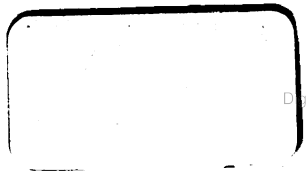

HONDURAS.

PRINTED BY BALLANTYNE AND COMPANY
EDINBURGH AND LONDON

HONDURAS;

DESCRIPTIVE, HISTORICAL,

AND

STATISTICAL.

BY

E. G. SQUIER, M.A., F.S.A.,

FORMERLY CHARGÉ D'AFFAIRES OF THE UNITED STATES TO THE REPUBLICS OF CENTRAL AMERICA.

"*Hic locus est Gemini janua vasta maris.*"—OVID.

Issued by permission of the Author, and under the Authority of

HIS EXCELLENCY DON CARLOS GUTIERREZ,

Envoy Extraordinary and Minister Plenipotentiary of the Republic of Honduras in Great Britain.

LONDON:

TRÜBNER & CO., 60 PATERNOSTER ROW.

1870.

PRELIMINARY NOTE.

RECENT events, but more especially the commencement and rapid progress of a great Inter-Oceanic highway through its territories, have invested the Republic of Honduras in Central America with new interest and importance. This important international work, which is under contract to be delivered over in efficient working order in 1872, must materially affect the course of travel and trade between the Atlantic and Pacific Oceans, and have a powerful influence in developing the vast natural resources of Central America in general, and of Honduras in particular. And as these regions, soon to be brought into prominence and within the circle of the nineteenth century activity, are but imperfectly known, the undersigned has conceived he would be performing a service to the British public, and a duty to the country which he has the honour to represent, by reproducing, in an accessible form, the chapters on Honduras contained in that standard book, "THE STATES OF CENTRAL AMERICA," by the well-known traveller and author, Mr E. G. SQUIER, formerly representative of the United States in the Central American Republics, and more recently its Commissioner in Peru.

Mr Squier, to whose friendly interests these Repul.. owe so much, has not only consented to this reproduction, but has revised these chapters, so as to give a clear and accurate view of the condition of Honduras at the present time.

On terms of complete harmony with its sister States —with the Republic of San Salvador and Guatemala on one hand, and Nicaragua and Costa Rica on the other —Honduras has the felicity of offering a common point of interest to all of them in the exceptional facilities it affords for an adequate route of inter-oceanic communication, which however it may benefit other countries and the world at large, must inevitably tend to the development and prosperity of one of the most favoured portions of the American continent.

The satisfaction with which the certainty of the near completion of the Honduras Inter-Oceanic Railway is received by Central America and the commercial world, is shadowed by the reflection that its success will not be witnessed by one of its most active, efficient, unselfish, and ardently patriotic supporters, the late Don LEON ALVARADO, to whose memory the reproduction of the following chapters, which years ago he translated into Spanish for the benefit of his countrymen, is reverently dedicated.

C. G.

WARREN HOUSE,
TUFNELL PARK, CAMDEN ROAD, LONDON.

CONTENTS.

CHAPTER X.

CHAPTER XI.

CHAPTER XII.

CHAPTER XIII.

CHAPTER XIV.

CHAPTER XV.

CHAPTER XVI.

CHAPTER XVII.

CHAPTER XVIII.

CHAPTER XIX.

APPENDIX.

HONDURAS.

CHAPTER I.

INTRODUCTION—NOTES ON THE GEOGRAPHY OF CENTRAL AMERICA IN GENERAL, AND OBSERVATIONS ON ITS CLIMATE, POPULATION, ETC.

CENTRAL AMERICA, in respect of geographical position, almost realises the ancient idea of the centre of the world. Not only does it connect the two grand divisions of the American continent, the Northern and the Southern hemispheres, but its ports open to Europe and Africa on the east, and to Polynesia, Asia, and Australia on the west.

Looking at the map, we find, at the Isthmus of Tehuantepec, the Gulf of Mexico approaching to within two hundred miles of the Western Ocean. Southward the continent widens, embracing the high table-lands of Guatemala upon the west, and the broad plains of Tabasco, Chiapa, and Yucatan upon the north and east. The Gulf or Bay of Honduras, however, closes around this section upon the south-east, and again narrows the continent to less than two hundred miles. The country

intervening between this bay and the Pacific, falling within the Republic of Honduras, is marked by a complete interruption of the Cordillera, and is traversed by a great transverse valley, running due north and south, through which the large river Ulua finds its way to the Atlantic, and the smaller river Goascoran flows into the Bay of Fonseca, on the Pacific. Still lower down, and passing the grand transverse basin of Nicaragua, is the well-known narrow Isthmus of Panama or Darien, over which the tide of emigration has twice poured its floods, once upon Peru, and again upon the glittering shores of California.

Nor are the topographical characteristics of Central America less remarkable than its geographical features. In its physical aspect and configuration of surface, it has very justly been observed that it is an epitome of all other countries and climates of the globe. High mountain ranges, isolated volcanic peaks, elevated table-lands, deep valleys, broad and fertile plains, and extensive alluvions, are here found grouped together, relieved by large and beautiful lakes and majestic rivers; the whole teeming with animal and vegetable life, and possessing every variety of climate, from torrid heats to the cool and bracing temperature of eternal spring.

The great chain of the Cordillera here, as in South America, runs nearest to the Pacific coast, but in places it is interrupted, and assumes the form of detached ranges and isolated elevations, groups or knots of hills, between which the streams from the interior high valleys or elevated plains wind their way to the two

oceans. As a consequence, the principal alluvions border on the Gulf of Mexico and the Carribbean Sea. Here rain falls, in greater or less abundance, for the entire year; vegetation is rank, and the climate is damp and proportionally insalubrious. The trade-winds blow from the north-east; and the moisture with which they are saturated, condensed on the elevated parts of the continent, flows down toward the Atlantic. The Pacific slope is therefore comparatively dry and healthful, as are also the elevated regions of the interior.

The geographical and topographical features of all countries have had, and always must have, an important, and often a controlling, influence upon the character and destiny of their populations. The nature and extent of this influence receives a striking illustration both in the past and the present condition of Central America. At the period of the Discovery, it was found in the occupation of two families of men, presenting in respect to each other the strongest points of contrast. Upon the high plateaus of the interior of the country, and upon the Pacific declivity of the continent, where the rains are comparatively light, the country open, and the climate relatively cool and salubrious, were found great and populous communities, far advanced in civilisation, and maintaining a systematised religious and civil organisation. Upon the Atlantic declivity, on the other hand, among dense forests, nourished by constant rains into rank vigour, on low coasts, where marshes and lagoons, sweltering under a fierce sun, generated deadly miasmatic damps, were found savage tribes of

men, without fixed abodes, living upon the natural fruits of the earth, and the precarious supplies of fishing and the chase, without religion, and with scarcely a semblance of social or political establishments.

It is impossible to resist the conviction that the contrasting conditions of these two great families were principally due to the equally contrasting physical conditions of their respective countries. With the primitive dwellers on the Atlantic declivity of Central America, no considerable advance, beyond the rudest habits of life, was possible. He was powerless against the exuberant vitality of savage nature, which even the civilised man, with all the appliances that intelligence has gradually called to his aid, is unable to subdue, and which still retains its ancient dominion over the broad alluvions both of Central and South America. His means of sustenance were too few and too precarious to admit of his making permanent establishments, which, in turn, would involve an adjustment of the relations of men and the organisation of society. He was therefore a hunter from necessity, nomadic in his habits, and obliged to dispute his life with men who, like himself, were scarcely less savage than the beasts of the forests.

Civilisation could never have been developed under such adverse conditions. It can only originate where favourable physical circumstances afford to man some relief from the pressure of immediate and ever-recurring wants—where a genial climate, and an easily-cultivated soil, bountiful in indigenous fruits, enables him not only to make his permanent abode, but to devote a por-

tion of his time to the improvement of his superior nature.

Such were the circumstances which surrounded the dweller on the high plains of Honduras and Guatemala. There, wide and fertile savannas invited to agriculture, and yielded to the rudest implements of cultivation an ample harvest. The maize, that great support of aboriginal civilisation in America, was probably indigenous there, and was thence carried northward over Mexico and the Floridas by the various families who established themselves in those regions, and whose languages and traditions point to the plateaus of Guatemala as their original seat.

The natural relations of Central America, as indicated by the physical facts already pointed out, are clearly with the Pacific and the states which now exist or may spring into existence upon that coast. To California and the greater part of Mexico, as also to some of the states of South America, it must come, sooner or later, to sustain a position corresponding with that which the West Indies have held toward the United States and Europe, with the important addition of being an established route of travel, and perhaps ultimately of commerce, between the Eastern and Western hemispheres. Its destiny is plainly written in the outlines of its coast, and is printed on its surface, not less than demonstrated by its geographical position.

The peculiarities of Central America, in respect of configuration of surface, will explain the almost endless variety of climate to which I have alluded, and which is

nowhere more remarkable than in that country. Situated between 8° and 17° north latitude, were it not for these features, the general temperature would be somewhat higher than that of the West Indies. As it is, the climate of the coast is nearly the same with that of the islands alluded to, and exceedingly uniform. It is modified somewhat by the shape and position of the shore, and by the proximity of the mountains, as well as by the prevailing winds. The heat on the Pacific coast is not, however, so oppressive as on the Atlantic; less, perhaps, because of any considerable difference of temperature than on account of the greater dryness and purity of the atmosphere.

What are called the "seasons" under the tropics, namely, the wet and dry, are much influenced in their commencement and duration by local causes, so that what is literally true of one place can only be partially so of another. The widest differences are, of course, between the Atlantic and Pacific slopes of the continent. The whole of Central America comes within the zone of the north-east trade-winds, which, sweeping across the Atlantic, reach the continent almost saturated with vapour. The portion of moisture of which they are deprived by the Carribbean Islands is probably again nearly, if not quite, made up in their passage over the sea of the same name. These winds are intercepted by the high mountain centres of the continent, and the vapour precipitated from them flows down to the Atlantic, through a multitude of streams and rivers. But the mountains of Central America are not all high enough

to entirely intercept the trade-winds. They are, moreover, broken through by transverse valleys, like that of the Nicaraguan lakes, and that of Comayagua in Honduras. As a consequence, the trades, for a greater part of the year, blow entirely across the continent, reaching the Pacific slope deprived of their moisture, and cooled by a passage over the elevated region of the interior. Hence result the greater salubrity of that declivity, the comparative coolness and dryness of its climate, and its consequent greater population. For about four months of the year, from May to October, the trades being intermittent, the Pacific declivity is subject to winds from the west and south-west, which precipitate their waters against the western slopes of the mountains, and constitute the rainy season. As these Pacific winds are seldom more than exaggerated sea-breezes, and are rarely of more than a few hours' continuance, the rains which follow from them are brief, occurring generally in the afternoon and night. It is rare to witness an entire day of rain, although there are occasionally meteoric combinations which produce what the Spaniards call *temporales*, or rains of several days' continuance.

On both coasts heavy dews fall during the night, so that vegetation is always profuse and beautiful. But on the more elevated central plateaus, where the altitude exceeds three thousand feet, the dews are slight, and the nights are as dry as the days. As a consequence, some of these districts at certain periods seem arid and burned, and never enjoy that luxuriance of vegetation

which constitutes equally the beauty and danger of the seaboards.

Although the rains, especially those which, at the epochs of change in the seasons, fall in showers, are much heavier than those which prevail in the United States and in Europe, so that in a few minutes the earth is covered with water, yet they do not generally last more than half an hour. They cease as suddenly as they begin; the sky as suddenly recovers its serenity, the sun comes out unclouded, dispersing the humidity, and in a brief space the earth becomes, to all appearance, as dry as if no rain had fallen.

What I have said applies strictly to the respective Atlantic and Pacific coasts. The central plateaus, or high table-lands of the interior, have a climate of their own, subject neither to heavy rains nor excessive droughts. From the circumstance that they lie nearest the Pacific, these plateaus partake most of the climate of that coast, with which their seasons also measurably coincide. The plain of Comayagua, situated in the very centre of Honduras, and equidistant from the two great seas, may be taken as an illustration. More or less rain falls there during every month in the year; but, during the prevalence of the dry season on the Pacific, it is only in the form of showers of brief duration, while during the wet season the rains are comparatively long and heavy. Continuous rains, or *temporales*, are unknown.

Specifically of Honduras, the most that can be said is, that owing to the varying elevations of the country, and its varying exposures to the winds, it has a variety of

climate adapted to every caprice, and a variety of temperature and moisture suited to the cultivation of the products of every zone. Observations made at the mouth of Black River, on the Bay of Honduras, for one year showed an extreme range of 24° of Fahrenheit, from 62° to 86°, and a mean temperature of about 72°, modified by a grateful sea-breeze. Observations at Carataska Lagoon showed, for the four hottest months of the year, a mean of 82° Fahrenheit. At Truxillo, during the same months, the mean was 78°. At Comayagua, the capital of Honduras, and situated very nearly in its geographical centre, the average temperature for the year is about 70°. Tegucigalpa is somewhat cooler. Observations on the rainfall of the republic give very nearly 48 inches annually, or about one-half of the amount which fell on the isthmus, between Lake Nicaragua and the Pacific, during the year 1852, viz., 97.7 inches. The average amount of rain which falls in America under the tropics is calculated by Prof. Johnson, in his tables, at 113 inches. At some points in Brazil—as, for instance, San Luis de Maranhao—the annual average is 276 inches; and in Guadalupe and some of the Lesser Antilles, as high as 292 inches.

The population of Central America, in the absence of reliable data, can only be calculated approximately. Attempts were made under the crown, and subsequently under the republic, to effect a complete census, but with very unsatisfactory results, since it has always been found that the ignorant masses of the people, and especially the Indians, avoid a census as in some way

connected with military conscription or taxation. They have been known to abandon their homes, and hide themselves for weeks in the mountains, to escape the commissioners! Again, the bulk of the Spanish population exists on the Pacific slope of the continent, while on the Atlantic declivity the country is either uninhabited, or sparsely occupied by Indian tribes, of which the number is wholly unknown. A considerable aboriginal population exists in the district of Peten, in the north of Guatemala, and there are several tribes, such as the Xicaques, Payas, Tonglas, Woolwas, Towkas, Ramas, Guatusos, &c., in the Atlantic divisions of Honduras, Nicaragua, and Costa Rica, none of whom have entered, as an element, in any calculation of the absolute population of the country.

Nevertheless, from the few and imperfect censuses, and such records of births and death as are accessible, the population of Central America and the states included under that designation, may fairly be estimated as in the following table, which also shows the area of each state approximately, and the proportion of population to the square mile :—

States.	Area in Square Miles.	Population.	Number to Square Mile.
Guatemala	43,380	890,000	20
Honduras	39,600	350,000	9
San Salvador	9,594	433,000	45
Nicaragua	49,500	300,000	6
Costa Rica	23,000	135,000	6 nearly.
Total	165,074	2,108,000	12½

Scanty as this population seems to be, it is nevertheless, relatively to the area of Central America, much larger than that of any of the Spanish American states. Chili has scarcely two-thirds as many inhabitants to the square mile, and Mexico but little more than half as many, as will appear from the subjoined table, compiled from the latest and most authentic sources.

Countries.	Square Miles.	Population.	Number to Square Mile.
Central America	165,054	2,108,000	12½
Mexico	762,000	7,853,000	10
New Granada	330,000	1,360,000	3⅜
Venezuela	410,000	887,100	2⅛
Ecuador	320,000	550,000	1¾
Peru	405,000	1,500,000	3⅛
Bolivia	380,000	1,200,000	3⅛
Chili	170,000	1,300,000	8
Brazil	2,720,000	4,450,000	2 nearly.

The data bearing upon the proportion of sexes in the aggregate population, although too imperfect to be worth presenting, nevertheless go to show that, as in Mexico, there is a considerable preponderance of females over males.

CHAPTER II.

DISCOVERY OF HONDURAS—BOUNDARIES—GENERAL ASPECT—TOPOGRAPHY, ETC.

IT was in Honduras that Columbus first planted his feet on the continent of America. In 1502, then sailing on his fourth voyage, he discovered the island of Guanaja (or Bonacca), which he named the Isle of Pines. From this island he descried to the southward the high mountains of the mainland; and pursuing his course in that direction, on the 14th of August landed at a point which he called *Punta de Casinas* (now Cabo de Honduras), and formally took possession of the country on behalf of the crown of Spain. He subsequently coasted to the eastward, touching at the mouth of Rio Tinto, or Black River; and finally, after great delays and dangers, reached a point where the coast, abruptly trending to the southward, formed a cape, to which, in gratitude for his safety, he gave the name of *Cabo Gracias á Dios*, "Cape Thanks to God." He lost a boat, with some sailors, in attempting to enter the Great Cape or Wanks River, which was, in consequence, called *Rio del Desastre*. From Cape Gracias he continued his voyage along what is now the Mosquito Shore, called by him *Cariay*, to the Isthmus of Darien.

Less than twenty years afterward, the conqueror of Mexico, Hernando Cortez, inspired by the accounts of vast and populous kingdoms to the southward of the prostrate empire of Montezuma, undertook an expedition into Honduras, which at this time was called Hibueras or Higueras. This expedition, both for its length and the difficulties which were encountered and overcome in its prosecution, stands almost without precedent in the history of martial adventure.

Starting from the Isthmus of Tehuantepec, Cortez boldly entered the vast and unknown wilderness which intervened between the confines of Mexico and the country of which he was in search. For two years he struggled among deep morasses, broad and almost impassable rivers, and high and desert mountains, with boundless courage and endurance. At the end of that time he reached the point where Columbus had made his first landing in Honduras; and there, after receiving the submission of the neighbouring chiefs, he founded the ancient city, now the port, of Truxillo.

In addition to the names of Columbus and Cortez, those of Alvarado, Cristoval de Olid, and Cordova appear in the list of daring and zealous captains who distinguished themselves in the exploration of the country and its reduction to the Spanish crown. But it is not my purpose to write the history of Spanish power in Honduras. Suffice it to say, that as early as 1540, sixty years before Jamestown was founded in Virginia, and nearly a hundred years before Hudson entered the bay of New York, Honduras had its large

and flourishing cities, and the Audiencia of the confines had been established within its borders.

Subsequently the seat of the Audiencia was transferred to Guatemala, and from that time forward, until the independence of the Spanish American states, Honduras constituted a part of the kingdom or Captain-Generalcy of Guatemala, which comprised the provinces or Intendencias of Guatemala, Honduras, San Salvador, Nicaragua, and Costa Rica. These threw off their allegiance to Spain in 1821, and, assuming the rank of sovereign states, soon after united in a confederacy called the "Republic of Central America." This union, in consequence of internal dissensions and the struggles of factions, became practically dissolved in 1839, since which time the several states have asserted and exercised their original sovereign powers as distinct republics.

The republic of Honduras, therefore, comprises the territory which pertained to it as a province. It is bounded upon the north and east by the bay of Honduras and the Carribbean Sea, extending from the mouth of the Rio Tinto, lat. 15° 45′ N., and long. 88° 30′ W., to Cape Gracias á Dios, at the mouth of the Rio Wanks or Segovia, in lat. 14° 59′, and long. 83° 11′, being a coast line of about four hundred statute miles. Upon the south it is bounded by the republic of Nicaragua. The line of division follows the Rio Wanks for about two-thirds of its length, and thence deflects to the south-west to the sources of the Rio Negro, flowing into the Gulf of Fonseca. It has a coast line of about sixty miles on this gulf, from the Rio Negro to the Rio

Goascoran, and embraces the large islands of Tigre, Sacate Grande, and Gueguensi. Upon the west and south-west it is bounded by the republics of San Salvador and Guatemala. The line of separation is irregular. Commencing on the Gulf of Fonseca, at the mouth of the Rio Goascoran, it follows that river for about thirty miles in a direction due north, to the mouth of one of its affluents from the north-west, called Rio Pescado. From the head of this stream it strikes a branch of the Rio Torola (flowing south-west into the Rio Lempa), which it follows to its mouth. Thence it follows the Rio Lempa to the mouth of the Rio Sumpul, which it ascends nearly to its source, to a point where its waters approach those of the Rio Paza, separating San Salvador from Guatemala. From this point it runs nearly north-east, along the mountain chain of Merendon and Grita, leaving the town and ruins of Copan about fifteen miles to the south-east, until it strikes the head-waters of the small stream called Rio Tinto, which it follows to the Bay of Honduras.

The state is therefore embraced entirely within 83° 20′ and 89° 30′ west longitude, and 13° 10′ and 16° north latitude, and comprises not far from 39,600 square miles, or about the same area with the state of Ohio.

The large island of Roatan, with its dependencies, Guanaja or Bonacca, Utilla, Helena, Barbaretta, and Morat, also pertain to Honduras, and are known under the denomination of "The Bay Islands." At one time, Great Britain set up claims to a considerable portion of

the eastern coast of Honduras, from Cape Comorin, or Cape of Honduras, a few miles to the eastward of Truxillo, to Cape Gracias á Dios, on behalf of the "*Mosquito* King;" but these pretensions have been formally abandoned by treaty, and the whole territory is now under the recognised and undisputed sovereignty of Honduras.

The general aspect of Honduras is mountainous; that is to say, it is traversed in various directions by ranges of mountains and hills, radiating from the common base of the Cordillera. This great chain, which may be regarded as the backbone and support of the continent does not, in Honduras, approach within fifty or sixty miles of the Pacific. Nor does it throughout maintain its general character of an unbroken range, but in its course sometimes turns back on itself, forming interior basins or valleys, within which are collected the head-waters of the large streams that traverse the country in the direction of the Atlantic Ocean. Nevertheless, viewed from the Pacific, it presents the general appearance of a great natural wall, with a lower range of mountains, relieved by volcanic peaks of wonderful regularity of outline, intervening between it and the Western Sea. It would almost seem that, at one time, the waters of the Pacific broke at the very feet of this great mountain barrier, and that the subordinate coast-range had been subsequently thrust up by volcanic forces. In San Salvador this conjecture seems to be wholly verified; for the high ridge, averaging some two thousand feet in altitude, and which extends from

the volcano of San Miguel to that of Apeneca, separated from the true Cordillera by the parallel valley of the River Lempa, is throughout of volcanic origin. Not less than eleven volcanic peaks bristle along its summit; and the traveller rides from one end of the state to the other over an almost unbroken bed of scoriæ and ashes, largely mixed with pumice, occasionally relieved by beds of lava and volcanic stones. In Nicaragua this volcanic range subsides for intervals, and is only marked by high cones and broken craters, while the Cordillera trends away to the south-east, on the northern border of the transverse basin of the Nicaraguan lakes.

Honduras has but a narrow frontage of about sixty miles on the Pacific, and within this limit the volcanic coast-range is wholly wanting. Its place is supplied by the high islands, of volcanic origin, in the Bay of Fonseca.

The northern and eastern coast of Honduras presents several bold groups of mountains, which are the ends of the dependent ranges radiating north and east from the Cordillera. These subordinate ranges strike the northern coast diagonally, and lap by each other in such a manner as to appear from the sea like an unbroken chain. Hence it has occurred that in some of the charts of that coast, although the mouths of the large rivers flowing from the interior are indicated, the rivers themselves are rendered impossible by a continuous chain of mountains, represented as skirting the shore at a very short distance inland.

The Cordillera proper, or the great dividing ridge

which separates the waters flowing into the Pacific from those falling into the Atlantic, traverses the state in a general direction north-west and south-east. Its course, however, is serpentine, and at one point, at least, it is interrupted by a large transverse valley, of which, as offering probably the most favourable route for a railway between the two seas, I shall have occasion to speak farther. Starting from the high plateaus of Guatemala, this range pursues a course nearly east until it reaches the frontier of Honduras, where it is deflected to the south-east, while a higher spur, or range, not inferior in elevation to the "Sierra Madre," or Mother Mountain, runs off east by north to the Bay of Honduras. At the point of separation, this range is called the Mountains of Merendon, afterward Grita, and nearer the coast, the Mountains of Espiritu Santo. On the coast itself, where it attains the majestic height of between seven and eight thousand feet, it is called the Mountains of Omoa. Along its northern base flows the Rio Motagua, rising near the city of Guatemala, and falling into the Bay of Honduras; and at its feet, on the south, flows the Rio Chamelicon, which in turn is separated from the parallel river Santiago by only a range of hills, terminating in the broad plain of Sula, near the mouth of the River Ulua.

Following the course of the Sierra Madre, we find it, at the distance of a few leagues from the Mountains of Merendon, involving itself in a tangled mass or knot of mountains known as the Mountains of Selaque. Intermediately lies the large valley or plain of Sensenti, in

which the Rio Santiago takes its rise. This great plain is not less than thirty miles long, by from ten to twenty wide, and is almost shut in by mountains. Its only outlet is the narrow valley, or rather gorge, through which it is drained by the Rio Higuito or Talgua.

The Mountains of Selaque constitute one of the principal centres of elevation in Honduras, their summits rising to the height of between seven and eight thousand feet. The uppermost branch of the River Santiago, called at various points Talgua, Higuito, Alas, and Rio de la Valle, bends around these mountains on the north and west. Another branch, the Rio Mejicote or Rio Grande de Gracias, separates them on the east from the Mountains of Puca, with their lofty peak, and from the terraced Mountains of Opalaca or Intibucat, with their truncated summits and elevated plains, on which flourish the cereal grains and the fruits of the temperate zone.

Next in order comes the valley of the Rio Sta. Barbara, one of the principal affluents of the Santiago, which, below the point of junction, is often called the Venta. The Rio Sta. Barbara, like the Santiago, has its sources in high plains, the principal of which is the valley or plain of Otoro, only separated from that of Comayagua by the group of mountains known as the Montecillos. These are formed by the true range of the Cordillera, which turns abruptly from its general east by south course to a direction due north, and finally loses itself in diverging ranges toward the coast. These divergences create another mountain-bound val-

ley, in the centre of which lies the lake of Yojoa or Taulebé.

We now come to the most remarkable topographical feature of the state, considered in reference to the facilities which it offers for the grand economic purposes of travel and commerce between the oceans. At the eastern base of the Montecillos range, where the interruption of the Cordillera is complete, lies the plain of Comayagua, from which, extending due north to the Atlantic Ocean, is the valley of the Rio Humuya, and, extending due south to the Pacific, is the valley of the Rio Goascoran—altogether constituting a great transverse valley reaching from sea to sea. These two rivers may be said to rise in the same plain, for they both have their sources side by side in the slight dividing ridge or swell of land which defines its southern extremity.

The plain of Comayagua has an extreme length of perhaps forty miles, by a general width of from five to fifteen miles. Its longest axis is nearly due north and south, coinciding with the general direction of the two rivers already named. It slopes almost imperceptibly toward the north, and is watered by the Rio Humuya, which runs through its centre. It is separated from the considerable plain of Espino on the north by low hills, which alone prevent the two plains from being regarded as one. Together, these two plains, both of surpassing beauty of scenery, fertility of soil, and salubrity of climate, occupy nearly one-third of the distance between the Bay of Honduras and that of Fonseca.

Passing the plain of Comayagua, the Cordillera is resumed in a great mass or group of high mountains, known toward the north as the Mountains of Comayagua, and on the south as the Mountains of Le Paterique. They extend about eighty miles from north to south, and near the centre send off a high range known as the Mountains of Ule, around which, almost describing a circle, flows the Rio Choluteca.

The valley of the Rio Choluteca, after that river turns the flank of the Ule Mountains, is broad and fertile. As it approaches the Bay of Fonseca, it widens into extensive, densely-wooded alluvions, which nevertheless are so high as to be above overflows, and are without swamps or marshes. Dependent upon this valley is a subordinate one, of great beauty, called Valle de Yuguare.

Nearly to the eastward of the high Mountains of Comayagua, after passing the river and valley of Sulaco, we come to a knot or group of high mountains, called the Mountains of Sulaco. Standing almost in the centre of the state, it sends the streams which have their rise in its gorges to every point of the compass. Here the great River Wanks or Segovia, reaching the Atlantic at Cape Gracias á Dios, takes its origin, as do also the large rivers Aguan or Roman, and Tinto or Black River, flowing north into the Bay of Honduras, and the tributaries of the Choluteca, flowing south into the Pacific. From this elevated centre also radiate several extensive ranges of mountains, scarcely inferior to their parent in elevation. That which extends to the north-

east, separating the numerous rivers flowing into the Bay of Honduras from the valley of the Rio Wanks or Segovia, is called the Mountains of Misoco. The range which extends to the north, and which terminates its numerous spurs in the high peaks of Congrehoy, frowning over the Bay of Honduras, is called the Mountains of Pija, while the chain which pursues a tortuous course to the south-west, and finally skirts the northern border of the transverse valley of the Nicaraguan lakes, is called the Mountains of Chili. The latter may be regarded as the true Cordillera. At the base of the Mountains of Sulaco, to the east and north-east, are the broad and elevated plains or terraces of Olancho and Yoro, celebrated, even in Central America, for the number and excellence of their cattle. The rivers on this slope of the continent abound in gold-washings, and may perhaps furnish, when the country becomes better known, a supply of gold scarcely less than that which has been obtained from California. Unfortunately, most of the wide region between the Mountains of Sulaco and the Atlantic, embracing nearly half of the whole territory of the state, is uninhabited except by detached Indian tribes. But little is known of the country, except that it is very diversified, and rich in the nature of its soil and the variety of its minerals.

The northern coast of Honduras presents a diversified surface. A portion is flat, and covered with vast growths of timber. Among the precious woods, the mahogany is most abundant. It would be a great mistake to suppose this coast to be of the same character with that

known as the Mosquito Shore, where the land is low, and filled with hundreds of swamps and lagoons. The mountains, as I have already said, often come down to the sea, or rise not very far inland. The Mountains of Omoa shadow over the Bay of Amatique, and those of Congrehoy and Poyas are conspicuous landmarks from the ocean, which breaks almost at their feet.

Combining my observations, I think that the average elevation of the Cordillera of Honduras, exclusive of isolated peaks, may be estimated at not less than 6000 feet. The plateau of Tegucigalpa has an average elevation of 3400 feet, that of Intibucat 5300 feet, and that of Sta. Rosa, or, rather, of the Department of Gracias in general, of 3200, and the plain of Comayagua of 1900 feet. The inhabited central portions of the state, or what may be called the grand plateau of Honduras, has an average elevation of 3200, or something less than one-half that of the great plateau of Mexico. It is calculated that temperature diminishes in the proportion of one degree of Fahrenheit for every 334 feet of elevation. The average temperature at noon at the mouth of Black River, on the northern coast of Honduras, as shown on a preceding page, is a little less than 70° Fahr. These elements of calculation would therefore give 60° Fahr. as the average noonday temperature of the plateau of Honduras, which is equal to about 55° of mean average temperature.

Topographically, therefore, Honduras has the greatest diversity of surface and of elevation; broad alluvions, fertile valleys, wide and elevated plains, and mountain-

terraced to their summits, collectively affording almost every possible variety of climate, soil, and production. These are conditions favourable to nurturing and sustaining a large population, and point unerringly to the ultimate, if not the speedy, development here of a rich and powerful state. A stable and liberal government, like that at present existing, and which makes the material interest of the country its primary care, with the opening of new and improved means of communication, cannot fail to attract to Honduras an emigration from Europe relatively not inferior to that which flows in a constant and increasing flood upon the shores of the United States.

CHAPTER III.

RIVERS, LAKES, AND LAGOONS.

THE rivers of Honduras are numerous; some of them of large size, and deserving of a particular notice. The Chamelicon, Ulua, Aguan or Roman, Tinto or Black River, Patuka, and Wanks or Segovia, flowing into the North Sea, and the Choluteca, Nacaome, and Goascoran, flowing into the Bay of Fonseca, are the most important. Of these, the Ulua, Aguan, Tinto, Patuca, Segovia, and Choluteca are naturally capable of navigation, to a greater or less extent, for vessels propelled by steam.

River Chamelicon.—The Chamelicon is a long stream, but drains a comparatively narrow section of country, and consequently does not pass a very large body of water. It is, moreover, rapid and full of shallows.

River Ulua.—The Ulua, on the other hand, which is the largest river in Honduras, drains a wide expanse of territory, comprehending nearly one-third of the entire state, and probably discharges a greater amount of water into the sea than any other river of Central America, the Wanks or Segovia perhaps excepted. Its principal tributaries are the Santiago, Sta. Barbara, Blanco,

Humuya, and Sulaco, and below their point of junction it is a majestic stream. It has a bar at its mouth, on which there is but nine feet of water, but this, except during the prevalence of high winds, may be passed by vessels drawing seven feet. Light-draught steamers can ascend as far as the junction with the Humuya, and in the rainy season pass up this stream to its union with the Sulaco. It is also said that similar vessels may ascend the Santiago to a point some distance above its junction with the Sta. Barbara. Where the Santiago is crossed by the road leading from Yojoa to Omoa, it is a deep and wide stream, with from eight to twelve feet of water in its channel. The Rio Blanco is narrow, but deep, and could be used advantageously as a means of local communication.

Altogether, the Ulua and its tributaries offer many facilities for water-communication with the interior, which cannot fail to be made useful as the resources of the country become developed. Nor is it impossible—on the contrary, from the volume of water which passes through them, it is more than probable—that both the Chamelicon and Santiago may be artificially improved, so as to answer an adequate purpose in bringing down to the coast and to a market the valuable products of the naturally rich departments of Sta. Barbara and Gracias. But, should this anticipation not be verified, it is certain that the valleys of these rivers offer facilities for the construction of carriage or rail-roads whenever circumstances shall require their substitution for the present slow and expensive method of transportation on mules.

The Ulua, from the junction of the Santiago or Venta, flows through a plain of great extent, which was called by the conquerors the plain of Sula. The soil on its banks is of extreme fertility. During the height of the rainy season, some portions of the country to the eastward of the river are overflowed, as also portions of the lands between it and the Chamelicon. Indeed, at this time, the waters of the two streams frequently intermingle.

River Aguan.—Rio Aguan, or Roman River, is a large stream, rising in the Mountains of Sulaco, and falling into the sea a little to the eastward of Truxillo. Its total length is about one hundred and twenty miles. Its largest tributary is the River Mangualil, celebrated for its auriferous sands and extensive gold-washings. In its course, it flows past the town of San Jorge Olanchito, through the rich valley of the same name, and the equally rich valley of Sonaguera. The portion of Honduras lying around its sources and on its banks is unsurpassed by any portion of the world for its fertility, its valuable woods, mineral, and other products. It is reported to have a comparatively favourable bar (carrying from five to seven feet of water), and to be practicable for boats of light draught for eighty miles. Its capacity for purposes of transportation is a question of much interest, for reasons which are obvious from what has been said of the resources of the country which adjoins it.

Rio Tinto, Negro or Black River, which, a short distance from the sea, takes the name of Poyer, Poyas, or

Polyer River, is a considerable stream, and is said to have a course of about one hundred and twenty miles. In common with most of the rivers on the coast, it has a bad, variable bar at its mouth, on which the water ranges at different seasons, at from five to nine feet. Small vessels may ascend from forty to sixty miles. It was on this river that the English had a fort and some settlements during the last century, which were, however, evacuated in 1786, in conformity with the treaty that year negotiated between England and Spain. Subsequent attempts were made to found permanent establishments there, one under the auspices of "the Cazique of Poyas," Sir Gregor M'Gregor; and another in 1839–41 by an English company, under the countenance of the British settlement at Belize; but all have proved signal failures. The last adventurers named the district "Province Victoria," and made an unimportant establishment, to which they gave the name of Fort Wellington. An account of this expedition was written by Thomas Young, a person connected with it in some official capacity, which conveys considerable information concerning this portion of the coast. He describes that portion of the stream called Rio Tinto as flowing through a low, but rich and densely-wooded country, which, a few miles higher up, becomes swampy, and covered with willow-trees. At the point where a branch of the main stream diverges to connect with the Criba, or Black River Lagoon, commences the savanna and pine-ridge country, where some Sambos have a settlement. The savanna supports a few cattle, but the land

is poor, and unfit for cultivation; yet, notwithstanding its aridity, it is very beautiful. It extends several miles in every direction, and appears to have been laid out by some landscape-gardener. It is relieved by clumps of papter-trees and low shrubbery, which are the haunts of many deer. There are also great quantities of lofty pine-trees. Some of the pine-ridges on this coast are very extensive, and are valuable for their timber, which is the red pitch-pine, rich in turpentine. This timber, from its length and straightness, is not only very useful for building, but also for masts and spars. In the pine-ridges, many mounds of earth rise above the level surface to the height of eight or ten feet, and have broad tops large enough for dwelling-houses. "Some parts of the savanna, however, are swampy, and are the nurseries of annoying insects." Above this pine-ridge the river is bordered by a continuous "bush," relieved higher up by many gracefully-bending bamboos, and the tall cabbage-palm, the crown of which affords food, and the straight trunk, when split, boards for native buildings. At a point sixteen miles above the mouth of the river, the English anciently had an establishment, and here the sarsaparilla and cacoa begin to make their appearance. Near this point had been anciently a coffee plantation, at a place called "Lowry Hill," and near by had been a sugar estate, the boilers for which still remained at the time of Young's visit. "Thousands of banana-trees, loaded with fruit, were growing spontaneously." The ground here becomes elevated, and the Poyer, or Sugar-loaf Peak, two thou-

sand feet high, shuts off the view seaward. Up to the "Embarcadero" the river is much obstructed by snags, which, even in small boats, it is difficult to avoid. Young adds, that "the passage from Fort Wellington to the Embarcadero, during a flood in the river, takes a pit-pan, with six men, three days and a half. The descent, under similar circumstances, can be made in a day and a half." The Embarcadero is estimated by Roberts (Strangeways following his authority) as ninety miles from the sea, but this is probably an over-estimate.

In the Poyas River proper the snags are not numerous, but the current is strong. The mahogany, which has been cut off below, begins to appear. The scenery also changes, the banks becoming high and rocky, and the bed of the stream studded with sunken rocks. The river now begins to wind among what are called the Poyer Hills or Mountains, and little is known of its character beyond that it is rapid and tortuous. At some point above the Embarcadero it divides into two principal branches, respectively called Agalta and Paon. This point is represented by Señor Herrera, Jefe Politico of the Department of Olancho, who went down the Paon and Poyas in 1840, as "thirty-five leagues from the valley of Olancho, the path lying through steep and broken mountains, and crossing the Paon not less than seventy-three times—a river," he adds, "of much water, and very stony." He reported emphatically against any attempt to open communication between the settled districts of Olancho and the sea by way of the Poyas River and its branches.

The Poyas Indians have a number of settlements among the hills of the same name, on the upper tributaries of this river. Young reports the land about the Poyer Hills as exceedingly fertile, and the country healthy.

Black River Lagoon, called Criba by the Spaniards, according to Roberts, who visited it, is about fifteen miles long by seven wide. It contains several small islands, which were cultivated during the English occupation of Black River. At this period they erected considerable works of defence, which were enlarged by the Spaniards after the English evacuation, the ruins of which are still conspicuous. On the borders of the lagoon are some extensive savannas and pine-ridges, from which the former settlers obtained considerable quantities of pitch, tar, and turpentine.

The Patook River (written *Patuca* by the Spaniards) enters the sea by a principal mouth about midway between Cartine (also called by the Spaniards Brus, and by the English Brewer's) and Cartago, or Carataska lagoons. It appears to be the largest river on the entire northern coast of Honduras, between the Ulua and Herbias, or Cape Gracias á Dios rivers. It takes its rise in the very heart of the Department of Olancho, in the vicinity of the large Spanish town of Juticalpa (capital of the department), and the great Indian town of Catacamas. The principal streams which unite to form the Patuca are the rivers Jalan, Tinto de Olancho, and the Guyape (or Guallape) and Guallambre. The two last named are celebrated for their extensive gold-

washings, to which reference is elsewhere made. The geographical basin in which this river collects its waters is one of the richest and most beautiful in all Central America. It is separated from the transverse valley of the Rio Herbias or Segovia by a high, narrow chain of mountains, steep on the south, but subsiding by terraces toward the north. Señor Herrera, in his report already alluded to, states that the Patuca is navigable for canoes as high as the junction of the Jalan with the Guyape. The river, however, above the coast alluvions has a powerful current, and is interrupted by rapids called "*chiflones.*" At the mouth of the Guallambre is what is called Puerto de Delon; below this point are numerous "*chiflones,*" the principal of which are those of Campanera and Caoba. At one point the river is compressed between high, precipitous walls of rock for a long distance. The place is called "*Portal del Infierno,*" or Hell's Gate, and probably gave rise to the story recorded by Roberts, "that at one part of its course the river has forced its way through a range of hills, one of which is completely excavated by the stream, which thus passes through a natural arch, as through a cavern, for a distance of nearly five hundred yards." The principal affluents below the Guallambre are the following, in the Poyas dialect—viz., Rio Guineo, Rio Cuyamel, Rio Amac-was (River of Bee-hives), Rio Was-pres-senia (Roaring Water), Rio Uampu, and Rio Upurra (River of Retreat).

The principal mouth of the Patuca opens directly into the sea, and is obstructed by a bad, shifting bar, on

which there is generally from eight to ten feet of water. Sometimes, after heavy gales, it is deeper. The tide, which is slight, nevertheless ebbs and flows in the river for some miles. The land about the mouth of the river is mostly savanna, which, however, according to an account given in 1844 by Messrs Haly, Upton, and Deacon, unlike most of the savannas on the coast, is not swampy, and furthermore has a black and fertile soil. An extensive pine-ridge is found about thirty miles up the river, above which, as also down to near the sea, the banks are thickly wooded, having a great variety of soil—red clay, loam, and black mould—all admirably adapted to the cultivation of sugar, coffee, cotton, cacao, indigo, &c. Large quantities of mahogany, cedar, rose, and Santa Maria wood are found throughout the whole length of the river valley, while the pine-ridges are capable of furnishing inexhaustible quantities of pine wood and oak. Exclusive of valuable woods, the forests produce abundance of sarsaparilla, India-rubber, gum copal, and vanilla. Mr Haly pronounces the Patuca "navigable for small steamers" to the vicinity of the Spanish settlements in Olancho, "or at least to the foot of the falls" (*Portal del Infierno*), and that "it is the best river on the entire coast, excepting that of San Juan de Nicaragua, for commercial intercourse with the interior." He thinks, also, that an establishment at its mouth, supported by improvements in the river and by roads in the interior, would soon become the most important point on the coast east of Omoa. According to Haly, it takes *seventeen days* to ascend the river to

the Spanish settlements in Olancho, which implies that the current must be very strong, and navigation far from easy. He estimates a day's voyage up the stream at thirty miles, and adds, that "the Spanish towns are therefore five hundred and ten miles above the mouth of the river." This estimate is simply absurd, as that distance in the direction of the course of the river would carry the traveller not only across the continent, but far out of sight of land in the Pacific Ocean! Distances in Central America, however, are always over-estimated, or, to use a saying of the country, "depend upon the quality of your horse." In other words, what is five leagues with a good animal is ten with a bad one. Roberts, more moderate, estimates the length of the Patuca at one hundred and fifty miles, and Strangeways at one hundred miles. Various establishments of Caribs and Sambos exist on the lower part of the river, and the Toacas and Poyas (called Payas by the Spaniards) on its upper waters and its various tributaries.

An arm of the Patuca, called Toomtoom Creek, diverging from the main stream a short distance above its mouth, connects it with Brus or Brewer's Lagoon. This lagoon has a wide mouth, but will not admit vessels drawing more than six or seven feet. Three or four miles from its entrance is an island of moderate height, about two miles in circumference, fertile, formerly fortified by the English, and seems to have been extensively cultivated. This lagoon abounds with fine fish, has plenty of water-fowl, and large beds of oysters. "The country to the northward," says Roberts, "is

beautifully diversified by gently-rising hills, valleys, and savannas, and the soil, generally speaking, is excellent."

Carataska or *Cartago Lagoon* "is of very considerable extent, varying in breadth, and having, in some places, the appearance of several lagoons running into each other, in various directions, for the most part parallel to the coast, but nowhere exceeding twelve miles in breadth." It has two entrances, one a small creek called "Tibacunta." The principal mouth is wide, with thirteen to fourteen feet of water on the bar. The lagoon is estimated at about thirty-six miles in length. It is for the most part shallow, varying in depth from six to twelve and eighteen feet. Captain Henderson, who visited it in 1804, describes the country near the Sambo village of Crata (Croatch or Cartago) as "a spacious savanna, of very considerable extent, forming an entire level of unbroken verdure and finest pasturage, skirted on one side by the waters of the lagoon, and on the other bounded by gently-rising hills. The clumps of pine and other lofty trees, interspersed at pleasing distances over the whole, gave the view all the appearance of cultivated art, and afforded a most agreeable relief to the eye." Several small streams discharge into the lagoon from the south, viz., Ibentara, Cartago, Locca, Warunta, and Kaukari. It has also three considerable islands. There are a number of villages of Sambos around this lagoon, who raise a few cattle, but do not cultivate the soil to any extent, being grossly indolent and improvident. "The land in the vicinity

of the lagoon," according to Roberts, "consists almost entirely of extensive and beautiful savannas, covered with the finest pasturage, and abounding in deer and other game. There are few pine-trees at Crata, but on the opposite or south side there are ridges growing timber as large as any on the coast. Behind these ridges the savannas are bounded by hills, whose summits are covered by the most luxuriant vegetation. On the banks of the streams in the interior there is excellent mahogany, and cedar of the finest quality and largest size. Pimento and various other valuable plants are also indigenous."

Rio Wanks, or *Segovia* (also called Herbias, Yare, Cape, Coco, and Oro), which enters the sea at Cape Gracias á Dios, is certainly the longest, if not in other respects the largest, river in Central America. It rises in the Department of Nueva Segovia, in the extreme north-west corner of Nicaragua, within fifty miles of the Bay of Fonseca, and flows north-east into the Carribbean Sea. For the greater part of its course it is the boundary between Honduras and Nicaragua. Its total length cannot be less than three hundred and fifty miles. For two hundred and fifty miles above its mouth it flows through an almost unbroken wilderness, among high mountains, and for a great part of its way in a rapid current over a very broken and rocky bed. It is nevertheless occasionally navigated by canoes to within a few leagues of the town of Ocotal (or Nueva Segovia). Señor Don Francisco Irias, of the town of Ocotal, descended it in 1842 in a canoe, and returned by the same

means. He started from a place called Coco, which, from his account, appears to be not far from Ocotal. From that point to another called Pailla, he represents the river as not much obstructed. "Just above Pailla there falls into the principal river a large and beautiful stream, called Bocay, the mouth of which is near that of the large river Pantasma, which enters from the right. There are other medium-sized tributaries, among which is the Poteca, rising on the left base of the mountains bounding the great valley of Jalapa, at a point called Macarali. The Poteca is too rough for navigation. There is also another stream, called Coa, which flows from the south, among high and steep mountains. It abounds in fish, and the forest which borders it is rich in honey, and also in valuable woods."

Below Pailla commence a series of rapids or falls, which follow each other in quick succession, some of which can only be passed by unloading the canoes, and carrying them over land. "These are the sole obstructions," continues Señor Irias, "to the navigation of the river from the point of embarkation to the sea at Cape Gracias á Dios. At present, the descent occupies about ten days. Two days are taken up in descending the rapids, and four in ascending them. It will be observed that only about one-fifth of the river is in any way obstructed. The delay in the voyage is chiefly occasioned by unloading and loading at some of the rapids. From Tilras and Quipispe, the final rapids, to the Cape, there is scarcely any current, and it is necessary to use the oars. This part of the country through which the river

passes is very beautiful, consisting of open plains covered with grass and scattered trees. It is well adapted for grazing, and cattle and horses might be raised here for exportation to Cuba and Jamaica. . . . In ascending the river from the Cape, I was occupied twenty days. . . . Cape Gracias á Dios unfortunately has no commerce, but it has a favourable and picturesque situation. It has in front a salt lagoon of great capacity, separated from the sea by a sandy strip of land covered with mangrove-trees. The entrance is to the south. . . . It is lamentable that so beautiful a section as that around the Cape should have no other population except a few worthless Moscos (Mosquitos or Sambos), unable from want of instruction, as unfitted by disposition, to attain to any improvement in the future."

In 1688, a body of French and English pirates, about three hundred in number, abandoned their vessels in the Gulf of Fonseca, forced their way across the continent, through Nueva Segovia, and down this river to Cape Gracias. They descended the stream on small rafts, which they called *pipiries*, "pitiful machines," each supporting two or three men. Many were drowned in the descent, of which De Lussan, one of the leaders, has left us an animated, though perhaps somewhat exaggerated, description. He says: "This river springs in the mountains of Segovia, and discharges itself into the North Sea at Cape Gracias á Dios, after having run a very long way, in a most rapid manner, over a vast number of rocks of prodigious bigness, and by the most frightful precipices that can be thought of, besides a

great many falls of water, to the number of at least an hundred of all sorts, which it 's impossible for a man to look on without trembling, and making the head of the most fearless to turn round, when he sees and hears the water fall from such an height into these tremendous whirlpools. In short, the whole is so formidable that there are none but those who have some experience can have right conceptions of it. But for me, who have passed these places, and who, as long as I live, shall have my mind filled with these risques I have run, it 's impossible I should give such an idea hereof but what will come far short of what I have really known of them." *

De Lussan speaks of the large quantities of bananas which they found on the banks of the river, " which kept them from starving ;" for, although there was "very good game," their " powder was wet, so that they could not go a-hunting." He describes the lower part of the river as "very good, and the stream very gentle."

Roberts, who spent some months at Cape Gracias, describes " the soil in that neighbourhood as very poor, and, with the exception of a few spots, on which there are small patches of cassava, incapable of producing anything better than a coarse, rank grass, fit, however, for pasturage." The few people who live there depend upon those who dwell a considerable way up the river for their supply of plantains, maize, and other provi-

* "A Journal of a Voyage made into the South Sea by the Bucaniers or Freebooters of America," p. 171. By the Sieur Raveneau de Lussan. London, 1704.

sions. Game is scarce, and there is a deficiency of good water, so that the Cape presents no advantages for an agricultural settlement, although holding out inducements for grazing establishments and commerce.

The river enters the ocean some distance to the northward of the bay or harbour, with which, however, it is connected by a creek or shallow canal, passable for canoes, and which might be deepened so as to enable small vessels to avoid the dangerous bar of the river itself, on which there is seldom more than four or five feet of water. "For forty or fifty miles above its mouth," continues Roberts, "the land is low, sandy, and poor, with occasional ridges of pitch-pine, and some patches of good mould." There is little doubt that the Rio Segovia might be made to answer a useful purpose in the development of the country.

Three rivers of note flow from the interior of Honduras southward into the Pacific. These are the Goascoran, Nacaome, and Choluteca. The last named is much the largest. It rises in the Lepaterique Mountains, at the head of the plain of Comayagua, flows eastward until it reaches the meridian of Tegucigalpa, then turns abruptly north, flowing past that city, and after describing a circuitous course, runs nearly south into the Gulf of Fonseca, having a total length of about one hundred and fifty miles. Its course illustrates what I have already said of the peculiarities of the mountain groups of Honduras. The Lepaterique Mountains become *knotted* and much broken up in the great bend of this river, which embraces one of the richest mineral dis-

tricts of Central America. The mines of Yuscuran, San Antonio Mineral, Sta. Lucia, San Juan Cantaranas, &c., all lie within this bend. The valley of the Choluteca is narrow until it reaches the point where it takes a southern direction, whence it gradually expands into broad alluvions on the gulf. In the midst of these alluvions is situated the town of Choluteca (anciently Xeres de la Frontera), a place of considerable size. The Yuguare is a tributary of the Choluteca. It flows through a broad valley, distinguished, even in Honduras, for its beauty and fertility. "Bongos," and other native boats of light draught, ascend the Choluteca to considerable distances. Indeed, the river, for ten or twelve miles from the gulf, can only be regarded as an estuary. Its banks, throughout the lower part of its course, are well wooded with cedar, mahogany, and other trees, the value of which is much enhanced by the facility with which they may be reached from the sea. The river will be of great utility in working the numerous rich silver mines which are found in the vicinity of Corpus, and in the hills which skirt its valley.

The Rio Nacaome collects its waters on the south side of the Lepaterique Mountains, while the Choluteca drains their northern slope. It is not a long stream, but passes a considerable body of water. It is very rapid, and is not available for purposes of navigation except during the rainy season, when it may be ascended by canoes as high as the town of Nacaome. Below that place it flows through alluvions; and above, to the town of Pespiri, it has a broad valley. Beyond that point it

finds its way in deep gorges among the hills and mountains. Its principal tributary is the Moramulca.

The River Goascoran rises among the low hills which lie at the head of the great plain of Comayagua, and its valley may almost be regarded as a prolongation of this plain. It has its sources in the same savannas with those of the Humuya, which flows northward into the Bay of Honduras. Its course is nearly due south, and, in conjunction with the River Humuya, it opens a great transverse valley, completely cutting through the Cordilleras, and extending from sea to sea. From this circumstance it derives its principal importance. Its valley consists of a succession of terraces, of greater or less width, with no alluvions proper until within ten miles of the Gulf of Fonseca, where the ground spreads out in a broad, low, and fertile plain. At Caridad, where the river breaks through the Lepaterique Mountains, the valley is much compressed, but this is only for a few hundred yards. The first town on the river is Goascoran, above which occur Aramacina, Saco, Caridad, San Antonio del Norte, Aguanqueterique, and San Juan. The entire length of the Goascoran is between seventy and eighty miles. During the rainy season it passes a large body of water, but during the dry season it can everywhere be forded without difficulty. From the gulf upward to the Rio Pescado, which enters it from the west, a few miles below Caridad, it constitutes the boundary between the states of San Salvador and Honduras. The principal importance of this stream, as already intimated, consists in

its dependence on the plain of Comayagua, whereby a favourable railway route is opened between the two seas.

Lakes.—The Lake of Yojoa, or Taulebé, is the only lake of note in Honduras. Very little was known of its extent or character until visited by Lieutenant-Colonel Stanton, R.E., under the auspices of the Honduras Railway Company, in February 1858. It is about twenty-five miles in length by from five to eight broad, with an average depth of from three to four fathoms, and is elevated 2050 feet above the sea, or eighty-five feet higher than the site of the city of Comayagua. It is remarkable as having not less than three outlets. From its southern extremity, which is about eight miles broad, flow out two large streams, the Rio Jaitique and the Rio Sacapa, which join each other fifteen miles from the lake, forming the Rio Santa Barbara, an affluent of the Rio Venta. Of these two streams the Jaitique is much the largest, in many parts navigable for canoes, but the Sacapa has the singular feature of flowing for upward of a mile under ground. The subterranean passage commences about two miles from the lake. The third outlet of the lake flows from its northern extremity, and is called Rio Blanco, a narrow, but deep and rapid stream, falling into the Rio Humuya. Half a mile from its point of *débouchure* the Rio Blanco also enters a subterranean passage, flowing for a mile and a half underground. Nor do the singular features of the lake terminate with this enumeration. On its right (north-east) shore there is a large hacienda, called "Hacienda de Agua Azul," within the boundaries of which an

immense spring of clear blue water, seventy-five feet across, rushes from the earth, supplying a stream which flows into the lake quite equal in volume with any of its outlets. This spring, and the circumstance that both the Sacapa and Blanco flow through subterranean passages, favour the belief that limestone is the predominant geological feature of the country; but upon this point I have no information. It is said that the lake abounds in fish, and that, during the prevalence of northers, its waves run with great force, utterly preventing the passage of canoes. The country immediately around the southern extremity of the lake is low and swampy, but beyond, and in the neighbourhood of Taulebé and San José, it spreads out in beautiful plains and valleys of the greatest fertility. Between these and the plain of Comayagua lies the high plateau of Siguatepeque, 3600 feet above the sea, from two to five miles broad, and thirty miles long. The climate here is temperate, the blackberry or bramble of our country abounding everywhere, and the soil fertile and capable of producing wheat, potatoes, and the various products of temperate latitudes.

Altogether, therefore, Lake Yojoa, presents more singular and interesting features than any other body of water either in North or Central America, and deserves a closer examination than has yet been given to it.

CHAPTER IV.

BAYS, PORTS, AND HARBOURS.

THE Bay of Fonseca is beyond dispute one of the finest ports, or "constellation of ports," on the entire Pacific coast of the American continent. It is upwards of fifty miles long, by thirty in average width. Its entrance, from the sea, is about eighteen miles wide, between the great volcanoes of Conchagua (3800 feet in height) and Coseguina (3000 feet in height), which stand like giant warders upon either hand, and constitute unmistakable landmarks for the mariner. On a line across this entrance, and about equidistant from each other, lie the two considerable islands of Conchaguita and Mianguera, and a collection of high rocks called "Los Farellones," which, while they serve to protect the bay from the swell of the sea, divide the entrance into four distinct channels, each of sufficient depth of water to admit the passage of the largest vessels. These islands are high; Conchaguita being not less than 1500, and Mianguera about 1200 feet in height. They were formerly inhabited by Indians, who withdrew to the mainland to avoid the oppressions of the freebooters during the period of their ascendancy in

the South Sea. Both of these islands belong to San Salvador.

The three states of San Salvador, Honduras, and Nicaragua touch upon this bay. Honduras has, however, much the largest frontage. The port of La Union, on the subordinate bay of the same name, is the principal Pacific port of San Salvador. Nicaragua has also a nominal port on the "Estero Real," an estuary of the bay, which penetrates that state in the direction of the Lake of Managua. Honduras has the free port of Amapala on the island of Tigre, which occupies a commanding position nearly in the centre of the bay.

The subordinate bay of La Union, from the island of Punta Sacate to its head, is about eight miles in length by four in breadth. Its northern half, however, is shallow, and almost dry at low water, and it is said that the anchorage is yearly becoming narrower, from the sand washed down by the rivers Goascoran and Sirama, both of which flow into it. There are also two other subordinate bays, viz., that of Chismuyo, to the northward of the large island of Sacate Grande, and which receives the Rio Nacaome, and that of San Lorenzo, a fine body of water to the eastward of the same island. At the head of this bay is situated the nominal port of San Lorenzo, which is only a dependency of that of Amapala. The principal estuary of the bay is that called "El Estero Real," which extends into Nicaragua behind the volcano of El Viejo. It starts from the extreme southern point of the bay, and penetrates inland for a distance, including its windings, of not far from

fifty miles. It has an average width of two hundred yards, and, for at least thirty miles from its mouth, a depth of not less than three fathoms. Sir Edward Belcher went up this estero in 1838, in the *Starling*, a vessel drawing ten feet of water, for thirty miles. In his own language, he "might easily have gone further, had the wind permitted." This estero extends to within twenty or twenty-five miles of Lake Managua, from which it is separated by the plain of Conejo.*

The principal islands in the Bay of Fonseca are Sacate Grande, Tigre, Gueguensi, and Esposescion, belonging to Honduras and Punta Sacate, Martin Perez, Conchaguita, and Mianguera (already described), belonging to San Salvador.

Sacate Grande is considerably the largest, and, in common with the others, is of volcanic origin. It is seven miles long by about four in breadth. The southern half is elevated, rising in a number of peaks to the height of two thousand feet. These elevations slope off gently to the northward, and subside finally in level alluvial grounds of exceeding fertility. These, as well as the slopes descending toward them, are densely wooded with cedar, mahogany, willowisti, and other valuable trees. The peaks themselves, as well as their more abrupt southern slopes, are covered with grass, called by the Indians *sacate*, whence the island derives its name. These grassy slopes afford pasturage for

* I have elsewhere indicated this line as the most feasible route for a ship canal, *via* the River San Juan and Lakes Nicaragua and Managua. See Part III. of "Nicaragua: its People, Scenery, Monuments, and proposed Interoceanic Canal."

great numbers of cattle, and it is said that as many as four thousand have been pastured upon the island at a single time. For most of the year, and except in very dry seasons, there are running streams of water on the northern slopes of the island. Abundance of water, however, may be obtained by digging through the upper lava crusts, beneath which, as is frequently the case in volcanic countries, flow constant streams. The grassy peaks of Sacate Grande, as well as of the other islands, afford a source of ever-varying and eternal beauty. With the commencement of the rainy season, they are clothed with the delicate translucent green of the springing grass, which deepens as the season advances both in colour and thickness, until all the asperities of the ground are matted over with an emerald robe of luxuriance. Then, when the rains cease and the droughts commence, the grass becomes sere, and finally of a brilliant yellow, and the islands appear as if swathed in a mantle of golden grain, which Ceres herself might envy. Then comes the torch of the *vaquéro*, and the sky is lurid with the blaze of the rapid flame, which clears the ground for the future fresh and tender blade, but leaves it browned and purpled, in sober contrast with its previous gayer garniture of gold and green.

The island of Gueguensi may be regarded as a dependency of Sacate Grande, from which it is separated only by a narrow and shallow strait. It has a single eminence of great beauty and regularity. The rest of the island is level, chiefly savanna, fertile, and well adapted to the cultivation of rice, cotton, and sugar.

It is fringed by a narrow belt of mangroves, which would lead the careless observer to suppose the ground within to be low and swampy.

The island of Tigre, from its position, is the most important island of the bay. It is perhaps fifteen miles in circumference, rising in the form of a perfect cone to the height of two thousand five hundred feet. The slope from the water, for some distance inward, is very gentle and admits of cultivation. Upon the southern and eastern shores, the lava forms black, rocky barriers to the waves, varying in height from ten to eighty feet; but upon the northward and eastward there are a number of "playas" or coves, with smooth, sandy beaches. It is facing one of the most considerable of these that the port of Amapala is situated. The water in front is deep, with clear anchorage, where vessels of ordinary size may lie within a cable's length of the shore.

This island was a favourite resort of the pirates, and it was here that Drake had his dépôt during his operations in the South Sea. At that time, in common with Sacate Grande, and the other principal islands in the bay, it had several considerable towns of Indians, who, however, soon afterward retired to the mainland to avoid their piratical persecutors. From that time it remained almost entirely uninhabited until about 1838, when some enterprising merchants conceived the idea of making it a free port. They accordingly obtained the requisite action from the Government of Honduras, and the free port of Amapala was accordingly established. Since then it has rapidly increased in population, and

is now by far the most important point in the Gulf, and undoubtedly destined to become the most important port in the Pacific between San Francisco and Valparaiso. It has a salubrious climate, resulting from its admirable ventilation, the proximity of high grounds, and absence of swamps. The markets of three states are accessible from it, and it may be reached from the sea much more easily than any other point in the bay, while the largest vessels of the line may lie in perfect security in its waters. The actual population may be estimated at about two thousand. It contains several large wholesale mercantile establishments, with the requisite warehouses, and a number of substantial and commodious dwellings. A direct trade is carried on between Amapala and Bremen, Liverpool, Marseilles, Genoa, New York, San Francisco, Panama, and Valparaiso. The exports are indigo, hides, tobacco, bullion, silver and copper ores, and Brazil-wood, together with maize to ports on the coast. The cultivation of sugar has been introduced on the mainland, with a view of supplying the Californian market.

Lying in front of the port of Amapala, to the northwest of the island of Tigre, is the island of Esposesion. It is high, with a large "playa" on its southern side, but is deficient in water. This, however, might be supplied to every necessary extent by wells of the requisite capacity. The same remarks hold good in respect to the considerable island of Punta Sacate. The little island of Martin Perez is comparatively low and level, and has a rich, productive soil. It retains its verdure

during most of the year, and is green when the other islands are sere and yellow from the drought. The remaining islands, of which there are many, may be described as volcanic domes, supporting only enough soil to nourish the grasses which disguise the rough and blistered rocks of which they are composed.

The bay abounds in fish, and its shores swarm with every variety of water-fowl—cranes, herons, pelicans, ibisis, spoonbills, ducks, curlews, darters, &c., &c. Large beds of oysters are found in the shallow waters in the dependent bays of La Union and Chismuyo. Their quantity seems to be inexhaustible. Huge piles of their shells are scattered along the shores of the islands and mainland, showing how extensively they were used by the aborigines. They are about the size of the ordinary oysters found around New York, and of excellent flavour. Crabs and crayfish are also abundant.

The whole region around this bay is eminently productive, and capable of furnishing supplies of every kind to every desirable extent. The lands on the banks of the Choluteca, Nacaome, and Goascoran are of the highest fertility, and adapted to the production of every tropical commodity. The savannas back of these comparatively low grounds are peculiarly fitted for grazing, while wheat, potatoes, and other products of the temperate zone may be cultivated on the slopes of the mountains and the plateaus of the interior. Wood of value for purposes of export, or for the construction of dwellings and ships, including pine, exists in exhaustless quantities on the very shores of the bay, or may be rafted

down the rivers from the interior. These rivers also afford facilities for navigation by small boats for considerable distances inland, to points near the metal-bearing spurs, or out-liers of the Cordilleras. The silver and gold mining district of Tabanco, in the Department of San Miguel (San Salvador), the silver mines of Aramacina and San Martin, and the famous mine of Corpus, all lie within from ten to twenty miles of this bay. Limestone is found in large beds on the navigable waters of the estero of Cubulero, and a fine rose-coloured sandstone abounds in the vicinity of the town of Nacaome, on the banks of the river of the same name. This bay must also ultimately become the dépôt of the coal from the beds which are said to exist in the valley of the River Lempa, when these shall come to be worked for supplying the Pacific steamers. It is alleged that coal is to be found both on the Rio Sirama and Choluteca, but the reports remain to be verified.

As affording admirable ports, abundant means for shipbuilding and repairs, with supplies of every kind, not less than for its value in respect to existing and local commerce with San Salvador, Honduras, and Nicaragua, the Bay of Fonseca has a singular value and commercial importance. But our estimate of that importance becomes greatly enhanced when we consider its commanding position, both in a political and geographical point of view, and especially when we regard it, as it soon will be, the terminus on the Pacific of the most available route of permanent railway communication between the two great oceans. I have no hesita-

tion in repeating now, what I had occasion to say to the Government of the United States when acting as its representative in Central America, that "the Bay of Fonseca is, under every point of view, by far the most important position on the Pacific coast of America, and so favoured by Nature as ultimately to become the great emporium of trade, and centre of enterprise upon that side of the continent." This was written before the fact of a feasible interoceanic railway route through Honduras, terminating on this bay, had been demonstrated or even conceived.

The principal ports of Honduras, on the Atlantic, are Omoa, Puerto Caballos, and Truxillo; and on the Pacific, Amapala, or the island of Tigre.

Puerto Caballos, or *Cortez*.—The first port established by the Spaniards on the northern coast was Puerto Caballos, lat. 15° 49′ N., and long. 87° 57′ W. It was selected by Cortez in his expedition into Honduras, and he founded a settlement there, with the purpose of making it the grand *entrepôt* of New Spain, which he called Natividad. For more than two centuries it was the principal establishment on the coast, but it was removed to Omoa, a few miles to the westward, during the time of the Bucaniers, because of the large size of the bay, which could only be adequately defended by the construction of several forts, while a single work was sufficient for the protection of the comparatively small port of Omoa.

The port, or rather bay, is of large capacity, being not less than nine miles in circumference. Its depth is

ample, ranging, for more than two-thirds of its area, from four to twelve fathoms, with secure holding ground. Toward its northern shore the depth of water is greatest; and here an iron wharf has already been constructed, one hundred and sixty feet long, at which the largest ocean steamers may "tie up," and receive and land passengers and cargo, more easily than in the docks of New York, inasmuch as, in this portion of the Bay of Honduras, the rise and fall of the tide is almost imperceptible.

Connected with the port or bay is a large salt-water lagoon, called Alvarado Lagoon, upwards of two miles in length, by about a mile and a quarter broad, of equal depth of water with the port itself.

The winds which prevail on the north coast of Honduras are from the north-east, north, and north by west, from all of which the port is perfectly protected. West and south-west winds are scarcely known, and are furthermore entirely cut off from the port by the high hills and mountains skirting the coast in that direction.

Omoa.—The port of Omoa is in lat. 15° 47′ N., long. 88° 3′ W. It is small but secure, and defended by a strong work called "El Castillo de San Fernando." The anchorage is good, in from two to six fathoms. The town is situated about a fourth of a mile back from the shore, and numbers fifteen hundred or two thousand inhabitants. The site of the town is level, but the country back rises rapidly into a chain of high mountains, which, commencing abruptly at Puerto Caballos, trend off to the westward, and connect with the Sierra

Madre in the department of Gracias. Very little agriculture, therefore, is carried on in the vicinity of Omoa, which draws its supplies chiefly from the Indians settled around Puerto Caballos, and from the vicinity of Cheloma and San Pedro, in the plain of Sula. A large number of cattle are shipped annually from Omoa to supply the markets and the mahogany establishments around Belize with provisions and with oxen for trucking the mahogany

Omoa, from its position, receives the full ventilation afforded by the trade-winds, and its climate in general is cool and salubrious. It has seldom been visited by those epidemics which so often desolate the islands of the Carribbean and the Mexican ports on the Gulf of Mexico. This exemption is no doubt due, in a great degree, to the proximity of the mountains and the absence of marshes in its vicinity.

Omoa receives an abundant supply of fish, turtle, and wild-fowl from the cays off the coast and the waters in its neighbourhood.

Truxillo.—This ancient port is situated in lat. 15° 55′ N., long. 86° W., upon the western shore of a noble bay, formed by the projecting land of Punta Castilla. Young estimated the population in 1842 at two thousand five hundred, of which one thousand were whites and Ladinos (mixed white and Indian), and fifteen hundred Caribs. The latter are described as tall, athletic, hardy, and industrious. The trade of the place is chiefly carried on with Olancho, of which department it may be considered as the port. Its exports, in com-

mon with those of Omoa, are hides, sarsaparilla, cochineal, indigo, copper, and silver.

Puerto Sal is a small harbour a few miles to the eastward of Puerto Caballos. The depth of water is not sufficient for large vessels. Some high rocks lie to the northward of the point which shuts in the harbour, called the "Bishops," under the lee of which there is a very good anchorage.

Triunfo de la Cruz is a large bay which commences at Puerto Sal, and bends thence inward, forming a coast-line of upward of twenty miles, terminating in a cape called Cabo Triunfo. It is very well sheltered from the winds, and has good anchorage for ships of every denomination.

Besides these harbours, there are many points on the north coast of Honduras where vessels may anchor under favourable circumstances. At the mouths of the Chamelicon, the Ulua, Lean, Black River, Patook River, and off Carataska Lagoon, there are roadsteads with good holding-ground, which are secure, except during the prevalence of north winds.

The islands of Roatan and Guanaja both afford excellent harbours, and there is also a good port on the south side of Utilla. The references had elsewhere to these islands, preclude the necessity of any special reference to their ports. It is only necessary to say, that these islands are surrounded by coral reefs and cays, which render approach to them difficult except under the direction of experienced pilots.

Amapala is a free port, situated on the island of

Tigre, in the Bay of Fonseca, and is the principal, and in fact, the only port of Honduras on the Pacific. The nominal port of La Paz, on the mainland, is a simple office for the collection of duties on goods which may be introduced for sale. A sufficient account of this port is given in the paragraphs on the Bay of Fonseca, and in the description of the island of Tigre, in a subsequent chapter.

CHAPTER V.

ISLANDS OF HONDURAS.

TO the northward of the mainland of Honduras, in the bay of the same name, there is a cluster of islands lying nearly parallel to the coast, at a distance from it of from thirty to fifty miles. Their names, in the order of their size, are Roatan (sometimes written Ruatan and Rattan), Guanaja (or Bonacca), Utilla, Barbaretta, Helena, and Morat. Dependent upon them are numerous coral islets, or "cays," of small size. These islands have good soil, fine climate, advantageous position, and some of them excellent harbours, rendering them both valuable and important to that portion of the continent upon which they are geographically dependent.

Roatan, the largest of these islands, is about thirty miles long by nine broad at its widest part. "It may be considered," says Alcedo, "as the key of the bay of Honduras, and the focus of the trade of the neighbouring countries." "This beautiful island," echoes Macgregor, "has an excellent harbour, easily defended, and is well adapted to the culture of cotton, coffee, and other tropical products." And Captain Mitchell, of the British Navy, whose account was written in 1850, adds, that "the local position of the island seems one of im-

portance in a commercial, and perhaps in a political, point of view. It is the only place where good harbours are found on an extensive and dangerous coast." "Roatan and Bonacca," writes another English author (Captain John Wright), "in consequence of their fine harbours, good soil, pure air, and great quantities of animals, fish, and fruits, and commanding ground, are proverbially known in that part of the world as 'the Garden of the West Indies,' 'the Key to Spanish America,' and a 'New Gibraltar.' From their natural strength, they might be made impregnable, being tenable with a very small force."

Strangeways affirms that here are found "great quantities of cocoa-nuts, wild figs, and excellent grapes. The forests produce white oaks and pine-trees fit for masts of merchant ships. It abounds with deer, wild hogs, Indian rabbits, and birds of many species. A constant breeze from the east cools and tempers the air, and there is abundance of excellent water." Young describes the island "as one beautiful mass of evergreens, from the shore to the tops of the high hills, interspersed with many cocoa-nut gardens; and there are many patches of coffee, which, although abandoned, continue to thrive well."

The account of this island by Captain Mitchell is the fullest. He says that it has little waste land on it, and that the whole might be advantageously cultivated.

"Limestone is the principal formation; there are also sandstone and quartz, and a great deal of coral on the lower parts. The island seems originally to have been elevated by a vol-

canic eruption, and the lower portions washed up by the subsequent action of the sea. On the coral formations sand has been thrown up; then decayed vegetable matter and seeds, drifted or brought by birds from the continent and surrounding lands. These, springing up and decaying, have assisted in forming a fruitful soil, on which man has at length landed, erected his dwelling, and has found the land subservient to his wants. These remarks are applicable to the lower portions of the island. I have not heard of any minerals having been collected on the island.

"The island has a singularly beautiful appearance at a distance, as you approach it in a ship. The mountains rise in a gradual height to the summit of nine hundred feet, and they seem successively to follow each other, intersected by valleys, the whole thickly and most luxuriantly wooded. As you draw near to it, you discover that palm and cocoa-nut trees encircle the shores, and forest trees of various descriptions grow on the higher hills. The natural beauty of its appearance is greatly enhanced when you cast anchor in one of its many harbours on the southern side.

"In the valleys, alluvial deposits and decayed vegetable matter form the soil, which is exceedingly rich and deep. On the mountains and their declivities, a red clay or marl predominates.

"A great deal of good and useful timber is found spontaneously growing on the island, such as Santa Maria wood, extensively used for ship-building, three varieties of oak, cedar, Spanish elm, and lancewood; and the shores of the island are lined and surrounded with groves of cocoa-nut trees, a tree which, in administering to the wants of man, is hardly surpassed in tropical regions. The seeds of this tree in remote times have been probably drifted here, and they have sprung up in abundance on a sandy and low shore, which is found so congenial to their growth.

"At present, the island produces in abundance cocoa-nuts, plantains, yams, bananas, pine-apples, &c., &c.; but I feel

convinced that bread-fruit, European vegetables, and indeed many fruits, vegetables, and productions of more temperate regions, would grow here.

"The country is capable of raising all tropical productions, such as sugar, coffee, tobacco, &c., which might become staple commodities of export.

"There was found on the island, previous to its being inhabited, a great quantity of deer, wild hogs, Indian rabbits, parrots, pigeons, birds of various descriptions, &c. Some years ago, previous to its settlement, men from small vessels and fishing-boats, employed on the surrounding coasts, originally resorted to this island for the purpose of supplying themselves with game and stock.

"A great quantity of domestic animals, such as poultry, pigs, &c., are raised; cattle might be raised, but the inhabitants have not yet the means of keeping them from destroying their plantations.

"It seems probable the island, at some remote period, was thickly inhabited by the Indian race. In clearing away the land for plantations, many domestic and culinary utensils have been found.

"A great deal of rain falls in the winter months, from September to February. This has the effect of cooling the air beyond what is felt in the other parts of the West Indies, and the breeze tempers the influence of the sun. If the people could keep themselves dry and free from damp, the climate must not only be exceedingly agreeable, but singularly pure and healthy. The dry months are much warmer. The natives, however, do not complain of the heat; they aver that it is the healthier portion of the year. The thermometer since we have been here (January) has averaged 80° of Fahrenheit.

"Rheumatism is very common, and a species of low fever or ague. The latter probably arises from the land not being sufficiently cleared away, and a luxuriant and decaying vegetation; the former from constant damp and exposure. Yet

I should think, from my limited observation, that the climate is not only healthy to those born in warm latitudes, but that Europeans, with proper precautions, might enjoy, not only health, but live to a good old age.

"The population of the island is now estimated at five or six thousand. In 1843 it was only eighty. It has gone on steadily and rapidly increasing, and there are at present three births to one death. With the means of existence at hand, and almost prepared for them, the young people have a disposition to marry at an early age; their families are large, many consisting of nine to ten, and even more children. They seem to be a proof of what has been often asserted in civilised countries, that a diet of vegetables and fish, or what is usually termed scanty food, is favourable to population.

"The population is scattered in different parts along the whole sea-shore of the island; from obvious reasons, they find these localities more convenient than the interior. They here erect their dwellings, in the midst of their palm and plantain groves, having their little vessels and fishing-boats in quiet and sheltered nooks, and convey their produce and seek for their wants by water-carriage.

"At Coxon Hole, or Port M'Donald, the greatest numbers seem located: there are here perhaps five hundred. It is a safe and sheltered harbour; yet chance seems to have directed them in the first instance to this spot, as I am inclined to believe, from my limited observation, there are other places more eligible for a township.

"The mass of the population is composed of liberated slaves from the Grand Cayman, and a small portion of the inhabitants are coloured people, also natives of that island, and formerly slave-owners. These latter people seem to be the most wretched on the island; unaccustomed to labour, and having lost their property and their slaves, or squandered away what they obtained for them, they have no longer any means of existence. From a false feeling of pride, so universal in man, and found alike in all countries, they were

unwilling to labour in a small island where they were once regarded with comparative consequence, and they emigrated and sought their fortunes on the unpeopled shores of Roatan. The slaves who had obtained their freedom, but could not procure labour in a small island like the Grand Cayman, hearing of the success of their former masters, followed in their footsteps.

"The dark population, or those who were formerly slaves, from their physical powers and their habits of labour from childhood, soon surpassed the white population in the accumulation of the means of existence, and are now the most thriving and successful.

"If riches be estimated from man's wants being easily supplied, and the accumulation of more than he requires, these people are not only wealthy, but in far better circumstances, than many of those who are relieved from manual labour in Europe.

"Added to these two classes, a third, and much smaller one, must be named, which consists purely of Europeans. They are men who have tried various pursuits and professions of life, which they have given up for various reasons, have taken to others, and have become familiar with the hard usages of adversity; and they sought this remote island, some in their old and some in their middle age, either to commence again, or to retrieve their broken fortunes, or to speculate in an imaginary construction of wealth. This class, though small in numbers, exercise a great influence over the minds of the community.

"The mass of the population is a fine race. They are strong, active, and athletic, temperate, quiet, and regular in their habits, not given to excess. The sexes are equally divided, and the old, who have lived with women in the days of slavery, evince a disposition to be married. I should say they have fewer vices than one usually meets among their class. As a proof that their character is good, they have lived and are living without any form of government or restraint,

and the crimes that have been committed are comparatively few.

"Their occupation consists in cultivating their grounds and plantations, fishing, turtling, &c. Necessity, in all countries, and in the first rude ages of civilisation, has been fertile in invention, consequently it is by no means extraordinary to find the mass of these people familiar with those rude mechanical arts of which they stand so much in need. Every man erects his own dwelling, plants and lays out his ground—most are carpenters, some good rope-makers. They have a knowledge of boat and ship-building, the making of lime, &c., and other useful attainments. Their dwellings are well and comfortably made.

"Their trade or commerce is in their plantains, cocoa-nuts, pine apples, &c., and this trade is steadily increasing. With these articles they trade to New Orleans, bringing back lumber, dry and salt provisions, &c.

"Their relations with other countries consist principally with New Orleans, Belize, and Spanish Honduras.

"I should conceive the island might maintain a population of fifteen or twenty thousand when cultivated.

"The harbours on the south side of this island are many and good. I have visited Coxen Hole, or Port M'Donald, and Dixon's Cove. In both of these you are sheltered from all winds. They have great facilities for heaving down and repairing ships, and fresh water is found in abundance.

"Dixon's Cove is a good harbour. It is about six miles to the eastward of Port M'Donald, in some points preferable to the latter. A ship having lost her anchors might run into this harbour and ground upon the soft mud without injury. Many ships might find achorage here.

"There is again Port Royal, a much larger harbour, and where twenty or thirty sail of the line might be moored. Its entrance is exceedingly narrow, which is its drawback, and the land is said not to be so fertile. Generally speaking, these harbours are surrounded by reefs of coral; their chan-

nels are narrow, and ought never to be attempted by strangers; but a local knowledge is easily obtained. The channels between the reefs are deep, and show themselves by the blueness of the water." *

A considerable trade in fruits and vegetables is kept up between this island, Havanna, New Orleans, and other ports of the United States.

Guanaja or *Bonacca* was discovered by Columbus, then sailing on his fourth voyage, in 1502. It was surveyed in 1840 by Lieutenant Thomas N. Smith, R.N., and, according to the chart published under order of the British Admiralty, is nine miles in length by five in breadth. It is distant about fifty miles from the nearest point on the mainland, and about fifteen miles to the north-east of Roatan, with which it is connected by a series of reefs, through which there are only a few narrow passages. The land is high, and can be seen from a great distance at sea. Henderson touched its shores during his voyage, anchoring in "a little bay of great depth of water, which, however, was so transparent that the shell-fish and coral rocks at the bottom could be clearly discerned. This part of the island," he continues, "is highly romantic and picturesque, and, like Roatan, profusely covered with trees. Its natural productions appear to be the same." Roberts also visited it, "landing opposite a watering-place, in an excellent harbour on the south side. The beach, above high-water mark, was thickly covered with cocoa-nut-trees, and innumerable tracks of the wild hog were visible on

* "Statistical Account and Description of the Island of Roatan." By Com. R. C. Mitchell, R.N., *United Service Magazine*, August 1850.

the ground. The island contains hills of considerable elevation, thickly covered with trees, and is said also to have beds of limestone and ores of zinc."

The account of Young, who was forced to take shelter there through stress of weather, is fuller, and gives a picture of the island as it was in 1841.

"It is covered with high hills, producing much valuable timber, and in the rich valleys and fertile savannas are numerous fruit-trees of various kinds. Along the water's edge, in many parts of the island, are numbers of cocoa-nut-trees. One spot in particular, in the middle of the island, is called the cocoa-nut garden, where there are many other fruit-trees, indicating the hand of industry. Viewed from any part, the island has a pleasing appearance, and, though small, might be made of importance if the English were to establish themselves upon it. The woods abound in wild hogs of large size, and thousands of Indian rabbits; the trees are full of pigeons and parrots; and the lagoons and harbours are celebrated for an immense variety of fish, which may easily be caught by going toward the edges of the coral reefs in a *dory* (canoe), where the bottom is plainly visible. Here the splendid sea-fans expand themselves, and almost invite the beholder to grasp them, so seducing are they in appearance, and so deceptive is the depth of the water. In some places large clusters of sponge can be seen; in others, handsome sea-eggs, inviting but to betray; and, altogether, with the numerous cays, studded with graceful cocoa-nut-trees around, there cannot be imagined a scene more novel and beautiful. Under the rocks, on the reefs round the cays, are plenty of craw-fish; conches and wilks are found in all parts, and a species of iguana, called *illishle*, abounds in every cay. The climate is exceedingly good; and during the ravages of the cholera at Truxillo a few years ago, the commandant of that place sent many to this island for the recovery of their health. Of the

whole number, but three died. When Black River was occupied by the British, before the evacuation took place in 1778, by order of the British Government, in consequence of its agreement with Spain, those of the colonists who were seized with the intermittent fever were sent to Guanaja, whence they generally returned improved in health and strength. It is surprising, considering the salubrity of this island, the richness of its soil, its woods and fisheries, and its adaptation to many purposes, that it has never been settled by the English. By many traces, it is clear that it was formerly populated by the Indians.

"In one part of the island, near Savannah Bight Cay, there is a very rich and fine savanna, with several fruit-trees in it; and, what is more singular, near the place a stone wall has been discovered, evidently, by its shape and appearance, the work of uncivilised man. This wall runs along for some distance a few feet high, and here and there are fissures, or rude niches, made for the admission of peculiarly-cut three-legged stone chairs, which, I suppose, must have been seats for their idols. Several places have been discovered cut out of the solid rock representing chairs; and numerous articles of roughly-burned clay, in various fantastical devices, for holding liquids, have been found, as also broken English crockery and iron; and I have seen several curious things in the possession of various people, which have been dug up, and are doubtless of Indian manufacture. I understand the adjacent island, Roatan, exhibits yet more proofs of having been inhabited by an uncivilised race.

"In the months of April and May, thousands of birds, called boobies and noddies, generally lay their eggs on the south-west part of Half-Moon Cay, thus affording a most delicious provision for nearly two months.

"The number of cocoa-nut-trees is really incredible—so much so that great advantage might be derived from making oil, which might be effected at a small expense, especially as living, after the first twelve months, would cost little or

nothing but labour—allowing that time for the establishment of plantations on the mainland for any sort of bread-kind, as the soil is so well adapted for such a purpose. Plantains, which may be considered as the standard, thrive wonderfully; this, with keeping some hogs and fowls on a cay, and feeding them on the refuse of the cocoa-nuts, &c., would, in a short period, show the advantage to be reaped. A few good Spanish dogs for hunting the wild hog, two or three turtle-nets, harpoons, hooks and lines, and fish-pots, are indispensable. On the island may also be grown coffee, cotton, tobacco, cacao, &c. During the greater part of the year plenty of fish and wild hogs can be caught, but when bad weather sets in, which is sometimes the case, little good can be done.

"With respect to making oil—it takes about fourteen common-sized nuts to make a quart, by the method in vogue at Roatan, &c.; but by the introduction of the hydraulic press, I should say, a quart might be expressed from nine or ten, and with a great saving of labour.

"The many uses to which the cocoa-nut-tree and its fruit can be applied are pretty well known; suffice it to say, it may be considered as one of the most valuable productions which a bountiful Providence has lavished on tropical climates. At the present time the island abounds with wild hogs, they not having been hunted much lately. Caribs occasionally resort to Guanaja for the purpose of hunting these animals, but they have not been so frequently as in former years; thus the hogs have much increased. The only things that can be said to militate against the island and its cays are, firstly, the myriads of bottle and horse-flies on the former, and mosquitoes and sand-flies on the latter, which appear to deter people from settling; although it is evident that when a place is covered with vegetation these annoying insects must exist, and that as the land becomes cleared the flies will gradually diminish.

"From March to June the cays are subject to the pest of whole armies of soldier-snails, creeping and crawling over everything the moment the sun sets, and with such an inde-

scribable noise as to surpass belief; the dead branches on the ground creak and break under the legion as they advance, consuming all in their progress. They were a great nuisance to us, as we were obliged to hang up our hammocks pretty high.

"On the whole, Guanaja may be considered a fine island, and one on which any man could soon obtain the necessaries of life, and with energy, activity, and a strict determination to sobriety, even the luxuries, without fear of a bastile in his old age."

Helena, *Morat*, and *Barbaretta*, are comparatively small islands, and may be regarded as detached parts of Roatan. They are, in fact, connected with it by reefs, through which there are only a few narrow and intricate passages. Captain Henderson, who visited Barbaretta in 1804, has left us a very animated and quite an enthusiastic account of its beauty. He describes it as high, and covered with a dense forest.

"After a walk of a mile and a half along the beach, in a course contrary to that which I had pursued the day before, we came to the rocks, and here, although our progress seemed less difficult to the eye, it scarcely presented fewer obstacles to the feet. Difficulties, however, sink before determination. After some trouble, I gained a firm station on a tolerable eminence, and without resorting to the extravagant and affected language sometimes used on similar occasions, I might truly say the whole was enchantingly beautiful and picturesque. The spot on which I stood might be connected with a space of somewhat more than half an acre, entirely clear of trees, and covered with luxuriant grass. Beyond this the whole became a thick, continued grove—

> 'Where scarce a speck of day
> Falls on the lengthened gloom.'

At the base of the rock the sea rolled with loud and haughty sway, and the confused masses of stone which lay scattered about at once confessed its uncontrollable dominion."

It was subsequently visited in 1841 by Young, who found some Spaniards from the mainland established there. One of these, Señor Ruiz, showed him over his "large and extensive plantations, full of all manner of bread-kind, besides greens, peas, and beans of various descriptions. He had a large expanse of ground covered with cotton-plants, and hundreds of papaya-trees, the fruit of which he gave to his fowls and hogs. He had also a cane-patch, and a small mill for crushing it, as he made his own sugar. There was a large turtle-crawl opposite his dwelling containing eight turtles. In rainy weather, he employed his people in the manufacture of cocoa-nut-oil." Finding him surrounded with all these means of comfortable and even luxurious existence, Young was astonished to learn that he had arrived there only three years previously, "with his wife, his son, about eleven years of age, some provisions, a gun, two or three machetes (large knives), and a few hooks, and other trifles." "I thought," continues this author, "of the thousands of my poor countrymen struggling in vain for a decent subsistence, and who would live in independence if similarly situated, instead of being brought to an early grave by disappointed hopes, or the weight of a large family." Roberts, who also visited Barbaretta, speaks of finding "three or four sorts of wild grapes."

Helena is smaller than Barbaretta, distant from it

between four and five miles, near the extreme north-eastern extremity of Roatan. Young found there a Frenchman, in the Honduras service, who had "plantations and large nets for turtling." His principal business, however, was that of making lime, which he sold at Omoa and other places at from two to three dollars a barrel: "rather a high price, but which he obtained in consequence of its strength, the kind of stone from which it is made being found chiefly in this island."

Honduras has two large islands in the Gulf of Fonseca, on the Pacific, viz., Tigre and Sacate Grande, which are described in the account elsewhere given of that gulf.

CHAPTER VI.

POLITICAL DIVISIONS—DEPARTMENTS OF COMAYAGUA, GRACIAS, CHOLUTECA, TEGUCIGALPA, OLANCHO, YORO, AND STA. BARBARA.

THE political divisions of Honduras are seven, viz., the departments of Gracias, Comayagua, Choluteca, Tegucigalpa, Olancho, Yoro, and Sta. Barbara. The subjoined table expresses the capital, area, and population of each, as also the aggregate area and population of the state :—

HONDURAS—CAPITAL, COMAYAGUA.

Departments.	Capitals.	Area in Square Miles.	Population.	Inhabitants to Sq. Mile.
Comayagua	Comayagua	4,800	65,000	13⅓
Tegucigalpa ...	Tegucigalpa....	1,500	65,000	43
Choluteca	Nacaome	2,000	50,000	25
Sta. Barbara...	Sta. Barbara...	3,250	45,000	12½
Gracias	Gracias.....	4,050	55,000	13⅔
Yoro	Yoro.....	15,100	20,000*	1⅓
Olancho.....	Jutecalpa.....	11,300	50,000*	4
Total.....		42,600	350,000	9

Each department has a distinct representation in the general Congress of the state, and is governed by an

* The population in Yoro and Olancho is calculated exclusive of the Indian tribes; and the area of the unsettled country, comprising nearly the whole of the eastern and politically unorganised half of the state, is divided between these two departments.

officer appointed by the central government, who bears the title of *Jefe Politico*, or political chief. Each department is also subdivided into districts, for the convenience of the inhabitants and the better administration of justice.

DEPARTMENT OF COMAYAGUA.

Districts.—Comayagua, Lajamini, Yucusapa, Siguatepeque, Miambar, Aguanqueterique, Goascoran.

Principal Towns.—Las Piedras or Villa de la Paz, Villa de San Antonio, Opoteca, Espino, San Antonio del Norte, Goascoran, and Caridad.

The Department of Comayagua, lying in the very centre of Honduras, and comprehending its capital, the ancient city of Comayagua, is entitled to the first place in a notice of the various departmental divisions of the state. Its distinguishing geographical feature is the plain of the same name, to which I have elsewhere adverted, and in which a great part of the population of the department is concentrated. The capital itself, the considerable towns of Las Piedras and San Antonio, and the smaller towns of Ajuterique, Lajamini, Yarumela, Cané, Tambla, Lamani, and Lo de Flores, are all found in this plain, embracing a population of not far from twenty-five thousand souls.

The city of Comayagua (anciently called Valladolid) is situated on the southern border of the plain. It was founded in 1540 by Alonzo Caceres, in obedience to instructions "*to find out an eligible situation for a town midway between the oceans.*"

It now contains between eight and ten thousand inhabitants. Previous to 1827 it had about eighteen thousand, and was embellished with fountains and monuments. In that year it was taken and burned by the monarchical faction of Guatemala, and has never been able wholly to recover from the shock.

In the maps its position has been put too far to the eastward and southward. It is in lat. 14° 28′ N., and long. 87° 39′ W., and in a right line, or within a few miles of a right line, drawn between the mouth of the Ulua and that of the Rio Goascoran. Its distance from the Bay of Fonseca is seventy-five miles, and it is, within a few miles more or less, midway between the two seas.

Comayagua is the seat of a bishopric, and has a large, and, according to Spanish taste, an elegant Cathedral. It has also a University, founded many years ago, but which declined in consequence of the adverse political circumstances of the country, until it was revived in 1849, under the auspices of Dr Don Juan Lindo, a man of enlightened spirit, then President of the state. The trade of the city is small. Hitherto the difficulty of communication with the coast has prevented it from gaining any commercial eminence. But when the incentives and means for developing the resources of the adjacent country shall be afforded, it must become a place of much importance.

The plain, upon its eastern and western borders, is skirted by mountains five or six thousand feet high, and it consequently enjoys a climate cool, equal, and salu-

brious, comparing in respect of temperature with our month of June. The hills and mountains adjacent to the plain are covered with pines, and on their summit and slopes, wheat, potatoes, and other products of the temperate zones are cultivated, and may be produced in abundance. The productions of the plain, however, are essentially tropical. Its soil is extremely fertile. In short, the plain of Comayagua offers all the conditions for attracting and sustaining, as there is abundant evidence that it formerly sustained, a large and flourishing population.

Indeed, hardly a step can be taken in any direction without encountering evidences of aboriginal occupation, and the names of the principal towns in the valleys are only perpetuations of those which they possessed before the conquest. In some of them the predominating portion of the population is still unmixed Indian. Lamani, Tambla, Yarumela, Ajuterique, Lajamini, and Cururu, are all Indian names. There are also many Indian towns which have been entirely abandoned as the population of the country has decreased, and of which the traces are now scarcely visible.

The principal ruins, strictly aboriginal and of ancient architecture, are in the vicinity of Yarumela, Lajamini, and near the ruined town of Cururu. They consist of large pyramidal, terraced structures, often faced with stones, conical mounds of earth, and walls of stone. In these, and their vicinity, are found carvings in stone, and painted vases of great beauty.

The principal monuments, however, retaining dis-

tinctly their primitive forms, can hardly be said to be in the plain of Comayagua. They are found in the lateral valleys, or on the adjacent tables, *mesas*, of the mountains. Of this description are the ruins of Calamulla, on the road to the Indian mountain town of Guajiquero; of Jamalteca, in the little valley of the same name; of Maniani, in the valley of Espino; of Guasistagua, near the little village of the same name; of Chapuluca, in the neighbourhood of Opoteca; and of Chapulistagua, in a large valley back of the mountains of Comayagua. I have visited all of these, but in many respects the most interesting, and by far the most extensive, are those of Tenampua.

The ruins of Tenampua are popularly called Pueblo Viejo, Old Town. They are situated on the level summit of a high hill, almost deserving the name of mountain, about twenty miles to the south-east of Comayagua, near the insignificant village of Lo de Flores, by the side of the road leading to the city of Tegucigalpa. The summit of the hill is a plain or savanna, covered with scattered pines, and elevated about sixteen hundred feet above the plain of Comayagua, of which, in every part, a magnificent view is commanded. The hill is composed of the prevailing soft, white, stratified sandstone of this region, and its sides, except at three points, are either absolutely precipitous, or so steep as to be nearly if not quite inaccessible. At the accessible point, where narrow ridges connect the hill with the other hills of the group, are heavy artificial walls of rough stones, varying in height from six to fifteen feet, and in

width, at the base, from ten to twenty-five feet. These walls are terraced on the inner side, for convenience of defence. At various points there are traces of towers, or buildings, designed perhaps for the use of guards or sentinels. The dimensions of the wall correspond to the greater or less abruptness of the slope along which it is carried, and are greatest where the ascent or approach is easiest. Where narrow gullies or natural passes existed, the hollows have been filled with stones, so as to present a vertical outer face, corresponding with the rocky escarpment of the hill. Naturally, I think this place is the strongest position I have ever seen. That it was selected, in part at least, for defence, is obvious. Under any system of warfare practised by the aborigines, it must have been impregnable. The defensive design is made still more apparent by the existence, in the centre of the area of the summit, at a place naturally low and marshy, of two large square excavations, now partially filled up, which were clearly designed for reservoirs.

But the most interesting features of Tenampua are not its ruined walls and defences. The level summit of the hill is about one and a half miles long, by half a mile in average width. The eastern half of this large area is crowded with ruins. They consist chiefly of terraced mounds of stone, or of earth faced with stone, of regular rectangular forms, their sides conforming to the cardinal points. Although the stones are uncut, they are laid with great precision. Most of the small mounds, which occur in groups, and are arranged with

obvious design in respect to each other, are from twenty to thirty feet square, and from four to eight feet in height. There are none of less than two, but most have three or four stages. Besides these, there are a considerable number of large pyramidal structures, varying from sixty to one hundred and twenty feet in length, of proportional width, and of different heights. These are also terraced, and generally have ruins of steps on their western sides. There are also several rectangular inclosures of stone, and a number of platforms and terraced slopes.

The principal inclosure is situated in the very midst of the ruins, at a point conspicuous from every portion of the hill. It is three hundred feet long by one hundred and eighty feet broad. The wall is fourteen feet broad, but now elevated only a few feet above the ground. It seems to have consisted of an outer and inner wall, each about two feet thick, between which earth had been filled to the depth of two feet. Transverse walls then appear to have been built at regular intervals, dividing it into rectangular areas, resembling the foundations of houses. It is not improbable they were surmounted by structures of wood, devoted to the use of the priests or guardians of the great temple, in the same manner that, according to the chroniclers, "the cloisters of the priests and attendants" surrounded the court of the great temple of Mexico. The line of the wall is only interrupted by the gateway or entrance, which is on the western side, between two oblong terraced mounds, in which the ends of the wall terminate.

To preserve the symmetry of the inclosure, the opposite or eastern wall has in its centre a large mound, also terraced and regular in form, equalling in size both those at the entrance.

Within the inclosures are two large mounds, the relative positions and sizes of which can only be explained by a plan. The largest has three stages and a flight of steps on its western side. From its south-west angle a line of large stones, sunk in the ground, is carried to the southern wall. The north line of this mound coincides with one drawn from east to west through the centre of the inclosure. Between it and the gateway is a square of stones, sunk in the ground, which may mark the site of some edifice. The second pyramid is situated in the north-east corner of the inclosure; it has the same number of stages with the larger one just described, and, like that, has a flight of steps on its western side.

At the extreme south-east corner of the hill is another inclosure similar to this, except that it is square, and has openings in the centre of each side. It also contains two terraced mounds, ascended by steps. Between the great inclosure, or central structure, and the precipice which faces the hill on the south, is a depression or small valley. This is terraced upon both sides, the terraces being faced with stone, ascended by various flights of stone steps. The principal mound beyond this depression is situated upon the edge of the precipice, due south of the great mound in the principal inclosure. It commands a view of the entire southern half of the plain

of Comayagua, and fires lighted upon it would be visible to all the inhabitants below. I could not resist the conviction that its position had been determined by this circumstance.

There are many other striking features in these ruins, of which no adequate idea can be conveyed except from plans, and which, therefore, I shall not attempt to describe. The most singular, perhaps, consists of two long parallel mounds, each one hundred and forty feet in length, thirty-six feet broad at the base, and ten feet high in the centre. The inner sides of each, facing each other, appear to have consisted of three terraces, rising like the seats of an amphitheatre. The lower terraces are forty feet apart, and faced with huge flat stones, set upright in the ground, so as to present an even front. The outer sides of these mounds have an appearance corresponding with that of the walls of the great inclosure, and each seems to have been the site of three large buildings. The whole rests on a terrace three hundred and sixty feet long. Exactly in a line with the centre of the space between these parallels, and distant twenty-four paces, are two large stones placed side by side, with an opening of about one foot between them. Fronting these to the northward, and distant one hundred and twenty paces, is a large mound occupying a corresponding relative position in respect to the parallels, and having a flight of steps on its southern side. Upon these mounds, as indeed upon many of the others, are standing large pine-trees, upwards of two feet in diameter. Without attempting to

define the special purposes of these parallels, it seems to me probable that they had a corresponding design with the parallel walls found by Mr Stephens at Chichen-Itza and Uxmal in Yucatan. Doubtless, games, processions, or other civic or religious rites or ceremonies, took place between them, in the presence of priests or dignitaries who were seated upon the terraces on either hand.

The form of the various mounds at Tenampua precludes the idea that they were used as the foundations of dwellings. It seems quite clear that they were either altars or sites of temples—counterparts of those of Guatemala, Yucatan, and Mexico, and of a large portion of those found in the Mississippi Valley, with all of which they accurately coincide in the principles of their construction. I was able to excavate but one, situated in the vicinity of the great temple. The mass of the mound, after penetrating the stone facing, was found to be simple earth; but the interior of the upper terrace was composed almost entirely of burned matter, ashes, and fragments of pottery. Great quantities of these fragments were discovered, and I was able to recover enough of some vessels to make out their shape, and the paintings and ornaments upon them. Some were flat, like pans; others had been vases of various forms. All were elaborately painted with simple ornaments or mythological figures. One small, gourd-shaped vase, of rude workmanship, I recovered nearly entire. It was filled with a dark-coloured, indurated matter,

which it was impossible to remove. Fragments of obsidian knives were also found.

Near the western extremity of the summit of the hill are two deep holes with perpendicular sides, sunk into the rock. They are about twenty feet square and twelve feet deep. Although now partially filled with earth, a passage is to be discovered at the bottom of each, leading off to the north. These passages seem to have been about three feet high by nearly the same width. How far they may go, or whither they lead, is unknown. The water which flows into them during rains finds a ready outlet. I am unprepared to decide whether these openings are natural or artificial, but incline to the opinion that they are natural, with perhaps artificial improvements or adaptations. A ruined pyramid stands near the principal mouth. The tradition concerning them is, that they were dug by the "antiguos," and lead to the ruins of Chapulistagua, beyond the mountains, and were designed to afford an easy means of flight in case of danger.

Altogether there are here the remains of between three and four hundred terraced, truncated pyramids of various sizes, besides the other singular inclosures which I have mentioned.

The whole place probably served both for religious and defensive purposes. This union of purposes was far from uncommon among the semi-civilised families of this continent. I have presented, in my work on the Monuments of the Mississippi Valley, many instances in which structures strictly religious are found within works

clearly defensive. It was within the area, and on the steps and terraces of the great temple of Mexico, that the Aztecs made their final and most determined stand against the arms of Cortez. It is not to be supposed, however, that this was a fortified town, or a place permanently occupied by any considerable population. The summit of the hill is rocky, and the soil thin and poor, affording few of the usual accessories of a large Indian population, viz., abundant water and rich lands. The builders doubtless had their permanent residences in the plain below, and only came here to perform religious or sepulchral rites, or to find safety in times of danger.

Falling within the Department of Comayagua is the plain of Espino. It lies to the northward of the plain of Comayagua, from which it is separated by only a narrow range of hills, and of which it may be regarded as an extension or dependency. It is watered by the same river, the Humuya, which traverses its entire length. The plain of Espino is sometimes called Maniani. It is much smaller than that of Comayagua, being but about twelve miles long by eight broad; but in other respects, such as climate, productions, &c., what is true of one is equally true of the other.

Dependent also upon the plain of Espino is the small lateral valley of Jamalteca, a spot of surpassing beauty, abounding in springs of water, which sustain its vegetation fresh and vigorous, and enable the inhabitants to keep an uninterrupted succession of crops during the dryest seasons, when the country elsewhere is parched, and agriculture is suspended. In this valley are some

very interesting monuments of the aborigines, indicating a large ancient population.

Nearly the whole length of the valley of the Rio Goascoran, which flows southward from the plain of Comayagua into the Gulf of Fonseca, falls within this department. This valley is narrow, and, except at its mouth, where it expands into the Pacific plains, does not embrace much valuable land. It is chiefly interesting as offering an easy route for the projected line of railway.

The mountains of San Juan or Guajiquero, in the south-east portion of this department, are occupied exclusively by Indians descended from the aboriginal Lencas. These mountains of stratified white sandstone are naturally terraced, presenting to the eye bold escarpments of rock, but supporting beautiful level areas, covered with rich soil, on which the Indians cultivate wheat and other grains, and the fruits of higher latitudes. They also rear a fine and very hardy race of mules, and altogether evince a degree of perseverance and industry, very wide nevertheless of enterprise, which we look for in vain among the semi-European inhabitants.

Every department in Honduras possesses more or less mineral wealth. In this respect, although not ranking so high as some of the others, the Department of Comayagua is abundantly favoured. The considerable town of Opoteca is literally built over a silver mine, which was most extensively worked under the Crown, and with signal success. At present the attention of the inhabit-

ants, for obvious reasons, is directed to agriculture. Near Aramacina, Las Piedras, and in the mountains near Lauterique, are numerous mines of silver, now wholly abandoned or imperfectly worked. They only need the touch of intelligence, enterprise, and capital to become of value. Copper ores exist in abundance, but no attempt has ever been made to reduce them. Throughout the entire department there are vast beds of blue and veined marble, proper for every class of constructions, and for conversion into lime. The predominating rock is sandstone, generally milky white, but sometimes of cream colour verging on orange. Near Guajiquero are also found inexhaustible beds of variously-coloured ochres of fine quality. These were and still are used for painting by the aborigines. The colours are remarkably vivid.

Pine and oak are abundant on the hills throughout this department, and mahogany, cedar, and lignum vitæ, as well as other useful woods, are found in all desirable quantities in the valleys bordering the streams. Many varieties of cactus are found in the plain of Comayagua. The most common is the variety called the *nopal* in Mexico, and which is cultivated in the southern states of that country, and in Guatemala, for the production of cochineal. The numerous wild plants of this variety found in Honduras produce what is called *grana silvestre*, or wild cochineal. The plains of Comayagua and Espino are admirably adapted, therefore, for the cultivation of cochineal, as well as coffee, and all the other great staples of semi-tropical regions.

DEPARTMENT OF GRACIAS.

Districts.—Ocotepeque, Guarita, Erandique, or Corquin, Gualalcha, Sensenti, Camarca, Intibucat, Gracias, Sta. Rosa, and Trinidad.

Principal Towns.—Gracias, Sta. Rosa, Intibucat, Sensenti, Corquin, San José, Ocotepeque, Cololaca.

The Department of Gracias lies in the north-eastern angle of the state, touching upon Guatemala and San Salvador. Its territory is, in many respects, the most interesting in all Central America, of which it may be regarded as, in some degree, an epitome.

Its surface is much diversified, and it is distinguished by several groups of majestic mountains. The mountains of Selaque occupy very nearly the centre of the department; and on the north it has the range of Merendon, which, as I have elsewhere said, extends from the borders of San Salvador to the Bay of Honduras, a distance of not far from one hundred and fifty miles. It is called by different names at different points, as Merendon, Gallinero, Grita, Espiritu Santo, and Omoa. No towns occur in these mountains, except the small village of Dolores Merendon. At its feet, upon the north, are several beautiful valleys, among which is that of Copan, distinguished for its ancient monuments. Upon the south, nearly coinciding with the boundaries between this department and that of Comayagua, are the mountains of Opalaca and Puca, both of commanding height. They extend to the north-eastward, nearly parallel to

those of Omoa, until intercepted by the valley of the Rio Sta. Barbara.

All of these mountains are heavily timbered with pines and oaks. Their lower slopes, and the valleys at their feet, produce the cedar, mahogany, and other valuable woods in great abundance. In the mountains of Merendon is found the *Quetzal*, the royal and sacred bird of the aboriginal kingdom of Quiché, and one of the most beautiful in the world.

Like all other parts of Honduras, this department is profusely watered. In it rise some of the largest streams of Central America. To the west of the mountains of Merendon, and rising in its gorges, are the small rivers Gila and Gualan, which flow into the Motagua. Flowing along the eastern base of the same range is the Rio Chamelicon, which has its rise a few leagues to the northward of the town of Sta. Rosa. It forms a valley of great beauty and fertility, which, like that of Copan, abounds in monuments of a large aboriginal population. The river Santiago or Venta, which, after its junction with the Humuya, is called the Ulua, has its sources in the great plain of Sensenti, where it bears different names—Rio de la Valle, Alas, Higuito, and Talgua. Its first great tributary in this department is the Rio Mejicote, or Gracias, flowing along the eastern base of the mountains of Selaque. Below the point of junction, the Santiago is a large, unfordable stream. Along the southern border of the department, and constituting the boundary separating it from San Salvador, is the River Sumpul, one of the largest affluents of the great River

Lempa, flowing into the Pacific. It receives several considerable tributaries from the territories of this department. Among them may be mentioned the Guarajambala, Pirigual, Moscal, and Cololaca.

Perhaps the most interesting topographical feature of this department is the plain or valley of Sensenti, lying between and almost encircled by the mountains of Selaque, Pacaya, and Merendon. It is about thirty-five miles long by from five to fifteen in width. It is nearly divided by a range of hills, which extend partially across it in the neighbourhood of Corquin. The upper valley might with propriety be called that of Sensenti, the lower one the plain of Cucuyagua. The latter has an average altitude of 2300 feet, and the former of 2800 feet, above the sea. The soil throughout is good, and the climate delightful. It constituted part of the dominions of the aboriginal cazique Lempira, who resisted the Spaniards longer than any chief in Central America. The army with which he encountered the Spanish general Chaves was more numerous than the present entire population of the department.

The climate of the department is unexcelled for salubrity. The general temperature, as might be inferred from the elevated character of the country, is cool, although no two places can, in this respect, be said to be alike, varying with their elevation. Intibucat, an Indian town, situated in the midst of a considerable plain or terrace of the Opalaca Mountains, is 5200 feet above the sea. Occasional slight falls of snow take place here during the months of December and January. I

passed through the town in the early part of the month of July when the thermometer at sunrise stood at 56° of Fahrenheit. Peaches, apples, and plums flourish in this plain, and the blackberry is indigenous among the hills. The towns of Caiquin and Colocte have a temperature still lower than that of Intibucat. During three weeks which I spent at Sta. Rosa, from July 9 to August 1, the average temperature at sunrise was 68°, at noon 72°, and at 3 P.M. 73° of Fahrenheit. From September to February the thermometer has a still lower range.

The vegetable products of this department, actual and possible, exhaust the list of productions of the temperate zones and the tropics. Wheat, rye, barley, the potato, &c., grow on the mountains, while sugar-cane, indigo, tobacco, cotton, coffee, cacao, plantains, oranges, &c., flourish in the plains and valleys. Of valuable timber there is also great abundance. Pine, equal to the best North Carolina, covers the hills. There is also much mahogany, cedar, granadillo, Brazil wood, mora, &c., for purposes of dyeing, manufacture, and construction. Copal, balsam, and liquid amber are among the most common gums. The tobacco of Gracias, as will be seen farther on, has a wide and deserved celebrity.

Apart from its agricultural wealth, Gracias is distinguished for its minerals and precious metals. Gold and silver mines are numerous and rich; although but little worked, for want of scientific knowledge, intelligence, machinery, and capital. The silver and copper mines of Coloal, in the mountains of Merendon, are

very valuable, the copper ores yielding 58 per cent. of copper, besides 98 ounces of silver to the ton. The silver ores of Sacramento (*chlorides*) yield 8674 ounces of silver to the ton. Coal is also found in the plain or valley of Sensenti, near the half-deserted town of Chucuyuco. I visited the beds at a place where they were cut through by ravines, and found the principal deposit from eight to ten feet thick, separated by bituminous shale from a superior bed about two feet in thickness. The coal is bituminous, and, at the outcrops, of fair quality. Asbestos, cinnabar, and platina are also found in this department. Opals are obtained at various localities, and have been exported to a considerable extent. The most and best have been found near the mountain town of Erandique.

It appears from the official paper of Honduras that, from the 1st of April 1851 to the 31st of January 1853, there were "denounced," or entered, in accordance with the mining laws, not less than *sixteen* opal mines in the single district of Erandique. In the department at large, for the same period, were entered thirteen silver mines, one gold mine, and one coal mine. Amethysts are reported as having been found near Campuca.

Near the little town of Virtud, in the extreme southern part of the department, is a curious natural phenomenon, known as *Mina ó Fuente de Sangre*, Mine or Fountain of Blood. From the roof of a small cavern there is constantly oozing and dropping a red liquid, which, upon falling, coagulates, so as precisely to resemble blood. Like blood, it corrupts; insects deposit

their larvæ in it, and dogs and buzzards resort to the cavern to eat it. In a country where there is so little scientific knowledge as in Central America, a phenomenon of this kind could not fail to be an object of great, if not superstitious, wonder, and many marvellous stories are current concerning the Fountain of Blood.*

* "A little to the south of the town of Virtud is a small cavern (*gruta*), which during the day is visited by the buzzards and *gabilanes*, and at night by a multitude of large bats (*vampiros*), for the purpose of feeding on the natural blood which is found here dropping from the roof of the cavern. This grot is on the borders of a rivulet, which it keeps reddened with a small flow of a liquid that has the colour, smell, and taste of blood. In approaching the grot, a disagreeable odour is observed; and when it is reached, there may be seen some pools of the apparent blood in a state of coagulation. Dogs eat it eagerly. The late Don Rafael Osejo undertook to send some bottles of this liquid to London for analysis; but it corrupted within twenty-four hours, bursting the bottles." Such was the report published in the *Official Gazette* of Honduras in 1853. Subsequently, in 1857, Dr J. L. Le Conte, surgeon to the expedition for the survey of the Honduras Interoceanic Railway, visited the grotto, which he found in a *cañon* of a small stream, lined by perpendicular rocks. He found the grotto or cave to be a fissure from fifteen to twenty feet high, and five or six feet wide at the entrance, but narrowing so that it cannot be entered for more than from thirty to forty feet. "It abounds in bats," writes Dr Le Conte, "which cling in masses from the narrower parts of the fissure. The stench is strongly ammoniacal, and so intense that I was obliged to retreat thrice before I could procure, from the innermost part that I could reach, a sufficient quantity of the material to fill the bottles of alcohol I had carried with me for the purpose. In the rainy season, a small current of red matter, like blood, flows from the cave into the stream; but in the dry season the water ceases to percolate through the roof and back of the cave, and the flow ceases. At the period of my visit it had already stopped; but the floor of the cave was covered two inches deep with a pasty mass, which gave a blood-red colour when mixed with water. It was full of larvæ of insects, and altogether in a useless condition for examination. On the sides of the cave were masses looking like dried blood, which had run down from above; and in the narrowest parts I could reach in the recess of the fissures, I col-

DEPARTMENT OF CHOLUTECA.

Districts.—Nacaome, Amapala, Choluteca, El Corpus, San Marcos, Namasigue, Oropoli, and Pespire.

Principal Towns.—Choluteca, Nacaome, Amapala, Pespiri, San Marcos, Namasigue, &c.

Choluteca is the extreme southern department of Honduras, fronting on the Bay of Fonseca. It lies on the western slope of the Mountains of Lepaterique or Ule, among which the streams that water it take their rise. It is, consequently, extremely diversified in surface. The valleys of the rivers Choluteca and Nacaome are broad and fertile, and the district fronting on the bay is distinguished for its extensive savannas and densely-wooded alluvions. For an average distance of fifteen miles inland, the soil is admirably adapted for plantations, and undoubtedly capable of producing in profusion all the staples of the tropics. As the country rises, which it does by a series of terraces, the savannas become broader and more numerous, affording vast

lected with my knife some fresh semi-fluid matter that the insects had not attacked. Examined with a microscope on the spot, it exhibited no living particles, nor, in fact, anything but minute fragments of the digested debris of insects. Opposite to the principal cave are two small ones, which contain the same material, and, not being fissure-like, enable the whole of their interior to be examined. I found the roof and back of these cavities entirely clean, so that it was evident that the material did not come through the rock, but consisted merely of the excrement of the bats which take refuge in the cave. The colouring matter is either peculiar to it, depending on the nature of the food, or perhaps developed by fermentation, as is the case, to a certain extent, with the well-known murexide."

pastures for herds of cattle, which at present probably constitute the chief wealth of the department.

The Mountains of Ule, or Lepaterique, which bound the department on the north, are not less than 5280 feet in height at the point where they are crossed by the high road from Nacaome to Tegucigalpa. Their summits are broad, undulating plains, cool, salubrious, and fertile, and literally constitute the granaries of the adjacent mineral districts. Wheat, potatoes, and especially maïze, have there a vigorous and most productive growth. Hail, and occasionally snow, falls there, and in a few instances it has been known to fall in sufficient quantities to whiten the ground for several days. From the summits of the Ule Mountains the eye takes in a landscape more than a hundred miles broad, from the great blue masses of the Mountains of Sulaco on the north, to the volcanoes of Nicaragua and the Gulf of Fonseca on the south and south-east.

From these mountains the traveller also obtains a fine view of the valley of Choluteca, which sweeps in luxuriant beauty around its base, the course of its river being clearly defined by the belts of evergreen forests which grow upon its banks. This view is obtained through the broad dependent valley of Yuguare, celebrated, even in Honduras, for its surpassing beauty and exhaustless resources. In this valley are several considerable Indian towns, whose inhabitants are distinguished alike for their industry, bravery, and republican spirit. Those of Texiguat and of Cururen obtained great distinction in the wars which preceded the dis-

solution of the republic of Central America, and are now among the most loyal and faithful citizens of the state, and its bravest defenders.

Apart from its agricultural wealth, the Department of Choluteca is rich in minerals, but chiefly in mines of silver. Among the latter is the famous mine of Corpus, near Choluteca, which, under the Crown, was regarded of so much importance as to induce the Audiencia to establish a branch of the treasury there, in order to receive the royal fifths. It is now worked in a very small way, the shafts having been filled with water, and the adits obstructed with fallen rock. The mines of Cuyal and San Martyn, also found in this department, are now worked profitably on a small scale. Their value is much enhanced by their proximity to the Gulf of Fonseca, through which the requisite machinery can be brought within reach. Mills have recently been established on the island of Tigre for sawing the cedar, mahogany, and other valuable woods which are found in great abundance on the coast, for exportation to Chili, Peru, and California.

The islands of Tigre and Sacate Grande, which have already been noticed, as also the free port of Amapala, fall within the jurisdiction of this department. Choluteca, which has a population of about four thousand souls, is nominally the capital, but the seat of administration has for a number of years been at Nacaome. This town is situated on the river of the same name, about eight miles above its mouth, and has a population of about two thousand inhabitants. A few leagues

above, on the same stream, is the considerable town of Pespiri. In the vicinity of Nacaome, at a place called "Aguas Calientes," there are several hot springs, much esteemed for their medicinal properties.

DEPARTMENT OF TEGUCIGALPA.

Principal Towns.—Tegucigalpa, Yuscuran, Cedros, Son Antonio Mineral, Yuguare, Agalteca.

The Department of Tegucigalpa is the smallest, but relatively the most populous of the political divisions of Honduras. It may be described as occupying a great interior basin or plateau, bounded on the north and west by the Mountains of Sulaco and Comayagua, and the south and east by those of Ule and Chili. The average elevation of this mountain-bound plateau is not less than three thousand feet above the sea. It is drained by the river Choluteca, which nearly describes a circle in tracing its course among the mountains, through which it breaks by a deep and narrow gorge or valley into the broad and rich plains of the Pacific coast.

The temperature of the department is cool, and its climate cannot be surpassed for salubrity. Its soil is not generally so productive as that of the remaining departments, but it excels them all in the number and value of its mines. It is, in fact, essentially a mining district; and, until the political disturbances of the country rendered the prosecution of that branch of industry almost impossible, mining was the chief employment of its people, and their principal source of wealth. The mines of Yuscuran are still worked, as are also those of

San Antonio and Santa Lucia. The gold and silver mines of San Juan Cantaranas are second to none in the state in value, but they are not largely worked, for precisely the reason which is most likely hereafter to commend them to American and European enterprise. The natives cannot be induced to establish themselves in their vicinity, *on account of the coldness of the climate.* The Mountain of Agalteca, in the north-west portion of this department, is a vast mass of very pure and highly magnetic iron ore. Some of the ore has so large a per-centage of metal, that it is forged directly from the mine, without undergoing the previous process of smelting.

Since the decline of the mining interest, the proprietors of this department have engaged largely in the raising of cattle, many of which are driven to San Salvador and Nicaragua for sale.

Tegucigalpa, the capital of the department, is the largest and finest city in the state, numbering not less than twelve thousand inhabitants. It stands on the right bank of the Rio Choluteca, in an amphitheatre among the hills, and is substantially and regularly built. It has not less than six large churches. The Parroquia is hardly second to the Cathedral of Comayagua in size. A fine stone bridge, of ten arches, spans the river, and connects the city with the suburb called Comayaguita. It had formerly several convents and a university, the last of which has still a nominal existence. It has also a mint. The trade of Tegucigalpa was formerly carried on through the ports of Omoa and Truxillo, but, since

the establishment of the free port of Amapala, it has chiefly taken that direction.

DEPARTMENT OF OLANCHO.

Principal Towns.—Juticalpa, Catacamas, Campamiento, Silca, Monte Rosa, Yocon, Laguata, Danli, Teupasenti.

The Department of Olancho joins that of Tegucigalpa on the east. It has an area of not less than eleven thousand three hundred miles, or something more than that of the State of Maryland. But a small portion of this wide district is inhabited by a civilised population, the greater part, comprising the entire eastern half, being in the possession of Indian tribes, known as Xicaques, Payas, Pantasmas, and Toacas. The Spanish settlements are almost entirely confined to the large interior plateau, generally called Valley of Olancho, in which the great river Patuca, and the hardly less important streams known as Rio Tinto and Roman or Aguan take their rise. This valley is represented as undulating, fertile, and chiefly covered with luxuriant savannas, supporting vast herds of cattle, which constitute the chief wealth of the people. In this respect, indeed, Olancho is distinguished above any other equal extent of Central, or perhaps of Spanish America.

From its elevation and the proximity of the mountains, Olancho has a cool and healthful climate. Its people are industrious, and live in the possession of all of the necessaries and many of the luxuries of life. From their geographical position, away from the centres of

political commotion, they have enjoyed comparative quiet during all the disturbances to which the country at large has been subjected. This circumstance has been favourable to the accumulation of property, and the department is therefore relatively the richest in the state.

Its exports are cattle, hides, deer-skins, sarsaparilla, tobacco, and bullion, which are chiefly taken to Omoa and Truxillo; a portion, nevertheless, goes by the way of Tegucigalpa to the Gulf of Fonseca. Next to its herds of cattle, its principal sources of wealth are its gold-washings. Nearly all the streams in the department carry gold of a fine quality in their sands. These washings were distinguished for their richness at the time of the conquest, and have ever since maintained a local celebrity. But the jealous policy of Spain was effectively directed to the suppression of all knowledge of the wealth and resources of these countries, and their condition since the independence has been unfavourable to their development. There can, however, be but little doubt that the gold-washings of the rivers Guayape and Mangualil, and their tributaries, are equal in value to those of California, and must soon come to attract a large share of attention both in the United States and in Europe. At present the washings are only carried on by the Indian women, who devote a few hours on Sunday mornings to the work, living for the remainder of the week upon the results. A farther notice of the mineral wealth of this department will be found in the chapter on mines and minerals.

Juticalpa, capital of the department, ranks third in the state in respect of size. It is delightfully situated on a small tributary of the Guayape, not far from the principal stream, and is reputed to contain ten thousand inhabitants. Near it is the large Indian town of Catacamas, and there are other considerable towns of Indians scattered throughout the valley. These Indians are proverbial for their peaceful disposition and industrious habits.

The communication between the valley of Olancho and the coast is chiefly carried on by mules, through the valley of the river Aguan, to Truxillo. A road was formerly opened through the valley of the Rio Tinto, but it was rough and difficult, and soon abandoned. There exists a much easier means of communication by way of the Rio Patuca, which is navigable as far as the Puerto de Delon, within a few leagues of Juticalpa. But the absence of a good port, as well as of commercial establishments at the mouth of the river, has rendered this natural highway of but little value. It is now chiefly used in floating down mahogany, which grows in large quantities on its banks. But even this trade is embarrassed by the difficulty of loading the wood in the open roadstead of the bar of the river. How far the Wanks River may ultimately be made useful to the trade of this department and that of Segovia, in Nicaragua, can only be ascertained by a survey of that stream, the capacities of which are but little known.

DEPARTMENT OF YORO.

Principal Towns.—Yoro, Olanchito, Truxillo, Negrito, Jocon, Sonaguera Sulaco, and Cataguana.

The Department of Yoro comprehends all the northern part of Honduras lying eastward of the river Ulua. Its area is upwards of fifteen thousand square miles; but, while the largest department in size, it is the smallest in respect of population. Its surface is exceedingly diversified. It is made up of a series of valleys, formed by the numerous streams which flow down from the interior into the Bay of Honduras. These have a direction from south to north, and, except on the very shores of the bay, where the country is plain and alluvial, are separated from each other by a corresponding number of ridges or mountain spurs or ranges, of various elevations. Communication transversely to these valleys and mountain ridges is exceedingly difficult, and the population of the department, therefore, has been chiefly concentrated in the valleys of those larger streams which have ports near their mouths, and through which pass the roads leading from the interior to the coast.

The mountains of Pija and Sulaco rise in the western part of this department, and form the eastern boundaries of the valleys of the Sulaco and Ulua rivers. They are terraced and truncated, constituting elevated savannas, sparsely covered with pines; but their soil is comparatively poor, and they have consequently failed to attract population from the more favoured portions of the state. Tradition points to them as containing great mineral

wealth, but they have never been adequately explored, and nothing can be affirmed in this respect with any degree of certainty.

The valleys of all the streams abound in precious woods, and the department may be described as comprising the great mahogany district of Central America. There are *cortes*, or cuttings, on nearly all the streams which, from their size, admit of the wood being floated down to the coast. The inhabitants are chiefly mahogany-cutters by occupation, having their temporary residences at the various *cortes* during the season of cutting, and retiring to their homes and plantations when it is ended.

On the upper waters of the streams, and among the mountains and hills which intervene between the coast and the valley of Olancho are found the remnants of the once famous and indomitable nation of Xicaque Indians. Their numbers are not known, but are estimated at not far from seven thousand. They are peaceful and inoffensive, and traffic freely with the Spaniards, collecting sarsaparilla, India-rubber, and skins, for the purpose of exchange for such few articles of civilised manufacture as they may require.

The greater portion of the great plain of Sula, described below, falls within this department. To the eastward of this plain, and, in fact, constituting an extension of it, is a vast tract of rich and valuable territory, known as *Costa de Lean.*

It has equal capacities with the plain of Sula for agricultural purposes, and in this respect holds out induce-

ments inferior to no other part of Central America or the West Indies. The proximity of the mountains, absence of marshes, abundance of good water, and exposure to the sea-breezes, are circumstances favourable to its salubrity, and must have an influence in directing to it the attention of emigrants and planters. The valleys of Sonaguera and Olanchito may also be mentioned as equally remarkable for their beauty, fertility, and general resources.

Yoro, a town of about three thousand inhabitants, is the capital of this department. Truxillo, already described, is its principal seaport.

DEPARTMENT OF SANTA BARBARA.

Districts.—Omoa, Sta. Barbara, Yojoa, San Pedro.

Principal Towns.—Sta. Barbara, Yojoa, Omoa, San Pedro Sula, Quimistan, Trinidad, Ilama, Sacapa.

This department lies to the northward of Gracias and Comayagua, and intervenes between these departments and the Bay of Honduras. It is traversed by several large streams. The Ulua runs through it from south to north, and the Blanco, Santiago, Sta. Barbara, and Chamelicon also flow through it in other directions. The valleys of these rivers afford large tracts of level and fertile lands, well-wooded, and capable of vast production.

The great plain of Sula, which may be said to commence at Yojoa, is a distinguishing feature of this department. It is not only of great extent, but of unbounded capacity. The early accounts of the country

represent it to have been densely populated by the aborigines. It is now mostly covered by a heavy forest, relieved only by a few narrow patches of cultivated grounds in the vicinity of the towns, which are scattered along the *camino real.* This forest abounds in valuable woods, and from it the greater part of the mahogany exported from Honduras has been derived. The Chamelicon and Ulua are the natural channels through which the mahogany has been, and still is carried to the seaside. That portion of the plain of Sula lying to the eastward of the River Ulua is included in the Department of Yoro. Taking it as a whole, it may be estimated as having a base of sixty or seventy miles on the Bay of Honduras, reaching inland, in the form of a triangle, to Yojoa, a distance of upwards of sixty miles, and comprising an area of not less than fifteen hundred square miles. In the future development of the country, this plain will attract the first attention, not less on account of its valuable natural products than its easy access through good ports, its navigable rivers, and rich and easily-cultivated soil, adapted to the production of cotton, rice, sugar, cacao, and the other great staples of the tropics. A variety of the cacao, called *cacao mico*, and said to be equal, if not superior, to the celebrated cacao of Nicaragua and Soconusco, is indigenous here, and the inhabitants draw their supply from the wild trees in the forest. The vanilla and sarsaparilla are also abundant. Copal-trees, India-rubber, rosewood, dragon's-blood, and other useful trees and precious woods, are found in profusion, and will ultimately contribute to swell the exports

and augment the wealth of the state. Vast numbers of palms of every variety relieve the monotony of the forest with their graceful forms. At one point on the banks of the Ulua, a few leagues above its mouth, is a natural park of the cocoa-nut-palm, which extends along the river for several miles.

In the neighbourhood of Yojoa the country rises by a series of magnificent terraces, which open out in broad, undulating savannas. Their soil is good, and, apart from their natural adaptation for grazing purposes, they admit of profitable cultivation. These terraces are represented as constituting the distinguishing features of the country around the city of Santa Barbara, where the principal part of the population of the department is concentrated.

The great dependent mountain chain of Merendon, elsewhere alluded to as dividing the valleys of the Chamelicon and Montagua, and terminating abruptly on the sea at Omoa, affords, on its slopes, favourable conditions, both of soil and climate, for the cultivation of the grains and fruits of higher latitudes. It, moreover, seems to be rich in gold, which is found, more or less abundantly, in all the streams which flow down its southern declivity. In the neighbourhood of Quimistan there are washings which have long been celebrated for their productiveness. In that portion of this chain back of Omoa, and overlooking the plain of Sula, are vast beds of white marble, of spotless purity, fine, compact, and susceptible of exquisite finish. It more closely resembles the marbles of Carara in Italy than any of those found in the United

States. It is easy of access, and may be obtained in any desirable quantity.

The fine, capacious harbour of Puerto Caballos or Port Cortez, and the small but secure port of Omoa, both fall in this department. They are fully described under the subdivision of "Ports of Honduras."

The inhabitants of this department are chiefly devoted to the raising of cattle, of which large numbers are exported to Belize and Yucatan, and driven into Guatemala, where they command prices ranging from five to ten dollars per head. A large part of the people in the towns in the plain of Sula, or bordering upon it, are employed in the mahogany cuttings, while a few, chiefly Indians, collect sarsaparilla, or occupy themselves, at intervals, in washing gold. Altogether, the department is healthy, and possessed of vast resources, the value of which is enhanced by the natural facilities which it possesses, both in respect of geographical position and the means of interior communication.

CHAPTER VII.

ASPECTS OF NATURE IN HONDURAS.

THE aspects of nature in Honduras are varied and striking. The conditions of conformation of coast, of elevation and consequent temperature, the amount of rain falling upon the respective declivities of the Cordilleras, all contribute to diversify the forms under which vegetable life presents itself to the eye of the traveller. The three great features, nevertheless, are the coast alluvions, generally densely wooded, the elevated valleys of the interior, spreading out in broad savannas, and the high plateaus of the mountains, sustaining an unending forest of scattered pines, relieved by occasional clumps of oak.

Upon the northern coast, in the broad plain through which the Ulua and Chamelicon find their way to the sea, the country is so low as occasionally to be overflowed for considerable distances. Here grow immense forests of cedar, mahogany, ceiba, India-rubber, and other large and valuable trees, thickly interspersed with palms, whose plumes rise through every opening, and fringe the bases of all the hills. The smaller streams are arched over with verdure, and completely shut out

from the sun, while the large rivers gleam like silver bands in fields of unbroken emerald. But even here, where the land is lowest, spread out broad, grassy meadows, the retreats of innumerable wild-fowl, and during the dry season, when the grass on the hills becomes sere and withered, offering abundant support for herds of cattle. In the depths of these primeval forests the mahogany cutters prosecute their laborious calling, rousing the echoes with the ringing strokes of the axe and the shouts of the truckmen, who, with twenty oxen attached to a single log, drag the heavy trunks to the edges of the rivers. The broad meadows supply them with food for their cattle, while every company has its hunter and fisher to help out the fixed rations with which it is provided by the proprietors of the establishments.

Farther to the eastward, on the same coast, the heavy forests are confined chiefly to the valleys proper of the rivers, and give place, at little distances inland, to sandy savannas, covered with coarse grass, and clumps of pines and acacias. But the plain country of the coast is everywhere narrow. The spurs or dependent ridges of the mountain groups of the interior often come down to the very shore. Immediately back of Omoa, within cannon-shot of its fortress, the mountains begin to rise abruptly, and speedily attain the height of nine thousand feet, looking down majestically upon their shadows in the clear waters of the beautiful Bay of Amatique. Such, also, is the case at the port of Truxillo. The peaks of Congrehoy, and the Mountains of the Holy Cross or

Poyas, form gigantic landmarks for the mariner in his approach to the coast of Honduras.

The alluvions of the Pacific coast are also densely wooded, but not extensive. At short distances inland they give place to numerous savannas and *jicarales*, in which the low calabash-tree, with its fruit resembling the apple, conveys to the traveller the idea of a New England orchard. These savannas are studded with clumps of acacias (gum-arabic bushes), and covered with grass; but the pine does not appear on this side of the continent, except upon the slopes of the hills at an altitude of about twelve hundred feet.

The valleys of all the rivers, on both coasts, are heavily wooded, and covered with *lianes* or vines; but as they are ascended toward the interior, vegetation diminishes, and is reduced to a narrow fringe of trees and bushes upon their immediate banks. These valleys, in the high interior country, often expand into broad and beautiful plains, half savanna, half woodland, the common grounds where the products of the tropics and of the temperate zone, the palm and the pine, flourish side by side. Such are the plains of Espino and Comayagua on the Humuya, of Otoro on the Sta. Barbara, Sensenti on the Ulua, La Florida on the Chamelicon, Olancho on the Aguan, and Yuguare on the Choluteca. In some of these, as in that of Comayagua, the variant forms of cactus become distinguishing features, frequently attaining to gigantic size, and almost taking the character of forests. Here they stud the ground, spherical and spinated, warning man and beast against

incautious tread, yet radiating from their grooved sides flowers and fruits of delicate ruby, in shape and colour like glasses of tenderest crystal, flowing over with ruddy wine of golden Burgundy. There they rise in tall, fluted columns, appearing in the exaggerating twilight like the ruins of ancient temples. And still beyond we see them, articulated and jointed, spreading their broad succulent palms, silvered with the silky habiliments of the scarlet cochineal, as if in imploration to the sun. And yet again, lavish of contrasting forms, they trail like serpents over the ground, and twine themselves in knotty coils around fallen trunks and among the crevices of the barren rocks. Here, too, the agave appears, with its dense green cluster of spiny-edged leaves, shooting up its tall stem, to flower but once, scatter forth its thousand bulbs, and then to die.

The mountains which rise around these valleys are ascended by terraces, crowned with forests of pines and oaks, and carpeted with grass. The summits of the mountains sometimes run up in peaks, but generally constitute broad table-lands, more or less undulating, and often spreading out in rolling savannas, traversed with low ridges of verdure, and green belts of trees, which droop over streams as bright and cool as those of New England. Here the familiar blackberry is indigenous, and the bushes which impede the traveller are covered with fruit. Wheat-fields, billowing beneath the cool mountain winds, and orchards of peach and apple trees, struggling against man's neglect, give to these districts all the aspects of the temperate zone; and when,

at night, bright fires of the pine illuminate every hut, and the picturesque inhabitants cluster around them to receive the warmth which the temperature here renders necessary to comfort, the stranger can scarcely appreciate that he is under the tropics, and within fourteen degrees of the line. The contrast which his experiences of to-day afford with those of yesterday, when he rode among groves of palms, plantains, and oranges, become still more decided when the cold, sleety rain descends from leaden skies, or the sharp hail falls from tumultuous clouds, swept over his head by blasts as chill and pinching as those of a northern November.

But whether in plain, in valley, or on mountain, everywhere the trees are covered with parasitic plants. Some varieties of cactus, particularly that of which the long, tangled arms are prismatic in form, do not disdain to fix themselves in the forks of the calabash-tree, and overwhelm it with their own more rapid growth. So abundant are these air-plants, that it is sometimes difficult to discover the verdure of the tree to which they are attached. Some are delicate as threads of silk, and others coarse and rank, but all of wax-like beauty, and many producing flowers of brilliant colours. Science would exhaust its nomenclature in distinguishing them, and the traveller is happy to think of them as yet unburdened with the portentous designation of studious Dryasdusts, to whom nature was not given as "a joy for ever," but a thing to be classified and named, and mummified in Greek and Latin cerements.

Upon the higher mountain crests, where the short

and hardy grass betokens a temperature too low for luxuriant vegetation of any kind, the air-plants themselves disappear, and the pines and gnarled oaks are draped in a sober mantle of long gray moss, which waves mournfully in the wind, like frayed and dusty banners from the walls of old cathedrals. The rocks themselves are browned with mosses, and, except the bright springs gushing from beneath them, and trickling away with a silvery murmur, there is no sound to break the eternal silence. The traveller sees, perhaps, a dark shadow sweep over his path; it is that of the eagle or of the voiceless raven, poising in the sky. Upon some distant rock his eye catches a slight and graceful figure; there is a sudden but noiseless bound, and the antelope of the mountain has disappeared.

The geological features of Honduras are equally marked and impressive. Starting from the Gulf of Fonseca and advancing northward, we leave behind us the volcanic coast-range, with its high, grassy peaks of scoriæ, and reach at once vast masses of white and rose-coloured rock, the out-liers of the great sandstone nucleus of the central plateaus. Viewed from a distance, they appear like cliffs of trap or basalt, and take a thousand castellated forms with the changing positions of the traveller. Among these we find occasional beds of blue limestone, and ribs of quartz and greenstone are here and there boldly protruded through the superincumbent rocks, richly veined with ores of silver and of gold.

As we proceed farther inland, the mountains rise by a succession of terraces, deeply furrowed by streams de-

scending to the sea. These terraces prove to be a succession of vast stratified sandstone deposits or beds, presenting abrupt edges, up which the sure-footed mule toils painfully and with difficulty. But when the ascent is accomplished, the traveller finds spread out before him extensive savannas, interspersed with groves of pines, and clumps of oaks and bushes. Often the layer of soil is thin, and a scant vegetation strives in vain to divest nature of its savage aspect. The rocks, exposed and bare, reflect the light of the sun, which shines down through the clear and rarefied atmosphere of these elevated regions with a blinding glare. The weary traveller looks forward with aching eyes, tracing the white line of the solitary path across the arid plain, and urges on his faithful mule, in the hope of finding some narrow valley, worn in the rock by mountain streams, where he may form his lonely camp for the night, in the pleasant company of living trees and running waters.

Suddenly the plateau along which he is journeying breaks away in a few rapid terraces, and reveals, almost beneath his feet, a wide and level plain, mottled with savanna and forest, threaded with bright streams, and dotted with villages, whose white churches catch the light like points of silver in the landscape. It seems but a little distance there: a stone thrown from the hand might fall in the square plaza, so distinctly defined, of the first village, but hour after hour the traveller toils downward, and night falls, and he sees the gleaming of lights in the valley, before the familiar barking of dogs, and the instinctive accelerated pace of

his mule, apprise him that at last he has reached the level ground.

In the western part of Honduras, among the Mountains of Corquin, the outline of the country is exceedingly bold and diversified. The rivers, collecting their waters in interior basins, break through the porphyritic mountains and hills which surround them in deep valleys or gorges, with steep and precipitous sides. Yet in these fissures, whose bottoms are only reached by dangerous zigzag paths, are found strips of alluvial soil, where the Indian builds his hut, and the necessary plantain has a luxurious growth, beneath high and frowning cliffs, bristling with peaks, like gigantic sentinels, along their rocky ramparts.

A greater variety of trees and abundance of verdure cover the hills and mountains of the northern coast, which have, in consequence, a less rugged aspect than those on the Pacific declivity, where the rains are not so constant. The hills are more swelling, and the mountains, though equally elevated, have a softer and more harmonious outline. They present few cliffs or rocky crests, and in their denser forests afford more congenial retreats to the multitudinous forms of animal life which are nurtured in the genial tropics.

Birds of brilliant plumage sparkle in the foliage of the trees, and crowds of monkeys troop among their branches. The tapir, the peccary, and the ant-eater live in their shade, and the puma and the cougar lurk in their recesses. Here, too, are found the boa, the bright corral, and the deadly tamagas. The vanilla

hangs in festoons from the limbs, and the sarsaparilla veins the earth with its healing root. And while silver, imprisoned in flinty quartz or crumbling greenstone, tempts men to labour with the promise of rich reward on the other slope of the continent, here gold glitters in the sands of almost every stream.

It is thus that Nature, lavish of her gifts, has comprised within the comparatively narrow limits of Honduras a variety of scenery, as well as of climate and production, unsurpassed by any equal portion of the earth. Upon the coasts she robes herself in luxuriance, draped in vines, crowned with flowers, and her breath is fragrant with aromatic gums, while the sea kisses her feet with its frothy lips. But among the mountains, in sober monastic robes, she is no longer the productive mother. The wind lifts the gray hair on her serene brow; but even here her lips, though motionless, still utter a language of lofty and holy import to the sensitive ears of her true votaries.

CHAPTER VIII.

MINES AND MINERALS.

IN respect of mineral resources, Honduras ranks first among all the states of Central America. Indeed, the mineral wealth of the country at large seems chiefly confined to that system or cluster of mountains which constitutes what may be called the plateau of Honduras. Nueva Segovia and Chontales, the mineral districts of Nicaragua, naturally belong to this mountain system; and the same is true of the mineral district of the department of San Miguel in San Salvador, which embraces the only mines found in that state. There are a few mines of gold and silver in Guatemala and Costa Rica, but, as compared with those of Honduras, they are insignificant in number and value.*

Mining has indeed been always, and until recently, the predominant interest in Honduras; but no branch of industry suffers so directly from wars and civil dissensions, such as have agitated Central America for the

* "El estado de Honduras es el mas rico en puntos minerales; alli esta el famosa del *Corpus*, que en otros tiempos produjo tanto oro, que se estableció en él una tesoreria para solo el cobro del derecho de quintos; el departamiento de Olancho en el mismo estado posee el rio *Guyape*, de cuyas arenas se saca, sin beneficio, el oro mas apreciable." —*Montéfur, Centro-America*, xxiii.

last thirty years. As a consequence, mine after mine has been abandoned, and the works once fallen into decay, there has been neither the enterprise, capital, nor intelligence necessary to restore them. The mining districts are studded with decaying mining villages, whose proprietors have become *hacienderos*, owners of immense grazing estates, on which their former labourers are now employed as herdsmen. A few establishments are still kept up, but the operations are conducted on a very small scale, and in a very rude manner, and afford a very imperfect indication of the capabilities of the mines.

Few of the mines were ever opened in conformity with any well-established or intelligent system, nor with any reference to continuous or extended operations. Without adits or machinery for draining, the only means of removing the water, which invaded many of the richest, were leathern buckets carried on the backs of men, in which manner also the ore was brought up from shafts so narrow as rarely to allow more than one man to work in breaking out the ore. When obtained, it was frequently crushed by heavy stones, bevelled on their lower edge, and vibrated backward and forward by men, or else slowly reduced by the rudest and most cumbersome machinery, driven generally by oxen or mules, but occasionally by water. In the latter case, the apparatus consisted of a vertical shaft (driven by a wheel moving horizontally), through which passed an arm, having at each end heavy stones attached by chains, which were thus dragged over the ore, in a basin

of masonry, until it was reduced sufficiently for amalgamation. This last operation was performed by placing the amalgam in heaps in a "*patio*," or yard, upon a floor of boards, where it remained for several weeks, until the amalgamation became complete, when the mass was washed in troughs, and the result reduced by fire.

But, even under all these difficulties, and rude and expensive processes, mining in Honduras, as I have said, was formerly carried on extensively and profitably. The mines were seldom worked to any great depth, and their proprietors were often obliged to abandon most of them before they had been carried to the depths where the richest ores are generally found. Others were given up from lack of knowledge of treating the ores; and still others from the lack of roads whereon the ores could be transported to the mills.

There are hundreds of mines scattered over the country, abandoned and filled with water, most, if not all, of which, could be profitably worked by the application of proper machinery. But as there are now no roads over which machinery can be transported, many of them must await the general development of the country to become of value. The rough and narrow mule-paths in the neighbourhood of the ports, on both oceans, are lined with fragments of heavy and expensive machinery, which men more enterprising than prudent have vainly essayed to introduce into the country. They are enduring monuments of that blind energy which neglects necessary means in its eagerness to attain desirable ends.

Silver ores are the most abundant and valuable of any which exist in the state. They are chiefly found upon the Pacific ranges or groups of mountains, while the gold-washings, if not the gold mines proper, are most numerous on the Atlantic slope. The silver is found, in various combinations, with iron, lead, copper, and in a few instances, with antimony. Chlorides of silver are not uncommon, and rank among the richest ores in the country.

The group of silver mines in the neighbourhood of Ocotal in Segovia (Nicaragua) enjoy a high celebrity, and are undoubtedly of great value. They yield their silver in the forms of sulphurets, bromides, and chlorides. Some of the mines give an argentiferous sulphuret of antimony. The mine of Limon, in the vicinity of Ocotal, formerly yielded large quantities of chloride of silver; but is now unworked for want of requisite machinery to keep it free from water. The ores of this district yield variously from 28 to 727 ounces of silver per every ton of 2000 lbs., or 32,000 ounces.

The mineral district of Yuscuran, in the department of Tegucigalpa, has a high and deserved reputation for the number of its mines, and the value of its ores. These are, for the most part, an argentiferous galena, and, when worked, yield from 63 to 1410 ounces per ton. The mines throughout this department and that of Choluteca yield a similar ore, generally occurring in a matrix of quartz, with varying proportions of brown blende, and sulphurets of zinc and iron, and oxydes of iron.

The mines of the Department of Gracias are equally celebrated with those of Tegucigalpa. Some remarkable combinations of silver are found in their ores. The upper or old mine of Coloal has sulphuret of copper (copper glass), galena with sulphuret of silver, and in parts copper, pitch ore, and black copper, the whole yielding 58 per cent. of copper, besides from 78 to 84 ounces of silver to the ton. The ores of the new mine of Coloal are a combination of chloride of silver, a little sulphuret of silver, oxyde of iron and antimony, mixed with earthy matter, and yield the somewhat startling proportion of 23.63 per cent., or 8476 ounces per ton of 2000 lbs. !

Dependent upon the silver deposits of Honduras are those of the department of San Miguel, in San Salvador. The silver occurs generally in the form of sulphurets, in combination with galena, iron, black blende (sulphuret of zinc), in quartz and greenstone matrices, interspersed with threads and crystals of native silver. The particular mines known as those of "El Tabanco" are richest, and yield from 100 to 2537 ounces per ton. These have been extensively and profitably worked, and derive a large part of their value from their proximity to the Bay of Fonseca.

Gold mines are not uncommon in Honduras, but, excepting those of San Andres in the Department of Gracias, and in the vicinity of San Juan Cantaranas in Tegucigalpa, they are no longer worked. The principal supplies of this metal in the state are drawn from the gold-washings of Olancho, which are exceedingly pro-

ductive. The River Guyape has always enjoyed great celebrity for the amount of gold contained in its sands; but since the early period of Spanish occupancy, washing has not been carried on except on a very small scale by the Indians, and even with them the process is generally left to the women and children, who only work for a few hours on Sunday mornings. Yet the amount thus obtained and carried into Juticalpa in the year 1853 was valued at $129,600.

The following paragraphs in reference to the gold district of Olancho are extracted from a private letter from Dr Charles Doratt, who visited that region in 1853:—

"Among the rivers of Olancho which we visited and 'prospected,' the Guyape and Jalan are decidedly the richest in auriferous sands. These two rivers unite a little below Juticalpa, the capital of Olancho, and form the Rio Patuca or Patook. The gold deposits on the Guyape commence properly at a point called Aleman, continuing thence up the river, the banks upon both sides containing much fine gold. We found gold in the alluvions half a mile distant from the present bed of the river. Leaving Juticalpa in a north-east direction, and crossing the department near Yocon, over an area of twenty leagues long and ten broad, there is not a streamlet, however insignificant, which does not contain gold both in its sands and in the banks which border it. For the most part, these streams follow the courses of the mountains, and fall into the Guyape and Jalan. The remaining ones, including the Sisaca and Mangualil (the latter carrying gold of larger size than the others), run into the 'Rio Mirajoço,' which, taking the name of Taguale, after fertilising the beautiful valley of Olancho, reaches the sea near Truxillo. In these larger rivers the gold is found in deposits near the bends and rapids. The finest

gold is from the Guyape, Jalan, and Mangualil, in the Department of Olancho, and the Sulaco, Caymito, and Pacaya in that of Yoro. . . . At Aleman the women only wash the sand on Sunday mornings, and with the aid of their miserable *batteas*, in a few hours procure a sufficient quantity of the metal to supply their wants for the ensuing week. It is sold on the spot at from $11.50 to $12 per ounce. At Guijana the gold is found in a soft slate, and at San Felipe in a red ferruginous earth. About five leagues from Danli, the Jalan produces well, and at the time of my visit there were more than a hundred men and women engaged in washing. They also used the *batteas*, and never went more than two or three feet below the surface."

The southern districts of Honduras, bordering on Nicaragua, bear also rich *placers* of gold, whence the Indians annually take considerable quantities. The same is true of the northern districts of the department of Sta. Barbara. The streams which flow from the mountains of Omoa into the Rio Chamelicon, and especially those in the vicinity of the town of Quimistan, all carry gold in their sands. Miners properly provided with implements for washing could not fail to secure here a rich reward for their labour and enterprise.

Honduras has also mines of copper of unsurpassed richness and value. The ores in all cases contain considerable proportions of silver. Those of Coloal, in Gracias, already alluded to, contain 58 per cent. of copper, besides about 80 ounces of silver to the ton. The ores from the mine of Guanacaste, department of Olancho, give upward of 80 per cent. of pure copper, besides 2.9 per cent. of silver, equal to 1039 ounces of silver per ton. But, notwithstanding their great richness,

these mines have been always neglected by the mining interest, or worked primarily for the silver which they contain in combination with the copper. Under the peculiar circumstances of the country, and principally from the difficulty of communication, the production of this metal has hitherto been regarded as unprofitable, and the pure copper as hardly worth its transportation to the coast; but, with improved means of communication, and the introduction of modern improvements in reducing the ores, the copper mines of Honduras must become one of the principal sources of wealth to the state. There are some mines of this metal in the neighbourhood of the Gulf of Fonseca from which it has been customary for the merchants to ballast vessels, or fill out the freight of those bound for England or Germany, where the ores have always commanded a good price, and yielded a fair return to the shippers, notwithstanding the difficulty and cost of transportation to the coast.

Byam, who visited Nicaragua and Honduras for mining purposes, describes the copper ores as, for the most part, "uncombined with sulphur," and not requiring calcination. He adds, that "they may all be smelted in a common blast-furnace, with the aid of equal quantities of iron-stone, of which there is abundance in the hilly country. The ores are what the Spanish miners call *metal de color*, red and blue oxydes, and green carbonates, with now and then the brown or pigeon-breasted. They cut easily and smoothly with the knife, and yield from 25 to 60 per cent. The veins

are generally vertical, and the larger ones run east and west."

Iron ores are common, but none of the mines of this metal are worked, except those of Agalteca in Tegucigalpa. The ore is highly magnetic, and so nearly pure that it is forged without smelting. It occurs in vast and exhaustless beds, and the metal might be produced in any desirable quantity; yet, within ten leagues of the mine, in the same department, it sells at the rate of from $10 to $12 per *quintal*, equal to $200 per ton.

Platina is said to exist both in the departments of Choluteca and Gracias, but the mines have never been worked. Cinnabar has also been found at several points, but probably not in sufficient quantities to admit of being reduced with profit. Zinc occurs in various combinations, and superior ores of the metal are found in great abundance on the islands of Guanaja (Bonacca) and Roatan. Antimony and tin also exist, but whether in such combinations as will admit of their economic production remains to be proved by experiment.

The opal mines of Gracias are worked to a large extent, and have been very productive. Some of the stones are large and beautiful, but most have suffered at the hands of the Indians, who estimate their value rather from their numbers than their size, and consequently break them in small pieces.

No means exist for determining the annual product of the opal mines, but it may be partially inferred from the fact that the mines or workings in the department are not less than one hundred in number. Amethysts

are also reported as having been found in this department, but none have fallen under my notice. Asbestos is known to exist, and, there is reason to believe, might be produced in quantities sufficient to meet all demands.

Coal has been discovered in several localities. The beds in the valley or plain of Sensenti are very extensive. I visited those in the neighbourhood of the village of Chucuyuco, at a point where they are cut through by the streams flowing down from the Mountains of Merendon into the Rio Higuito. The lower bed is about eight feet in thickness, separated from an upper stratum, which is two feet in thickness, by a layer of bituminous shale. The coal is what is called "brown coal," which is of a later formation than that familiarly known as "*pit coal*," which occurs beneath the new red sandstone. It is a tertiary formation of the era of the chalk of the Mississippi Valley. This coal occurs in vast layers in various parts of Germany, where it is extensively used for smelting metals in reverberating furnaces. Specimens of the Sensenti coal gave the following results:—

Specific gravity, ...	1.504
Ashes and earthy matter, ...	25 per cent.

But these specimens were taken from the exposed faces of the beds, where they were washed by the streams, and were consequently much infiltrated with foreign substances. The area of the beds is not known, but they probably extend below the greater part of the plain or valley. Situated so far inland, it is not presumed that these beds can ever have more than a local value in the

reduction of the rich silver and copper ores found in the neighbouring mountains.

Other beds of coal are said to exist in the valley of the Sulaco River, department of Comayagua, and in the neighbourhood of Nacaome, department of Choluteca; but I am in possession of no positive information in respect to them.

In addition to these brief notices of the mines and minerals of Honduras, I may mention that an abundance of fine white, blue, and veined limestone is scattered throughout every department of the state. Large beds are found within a few miles of the Gulf of Fonseca, and extend thence through the valley of the Rio Goascoran, plain of Comayagua, and valley of the Humuya, to the Bay of Honduras. The hills and mountains back of Omoa have exhaustless quarries of a fine, compact, white marble, remarkably free from faults and stains, and well adapted for statuary and ornamental use.

It is impossible, from the same want of data which I have deplored in respect to every other branch of industry, to form an accurate or satisfactorily approximate estimate of the past or present production of the mines of Honduras. It is alleged by persons whose antecedents entitle their statements to weight, that upwards of $3,000,000 in gold and silver were annually exported from the northern parts of the state during the later years of its provincial existence. Since the independence, a small export duty has existed on bullion, but the facilities for evading the law have been such that

it is not likely that one-tenth part of the amount sent out of the country has come upon the records of the customs. Any statement upon the subject must therefore be purely conjectural.

In 1825, a statement was made by the Master of the Mint of the Federal Republic of the amount of gold and silver coined for the period of fifteen years previous and subsequent to 1810. He reports as follows:—

"For fifteen years, ending 1810, were coined 285 marks of gold, 253,560 marks of silver, collectively valued at $2,193,832.

"For fifteen years, ending 1825, 1524 marks of gold, 42,388 marks of silver, equal in value to $3,810,383."

But the amount coined in the mint of Guatemala was insignificant in comparison with the aggregate product of the country during the same period. Where there was one dollar of coin from the mint in circulation, there were twenty dollars which were without the government stamp, mere rough pieces of pure gold and silver, which were received and paid out by weight.* Furthermore, during that period, with the exception of indigo and cochineal, the precious metals constituted the principal export of the country. Upon this point the report above quoted observes: "It must not be deduced from these statements that the amount

* Thomas Gage, an English friar, who resided for twelve years in Guatemala, about the middle of the seventeenth century, has left us some facts which go to show the large and unrecorded production of the precious metals at that period. He speaks of one hundred mules entering the city of Granada "laden with gold and silver, which was the king's tribute."—"*New Survey of the West Indies*," p. 421.

of gold and silver coined indicates the amount produced in the country. Apart from the amount manufactured into ornaments and used for other purposes, there has been a great quantity exported, particularly since 1821. It is positively known that the merchants of Honduras and other parts have exported great quantities of gold and silver bullion, so that, according to the calculations of intelligent persons, not one-tenth part of the production of these metals has passed into the mint. On this account, it is impossible to state exactly the actual produce of each year, and much less the amount exported, because the greater part has been effected clandestinely. In all the territories of the republic there are mines in abundance, but particularly in the State of Honduras, where the greatest number are to be found, and where nature presents her greatest mineral wealth. . . . M. Gourmez, a mining engineer, who has visited most of the mines of Honduras, assures me that it is easier to find mines than men to work them; and that, if labour and means of communication existed, our mineral productions might in a short time rival those of Mexico and Peru." *

It should be observed that Honduras has adopted, without modification, the famous "*Ordenanzas de la Mineria,*" or mineral ordinances of Spain, for the government of the mining interest.

* It is affirmed, in the report here quoted, that upwards of two thousand metallic veins had been registered in Honduras up to the year 1825.

CHAPTER IX.

PRECIOUS WOODS—VEGETABLE PRODUCTIONS—ANIMALS —FISHES—REPTILES—INSECTS.

THE precious woods of Honduras rank next only to its minerals in point of value. At present they probably constitute the principal item in the exports of the state. Those best known are the mahogany and rosewood; but the proportion of the former which enters into commerce is much the greatest, and, both in this respect, and as giving employment to a considerable body of the inhabitants of the state, it is entitled to a first consideration.

And here it may be observed that the mahogany-tree of Honduras (*Swietinia mahogoni*), in respect of its vast size and magnificent foliage, is entitled to be called "King of the Forest." In comparison with it all other trees dwindle into insignificance. The enormous size and height of the trunk, the vast spread of its branches, and the space of ground occupied by its roots, are equally remarkable. It is of exceedingly slow growth, hardly undergoing a perceptible increase of size in the narrow span of man's life. It has been calculated that it requires three hundred years wherein to attain a growth proper for cutting. Some idea may be formed

of the great size which it sometimes attains from the fact that the lower section of a tree seventeen feet long, has been known to measure "in the square" five feet six inches, equal to five hundred and fifty cubic feet, and a weight of seventeen tons!

The mahogany grows in nearly all parts of Honduras, in the valleys of the various streams. It is, however, most abundant upon the low grounds which border the rivers flowing into the Bay of Honduras, where it also attains its greatest size and beauty, and where the mahogany works, called "cortes" (cuttings) by the Spaniards, are chiefly confined. As these lands are for the most part the property of the state, the wood is cut under licences obtained from the Government, which exacts a fixed sum for each tree. Except those made at the mouths of the various rivers for receiving, marking, and shipping the wood as it is floated down, the mahogany establishments are necessarily temporary, and changed from time to time as trees become scarce in their neighbourhood.

Of all occupations known to man, that of the mahogany-cutter is perhaps the wildest in its nature, and yet among the most systematic in its arrangements. When the cutter has fixed upon the valley of some river as the field of his operations, he makes a dépôt for storing provisions, and for securing and embarking the wood. Here he maintains a little fleet of *pitpans* for carrying supplies and keeping up relations with the "works" proper, the sites of which are determined chiefly by the abundance of trees, their accessibility,

and the means that exist for feeding the cattle which it is necessary to use in "trucking" the wood. To these points it is often necessary to drive the oxen through thick and untracked forests, and to carry the chains and trucks, by means of small boats, against strong currents, or over shallows and rapids, which are only surmounted with infinite labour.

The site once definitely fixed upon, the next step is to erect temporary dwellings for the men: a task of no great difficulty, as the only requisite is protection from the sun and rains, which is effected by a roof thatched with long grass from the swamps, or with "cahoon" leaves, or the branches of the thatch-palm. A hammock swung between two posts, two stones to support his kettle, and the hut of the cutter is both finished and furnished!

The mahogany season, which lasts some months, commences in August of each year, it being the opinion of cutters that the wood is not then so apt to split in falling, nor so likely to "check" in seasoning, as when cut from April to August, in what is called "the spring." Furthermore, by commencing at this period, the cutter is enabled to get down his wood, and prepare it for trucking by the setting in of the dry season.

The labourers are divided into gangs or companies of from twenty to fifty each, under the direction of a leader styled "a captain," who directs the men in his company, assigns them their daily tasks, and adds to or deducts from their wages in proportion as they accomplish more or less than what is supposed to be a just day's work.

Each gang has also one person connected with it, who is called a hunter, whose duty it is to search the "bush" for trees proper to be cut. His work, therefore, commences somewhat earlier than that of the others, and, as it involves activity and intelligence, he is paid much higher wages than the mere cutters. His first movement is to cut his way through the thickest of the woods to some elevated situation, where he climbs the tallest trees he finds, from which he minutely surveys the surrounding country.

"At this season of the year (August), the leaves of the mahogany-tree are invariably of a yellow-reddish hue, and an eye accustomed to this kind of exercise can, at a great distance, discern the places where the wood is most abundant. He now descends, and to such places his steps are at once directed, and, without compass or other guide than what observation has imprinted on his recollection, he never fails to reach the exact spot at which he aims. On some occasions, no ordinary stratagem is necessary to be resorted to by the huntsman to prevent others from availing themselves of the advantage of his discoveries; for, if his steps be traced by those who may be engaged in the same pursuit, which is a very common thing, all his ingenuity must be exerted to beguile them from the true track. In this, however, he is not always successful, being followed by those who are entirely aware of all the arts he may use, and whose eyes are so quick that the slightest turn of a leaf or the faintest impression of the foot is unerringly perceived; even the dried leaves which may be strewed upon the ground often help to conduct to the secret spot; and it consequently happens that persons so engaged must frequently undergo the disappointment of finding an advantage they had promised to themselves seized on by others. The hidden treasure being, however, discovered,

the next operation is the felling of a sufficient number of trees to employ the gang during the season.

"The tree is commonly cut about ten or twelve feet from the ground, a stage being erected for the axe-man employed in levelling it; this, to an observer, would appear a labour of much danger, but an accident rarely happens to the people engaged in it. The trunk of the tree, from the dimensions of the wood it furnishes, is deemed most valuable; but, for purposes of an ornamental kind, the limbs or branches are generally preferred, their grain being much closer, and the veins richer and more variegated."

A sufficient number of trees being cut, the preparations for "trucking" commence by the opening of roads from the places where they lie to the nearest river. The distance of road to be cut depends on the situation of the trees. When they are much dispersed, miles of roads and many bridges are required. A firm and well-graded main road is first built, from whence radiate numerous wing-roads. These are all built by task-work, and the principal amount of the labour of the cutters is expended upon them. The clearing away of the bushes and undergrowth is the work of one set of men, who are expected to clear one hundred yards per day. They are followed by another set, who cut down the larger trees as even with the ground as possible, the task being also one hundred yards per day to each labourer, although this is more difficult and laborious, from the number of hard woods growing here, which, on failure of the axe, are removed by the application of fire. The trunks of these trees, although many of them are valuable for different purposes, such as bullet-tree,

ironwood, redwood, sapodilla, &c., are thrown away as useless, unless they happen to be adjacent to some creek or small river which may intersect the road; in that case they are applied to the constructing of bridges across the same, which are frequently of considerable size, and require great labour to make them of sufficient strength to bear such immense loads as are taken over them.

The roads being finished generally by the month of December, the trees are sawn into logs of various lengths, in order to equalise the loads which the oxen have to draw. This being completed, the logs are separated one from the other, and placed in whatever position will admit of the largest square being formed according to the shape which the end of each log presents, and is then reduced, by means of the axe, from the round or natural form into "the square;" although some of the smaller logs are brought out in "the round," yet, with the larger description, the making them square is essential, not only to lessen their weight, but also to prevent their rolling on the truck or carriage.

"In the months of April and May, all the various preparations having been completed, and the dry season having become sufficiently advanced, the 'trucking' commences in earnest. This may be said to be the mahogany-cutter's harvest, as the result of his season's work depends upon a continuance of the dry weather, for a single shower of rain would materially injure his roads. The number of trucks worked is proportioned to the strength of the gang, and the distance generally from six to ten miles. We will, for example, take a gang of forty men, capable of working six

trucks, each of which requires seven pair of oxen and two drivers, sixteen to cut food for the cattle, and twelve to load or put the logs on the carriages, which latter usually take up a temporary residence somewhere near the main body of the wood, it being too far to go and return each day to the river side, or chief establishment. From the intense heat of the sun, the cattle would be unable to work during its influence; consequently, they are obliged to use the night-time in lieu of the day, the sultry effects of which it becomes requisite to avoid. The loaders, as before mentioned, being now at their stations in the forest, the trucks set off from the *embarcadero* about six o'clock in the evening, and arrive at their different places of loading about eleven or twelve o'clock at night. The loaders, being at this time asleep, are warned of the approach of the trucks by the cracking of the whips carried by the cattle-drivers, which are heard at a considerable distance; they arise, and commence placing the logs on the trucks, which is done by means of a temporary platform laid from the edge of the truck to a sufficient distance upon the ground, so as to make an inclined plane, upon which the log is gradually pushed up from each end alternately. Having completed their work of loading all the trucks, which may be done in three hours, they again retire to rest till about nine o'clock next morning. The drivers now set out on their return, but their progress is considerably retarded by the lading; and although well provided with torchlight, they are frequently impeded by small stumps that remain in the road, and which would be easily avoided in daylight. They, however, are in general all out at the river by eleven o'clock next morning, when, after throwing the logs into the river, having previously marked them on each end with the owner's initials, the cattle are fed, the drivers retire to rest until about sunset, when they feed the cattle a second time, and yoke in again.

"Nothing can present a more extraordinary appearance than this process of trucking, or drawing down the mahogany

to the river. The six trucks will occupy an extent of road of a quarter of a mile. The great number of oxen, the drivers half-naked (clothes being inconvenient, from the heat of the weather and clouds of dust), and each bearing a torchlight, the wildness of the forest scenery, the rattling of chains, the sound of the whip echoing through the woods; then all is activity and exertion so ill corresponding with the silent hour of midnight, makes it wear more the appearance of some theatrical exhibition than what it really is, the pursuit of industry which has fallen to the lot of the Honduras wood-cutter.

"About the end of May the periodical rains again commence. The torrents of water discharged from the clouds are so great as to render the roads impassable in the course of a few hours, when all trucking ceases; the cattle are turned into the pasture, and the trucks, gear, and tools, &c., are housed.

"The rain now pours down incessantly till about the middle of June, when the rivers swell to an immense height. The logs then float down a distance of two hundred miles, being followed by the gangs in pitpans (a kind of flat-bottomed canoe), to disengage them from the branches of the overhanging trees, until they are stopped by a boom placed in some situation convenient to the mouth of the river.

"Each gang then separates its own cutting by the mark on the ends of the logs, and forms them into large rafts, in which state they are brought down to the wharves of the proprietors, where they are taken out of the water, and undergo a second process of the axe to make the surface smooth. The ends, which frequently get split and rent by the force of the current, are also sawed off, when they are ready for shipping."

The wages paid in Belize by the English cutters on the eastern coast of Yucatan do not vary much from the prices common in Honduras. A "gang" there is

understood to comprehend a "captain" and fifty men, divided into thirty first-class, ten second-class, and ten third-class. The captain receives from $30 to $45 per month, and the men $15, $12, and $10, according to their rank. The hunter for the gang has $15 per month, or most frequently is paid at from half a dollar to a dollar for each tree he finds, according to its size and value. The men here, as in Honduras, are supplied with tools and rations, and receive their pay in the same relative proportion of goods and money.

Around Belize the mahogany-cutters are chiefly negroes, descendants of the slaves who were formerly employed there. But in Honduras they are principally Caribs, who in activity and strength are said to excel the negroes; they are also more intelligent, and require less care and superintendence. Many of them go annually to Belize, and hire themselves for the season, returning to their homes at its close.

In reference to the mahogany trade of Honduras, as, indeed, in respect to every other branch of industry, and commerce, we are without information as to its amount and value. It may nevertheless be regarded as steadily *increasing, and as promising to become every year more* important as the supplies of wood from the islands and from the peninsula of Yucatan diminish, and as the demand for it in the markets of the world is augmented. The principal establishments are now on the River Ulua and its branches, and on the Aguan, Black, and Patuca rivers. The other streams have been neglected, in consequence of the difficulty of floating down the

wood, as well as of embarking it on an unprotected shore.

Besides the mahogany, Honduras supplies nearly every other variety of wood common to the tropics, all of which are too well known to need more than an enumeration. Rosewood is common on the northern coast, where it is beginning to become an article of commerce. Lignum vitæ abounds in the valley of the Ulua, and on the banks of the rivers in the plain of Comayagua, and no doubt is common in all other parts of the state.

Among the numerous dyewoods, or trees producing dyes, for which Honduras is famed, may be enumerated the fustic, yellow sanders, Brazil-wood, dragonsblood-tree, Nicaragua-wood (a variety of Brazil-wood), and the Anotta.

Trees producing gums and medicines are not less numerous. The gum-arabic bush abounds on all the open savannas on the Pacific slope; and in the forests may be found the copaiba-tree, the copal-tree, liquid amber, palma christi, ipecacuanha, and finally the *ule*, caoutchouc or India-rubber. The latter is abundant in the low lands of both coasts. Small quantities are collected for sale by the Caribs on the bay of Honduras, but it has as yet received very little attention.

Among the common and most useful woods, the long-leaved or pitch-pine deserves the first mention, not less on account of its excellent quality than its great abundance. It may almost be said to cover all the more elevated portions of Honduras, from one sea to the other. Upon the Pacific slope of the continent it makes its

appearance on the hills and mountains at the height of about one thousand two hundred feet above the sea. Toward the interior it is found at lower elevations, and on the Atlantic declivity it is abundant nearly down to the sea-level. I found it on the low hills bordering the great plain of Sula, on the west, at the height of two hundred and fifty feet; and it is well known that on the savannas bordering the rivers and lagoons to the eastward of Truxillo, as well as on the Mosquito Shore, it is a characteristic feature. The trees do not grow closely together, but stand well apart, permitting the mountain grasses to grow beneath and around them, so that a pine forest in the interior more resembles a well-kept park than the thickets to which we are accustomed to give the name of forest. The trees grow frequently to great size, but average about twenty inches in diameter. They are rich in pitch, and the wood is firm, heavy, and durable, and the heart is never attacked by insects. It furnishes, therefore, a cheap and convenient timber for all kinds of constructions in the country, as well for bridges as for buildings and for boats. Captain Henderson observes of the Honduras pine:—"The timber which it furnishes can scarcely be exceeded in size, and is generally considered, for every necessary purpose, greatly superior to what can be imported from the United States;" and Strangeways expresses the conviction that the endless tracts of pine forest on the northern coast will ultimately come to furnish a large supply both of pitch, tar, and timber for the wants of commerce.

The *cedro*, or cedar, ranks next to the pine in the list of common and useful woods. It is found in all the valleys, but more particularly in those of the principal rivers near the coasts. It attains the height of seventy or eighty feet, and a diameter of from four to seven feet. It is not attacked by insects, is light and easily worked, as well as ornamental in colour and agreeable in smell. For these reasons, it is more extensively used than any other wood in Honduras. It is now exported in small, but increasing quantities. Most of the canoes and *pitpans* of the natives are hollowed from the trunks of the *cedro*, and are both light and durable, but liable to be split in beaching.

The *ceiba*, or silk-cotton-tree, is abundant, and distinguished for its vast size, which leads to its common use for "*bongos*" and "*pitpans*." I have seen boats, hollowed from a single trunk, which would measure seven feet "in the clear" between the sides. This tree blossoms two or three times a year, when its carnation flowers give a bloom to an entire forest. It produces a pod containing a kind of downy fibre or cotton, which is sometimes used to stuff cushions and pillows, and may possibly be made useful for other purposes.

In addition to these woods, all of those enumerated below are more or less abundant and fitted for use, viz. —Live-oak, Santa Maria, sumwood, sapodilla, mangrove, mangrove grape-tree, ironwood, calabash, buttonwood or mangle-saragoza, mohoe, locust, polewood, almond or *almendrillo*, various kinds of oak, granadillo, many varieties of palms, zapote, &c., &c.

Apart from the lime, lemon, orange, and palm trees, there is a great variety of trees bearing fruits which are indigenous in this country. The cacao is one of these, and is remarkably abundant on the northern alluvions, where the natives draw their entire supplies from the forest. It is known there as the *Cacao mico*, monkey or wild cacao, and is distinguished from the cultivated variety by having larger nuts, and, it is claimed, a finer flavour. The pimento-tree, closely resembling the Jamaica "allspice," is also indigenous. Its berry is somewhat larger than the variety found in the islands, but weaker in its aroma, and has not yet entered into the commerce of the country.

The anona, of several varieties, is also indigenous; the aguacate, or alligator-pear, citron, tamarind, guava, pines, mango, papaya, zapote, granado, mamay, nance, jocote or wild plum, manzanill, &c. &c.

The sarsaparilla is probably produced nowhere in the world of better quality or in greater abundance than in Honduras, but more particularly on its northern and eastern coasts. It is wholly collected by the Indians, but never in greater quantities than may be necessary to procure, by exchange, such articles of European manufacture as they may happen to require. It might be systematically obtained in quantities to meet every demand of commerce.

The vanilla occurs in the same district with the sarsaparilla, and is remarkable for its luxuriance and the size of its pods. It has not yet become an article of export, but the specimens which have been sent to the

United States and Europe have already elicited orders beyond the capacity of the available labour of the coast to supply.

The *pita*, called in Mexico *ixtle*, is a variety of the agave, very prolific, and yielding fibres varying in quality from the coarsest hemp to the finest flax. It is used for the manufacture of thread, cordage, hammocks, paper, &c., and being hardy and easily cultivated, may be made an important article of export as well as of domestic use.

I have already said that Honduras produces freely all the great staples of the tropics. The lands upon both coasts are well adapted for cotton, which, however, is not now produced, except in small quantities at a few points by the Indians, for their own peculiar manufactures. The experiments which have been made in the production of this staple, both in San Salvador and Nicaragua, have been in every way satisfactory, so far as the quality of the article itself is concerned.

The sugar-cane of Honduras, as indeed of all Central America, is indigenous, and widely different from the Asiatic variety cultivated in the West Indies and the United States, being softer and slenderer, and containing a proportionately greater quantity of stronger juice. It grows luxuriantly, alike on the plains and among the mountains, at elevations of between three thousand and four thousand feet. Two crops, and, under very favourable circumstances, three crops a year are taken annually, and the cane does not require re-planting but once in ten or twelve years. The

crystals of the sugar produced from this cane are large and hard, and with care in the manufacture, nearly as white as the refined sugar of commerce. There are no extensive establishments for its production, but innumerable little *trapiches* or mills, driven generally by oxen, are scattered all over the state, to supply the local wants of the people. The greater part of the supply for ordinary consumption is in the form of "*chancaca*," or crude sugar, made into cakes of about two pounds each, and wrapped in plantain leaves. In this form it is eaten with the native *tortillas*, and constitutes an article of daily food among the lower classes.

Coffee of excellent quality flourishes freely in Honduras, although it has never been adopted as an article of general production, not even to the extent of supplying the consumption of the state. I saw neglected patches at various places in the Department of Gracias, in all of which the bushes were heavily laden with the berries. There is every reason for believing that coffee of equally good quality with that of Costa Rica may be produced in Honduras, which has every requisite variety of soil and climate.

Cochineal seems to have been anciently cultivated, to a small extent, in Honduras, but the production is now entirely confined to Guatemala, of which state it constitutes the chief staple. The *nopal* is abundant and indigenous in the plain of Comayagua, where its leaves are silvered with the webs of the *Cochineal silvéstre*, or wild cochineal.

The tobacco of Honduras has a deserved celebrity

throughout Central America; that of the Llanos de Sta. Rosa, Department of Gracias, is regarded as second to none in the world. It was, in fact, the discovery of the peculiar advantages of that locality for the cultivation of this staple which led to the foundation of the flourishing city of Sta. Rosa, which is now the most important place in the department, completely overshadowing the ancient city of Gracias. The cultivation of tobacco was commenced on the plains of Sta. Rosa near the close of the last century, and increased so rapidly that, in 1795, a royal factory was established there, and a factor appointed by the Crown. From this time the tobacco produced here grew in importance and reputation, until it came to be sent not only throughout the old kingdom of Guatemala, but to Mexico, Peru, and even to Spain itself. The population of Sta. Rosa increased in proportion, and in 1823 the Constituent Assembly gave it the name of Villa. The political convulsions which have agitated the country since have been severely felt at Sta. Rosa, in the falling off in the production of its great staple, and in a corresponding decrease in its population; still, the amount annually produced is considerable, of which a large part is exported to Cuba, where it is manufactured and sold as the production of that island. The plains of Olancho, as also the valley of Sonaguera, are said to produce a superior quality of tobacco. Some of the tobacco of Honduras finds its way to the other states, and considerable quantities have been exported from the Pacific ports to Hamburg and other ports of Germany. The

attempts which have been made to export cigars have not been successful, chiefly from deficiency of skill in the preparation and manufacture of the tobacco. With increased experience and knowledge in these respects, there is no doubt that tobacco will become a principal article of production and commerce.

Indigo is not produced to any large extent in Honduras. Its cultivation has nevertheless been recently introduced in the valley of the Chamelicon, Department of Gracias, with the most satisfactory results. The quality of the article is found to equal that of Nicaragua and San Salvador, which is regarded as superior to the indigo of India. There is every reason to believe that the production might be extended with ease and profit throughout the valley of the Chamelicon, and the valleys of the other streams falling into the Bay of Honduras.

Maize flourishes luxuriantly, and two crops a year may be raised on the same ground wherever the soil is sufficiently moist, or may be made so by irrigation. In the interior, among the mountains, it is not customary to plant the fields a second time in the course of the year, except for the purpose of growing the stalks, to be cut down as *sacate* or fodder for cattle. The variety of maize in general use more resembles that of New England than of the Mississippi Valley. The grain is remarkably full and hard, and the ears relatively small but numerous. Here, as in nearly every part of tropical America, maize is essentially the "staff of life;" and, made into *tortillas*, *tamales*, *atole*, *tisti*, and other forms

of food, constitutes the chief support of the people. It is generally cheap, but occasionally suffers from the *chapulin* or *langosta*, a species of locust or flying grasshopper, which comes in such clouds as completely to destroy the largest *milpa* in the course of a few hours. As the pest of *langosta* is usually general, the visitation sometimes results in a great scarcity, bordering on famine; in which cases maize advances to as high as four or five, and even ten, dollars per bushel. Fortunately, the insect seldom attacks the fields which are planted high up on the slopes of the mountains, where the people make their *milpas* during the periodical visitations of the *chapulin*.

Wheat and the other cereal grains of the temperate zone are produced in all the more elevated districts of Honduras. Little, if any, foreign flour enters the state, and the total consumption may be regarded as supplied at home. I found the wheat-fields in the vicinity of the Indian towns, to the south-west of Comayagua, on the terraces of the mountains, at an elevation of four thousand feet above the sea; but this grain will grow at lower altitudes. The stalk is short but firm, and the grain not so plump as that produced in northern latitudes. This may be the result of the poor quality of the variety in use, and to the circumstance that the seed is never changed. The flour is white and well-flavoured, and in all respects equal to that produced in Chili and the United States.

Rice is largely used, particularly near the coasts, where it is produced with little labour, and of the best quality.

Potatoes, as I have said, are cultivated to a limited extent on the higher plateaus of the mountains, but chiefly by the Indians, who carry them to the large towns, to which their consumption is chiefly confined. Elsewhere, and in all parts of the state, the *yam* and the *manioc* or *cassava* are abundant, and in general use. The yams produced near Omoa, Puerto Caballos, and Truxillo are remarkable alike for their excellent quality and great size—a single root sometimes weighing from fifty to sixty pounds! In conjunction with plantains, bananas, and the varieties of beans, which, under the denomination of *frijoles*, are of universal use, these constitute the principal vegetable supplies of the country. The plantain is wonderfully luxuriant on the northern coast. Next to the maize, or perhaps deserving the first place, it is the principal reliance of the people of the tropics as an article of food. It is easily propagated, and requires but little care after planting. Its yield is enormous, and from a single acre it is estimated by Humboldt to equal the crop of one hundred and thirty-three acres of wheat, and of forty-four acres of potatoes! It must, therefore, enter as an important element in all calculations on the subject of provisioning the labourers who may be engaged in the construction of the proposed public works in Honduras.

The fauna of Central America corresponds with its intermediate geographical position, partaking of the character of that of the equatorial regions of South America upon the one hand, and the semi-tropical districts of Mexico on the other. Thus we find several

varieties of the ant-eater, corresponding with those of the valley of the Orinoco on the northern and eastern coasts of Honduras, while the gray squirrel of our latitudes greets us with his familiar bark among the forests of the interior.

Among domestic animals, we find the horse, the ass, the ox, sheep, goats, hogs, dogs, and cats, all of foreign origin, except one variety of the dog, which is indigenous.

The horse is found in all parts of Central America, although not used, except at a few of the ports, for purposes of draught. The savannas afford him an abundance of pasturage, and sustain him in good condition. Over these he roves in nearly a wild state, and is seldom caught except with the aid of the lasso. Introduced by the Spaniards, he retains many of the peculiarities of the Arab stock. He is small, of good build, firm in the joints, and distinguished for the extreme smallness and beauty of his ears. He suffers much from insects, which frequently enter the ears, causing them to lop, and otherwise disfiguring the animal. He is also often attacked by bats (*vampiros*), and by a species of spider (*araña*), which attacks the feet, and causes the hoof to separate.

The ox finds ample pasturage and congenial roving-ground in the vast savannas and open forests of Honduras. With the horse, he gives evidence of his Spanish origin. He grows above what in this country is regarded as average size; is of great beauty and strength of form, powerful neck, short head, and compact, but relatively short limbs. He suffers much less than the horse from insects, and nearly always looks smooth and sleek. The

cows do not yield a large quantity of milk, but it is of good quality. Vast herds of cattle are raised in various districts of the state, and constitute a principal part of the property of the people. Large numbers of oxen, broken to the yoke, are supplied to the mahogany works on the coast and at Belize, at from ten to fifteen dollars the pair.

The hog is smaller than the European varieties, almost black in colour, with thin bristles, long snout, short legs, and stout body. He is sometimes kept up and fattened, but is generally allowed to run at large and find his own food. The Chinese or East Indian variety has been successfully introduced by some enterprising citizens of Sta. Rosa, Department of Gracias.

Goats are not numerous, but breed rapidly, keep in good condition, and might be introduced to any desirable extent, especially in the more elevated districts. Since, from the abundance of cattle, they are not required for food, they exist in the country rather as domestic pets than for economic purposes.

Sheep are found in greater or less numbers, but are only raised systematically in Quesaltenango and the other departments of Guatemala, constituting what are called *Los Altos*, the Highlands, where their wool is extensively manufactured by the natives into a variety of thick cloth, much prized throughout all Central America. The wool seems to be long and coarse, and the flesh is but little used for food. There is good reason to believe that this animal might be introduced successfully into all the elevated districts of Honduras.

The ass is nowhere used for burden, and is kept simply for the purpose of crossing with the horse, and for the production of mules. The latter are in universal use, and are highly valued. They are chiefly raised in the mountain districts, and afterwards transferred to the plains. Great pains have been taken to produce fine breeds, and with considerable success. Taken generally, they are rather small in size, but hardy to a wonderful degree. Some of large size, and well broken, command high prices, ranging from $70 to $300. The prices of ordinary cargo mules vary from $15 to $35. They are not shod, except in parts of Guatemala; but their hoofs are hardened by the application of hot lime-juice. Eight *arobas* (200 lbs.) constitute an ordinary load for a pack-mule in Honduras, while ten, and even twelve *arobas* are regarded as a cargo in the level districts of Nicaragua and San Salvador.

Among wild animals, Wright, in his Memoirs on the Mosquito Shore, quoted by Strangeways, mentions the *buffalo*, but he probably mistook the *cimarrones*, or wild cattle of the coast, for the bison.

The deer (*Cervus Mexicanus* and *Cervus rufus*) is abundant in the wood and savannas. The variety first named resembles the European deer in colour, but is somewhat less in size, and provided with large antlers. The second is more numerous, of lighter and browner tint, with short, smooth-pointed horns of at most two indentations. The young of this variety is very pale in colour, almost white, and is highly valued for food. Captain Henderson may have confounded this variety

with the antelope, which, he affirms, is found in Honduras. He says, "If this animal, which in this country is known by no other name than that of antelope, be not such in fact, it is difficult to designate to what class it should belong. The resemblance, so far as description can be relied on, is in every respect essentially the same." It is described as about half the size of the fallow deer, short tail, knees furnished with tufts of hair, body reddish brown, under part of buttocks white, horns about twelve inches long, and bent in the form of a lyre. It is said to go in large flocks.

The peccary is common in Honduras, in the valleys of the rivers, and in the neighbourhood of the coasts. The waree is also found in large droves in portions of Honduras, Nicaragua, and Costa Rica. Henderson supposes it to be the ordinary hog run wild.

The tapir is found upon the northern and southern coasts, but rarely in the interior country. It is sometimes partially tamed.

The manatus, or sea-cow, is found in all the creeks and lagoons of the northern coast. I have never heard of its existence on the side of the Pacific. It is well known to belong to the mammalia. It grows to the length of ten feet, and attains a weight of from seven hundred to one thousand pounds. The Caribs of the coast hunt it for the sake of its flesh, skin, and fat. It is taken with the harpoon, and its capture requires a great deal of judgment and skill.

Monkeys are numerous, and of many varieties, including those known as the horned, brown, and capuchin

The last-named variety is abundant, and is a very playful little animal. There is another variety, mentioned by Captain Henderson, which is common in Honduras, and which he thinks has escaped particular notice. "In form and size it resembles the *apella;* and the female, in which the characteristic difference appears most strongly to exist, is particularly denoted by a loose, fleshy, appendent membrane, which frequently occasions its sex to be mistaken."

The racoon is common, of medium size, living chiefly upon animal food, and is of thieving propensities. Individuals frequently live apart, and are called "*Pisotes solos*" by the Spaniards. These grow very fat, and of extraordinary size.

The opossum attains a length of ten inches, colour gray, powerful head, long and very flexible tail, and the feet provided with sharp claws. The female has a cavity or sack in the belly for the reception of her undeveloped young. When they leave it, they are generally carried on the back of the mother. Food—small birds, lizards, &c.

The squirrel. There are two kinds of squirrels found in Honduras, the gray and the small red squirrel.

The ant-eater is also found of several varieties, known as the striped ant-eater, and the little ant-eater. Among the other lesser animals may be enumerated the quash, which resembles the ichneumon, fetid in smell, with powerful lacerating teeth.

The armadillo of three bands, the eight-banded, and the nine-banded. The gibeonite (*Cavia paca* or *Mus*

paca, L.) is most plentiful, and is easily domesticated. It grows to the length of two feet, thick and clumsy in form, and of a dusky brown colour, with four longitudinal series of spots on each side of the body. Its flesh is extolled as a great delicacy. The Indian coney, or rabbit (*Cavia aguti*) is similar to the gibeonite, and is about the size of the ordinary hare. It does not run, but leaps; is easily tamed, and largely hunted by the Indians for food and for its skin, which is of a durable quality. It swarms in the islands belonging to Honduras, in the bay of the same name.

Among the feline animals found in Honduras is the jaguar (*Felis onça*, L.) It is of a bright tawny colour, upper part of head striped with black, sides beautifully variegated with irregular black spots, breast and belly of a whitish colour; seldom attacks men, and inhabits places almost inaccessible to human feet. Besides the jaguar we occasionally find also the black tiger (*Felis discolor*), which is much the fiercest animal of Honduras. It grows of large size, and is remarkable for its strength. It often kills full-grown cattle, dragging them far into the woods; and it does not hesitate, if irritated, to attack men. The ocelot, or tiger-cat (*F. pardalis*), resembles the common cat, but is much larger. It is timid, and seldom ventures from its hiding-places. It is valued for its skin. The cougar, or puma (*F. concolor*), is also abundant, and is slender and graceful in form. It is usually called *leon* (lion) by the natives. It is neither as powerful nor as fierce as the ounce or

jaguar, and flies from the face of man. The *coyote*, or indigenous wolf, is not uncommon.

The interior of Honduras is rather deficient in birds, but they abound on the coasts and in the valleys of the principal rivers. The most celebrated is the *quetzal*, which was the imperial bird of the Quichés. It is best known in the museums as the *Trogan resplendens*, and is found only in the mountains of Merendon, in Honduras, and the department of Quezaltenango, in Guatemala. The parrot abounds everywhere, of numerous varieties, and of the most vivid colours. The *guacamaya*, or macaw, red and blue, are numerous on both coasts as is also the toucan. The yellow-tail soon becomes familiar to all voyagers on the rivers of Honduras. It is remarkable not less for its bright colours than its pendent nests, of which forty or fifty sometimes hang from the branches of a single tree.

Among the *raptores*, or birds of prey, are a variety of hawks, vultures (including the common buzzard or *zapilote*), owls, and sea-eagles. The crow, blackbird, Mexican jay, ricebird, swallow, rainbird, humming-bird (of numerous varieties), are also common. Of water-birds, the pelican, muscovy duck, black duck, curlew, plover, spoonbill, teal, darters, herons, ibises, cranes, &c., are all found abundantly on the shores of the lagoons and rivers. The wild turkey, curassow, quam (*Penelope cristana*), *chachalaca*, or indigenous hen, Mexican partridge, quail (in abundance), snipe, and several varieties of wood pigeons and doves, are most numerous in the interior country.

The alligator is found in all the lagoons and rivers on both coasts. It attains the size of fifteen feet in length. It avoids the neighbourhood of man, and generally abandons the streams as their banks become inhabited. Of the lizard tribe there are infinite varieties. The most remarkable is the iguana, which sometimes attains three or four feet in length. It is bluish-gray in colour, and lives almost exclusively on the blossoms of trees. Its bite is painful, but not dangerous. The flesh is delicate and much valued.

Serpents of several kinds are found both in Honduras and San Salvador, but they are chiefly confined to the coasts. The common practice of burning the dry grass and withered vegetation of the interior during the dry season has almost had the effect of annihilating this species of reptile. During a year spent in the state, and almost constantly occupied in the field, I do not remember to have seen more than four serpents, and only one of these (*a corral*) of a poisonous character. As we approach the coast, however, they become more numerous, but they are generally of harmless varieties. In respect to serpents of the coast, Messrs Müller and Hesse observe :—

"For the most part they are harmless, and they are seen by the natives in their houses rather with pleasure than alarm or disgust, since they are useful in the destruction of vermin. The harmless snakes have generally rounded spots on the head, angular marks under the tail and belly, while the body is covered with oval scales. The upper jaw, as in mammalia, is set for its entire length with sharp, wedge-shaped, solid teeth, and from the junction of the jaws springs another row.

The under jaw is furnished in the same manner, so, that in opening the mouth, four rows of teeth are seen. The harmless snakes are, in general, long and slender in body, the head is handsomer, and the scales are smoother. In our journeys through the forests we observed several of these, and especially one large kind of bluish white colour, which we were unable to catch, as it disappeared rapidly when we approached it. This kind is named by the Indians *woulah*, and they say that, though it steals fowls, it destroys the smaller varieties of poisonous snakes. The venomous serpents are distinguished by a thicker body and shorter tail, a broad head covered with scales, and more especially by the poison-fangs, which are sharp, provided with a channel and an opening at the upper end, not at the top but at the side, for the exit of the poison. Behind these fangs lie several smaller teeth, but they are concealed in a fold of muscle. As we had no opportunity to see or investigate any such specimens, although the Indians, in hopes of reward, hunted several times in vain for us, we must content ourselves with repeating the ordinary names in use there. There is the golden snake, the whip-snake, tamagas, and barber's pole. The two latter are the most dangerous, and their bite destroys life. According to experience, the root of the guaco is a reliable remedy for the bite of a snake. It is found almost everywhere, especially on the island of Roatan. The number of serpents is perceptibly diminished by the advance of cultivation."

In addition to the snakes mentioned in this extract may be enumerated the rattlesnake, the ordinary black snake, and the *corral*, the last ranking with the *tamagasa* in the deadly nature of its bite. It is of the most brilliant colours, covered with alternate rings of green, black, and red. It does not grow of large size, nor is it common.

The tortoise and turtle are everywhere numerous,

and of several kinds. The land turtle, chiefly of the species *tubulata*, attains a foot in length. It has a dark shell, and is eaten in common with the sea-tortoise, but is not regarded as of so good quality. The rivers abound in a species of turtle generally called *hicatee*. It is smaller than the sea-turtle, but inferior in no other respect. It attains a length of eighteen or twenty inches, and is remarkable for the depth of its shell. The varieties of sea-turtle familiarly known as green-turtle and hawk's-bill-turtle are abundant on both coasts, and furnish a large supply of food, and a principal source of wealth to the Indians. From the variety known as hawk's-bill is taken the best tortoise-shell of commerce. There is still another species, which grows to a larger size than either of those already enumerated, called the trunk-turtle. Its flesh is not used, nor is its shell of good quality. A kind of oil, which is much valued, is extracted from this turtle, and, it is supposed, might be made a considerable article of trade.

Oysters, of two varieties, are plentiful, viz., what is called the bank-oyster, found in beds, and growing in clusters of ten or twelve each, and the small or mangrove-oyster, which is generally found attached to the roots of the mangrove-trees, which line the shores of all the creeks and lagoons. Both varieties are esteemed for food. Vast beds of the first-named species exist in the Bay of Fonseca.

Crustacea of various kinds and sizes, from the largest lobster to the smallest crab, are most abundant. In

particular, the mangrove-crab, and the white and black land-crab, are very numerous in the lagoons and around the mouths of rivers. They constitute a very savoury and nourishing food. Every half-rotten tree near the water is inhabited by countless thousands of soldier-crabs, which, at certain times of the year, migrate inland, and afterwards return to the sea. Conchs are numerous in all the cays off the northern coast, and especially on those around the islands of Roatan and Guanaja.

Not only do all the lagoons and creeks of the coast abound in endless varieties of fish, but these swarm in all the rivers and lakes of the interior. In the sea may be found the rock-fish, hog-fish, king-fish, baracouta, parrot-fish, grouper, red and black snapper, porgee, shad, gar-fish, sword-fish, porpoise, flounder, &c. In the lagoons, the jew-fish, sheep's-head, snook, mud-fish, mullet, calapaver, mackerel, drummer, grunt, eel, cat-fish, &c. In the rivers, the mountain mullet and cat-fish are most numerous. The shark abounds on both coasts.

A species of vine (*Sapindus saponaria*) grows abundantly in the river valleys, which is often used by the natives for poisoning, or rather stupefying, the fish of the streams. It is pounded, infused in water, and then poured in the stream, causing the fish to rise helplessly to the surface, when they are easily taken by hand. If allowed to remain in the water, they soon recover from the effects of the intoxication.

Honey-bees exist in Honduras of several varieties.

One (*Apis pallida*) is small, light-coloured, and stingless. There is another species, found in the mountain districts, which is indistinguishable from the common honey-bee of the United States. The honey is largely used by the natives, who draw a principal part of the wax used in the ceremonies of the Roman Church from the natural bee-hives of the forests.

The absence of mosquitoes throughout Honduras and San Salvador generally is worthy of remark, since it is commonly supposed that this insect is one of the principal pests of the country. It is almost unknown in the interior districts, and only found at a few points on the coasts. Their almost total absence around the Bay of Fonseca is one of the best evidences of the absence of pestilential marshes and lagoons in its vicinity. The flea is common everywhere, and a source of infinite annoyance. The *agarrapata*, or wood-tick, is abundant on the low grounds, and particularly in sections frequented by herds of cattle. They are readily removed from the person by balls of soft wax, which every traveller carries for that purpose. The *chigoe, nigua*, or *jigger*, a small black flea, which attacks the feet and burrows under the skin, causing irritating sores, is scarcely known upon the Pacific coast. It is, nevertheless, found upon the northern coast, but rarely attacks persons who preserve proper cleanliness of person. Among spiders the tarantula may be enumerated, but it is not often seen. A species called *araña de cavallo* I have already mentioned as sometimes attacking the feet of horses. Among beetles, the elephant-beetle is

remarkable for its size. At night the neighbourhood of the coasts is sprinkled with fire-fly stars of great brilliance and beauty. Scorpions are found everywhere, in greater or less abundance; but it is only the sting of the *alacran del monte*, wild or forest scorpion, which is to be greatly dreaded. The house-scorpion is largest, but pale in colour, and its sting is far less virulent, corresponding nearly with that of the common wasp. The centipede attains, on the north coast, a length of six or seven inches. Its head bears a pair of strong nippers, and it moves upon twenty divisions of the body, to each of which are attached two feet. It is often found in dwelling-houses, but is not to be feared.

The insect, however, which is most dreaded in Honduras, as indeed in all Central America, is the *langosta* or *chapulin*, a species of grasshopper or locust, which at intervals afflicts the entire country, passing from one end to the other in vast columns of many millions, literally darkening the air, and destroying every green thing in their course. I once rode through one of these columns, which was fully ten miles in width. Not only did the insects cover the ground, rising in clouds on each side of the mule-path as I advanced, but the open pine forest was brown with their myriad bodies, as if the trees had been seared with fire, while the air was filled with them, as it is with falling flakes in a snow-storm. Their course is always from south to north. They make their first appearance as *saltones*, of diminutive size, red bodies, and wingless, when they swarm over the ground like ants. At this time vast numbers

of them are killed by the natives, who dig long trenches two or three feet deep, and drive the *saltones* into them. Unable to leap out, the trench soon becomes half filled with the young insects, when the earth is shovelled back, and they are thus buried and destroyed. They are often driven, in this way, into the rivers and drowned. Various expedients are resorted to by the owners of plantations to prevent the passing columns from alighting. Sulphur is burned in the fields, guns are fired, drums beaten, and every mode of making a noise put in requisition for the purpose. In this mode detached plantations are often saved. But, when the columns once alight, no device can avail to rescue them from speedy desolation. In a single hour, the largest maize-fields are stripped of their leaves, and only the stems are left to indicate that they once existed.

It is said that the *chapulin* makes its appearance at the ends of periods of about fifty years, and that it then prevails for from five to seven years, when it entirely disappears. But its habits have never been studied with care, and I am unprepared to affirm anything in these respects. Its ordinary size is from two and a half to four inches in length, but it sometimes grows to the length of five inches.

CHAPTER X.

EXISTING ABORIGINAL INHABITANTS—THE XICAQUES, PAYAS, SAMBOS, AND CARIBS.

I HAVE elsewhere said that the Indian or aboriginal element predominates in the population of Central America. The population of Honduras forms no exception to this remark; and in some districts of the state it is difficult to say if the whites have assimilated most to the Indians in habits of life, or the Indians most to the whites. In the eastern portion of the state, within the district which lies between the Rio Roman and the Cape or Segovia River—an area of not less than fifteen thousand square miles—the country is almost exclusively occupied by native tribes, known under the general names of Xicaques and Payas. Portions of all these tribes have accepted the Catholic religion, and live in peaceable neighbourhood and good understanding with the white inhabitants. The large town of Catacamas, and some other towns of less note in the vicinity of Juticalpa, in Olancho, are exclusively inhabited by Christianised Payas and Xicaque Indians. But, apart from these, there are considerable numbers who live among the mountains, and who conform more closely to their original modes of life. Yet they also are peaceful, and their relation-

ship with the Spaniards is entirely friendly. They bring down sarsaparilla, deer-skins, dragon's blood, and other articles, including a little gold washed from the sands of the mountain streams, and exchange them for such articles of civilised manufacture as their wants require. They tacitly recognise the authority of the Government, which, however, does not interfere with the simple patriarchal system which they keep up for their organisation. Occasionally small parties come down to the coast to work in the mahogany establishments. When their engagements are completed, they quickly return to their homes.

At the time of the discovery, these Indians were found to be, in respect of civilisation, far below the Quichés, Kachiquels, and Nahuatls, who occupied the plateaus of Guatemala, San Salvador, and the western part of Honduras. But they were, at the same time, greatly in advance of the roving fisher-tribes who dwelt on the low shores of the Carribbean, now called the Mosquito Coast. They were at first intractable, and, favoured by the physical conditions of their country, for a long time obstinately resisted the attempts of the Spaniards to reduce them to their sway; but subsequently, when the general settlement of the country to the westward had been effected, and the power of the Spaniards came to be better appreciated, a friendly understanding spring up, which has not been disturbed for many years.

The names Xicaques and Payas may be regarded as general designations. The *Toacas* or *Towkas*, some of

whom live on the banks of the Rio Patuca, and the *Secos*, found on Rio Tinto, or Black River, probably belong to the Payas. They are described by Young, who visited them, as having "long black hair hanging over their shoulders, very broad faces, small eyes, with a peculiar expression of sadness and docility, which prepossesses the beholder in their favour."

"They are short," he continues, "but remarkably strong, and capable of carrying heavy burdens over the rocky passes of their steep mountains without appearing to suffer much fatigue. Their character for faith and honesty stands high; but, like all other savage tribes, they have a great fondness for spirituous liquors. They bring for sale sarsaparilla, cacao, pimento, *kinkooras*, several sorts of bread-kind, fowls, turkeys, ducks, &c., and receive in return iron pots, knives, *machetes*, powder, shot, beads, and similar articles of use and ornament. . . . In character they are mild and inoffensive. They are industrious, and skilful in manufacturing from their wild cotton a sort of cloak called *kinkoora*, which, being dyed according to some device, and the down of birds interwoven in the fabric, has a very pleasing appearance. . . . At the present day, the grossest superstitions exist among the Poyers, and their idolatrous feasts are as common as ever; but their savage character has disappeared, for they are now a mild and peaceable race, having tact and ingenuity in their little manufactures which would puzzle a machine-loving European. . . . There is another class of Poyer Indians much lower in civilisation. They are termed wild Indians, for, like the Arabs, they wander to and fro as they list, making plantations which, in the course of a certain number of moons, they revisit to gather the fruit. They collect honey, vegetable dyes, sarsaparilla, &c., which they sell to their more civilised brethren for hooks, harpoons, lance-heads, knives, and other articles. They have no intercourse with the Sambos on the

coast, and it is only because they cannot do without such things as I have enumerated that they visit the Poyer villages. . . . The Indians living on the banks of the Seco River, and called *Secos*, have much the same character as the Poyers.

"The *Towcas* [*Toacas*, *Thuacos*, or *Juacos*] are remarkable for their industry and inoffensive character. They are generally a finer race of men than either the Poyers or Secos. They speak at all times low and with great ease, and have an air of gentleness and melancholy. They sound the letter *s* in almost every word. They are celebrated for their skill in making *dorys* and *pitpans*. Their principal residence is near the head of Patook (Patuca) River. . . . The Towcas, like the other tribes, have a great character for faith and probity, and are equally famed for carrying heavy burdens. They are very dexterous in shooting birds on the wing with their bows and arrows, and are well suited for anything requiring sagacity and endurance. It is astonishing to observe how little value they put on their labour. For instance, they will sell a dory or pitpan for one axe and a machete, or two iron pots, and so on, notwithstanding the immense time which they expend in making them."

Young visited a Poyer or Payas village on one of the tributaries of Black River, of which he has given us the subjoined account. It illustrates the condition and mode of life of these Indians in general.

"The Indian town, to my astonishment, was comprised in one large house of an oval form, about eighty-five feet in length and thirty-five feet wide, in which all the natives resided truly in the patriarchal style. Crickeries were erected all around, close to each other, separated by two or three cabbage boards, each family having one of these compartments. At one side of the house a place was divided off about sixteen feet by ten feet, and hidden from view by green

leaves, which were replenished as fast as they faded. In this place the women are kept during their confinement, and, after a few days, they are again able to attend to their multifarious duties. On our entrance the women were busily occupied, some pounding cassada and Indian corn together, boiling it, and making it into a beverage called *oulung;* some preparing cassada for bread in the morning; others making *tournous;* others, again, rubbing cacao and squeezing sugar-cane; in truth, the whole body of them were most busily employed, under the management of the chief's wife, the chief, who is called by the English name of officer, being absent. We were looked upon with a quiet sort of wonder, the women merely gazing for a few minutes upon the white men, of whom, perhaps, they had heard much, and then they resumed their pounding, boiling, and beating. The *oulung* is a beverage not to be despised on a warm day by those who do not mind a particularly sour taste. After the second time of tasting it, I sought it with pleasure. Their bread, too, is sour, but even that I relished. It is made of pounded cassada into rolls about fifteen or sixteen inches in length, and about the thickness of a man's wrist. It is then wrapped round with several layers of leaves, and slowly barbacued until done. When eaten fresh, it is good, the sour taste being acquired by keeping. The house is thatched in a very neat manner with swallow-tail leaf to about four feet from the ground, so that the rain, however violent, does not trouble them. They are noted for cleanliness. The situation was well chosen, and a few yards from the house, down a steep pass, was a stream of water, forming innumerable cascades as it ran leaping and dashing over the huge blocks of stone with which it abounded. Here, as we sat, our ears drank in delight at the soothing sound of the water, and we beheld with extreme gratification the verdant hills, the rich plumage of birds as they flew by, and heard the chattering monkeys filling the wood with their noise. I observed around the house numerous fowls, a few

Muscovy ducks, turkeys, and pigs; and they can, in general, obtain game by a little exertion in hunting. The peccary, which inhabits high and dry places, often falls here before the superior dexterity and cunning of man. Waree are not found on the Poyer mountains, so that the Indians sometimes form a party, and descend to one of the hunting passes in the Black River, or such places as they are known to frequent. Very few of them have guns; they merely go armed with a lance and bow and arrow, and they rarely return without a noble supply of barbacued meat. After partaking of a couple of fowls, some cassada and plantains, cacao, and boiled cane-juice, prepared for us by these kind people, we betook ourselves to repose. Early in the morning, while in my hammock, an Indian woman timidly touched me, saying 'Englis,' at the same time presenting me with a hot roll of bread, nicely done up in fresh leaves; another soon came to me with a bundle of *oulung*, and so it continued until I had three or four bundles of *oulung*, and nine large rolls of bread. In return, I presented them with a little tobacco, some needles, and salt, and gave a clasp-knife to the officer's wife. Soon after, I was agreeably surprised by several of the men arriving from the plantations loaded with sugar-cane, plantains, cacao, &c., which we very willingly received in exchange for a few hooks, needles, &c. On inquiry, I learned that there was another town about fifteen miles off, judging from the rate they travel in an hour, and in the route to the Spanish country. Before our departure, a number of Indians came from the neighbouring town, having been apprised of our arrival, bringing sarsaparilla to trade with for Osnaburg; but we not having that, or cloth of any kind, they were compelled to carry their heavy burdens back."

The coast around Carataska Lagoon, and as far to the westward as Brewer's or Brus Lagoon, was for many years occupied by Sambos, corresponding generally in

character with those of the Mosquito Shore. But the Caribs, spreading rapidly eastward from Truxillo and Black River, have now nearly displaced them, and driven them to the southward of Cape Gracias á Dios, into what is called the Mosquito territory.

These Sambos or Mosquitos are a mixed race of negroes and Indians. It seems that early in the seventeenth century a large slaver was driven ashore not far from Cape Gracias. The negroes escaped, and although at first they encountered hostility from the Indians, they finally made peace, and intermixed with them. The bucaniers had their haunts among them during the period of their domination in the Carribbean Sea, and bequeathed to them a code of morality, which subsequent relations with smugglers and traders have not contributed to improve. The negro element was augmented from time to time by runaway slaves (*cimarrones*) from the Spanish settlement, and by the slaves brought from Jamaica by the planters who attempted to establish themselves on the coast during the early part of the last century.

The Sambos were fostered by the royal governors of Jamaica during the wars with Spain as a means of annoyance to the Spaniards, and with the ultimate purpose of obtaining possession of their country. Governor Trelawney, in 1740, procured from some of the chiefs a cession of the entire shore to the British Crown, which act was followed up by the appointment of a governor or superintendent, the erection of forts, and other evidences and acts of occupation and sovereignty. The

pretensions thus set up were nevertheless formally and fully relinquished by subsequent treaties with Spain, which provided for the destruction of the English forts, and the unqualified abandonment of the shore. Nor were these pretensions renewed so long as Spain retained her power in America. It was not until her dominion was succeeded by the feeble sovereignty of the Spanish American republics that the traditionary policy of Great Britain on the Mosquito shore was revived. Its revival has led to that singular complication which is now familiar to the public as "the Mosquito question."

The relations of the Sambos, first with the bucaniers, and subsequently with the English, by supplying them with fire-arms and other means of aggression, made them formidable to the neighbouring Indian tribes. They often left the creeks and lagoons of the shore, and, going up the various rivers, made descents on the Indian towns on their banks, carrying off the inhabitants to be sold as slaves. For many years an active traffic was thus kept up with Jamaica. As a consequence, the Indian towns nearest the coast, and most exposed to these incursions, were either abandoned entirely, or their inhabitants purchased security from attack by annual presents of boats, skins, and other products of their country to the piratical Sambos.

But with the decline and final suppression of the traffic in Indian slaves, the Mosquito Sambos have lost much of their activity, and have surrendered themselves more and more to their besetting vice of drunkenness, which, operating on constitutions radically tainted and

weakened by unrestrained licentiousness, is hastening their utter extinction.

As I have said, the increase and expansion of the Caribs has already driven most of the Sambos, who were established to the northward and westward of Cape Gracias á Dios, into the territory of Nicaragua, southward of the Cape. As the whole Mosquito population does not probably exceed six or seven thousand, it follows that the proportion which remains in Honduras is insignificant. All accounts concur in drawing a wide distinction between the Sambos and Indians proper, which is little to the advantage of the former.

"The difference between the Sambos and Indians," says Young, "is very striking. The former are of all shades of colour, from the copper of the Indian to the dark hue of the negro, their hair being more or less woolly as they approximate to the latter. They are, in general, well proportioned and active, but more capable of undergoing privations than the fatigue of hard labour. . . . They ornament their faces by laying on large daubs of red and black paint. . . . Their fondness for liquor is excessive, and from this they suffer great calamities, for, having once commenced to drink, they go on till they fall down in a helpless state of intoxication, and lie exposed to the heavy dews or pouring rain. Their bodies are wasted by fearful disorders, which eventually carry them off: this is one cause of the gradual decrease of population. . . . They do not appear to have any idea of a Supreme Being, but many who have at various times been at Belize know the meaning of God, and often say, 'Please God' so and so; or, if they wish to be implicitly believed, they will gravely say, 'God swears.' They have an implicit belief in an Evil Spirit, whom they call Oulasser, and of whom they are in much fear; and after sunset a Sambo will not go out

alone, lest Oulasser should carry him away. They also much dread a water spirit, whom they call Lewire. . . . The men are naturally apathetic and indolent when not excited by liquor, hunting, or fishing, and, as they have no notions of morality to hinder them from indulging their desires, we need not wonder that chastity is not considered a virtue. Polygamy is common among them. . . . Their children are often interesting, and the nearer the child is in blood to the Indians, the handsomer and clearer becomes the skin, the features, however, being more pleasing the closer the child approaches to the Sambo. Ugly children are rarely found, and deformed ones never; hence it is to be feared that they have the practice of destroying the latter at their birth. . . . The Sambos count with their fingers and toes, reckon their days by sleeps, and months by moons. Their dwellings are quickly made. They have no divisions in their huts, but sleep on *crickeries*, which are formed of posts four or five feet high, driven in the ground, pieces of split bamboo being laid on top. Their whole household property consists of a few iron pots, wooden bowls, spoons, and stools, calabashes and gourds for water, a few small *oushners*, striking staffs, harpoons, &c., with here and there a gun, and some rudely-shaped moccasins hanging up, and generally a few bunches of plantains or bananas tied to the ridge-pole. . . . Whatever may be charged against the Sambos, such as petty thieving, indolence, and drunkenness, very few crimes of flagrant enormity are committed, although they are living without religion, and with but few laws. . . . I have had no means of ascertaining what the numbers of the Sambos now (1839) are. It has been calculated lately that the whole population [including what is called the Mosquito Shore] does not exceed eight thousand, as they have been decreasing for many years, although gradually approaching civilisation. The Sambos at the Cape and southward of it are generally a finer race than those to the northward and eastward. . . . The Mosquitos of the present day,

I think, have degenerated, the causes being the great increase of drunkenness, and the want of good chiefs to stimulate them; and such is their degraded condition, that in a few generations there will be few left to tell the tale of their existence. The white man advancing one way, and the Caribs, with their rapidly-spreading population increasing in another, will evidently sweep the Indian from his native haunts, and civilisation will extend its arms and embrace a shore which has been for ages in a state of blind superstition and ignorance."

Besides the native Indians and Sambos, there is another and very active element in the population of Honduras—viz., the Caribs. The history of their establishment in the country is alike curious and interesting. They constitute all that remains of the aboriginal inhabitants of San Vincent, one of the Leeward Islands. During the contests between the French and English for the possession of the smaller islands of the Antilles, the Caribs of San Vincent were almost invariably attached to the French interest, and gave so much trouble to the English authorities and inhabitants, that, after many contests and much bloodshed, they were finally, in 1796, carried *en masse*, to the number of upwards of five thousand, to the then deserted island of Roatan, in the Bay of Honduras. The cost of the deportation was not much less than $5,000,000! A few months afterwards, they were invited to the mainland by the Spanish authorities, who aided them in founding various establishments on the coast, in the vicinity of Truxillo. Since that time they have increased rapidly, and greatly extended their settlements, both to the eastward and

westward of that port. In 1832 a portion of them were induced to take part in the ill-advised attempt of some emissaries of Spain to subvert the republican government. The attempt was unsuccessful, and, in Omoa and elsewhere, resulted in the severe punishment of those who had become implicated. A portion of the latter escaped to a place called Stann Creek, in the alleged jurisdiction of Belize, where they made a temporary establishment; but an amnesty was afterwards granted, since which time most of the fugitives have returned to their former seats.

When San Vincent was first visited by Europeans, it was found in possession of two distinct families of natives, who had a common language, but differed widely in colour and in modes of life. These were respectively called the Black and Yellow Caribs, and the natural jealousies between them were often fomented by the whites into open and exterminating hostilities. When, however, the deportation took place in 1796, the feeble remnants on both sides had been forced into friendly relationship by the weight of common misfortunes. The fusion of blood, nevertheless, had not been sufficiently great to obliterate the original distinctions of colour, which are to be observed to this day. It has been supposed that these distinctions were produced in the same manner that corresponding changes were caused on the Mosquito Shore, by the infusion of negro blood. It is said that some time about 1675, a Guinea slaver was foundered on one of the small islands in the neighbourhood of San Vincent, and that the negroes who escaped

mingled with the natives, originating what were afterwards called the Black Caribs. Subsequent differences arose between these and the pure Caribs, which led to a division of the island, in which relation they were found by the Europeans. This explanation seems probable, for the presence of negro blood in the Black Caribs is evident and palpable. They are taller and stouter than the pure Caribs, and more mercurial and vehement. The latter are short, but powerfully built. Both are active, industrious, and provident, exhibiting in these, as, indeed, in most other respects, decided contrasts with the Sambos of the Mosquito Shore. They are far more civilised in their habits, living in well-constructed huts, which are kept clean and comfortable. They still retain their original language, which is the true Carib of the islands, although most, if not all of them, speak Spanish, as well as a little English.

They profess and practise the Catholic religion, yet preserve many of their native rites and superstitions. Altogether, they constitute a good and useful labouring population, and form the chief reliance of the mahogany-cutters on the coast. They supply Omoa and Truxillo, as also Belize, in part, with vegetables and fresh provisions, and are the chief collectors of skins, sarsaparilla, and other articles exported from Honduras. Intelligent, faithful, inured to the climate, and, moreover, expert in the use of the axe, and with some knowledge of the building of roads and bridges, they must prove of the greatest service in the future development of the vast resources of that country, and of the utmost importance in the

construction of the proposed railway between the seas. It is calculated that there are among them fully three thousand men more or less instructed in precisely the kind of work required in the prosecution of the enterprise referred to, and whose labour may be procured for a reasonable compensation.

All travellers concur in awarding high praise to the Caribs (called Kharibees by Roberts) of Honduras. Young says of them:—

"They are peaceable, friendly, ingenious, and industrious. They are noted for their fondness for dress, wearing red bands around their waists to imitate sashes, straw hats knowingly turned up, clean white skirts and frocks, long and tight trousers, and, with an umbrella or cane in hand, have an air of great satisfaction with themselves. The Carib women are fond of ornamenting their persons with coloured beads strung in various forms. When bringing the products of their plantations for sale, they appear dressed in calico bodices and lively-patterned skirts, with handkerchiefs tied around their heads, and suffered to fall negligently behind. . . . The Caribs cannot be considered a handsome race, but they are hardy and athletic. The difference in their colour is remarkable, some being coal-black, and others nearly as yellow as saffron. They are scrupulously clean, and have a great aptitude for acquiring languages, most of them being able to talk in Carib, Spanish, and English; some even add Creole-French and Mosquito. . . . Polygamy is general among them, some of them having as many as three or four wives, but the husband is compelled to have a separate house and plantation for each, and, if he make one a present, he must make the others one of the same value; and he must also divide his time equally among them—a week with one, a week with another, and so on. When a Carib takes a wife,

he fells a plantation and builds a house; the wife then take the management, and he becomes gentleman at large until the following year, when another plantation has to be cleared. The wife tends these plantations with great care, perseverance, and skill, and, in the course of twelve or fifteen months, has every description of bread-kind in use among them; and, as the products are entirely her own, she only keeps sufficient at home for her husband and family, and disposes of the rest to purchase clothes and other necessaries. Just before Christmas, the women engage several creers, freight them with rice, beans, yams, plantains, &c., for Truxillo and Belize, and hire their husbands and others as sailors. It is the custom, when a woman cannot do all the work required on the plantation, for her to hire her husband, and pay him two dollars per week. The women travel considerable distances to their plantations, and carry their productions in a kind of wicker-basket. I have known them walk from far beyond Monkey-apple town to Fort Wellington, a distance of forty miles, to exchange their baskets of provisions for salt, calico, &c. Men accompany them on their trading excursions, but never, by any chance, carry the burdens, thinking it far beneath them. In the dry seasons, the women collect firewood, which they stack in sheltered places, to be ready for the wet months. Industry and forethought are peculiar traits of character in Carib women, consequently they easily surround themselves with necessaries and comforts. The men can hew and plant, hunt and fish, erect a comfortable house, build a good boat, make the sails, &c. Some are capital tailors, and others are good carpenters; altogether, there cannot be a more useful body of men. They often go to the various mahogany works around Roman River, Limas River, Truxillo, or Belize, and hire themselves as mahogany-cutters, for which, by their strength and activity, they are well fitted. They hire for five or six months, sometimes longer, for eight to twelve dollars per month and rations. I have known some Caribs of superior

manual power, and who understood the whole routine of mahogany-cutting, obtain as much as fifteen and sixteen dollars a month. On the expiration of their engagement they return to their homes, laden with useful articles, and invariably well dressed. I saw a Carib belonging to Cape Town that had just returned from Belize, who sported a pair of cloth boots, a white hat, black coat, white trousers, a fancy-coloured shirt, a pair of splendid braces, and an umbrella. His coat happened to be an extremely tight fit, and, as he appeared to be very uncomfortable, we asked him to cut up a pine-apple, which, after several vigorous efforts, he succeeded in accomplishing.

"The Caribs grow the Bourbon sugar-cane, and they declare that the soil is well adapted for its cultivation; I have myself seen it sixteen feet in height, and thick in proportion, from the plantation of Captain Samboler, at Zachary Lyon River. Tobacco is now grown in small quantities by the Caribs, and also by the Mosquitians at Patook, but they have not yet discovered the proper method of drying; the tobacco of the one tribe tastes like dried hay, and that of the other is so strong as to occasion bad symptoms to those unaccustomed to its use. If the proper method of preparing tobacco were practised, it might become an article of exportation. In the interior, among the Spaniards, a large quantity is produced, and conveyed on the backs of mules to Truxillo for sale. Some of the superior sort is made into '*puros*,' twelve of which can be had for fivepence currency; and three dozen cigaritos for the same price. Their best tobacco is not to be compared in flavour to that from Havana, in consequence of the mode of damping and drying practised by the Central Americans, but it is equal in point of quality and size. The Carib houses are all exceedingly well built, the posts being of ironwood, subah, &c.; the rafters and beams of Santa Maria; the thatch, swallow-tail or cahoon, and wattled with cabbage boards; they have apertures made for

windows with shutters, which are closed in the evening with much care, to prevent the admission of the land wind. The Carib houses being open to the sea-breeze, and always closed against the land wind, is no doubt the main reason of the healthiness of their towns; much, however, is attributable to their cleanliness, and the plenty in which they live.

"The old people are supported by their sons or other relatives, and are treated and spoken of with much respect, the children seeming to vie with each other in testifying their affection. At every Carib town numerous pigs and fowls, belonging to the women, are indiscriminately running about, for the people prefer making plantations, sometimes as far as five miles from the town, to stying up the hogs, which they would be obliged to do if their plantations were close at hand, as the pigs, in their perambulations, would find them out, and do much mischief. These hogs, when fattened, are sent to Truxillo and other places for sale."

In the Departments of Gracias, Comayagua, and Choluteca there are a number of purely Indian towns, in which the inhabitants retain their ancient language and many of their primitive habits. The cluster of villages in the Mountains of San Juan, to the south-west of Comayagua, viz., Guajiquero, Opotero, Similiton, Cacauterique, &c., as also a number of others among the Mountains of Lepaterique, viz., Aguanqueterique, Lauterique, Cururu, Texiguat, &c., are all purely Indian towns. Their population is industrious, provident, and peaceable. The elevated districts which they occupy enable them to cultivate wheat, potatoes, and other products of higher latitudes, which they carry for sale to large distances. The traveller meets them in the most secluded and difficult passes, patiently pursuing their

journeys, and never speaking unless first addressed. They almost invariably carry their bows with them, but only for protection against wild beasts. Their present abodes among the mountains do not appear to have been their original seats, but to have been forced upon them by the gradual usurpation of their lands by the whites, or chosen to avoid a contact which they disliked. They are, nevertheless, exceedingly jealous of their rugged retreats, and are never excited except by some encroachment, real or fancied, upon the limits of the lands pertaining to their respective towns. They all profess the Catholic religion, but their forms of worship, and especially their music, are strongly impressed with aboriginal characteristics.

The existing Indian element in Honduras, left to itself, promises little or nothing for the development of the country; yet, with the introduction of an intelligent and enterprising people, their industry may be turned to good account. Frugal, patient, and docile, they have many of the best qualities of a valuable labouring population, and only lack direction to become an important means in the physical regeneration of the country. The Caribs certainly have shown great capacity for improvement, and at their present rate of increase must always be able to supply every industrial demand which may be created on the northern coast, where the climate is least favourable for the introduction of foreign labour.

CHAPTER XI.

POLITICAL ORGANISATION — CONSTITUTION — RELIGION — EDUCATION — INDUSTRY — REVENUES — CURRENCY — FUTURE PROSPECTS.

THE dissolution of the Federal Republic of Central America in 1838 left the various states which had composed it in a singular and anomalous position. Some of them, including Honduras, still adhered to the idea of nationality, and while, in fact, exercising all the powers of distinct sovereignties, they carefully avoided taking the title. They called themselves *States*, and named their highest executive officers "chiefs" or "directors." They supplied the want of a common or national constitution by means of treaties of alliance and friendship, which, in certain contingencies, bound them to support each other by force of arms.

The three central or liberal states, Honduras, San Salvador, and Nicaragua, nevertheless cherished the hope of reconstructing the confederation, and exerted themselves to procure the concurrence of Guatemala and Costa Rica. To this end a national convention was called in 1842, and subsequently another in 1847; but from the neglect or refusal of the states last named to send delegates, as also from the difficulty of defining

satisfactorily the relative powers of the allied states themselves, the attempts at union failed.

Finally, abandoning the hope of inducing Guatemala and Costa Rica to enter into the proposed new federal republic, the central states, in 1849, sent commissioners to Leon, in Nicaragua, where they agreed upon a basis of union or pact, under the title of the "National Representation of Central America." This pact was unanimously ratified by the people of the several states in their primary capacity, and delegates were chosen, in accordance with its provisions, to frame a national constitution on the principles laid down in its articles. This constituent assembly met in the city of Tegucigalpa, in Honduras, in the autumn of 1852, and proceeded to the discharge of its duties. But, meantime, the reactionary element in Guatemala had brought such influences to bear upon the Government of San Salvador as to induce it to withdraw its delegates from the convention. This example was soon after followed by the Government of Nicaragua, and, as a consequence, the assembly was broken up.* To Honduras, therefore, remains the honour of having adhered to the principle of union and nationality to the last moment:

"Faithful among the faithless found!"

Since that event, both Nicaragua and San Salvador have assumed the name of republics; and although this step has not been taken by Honduras, that state may

* For an "Outline of the Political History of Central America," including the history of Honduras, see my work, "Nicaragua, its People," &c., vol. ii., p. 365–452.

nevertheless be regarded as a distinct nationality. Its constitution, framed in 1848, "in the name of the Eternal Being, the Omnipotent Author and Supreme Legislator of the Universe," is thoroughly republican in its provisions. The Declaration of the Rights and Duties of the People sets forth that:—

Sovereignty is inalienable and imprescriptible, limited to the welfare and convenience of society, and no fraction of the people, nor can individuals exercise it, except in conformity with laws established by the general consent. All power emanates from the people, and all public functionaries are their delegates and agents, but only to the extent defined by written constitutions, or decreed by laws framed in conformity with them. Such functionaries are furthermore amenable, even with their lives, to the people, who have intrusted them with power, for its faithful discharge. All the inhabitants of the state have the indisputable right of life, liberty, the pursuit of happiness, and the acquirement and disposition of property, in modes not detrimental to the rights and well-being of others. They are, at the same time, obliged to respect and obey the laws, and to contribute, to the just proportion of their means, in support of the expenses of Government, not less than with their lives, if necessary, to the service and defence of their country. Armies can only exist for the public protection and defence of the state; and no member of the army, while in active service, is eligible to the office of president, senator, or deputy. The press is free, and every citizen may write and publish, without censorship or hindrance,

amenable only to the laws for the abuse of his privileges. No citizen can be tried by military tribunals except for offences committed while in actual service in the army. Every citizen has the right of expatriation. Epistolary correspondence is inviolable; nor can stolen or intercepted letters be used in evidence against their writers. All causes of difference between citizens may be decided by arbitration; and the parties may at any time withdraw their suits from the jurisdiction of the courts, and submit them to arbitrators, whose decision in all cases shall be final.

The general organisation and powers of the Government, as set forth in the Constitution, may be summed up as follows:—

Citizenship.—All persons born in the state, or in the other states of Central America, and resident in the territories of Honduras, are recognised as citizens. Foreigners may acquire the rights of citizens by legislative act, but nevertheless shall be entitled to the same protection with citizens from the moment they have declared their intentions to become such before the competent authorities.

The right of suffrage belongs to all citizens over twenty-one years of age, "*but after* 1870 *it shall be limited to such only as may then be able to read and write.*" This right, as well as the title of citizen, is lost by entering foreign employ, or by criminal conviction. It is suspended during criminal processes against the person, by conviction of fraudulent indebtedness, by notoriously vicious conduct, moral incapacity legally

declared, *and by entering domestic service near the person.*

Foreigners become naturalised by holding real estate of a fixed value, by residence of four years, and by marrying in the state. They are obliged to pay taxes in common with the citizens at large, and have the same right to appeal to the courts.

Government and Religion.—The Government is popular and representative, and composed of three distinct powers—viz., legislative, executive, and judicial; the first residing in the General Assembly, the second in the President, and the third in the courts. The state recognises the Apostolic Roman Catholic religion, to the exclusion of the public exercise of all others; but no laws can interfere with the private exercise of other forms of worship, nor with the fullest liberty of conscience.

Elections.—The state is divided into election districts of fifteen thousand inhabitants, each entitled to one deputy; but, pending a census (not yet made), the several departments each elect one senator and two deputies. As there are seven departments, it follows that the legislative body is composed of fourteen deputies, half of whom are elected annually. A deputy must be at least twenty-five years of age, a citizen of the department which elects him, a proprietor to the value of $500, or in the exercise of some profession or art which yields that annual return. The senators are seven in number; they must not be less than thirty years of age, proprietors each to the value of $1000, or licentiates in some

of the liberal professions. Three of the seven are elected annually. Eight deputies and five senators constitute a quorum of the Legislature, of which the ordinary sessions are limited to forty days. The Legislature imposes taxes; names, in joint session, the magistrates of the Supreme Court of Justice; grants the annual appropriations; fixes the military contingent; controls the educational system; makes war or peace; ratifies treaties; and has the power of impeaching and trying the executive officers of the state, &c.

The Executive.—The executive power is vested in a President, who must be a native of Central America, a citizen of the state for five years, thirty-two years of age, and a proprietor of real estate to the value of $5000. He must receive an absolute majority of votes; or, in case no candidate receives such majority, the Legislature elects one of the two having the highest number of votes. The President holds his office for four years, and is incapable of being elected to serve for two consecutive terms. He may select his ministers for the various departments of government, who have, *ex officio*, a seat in the Legislature, but are not entitled to vote. His remaining duties and powers are such as usually pertain to a republican executive, including the power of the veto. He is especially empowered to make contracts for colonisation, and for the general development of the resources of the state, which are subject to the legislative sanction.

Council of State.—This council is composed of one senator, elected by the General Assembly; one magis-

trate of the Supreme Court, selected by his associates; the Minister of Domestic Relations; the Treasurer of the State; and two citizens, distinguished for their services, who are named by the General Assembly. Their duties are, for the most part, advisatory, but in cases of emergency they may exercise extraordinary powers, subject to the subsequent entire revision of the General Assembly. The necessity of the council results from the difficulties in the way of convening the Legislature in cases requiring prompt action, owing to the delays in communication, and the diffusion of the people over a wide territory.

Judiciary.—The judiciary consists of a Supreme Court of Justice, divided into two sections of three magistrates each, one of which is established in the city of Comayagua, and the other in that of Tegucigalpa. They must be composed of advocates of established reputation, twenty-five years of age, and proprietors to the value of $1000. They are elected on recommendation of the executive, by the General Assembly, and hold their offices during good behaviour. They take cognisance of all causes of a general character, or which may be brought up to them from the inferior or district courts, the attributes of which are set forth with great minuteness and care. All persons accused of crime must be examined within forty-eight hours after their arrest, and the judge must decide upon their detention or liberation within the next twenty-four hours.

No person can be called upon to testify against himself, nor against any of his relatives within four

degrees of consanguinity. Capital punishment is abolished.

Departments.—Each department has a chief officer, called "Jefe Politico," named by the executive, who must be twenty-five years of age, and a proprietor in the department where he is named. He is the organ of communication between the central government and the people of the departments for the promulgation and execution of the laws. The officers of every municipality must be able to read and write, and must act in concert with the political chief of the department.

Such are the outlines of the Constitution, under which the internal affairs of the country seem to be well administered. Few cases of importance come before the courts, since all offences of a petty nature are summarily disposed of by the municipal authorities.

Although the Catholic religion is the only one recognised by the Constitution, it is not to be inferred that the Government and people of Honduras are intolerant and bigoted. There is probably no state of Central America in which there prevails so great a degree of liberality in respect of religion. This has resulted from a variety of causes and circumstances connected with the history of the country. Both at the time of the separation from Spain, and subsequently, during the struggles attendant on the organisation of Central America as a republic, the Church, as represented by the great body of the priesthood, took an active part with the aristocracy and monarchists against the liberal or republican party. The struggle was so protracted and bitter as not only to

estrange the great mass of the people from the Church, but to lead them to limit its power and influence by the most decisive measures, when their own success enabled them to do so with safety. The first blow fell upon the Archbishop of Guatemala, who was banished from the republic. The members of all the monkish orders were next expelled; the convents were suppressed, and the estates and revenues pertaining to them confiscated for educational purposes. The sale of indulgences and the promulgation of papal bulls were also prohibited: and finally, in 1832, the laws recognising the Catholic creed as the faith of the country were not only abrogated, but religious freedom unconditionally decreed by the general Congress. The state of Honduras distinguished itself by action still more decided. It passed a law legitimatising all the children of priests, entitling them to bear the names and inherit the property of their fathers, and declaring the cohabitation of priests with women to be an evidence of marriage in every legal sense, and subjecting them to all of its responsibilities. It was in vain that bishops and popes rained their bulls of excommunication and malediction upon the republic. A special excommunication, directed against the President, Morazan, was put into a cannon by a common soldier, and fired off in the direction of Rome, in token of contempt and defiance; and although these extreme measures were naturally followed by a degree of reaction, and in Guatemala, the seat of the old viceregal court and centre of monarchical influences, by the re-establishment of the convents and priestly censorship of books, still, in

the remaining states, the power and prestige of the Church remained permanently broken down; and while it may be conceded that there is much of ignorance and superstition among the people at large, it may at the same time be doubted if, under the general deference to religion among the better classes, there really exists a faith in papal infallibility or a real devotion to the dogmas of the Church; and although the people of Honduras, in common with those of Central America in general, are nominally Catholics, yet, among those capable of reflection or possessed of education, there are more who are destitute of any fixed creed, Rationalists, or, as they are sometimes called, Free-thinkers, than adherents of any form of religion.

Honduras was early established as a bishopric, with its episcopal seat at Truxillo, whence it was removed to Comayagua, where a cathedral was built, and where it still remains. For many years the see had remained vacant, until 1854, when it was filled by the consecration of Señor Don Hippolito Casiano Flores, the late incumbent. Finally, it may be observed that the Church in Honduras is supported only by voluntary contributions and a small annual appropriation on the part of the state. It is without rents or revenues of any kind.

Honduras has two universities; one established in the city of Comayagua, and another in Tegucigalpa. They have nominally professorships of law, medicine, and theology, but, in fact, their course of instruction is little in advance of that of the common schools of the United

States, except, perhaps, in the department of languages. In the department of natural sciences, and in those studies of greatest practical importance to the development of the resources of the country, chemistry, engineering, the higher mathematics, they are entirely deficient, and much behind those of Nicaragua, San Salvador, and Guatemala. Indeed, most of what are called educated men in the state have received their instruction in foreign countries or at the institutions just named. Efforts have been made to elevate the character and efficiency of these establishments in Honduras, but they have been too feeble to produce any important change. Still, the fact that they have been rescued from a state of entire suspension, and are not deficient in pupils in the elementary branches of knowledge, gives encouragement for the future, and, with the restoration of peace and the return of national prosperity, there is reason to believe they may become an honour to the country.

The Lancasterian system of education was introduced in Central America during the existence of the Federation, and has been continued, with some modifications, in the various states. The requisite data for estimating the public or common schools of Honduras do not exist, since such few returns from the departments as have been incidentally published in the official paper are confessedly imperfect. On a very liberal estimate, there may be four hundred schools in the state, with an average attendance of twenty-five scholars each, or an aggregate of ten thousand pupils of all classes in a total population of three hundred and fifty thousand.

Very few data exist for calculating either the amount or value of the industrial products of Honduras. Its exports consist chiefly of bullion, mahogany, hides, sarsaparilla, tobacco, cattle, and a small amount of indigo; and its imports of cotton, silks, hardware, &c.

The value of the imports of the state is also to a great degree conjectural, owing to the fact that the customs at several ports have been farmed out to individuals, whose interest it is to conceal their actual amount.

The sale of *aguardiente*, or native rum, is a Government *estanca* or monopoly, and yields a considerable annual income to the state.

The cattle of Honduras constitute a most obvious source of wealth. The comparatively open character of the interior country, and its vast savannas, covered with natural and unfailing meadows, are circumstances eminently favourable for the increase of this kind of property to an indefinite extent. The exports of cattle to the neighbouring states of Guatemala and San Salvador are considerable, the latter republic, in common with the British establishment of Belize, drawing nearly its entire supply of cattle from Honduras. Numbers are sent to Cuba and also to Panama. The possibility of salting beef in the state, and making it an article of export to the West Indies and even to European markets, has been suggested with much plausibility. It may be objected that the high temperature of the country must prove an insuperable difficulty to the success of the experiment; but there are certainly many portions of the interior where the elevation, and

consequently cool climate, must, to a certain extent, obviate this objection, if well founded. But the recent discoveries in the way of forming refrigerating chambers in ships, in which meats may be perfectly preserved for weeks and months, must enable Honduras to dispose profitably of its herds.

The narrow colonial system of Spain had the effect to keep many of her American possessions, and especially Central America, entirely excluded from intercourse with the rest of the world. None of the improvements in the arts or in agriculture, which elsewhere were effecting gradual but total revolutions in the industry of nations, were permitted to reach that country. Trade was monopolised by the Crown, which equally undertook to regulate the amount of production of the various articles for which these colonies were distinguished. A single example will illustrate the extent to which this jealous and oppressive policy was carried. Early in the eighteenth century, the cultivation of the grape had been introduced upon the northern coast of Honduras, with so much success and promise as to attract the attention of the Government of Spain, and lead it to fear that the colony might ultimately come to rival the mother country in the production of wine. Orders were consequently issued to the officers of the Crown to destroy the vines, which orders were carried into execution. Since that period no farther attempts have been made to introduce the grape, but no doubt exists of the fact that it might be produced in great abundance, and become an element of wealth to the state.

The internal troubles which followed the independence have left the country no opportunity to repair the errors of the previous colonial system, which had so effectually suppressed its industry, and prevented the development of its resources. These commotions deterred foreign enterprise from taking that direction, while they equally debarred the people themselves from making an effective use of the limited means at their own command for their own improvement.

A great, and, until remedied, an insuperable obstacle to the development of Honduras, is the want of adequate means of internal communication. The roads, so called, are mere mule-paths, often conducted, to avoid large and rapid streams, over the steepest and roughest mountains, where in some places they are so narrow, abrupt, and obstructed, that the stranger recoils in despair of effecting a passage. The loads carried by mules are necessarily light, and the expense of transportation becomes so great as to effectually prohibit the exportation of the more bulky products of the state, except from places near the coast. All articles of importation, also, which cannot be packed on mules require to be transported on the shoulders of men; and the pianos, mirrors, and other foreign articles of bulk and value in use in the larger towns of the interior have all been carried in this manner from the seaports—distances varying from sixty to one hundred miles! The requisite machinery for working the mines in a manner adequate to their importance is also excluded for the same reason. But with the opening of a single good road through the state, and

especially with the construction of the proposed railway between the seas, these difficulties will be in a great degree removed, and industry increase in proportion to the incentive which may be held out for its exercise. The importance of these material considerations is well understood by all the educated portions of the people; and it is but just to say, that they are disposed to make use of every means in their power, alike by the encouragement of foreign enterprise, and by an active co-operation on their own part, to hasten the development and secure the prosperity of the state. Liberal in politics and religion, and repelling those prejudices which it has been the effort of demagogues in Mexico and Guatemala to inspire against foreigners, and especially against the United States, they look towards the latter country as the direction from whence their cherished hopes for the future are to be realised.

Civilisation is harmonious; and there can be no great intellectual, political, or social advancement, which is not preceded by a corresponding material progress. This truth has gradually forced itself upon the minds of the reflecting portion of the people of Central America, and they have come to understand that political permutations are powerless to effect the regeneration of the country. They distinctly perceive that the existing elements of population, however important in the aids which they may afford, are yet inadequate to that great end.

It has not always been prudent for them to avow their own convictions in the face of prejudices which are diligently fostered by demagogues for sinister and selfish

purposes. The special power conferred upon the President by the Constitution of Honduras, "to conclude contracts for colonisation," nevertheless indicates the direction in which the framers of that instrument looked for relief from the difficulties and dangers of their condition. As I have elsewhere intimated, it is only by a judicious system of colonisation, which shall ultimately secure the predominance of white blood, at the same time that it shall introduce intelligence, industry, and skill, that the country can hope to achieve peace, prosperity, and greatness.* With vast resources, a climate adapted to every caprice, not less than to the products of every zone, and an unrivalled position, it would be a practical denial of the evidences of high design to doubt the future power and greatness of the hitherto little-known, the long-distracted, and, as yet, utterly undeveloped Republic of Honduras.

* For the law of Honduras relating to Immigration, see Appendix.

CHAPTER XIII.

INTER-OCEANIC COMMUNICATION THROUGH HONDURAS—MODERN EXPLORATIONS—ORIGIN OF THE HONDURAS INTER-OCEANIC RAILWAY.

In the year 1850, while occupying the position of diplomatic representative of the United States in Central America, it became requisite for me to visit the Bay of Fonseca, which has a commanding geographical position between the states of Nicaragua and San Salvador, on the Pacific Ocean. During my residence at the port of La Union, on the dependents bay of the same name, my attention was arrested by the circumstance that portions of this bay were swept by strong winds from the north, leading me to infer that there must exist an interruption in the great mountain-chain of the Cordillera, which otherwise would interpose an impassable barrier to the winds blowing from that direction. This inference was strengthened on learning that the north winds prevailed only during the period of their continuance on the Atlantic coast, and was confirmed by the additional circumstance that the current of wind reaching the Pacific was only felt over a very narrow space, not exceeding ten miles in breadth. It was with no surprise, therefore, on ascending the volcano of Conchagua, which

rises above the port of La Union, in company with the commander of the French frigate, *La Seracuse*, that I turned my glass to the northward, and saw that the mountains of Honduras seemed to be completely interrupted in that direction.

Then, this fact only interested me as a remarkable feature in the general physical character of the country; nor was it until the autumn of 1852 that I was led to reflect upon it in connexion with the subject of interoceanic communications. At this time the practical examination of the Isthmus of Tehuantepec, with reference to the construction of a railway between the seas, had resulted in establishing the fact of the total absence of adequate ports for the purpose upon both oceans. The project of a communication at that point had, moreover, become involved, politically, to such a degree that little hope could be entertained of its successful prosecution until a new and permanent order of things should be established in Mexico, a result which the previous history of that country gave no warrant for anticipating as likely to happen for many years.

The unwilling conviction was consequently forced upon my own as well as on the public mind that, in order to reach California, it would continue to be necessary to follow the tedious and circuitous route by way of the Isthmus of Panama.

It was then, and in complete ignorance of the early explorations of the Spaniards recounted in the preceding chapter, that the observations which I had made at La Union led me to inquire if there might not be a feasible

railway route across the Continent, terminating on the Bay of Fonseca.

On presenting my views upon the subject to a few personal friends and public-spirited gentlemen, among whom was the late far-seeing and brilliant Hon. Robert J. Walker, at one time Secretary of the Treasury of the United States, it was determined to incur the expense of verifying them by a direct and careful examination of the country in question. I at once proceeded to organise a competent corps of reconnaissance for the purpose, which sailed from the United States in the month of February 1853, returning in the month of December of the same year.

The result of this reconnaissance was the definite establishment of the existence of a feasible and very favourable railway route between Puerto Caballos (Port Cortez) on the north, and the Bay of Fonseca on the south, passing through the very heart of Honduras, and close to its capital city. A liberal charter for a railway company was negotiated by myself with the Government of Honduras, General José Cabañas being President of the Republic, and Don Leon Alvarado and Justo T. Rodas, commissioners on the part of the Government. Under this charter an organisation was effected in the city of New York; but the resources of the Pacific coasts had then only begun to be developed, and the boldness, I had almost said the audacity, of existing enterprise was then unknown. Without considering the altered circumstances of the age, and its new appliances, men clung to the wretched transit at Panama with stubborn and

wilful ignorance, for no reason except that there the Spanish muleteers have passed for centuries, and that, "if any better route existed, it would have been known before."

Despairing of realising the Honduras project in the face of prevailing ignorance and the open hostility of the Panama interest, the promoters of the proposed Honduras Inter-oceanic Railway determined to appeal to European intelligence and capital; and the writer of this volume was delegated to present the enterprise in London and Paris. At the end of two years of arduous effort, in which the simplest lessons in geography had to be taught to graybeards and capitalists, and in which territorial pretensions and accumulated international grievances had to be adjusted, a mixed English, French, and American company, for the construction of the proposed work, was organised, under the direct sanction of the British Government, with its seat in London, with the late Sir William Brown, chairman, and Robert Wigram Crawford, M.P., now (1870) Governor of the Bank of England, as vice-chairman, and an array of names in financial circles as directors, such, probably, as never before was brought together in support of any enterprise whatever.

Sir William, then Mr, Brown, took the chairmanship of the company at the special request of the late Lord Clarendon, who (in vindicating the treaties made with Honduras, guaranteeing, first, the "independence and neutrality" of the proposed railways; and, second, surrendering to Honduras all pretensions to the "Bay

Islands") said, in the House of Lords, February 3, 1857: "The concessions contained in the treaties with Honduras have been made for the purpose of increasing the facilities for the construction of a railway, which, I believe, will be found to be the best mode of establishing a communication between the two oceans. On both sides are magnificent harbours."

Here, perhaps, as appropriately as anywhere else, reference may be had to the political results that followed on the presentation of the Honduras enterprise in England, and the part which it played in disposing of a number of embarrassing and irritating questions, involving not only Great Britain and the Central American States, but also the United States. In the original charter of the railway, and with a view to its perfect neutralisation, in the interest of all nations, it was stipulated, Section V., as follows:—

"Art. 4. And since, by Article VIII., of a convention between Great Britain and the United States, signed April 19, 1850, it is established as a general principle, and agreed between these powers, to extend their protection, 'by treaty-stipulations, to any practicable communications, whether by canal or railway, across the isthmus that connects North with South America,' therefore the Government of Honduras, with the view to secure the route herein contemplated from all interruption and disturbance, from any cause, or under any circumstances, engages to open negotiations with the various governments with which it has relations, for their separate recognition of the perpetual neutrality, and for the protection of the aforesaid route; and, to prevent any misunderstanding or jealousy, it is agreed that the treaty-stipulations with each and all governments, in respect to the said route, shall be in terms the same."

In conformity with the stipulations of this article, "A Treaty of Friendship, Commerce, and Navigation" was concluded between Great Britain and Honduras by Lord Clarendon, on one side, and Don Victor Herran, on the other, August 26, 1856, containing the following articles, which were subsequently embodied, *mutatis mutandi*, in treaties between Honduras and the United States, France, Prussia, and Italy:—

"*Additional Article.*—1. The Government of Honduras agrees that the right of way or transit over such route or road, or any other that may be constructed within its territories, from sea to sea, shall be at all times open and free to the Government and subjects of Great Britain, for all lawful purposes whatever. No tolls, duties, or charges of any kind shall be imposed by the Government of Honduras on the transit of property belonging to the Government of Great Britain, or on the public mails sent under authority of the same, nor on the subjects of the British crown; and all lawful produce, manufactures, merchandise, or other property belonging to subjects of Great Britain, passing from one ocean to the other, in either direction, shall be subject to no import or export duties whatever, nor to any discriminating tolls or charges for conveyance or transit, on any such route or road as aforesaid, and shall be secure and protected from all interruption or detention on the part of the state. The Republic of Honduras further agrees that any other privilege or advantage, commercial or other, which is or may be granted to the subjects or citizens of any other country, in regard to such route or road as aforesaid, shall also, and at the same time, be extended to British subjects; and finally, as an evidence of its disposition to accord to the travel and commerce of the world all the advantages resulting from its position in respect to the two great oceans, Honduras, of her own good-will, engages to establish the ports at the extremities of the con-

templated road as free ports, for all the purposes of commerce and trade.

"2. In consideration of these concessions, in order to secure the construction and permanence of the route or road herein contemplated, and also to secure for the benefit of mankind the uninterrupted advantages of such communication from sea to sea, Great Britain recognises the rights of sovereignty and property of Honduras in and over the line of said road, and for the same reason guarantees positively and efficaciously the entire neutrality of the same, so long as Great Britain shall enjoy the privileges conceded to it in the preceding section of this article. And when the proposed road shall *have been completed, Great Britain equally engages, in conjunction with Honduras*, to protect the same from interruption, seizure, or unjust confiscation, from whatsoever quarter the same may proceed."

The negotiation of this treaty led to a better understanding between Honduras and Great Britain as regarded the claims of the latter to the Bay Islands, and its pretensions on the "Mosquito Shore," both of which were surrendered to Honduras by the treaty of November 28, 1859. This treaty set forth:—

"Art. 1. Taking into consideration the peculiar geographical position of Honduras, and in order to secure the neutrality of the islands adjacent thereto, *with reference to any railway or other line of inter-oceanic communication which may be constructed across Honduras*, Her Britannic Majesty agrees to recognise the islands of Roatan, Guanaja, Helena, Utila, Barbarette, and Morat, known as the Bay Islands, and situated in the Bay of Honduras, as a part of the Republic of Honduras, &c.

"Art. 2. Her Britannic Majesty engages, &c., &c., to recognise as belonging to and under the sovereignty of the Republic of Honduras, the country hitherto occupied and

possessed by the Mosquito Indians, within the frontier of that Republic, wherever that frontier may be," &c.

In this way, as already said, the complications between Great Britain and the Central American States, in which the United States had necessarily become involved, and which, at one time, threatened a serious rupture between the two countries, became honourably and satisfactorily settled. From this not inappropriate digression we come back again to the operations of the Honduras Inter-oceanic Railway Company in London.

Under the auspices of the directors, and at their own personal expense, a final "locating" survey of the proposed railway was made in 1857-8, under the principal direction of General Wm. W. Wright, late Chief Military Engineer of the United States, and a careful survey of the harbours and rivers of the State by Captain W. N. Jeffers, U.S.N. These were subsequently officially verified by Lieut.-Col. Edward Stanton, R.E., in command of a detachment of Royal Engineers, detailed for the service by Her Majesty's Government.

Before, however, action could be taken on the data and reports thus carefully got together, the Italian war broke out, and all operations towards the realisation of the contemplated work were necessarily (?) suspended. Then followed the great civil war in the United States, the attempt of the French Emperor to found a "Latin Empire" in Mexico, and other disturbing causes and events, which effectually paralysed an enterprise that, under a mistaken policy on the part of its managers, was never allowed to make an appeal to public intelli-

gence or support. In the general turmoil of war, and under the pressure of discouraging circumstances, the charter of the projected railway was allowed to lapse by its own terms, and to disappear, for the time, from public view.

But the originators of the enterprise, although despondent, did not despair of its ultimate realisation. Don Leon Alvarado, who had signed the original contract on the part of the Honduras Government, was sent to Europe as a special commissioner on its behalf, where he was cordially supported by his countrymen—Don Carlos Gutierrez, Minister Plenipotentiary and Envoy Extraordinary of Honduras at the Court of St James', and Don Victor Herran, occupying a corresponding position at the French Court. After many vexatious delays and disappointments, and after strenuous but vain efforts to organise a new company on a corresponding basis with the old, for the realisation of the enterprise, these gentlemen decided on making a direct appeal to the public for a loan to the Government of Honduras, pledging for its payment not only the road itself, but the extensive public lands of the Republic, with its vast and valuable supplies of mahogany and other precious woods. Regarding the line of the proposed road as naturally composed of three sections, of very nearly equal extent, the Atlantic, Central, and Pacific sections, they determined, with rare good sense and economical appreciation, to ask, at first, for only the amount necessary for the first section of the work—viz., £1,000,000 sterling. The eminent banking-house of Messrs Bischoffsheim, Goldsmidt, &

Co. undertook the financial arrangements, and the not less eminent engineering firm of Waring Brothers, the construction of the first section. The appeal to public intelligence, supported by the obvious advantages of the proposed work, met a hearty response, and, in October 1868, ground was broken at Puerto Caballos, or Cortez, and the work formally commenced. Since then extensive wharves, with corresponding warehouses and machine shops, have been completed, and, by the time these pages reach the public, the first, and in many respects the most difficult of the three sections of the road, will be completed and equipped, and, as per contract, "in good working order."

Early in the present year (1870) the remaining sections of the road were contracted for, by the same well-known and successful firm, Messrs Waring Brothers, and, under the same reliable financial auspices, a further loan was successfully raised for the completion and full equipment of the Honduras Inter-oceanic Railway, ensuring its completion, and its opening to the world, and its trade and travel, before the close of the year 1872. The nature of the country through which the railway will pass, the character of its ports, the business it will subserve, and the resources, great and varied, which it will develop, as well as its advantages, compared with other existing or projected routes, will form the subject of additional chapters.

CHAPTER XIV.

REQUISITES FOR AN ADEQUATE INTER-OCEANIC TRANSIT.

PROBABLY more idle speculation has been expended on the question of uniting the Atlantic and Pacific Oceans, by canal or railway, *via* the Central American isthmus or isthmuses, than on any other similar question whatever. In these speculations the plainest, and at the same time the most important, practical, and economic conditions and considerations, have generally been overlooked from ignorance, or ignored from prejudice. Now, to an adequate inter-oceanic transit, whether by canal or railway, three things or conditions are indispensable:—

1st. Good ports at both extremities.
2d. A salubrious region, furnishing sufficient supplies, and capable of development.
3d. An advantageous position in respect to the great commercial centres of the world.

In testing the various routes, actual, in construction, or projected, by their conformity with these essential conditions, it must not be forgotten that *time*, rather than *distance*, is the true measure of the relations of places. In other words, it by no means follows that

because any designated route may be shorter than another, it is therefore best. It may lack proper ports, pass through an insalubrious region with limited resources, or without resources at all, and, further, may lie outside the most important zones of travel and trade. Questions of distance, and, for that matter, of cost, become subordinate to these considerations.

Bearing in mind these general propositions, we proceed to the consideration of the various points that have, at different times, been suggested as affording facilities for inter-oceanic communication across the American continent. Of these, three have been claimed to be fit places for opening canals between the Atlantic and Pacific:—

1. By way of the Rio Atrato, and its tributaries, either the "San Juan" (Pass of Raspadura), or "Truaudo," in South America.
2. Through the Isthmus of Darien.
3. Through Nicaragua, by way of the Rio San Juan and the interior lakes.

The routes *via* the Atrato, and across Darien, had been proved to be utterly impracticable. Apart from deficiencies in respect of ports, and drawbacks in respect of climate, they all involve *tunnels*, the shortest not less than seven miles in length. Whatever feat "engineering of the future" may contemplate, that of tunnels for ocean-going ships does not fall within the range of nineteenth century achievement, nor is its realisation called for by any nineteenth century requirements. Through

Nicaragua these certainly exist, as shown by the survey of Colonel Childs in 1850 (the only survey at all conforming to modern engineering requirements), a practicable canal route, with an up lockage of one hundred and twenty odd feet to Lake Nicaragua, and a corresponding down lockage to the Pacific. Nature has here placed sufficient water-reservoirs at the "summit" for supplying the lockage both ways, and if ever the necessity for a canal across the continent shall become sufficiently important to ensure its construction, it will *be opened through* Nicaragua, and nowhere else. The idea of an "open-cut canal," founded on the tales of Cullen, Gisborne, Du Puydt, &c., may amuse shallow investigators for a few years longer, but will disappear with the advance of geographical knowledge. The question is simply one of tunnelling *through* the Cordillera, or *locking up and over* it. Leaving the paramount consideration of ports aside, we have to contemplate, in Nicaragua, not less than thirty-two locks (for ships) of eight feet lift each; and at Tehuantepec (where certain active imaginations have traced a canal route), the still more startling number of 148 locks of the same lift—the summit, which has no adequate water supply, being, according to the most favourable *ex parte* statements, not less than 656 feet above the sea level.

As regards inter-oceanic railways, we have actually constructed, in progress, or projected, the following:—

1. The Panama Railway, about fifty miles long, completed.
2. Through the state of Veraguas, United States of

Columbia, from Chiriqui Lagoon, on the Carribbean Sea, to Golfo Dulce, or some undetermined point on the Pacific, within or outside Columbian jurisdiction. Length and elevation to be overcome unknown. It has never been brought to the test of a survey, but may be practicable.

3. Through the Republic of Costa Rica, from Port Limon, on the Carribbean Sea, to the Gulf of Nicoya, on the Pacific. Length, according to reports of the promoters, 123 miles; elevation of summit, 5118 feet above the sea. Projected.
4. Through the Republic of Honduras from Port Cortez, on the Bay of Honduras, to the Bay of Fonseca, on the Pacific; length about 200 miles; elevation of summit, 2850 feet. In course of construction, and under contract to be completed in 1872.
5. Across the Isthmus of Tehuantepec, Mexico, from the Gulf of Mexico to the Pacific; length, 180 miles; height of summit, 656 feet.

Some other routes have been suggested, but hardly rise to the dignity of being called "projects."

Whoever will take the trouble of consulting a map of the world will observe, that nearly all the civilized populations of the globe, and nearly all the great centres of agricultural and mechanical production, of industry and commerce, lie to the northward of the thirtieth parallel of north latitude. All Europe, all Canada and the United States, the Sandwich Islands, Japan, and China,

lie to the north of the same parallel. In establishing communication between these centres and states, across the American continent, every mile the route may take to the southward of this parallel adds two miles to the aggregate distance between them. The higher the latitude, therefore, in which any route across the Central American Isthmus may lie, all other circumstances being equal, the better. Such route, which shall also combine the additional and essential condition of good ports, will have not only the first claim on public attention and support, but will in the end, supersede all others.

And here it may be observed, that when the project of opening an inter-oceanic communication across the Central American Isthmus first began to attract the attention of the world, steamboats and railways were unknown. Accordingly, no lines were indicated except such as were supposed to have an adaptability for canals; and hence also resulted that predilection, almost amounting to prejudice, with which certain particular lines have continued to be regarded, even since modern discovery has altered the entire nature of the question. The Spaniard designated the Isthmuses of Panama and Tehuantepec as probably the only places where a canal could be dug. He was governed in this selection wholly by the consideration which I have named, and to which all other considerations were necessarily subordinate. Had he been acquainted with steam in its application to land-carriage and to navigation, he would never have given those isthmuses a second thought, but would have selected other lines which should combine

the great and indispensable conditions to a good and permanent route of transit, viz., good ports, salubrious climate, and advantageous commercial position.

But now, however desirable a water communication between the seas may be esteemed, it is well known that many of the requirements of trade, and all those of travel and the transmission of intelligence, can be met by railways better than by canals. Their greater adaptation to natural conditions, facility of overcoming physical obstacles, and greater cheapness of construction, also commend them more directly to practical attention.

As we have seen, the Isthmus of Honduras was designated as early as 1540, as affording superior advantages to any other route of communication then known, for land transport between the oceans. It was subsequently carefully examined with reference to a general concentration there of the fleets of Spain, preliminary to the abandonment of the other routes then in use. These examinations, so far as their results are known to us, were in every case favourable to the change. Why that change did not take place is sufficiently explained by the political condition of the world at the close of the sixteenth century, when the nations of Europe, as if by common impulse, jealous of the power and glory of Spain, united in a system of public and private war on her commerce and against her American possessions. To erect new establishments, build new fortifications, and carry out all the measures necessary to a successful transfer of the route from Panama, under

such adverse circumstances, was obviously impossible. To retain what she already possessed, and to give adequate protection to the route then in use, was all that her power, diffused over so vast an area, could accomplish. With her declining fortunes, the necessity of a new and better way of communication gradually became less, until, with the revolt of her colonies, all interest in the matter ceased. The difficult and deadly route by way of Panama, traversed only at intervals by caravans of mules, sufficed for two centuries for the small necessities of communication with the Pacific; and it was not until the purchase of California by the United States, the discovery there of gold attracting an emigration unprecedented in the history of the world, that the question of inter-oceanic communications assumed, for a second time, a real interest and a practical form. Tens of thousands of eager and ambitious men directed their course to Panama, heedless of its insalubrity, and risking decimation in their transit. They recklessly sought the only way then open to them, whereby they could reach the shores where Fortune was believed to shower her favours with a lavish and indiscriminate hand. To afford them a safer and speedier means of passing the barrier of the continent became, at the same time, a necessity and a benefaction; and it is only surprising that enterprise usually intelligent, and capital always cautious before attempting to accomplish this grand object, did not first seek out the shortest, safest, and speediest line whereby the seas might be united, instead of blindly

accepting a route notoriously cursed by nature, and condemned by every consideration, geographical, commercial, and political—deadly in climate, barren of resources, without ports, and in every way incapable of meeting the great and permanent requirements of travel and of trade. And however much we may admire the energy, perseverance, and zeal, which has finally carried through the railway at Panama, in face of appalling physical difficulties, and at fearful sacrifice of human life, it is nevertheless obvious to all, and conceded by all, except those whose interests lead them to maintain a different view, that this railway fails to meet adequately, or in any considerable degree, the leading requirements of a safe, easy, and permanent route of inter-oceanic communication. No other line of transit yet proposed, at Chiriqui, Nicaragua, Honduras, or Tehuantepec, but possesses greater advantages, and in every respect improved conditions over Panama.

CHAPTER XV.

LINE OF THE HONDURAS INTER-OCEANIC RAILWAY.

OF all the routes of inter-oceanic communication across the Central American isthmus, that *via* Honduras best meets the requirements indicated in the preceding chapter. It commences at Port Cortez (formerly Puerto Caballos) on the Bay of Honduras, in lat. 15° 49′ N., and long. 87° 57′ W., and runs nearly due south, across the continent, and wholly through the Republic of Honduras, to the Bay of Fonseca on the Pacific, in lat. 13° 21′ N., and long. 87° 35′ W. Its total length, from anchorage to anchorage, or from five fathoms of water in Port Cortez, to five fathoms in the Bay of Fonseca, is about 150 geographical, or following the located line, a little over 200 statute miles.

Starting at Port Cortez, the line pursues a course a little east of south, across the plain of Sula, until it strikes the Rio Ulua near the town of Santiago; thence it follows the valley of that river, now called the Humuya, to its very source, in the great plain of Comayagua. At the southern extremity of this plain there is an elevation of four hundred feet, which constitutes the "summit" between the Atlantic and Pacific.

Here the sources of the Humuya interlock with those of the Rio Goascoran, which flows south, through its proper valley, into the Gulf of Fonseca.

Two important facts are to be observed in tracing this line—

1. That the valleys of the Humuya and Goascoran, in conjunction with the central plain of Comayagua, constitute a great transverse valley extending from sea to sea, completely cutting through the chain of the Cordillera.

2. That this great transverse valley or natural cut extends due north and south, so that the road, in its whole course, deviates very little from a right line.

Port Cortez.—We have seen (*ante*, p. 53) that this port was selected by Cortez in his expedition into Honduras, and was by him called Puerto Caballos. He founded there a town, which he called Natividad. The selection was made, to quote the language of his fifth letter to the King of Spain—"*Porque es el puerto mejor que hay en toda la costa descubierta de esta tierra firme, digo, desde Las Perlas hasta la Florida*"—"because it is the best port hitherto discovered on all the coast of the main land from Las Perlas to Florida." He adds that he has made haste to effect a settlement, not less because of the beauty of the port itself, than on account of the excellence of the neighbouring country, which he affirms was well populated and fruitful. In fact, Port Cortez remained for more than two centuries the principal port on the coast; but, during the domination of the pirates, and the wars with the English and

Dutch, it was found to be too large to be easily defended, and was consequently removed, a portion of the inhabitants establishing themselves at Omoa, a few miles to the westward, and the remainder settling at Santo Tomas. Captain Jeffers, U.S.N., describes Port Cortez as follows:—

"Puerto Cortez is a good harbour, of great capacity, sufficient depth of water, and easy of entrance and exit. Situated at the base of the hills, there are neither marshes nor swamps to affect the healthiness of the locality, which is sufficiently extensive for the formation of a large city. The lagoon, which is of salt water, and open to the sea, abounds in fish."

Port Cortez to Santiago.—From Port Cortez, in order to reach the great and beautiful plain of Sula or Santiago, through which flow the large rivers Chamelicon and Ulua, the road makes a circuit of several miles around the eastern end or base of the high mountain chain of Merendon or Omoa, which is a branch of the Cordillera, and which here finds an abrupt termination.

The plain of Sula forms a great triangle, its base resting on the sea, and extending for upwards of fifty miles along the coast, from the outposts of the mountains of Omoa to those of Congrehoy, and its apex extending due south, on the line of the railway, in the direction of Comayagua. A portion of this plain, to the right or eastward of the Rio Ulua, is flat, and, during high water, subject to overflow. Such, however, is not the case with the western portion of the plain, over which the road is built. Here the ground is firm, and the streams have all sand or gravel beds. No bottom-

less marshes, such as those which have obstructed the Panama road, are found here, nor, indeed, upon any part of the entire line.

The ascent to Santiago is so gentle as almost to be imperceptible, and the cutting and filling so slight as scarcely to deserve mention.

Santiago may be regarded as the head of steamboat navigation on the Ulua, although vessels of light draught, at favourable stages of the water, might ascend much farther. The engineers, who examined the river minutely, report that "steamers drawing seven feet may enter the Ulua at all times, and from June to January ascend as far as the junction of the Humuya. Light-draught steamers can always ascend to the mouth of the Humuya, and by the Rio Blanco to a point near Yojoa."

From Santiago, by Valley of Rio Humuya, to Plain of Espino.—The plain of Sula continues for about ten miles beyond Santiago, where it is contracted by the hills and mountains which border the comparatively narrow valley of the Humuya. From this point the ascent becomes more rapid. The course of the river Humuya, up to the plain of Espino, is direct, and the valley is formed between hills of from fifty to five hundred feet of altitude, which, in general, come down to the banks of the river, but occasionally recede, and leave strips of level above the reach of inundations. The slopes of these hills are seldom abrupt, and the alternation of "cut and fill," for the entire distance, is very favourable. The country around is generally broken, but intersected by numerous fertile valleys.

This portion is more valuable for grazing than for agricultural purposes. The hills are covered with the pine and oak, and on the borders of the streams exist vast quantities of mahogany, cedar, guanacaste (*lignum vitæ*), India-rubber, and other valuable trees.

About midway between Santiago and the plain of Espino, the river Sulaco, descending from the right, unites with the Humuya. This is a considerable stream, draining a broad and fertile valley, and extending in the direction of the rich department of Olancho. The construction of the railway will lead not only to the development of the valley of the Sulaco, by means of dependent waggon-roads, but will also bring the rich district of Olancho in close communication with the coast at Port Cortez.

Plain of Espino to Plain of Comayagua.—The plain of Espino may be said to commence at the town of Ojos de Agua. It rises gently toward the north, and lends its aid to the railway in overcoming the "summit," without involving any effort of engineering skill. It is about twelve miles long by eight broad, and surpassingly beautiful. Under the Spanish dominion, traffic was carried on between this plain and Port Cortez in boats. In later times, loaded canoes have descended; and Captain Jeffers went down in one from Ojos de Agua. The current of the stream, however, is rapid, and much obstructed by boulders and rocks, making the navigation both difficult and dangerous.

Between the plains of Espino and Comayagua the River Humuya is much compressed by high hills, which,

however, interpose no engineering difficulties of importance.

Plain of Comayagua.—The great plain of Comayagua, as already several times observed, constitutes precisely that feature in the general topography of the country which gives not only practicability, but eminent feasibility, to the Inter-oceanic Railway. It is situated in the very centre of the state, midway between the seas, and is about forty miles in its greatest length, by from five to fifteen broad. Its greatest or longest axis is north and south, and nearly coincides with the line of the proposed road. These dimensions are exclusive of the lateral or dependent valleys of the streams, which concentrate themselves in this basin, and form the Rio Humuya. Like the plain of Espino, it slopes gradually to the north, and thus renders the grade of the road to the summit gentle and easy. This plain is the only one in all Central America the longest axis of which coincides with the meridian—a feature which was early remarked by the Spaniards, and which led, as we have seen, to the foundation of the city of Comayagua.

The line of the road runs close by the city of Comayagua, crossing the Humuya to the eastward of the town of Lamani, and reaches the summit, on a grade of eighty-five feet for five miles, at the Pass of Rancho Chiquito. There is another pass, seventy feet lower, some miles to the westward, called Pass of Guajoca; but it is less favourable for the work than that *via* Rancho Chiquito.

The Summit.—The Pass of Rancho Chiquito, the highest point between the two oceans, is 2850 feet above the sea. It is not a rocky summit, abruptly dividing the waters flowing into the great oceans, but a beautiful valley, a savanna, or natural meadow, bounded on the east by a parallel range of mountains, and on the west by a corresponding range of hills. In this meadow, dotted over with cattle, the traveller finds two bright streams, scarcely a hundred yards apart, flowing in opposite directions. One is a source of the Humuya flowing into the Atlantic, the other of the Goascoran falling into the Pacific.

The pass of Guajoca, like that of Rancho Chiquito, is a broad savanna, in which the sources of the Goascoran and Humuya almost mingle. Upon the north side rises abruptly a high continuous ridge, 1200 or 1500 feet in height, which extends exactly parallel to the line of the road.

Valley of the Goascoran.—After passing the summit, the line of the road follows the valley of the Rio Goascoran to the plains surrounding the Bay of Fonseca. The grade is very nearly uniform, although averaging higher than on the northern declivity. Although the elevation overcome at Rancho Chiquito is 2850 feet, it must be considered that there are no descents, *and that it is the total of ascents, and not the elevation of the summit*, that constitutes the expense of working a modern railway.

South of Goascoran the formations are of porphyry, limestone, white sandstone, disintegrated quartz, gravel,

and sand, mixed with lavas and volcanic stones. At Goascoran there are extensive beds of blue limestone, and in all the streams an immense quantity of large boulders of granite, gneiss, conglomerate, and sandstone. From this point the rock is a white sandstone, sufficiently soft to be quarried with the pick, but hardening and toughening by exposure. Its durability is sufficiently proved by the existence of engraved figures upon the rocks near Aramacina, which are in a good state of preservation, although of a date anterior to the Conquest. Excavations are made at an expense little or no greater than in earth, with the advantage of durability, and no liability to wash. Upon the whole line there is abundance of gravel, sand, lime, and brick-clay.

At Aramacina the yellow pine appears on the hills, and at San Juan and Aguanqueterique it is to be found of good size and in inexhaustible quantities in the immediate vicinity of the road. The pine attains a size of thirty inches, and from fifty to seventy-five feet of altitude, differing in no respect from the best North Carolina. The oak is also to be found in considerable quantities, as well as many other useful and valuable woods in any desirable abundance.

The smaller streams running into the Goascoran afford a supply of water-power applicable to the running of saw-mills or other machinery.

Bay of Fonseca.—Of the magnificent Bay of Fonseca little need be added to what has been said already. (See *ante*, p. 45, *et seq.*) A general chart of the bay was

made by Sir Edward Belcher, under directions from the British Government, in 1838; and a more minute survey of the parts available for the railway was made by Captain W. N. Jeffers, U.S.N., in 1857-58. The results attained by these officers coincide with those reached by Captain M. T. de Lepelin, of the French Marine, who reported to the Imperial Government in 1854 that

"The vast and magnificent bay, studded with islands, which stretches into the land between the points of Candadilla and Coseguina, and generally known as the Bay of Fonseca, or Amapala, has no rival on the entire coast of the Pacific, whether as regards its extent, its security, its beauty, or its naval and commercial position."

It seems to have been marked out by the Creator as the ultimate centre of the commerce of the Pacific. Salubrious, surrounded by a country of illimitable agricultural resources, and with rich and exhaustless coal, gold, and silver mines inland; abounding in fine fish, including excellent oysters, &c., &c.—in short, possessing all the necessities for sustaining a large and prosperous population, the Bay of Fonseca is unrivalled in its adaptation for a terminus of a great work of universal utility like the one now in course of construction.

Resources on the Line of Road.—Apart from the rich agricultural resources of the country through which the road passes, embracing every variety of tropical staple—coffee, cochineal, cotton, cocoa, sugar, rice, tobacco, indigo, maize, &c.—there are other vast and undeveloped sources of wealth. The valley of the Ulua abounds in valuable and precious woods, and the hills and moun-

tains of the interior contain numberless mines of the precious metals. There is hardly a stream on the Atlantic slope of the Cordillera which does not carry gold, in greater or less quantities. Recent examinations have shown that the sands of particular streams approach the *placers* of California in the extent and value of their yield. The silver mines of the interior, however, are unsurpassed in the amount and richness of their ores; and there is reason to believe, with the intelligence, enterprise, industry, and capital which will inevitably flow into the country with the construction of the railway, that Honduras will become, in proportion to its territorial extent, the largest silver-producing country of the world. In fact, up to this time, the mining interest of the state has been greater than all others, and under the crown as much as $3,000,000 were annually exported from the northern ports of the province. Other metals, such as iron, copper, and lead, are also abundant, and require nothing more than the opening of roads for the transportation of machinery, &c., to become important items in the productive wealth of the country.

Coal is also found at various places in the state, as also in the State of San Salvador, within sixty miles by water of the Bay of Fonseca. It can be supplied to the steamers running in connexion with the road, and can be exported to any point on the Pacific where it may be desired. A bed of coal which I examined in the plain of Sensenti, department of Gracias, covers a large area, and is ten feet in thickness. In this depart-

ment are valuable mines of opals; and cinnabar and asbestos are also reported to exist.

In the enumeration of the products of the state, hitherto neglected, I may mention sarsaparilla, gum copal, India-rubber, gum arabic, fustic, dragon's blood, vanilla, Brazil-wood, liquid amber, Peruvian bark, (quinine), &c., &c. Cattle are numerous in the state, and constitute a considerable part of the wealth of the inhabitants. Hides, therefore, which now hardly pay to be carried to the coast on mules, will become an important article of export when new and cheap means of transportation are established.

Altogether, the establishment of regular communication with Honduras, and between its ports and the interior, will open to the world a rich and virgin field for industrious and enterprising men, create new markets for manufactures, afford additional supplies for use, and give a corresponding impulse to commerce and trade.

CHAPTER XVI.

COMPARISON OF ISTHMUS ROUTES IN RESPECT OF PORTS.

"It is necessary to remark that, irrespective of climate and political considerations, there is one chief requisite, one main point to be insisted on, in connexion with any route or line intended to be available for general utility, without which permanent success will be impossible. This indispensable adjunct is a *good port*. Without such a place of resort at *each end* of any canal or railway, easy of access, and sheltered at all times, shipping could not effect objects securely, and in definite times. Delay, expense, and risk must be the consequence of using a route unprovided with adequate harbourage."—ADMIRAL FITZROY, *Journal Royal Geographical Soc.*, vol. XX., p. 165.

IN order to institute a fair and impartial comparison between the various inter-oceanic routes, proposed or in actual operation, we must first inquire what are the purposes of each. Taking them in their order, Panama, Chiriqui, Costa Rica, Honduras, and Tehuantepec are claimed to be proper and feasible points for railways. Nicaragua is simply impracticable for a railway; that is to say, for a continuous road, leading from one ocean to the other. A road built up the valley of the San Juan River would require to be constructed through an unbroken wilderness, and, moreover, to be 119 miles in length; and even then, a change to boats would become requisite to pass the lake (which cannot be turned), with a resumption of land-travel on the

Pacific side. Furthermore, Nicaragua has no good port on the Pacific short of Realejo, a distance of upward of 300 miles from San Juan de Nicaragua.

The Panama Railway.—It is not necessary, in this connexion, to give much consideration to Panama. Its Atlantic terminus is not less than seven degrees of latitude to the southward of the corresponding terminus of the Honduras line, while its Pacific terminus is not less than four days' sailing distance below the latitude of the corresponding terminus of the Honduras line. Supposing all other circumstances to be equal, the saving in distance of the Honduras over the Panama line would decide the question of superiority immensely in its favour.

In the first place, the Bay of Panama, on the Pacific, is in no sense of the word a port; steamers, at best, have to lie several miles from shore, and passengers, freight, and supplies have to be embarked and disembarked in small boats and lighters, an operation that can only be performed at certain stages of the tide (which has a rise and fall of from eighteen to twenty-two feet), and in bad weather cannot be performed at all. Delay, danger, uncertainty, and expense are the necessary results of this deficiency.*

* Mr Horace Greeley, in relating his experiences of a trip from San Francisco to New York, published in his paper (the *New York Tribune*, October 1859), says:—"Our two days' crossing the gulf of Tehuantepec were our roughest—far more turbulent than those consumed in traversing the gulf of California. . . . . We came to anchor in the Bay of Panama about 9 A.M. of Saturday—just twelve days from San Francisco, and just too late to land our mails, treasure, and passengers by that morning's tide, *so that we were obliged to lie in that hot harbour till*

The objections to Navy Bay (the Atlantic terminus of the Panama Railway), apart from its insalubrity, are not equally great; but this is far from being a safe port, inasmuch as it is open to the north-east, the direction from whence blow the heaviest gales. On the 31st of December 1854, a storm from the north-east destroyed the wharves at Colon (Aspinwall), and wrecked every vessel in the port. The American steamer *North Star*, and the British West India steamer *Derwent*, only escaped a similar fate by getting up steam and standing out to sea. A delay of two

3 *or* 4 P.M., when we were lightered ashore on the incoming evening tide, and despatched in two or three separate trains to Aspinwall. Panama has a fine harbour, landlocked by a number of little islands, which rise boldly from the water to a height of one to three or four hundred feet, covered by a tropical vegetation refreshing to the eyes of weary sea-goers. But the water is very shoal, save at high tide, for a mile or more from shore on every side, and I can't help thinking that, between the Railroad and the Mail Company, a wharf ought to be constructed to which a lighter drawing *at least two or three feet of water* might come up at any time. *The want of such a wharf cost us six tedious hours' waiting, and brought us into New York some thirty hours later than we otherwise would have come in. This most circuitous route to California cannot always afford to lose thirty hours on a passage.* Of Panama, I saw little, and that little did not impel me to regret that I had not seen more. Its importance is a memory only, and is not likely to be revived. The Panama Railroad I have steadily regarded as one of our countrymen's most creditable enterprises, and this is a view to which 'distance' did not 'lend enchantment.' We of the last train left Panama about 5 P.M., and reached Aspinwall about 8, making the transit from ocean to ocean (47½ miles) in three hours. . . . . It seems a pity that such a swamp as Aspinwall had to be chosen for its Atlantic terminus; but, even thus, the railroad is a great and general blessing. . . . But one of two things the Railroad and Steamship Companies should do—either whirl their passengers through Aspinwall at once, or enable them to stop there in comfort. At present, they are usually kept there from three to fifteen hours, at a greater cost for misery than they ought to pay for comfort."

days in embarking the California passengers, mails, and treasure was the consequence.*

Tehuantepec.—It follows, then, that the routes which, in respect of latitude and consequent saving of distance, can bear a comparison with each other, are those of Honduras and Tehuantepec. In this respect, these are the only ones which meet the obvious requirements of commerce and travel. And here the general

* "A heavy sea has been setting into this harbour since Sunday. . . . Yesterday the Panama Railway Company's depot was sadly damaged, and their wharves and road track washed over. A heavy sea burst open an iron door of the depot, and swept within sixty feet of the wharf of the old United States Steamship Company."—*Letter to the New York Times, dated "Aspinwall, N.G., Nov. 4, 1859."*

"A heavy gale prevailed at Aspinwall from the 19th to the 24th inst., with a heavy sea setting into the harbour, so that the English steamer *Solent* was unable to discharge all her cargo, and had to let all or part of her cargo for the South Pacific remain on board. The vessels in port were not able to get alongside of the wharf until the morning of the 24th, at which time a heavy swell was still running."—*New York Herald, November* 3, 1860.

"A heavy sea, followed by a severe gale, commenced rolling into this harbour on the 11th, and continued throughout the 12th and 13th. As there was an unusual amount of shipping in port great anxiety was felt. On the 11th the ships discharging at the wharves hauled off, and after letting go their anchors, made fast to the buoys also. On the morning of the 12th the sea and gale had both increased, so that nearly every vessel commenced dragging, and soon the hawsers attached to the buoys were parting. About ten o'clock A.M. signals of distress were flying from the schooner *H. P. Russell* and bark *M. J. Colcord.* Assistance was soon rendered from the United States storeship *Relief* and the *Roanoke.* While giving aid the United States ships' boats broke away, and were swamped in the breakers; fortunately no one was drowned. Soon after signals were set from the ships *John W. White* and *Telassar.* The latter ship was finally driven against the wharf of the United States Mail Steamship Company, with such violence that she soon bilged and sunk in five fathoms of water. She had in her about 560 tons of coal. Before sinking she carried away about ninety feet of the

reader must bear in mind that, above latitude of 14° N., the continent does not run north and south, but nearly east and west. The proposed northern terminus at Tehuantepec is in lat. 18° 8′ N.; that of Honduras in lat. 15° 49′ N.; the southern termini in lat. 16° 12′ and 13° 21′ N. respectively. The absolute difference in latitude is, therefore, but 2° 19′; and although Tehuantepec is in long. 94° 30′ W., and Honduras in long. 87° 57′ W., it is immaterial, in the voyage from New York to San Francisco, for instance, whether the *westing* is made in the Gulf of Mexico or in the Pacific—except, perhaps, that the Pacific is a smoother sea than

wharf—a more serious loss than of the vessel itself. Captain Walker was at work faithfully, and did all that man could do to save his ship, but when he first needed help the men from the ships of war were engaged in saving other vessels. The violence of the sea and wind were such that the flag-officer was apprehensive the propeller of his ship (*Roanoke*) would not be able to move her, but after getting up steam she moved across the bay.

"The *Telassar* is a complete wreck—fast going to pieces. The *H. P. Russell* was the next most severe sufferer; she was completely disabled, and will probably be lost. The other vessels were fortunate enough to keep off the wharves and coral bottom, by assistance and good chains and hawsers.

"I cannot permit the occasion to pass without alluding to the conduct of J. W. Bourn, the agent of the United States Mail Steamship Company. He rendered every possible assistance to the ships in distress, and worked indefatigably to save the wharf. It was at the imminent risk of life to stay on the wharf, with heavy seas sweeping it from end to end, and the *Telassar* driving into it and carrying away twenty feet at every pitch; but he stood his ground until the ship was worked past.

"A serious and melancholy accident happened to a boat's crew of the *Saratoga* this morning. In coming on shore the boat was swamped by a heavy sea, and before assistance reached her three men were drowned." —*Letter from "Aspinwall," in the New York Herald, November* 29, 1858.

the Gulf, and that it could be made in the first quicker and more easily than in the latter.

It would appear, then, that Tehuantepec has an absolute advantage over Honduras of 2° 19′ of latitude, equal to 4° 38′, or 270 nautical miles in the whole voyage, as between New York and San Francisco. But this *apparent advantage* is lost, in consequence of certain difficulties in the nagivation of the Gulf of Mexico, for all steamers from the Atlantic states must give the great bank of Campeachy, with its thousand reefs and low islands, a wide berth, by keeping far to the northward. They cannot, as I have already said, safely steer in a right line from the Straits of Florida for Coatzacoalcos, but must make a circuit to avoid the Alacranes and other dangerous impediments to navigation to the north of Yucatan, upon which the British West India Steamship Company lost a number of their best vessels, until strict orders were given to have them keep well to the northward of the Campeachy bank.*

Calculating the deflection from this cause, not only is the apparent advantage in favour of Tehuantepec over Honduras lost, but the aggregate distance is so much increased as to give *an absolute advantage to the route* via *Honduras.*

We now come to the question of ports, upon which Admiral Fitzroy, in the quotation at the head of this section, has laid a stress which all who have investi-

* The steamer *Tweed*, belonging to this company, was lost on these reefs in making the voyage to Vera Cruz in 1847, as was also the steamer *Forth* in the year 1849.

gated the subject know is none too emphatic. To avoid any imputation of unfairness in this matter, which is necessarily one of testimony, I shall content myself with quoting from authorities not open to suspicion, whose impartiality cannot be called in question, and who establish the fact that Tehuantepec has no ports worthy of the name on either sea. In respect to the Pacific terminus:—

"The port of Tehuantepec is not more favoured by nature [than the coast of Nicaragua]. It gives its name to the hurricanes which blow from the N.W., and which prevent vessels from landing at the small ports of Sabinas and *Ventosa* (*Anglice*, 'the Windy')."—HUMBOLDT, *New Spain*, vol. i., p. 26.

Referring to Tehuantepec, M. Michael Chevalier observes that:—

"It would be necessary to remedy, if possible, the *want of a moderately convenient port* on the Pacific. Tehuantepec scarcely deserves the name of roadstead; the sea recedes day by day from its shores, the anchorage yearly becomes worse; the sand deposited by the Chimalapa increases the height and extent of the bars of sand at the entrance of the first lake, in the second, and thence into the sea, and already is Tehuantepec accessible to small vessels only."—*L'Isthme de Panama*, p. 66.

In fact, the plan of employing what is called the port of Tehuantepec was formerly abandoned by the engineers of the Tehuantepec survey, who proposed to create an artificial port at Ventosa, on the Pacific, by the construction of a "breakwater 2000 feet long." The difficulty of constructing artificial harbours to

meet any important purpose is too obvious and well understood to require remark.

In one word, Tehuantepec has absolutely no port on the Pacific. It is even less favoured on the Atlantic; nor is it claimed that there is here an approximation to what is understood by a port.

This deficiency is proposed to be supplied by entering the Coatzacoalcos River, which is without shelter at its mouth, and which flows directly into the open sea. It has, moreover, a bar, which in bad weather would be impassable for vessels of 100 tons. "*At high water, on the full and change, the depth of water on the bar is about* 13 *feet, and falls as low as* 11 *feet,*" is the confession of those who have identified themselves with the Tehuantepec project.—*See Major Barnard's Report,* p. 115. Upon this point the authority of General Orbegoso, who was first employed by Señor Garay to examine the Isthmus of Tehuantepec, cannot be accepted. He reported 21 to 23 feet on the bar, while the engineers of the Tehuantepec Company found but from 11 to 13, and Commodore Perry but 12 feet. Señor Moro seems to have been of the same school. He reported 23 feet on the bar at Boca Barra, at Tehuantepec. Proceeding upon the erroneous assumption that the Coatzacoalcos carries 18 feet at its bar, instead of 10 or 13, Captain Liot, Superintendent of the British West India steamers (*Considerations upon the Question of Communication between the Atlantic and Pacific Oceans,* p. 8), observes:—

"The soundings given in the preceding remarks (even

those most favourable to the Tehuantepec project) are evidently insufficient for large vessels with full cargoes; for although if the principal channel of the bar were always to maintain a depth of 18 feet (as Señor Orbegoso asserts it does, but afterwards admits that 'under extraordinary circumstances, perhaps, it does not'), how is a ship of 600 tons burden, for instance, drawing 18 feet water at least, to pass it? If there were much swell on the bar, it would be perilous for vessels of even 15 feet draught to attempt it. Thus, then, this projected ship canal would avail only for vessels of and under 300 tons burden, and in the season of 'norths' great risk would attend their approach to that part of the coast, where there is neither port nor shelter nearer than Vera Cruz (120 miles, upon a north-west bearing from the bar of the Coatzacoalcos); and during 'norths' the land thereabout is not only a 'dead lee-shore,' but it forms a perfect '*cul de sac*,' out of which sailing vessels could not escape under canvas, except by risking the passage of the bar (which shifts), and that they would scarcely dare to do without a pilot; during a hard 'north,' moreover, the surf on the coast is so heavy that pilots are unable to 'board' vessels, whatever their distress or danger may be."

Colonel Abert, of the *United States Topographical Bureau*, in a review of the Transits, published by the United States Congress, observes:—

"The gulf bar cannot be considered as affording more than 12 feet of water. *Upon the Pacific side there is no harbour.* . . . Tehuantepec Bay is represented as shoal, and much exposed, dangerous, and subject to frequent tempests."

Commodore Shubrick, commanding the Pacific squadron, in a letter to the Secretary of the Navy, dated October 7th, 1847, says:—

"There is, I understand, anchorage in the Bay of Tehu-

antepec, but all accounts agree with the letters of Mr Forbes in describing it as exceedingly boisterous. Captain Hall says the hardest gales he ever experienced were in that bay, and the Spanish call it Ventosa."

Again, J. H. Alexander, Esq., in a communication on the subject to a Special Committee of Congress, reported:—

"What was said just now as to the defects of the harbour of Juan del Sur, in connexion with the Nicaragua route, applies also to the consideration of another which has attracted much attention, I mean that over the Isthmus of Tehuantepec. . . . In regard to the approaches, on either side, Nature has been unkind; and Ventosa Bay, on the Pacific, is in its very name ('the Windy') an apt expression for the character of the roadstead, while on the Coatzacoalcos side there is nothing to protect the entrance of that river from the northers of the Gulf of Mexico."—J. H. ALEXANDER, *Congressional Report, No.* 145, 1849, p. 44.

Col. George W. Hughes, of the U.S. Topographical Engineers, in a letter to the Secretary of State on the subject of "Inter-Marine Communications," sums up his account of Tehuantepec in the following words:—

"One most serious objection to any communication across this isthmus for great commercial purposes is to be found in the want of safe and capacious harbours at either terminus. At the mouth of the Coatzacoalcos there is but 12½ feet at low tide, and it is exposed to the full force of the northers which prevail from November till April. *I have seen thirty ships stranded in a single norther in the month of March.* It may be said that the bar may be removed, and an artificial harbour constructed at the mouth of the river. There is probably no more difficult problem in the science of engineering than the execution of such works under the best of cir-

cumstances; but I am far from asserting that skill and *money* may not accomplish them. The mouth of the Coatzacoalcos is peculiarly ill adapted to such improvements, which would scarcely be inferior in magnitude to the harbour of Cherbourg, and would assuredly require the munificence and resources of a Louis XIV. for their execution. The bar, created by the action of a certain natural law, would, if removed, be immediately re-formed by the same cause to which it owes its origin, unless that cause should be so modified as to direct elsewhere the deposition of earthy matter; and, in the present case, the question would be further complicated by the silting up of the artificial harbour, if one should be built. Supposing that such a harbour should be constructed, it would still be liable to the objection of the difficulty and danger of access, especially for sailing vessels, in the season of northers. . . The whole shore of Tehuantepec is subject to the visitation of terrific hurricanes (which take their name from the isthmus), sweeping with resistless fury along this inhospitable coast, where the tempest-tossed mariner seeks in vain for a harbour of refuge, even for the smallest class of sea-going vessels. For this there seems to be no remedy; the genius of man cannot control the storms, and Nature is constantly interposing new physical difficulties in the way of navigation."

The official survey of the entrance of the Rio Coatzacoalcos by Commodore Perry, published by the Government of the United States, shows but 12 feet of water on the bar, in a channel but 150 feet wide. Outside of the channel the water shoals rapidly to 11, 10, and 9 feet.

Tehuantepec, therefore, lacks the essential requisite of good ports: it has none worthy of the name, or capable of meeting the ordinary conditions of an interoceanic transit on either sea. It would be difficult, if

not impossible, to find in the Gulf of Mexico, or anywhere else on the whole Atlantic coast of America, a more dangerous point, or one less suited for a terminus of a route of communication across the continent, than Tehuantepec. The northers sweeping down the great valley of the Mississippi have here their greatest force and influence, and, as observed by Captain Liot, no steamer or other vessel of ordinary sea draft could cross the Coatzacoalcos bar during their prevalence, which is for six months in the year, from September to March. Ordinary waves are five or six feet from trough to crest; and with a moderate wind on shore, in conflict with the current of the river, the sea would break on the bar. Deducted from the total depth, no sufficient depth of water remains to float a vessel of a size and draft proper to venture on the open sea.

CHAPTER XVII.

COMPARISON OF ISTHMUS ROUTES IN RESPECT OF DISTANCE AND ECONOMY OF TIME.

ALTHOUGH *time*, not distance, is the true measure of the relations of places, yet, as the saving of time depends more or less on the distance to be traversed, a shortening of distance must always be an important element in calculating the advantages of the respective routes which have been proposed between the oceans.

But this is only one element. Good ports, where vessels may embark and disembark their freight and passengers with rapidity at proper wharves, instead of through the means of small boats and lighters, is another important element to be considered, not only in respect of economy of time, but in respect also of convenience, cost, and security. Another element is a general sailing course free from opposing periodical winds, and other similar detaining and obstructing causes. And still another element, and one of primary importance, is the avoidance of harrassing delays resulting from frequent transhipments. These not only consume time, but are fruitful in annoyance, and are a constant occasion of dread to the traveller. As I have already said, "frequent transhipments are inadmissible

in any route of inter-oceanic communication looking to permanence."

I unhesitatingly claim for the route *via* Honduras, in respect not only of distance, but in freedom from detentions and delays resulting from bad ports, adverse winds, and frequent changes, a clear and emphatic superiority over all routes which have been proposed across the Central American Isthmus.

The distances from Liverpool to San Francisco, touching at Jamaica, by the various routes in existence or proposed, are as follows:—

Via Panama, . . .	7980 miles.
„ Nicaragua, . . .	7720 „
„ Tehuantepec, . . .	7740 „
„ Honduras, . . .	7320 „

The distance from New York to San Francisco, as also the distance from New York to Callao and Valparaiso, are as follows:—

	Via Panama.	*Via* Nicaragua.	*Via* Tehuantepec.	*Via* Honduras.
NEW YORK.				
To San Francisco, .	5224	4700	4200	4121
„ Callao, . .	3500	3600	4080	3540
„ Valparaiso, .	4760	4980	5400	4800

The positive saving in distance which the Honduras line would afford over Panama, in the voyage from Great Britain to California, would be therefore 660 miles; over Nicaragua, 400 miles; over Tehuantepec, 420 miles; and in regard of distance, and as respects the South American ports, the line would be more favourable than Tehuantepec, and quite as favourable as the others. As regards New York and the Atlantic

States of the Union, the gain over Panama would be 1100 miles; over Nicaragua, 580 miles.

But, as already observed, the *shortest steaming course* is not always a practicable one. Thus, after passing the Capes of Florida, steamers cannot safely steer direct for Vera Cruz or Tehuantepec. They must keep well to the northward to avoid the dangerous reefs, shoals, and low islands, elsewhere alluded to, which embarrass the great Campeachy Bank to the north of Yucatan. This *detour* augments the sailing distance between New York and Tehuantepec several hundred miles, and thus increases the relative superiority, in respect of distance, of the proposed Honduras route. But, I repeat, *time*, not *distance*, is the true measure of the relations of places. The time occupied in making the voyage between New York and San Francisco, as appears from official tables, is as follows:—

Average passages *via* Panama,	24 days, 9 hours.	
,, ,, Nicaragua,	22 ,,	22 ,,

Now the difference between the Honduras and Panama routes, in point of absolute distance, is about *one-fifth*. All other circumstances, therefore, being equal, the opening of the Honduras road would affect a saving of *five* days.

But the greater facilities which Honduras affords, resulting chiefly from the possession of unexceptionable ports, will augment that saving from *three* to *five* days more, or to from *eight* to *ten* days in all; that is to say, reduce the voyage from twenty-four days and a-half to fourteen days.

How serious are the natural difficulties which embarrass the route by the way of Panama, will appear from the fact that, allowing 12 miles per hour for ocean steaming, 20 miles per hour for the rail, and four hours each for embarking and disembarking, the whole voyage (5175 miles by sea, and 49 miles by rail) should be performed in 21 days 12 hours, the difference between 21 days 12 hours, and 24 days 9 hours, the time actually consumed, is therefore due to the natural deficiencies above indicated, and which, at whatever expenditure, can never be wholly remedied.

All other circumstances being equal, the *saving of time* which the Honduras route will effect, as between Europe and the Atlantic States of the United States and California, would give it a practical, if not an absolute monopoly of travel and of traffic. But when we add to this the comparative ease and cheapness of the transit, as compared with the difficult and costly embarkations and disembarkations at Panama, then this advantage becomes largely enhanced. Add, also, the important fact of a salubrious climate, and the great superiority of the Honduras route becomes manifest, and warrants the conclusion that it will attract the entire Isthmus travel between the seas.

Next, as regards Australia: for the year and a half ending January 1, 1865, the passage of the mails from London to Melbourne occupied an average of 95 days, and from Melbourne to London 85 days. The distance from Liverpool to Melbourne *via* Honduras is 12,341 miles. At an average rate of steaming of 12 miles per

hour, and allowing five days for coaling and transhipment, the voyage could be performed in 47 days 20 hours; or, calculating steaming at 10 miles per hour, and allowing the same time for detentions, in 56 days 10 hours; in the former case effecting a saving of 47 days in the *outward*, and 37 days in the *inward* voyage.

Although the saving of distance *via* Honduras over that *via* Panama, in the voyage from Great Britain to Australia, is but slight, still, should a line of steamers be established between the mother-country and her Australian colonies, the paramount considerations of good ports, salubrious climate, the possession of coal on the Pacific, and abundant supplies, would necessarily determine the Isthmus of Honduras as the point where the continent would be crossed.

CHAPTER XVIII.

COMPARISON OF THE ISTHMUS ROUTES IN RESPECT OF SAFETY.

IN fixing upon a permanent route of inter-oceanic communication in this age of scientific research and discovery, we are called upon to take into consideration not only the more obvious and palpable conditions requisite to the success of such an enterprise, but the incidental circumstances which may affect it. Within a few years attention has been directed to winds and currents in their influences on navigation and commerce, and their careful investigation has already led to important results, which are practically exemplified in enabling vessels to make their voyages with increased rapidity and safety. The aggregate of saving of time and property, and life, more valuable than all, is but imperfectly comprehended by the public.

Now, in making the voyage to the Central American Isthmus, vessels are not only obliged to traverse more than 1000 miles of the Atlantic, the most turbulent of oceans, but, in order to avoid the currents of the Gulf Stream, to pass to the windward, or eastward of Cuba. The outward, and often the return track of the Panama and Nicaragua steamers, is between Cuba and Santo

Domingo, and of course to the eastward or outside of Jamaica.

As a consequence, no sooner do they pass from the stormy Atlantic than they enter precisely that part of the Carribbean Sea most frequently swept by hurricanes. The two great centres of these terrible elemental visitations are the West Indies and the China Sea. Beyond these limits they are of comparatively rare occurrence. Professor Johnson, in his standard *Physical Atlas*, gives a chart showing the general course of the West India hurricanes, and also exhibiting the date, and, so far as known, the course of the principal ones that have occurred during the past 150 years. From these it will be seen that the West India hurricanes commence near the Leeward Islands, sweep toward the north-west, taking Jamaica and Santo Domingo in their course, and, after reaching the Gulf Stream, are deflected in the direction of its current to the north-east. They all, therefore, as well as the few which reach the Gulf of Mexico, cross the track of the Panama and Nicaragua steamers and vessels.

Of the 50 hurricanes, the ranges of which are given by Professor Johnston, but *two* crossed the route which is proposed to be followed by the Honduras line, namely by land from New York to Florida, and thence by steamers to Port Cortez.

Again: it is precisely in the line of all communication with Nicaragua and Panama that we find the region of rotatory or Carribbean hurricanes, as laid down by the same authority. These would be wholly avoided by taking the direction of Honduras.

Hence it appears that the route by way of Honduras is almost entirely free from the dangers resulting from hurricanes. When we consider that not far from 100,000 persons now pass annually, by way of the Isthmus, from the Atlantic to the Pacific coasts of the continent, security from dangers of this kind becomes an important consideration. The destruction of a merchant vessel, at the worst, involves but the loss of ten or twelve lives and a few thousand dollars of property; and, however deplorable the catastrophe may be regarded, it sinks into insignificance when compared with the loss of a Californian packet, with its five or six hundred passengers and millions of treasure. An important result, therefore, is gained if danger from this source be obviated or diminished; for any diminution of the contingencies of travel must be regarded as a public good.*

There is still another point in the chart of Professor Johnson which deserves notice in this connexion. It is the course of the "northers," or dreaded north winds of the Gulf of Mexico, which have been so often productive of the greatest disasters to shipping. These winds sweep down the valley of the Mississippi, and across the Gulf of Mexico into the bight of the gulf lying between the peninsula of Yucatan and the lower states of Mexico. They blow with more or less constancy, and

* Since the above paragraphs were first printed, they have received a fearful illustration in the loss of the steamer "Central America," off the coast of Carolina in September 1857. This disaster involved a loss of not less than 460 lives, and nearly $2,000,000 of treasure, apart from other valuable property.

often with terrible force, for six months of the year, from September to March, on nearly a direct line from the mouth of the Mississippi to the Isthmus of Tehuantepec. As they advance across the Gulf, their force is augmented, and the contraction of the land contributes to give them a power, at times, almost equalling the hurricanes of the Antilles. This fact, in conjunction with the circumstance that Tehuantepec has no port at its northern or gulf terminus in which steamers or sailing vessels could find refuge, demonstrates its utter inadequacy for the great purpose of inter-oceanic communication. The impossibility of any vessel entering the River Coatzacoalcos, which opens due north, over a bar on which the maximum of water never exceeds thirteen feet, during the prevalence of the northers, is obvious to the dullest apprehension and the most prejudiced mind.

CHAPTER XIX.

OBJECTS TO BE SUBSERVED BY THE HONDURAS INTER-OCEANIC RAILWAY—ITS SOURCES OF REVENUE.

"Measured on a globe, it appears that the Honduras line is as favourably situated for communication with Europe, North and South America, China, India, and Australasia, as any part of the Central American Isthmus, while the excellence of both ports, and their easy and safe approach, render its situation unimpeachable. . . . Looking especially to European communications, a main or trunk line of steamers, calling at Jamaica, in traversing the West India Archipelago, would find a suitable terminus at Port Cortez, the northern end of the railway, while the Bay of Fonseca, at the other end, is in the region of steady winds, and well suited for a direct track across the Pacific Ocean, either to China or Australasia. . . . The climate, productions, and population of Honduras are more in favour of a railway from sea to sea, than those of any part of the great Isthmus whatever."—*Admiral Fitzroy to the Earl of Clarendon.*

THIS extract from the confidential report of the most eminent of British explorers of the Pacific Coast of the American continent, to the head of his Government, sufficiently establishes that the existing Panama route, across the Central American Isthmus, possesses no advantage, even in the illusive one of *distance*, over Honduras, and not even in respect to the West Coast of South America (Ecuador, Peru, and Chili), nor yet as regards Australasia. In this direction its advantages,

if any, would lie; while in regard to Mexico, California, British Columbia, the Sandwich Islands, Japan, and China, its disadvantages are great and obvious. This, as regards distance alone, and irrespective of the vital considerations of ports, salubrity, and local resources.

The vast Bay of Fonseca, perfectly protected, with the ports of three States fronting on it, and its shores capable of affording supplies of food and timber for the combined navies of the world, will not be long in superseding the Bay of Panama as the rendezvous of Pacific commerce.

In considering the primary question of revenue, these essential facts and conditions must not be overlooked. Nor can we overlook the further great fact that while the Panama Railway passes through a region incapable of useful development, that through Honduras traverses a region rich in agricultural and mineral resources, capable of attracting and sustaining an active and prosperous population. In fact, the local development of the country must, in itself, soon give sufficient employment and support for the railway, leaving out of view the support which it would receive from "through" trade and travel.

By "through" trade and travel, I do not wish to be understood as referring wholly to the trade and travel between the Atlantic and Pacific States of the United States, nor between Europe and the Pacific Republics and the East.

I mean to refer particularly to the already large and rapidly-growing commerce between the Central

American States and the United States and Europe. The inhabited and productive portions of these States, and their capitals and principal ports, all lie on or near the Pacific. Honduras alone has any important establishments on the Atlantic. San Salvador, the most important of all commercially, lies wholly on the Pacific.

Now, the aggregate population of these States—viz., Guatemala, San Salvador, Honduras, Nicaragua, and Costa Rica, greatly exceeds that of Peru, and is nearly double that of Chili (*ante*, p. 11). At present, their staples—coffee, dye-wood, hides, indigo, cochineal, and bullion—find their way to the markets of the world *viâ* Panama. The Panama Railway has had for many years a line of steamers, four in number (a fifth is in course of construction), running between Panama and the Pacific ports of Central America, for the accommodation of existing travel and commerce. These steamers have been among the most profitable investments of that great monopoly.

For these States and their commerce, the Honduras Railway is the natural channel and outlet. Not a pound of freight, nor a single passenger, will take the costly, uncomfortable, circuitous, and insalubrious route to Europe or the United States, by way of Panama, after the Honduras road shall be opened.

A striking illustration of the rapid development of the Central American States is afforded in the case of San Salvador, whose commerce, exports, and imports have risen from an aggregate of $1,940,000 in 1857, to

$7,497,300 in 1869, an increase, in twelve years, of 400 per cent., or at the rate of about 33 per cent. per annum. The statistics of the remaining States have not been so accurately kept as those of San Salvador; but, as far as accessible, show a very nearly corresponding increase in values.*

At a meeting of citizens of San Francisco interested in the California and Central America commerce, held on the 23d June last (1870), Captain Douglass, for many years commander of one of the Panama Railway steamers, gave the following statement:—

"TOTAL VALUATION OF EXPORTS OF THE FIVE CENTRAL AMERICAN REPUBLICS AT PORT OF EXPORT IN 1869:

23,750 tons coffee, @ $160 ℔ ton of 2000 lbs.,	$3,800,000
11,500 tons sugar, @ $90 ℔ ton of 2000 lbs.,	1,035,000
2,800 tons rice, @ $60 ℔ ton of 2000 lbs.,	168,000
2,020 tons indigo, @ $2500 ℔ ton of 2000 lbs.,	5,050,000
900 tons cochineal, @ $1600 ℔ ton of 2000 lbs.,	1,440,000
600 tons silver ore, @ $40 ℔ ton of 2000 lbs.,	24,000
300 tons tobacco, @ $300 ℔ ton of 2000 lbs.,	90,000
85 tons deer skins, @ $600 ℔ ton of 2000 lbs.,	51,000
5,000 galls. balsam, @ 80c. ℔ imperial gall.,	4,000
2,000,000 feet cabinetwood, board measure, in log, @ 14c. ℔ foot,	40,000
120,000 hides, @ $1.80 each,	218,000
Total exports,	$11,920,000

* In the "Commercial Report" (Blue Book) for 1869, Mr Consul Wallis says of Costa Rica, "The value of the coffee crops for this

"The imports almost always balance the exports in the Central American Republics, and the former are principally composed as follows:—Cotton and linen goods from England, France, and Germany; cheap hardware from Germany; machinery from England; wine and brandies from France and Spain; flour, barley, and oats from California and Chili; agricultural implements from New York.

"The imports of flour into the five Central American Republics for the year 1869 were as follows:—From California, 41,203 barrels of 196 lbs. each; Chili, 26,000 sacks of 100 lbs. each."

These calculations are all irrespective of the trade through the Atlantic ports of Limon in Costa Rica, San Juan de Nicaragua, Truxillo and Omoa in Honduras, Izabal in Guatemala, and Belize, which certainly cannot be less in value than $4,000,000. Altogether the commerce of Central America, exports and imports, may be estimated at about $30,000,000, of which $26,000,000 is with the Pacific coast of the country, and must pass over the Honduras Railway. This is sufficient to give steady occupation for a good railway, and yield a liberal return on the capital invested in it.

As regards what may be called "through traffic"—that is to say, the commerce between Europe and the United States, and the North Pacific Coast, including Mexico, California, British Columbia, the Sandwich Islands, China and Japan—it is clear that it will pass

year may be estimated at $10,000,000, and the cost of production at $5,000,000." The *Gaceta Official de Honduras*, 14th June 1870, gives 8200 as the number of packages and bales of goods introduced at the single port of Amapala (Island of Tigre), for the year ending February 1, 1870.

over the Honduras Inter-Oceanic Railway. The only competition, probable or possible, will be that of the Pacific Railway, through the United States.

But the Pacific Railway is rather a political than a commercial undertaking. Its construction was a military and postal necessity to the United States. Its uses are the rapid transmission of mails between New York and San Francisco, the speedy exchange of treasure and "express freight" (*i.e.*, of articles of small bulk and high value), the quick conveyance of first-class passengers (*i.e.*, with whom time is more valuable than money, and who can afford to pay for sleeping cars, provisions cooked *en route*, &c., &c.), and for the concentration of troops and military supplies on the Pacific in case of necessity. But for carrying general freight and the great bulk of passengers between one coast and the other, it can never compete with the sea route *viâ* the Isthmus of Honduras. The managers of every steamship line between New York and San Francisco unanimously maintain, after an experience of twenty years, that the transportation of "first-class passengers," requiring ample room, superior food and attendance, never "paid," and that their profits were derived from what are called second-class passengers and freights. With passengers of this class the saving of time is of less consequence than the saving of money. The larger number of passengers going westward (and it is in that direction that the tide of European and American emigration flows), are artisans, small farmers, and labourers, generally having large families, and carrying with them

their tools and household goods. These obviously cannot afford to pay the necessarily high fares involved in railway travel of three thousand miles, unless they should go by slow trains, affording little if any gain, in respect of time, over the route *vid* Honduras. Such trains (the fast or express trains occupying upwards of seven days), could not perform the trip in less than ten days and nights—a trip past the limits of human endurance to perform. Were the passenger to stop to rest, the time of the journey would be proportionately prolonged, and the cost of the journey enhanced. For ordinary travel, therefore, from the Atlantic to the Pacific, the great Continental Railway does not afford equal advantages with the sea and isthmus routes.

What is true of ordinary passengers is equally true of ordinary freight. It has been found that teas, even, cannot bear the cost of transport over the Pacific Railway further eastward than St Louis, if indeed as far. A cargo was taken to Chicago not long ago at a loss.

In short, the purposes of the Continental Railway and of the Honduras route are in no respect the same. No antagonism of interest can exist between them; on the contrary, they are useful auxiliaries, and the stimulus which the opening of the Pacific Railway has given to the development of the Pacific Coast makes an adequate isthmus route all the more necessary, and will contribute to its success in a financial sense.

I have not alluded to the trade and travel between Europe and the west coast of South America—Ecuador,

Peru, Bolivia, and Chili—which now passes across Panama, but which, for reasons already given, will ultimately, if not immediately, find its way to Honduras. Its value is great and increasing. Nor have I dwelt on the probable returns from any communication that may be established, by way of the Isthmus, with Australasia, and which—also for reasons already given—would naturally be through Honduras.

It is enough to know, that leaving all other sources of revenue aside, the commerce of Central America, and the returns from the development of the resources of Honduras itself, will be adequate to support the Honduras Railway, and yield in addition a handsome per cent. on its cost.

The most obvious source of revenue, not local, is clearly the trade and travel between the Atlantic and Pacific ports of the United States. It will not be out of place, therefore, to indicate in what respects these will be subserved by the work now in progress.

There are two modes of reaching Port Cortez, the northern port of the Honduras road, from New York:—

1. Direct by steamer, 1750 miles.

2. By railway through the great Atlantic cities and capitals—Trenton, Philadelphia, Wilmington, Baltimore, Washington, Richmond, Weldon, Charleston, Savannah, Fernandina, Cedar Keys, &c., to Charlotte Harbour, in Florida, and thence, by steamer, touching (if thought proper) at Key West and Havana, to Port Cortez.

Sailing direct from New York to San Francisco, we

have the following results as regards distance and time, computing the steamer rate at twelve miles, and the railway rate at twenty miles per hour, viz.:—

New York to Port Cortez (sea),	1,750 miles,	146 hours.	
Disembarkation at Port Cortez,	. .	4	„
Port Cortez to Fonseca (rail),	200 „	10	„
Embarkation at Fonseca,	. . .	4	„
Fonseca to San Francisco (sea),	2,210 „	184	„
Total,	4,160 „	348	„

Equal to fourteen days, twelve hours.

Proceeding, however, by rail to Charlotte Harbour (and thus accommodating the entire Atlantic seaboard of the United States), we have—

New York to Charlotte Harbour (rail),	1,010 miles,	51 hours.	
Embarkation at do.	. . . .	4	„
Charlotte Harbour to Port Cortez (sea),	700 „	58	„
Disembarkation at do.	. . .	4	„
Port Cortez to Fonseca (rail),	. 200 „	10	„
Embarkation at Fonseca,	. . . .	4	„
Fonseca to San Francisco (sea),	. 2,210 „	184	„
Total,	4,120 „	315	„

Equal to thirteen days, four hours.

Following the route by way of Florida, therefore, fourteen days may be taken as the maximum of time between New York and San Francisco, through Honduras; or, if by sea to Port Cortez, fifteen days.

Economically considered, the advantages would be, say as compared with Panama, such a saving of distance and time as would enable a smaller number of

steamers to do the corresponding work on both oceans at less cost of coal, wages, and sustenance of passengers, and at less original outlay in the way of capital.

Every consideration, therefore—saving of distance and time, economy of operation, advantages of ports, facility of disembarkation and embarkation, better sources of supply, salubrity of climate, &c.—point out Honduras as the only part of the Central American Isthmus combining the paramount and indispensable requisites for an adequate and permanent inter-oceanic railway, available, advantageously, for both continents. All that has been said of it, in the preceding pages, will be amply vindicated on its completion in 1872. No antagonism or detraction can any longer impede, much less prevent, its realisation.

APPENDIX.

A.

LAW OF HONDURAS RESPECTING IMMIGRATION.

The President of the Republic of Honduras to its inhabitants.

Know that the Sovereign Congress has issued the following decree:—

The Supreme Congress, in order to establish the conditions under which foreign emigrants are to be admitted into the Republic, and in accordance with Article 19 of the Constitution, has decreed:—

Art. 1. The rights enjoyed by natives, in conformity to the laws to which emigrants will be subject from the time of their being entered on the census lists, are granted to all foreigners who may desire to become domiciled in Honduras.

Art. 2. Any foreigner who, from the day he obtains a letter of naturalisation, in five years actually cultivates national property, establishing upon it permanent farms, shall have such property in his own exclusive possession, with the right of taking from neighbouring property belonging to the State the supplies necessary for his establishment.

Art. 3. Foreigners will enjoy the privilege of freedom

from military service for a period of ten years, except in case of a national war to repel an invasion; and for four years they will be exempted from undertaking any public office or employment.

Art. 4. Emigrants professing any other religion than that of the country can exercise privately their own worship, and establish cemeteries for the burial of their dead.

Art. 5. Emigrants will not be liable, for eight years, to the payment of rates or extraordinary taxes; nor will they pay any customs duty for the importation of machinery, tools, instruments, and books for use in their professions or trades.

Art. 6. The Government will grant exclusive privileges to foreign inventors, or importers of useful machines or patents unknown in the country.

Art. 7. Foreigners who are free from legal responsibility can at any time emigrate and dispose of their interests at their free will and pleasure.

Art. 8. Those emigrants who may rent private lands or property shall not be asked higher rates or prices than those required from natives.

Art. 9. The concessions in this law are equally applicable to emigrants from the American Republics.

Given in the Hall of National Congress, Comayagua, 26th February 1866. Juan Lopez, D.P.; Cárlos Madrid, D.S.; Jerónimo Zelaya, D.S.

To the Executive Power—"Let the above be executed."

COMAYAGUA, *6th March* 1866.

JOSÉ MARÍA MEDINA.

The Secretary of State,
FRANCISCO CRUZ.

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