisherman in his boat to find it. When this movement of the arrow ceases the turtle is supposed to be tired out, so then the line is drawn in very softly until the animal appears on the surface, when he is at once harpooned and secured.

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<sup>1</sup> See the curious notes of M. F. Gomes do Amorim, the illustrious Portuguese writer, in his beautiful plays—especially the *Cetro Vermelho*—upon the Amazonian customs.

Turtle fishing from the shore is called there by the characteristic name *viração*—that is to say, turning him over or putting the turtle upside down on his back. This is done on the immense sandy shores of the Solimões, the Madeira, the Purús, and the Rio Branco, during the laying season, when the turtles begin to bury their eggs. The people of this country have no scruple in taking these eggs for making the famous “butter” so dear to M. Jules Verne, and for taking, at the same time, the young turtles when they have hardly come out of their shells. A law (1st June, 1882) forbids this barbarous custom, and lays down that the municipalities, during the four months of low water, shall have the shores guarded by a small detachment of police, and inflicts severe penalties on transgressors.

The season for making turtle oil (*manteiga*) usually comes to an end at the commencement of November.

During our childhood the *modus operandi* was as follows:—

The eggs were thrown into a boat and pressed down with the feet, in the same manner as grapes are trodden for wine, until they formed a gelatinous paste. The skins, which serve as shells to the eggs, were then removed, the whole was covered over with water and exposed to the sun for several days, during which the oil rose to the top and was taken off, boiled in a cauldron, and finally placed in large earthenware pots containing about fifty quarts each. It has been calculated that a turtle lays about eighty eggs, and that to make one pot of this grease the eggs of forty turtles were necessary.

The production of turtle butter is stationary. In 1882-83 exportation duty had been paid, according to the provincial returns of the Amazon, upon 6028 *kilogrammes* of this material, made chiefly on the Solimões. In 1894-95 the coasting trade exportation rose to 14,450 *kilogrammes*, of a value of 2 *contos* 890 \$000 *réis*, but it fell in 1896 to 7781 *kilogrammes* of hardly 1 *conto* 216 \$000 *réis*.

Catching the ox-fish or river cow, of which we have already spoken, is much more difficult, for it has an excessively acute sense of hearing. The harpoon is generally used. This kind of fishing is steadily diminishing, and the exportation of preserved



*peixe-boi*, called *mirira*, which is much superior to most preserved fish found in Europe, tends to cease altogether. During the financial year 1881-82 the quantity of *mirira* exported amounted to 1311 *kilogrammes*, divided in the following manner:—260 *kilogrammes* from the Purús, 247 from the Juruá, 714 from the Solimões, plus 90 *kilogrammes* of fresh *peixe-boi* from the Purús. But in 1894-95 the amount exported by coast-



*Harpoon fishing in the Amazon*

ing traders was not more than 691 *kilogrammes*, of a value of 9 *contos* 430 \$000 *réis*, and in 1895-96 it was even less, being 361 *kilogrammes*, valued at 4 *contos* 771 \$000 *réis*.

Salted *pirarucú* was exported on a larger scale, and promised to be profitable, but it has not made any progress for more than fifteen years. During the fiscal year of 1881-82, 796,169 *kilogrammes* were exported, of which 146,869 came from the

París, 4845 from the Madeira, 122,625 from the Juruá, 460,483 from the Solimões, 13,396 from the Rio Negro, and 47,951 from the port of Itácoatiára. In 1894-95 the exportation by coasting trade was only 564,954 *kilogrammes*, of an official value of about 411 *contos*, and in 1895-96, of 555,118, of nearly 468 *contos*. It is true that in these figures are not included the exports from the Parintins, Itácoatiára, and Maués, which in 1895-96 amounted to 313,880 *kilogrammes*, worth 270 *contos*.

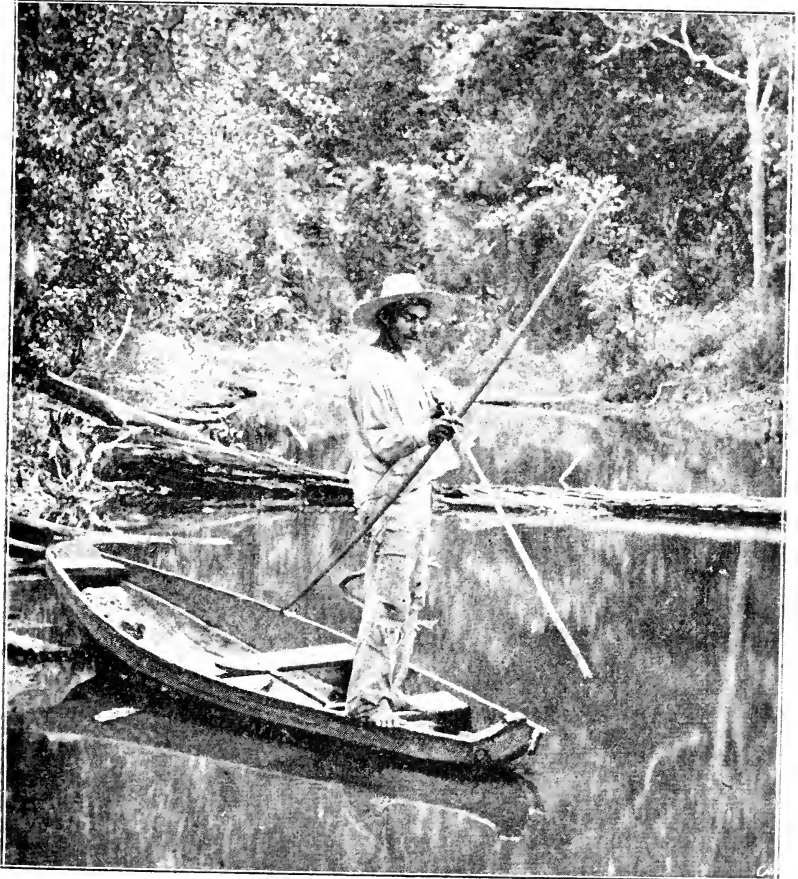
On the affluents of the Amazon, fishing still preserves some characteristics which will certainly disappear as soon as it becomes a commercial industry, instead of being a delightful pastime for the well-to-do, and an excellent means of livelihood for the poor. There will no longer be seen those very original boats peculiar to the Amazonian region, the picturesque *igáras*; the *abá*, a rough craft carved out of the trunk of a tree, all in one piece, with roughly-hewn planks for seats; the *montaria*, a little open canoe; the *igárité*, a boat to carry one person, made most frequently of palm leaves: the *igára-assú*; the *bóte*, the grand canoe, and the *batelão*, a kind of barge; nor will the *caboclo*, armed with its *jacumá*, a short oar which serves also as rudder, be found there any more.

The necessary tackle for the chase and fishing, as now used by the *tapuyos* of the interior, will also change, and their arrows, which are to-day so varied, will be swept away by civilisation. These arrows are of various forms; there are the *uacuí* for little fish, the *apepéna* for larger fish, the *sararára*, that we have already described, for spearing the turtle, the *uacuruá* for birds, and finally the *taquára* for big game.

But if all these are lost, the destruction of fish, on the other hand, will no longer be so deplorable in certain parts by means of vegetable poisons, such as the *Timbó*, the *Tinguy*, the *Turary*, or the red *Cruapé*, etc.

The *timbó* (*Serjania cuspidata*) furnishes by distillation an essential oil of the odour of musk and a powerful narcotic, which is sufficient, if merely breathed, to produce a poisonous effect. The *tinguy* (*Phacocarpus*) acts equally as an intoxicating poison; the bark, leaves, and fruit are narcotic and acid. The *turary* (*Paullinia grandiflora*) and the red *cruapé* (*Paullinia pinnata*) serve the same purposes, and have similar properties.

We have witnessed more than once this barbarous mode of fishing, which is carried out in the following manner:—the timbó is squeezed, and its juice is thrown into a lake or a small watercourse where the water is still and shallow. After a few hours, the fish, which become intoxicated, rise to the



*Bow and Arrow fishing on the Amazon*

surface, and they are then simply picked up and dropped into the boat. No notice is taken of small fish.

As for hunting, we can only speak of it from memory; it is

only pursued as a pastime for the purpose of filling the larder with game. It offers, however, an unlimited field, as we have already shown when speaking of the animals which abound on the Amazon. The stag is hunted, but only to a small extent, and merely for the sake of his skin. In 1894-95, 9730 stags' hides were exported from Manáos, of a value of a little more than 14 *contos*; and in 1895-96, 9629, of nearly 15 *contos* and a half, without speaking of 2733 from other parts of the State.

Agriculture proper is neglected by the inhabitants on account of the fabulous and immediate profits they find in the extraction of forest products.

It can even be stated that it is less advanced to-day than it was a century ago, for coffee, rice, indigo, cotton, and tobacco are now scarcely cultivated there. And yet a writer at the end of the eighteenth century, the naturalist Rodrigues Ferreira, said that on the Amazon wild indigo grew everywhere without culture, attaining a height of from 5 to 6 feet, and he added: "Indigo is as common there as marsh mallow in Portugal." Near to San Gabriel a factory for the preparation of indigo has even been established.

This naturalist had started from Barcellos, then the chief place in the Capitania that has become the State of the Amazon, on an official mission, and we have in our possession the account of his interesting expedition.

He went over the whole region of the Rio Negro. Coffee was cultivated wherever he went. To-day the inhabitants are obliged to import it. Cacao was hardly successful. Ferreira constantly repeats that the principal crop grown in the country is coffee, even before manioc.

At Moreira he mentions three planters who gathered in 88 *arrobes* of coffee (about 2600 lbs.). They were in the habit of sheltering their coffee plants under the shade of *ingazeiros* (*Inga dulcis*).

The red rice was indigenous, and grew of its own accord. White rice had been imported from Portugal. The Marquis de Pombal, who took pains to go into details, recommended the cultivation of the native rice; but in spite of his advice, this culture ceased from 1763, the white rice introduced two years

previously having given at once the best results. The production of it was so great that since 1784, eight mills had been erected at Pará for removing the husks of the white rice of this region.

At the same time, at the request of the Portuguese naturalist, Antonio Villela do Amaral<sup>1</sup> wrote in 1787 at Barcellos a treatise upon the agriculture peculiar to the Rio Negro, and the Padre João Daniel<sup>2</sup> devised a new scheme for agricultural labour.

The different Governments have all tried to arrest this decadence, but without success. Some of them have not lasted long enough to carry through the desired reforms: others have had recourse to experiments destined to prove abortive; all have had to contend with the irresistible current which carries the population towards industries which, without requiring any long preparation or special aptitude, are much more lucrative with more immediate results, such as the extraction of indiarubber.

Thus, whilst the exportation of indiarubber and certain other forest products increases in most extraordinary proportions, that of really agricultural products diminishes in a sad way, as will be seen by the following tables:—

## COFFEE.

1829-1830,	-	-	-	-	-	-	-	-	-	6200 <i>arrobes</i> .
1859-1860,	-	-	-	-	-	-	-	-	-	270 ,,
1869-1870,	-	-	-	-	-	-	-	-	-	34 ,,
1895-1896,	-	-	-	-	-	-	-	-	-	nothing.

## COTTON.

1867-1868,	-	-	-	-	-	-	-	-	-	103 <i>arrobes</i> .
1871-1872,	-	-	-	-	-	-	-	-	-	220 lbs.
1895-1896,	-	-	-	-	-	-	-	-	-	nothing.

## TOBACCO.

1829-1830,	-	-	-	-	-	-	-	-	-	5620 <i>arrobes</i> .
1859-1860,	-	-	-	-	-	-	-	-	-	2270 ,,
1869-1870,	-	-	-	-	-	-	-	-	-	61 ,,
1881-1882,	-	-	-	-	-	-	-	-	-	125 lbs.
1895-1896 (from Itácoatiára, Santo-Antonio, and Maués),										5850 ,,

(*N.B.*—An *arrobe* is 14 kilogrammes 690 grammes, or a little over 29 lbs.)

<sup>1</sup> MS. at the Nat. Lib. at Rio.

<sup>2</sup> *Quinta Parte do Thesouro descoberto no Rio Maximo Amazonas.* Rio, 1820.

Cacao (cocoa) continues to be cultivated upon a very limited scale, but sufficiently for this product to stand fairly high in the tables of State exportation. This culture, which seemed fifteen years ago likely to follow the destiny of so many others, has improved of late years, as the table will show:—

CACAO.		Quantity.	Value.
1880-1881,	- - - - -	100,794 lbs.	—
1881-1882,	- - - - -	47,116 „	—
1894-1895,	- - - - -	337,422 „	158 <i>contos</i> .
1895-1896,	- - - - -	349,096 „	149 „

To this amount exported must be added that of Parintins, Itácoatiára, and Maués which, in 1895-1896, amounted to the following:—

CACAO.		Quantity.	Value.
1895-1896.			
From Parintins,	- - - - -	1,008,456 lbs.	423 <i>contos</i> .
„ Itácoatiára,	- - - - -	62,750 „	106 „
„ Maués,	- - - - -	174,976 „	81 „

The exportation of cacao, therefore, in that year from the entire State amounted to 1,595,278 lbs., of an official value of 759 *contos*.

The rearing of cattle, which gives the finest results, especially in that part which is watered by the Rio Branco, has been much neglected, and it is only now that a company, having its offices in Pará, is in search of pasturage in order to carry on cattle breeding on a large scale. The Federal Union possesses, as we have already stated, a certain number of farms in this State from which no profit is drawn, but which the Union refuses to give up.

According to an official document, the farms of this Municipality<sup>1</sup> are 134 in number, of which 10 are on the Rio Branco itself, and the others on its affluents, viz., 1 on the Mocajahy, 3 on the Agua-Bôa-Grande, 1 on the Cuitanahú, 1 on the Sam-

<sup>1</sup> *Relat. das Rep. de Estatística e Arch. publ. do Amazonas*, quadro n.º 84, 1898.

Laurenço, 14 on the Cauamé, 1 on the Agua-Boazinha, 43 on the Rio Uraricuéra, 1 on the Truarú, 2 on the Parimé, 1 on the Arumine, 1 on the Majáry, 16 on the Mont Majáry, 1 on the Igarapé Caurani, 5 on the Rio Santa-Rosa, 2 on the Maracá, 4 on the Igarapé Grande, 25 on the Tacutú, and 4 on the affluents of this last river. Altogether they possess 56,775 head of cattle.

Besides the cattle on the farms on the Rio Branco and its affluents and sub-affluents, cattle may still be found on the



*Cattle farm on the rio Purus*

Prairies or *Campos* watered by the Madeira and by the Lower Amazon, as well as on the Rio Autaz, at Purupurú, Codajaz, Coary, Tefé, Fonte-Bôa, Sam-Paulo-d'Oliveira, etc.

Numerous laws have been proposed and carried to encourage agriculture in the Amazon.

A law of 16th May, 1872, granted bounties to any farmers

who in the year could show on the market place at Manáos 100 *alqueires*<sup>1</sup> of manioc flour (*cassave*) grown by them, and 50 *alqueires* of rice or beans, or 500 *maquias*<sup>2</sup> of maize. Another law, of the 20th May of the same year, exempted from all local duties for ten years the following products so long as they were cultivated in the country—cotton, tobacco, rice, coffee, beans, maize, manioc flour, sugar, molasses, and sugar-cane brandy.

The following year (29th May, 1873) a law authorised the President of the Province to sign with Messrs. Nash, Ferreira & Company a contract for the establishment of one or more farms for the cultivation of sugar-cane, various cereals, and for the manufacture of sugar and sugar-cane brandy; the sum authorised for this purpose amounted to £2000.

At the end of two years (25th May, 1875) the President was again authorised to contract a provincial loan of £20,000 to be placed at the exclusive disposal of farmers. A second law of the same date sanctioned a loan of £880 to an inhabitant of the province, M. Labre, and to another, M. Amorim, a loan of £500, to enable them to start an establishment for the rearing of cattle and horses.

In 1879 a law bearing the date of the 26th May, authorised the expenditure of £3000 for distribution as help to the small farmers of the province. Two years after (14th May, 1881) a similar sum was voted in favour of agriculturists and breeders of cattle; and a law of the 15th June, 1881, sanctioned the payment of a prize of £200 to the North American agriculturist, Jasson W. Stone, for his tobacco plantations.

A law of the 8th June, 1883, authorised the President of the Province to grant a guarantee of 7 per cent. interest upon a capital of £226,000 for the establishment of three central sugar factories in the province.

Other provincial laws, voted by the Legislative Assembly during its session of 1884, granted prizes to encourage the culture of the indiarubber tree and the growth of certain

<sup>1</sup> The alqueire is equivalent to about 40 lbs.

<sup>2</sup> The maquia is equivalent to about 2½ lbs.



agricultural products. One of them guaranteed a subsidy of 30 *contos* (about £3000 at the rate of exchange at that time) to the founder of a model farm, and instruction in agriculture was ordered to be given at the Museum.

The Republic has not been less liberal in its encouragement of agriculture than was the Empire, and as it has at its disposal resources that are incomparably greater, it has been able to show itself even more generous. Under the Government of M. Eduardo Ribeiro, of which Colonel José Ranalho continued the traditions, liberal grants have been made with a view to encouraging agricultural production.

The law No. 25 of the 25th Oct. 1892, in particular, authorised the Government of the State to make loans to farmers under certain conditions. One of 20 *contos* was granted to M. Carlos Augusto da Fonseca, and eight of 5 *contos* each to the following:—José Pereira Vidal, Augusto Berger, Joaquim d'Oliveira Martins, João Antonio Rabello, Joaquim Damasio de Freitas, Carolino A. Soares, and D. Antonio Cavalcante, José Martins de Barros, and D. Umbelina Fernandes Martins.

A contract was made for the introduction of Japanese immigrants, but they did not come, and the contract has lapsed.

A more serious attempt is now being made with immigrants from the State of Ceará, for whom the Amazonian Government has founded agricultural colonies which are managed according to the following instructions of the 25th June, 1898:—

Preference is given to immigrants who are already engaged in agriculture and cattle breeding, and amongst those especially to such as are married and have families. The number of unmarried immigrants must not exceed 25 per cent. of the total of each convoy. Before embarking, the emigrants sign an engagement by which they are pledged to settle in the colony and to work the allotment of land which has been granted to them.

To those immigrants who do not intend to settle in the agricultural colonies of the State, but go there simply to work at the extraction of forest products, the Government only grants free passage to Manáos.

To the others who are willing to devote themselves to agriculture in the colonies, of which one alone is established, and that at the very gates of the capital, the State grants special favours: free passage to Manáos, including embarkation at Fortaleza, the capital of the State of Ceará, and debarkation at Manáos; free transport to the colony; they are fed and clothed by the State for three months, and so long really as they do not abandon their work in the colony or upon their plot of ground; each man receives a piece of land measuring at least 20 hectares, with a small cottage to house him and his family; of this ground marked out and measured, at least 5 hectares are prepared in advance for cultivation; seeds, tools, and agricultural implements necessary for their work are supplied gratis, and these men are employed in preference to others for the necessary work of parcelling out the colony. The immigrant is no sooner installed than he receives provisional title deeds of his property (at least 20 hectares), and these title deeds are never withdrawn from him unless he abandons the colony before it has become emancipated from Government protection.

Three years after its establishment each colony is emancipated from this protection, and every colonist who has his land effectively cultivated then receives his definite title as proprietor. On the other hand, those lots which have not been brought under cultivation will be sold by auction. If, however, before the three years have expired, the head of the family dies, the Government will deliver the title of definite ownership to the heirs at their request, provided their plot of land has been regularly cultivated.

Moreover, if the colony be so ambitious as to require more complicated industrial apparatus—furnaces, retorts, workshops, machines, etc.—the State will provide them upon most reasonable conditions.

This attempt is excellent, and, to make it perfect, all that is necessary will be to replace the word “Cearense” by the word “Brazilian,” extending these favours to the sons of all the other States of the Federal Union.

The local Government, as will be seen, neglects nothing in order to encourage regular agriculture.

If there is any objection to be made, it is certainly not on the score of having misjudged the importance of agriculture in such a country as this; it would be rather on the fact of not having taken more radical measures still, in order to remedy the evil.

In such a matter, the difficulty lies not in voting funds, but in regulating their employment under the most profitable conditions.

## CHAPTER V

MEANS OF LIVELIHOOD: *Industry*.—How it is in decline—Encouragement given to it by the local Government—Forest products—The *Tucum* fibre—The *Piassara*—The *Cumarú* or Tonquin bean—The *Puxury*, Cloves, Guarana, Sarsaparilla, Quinquina, Oil of Copaiba, Brazil Nuts, the Cedar—A quotation from Wallace.

WE have just seen how agriculture is neglected in this State. In spite of the richness of the soil and the small amount of manual labour necessary to render it productive, Amazonia still awaits pioneers to work the land and make it yield up its wealth.

Industry properly so-called is no less neglected than agriculture in this country where nature is so prodigal, and where the wants of life can be satisfied almost without effort.

There are many reasons for this double phenomenon that we trust is but transitory.

In the first place the number of inhabitants is small, for, according to the official census of 31st Dec., 1890, the density of population per square kilomètre was hardly 0·08, whilst in Norway, which is relatively the most thinly populated country in Europe, the density is six inhabitants per square kilomètre.

We must also take into account the facility with which the inhabitants are able to obtain either at home or from abroad all the necessary provisions they require with the money made from the sale of indiarubber. They need but appropriate the wealth of their rivers and forests, and they can import from Europe or North America everything they desire, thanks to the great profits from indiarubber. Their incomparable system of river navigation and their vast *seringaes*, instead of stimulating their

efforts, impede them by offering too many facilities and means of supplying their wants elsewhere.

But that which above all diverts men's thoughts from improved industry and regular agriculture is that natural thirst for gold which has taken possession of the greater part of the population, and forces it down into the depths of the forests or towards the furthest rivers in search of the marvellous tree from which runs the sap of indiarubber.

The local Government, wishing to struggle against this disastrous tendency, has tried over and over again to restore this army of workers to more settled occupations, but every measure that has been taken to encourage the industry of the country has been very nearly useless.

Not to go back earlier than 1869, a President, whose administration has left lasting traces, M. João Wilkens de Mattos, stated in one of his reports that the province had just expended the sum of more than £2000 in loans to a brick and tile factory, a steam sawmill, and other enterprises of less importance.

Since that time we find in the collection of laws voted by the Provincial Legislative Assembly and the Congress of State, and sanctioned by the different Presidents and Governors, a series of subsidies or loans granted for similar purposes.

The subsidy law of 20th May, 1871, authorised the payment of the machinery ordered for the brick and tile works of M. F.-A. Monteiro-Tapajoz: and that of 30th April, 1872, granted the sum of £200, free of interest, to MM. Gonçalves do Nascimento also for a brick and tile factory at Silves.

On the 20th May, 1875, a sum of £600 was charged to the budget of expenses to cover the purchase of machines made by MM. J. Alves da Silva Brothers for their tile works.

On the 15th May, 1879, a loan of a similar amount, free of interest, was made to MM. Soares Bello for the erection of a steam sawmill.

By a law of the 16th June, 1883, an establishment for making machinery for naval purposes at Manáos, being recognised as of public utility, received a guarantee for twenty years of 7 per cent. interest upon a capital of £15,000. And since then other similar sums have been voted.

In spite of all these bounties, and one might say, in spite of all capital that has been sunk, industrial enterprise remains in an unsatisfactory state.

In order that the Amazon may enter upon the road of progress and ensure itself an industrial future, it seems to us that the impulse and management must come from a kind of superior genius. The day when a man, in possession of sufficient capital and a nucleus of workmen gifted with a tenacity proof against everything, comes and establishes himself in the midst of the natives and the seekers of indiarubber, firmly resolved to devote himself exclusively to these two branches of civilised production—first of all agriculture, and then industrial works—on that day the much-desired economic revolution will be initiated in this State; and from that day forth this near neighbour of the United States, this legendary El Dorado, will begin to astonish the world by its gigantic productions.

But, until this great colonist is born or is revealed, let us pass in review the principal products which are now the most important of the Amazonian region.

We remember to have read in the great books of our childhood this historic axiom—"Humanity has passed through three great phases: savage life, pastoral life, and agricultural life."

The inhabitants of the Amazon have introduced a fourth amongst these side factors of civilisation—"forest life."

They are in fact foresters—maybe the first foresters of the New World. If that does not constitute their forest title to glory, it at least secures their right to fortune.

From the forest they draw their revenues, and the forest is as yet far from having yielded up all its resources. It is thence they obtain the *tucum*, the *piassava*, tow, *cumarú*, *purury*, cloves, *guarana*, sarsaparilla, *quinquina*, etc., without speaking of indiarubber.

The *Tucum* is the fibre of a great palm (*Astrocaryum vulgare*), which grows freely in this country, and is of exceptional utility. Its timber may be employed for ordinary building purposes; and its fruit, which is agreeable to the taste, furnishes an excellent oil for illuminating and industrial uses. As to the fibre, it is

employed in the manufacture of a great number of household articles, such as baskets, boxes, mats, hats, nets, etc., and has been for some years the object of considerable commerce. During the fiscal year 1881-82, 876 lbs. of these filaments were exported. Since then the production has diminished considerably, and in 1895-96 not more than 450 lbs. were exported.

The *Piassava*, which is derived from the bark of the palm we have already described, furnished for exportation in 1894-95 more than 624,000 lbs., of a value of 136 *contos*; but in 1895-96 only 584,262 lbs., of a value of 78 *contos*, were exported. It is with this substance that brooms and brushes are manufactured. The species *Leopoldina piassava* also has filaments that can be used in the same way, and the fruits of these two species contain an oily substance in great quantity. The fibre is also exported in the form of tow—4275 lbs. in 1895-96.

The *Cumarú*, fruit of the *Dipteria odorata* or *Coumarouna odorata*, yields by extraction an oil which is used in perfumery and pharmacy. In 1895-96 2000 lbs. of cumarú beans were exported from Manáos, and over 18,000 lbs. from Parintins, Itácoatiára, and Maués.

The *Puxury* (*Nectandra puchary*), also employed in medicine, is likewise exported to a limited extent.

The Clove (*Carophyllos aromaticus*), which is the undeveloped flower of the clove tree, is becoming more and more neglected. The low price of this spice has caused it to disappear for the past twenty years from our table of exports.

*Guarana* is extracted from the seeds of a climbing shrub of the Sapindacean family, of which we have previously spoken. It is found wild in our forests, but is cultivated by the natives of Maués, where it produces the seeds at the end of from three to four years.

The fruit is gathered generally in November, and has an exterior covering containing the pulp and the seeds, which in their turn are enclosed in an inner covering. One man can prepare, during the season, from 150 to 500 lbs. of Guarana, according to his aptitude. Dr. Stenhouse, who has analysed this substance lately, has found in it a quantity of *théine*, more considerable than that contained in tea, coffee, and *maté*, and he

has noted the results from his experiments in the following interesting table, which reverses the generally accepted ideas:—

Roasted coffee, - - - - -	1.00	per cent of théine.
Maté, - - - - -	1.20	„ „
Leaves of the coffee plant, - - - - -	1.26	„ „
Black tea, - - - - -	2.13	„ „
Guarana, - - - - -	5.07	„ „

The exportation from Manáos of this product is insignificant: 174 lbs. in 1895-96; but from Parintins and Maués, during the same year, 47,020 lbs., of a value of 197 *contos*, were exported.

Sarsaparilla belongs to the family of endogenous plants known to botanists under the name of *Smilacææ*, and to the genus *Smilax* in which are numbered hundreds of species. The sarsaparilla of Brazil (*Smilax Syphilitica*) shares the diuretic and sudorific properties of its congeners of Peru, Mexico, and Jamaica. Although in general it is not so highly esteemed as that of Honduras, it is very much employed in pharmacy. Commerce has for a long time taken possession of the adventitious roots of this perennial sarmentous climbing plant; they are vermiform and of the size of a goose's feather. Of late years, on account of the low price of this article, its production in the Amazon has much diminished: from 90,000 lbs. exported in 1880-81, it has fallen to 3472 lbs. in 1894-95, and to 4806 lbs. in 1895-96.

M. de Jussieu has taught us to recognise in the *Quinquina* a cousin of coffee. Both, in fact, form part of the family of the *Rubiaceæ*, in spite of the researches to which Lindley devoted his attention. The bark of *Cinchona* is, without doubt, a febrifuge of the first order, and Peru, Bolivia, and Amazonia, as well as other countries, produce it. The *remijas* of Brazil are grey, yellow, and red. The grey are covered by their rind, and are generally round; they are produced from the young branches. The yellow are in flat or rounded bark, and the red come from the trunk of the tree and its big branches.

During the year 1878-79 the Amazon only exported 150 lbs. of quinquina. In 1881-82 it increased to 9088 lbs. During the year 1883 a single ship from Manáos, at the end of November, carried a cargo of quinquina of a value of over £20,000.



However, we have reason to believe that a great part of this passed in transit only, and was of Peruvian origin.

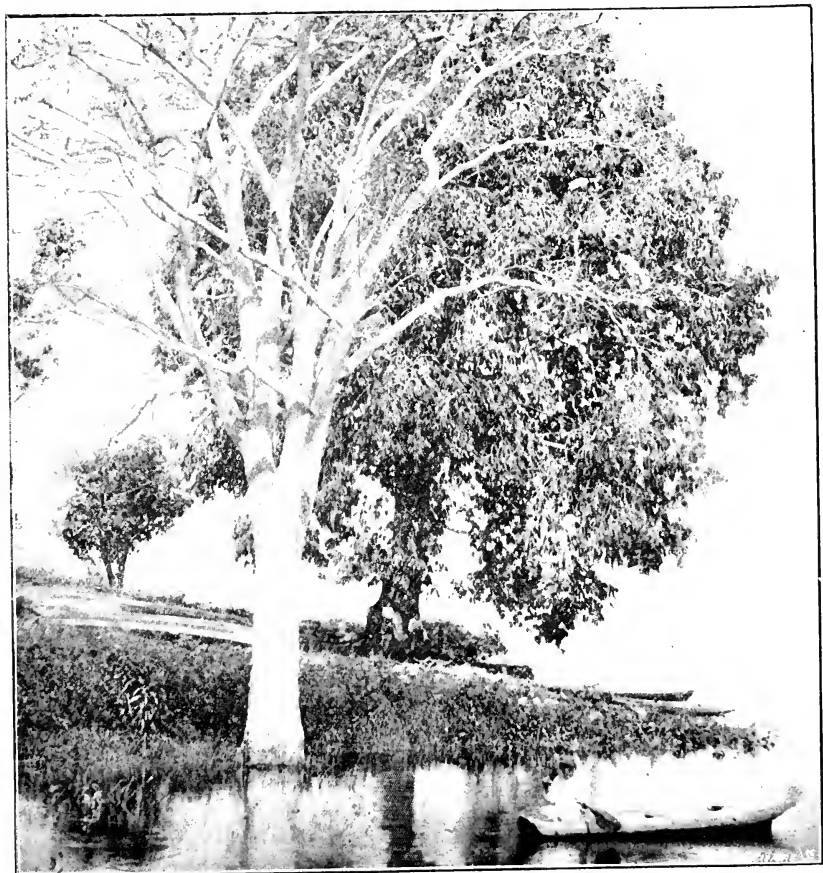
The State of the Amazon may be considered as the central pharmacy of the entire world. No other country produces in such abundance the remedies for perhaps every ailment.

Besides the products that we have just noted and which are obtained from the forests without culture, it exports also the oil of *Copaiba* or *Copaiva*. This medical balsam is produced by a tree of the Cisalpine division of Leguminous plants. The *Copaifera Nitida* is a fine tree of from 56 to 72 feet in height and 50 to 60 inches in circumference. Between 1876-77 and 1882-83 its exportation amounted to 293,748 lbs., representing an annual exportation of 48,958 lbs. It has diminished since then, as in 1894-95 it was only 18,976 lbs., of a value of 11 *contos*; in 1895-96 it rose to 29,812 lbs., of which 5804 lbs. were from Parintins and Itácoatiára, of the value of 30 *contos*.

But the forest product whose exportation is the most considerable, after of course indiarubber, is the Brazil nut, the fruit of the Brazilian chestnut tree, a Myrtacean of the genus *Bertholletia Excelsa*. It is a splendid tree of more than 72 feet in height and from 6 to 7½ feet in diameter, growing on firm ground in rich and low soil. The nuts, to the number of sixteen or eighteen together, are enclosed in a round shell, hard and black, similar to the cocoa nut but more wrinkled. These great shells fall of themselves when the nuts are ripe, and are gathered in January and February. The wood of the tree, hard and greyish, is excellent for ordinary building as well as for naval construction; the wrinkled bark produces tow; the nuts, besides being eatable, yield an oil very sweet and agreeable in taste. The produce of these nuts or toucas is 67 per cent. In 1894-95 the exportation amounted to 111,424 lbs., of a value of 887 *contos*; and in 1895-96 it rose to 168,396 lbs., of value 1414 *contos*.

Although the exportation of the various kinds of timber growing in this valley is not very considerable, we may allude to that of cedar, which amounted to 36,928 lbs. in 1894-95, and to 39,744 in 1895-96.

All these forest products constitute a natural industry which demands scarcely any preparation, and which nevertheless gives very excellent results, as we have seen. What would it be then if this State were, we will not say entirely, but even partially,



Brazilian Chestnut Tree and *Taperchaseiro* (Amazon)

submitted to a rational mode of cultivation? What wonders would this highly favoured land not bring to light!

In order to achieve this it would be necessary to overcome both European prejudice, which represents this region as a kind

of impenetrable wilderness, and the mistaken tendency of the inhabitants to concentrate all the vital force of the population upon one single product—indiarubber.

Let those who fear the warmth of a tropical climate ponder over these words of Wallace,<sup>1</sup> who was the companion of the regretted Henry Bates, and who subsequently explored alone the Rio Negro and the Rio Uaupés:

“It is a common error, says the English naturalist, to believe that in tropical countries, luxuriant vegetation annihilates the efforts of man. On the contrary it is just the reverse. Nature and climate are nowhere so favourable to the labourer.”

And he adds, speaking with authority:

“I affirm, without fear of being gainsaid, that here the virgin forest can be converted into rich pasturage and meadows, into well-cultivated fields, gardens, and orchards, containing every variety of product, and all this with less work, and what is still more important, in half the time it would take with us, where, moreover, the earth has been cleared for a long time. Every tree planted there would attain great dimensions in five or six years, and many amongst them would bear fruit at the end of two or three years. Coffee and cocoa yield abundant harvests with very little care. Pineapples and water melons need but to be planted, and as soon as the fruit is ripe it is gathered, no attention being paid to the plants in the meantime. Indian corn and rice can be treated in very nearly the same manner. Onions, beans, and many other vegetables thrive there in a surprising fashion.

“It is never necessary to till the soil or to enrich it with manure, but if this were done, it is probable that the results would be even greater. I can affirm, without hesitation, that two or three families composed of half a dozen working men and boys, who could bring in goods a capital of £50, would be in possession of all these advantages at the end of three years. Supposing that they grew accustomed to use manioc flour or maize, they would have nothing to buy except clothes. They would be abundantly supplied with pork, beef, mutton, fowls,

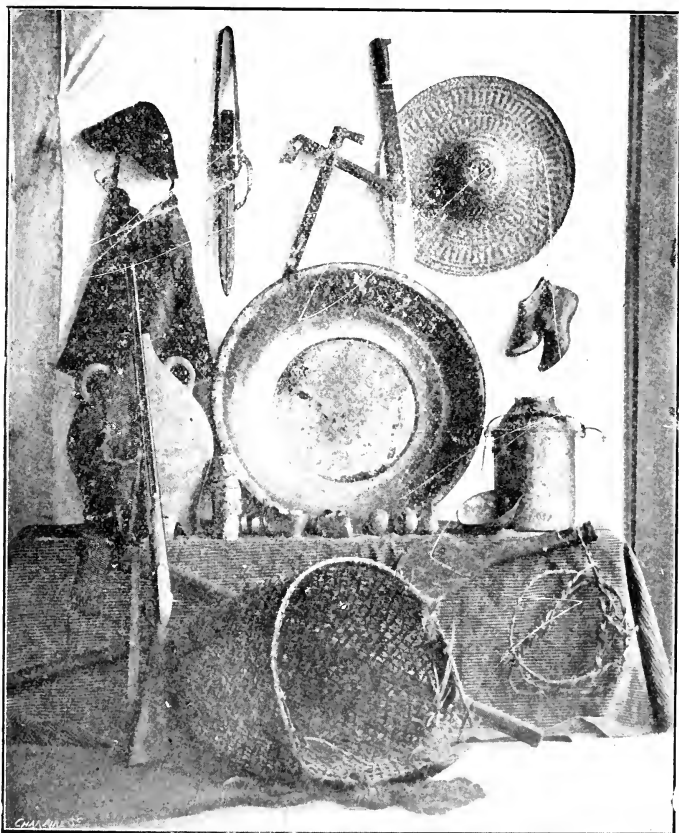
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<sup>1</sup> A. R. Wallace, *Travels on the Amazon and Rio Negro* (1848-49). London, 1853.

eggs, butter, milk, cheese, coffee, cocoa, molasses, sugar, delicious fruits, turtles and turtles' eggs, and an immense variety of game would provide a great number of dishes for their table. Vegetables also would not be wanting. They would have fruit, wild or cultivated, in an abundance, beyond their dreams, and of a quality such as riches alone could procure for them in other countries. Their material wants once satisfied, what beautiful gardens and what shady walks would they not be able to design! How easy it would be to construct natural conservatories under the trees in the forest, and to collect there all the rarest and most beautiful specimens of orchids in the neighbourhood! What grand and beautiful avenues of palms would they not be able to plant! What splendid creeping plants would they not find to cover the walls of their houses and to garnish the arbours of their gardens!"

Such a picture, however poetical it may appear, is not in the least overdrawn. It is a faithful description of the kind of happiness that awaits the colonist of the future.





Trophy of a *Seringueiro*

## CHAPTER VI

MEANS OF LIVELIHOOD: *Industry* (continued).—The Tree of Life and Death—Different species of indiarubber—What it is—How it is extracted—Transformation on the spot—Indiarubber from a scientific point of view—Superiority of the Amazonian species—The applications of indiarubber—Its consumption—Price on the spot and abroad—The European colonies and indiarubber. Exploitation in the country—Development of the production—Export duties—Productive districts—Amount of indiarubber exported from the Amazon, compared with the exportation of all the products of the neighbouring countries—The production is entirely due to native labour—Direct exportation for abroad—Official value of the exportation—Total exportation from Manáos—Consequences of the development of the exportation.

INDEPENDENTLY of the means of livelihood and the sources of revenue, relatively not considerable, that the Amazonian population draws from forest and agricultural products, there exists in this State a master industry which has killed, so to speak, all the others, and which almost alone goes far towards supplying the natural wants of the inhabitants. We refer to the indiarubber industry, and we fear that if it continues to be carried on, as it is now, to the exclusion of all others, it will become at length a cause of moral retrogression for the country and a source of disappointment to those who have given themselves up to it.

Indiarubber is the Tree of Life and Death planted by nature in the Amazonian Eden. We have no wish to turn our compatriots away from this legitimate and remunerative source of wealth, but we desire only to obey sound economic principles, based upon the experience of other nations, and to ensure a wiser use of the productive forces of our country. We wish equally to write nothing that might encourage European

emigrants to come to Amazonia in order to exploit this natural wealth, for it is the source of many obstacles, in the way of obtaining the real riches that might be produced by regular cultivation of the soil.

This chapter, therefore, aims only at completing the picture of the country which we have undertaken to paint.

The elastic matter known in international commerce under the name of *caoutchouc* or indiarubber is extracted from several families of plants, of which the number increases as this milky sap becomes more extensively used.

India produces the *Ficus elastica*; Java other varieties of *Ficus*: *Ficus radula*, *F. elliptica*, etc.; there are also the *Urostigma elasticum* of Assam, the *F. Vogeli* of Konakry; and the *F. Rubiginosa* of Australia; South America produces the *Ficus primoides*. Central America and certain parts of South America produce a sort of caoutchouc, obtained from the *Castilloa elastica* or *Ulé*, from the *C. Markhamiana*, from the *Artocarpus integrifolia*, and from the *Cecropia peltata* of the Artocarpus family. To the family of the Asclepiades belongs the *Periploca græca* of the Reunion Islands. In Peru, amongst others, the *Syphocampylus* grows, which is also found in the Upper Amazon, but it has been almost entirely neglected until now. The family of the Apocynæ is one of the richest in rubber-producing trees; and it is to this that belong the *Vahea gummifera*, the *Vahea Madagascariensis* of Madagascar, Diégo Suarez, and the Reunion Islands; the *Landolphia Kirkii*, the *L. owariensis* and the *L. Klainci* of Gabon, Zanzibar, Casamence, and Fernan Vaz; the *Urceola elastica* and the *Willughbeia edulis* of the East Indies; the *Collophora utilis* (*Sorra* of the Brazilians), the *Hancornia speciosa* (*mangabeira*) and the *Cameraria latifolia* of South America. The caoutchouc of Fort-Dauphin, *Euphorbia* sp.; of Fafetone, *Calotropis Procera*; of Lagos, *Kickria Africana*; and of Tolima, the *Sapium Biglandulosum* are also known. In some regions in Brazil, principally in the State of Cearà, an Euphorbiacean, the *Maniçoba* or *Manihot glaziovii*, is used now with much success. It is a tree with a farinaceous and swollen



root, and is called the *Cearà*, from the State which chiefly produces it.

However, it can be stated that the Heveæ, above all, are the trees that present the finest qualities and the greatest quantity of the elastic gum now on the market throughout the world.

Amongst these Heveæ the following may especially be noted: *Hevea apiculata*, *H. benthamiana*, *H. brasiliensis*, *H. discolor*, *H. guianensis*, *H. lutea*, *H. membranacea*, *H. pauciflora*, *H. rigidiflora*, *H. spruceana*, etc.

Caoutchouc—gum elastic or indiarubber—is called in Brazil *seringa* or *borracha*. Father Manoel da Esperança, who long before La Condamine had found it in use amongst the Cambebas Indians, called it they say by the singular name of *seringa*. Having remarked that these intelligent savages used it to make bottles and bowls in the form of a syringe, the good Father called to his aid his figures of rhetoric, and devised the name of *seringa* for the substance which served for the fabrication of these articles of domestic use. Thence came the name of “*syringers*” or “*seringueiros*” by which the extractors of the milky sap are still known in Amazonia, and that of *seringues* given to the places where they extract this product by incision.

The name of caoutchouc, by which it is known in France and other European countries, was due to the astronomer De La Condamine. In a memorandum presented to the Académie des Sciences in Paris in 1745 on his return from South America, where he had been sent in order to determine the length of a degree on the meridian, he informed that learned company that the Omagua Indians on the Amazon, on the south-east of Quito, gave the name of “*cahuchu*” to a resin drawn from the tree *Hyévé*; from whence is derived the *Hevea Guianensis*. De La Condamine, therefore, may be considered to have introduced caoutchouc into France. The English “*Indiarubber*” is later.

Caoutchouc is contained in the milky sap of the trees that we have just mentioned, and of several others that are found in the Amazonian forests, where they grow wild. It occurs in the sap in globular form, and these drops are suspended and resemble,

when they are removed, the fatty globules of milk, and are composed of vegetable albumen.

In order to make the gum run out, the tree used to be tied round with bindweed, attached obliquely at 5 or 6 feet from the ground, and small incisions were made in the bark above this.



*Seringueiro* in working dress

The sap, in running out, finding an obstacle in its way, all flowed to the same point, where it was collected in an earthenware vessel.

This primitive and barbarous system, called *arrôcho* in the country, has been abandoned for many years in favour of

that of *tigelinhas*, or little goblets, which is now in use in Amazonia. This system is carried out in the following manner: the workman, the *seringueiro*, leaves his hut in the morning with all the implements of his trade, having previously carefully studied the ground and singled out the rubber-bearing trees



*Seringueiro* in search for fruits of the Palm tree  
for smoking the rubber

that are scattered pell-mell with others in the spot where he is working. Upon this ground are traces of paths—*estradas*—often zigzag, lined right and left with the precious trees. Arrived upon his *estrada*, he proceeds to cut, by means of an axe or

*machadinha*, upon the trunk of each rubber tree, right through the bark, small incisions of about an inch usually in length. On the lower side of each of these cuttings he fixes, by means of some semi-plastic clay, a small tin goblet or cup. This operation generally takes place before eleven o'clock. Towards



*Seringueiro* bleeding the rubber tree

noon the goblets are nearly full of the viscous juice. They are then removed from the tree and their contents emptied into a pail, which the *seringueiro* carries to the terrace of the *barracão* or hut.

The extraction being terminated, next comes the coagulation, which is effected by smoking.

Upon the terrace there has been already prepared a *fumeiro*, or smoking apparatus, a kind of reverberatory oven, furnished at its upper extremity with a flue or chimney up which passes the very abundant smoke which is caused by burning the fruits of certain kinds. On the Rio Purús, the fruit of the Urucury (*Attalea excelsa*) is employed for this operation; on the Rio Autaz, that of the palm yuáuassú (*Manicaria saxifera*); at Manacapurú on the Rio Jahú and in other places where these two palms are rare, small branches of certain trees, such as the *carapanáúba* and the *paracáúba*, are burned.

The fire lighted, the seringueiro takes a sort of palette or large wooden spatula, which he dips several times into the pail, where the sap, which is soon to become the indiarubber of commerce, has the appearance of thick cream. He then exposes his mould to the action of the column of smoke for a few seconds. The liquid part quickly evaporates and a thin layer of gum elastic forms upon the mould. The operation is repeated, and successive layers are obtained, elastic and regular stratifications of a certain thickness and without the slightest impurity. As soon as he has obtained the quantity required and determined by custom, he cuts the ball of caoutchouc at the top with the moistened blade of a knife, gives two taps on the sides of the mould, and removes the thick mass of rubber that has just coagulated, and exposes it to the sun, where it acquires the blackish colour it has when it is placed upon the market.

If the workman has done his work properly, the indiarubber which he has just produced should contain no foreign matter, and forms the *fine* quality. If it is not quite pure, it forms the *medium* quality. The waste becomes the *seruamby*.

Certain species of trees cannot be worked in this manner, for after the incision they would be attacked by worms and would die. It is necessary, then, to cut them down and collect the sap in a pipe, where it coagulates and becomes the *caucho*, an inferior

quality which is only collected on the Amazon occasionally. As a rule, the Amazon claims to produce none but the superior qualities.

All these processes are very simple. It is easier to make indiarubber than butter or cheese, and a child is able to pursue this rudimentary industry.

Of late years there have been thoughts of using not only the milky sap of the *Siphonia*, but also its leaves, from which could be extracted an elastic matter having the same properties. An English company engaged in the gutta-percha trade, by a process of manipulating the leaves, is making experiments in this direction, which, if they succeed, would entirely transform the industry.

However this may be, we have no doubt that this product will soon be found capable of being properly dried and refined on the spot. Why should not factories be erected in the neighbourhood of the raw material, to manufacture it there? Were it to exploit only the Brazilian markets, its field for activity would be already vast enough.

Indiarubber from the Amazon pays exportation duties amounting on an average to nearly 20 per cent. It is necessary to reckon the expenses of shipping, insurance, transport, and of landing at the port of arrival in Europe. In some countries it has to pay entrance duty. Then there are the profits of middlemen. Once manufactured, it has to pay new duties, the carriage and the insurance to Brazil, which, after having produced the raw material, buys it back again, transformed, with an overcharge of more than 100 per cent. This margin is large enough to tempt European capitalists who would wish to erect factories on the spot.

Nearly forty years ago a Mr. Strauss took out a patent for a system of coagulation by means of a solution of pumice stone (bisulphate of potassium and alumina). The Brazilian Government bought the patent and made it public property. Indiarubber thus obtained takes a reddish yellow tint. In 1883 M. Macedo Bentes of Pará presented some specimens of rubber prepared according to a process for which he obtained a patent. We have had an opportunity of seeing these samples which

seem to have solved this triple problem: expulsion of damp, which uselessly adds to the weight of the rubber; absence of foreign matter, which diminishes its market value; and facility of transport, for it was prepared in the form of leaves of six centimètres (about  $2\frac{1}{2}$  inches) in thickness. We ourselves obtained a *diplôme d'honneur* at the Universal Exhibition at Antwerp in 1885 for introducing this system. Since then it has been almost entirely abandoned, the manufacturers fearing that this mode of preparation deprived the indiarubber thus obtained of a portion of its elasticity.

Indiarubber is, as is well known, a soft material, flexible and elastic at a temperature of  $10^{\circ}$  Cent. =  $58^{\circ}$  Fahr. Below zero (freezing point of water) =  $32^{\circ}$  Fahr., it loses its elasticity and becomes hard without being brittle or powdery. It is then said to be frozen. It has the immense advantages of being impermeable to water and almost unaffected by the action of the air.

When it is not dried by the smoke which is used in its preparation, as we have seen, it is white and semi-transparent. In pressing against each other two surfaces of freshly cut indiarubber they easily adhere. It burns with a bright and smoky flame with a very disagreeable odour. The Indians used it formerly as an illuminant. If it is submitted to a temperature of  $235^{\circ}$  Cent. =  $445^{\circ}$  Fahr., it melts; and if distilled in a closed vessel it furnishes from 88 to 92 per cent. of an oil containing diverse carburets of hydrogen.

It swells and becomes soft in boiling water, but is quite insoluble in this liquid or even in alcohol. It can, however, be dissolved in turpentine, benzine, purified petroleum, chloroform, and above all in sulphuret of carbon (ether). The addition of alcohol to a solution of ether determines, for testing purposes, the presence of indiarubber by a milky precipitate, analagous to the natural sap, which, by the way, can be preserved for a long time in solution with turpentine.

Up till now it has not been found possible to dye it except with alkanet and certain aniline dyes.

The chemical constitution of the milky sap which furnishes rubber and holds it in suspension is very complex, and resembles that of resins and essences. According to Professor Faraday it presents the following composition:—

Caoutchouc, - - - - -	31·70
Vegetable albumen, - - - - -	1·90
Waxes, - - - - -	Traces
Bitter azotic matter soluble in water and insoluble in alcohol, - - - - -	7·13
Matter soluble in water and insoluble in alcohol, - -	2·90
Acidulated water, - - - - -	56·37
	<hr/>
Total, - - - - -	100·00

As to indiarubber itself, it seems to be composed of carburets of hydrogen. It contains 87·2 per cent. of carbon and 12·8 per cent. of hydrogen. Its density is equal to 0·925.

This applies to indiarubber in general. That from Amazonia in particular owes its superiority, not only to its mode of preparation, but still more to the fact that it is more elastic than that produced in any other country. It also contains the least proportion of water and foreign substances, and undergoes the least loss in preparation, its specific gravity being the smallest of all.

Its great elasticity is known to every manufacturer.

The proportion of water and foreign substances that it contains is only 68·30 per cent., whilst that of the *Ficus elastica*, for example, is 90·43 per cent., so that the milky sap of the Amazonian *Siphonia* contains 31·70 per cent. of indiarubber proper, whilst that of the ficus only contains 9·37 per cent.

Lastly, in the preparation of the raw material, the Amazonian rubber loses barely 12 per cent., whilst the loss in all other kinds varies between 17 per cent. for the fine qualities from Loanda, and 35 per cent. for that from Borneo. Even the waste, the *sernamby* of our production, loses only 25 per cent., whilst that of Madagascar loses 28 per cent., and that of Gabon 35 per cent.

Indiarubber is a bad conductor of heat and a non-conductor



of electricity. Hydrogen gas will go through it in course of time. Nitric and sulphuric acids attack it. These physico-chemical properties of caoutchouc have been discovered little by little, and have much contributed to enlarge the field of its applications.

The first uses of it were, in fact, very limited. It served to rub out pencil marks and to clean paper. It was only by slow degrees that men conceived the idea of utilising its two great qualities, viz., its elasticity and its impermeability, without mentioning its valuable negative property of being a non-conductor of heat and electricity.

As early as 1785, Charles, the French physicist, who was the first to apply hydrogen gas to balloons, coated his balloon with a layer of caoutchouc dissolved in turpentine. From 1790 it began to be spread on tissues and to be made into elastic springs. In 1820 Nadler mixed thin filaments of it in the wool itself of tissues, after which Mackintosh fabricated the famous capes that bear his name by sticking two pieces of merino together with a layer of gum elastic between them.

The field was open. Since then, the employment of this article has been very considerably extended, so that to-day the Amazonian sap is used for the manufacture of gas tubing, hose-pipe for watering, rope, cords, plaques, instruments used in surgery, chemistry, photography, electricity, telephony, telegraphy, etc., etc., air balls for children, varnish of all kinds for maps, etc., sponge bags, elastic tissues and stuffs, braces, garters, abdominal belts, and such like surgical and medical appliances etc., impermeable tissues, life-saving apparatus, and a quantity of other objects impossible to enumerate.

Caoutchouc furnishes likewise some oils. Painting on canvas is rendered permanent and nacreous by a mixture of this substance, which gives besides an adhesive glue known under the name of marine glue.

Great progress was made in this branch of industry in 1842, when two Englishmen, Broding and Hancock, discovered that indiarubber, combined with a small quantity of sulphur, acquired the property of preserving its elasticity by adapting itself to

various temperatures. Indiarubber thus treated is called vulcanised.

Thanks to later improvements, introduced by Ludersdoff, Gérard, Parkes, and many others, there are now made vases impermeable to water, steam, etc., printing rollers, conduit pipes



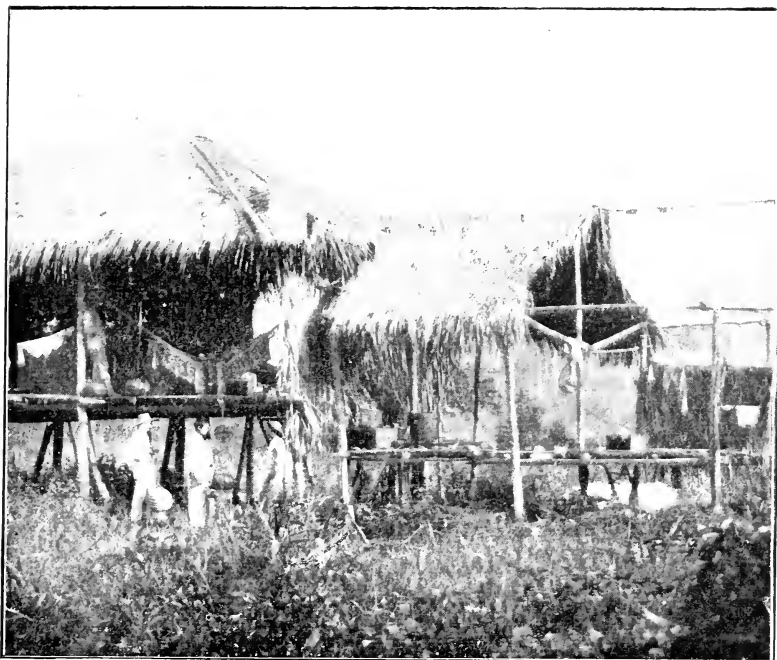
*Seringueiro* walking through the *Seringal*

and tubes, railway buffers, billiard cushions, cigar cases, tooth-brushes, children's toys, tobacco pouches, boots, cushions (air and water), driving bands for machinery, knee-caps, washers for safety valves, etc., imitation leather, and diverse articles

of furniture, without speaking of carpets made of vulcanised indiarubber, cotton waste, and cork, etc., etc.

The use of indiarubber for tyres of wheels, and the wonderful popularity of the modern cycle, not to mention automobiles or motor carriages, have developed the consumption of that article in a most extraordinary manner of late years.

In 1897 the United Kingdom alone imported from all the rubber-producing countries—America, Africa, Asia, and Polynesia



*Seringueiros* bringing the rubber to the Proprietor

—15,000 tons of caoutchouc, of a value of £5,000,000 sterling, Manchester being the principal centre of consumption. During this year the German industries absorbed 9000 tons. These two figures will give some idea of the growth of the consumption, which now amounts to about 50,000 tons per annum.

Let us pursue our history of the utilisation of this milky sap.

In 1848 Charles Goodyear, a North American, recognised that if the proportion of sulphur were increased, the elasticity of the indiarubber diminished: hardened rubber was then invented under the name of vulcanite.

Indiarubber, reduced to a paste at a temperature of 150° Cent.=302° Fahr. and mixed with a fifth of its weight of sulphur, acquires, in fact, the hardness of ebony and the polish of tortoise shell. In that form it is employed for articles of furniture, mouldings, door handles, gun and pistol stocks, knife handles, frames, etc.

By mixing with this paste certain mineral colours, in the form of powder, not susceptible to the action of the sulphur, imitations of varieties of marble, agate, and valuable stones can be obtained.

Such are the enormous strides that have been made with this material, which brings in millions of pounds, not only to the whole valley of the Amazon but into the cash-boxes of foreign manufacturers in England, the United States, France, Germany, Belgium, and elsewhere, for it is exported from Brazil in the raw state: it is raw material which the foreigner transforms, and which he sells back again to us after having manufactured it.

From 1825 to 1840 indiarubber from the Amazon was prepared for exportation in the form of thick shoes. Foreign buyers complained of this, and this clumsy form disappeared about 1855. At the present time rubber is exported either in leaves or in the form of large, egg-shaped balls, and it is classed in the countries of its production, in four principal categories, viz., the *fine* (*finá*), the *medium fine* (*entre-fina*), the *sernamby*, and the *caucho*.

These four sorts fetch various prices, which have risen during the last seventy-five years, since 1825, in the proportion of 300 to 3100, Amazonian rubber obtaining always a higher price than that of any other country. The superiority of this rubber over that of other countries in America, as well as over that of India, Africa, and Oceania, is due to the causes we have already stated.

On the market at Manáos, as the exportation duties have to be collected *ad valorem*, according to the variable value of this product, a commission has to fix the price each week, and, in so doing, it is guided by the information derived from the largest export houses, *i.e.*, information from those most interested. This weekly price establishes the value of each of the four sorts, and the differences between these four qualities vary enormously. In June, 1895, for example, between the *fine* rubber of the first quality and the *sernamby* or third quality the difference was from 28 to 29 per cent., and the difference between the fine and the fourth quality or *caucho* was 41 or 42 per cent. In March, 1896, the difference in price between the first and third and fourth sorts was respectively 32½ per cent. and more than 52½ per cent. On the other hand, the difference between the price of *fine* and *medium fine* (*entre-fina*) is always small, and varies between 5 and 8 per cent.

The price of fine rubber at Manáos in March, 1896, was 6200 *réis* per *kilogramme*; in March, 1897, 7000 *réis*; in March, 1898, 9350 *réis*; and January, 1899, 10,000 *réis*. And on the 11th January, 1899, the prices in Manáos were as follows:—

Fine, - - - - -	10,000 <i>réis</i> per <i>kilog.</i>
Medium Fine, - - - - -	9,000 „
Sernamby, - - - - -	7,700 „
Caucho, - - - - -	6,500 „

Upon the English markets the first quality, which is called *fine Pará rubber*, fetched 3s. 7d. per lb. at the commencement of 1898. The prices rose gradually, so that in July it was at 4s. 5d. per lb. At the end of the year it fell to 4s. 1d., but from the 1st to the 10th February, 1899, the following prices ruled on the English market:—

	S.	D.	S.	D.	
Fine Pará rubber, - - - - -	4	2	to	4	2½ per lb.
Negrohead (Sernamby), - - - - -	3	7	„	3	8½ „
Columbian, - - - - -	3	4	„	3	9 „
Ecuador, - - - - -	3	0	„	3	8 „
Central American, - - - - -	1	10	„	3	9 „

At Pará the price of rubber during the last five years was as follows:—

AVERAGE PRICES OF INDIARUBBER ON THE MARKET  
AT PARÁ.

FROM 1893 TO 1898 IN *Réis* (PAPER CURRENCY).

	FINE RUBBER.		SERNAMBY or NEGROHEAD.	
1893-94, - -	from 4951 to	5,142 <i>réis</i> .	From 2911 to	3254 <i>réis</i> .
1894-95, - -	5345	5,719	3271	3649
1895-96, - -	5959	6,428	3962	3372
1896-97, - -	7401	7,870	3811	4331
1897-98, - -	9546	10,422	5502	6030

EXTREME PRICES OF INDIARUBBER ON THE MARKET  
AT PARÁ.

FROM 1893 TO 1898 IN *Réis* (PAPER CURRENCY).

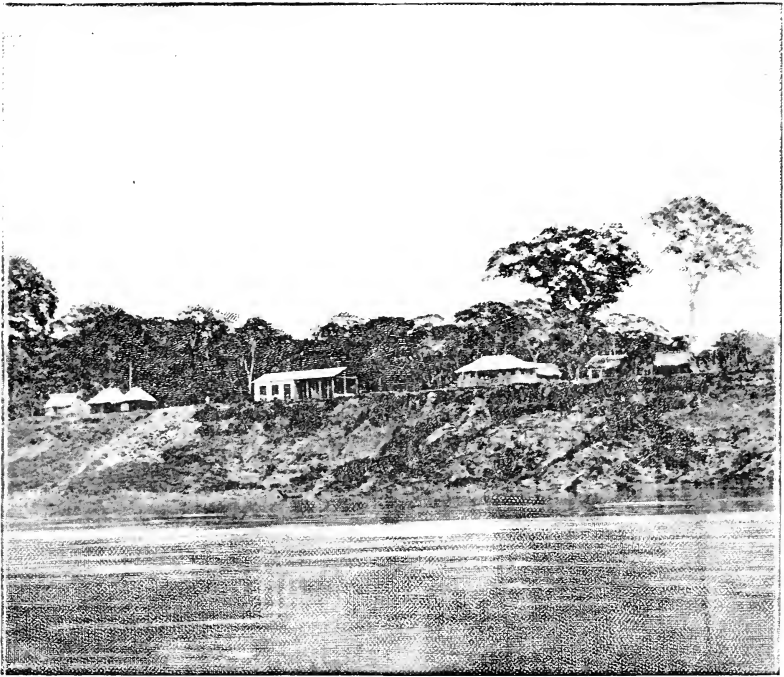
	FINE RUBBER.		SERNAMBY or NEGROHEAD.	
1893-94, highest	5,755 <i>réis</i> ,	lowest 4125 <i>réis</i> .	Highest 3069 <i>réis</i> ,	lowest 1976 <i>réis</i> .
1894-95, ,,	6,468	4506	4193	2312
1895-96, ,,	7,925	4975	4134	2577
1896-97, ,,	8,812	6150	5925	3056
1897-98, ,,	12,970	8150	8270	4043

In Europe the three principal rubber markets are London, Antwerp, and Hamburg. Geneva will doubtless become a storehouse for Italy, Austria, and Switzerland, if the "Ligue Brasileira" obtains the support of which it is worthy from the Governments of Pará and the Amazon. French commerce is also aiming at having a market at Havre, which would be supplied principally with rubber of French production. With this object, the French Government is preparing to levy a different duty upon rubber exported from her colonies to foreign markets.

At the same time, the different European centres are making an effort to cultivate in their warm colonies diverse species of Brazilian rubber-producing trees. The West African *Official Journal*, of the 16th Feb., 1899, gives the following details

on the subject of the attempts made in the district of Dakar-Thiès with the *Ceará* or *Manihot Glaziovii*:—

“The ceará can be reared either from seed or a cutting. In the garden belonging to the Mission are many vigorous plants that have grown from cuttings, and in that of the Residence there are 260 young cearás that have sprung from seeds sown in July and August last. At Toul there are thirty in beautiful condition, and twenty others are being tried near the school.”



Encampment of Proprietor of an Indiarubber Estate (*Seringal*)

M. Eugène Poisson, charged with the Government mission, has announced that he had sent off to France 150,000 seeds of the Amazonian Hevea, to be distributed as young plants to the colonies.<sup>1</sup>

The exploitation of indiarubber is not carried out in the

<sup>1</sup> *La Nature* for the 25th February and 4th March. Paris, 1899.

same manner throughout the valley of the Amazon; the customs vary a little on the different rivers. On the Purús, for example, which is one of the rivers producing most indiarubber, the proprietor of the ground has it marked out at his own expense; he builds the huts and dwellings, and transports the workmen (*seringueiros*) at his own cost to the *seringal*, where they exploit the trees and extract the sap, keeping for themselves 50 per cent. of the amount of rubber collected. It is true that the proprietor



Cabin of a Workman (*Seringueiro*)

makes good his expenditure by supplying the workmen with all they require—clothes, boots, food, drink, etc.; he alone sells them these commodities; he takes his payment out of the produce of the rubber harvest, keeping an account against his men. Upon these goods he gains from 10 to 15 per cent., some proprietors even more, so that of the total sum gathered in rubber, the



proprietor, having made all these advances, does not obtain for himself more than between 60 and 75 per cent. net.

On the market at Manáos all business done is for cash. The proprietor arrives with his cargo of rubber; it is classed according to the four recognised categories—fine, medium fine, sernamby, and caucho: it is then weighed and paid for in cash. It is then only that the proprietor balances his accounts with the workmen on his land, and during the interval of two harvests he recovers the money he has advanced.

This system, strange though it may appear, is evidently not a bad one, as with it the production is constantly increasing.

From 1858 to 1862, during a period of five years, Amazonia exported 67,881½ *arrobes* or 997,380 *kilogrammes* of caoutchouc. Between 1863 and 1868, another period of five years, the exportation increased to 229,124 *arrobes*, that is to say, 3,365,848 *kilogrammes*.

From 1876-77 to 1880-81, during a third period, the quantity rose to 12,280,532 *kilogrammes*.

But it is above all during these last nine years that the exportation of this valuable raw material of indiarubber has taken a most surprising development, and although the production has increased in an extraordinary manner, the price has never ceased to rise.

The following table will give some idea of this:—

## EXPORTATION OF RUBBER FROM THE AMAZON.

### BY PERIODS OF THREE YEARS.

(From the Port of Manáos alone.)

Period of three years.	Quantity in kilog.	Increase.	Official value.	Increase.
From 1887 to 1889,	9,511,994	...	43,136 <i>contos</i>	...
„ 1890 to 1892,	11,272,954	1,760,060	56,835	„ 13,699
„ 1893-94 to 1895-96,	27,671,456	16,398,502	146,523	„ 89,688

In nine years the quantity exported has increased threefold, and the official value has more than doubled.

These figures should be studied very closely.

Indiarubber exported from the port of Manáos can be thus divided:—

1st. Rubber exported to other Brazilian ports, and principally to Pará, is subject to 21 per cent. duty *ad valorem*.<sup>1</sup>

2nd. Rubber exported directly from the Amazon to foreign countries, without passing through the warehouse at Pará, pays only 18·5 per cent. *ad valorem*, the deduction 2·5 per cent. being allowed as an inducement to direct exportation from the Amazon to foreign parts without re-shipment at Pará.<sup>2</sup>

3rd. Rubber from the Rio Abuná and its affluents, if exported abroad direct, pays 10 per cent. less than the rubber from other sources.

4th. Rubber from the Brazilian side of the Javary until 1897 paid barely 8 per cent. *ad valorem* in order to discourage the smuggling which is practised from one shore to the other, for, as is well known, the right bank of this river belongs to Peru.

5th. Lastly, rubber produced from the neighbouring Republics (Bolivia, Peru, Venezuela, etc.), and passing through the ports of the Amazon, is not subjected to any duty. Indiarubber of this kind brings no contribution to the State's receipts, although it is well known that a certain portion of it has been purposely taken out of the country in order to escape the export duties.

During the year 1893, of which we have the detailed official accounts, the distribution of these diverse categories was as follows:—

	<i>Kilogrammes.</i>
1st. Exportation abroad direct from Manáos, - -	4,049,317
2nd. Exportation through the warehouses at Pará, - -	5,496,668

Thus during that year a total of 9,545,985 *kilogrammes* was exported from the principal port of the Amazon of an official value of 46,563 *contos* or millions of *réis*. In the above

<sup>1</sup> Law No. 222 of 16th April, 1898, upon the receipts and expenses of the State. Manáos. Official *Imprensa*. 1898.

<sup>2</sup> The Law No. 296 of 8th Oct., 1899, upon the receipts and expenses of the State during the financial year 1900, has reduced this duty to 18 per cent. *ad valorem*.

figures the exportation from the neighbouring Republics is not included.

Moreover, whilst the production increases visibly upon every river, smuggling has steadily diminished it on the Brazilian bank of the Javary.

During the first half of the year 1896 the production of that part had been 422,332 kilogrammes, of an official value of 2392 contos: but during the corresponding period of the following year it was not more than 112,649 kilogrammes, of a value of 825 contos. It is most important that these shameful frauds should be put a stop to, which will not be until the Federal Government has signed new treaties of commerce with the neighbouring Republics.

In 1882 we gave for the two provinces—now States—of the Amazon and Pará conjointly an exportation of 13,800,000 kilogrammes; but M. Emile Levasseur seemed to be in doubt about this amount, which did not appear to him to be in accordance with the small population of the two provinces. He can satisfy himself now that the Amazon alone exports nearly 10,000,000 kilogrammes per annum.

In 1892 9,371,111 kilogrammes of rubber entered the port of Manáos for exportation. The following figures do not include the rubber from neighbouring Republics passing through Manáos, but represent Amazonian-Brazilian rubber alone:—

1.	From the Rio Purús,	-	-	-	-	3,459,455	kilog.	
2.	„	„	Juruá,	-	-	2,087,817	„	
3.	„	„	Madeira,	-	-	1,579,571	„	
4.	„	„	Javary (Brazilian side),	-	-	1,032,849	„	
5.	„	„	Solimões,	-	-	949,511	„	
6.	„	„	Negro,	-	-	221,930	„	
7.	„	„	Jutahy,	-	-	56,083	„	
8.	„	„	Amazonas,	-	-	3,895	„	
							<hr/>	
							9,371,111	kilog.

The above figures, which tend, moreover, to increase year by year, give for a population of 147,915 a production of 63 kilog. 35 per head. This exportation had, at the market, an official value of 43,529 contos or millions of réis. Therefore, the

rate of exchange being maintained during that year at an average of 1s. per 1000 réis (paper), this sum represented a total of £2,176,450, making an average of nearly £14 16s. a head.

This average of production per head will work out still better if we compare it with that of independent countries and colonies in the neighbourhood of the State of the Amazon, remarking simply that we are speaking of the exportation from Amazonia of one single product, viz., indiarubber, whilst in the case of all the other States we include the entire exportation of all their products and merchandise:—

Name of Country.	Population.	The amount of Exportation in francs.	Value of Exportation per head in francs.	Comparison of the State of the Amazon in francs.
Venezuela <sup>1</sup> - - -	2,323,527	86,420,615	37	less 333 fr. per head
Bolivia <sup>2</sup> - - -	1,189,800	67,298,400	56	„ 314 „
Columbia <sup>3</sup> - - -	3,320,530	59,817,730	18	„ 352 „
State of the Amazon <sup>4</sup> -	147,915	54,628,905	370	
Peru <sup>5</sup> - - - -	2,629,663	38,597,520	14	„ 356 „
Ecuador <sup>6</sup> - - -	1,202,200	36,759,000	30	„ 340 „
British Guiana <sup>7</sup> - -	278,328	31,702,100	113	„ 257 „
Government of Surinam <sup>8</sup>	66,037			

These data reveal most favourably the productive power of the Amazon.

<sup>1</sup> In bolivars, the bolivar = 1 franc.

<sup>2</sup> In bolivianos, the boliviano = 3 francs 12 centimes.

<sup>3</sup> In pesos, the peso = 5 francs.

<sup>4</sup> In réis, the 1000 réis = 1/- (average exchange, 1892).

<sup>5</sup> In soles, the sol = 3 francs 12 centimes.

<sup>6</sup> In sucres, the sucre = 5 francs.

<sup>7</sup> In pounds sterling = 25·10 francs.

<sup>8</sup> Insufficient data. In 1892 the Dutch Guiana announced a deficit of 435,132 Dutch florins.

This phenomenon is still more surprising when we consider that it in no way depends upon the foreign element represented in the State by a small number of men who are entirely engaged in commerce. Brazilians alone—natives of the State or immigrants from other regions in Brazil, especially from



*Seringueiros* collecting the *latex* from the rubber trees

Ceará—have obtained these astonishing results. Slave labour has never counted for anything in this production. At the time when slavery still existed the Amazon contained barely a thousand slaves, and these were set free on the 10th of July, 1884, four

years before the total abolition of slavery was decreed in Brazil, and all the rubber-producing districts did not possess even five hundred slaves, who were nearly all employed in domestic service, or in the extraction of forest products.

In all the municipalities of the rio Solimões, which was then



*Seringueiro* returning from work in the forest

reckoned amongst the rivers which produced the most indiarubber, and which undoubtedly furnished the most cacao and dried fish, there were only fifty-one slaves before the final abolition of slavery.



In 1886,	-	-	-	-	-	-	-	-	1574 tons.
„ 1887,	-	-	-	-	-	-	-	-	1688 „
„ 1888,	-	-	-	-	-	-	-	-	2141 „
„ 1889,	-	-	-	-	-	-	-	-	3255 „
„ 1890,	-	-	-	-	-	-	-	-	3693 „
„ 1891,	-	-	-	-	-	-	-	-	3991 „
„ 1892,	-	-	-	-	-	-	-	-	3812 „
„ 1893,	-	-	-	-	-	-	-	-	4745 „
„ 1894,	-	-	-	-	-	-	-	-	3753 „
„ 1895,	-	-	-	-	-	-	-	-	5433 „
„ 1896,	-	-	-	-	-	-	-	-	6827 „
„ 1897 (first six months only),	-	-	-	-	-	-	-	-	4285 „

It is sufficient to look at this table to see to what an extent the port of Manáos has developed its commerce direct with Europe and the United States in freeing itself more and more from dealings with the port of Pará.

If, instead of considering the civil year, we examine the figures of the fiscal year, we find that the port of Manáos has exported direct for abroad :

3,647,795	kilogrammes of rubber in 1894-95	as against	4,347,606	for Pará.
4,745,686	„	„	1895-96	„ 3,996,560 „

So that, since 1895-96 its direct exportation has become greater than that carried out by the coasting trade.

The following table will explain better the progress of exportation direct from the port of Manáos to its destination abroad :

## II.—OFFICIAL VALUE OF THE EXPORTATION OF INDIA-RUBBER FROM THE STATE OF THE AMAZON DIRECT FROM MANÁOS TO ITS DESTINATION ABROAD (IN CONTOS OR MILLIONS OF REIS).

Years.	Official Value.	Annual Average.	Increase.
1869-70	0·8		
1872-73	28		
1873-74	95	70·7	
1874-75	155		
1876-77	75		



Years.	Official Value.	Annual Average.	Increase.
1877-78	25.4		
1878-79	41.9		
1879-80	942	870.4	
1880-81	1,174		
1881-82	1,563		799.7
<hr/>			
1882-83	2,290		
1883-84	2,517		
1884-85	2,637	3,170.6	
1885-86	3,275		
1886-87	5,134		2,300.2
<hr/>			
1888	3,390		
1889	4,958		
1890	7,304	7,039.8	
1891	6,872		
1892	12,675		3,869.2

## PERIOD OF THREE YEARS ONLY.

1893	19,731.2		
1895	23,803	25,882.06	
1896	33,112		22,012.06

## III.—TOTAL EXPORTATION FROM MANAÓS.

## 1892.

1. Total exportation of rubber from the State of the Amazon, 7,928,382 kilog.  
viz :
  - A. By coasting traders, - - - 4,643,732 kilog.
  - B. By ships making long voyages, 3,284,640 ,,
2. Official value of rubber exported in millions of réis, - - - 30,594 contos.
3. Amount of duty paid to the State upon this exportation, - 5,338 ,,

## 1893.

1. Total exportation of rubber from the State of the Amazon, 9,590,985 kilog.  
Difference between the above and the preceding year, - + 1,662,613 ,,  
viz :
  - A. By coasting traders, - - - 5,496,668 kilog.  
Increase on the preceding year, - - - - + 852,936 ,,
  - B. By ships making long voyages, 4,049,317 kilog.  
Increase on the preceding year, - - - - + 809,677 ,,

2. Official value of rubber exported in millions of réis, - -	46,563 contos.
Increase on the preceding year, - - - - - +	15,969 „
3. Amount of duty paid to the State upon this exportation, -	7,280 „
Increase on the preceding year, - - - - - +	1,942 „

## 1894.

1. Total exportation of rubber from the State of the Amazon, 8,639,519 kilog.	
Diminution on the preceding year, - - - - -	951,466 „
viz.:	
A. By coasting traders, - - - 5,117,952 kilog.	
Diminution on the preceding year, - - - - -	378,716 „
B. By ships making long voyages, 3,521,567 kilog.	
Diminution on the preceding year, - - - - -	572,750 „
2. Official value of rubber exported in millions of réis, - -	42,547 contos.
Diminution on the preceding year, - - - - -	4,016 „
3. Amount of duty paid to the State upon this exportation, -	7,603 „
Increase on the preceding year, <sup>1</sup> - - - - - +	323 „

## 1895.

1. Total exportation of rubber from the State of the Amazon, 9,170,975 kilog.	
Increase on the preceding year, - - - - - +	531,456 „
viz.:	
A. By coasting traders, - - - 4,684,435 kilog.	
Diminution on the preceding year, - - - - -	434,517 „
B. By ships making long voyages, 4,487,540 kilog.	
Increase on the preceding year, - - - - - +	965,973 „
2. Official value of rubber exported in millions of réis, - -	50,298 contos.
Increase on the preceding year, - - - - - +	7,751 „
3. Amount of duty paid to the State upon this exportation, -	8,843 „
Increase on the preceding year, - - - - - +	1,240 „

## 1896.

1. Total exportation of rubber from the State of the Amazon, 9,113,515 kilog.	
Diminution on the preceding year, - - - - -	57,420 „
viz.:	
A. By coasting traders, - - - 3,567,766 kilog.	
Diminution on the preceding year, - - - - -	1,115,669 „
B. By ships making long voyages, 5,545,751 kilog.	
Increase on the preceding year, - - - - - +	1,058,211 „

<sup>1</sup> Although the exportation in 1894 was lower by nearly a million kilogrammes than that of 1893, the amount of duty paid to the State was greater by 323 millions or contos of réis than that of the preceding year, because the duty is paid *ad valorem* and the price of rubber was high. For a smaller quantity of rubber a greater amount of duty was paid.

2. Official value of rubber exported in millions of réis, - - -	62,502 contos.
Increase on the preceding year, - - - - - +	12,204 „
3. Amount of duty paid to the State upon this exportation, -	11,327 „
Increase on the preceding year, - - - - - +	2,484 „

All this exportation is done principally by sixteen commission agents established at Manaós, whose names are as follows, together with the quantity of indiarubber that they have sent to Europe and the United States from the 1st July, 1896, to the 30th June, 1897—that is to say, during the fiscal year of 1896-1897:—

1. Prusse Pussinelli & Co., - - - - -	1,847,541 kilog.
2. Wit & Co., - - - - -	1,240,957 „
3. Rud Ziets, - - - - -	526,368 „
4. Adelbert H. Alden, - - - - -	501,533 „
5. Brocklehurst & Co., - - - - -	465,928 „
6. Marius & Lévy, - - - - -	412,966 „
7. Mello & Co., - - - - -	334,663 „
8. J. H. Andresen, successors, - - - - -	290,707 „
9. B. A. Antunes & Co., - - - - -	223,515 „
10. Lajeunesse & Co., - - - - -	151,229 „
11. Kahn, Polack & Co., - - - - -	185,288 „
12. Sears & Co., - - - - -	135,720 „
13. J. A. Freitas, - - - - -	120,613 „
14. Aranjo Rozas & Co., - - - - -	68,434 „
15. A. Berneaud & Co., - - - - -	79,570 „
16. Louis Schill & Nephews, - - - - -	48,129 „

If to the 6,624,163 kilogs. sent abroad in 1896-97 by these sixteen agencies, we add 736,405 kilogs. sent by several others, less important, we have for that year an exportation, by ships making long voyages, of 7,360,568 kilogs., which is an increase of 2,873,028 kilogs. on that of the year 1895.

We cannot help feeling pride at these figures when we consider the history of indiarubber. The civilised world heard it spoken of for the first time on the 28th April, 1745, in that famous meeting at the re-opening of the Académie des Sciences, where M. De La Condamine, of that same Academy, read his "*Relation abrégée d'un voyage fait dans l'intérieur de l'Amérique méridionale, depuis la Côte de la mer du Sud,*

*jusques aux Côtes du Brésil et de la Guiane, en descendant la rivière des Amazones.*"<sup>1</sup> He said:

"The resin called *cahuchu*,<sup>2</sup> in the country of the Province of Quito that is near the sea, is also very common on the shores of the Marañon. . . . When it is fresh it can be moulded to any form; it is impenetrable to moisture; but that which makes it most remarkable is its great elasticity. Bottles can be made of it that are unbreakable, also boots, and hollow balls which become flat when pressed, and regain their shape immediately the pressure is removed. The Portuguese at Pará have learnt from the Omaguas<sup>3</sup> how to make with this substance pumps and syringes that require no piston rods: they have the form of hollow pears, are pierced with a small hole at their extremity, where a tube is fixed, and when filled with water and pressed, they have the effect of an ordinary syringe. This article is very much in use amongst the Omaguas, and when they are assembled together at any of their fêtes, the head of the family never fails to offer one of these syringes to each guest, and its use invariably precedes the ceremonious feast."

This strange description by the French *savant* helps us the more readily to understand the great strides which the hollow balls he mentions have made in the last century and a half. They have largely contributed to ensure to the State of the Amazon a place in the front rank amongst the other States of the Brazilian Union, and have been the means of putting into its treasury during the year 1897-98 a sum higher<sup>4</sup> than the receipts of the entire thirty-seven years during which, under the Empire, it existed humbly awaiting attention from the central power. Indeed, according to the report presented by

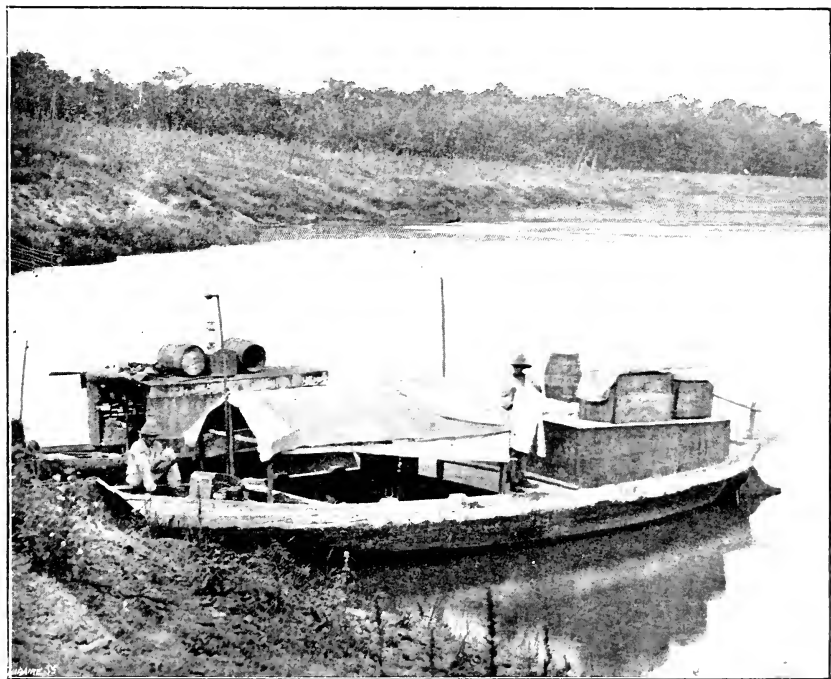
<sup>1</sup> De La Condamine, *Relation, etc.*, Paris, 1745, pp. 78 to 80, relative to his voyage in July, 1743.

<sup>2</sup> Pronounce *cahout-chou*, says a note by De La Condamine. Carl Friedrich Phil. v. Martius: *Wörterammlung Brasilianischer Sprachen*. Leipzig, 1867. P. 391 says: "*Caú-uchú* (Amazonas) siphoniae sp. gummi elasticum fundentes qui primi Omaguas ad conficiendos tubulos usi sunt."

<sup>3</sup> From that evidently came the Brazilian-Portuguese name of *seringa* given to indiarubber.

<sup>4</sup> *Mensagem*, Imprensa official, Manáos, 1898, p. 20.

the late vice-governor in office, Colonel José Ramalho, at the congress of representatives, on the 10th July, 1898, the receipts stood at 21,426 millions or contos of réis, whereas the receipts from 1852—the date of the creation of the province—to 1889, the date of the proclamation of the Federal Republic, amounted only to 21,325 contos.



Boat of *regatão* (pedlar)

## CHAPTER VII

*Commerce and Navigation.*—Navigation of the Amazon before 1853—"The Commercial Navigation Company of the Amazon"—"The Amazon Steam Navigation Company, Limited"—Earnings of the two companies—Manáos and Pará—Protective laws adopted by the Amazon—Commerce of importation—Commerce of exportation—Direct navigation—"The Red Cross Line"—Commerce of the Amazon with the neighbouring Republics—Lines of navigation for Europe, North America, South America, Brazilian ports, and the interior of the State—Distances from Manáos to the furthest ports of the Rios Amazon, Solimões, Maranhão, Negro, Juruá, Purús, and Madeira.

WE have seen the conditions of industry in the State of the Amazon. We have noticed the principal sources that supply it, what progress is being made daily, and the certain future that lies before it. We have endeavoured, by giving an exact account of Amazonian production, and by describing other means of revenue that have not yet been exploited, to encourage new efforts, and to make European capital find its way into this rich country.

We have now to occupy ourselves with commercial transactions, to show what means of transport are available for the exchange of the raw material with manufactured goods, and to make known the actual state of import and export trade in this the greatest State of the Brazilian Union. We shall give in this chapter a complete enumeration of the lines of navigation that form the service of this country; and we shall then deal successively with the commercial relations of the State of the Amazon with its neighbour, the State of Pará, as Belem was, until a few years ago, its principal port; with the trade with Europe; with the traffic with the neighbouring Republics; and

with the different lines of navigation. Here the figures will speak for themselves.

The State of the Amazon, as we have said, remained isolated from the rest of Brazil for many years, even after the proclamation of the independence of this country, which took place in 1822. Until 1853, when Europe was already in regular relations with Rio de Janeiro and the principal ports of the Brazilian coast, the State of the Amazon was deprived of the benefits of steam navigation. The communications, which were not numerous, were effected with great difficulty by means of sailing vessels (*batelões*), which went up from Belem, the capital of Pará, to Barra-do-rio-Negro, since named Manáos, and which then was under the control of its neighbouring province, being only an administrative department or *comarca*.

In 1851, when this comarca formed a territory independent of Pará, under the designation of the Province of the Amazon, things were still in the same state. In vain had certain enterprising men conceived the idea of ascending the river in steam boats—antiquated prejudices and unreasonable laws were opposed to all spirit of initiative, and guarded the entrance to the Amazon like the dragons in the fable, defending the entrance to this new garden of the Hesperides.

In 1826, a steamboat from the United States endeavoured to convey a cargo of merchandise to Péru by way of the great river Amazon, but did not succeed. Again in the same year, and in 1837, 1838, 1839, 1840, and 1848, other attempts were made by the natives, but with no more success.

All these efforts, however, were not made in vain. They decided the central Government to relax its severity, and in 1853, M. Irineu Evangelista de Souza, better known by his title of Viscount de Mauá, obtained the monopoly of steam navigation of the largest river in the world. This privileged person, whose enterprising spirit still merits the recognition of all the sons of the Amazon, benefited also by high subsidies and exceptional favours, which had their justification at that time, but which, after nearly half a century of exploitation, seem to have no



longer any *raison d'être*. As long ago as 1865, Agassiz was of opinion that an end should be put to these favours.

Nevertheless, the obstacle was removed and the first step was taken. From the year 1853 onwards trade with Pará really commenced to have a certain importance, although the beginning was most modest.

The "Companhia de Navegação e Commercio do Amazonas" was established at Rio with a capital of 4000 contos or millions of réis, and decree No. 1055 of 20th Oct., 1852, approved of its rules and regulations. At the end of twenty years it was amalgamated with the "Amazon Steam Navigation Company, Limited," founded in London, and its rules were approved of by the Brazilian Government in 1874. Its nominal capital was £625,000, divided into 50,000 shares of £12 10s. each; but of these only 40,419 were issued, making the capital £505,237. After the first year this company incorporated in its powerful organisation two other companies, also subsidised by the Government: the "Companhia Fluvial Paraense," and the "Companhia Fluvial do Alto Amazonas."

During the first period of five years, from 1853 to 1857, the Company of the Amazon realised receipts to the amount of more than 449 contos, as much for the freight of merchandise as for the passage of passengers.

Progress has continued to be made ever since.

The second period of five years, from 1858 to 1862, showed accounts of receipts amounting to over 800 contos.

The third period, from 1863 to 1867, yielded more than 2000 contos.

From 1887 to 1891 the receipts were over 15,417 contos.

At the present day it is admirably organised. It possesses thirty-four steamships, with 1126 employés, and supplies a service of eight lines of navigation in the State of the Amazon.

From this activity on the part of a single company it is easy to judge of the quantity and value of the merchandise and produce put into circulation.

When once steam navigation was established, the commerce

of the Amazon developed rapidly. In fact, the Amazon exported for the port of Pará :

In 1879-80, produce of an official value of	6,440	contos.
„ 1882-83, „ „ „	10,773	„
„ 1885-86, „ „ „	13,300	„

The growing prosperity of the port of Manáos brought it soon into competition with that of Pará. In order to account for the rivalry which was inevitable sooner or later between these two commercial centres, it suffices to open a map and consider their geographical position.

Pará, or Belem, is favoured by nature. It is at the mouth of the Amazon, as St. Nazaire is at the mouth of the Loire, and Havre at that of the Seine. Just as Nantes and Rouen see their commerce dwindling away whilst that of St. Nazaire and Havre increases, Manáos would have inevitably suffered the same fate if the river of the Amazon had a bar, if the tides were not felt up to 600 miles above Belem, if the immense mouth of the river did not constitute a prolongation, as it were, of the ocean, and form a veritable arm of the sea.

For very many years Manáos transacted all its business through Pará, whither it sent all its forest produce, and where it bought all its stores. Little by little it became possessed by a laudable ambition, and wished to free itself from an intermediary which had been useful, but was becoming onerous. Already for some time past every effort of merchants of Manáos had been directed towards this end, and law No. 385 of the 14th October, 1878, gave them a promise of seeing their hopes realised, by establishing a difference of 3 per cent. between the duty charged upon Amazonian rubber exported through Pará, and that sent to its destination abroad direct from the ports of the Amazon.

To prepare for this emancipation from the protection of the neighbouring State, the Amazon had already taken excellent practical measures as early as 1874, when it had established a subsidised line of steamers, putting it into direct relations with the principal European markets. In 1882 it had established

another line, also subsidised, connecting it direct with the United States. Then in 1884 it succeeded in putting itself into direct and immediate communication with Rio de Janeiro and the intermediate ports by subsidising the national line of steamers which formerly had made Belem their terminus. At last, after having helped the establishment of lines of navigation for its different rivers by means of subsidies, it granted one to an Italian line, starting from Genoa, whose magnificent steamers have called at Manáos since 1897.

Pará, in spite of appearances to the contrary, has no reason to be uneasy concerning these natural desires for emancipation which do not in any way tend to impoverish it, for all those foreign lines call there and consequently contribute to develop its trade also. Pará possesses, moreover, elements of life and prosperity that render this rivalry less formidable. It can provide amply for itself, and without any sensible loss dispense with the profits derived from the trade of Manáos.

The system of sea and river transport was thus complete, and Manáos could trade untrammelled with Europe, North America, part of Africa, the neighbouring Republics, and the whole of Brazil, especially as since 1896 a sub-river cable connects it with Belem, and thence with the rest of the world.

It remained to turn the tide of commerce direct from the ports of the State towards the foreign markets without carrying the exported goods through Pará. This was accomplished by means of a series of economic measures which produced the best results, some of which we have just mentioned.

The local Government decreed that the produce exported direct for foreign markets should pay duty of 3 per cent. less than that paid by the same produce when exported by way of Pará; that the firm of Brocklehurst, of Liverpool, which had undertaken to maintain a direct line of navigation between Liverpool and Manáos, and has a wholesale house in the latter city, should enjoy special advantages enabling it to defy all competition.

Pará itself helped by its attitude the realisation of its rival's

plans. It did not know how to make any liberal arrangements in time to secure the monopoly of Amazonian commerce. The produce exported from the Amazon was subjected at Pará to  $\frac{1}{2}$  per cent. duty upon its official value, and 5 per cent. and 8 réis per kilogramme for verification of the weight. Therefore this produce went out of the market of production, already over-charged with heavy duties. Indiarubber, for example, paid to the Amazon 9 per cent. duty; guarana and cacao were taxed at 5 per cent.; and dried and salted fish at 3 per cent. All the other products were still more heavily charged, and some paid even 8 per cent. of their value, without counting the 3 per cent. additional duty charged by the English Navigation Company of the Amazon.

At the present time, by law No. 122 of the 10th April, 1898, the export duty established by the State is assessed as follows:—

Caoutchouc exported to other States in the Brazilian Union, 21 per cent.; if exported abroad direct, 18·5 per cent.; if coming from the Rio Abuná or its affluents and exported abroad direct, 10 per cent. less than the duty paid on rubber from other sources.

Brazil nuts (*toucas*) exported abroad direct, 10 per cent., or if exported to other States in Brazil, 12 per cent.

*Cacao* (cocoa) and guarana exported abroad direct, 8 per cent., or to other States in Brazil, 12 per cent.

Pirarucu and other fish, dried or salted, for all destinations, 10 per cent.

And all other produce for any destination, 10 per cent.

The export duty has therefore been considerably increased, the increase upon rubber being more than cent. per cent.

The finances of the State of the Amazon could not but profit by a gradual and rational reduction of the duty on the most of those products, especially on those which require regular cultivation such as cacao.

In spite of all these charges, the imports and exports of the State have never ceased to increase remarkably. It is believed that for certain produce the returns would be even greater if the trade in them were not fettered by such heavy duties.

The following table will give an exact idea of the commercial progress of the State of the Amazon:—

IMPORTS OF THE PROVINCE OF THE AMAZON BY COAST  
TRADING AND BY LONG VOYAGES.

Fiscal Years.	Coast Trading. (In <i>contos</i> .)	Long Voyages. (In <i>contos</i> .)	Total. (In <i>contos</i> .)
1876-77	1641	190	1831
1880-81	1909	673	2582
1881-82	3133	746	3879
1882-83	5220	1099	6319
1883-84	4595	1495	6090
1884-85	3780	1061	4841
1885-86	5236	1040	6276
1886-87	5095	1274	6369

Since the new republican *régime* has assured the States their autonomy, it has become very difficult to obtain recent data for the imports, upon which duties are imposed by the Federal Union, and charged to its profits by the Custom-houses, the export duties alone being under the control of each State.

However we have a certain indication of increase in the imports of the State of the Amazon: this is the steady increase in the receipts of the customs, receipts which, as we have just said, all go into the treasury of the Federal Union.

During the four years of the government of M. Prudente de Moraes (1894-98) the Brazilian customs receipts decreased in an alarming manner. According to an official document, the receipts of the first three months of the year 1897 were more than 19,559 *contos* less than those of the corresponding period in 1896, and nearly 17,000 *contos* less than those of the same period in 1895. The diminution amounted to nearly 100 per cent. in the case of certain Custom-houses, like those of Parnahyba and Victoria. That of Rio de Janeiro had a decrease of nearly 32 per cent. compared with the corresponding period in 1896. Only eight Custom-houses had an increase in their receipts, and amongst these eight that of Manáos figures with an increase of nearly 3 per cent. (2·76 per cent., to be accurate).

The following are the receipts of the Brazilian customs in 1898, and those of the Manáos Custom-house will be seen to compare favourably with others:—

1. Federal District, - - - - -	86,774	<i>contos.</i>
2. Santos, - - - - -	39,866	„
3. Bahia, - - - - -	23,006	„
4. Recife, - - - - -	22,916	„
5. Belem (Pará), - - - - -	22,261	„
6. Rio Grande do Sul, - - - - -	15,591	„
7. Manáos, - - - - -	6,698	„
8. Fortaleza (Ceará), - - - - -	5,773	„
9. Maranhão, - - - - -	4,861	„
10. Porto Alegre, - - - - -	3,492	„
11. Maceió, - - - - -	2,693	„
12. Corumbá, - - - - -	1,891	„
13. Paranaguá, - - - - -	1,699	„
14. Aracajú, - - - - -	1,691	„
15. Florianópolis, - - - - -	1,688	„
16. Parabyba, - - - - -	1,330	„
17. Sam-Paulo, - - - - -	269	„
18. Parnahyba, - - - - -	657	„
19. Uruguayana, - - - - -	599	„
20. Victoria, - - - - -	541	„
21. Natal, - - - - -	250	„
22. Penedo, - - - - -	187	„
23. Macahé, - - - - -	157	„

The receipts of the Custom-house at Manáos were greater than the united receipts of the eight Custom-houses of Florianópolis, Parabyba, Parnahyba, Uruguayana, Victoria, Natal, Penedo, and Macahé.

Thus not only do the revenues of the local government increase steadily, but the contribution paid by the Amazon to the Federal Union is on the increase. However, by one of those disastrous oversights, of which those Governments alone are capable which are not in touch with the people they govern, the Custom-house of Manáos continues to be the same delapidated shed, which was not so utterly inadequate, perhaps, as long as the officials were not called upon to control a trade in goods to the value of millions.

During the same period, exportation has taken a still more

considerable development, as will be easily seen by examining the following table:—

EXPORTATION FROM THE PROVINCE OF THE AMAZON.  
(OFFICIAL VALUE.)

Fiscal Years.	Value in <i>contos</i> .	Difference in <i>contos</i> .
1876-77	2,600	—
1880-81	7,343	+ 4,743
1881-82	10,342	+ 2,999
1882-83	13,064	+ 2,722
1883-84	12,877	- 187
1884-85	13,058	+ 181
1885-86	16,576	+ 3,518
1886-87	14,635	- 1,941

But it is principally since the Amazon has acquired independence that its resources have become at the same time much greater and more regular, as the following accounts of the exports, according to their official value, since 1892 will show:—

EXPORTATION FROM THE STATE OF THE AMAZON.  
(OFFICIAL VALUE.)

Years.	Value in <i>contos</i> .	Difference in <i>contos</i> .
1892	31,232	—
1893	48,489	+ 17,257
1894	44,836	- 3,653
1895	51,995	+ 7,159
1896	64,608	+ 12,613
1897-98 (provisional)	90,000	+ 25,392

In six years the value of the exports has increased three-fold, and even if in calculating their value we accept an excessively low rate of exchange, viz.,  $7\frac{1}{2}$ d. per 1000 *réis*, the official value of the goods exported would still amount to £2,823,750.

In 1876-77 the official value of the Amazonian exports was only 2600 *contos*, in 1886-87 it had already reached 14,635 *contos*, and ten years after it rose, as we have shown, to nearly 90,000 *contos*.

At the risk of becoming wearisome we must dwell upon the progress of Amazonian commerce, which proves that certain countries in South America, that are but too little known in Europe, offer examples of prosperity which can be compared only to the United States, and are well suited to encourage commercial dealings with the old world.

The direct commerce of the Amazon with foreign countries is of too recent date to have produced as yet all the results which may be expected. In fact it only goes back to 1874, but yet it has exceeded all hopes. Until that time the transactions abroad of the Manáos market were only made through the intermediary of the port of Pará.

Denmark was the first country to have relations with this market. On the 25th March, 1874, a sailing ship of 263 tons, carrying the Danish flag, entered the port of the capital, coming from Hamburg.

The impetus to trade was given, and on the 30th of the following month a small English steamer of 595 tons arrived from Liverpool, and inaugurated the subsidised navigation, of which the promoter was M. de Brito Amorim, a Portuguese.

Since then the connections of Manáos with Liverpool, Havre, and Lisbon have been regularly developed, thanks to the regular sailings (established in 1877) of the Red Cross line of steamers, belonging to Messrs. Singlehurst, Brocklehurst & Co.

During the first six years the following amount of india-rubber was carried by the steamers of this line from Manáos to Europe:—

#### RUBBER EXPORTED DIRECT FROM MANÁOS BY THE STEAMERS OF THE RED CROSS LINE.

Years.	For Liverpool.	For Havre.	Total.
1877	14,781 kilog.	—	14,781 kilog.
1878	238,303 „	15,415 kilog.	253,718 „
1879	266,101 „	18,470 „	284,571 „
1880	370,899 „	10,413 „	387,312 „
1881	266,466 „	32,906 „	299,372 „
1882	389,915 „	38,672 „	428,587 „



Thus during these first six years this line transported only 1,668,341 kilogrammes of rubber from Manáos to Europe. But during the first three months alone of 1897 it carried into Europe nearly as much as during all these six years put together, viz., 1,529,024 kilog. of rubber, not to mention 8305 hectolitres of Brazil nuts, 44,545 kilog. of piassava, 12,408 kilog. of copaiba oil, 2601 kilog. of cocoa, etc.

Of the commerce between the State of the Amazon and the neighbouring Republics, the following table will give an idea:—

EXPORTATION OF THE NEIGHBOURING REPUBLICS  
VIA THE STATE OF THE AMAZON.

Years.	Republic.	Indiarubber.	Value in <i>contos</i> .
1880-81	Peru	196,517 kilogrammes	—
„	Bolivia	53,698 „	—
„	Venezuela	4,345 „	—
1895-96	Peru	1,896,248 „	8465
„	Bolivia	729,040 „	4323
„	Venezuela	49,494 „	310
1896-97 (half-year only)	Peru	479,756 „	2298
„	Bolivia	355,736 „	2606
„	Venezuela	9,147 „	47

It is thus easy to see that the transit trade has had also a continuous and rapid increase.

Let us complete this information by giving a list of the lines of steamers leaving the Amazon for Europe, for North America, for South America, for the different ports of Brazil, and lastly, for the different points in the interior of the State respectively.

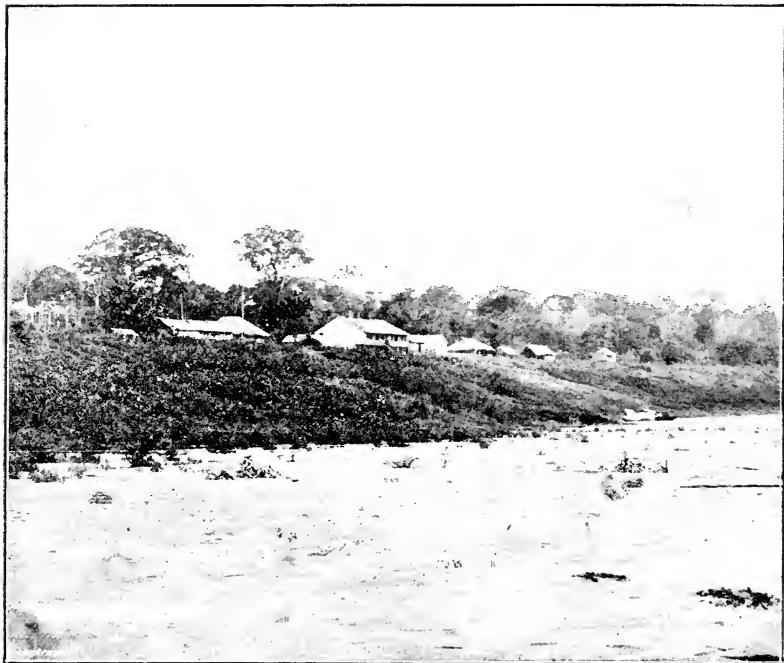
LINES OF STEAM NAVIGATION.

*I.—For Europe and Africa.*

*a.* Two English companies, with headquarters in Liverpool—the Red Cross line, under the management of Messrs. R. Singlehurst & Co., and the Booth Steamship Co., Limited, of which the managers are Messrs. Alfred Booth & Co.—have organised a joint service for Amazonia. These two companies

together own twenty-two steamers of from 3498 tons (the *Augustine*) to 1611 tons (the *Origen*). These latter are almost exclusively devoted to merchandise, and are cargo boats.

Regularly every week, one of these steamers leaves Liverpool for its destination, Manáos, putting in alternately at Hamburg, Lisbon, Madeira, Pará: and Havre, Oporto, Lisbon, Madeira, and Pará.



*Village of S. Luiz de Cassianan*

The service on board is excellent. These companies do not receive any subsidy from the State.

*b. La Ligure Brasileira*, which has at its head the Italian deputy Gustavo Gavotti, has a service of steamers from Genoa to Manáos. They sail once a month, calling at Marseilles, Barcelona, Tangiers, Lisbon, Madeira, Pará, Santarem, and Obidos. This line, inaugurated in October, 1897, received from

the State of the Amazon a subsidy of 200 *contos*, which was increased to 400 in 1899, to put it into direct communication with the Mediterranean.

## II.—*For North America and the West Indies.*

The two English companies from Liverpool, viz., the Red Cross line and the Booth line, form a combined service between New York and Manáos, sailing every twenty days, and calling at Barbadoes and at Pará.

## III.—*For the South American Republics.*

### a. *For the Republic of Peru.*

1. The two English companies from Liverpool, already mentioned above, have a combined service, providing communication once a month between Manáos, Iquitos, and Peru.

2. The English Amazon Company has a monthly service, subsidised, sailing from Manáos to Iquitos, calling at Manacapurú, Codajaz, Coary, Tefé, Fonte-Boâ, Tonantins, Sam-Paulo-d'Oliveira, and Tabatinga, which are all in Brazil; and at Loreto, Caballo Cocha, Pebas, and Iquitos, which are in Peru; the distance from Manáos to Iquitos being 1152 miles.

3. The *Industria Pastoril* Company is now establishing a regular service of steamers going from Belem to Buenos Ayres, and touching at Manáos.

### b. *For the Republics of Colombia, Bolivia, etc.*

As we shall see, several lines of steam navigation provide more or less regular communication between Brazil and the neighbouring Republics. The steamers of the Rio Madeira line go up to Santo Antonio, and connect Brazil and Bolivia; whilst others, sailing along the Içá, connect Brazil and Colombia.

## IV.—*For the different parts of the United States of Brazil.*

a. *With Rio de Janeiro*, the Federal capital of the United States of Brazil, direct navigation was inaugurated at the commencement of the year 1884, thanks to the efforts of

M. Joaquim Rocha dos Santos, late representative of the Amazon in Congress. The Lloyd Brasileiro, which runs this line, has for this service nine steamers, which sail three times a month, once every ten days, from Rio de Janeiro for Manáos, with stoppages at Victoria (Espirito-Santo), Bahia, Maceió (Alagôas), Recife (Pernambuco), Parahyba, Rio Grande do Norte, Fortaleza (Ceará), Amarração (Piauhy), Maranhão, Pará, and Obidos. The total voyage, in spite of these numerous stoppings, does not take more than from fifteen to seventeen days.

*b.* For *Parahyba*. Messrs. J. A. Guedes & Co. have three steamers making a regular service between Manáos and Parahyba, calling at Itácoatiára, Pará, Camocim, and Fortaleza.

*c.* For *Fortaleza*, capital of the State of Ceará, there is a regular line of steamers, receiving from the State of the Amazon an annual subsidy of 120 contos of réis.

*d.* For *Belem*, capital of the State of Pará. The departures from Manáos are almost daily. In fact, the steamers of every line, for the South, for Europe, or for North America, after leaving Manáos stop at Belem, and in addition to these, the English Amazon Company has several lines of boats which make a regular service between Belem and Manáos, either as a terminus point or as a calling station, and which at least eight times a month put the two neighbouring capitals in communication.

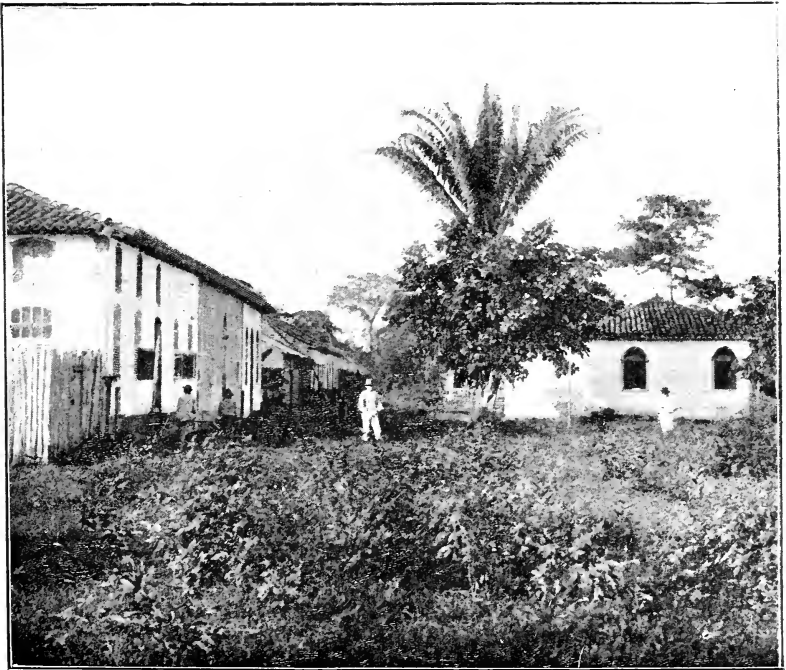
*V.—Lines of penetration for the different parts of the State of the Amazon.*

*a.* From Manáos to Santo-Antonio, in the *Rio Madeira*. The English Amazon Company has a regular line going up to Santo Antonio, upon Brazilian territory, whence the voyage can be continued by boat into Bolivian territory and the Brazilian State of Matto-Grosso. After leaving Manáos the steamers call at Canuman, Borba, Sapucáia, Tabocal, Santa Rosa, Manicoré, Baéttas, Júmas, Tres Casas, Missão de S. Pedro, Humaythá, Missão de S. Francisco, Cavalcante, and Jamary, and stop at Santo Antonio, 711 miles from Manáos.

*b.* From Manáos to S. Gabriel, on the *Rio Negro*. The

English Amazon Company has a regular service to S. Gabriel, 500 miles from Manáos. After leaving Manáos the steamers call at Tauápessassú, Ayrão Moura, Carvoeiro, Barcellos, Thomar, and Santa Isabel, and stop at S. Gabriel.

c. From Manáos to the *Rio Juruá*. The English Amazon Company has a regular line starting from Manáos and calling at Manacapurú, Anamá, Codajaz, Coary, Fonte-Bôa, Juruápucá, and Gavião.



*Village of Bôa-Vista*

d. From Manáos to the *Rio Purús*. This line is served regularly by the English Amazon Company, whose steamers call at Manacapurú, Anamá, Berury, Pacatuba, Bôa Vista, Piranhas, Itátúba, Jatuarána, Arumã, Tauariá, Jaturú, Canutama, Salvação, Porto Alegre, Boá Esperança, Bella Vista, Santo Antonio, Vista Alegre, Labrea, Providencia, Sepatiny, Hyutanahã,

Cachoeira, Searihan, Aboniry, Pacoval, Purgatorio, Bôa União, Memoriá, Quicihã, Ajuricaba, Capitary, Matarupia, Sirinihym, S. Sebastião, Casaduá, Canto da Fortuna, Guajarába, Lafayette, Tenha Modo, Içá, on the mouth of the Pauhiny, the distance travelled being 1437 miles from Manáos.

*e.* From Manáos to the *Rio Acre*. Steamers leave Manáos and call at Fortaleza, Tambaqui, Bôa Esperança, Volta do Acre, Santo Antonio, Apuhy, Madeirinha, Atinary, S. Paulo, Lua Nova, Andirá, Mundo Novo, Bôa Vista, Caquetá, Gloria, Humaythá, Bôa União, Apialhy, Baixa Verde, Catuába, Panorama, Empreza, Bocca do Riozinho, Anajaz, Bem Posto, Juà, Flores, Cajueiro, Floresta, Europa, Santa Anna, Miritysal, Tamandaré, Cameté, Itapéro, Porto Novo, Maracajú, Manaleão, Bom Lugar, S. José, Trombetas, Arapixy, Rio Branco, Pacatuba, S. João, Valha-me-Deus, on the mouth of the Yáco.

*f.* From Manáos to the *Rio Yáco*. A regular service is organised by the English Amazon Company, with stoppages at Caiêté, Desengano, S. Caetano, the mouth of the Macahuan, Maracaná, S. José, Mercês, Bôa Esperança, Santa Clara, S. Sebastião, Santa Maria, S. Francisco, Silencio, Capivára, S. Jorge, Piedade, Santa Thereza, Macapá, Barcelona, Novo Desterro, Itátinga, Atlante, Santa Cruz, Aracajú, Chandless, Juruázinho, Andrade, S. Vicente, Pinto, S. José, and Santa Barbara.

*g.* From Manáos to the *Rio Pauhiny*. This regular service is also organised by the same company, with stoppages at Monte Verde, Monte Escuro, Serra Leôa, Saccado, Santa Carolina, Ipuranga, Monte Bello, Sudarahy, Matto-Grosso, Monte Mór, Salva Vidas, Barroso, Saccadinho, Cacoalinho, Cachoeira, Céu Aberto, Santa Helena, Espirito Santo, Santa Maria, S. João, the mouth of the Moaco, Sumauma, Santa Felicia, S. Joaquim, Nazareth do Xingú, Cantagallo, Monte Alegre, Peniry, Pouso Alegre, the mouth of the Tiuhiny, Maripurá, Restauração, Occo do Mundo, Bôa Fé, Santa Cruz, S. Leopoldo, S. Lourenço, S. Miguel, Suory, Bôa Hora, S. Elvas, Victoria, Sinimbú, the mouth of the Inahiny, S. Paulo, Desterro, Bom Lugar, Seruhiny, Canto Escuro, Inferno, and the mouth of the river Acre.

*h.* From Manáos to the *Rio Autaz*. This line receives from the State a subsidy of 55 *contos*.

i. From Manáos to the *Rio Jutahy*. This line receives from the State a subsidy of 144 *contos*.

j. From Manáos to the *Rio Maués*. This line receives a subsidy of 96 *contos*.

k. From Manáos to the *Rio Japurá*. This line receives a subsidy of 48 *contos*.

l. From Manáos to the *Rio Branco*. This line receives a subsidy of 100 *contos*.

m. From Manáos to *Lake Janaucá*. This line receives a subsidy of 35 *contos*.

n. From Manáos to the *Rios Amazonas, Madeira, Javary, Purús and its affluents*. The firm of Marques Braga possesses five steamers which navigate the rivers just named.

o. From Manáos to the *Rios Japurá and Badajoz*. The firm of Elias Thomé de Souza & Co. have one steamer and one steam launch for the navigation of these two rivers.

p. From Manáos to the *Rios Juruá, Jutahy, Japurá, Madeira, Maués, and Purús*. The firm of A. Berneaud & Co. have nine steamers for these rivers.

q. From Manáos to the *Rio Juruá*. Messrs. Mello & Co. have six steamers for this river, starting from Belem.

r. From Manáos to the *Rios Solimões and Purús*. Messrs. S. F. de Mello & Co. have two steamers for these rivers.

s. From Manáos to the *Rio Juruá*. Messrs. Araujo Rozas & Co. have one steamer on this river.

t. From Manáos to the *Rios Badajoz, Copeá, Japurá, and Manacapurú*. Messrs. Baptista & Araujo have two steamers on these four rivers.

u. From Manáos to the furthest navigable points of the *Rio Badajoz*. A monthly voyage is made upon this river by steam launches, in virtue of a contract signed by the State with Messrs. Affonso Silva & Co.

The halting places after leaving Manáos are Manacapurú, Anaman, Anory, Codajaz, Belem, Badajoz (village), the mouth of the lake Badajoz, mouth of the Pioriny, Porto Alegre do Codajaz-merim, an affluent of the Copeá.

v. From Manáos to the *Rio Coory* and its affluents. In virtue of a contract with the State, Messrs. Affonso Silva & Co.

have organised a regular subsidised service of steam launches upon this river and its affluents, starting from Manáos, and calling at Manacapurú, Codajaz, Bourg de Coary, Freguezia, Velha, the mouth of the Rio Uranas, Urucá, Itanhoan, and Paranápára.

*x.* From Manáos to the furthest navigable point of the *Rio Aripuaná*. F. J. de Oliveira & Co. have organised a monthly subsidised service of small steamers upon this river.

To sum up, we have sixteen steam navigation companies or shipowners, possessing 114 first-class steamers or steam launches, of a total tonnage of more than 84,000 tons, and employing nearly 4000 men, without speaking of ordinary boats such as *canôas*, *igārítés*, *batelões*, etc.

M. Charles Wiéner, who, however, is a sincere friend and an admirer of the Amazon, writes in an amusing way<sup>1</sup> of our centres of population. "When three huts are found together, and near each other, it is then called a port. Before these cottages the seeker of indiarubber and his olive-complexioned wife smoke their cigarettes or pipes, and scratch themselves with a meditative air."

Professor Vincenzo Grossi, another friend of the Amazon, thinks this description delightful, and quotes it with admiration.<sup>2</sup>

They have both proved quite simply that it is easier to make jokes than to possess common sense or a true perception of facts. This seeker of indiarubber, who smokes his pipe or his cigarette with his olive-complexioned wife, and scratches himself with a meditative air outside his hut, merely contributes to the production of 10 million kilogrammes of caoutchouc per annum, and provides the freight of 114 steamers; and these three cottages which form a port are certainly more useful to the progress of humanity than many universities or chancellor's offices of our acquaintance.

The following table gives the distances travelled, and the trading stations on some of the navigation lines that we have mentioned:—

<sup>1</sup> Charles Wiéner, *Amazone et Cordillères* ("Tour du Monde"). Paris, 1883.

<sup>2</sup> Vincenzo Grossi, *Nel Paese delle Amazzoni* (Roma, 1897), p. 40.



*Table of distances from Manáos, Capital of the State of the Amazon, to the Principal Ports (Trading Stations) along the River Lines.*

## I.

*Rio Amazon.*

1. From *Belem*, capital of Pará, to

Breves, - - - - -	146 miles.
Santa Maria, - - - - -	226 „
Gurupá, - - - - -	267 „
Porto de Moz, - - - - -	315 „
Prainha, - - - - -	411 „
Monte Alegre, - - - - -	454 „
Santarém, - - - - -	313 „
Obidos, - - - - -	581 „
Parintins (State of the Amazon),	676 „
Fortaleza, - - - - -	692 „
Itácoatiára, - - - - -	814 „
<i>Manáos</i> , - - - - -	924 „

## II.

*Solimões (Upper Amazon) and Marañon.*

1. From *Manáos*, capital of the State of the Amazon, to

Codajaz, - - - - -	155 miles.
Coary, - - - - -	239 „
Baliero, - - - - -	325 „
Teffé, - - - - -	347 „
Caiçára, - - - - -	362 „
Jauatá, - - - - -	407 „
Aráras, - - - - -	470 „
Fonte Bôa, - - - - -	486 „
Tonantins, - - - - -	626 „
S. Paulo d'Oliveña, - - - - -	721 „
Caldeirão, - - - - -	782 „
Tabatinga, - - - - -	826 „
Loreto (Republic of Peru), - - - - -	889 „
Caballo Cocha, - - - - -	924 „
Piruate, - - - - -	984 „
Cochiquina, - - - - -	1002 „
Pebas, - - - - -	1040 „
<i>Iquitos</i> , - - - - -	1152 „

## III.

*Rio Negro.*

1. From <i>Maniós</i> to Tauuápeçassú,	-	-	-	-	-	-	65 miles
Ayrão,	-	-	-	-	-	-	135 „
Moura,	-	-	-	-	-	-	174 „
Carvoeiro,	-	-	-	-	-	-	201 „
Barcellos,	-	-	-	-	-	-	268 „
Moreira,	-	-	-	-	-	-	314 „
Thomar,	-	-	-	-	-	-	358 „
<i>Santa Isabel</i> ,	-	-	-	-	-	-	423 „

## IV.

*Rio Juruá.*

1. From <i>Maniós</i> to Manacapurú,	-	-	-	-	-	-	55 miles.
Anamá,	-	-	-	-	-	-	106 „
Anory,	-	-	-	-	-	-	122 „
Codajaz,	-	-	-	-	-	-	166 „
Badajoz,	-	-	-	-	-	-	234 „
Coary,	-	-	-	-	-	-	328 „
Teffé,	-	-	-	-	-	-	435 „
Fonte Boa,	-	-	-	-	-	-	568 „
Coapiranga,	-	-	-	-	-	-	594 „
Juruápuca,	-	-	-	-	-	-	838 „
Gavião,	-	-	-	-	-	-	894 „
Popunhas,	-	-	-	-	-	-	959 „
Chué,	-	-	-	-	-	-	1057 „
<i>Marary</i> ,	-	-	-	-	-	-	1093 „

## V.

*Rio Purús.*

1. From <i>Maniós</i> to Manaquiry,	-	-	-	-	-	-	42 miles.
Bóá Vista,	-	-	-	-	-	-	47 „
Manacapurú,	-	-	-	-	-	-	57 „
Paratary,	-	-	-	-	-	-	93 „
Anamá,	-	-	-	-	-	-	117 „
Berury,	-	-	-	-	-	-	133 „
Perseverança,	-	-	-	-	-	-	135 „
Paricatúba,	-	-	-	-	-	-	178 „
Ayapuá,	-	-	-	-	-	-	198 „
Arumá,	-	-	-	-	-	-	233 „
Campinas,	-	-	-	-	-	-	318 „

From <i>Manóos</i> to Guajaratúba, - - - - -	338	miles.
Bóa Vista, - - - - -	357	„
Abufary, - - - - -	387	„
Paraná Pixúna, - - - - -	405	„
Piranhas, - - - - -	411	„
Andarahy, - - - - -	415	„
Itátuba, - - - - -	423	„
Jatnarána, - - - - -	438	„
Arumã, - - - - -	468	„
Secutiry, - - - - -	475	„
Bom Principio, - - - - -	495	„
Tanariá, - - - - -	498	„
Bacury Pary, - - - - -	513	„
S. Sebastião, - - - - -	519	„
Jaturú, - - - - -	542	„
Nova Olinda, - - - - -	566	„
Floresta, - - - - -	569	„
Paripy, - - - - -	583	„
Tapaná, - - - - -	594	„
Caridade, - - - - -	600	„
Porto Alegre, - - - - -	618	„
Conceição, - - - - -	642	„
Cavatiá, - - - - -	645	„
Salvação, - - - - -	671	„
Jadibarú, - - - - -	687	„
Repouso, - - - - -	690	„
Atalaia, - - - - -	694	„
Canutama, - - - - -	696	„
Alliança, - - - - -	699	„
Bóa Esperança, - - - - -	703	„
Bella Vista, - - - - -	707	„
Calasans, - - - - -	720	„
Santo Antonio, - - - - -	723	„
Jardim das Damas, - - - - -	729	„
Urucury, - - - - -	736	„
Vista Alegre, - - - - -	742	„
S. Sebastião, - - - - -	752	„
S. Braz, - - - - -	760	„
Carmo, - - - - -	763	„
Assahytuba, - - - - -	772	„
Santa Eugenia, - - - - -	778	„
Passiá, - - - - -	801	„
Teuhiny, - - - - -	810	„
Labrea, - - - - -	818	„
Ituxy, - - - - -	826	„
S. Luiz, - - - - -	841	„
Mabedery, - - - - -	871	„
Providencia, - - - - -	913	„

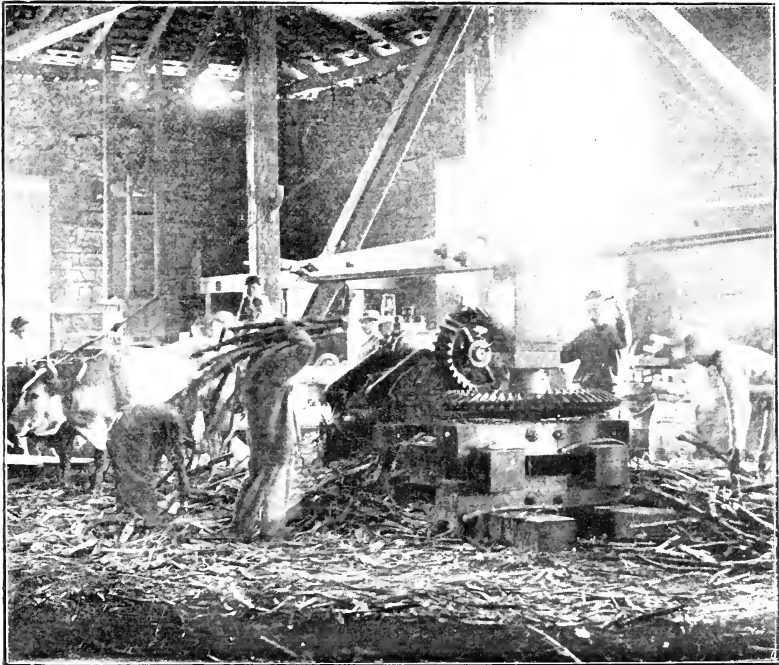
From <i>Mauós</i> to Memoriázinho, - - - - -	918 miles.
Sepatiny, - - - - -	945 "
Santa Helena, - - - - -	952 "
Hyutanahã, - - - - -	1027 "
Espirito Santo, - - - - -	1049 "
Searihan, - - - - -	1067 "
Memoriã, - - - - -	1110 "
Terruhã, - - - - -	1185 "
Pouso Alegre, - - - - -	1227 "
Pauliny, - - - - -	1239 "
Quicilhã, - - - - -	1354 "
Sinimbú, - - - - -	1379 "
<i>Anajaz</i> , - - - - -	1437 "

## VI.

*Rio Madeira.*

1. From <i>Mauós</i> to Canuman, - - - - -	80 miles.
Borba, - - - - -	116 "
Retiro, - - - - -	148 "
Sapucaya, - - - - -	163 "
Vista Alegre, - - - - -	172 "
Marajó, - - - - -	191 "
Tabocal, - - - - -	194 "
Bóia Vista, - - - - -	204 "
The Isle of Aráras (Aras), - - - - -	214 "
Santa Rosa, - - - - -	222 "
Cachoeirinha, - - - - -	247 "
Manicoré, - - - - -	293 "
Capaná, - - - - -	324 "
Onças, - - - - -	334 "
Marmello, - - - - -	361 "
Tyrol, - - - - -	369 "
Uruapiara, - - - - -	374 "
Baêtas, - - - - -	394 "
Bom Futuro, - - - - -	400 "
Meditação, - - - - -	407 "
Porto Alegre, - - - - -	429 "
Castanhal, - - - - -	436 "
Tapurú, - - - - -	438 "
Jurarã, - - - - -	439 "
Carapamatúba, - - - - -	466 "
Sítio Raphael, - - - - -	471 "
Pariry, - - - - -	476 "
Júmas, - - - - -	487 "
Tres Casas, - - - - -	496 "

From <i>Maniós</i> to Pirahyba, - - - - -	515 miles.
Mission de S. Pedro, - - - - -	524 "
Popunhas, - - - - -	540 "
Crato, - - - - -	544 "
Humaythá, - - - - -	551 "
Paraiso, - - - - -	560 "
Mission de S. Francisco, - - - - -	594 "
Papagaio, - - - - -	619 "
Abelhas, - - - - -	631 "
Bóia Hora, - - - - -	643 "
Cavalcante, - - - - -	653 "
Mutuns, - - - - -	693 "
<i>Santo Antonio</i> , - - - - -	711 "



*Sugar-Cane Brandy Factory at Sepating*

As will be thus seen, the means of communication are not wanting. The most part of the great affluents of the Amazon is traversed by steamers. Nearly all the great maritime centres of Europe and North and South America are connected with

Manáos by the great lines which carry travellers and merchandise across the seas, and while the French are studying a Government scheme for a line of steamers from Havre to Manáos, the Hamburg American line has already started a regular service of steamers with the Amazonian port.

In a few years our great State will be as well known in Europe—thanks to its numerous means of communication—as is New York or Rio de Janeiro, and we have no doubt that a regular current of immigration will soon set in, when men become aware of the facilities and resources that are so liberally offered by the enlightened government of the Amazon.

Our aim is to contribute as much as lies in our power to the future greatness of our country. All our energies will be devoted to this immense work, and others will come after us who will do yet more; and from generation to generation progress will be made, and the Amazon will at length enjoy all the fruits of labour and civilisation.

## CHAPTER VIII

*Art, Sciences, Folk-lore.*—State of the natives at the time of discovery—Their primitive civilisation—Their language—The *abacenga* and the *neengatú*—Poetry of their language—An unpublished Indian song—An unpublished fable—Indian dances.

LET us go back four hundred years to the dawn of the sixteenth century.

In Europe the Renaissance was taking place, and the Middle Ages were past. Printing was spreading ideas, multiplying the human speech, and calling every class—noble, artisan, and peasant—to share in its gifts. Libraries were installed in feudal castles; arms gave place to peaceful pursuits. In the century of Leo X. we see Ariosto, Machiavelli, Leonardo da Vinci, Michael Angelo, Raphaël, Erasmus, Copernicus, Marot, and Rabelais. Already Martin Luther called the people to the Reformation; but it was not until nearly three centuries later that the powerful voice of Mirabeau answered by demanding Reform.

Then it was that Europeans arrived in Brazil.

What did they find there on landing?

—They found immense solitudes, forests, marshes, a sort of antiquated Druidic Gaul, inhabited by strange men. These virgin lands were the home of a race of savages that they scorned to consider as men.

Here, to all appearance, were no signs of the poetic civilisation of the Incas of Peru, nor of the imposing customs of the Aztecs of Mexico, but free people, following, for the most part, their ferocious instincts, leading a life of nature in the midst of the woods, spending their time in wandering, eating, fighting, and

killing each other. Scorning the gold and precious stones that lay beneath their feet, these savages preferred following the tapir and the *pacas*,<sup>1</sup> and gave themselves up to the rough pleasure of an unending chase.

These naked savages penetrated into the brushwood, where they remained motionless for entire hours, lying in wait for the birds and deer, which they devoured raw. Their hunger satisfied, they slept under the thick trees of the forest by the river banks. They had but one solitary companion—their bow, heavy as iron. They only assembled together at intervals, in order to defend themselves against a common danger. Their senses alone were highly developed. They could see far across the immensity of space. They could hear and recognise the slightest sound in the forests. Their sense of smell was as acute as that of a dog. They could shoot with marvellous aim, and rarely missed their quarry.

The brain, only having one fixed idea, viz., how to procure food, was wanting in development and resource. Their mental agility showed itself in cunning; strength of muscle took the place of intellectual vigour, and their bodily strength was truly prodigious. Jean de Léry relates that none of his companions were able to bend the bow that a young Indian of ten years of age could use without much effort. These Hercules had generally a great horror of all agricultural labour, and, as a rule, their only toil consisted in gathering the wild fruit that hung from the trees. There were some, however, who showed some taste for certain industrial occupations.

When the Portuguese landed in Brazil, they seemed to recognise a rough attempt at civilisation amongst a small number of tribes on the shore. In the leisure time they could spare from hunting, fishing, fighting, and long journeys through the forests, the Indians of that region crushed manioc, extracted the *cajú* (*Anacardium occidentale*), an excellent wine, and made palm oil for their own use. Others employed themselves in preserving provisions, such as meat, game, and fish, by smoking them in a particular way (the *moquém*), or else they passed the long rainy

<sup>1</sup>The tapir is the *tapirus americanus*, and the paca is the *coelogenys Paca* of zoologists.



season in painting their *igassúas* or funeral urns, their vases, and their fantastically-ornamented calabashes, in the most picturesque fashion, using for this purpose the sap and varnish from certain plants, as, for example, the *cumati* (*Asclepidea follicularis*).

Some Amazonian tribes were skilful in making pottery, and produced some very curious work, of which the reproductions in colour can be seen in the *Archivos do Museu Nacional* at Rio de Janeiro.

It was certainly not at the first attempt that our ancestors in the different continents succeeded in drawing straight and curved lines, and distinguishing the varied forms of the natural objects. It probably took centuries, and perhaps long generations of unknown artists, to arrive at this point in ornamental and decorative design.

There are also other facts which justify a comparison between the Indians of certain parts of Brazil and various prehistoric peoples of Europe. Those of the Amazon, for example, spun cotton and certain textile fibres, knew the art of weaving, and made large pieces of stuff.

But these rough workers reserved naturally all their talent for the fashioning of their arms and the making of their tools. They stored up as their principal treasures an assortment of polished bows, carved arrows, and oars or paddles, war clubs, and clay vases or calabashes (*cúias*), rounded like fruits, glossy like leaves.

Their clothing was simple as their habits. However, as a luxury which might serve as a suggestion to our smartest Europeans, certain tribes had gloves and masks made of feathers, bark of trees, and fur of certain monkeys, which they wore on great occasions.

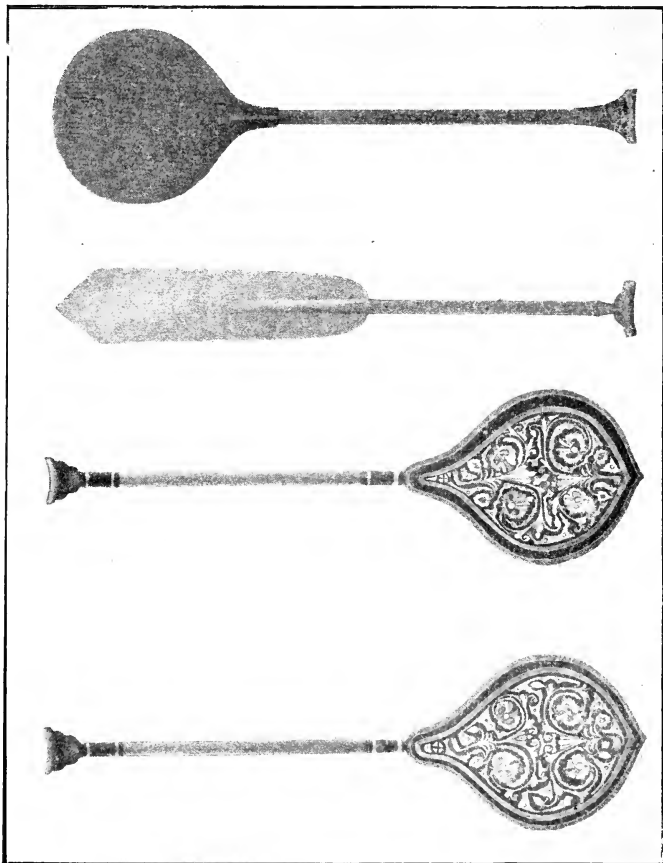
Their language was more complicated.

Along the coast among the *tupi* tribes<sup>1</sup> the same language was generally spoken, having undergone but few accidental alterations, due to climate and circumstances, such as exist in

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<sup>1</sup> *Tupi, tupy, topi, togpi*: the interior of the house, which is of the house. Also perhaps from *tubi, tubib*: chief of the relations, *cacique*.

the civilised languages of Europe. In the interior of the country the *tapuyas*,<sup>1</sup> on the contrary, spoke different languages.



*Indian Paddles*

Both the language of the coast and that of the *sertão* had numerous dialects.

<sup>1</sup> *Tapyi*, prisoners: from *tapi*, part. of *tar*, to take, to buy, and *ni*, multitude, or troop of captives; perhaps also from *tapoy*, nomads. The *Tapuyas* seem to have been the primitive inhabitants that the *tupis* drove inland far from the shore, so that they went to live in the *sertão*.

The necessity of making themselves understood by the natives of the conquered country early impressed upon the Portuguese merchants and missionaries the idea of rendering as uniform as possible the language spoken by the Indians on the coast. Thanks to these natural efforts and to the intercourse of the Indians, either with one another or with their conquerors, and above all, thanks to the work of the grammarians of the Company of Jesus (the Jesuits),<sup>1</sup> the language of the coast became really the "general language"—*lingua geral*—which was called later under the name given by the Indians themselves of *abañeenga*, language of the Indian, or of the man, *aba*, to distinguish it from *caraiñeenga*, the language of the white, from *carai*, learned. It was called also *tupi-guarani*, from the name of the two great Indian tribes who spoke it—the *tupis*, in the north, in Brazil, and the *guaranis*, in the south, in Paraguay. The *tupi* of the Amazon proper is called *neengatú*, "the good speaking."

M. Baptista Caetano,<sup>2</sup> whose writings are an authority on this matter and deserve to be much better known by Europeans, thinks that all the dialects spoken in South America can be definitely reduced to five, and maybe even to two only, viz., *Chilidugu*, *Aymaráaro*, *Kechuacallu*, *Kiriri*, and *Abañeenga*. The *Chilidugu* itself might be classed with the *Kechuacallu* and the *Abañeenga*; the *Kechuacallu* with the *Aymaráaro*, and the *Kiriri* with the *Abañeenga*.

The *Abañeenga* or *tupi-guarani*, or general language, is still spoken by the Indians of South America, from the Guianas to the plains of Patagonia. An Amazonian who spoke the *neengatú* of his country, and who was from 1865 to 1867, during the war of the Triple Alliance against Paraguay in this Republic, in Uruguay and in Argentina, stated that the general

<sup>1</sup>The three first grammarians of this tongue were three Jesuits—Joseph de Anchieta, whose grammar appeared at Coïmbra in 1595; Antonio Ruiz de Montoya, who published his work in Madrid in 1640; and Luis Figueira, whose grammar was printed at Lisbon in 1687.

<sup>2</sup>*Apontamentos sobre o abañeenga*, Rio, 1876.—*O Dialogo de Léry*, Rio, 1876.—*Estudo sobre a lingua Kiriri*, Rio, 1877.—*Etymologias brazílicas*, Rio, 1877.—*Esbôço grammatical do abañeé*, Rio, 1899.—*Aba Reta*, trad. en port., Rio, 1879.—*Vocabulario das palavras guaranis*, Rio, 1886, etc., etc.

language more or less modified was spoken everywhere. He adds that not only did the people and the soldiers speak it, but that families in good society were not above its habitual use. Thus he was very much astonished, on arriving from the northern extremity of Brazil, to find that he was able to understand all the natives of those parts without difficulty by speaking to them in the *tupi* of the Indians of his native land.<sup>1</sup>

The Padre M. J. de Seixas,<sup>2</sup> Silva Guimarães,<sup>3</sup> Gonçalves Dias,<sup>4</sup> Colonel Faria,<sup>5</sup> Ferreira França,<sup>6</sup> Latham,<sup>7</sup> Doctor Carl Friedr. Phil. von Martius,<sup>8</sup> Professor Hartt,<sup>9</sup> General Couto de Magalhães,<sup>10</sup> and many others have published works upon this language. Von Martius and Baptista Caetano alone seem to have penetrated its secrets, although the researches of the others have certainly helped to reveal its mysteries.

The study of the tupi-guarani language proves that the Indians of the Brazilian coast, and those of the Amazon in particular, were no longer at the stage of using simple monosyllables. The agglutinative stage had been reached, and the syntax showed some remarkable variations from that of other native dialects in the New World.

It would be foolish to attempt to explain in a few lines the morphology of the language, those interested in it can easily refer to the works mentioned above, but we wish to note a few of its peculiarities.

M. Escobary, who has published studies upon the *Aymará*

<sup>1</sup> Pedro Luiz Sympson, *Grammatica da lingua brazílica geral*, Manaus, 1877.

<sup>2</sup> Pe. Manoel Justiniano de Seixas, *Vocabulario da lingua indigena geral*. Pará, 1853.

<sup>3</sup> João Joaquim da Silva Guimarães, *Diccionario da lingua geral dos indios do Brazil*. Bahia, 1854.

<sup>4</sup> Antonio Gonçalves Dias, *Diccionario da lingua tupy*. Lipsia, 1858.

<sup>5</sup> Francisco Raymundo Corrêa de Faria, *Compendio da lingua brazílica*. Pará, 1858.

<sup>6</sup> Dr. Ernesto Ferreira França, *Chrestomatia da lingua brazílica*. Leipzig, 1859.

<sup>7</sup> R. G. Latham, *Elements of Comparative Philology*. London, 1862.

<sup>8</sup> Dr. Carl Friedrich Phil. von Martius, *Wörterammlung Brasilianischer Sprachen*. Leipzig, 1867.

<sup>9</sup> Chas. Fred. Hartt, *Notes on the lingua geral or modern tupi of the Amazonas*. New York, 1872, "Transac. of the Amer. Philol. Assoc."

<sup>10</sup> Couto de Magalhães, *O selvagem: Curso de lingua geral*. Rio, 1876.

language, puts forward a theory, which he supports by numerous examples, that the names in the Bible and those in *Aymará* are identical. On the Amazon, Noronha remarked as early as 1768 that the *Uerequêna* or *Arequêna* Indians from the rio Içana before having any contact with civilised races, had biblical names such as Joab, Jacob, David, etc. According to him, the Indians of the rio Içá and its affluents practised circumcision upon newly-born children, the mother being charged with this operation.

It was only after circumcision that the new-born child was given a name, in the midst of dances and fêtes celebrated before the mask of Jurupyry.

Certain Americans of the present day believe that the Indians counted up to 10 in tupi-guarani, and then formed other numbers as compounds of ten, saying for eleven, ten and one; for twelve, ten and two; for twenty, two ten; and so on. It is certain that the savages in contact with civilised people have had to try to make themselves understood, and that now they have words to express all the numbers. But it is no less certain that at the time of the discovery they could really only count up to 3. They said—1, *oyepé* (which is by itself); 2, *mokuen* (which makes the pair); and 3, *mosapeire* (which completes it, which forms the crown). To say 4, they were obliged to repeat 2 and 2, *mokuen-mokuen*; for 5, they said *chepó*, my hand, the fingers of my hand; for 10, they said *my two hands*; and for 20, *my hands and my feet*.

In spite of the relative poverty of its vocabulary, their language was rich in expressive and poetical words. The morning star, says Fred. Hartt, they called the *pilot of the morning*, *pira-panem*.<sup>1</sup> Amongst the constellations there were *ouegno-moin*, the crab; *yassatin*,<sup>2</sup> a bird; *tuyaué*, the old man;<sup>3</sup> *coromy manipoére-ouaré*, the manioc-eating boy;<sup>4</sup> *yandoutin*,<sup>5</sup> the white

<sup>1</sup>*Pira pané* does not mean pilot of morning, but "deprived of fish." This name, says Bap. Caetano, was given to Mercury, to whose influence the Indians attribute the want of fish at certain seasons.

<sup>2</sup>This is probably a bad orthography for *yacutinga* (*Penelope pipile*).

<sup>3</sup>In modern tupi, we say *tijuaé*, and in guarani, *tuyábae*.

<sup>4</sup>In modern tupi, *corumi manipuéra oábae*.

<sup>5</sup>*Nhandú* (*Rhea americana*), that which runs.

ostrich, who eats the birds' eggs (*ougraoupia*), represented by two neighbouring stars; *Tapity*,<sup>1</sup> the hare; *Gnupouéon*,<sup>2</sup> the manioc oven, etc. That which is still more interesting is the fact that they have given, as is affirmed, the name of *Jaouáre*,<sup>3</sup> the dog, or better, the jaguaor, to a great star which comes directly after the moon, and which, according to the Indian belief, runs after her in order to devour her. . . .

"Doctor Silva Coutinho told me that the Indians on the Amazon not only give names to a great number of celestial bodies, but they have legends about them. They say that the two stars forming the shoulder of Orion are an old man and a young boy, who are chasing a river cow (*peire boi*) in a canoe.<sup>4</sup> They designate by the name of *manatee* a large black patch in the heavens, situated near that same constellation. At first, they add, the old man (the great star) was in the prow of the canoe, whilst the young man (the smaller star) was in the stern, holding the tiller. When the old man perceived the river cow, he was too much excited to harpoon it, and so he changed places with the boy.

"There is a constellation to which they give the name of the Palm; quite near there is a row of stars. They are, they say, the monkeys coming to eat the fruit of the palm tree.

"Doctor Coutinho found another myth in the rio Branco; the moon, represented as a young girl, became enamoured of one of her brothers, and visited him frequently by night; but at last her secret was betrayed, and during one of these visits her lover passed his hand over her face, and, as his hand was covered with some black substance, the traces of it remained imprinted there."

Noronha relates that in 1768 he frequently met *Passé* Indians on the rio Japurá, and he thus sums up their ideas about the heavenly bodies: the sun is immovable; the earth alone moves so that it can present each part of its surface to the sun's warmth. There are only two real stars: the sun and the moon; the one to

<sup>1</sup> *Tapüiti*, rabbit, in *guarani*.

<sup>2</sup> In modern *tupí*, *iapuna*.

<sup>3</sup> In *tupí*, *Jaguára* or *Yaguára* (*Felis onca*).

<sup>4</sup> See upon all these subjects *Folk-Lore Brésilien*, by F. J. de Santa-Anua Nery.—Librairie Academique Didier. Paris, 1888.

give light by day and the other by night. The upper space beyond the sun and the moon is separated from them by a blue vault, forming a kind of trellis work or curtain. This immense space is all brilliant with lights, for it is the dwelling of the Creator, of whose nature men know nothing. A few rays of the lights which illumine this blissful abode stream through the interstices of the blue canopy, and these form the stars. The rivers and watercourses are the veins and arteries of the earth's body, and the movement of these waters is due to the movement of the world.

The Chománas (Xománas) on the same river called the sun *the hot star (syma)*; the moon, *the cold star (uaniu)*; the stars, *shining lights (rueté)*; a thunderbolt, *a crashing noise (yuni)*; thunder, *the precursor of rains (quiriuá)*; lightning, *terror (pelú)*; daybreak, *the commencement of day (samataca)*.

Tupi-guarani, or still more the Neengatú of the Amazon, abound in picturesque expressions, of which the following are examples:

Those terrible little insects with the numerous feet that are commonly called centipedes (*scolopendra*) are well known. The Indians have given them a name much more appropriate to their form: *jurupary-kybaba, devil's combs*.

The Capuchin monks appeared amongst them to preach the gospel; immediately a name was applied to them which depicted them with the greatest fidelity on account of the form of their cowl: *pay-tucura, grasshopper monk*.

When the French arrived, the Indians at once called them by the name of *white savages, tapaytinga*.<sup>1</sup>

Every name is descriptive:

What is a scorpion?—*The excrement of the serpent: mboi repoti*. And a crab?—*A beast having eyes in his legs: uça*. And a man with smallpox?—*A holey face: tabaquaré*. Aras? *The sons of the day: ará-ará* (a large, brightly plumaged parrot). The tamanoir (ant-eater)—*a chaser of ants: tamanduá*.

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<sup>1</sup> It is there in the generally admitted sense; tapaytinga, tapaya tinga, or white tapuyo. We believe that it really means assailant of aldées, from *taba aldée*, union of thatched roofs and *itig*, to invest, to assail; from whence tabeitig, tapaytinga.

The English and the French languages contain, moreover, hundreds of purely Indian words which have undergone slight modifications, such as the following: *agami*, *agouti*, *aï* (a sloth); *ananas* (pine apple); *ara* (the above-mentioned parrot); *boa*, *cacao* (cocoa); *caïman* (cayman, an alligator); *caoutchouc*, *capivard* (capivi balsam); *carapa* (carapace shell); *cassave* (cassava); *coaita* (coati); *coca*, *copahu* (copaiba balsam); *courbaril*, *curare*, *genipa*, *guarana*, *hocco*, *igname* (yam), *iguane*, *ipeacuana*, *jaborandi*, *mani* (a resin), *manioc*, *papayer* (papaw), *piassava*, *piaye*, *rocou*, *sagouin*, *sarigue* (opossum), *tamanoir* (ant-eater), *tapir*, *tapioca*, *tatou*, *toucan*, and very many others, and thus there are many who speak some of the *Neengatú* of the Amazons without knowing it.

If, following the example of a few ingenious writers, we wished to put forward a seductive paradox, it would not be difficult to prove an apparent analogy between the Greek and the Tupi-guarani languages. *Tupan*, God, would be *theos* (*θεος*); *tata*, fire, could come from *dadeô* (*δαδεω*), to burn; *oca*, house, would be *oïkia*; *cunã*, woman, could find its analogy very easily in the Greek *γυνή*; *myra*, people, would be a derivation of *Μυριας*; *cariua*, white, master, lord, would be *κυριος*; *catá*, good, could be drawn from *ἀγαθος*, and so on. But Voltaire was right in saying that "etymology is a science where the vowels signify nothing at all, and the consonants nothing much."

Such *jeux d'esprit* now have no longer a *raison d'être*: science exacts proofs other than accidental resemblance to substantiate the relationship between languages. It is none the less true that the language of the natives of Brazil still requires much serious study, after which, perhaps, it will furnish the key to many enigmas.<sup>1</sup>

In spite of all these elements of rudimentary civilisation, the Indian with his solid, thick-set frame, his olive skin tanned by the sun, his long, coarse, black hair; with his broad shoulders

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<sup>1</sup> See *The Brazilian Language and its agglutination*, by Amaro Cavalcanti (Rio de Janeiro, 1883). Dedicated by the author to "His Imperial Majesty Don Pedro II., the constant Protector of the intellectual development and the general instruction of the country."



and small hands, his scanty beard, dreamy, languid eyes, appeared to the Europeans an inferior being. Then began the terrible man-hunt, and a reckless war of extermination. The poor people struggled desperately against the firearms of the civilised invaders. It was only by sowing discord amongst them that the Europeans succeeded in seizing their lands, driving them into the interior, or reducing them to slavery.

To arrest this carnage royal edicts and papal bulls were necessary. In the middle of the sixteenth century, be it said to the shame of Europe, a Pope was obliged to declare solemnly that—Indians were men made in the image of God, and possessing immortal souls — *attendentes Indos ipsos, ut potè veros homines*.<sup>1</sup>

And now the miserable descendants of the ancient masters of the soil are decimated by smallpox and degraded by the abuse of strong drink.

In making himself master of the New World one would imagine that the European had endeavoured to poison everything that he was unable to kill.

Volumes have been written in order to show that among all nations literature began with poetry, and especially lyric verse. It is a great pity that no stanza of these past times has been preserved to us: it would have been of more value than all the folios of the libraries. Little does the literary movement of humanity in prehistoric periods concern us. We suspect that it was limited to a very small number of poetic improvisations, and that leisure time being scarce, people dispensed with this luxury. At that time there is no doubt that they lived upon good game and not upon fine language.

As to the Indians with whom we are occupied, they have left no written record of ancient poetry. The bard had no place amongst them. It is believed that they used to sing certain very simple chants together, exciting themselves with savage dances and strong drink.

Nearly all we know of their traditions is of later years, and we regret to inform amateurs of archaic poetry that the greater

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<sup>1</sup> Paul III. The fourth day of the nones of June of the year 1537.

part of the Indian compositions that have been studied hitherto show more or less evidence of European intercourse.

Such as it is, however, this poetry has preserved a strange savour. Under the graft, the savage stock is still felt. Their poetry consists of short phrases, having a sort of artless rhythm, composed under the influence of sudden inspiration, and presenting vivid pictures.

Without going back to the Indian poetry and songs which appeared ten years ago in *Brazilian Folk-Lore*, and which attracted the attention of an eminent critic,<sup>1</sup> we prefer to give here a fresh specimen of verse and an unpublished chant, discovered in the rio Autaz amongst the Indians already in contact with civilisation, which the *caboelos* of those parts, when they are working the manioc flour, sing in continuous chorus :

Se manieu Julião  
 Se putia pura  
 Se manú açara.<sup>2</sup>



This sketch would be incomplete if we were not to give some idea of the Indian legends which always have a certain interest for students of folk-lore, even though they proceed from half-civilised Indians.

The following is one which we believe to be absolutely unknown, and hitherto unpublished :

A rustic landowner had had the misfortune to ally himself in friendship with the male Jaguar, who made him frequent visits, and had the habit of bringing with him always some other animal of the neighbourhood. Arrived at the house of his human friend, the Jaguar never failed to eat up a goat or a

<sup>1</sup>J. Weber, of the Paris journal *Le Temps*, quoted by M. Eduardo Prado, in the notice upon *L'Art*, from the work of F. J. de Santa-Anna Nery, entitled *Le Brésil en 1889*. Paris, 1889.

<sup>2</sup>Translation: *Mons. Emmanuel Julien—the pot is boiling, and he forgets the manioc.*

sheep whilst everybody was asleep. After having serenely devoured his chosen victim, the Jaguar proceeded to collect the blood into a calabash, and treacherously sprinkled some of it on the animal he had brought as a companion. When the morning came, the countryman saw what carnage had been accomplished in his stable during the night. The Jaguar then threw the blame on his friend, saying he was the real culprit, and that he was still bespattered with his victim's blood, and, regarding this as a proof, the farmer gave the innocent animal a terrible thrashing, whilst the wily Jaguar, comfortable after his heavy meal, laughed in his sleeve.

Most of the animals had paid this visit with him, when one day the Jaguar had the unlucky idea of inviting the monkey to accompany him on his habitual excursion. "Very well!" replied the monkey, who, however, had his misgivings. He fetched his violin and his knife and fork, and started off with the Jaguar. It was a long way, and they had to stop a little to take breath in a sugar-cane plantation belonging to the very man they were going to visit. "Don't touch anything, friend monkey," said the Jaguar; "this plantation belongs to my friend; you can browse on the grass, whilst I go for a turn."

He had employed the same stratagem a hundred times with the other animals, and believed himself sure of success.

He then went over to the other side and began sucking the sugar-cane, but the monkey, always on his guard, followed him at a distance, saw him munching away at the sugar, and commenced to do the same. When the Jaguar returned he found him still engaged in this pleasant occupation, and reproached him with his want of good manners.

They arrived in a very bad temper at the farm, where the rustic, with his usual generosity, had prepared a copious repast, composed chiefly of five large fillets of beef. "Go and fetch your knife and fork, friend monkey!" said the Jaguar (this was the usual system he employed with the other animals, who, on returning, found there was nothing left to eat).

"Thanks very much, but I have them with me," replied the other proudly, drawing them from his pocket.

They commenced dinner. The man took one piece of meat,

the Jaguar another, the monkey a third. But scarcely had the latter put his little teeth into his piece when he saw that the Jaguar had finished his, and had seized a second; seeing which, the monkey threw the meat he had begun to eat to the dogs, and took the remaining fillet. The Jaguar became very angry again, but said nothing.

The repast finished, being fatigued after their journey, they all went to bed. The monkey took the precaution of swinging his hammock up very high. He did not sleep, however, but began to play his violin. The Jaguar wanted him to be quiet, but the farmer thought the music charming, and begged him to continue. At last it grew late, the music ceased, the man went to sleep, the Jaguar feigned slumber, and the monkey imitated him.

After some time the Jaguar got up, ran to the stable, devoured a goat, filled his calabash with the blood, and returned to sprinkle his companion with it. But he was wide awake, sitting in his hammock, though to all appearance fast asleep, with his legs hanging down. When the Jaguar came close up, he gave a kick to the calabash, and smothered the other with its contents.

At daybreak the farmer saw at once that, as usual, one of his goats had been eaten; he became very angry, and insisted on knowing who had done it.

“Ah! I expect that is my friend, the monkey,” said the Jaguar, from his corner where he had hidden after having cleaned himself as well as he could.

“Look at your good neighbour, the Jaguar!” said the monkey. “He is still covered with the blood from your poor beast.”

The farmer assured himself that what the monkey said was true, and remembering all the wrongs to which he had submitted, and the ingratitude of the Jaguar, he took his rifle, shot him dead, stripped off his skin, and gave his flesh to the dogs.

The monkey,<sup>1</sup> before saying good-bye to his host, helped himself to a fillet of his dead friend, and took it away with him. He had an idea. He took it to the Jaguar's widow, saying,

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<sup>1</sup> The coarseness of this passage is such that we have been obliged to shorten it in the remainder that follows.

“Here is a *filet de bœuf*, and most excellent eating, a present from your husband, who was never better than he is now!” At the same time, in order to play a trick upon his late friend’s family, he told the little ones that it was a piece of their dead father, who was dead and buried. “Do you know what you are eating, mother?” said they. “It is papa’s flesh; the monkey has killed him!”

The Jaguar’s widow swore to be revenged, and hid herself in a large hole completely concealed in the plain, her jaws opened wide hoping that the monkey, being naturally inquisitive and addicted to wandering, would come that way, so that she could tear him to pieces. One day the monkey was walking about in the neighbourhood, and heard the other animals crying out,—“*The ground has teeth!*”—for they saw only the fangs of the Jaguar visible above the surface. The monkey at once concluded that this was a stratagem on the part of his enemy, and arming himself with a big stone, came near with great care, threw it with all his force into the open jaws, and bolted for his life.

The inconsolable widow, seeing her trick frustrated, got out of her den, intending to devise something else.

The dry season arrived, and there was only one spring left in the country. She kept guard over it, allowing every other animal to come and drink freely, with the exception of the monkey, who was dying of thirst, until he became so desperate for want of a drink of water that he anointed his body all over with *jataicica*,<sup>1</sup> then rolled himself in green leaves until he was completely covered with them, and boldly advanced to the stream. Everybody was amazed. Never had such an animal been seen, even the Jaguar’s widow herself was completely deceived, and allowed him to come up to the spring, where he drank with avidity for some time, and then dragged himself away. Arrived at a respectful distance, he tore off the leaves that had disguised him, and jeered at the widow with all his might directly she recognised him.

Madame Jaguar became furious, and decided for the future not to allow any animal whatever to come near the spring. The

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<sup>1</sup> Resin of *jatahy*: *Hymenoc sp.*

monkey now determined to profit by the general discontent in order to prepare a new trick for his enemy, and arranged a procession in which every animal in the forest was to take part.

On the day fixed, he placed himself courageously at the head of the procession and started off, singing sad chants, and as they were passing near the spring, the widow called out, "What on earth is that? What is the meaning of those hymns?" "It is the office of the Holy Virgin," he replied, "and we are praying for her help. Have you not heard the news? There is going to be a most terrible storm which will sweep us all away, and it is doubtful whether even the biggest trees will be able to withstand it." "For pity's sake!" said the Jaguar, "please fasten me to that huge tree I see over there, so that I may not be blown away also." "You have behaved very badly to us," cried the rest of the animals in chorus. "However, in face of a common danger we will pardon you. Come with us, therefore, and we will fasten you to it."

The monkey charged himself with this duty. Taking a rope of *curatú*<sup>1</sup> he immediately commenced operations. The upper part of the Jaguar's body being attached tightly to the tree, she called out, "Please fasten my hind quarters more securely still!" "Impossible!" cried her tormentor, "that part of you I want kept clear for the whip," and he proceeded to administer a most fearful thrashing with a freshly made birch, after which they all went away laughing heartily at the excellent joke.

At Paricatuba, upon the rio Mamiá, Ribeiro de Sampaio<sup>2</sup> assisted in 1774 at a feast that the Indians celebrated on the occasion of their children's arrival at the age of puberty. During this ceremony, which lasts eight days, they whip each other with strips of hide from the stag, tapir, or river cow, having a stone at the end. An Indian places himself in the middle of a space marked out, his arms spread in the form of a cross, whilst another whips him, then takes his place and submits

<sup>1</sup> Palm-tree (*Attalea spectabilis*).

<sup>2</sup> Ribeiro de Sampaio; work cited, page 22.

to the same castigation. Meantime the old women of the tribe prepare the *payuará*, a wine made from the fruit of the *cassava*, and the *paricá* (*mimosa anacardioides*, which De La Condamine calls *curupa*, like the *Cumbebas*), a kind of tobacco which they smoke in the most singular fashion: each of them has in his hand his pipe filled with the *paricá* powder: he applies one of the extremities of this pipe to the nose of his next neighbour, and blows through the tube with all his might. The other renders him a like service. This amusement lasts the entire day, and the night is devoted to drink and dances.

Amongst these dances, one of the most extraordinary is that which the Uaupés execute in honour of the *Jurupary*, to the sound of a dozen of the sacred *torès*, which they guard with great care, far away from the sight of women, who cannot even hear the music.

Amongst nations still in their infancy, cries and dancing make up for poverty of idiom, and give them modes of expression.

In proportion as natives mature and enter into the calm of experience, the muscles tend to repose, the body becomes less prone to violent demonstrations, language gains in resources, sensation becomes transformed into sentiment and that into refined thought. Excessive civilisation renders the heart impassible, the head cool, and the limbs rigid.

This phenomenon of passivity is very noticeable amongst the Indians who have come in contact with civilisation with the whites. Their dances and their religion, as we shall soon see, have been affected by contact with foreign customs. The old dances have remained, but the energy of the dancers has diminished. The following is the description as given by Agassiz<sup>1</sup> of the modern dance of the Indians of the Amazon, which agrees with our personal observations:—

“The dance commenced. It was of a most peculiar character, and so languishing that it hardly merited this name. The body made scarcely any movement; the arms, raised and curved,

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<sup>1</sup> M. and Madme. L. Agassiz: *Voyage au Brésil*, Paris, 1876.

were still and motionless; the fingers, clacking like castanets, accompanied the music, and one would imagine that statues were gliding about rather than dancers. The women above all produced this impression, as they moved even less than the men."

As to the actual inhabitants of the towns of the Amazon, they have introduced into their homes the music and dances of Europe. Nothing distinguishes them from the civilised people of the Old World.



## CHAPTER IX

*Modern education.*—General organisation of public instruction in Brazil—What public instruction was on the Amazon fifty years ago—What it has become—Funds devoted to public instruction by the State budget—Elementary public schools—Secondary teaching—Training schools for teachers—Professional teaching—Museum.

THE best scholastic system is evidently that which answers best to the national temperament, to the wants of the moment, and to the general institutions of a people.

In Brazil the organisation of education rests upon three bases. To a certain point it is in accordance with our customs, abilities, and political system, and in no way resembles that which prevails in such a country, for example, as France.

France is a Republic strongly centralised. Brazil is also a Republic, but a Federal Republic composed of autonomic States. Thus, whilst in France teaching of every kind is under a central authority and subject to the power of the State, in Brazil, on the contrary, it is, as it were, organised upon the same lines as the autonomous government of each State.

Education in Brazil is under the control of each State, and also in principle under that of each municipality.

Even the higher education itself is not a monopoly of the Federal Union—the twenty States, the municipalities and corporations even can create Universities and faculties, and these establishments are entirely free in the choice of their professors, in the settling of their programme, and in the choice of their methods. The Federal Union cannot force them to acknowledge its authority nor claim any right to control or inspect the work done. The examinations to which candidates of every province

have to submit, who wish to enter the establishments of higher education that it still maintains, are the only means at its disposal of bearing directly upon the programme of elementary and secondary instruction.

In France elementary teaching has only become free since the application of reforms introduced by M. Jules Ferry. In Brazil it is gratuitous everywhere, and even before the establishment of the Republic it already existed in virtue of a clause of the Imperial Constitution of the 25th March, 1824. The fact that education is gratuitous does not make it compulsory, but the means of educating their children are offered to fathers of families throughout the entire territory of the Republic. Certain Brazilian States have made education compulsory, and there are others where it remains optional, but it is always and everywhere gratuitous.

In the State of the Amazon it is not obligatory. In so vast a region where the centres of population are irregularly distributed, where the interests are very diverse, it would be perhaps difficult to enforce the attendance of every child at a school, but this fact is none the less regrettable. On the other hand, the fact that the teaching is secular in the Amazon seems a natural corollary of the separation of Church and State decreed by the Provisional Government, and confirmed by the Republican Constitution of 24th February, 1891. However, religious teaching is given in nearly all the private scholastic establishments, and most frequently by lay instructors, without giving rise to any great inconvenience.

Public teaching, then, in Brazil is sufficiently in harmony with our governmental organisation and our customs. It is gratuitous, as is suitable to a democracy. It is obligatory or optional, according to circumstances, as it should be in a vast and free country governed as a Federal Republic. Lastly, it is not religious, but neither is it anti-religious, because with us there is a happy blending of religious and free practical philosophy.

The theory of free education justifies itself.

The decentralisation of public instruction was rendered necessary by the political organisation of the country, as we

have already explained, and by the peculiar conditions of its population. The Brazilian territory is immense. It is only less by one-fifth than the total surface of Europe. Moreover, it is very unequally peopled. It would have been difficult to organise the same system of teaching in the State of the Amazon, for example—where there are barely 0·08 inhabitants per square kilomètre—as in the capital of the Union, where the density of population amounts to 197 per square kilomètre. It would have been impossible to enforce a uniform system in countries so dissimilar in point of population, climate, ethnological elements and local customs. It was wiser to leave to the States the care of arranging their own teaching according to their respective wants.

The States, moreover, have shown themselves worthy of the task that has been confided to them. They have rivalled each other in their zeal to ensure to the greatest number possible of those under their charge the best and most useful education, and this noble emulation between the twenty States has resulted in a truly remarkable progress.

One of the former ministers of public instruction of the kingdom of Italy, Signor Coppino, was in the habit of saying: "Elementary schools and teachers are only wanting where the parishes do not exhibit sufficient eagerness to endow them properly with funds."

The Central Government, indeed, cannot provide for everything. On that score the States of Brazil have nothing to reproach themselves with, nor to wish for, because almost all of them devote the best part of their budget to public instruction.

The State of the Amazon occupies an honourable place by the side of its nineteen brothers, from the point of view of public education, and the progress it has made in this respect merits every possible encouragement.

The first elementary public school of which mention is made in the legislative annals of the old province was established by the law No. 6 of 8th May, 1838, when this State was only a simple *comarca* dependent upon the province of Pará. The school was established in the quarter of Saint Vincent, in the town of Barra do rio Negro (now called Manáós), where ten years after

law No. 151 of 25th Nov., 1849, established also an elementary school for girls.

Thus, therefore, sixty-one years ago, at the time when this *comarca* became a province, the Amazon possessed just two public elementary schools.

In 1852, when this territory became independent, and constituted the province of the Amazon, four public elementary schools were established at Silves, Itácoatiára, Moura, and Thomar.

In 1853 nine new schools were founded, for boys only, at Villa Bella (now called Parintins), Maués, Canuná, Borba, Tefé, Sam Paulo d'Oliveña, Sam Gabriel, Barcellos, and Coary.

The following year, law No. 27 of the 9th September 1854, provided for the education of girls, and instituted a second elementary school for them at Tefé.

We possessed, therefore, forty-five years ago only sixteen elementary schools throughout the extent of our great Province; and twenty-seven years after, in 1881, we were still only provided with forty such schools, some of which had no regular managers. The Province at that time expended about 53 *contos* upon its public instruction, and only obtained very meagre results, as the attendance ranged between 1000 and 1500 pupils.

Since this latter date, 1881, a new era has commenced for our public education; it is under energetic direction, and considerable vigour is manifested. The great importance of having citizens well educated and capable of raising the intellectual level of the Amazonian population has been at last understood. The local Government will not suffer the material progress and future developments of agriculture and industry to be without support, and to rest upon an insecure foundation. It has set itself to conquer ignorance in the same way as it determined to vanquish slavery and to ensure the benefits of a prompt and serious immigration. It has understood that a nation, in order to prosper, ought at the same time to take care of its moral, intellectual, religious, and purely material interests, and that it is always dangerous to ignore any of these four factors in every real civilisation.

This is why a certain writer was correct when he said: "There existed about two thousand years ago, in the south of Europe, a

very small people, of two or three million men, so poor that they paid their ambassadors only 7 francs 50 cents a day, whose fleet consisted of small coasting vessels, and whose army would hardly have formed two or three regiments—it was called *Greece*.

“There was also, on the other side of the *Ægean Sea*, the immense *Persian Empire*, rich in millions, which possessed the whole of Asia from the Indian Ocean to the Euxinus, and had a fleet of thousands of ships, and an army of millions of men. And yet in the eyes of history and posterity, Greece, with its small population, was the great nation—whilst the Persians, with their immense empire, were but barbarians.”<sup>1</sup>

We had no wish that our immense Amazonia should be one day reckoned as the home of a barbarous nation: nor did we want to be accused of building on the sand and of spreading barbarism. Our compatriots, inspired by the good example set by most of the countries which are in the vanguard of civilisation, had no hesitation in employing the greater part of our budget in the instruction and education of the masses. They spared nothing in order to achieve a rapid transformation of our elementary teaching in accordance with our national aspirations.

The funds devoted to public instruction of every form and degree do the greatest honour to the local legislators.

The results that have been obtained already augur very favourably for the future of education and intellectual progress.

During the financial year 1898 the amount assigned to educational purposes rose 1737 *contos* or millions of *réis*, without counting the subsidy allowed to the theatre, considered as a means of instruction and improvement, nor the sums allowed for the maintenance of the State printing press (more than 51 *contos* for the latter and about 232 *contos* for the former).

The receipts being estimated for that year at 17,938 *contos*, it is easily seen that the Amazon devotes nearly one-tenth of its funds to education. There are States in Europe which do not display such wise liberality.

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<sup>1</sup> See *Les découvertes de la science sans Dieu*, by Eugène Loudun.

The resources of this budget serve to provide the expenses and maintenance of:

138 public elementary schools, of which 30 are for boys, 20 for girls, and 79 mixed—this service of elementary education absorbs a little over 983 *contos*;

21 foundation scholars who have their education at the expense of the State (23 *contos* 400,000 *réis*):



*The Benjamin Constant Institute at Mauós*

The Library, Archives, and Statistics (100 *contos* 920,000 *réis*);

The Museum (115 *contos* 920,000 *réis*);

The Institute of Arts and Crafts (281 *contos* 900,000 *réis*);

The Benjamin Constant Institute (171 *contos* 600,000 *réis*);

And gratuities to certain private schools (10 *contos*).

The number of pupils on the books has increased in proportion to the facilities for education. The elementary schools are thus registered :

In 1878	-	-	-	-	-	-	-	-	1029 pupils
1882	-	-	-	-	-	-	-	-	2478 „
1896	-	-	-	-	-	-	-	-	3109 „
1897	-	-	-	-	-	-	-	-	3242 „
Plus the attendance in Private Schools	-	-	-	-	-	-	-	-	644 „

The State possesses only 16 school houses, of which 6 are in the capital and 10 in different parts of the interior.



*School at Manaus*

The school furniture of North American production is being replaced by that of French manufacture.

The secondary or higher education, which is in some respects an *education de luxe* in a new country, has not been neglected. It is given regularly and in a satisfactory manner in an establish-

ment which combines a training school for elementary teachers and the Amazonian *Gymnasium*, a *Lycée* of day scholars with numerous courses of study, too numerous perhaps, where are taught not only the dead languages, such as Latin and Greek, but English, German, and French; also all the higher subjects that are taught in the *lycées* of Europe, and even biology and sociology. In 1897 the school for teachers, which receives pupils of both sexes, had 69 scholars on the books, and the *gymnasium* 36. Higher education is also given in a small diocesan seminary and in a few private colleges.

Technical and professional education, which we consider as a primary and urgent necessity for our country so lacking in artisans, had been given for a long time in an establishment that was unwisely closed, but which was reopened in 1882 and has been recently reorganised. The programme of that special tuition comprises elementary instruction and practical professional classes. Workshops for tailors, bootmakers, blacksmiths, locksmiths, carpenters, bookbinders, and many other trades have been opened, and the pupils live as boarders in this *lycée* of arts and crafts.

The Amazonian Museum, which was reorganised by a decree dated 21st Aug., 1897, comprises two sections—Botany and Zoology—and employs a travelling naturalist. The first section is devoted to general and applied zoology, comparative anatomy, general paleontology, geology, and mineralogy. The second section comprises general and applied botany, vegetable paleontology, ethnography, archæology, and anthropology. It possesses some excellent collections—one which belonged to M. Paul Taubert, associate of the Berlin Museum, contains his library and botanical collection; the other, purchased from M. Richard Payer, is an ethnographical collection, principally made near the rio Negro and its affluents. Its library and collection of instruments are enriched from day to day.

Such in its broad lines is the state of public education in the Amazon. Gaps there certainly are that have yet to be filled up. There remains much to be done before perfection is attained. Institutions and masters are inadequate in more respects than



one. They are insufficient in number, and their capacity is sometimes at fault. The newer methods are not yet established everywhere. The more pressing needs have been attended to, but little by little the faults will be corrected. Experience will prove the best mistress in a country so full of good intentions.

A State that devotes to public instruction a sum representing one-tenth of its total revenue merits admiration, encouragement, and not unfrequently imitation.

## CHAPTER X

*Cults and religious rites.*—Religious sentiment amongst the Indians—How their religious belief has been produced—Indian superstitions—An Amazonian Idol—M. de Castelnau's find—Influence of the Jesuits and other missionaries on the primitive belief of the aborigines—The *Sairé*—Present state of Catholicism.

AMONGST a people left to itself, religious evolution nearly always follows the slow transformations in the language. A language poor in abstract expressions implies an unpolished cult, hardly freed from sensations which are purely organic. Sir John Lubbock and others of his school are of opinion that the earliest religious phenomena coincide with the first temptations of the human soul. They suppose that dreams have been the origin of religious manifestations which are explained thus :

The savage has seen in his sleep the disembodied spirit of the great chief of his tribe. On his awakening he affirms that the great chief still lives, that he is floating about his cabin, that he watches, though he is invisible, over his former warriors, and that he himself has seen him and held converse with him. And thus the way is opened to every superstition and to eventual deification.

This system, however ingenious it may be, cannot account for every religious fact amongst all nations. It even seems to us that it does not penetrate deep enough into the psychological analysis, and the genesis of the supernatural in the soul of the first man. It cannot in any case be applied to the primordial fetichism of the Brazilian aboriginals.

This religion, as we are now about to show, appears to rest on a confused abstraction of certain natural phenomena, and would have tended to a universal pantheism rather than to a

human polytheism. Without doubt, hallucination played an important part in the first unconscious idea of the divinity conceived by the limited intelligence of these men of the woods; but it did not, in all probability, affect individuals as it did, for example, amongst the Redskins of North America. It did not give rise to the great pantheistic idea of the *Totem*. Enthusiasm was more rational amongst the Indians of Brazil, we may even say more scientific, as it was only produced under the inspiration of the marvels of nature. It even avoided in general all exterior manifestation, and did without an external cult.

This religion without cult, without inspired sorcerers (for the *pagé* was not really one, as was afterwards supposed), devoid of jugglers and of priests, and without temples, pompous ceremony, or secret initiations, was but a simple manner of conceiving the laws of the universe, and numerous proofs of this fact could be adduced.

The first travellers who studied the Indians of the Tupi-Guarani group in the course of the centuries that followed their discovery misunderstood their religion. Those who came after repeated the same stories without verifying them or submitting them to any severe criticism.

These travellers affirmed that the absence of all religious ideas was the characteristic of these tribes, degenerated and degraded ever since the fall of Adam. Later on they attributed to the Indians a theogony which they had received from the very people who ascribed it to them.

One of these ancient chroniclers, Father Vasconcellos, if we are not mistaken, even said in a fit of pathos: "Their language has neither an *f*, an *l*, or an *r*, as if Providence had wished to show that they had neither *fé* (faith), *lei* (law), nor *rei* (king)." Such was, at that time, the way in which comparative studies of linguistics and mythology were made.

The good Father was deceived, however.

The *Tupi-Guarani* language has neither *f* nor *l*, but it has the letter *r*, only it is always pronounced very softly, whether it is at the commencement or in the middle of words. Thus the Indians of the Amazons say, with the letter *r* very liquid: *marica*, stomach; *rāna*, tooth; *pira*, fish; *muira*, wood, etc.

It is true that if the earlier chroniclers treated thus questions of origin, at the present time they are approached with preconceived ideas that are no less disastrous. Have we had any clearer knowledge since Max Müller put forward his theories?

The truth is that the questions of origin are almost everywhere impossible of solution in the actual state of our knowledge. They are too much enveloped in darkness, which even the eye of genius cannot pierce.

Whilst the *Aryâs* of India developed the idea of cause by way of analogy, by applying to the universe the three stages of human existence, viz., to be born, to grow, and to die—*Brahma*, *Vishnu*, *Siva*—the *Tupi-Guarani* Indians proceeded in a far simpler manner.

They spoke of one phenomenon, viz., *maternity*. Their mind ascended to the source of Being without speculating upon its three phases as amongst the Hindoos.

These uncultivated men, little higher than the brute creation, were, above all, struck by two great facts in their surroundings: the birth of man and the production of light.

Seated in the shadow of the *mattas virgens* they silently watched in superstitious meditation the birth of their children, and this mystery of parturition troubled them. They saw but one cause: the mother, the life-giving mother.

And when they found themselves before this dazzling nature penetrated with light, when their eyes, fatigued with the darkness of the forest, gazed on that ocean of light that inundated the heavens, they asked themselves in wonder:

What is it that makes the day? It is its mother, *ci*.—What is the mother of day? It is the sun, *uaraci*.

The sun became the mother of the universe, a female deity who lights every man coming into this world.

But in the torrid zone it is difficult to attribute to the sun the bountiful part of universal producer or mother (*ci*). *Uaraci* never touches plants except to consume them with her death-dealing fires.

Who then engenders the refreshing verdure upon the earth? It is the mother of the plants.—Who is then the mother of the plants? It is the sweet moon, who, during the beautiful nights

of the tropics, sheds her dews over the forests. And the moon was called *yaci*, the mother of plants.

The Indians never imagined the crossing of a male god with a female deity. To them generation had only one efficacious factor: the mother, *ci*.

By the side of this religion of calm enjoyment they had also the religion of fear.

Their desire of knowledge, which is the chief factor in all human progress, the germ which engenders the knowledge of good and evil, was held in check by a vague feeling of terror.

Abandoned to themselves in the depths of immense solitudes, surrounded by mysterious faces which operated with brute power on every side, they did not understand what there was hidden behind these phenomena having the appearance of vital and voluntary energy.

Those trees which bent to the will of the wind<sup>1</sup> through which the storm howled, swaying them to and fro in its fury, threw upon the earth gigantic shadows, terrible like that of the *caápora*, or very small and deformed like that of the *curupira*.<sup>2</sup>

Their nights were tormented with visions. Fatigue, perpetual fear and indigestion troubled them in their sleep. Nightmare laid hold upon them, and this nightmare became an evil genius who seized them by the throat. This was the *Jurupary*.

When they awoke during the long nights a bird sang and uttered a piercing and monotonous cry in the solitudes. This was the little lame dwarf, *Maty-Tapéré*, which still terrifies the Amazonian children of the present day.

When the Indian sets fire to the trees in the forest in order to clear a space for his *maloca*<sup>3</sup> the spiral flames run before him, the serpents hidden in the close grass writhes, burn, and try to escape. He sees in it the *Mboitata*, the *serpent of fire* which protects the forest.<sup>4</sup>

<sup>1</sup> The wind is angry (*Thooru jack-jemm*), say the Botocudos.

<sup>2</sup> *Curupira*, scurfy, from *curub*, scurf, and *pir*, skin. Even at the present day the people there give sometimes the name of *tinhos*, scurfy, to the devil.

<sup>3</sup> A collection of Indian huts.

<sup>4</sup> See *Revista Brasileira*, of Rio de Janeiro: *A Religião dos Tupys-Guarany*, by Dr. José Verissimos de Mattos, a distinguished Americanist of Pará.

When he approaches the rivers during the nights light as day, he hears the murmur of the waves breaking on the shore: they are the *yáras*, enchantresses who are luring him on to kill him.

This great child of nature is in terror of everything, yet he is very brave amongst his fellow-men. Death, which he deals so valiantly, he does not fear to meet. But there is something that he dreads far more than death, viz., the unknown, the spirit of things unseen, the mysterious assemblage of phantoms with which his imagination peoples the unknown land, whither he will go after death; it is an unknown, indefinite something which he has in his soul, and which torments him from his birth.

It is in this way perhaps that religious sentiment was developed amongst these savages. It existed still in the vagueness of an unconscious theodicy. The period of pious expression had not yet arrived for these independent and undeveloped minds. Their wandering life, moreover, hardly favoured the establishment of temples and altars.

Until quite lately the absence of every exterior manifestation of religion among the Brazilian aborigines had struck all students. Not a ruin, no remains of any sanctuary could be found in a country which had never suffered the ravages of any destructive invaders. There was not the smallest inscription to decipher, nor the least fragment of any stone deity, and this in a region where one would have expected to find the remains of a past which might serve as a clue to the origin of an entire race.

The disappointment was great.

However, a few inscriptions (*letrados*) have since been found here and there.

Certain *sarants* in a recent congress gave vent to some most amusing hypotheses on this subject. According to them our Indians worshipped the trees in the forests, and chose for their idols the finest produce of tropical vegetation, thereby avoiding the expense of graven images. Or else they were simple schismatics, who had separated themselves from the idolatrous cult of their neighbours to live without images in a sort of pure idealism.

These theories do not bear examination, however scientific they appear, and in spite of the barbarous words in which they are stated.

It would be best perhaps to abide by the opinion expressed one day by M. Frank in a lecture at the *Collège de France*—“The Indians of South America,” said he, “are men like others, endowed with the same rights, but condemned by some unknown original defect and by their unfortunate surroundings to remain inferior to other men. We are obliged to acknowledge that these welded skulls and these coagulated brains were powerless to fathom *by themselves* every phase of the religious and scientific progress of humanity.”

If they stopped short at the point where a positive cult issues from the confused aspirations of a dreamy and naturalistic mysticism, it is because amongst them the degree of consciousness was determined by a fatal law of their being. Perhaps also these inhabitants of the forests never had the good fortune to receive one of those revelations which open out to nations prospects of a more glorious future. A spark perhaps would have sufficed to enlighten them and urge them forward. They have only had the hardships of existence, and the darkness of their words has hemmed them in. To penetrate the mystery of their despondency would be as difficult as to say what is wanting in the great vertebrates to make men of them.

During the past few years idols and remains of Indian temples have been discovered in certain parts of Brazil, and weapons, stone implements, and numerous specimens of the ceramic art have been found and studied, as well as *mounds*, *sambaquis*, and inscriptions, forming a complete series of antiquities to which recent discoveries are constantly adding.

M. J. Barbosa Rodrigues has devoted a book to the “Antiquities of the Amazon.” M. Ladislau Netto, the regretted director of the National Museum, undertook in 1881 an expedition to Pará to make preparations for the exhibition of Brazilian Anthropology held at Rio de Janeiro in the following year. He found some remains of images on the isle of Pacoval, and is of opinion that this isle, situated at the mouth of the river of the Amazons, was artificially constructed by the Indians,

who gave it the form of a turtle, intending it to serve as a burial place for their dead. More recently still, M. José Verissimo de Mattos discovered an idol which confirms the statements made, after the examination of the idol brought back from the Amazon in 1875, by M. Barbosa Rodrigues.

Let us remark, however, that these discoveries relate solely to Amazonia. They do not weaken the general conclusions that we formulated above. Whilst assuming for the rest of the country and the greater part of the native tribes the existence of a primordial fetichism, we may admit that certain groups of Indians had developed a less rudimentary religious system.

Two questions here present themselves for consideration: Was it alone and unassisted that these natives arrived (from internal or external causes not yet determined) at that degree of religion which finds expression in works of art or in public ritual, or did they make this progress as a result of intercourse with foreigners?

Everything seems to favour the latter hypothesis.

It is possible that Mexican immigrants may have settled at some far-distant date on the islands of Marajó and Pacoval: and it is also possible, and probable, that the frequent contact of the natives of the Upper Amazon with those of Peru may have introduced amongst them certain more advanced forms of religion.

Indeed it is now known that the Ucayale,<sup>1</sup> one of the branches of the Amazon, has its banks lined with niches, grottoes artificially enlarged, mausoleums supported by pillars surmounted by a lintel and sepulchres. There was also on the banks of the Apurimac, another branch of the Amazon, the fortress of Chocequirao, where the heirs to the crown of the Incas lived; and this was the refuge of the last survivors of the Manco-Capac race.

But, we repeat, much prudence is necessary whenever any question arises as to traces of Indian civilisation in Brazil, as the following example will prove:—

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<sup>1</sup> See on this subject the opinion of the Marquis de Nadaillac, in his beautiful work, *L'Amérique Préhistorique*.



There is at the Louvre, in one of the rooms closed to the public, and which we have only been able to see by the special permission of M. de Rouchaud, a statue of a monkey, very curious to study,<sup>1</sup> as it recalls by its rather advanced workmanship some of the beautiful specimens of Mexican art. It was, perhaps, a savage god dreaming under the cocoa-nut trees of wanton love, for an exaggerated phallus is represented at its abdominal parts. M. de Castelnau was entirely mistaken about it. In the year 1846, as he passed through the town of Barra do rio Negro (now called Manaós, capital of the Province of the Amazon), he found this image, which served as a seat at the door of a house, and at once believed *he had found Peru*. He took charge of this relic, and brought it back with him to France, where a legend soon sprang up about this false idol. M. Paul Marcoy declared that this little monkey god had been found by the Carmelites at the source of the river Uaupés, and they had sent it to one of their mission stations, whence a merchant had forwarded it to Manaós. It was in this town that M. de Castelnau found the idol which now enjoys the honour of being exhibited in Paris.

Now, this stone monkey which, according to our two travellers, descended in a direct line from the Indian Pantheon, this ape which has been the hero of a strange Odyssey, has since been proved to be nothing else but the work of a Portuguese mason, who made it in the year 1784, and Senhor Antonio Jacintho de Almeida only deserves our thanks for inspiring the genius of our much-regretted poet, Porto Alegre, who related its adventures in a most laughable comedy.

All this long archæological investigation ended, therefore, in verse.

As to the Amazonian idol of M. Barbosa Rodrigues, it is more authentic and of better quality. According to him it is more than three hundred years old. It was found buried in the garden of a house in the town of Obidos, in the Province of Pará, on the left bank of the Amazon. It represents, they say, a god of fishing, and the Brazilian *savant* reminds us that even

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<sup>1</sup>This image is at present in one of the rooms at the *Musée du Trocadéro*, Paris.

at the present day some of the Amazonian Indians fasten to their roughly-made boats (*montarias*) some leaves of the *tajá*, in order to charm the fish and secure miraculous hauls.

In spite of these few improvements which we consider to be of Mexican or Peruvian importation, contrary to the opinion of M. Barbosa Rodrigues, who has advanced certain daring and seductive hypotheses on this subject, it is doubtful whether the primitive religion of the Indians in Brazil was ever monotheistic.

Greece and Rome required three hundred years of philosophy, grafted upon many centuries of polytheism, before they evolved the idea of one supreme God, and then it existed only in the privileged brains of a few Platonists and Stoics; and even so it is not scientifically certain that it was imported, that is to say, revealed. It is impossible to calculate the time that would be necessary for unconscious followers of fetichism to arrive at the final stage of religious and metaphysical abstraction.

The Catholic preaching of the missionaries very nearly worked this miracle in a few years.

We are touching here on a delicate point of religious criticism. We will only say in a few words that the teaching of Christ is suited to every soul and to all races of men, so profoundly human is it, not to say divinely inspired. But this sublime and universal doctrine acquired different qualities, according to the more or less precious vases into which it was poured, as says the Gospel.

Amongst the proud Roman Stoics, the Christian belief produced the religion of martyrs and of the Fathers of the Church; amongst the German Barbarians it produced the third faith of the Middle Ages; and in the solitudes of the New World it became a sort of Christian fetichism.

We must explain the above statement.

After grasping conquerors had shed torrents of blood, the Word of Life was sown by men full of courage and devotion. The Priest endeavoured to unite to their native country, as well as to their Eternal home, the souls that other men simply regarded as means of making money. He went through our forests with his crucifix and his prayer-book, dressing their wounds and restoring their courage. The missionary knew how to offer unspeakable consolation to these full-grown children

struck down by misery. He told them that their victors were subjects of a just master, who rewarded the good and punished the wicked, of a Being who created and governed everything. He showed them what a comfort it would be to them in their misfortune, were they to put their trust in this great benefactor of the world, but he did not hide from them the fact that this God became sometimes a terrible God, prompt to chastise.

Thus did the missionaries present the principal dogmas of Catholicism to these undeveloped intellects.

They did not insist upon any strict theological teaching, being sure that their orthodoxy would soon be disfigured; they had but one end in view, viz., to render gentle and good these unhappy human beings, who gave themselves up recklessly to every impulse of their violent passions.

Thus they succeeded in diminishing their ferocity, and gradually altered their primitive beliefs.

The God of the Christians became for these imaginative savages the awe-inspiring *Tupan*.<sup>1</sup> Satan was incarnate in the person of the terrible *Anangú*.<sup>2</sup> The genius of which we have already spoken gave place to the cult of the saints. Then they grasped a trinity, based upon the Catholic Trinity, and composed of the sun (*Uruci*), the moon (*Yaci*), and a God of Love (*Rulú* or *Perulú*).

The Portuguese preachers were no less successful with their catechumens in that which concerned the exterior cult and sacred ceremonies. They succeeded in making them observe festivals and respect devotional images.

We took part in our childhood at processions where fetich beliefs were mixed up with Christian rites. M. Barbosa Rodrigues has described the festival of the *Saïré*,<sup>3</sup> of which we still retain a vivid remembrance: it savoured of ancient traditions rather than of severe Catholic solemnities.

The *saïré* is a semi-circle made of wood  $1\frac{1}{2}$  yards in diameter. In this semi-circle two other smaller semi-circles are drawn as tangents to each other with their extremities resting on the large diameter. This solid banner resembles a double Romaic window.

<sup>1</sup> *Tupan*, the soul of the father or his parents, of the protector or creator.

<sup>2</sup> *Anangú*, the soul of evil.

<sup>3</sup> See *Revista Brasileira*.

From the point of contact of the two semi-circles rises perpendicular to the diameter of the large one a radius which passes through the circumference and terminates with a cross. The two small semi-circles have likewise their radii perpendicular to the diameter adorned also with a cross. These arcs are covered with a padding of cotton wool and decked with ribbons. A quantity of little mirrors, cakes, and fruits are suspended from it, and a large ribbon like an oriflamme hangs from the cross in the middle.

The entire biblical history of the deluge is contained in this symbolical representation.

The large arch represents Noah's ark; the little mirrors signalise the light of day; the cakes and fruits the abundance which was in the ark: the cotton and the tambourine the white foam and the roar of the waves during the deluge: the movement given to the *saïré* recalls the floating of the ark upon the waters. The three semi-circles taken together are the three beings of the Trinity, distinct although connected. The three crosses are the figures on Calvary, Christ crucified between the two thieves, and so on.

The ingenious priest who invented this instrument certainly did more than all the other preachers put together to perpetuate a semblance of the Catholic faith amongst the Indians.

When the Indians celebrate any saint's day they erect an altar in their hut, upon which they place an image of the saint, and at its feet is placed the *saïré*. In front of the house they raise a large thatched roof. Tables are set up, and everything prepared for dancing and merrymaking. This, of course, only takes place amongst the converted Indians.

When the day arrives the *saïré* is carried from the house to the church, and the procession is arranged in the following order—first comes a dignified Indian carrying a banner upon which is fixed the image of the saint whose festival is being kept. Then follows the most holy *saïré*. Three old Indian women, dressed in their finest attire, carry it high up in the air by its base. A young girl swings the long ribbon of the *saïré*, whilst at each side one of her companions shakes the sacred tambourine, which is adorned with many-coloured ribbons. The women follow next, and the men close the procession. During

the march, at regular intervals, the old women make the *saviré* swing backwards and forwards, imparting to it the most expressive movement of rolling and pitching, whilst the young girl plays her tambourine and dances to the time of the song and the chant.

The melody is sad, monotonous, and is the long wail of suffering souls. The words are simple and expressive of hope in the future life.<sup>1</sup> They say :—

—“In the baptismal fonts of stone has the child Jesus been baptized.”

The choir replies :

—“Both Jesus and Holy Mary.”

—“The Holy Mary is a beautiful woman; her Son is like her; He is in the high Heavens, upon a great cross in order to guard our souls.”<sup>2</sup>

The choir repeats :

—“Both Jesus and Holy Mary.”

The Christian idea continues to haunt even the minds of those Indians who have never received any religious teaching: their ancestors have evidently transmitted it to them. For upon the mountain of Parintins, opposite the mouth of the Jamunda, on the right bank of the Amazon, there was formerly a mission station of the Jesuits. The savages that they had converted one day revolted, burnt the house of the preachers, demolished their church, and fled. But the bells were probably forgotten, and even to the present day there is a tradition that sometimes, in the silence of the night, they are heard tolling as if to reproach those savages for their ingratitude and their hardness of heart.

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<sup>1</sup> The refrain is in Portuguese; the chant is in Tupi language, of which the following is the text :

Itá camuti pupé neiassúcaua pitangué puránga ité.

<sup>2</sup> Santa Maria cunân puránga, imembóira iauéré iuaté pupé, oicou curussá uassú pupé, ianga turama rerassú.



## THIRD PART

### THE FOREIGNER AND HIS RELATIONS WITH THE INHABITANT

#### CHAPTER I

*Voyages of exploration.*—Why Europe should be interested in the affairs of the Amazon—De La Condamine—Alex. von Humboldt—Von Spix and Von Martius—Ed. Poeppig—Alc. d'Orbigny and the Comte de Castelnau—Osculati, Mawe, Smyth, and Lowe—Wallace and Bates—Other English travellers—W. Chandless—The United States and explorations in the Amazon—French, Italians and Germans—A royal princess in the Amazon—The valley of the Madeira—Louis Agassiz.

ONLY a few years ago it was the fashion in Europe to affect indifference on the subject of the Latin American nations. An idea prevailed that these far-away countries could boast of nothing but incessant revolutions, periodical earthquakes, *operetta generals*, and a constant supply of adventurers. A little of this contempt, which was due as much to ignorance as to conceit, has now been removed. People are becoming interested in the progress, the rising industries, the flourishing commerce, and even the literature and art of these countries.

Amongst them, Brazil, pacified after a period of unexpected agitation, is resuming its proper position. The English do not overlook the profits derived from their invested capital. The Germans and the Italians know that thousands of their countrymen prosper there. The French lastly remembered the glory, ephemeral perhaps, but dazzling, won by their ancestors in this part of the world in the seventeenth century. In fact the

French at that time first made known to Europe the marvels of "Antarctic France."

Jean de Léry<sup>1</sup> said of the beautiful country of Brazil :

"Every time that the image of this New World, which God has allowed me to behold, presents itself before my eyes, this exclamation of the prophet comes immediately to my memory :

*"O Seigneur Dieu, que tes œuvres divers  
Sont merueilleux en ce monde univers!"*

His contemporary, Father Claude d'Abbeville,<sup>2</sup> said with no less enthusiasm in his quaint poetic language, "The Holy Scriptures make much of the beauty of the earthly Paradise, particularly on account of a river which ran out of it, watering this garden of delight. I will content myself by remarking here that this country of Brazil is marvellously embellished by many great rivers. These beautiful streams temper the atmosphere and moisten the soil of Brazil, so that it is continually and at all seasons green and fertile. . . . How pleasant it is to see all the country adorned with an infinite variety of beautiful colours, with herbs and flowers such as are found nowhere else."

The learned custodian of the Sainte-Geneviève Library, M. Ferdinand Denis,<sup>3</sup> has rightly observed, "The English were the first to develop a taste for industrial improvement amongst the Brazilians, and they originated in the country that commercial activity which we carried on later with considerable success, but the French have the right to claim the honour of having introduced the Arts and Sciences which one people always owes to another; and their introduction marks an epoch in the history of a nation's social development. If we take into account the shortness of the time that has elapsed since the Brazilians first turned their attention to intellectual pursuits, and if we consider what they have produced and compare them as to art with the other nations of America, there is no doubt that they hold the foremost place now and will continue to do so in the future.

<sup>1</sup> *Histoire d'un voyage fait en la terre de Bresil.* 3<sup>me</sup> édit., Genève, 1585.

<sup>2</sup> *Les singularitez de la France Antarctique.* Paris, 1558.

<sup>3</sup> *Bresil.* Paris, 1837.



The States of the North form great political combinations and develop industry; the States of South America, and above all Brazil, cultivate arts and science, and comprehend the great social movements which ought to guide the world.”

Brazil has ever aroused the admiration of all travellers who have visited her. Amazonia abounds in reminiscences of learned men from almost every country of Europe. The memories of the past and the accounts of more recent travels ought to induce Europeans to cement more firmly the friendship that has always existed between them and the Brazilians; commerce and colonisation should more than ever unite their home and ours.

In order that we may not be accused of judging our native land with too much patriotic partiality, we will devote this chapter to collecting the testimony of explorers of every nationality who have visited the Amazon.

Men of courage have not feared to penetrate into its most remote districts, and have satisfied themselves as to its resources and its future. They have not simply praised the lavish beauties offered by nature, the charming situation of the towns, and the majesty of the immense valley; they have been careful to note every detail of scientific interest.

But, as we have already said, most of the works and accounts that these travellers have left, appeal more particularly to the learned world than to the mercantile and industrial classes, which alone have means of profiting by their discoveries.

De La Condamine, the French astronomer,<sup>1</sup> at the end of the eighteenth century, opened out to European science the region of the Amazon. But it was Alex. von Humboldt, the German naturalist,<sup>2</sup> the modern Aristotle, who, just a century ago, brought systematic observation to bear upon this vast field for investigation. He wrote on his return:

“Since my departure from the banks of the Orinoco and the Amazon, a new era unfolds itself in the social state of the nations

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<sup>1</sup> Work cited.

<sup>2</sup> Alex. von Humboldt, accompanied by Aimé Bonpland, quitted La Corogne on June 5th, 1799. He was then thirty years of age. It was during this first voyage that he visited a part of Amazonia. He made his second voyage in 1804.

of the West. The fury of civil discussions will be succeeded by the blessings of peace, and a freer development of the arts of industry. The bifurcation of the Orinoco (the Cassiquiare), the isthmus of Tuamini, so easy to pass over by an artificial canal, will fix the attention of commercial Europe. The Cassiquiare—as broad as the Rhine, and the course of which is 180 miles in length—will no longer form in vain a navigable canal between two basins of rivers, which have a surface of 190,000 square leagues. The grain of New Grenada will be carried to the banks of the rio Negro; boats will descend from the sources of the Napo and the Ucayale, from the Andes of Quito and upper Peru, to the mouths of the Orinoco—a distance which equals that from Timbuctoo to Marseilles. A country nine or ten times larger than Spain, and enriched with the most varied productions, is navigable in every direction by the medium of the natural canal of the Cassiquiare and the bifurcation of the rivers. This phenomenon, which one day will be so important for the political connections of nations, unquestionably deserves to be carefully examined.” These brilliant predictions, inspired in the illustrious traveller by the sight and the study of our incomparable network of rivers, have not yet been fulfilled.

The Cassiquiare has not yet accomplished its natural mission, which is to unite the Orinoco with the Amazon by means of the rio Negro; the isthmus of Tuamini has not yet found its de Lesseps. But steam navigation has partly accomplished the work dreamt of by the great *savant*, and the basins of the two parallel rivers may be said to be in constant communication.

When the isthmus of Panama is cut through Amazonia will be connected, by way of Columbia, with the two oceans. But that time is far distant.

The bold initiative of von Humboldt and of Aimé Bompland, his too soon forgotten companion, had a happy result. It gave rise to a new voyage, viz., that of two Germans, whose work has remained celebrated.

Dr. Joh. Bapt. von Spix and Dr. Carl Friedr. Phil. von Martius arrived at Rio de Janeiro on July 14th, 1817, and did not quit Brazil until June 14th, 1820, after having made a profitable expedition in the valley of the Amazon, whence they

brought back some admirable collections. They studied the flora and fauna, as well as the ethnology and languages, and on their return they never ceased augmenting the vast store of information they had acquired during this three years' journey. Others after them may have gained a wider spread of notoriety, but none have ever surpassed them either in variety of knowledge or in scientific accuracy. After their joint work, entitled *Reise in Brasilien*, had been published in Munich, von Martius began to bring out his *Flora Brasiliensis*, continued by Aug. Wilhelm Eichler, a work of the most undoubted value; and the two travellers of 1817-20 never ceased to write until their death.<sup>1</sup>

Pœppig (1827-32), who lived a little later, did not attain to their level, but was still of considerable merit. He also occupied himself with the Amazonian flora.<sup>2</sup>

The works of other German travellers, such as Robert Avé Lallemand<sup>3</sup> and Franz Keller,<sup>4</sup> are much more recent.

Only twenty years after von Spix and von Martius, a Frenchman, Comte Francis de Castelnau,<sup>5</sup> accompanied by a group of distinguished men, visited the Amazon by order of the French Government. His works are too well known for us to discuss them here. Although they are a little out of date here and there, they are of great interest, for the French in particular, who will find in them much information regarding the aspect of the country and its varied productions.

The work of Comte de Castelnau was preceded by the fine studies of Alcide d'Orbigny,<sup>6</sup> some of whose essays have excited

<sup>1</sup> Dr. Joh. Bapt. von Spix und dr. Carl Friedr. Phil. von Martius, *Reise in Brasilien*, 1817-20, München, 1823-31.

<sup>2</sup> Eduard Pœppig, *Reise in Chile, Peru und auf dem Amazonenstrom*, 1827-32, Leipzig, 1835-36.—*Nov. Gen. ac spec. plantarum quas in regno Chilensi, peruriano et in terra Amazonica, annis 1827-32, legit*, Lipsiæ, 1835-45.

<sup>3</sup> Robert C. B. Avé Lallemand, *Tabatinga am Amazonenstrom*. Hamburg, 1863.

<sup>4</sup> Franz Keller, *The Amazon and Madeira Rivers*. London, 1874.

<sup>5</sup> Francis de Castelnau, *Expédition dans les parties centrales de l'Amérique du Sud, de Rio-de-Janeiro à Lima, et de Lima au Pará, pendant les années 1843-47*. Paris, 1850.

<sup>6</sup> Alcide d'Orbigny, *Fragment d'un voyage au centre de l'Amérique Méridionale*, contenant des considérations sur la navigation de l'Amazone, 1826-33. Paris, 1845.

considerable interest amongst American scholars, without, however, contributing to the practical development of Amazonia.

The less scientific publications of Paul Marcoy<sup>1</sup> and Emile Carrey<sup>2</sup> followed.

Nearly at the same time an Italian, Osculati,<sup>3</sup> studied more particularly this region and stopped at Manáos, which he would certainly not recognise now.

After the Germans, French, and Italians, the English and the North Americans of the United States in their turn made the acquaintance of the ancient *El Dorado*. England above all distinguished herself in these scientific explorations.

Her first explorers in chronological order were in one part Lieut. H. L. Mawe,<sup>4</sup> and in another Smith and Lowe.<sup>5</sup>

Lieut. Mawe left the Callao to descend the Amazon, after having crossed the Andes on November 20th, 1827. He was at Tabatinga on Brazilian territory by January 31st, 1828, and arrived at Belem on April 19th, having stopped at Barra do rio Negro (Manáos) for some days. He foresaw the glorious future of this country, rich not only in its infinity of produce, but also in having at its disposal means of transport for its wealth in every direction, as it possessed immense watercourses, some of which, he was justified in saying in 1828, were almost as unknown as the rivers on other planets. He foresaw also the revolution that stean navigation would cause there. "Ten years after its introduction," added he, "the country that I have attempted to describe will be no more recognisable" (pp. 44 and 45). Amongst English travellers there are two who should be placed in the front rank, for their researches served as a basis upon which Darwin built up his theory of evolution, and in their works they display a rare power of observation.

<sup>1</sup> Paul Marcoy, *Voyages à travers l'Amérique du Sud, de l'Océan Pacifique à l'Océan Atlantique*. Paris, 1869.

<sup>2</sup> Emile Carrey, *L'Amazonie*. Paris, 1856.

<sup>3</sup> Gaetano Osculati, *Esplorazione delle ragioni equatoriali lungo il Napo ed il fiume delle Amazzoni*, 1846-48. Milano, 1854.

<sup>4</sup> Henry Lister Mawe, *Journal of a passage from the Pacific to the Atlantic crossing the Andes and descending the river Marañon or Amazon*. London, 1829.

<sup>5</sup> W. Smyth and F. Lowe, *Narrative of a journey from Lima to Pará across the Andes and down the Amazon*, 1834. London, 1836.

We refer to Alfred Wallace<sup>1</sup> and Henry Bates<sup>2</sup> who brought back from the Amazon 14,712 specimens, of which 8000 were completely new.

Very far behind them come Edwards,<sup>3</sup> James Orton,<sup>4</sup> whose book is delightfully written, W. Chandless, Wickham,<sup>5</sup> and Mathews,<sup>6</sup> and amongst these Mr. W. Chandless merits special mention.

He occupies, in fact, a place apart in this list of travellers, owing to his excellent works of exploration upon the Purús, the Aquiry, the Maués-Assú, the Abacaxis, and the Juruá,<sup>7</sup> all of which are valuable.

Upon the river Madeira we already had a clever work by a North American, Charles Wilkes,<sup>8</sup> giving an account of a journey of exploration made more than sixty years ago.

Maury, a lieutenant in the Federal Navy of the United States, who followed Wilkes, introduced new subjects for consideration. He abandoned the speculative studies of his predecessors of other nationalities, and being gifted with that practical sense which distinguishes his countrymen, he proposed finding the means of opening the Amazon to foreign navigation, and aimed at gathering on the spot arguments in favour of his design.

England and the United States, coveting these countries where invested capital produced large interest so quickly, wanted to force Brazil to grant free navigation of the river

<sup>1</sup> Alfred R. Wallace, *A Narrative of travels on the Amazon and Rio Negro*. London, 1853. *Tropical Nature and other Essays*. London, 1878.

<sup>2</sup> Henry Walter Bates, *The Naturalist on the River Amazon*. London, 1864. 2nd edition.

<sup>3</sup> William H. Edwards, *A Voyage up the River Amazon*. London, 1855.

<sup>4</sup> James Orton, *The Andes and the Amazon*. London, 1870.

<sup>5</sup> Henry Alexander Wickham, *Rough notes of a journey through the Wilderness, by way of the great cataracts of the Orinoco, Atapabro, and Rio Negro*. London, 1872.

<sup>6</sup> Edward D. Mathews, *Up the Amazon and Madeira Rivers*. London, 1879.

<sup>7</sup> William Chandless, *Ascent of the river Purús*. London, 1866. "Journ. of the R. G. S." t. XXXVI.—*Notes on the river Aquiry, ibid.*—*Notes of a journey up the river Juruá*. London, 1869. "Journ. of the R. G. S." t. XXXIX.—*Notes on the rivers Maué-assú, Abacaxis, etc.* London, 1870, t. XL.

<sup>8</sup> Charles Wilkes, *Exploring Expedition during the Years 1838-42, Madeira—Brazil*. New York, 1858.

to trading vessels of all nations, that is to say, above all, to their own.

Agitation on this subject commenced as early as the year 1851.<sup>1</sup> A proposal was laid before the diplomatic representative of Brazil at Washington, who had no difficulty in proving that his Government was the only judge of the advisability of this measure.

The British Government lost no time in adding its efforts to those of the Federal Government of the United States. Lord Clarendon on October 27th, 1854, addressed himself to the Brazilian Minister in London, and demanded the opening of the Amazon. He was answered by an argument *ad hominem* that could best meet the case under the circumstances.

“Every one knows,” said the Brazilian Minister, in the note that he addressed in reply to the claims of the English Secretary of State, “every one knows that Great Britain has always refused, *even to the owners of land on the banks*, the navigation of that part of watercourses where she is in possession of the two banks; and that upon the rivers of which she possesses one bank only, she only accords navigation to the State possessing the opposite shore. In order to prove that this system is followed by the Britannic Government, it will suffice to cite the following facts:—The navigation of the St. Lawrence is only common to England and the United States upon that part where each bank belongs to one or the other of those two Powers, whilst only ships flying the English flag can sail upon that part, both shores of which, as far as the mouth of the river, belong to England; the arrangements concluded in 1842 with the United States, relating to the navigation of the river Saint John, and in 1845, relating to that of the Columbia, give evidence of the same system.”

This argument *utrinque feriens* was very well employed against the two claimants.

England took this as final, but it did not prevent a subject of Her Britannic Majesty from trying to raise a conflict between

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<sup>1</sup> Read in the *Annals of the Brazilian Parliament*, Session of 1857, the speech of the Councillor Sergio Teixeira de Macedo, made during the sitting of June 16th.

his country and Brazil, in order, as he innocently said, to hasten the solution of the problem.

The North Americans, more tenacious of their projects, and less deferential to diplomatic precedent, went to work in another manner. They supposed the question to be almost decided, and they sent an expedition to the Amazon in order to study the openings for their commerce there, and to furnish new reasons for forcing the free navigation of the great river.

On February 15th, 1851, the Admiralty departments entrusted Lieutenants W. Lewis Herndon and Lardner Gibbon with this delicate and important business. The reports of the two Commissioners were presented at the Congress of Representatives at Washington in February, 1853.

These documents contained enthusiastic accounts of the commercial resources of Brazil.

“This is,” they say, “the country of rice, sarsaparilla, india-rubber, balsam copaiba, gum copal, animal and vegetable wax, cocoa, Brazilian nutmeg, Tonka beans, ginger, black pepper, arrowroot, tapioca, annatto, indigo, and Brazil nuts; dyes of the gayest colours, drugs of rare virtue, variegated cabinet woods of the finest grain, and susceptible of the highest polish. The forests are filled with game, and the rivers stocked with turtle and fish. There dwell the *anta* or wild cow, the *peixe-boi* or ox-fish, the sloth, the ant-eater, the beautiful black tiger, the mysterious electric eel, the boa constrictor, the anaconda, the deadly coral snake, the voracious alligator, monkeys in endless variety, birds of the most brilliant plumage, and insects of the strangest forms and gayest colours. The climate of this country is salubrious, and the temperature agreeable.”

The above list is certainly complete and attractive enough; and the authors, foreseeing the great future in store for this part of Brazil, say in another chapter, “The mind is confused with the great images presented to it by the contemplation of these things. We have here a continent divided into many islands (for most of its great streams inosculate), whose shores produce, or may be made to produce, all that the earth gives for the maintenance of more people than the earth now holds. We have here also a fluvial navigation for large vessels, by the Amazon and its great

tributaries, of (in round numbers) about 6000 miles, which does not include the innumerable small streams that empty into the Amazon, and which would probably swell the amount to 10,000; neither does it include the Orinoco with its tributaries on the one hand nor the La Plata with its tributaries on the other, the former of which communicates with the valley of the Amazon by the Cassiquiare, and the latter merely requires a canal of six leagues in length over very practicable ground to do the same.

“Let us now suppose the banks of these streams settled by an active and industrious population, desirous to exchange the rich products of their lands for the commodities and luxuries of foreign countries: let us suppose introduced into such a country the railroad and the steamboat, the plough, the axe, and the hoe; let us suppose the land divided into large estates, and cultivated by slave labour<sup>1</sup> so as to produce all that they are capable of producing; and with these considerations, we shall have no difficulty in coming to the conclusion that no territory on the face of the globe is so favourably situated, and that, if trade there is once awakened, the power, wealth and grandeur of ancient Babylon and modern London must yield to that of the depôts of this trade that shall be established at the mouths of the Orinoco, the Amazon, and the La Plata.”

These explorers were right in seeing all this on a grand scale. Amazonia is in fact called to the highest destinies. When her soil has been brought under cultivation by the labour of free colonists she will leave Europe far behind her. She will become one day the centre of agricultural production of the entire world. The centres of production and civilisation change like the poles, slowly but surely.

But we are not concerned with the centuries to come; our present task is to mention the chief explorers of Amazonia.

After an interval of twenty years another United States citizen, Mr. H. H. Smith,<sup>2</sup> visited our country as a clear-sighted and well-wishing friend.

<sup>1</sup> In this will be recognised the North American in favour of slavery. Happily, as the reader will see further on, slavery had ceased to exist in this State, even before it was entirely abolished in Brazil.

<sup>2</sup> Herbert H. Smith, *Brazil.—The Amazons and the Coast*, New York, 1879.



Since then travellers of every nationality, men of science or simply tourists, curious or studious, have found their way to the Amazon.

The French know the accounts of the travels of MM. Jules Crevaux,<sup>1</sup> Charles Wiéner,<sup>2</sup> C. Wallut,<sup>3</sup> H. Coudreau,<sup>4</sup> Girard,<sup>5</sup> M. Monnier,<sup>6</sup> O. Ordinaire,<sup>7</sup> and even the romances of Jules Verne<sup>8</sup> and Bousсенard.<sup>9</sup>

The Italians have read of late years the impressions of Signor Stradelli,<sup>10</sup> of Father Coppi,<sup>11</sup> and of Professor Vincenzo Grossi.<sup>12</sup>

In Germany, besides the fine works that we have mentioned, a work has been lately published, as learned as it is conscientious, which a Princess, filled with scientific curiosity, has written on the Amazon: "The voyage of Her Royal Highness Princess Teresa of Bavaria" is by no means commonplace and is superior, from a documentary point of view, to those of most of the masculine travellers of these last twenty years.<sup>13</sup>

Since steamers have navigated the Amazon and its principal affluents, the number of travellers has considerably increased; it is necessary to admit, however, that their works are far from surpassing, or even equalling, in scientific value those of the explorers of the end of the eighteenth century and of the first

<sup>1</sup> Jules Crevaux, *Voyage dans la Guyane et le bassin de l'Amazone*, Paris, 1880.—*Fleures de l'Amérique du Sud*, Paris, 1883.

<sup>2</sup> Charles Wiéner, *Amazone et Cordillère*, Paris, 1883-84, "Tour du Monde."

<sup>3</sup> C. Wallut, *Sur les rives de l'Amazone*, Paris, 1882.

<sup>4</sup> H. Coudreau, *Le Territoire contesté entre la France et le Brésil*, Lille, 1886.—*Voyage au Rio-Branco, aux Montagnes de la Lune, au Haut Trombetta*, Rouen, 1886.—*La France Equinoxiale*, Paris, 1887.—*Les Français en Amazonie*, Paris, 1887.

<sup>5</sup> C. Girard, *Les Andes, les Cordillères et l'Amazonie*, Paris, 1889.

<sup>6</sup> M. Monnier, *Des Andes au Pará: Equateur, Pérou, Amazone*, Paris, 1889.

<sup>7</sup> O. Ordinaire, *Du Pacifique à l'Atlantique par les Andes péruviennes et l'Amazonie*, Paris, 1892.

<sup>8</sup> Jules Verne, *La Jangada*.—*Huit cent lieues sur l'Amazone*, Paris, 1892.

<sup>9</sup> Bousсенard, *De Paris au Brésil par terre*, Lagny, 1885.

<sup>10</sup> E. Stradelli, *Rio Branco*, Roma, 1899, "Boll. della Soc. Geogr. Ital." Marzo-Aprile.—*L'Uaupés et gli Uaupés*, Roma, 1890, *ibid.*, Maggio.

<sup>11</sup> G. A. Collini, *La provincia delle Amazzoni, secondo la relazione del P. Illuminato Giu seppe Coppi*, Roma, 1885, "Boll. della Soc. Geogr. Ital.," Febraio-Marzo.

<sup>12</sup> Vincenzo Grossi, *Nel Paese delle Amazzoni*, Roma, 1897.

<sup>13</sup> Therese Prinzessin von Bayern, *Meine Reise in den Brasilianischen Tropen*, Berlin, 1897.

half of the nineteenth century. We make an exception only in the case of Agassiz.

In 1863, Gustave Walles, in studying the flora of the upper rio Branco, stated the existence of a gigantic tree whose proportions surpassed those of the famous Baobab of Senegambia, and the no less wonderful Wellingtonias of the Sierra Nevada and California. This tree of the rio Branco is the veritable giant of the tropical flora, and constitutes a small forest in itself. It is over 153 feet in height from the roots to the first branches, and is a mass of verdure. Its circumference at the ends of the branches is 840 feet, and it shades more than 5500 square yards of soil, so that more than 12,000 men could encamp under it.

The ancients would have deified this formidable monster, but to us it reveals the productive power of the Amazonian soil, and is a guarantee that the sweat of European immigrants will not fall one day upon an ungrateful land.

By the side of this tree of the rio Branco, what are the most marvellous pines of the North, with which the streets of Paris are paved? What are the old oaks that once sheltered the Druids? The celebrated chestnut tree of Etna itself, by the side of this leafy colossus, is but a vulgar pygmy; for although it is growing in a volcano, warmed by subterranean lava, it has never been able to attain, during the 4000 years that it has seen the Sicilian sun, more than 160 feet in circumference.

The engineers J. and F. Keller, of Stuttgart, were sent in 1867 by Senator Dantas, then Minister of Agriculture, to make an exploration on the Rio Madeira. The instructions which they received on October 5th, 1867, were to the following effect:—

“The Government, being convinced of the advantages that should result from facility of communication with the Province of Matto-Grosso, by means of the river *Madeira*, has resolved to engage you to make studies and works to this effect. For your guidance in the mission confided to your zeal, it has been determined that you should proceed in accordance with the following instructions:

“1st. The existence of falls offering insurmountable obstacles to navigation being possible in the lower and upper *Madeira*, you will have to make a plan, and draw up an estimate of the

probable cost of the construction of a roadway which would avoid these obstacles, and secure facility of transport for passengers and goods. This work, which is the principal object of your mission, must be accompanied by every necessary particular and explanation.

“2nd. While making this survey, you must ascertain the quickest, easiest, and safest means of navigating the upper and lower Madeira, either by steamboats, or by train of barges towed by steamers, indicating in either case the best conditions in view of climate and the river system, and adding every detail concerning the conditions of the territory, which might cause delays at either extremity, also fully reporting the geological variations, and the products of the vegetable, animal, and mineral kingdoms.

“3rd. You will have to give, in addition to that, an exact account of any spots either on the banks or in the proximity of the river *Madeira*, which would be most appropriate for founding the settlements, military or agricultural colonies, and fortifications, indicating in a precise manner their geographical position, and determining the same astronomically, and paying special attention to circumstances likely to affect the health, comfort, and prosperity of the inhabitants, the embarkation and delivery of the produce of their industry to the markets and centres of consumption.

“4th. You will also have to acquire minute information regarding the native tribes living in these regions, in order to give a detailed and exact report upon all that relates to their customs, manner of living, and aptitude for civilised life, as well as upon the most efficacious means for bringing them under the influence of civilisation.

“5th. You may rely upon receiving every assistance in the accomplishment of your mission from the President of the Provinces of the Amazon and Pará as well as from the President of the Province of Matto-Grosso, when you enter that province.

“6th. You will have to come to terms with the local authorities of the Bolivian territory, in case your studies necessitate your proceeding in that direction, and measures have already been taken to that end.

“You are particularly urged to consider that the principal

object of the mission, with which you have been entrusted by the Imperial Government, is the work mentioned in the first paragraph, to which all the others are subordinate."

These two engineers published at Stuttgart in 1873 a very remarkable account of their exploration; they not only describe several affluents of the Amazon, from the point of view of their navigability, but they give most valuable information regarding the climate, productions, and nature of the lands watered by these streams.

Louis Agassiz visited part of the Province of the Amazon in 1865-66. The accounts that he has left us show great accuracy of observation, and give proof at the same time of the profound impression left by our country on the mind of the great naturalist.

On leaving Brazil on July 2nd, 1866, Agassiz wrote, "We sailed for the United States, carrying with us to our northern home a store of pleasant memories and vivid pictures to enrich our life hereafter with tropical warmth and colour."

To these words, expressive of his regret and admiration, the renowned traveller added the following appreciative testimony:—"The importance of the basin of the Amazons to Brazil, from an industrial point of view, can hardly be over-estimated. Its woods alone have an almost priceless value. Nowhere in the world is there finer timber, either for solid construction or for works of ornament, and yet it is scarcely used even for the local buildings, and makes no part whatever of the exports. It is strange that the development of this branch of industry should not even have begun in Brazil, for the rivers which flow past these magnificent forests seem meant to serve, first as a water-power for the sawmills, which ought to be established along their borders, and then as a means of transportation for the material so provided. Setting aside the woods as timber, what shall I say of the mass of fruits, resins, oils, colouring matters, and textile fibres which they yield? When I stopped at Pará, on my way home to the United States, an Exhibition of Amazonian products, brought together in preparation for the World's Fair at Paris, was still open. Much as I had admired, during my journey, the richness and variety of the materials native to the soil, I was amazed when I saw them thus side by side. There I noticed, among others, a collection of no less than

117 different kinds of highly valuable woods, cut from a piece of land less than half a mile square. Of these many were dark-coloured veined woods, susceptible of a high polish—as beautiful as rosewood or ebony. There was a great variety of vegetable oils, all remarkable for their clearness and purity. There were a number of fabrics made from the fibres of the palm, and an endless variety of fruits. An empire might esteem itself rich in any one of the sources of industry which abound in this valley.”

The timber industry and trade that Agassiz mentions ought in fact to become one of the first cares of the Government of the State, and, as we ceaselessly repeat, it ought to precede agriculture in these richly-wooded regions. The clearing process should not be unproductive, as it is in the United States; it should, on the contrary, if properly carried out, furnish sufficient capital for the initial preparation of the soil.

The pioneer should begin with the trees, cut them down and sell them, for in Europe wood is becoming scarce. The only thing necessary is to accustom Europeans to the work which would of course be new to them. If the owners were content at first with a small profit, which would greatly increase as large quantities of merchandise were sold, they would be able to land at Liverpool, Havre, Hamburg, and other places, wood for cabinet-making and building purposes which would be sold at a lower price than local produce. Workers of timber in England and France would then no longer have to fear the competition of Sweden and Norway. Raw material being cheap it would be easy for them to obtain more remuneration for their work.

Agassiz was rightly much struck with the advantages without number that a State could derive from such a source of riches.

There is no need to do more than mention the travels of C. Barrington Brown and William Lidston, two Englishmen, who described the country in a large but uninteresting work.<sup>1</sup>

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<sup>1</sup> *Fifteen Thousand Miles on the Amazon and its Tributaries*, London, 1878.

## CHAPTER II

*Voyages of Exploration* (continued).—The Portuguese and the Brazilians in the Amazon—Christovam de Lisbóa and Laureano da la Cruz—The Fathers Antonio Vieira and João-Felippe Bettendorff—Gonçalves da Fonseca, the pilot Nunes de Souza and Bishop Miguel de Bulhões—Noronha, Ribeiro de Sampaio, Braun and Lacerda-e-Almeida—The Indians with tails according to Noronha—The naturalist Rodrigues Ferreira—Other native travellers—Foreign contemporary travellers—Abbé Durand—Amazonia is not Central Africa.

THE Amazon has not only been explored by foreigners, but by a great number of Portuguese, at the time when Brazil was only a colony, and since then hundreds of Brazilians have conscientiously travelled over their own dominion and have described its curiosities.

The only reproach we will permit ourselves to bring against these brave explorers of our nation is that in their modesty they have not given enough publicity and importance to their enterprises. The humblest foreign traveller who has stopped for a short time in a hôtel at Manáos, without even knowing the language of the country he has visited, returns to his own country with a book all ready in his portmanteau, and we ourselves, the sons of great Amazonia, do scarcely anything to make our beautiful fatherland known and appreciated. There exists in London, Paris, Rome, and in all the great cities of Europe, learned societies which would welcome with delight any communication sent to them from so far.

We must not weary of repeating: the Portuguese, masters of Brazil for more than three centuries, and the Brazilians, whose works are too little known on this side of the Atlantic, have

done most to explore the immense valley. It can even be said without any exaggeration that as a rule they preceded everywhere the most enterprising explorers from abroad.

The sixteenth century passed away without leaving us any detailed account of the Amazon, with the exception of a few pages referring to the magnificent discoveries made by Vicente Yañez Pinzon.<sup>1</sup>

But from the seventeenth century onward the works on this subject became fairly numerous. In 1627 we have the letters of Father A. Christovam de Lisbôa, written from Maranhão to his brother, the learned antiquary, Manoel Severim de Faria, giving an account of the missionary labours of the Franciscan missionaries on the Amazon.<sup>2</sup> Ten years after a paper appeared at Lisbon<sup>3</sup> giving an account of the state of these regions. In 1651 Father Laureano de la Cruz announced the discovery of the great river, and claimed the glory of it for the Franciscans,<sup>4</sup> although the Jesuit, Christophe de Acuña, had descended the Amazon in the company of Captain Pedro Teixeira twelve years previously.<sup>5</sup>

Again, two Jesuits, one of whom is counted amongst the greatest writers in Portugal, Fathers Antonio Vieira<sup>6</sup> and João Ph. Bettendorff,<sup>7</sup> described this country and pleaded the cause of the Indians, whilst another Jesuit, Father Manoel Rodriguez,<sup>8</sup>

<sup>1</sup>*Novæ orbis regionum ac insularum veteribus incognitarum*, Basileae, Anno, 1532: *De navigatione Pinzoni, et de rebus per eum repertis*.

<sup>2</sup>*Cartas a seu Irmão*, Manoel Severim de Faria, *dando-lhe noticia dos seus trabalhos de religioso*.—Manusc. from the Lib. Publ. at Lisbon.

<sup>3</sup>*Memorial sobre as terras e gente do Maranhão e Grão Pará e rio das Amazonas*, Lisbôa, 1637.

<sup>4</sup>Laureano de la Cruz, *Descubrimiento del rio de Marañon llamado de las Amazonas*, 1651, publ. by P. Marcelino de Civezza, Prato, 1878.

<sup>5</sup>Christoval de Acuña, *Nuevo Descubrimiento del gran rio de las Amazonas*, Madrid, 1641.

<sup>6</sup>Antonio Vieira, *Carta a el rey n. Senhor sobre as Missões do Seará, do Maranhão, do Pará e do grande Rio das Amazonas*, Lisbôa, 1660.—*Informação do modo como foram tomados e sentenciados per captivos, no anno de 1665, 702 Índios*; Manusc. from the Lib. Publ. at Lisbon.—*Collecção de todas Cartas do P. Antonio Vieira*, de 1647 à 1697, Manusc. from the Nat. Lib. at Rio.

<sup>7</sup>João Felipe Bettendorff (*sic*), *Chronica da Missão da Companhia de Jesus em o Estado do Maranhão*, 1661-99, Manusc. from the Lib. Publ. at Lisbon.

<sup>8</sup>Manvel Rodriguez, *El Marañon y Amazonas*, Madrid, 1684.

wrote upon the Amazon. As early as 1662 Mauricio de Hiriarte had given a description of it, to which attention was drawn by Viscount de Porto-Seguro in 1874.<sup>1</sup>

The eighteenth century was for these regions the great century of exploration. The account of the adventurous expeditions of Walter Raleigh had just been published;<sup>2</sup> Spaniards, English, French, and Dutch endeavoured, one and all, to secure a footing in a country of which they had heard such marvels, and the Portugo-Brazilians had to redouble their activity to assert their rights,<sup>3</sup> whilst the question of the subjection of the Indians was the cause of perpetual disputes between the colonists and the missionaries.<sup>4</sup>

The account of Gonçalves da Fonseca<sup>5</sup> and the track-chart of the pilot Nunes de Souza<sup>6</sup> teach us that as early as the middle of the century, the mines of Matto-Grosso were reached by way of the rio Madeira; soon after, not only did the bishop of the diocese<sup>7</sup> issue a pastoral letter in favour of the liberty of the Indians, but one bishop even went over his vast district and described it, as his successors have continued to do to the present day.<sup>8</sup>

In 1768 we have the well-known voyage of the Vicar General

<sup>1</sup> Mauricio de Hiriarte, *Descrição do Estado do Maranhão, Para, Cornpá e rio das Amazonas*, 1662, Vienna, 1874.

<sup>2</sup> *Voyages de François Coreal aux Indes Occidentales . . . Traduits de l'espagnol avec une relation de la Guiane de Walter Raleigh*, Amsterdam, 1722.

<sup>3</sup> *Parecer sobre pertencer a Portugal o rio Amazonas e necessidade de o fortificar*, without date or name of author, but at the commencement of the eighteenth century, Manuser. from the Lib. Publ. at Lisbon.

<sup>4</sup> *Representação a D. João V sobre a liberdade ou captivoiro dos indios do Pará e Maranhão*, 1735. *Reflexões* que com esta representação se offereceram a S. M. o sr. d. João V, Manuser. from the Lib. Publ. at Lisbon.

<sup>5</sup> José Gonçalves da Fouseca, *Navegação feita da cidade de Gram Parã até a bocca do rio da Mudeira pela escolta que por este rio subio ás minas do Matto-Grosso*, 1749, Lisbôa, 1826, "Collecç. Ultram.," t IV, n<sup>o</sup> 1.

<sup>6</sup> Antonio Nunes de Souza, *Derrota desta cidade de Santa Maria de Belem do Grão Pará para as Minas de Matto-Grosso . . . que pôde servir para outra qualquer monção indo passar as cachoeiras*, 1749, Manuser. at Inst. Hist., Géogr. and Ethnogr. at Rio.

<sup>7</sup> Dom Fr. Miguel de Bulhões, *Charta pastoral . . . dada em favor da liberdade dos Indios da sua diocese*, 1750, Manuser. at Nat. Lib. at Rio.

<sup>8</sup> Dom Fr. João de S. José, *Viagem e visita do sertão em o bispado do Gram-Pará em 1762 e 1763*, Rio, 1847, "Revista Trimensal do Instituto" 2<sup>a</sup> série, II.



Noronha,<sup>1</sup> followed by those of Sampaio,<sup>2</sup> of Braun,<sup>3</sup> and of Lacerda-e-Almeida.<sup>4</sup> Noronha has given us the strange story of the Indians with tails like monkeys, and his extravagant account deserves to be quoted.

“A little over twenty leagues above the mouth of the Parauari, on the south bank of the Amazon, is the mouth of the rio Yuruá, commonly called Juruá by the whites, at 2° 30' of south. lat., on the way down from the kingdom of Peru in the north. . . . The Indians of the tribes *Cauaná* and *Ugina* remain far above the cataract of the river and far from its bar. Of those of the tribe *Cauaná*, the other Indians say that which certain geographers have reported on the subject of Greenlanders and Laplanders, viz., that they are of short stature, being scarcely 5 palms in height (3 feet 4 inches). What they say of the other tribe, the *Ugina* or *Coatítapyia*, is still more remarkable; they affirm, in fact, that all of them have tails, and are born of Indian women who have had intercourse with the apes called Coitas. Whatever may be the cause of it, I am inclined to believe that their story about these tailed Indians is true, and that for three reasons. The first is that there is no physical impediment to the growth of the tail; the second, because, having questioned several Indians from this same river near which they were born, who had seen and attacked the Uginas, I have always found them consistent in their accounts, with this difference only, that some of them described the tail as being a palm and a half in length (13 inches), whilst others represented it as being two palms (17½ inches), and even more; the third reason is that the Rev. Father José de S. Thereza Ribeiro, a Carmelite friar, now curé of the parish of Castro de Avelães, assured me that he had seen an Indian from the rio Jupurá who had a tail. I requested

<sup>1</sup> José Monteiro de Noronha, *Roteiro da viagem da cidade do Pará até ás últimas colonias do sertão da provincia*, 1768, Pará, 1862.

<sup>2</sup> Francisco Xavier Ribeiro de Sampaio, *Diário da viagem que em visita e correição das povoações da capitania de S. Jozé do Rio Negro fez o ouvidor e intendente geral da mesma*, no anno de 1774 e 1775, Lisbôa, 1825.

<sup>3</sup> João Vasco Manoel de Braun, *Roteiro Chorographico (Inedito) da viagem*, 1781, Pará, 1857.—*Roteiro Chorographico da viagem que . . . determinou fazer ao rio das Amazonas*, 1784, Rio, 1849, “Rev. Trim do Inst.,” 2ª série, V.

<sup>4</sup> Francisco José de Lacerda-e-Almeida, *Diario da viagem . . . pelas capitánias do Pará, Rio Negro*, nos annos de 1780 a 1790, S. Paulo, 1841.

him to relate this story to me on oath; he did so; I have the document in my possession, the tenor of which is as follows:—

“I, the undersigned, Brother José de S. Thereza Ribeiro, of the order of our Lady of Mount Carmel of the ancient observance, etc., etc., hereby swear and certify *in verbo sacerdotis* and by the Holy Gospel, that being missionary in the old *aldée* of Parauari, which was afterwards transferred to the place where Nogueira is now situated, a man named Manoel da Silva, a native either of Pernambuco or Bahia, arrived there in the year 1751 or 1752, coming from the rio Jupurá, with some Indians in his service. Amongst these Indians he brought one, a heathen savage (not baptized) of thirty years of age, who, Manoel da Silva assured me, had a tail; and as I did not place any faith in this extraordinary statement, he made the Indian come and undress himself under the pretext of catching some turtles from an enclosure where I kept them, in order that by this means I might be convinced of the truth of it. And then I saw, without the slightest shadow of doubt, that the aforesaid Indian had a tail of the thickness of a thumb, and the length of *half a palm* ( $4\frac{1}{2}$  inches), covered with smooth skin without hair. This same Manoel da Silva assured me that the Indian himself said that he cut his tail every month in order that it should not become too long, as it grew rapidly. I have not examined the tribe of this Indian, nor the exact spot where he lived, nor do I know if the other Indians of his tribe have tails also. But about four years ago I learned that on the rio Juruá there is a tribe of Indians with tails.—And, because this is the truth, I have drawn up this official report, written and signed by me.—*Sítio* of Castro de Avelães, October 15th, 1768.—(Signed) F. José de Santa-Thereza Ribeiro.’”<sup>1</sup>

The Juruá, where these priests imagined the sons of Coitas to dwell, has now a service of steamers, and the industrious *seringueiros* who collect indiarubber on their lands have never found these famous “tailed men” spoken of by the Reverend Father Ribeiro.

The “*Diario da Viagem*” of Sampaio is more interesting, and he shrewdly discusses many of De La Condamine’s accounts.

<sup>1</sup> Work cited pp. 49-51.

Almost at the same time all these countries were visited by Wilkens,<sup>1</sup> Pontes,<sup>2</sup> Mauricio,<sup>3</sup> Bitancourt,<sup>4</sup> and above all by the diligent naturalist, Alexandre Rodrigues Ferreira.<sup>5</sup> "The Philosophical Voyage" of this latter is remarkable from every point of view. The Captain General, João Pereira Caldas, requested him in 1785 to study not only the rio Negro but the rio Branco and its affluents, the Aracá, the Padauary, the Cababori, the Uaupés, the Içána, and the Ixié. Rodrigues Ferreira undertook this expedition without delay, and as early as January 17th, 1786, he sent in his first report, followed by others, all full of the most valuable information.

In 1790 Almeida Serra<sup>6</sup> took again very nearly the same route as Gonçalves da Fonseca and Nunes de Souza forty years before in order to reach the mines of Matto-Grosso by the Madeira.

In the nineteenth century this noble emulation of the Brazilians has not slackened.

As early as 1821 the work by Ayres do Casal upon the Amazon was published in French.<sup>7</sup> In 1848 the *Revista do Instituto Historico e Geographico* of Brazil, of whose services to science one cannot speak too highly, published the geographical notes of Fernandes de Souza<sup>8</sup> upon "the Capitania of the rio Negro," which has now become the State of the

<sup>1</sup> Henrique João Wilkens, *Diario de viagem que fez...ao anticipado exame do rio Japurá*, 1781, Manusc. at the Nat. Lib. at Rio.

<sup>2</sup> Silva Pontes, *Diario da viagem que fez ao tirar a configuração do rio Guaporé*, 1783, Manusc. at the Nat. Lib. at Rio.

<sup>3</sup> Raymundo Mauricio, *Participação em fórmula de itinerario que apresentou... acerca da diligencia que fizera para descobrir comunicação pelos rios Cubory e Piquié para o Japurá*, 1787, Manusc. at the Nat. Lib. at Rio.

<sup>4</sup> Theodozio Constantino de Chermont et Ignacio de Moraes Bitancourt, *Diario da navegação do Rio Urubú*, 1787, Manusc. at the Nat. Lib. at Rio.—Bitancourt made the voyage, of which the engineer De Chermont wrote the account.

<sup>5</sup> Alexandre Rodrigues Ferreira, *Diario da viagem philosophica pela Capitania de São-José do Rio Negro*, 1786, Rio, 1885, "Rev. Trim. do Inst. Hist. Geogr. e Ethnogr. do Brazil," t. xxviii, Part. 1<sup>e</sup>.

<sup>6</sup> Ricardo Franco de Almeida Serra, *Noro Diario da viagem dos Rios da Madeira, Mamoré, e Guaporé até Villa Bella, capital do governo de Mato Grosso*, 1790, Manusc. at the Nat. Lib. at Rio.

<sup>7</sup> Manuel Ayres du Casal, *Notice sur les capitaineries de Para et de Solimoens au Brésil*, Paris, 1821, "Nouv. Ann. des Voyag.," ix.

<sup>8</sup> André Fernandes de Souza, *Noticias Geographicas da Capitania do Rio Negro*, Rio, 1848, "Rev. do Inst.," 2<sup>e</sup> série, iii.

Amazon. Four years after Lourenço Amazonas<sup>1</sup> brought out his Topographical, Historical, and Descriptive Dictionary of the *Comarca* of the Upper Amazon, and Ferreira Penna<sup>2</sup> commenced the publication of his fine works directly after.

During this time Hilario Gurjão,<sup>3</sup> an engineer officer who died gloriously in Paraguay, went up as far as Cucuy, and Gabriel Ribeiro<sup>4</sup> worked out a plan for connecting Manáos with the rio Branco.

In 1861 the first of the South American writers on the subject of historical geography, Caetano da Silva,<sup>5</sup> in a book which became an authority, maintained the rights of Brazil to the contested territories of Guiana, and soon after Tavares Bastos,<sup>6</sup> began the struggle which ended in the opening of the Amazon to friendly nations.

We only speak from memory of the two small works by Bernardino de Souza,<sup>7</sup> who was the ethnographer of the Madeira commission, and we will not repeat what we have previously said on the subject of the exploration of the watercourses in the Amazonian region by the natives of that country.

When the report of W. Chandless upon the rio Abacaxis appeared in 1870, that of Rodrigues de Medeiros had preceded it by seventeen years, and after the two Wurtemberg engineers, J. and F. Keller, published their studies on the Madeira in 1869, we had a complete series of works upon this river; for over a century (1749) we had had the description of Gonçalves da Fonseca, and the observations of the naturalist Rodrigues Ferreira (1786): for the past eighty years the accounts of

<sup>1</sup> Lourenço da Silva Araújo e Amazonas, *Diccionario topographico, historico, descriptivo da Comarca do Alto Amazonas*, Recife, 1852.

<sup>2</sup> Ferreira Penna has enriched the "Archivos do Museu" at Rio with numerous studies of much value.

<sup>3</sup> Hilario-Maximiano-Antunes Gurjão, *Descrição da viagem feita desde a cidade da Barra do Rio Negro, pelo rio do mesmo nome, até à serra do Cucuí*, Rio Negro, 1855.

<sup>4</sup> Gabriel-Antonio-Ribeiro Guimarães, *Reconhecimento de uma estrada dos campos do Rio Branco para a capital*, Manáos, 1855.

<sup>5</sup> Joaquim Caetano da Silva, *L'Oyapoc et l'Amazon*, 2 vol. Paris, 1861.

<sup>6</sup> A. C. Tavares Bastos, *O valle do Amazonas*, Rio, 1866.

<sup>7</sup> Francisco Bernardino de Souza, *Lembranças e Curiosidades do Valle do Amazonas*, Pará, 1873.—*Commissão do Madeira: Pará e Amazonas*, Rio de Janeiro, 1874.

Lacerda-e-Almeida and of Silva-Pontes; for the last eight years the works of Quintino Quevedo, and, above all, those of Silva Coutinho (1861). With regard to the Purús, the notes by Chandless fully described this interesting valley in 1866: but we had as early as 1853 the report of Silva Salgado, and in 1862 that of Silva Coutinho, without mentioning the publications of Colonel Labre, who not only wrote about this region, but made it thrive to the profit of all. As to the rio Negro, von Spix, von Martius, Wallace, and Bates have succeeded in finding a series of works, which were commenced as early as the seventeenth century. We have said, moreover, that the bifurcation of the Orinoco was well known by the Portugo-Brazilians as early as the first half of the seventeenth century, although the glory of its discovery has been attributed by Europe to Alex. von Humboldt.

If we have called to mind all these works with a certain satisfaction, it is not to display mere erudition, but simply to claim for our nation the honour to which it has a right; and that being now done, let us return to the foreign travellers.

A French missionary, Abbé Durand, after having studied the Solimões or Upper Amazon, the rio Madeira, and other Amazonian watercourses, sent to the *Société de Géographie de Paris* a very valuable communication, which was read at the meeting of August 5th, 1874.

He said there: "The territories that border the deep waters of the Madeira are fertile and suitable to every kind of culture, rich in bearings of gold, of which fragments roll in the waters of all its affluents (?). Therefore let men of all nations soon come to the shores of these river highways. Agriculture, commerce, industry, and the exploitation of gold mines all promise them an incalculable prosperity."

And speaking of the climate of the Amazon, which has been so discredited and calumniated by those who have never experienced it, he adds:

"These provinces have a reputation for being unhealthy, whereas the climate of the Amazon is healthier than that of many parts of Europe. The fevers which devastate certain districts every year are caused rather by the neglect of the

simplest laws of hygiene than by the insalubrity of the climate, which offers, therefore, no impediment to colonisation."

We deem it unnecessary to enumerate the other voyages undertaken in these parts: mere extracts, shortened and necessarily restricted to generalities, would teach the reader nothing very precise.

We believe it would be more useful to put him on his guard against the idea which strangers are apt to form regarding voyages of exploration on the Upper Amazon or in the collateral valleys of the river.

Whenever a European hears that a traveller has buried himself in the solitudes of Amazonia, he willingly believes that this is a most exceptional exploit, and that the lucky mortal who returns from it has been in countries where never before has the foot of civilised man been set. It must be admitted that the tales of adventure which now appear as if they were serious stories of travel, are likely to spread these gross errors. Let us hasten to warn these imaginative persons, who are too prone to credit the picturesque and the marvellous. The authors of the books to which we refer only journeyed through parts inhabited by Brazilians, or by foreigners established in Brazil, where reside Government officials, merchants, soldiers, and very sociable human beings. As to the famous Indians of whom such wonderful tales are told, they remain almost always out of sight, unless they can make themselves useful by their special knowledge of the country. In any case they are generally much less to be feared than the Calabrian brigands, or the savages in the great European cities.

Let the reader take our map of the Amazon and he will see that the *seringueiro*, more daring than the *savant*, has already penetrated almost everywhere, and that commerce and steam navigation have reached places where the geographer and the man of science have not yet carried their investigations.

Amazonia must not be confounded with Central Africa.

## CHAPTER III

*Systems of population.*—The first attempts—Why they could not succeed—Theories against the possibility of settling a white population in Brazil—The use to be made of the Indians—The part played by the Indians in the past—The Marquis de Pombal and the Indians—The population of the warm zone.

BRAZIL has expended up to the present time considerable sums in order to attract Europeans. From 1846 to 1882 it had expended for this purpose the relatively large amount of 46,000 *contos* or millions of *réis*, and yet from 1855 to 1882 it had secured barely half a million immigrants, or about the same number that the United States received in a single year. It is only since 1888 that a regular stream of European emigrants has begun to flow to the south of Brazil; the north of this country has only received a very insignificant number.

These meagre results are due to various causes.

We agree with those who think that a new State cannot spend enough upon attracting immigration, and we should like to see the men who govern and administrate Brazil devoting their chief attention to the important matter of developing this country by means of European labour. The whole future of Brazil depends upon this development.

The present situation of Brazil is already better than that of the United States in 1830, when the American Republic did not receive more than an average of 15,182 immigrants per annum.

Brazil has now an average of 80,000; we need not, therefore, despair of seeing it follow the same way as the great republic, in spite of certain prejudices which still impede its colonisation. Everything will depend upon the efforts of the Government of the Brazilian States and their agents abroad.

The greater part of the sums spent by Brazil upon immigration have been almost exclusively applied to the colonisation of the Southern Provinces; the Northern, and especially Amazonia, have received very little help.

However, towards 1855 an attempt at colonisation was made in the Province of the Amazon through the agency of the "*Companhia de Navegação a Vapor do Amazonas*," having then at its head the Vicomte de Mauá; but this company was evidently interested in preventing it from coming to anything. It received large subsidies from the Central Government and from the two Provinces of Pará and the Amazon. Let us hasten to say that these favours had their justification then in the necessity of encouraging an enterprise at its commencement, which, moreover, rendered in its time much real service.

In virtue of its contract it established two centres in the Province of the Amazon, one of which, called "Mauá," was near the chief town of the province, at the mouth of the rio Negro; the other, named "Serpa," was upon one of the banks of the Amazon, above the little town which is now known as Itácoatiára.

The first of these colonies was to be an agricultural and the second an industrial centre. This was, perhaps, too much to wish for at once, and it did not meet the views of those chiefly interested, viz., the colonists themselves; for colonisation is not managed in that manner.

These colonies were organised with much ostentation, but without any practical sense.<sup>1</sup> Both fell into decay at the end of a few months, and were abandoned after having caused serious injury to the Company, which, however, was consoled by receiving from the Central Government 720 *contos of réis*, something like £72,000 a year, at the then rate of exchange, for supplying a service of steamers along 526 leagues of the Amazon, 139 leagues of the rio Negro, and 56 of the Tocantins.

These attempts were bound to fail for many reasons.

First of all, the colonists engaged for the agricultural colony were not suitable, and as for the industrial colony, there had been installed, by the side of a machine for making bricks and

<sup>1</sup> See: O AMAZONAS—*seu Commercio e Navegação*.—Manáos, 1877.



tiles at the rate of 120,000 per diem, only one single furnace, which was capable of baking not more than 8000 or 10,000, so that, whilst this was in use for an entire month, the machine was lying idle.

In the second place, the Company had every interest in developing the timber industry, which would certainly fill their steamboats at once, whilst agriculture, on the contrary, would only have given results at the expiration of some years, and that progressively.

The failure of this system of colonisation discouraged any further attempt.

Moreover, an idea had taken root in the minds of a great number of the inhabitants of Brazil and elsewhere, that Europeans could never be successful colonists in lands situated within the tropics. In vain were Sumatra and Borneo used as arguments to the contrary—people did not want to hear anything about it.

It is certain that Europeans could hardly be employed at the outset in the forests, even though a number of Italians have proved capable of this work, but as a rule the education, habits, and physical constitution of Europeans all appear disqualifications. But it is no less certain that they might become excellent farmers and artisans in this zone. The future resources of this country cannot remain limited to workers in the forests; even the forest industry itself in time will become transformed. Already the *seringueiros* are compelled to search for the rubber-bearing trees in far-distant forests. The day will come—sooner perhaps than is generally believed—when shrewd *seringueiros* will plant the rubber instead of going so far to look for it, and this will be an economy of time and labour and a veritable gain to civilisation; and new-comers will leave standing those rubber trees that are productive, and will plant others on their land. The rational culture of the different species of caoutchouc-bearing trees will become a sort of agricultural industry similar to the coffee plantations in the south of Brazil, all the more because it will give much surer and more remunerative results.

J. M. da Silva-Coutinho affirms with considerable authority<sup>1</sup>

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<sup>1</sup>See, *Anexos* ao “Relatorio sobre a exposiçao universal de 1867.”

that the rubber tree commences to yield sap at the end of ten years and continues to do so for eighty years, and produces on an average 4 *kilogrammes* of rubber every year (about 9 lbs.). One man is able to extract latex producing as much as 32 kilogs. (72 lbs.) per diem when he has the trees close at hand. In addition to which, as the trees ought to be planted at a distance of 30 feet from each other, *cacao* (cocoa) could be planted in the space between two trees. The harvest of cacao is made at exactly the time when the workers are not employed at the extraction of the rubber, so that the two cultures could go very well together.

It would also be indispensable on a great estate not to confine one's self to one special culture, but, on the contrary, to imitate what is done in Europe and to multiply as much as possible the varieties of agricultural produce according to the land that yields it. Such an experiment could not fail to succeed.

The theory as to the inaptitude of Europeans to colonise this country falls through, therefore, of itself. We are convinced, on the contrary, that they will bring into our country intelligence and hard work, and will be able to teach us to profit by the progress already made in the Old World.

They will bring with them the best system of cattle-breeding; they will set up farmyards, and introduce improved methods of gardening, and perhaps the culture of cereals and the vine as in Algeria. Nothing is impossible to the man who is willing to work.

Agriculture will little by little replace the present forest industry, which only disperses our population, and Amazonia will be transformed when the plough and machinery are introduced into our country by immigrants whose capital is there invested.

This transformation of work and production must be well thought out and directed, and the idea will perhaps alarm certain conservative minds, friends of the routine and the chance produce of the uncultivated forest. But the opinion of this class of reasoner can be disregarded, and inert men who are opposed to all progress ought never to be admitted into the counsels of a

country aiming at developing its resources. "Willingly!" they would exclaim, like the President of Mexico said when he was spoken to on the subject of establishing a railway between Vera Cruz and Perote, "but what will become of our mules and our muleteers?"

Until the immigrants whom we expect arrive at their destination; until they engage in their turn even Chinese coolies for the harder part of their work, we should encourage every project brought forward in favour of utilising native labour.

The Indian is certainly not the only worker possible in this climate, but he is at present the one easiest to procure.

It is necessary, therefore, to civilise him, to defend him against adventurers, to protect him with love and intelligence, to gain his confidence by interesting him in our works and by giving him a share in our success.

The people of the Amazon secured a glorious record in the annals of humanity when, on July 10th, 1884, they set at liberty the last of the slaves; and they will secure another and a still more glorious one on the day when they put an end to the oppression and the misery which degrade the natives, who are shamefully treated by the whites and the civilised half-breeds.

On reading the official reports of the Presidents who have succeeded each other in the administration of this province, and on looking through the accounts of travellers who have lived in the *sertões* of the Amazon, one feels both love and pity for the poor, ill-treated Indians, who are at the mercy of so-called civilised beings. The Indian is a good fellow, an overgrown child, whom one must know how to manage. His erratic habits and his exceeding taste for independence are imposed upon him by the necessity of flying from oppression, rather than by nature.

We do not believe that it would be difficult to elevate our poor Indians to the state of proprietors. It would suffice, perhaps, to distribute amongst them suitable plots of land, some tools and capital, and to initiate them into the methods of agriculture.

The Indian is the link between the inhabitants of the past and of the present in this corner of our globe. Indian blood runs in the veins of almost all the inhabitants of Latin America, and as she, according to the expression of M. E. Reclus, is *more humane than her Anglo-Saxon sister*, she seemed to understand, at a certain epoch, the duty of calling the natives to take part in her progressive development.

One cannot study the Indian without being struck with his dignity, from the point of view of language and race, as well as with his social and economic importance in Spanish and Portuguese America.

It has been said that the Indian is a coarse being, of limited intelligence, hardly emerged from childhood, yet he possesses a language such as the *Abañeenga*, or the *Tupí-Guaraní*, rich, sonorous, expressive, and spoken from the upper sources of the Marañon to the confines of La Plata,<sup>1</sup> a language once spoken by more than a thousand tribes, some being now extinct and others still existing.

It has been stated that for the most part the Indian is a nomad; that his presence from day to day is uncertain; that he has no present, still less a future, and that his past is interesting only to the curious. Still, after four centuries of pitiless persecution or of petty vexations, of open oppression or of disguised slavery, in spite of the tyranny of his conquerors from the other side of the ocean—*pará ambolpir iguā*—in spite of the indifference of philanthropists who are much concerned about protecting the African, the Indian has not disappeared—he lives on in spite of everything. Sometimes he lives retired in his forests, the access to which he has the right to defend; at other times he comes out of his retreat, whether voluntarily or not; he dwells then in the midst of his “masters,” whose impoverished blood he invigorates.

In many countries—in Brazil, Uruguay, Paraguay, Bolivia, Peru, Ecuador, Venezuela, Columbia, Central America, Mexico, and elsewhere—the half-castes of this race take their place in

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<sup>1</sup> “No primitive language in the world, not even Sanscrit, has been spoken over so great a geographical extent as the *Tupí* and its dialects.”—Couto de Magalhães, *O Selvagem*, Introduction, p. 35. Rio de Janeiro, 1876.

the world, and in letters, science, art, war, and politics they rival the pure whites.

Some hundreds of tribes have undoubtedly disappeared since the time of the discovery of America, but others have only moved elsewhere, and their migrations being scarcely known, have led Europeans to believe that they were extinct.

Since the earliest days of their conquest the Indians proved themselves to be capable of great things, and in the work of civilisation that Europe undertook in the New World, in spite of all prejudices, they were always a useful element and sometimes even indispensable.

In Brazil as early as the sixteenth century, that is to say, the first century of discovery, we find a *Tupinambá* woman, Catherine Alvares *Paraguassú* (1531-83), helping to consolidate the domination of the mother country at Bahia, and leaving there an illustrious line of descendants.

Another pure blood Indian woman, the daughter of the Grand Chief *Tebyrigá*, married João Ramalho, the founder of so many centres of population in the region of San Paulo (1532-53).

During that time the "Ferocious Snake," the famous *Ararigboia*, chief of the *Tupiminós*, most powerfully assisted the Portuguese colonists in driving the French out of the bay of Rio de Janeiro (1565), and under the justly celebrated name of Martin Affonso de Souza he was loaded with honours by the king, Dom Sebastian, before the latter went away and was lost in Morocco at the battle of Alcazar-Quivir (4th August, 1578), "from whence he will return one day when it is foggy," according to the popular belief in Portugal.

In the seventeenth century two names stand out, surrounded as they are with a well-merited glory, one of which is that of Jerome d'Albuquerque-Maranhão, who was the natural son of the Portuguese Jerome d'Albuquerque—himself related to the *Terrible Albuquerque*, one of those heroes described in the *Lusiad*—and of the daughter of an Indian chief named "The Green Bow" (1548-1618). This half-breed of white and Indian, after having governed the Rio Grande do Norte, which he had conquered, became, in June, 1614, "commandant of the conquered

and discovered lands of the Maranhão," from which he succeeded in expelling the French.<sup>1</sup> It was after this victory that he added to the name of his father (d'Albuquerque) the name of the country he had just reconquered (Maranhão). He was named nobleman of the royal house, and died in Portugal full of honours, leaving three sons, who were ennobled in their turn by the King of Portugal.<sup>2</sup>

The other was *Clara Camarão*, who was the daughter of poor *tapuyas* of Ceará, or of Rio Grande do Norte, and married to an Indian like herself named *Poty*, which word signifies *shrimp*; whence their name of *Camarão*, which in Portuguese

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<sup>1</sup> About 1605 Charles des Vaux, a native of Touraine who had lived eight years amongst the Indians in Brazil, persuaded Henry IV. that the people of this country were ready to give themselves to the French. At that moment Daniel de La Touche, the Lord of Ravardière, had just arrived in company with Jean Moquet from an expedition in the Guiana, whence he had brought the Cacique Japoco. The king ordered him to go to Maranhão with des Vaux in order to study this country. On their return Henry IV. was no longer alive, and it was Mary de Médicis who confided the expedition (1612) to a group of noblemen, having at their head François de Razilli, Lord of Aumels, Claude de Razilli, Lord of Launay, La Ravardière, de Chabannes, cousin of the latter, Nicolas de Harlay de Sancy, Baron de la Motte and de Gros-Bois, de Pézieux, cousin of Marguerite de Montmorency, Princess de Condé, du Prat, de Saint-Gilles, de Rochefort, d'Ambreville, de Saint-Vincent, de Logeville, de la Roche, du Puy, etc. On November 19th, 1614, after more than two years' stay in this country, the French suffered a repulse which obliged them to sign an armistice. The truce was declared at an end by Jerome d'Albuquerque at the close of the following year. Reinforcements had reached him, whilst the French saw themselves abandoned by the mother country, and La Ravardière had to capitulate. Of this magnificent attempt to establish "Equinoctial France" there remains only the town of Saint-Louis de Maranhão, capital of the State of that name. On arriving there on August 6th, 1612, La Ravardière and his companions were nominated "Lieutenant-Generals of the King of the West Indies and the lands of Brazil," and built there the village of Saint-Louis, which alone perpetuates the memory of their unlucky expedition.

<sup>2</sup> A letter from La Ravardière to Jerome d'Albuquerque-Maranhão, dated November 23rd, 1614, and mentioned by Baron de Rio-Branco (*Le Brésil en 1889*, Paris, 1889), gives an idea of the chivalrous spirit of Albuquerque: "The clemency of the great Captain d'Albuquerque, who was viceroy to His Majesty Dom Emmanuel in the East Indies, shows itself in your courtesy to my French soldiers and in the care you have taken in giving burial to the dead, amongst whom there is one (without doubt his cousin M. de Chabannes) whom I loved as a brother, for he was brave and of good family." In his turn a young Parisian surgeon, de Lastre, who gave his services to the wounded in both camps, wrote, "Never have I seen such honest people."

means the same as the *Tupi-guarani* word. Clara and Antonio-Felippe Camarão were an heroic couple, who distinguished themselves in the war against the Dutch in 1637, and were ennobled by Philip IV.<sup>1</sup>

In the eighteenth century we again find at least three Indians of pure blood who ranked amongst the greatest foreigners.

These were Dom José de Souza-e-Castro, and his son Dom Felippe, both knights of *São Thiago* and the *mestre do Campo* João Doy. The two former were of the *Tupi* tribe from the mountain of Ibyapába in the Ceará, and the latter belonged to the *Potiguares*.

We might make a very much longer list of Indians who won the admiration of the Portuguese, and gained by their valour either letters of nobility or high dignities.

As we approach modern times, the heroic age being past, the Indians have played a less important part. Their conquerors wished at first to drive them back, but they did not succeed. Disconcerted for a moment, the Indians soon rallied and defended themselves, either alone or with the aid of allies, uniting themselves first to one, then to another, according to the interests of the moment. But whether waging war or negotiating alliances, they continually give proof of possessing two master qualities—bravery and diplomacy.

As to their bravery, the words recorded by Michel de Montaigne (1533-92), bear testimony to it. At Havre de Grâce the author of the *Essays* found himself in the presence of an Indian chief, and asked him what privileges were enjoyed by the chiefs of his tribe. "They only have one," replied the savage; "they are the first to march to war!"

Of their diplomacy, the account by Hans Stade gives us an example. The French sailors had never ceased trading with the

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<sup>1</sup> Philip IV. of Spain, Philip III. of Portugal. Portugal remained under Spanish dominion from 1580 until 1640. The Spaniards tried again after 1640 to maintain themselves in the country, and the first battle in the war of Portuguese Independence (Montijo, May 26th, 1644) was again won over the Spaniards by Mathias d'Albuquerque, a Brazilian, who was rewarded by the grant of the title of Count d'Alegrette.

Indians on the Brazilian coast, in spite of the jealousy of the Portuguese, who, by their vexatious measures, had set many of the shore tribes against them. One of these tribes, that of the *Tamoyos*, in the neighbourhood of Rio de Janeiro, was allied to the French. Its chief was called *Cunhambebe*, "the great and powerful King Quoniambeck," of whom André Thevet,<sup>1</sup> who has given us his portrait in two of his works, speaks. Hans Stade, a Hessian, was taken a prisoner by the *Tamoyos*, who prepared to devour him according to their usual custom. The poor man was in despair, invoking Heaven, reciting psalms, and singing hymns, but all to no purpose: the sacrificial fire was lighted, and he was going to die. In his distress he suddenly remembered that these savages were the faithful allies of the French. "I am a Frenchman!" he cried out to the Tamoyo chief. But the great and powerful King Quoniambeck, it appears, was used to such pleas, for he replied to the prisoner, "For some time we have not eaten a white man, and every one who falls into our hands now says he is a Frenchman." Hans Stade, however, did not lose his head. "But," said he, "look at my red hair, my red beard, and my white skin: the Portuguese are not made like that." Cunhambebe hesitated, not wishing to make a mistake by eating the flesh of a friend, and therefore set the German free, who himself related this story to us.

Not being able to drive the Indians out, their conquerors ill-treated them, and that so terribly that the Pope and the Jesuits intervened in their favour.

In two Papal Bulls, Paul III. (1534-49) had already proclaimed<sup>2</sup> that the American Indians are free men and endowed with reason. Two centuries later, on December 20th, 1741, another Pope, Benedict XIV. (1740-58), in a brief addressed to the Episcopate of Brazil, again protested against the slavery of the Indians and the violence to which they were subjected, and threatened the oppressors with the censure of the Church.

<sup>1</sup> *Histoire de Theret*, of two voyages made by him in the South and West Indies (Manuscript in the *Bibliothèque Nationale de Paris*, No. 15,454, quoted by Baron de Rio-Branco in *Le Brésil en 1889*, by Baron de Santa-Anna Nery.

<sup>2</sup> Brief *Pastorale officium erga oves nobis calitus creditas*, given at Rome on May 23rd, 1537, and addressed to Cardinal D. Juan de Tavera, Archbishop of Toledo. Bull *veritas que nec falli*, given at Rome, June 2nd, 1537.



However, the Indians had already found an eloquent and courageous defender in the person of a truly exceptional man, Father Antonio Vieira (1608-97), a great orator, in fact the finest of our Portuguese language: a great writer, whose works have become classics with us; diplomatist, missionary, and coloniser: this Jesuit was great in everything.

When he was a missionary at Maranhão and at Pará, he harassed the Court with complaints against the governors, whose tyrannies over the Indians he strongly denounced. The following is one of the appeals he addressed to the king, Dom Juan IV. of Portugal (1640-56):—"Sire, I have never understood anything about political matters, and to-day I understand them less than ever, but as a loyal subject I will simply say what I think. I believe that it would be better to submit to one robber than to two, and that it is more difficult to find two honest men than to find one."

The king had just divided the State of Maranhão-Pará into two *capitânicas*, with two governors.

He continued:—"Two Roman citizens were once mentioned to Cato as candidates for two vacant appointments; he replied that neither of them was suitable: the one because he had nothing, the other because nothing satisfied him. It is the same thing with the two captains-general who are to share the government of Pará: Balthazar de Souza has nothing, whilst nothing satisfies Ignace do Rego. Now, I do not know which is the greater temptation, want or greed. All there is in the *capitânia* of Pará, with the exception of the land itself, is not worth ten thousand *crusados*, as everybody knows. However, do Rego wishes to raise more than a hundred thousand in three years. . . . All this has to come out of the sweat and the blood of the poor Indians, whom he treats like his slaves, without any of them being able to free themselves from his service, or to enter any other elsewhere, which, apart from the injustice committed against the Indians themselves, causes the Portuguese to have no one to serve them, whilst the poor Indians perish. . . ." <sup>1</sup>

<sup>1</sup> *Cartas selectas do P. Antonio Vieira*, Paris, 1862.

All these protestations, supported at Rio de Janeiro by Bishop Lourenço de Mendonça (1632), and at S. Paulo by the Jesuits, led to the issue of the royal *alvará* of April 1st, 1680, then to that of June 6th, 1755, and lastly to the Instructions of October 17th, 1758, on the subject of the government of the Indians.<sup>1</sup>

These Instructions, very minutely and pretentiously made out, are most curious to study. At all events they give us right impressions, on the one hand, regarding the situation of the Indians in Brazil in the second half of the eighteenth century: and on the other, upon the state of mind of the Marquis de Pombal (1699-1782) and his assistants. The "Great Marquis" was then engaged in a struggle with the Jesuits. They were driven from Portugal September 3rd, 1759, but were forbidden to preach in May, 1758.

The Instructions complained first of all that the Jesuits, instead of teaching the vanquished—the Indians—the language of their conquerors, viz., Portuguese, had, on the contrary, amalgamated the two principal dialects of the Indians, and formed the *tupi-guarani*, in which language (called by them the *general tongue*), they composed their catechisms and the *mysteries* taught by the neophytes. Naturally the teaching of the Portuguese language was to be carried out at the expense of the Indians, who under no pretext were allowed to use their own dialects.

We will say in passing that at the present day the system of the Marquis de Pombal has been adopted, to the great detriment of Americanist study. During our childhood the seminary of Pará had a class of "tupi-guarani," which for the past twenty years has been, unhappily, suppressed.

The Instructions laid down that the Indians were not to be offended in any way, and it was forbidden to call them negroes. "Amongst the various sad practices and pernicious abuses which have led to the degradation of the Indians, is the most unjust and scandalous custom of calling them negroes. People have doubtless tried, by the infamy and baseness of this name, to

<sup>1</sup> *Arquivo do districto federal*, under the direction of Doctor Mello-Moraes, Junior, Rio de Janeiro, 1896.

persuade them that Nature had destined them to be the slaves of the whites, *in the same way as the blacks on the coast of Africa.*"

The Indians were required to dress themselves in a decent manner, and to have not only first names but family names, taking those in use in Portugal.

The other orders contained in this curious official document were more useful, although presented under the sentimental and rather foolish form that was then in vogue.

These measures, decreed with a great show of rhetoric, produced no good results. Only men trained to the hard task of spreading civilisation could have carried them out, and it may even be said that the oppression of the Indians assumed a more cruel character. It was then that the director of the royal borough of Arronches<sup>1</sup> withdrew forty-one young Indians of both sexes from school and sold them as slaves; and the trade in Indian slaves of the borough of Vianna, in the Ceará, was carried to such an extent that married couples were separated and young girls violated. . . .

After that date the "conversion" of the Indians hardly made any progress, although in the greater part of those regions where either entirely savage tribes, or those who had become civilised, existed, there were established "Directors of the Indians," charged to look after their welfare. But these attempts, made without plan or method, have never succeeded. At the present day the problem is more urgent, for all the world is more or less concerned in the populating of the hot countries of America.

Some people believe that if the individual of the white race can become acclimatised there without much difficulty, the race itself could not be reproduced there, or if it did, it would at least lose a great part of its qualities.

If the partisans of an opinion very widely spread amongst Europeans are to be believed, these regions—the most extensive, the richest, and the most fruitful of the Latin American countries—cannot be exploited on a large scale except by the

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<sup>1</sup> *Notas para a Historia do Ceará.* Dr. Guilherme Studart, Lisbon, 1892, page 183 and following.

overflow population of the temperate regions which will arrive there in a more or less distant future.

The rulers themselves of these countries practically share this opinion, for whilst in theory they maintain that even the equatorial plain of the Amazon may be inhabited and colonised by white men—and this is our firm personal opinion—they invite the yellow races of Asia to settle there, after having done everything to attract the whites of Europe.

The population of the warm countries of America is a grave problem, complicated by the intervention of the geographers, economists, and politicians of Europe.

The geographers and economists, who have never taken the trouble to go there and study this complex question on the spot, act like certain travellers who have traversed these regions in haste, without knowing the language, customs, or conditions of labour, and unhesitatingly declare, faithful to tradition, that the white cannot be acclimatised in that latitude.

Politicians, instead of saying what would be comprehensible:—"You wish to attract our able-bodied, healthy men, when we need them for our standing armies, or to keep labour cheap by the abundance of hands," say hypocritically: "Your hot countries are pestilential and uninhabitable—we will not permit our countrymen to go there and die."

Therefore, to the first we reply, "Millions and millions of whites live, prosper, and found families in the warm regions of America. All those who have lived there, who have studied these regions on the spot, from Humboldt down to Agassiz, from Wallace and Bates to Wiener, believe in the possibility of the acclimatisation of the white race in that zone. Your fine theories are worth nothing when confronted with hard, stern facts."

To the second we say, "Theoretically, the liberty of emigration is part and parcel of the liberty of locomotion; you have not the right to prevent any one from expatriating himself. Practically you are incapable of rendering your prohibitions effective: every year there is in Europe a surplus of a million, who must perforce go away, and who in reality do go away, in spite of all your restrictive measures."

It is in this way that Brazil alone has received during ten years more than a million emigrants from Europe, and finds that this number is insufficient for its wants, and is trying to introduce into the country Chinese and Japanese workers.

The Brazilian Treasury makes enormous sacrifices for the introduction of immigrants. Generally they are given their passage gratis, as well as board, lodging, and medical assistance during the first days after their arrival: they are granted lands on credit (or rather, let us say, gratis, for although certain conditions are attached to their tenure, payment is seldom exacted), in certain cases they are even allowed advances in the form of seeds and agricultural implements, etc.

None of us in Brazil ever complain of this influx of foreign workers, but it is certain that the rational populating of the country would gain much by calling the Indians to contribute to that increase of civilised labour.

According to an official document<sup>1</sup> there are nine provinces in Brazil, which we now call States, where Indians are still living, viz., Amazonas, Pará, Maranhão, Espirito-Santo, Paraná, Rio-Grande-do-Sul, Minas-Geraes, Matto-Grosso, and Goyaz.

These nine States contain altogether an area of 6,711,144 square kilomètres, and form more than three-quarters of the total area of Brazil, which is 8,337,218 square kilomètres.

Part of the States of Goyaz and of Matto-Grosso, a small portion of the State of Minas-Geraes and the whole of the States of Amazonas, Pará, and Maranhão are situated in the tropics.

The Eastern portion of Minas-Geraes and the State of Espirito-Santo are entirely situated in the sub-tropical or hot zone.

Lastly, the two States of Paraná and Rio-Grande-do-Sul are in the warm temperate zone, where the mean temperature is always below 68° Fahr. It is agreed that these two States, which have together an area of 457,872 square kilomètres, lend themselves admirably to European colonisation. Opinions only differ when regions in the north of Brazil, and in particular the equatorial plain of the Amazon are in question.

It is precisely there that the Indian becomes valuable; he

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<sup>1</sup> *Relatorio do Ministro da Agricultura*, Rio, 1889.

supplies a means of hastening the useful populating of these splendid regions; when his blood is mixed with that of the whites, little by little, a new race will be formed which will have all the qualities of the white race with the advantage of being adapted to its surroundings.

In any case, it would be strange if at the end of this nineteenth century, which has witnessed the political emancipation of the sixteen republics of which Latin Europe was once mistress, we could contemplate with indifference the gradual disappearance of so many nations.

Philanthropists who have done so much for the liberation of the "black slaves" are in duty bound to plead the cause of the "red slaves." *Sarants* have only just time to avail themselves of the remaining tribes of Indians to complete their studies from every point of view, and economists can be forgiven much if they persuade the Governments of Latin America—too much inclined to expend the best of their resources for the exclusive benefit of the worn-out Europeans—that they have a more pressing duty to accomplish, viz., to devote a portion of their subsidies to the intellectual and moral development of the former masters of the soil, in order to make them the basis of a rational system of population in their respective countries.

## CHAPTER IV

*Systems of population* (continued).—Measures in favour of immigrants—The proletarian emigrant—Small landed proprietors and industrial workers—The emigration of capital—Foreign merchants—Guarantees given to foreigners by the laws of the country.

A NUMBER of years will still have to run before it is possible to give moral and religious teaching in a way useful for civilisation, to the Indians disseminated in the forests which border the shores of some of the Amazonian watercourses. Since 1884, slavery has happily ceased to exist in this country, and since 1888, in the whole of Brazil. It is, therefore, more than ever urgent to consider the subject of the introduction of numerous hands, in order to exploit a land which is so marvellously productive. No time could be more favourable than the present, for whilst the number of countries whence emigrants proceed increases, that of the countries whither they go diminishes. Amongst the former may be more especially enumerated the United Kingdom of Great Britain and Ireland, Italy, Germany, Scandinavia, Russia, Spain, and Portugal, furnishing, together with the rest of Europe, more than a million of emigrants per annum. On the other hand, the countries whither immigrants come are only the United States of North America, Australasia, Brazil, the Argentine Republic, and Canada.

In the United States the best lands are already settled, and this country adopts measures for preventing new arrivals from competing with workmen already established.

Australia, in spite of appearances, is almost sufficiently populated, and the proof of it is that the number of departures is almost as great as the number of arrivals.

The Argentine Republic, since 1889, has witnessed a considerable diminution in the number of immigrants on account of the crisis that it went through: for a time, indeed, the number of re-emigrations from there exceeded that of the immigrants.

Canada, although it always seeks to attract immigrants, has begun to send out emigrants.

There remains only Brazil, and in Brazil, Amazonia, which should be new lands for immigration, but this has not yet been organised in a proper manner; however, numerous enactments are greatly facilitating it.

Land is easily acquired, and it is cheap. A few pounds will purchase a domain of considerable extent, although the surveys are made at the expense of the purchaser.

According to the regulations in force for the purchase of vacant lands belonging to the State, all the free ground has been divided up into two categories: the first comprises the land situated near main roads, and on the banks of navigable rivers: the second embraces the lands in the interior, and those which do not happen to be situated upon the banks of the rivers where steamers ply. These regulations also make a distinction between lands intended for agriculture and those acquired for the purpose of extracting their natural wealth. The categories and prices have been fixed according to the following tariff:—

I.—*Lands situated near high roads and on the banks of navigable rivers.*

1st. *Lands intended for agriculture.*—From 1500 to 2000 *mètres* in length by 2000 to 3000 *mètres* in breadth, 0,08 *real* the *mètre*. From 2000 to 3000 *mètres* in length by 3000 to 4000 *mètres* in breadth, 0,12 *real* the *mètre*.

2nd. *Lands intended for cattle rearing.*—From 2000 to 4000 *mètres* in length by 4000 to 5000 *mètres* in breadth, 0,04 *real* the *mètre*. From 4000 to 5000 *mètres* in length by 5000 to 6000 *mètres* in breadth, 0,06 *real* the *mètre*.

3rd. *Lands intended for the extractive industry.*—From 2000



to 3000 *mètres* in length by 3000 to 4000 *mètres* in breadth, 0,1 *real* the *mètre*. From 3000 to 4000 *mètres* in length by 4000 to 5000 *mètres* in breadth, 0,2 *real* the *mètre*.

## II.—*Other lands.*

1st. *Lands intended for agriculture.*—From 2000 to 4000 *mètres* in length by 3000 to 4000 *mètres* in breadth, 0,05 *real* the *mètre*. From 4000 to 5000 *mètres* in length by 4000 to 5000 *mètres* in breadth, 0,08 *real* the *mètre*.

2nd. *Lands intended for cattle rearing.*—From 4000 to 5000 *mètres* in length by 6000 to 8000 *mètres* in breadth, 0,03 *real* the *mètre*. From 8000 to 12,000 *mètres* in length by 10,000 to 12,000 *mètres* in breadth, 0,05 *real* the *mètre*.

3rd. *Lands intended for the extractive industry.*—From 6000 to 8000 *mètres* in length by 6000 to 8000 *mètres* in breadth, 0,08 *real* the *mètre*. From 8000 to 10,000 *mètres* in length by 8000 to 10,000 *mètres* in breadth, 0,15 *real* the *mètre*.

Not only can these lands, now belonging to the State, be obtained at an excessively low price, but the Government is already making arrangements for the housing of future immigrants. A site has been chosen for the purpose of building a hostelry for immigrants, where they will be lodged, fed, and assisted during the first days after their arrival until they are definitely placed.

Other measures will very shortly be taken by Congress, acting in harmony with the vice-governor in office, in order to induce the "worn-out people of Europe" to take the road to the Amazon.

"When I remember," writes Agassiz,<sup>1</sup> "how many miserable people I have seen in Switzerland, bending over the works of a watch, or a bit of lace, hardly daring to raise their eyes from their work, and that from sunrise to well into the night, without being able, even at this price, to gain sufficient for their bare

<sup>1</sup> See *Voyage au Brésil*, by M. and Madame Louis Agassiz, Paris, 1869

wants, and when I think how very easily everything grows here upon land that one could have for nothing, I ask myself by what strange fatality one-half of the world is so overcrowded with inhabitants that there is not bread enough for them all, whilst in the other half the population is so scanty that the number of hands cannot suffice to gather in the harvest? Ought not a stream of emigration to flow abundantly into this region so favoured by nature and so sparsely inhabited?"

Thanks to the liberal measures that we have just mentioned, it will not be long before immigrants settle near the Amazon and cause all the marvels of Europe to blossom there.

New-comers, however, would strangely deceive themselves if they imagined that in such a country one could make a fortune, or even a competence, without work.

Amazonia needs labourers: but there is no place either for the idler or the vagabond, and mere adventurers should equally stay away.

We only want industrious, hard-working men, whom fortune has not favoured in their mother country; men having a decided determination to adapt themselves to a regular trade, to industry or to agriculture, for their own personal profit, and for the benefit of the country which welcomes them. Those who cross the seas with this end in view are sure of finding in Amazonia useful employment, and large remuneration for their labour, intelligence, and money.

There are three great classes of persons who seek to emigrate. The first comprises the working classes: the second embraces the small proprietors, farmers, or manufacturers; and in the third are found the capitalists, who wish to make their money increase in a more rapid manner.

The working man possesses nothing but himself and his power of doing work—*omnia mea mecum porto*. In countries like Amazonia this working power is not to be disdained, assuming that the working man is courageous, honest, and animated with a desire to do well.

We say that this sole possession of the working classes is not to be disdained, for it is, in fact, a personal capital, consisting of

the instruction of the worker, the trade that he has learned, the particular fitness and the inventive genius that he possesses. J. B. Say does not hesitate to declare that a man who has finished growing is an accumulated capital, and MacCulloch maintains that every individual who has arrived at maturity may be considered a machine which has cost twenty years of constant attention, and a considerable capital spent in construction. Edward Young, the chief of the statistical office at Washington, thinks that the sum of a thousand dollars (£200) may be estimated as representing the average value of each person added in a permanent manner to the population of any country other than his own. Therefore if the State of the Amazon introduced, let us say, 50,000 immigrants from Europe in five years, and spent £10 on the recruiting, transport, reception, and placing of each immigrant, it would have made an excellent bargain, for the population would have rapidly increased, and for an outlay of £500,000 the State would have acquired a working capital representing £10,000,000, being twenty times the sum expended.

The working man possesses accumulated force, and his duty is to render it productive instead of feeding it to the detriment of the community by living in idleness. An idle workman would be a nuisance; an idle capitalist has at least his wealth, which does the work of production in his stead.

The working man, therefore, is only a valuable immigrant so long as he knows some useful trade, and has the intention of following it. When he fulfils these conditions, he easily finds occupation in a country which has undertaken great public works, and will continue to do so.

The workmen who have the greatest chance of finding immediate occupation in the Amazon are—masons, bricklayers, stone-cutters, carpenters, clerks, carmen, labourers, journeymen, caulkers, dyers, sawyers, packers, grocers' assistants, ropemakers, engineers, ox drivers, designers, fruit gatherers, sweepers, tilers, slaters, tinsmiths, turners, butchers, varnishers, polishers, blacksmiths, plasterers, porters, weavers, spinners, cutlers and grinders, furriers, stokers and firemen, horticulturists, and market gardeners.

Besides working men, small proprietors, farmers, and manufacturers are anxious to improve their lot by emigration.

This class is not at all numerous in France, where people remain attached to their piece of land, contented with little. The emigrants from France are mostly agricultural labourers or farmers and manufacturers who have done badly in their business.

Such men should come provided with a small capital, and their position will be better than that of the simple working man, provided always that they take care at first to work for somebody else, without risking their money at once in a country where everything will be quite new to them. They arrive, in fact, in a strange country, and generally know nothing of the language, manners, and customs: they have had no experience of what they will need, nor of the advantages of various methods of work. They are, therefore, in want of help and advice in order that they may not make a start in a wrong direction. They ought really to serve an apprenticeship, and if they do not want to risk needlessly all they possess, it is necessary that they should submit to this position for a time, whilst they acclimatise themselves to the country, and increase their little store of capital by salaried work; they are thus able to acquire a thorough knowledge of the country and its agricultural, commercial, and industrial wants.

It is only after this apprenticeship that the colonist can establish himself without fear; but, once installed, he will be able in his turn to furnish work for any of his countrymen who have recently arrived; for the fertility of the soil is such that products planted and sown by four hands will require the care of twice that number the year following. It is only in this way that small and medium holdings of land can be worked in these parts.

We have now to speak of the third class of emigrants, viz., the capitalist, who have likewise a prospect of succeeding far beyond their hopes in a country where capital is as much wanted as labour, and money always finds a ready use and brings in high interest, as there is never enough to supply all the necessities of the rapid progress of commerce.

Large banks, assurance companies, and companies for the development of commercial and industrial undertakings have not yet been founded. Great agricultural works and forest exploitations await but funds in order to produce millions, and those capitalists who are the first to arrive will have good reason to esteem themselves fortunate.

There is one consideration, moreover, which should encourage, or at any rate reassure, those Europeans who contemplate settling in the State of the Amazon. They are certain to find there already a number of their fellow-countrymen upon whom fortune has smiled, and who occupy an excellent commercial position, either in the capital or in the interior.

At *Manáos* there are a good many shops and commercial establishments belonging to foreigners, and these are, as a rule, superior both in number and importance to those belonging to Brazilians.

The foreigners who predominate are Portuguese, who occupy a special position in Brazil, and have a common origin with us. They resemble us in language, religion, customs, and history, and they have had an interest in the country for many years. Their exceptional position is, therefore, quite natural. The Portuguese is neither an absolute foreigner, nor is he quite a Brazilian, but is a kind of historical ancestor in the same way as the Englishman is to the Yankee.

Besides the Portuguese, other foreigners hold honourable positions. At *Manáos* there are to be found amongst the large wholesale and commission houses, North Americans, English, French, Germans, and Italians.

Every foreigner is welcomed in Brazil with the greatest cordiality. There is not a single nation in the world that does more for the immigrant, and this is proved on every available occasion. Their rights are respected and their civil position protected by very liberal laws. Agassiz, a citizen of the United States Republic, born in Switzerland in another republic, wrote these words: "Nothing could be imagined more liberal than the Brazilian legislation." On this point it is in advance of the most part of the European States, that boast of their political organisation.

Like Brazilians, foreigners are able to receive, gratis, elementary instruction in the public schools; and like them they are also free to enter the *lycées* and other educational establishments. They go about everywhere with the liberty accorded to the natives of the country, and can claim the guarantee of *habeas corpus*. On condition that they submit to the legal regulation, with which it is easy to comply, they can carry on every trade and industry which is not harmful to good morals, health, and public safety. They can dispose of their goods, and entirely enjoy the rights of property accorded to Brazilian citizens. The most complete liberty of conscience is allowed, there being no State religion.

The rights of the children of foreigners born in Brazil have more especially engaged the attention of the legislator. It has been decreed that the civil status of adult foreigners residing in Brazil, and who are not there in the service of their own country, is also the civil status of their children, but only during the minority of the latter. On their coming of age they enter into the enjoyment of the rights granted to Brazilian citizens themselves.

The Brazilian woman who marries a foreigner takes the position of her husband, in the same way as if a Brazilian marries a foreign woman, she becomes a Brazilian herself *ipso facto*. The law recognises only civil marriage.

The rights of succession to the property of foreigners dying in Brazil are regulated in general by the same procedure and authority which operate in the case of Brazilians, unless there be any special agreement with the country of the deceased, in which case the foreign consular agreement is made the authority. For certain countries, after a simple arrangement has been concluded by an exchange of notes establishing reciprocity of action, Brazil recognises the authority of consuls following certain stated rules and regulations.

Brazil has concluded treaties with the majority of civilised countries for the extradition of criminals. Letters of naturalisation are granted with the greatest facility and without expense. Naturalised foreigners enjoy the same rights and prerogatives as Brazilians by birth, with but slight political restrictions, which

only affect, moreover, a very limited number of them, as, luckily for our national spirit, very few amongst them have political aspirations.

The laws of the Federal Union upon naturalisation and rights of property, as well as the laws and regulations of the State, favour, therefore, the foreign immigrant in every way.

The certain sources of riches which nature offers him, and the relatively high salaries paid, combine to attract him to a region where the miseries of Europe will be still unknown for a long time to come, where a livelihood is assured to every man who will work, and where lasting enterprises may be undertaken.

Space is very limited in Europe, and it will be long before any general expropriation can secure to every citizen a universal and impersonal ownership of the soil.

Utopian dreamers who find that there is not room for everybody in the old continent would do well to turn their attention towards the Amazon, and to encourage the disinherited to go there, and become proprietors in a land which offers a welcome to all.

## CHAPTER V

*Systems of population* (continued).—The Indian as an aid to European colonisation—Attempts made in this direction—Classification of the Indians according to Dr. Von Martius—New classification of the Indians of the State of the Amazon—List of 373 tribes.

THE Europeans who discovered South America never thoroughly understood, as we have already said, how to civilise the native population. During the earliest times of the conquest, civilising to them meant calling the Indians to receive Christian baptism and making most lucrative exchange with the savages. Later on, when the Portuguese grasped the fact of the vast riches above and under the soil of these new countries, they made under the name of repurchases (*resgates*) immense raids in order to seek amongst the Indians slaves ready acclimatised and ripe for work. That was the time of the wholesale destruction of the natives. Berredo in his annals<sup>1</sup> speaks of one of these expeditions, which took place on January 7th, 1665, during which 300 *malocas* or villages were set on fire, the bodies of 700 Indians strewed the land in which they were born, and 400 prisoners were led captive to the establishments of the conquerors.

The Jesuits raised their voices in favour of the oppressed race, but the Marquis de Pombal lost no time in suppressing them. We are independent enough to say without hesitation that the suppression of the Jesuits in Brazil was a step in the wrong direction, and struck the death-blow to the work of civilisation amongst the Indians.

<sup>1</sup> Bernardo Pereira de Berredo, *Annaes Historicos do Estado do Maranhão*, Lisboa, 1749.



Attempts are now being made to resume this work, and the late vice-governor of the State of the Amazon, Colonel José Ramalho, has been re-establishing a protectorate of the Indians, with local directors for each region. Baron de Manóas, a son of the country, is at the head of this new department, and the direction of the Indians of the rio Branco has been confided to the care of M. Tenreiro-Aranha, the son of the first President of the Province of the Amazon after it was separated from Pará in 1852.

It is in order to assist in this work that we have proceeded to catalogue the ancient and modern tribes of the whole State of the Amazon.

In 1867 Dr. Von Martius, the indefatigable Bavarian *savant*, who devoted more than half a century of his life to the study of Brazilian matters, made a classification of the Indian tribes of the New World in a well-known book.<sup>1</sup> He not only studied the ancient and the still existing tribes of the whole of Brazil, but also those of South America, the Guianas, the West Indies, and some of those in North America. His catalogue contains the names of about 500 tribes.

Taking the work of the illustrious ethnographer as our basis, we have proceeded to a more modest labour, which only embraces the tribes in the State of the Amazon, from the middle of the seventeenth century to the present day. We have intentionally omitted even the tribes of the great river which are not upon the actual territory of the State, but nevertheless we have been able to enumerate nearly 400 different tribes in the State of the Amazon alone, and our list includes the names of about 230 tribes of which Dr. Von Martius has made no mention.

The only sources upon which we have drawn are the Voyages of Noronha and Ribeiro de Sampaio, already referred to in the course of this book, the printed chronicle of Simon de Vasconcellos,<sup>2</sup>

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<sup>1</sup> Dr. Carl Friedrich Phil. v. Martius, *Zur Ethnographie Amerika's zumal Brasiliens*, Leipzig, 1867.

<sup>2</sup> Padre Simão de Vasconcellos, *Chronica do Companhia de Jesu do Estado do Brasil*, Lisboa, 1663.

the unpublished chronicle of João-Felippe Bettendorff,<sup>1</sup> the study of Bernardino de Souza,<sup>2</sup> and the reports of the Presidents and Governors of the Amazon. It is especially these latter, unknown to Dr. Von Martius, which have enabled us to give a more complete list than he did.

The following is the list, interesting even in its dryness :—

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<sup>1</sup> Padre Ioao Fellippe Betendoreff (*sic*), *Chronica da Missão da Companhia de Jesus em o Estado do Maranhão*, Man. from the Public Lib. at Lisbon, 1699.

<sup>2</sup> Conego Francisco Bernardino de Souza, *Commissão do Madeira*, 1<sup>a</sup> Parte, Rio, 1874.

## ALPHABETICAL LIST

of the

*Indian Tribes in the State of the Amazon from 1768  
to the present day*

### A

1. *Abacátes*, an extinct tribe of Indians of the Amazon, mentioned by S. de Vasconcellos. Their name signifies the fruit *abacate* (prickly-pear) (*Persea Gratissima*).

2. *Abacaxis*, *Abacachis*, *Abacachys*, Indians of the rio Negro and the Madeira; they were the first to group themselves, under the guidance of the missionaries, in the village of Serpa, now called Itácoatiára, then established on the rio Abacaxis. Abacaxis is a Brazilian pine-apple (*Abi-acoigoé*, bitter, and *Ah!*).

3. *Abaetés*, an extinct tribe of Indians of the rio Madeira, mentioned by C. de Acuña. Martius is of opinion that these are the same that have since been known under the name of *Abactis*, *Abacátes*, which is scarcely possible. Their name comes from *Aba-eté*, clever men.

4. *Acángas-Pirangas* (Red heads), a tribe still existing of the Madeira.

5. *Acaráiuáras*, *Acaraiuarás* (Nation of the *acarás* fish, *Lobotes*), Indians which at the end of the eighteenth century still lived on the banks of the Abacaxis, the Canumá, and the Maués.

6. *Acarapis*, *Agaranis*, Indians of the rio Negro and the rio Branco, that were still to be found at the end of the eighteenth century near the sources of the rio Parime.

7. *Acauans*, *Acauãs*, *Acauás* (The Fighting Men), an extinct tribe of the lower Amazon; they took their name from the *Acaun* (*Falco cachinans*), a bird that plays a great part in the superstitions of the half-civilised Indians of the Amazon.

8. *Achouris*, an extinct tribe of the Juruá and the Solimões; they still inhabited the country of Egas on the rio Teffé at the end of the eighteenth century.

9. *Addaraias*, an extinct tribe of the rio Negro.

10. *Adoriás*, an extinct tribe living near the Amazons; they have disappeared since the commencement of the nineteenth century.

11. *Aguáras*, *Aguáyras*, an extinct tribe of the *Tupis* of the North, mentioned by C. de Acuña; probably the same as the *Aguarás* of the rio Uaupés, noticed by Alex. R. Ferreira in 1785.

12. *Aguas*, the generic name of the tribes of the race of the *Omáguas*. According to von Martius, *água* is only the *Tupi* word *ava*, *aba*, or *áva*, which signifies man, free master. Several tribes bear this name with a qualification: *En-aguas*, the good men; *Sari-maguas* (in Portuguese *Sorimão*, plural *Sorimões*), whence the upper Amazon takes its name of *Solimões*. According to the same author, they have nothing in common with the *Umáuas* of the upper Japurá.

13. *Aicás*, entirely savage Indians on the rio Uaracá.

14. *Aitouariás*, Indians on the Abacaxis, Canumá and Maués.

15. *Ajururís*, *Ajururés* (the Parroquets), Indians of the Madeira; seem to be the same as the *Aráras* (*Aras*), so called on account of their skill in making ornaments from the feathers of aras.

16. *Amaribas*, *Amaribás*, *Amaripas*, *Amaripás*, Indians of the Tacutú; A. R. Ferreira and da Gama-Lobo d'Almada noticed them upon the rio Branco at the end of the eighteenth century; they went often to the village of Sam Joaquim. According to Schomburgk, the tribe is extinct as an individual nation, and its remains have merged into other tribes.

17. *Amazonas*, *Amazones*, *Icamiábas*, *Ycamiabás*, *Cunhatese*

*Cuymas, Cougnantainsecouimas, Coniapuyáras, Comapuyáras, Conyapuyáras, Aikeambenamos*, female Indians living without men, that F. de Orellana was the first to notice on the banks of the Jamundá, the watercourse which serves us as the boundary between the States of the Amazon and Pará.

18. *Ambuás, Ambuas*, an extinct tribe on the Tefié, the Japurá, and the rio Içá, who lived near the Nogueira at the end of the eighteenth century.

19. *Anamaris*, an extinct tribe on the Amazon, mentioned by S. de Vasconcellos.

20. *Ananá, Anúnas*, an extinct tribe on the rio Uaupés, akin to the tribe of the Uaupés.

21. *Anas, Aánas, Anós, Uayuánas*, an extinct tribe on the rio Negro and the Padauri, whence they had already migrated at the end of the eighteenth century.

22. *Anduras*, an extinct tribe of the Amazon, mentioned by S. de Vasconcellos. Probably the same as the *Andirás, Andiras, Morcegos, Murcialegos* (Bats), called also *Jauarités* (jaguars) on account of their ferocity.

23. *Aneaquís*, Indians of Silves.

24. *Anhuaques, Anhukises, Anhuquicès*, Indians united with those of other tribes in 1839, in a village called Porto-Alegre, in the district of Sam Joaquim, on the rio Branco, to the number of about 2000. In 1852 the village was in rapid decline for want of missionaries.

25. *Aniánas*, Indians on the Japurá, they had a special instrument called the *trocano*, by which they could warn the neighbouring tribes from a distance of two or three leagues.

26. *Aníbas, Anibás, Anoiübas* (Men from the other side), an extinct tribe on the rio Aníba.

27. *Anicorés, Arucunans, Aricunanés, Aricorimbys*, an extinct tribe of the rio Negro and the Madeira, they have almost entirely disappeared for the past sixty years. Their name seems to have come from the rio Anicoré, or Manicoré, rapid water.

28. *Apenaris* (Men coming from afar), an extinct tribe on the Juruá, still numerous at the end of the eighteenth century.

29. *Apiacás, Appiacás, Apiácas*, peaceful Indians of the country between the Amazon and Matto-Grosso. General Machado de Oliveira (Rev. Trim. do Inst., Rio, 1856) said that they "were still very numerous, 16,000 at least of them, forty-five years ago."

30. *Apolinas, Apolinás*, Indians of the Purús; probably the same as the *Apurinas* or *Ipurinas* (which see).

31. *Aponariás, Apinariás* (Savage men), Indians of the Madeira.

32. *Aquinaús*, an extinct tribe on the Amazon, mentioned by S. de Vasconcellos.

33. *Aragoanainás*, an extinct tribe on the Amazon, also mentioned by S. de Vasconcellos.

34. *Araicás, Araicús, Araycús, Uaraycús*, Indians of the Jutahy, the Juruá, and the Javary, still numerous at the end of the eighteenth century.

35. *Arapassus, Arapacús*, Indians on the rio Uaupés, noticed by Alex. R. Ferreira at the end of the eighteenth century.

36. *Arapaxis*, Indians of the rio Uaupés, still encountered by Alex. R. Ferreira at the end of the eighteenth century.

37. *Araquaxús, Araquajús*, Indians on the Amazon, who still existed at the commencement of the nineteenth century.

38. *Aráras* (*Aras*, like the day, like light), Indians of the Maués, the Madeira, the rio Negro, and the upper Purús, who are counted as being amongst the finest types of Indians.

39. *Araruás, Alaruás, Aráruas, Araós, Aroas, Aráus*, Indians on the Japurá and the Juruá. They have their ears pierced and adorned with the feathers of the Toucan.

40. *Arauaris*, Indians of the Juruá, still numerous at the end of the eighteenth century.

41. *Aricoronés, Urucuryngys*, Indians of the Madeira, near the cataracts.

42. *Ariinis, Ayrinis, Aryhinis, Araynis, Ayrinys* (The Great Parents), Indians of the rio Negro, who had nearly entirely disappeared at the end of the eighteenth century. They spoke the *Bahé* or *Baré* tongue, which, according to A. von Humboldt, is used by all the Indians of the rio Negro.

43. *Arinos, Arinas, Arynas*, an extinct tribe on the Branco, still numerous at the end of the eighteenth century. Gama-Lobo represents them as being deserters from Spanish possessions.

44. *Ariquénas, Uariquénas, Verequenás, Arcéúnas, Aricunás*, Indians on the Madeira, the Jatapú, the Uatumá, the Içána, and the rio Negro, having, in common with the Manáos, several customs resembling those of the Israelites; they used to spin cotton.

45. *Aroaquis, Aroaquiz, Aruaquis, Aruaquys, Arauaks, Arawaaks, Aruaacs, Arouages, Uaruáquis, Paurauánas*, a powerful nation, who lived between the rio Negro and the Uatumá, and the Jatapú, extending over the Matary and the Urubú; living now on the rio Uatumá. The *Pariquis*, the *Uassahys*, and the *Jauaperys* seem branches of this great nation. In 1669 Father Theodosio said that they lived principally on the Jauapery, where Ferreira and Noronha noted them at end of the eighteenth century. In 1787 Gama-Lobo speaks of three villages they had upon the rio Caumé, in the region of the rio Branco.

46. *Arunás, Arynás*, Indians on the Juruá and the rio Negro.

47. *Assaianis, Assauinauis, Uassahyanis*, Indians of the rio Ixié and the rio Içána.

48. *Assawaras, Assaváras*, Indians of the rio Negro appearing to be akin to the Aruaquis.

49. *Aturahis, Aturahiz, Aturahiós, Atorais, Aturiahús, Aturáiús, Aturáiús, Atyais, Ataynarús, Uitarais* (plaiters of baskets), Indians on the rio Branco and the Tacutú.

50. *Aturès*, Indians, disappeared towards the middle of the eighteenth century. Alex. von Humboldt mentions having seen at Maipure an old parroquet speaking their language that the Indians themselves in the neighbourhood could no longer understand.

51. *Aturarys*, an extinct tribe mentioned by Cardim; perhaps the same as the *Aturiaris*, mentioned by S. de Vasconcellos.

52. *Auinamarys*, a tribe now living on the upper Purús.

53. *Aurabaris*, an extinct tribe of the Amazon, mentioned by S. de Vasconcellos.

## B

54. *Baeúnas*, an extinct tribe of Silves.
55. *Baiánas*, *Bayánas*, *Bayanais*, *Banhunas*, Indians of the rio Negro.
56. *Baibiris*, Indians of the Juruá.
57. *Banibas*, *Baniuas*, *Banivas*, *Manivas*, Indians of the rio Negro.
58. *Bapiánas*, Indians of the rio Negro.
59. *Barabatánas*, *Bauatanas*, Indians of the Apaporis.
60. *Barés*, a powerful and numerous tribe of the rio Negro, extended as far as the Madeira and the Japurá.
61. *Bauaris*, Indians of the Juruá.
62. *Boanaris*, *Boavatánas*, Indians of the Uaupés.
63. *Brauarás*, Indians of the Maués.
64. *Bugés*, Indians of the Juruá.
65. *Buibaguás*, Indians of the Juruá.
66. *Burenaris*, Indians of the rio Negro.
67. *Burururús*, Indians of the rio Urubú, the name of which river is a corruption of *Burururús*.

## C

68. *Cabouquénas*, Indians of the rio Urubú.
69. *Caburicénas*, Indians of the rio Negro.
70. *Cacatapuyas*, Indians of the rio Içá; regarded as cannibals. Tattooed with a large black streak from the ears to the nose.
71. *Cachaparis*, *Cachaparys*, Indians of the Purús.
72. *Cacheguénas*, an extinct tribe of the Amazon, mentioned by Bettendorff.
73. *Cagoós*, an extinct tribe of the Amazon, mentioned by S. de Vasconcellos.
74. *Caixánas*, Indians of the Japurá.



75. *Cambébas, Campévas, Omaguás, Homaguás, Omacuás, Umauás, Umáuas* (Flat-Heads), Indians on the Padauari, the Juruá, the Solimões, and the Javary. At the end of the eighteenth century they had their centre at S. Paulo d'Oliveira, but tradition represents them as having migrated from Peru. According to R. de Sampaio, they were the "most civilised and rational Indians." Their tint was less dark and their appearance more attractive than those of other Indians; they dressed themselves in cotton stuffs made by the women of the tribe. For hurling their arrows they did not use the bow. It was they who taught the other Indians the uses of indiarubber.

76. *Canamarys, Canamaris, Canamarés*, peaceful Indians of the upper Purús, the Juruá, and the rio Ituxy, where they had two *malocas* in 1861; they are agriculturists, and plant and spin cotton.

77. *Canicoaris, Canisiuaras*, Indians of the Amazon, mentioned by S. de Vasconcellos.

78. *Carabajáνας*, Indians of the Amazon.

79. *Caraganás*, Indians of the Amazon, mentioned by S. de Vasconcellos.

80. *Carajás, Caraiás, Carayás, Caraiyais*, Indians of Silves, and the rio Negro, born enemies of the *Manáos*.

81. *Carajahis*, Indians of the rio Negro.

82. *Carapanaris*, Indians of the Amazon, mentioned by S. de Vasconcellos.

83. *Carapanás*, Indians of the rio Içána, 892 of them were converted by the Capuchins in 1888.

84. *Cariáνας, Carabáνας, Caribanas*, Indians of the rio Negro.

85. *Cariguáras, Cariguáνας, Cariguanos*, Indians of the Amazon, mentioned by Bettendorff.

86. *Caripúνας, Caripunás, Cauaripúņas, Caribes*, Indians, *caraibes* of the rio Negro, the Madeira, and the Purús.

87. *Carucúras*, Indians of the Amazon.

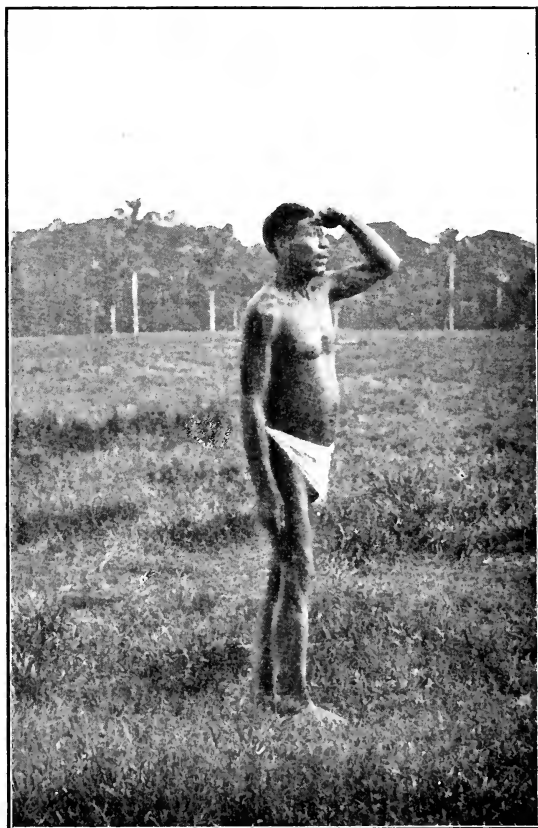
88. *Carunans*, Indians of the upper Purús.

89. *Catauixis, Cathauyrys*, Indians of the Solimões, the Juruá, the Tefé, and the middle Purús. They have a relatively clear skin,

are hard working, and make coarse, rough pottery. Those of the Solimões have their bodies covered with marks.

90. *Catianas*, a tribe now existing on the upper Purús.

91. *Catuquinas*, *Catoquinas*, *Catuqueiras*, Indians of the Teffé, the Juruá, the Jutahy, and the lower Purús.



*Indian Chief (Catanixis)*

92. *Cauãnas*, *Cauanãs*, *Coinãs*, *Coeuãnas*, *Cabeuanas*, Indians of the Juruá, the rio Negro and the Uaupés. Ribeiro de Sampaio described them in 1775 as being hardly 5 *palms* in height (3 feet 4 inches).

93. *Cauaxis*, Indians on the Juruá.
94. *Cauiaris*, *Cauiyaris*, Indians on the Japurá.
95. *Caxararys*, Indians of the middle Purús, laborious and peaceful.



*Young Caxarary Indian*

96. *Cayaxânas*, *Cauiyânas*, *Cauixânas*, *Cujubicênas*, Indians of Tonatins.
97. *Cayuicenas*, *Cayuioicinas*, *Cayuvicenas*, Indians of the

Japurá, the rio Içá, and Tonantins, are disposed to practise agriculture.

98. *Cequênas*, Indians on the rio Negro.

99. *Cericumás*, *Cericúmas*, *Cericúnas*, *Cericanáas*, *Crichanáas*, Indians on the rio Branco, the rio Negro, and the Jauapiry.

100. *Chaperás*, *Chaperús*, Indians of the rio Negro.

101. *Chayawitás*, *Chaiaiutás*, Indians on the Javary and the Jatahy.

102. *Chibáras*, *Chibarás*, *Chivaros*, Indians on the Juruá.

103. *Chimaánas*, Indians on the Javary. Perhaps the same as the *Xománas*.

104. *Chiriúbas*, Indians on the Juruá.

105. *Cigananerys*, Indians on the upper Purús.

106. *Cipós* (Woodbines), Indians on the affluents of the Purús.

107. *Cirús*, Indians of Egas.

108. *Clituás*, *Chituás*, Indians on the rio Içá.

*Coatátapuiyas*, *Coatátapuyas*. (See *Uginos*.)

*Cócas*. (See *Varús*.)

109. *Cochiuáras*, *Cuchi-uáras*, *Cuchiurás*, *Cuchig-uáras*, *Cuchig-uáras*, Indians on the Coary.

110. *Cocruánas*, *Coerúnas*, Indians on the Teffé.

111. *Coerúnas*, Indians on the Japurá and the Teffé.

112. *Coeuánas*, *Coíánas*, Indians on the rio Negro.

113. *Colinos*, *Calinas*, *Curinas*, *Corinás*, nomadic Indians on the Juruá and Sam Paulo d'Oliveira.

114. *Comanys*, *Comanis*, *Conamis*, Indians of Silves and the Maués.

115. *Conamánas*, Indians of Jutahy and Fonte-Bôa, who had friendly intercourse with the Portuguese from the earliest times of their discovery.

116. *Coratús*, *Coretús*, Indians on the Teffé and the Japurá.

117. *Cotocerianás*, an extinct tribe on the Amazon, mentioned by S. de Vasconcellos.

118. *Cubeuánas*, *Cubenánas*, Indians on the rio Negro.
119. *Cucámas*, *Cocámas*, Indians of Caldeirão and Manaquiry.
120. *Cudujaris*, *Cudajaris*, Indians of the rio Negro.
121. *Cuenacás*, Indians of the rio Negro.
122. *Cujigeneris*, Indians of the Purús.
123. *Cumacumans*, Indians of the Apaporis.
124. *Cumaruuíarús*, an extinct tribe on the Amazon, mentioned by S. de Vasconcellos.
125. *Cumayaris*, an extinct tribe on the Amazon, mentioned by Bettendorff.
126. *Cumuramás*, Indians of Fonte-Bôa.
127. *Curanáos*, *Curanáus*, Indians on the rio Negro.
128. *Curenqueás*, *Corinqueans*, an extinct tribe on the Amazon, mentioned by S. de Vasconcellos, who describes them as giants of 16 palms in height (11 feet 8 inches), wearing nuggets of gold in their lips and nose.
129. *Curêras*, Indians of the rio Cadayari, of whom 786 had been converted by the Capuchins in 1888.
130. *Curicicuris*, *Curúcicuris*, Indian pottery makers of the Teffé and the Juruá, of whom Pedro Teixeira (1637-39) bought some bars of gold during his famous travels.
131. *Curiciraris*, Indians of the Juruá.
132. *Curitiás*, Indians of the Maués.
133. *Curiuaás*, Indians of the Juruá.
134. *Curuaxiás*, Indians of Itácoatiára.
135. *Curucurús*, Indians of the Amazon, cited by S. de Vasconcellos.
136. *Curunaris*, Indians of the Amazon, cited by the same author.
137. *Curutahys*, *Crupatys*, tall, strong Indians on the affluents of the Purús.
138. *Cuxixiniaris*, Indians on the upper Purús.

## D

139. *Dachiuarás*, Indians on the Juruá.
140. *Deçacas*, Indians on the Uaupés.
141. *Deçánas*, *Deçannas*, Indians on the rio Içána and the Uaupés.
142. *Demacarís*, *Demacuris*, Indians on the rio Negro.
143. *Detuanás*, Indians on the Apaporis.
144. *Duanaes*, Indians on the rio Içána.

## G

145. *Ganarís*, Indians on the Amazon, mentioned by S. de Vasconcellos.
146. *Gemiás*, Indians on the Juruá.
147. *Gepuás*, Indians on the Japurá.
148. *Goaurús*, *Goarirás*, Indians on the Amazon, mentioned by S. de Vasconcellos.
149. *Goataneís*, Indians on the Amazon, mentioned by the same author.
150. *Gonaporís*, Indians on the Amazon, mentioned by the same author.
151. *Goyazes*, Indians on the Amazon, mentioned by the same author.
152. *Guanarcís*, Indians on the Amazon.
153. *Guanavénas*, *Guanevenas*, Indians on the rio Urubú.
154. *Guaquiariís*, Indians on the Amazon, mentioned by S. de Vasconcellos.
155. *Guaribas*, *Guarahibas* (howling monkeys), Indians on the rio Negro.
156. *Guataicús*, Indians on the Amazon.
157. *Guibanás*, Indians on the Juruá.
158. *Guinacuinás*, Indians of the Amazon, mentioned by S. de Vasconcellos.

159. *Guinamás*, Indians on the Amazon, mentioned by the same author.

160. *Guirinas*, Indians on the rio Negro.

## H

161. *Hiyánas*, Indians on the rio Negro, speaking the same tongue as the *Manãos*.

162. *Huiranas*, *Hurunás*, Indians on the Juruá.

163. *Hymanirys*, Indians on the upper Purús.

## I

164. *Iagoanais*, Indians on the Juruá.

165. *Içánas*, *Içannas*, Indians on the rio Içána.

166. *Içás*, Indians on the rio Içá, they took their name from an ape with a black mouth (*içá*), which their tattooing makes them resemble.

167. *Imainanans*, Indians on the Purús.

168. *Inheyguáras*, an extinct tribe on the Amazon, mentioned by Bettendorff.

169. *Ipurinás*, *Ypurinans*, *Hypurinás*, *Apurinás*, *Jupurinás*, Indian warriors of the Purús and the rio Ituxy, where they had 18 *malócas* in 1861.

170. *Irijús*, Indians of the Solimões and the Purús; they had nearly entirely disappeared from this latter river by 1768.

171. *Itumiris* or *Piratapuyas*, Indians on the rio Papury, where the Capuchins converted 324 of them in 1888.

*Iuris*. (See *Juris*.)

## J

172. *Jabánas*, *Jabahánas*, *Jahahánas*, Indians on the rio Negro and the Apaporis.

173. *Jacatiguáras*, *Jacatiguaraes*, an extinct tribe on the Amazon, mentioned by Bettendorff.

174. *Jacúnas, Jaúnas, Jauaná, Quarunás*, Indians on the Apaporis and the Teffé.

175. *Jamamadys, Jamamandys, Hyamamadys*, a tribe now on the middle Purús; they are laborious, and in 1881 possessed two *malócas* there.



*Cacique (tucháua) of the Jamamadys*

176. *Jamamarys*, a tribe now living on the Purús.

177. *Janumás*, Indians on the Teffé.

178. *Japiúas*, Indians on the rio Negro.

179. *Japuás, Japiúas*, Indians on the Apaporis; perhaps the same as the preceding.



180. *Jarúnas, Jurúnas, Juruúnas*, Indians on the rio Negro.

181. *Jaúnas, Jaunás, Jauanás*, Indians on the Apaporis and the Teffé.

182. *Jerimans*, Indians on the Juruá.

183. *Juamys, Juamis*, Indians on the Japurá.

184. *Juaperys, Jauaperys, Jauamerys, Mamerys, Camerys, Uaimerys, Waimerys*, some suppose them to be the same as the *Crichanús*; a tribe now settled near the rio Jauapery.

185. *Juberys, Iuberys*, Indians of the Purús and the rio Ituxy, where they were concentrated in two *malócas* in 1861.

186. *Júmas, Iúmas*, Indians on the rio Negro, the Solimões, the Juruá, the Teffé, and the Madeira.

187. *Junás*, Indians on the rio Negro.

188. *Jupuares, Jupúás*, Indians on the Apaporis.

189. *Juquis, Juquys, Yuquis*, Indians on the Madeira.

190. *Jurimáguas, Jurimáuas*, Indians on the Juruá: "The most numerous and warlike nation of the Amazon," said R. de Sampaio in 1775. In 1709 they still had a village upon the banks of the Juruá; the Spanish Jesuits succeeded in making them migrate to Peru.

191. *Juripixúnas, Jurupixúnas*, Indians on the rio Negro.

192. *Jurys, Jurís, Iurís, Hyurys*, Indians on the rio Negro, the rio Içá and the Teffé. R. de Sampaio has described their customs.

## L

193. *Laganaris*, an extinct tribe on the Amazon, mentioned by S. de Vasconcellos.

## M

194. *Macipiás*, an extinct tribe on the Amazon, mentioned by S. de Vasconcellos.

195. *Macuchis, Macuzis, Macusis*, a tribe now on the rio Branco.

196. *Macucoênas*, Indians on the Uaupés.

197. *Macugás*, an extinct tribe on the Amazon, mentioned by S. de Vasconcellos.

198. *Macunás*, *Macunés*, Indians of the Apaporis and the Japurá.

199. *Macús*, *Maharús*, a tribe now on the Maués, the Japurá, the rio Negro, and the Papury, where the Capuchins had converted 669 of them and grouped 162 into a village in 1888.



*Macuchi Indian*

200. *Madnuacás*, *Mandauacás*, Indians on the rio Negro.

201. *Mahaens*, Indians on the rio Branco.

202. *Maiapenas*, *Maiapinas*, *Mapinis*, Indians on the rio Negro.

203. *Maiurúnas*, *Maerúnas*, *Marorúnas*, *Marurúnas*, *Majorúnas*, *Mangeronas*, Indians on the Jutahy, the Javary, and S. Paulo d'Olivença. They have long hair and shave the middle of their

head, their nose and lips are pierced, and they wear shells in their ears and lower lips, with *aras'* feathers in the corners of their mouth; they were regarded as cannibals and were accused of eating, not only their prisoners, but the old men and the infirm of their own tribe.

204. *Maliás*, Indians on the Juruá.

205. *Mamángas*, *Mamangás*, *Mamayamas*, *Mamayamazes*, Indians on the rio Negro and the Uaupés.

*Mamerys*. (See *Juaperys*.)

206. *Mamis*, Indians of the Madeira.

207. *Mamurys*, Indians of the upper Purús.

208. *Manaós*, *Manáús*, *Manóas*, an extinct tribe that lived on the Negro and the Tefé; they have given their name to the capital of the State of the Amazon, where, however, the travellers of the eighteenth century only noted the presence of the *Banibas*, the *Barés*, and the *Passés*, these latter having recently come down from the Japurá. Their primitive habitat appears to have been the Japurá. However, Ribeiro de Sampaio said in 1775 that Thomar seemed to be their capital; they were then "the most renowned nation on the whole of the rio Negro, for valour, number, language, and customs." They had destroyed the *Caraiás* and held their position against the *Barés*. They were supposed to be cannibals, and believed in two principles, viz., that of good, *Mauari*, and of bad, *Saráua*. It was a chief of the *Manóas*, Camandre, who assisted in the foundation of Mariuá, since called Barcellos, the former capital of the Amazon. Another chief of the *Manóas*, named Ajuricaba, made war against the Portuguese, and finally fell into their hands, together with 2000 men of his tribe.

209. *Manauís*, Indians of the rio Negro, differing from the *Manóas*.

210. *Manatenerys*, *Manaterys*, a tribe now living on the Juruá, the upper Purús, and the rio Ituxy, where they had three *malócas* in 1861; they are agriculturists, planters, and spinners of cotton.

211. *Manibas*, *Manivas*, Indians of the rio Queirary, where the Capuchins had converted 900 of them in 1888; they seem to be a branch of the *Banibas*.

212. *Mapiánas*, Indians of the Juruá.

213. *Mapiarús*, Indians of the Amazon, mentioned by S. de Vasconcellos.

214. *Maquiritaris*, Indians on the rio Negro.

215. *Marabitánas*, *Marapitanas*, Indians on the rio Negro.

216. *Maravanás*, Indians on the rio Negro.

217. *Maraimumás*, Indians on the Amazon, mentioned by S. de Vasconcellos.

218. *Maranás*, Indians on the Juruá.

219. *Marauás*, *Maruás*, *Muruuás*, *Mariruás*, Indians on the Juruá, the Javary, the Jutahy, the Japurá, and the rio Içá; supposed to be cannibals.

220. *Marianás*, *Mariaránas*, Indians on the Japurá, the Teffé, and Egas; Bettendorff calls them "people rich in gold."

221. *Marigudariás*, Indians on the Amazon, mentioned by S. de Vasconcellos.

222. *Marunacús*, Indians on the Juruá.

223. *Marupás*, Indians on the Madeira.

224. *Matanauis*, Indians on the Madeira.

225. *Matuanis*, Indians on the Amazon, mentioned by S. de Vasconcellos.

226. *Maturuás*, Indians on the rio Maués.

227. *Matuyús*, Indians on the Amazon, mentioned by S. de Vasconcellos.

228. *Mauayás*, Indians on the Japurá. They have their ears pierced and adorned with feathers of the toucan.

229. *Maués*, *Mauhés*, *Maguez*, Indians on the Maués, the Madeira, and the rio Andirá, they are engaged in the preparation of guarana (*Paullinia Sorbilis*).

230. *Mauís*, Indians of the rio Negro.

231. *Maupis*, Indians of the rio Negro.

232. *Mendos*, *Mendós*, Indians of the rio Ixié.

233. *Meporis*, *Mepuris*, *Mepuriés*, *Mapuris*, Indians of the rio Negro and the Japurá; their language is a dialect of the *Baré*.

234. *Miranhas*, Indians of Caiçára, the Japurá, and the rio Içá; supposed to be cannibals.

235. *Miriximandys*, Indians of the upper Purús.

236. *Miruruás*, Indians of the Amazon, mentioned by Bettendorff.

237. *Moacaranás*, Indians of the Amazon, mentioned by S. de Vasconcellos.

238. *Mucínós*, Indians of the rio Negro.

239. *Muennes*, Indians of the Juruá.

240. *Mundurucús*, *Mundrucús*, *Motúricús*, Indians of the Abacaxis, the Murumaratuba, the Canumá, and the Maués; they are numerous and inclined to agriculture.

241. *Mupiús*, Indians of the Amazon, mentioned by S. de Vasconcellos.

242. *Múras*, plunderers and wanderers that have been found ever since the earliest explorations, at Silves, on the whole extent of the Madeira, at Manacapurú, upon the Purús, where they annihilated several tribes, on the lakes of Anamá and Cudajaz, whence they started on their incursions upon the rio Negro, the Mamiá, the Teffé, the Japurá, the Javary, the Jaú, and the Unini; even up to the end of the eighteenth century they still infested the neighbourhood of Manáos. Their incursions certainly delayed the populating of part of the Amazon.

243. *Muzas*, Indians of the lower Purús.

## O

*Omáguas*. (See *Cambébas*.)

244. *Onamanáos*, *Orumanáos*, Indians of the rio Atauí.

245. *Ororupinás*, Indians of the Amazon, mentioned by S. de Vasconcellos.

246. *Ozuánas*, Indians of the Amazon, mentioned by Bettendorff.

## P

247. *Pacajás*, *Pacajaz*, *Pacaiás*, *Pacayazes*, Indians of the Amazon, of whom Bettendorff states that they speak the "general language."

248. *Pacurís*, Indians of Silves.

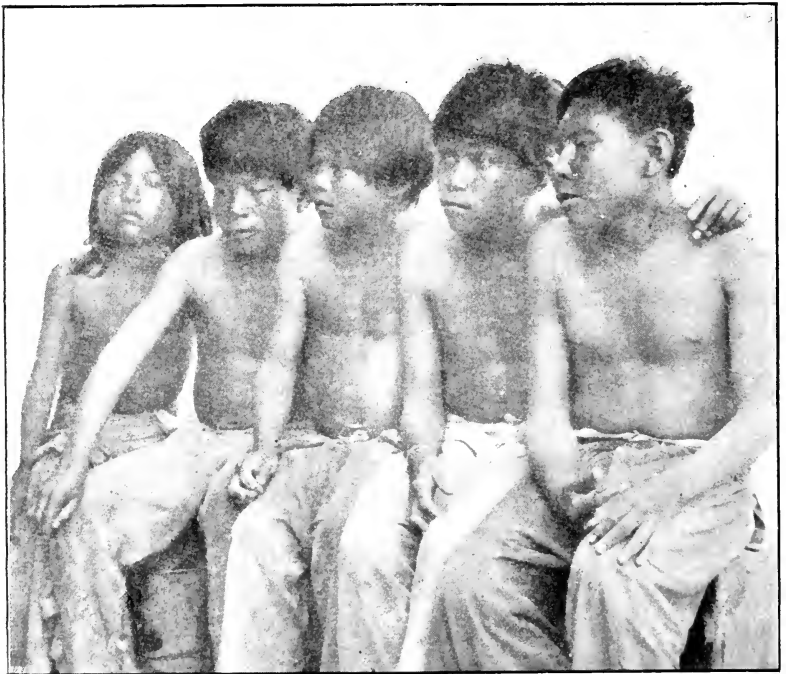
249. *Pachiánas*, *Pariánas*, *Pauiránas*, Indians of the rio Branco and the rio Negro.

250. *Paquanás*, *Payánas*, Indians of the Juruá.

251. *Paicuénas*, Indians of the rio Negro.

252. *Paicyeys*, Indians of the upper Purús.

253. *Paipunás*, *Paipomas*, Indians of the Juruá.



*Group of children of the Pamary tribe*

254. *Pámas*, Indians of the Madeira and the Purús.

255. *Pamanans*, *Pamanás*, a tribe now living on the middle Purús, the Ituxy, and the Mucuhy; laborious, peaceful, well built, complexion relatively fair.

256. *Pamarys*, *Pamacuyris*, *Pamaouiris*, *Purú-Purús*, a tribe now living on the lower Purús, they have spread to the middle

Purús; they are skilful rowers, but appear to suffer from hereditary skin diseases.

257. *Pananuás, Panenuás*, Indians of the rio Negro and the Uaupés.

258. *Pános*, Indians of the Javary.

259. *Papís*, Indians of the Teffé.

260. *Paraumás, Parauámas*, Indians of the Japurá.

261. *Paraús*, Indians of the Juruá.

262. *Pariánas, Paraviánas, Parariánas, Paravilhánas*, Indians of the Japurá, the Içá, the Tonantins, and the rio Branco; inclined to agriculture.

263. *Parintins*, Indians of the lower Amazon, who have given their name to a small town.

264. *Parintintins, Parentintins*, Indians of the Amazon and the Madeira, warriors and plunderers.

265. *Pariquis, Paraquis*, Indians of fine appearance living on the rio Uatumá, they penetrated as far as Itácoatiára in the middle of the eighteenth century.

266. *Passés*, Indians of the rio Negro, the Içá, and the Solimões, also noticed at Nogueira, Caiçára, and on the Japurá; they carry on agriculture, and were very numerous at the end of the eighteenth century; they believed in one God, in the immortality of the soul, and in the world moving round the fixed sun. They tattoo, a black square patch covering part of the face, nose, and chin; and two stripes starting from the nose, passing between the eyes and going up to the roots of their hair; from their temples descend other stripes which join the large black patch; they bore several holes in their ears; and the lower lip also is pierced.

267. *Payábas*, Indians of the Içá.

268. *Payánas, Poyánas*, Indians of the Japurá and of Fonte-Bôa. They tattoo their lips entirely black, and have their ears pierced and adorned with toucan feathers.

269. *Periatis*, Indians of the Japurá.

270. *Peridás*, Indians of the Içá and the Japurá.

271. *Piránhas, Piránas* (Razor-fish), Indians of the Içá.

272. *Piriquitos* (Long-tailed parrots), Indians of Matary.

273. *Pixúnas, Pexúnas* (the Blacks), Indians of the rio Negro.

274. *Pocoanás*, Indians of the Amazon, mentioned by S. de Vasconcellos.

275. *Poquis, Poquisguáras*, Indians of the Amazon, mentioned by Bettendorff.

276. *Porocotós, Procotós, Puricotos, Ipurucotós, Iperucotós*, a tribe now living near the rio Branco and the Uraricuêra.

277. *Puetánas, Puitánas, Puetávás*, Indians of the Içána.

278. *Pumacaás*, Indians of the Juruá.

279. *Puplepás*, Indians of the Juruá.

280. *Pupnenicás*, Indians of the rio Negro.

281. *Pupuiguáras*, Indians of the Amazon, mentioned by Bettendorff.

282. *Purenumás*, Indians of the Içá; lips tattooed entirely black.

283. *Puréus*, Indians of the Japurá.

284. *Purús*, Indians of the Solimões; like many other tribes, they practise religious fasting to such an extent that they sometimes die from it.

*Purúpurús.* (See *Pamarys*.)

## Q

285. *Quereruris, Queraruris, Quereruis*, Indians of the rio Negro.

## S

286. *Saguarús*, Indians of the Amazon, mentioned by S. de Vasconcellos.

287. *Saindayuuis, Saguyndajuquis*, Indians of the Juruá.

288. *Samaruás*, Indians of the Amazon, mentioned by S. de Vasconcellos.

289. *Saparás, Sapáras*, Indians of the rio Branco.



290. *Sapupés*, Indians of the Maués and the Matary.

291. *Sarás*, Indians of Itácoatiára.

292. *Sedeuys*, Indians of the Uatumá.

293. *Siguiás*, Indians of the Amazon, mentioned by S. de Vasconcellos.

294. *Simanirys*, a tribe now living near the lower Purús and its affluents.

295. *Simarumans*, peaceful Indians of the middle Purús and the Mucuhy.

296. *Solimões*, *Sorimões*, *Sorimaús*, *Solimans*, Indians of the upper Amazon, which has taken its name from them (*Solimões*). Perhaps the same tribe as that of the *Ierimans*, of whom Bettendorff said in the eighteenth century that they were "the most renowned and active nation on the entire river."

297. *Sutaás*, *Sotaás*, *Sotaús*, *Soatans*, Indians of the Juruá.

## T

298. *Tacús*, Indians of the rio Negro, who had never been heard of before the middle of the eighteenth century, when they appeared at Ayrão.

299. *Tamuánas*, Indians of the Japurá, the Içá, and the Teffé. Tattooed with entirely black lips.

300. *Tanimbuca-Tapuyas*, Indians of the Apaporis.

301. *Tapaxánas*, *Tapagánas*, Indians of the Jutahy.

302. *Tapicarís*, *Tapicurés*, Indians of the rio Negro and the rio Branco.

303. *Tarás*, Indians of Crato.

304. *Tariánas*, Indians of the rio Uaupés; in 1888 the Capuchins had grouped 2272 of them into eleven *aldeias*.

305. *Tarmás*, a tribe now on the rio Negro.

306. *Terariás*, Indians of the Amazon, mentioned by S. de Vasconcellos.

307. *Terecumás*, *Terecuns*, *Taracuns*, Indians of the Uatumá.

308. *Termaisáris*, Indians of the Içána.

309. *Tiaris*, Indians of the Purús, almost entirely extinct since the end of the eighteenth century.

310. *Ticúnas*, *Tycúnas*, *Tipunas*, *Tecúnas*, *Tucúnas*, a tribe now near the Javary, the Jutahy, the Içá, and Fonte-Bóá. They are represented as believing in metempsychosis and as practising circumcision; they worshipped the Hohó, a hideous figure made of calabashes and covered with the tow of a tree called *aichama*. They were skilled in the preparation and stuffing of birds, and were tattooed with a narrow black stripe going from the ears to the nose.

311. *Timanarús*, Indians of the Uaupés.

312. *Tocandiras* (Black Ants), Indians of the Apaporis.

313. *Toquedas*, Indians of the Juruá.

314. *Torás*, *Turás*, *Toras*, Indians of the Madeira and the Purús.

315. *Tucanos* (the Toucans), a tribe now on the Tiquié; in 1888 the Capuchins had grouped 943 of them into four *aldeias*.

316. *Tacumás*, *Tucúmas* (eaters of *Astrocaryum Tucuma*), Indians of the Madeira.

317. *Tuinamanás*, Indians of the Amazon, mentioned by S. de Vasconcellos.

318. *Tumayris*, *Tuemeyaris*, Indians of the Içána.

319. *Tumbiras*, *Tymbiras*, *Timbiras*, Indians of the Japurá and the Içá. Tattooed with the whole face blackened, and with the lower lip pierced, and from it was suspended a spherical black plaque, similar to the *batoque* of the *Botocudos*.

320. *Tupinambaránas* (the false or bastard *Tupinambás*), Indians of Parintins, came in the eighteenth century from the upper Madeira, where they took refuge at the commencement of the seventeenth century after their dispersion, when they had been beaten and driven back by the Portuguese.

321. *Tapinambás* (the descendants of the first father), Indians of the lower Amazon; according to tradition they came from the south of Brazil in order to escape from the persecution of the whites. They were the ancestors of the preceding. In the middle of the eighteenth century they had an *aldeia* upon the lake Uaicurupá, on the eastern bank of the rio Tupinambarána.

322. *Tupivás*, an extinct tribe on the Teffé.  
 323. *Turimarís*, an extinct tribe on the Içána.  
 324. *Turumatys*, Indians of the upper Purús.  
 325. *Tururís*, *Tururis*, *Tauarirís*, an extinct tribe at Itácoatiára.

## U

326. *Uacarús*, *Uacaraús*, *Uacarauás*, Indians of the Juruá and the rio Negro.  
 327. *Uaimaràs*, *Uaiumarás*, Indians of the rio Branco.  
 328. *Uajanás*, Indians of the rio Negro.  
 329. *Uamarús*, an extinct tribe on the Coary.  
 330. *Uananás*, Indians of the rio Negro and the Uaupés.  
 331. *Uapiránas*, *Uapichánas*, *Uabiránas*, *Wapissíánas*, a tribe now on the rio Branco.  
 332. *Uaquís*, *Uakis*, Indians of the rio Branco.  
 333. *Uaraicús*, *Uraicús*, *Araicús*, Indians of the Javary and the Jutahy.  
 334. *Uaranácuacénas*, *Uaronocoacénas*, Indians of the rio Negro and the rio Uananacoá.  
 335. *Uarinas*, *Uirinas*, *Uariras*, Indians of the rio Negro.  
 336. *Uarupís*, Indians of the Solimões.  
 337. *Uarús* or *Cocas*, a tribe that lived formerly at Caiçára and Teffé. R. de Sampaio imagines that they are called *Cocas* because they constantly repeat this word, which in their language signifies *no*.  
 338. *Uassahys*, *Assahys* (Drinkers of *assahy*, a liquor made of the fruit of the palm, *Euterpe oleracea*), Indians now near the rio Carimany.  
 339. *Uatanarys*, peaceful and laborious Indians of the middle Purús. Probably the same as the Manaterys.  
 340. *Uaupés*, *Waupés*, *Guaypés*, Indians of the rio Uaupés. Their ears and lower lips are pierced. They wear round their neck, suspended by a cord, a smooth white stone of cylindrical form, which

seems to denote their caste; those of the chiefs are  $4\frac{1}{2}$  inches in length, those of the nobles are rather smaller, whilst those of the common people are very much smaller still.

341. *Uayapés, Uayupés*, Indians of the Solimões, Teffé, Codajaz, and Coary.

342. *Uayamás*, Indians of Caiçára.

*Uayaanés, Uayunás.* (See *Anas*.)

343. *Uayurús, Uaiurús*, Indians of the rio Negro and the rio Branco.

*Uerequênas, Variquênas.* (See *Ariquênas*.)

344. *Uerimás*, Indians of the Apaporis.

345. *Uginos, Uginas, Ujanos, Coatátapiiyas, Caatatapúyas* (Ind. *Coitas*), Indians of the rio Negro, found also upon the Juruá, the Jutahy, and the Içá; they speak the language of the *Manáos*, and are supposed to have a tail like the *Coitas* apes (*Ateles Paniscus*).

*Umáuas, Umauás, Umáguas.* (See *Cambebas*.)

346. *Urayaris*, Indians of the Amazon, mentioned by S. de Vasconcellos.

347. *Uriranás*, Indians of the rio Negro and the Uaupés.

348. *Urúburingás*, Indians of the Amazon, mentioned by S. de Vasconcellos.

349. *Urubús*, Indians of the Juruá, a different tribe from the *Burururús*.

350. *Urupás, Orupás, Uarupás, Uarupús, Urupúyas, Urupnyas, Oropias, Arapiuns, Uaiapás*, Indians of the Maués and the Madeira.

351. *Ururis, Ururiz*, Indians of Itácoatiára.

## X

352. *Xámas, Xamás*, Indians of the Japurá, the Içá, Teffé, and Fonte-Bôa. Tattooed with black patches covering the lips, and a streak going from the corners of the mouth to the ears, which are pierced.

353. *Xaperús*, Indians of the rio Branco.

354. *Xapuínas*, Indians of the Ixié.

355. *Xiapunirys*, Indians of the rio Purús.

356. *Ximanirys*, Indians of the rio Purús.

357. *Xiriáνας*, Indians of the rio Negro.

358. *Xomáνας*, *Jumáνας*, Indians of the Jutahy, the Içá, and Fonte-Bôa. Tattooed with a black patch covering the lips, and a stripe going from them to the ears, where the men wear rings of *tucumá* (*Astrocaryum tucuma*), whilst the women wear birds' feathers. They burn the bones of their dead, and drink the ashes in order that they may become imbued with the valour of the dead. They were much esteemed by the Portuguese on account of their fidelity to their word.

## Y

359. *Yabáνας*, *Yabaáνας*, Indians of the rio Negro.

360. *Yagoararús*, Indians of the Amazon, mentioned by S. de Vasconcellos.

361. *Yammás*, Indians of the Amazon, mentioned by the same author.

362. *Yamóos*, *Yameos*, *Yamcos*, Indians of the Javary.

363. *Yareuaguaçús*, Indians of the Amazon, mentioned by S. de Vasconcellos.

364. *Yaribarás*, Indians of the Amazon, mentioned by the same author.

365. *Yauanás*, Indians of the Teffé and Egas.

366. *Yauretiuáras*, Indians of the Madeira.

367. *Yochináuás*, Indians of the Juruá.

368. *Yucúνας*, *Yucunás*, *Ycunas*, Indians of the Japurá and the Içá; agriculturists, eating neither *couac* nor *cassava*, but tapioca; they are monogamous.

369. *Yuenáas*, Indians of the Japurá.

370. *Yupicuás*, Indians of Teffé.

371. *Yupiuás*, Indians of the Japurá and the Içá; they have their ears pierced and adorned with toucan feathers.

372. *Yupurás, Japurás*, Indians of the Japurá. R. de Sampaio says that the *yupurá* is a fruit, of which these Indians make a soft, black, fœtid paste, which they eat.

## Z

373. *Zurirús*, Indians of the Amazon, mentioned by S. de Vasconcellos. Perhaps the same as the *Zurinas* of C. de Acuña.

## CHAPTER VI

*Prosperity of the State of the Amazon.*—Of what it consists—Table of its revenue from 1852 to 1898—Traffic of the port of Manáos—The State of the Amazon has no debt of any sort—Its financial position compared with that of the neighbouring States—Amazonian life and white immigration—Refutation of old prejudices.

WE are drawing near to the end of our task. A brief *résumé* of all the facts that testify to the increasing prosperity of the State may not be unwelcome to the reader, as this will enable him to appreciate the value of the elements of civilisation at its disposal, which can be placed at the service of European immigration. He will form an exact idea of every kind of security that this region of Brazil—too much neglected hitherto—is able to offer to foreign capital and labour.

If we survey the rapid progress that the Amazon has made recently, we can no longer doubt the wonderful future that it is our pleasure to predict for our country; and our readers will be animated with a great desire to contribute to it as much as they can when they learn that this generous land of Brazil has, since 1884, effaced the last vestiges of slavery, transformed its capital, and created in its budget a special fund for the sole purpose of increasing its population, by preparing a freer and healthier field for foreign capital and labour.

The extraordinary development of this country is undoubtedly one of the most curious economic phenomena of our time. No other region in the world has perhaps ever presented, under similar conditions, a more brilliant example of what labour can accomplish when applied to a soil in which inexhaustible riches lie hidden. We see here a country

as vast as a third of the whole of Europe, although even more thinly populated than the state in the Old World, where the density of the population is least. We see this immense and almost unoccupied country multiply its revenues and its productions a hundredfold in a few years; we can watch the awakening of a tropical nation which, without any appreciable help from foreign immigration, is adopting an active life of industry and commerce, multiplying its exchanges with the entire world, navigating its immense rivers with numberless steamboats, supplying the principal markets of Europe and America with certain indispensable raw materials, sending its courageous pioneers, its indefatigable *seringueiros* into the solitudes of its forests, and showing, in a word, every evidence of bold and vigorous life. Certainly this is a sight which one has too rarely an opportunity of contemplating in this beautiful South America, which not so very long ago seemed to have no scope for the employment of its Latin genius. Such a sight is presented to us by the Amazon.

Latin Europe, too often indifferent as to the destinies of her younger sister nations that are developing beyond the ocean, with their eyes fixed upon her, has the inveterate habit of reserving all her admiration for the miracles of Anglo-Saxon energy. It is right also that she should learn from time to time, in order to give her confidence in herself, the value of Latin blood when infused into the veins of distant nations, and what can be done by a few descendants of those Portuguese who, in the sixteenth century, planted in the midst of barbarian tribes the germs of a great nation.

It is good that she should know that the Germans and Anglo-Saxons, who swarm over every country on the globe, have not the monopoly of ensuring the welfare of their descendants.

The prosperity of the State of the Amazon appears first of all in the constant increase of its local revenue, in the augmentation of its contribution to the budget of the Federal Union, in its increasing exports, in the extended navigation from its principal river port, viz., Manáos, and in the numerous





<i>Year.</i>								<i>Actual Receipts.</i>
21. 1872,	-	-	-	-	-	-	-	443 <i>contos.</i>
22. 1873,	-	-	-	-	-	-	-	563 „
23. 1874,	-	-	-	-	-	-	-	508 „
24. 1875,	-	-	-	-	-	-	-	418 „
25. 1876,	-	-	-	-	-	-	-	518 „
26. 1877,	-	-	-	-	-	-	-	553 „
27. 1878,	-	-	-	-	-	-	-	553 „
28. 1879,	-	-	-	-	-	-	-	621 „
29. 1880,	-	-	-	-	-	-	-	840 „
30. 1881,	-	-	-	-	-	-	-	806 „
31. 1882,	-	-	-	-	-	-	-	1017 „
32. 1883,	-	-	-	-	-	-	-	1229 „
33. 1884,	-	-	-	-	-	-	-	1816 „
34. 1885,	-	-	-	-	-	-	-	1187 „
35. 1886,	-	-	-	-	-	-	-	1599 „
36. 1887,	-	-	-	-	-	-	-	2280 „
37. 1888,	-	-	-	-	-	-	-	1650 „
38. 1889,	-	-	-	-	-	-	-	1814 „

Including fractions, which we have omitted in the above table, the receipts of these thirty-eight years amount to the sum of 21,315 *contos* or millions of *réis*.

We must now see what these receipts have been since the establishment of the Republic, that is to say, since the State of the Amazon became autonomic:—

## II.—ANNUAL RECEIPTS OF THE AMAZON.

*In contos or millions of réis.*

*Since the establishment of the Republic in November, 1889.*

<i>Year.</i>								<i>Actual Receipts.</i>
1. 1890,	-	-	-	-	-	-	-	2,343 <i>contos.</i>
2. 1891,	-	-	-	-	-	-	-	4,747 „
3. 1892,	-	-	-	-	-	-	-	6,807 „
4. 1893,	-	-	-	-	-	-	-	8,492 „
5. 1894,	-	-	-	-	-	-	-	9,623 „
6. 1895,	-	-	-	-	-	-	-	10,272 „
7. 1896,	-	-	-	-	-	-	-	13,109 „
8. 1897-98,-	-	-	-	-	-	-	-	21,426 „

Thus the receipts of the thirty-eight years, during which the Province was dependent on the Central Government, amounted

altogether to 21,315 *contos*, whilst those of one single year, viz., 1897-98, under its autonomic government, were 21,426 *contos*.

The last President of the Province of the Amazon, Oliveira Machado, in the Report he presented on June 2nd, 1889, to the Provincial Assembly,<sup>1</sup> remarked with some sadness:

“I found the Province without a budget, without police regulations, without municipal government, *without money*, and why not say it? *without credit*.”

The late governor of the State of the Amazon, Colonel José Ramalho, in the note he presented on July 10th, 1898, to the Congress of Representatives,<sup>2</sup> said with just pride:

“According to a table which has been sent me at the last moment, the receipts of the State, between July 1st, 1897, and June 30th, 1898, including the balance from the preceding year, amount to 21,426 *contos* and 294,807 *réis*; in this sum are not included either the receipts of the taxes in the interior belonging to the last months of the financial year, nor part of the general tax belonging to the month of June.”

The difference between centralisation and federation is very plainly shown by the above figures.

The receipts of the financial year 1897-98 were furnished by the following sources of revenue:—

Exportation, - - - - -	18,474 <i>contos</i> .
Interior, - - - - -	759 „
Extraordinary revenue, - - - - -	515 „
Revenue for special purposes, - - - - -	215 „

These figures, including the omitted fractions, together with the balance from the preceding year, which amounted to 1449 *contos*, make up the sum total of 21,426 *contos*.

The taxes upon exports do most to swell the State budget, and chiefly that upon indiarubber.

The taxes from the interior are levied upon the transfer of property, upon document stamps issued exclusively by the local government, upon storage of merchandise, upon the

<sup>1</sup> *Relatorio com que . . . installou a sessão extraordinaria da assembleia legislativa provincial*, Manáos, 1889, p. 3.

<sup>2</sup> *Mensagem . . . em 10 de Julho de 1898*, Manáos, 1898, p. 20.

water supply, the salaries of officials, and the alienation of lands belonging to the State, etc.

The extraordinary revenue proceeds from fines, transfers, and prorogations of State contracts or goods, etc.

The revenue for special purposes is composed as follows: a duty of 30 *réis* per *kilogramme* is laid on exported indiarubber, and this is used for defraying the expenses of the immigration service; a duty of 20 *réis* per *kilogramme* on all other produce exported, which sum is destined for the building of a Commercial Exchange; and a supplementary duty of 3 per cent. upon the value of all exports wherever they are bound for. Such are the receipts collected by and for the State.

Over and above the receipts of the autonomic State, which, by order of the Federal Constitution of February 24th, 1891, cannot impose duty upon produce and merchandise imported from abroad, are the proceeds of the customs duties, which go not to the State but to the Federal Union. The State of the Amazon has the constitutional right to impose duties upon imports from other States of the Federal Union. Hitherto this has not been exercised, and it is perhaps the only one of the twenty Brazilian States which permits goods from other States in Brazil to enter free of duty. There are no *octrois* or town duties.

But before speaking of the revenues from the customs that are charged by and for the Federal Union, let us say a word about the municipal receipts, the municipality being also in our constitutional system an autonomic organisation. A certain number of municipalities, which just maintained an existence at the time of the centralisation, have become most prosperous and enjoy fine revenues. That of Labrea, on the Purús, for example, amounted during the financial year 1896-97 to nearly 508 *contos* or millions of *réis*, which nearly exceeds the revenue of the entire Province of the Amazon in 1875, when the provincial revenues did not exceed 418 *contos*. That of San Felipe during the same year (1896-97) was nearly 280 *contos*; that of Humaythá, 177 *contos*; that of S. Paulo-d'Oliveira, 119 *contos*; and that of Manicoré, 112 *contos*.

The *Federal receipts*, which are paid into the National

Treasury and are derived from the customs duties, are no less satisfactory. The Custom House at Manáos has only been installed since the financial year 1868-69, and its receipts have been continually on the increase.

During the first five years it brought in less than 200 *contos*, but at the present time it is bringing in more than 6000 *contos*.

What is at once a cause and an effect of the development of trade in the State of the Amazon, viz., *facility of transport*, has considerably increased.

In 1872-73, 51 ships entered the port of Manáos and 45 went out of it, the river traffic thus registering 96 steamers. In 1881-82, 186 large steamers entered the harbour and 138 left it, making 324 in all. Therefore in ten years the general traffic increased threefold. In 1897, 911 ships, including 91 foreign vessels, came into the port of Manáos and 892 went out, including 91 foreign vessels. The traffic in the port therefore, both of ships coming in and going out, was nearly six times greater than that of 1882, and in order to illustrate the activity of this port it may be mentioned that during the same year, 1897, the number of passengers going and coming was over 61,000 (61,353 to be exact).

This continued financial prosperity has not been unproductive. The local government has been able to utilise it in making important changes which will themselves bear fruit.

Education has been developed. We now have not only elementary schools, the Amazonian Gymnasium, the Institute of Arts and Crafts, the magnificent Benjamin Constant Institute, and the Library, but the Museum has been reorganised, and funds have been provided for supplying elementary instruction in a number of excellent school buildings, and a Board of Statistics and Public Archives has been created.

The Museum is in two sections. The first is devoted to general and applied zoology, comparative anatomy, general and animal palæontology, geology, and mineralogy. The second section embraces general and applied botany, vegetable palæontology, ethnography, archæology and anthropology. The director of the zoological section has also the charge of the botanical

garden. He has acquired the collections and the library formed by the botanist, Paul Taubert, assistant at the Berlin Museum, and the ethnographical collections of Richard Payer, besides books and special instruments of great value.

Schoolhouses have been built, although in a comparatively small number; the Statistical Office is in working order, and is bringing out publications which, to be of real use in making Amazonia better known, ought to be written in French and English, and classed methodically, as its first publication, a large volume containing a confused mass of information, is of service only to those who know Portuguese, and these are but few in the countries where people are interested in the affairs of Brazil.

The attention of the local government has above all been drawn to the subject of hygiene, which, indeed, should continue to be its principal object, on account of the prejudices existing in Europe.

Avenues have been made, boulevards constructed, squares and open spaces laid out, gardens and fountains arranged, old streets made wider, bridges thrown over the *igarapés*, a new reservoir for water constructed, a landing stage built, temporary quays and a warehouse for the storage of merchandise opened, and theatres and public buildings erected. The town has lost its character of an overgrown village, and has become a modern city, with extensive and populous suburbs.

This work of sanitation and embellishment is above all due to the efforts of Eduardo Gonçalves Ribeiro, who during his administration of nearly six years was singularly successful in grasping the future destinies of Manáos.

Without doubt, there still remains much to be done, and above all, a system of perfect drainage must be carried out.

This will be the task for his successors. M. José Ramalho has done something towards this in signing a contract with the engineer, M. Lauro Bittancourt, for the construction of sewers, and the clearing away of drainage in the capital. Colonel Silverio Nery, who has just gone into power for four years, and who, as an Amazonian, knows so well all the wants of his country, will do everything that is possible to further the

most urgent material improvements in consulting the financial necessities of the State, and proceeding with method.

The State has no debt whatever, neither at home nor abroad, neither consolidated nor floating, and its revenues increase from year to year, so that it can find the means of acquiring gradually all that is needed by a civilised people. If it does not wish to overload the present generation, it might raise a loan—and its last financial legislation sanctions such a proceeding—and it



*The Eduardo Ribeiro Avenue at Manaus*

could find capital abroad for the purpose of carrying out two particularly necessary works: the peopling of its soil, and the improvement of its hygiene by means of a proper system of drainage.

By comparing the situation of the State of the Amazon, as regards its financial liabilities, with that of the neighbouring

independent States, it will easily be seen how very prosperous it is:—

*Debt of the neighbouring States compared with that of the State of the Amazon.*

Name of Country.	Exports (1892).	Total Debt.	Observations.
Venezuela, - - -	£2,456,825	£5,391,520	Foreign liabilities in 1893, £2,885,017.
Columbia, - - -	£2,392,710	£5,867,486	„ „ 1889, £2,877,403.
Ecuador, - - -	£1,470,360	£3,426,466	„ „ 1892, £2,565,092.
Bolivia, - - -	£2,691,936	£1,029,374	„ „ 1891, £469,656.
State of the Amazon,	£2,185,156	None.	None.
Peru, - - -	£1,543,901	Numerous liabilities.	Has paid off 32 millions sterling of its foreign liabilities by transferring to its creditors nearly all the funds of the State.

If this financial situation is of a nature to attract foreign capital to the Amazon, the climatic conditions of the country should at the same time reassure European immigrants.

In order to prevent the peopling of the hot zone by the white race, three principal arguments have been brought forward. It has been said that Europeans are not able to work in the tropics, even though individuals of the white race may succeed in living there, the race itself cannot become acclimatised, and degenerates at the end of three or four generations, and the *malaria* which devastates these countries is a constant obstacle to acclimatisation.

None of these objections hold good in the face of facts, and Dr. L. W. Sambon has proved this lately in a lecture given before the Royal Geographical Society.

In the first place,<sup>1</sup> he states that the belief that the white cannot work in the tropics is based upon the statements of former advocates of coloured labour in these regions. Experience has

<sup>1</sup> Communication made on the 27th April, 1898.



proved the contrary. Nowadays the white works on the coffee plantations in Central America, South America, tropical Australia, South Africa, the West Indies, and India, without experiencing any worse consequences than when working in temperate regions. The places where malaria is prevalent within the tropics are not more dangerous than similar places thus affected in the temperate zone. In England and Germany malaria has almost entirely disappeared, but in Italy it is still fatal, and decimates every year the labourers of the Roman Campagna and the rice swamps in Lombardy. In France, although as early as 1599 an edict of Henry IV. conceded to a Dutchman named Humfroy Bradley the general privilege of draining all the marshes that their proprietors would not drain themselves, according to a statement made by the administration of direct taxation there are still 185,000 *hectares* of marsh land, of which 58,000 belong to the parish committee.<sup>1</sup> In the Amazon the white may be killed by the *béribéri* or carried off by bilious fever; in Europe he may die of pneumonia or become crippled with rheumatism.

It is an undoubted fact that digging up the virgin soil in certain localities is not always free from peril; but as has been often observed, even in the great European cities, any very considerable disturbance of the soil, such as is necessary in cutting canals or constructing railways, may often occasion epidemics through interference with the drainage.

It has been said that the white race is unable to exist within the tropics for more than three or four generations.

We have not yet collected a large enough number of facts with which to overthrow this assertion, which has been made without any proofs. On one side the greater part of the countries in the hot zone have neglected these demographic data; and on the other, there have been admixtures of Indian blood or of other blood freshly arrived from Europe, and these circumstances prevent a perfect table from being shown. How-

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<sup>1</sup> *Répertoire Général Alphabétique du Droit Français*, published under the direction of MM. George Frèrejouban du Saint and A. Charpentier, "Article Marais," Paris, 1898.

ever, Sir Clements Markham, the eminent president of the Royal Geographical Society, in a remarkable report presented at the seventh International Congress of Hygiene and Demography, collected all the information he could find in order to prove that families of Europeans have remained established in the tropics for several generations, and that in each case the living representatives of these families were equal to their ancestors in respect of physical and moral development.

Still, not so very long ago, it was generally believed that every species of animal or plant had been created, in the beginning of the world, upon the very same place where we find it at the present day.

The principles of evolution have swept away these old theories, and now it is generally admitted that the surface of our planet has undergone continual changes. Some lands have sunk beneath the ocean and others have risen from its depths, mountains have been raised up, altered, and have fallen to dust; the physical conditions of each region have suffered constant change. Organic life has therefore been subjected to displacements and modifications without number. Even independently of topographical changes, we know that certain plants and animals have had to change more than once their habitat of distribution in the perpetual *struggle for life*. It is difficult to account for the changes that have taken place in the vegetation of Europe since the dawn of civilisation; they must have been very considerable, but we possess no complete history of them; it is otherwise in the case of some of the countries situated within the Tropics.

Let us take New Zealand, for example. Its *flora* was studied before it was much affected by foreign immigration, and the changes that have been produced there during the short period of European occupation are almost incredible. More than 500 species of exotic plants have become acclimatised there, and several amongst them have become so abundant in certain districts that they have replaced the native plants.

In Brazil the coffee plant was not introduced in Pará until after 1727, nor in Rio until 1773, and less than a century after, Brazil alone produces more coffee than all other countries put together.

Certain plants, when they are introduced for the first time into a strange country, seem incapable of thriving there. It must not be hastily concluded from this that the climate is unsuitable to them. The red clover would not thrive in New Zealand until certain species of bees were introduced for the purpose of fertilising the flowers, but now it is replacing the native grasses.

In the Amazon in ten years the white rice from abroad replaced the native red rice.

What is true of plants is equally true of animals.

Of 22 domestic animals in Europe 5 only are indigenous; 12 have been imported from Asia, 3 from America, and 2 from Africa. On the other hand, Europe has successively acclimatised in America and Australia animals which she had borrowed herself from Asia and Africa. There were no sheep in either America or Australia—at present their number is incalculable; horses and oxen have prospered admirably in South America; in New South Wales horses have become wild and are breeding with an alarming rapidity. The rabbit introduced into Australia and New Zealand, and the sparrow introduced into New Zealand and the United States, have become veritable scourges.

Hundreds of examples of this kind could be mentioned; the latest is perhaps that of the invasion of the brown rat from the east of Central Asia, which has practically driven the black rat out of Europe as that had chased from South America the more feeble rodents.

We see therefore that not only can plants and animals become naturalised in other climates, but they even thrive frequently much better in a new country than in their own, thus disproving the old theory, according to which each species occupies its distinct district and finds there the conditions best adapted to its life.

Let us return to man and apply these principles to him.

Anthropologists have divided the human species into several races, of which the number varies according to the authors, from three (Cuvier) to fifteen (Bory de Saint-Vincent).

Formerly these races were considered as forming quite distinct ethnic groups, and they were believed to have been

created independently of each other. Nowadays the unity of the human species is a fact accepted by the whole world. We think now again, as Hippocrates did two thousand years ago, that "*races are sisters to climates.*"

Anatomically and physiologically, man is a mammifer, subject to the same laws that regulate the other forms of life. Consequently he must have had a limited primitive area. To suppose that at the beginning he appeared at the same date in all the regions where we see him now would be to make him, without any reason, the only known exception to the general rule, and in the absence of a direct proof we cannot admit this hypothesis. On the contrary, if there is an undeniable historical fact—a fact that researches of ethnographers constantly confirm—it is that migrations and acclimatisations, which were their natural consequence, took place at all periods. The history of humanity is composed of a series of invasions and displacements, of incessant movements of individuals and masses of people. The swarms of colonies founded by Phœnicia and ancient Greece, the hordes of Slavs and Teutons that inundated the Roman Empire in the fifth and sixth centuries of our era, and in more recent times, the migrations of numberless Mongolians, are well-known examples. These migrating tribes, whilst taking different directions, have spread themselves along the valleys of the rivers and across the defiles of the less elevated mountains; very rarely have they travelled northwards, and then only in consequence of the irresistible pressure of their stronger neighbours. Most frequently they have gone towards the south in search of warmer or more fertile regions. As a rule they took up their abode in climates not too different from those to which they were accustomed, but there have been exceptions: for instance, the Vandals went to live in North Africa.

In following the history of these swarms of men who, centuries ago, went to settle far from their ancient homes, we find them everywhere subject to the laws that govern the dispersion of all organic beings. Thus, according to more or less favourable circumstances, some totally disappeared, whilst others continued to exist; and of these, some were transformed by their new

conditions of life, and by mixing and crossing with the natives of the country; whilst others underwent changes that were scarcely perceptible, and succeeded so well in their new surroundings that they entirely assimilated themselves with the primitive inhabitants, or else drove them out. In India, although the Rohillas, the Rajputs, and the Parsees of the Aryan race have remained unchanged for centuries, on the other hand the Portuguese in Bombay and Goa have undergone considerable modifications, and at present they are as dark in colour as the Kôles or the Bhits. The same thing has taken place in America. The Anglo-Saxons of North America have remained similar to the types of the mother country; the Spaniards and the Portuguese have intermarried with the primitive inhabitants, and have formed a mixed race in nearly all their old colonies.

Therefore, if the earlier Aryan emigrants have been able not only to prosper but even to absorb the Semitic inhabitants of the Indies, and the redskins of the hot countries of America, why should the Aryans of the present day be incapable of doing likewise?

The American Indians inhabit the frozen plains of Hudson's Bay as well as the hot regions of South America.

In the Republic of Equador they live on mountains which are 7000 feet high as well as in the lowlands situated at the foot of the Andes. If these savages are able to accommodate themselves to such temperatures, why cannot the white, who has other facilities of comfort, do the same?

The Jews have succeeded admirably in climates absolutely different from that of their own country. Thus they thrive as well amid the ice of Poland as under the South African sun. The Portuguese, Spaniards, and quite recently the Italians, have had no difficulty in settling in some of the hottest regions of America, and the death-rate of the Spaniards in Cuba has always been less than that in Spain. The Dutch have prospered in South Africa and in the Moluccas. At the Cape, where they have remained almost isolated for about two hundred years, they have hardly changed, and the Boers of South Africa are as strong and robust as are the Dutch in Holland.

It is often said that emigrants from the south of Europe

have more chance of acclimatising themselves in tropical countries than those from the north. We have just seen by the example of the Dutch in Africa that this is only partly true: but it is certain that hot regions like the Amazon, which have never made a methodical attempt to increase their population by means of European immigrants, should show a preference to Europeans from the south, viz., to Portuguese, Spaniards, Italians, Savoyards, Basques, Swiss from Tessin, and Tyrolese.

In a memorandum presented at the first Geographical Congress held at Genoa, which the Geographical Society of Rome was good enough to have printed,<sup>1</sup> we calculated that of the 1,095,955 emigrants who on an average leave Europe every year, nearly 365,000 are from Italy, Spain, and Portugal. The State of the Amazon, were it only to receive a tenth part of this number, would secure a most welcome addition to its population.

It has been proved, I think, thanks to the arguments of Dr. Sambon, that in themselves meteorological agents are not of very much account in the question of acclimatisation.

Without doubt, there as elsewhere, heat and humidity have a harmful influence, but to combat these there are two arms which are infallible: the first consists of the mysterious process of organic adaptation, which is able to change to hair the wool of European sheep imported to the West Indies and the west coast of Africa; the other is the progress of civilisation, which makes us daily more and more independent of our natural surroundings.

At a recent date, between 1830 and 1850, the French, even the most optimistic, had come to the conclusion that they would never be able to prosper in Algeria, for they considered the climate to be fatal to Europeans. A French general went so far as to say: "The cemeteries are the only colonies in Algeria that steadily increase." At the present time the French doctors send their convalescent patients there, and indeed several towns in that country are considered as excellent sanatoria. It will be the same in Amazonia a few years hence. The climate is not the obstacle to populating these hot regions, but the microbes,

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<sup>1</sup> F. de Santa-Anna Nery, *L'Émigration et l'immigration pendant les dernières années*, Genova, 1894.

the infinitesimally small microbes, upon the subject of which Dr. Patrick Monson states some decisive facts.

He acknowledges that he formerly accepted the current notions, and was freely pessimistic on the subject of peopling the tropical zones with the white race. Later his ideas underwent a complete revolution, which commenced when the parasitic origin of a great number of maladies was proved. His changed opinions were confirmed when it was shown that the diseases of men, as well as those of animals and plants, are due to living organisms, and they became settled convictions when his own experience proved to him that the immortal discovery of Laveran on the subject of the protozoic germ of malaria is an undeniable fact. Now he believes firmly in the possibility of populating the warm zone with the white race.

The upholders of the contrary theory raised, as a last objection to the colonisation of Brazil by Europeans, the fact that slavery prevailed in this country. The free man, however miserable he may be, does not like to find himself in company with the slave. It is repugnant to his instincts to unite his efforts with those of that nameless horror. His free labour seems tarnished by contact with forced work, and he feels no longer proud of earning his bread by the sweat of his brow, as his work has become a degradation. He fears being confused with the race held in subjection, and he prefers to retain his independence as a paid workman and his proletarian misery in the countries where he is a citizen like his master. There at least, if capital oppresses him, he has the right to seize it in his turn and to use it for his own emancipation.

Foreign workmen can come into the State of the Amazon, for there has not been a single slave there since 1884. They will no longer find men there whose bodies have been bought and paid for, but workers like themselves whose services are remunerated.

Let them come, therefore, in numbers and seek independence and fortune by means of honourable labour. Let them associate with each other, let them follow their individual trades, or let them gather round a rich colonist, it makes no difference. They can be assured that they will meet friends, brothers, and free men in our midst.

## CHAPTER VII

*Conclusion.*—Rational method of populating the Amazon—A great State of the future—A new market—Why Europe should look towards the Amazon—What is necessary to prepare the future of the Amazon—The Land of the Amazons in Europe—A permanent museum in Europe—How it ought to be organised.

THE State of the Amazon, according to the official data of the census of December 31st, 1890, has a population of only 0·08 inhabitant per square *kilomètre*, being the lowest rate in South America. A better idea of it will be given if it be compared with that of certain States in Europe.

The density of population in France is 73 per square *kilomètre*, in Germany it is 95, in the United Kingdom it is 126, and in Belgium it is 216. In the State of the Amazon, as we have just seen, it does not even amount to one unit.

This disproportion between the number of inhabitants and the immense extent of territory cannot be attributed to the excess of deaths over births, or to the inclemency of the country, which would, of course, be an obstacle to the propagation of the race. The official statistics, and what we have already said about the climate and the country in general, give ample proof to the contrary, more especially as the very figures of the census state that the population has increased by nearly 156 per cent. in eighteen years, from 1872 to 1890, the dates when the census was taken.

Simple administrative and economic causes explain why, since the declaration of the independence of Brazil, the population



has not increased in proportion to the available land and the certain resources of the country.

For one reason, until 1852 this region was dependent upon Pará, forgotten by the central power, which did not open the Amazon to foreign ships until 1867, and it has only been in direct communication with Manáos, by means of steamers from Rio de Janeiro, since 1883.

Again, the forests were the most obvious sources of wealth, and the collection of it necessitated the dispersion of the inhabitants, who live scattered about on every river, and it is only incidentally that they ever come into the towns and villages.

Without laying too much stress upon these considerations, let us say only that the centres actually inhabited prove the possibility of creating others equally prosperous in their neighbourhood: it is necessary to guard against dispersing colonising forces too much, and to commence the conquest of the virgin forest by means of massed numbers and not by a scattered band of stragglers. We must proceed from the known to the unknown, and avoid the scattering of new-comers, and, above all, connect the already existing towns and villages with those shortly to be founded, by means of grants of the intervening lands. It is no less necessary that allotments should not be distributed haphazard; on the contrary, let us take great care to open up the country by degrees, and to increase the importance of our admirably-situated capital by arranging our native and foreign colonists in one long, continuous line, or in concentric circles. Let this body of pioneers of the Amazon be able to fall back on its basis of operations, which for the moment is Manáos, and by following this safe course we shall undoubtedly succeed in a relatively short time in giving some kind of cohesion and density to the population, whilst we are preparing the normal development of the State.

It is probable that co-operative methods will commend themselves to the new colonists as soon as they arrive there in numbers, and that the social customs of the country will be rapidly transformed. No one need be alarmed at these probable consequences of increased population by rational means, where

civilised Indians, Brazilians from the other States of the Union, principally from the north, and immigrants from southern Europe, will all have their place and their employment.

The Amazon is vast enough to receive and support them all, since it is larger than any other neighbouring Republic.<sup>1</sup>

When this country is as thickly populated as Belgium, for example—which, however, is not to be desired—it will contain instead of 147,915 inhabitants, which was the number at the census of 1890, more than 409 millions, being very much more than the whole of Europe. If it were only peopled like Norway, which is relatively the least populous State in Europe, having a density of barely six persons per square *kilomètre*, it would still contain no less than 11,382,120 inhabitants.

There will be room then amongst this multitude for every kind of organisation of labour. It is sufficient for us at present to look forward to the realisation of our most cherished hopes, and to note the beginning of the movement which seems to be guiding emigrants from Europe to the fortunate regions of the Amazon:

*Incerti quo fata ferant, ubi sistere detur.*

We are convinced that this marvellous land will in the near future attract the commerce and emigration of the Old World.

The nations of Europe are passing through a crisis, due to over-population in some cases, and to over-production in others. There are too many men upon the spot of earth which is called Europe, and they feel the want of room and the need of starting afresh on the peaceful conquest of the globe.

Asia has been exhausted by the earlier civilisations. Europe has witnessed for two thousand years an ever-increasing struggle for existence. North America is in full activity, and is already

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<sup>1</sup> Area of the State of the Amazon,	...	...	1,897,020 square <i>kilomètres</i> .
"    "    Columbia,	...	...	1,203,100 " "
"    "    Bolivia,	..	...	1,189,800 " "
"    "    Peru,	...	...	1,137,000 " "
"    "    Venezuela,	...	...	1,043,900 " "
"    "    Ecuador,	...	...	299,600 " "

taking measures for keeping off new-comers.<sup>1</sup> There remain, therefore, for the purpose of production: Africa—a corpse which men are trying to resuscitate—and South America.

Nations are on the alert, and believe they are but consulting their material interests and satisfying their commercial wants, whilst they are really preparing to carry out the designs of Providence, which is the mysterious *raison d'être* of humanity. Everywhere mankind is spreading and trying to live more at ease. Everywhere the nations endeavour to find a market for the superabundance of their manufactured goods, which lie barren on their hands. Openings for trade are gradually appearing, and with it civilisation is spreading all over the world.

The time is past when expansion abroad was looked upon as a curse that impoverished the mother countries. That was true to a certain point, when the people were more given up to agriculture and the number of hands did not suffice for the tilling of the land. But at the present day the transformation effected by machinery, and the importance of trade in manufactured goods, compel men to move about and to send their produce abroad. To extend the mother country as far as possible is now a source of prosperity, and for the future it will secure the pre-eminence to that nation which has sent most of its children abroad.

The United Kingdom sends her children afar—about 348,000 per annum—and her riches have never been greater. Germany sends 104,000 per annum, and she daily becomes more powerful. Italy is the only Latin nation which continues to spread the Latin race in the world and prevents humanity in the future from being a too exclusive blend of other rival races: although her inhabitants emigrate in very large numbers—255,000 per annum—she presents one of the most remarkable examples of

<sup>1</sup> This is one of the forms that protectionism assumes in this country. Mr. John Haws Nobb (*Political Science Quarterly*, vol. vii., part 1, pp. 133-38, March-June, 1892, New York), was the first to propose that a minimum of education should be required of Italian immigrants. Mr. James Bryce, M.P., publicly complimented the United States on showing themselves now “less yielding to the ignorant and half-civilised masses that Central Europe throws upon their shores.”

restoration of modern times. Russia sends her subjects to Asia, and her population—in spite of an average yearly exodus of 120,000 since 1891—never leaves off increasing. Spain and Portugal would have already disappeared from among nations if they had not founded the young democracies of Latin America.

These phenomena admit of a very simple explanation.

Without mentioning the commercial relations that are nearly always established between the mother country and the emigrants, to the great benefit of all, it is evident that the overflow which goes away leaves more room for those who remain and allows them to fill up the void thus left. The nations who emigrate are not necessarily the poorest, but they might become so were they not to emigrate, because, as Duval rightly says, “stagnant nations grow corrupt like stagnant waters.”

It is certain that the existence of large landed proprietors and the law of primogeniture are in Great Britain and Germany the principal causes of emigration, as low salaries are in Italy, Spain, and Portugal. In France, where landed property is better distributed, more people are able to remain and live on it, and emigration therefore is naturally very much less. However, France does not furnish as many emigrants as she could (the annual average being scarcely 20,000), if the marriages produced more children. Men like M. Paul Leroy-Beaulieu declare that colonisation is for her a question of life or death, and that without colonisation she will fall to the level of Roumania or Greece.

A fortnight's voyage separates Amazonia from the leading ports of Europe. We offer to the commerce and industry of the world the most valuable and useful raw materials, gums, resins, balsams, essences, thickened saps (the most important being indiarubber), aromatics, textile fabrics, dyeing and tanning materials, vegetable oils, medicinal substances, wood for building and cabinetmaking, furs, feathers, vegetable ivory, cacao, etc.

For many years to come we shall be able to receive in exchange: corn, tinned provisions, wine, beer, brandy, liqueurs, butter, cheese, salt, pastes, cloths, linen, arms, agricultural

implements, furniture, machines, works of art, and in fact all articles manufactured in Europe that do not find sufficient outlets elsewhere.

The Amazon therefore merits a little consideration on this side of the ocean, where one is not accustomed to have business relations with a State whose population produces no less than £15 per head, and which has no debt.

The voyage, which now takes twenty days from Havre to Manáos, will be made in ten when large steamers, making shorter stoppages, replace the steamboats now used.

Great progress has already been made towards this end. The writer remembers that in 1862, when he made the voyage from the Amazon to Europe for the first time, there were no regular liners, and the sailing ship upon which he took his passage was forty-seven days at sea, without any stoppage, from Pará to St. Nazaire. A few months ago he made the same voyage on an excellent steamer of the Red Cross line in seventeen days, including stoppages at Madeira and Lisbon. Soon it will be possible to sail from Liverpool, Antwerp, Hamburg, Havre, or Genoa, to Parintins, Itácoatiára, and Manáos, with as much facility and comfort and in as short a time as to Philadelphia and New York.

We are drawing nearer and nearer to Europe; let Europe meet us half way.

Nations of the old continent who know to what an extent the United States of North America, by dint of protective and *quasi*-prohibitive duties, have, in order to be in dangerous competition with them, transformed themselves into an industrial country, will soon understand that it is towards Brazil, towards the Amazon that they must turn the current of emigration, which carries away every year more than a million human beings. Their interest will appeal to them more than their old prejudices.

Europe constitutes the International African Association, for which she makes enormous sacrifices both in men and in money, and this obliges her to create States buried in the heart of the black continent,

*Semper sole rubens et torrida semper ab igne.*

Belgians, French, Portuguese, Germans, Italians, and English cling tenaciously to these lands, because they hope to find future buyers there for their goods, and because they have every intention of taking away those products from them which are wanting on their own soil.

The French spend men and money freely in order to secure a footing in Chinese India, connecting Annam, Tonkin, Cambodja, and Laos with Cochin-China, and they are also trying to establish themselves in Madagascar; they aim at recovering their former maritime possessions, and at extending their influence over far-off continents, or islands lost in the ocean.

The Germans quarrel with Great Britain over a strip of African land in their desire to add colonies in Africa and the Pacific Ocean to their powerful empire.

The Italians have a footing upon the east coast of Africa, in Abyssinia, and on the coast of the Indian Ocean, and they dispute with the French their claim to Tripoli.

Spain, weakened though she be, and France, both covet Morocco.

Industrial England has already in her practical manner almost entirely secured the land of the Pharaohs, and has lately planted her flag over the whole of the Soudan.

All Europe is going through a crisis of over-growth, and is making every effort to expand.

The State of the Amazon in itself is more vast than the United Kingdom, France, Germany, Italy, Belgium, and Portugal all put together;<sup>1</sup> it is asking for immigrants, whose commerce

<sup>1</sup> Area of Great Britain and Ireland, ... ..	314,952	<i>square kilomètres.</i>
„ France, ... ..	528,401	„ „
„ Germany, ... ..	539,737	„ „
„ Italy, ... ..	276,322	„ „
„ Belgium, ... ..	29,457	„ „
„ Portugal and its Islands, ... ..	92,575	„ „
Forming a total of ... ..	1,781,444	„ „
Area of the State of the Amazon, ... ..	1,897,020	„ „
Difference in favour of the Amazon, .. ..	115,576	„ „

will at once profit the mother countries; it offers to new-comers an already prepared soil, an assured civilisation, a market, the elements of life and innumerable advantages: it is situated at a comparatively short distance from the Old World, and may become the chief mart of the greater part of the commerce of the five neighbouring Republics and the Guianas: but for this Amazon nothing is attempted, no grand project is entertained.

It is true that there is not a single gun to be fired, that the only things to be expropriated over there are forests and wild beasts, and that there is not even the opposition of Indian savage tribes to be feared, as, on the contrary, the natives will prove themselves to be valuable labourers.

Europe has perhaps an excuse for her indifference, inasmuch as she is ignorant in a great measure of the resources of this privileged region. The fine works which have been written on the subject of this incomparable valley are for the most part by specialists, and in consequence have not reached the general public, who are not usually attracted by scientific writings. Some of these works, the best perhaps, such as those by Alex. von Humboldt, Spix and Martius, Comte de Castelnau and L. Agassiz, appeared at a time when public attention had not been turned towards those far-distant countries.

The Amazon has not yet been vulgarised. The daily press—the only one which has taken a real hold upon the masses—has not yet given her the attention she deserves. Since 1883, however, the Amazon has tried to make herself known and appreciated, and we have undertaken this difficult though honourable task, and have set about it with energy, sustained by a great love for our country, and nourishing long-cherished hopes and vast expectations. In the papers, in periodical reviews, in pamphlets, and in publications of every description, with the pen and by word of mouth, we have endeavoured, to the best of our ability, to spread exact notions on the subject of this part of Brazil, whose produce we have exhibited without any official help, at the Exhibitions of Antwerp, Beauvais, Bourges, and Paris, and at the Musée Commercial de Paris.

This work, however modest it may be, has not been without

good results, and now people are beginning to concern themselves about the Amazon and to realise its existence; and in Europe to do this is to arouse popular interest. Thousands of requests for information have been addressed to us from all sides, a number of emigrants have gone there, and others are making up their minds to go, whilst endeavouring to find companions, rightly dreading the solitude at first. Signs are not wanting of a general movement towards Amazonia, and these encourage us to new efforts. But we want to be seconded in our mission, for one voice is very feeble, and we are no longer living in an age when one man could lead nations onwards to unknown enterprises. Enthusiasm no longer exists save in the breasts of poets or in the hearts of apostles. The majority of men are only affected by what appeals to their own immediate interests, and we must touch them, therefore, at this point.

Practical lessons are the fashion, as men believe more readily what they see with their own eyes.

Why should we not try this easy means, which coincides with the tendency of the day? Why should we not bring the products of Amazonia over to Europe and display them to all?

A simple, permanent exhibition of our industries would answer this purpose.

A museum of Amazonia in Europe for exhibiting the produce of Pará and the Amazon would be, for lovers of novelties, an unprecedented attraction; for *savants*, an interesting and easy subject for study; for literary men and artists, a feast of the picturesque; for manufacturers and merchants, a stimulus to emulation; for economists, a point of comparison and guiding mark; and for everybody an incentive to successful emigration.

This museum should comprise two principal sections. In the first, classed methodically, with their cost price and the amount of their production, would be all the raw materials already in use, and all those that are capable of being used with advantage. In the second section would be classed with the prices paid over there, specimens of every article of foreign manufacture required by the consumer in the Amazon.

Plans and tables would show the position of lands still at disposal, their price, and the class of culture best suited to them,



the advantages offered to immigrants, and other useful practical information concerning their departure and arrival. It would be easy to add a list to this of all wants and offers of employment, the current prices of the raw materials on the spot, time of sailings, etc., etc.

Frequent conferences and lectures, given by the most enlightened members of the Brazilian colony, and by travellers and merchants knowing the country, periodical meetings to which the press and the learned societies would be invited, and free courses of lessons in the Portuguese language would complete this organisation.

This permanent exhibition would not be very costly. The liberality of our countrymen, who are ever mindful of the greatness of their country, would partly provide for it, and with the aid of the Governments of Pará and the Amazon, would permit a reasonable annual grant to be made. This exhibition could, moreover, be organised in the same way as the Museum of Decorative Art in London, and could be easily transported to all the universal exhibitions without too considerable an outlay.

The idea is imposing and original. It is worthy of the two States that are marching so resolutely along the way of progress, and we are convinced that it would meet with the utmost approval on the part of the new governor of the Amazon, if the Doctor Paes de Carvalho, the eminent and truly patriotic man who at the present time administrates the State of Pará, were pleased to take it under his high patronage. It would do more in two years than could be done with the pen or by word of mouth in ten. It would do more than all the appeals addressed by the press to future colonists of Amazonia, and more than all the laws and subsidies together, which have for their object the promotion of foreign immigration.

The different peoples of Europe—for this exhibition ought not to remain shut up in one single capital—would thus learn to know this land of the Amazons, where the natives can supplement foreign labour,—this legendary *El Dorado*, where *vegetable gold* is a surer source of wealth than the mines of Australia and Africa,—these splendid lands of indiarubber,

whose products modern industry daily utilises more and more.

This exhibition would reveal to some extent the splendours of tropical nature, and would induce men to visit these regions.

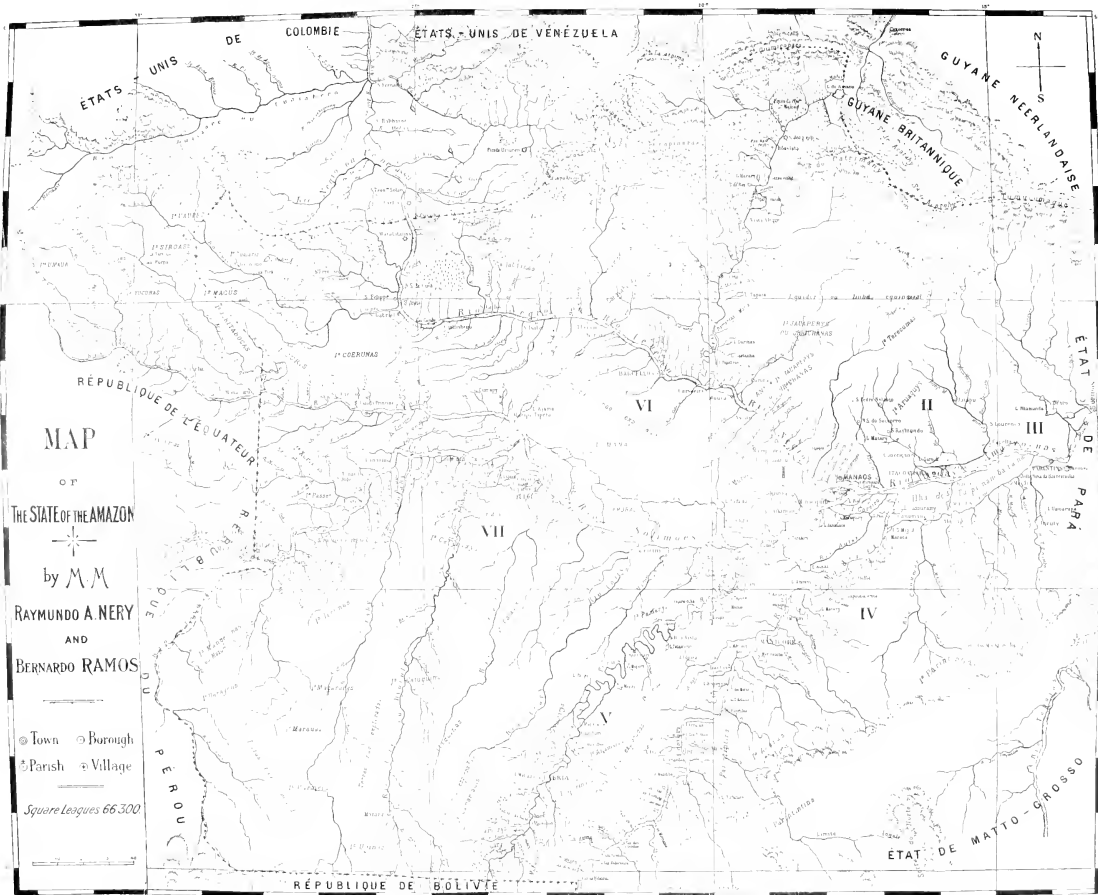
For our own part we should be happy to thus prepare the way to this glorious future, and to expend what life remains to us in this great patriotic work.

Then only would be realised the wish ascribed by Garrett to the dying Camões<sup>1</sup>:—

*Oh! Tagus superb, is there left not a trace  
Of thy glory, nor even an heir to succeed  
To thy mighty renown? Yes! take and guard this great  
vastness of space  
Oh! Generous Amazon—wondrous indeed!  
This birthright of chivalry, honour, and fame,  
Nè'er let perish thy Portuguese language and name.*

<sup>1</sup> Almeida-Garrett, *Camões*, x. 21.

THE END.



MAP

OF  
THE STATE OF THE AMAZON

by M M

RAYMUNDO A NERY  
AND  
BERNARDO RAMOS

⊙ Town    ⊙ Borough  
⊙ Parish    ⊙ Village

Scale: Leagues 66.300





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