

©
COMMERCIAL CUBA

A BOOK FOR BUSINESS MEN

BY

WILLIAM J. CLARK

WITH AN INTRODUCTION BY

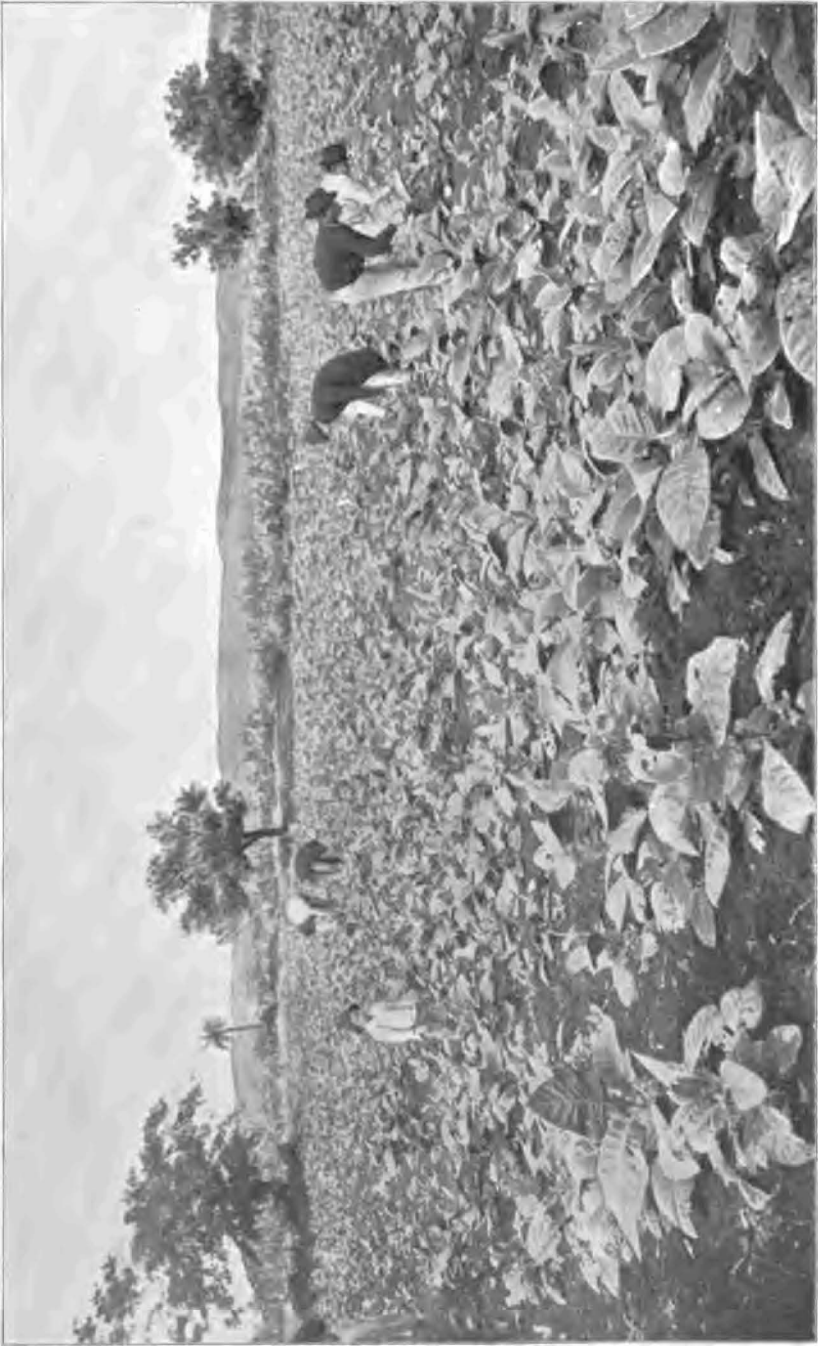
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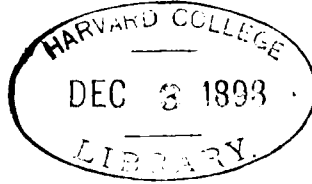
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TOBACCO PLANTATION

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INTRODUCTION

BEFORE the publication of this book, I was favored by my friend, the author, with a perusal of the manuscript. On carefully reading it over, I was struck with the vast amount of valuable data which it contained, covering almost the entire field of inquiry regarding Cuba and her resources. These data are partly the result of Mr. Clark's personal observation during his travels in the island, and partly the result of laborious and painstaking classification of existing material, collected from many and diverse sources.

In spite of the very careful work bestowed upon it by the author, it would be too much to hope that no errors of fact or inference exist in the book. I believe, however, that, upon the whole, it will be found to be not only timely, but of great practical value to all those interested in the subject of which it treats. Facts regarding Cuba and her resources are greatly needed at the present moment, when the epoch-making events of the last six months have so radically transformed the relations previously existing between Cuba and the United States. In all that has led up to these changed conditions, prejudice, passion, and nearly absolute ignorance of fact have played a much more active part than

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the cool forecasts of mature knowledge and judgment. But, as the result has proved, our knowledge, like our own strength, has been as our day. Perhaps, had we known more at the time, we might have done less and worse than we did. Our knowledge—or let us better say, our feelings—sufficed to lead us to at last bring to a complete termination the intolerable condition of affairs which had so long reigned at our threshold, and to carry us through the preliminary and essential work of *demolition*.

But we are now entering upon the far vaster task of reconstruction, and for this mere feeling and sentiment do not suffice. Nothing but cold facts and level-headedness will enable us to achieve success in this work. An enormous field is about to be thrown open to American enterprise, and it is of great significance that we should know as much as possible of the conditions with which we are to be confronted. American influences and American ideas are destined to prevail all over the island, to arouse it from its dismal lethargy, and to take its long-buried talent from the napkin and give it to the exchanges. This work of redemption will bring us into close contact with a people whose characteristics are the antitheses of our own. While holding fast and unwaveringly to those grand attributes which have made the English-speaking race the hope and promise of civilization and true progress the world over, it is our duty to study and respect the national idiosyncrasies of the less earnest and forceful people among whom we are to come as leaders and guides, in order that our

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leadership and guidance may allure, rather than repel, those over whom they extend.

I trust that the present volume may be helpful to this end; if so, it will be a source of gratification to me to hope that I may have, in some slight degree, added to its usefulness.

E. SHERMAN GOULD.

YONKERS, N. Y.,

September 14, 1898.

COMMERCIAL CUBA

CHAPTER I

HOW TO MEET THE RESIDENT OF CUBA

IMPORTANCE OF MATTERS OF ETIQUETTE.—MANNERS AND CUSTOMS.—DRINKING AND SMOKING.—WOMEN IN CUBA.—DOMESTIC LIFE.—SHOPPING.—OBSERVANCE OF FEAST DAYS.—POPULARITY OF COCK-FIGHTING.—SPANIARDS AND CUBANS AS BUSINESS MEN.—SOCIAL DISTINCTIONS.—THE FUTURE OF BOTH RACES.—THE FULL-BLOODED BLACKS.—THE CHARITY SOCIETY OF HAVANA.—BALLS AND OTHER ENTERTAINMENTS.—HORSEBACK RIDING.—CUBAN FUNERALS.—DEFECTS IN THE CUBAN CHARACTER.

THE American visiting Cuba, no matter for what purpose, will find that his success is principally dependent upon his cultivation of courtesy, good temper, and patience, and upon his becoming acquainted, so far as possible, with the peculiarities of business and social life. Without diligent attention to the prevailing etiquette, his mission, whether it be commercial or social in its character, is likely to be barren in results; while if he be able to maintain at all times an aspect of placid imperturbability, all things will come unto him—in time. We have therefore devoted our first chapter to a brief account of how the inhabitant of Cuba spends his time, of how he meets a visitor, and of how he expects a visitor to meet him.

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While great allowances are made by well-bred Spaniards and Cubans for ignorance of their prevailing social manners and customs on the part of foreigners, it will be well for American visitors, especially ladies, to conform to the general tone of public opinion rather than to attempt to brave it. The latter course cannot fail to give more or less offence, and will greatly diminish the ease and comfort of social intercourse. In what follows, these peculiarities will be given as they naturally introduce themselves into the descriptions of ordinary Cuban life.

The Cuban commences his day with a light repast of fruit, bread, and coffee, followed by the later and more substantial breakfast—the *déjeuner à la fourchette* of the French—with the period of rest which generally ensues. It must be remarked, however, that this applies more particularly to the upper and middle classes. The workman starts out for the day's work, which commences at six A.M., with nothing but a glass of aguardiente and a cigarette. He works till ten o'clock, when he knocks off for an hour for breakfast. Work is resumed at eleven o'clock and continued until five P.M., when he quits for the day and gets his dinner. He has only two meals a day, and seems to thrive on his peculiar mode of diet. There can be no possible doubt, however, that his sanitary condition would be greatly improved by substituting a good cup of coffee and a plate of eggs and bacon for his spirit and tobacco in the morning, knocking off an hour or two later for his midday repast. It would take some time, however, for his stomach to accommodate itself to the change.

Reverting to city life, one finds that dinner is served in the evening, and that, until a moderately late hour, the remainder of the day is given up to recreation and amusement. In the larger cities crowds of both sexes

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flock to the open-air cafés which abound, and while these present a scene of light and enjoyment, everything about them is always decorous and dignified, any departure therefrom being considered exceedingly bad form. Nothing is considered to show worse breeding than to laugh or even smile at the misfortune of a stranger. While intoxicants are sold at all these resorts, the natives indulge very sparingly in them, and generally use instead, and have a choice from, an elaborate list of what in American slang would be termed "soft drinks." These embrace all of those known to us, and many more of a fruity character, while more solid refreshments are also served, the favorite being ice cream of a most delicious quality. Intoxication is almost unheard of at the cafés or elsewhere, and the American who may wish to compromise between the stimulants to which he is accustomed and the mild beverages which are dispensed there, by ordering beer, is apt to be disappointed, as he may find it served in a glass with a lump of ice floating around in it. There are, or were, however, places in Havana where beer properly cooled can be obtained on draught.

The gentlemen are at liberty to smoke anywhere without asking permission of the ladies, either at the cafés, hotels, private residences, or even in the ordinary street and steam cars. The only restriction to the privilege of smoking is at the theatres, although even there one may indulge in it in the corridors.

At public tables, in the cafés and hotels, the well-bred native never takes a seat without asking permission, perhaps simply by a sort of interrogative bow, of those who may be already seated there. On rising and leaving others still at their repast, a polite expression sometimes made use of is "Buen provecho"—which simply means the hope that the meal may agree with those par-

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taking of it. The omission of this would not, however, be considered a rudeness. A polite bow both in sitting down and rising amply fulfils all the requirements of courtesy, as elsewhere.

An odd custom prevails at many of the theatres of selling tickets "por tandas," or by the act. Thus you may buy a ticket for a single act, and if you want to occupy the same seat during the performance of the entire piece, you must buy the necessary series of tickets at the commencement. This is a very convenient arrangement, and seems to meet the requirements of the evening loungeur to perfection. For the more important representations this practice is not followed, but the piece is given "en funcion seguida," that is, you buy your tickets at once for the whole performance.

In the higher walks of society, ladies never appear anywhere in public without an escort, either male or female. If accompanied by a gentleman, he must be a husband, brother, or near relative, otherwise the case would be even worse than no escort at all. American and English ladies are not judged as harshly as natives would be for violation of this rule, the observance of which is naturally somewhat difficult for mere temporary visitors, but our countrywomen would do well to conform as closely as possible to custom in this particular, especially if making a prolonged stay in Cuba.

No matter how well one may know the Cuban or resident Spaniard in a business or social way, it should be understood that not until his character, history, position, and social relationship are well established, will he be invited to meet the ladies of the family, and then he will never be permitted to see the unmarried ones alone. If a gentleman has expressed admiration for any particular young lady, and a series of visits has been begun, it will be found that the lady in question is very

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exacting as regards the promptitude and regularity with which he keeps them up.

Letters of introduction are considered much more weighty in Cuba than in the United States, or even in Europe, for he who gives one, even though it be couched in the most moderate language, practically considers that he guarantees every future act of the one to whom it is given, so far as it may affect the person receiving him. So these are rarely given to a gentleman to be presented to a lady, or when there is any uncertainty whatever concerning the person who is to carry the letter.

In driving, take the left-hand instead of the right-hand side of the road, and always take a carriage for any business or social call of importance in the city. Horseback will do in the country, but journeying by street car or on foot is not practised in the city unless upon ordinary business, while the bicycle is, as yet, more or less in the experimental stage of its social existence.

The Spartan-like simplicity of the furnishing of rooms, in either hotels or private residences, should not be considered as indicating the absence of artistic taste, but rather an essential of the climate: yet there is a stiffness as regards the arrangement of the furniture and appointments in the parlors and living-rooms which reminds one of the typical farm-house parlor in New England, although the Cuban parlor is occupied daily instead of only on occasions of weddings and funerals. In these living-rooms there is always a double row of cane-seated chairs facing each other, placed with the utmost exactitude. These chairs should never be disturbed from the position they occupy. There is an absence of mats and carpets both in the reception-room and in the halls and sleeping-rooms. The bed which one must occupy, while clean and attractive in appearance, will be found to consist, generally, of a wire mattress, over which is

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placed a light quilt, or "colchoncito." At first this seems a trifle hard, but with two sheets and a white cotton spread, it is far more comfortable than would be a downy couch in the tropics. Beds are overhung with a good-sized mosquito bar, essential at all seasons of the year. While these, even in the smaller hotels, will be found freer from vermin than might be expected, it is always well for one to examine the sleeping surroundings before retiring, and to look for larger and more poisonous game, such as centipedes or scorpions.

Food on nearly all public and private tables in Cuba will be found excellent—clean and well prepared; yet an inexplicable custom exists of having the surroundings of the kitchen less healthful than they should be. The coffee is the best in the world. The bread is excellent, said to be fermented by the use of banana stalks in the dough instead of yeast. The visitor will note an absence of butter, except in extraordinary cases, and then the quality will be found questionable. The meats are good, but less tender than in the Northern States. The fish is delicious. Eggs will also be found, treated in more appetizing ways than in America or Europe, while there is always an abundance of fruit in the greatest variety, which would please the palate of any epicure. The northern traveller will greatly miss the abundance and variety of table vegetables to which he has been accustomed.

In shopping there is no uniformity of price. No one should expect to pay more than a fraction of the amount asked by the average tradesman for his wares, and it is to be regretted that it is always necessary to count the change received even in stores of the highest class. The little tricks of the small shopkeeper perhaps manifest themselves as clearly in connection with the purchasing of cigars as in any other way, for excellent



CUBAN BEDROOM

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and cheap as these are at the factories, the average cigar-stand keeper will endeavor to impose upon the stranger a poorer quality than could be purchased under similar circumstances in the United States. The quality of other articles purchased should also be invariably examined. The importunity of street venders and fakirs is fully equal to anything to which we are accustomed, while that of the professional beggars is equalled only by that in the Latin countries of Europe, there being the same public display of deformities to excite pity. Mendicity, however, does not prevail to the same extent as in Mexico. The Cuban, even of the poorest class, is not naturally a beggar.

In meeting one's acquaintances, either Cuban or Spanish, their profuse expressions of hospitality and good will should not be taken to the full extent of their utterance, which sometimes is of the most exaggerated character. This is but a custom, although among the Cubans, especially in the rural districts, there exists a most warm-hearted hospitality, which increases as acquaintance becomes more intimate.

Suspicion is a natural characteristic of both Cuban and Spaniard, and confidence once violated, or the indication of anything but the most honorable intention in either business or social matters, is never forgotten; yet these people are as warm in their affection and friendship as they are unforgetting and unforgiving in case of wrong.

It should be remembered that with the Cubans who still adhere to the Catholic faith, Sunday is a feast day given up to social enjoyment after the religious duties of the morning have been performed, but that certain saints' days must be far more seriously observed, and certain functions which would be permissible on the Sabbath would be in bad form on such anniversaries. The number of saints' days of all kinds is appalling. On

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the published calendars each one of these is indicated in red, and when the more important saints' days come round, it is to be expected that many places of business, which are open even on Sunday, will be closed, and that laborers will refuse to work. For promoting the future development of the island no better suggestion can be made than to limit as far as possible the list of religious holidays.

The stranger must not be horrified because a large share of the male population visit the public cock-pits on Sunday morning, and mayhap are therein fighting birds owned by themselves; nor should he be shocked at finding the larger portion of the fashionable population and nearly every one else attending bull-fights in the afternoon. They see no harm in this, for it is but conformity with the customs and traditions of their ancestors, and while it is reasonable to suppose that association with Americans will have a tendency to make cruel sports less fashionable, it should never be expected that the Puritanical Sabbath can be grafted upon the Cuban system. Any attempt to do so would be only a source of irritation, for in this and in some other respects, though oppressed and restricted by the Government in the more important things of life, they have enjoyed a kind of personal liberty and freedom of action not possessed by the average American citizen, and it would be unwise, to say the least, to attempt to interfere with it.

In person, the Cuban is naturally more cleanly than is generally supposed, and even the country laboring people in their suits of white cotton stuff present an appearance in this respect only met with in the "White Wings" of our larger cities. The mistake should not be made of considering him or his Spanish relative altogether indolent or unpractical in the ordinary affairs of life; while his experience may have been limited, his

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natural intelligence and knowledge of the island will make him fairly the equal of the ordinary American negotiator in affairs which appertain to him.

While the average resident Spaniard will be found to be as sharp and unscrupulous a trader as exists on the face of the globe, his tactics are not unlike those of many Italian immigrants in the United States. Commencing, perhaps, as a laborer, or in a similar humble way, by the greatest economy he acquires a small capital which he invests in some petty business, and from this entrance into commercial life frequently grows to be a man of wealth and prominence, even though not possessing the rudiments of an education. The more open-hearted Cuban has generally proved to be his victim, especially when the Spaniard has become a money lender.

With both the Cubans and Spaniards, their seemingly dilatory methods of conducting business negotiations may, after all, not be so much of a weakness in them as it is ordinarily considered to be, especially in dealings with Americans, for it introduces an element into such transactions which will irritate and exhaust those accustomed to our methods by the time the Spaniards or Cubans are ready to bring matters to a crisis. So that the most frequently spoken word in the Spanish language, "mañana" (to-morrow), which has been called the curse of all Spanish-speaking countries, may, after all, possess certain elements of strength for the residents of Cuba in their commercial affairs.

The term "average Spaniard" has been used perhaps incorrectly, for it is difficult to fix an average among them, as those from the various provinces of Spain have almost as widely varying characteristics as though they were of distinct nationalities. A few will be met possessing the sandy hair of the Saxon, or the reddish tint of the Celt, with corresponding facial expression. Again,

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the perfect Moorish type is met, while there are minor differences in physical appearance, and the greatest variations in traits of disposition and intelligence. The peasantry from certain provinces represent stupidity itself, while those from others, such as Catalonia or Galicia, exhibit a phenomenal shrewdness. In political opinions wide differences also exist, extending from the almost fanatical supporter of the present monarchy to the patient Carlist, or to the rabid Republican who closely approaches the anarchist in his belief. It is generally safe to consider the former Spanish private soldier in Cuba either a Carlist or Republican in his political tendencies, for care has been taken to detail such soldiers for duty outside of Spain. The majority of these will be found to be Catalans, or natives of the province of Catalonia. The Spanish laboring classes in Cuba strictly adhere to the custom of wearing the highly colored native caps of their respective provinces, this being particularly noticeable about Havana. Each shade or combination of colors signifies that the wearer came from some particular province. A large portion of the so-called Spanish population is composed of Canary Islanders, who are perhaps more thoroughly detested by the Cubans than are the genuine Spaniards.

Going higher in the scale, it should be remembered that there is practically no social intercourse between Cuban and Spanish families except where the children of the latter have been born on the island, these being considered natives and proving so in their sympathies. Likewise in business, there is only that intimacy which the necessities of trade demand. It is a natural supposition that this line of separation will even be more clearly defined in the next generation than ever before.

The effect which the war and the reconstruction of the entire political system of the island will have upon

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the future social and business life is as yet uncertain. Many of the best Cuban families have, of course, suffered greatly in fortune and in the loss of members as a result of the insurrection, and their future position cannot now be determined. The property losses which have been met with by the Spanish residents have also been great, and many of them will doubtless return to Spain; yet it is safe to say that the crafty, commercial Spaniard, who has little actual sentiment in his nature, will, when the last vestige of Spanish authority has disappeared, proceed to shout as loudly "vivan los Americanos" as he shouted "viva España," and declare that he has always been an annexationist, and with his usual tact try to make the best of his opportunities. In fact, if reports which reach us are correct, he is already doing this, for it is said that at present, while the more timorous of his people are selling all kinds of property at the greatest sacrifices, and while many Cubans are likewise compelled to do the same, the shrewder and more active Spaniards are taking advantage of the misfortunes of their compatriots in the way of profitable bargains. Later on these men will undoubtedly endeavor to shape the social life and business methods of Cuba in accordance with their own ideas and in such a manner as will give them the greatest distinction and influence. On the other hand, the better class of Cubans desire to get as far away from the old condition of affairs as possible, except in little social customs and other trifling matters dear to their hearts. Thousands of this cultured class, educated in England, France, and in the United States, or in the Spanish-American Republics, will return to Cuba, bent on advancement, and will carry great influence in shaping a higher and better social and business life than has ever before existed in the "Pearl of the Antilles." American influence and emigration will have its part

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in this, how prominently and successfully will depend to a great extent upon the avoidance at the start of mistakes in both social and business intercourse.

A fact which should be impressed upon the minds of visiting Americans is that the color line is not nearly as closely drawn in Cuba as it is in the United States, and that education, wealth, and personal worth will generally determine a native's position without regard to whether he has some colored blood in his veins or not. Apropos of this, it should be stated that the blood of Aragon and Castile has harmonized much more thoroughly with that of the African than has ever that of the Anglo-Saxon, producing generally a people comely in appearance and strong both mentally and physically; naturally inclined to culture and refinement, yet unfortunately in the past not often given full opportunity to develop such natural tendencies, and not always well balanced or practical in the every-day affairs of life.

The full-blooded blacks, found more numerous in the eastern provinces, manifest some characteristics which incline one to the belief that a few years of good government and education will do as much for them as it has for the colored race in America. Many will now compare favorably with our own colored population, and they are far superior in intelligence and physique to the blacks in the other West India Islands, with the possible exception of Porto Rico. From this, the opinion should not be formed that a majority of the Cuban population is black or colored. This subject, however, is thoroughly treated in the chapter on population. It may be said here that slightly less than one third of the population has colored blood in its veins, or about the same proportion as exists in the city of Washington, D. C.

The frequently used term "creole" means those of pure white blood born in Cuba of Spanish descent.

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The frequency of Irish names is somewhat surprising to the stranger, but signifies nothing more than the origin of the ancestors of those who possess them. These may now be either Spanish or Cuban in sentiment, as well as in all other ways. As to their origin, it should be remembered that in the seventeenth and eighteenth centuries, as well as in the early part of the present century, many Irishmen entered the military service of Spain.

The habit of giving all stores, factories, etc., dedicatory titles prevails in Cuba, as it does generally in many of the countries of Europe. Some of these titles are very ludicrous, "To the Reformed Shark," for instance; others are less droll and, to our notion, decidedly blasphemous.

Glass windows will rarely be found, even in the handsomest buildings. Window openings on the lower floors are always securely barred, however, and everywhere they have substantial shutters.

Elevators do not exist, except in two hotels in Havana, and, in fact, few buildings are high enough to require them.

Popular tradition always associates the guitar with the Spanish race, and some travellers doubtless indulge the hope of hearing its strains wafted on the night air below the balconied windows, which seem to invite the serenader. It would be difficult, however, to find a performer on this instrument anywhere upon the island. Indeed, the Cubans, although fond of music, and possessing some musical taste, do not generally devote much time to the scientific or even the popular cultivation of the art. In this respect they differ from the Mexicans, among whom the lighter styles of music are much practised. There are, however, a few good amateur pianists in the cities, and the voice is sometimes cultivated, though seldom with much success. The

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Cuban voice is naturally shrill, producing a disagreeable effect when not thoroughly trained.

There is a great deal of social visiting between both Spaniards and Cubans, but comparatively few formal functions, such as private dinners and balls. The finest public balls are those given by the society of the "Caridad," or charity society, for the benefit of the poor. This society is a sort of social club, and is peculiarly Cuban in its character, although many Spaniards are also admitted. It is confined strictly to the *élite* of Havana society, although foreigners of good position can readily obtain access to the balls, through invitations from members. The society has its own assembly rooms in the Cerro. Other balls, less noted, are given during the season, at the Irioja Theatre, for instance. The scene presented at these functions is surprisingly brilliant, the elegance of the decorations and of the ladies' toilets, and the perfect good taste and refinement displayed, combine to produce an effect which we might seek in vain in many of our own more pretentious and costly public entertainments. There are other balls given during the season besides these; that at the "Círculo Militar" being a very fine one. The "Casino Español," a political club, also gives entertainments, though rather of the nature of receptions, a peculiarity being that the gentlemen do not wear evening dress. At all the others mentioned, evening dress, or "etiqueta," as it is called, is rigorously required.

There are numerous masked balls given during the Carnival, at the various theatres, to which all are admitted after buying a ticket at the entrance. These are not usually attended by ladies of respectability, and partake of the character of the French balls in New York.

While doubtless a society for the prevention of cruelty to animals will have much to occupy its attention



A CUBAN WINDOW

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if one is ever organized in Cuba, both Cubans and Spaniards delight in decorating their horses, mules, and oxen, used for transportation, either with bedecked harnesses or a profusion of color otherwise applied.

Every one rides in some way if he can ; in the cities, in cabs of the appearance of a small open barouche ; in the country, either on horseback or in the volante, now almost obsolete, the native carriage of which numerous writers have said that it was "a cross between a mule litter and a wheel-barrow run backwards," and that there "should be societies for its gradual suppression as a horse killer." This last remark would apply with equal force to the mule carts of the city and the ox-carts of the country, for no more cumbersome vehicles can be imagined than these.

The natural Spanish taste for color and ornament finds expression on the exterior of houses, these being striking shades of red, blue, green, gray, and yellow. These generally have the ideal characteristics of Spanish construction, being heavily built of stone, low in height, and covered with half-round vitrified tile.

As to the costume of the people, except among the lower classes, there is little to indicate any difference from the methods of dress followed in our southern cities in the summer time, excepting that the ladies wear hats less frequently, and some still wear the mantilla, with a grace such as only those of Spanish extraction can.

Occasionally some professional gentleman will be noted who adheres to his silk hat and frock coat as religiously, under all conditions, as does the resident of London, and as these two essential portions of his attire are usually of ancient stamp, his appearance seems peculiar, when the conditions of climate are considered. The habitual use of the high silk hat or "bomba" is generally

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confined to doctors and lawyers. It is frequently worn, however, in connection with full dress, in the evening.

The ladies, when young, especially those that are attractive in appearance, have the habit of using rice powder to an astonishing extent. The darker the complexion the more plentiful is its use, giving rise to a somewhat striking appearance. Other cosmetics are rarely used.

The Cubans of both sexes pride themselves on the smallness of their feet, and perhaps there is justice in their claim that they can thus quickly distinguish Spaniards, and have accordingly designated them as "the big feet."

A Cuban funeral is one of the most striking sights of its character imaginable, even the poorer classes being willing to make great sacrifices in order to outshine their neighbors upon such mournful occasions. Notwithstanding the great respect paid to the dead immediately after their departure, five years is ordinarily the limit to which such respect or remembrance is expected to last, except as it may be perpetuated by memorial tablets or monuments. Nearly all graves are rented for this period and then re-opened to make room for new occupants, the slight remains being completely consumed in a rude crematory resembling a limekiln. Until now the Church has had a monopoly of the cemetery business, but it is probable that cemetery reform will be one of the first demands made by an increasing American population.

Some peculiarities followed in dispensing articles of daily necessity should be mentioned. Cows are driven into the city and milked before the doors of those who purchase the milk; poultry dealers on horseback bring in the fowls alive, hanging head downwards from the pommels of their saddles; while there are other kinds of queer merchandising also done by men on horseback.

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The ordinary vegetable retailer is the Chinaman, who carries his wares in two baskets suspended from a pole across his shoulders in exactly the same manner and presenting the same appearance as in his own flowery kingdom.

A peculiar sound used by the Cubans in attracting the attention of each other should not be taken as an insult, although it much resembles our "hiss" of disapproval. While it may seem trifling to mention, it is safe to say that if this habit is not remembered the newly-arrived visitor will consider many times that he is being intentionally insulted because of hearing it behind his back. Another peculiarity to which attention should be called is that Cubans, in motioning any one to come to them, make exactly the opposite movement to that used by us, the open palm of the hand being waved away from the person who is making the calling signal.

Both Cubans and Spaniards are somewhat egotistical, and fond of exaggerating their personal prowess, especially as regards anything supposedly heroic. Amusing illustrations of this can always be seen by the careful observer watching the proceedings of the Havana Fire Department, composed principally of volunteers. No matter how rapidly the fire may be gaining headway, not one of these men will go near it until arrayed in full uniform, including rubber boots, and should they arrive after the fire is out, it is said that each one is sure to enter the building where the fire has occurred and zealously smear his face and hands with black in order to parade himself all the distance back to the engine house and receive the applause of the crowd on the way. This is probably a scandal; at all events it is but justice to say that when actually engaged in fighting the flames they display great agility and considerable heroism.

Cubans and Spaniards alike are natural gamblers, but

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unless possessing the means to do otherwise are economical in fixing the amount of their wagers; and they are exceedingly honorable in paying their bets, no matter what the amounts may be, if the peculiar form of gambling is considered lawful, while they will gesticulate wildly and become much excited over the most trifling amounts. At the cock-fights betting is done as rapidly and in much the same manner as transactions on the New York Stock Exchange, the raising and lowering of fingers signifying the amounts and character of the wagers. The loser invariably comes to the winner and settles his losses without being called upon to do so. One of the favorite means of gambling is playing dominoes, over which the players will become more excited than the same number of Americans over the largest game of poker conceivable.

Havana has its carnival prior to Lent, the same as in certain European cities, and practically prolongs these festivities through each Sunday of the Lenten period, although participation in them is not quite so general. Every Sunday afternoon during this period the Prado—the magnificent drive through the heart of Havana—is a solid line of carriages filled with maskers arrayed in fancy costumes, who pelt each other with flowers, paper bags of flour, and rolls of paper, and are similarly pelted by the bystanders. During Holy Week business is entirely suspended on the island from Thursday until Saturday morning, and no vehicles are permitted on the streets of any of the towns, except those conveying doctors to the sick. Religious processions are common at all places and at all times throughout the island, and many curious customs exist in connection with them.

The Royal Havana Lottery has been one of the greatest curses of the island, as well as having been made one of its most conspicuous features, for lottery tickets

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are sold everywhere, and the sellers of these are more pressing in their offers of them than would be the same number of American newsboys. As this lottery is a Spanish Government institution, it is reasonable to suppose that its existence will soon be terminated.

Mr. Quesada, who is well qualified to speak of Cuban society, in his "Free Cuba" says :

" With society constituted as it is in Cuba, it is extremely difficult for a stranger to acquire a knowledge of the character of the inhabitants. He can never see them as they see each other. He can rarely learn from his personal observation anything of society as a whole, though he may often have favorable opportunities of becoming pleasantly acquainted with individual families. Unless it be in some portions of the United States and the West Indian Islands, there is nothing to compare with the free open-handed hospitality which the merchant, or planter of whatever grade, lavishes upon those who are commended to his regard by a respectable introduction from abroad. With such a passport, he is no longer a stranger, but a brother, and it is the fault of his own heart if he is not as much at home in the family, and on the estate of his friend as if it were his own. There is nothing forced, nothing constrained, in this. It is evidently natural, hearty and sincere, and you cannot partake of it without feeling, however modest you may be, that you are conferring a favor rather than receiving one. Many and many are the invalid wanderers from home, who have known and felt it like gleams of sunshine in their weary pilgrimage."

While the writer has endeavored to be entirely fair in his statements as to the better characteristics and qualities of the Cuban, it must, of course, be conceded that he also has his serious weaknesses and defects which, in the writer's opinion, will most prominently manifest themselves in connection with questions of government authority or policy. This will arise more from the influence of Spanish example, so long held up before him, than from a natural tendency to dishonesty, or from any personal inclination to be arbitrary, unreasonable, or overbearing. So far as practical results are concerned, it makes but

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little difference what cause produces them, and it is to be feared that the result of prematurely placing too much power in the hands of the Cuban people might be politically disastrous.

Though not agreeing with all of the opinions expressed by certain Americans familiar with Spanish and Cuban character, it may be well to make some reference to what some of these gentlemen have had to say upon the question. One student of character calls attention to the long, brown, skinny hands of both Cubans and Spaniards, with nails of extraordinary length trimmed to points like birds' claws, as suggesting characteristics familiar to experts in criminology; yet the statistics of the island do not show that this trait, as elsewhere, denotes dishonesty, so far as the Cuban is concerned. Although perhaps having a tendency toward homicide, in connection with jealousy, he generally seems to have respect for the property of others.

But to view Cuban life in all its phases we must quote some of James W. Steele's ("Cuban Sketches," New York, 1881) sarcastic remarks, which echo the expressions heard from some others:

"Laziness is natural, universal and reputable. The avoidance of heat, worry, work and perspiration, and good judgment as to the shadiest side of every way of life, are the essentials of tropical happiness." "The necessity for manual labor is a disgrace and misfortune combined. 'Los negros' were designed for that, and the white is expected to see it done, and be the beneficiary." "Foppery is so common that it does not exist, indolence so natural that it excites no remark, and ambition and endeavor are follies. How tiresome it grows; these are not those of whom the kings of men will ever come. It is a people of smiles, glances, easy talk, and time-killing dilettantism, except for those who are obliged to work, and they are beneath consideration."

Still, speaking of the first insurrection (1868-78), Mr. Steele says:

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“There has been courage in danger, and there have been calm and heroic deaths for ‘Cuba Libre.’ Some of those have fallen who, with any other people or surroundings, would have ‘lit a candle that shall never be put out.’ I do not know of what stuff martyrs are made, but some of those who have died hopeless and unshriven have met their fate with a serenity that has half redeemed the fame of all their fellows, and rescued from pity or ridicule the story of the last and longest of the struggles of the sons of Cuba for the land in which they were born.”

These words are equally true of the martyrs of the later Cuban insurrection, which has now happily terminated by freeing forever the survivors and their descendants from the miseries and barbarities of Spanish rule.

CHAPTER II

THE POPULATION—ITS CHARACTERISTICS AND OCCUPATIONS

THE POPULATION BY PROVINCES ACCORDING TO THE LAST CENSUS.—PERCENTAGE OF NEGROES TO TOTAL POPULATION.—THE SPANISH RESIDENTS.—CRIMINAL STATISTICS.—VAGRANCY.—CHARITIES, PUBLIC AND PRIVATE.—LACK OF EDUCATIONAL FACILITIES.—WHAT OFFICIAL STATISTICS SHOW.—HIGHER EDUCATIONAL INSTITUTIONS IN HAVANA.—RELATION OF THE CHURCH TO THE STATE.—INFLUENCE OF THE ROMAN CATHOLIC CHURCH.—FREEMASONRY IN CUBA.—ITS ORIGIN AND PRESENT CONDITION.—DIVISION OF OCCUPATIONS AND BUSINESS INTERESTS.—THE LABOR PROBLEM.—SPANISH PEASANTRY AND CANARY ISLANDERS.—NEGROES AND COOLIES.—POSSIBILITY OF IMPORTING ITALIAN LABOR.

POPULATION

THE most recent census of the population of Cuba was made in 1887. Officially stated, the results by provinces were :

<i>Provinces.</i>	<i>Population.</i>	<i>Population per square mile.</i>
Pinar del Rio.....	225,891	39.19
Havana.....	451,928	109.93
Matanzas.....	259,578	79.50
Santa Clara.....	354,122	39.90
Puerto Principe.....	67,789	5.46
Santiago de Cuba.....	272,379	20.13
Total.....	1,631,687	

It thus appears that the density of population was



TYPICAL STREET SCENE

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greatest in Havana, being 38.5 per cent. above Matanzas, the next highest in this respect. In Pinar del Rio and Santa Clara the density was almost identical, in each case being about one-half that of Matanzas, or one-third that of Havana, while the ratio of density in Puerto Principe to that in Havana is only 4 per cent., and of Santiago to Havana, 18 per cent. The average density of population for the entire island in 1887 was practically the same as that of the State of Virginia. Of the total population stated, 1,102,689 were whites and 485,187 negroes; Chinese and other coolies, 43,811; percentage of whites to total, excluding coolies, 69.45; of negroes, 30.5.

The following official table, showing the percentage of negroes to total population of Cuba, excluding Chinese, at various census periods, is interesting, and seems to indicate that there is little danger from the bugaboo of a Black Republic there.

<i>Year.</i>	<i>Per cent.</i>	<i>Year.</i>	<i>Per cent.</i>
1804.....	45.8	1860.....	47
1819.....	47	1869.....	43
1830.....	56	1877.....	33
1841.....	58.4	1887.....	30.55
1850.....	50.75		

Many estimates have been made upon the present population, all varying. As fair a calculation as can be made would be to add to the total for 1887 a proportionate rate of increase for the last ten years similar to that which had been had for a long term of years previous thereto, such average being about nine-tenths of one per cent. annually. This would give approximately 1,780,000, from which should be deducted, say, 400,000 "reconcentrados" and other inhabitants who have died from the results of the insurrection, leaving 1,380,000 to be considered the present population of the island, excluding the military. Unquestionably Spanish office-

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holders and many others of that nationality will promptly leave Cuba when abandoned by their army, but there will be enough former soldiers remaining as citizens, Cubans returning from foreign shores, and American emigrants rushing in immediately, to make a resident population of over a million and a half.

More uncertain than the total present population is the proportion of Spaniards thereto, excluding soldiers. Cubans have estimated the number as low as 150,000. Rowan places it at one-fifth of the entire number of whites, or, say, 220,000. Conservative Americans who have traversed the island thoroughly, estimate that the number is more nearly 300,000, and that at least 150,000 of them are male adults; this is attributable to the fact that the great majority of emigrants from Spain are of the male sex.

The white population other than that of Spanish or Cuban blood is officially estimated at being less than 11,000.

The respective proportion of the sexes to the entire population in 1887 was—males, 54.7; females, 45.3. Among the non-Caucasian races (African and Mongol) it was—males, 52.08; females, 47.92.

This remarkable showing is attributable to the following causes:

1st. That the natural tendency of the lower class Spaniards, at least, was to emigrate without their families.

2d. That male coolies were imported almost exclusively.

3d. That not sufficient time had elapsed in 1887 since the abolition of slavery in 1886 to allow the increase in progeny among the blacks to show its natural tendency.

Eleven years have probably made some changes in this last-named condition, and the ordinary supposition would be that at present there should be a larger per-

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centage of female population than in 1887. Those most familiar with the present conditions maintain that the proportion of deaths among the "reconcentrados" has been greater among the males than among the females. While, of course, those who have been killed or who have died from disease in the ranks of the insurgents or Spanish volunteers were all men, it is to be presumed that now the two sexes are about equal on the island.

In 1887, the proportion of the various classes of the population who could read and write were—of 1,102,689 whites, 387,314, or 35.1 per cent.; of 528,998 negroes and Chinese, 62,020, or 11.7 per cent. Unquestionably the present proportion of those who can read and write among the negroes is much larger than at the time of the census in 1887, for, like their brethren in this country, since their emancipation they have eagerly seized every opportunity for the education of their children. Previous to the recent insurrection, about 65 per cent. of the entire population were engaged in agricultural pursuits, the number of whites and blacks in this occupation being nearly equal.

While not vouching for the entire reliability of the following, its source is so high that it is considered a fairly accurate statement of the criminal tendencies of the various classes of the population; an especially important fact to be made clear at present, the statistics having been published by the editor of *Los Sucesos*, José de J. Marques, Havana, November 18, 1885 :

"From the quarterly synopsis of the penal statistics of the Island of Cuba during the year 1884, published in the *Gaceta*, of Madrid, it appears that 1,415 individuals are suffering terms of imprisonment. Of these 508 are negroes, 108 Chinese, 586 European Spaniards, 180 Cubans (white natives), 19 Canary Islanders, and 14 foreigners. The colored race is represented by something more than one-third, and adding the Chinese, these two elements compose something less than one-half of the number of prisoners.

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"The statistics of population are divided as follows : Negroes, 460,000 ; white natives, 860,000 ; white Europeans, including Canary Islanders, 140,000 ; Chinese, 30,000 ; foreigners, 10,000—a total of 1,500,000. Taking this as a basis, it follows that the convicts are in the proportion of 1.06 for every 1,000 inhabitants.

"In relation to the several sub-divisions the ratios are respectively as follows :

"Native whites : Population, 860,000 ; convicts, 180. Proportion, 1 for every 4,777 inhabitants.

"Negroes : Population, 460,000 ; convicts, 508. Proportion, 1 for every 905 inhabitants.

"Foreigners : Population, 10,000 ; convicts, 14. Proportion, 1 for every 714 inhabitants.

"Chinese : Population, 30,000 ; convicts, 108. Proportion, 1 for every 277 inhabitants.

"European Spaniards, including Canary Islanders : Population, 140,000 ; convicts, 605. Proportion, 1 for every 231 inhabitants.

"It follows that there are imprisoned : 1.10 for every 1,000 colored inhabitants ; 1.40 for foreigners ; 3.61 for Chinese ; 4.32 for Europeans, and only 0.20 for native whites."

Were analysis made of the character of the various crimes for which conviction was had, there is little doubt that a surprisingly large portion of these, involving Cubans and Spaniards, would be for murder, attributable to jealousy, "with a woman in the case." The warden of the penitentiary at Havana assured the writer a few years since, that of the 1,500 convicts under his charge about 80 per cent. were there for the cause just stated. While brigandage has been common in the rural districts, and petty pilfering not unusual everywhere in Cuba, serious crimes against property by professional criminals are probably more rare in Cuba than in the United States.

VAGRANCY

In the past there has been no law or system designed for the suppression of vagrancy. On the con-

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trary, the municipal authorities have furnished documents authorizing certain persons to become professional beggars. Consequently, Cuba has been as seriously cursed in this respect as any country in the world, and Saturday has been regularly observed as beggars' day, the professionals considering it their privilege then to visit every house and place of business to solicit alms, exhibiting abnormal deformities, or the results of accident or disease, more conspicuously, if it were possible, than they ordinarily show them upon the streets. There has been practically no government charity other than a few hospitals, notable among which is that for lepers at Havana. Among the professional beggars, self-mutilation or the deforming of young children, to excite sympathy and charity, has not been uncommon. The custom in the past has been for each merchant in the principal towns to give every beggar who applied on Saturday either a loaf of bread or five cents, but very little, if any, attempt has been made at systematic private charity. Of course, at the present time there is an enormous number of worthy poor who will require, and should receive, either government or private aid to reestablish themselves as ordinary members of society; yet it is to be greatly feared, unless stringent methods are followed for the suppression of vagrancy, that in the future the number of professional beggars will be greatly increased from the ranks of those who are suffering from the effects of the insurrection.

EDUCATION

Serious complaints have been made by all classes of Cubans, as well as by the better class of Spaniards, regarding the lack of educational facilities.

The municipalities pay for the maintenance of public schools, but have exerted no control over them, the

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Government, as usual in all public matters, having taken entire charge of their affairs. Theoretically, it has appointed municipal and provincial boards of education and inspectors of schools, but practically it has neglected to do so, or appointed those entirely ignorant of educational matters. It would seem as if a similar course had been followed in the selection of the writers of the text-books prescribed, for even the geography of Cuba is not correctly given in them, while the descriptions of other countries of the Western Hemisphere are simply ludicrous. But perhaps due allowance should be made, as such books are, for the most part, written and published in Spain.

As to the actual number of schools, the same inconsistencies exist that are so frequently found in connection with other Spanish statistics on Cuba. According to the census of 1877 there was a total of 1,001 public and private schools on the island, or one for each 1,520 of population. The census of 1887 reports 775 public and 300 private schools, or one for each 1,517 of population. In 1893 it was officially stated to the representative of Her Britannic Majesty's Government, that there were 843 public schools in Cuba, making an average of one school for every 1,800 persons. They were said to be distributed over the different provinces as follows :

<i>Provinces.</i>	<i>Number of Schools.</i>
Havana	209
Pinar del Rio	137
Santiago de Cuba	118
Matanzas	148
Santa Clara	195
Puerto Principe	36
Total	843

That something is wrong in the calculation as to the number of schools per inhabitant is apparent.

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The annual official report of education on the island, published at Havana in 1895 for the previous fiscal year, gave the total number of public schools as 910 (which was about one for every 1,800 inhabitants). Of these schools 461 were designated as incomplete. This means schools in the smaller towns where little but elementary reading was taught. The number of private schools was given as 766, making a total of 1,676 of both public and private institutions. These were divided as regards the character of their attendance into 713 for boys, 662 for girls, and 301 for both sexes. The attendance reported was : Boys, 35,291 ; girls, 29,705 ; total, 64,996, or approximately one pupil only for each 25 inhabitants. Of the attendance, 36,747 were credited to the public and 28,249 to the private schools.

The expenses of the public schools were given as follows :

Salaries	\$472,870 88
Materials.....	113,637 01
Rentals	<u>150,256 90</u>
Total	\$736,764 79

or slightly over \$20 per pupil. This expense was not charged in the general budget of the island. It is claimed that the municipal authorities have frequently neglected payment of the teachers for years, or have paid them in depreciated local securities of the same character as tax warrants in the United States ; hence no great degree of efficiency or enthusiasm could be expected from them. The education law, it is also claimed, required the establishment and maintenance of 1,870 full-fledged public schools, instead of the 449 which exist at present. It is also claimed that the requirements of the law concerning the establishment of higher educational institutions were not complied with as regards either their

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number or character. In each province, however, there has been an academic institute for boys ("Instituto de Segunda Enseñanza") in which the ordinary course of study is five years, which must be taken, and a degree secured, before the student can enter the university at Havana. There was a total attendance of 3,415 at all of these academies in 1894.

At Havana there are also located the following higher educational institutions: Saint Alexander School of Fine Arts, which in 1894 had an attendance of 375; the Technical College ("Escuela Profesional"), which, in 1894, had an attendance of 42; and the School for Teachers ("Escuela Normal Para Maestros") or Normal College, which, in 1894, had an attendance of 17 males and 221 females. These higher schools are entirely supported by local and municipal taxation.

The University of Havana, with a famous reputation, ordinarily has an attendance of from 1,300 to 1,400 students. It possesses some heavy endowments and apparently has a liberal annual allowance from the general government of the island; in 1893 this was \$137,000. A few years earlier the sum was much larger, so that the annual revenues of the university exceeded its expenditures by over \$100,000. More recently, complaints have been made that the faculty, owing to lack of funds, have been unable to carry out their desires as regards all features of higher education, and the claim is even made that by some process of juggling the official books, the financial affairs of the university are so manipulated as to afford the Government a source of income.

Of this and of Cuban educational matters in general, Tomas Estrada Palma, in his terrible arraignment of the Spanish Government in Cuba, made to the Hon. Richard Olney, Secretary of State, December 7, 1895, says:



COURTYARD OF A CUBAN HOUSE

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“ Does the Government favor us more in the matter of education ? It will suffice to state that only \$182,000 are assigned to public instruction in our splendid budget. It may be proved that the University of Havana is a source of pecuniary profit to the State. On the other hand, this institution is without laboratories, instruments, and even without water to carry on experiments. All the countries of America excepting Bolivia, all of them, including Haiti, Jamaica, Trinidad and Guadaloupe, where the colored race predominates, spend a great deal more than the Cuban Government for the education of the people. On the other hand, only Chile spends as much as Cuba for the support of an army. In view of this it is easily explained why seventy-six per cent. of such an intelligent and wide awake people as that of Cuba cannot read and write. The most necessary instruction among us, the technical and industrial, does not exist. The careers and professions most needed by modern civilization are not cultivated in Cuba. In order to become a topographer, a scientific agriculturist, an electrician, an industrial or mechanical engineer, a railroad or mining engineer, the Cuban has to go to a foreign country. The State in Cuba does not support a single public library.”

RELATION OF THE CHURCH TO THE STATE

The history of Cuba does not differ materially from that of the other colonial possessions of Spain. It is one long record of the greed, corruption, and tyranny of an office-holding class, whose ranks have been recruited exclusively from men born in Spain. Even a single generation has been enough to disqualify the Cuban born of Spanish parents from filling any office in the general administrative service of the island. This fact is well summed up in the pithy saying that “A Spaniard can do anything in Cuba, except raise a Spanish son.” The operation of this rule has had a very important effect upon the character of the permanent white population of Cuba. The children of Spanish parents, under the ban of exclusion from all offices of honor or profit, have been constantly absorbed into the ranks of those with whom hereditary hatred of Spanish rule has become almost a religious duty.

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The Roman Catholic Church in Cuba, under the directing administration of the Spanish hierarchy, has joined with the civil government to make the lot of the native Cuban as hard as possible. Being mediæval in character, the Church still retains its control of those civil functions which relate to the registration of births, deaths, and marriages, and it has also a predominant share in the system of education which now prevails. A significant sign of the feelings with which the Cubans who have taken part in the revolution are imbued was shown by the Provisional Government's passing, as one of its first measures, a law to make civil marriages alone valid. Yet Cabrera relates that no native Cuban has ever been archbishop of Santiago, or bishop of Havana, the two dioceses of the island; that only two natives have ever been canons of the cathedral of Havana; that, in 1871, only two rectors and three chaplains in the diocese of Havana were Cubans; and that in only twenty-two out of one hundred and forty-four parishes in the same diocese were there Cuban priests of any rank. The same writer gives the annual charge of the ecclesiastical establishment upon the revenue of the island as \$548,694. Besides this amount, of course, are the customary or voluntary offerings, amounting in all, probably, to a much larger sum. The Church has also had extensive revenues from its own property.

The effect of this close union, identity of interest, and similarity of *personnel* of the ecclesiastical and civil departments of the foreign government which has ruled Cuba, has been deplorable for the true interests of the Church. The Cubans have grown to regard her as a purely alien institution which has strengthened the cruel hand of tyranny, instead of having stood as a barrier between the governing and governed classes; they have been inclined to avail themselves of her services and

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rites as seldom as possible ; indeed, a very large number of male adults have wholly neglected her ministrations except in the indispensable confession before marriage, with the ceremony itself, and in the administration of extreme unction, though the call for this rite has often been omitted by the dying man owing to his having been engaged in rebellion against the civil government, or to his having placed himself outside the pale of the Church by indulging in practices which she has forbidden. The writer extremely regrets to have to hint at such a heinous profanation of the most sacred obligation of the clergy, but he is compelled to say that the average Cuban rebel of the past half century firmly believes that secrets given at confession have been revealed by the Spanish clergy in Cuba to the military government.

Out of this belief has arisen the extraordinary development of Freemasonry in Cuba. In proportion to the total population, there are more Free and Accepted Masons in Cuba than in any country in the world. The reasons for this state of affairs are not hard to find. Freemasonry gratifies the religious instinct inherent in all mankind, by giving them an opportunity to worship the Supreme Being without the trammels of a sectarian creed ; the Cubans, therefore, who have placed themselves under the ban of the Catholic Church, have found in Freemasonry a natural substitute, all the more so because that Church's active hostility to Freemasonry has been positive encouragement to them to join it. Furthermore, Freemasonry has provided for the Cubans a common brotherhood among whom secrets imparted under the seal of Masonic faith are sure to be kept ; it has furnished them with the means of recognizing strangers belonging to their order ; and it has always been active in extending protection and succor to the mothers, wives, sisters, and daughters of its members.

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Freemasonry in Cuba, therefore, on account of the great part it has been called upon to play in the national life, and also on account of its large membership, must be considered to be a factor of the first importance in the future affairs of the island.

Through no fault of its own, since politics and sectarian religion are strictly excluded from its lodge meetings, the ban of both Church and State has been placed upon Freemasonry in Cuba. There have been times, both recent and remote, when attendance at a Masonic meeting in Cuba was equivalent to a verdict of being guilty of high treason. Some of the captain-generals being Masons themselves, have forborne to persecute the order, but others have exhausted their resources in trying to exterminate it by fire and sword, or rather by the garrote and deportation to Spain's fearful African penal colonies. For the benefit of any American or English members of the Masonic fraternity who may read this chapter, it may be said that all Freemasonry in Cuba, including the first three degrees, is worked according to the Scottish Rite; and that while adherence to the received ritual is, in some cases, not as close as is generally the case in the United States, the writer desires to say, after an extensive experience among Cuban Freemasons, that he has always found them conscientiously living up to its teachings and essential obligations.

The future connection between Church and State in Cuba must be determined by the free suffrages of the inhabitants of the island, including those who return from exile. It is not so well known as it should be that there is nothing in the constitution of the United States prohibiting the establishment of any religion by one of the States, the familiar clause in the first amendment reading: "Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise

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thereof." The case in regard to a Territory of the United States not admitted to full statehood is not so clear, but it is extremely unlikely, if the inhabitants of such a territory wished to tax themselves for the support of some religion, that the Supreme Court would be called upon to pronounce such a law to be void. Whether, therefore, Cuba receives an autonomous government, under the protection of the United States, or whether she becomes an organized territory, amenable to the provisions of the constitution of the United States, the future connection between Church and State in Cuba will be determined by the residents without much chance of outside interference. Under these circumstances, it would appear to be the part of wisdom for the Vatican to recognize as quickly as possible the altered status of the Church in the island by causing all the offices vacant now, or for some time to come, to be filled by priests of native extraction, thus in some degree redressing the wrong under which Cubans, in spite of the doctrine of the equality of all men within the fold of the Church, have so long labored. In any case, the Church may as well make up its mind to the transfer of those strictly civil functions which it now exercises, to hands more fitted in a modern state to exercise them. The writer would gladly have refrained from entering upon such controversial topics had it not been absolutely necessary to a clear understanding of the present attitude of the native male population of Cuba toward the Church.

DIVISION OF OCCUPATIONS AND BUSINESS INTERESTS

All officials of prominence and the clergy have been Spanish.

The land owners are generally Cubans, although

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There are said to be from 40,000 to 60,000 Chinese, who are scattered throughout the cities and country, following the same vocations and being very similar in every way to their brethren on our Pacific coast. Yet they are not so much in evidence as their stated number would indicate. Many of them are employed on plantations.

The majority of machinists and steam engineers, as well as railroad hands, are Spanish and Cubans, but neither Cuban nor Spaniard has much natural inventive ability, as is evidenced by the primitive methods followed in everything—from the handling of ships' cargoes in the harbors to the ploughs in the field made from forked tree branches.

The chief engineers of nearly all the large sugar estates are foreigners: American, English, German, and French.

THE LABOR PROBLEM

The question of rural labor is perhaps destined to be more serious in the future than it has been in the past, although from the first establishment of the sugar and tobacco industries in the sixteenth century, the demand for labor has been continually increasing. It was originally attempted to meet this demand by enslaving the aborigines and simultaneously importing negro slaves. A few decades sufficed to exterminate the former class, but the latter course was continued long after it was prohibited by international agreement. Then came contract importation of Chinese coolies, until that in turn was prohibited by law, and in later years was followed by the immigration of Spanish peasantry and Canary Islanders. Of this class of labor the best is that furnished by former Spanish soldiers, who seem to work faithfully at any place or under any conditions, where a fair compensation can be had for so doing. There are



HUT OF THE NATIVES, MADE ENTIRELY OF THE ROYAL PALM TREE

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many white, black, and medium-colored Cubans who will work equally well, but they, as a whole, when resident in the rural districts, seem to prefer the cultivation of small patches of ground for themselves, rather than working for wages, although the net result to them may not be so favorable. It is the writer's theory that the colored Cubans, at least, seem to consider that the course which they follow in this respect especially demonstrates their personal independence, which they have been anxious to establish since they have been freed from slavery, and if such be the case, it is reasonable to suppose that under present conditions they will be more anxious to do so than heretofore. But all classes of Cubans naturally prefer to live in the towns, and the same can be said of the majority of the Spaniards and Canary Islanders, who, in Havana, have usurped many of the occupations usual to women, such as laundry work, and acting as house servants, in preference to securing more profitable employment on the plantations. While the lot of the working classes in the cities, owing to high rentals and other excessive living expenses, is anything but a happy one, nevertheless the natural tendency of the elements who should cultivate the soil has been to cluster there.

There is but little doubt that this tendency, in the immediate future, at least, will be stronger than ever before, owing to the military edict of reconcentration and the consequent destruction of many rural homes. Some well-devised plan undertaken by the government or by private enterprise will be necessary to redistribute the "reconcentrados" throughout the country, while, of course, it must be remembered that the great mortality among them has been so serious as to reduce the total population of the island by 400,000. When it is understood, in connection with this, that the proportion of deaths among these "reconcentrados" has been much

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greater among the able-bodied men than among the women and children, it is apparent that not only has the entire productive force of the island been reduced, but that farm labor especially must, for the present, be exceedingly scarce, even if so much of this class as remains should return to its former localities.

The Spanish and the Canary Islanders who remain in Cuba will naturally object to locating in the rural districts for a long time to come, unless employed in large numbers in the same localities, because of Cuban prejudice, and for fear that they cannot be properly protected from the results of it. This situation is much to be regretted, for, as already intimated, much of this class of labor is the best that has ever been available for the mine or plantation owner.

The Galician and Catalan peasantry especially are noted for their industry and other commendable qualities.

The Chinese, as in California, are reliable laborers, but their number is not sufficiently large to be a great factor in the entire labor market, and they are as fast as possible drifting into market gardening on their own account, or into conducting minor kinds of commercial business, and the majority are now well along in years, because coolie importations ceased several years ago.

If we look forward to sources from which to supply the future demand for labor, we find that while the British West Indian islands especially are overpopulated, the large mass of their negro population is about as worthless as can be imagined, the writer personally having known of negro laborers from our Southern States being imported to some of these islands and paid wages of \$1.75 per day, while hosts of the native negroes would gladly have undertaken the same character of work for less than 40 cents. Consequently, much relief cannot

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be expected for the Cuban labor market from the other West Indies.

Some colored labor will undoubtedly emigrate from our Southern States, owing to the high rate of wages which will probably be paid at the commencement of the new commercial development, but from the differences of religion, language, and surroundings, it is to be doubted if this immigration ever becomes extensive ; so it would appear as if some entirely new field must be looked to to meet the demands of the future. If the writer were to hazard a guess as to what this would be, he would say Italy, and it would not be surprising if, within a few years, the Italian language would be almost as common on the island as the Spanish, for there is a great similarity between the two languages, and also a similarity in character, disposition, and other peculiarities of the two peoples, while, of course, the religion is the same. Knowing to what extent Italian labor is now being employed in the Argentine Republic and other South American countries, and considering how much higher the rates of wages must necessarily be in Cuba for some years, it looks as if this theory might be found to agree with the ultimate solution of this problem.

Speaking of the character of farm labor in the past, a report from the British Consul-General at Havana says :

“ They are lodged in ‘baracons,’ or great sheds of the most primitive kind, in which hammocks are slung, and are fed twice a day on rice, beans, and beef, usually, and eat their food sitting on the ground, or are furnished with rough benches or boards. The Spanish laborer expects little. Withal, he is a peaceful, temperate and hard working man, as a rule. Chinese labor is used to a considerable degree, but it is not cheaper than black or white labor. The Chinamen are all old men, formerly coolies, and as there is not any fresh immigration at present, they are becoming scarcer. The cross between the Chinamen and the negroes is a good one usually, but they do not, as a rule, live much past middle age.

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“The black laborer in Cuba is undoubtedly a stronger man physically than the white, and very much superior in this respect, and in most others to the Louisiana negro coming from a different part of Africa.”

At this writing negotiations are about to begin as regards the return of the Spanish soldiery to Spain, or for their disposal otherwise: looking forward to the ultimate prosperity of Cuba, the writer can but express the hope that prejudice will be forgotten by the Cubans, the future necessities of the island recognized by those in authority, and that so many of these men as wish may be induced to remain in Cuba, and thus partially solve the future labor problem.

CHAPTER III

CLIMATE AND THE PRESERVATION OF HEALTH

THE RAINY SEASON.—COMPARISON OF THE RAINFALL IN CUBAN AND AMERICAN CITIES.—THE RECORD FOR TWENTY YEARS IN HAVANA BY MONTHS AND BY SEASONS.—THUNDER STORMS AND TRADE WINDS.—HUMIDITY.—TEMPERATURES IN HAVANA FOR TEN YEARS.—COMPARISON OF TEMPERATURES IN CUBAN AND AMERICAN CITIES.—CHANGES IN TEMPERATURE IN THE WINTER.—SANITARY CONDITIONS AND THE CARE OF HEALTH.—NECESSITY OF UNUSUAL PRECAUTIONS.—DANGERS OF SEA BATHING.—VIRTUES OF COCOANUT MILK.—WINES AND FRUITS.—REMEDIES FOR MALARIAL AND YELLOW FEVERS.—HEALTHFULNESS OF THE PLAINS AND HILLS OF THE INTERIOR.

CLIMATE

SYSTEMATIC and continuous meteorological observations in Cuba for a long series of years have been made only at the Belen College, in Havana. These, commencing in 1859, have been continued up to the present time. Observations, however, have been made at various times for limited periods in other portions of the island, which permit sufficiently close comparisons to be made to indicate fairly the climatic conditions of the entire island, and to correct many popular misunderstandings about them.

First, for a better comprehension of the so-called rainy season, it should be said that it ordinarily begins at Havana in June and terminates in November. In other

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parts of the island and in different years this varies, even to the extent of more rain falling during the so-called dry season than during the wet season, in certain years, as will be seen from some of the following official tables :

AMOUNT OF RAINFALL AT HAVANA, DIVIDED BY SEASONS.

	RAINY SEASON—JUNE TO OCTOBER, INCLUSIVE. FIVE MONTHS.		DRY SEASON—NOVEMBER TO MAY, INCLUSIVE. SEVEN MONTHS.	
	Amount.	Per cent. of Annual.	Amount.	Per cent. of Annual.
1859	28.44	63	16.40	37
1860	27.80	63	16.65	37
1861	28.76	71	11.83	29
1862	36.09	70	15.20	30
1863	23.07	51	22.03	49
1864	28.53	60	19.35	40
1865	25.29	54	21.57	46
1866	33.29	73	12.56	27
1867	45.66	64	25.74	36
1868	22.00	44	27.80	56
1869	22.64	41	33.15	59
1870	32.38	70	13.89	30
1871	39.52	73	14.32	27
1872	27.56	58	20.32	42
1873	24.12	47	27.35	53
1874	42.11	79	11.07	21
1875	27.63	65	14.68	35
1885	26.79	56	21.38	44
1886	47.49	74	17.04	26
1887	32.38	66	16.95	34
1888	23.97	45	29.54	55
1889	35.71	60	24.02	40
1890	28.15	50	28.41	50
1891	38.02	65	20.51	35
1892	49.49	85	8.81	15
1893	38.95	64	21.64	36
1894	38.08	75	12.63	25
1895	38.78	69	17.07	31
1896	31.09	60	19.97	40
1897	27.70	60	18.51	40

CLIMATE AND HEALTH

AVERAGE NUMBER OF DAYS ON WHICH RAIN FELL IN CERTAIN CUBAN AND AMERICAN CITIES.

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.	Years.
Washington, D. C.	12.1	10.9	12.2	11.2	12.2	10.5	11.1	11.3	8.6	8.8	10.1	10.4	120.2	25
New Orleans, La.	11.2	9.4	9.8	7.9	9.9	13.6	15.8	14.4	10.8	7.4	9.4	11.9	131.7	25
Key West, Fla. . .	8.1	6.8	4.9	4.5	8.5	11.8	12.6	14.6	16.4	12.4	8.0	7.2	117.7	25
Jacksonville, Fla. .	9.5	9.1	8.2	6.7	9.8	13.5	15.0	15.0	14.1	9.0	8.0	7.2	124.9	25
Charleston, S. C. . .	10.6	10.1	10.0	7.7	9.1	10.9	12.1	13.3	10.6	7.4	7.7	8.9	118.5	25
New York, N. Y. . .	11.9	10.9	11.8	11.1	10.4	10.4	11.2	9.8	9.3	9.6	10.2	11.0	127.8	25
Boston, Mass.	12.8	11.1	12.8	11.4	11.2	10.3	11.0	10.4	9.6	10.0	11.1	11.7	133.0	25
Chicago, Ill.	11.8	10.8	12.0	11.4	11.8	11.4	9.2	9.0	9.0	10.1	11.0	12.1	131.1	25
St. Louis, Mo.	9.1	9.5	10.8	10.3	11.8	11.4	9.6	7.6	7.0	7.3	9.1	9.9	113.3	25
San Francisco, Cal. . .	11.4	10.6	10.3	7.4	4.2	2.0	.6	.3	1.6	3.8	6.4	11.2	69.4	25
Havana, Cuba.	7.5	5.7	5.5	4.6	9.3	12.8	12.7	12.6	15.4	15.1	10.2	8.5	119.9	15
Santiago, Cuba.	2.0	5.0	6.0	9.0	11.0	5.0	5.0	16.0	19.0	11.0	9.0	3.0	101.0	1

PRECIPITATION IN INCHES AT HAVANA.

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	An- nual.
1859.	5.81	0.19	0.78	0.40	2.00	2.95	3.70	7.93	3.94	9.92	5.93	1.29	44.84
1860.	2.02	3.42	0.55	6.02	1.07	7.88	2.78	6.08	6.47	4.59	0.59	2.98	44.45
1861.	0.61	0.59	2.39	2.05	4.43	3.19	4.88	8.39	5.01	7.29	0.63	1.13	40.59
1862.	2.00	1.09	2.22	1.17	3.26	9.20	8.42	5.70	4.90	7.87	2.28	3.18	51.29
1863.	1.48	0.28	2.70	0.38	10.22	3.20	2.14	7.89	4.61	5.23	2.49	4.48	45.10
1864.	4.50	1.43	3.73	2.05	2.59	7.32	5.13	7.09	3.63	5.36	2.33	2.72	47.88
1865.	4.88	2.92	2.70	0.07	4.98	1.17	2.55	5.41	7.36	8.80	5.85	0.17	46.86
1866.	2.01	2.72	0.57	1.93	1.75	3.72	12.33	4.42	6.81	6.11	2.52	1.06	45.95
1867.	2.89	1.16	0.52	1.20	13.95	14.44	6.71	7.19	6.43	10.89	1.47	4.55	71.40
1868.	3.22	2.36	1.31	6.60	3.85	2.99	1.95	2.96	5.39	8.71	8.65	1.81	49.80
1869.	2.02	2.02	2.10	22.57	2.48	4.83	4.13	4.08	7.04	2.56	0.87	1.09	55.79
1870.	1.50	1.62	1.04	2.44	4.70	8.65	8.20	3.15	2.42	9.96	1.88	0.71	46.27
1871.	2.09	0.00	0.35	0.06	6.67	3.92	6.65	8.32	15.98	4.65	0.90	4.25	53.84
1872.	6.29	1.86	1.06	0.19	2.94	1.46	4.08	6.38	8.50	7.14	4.01	3.97	47.88
1873.	5.32	9.41	1.02	4.92	2.38	4.76	1.15	4.52	6.88	6.81	1.62	2.68	51.47
1874.	1.64	1.30	0.11	1.72	2.31	15.25	4.96	6.64	5.92	9.34	1.34	2.65	53.18
1875.	1.72	4.09	1.07	4.18	2.89	1.24	2.36	10.60	10.02	3.41	0.47	0.26	42.31
1885.	2.16	5.54	1.42	1.55	6.35	8.03	0.64	4.52	6.00	7.60	1.92	2.44	48.17
1886.	2.69	1.09	0.73	8.07	3.06	12.62	15.06	10.03	4.52	5.26	0.73	0.67	64.53
1887.	3.33	0.01	3.52	2.69	0.68	15.19	3.21	5.12	2.44	6.42	3.50	3.22	49.33
1888.	0.02	3.07	1.56	0.82	13.58	7.92	4.17	1.45	6.47	3.96	7.47	3.02	53.51
1889.	5.77	4.37	5.05	2.28	1.16	9.30	5.24	9.36	3.31	8.50	3.91	1.48	59.73
1890.	0.52	0.66	0.54	0.06	17.51	1.50	7.13	5.25	12.27	2.00	7.94	1.18	56.56
1891.	3.45	1.80	5.05	1.98	1.58	3.14	6.16	8.72	5.50	14.50	5.19	1.46	58.53
1892.	0.90	1.24	1.70	0.02	1.27	17.56	5.03	5.75	9.24	11.91	2.35	1.33	58.30
1893.	4.21	0.26	0.56	1.12	5.79	10.67	4.64	7.18	3.15	13.31	4.14	5.56	60.59
1894.	0.46	1.26	2.42	0.78	2.60	6.78	5.11	2.40	10.26	13.53	4.17	0.94	50.71
1895.	0.45	5.05	1.31	1.85	4.92	3.76	4.33	4.65	13.57	12.47	2.16	1.33	55.85
1896.	1.11	6.22	3.69	0.00	2.70	16.91	3.10	3.88	5.73	1.47	3.53	2.72	51.06
1897.	6.31	1.23	3.22	5.67	0.33	5.26	5.98	5.72	7.61	3.13	1.45	0.30	46.21
Mean.	2.71	2.27	1.83	2.83	4.47	7.16	5.06	6.02	6.71	7.42	3.08	2.15	51.73

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AVERAGE MONTHLY AND ANNUAL RAINFALL IN INCHES AND HUNDREDTHS IN CERTAIN CUBAN AND AMERICAN CITIES.

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.	Years.
Washington, D. C.	3.50	3.31	4.08	3.16	3.90	4.29	4.84	4.44	3.82	3.27	2.88	3.01	43.61	25
New Orleans, La.	5.17	4.56	5.35	5.28	4.76	6.49	6.50	6.02	4.70	3.25	4.30	4.38	60.52	25
Key West, Fla. . . .	2.10	1.70	1.20	1.30	3.30	4.10	4.20	5.10	7.50	5.30	2.50	1.70	40.10	25
Havana, Cuba. . . .	2.32	2.52	2.50	1.46	5.15	8.29	5.09	5.43	7.62	8.49	4.24	1.93	55.14	10
“ “	2.71	2.27	1.83	2.83	4.47	7.16	5.05	6.02	6.71	7.42	3.08	2.15	51.73	30
Matanzas, Cuba. . .	3.18	.77	.63	1.92	2.32	5.35	9.57	11.50	7.80	7.47	3.38	1.40	55.29	1

The rainy season is ushered in by short and sharp showers, preceded by gusts of wind, which occur generally in the afternoon. After a few days of this, showers will begin falling in the morning also, and when the rains have fairly set in showers occur at any time during the twenty-four hours, generally short and violent, the sun shining brightly in the intervals. Prolonged storms without intermission are rare.

The division between the dry and the wet season is not so clearly defined as is frequently supposed; the preceding figures show that some rain falls throughout the year. The average precipitation of nearly 52 inches per annum is in excess of that in the vicinity of New York, where it is about 46 inches. The chief peculiarity in the tropical rainfall consists in the short, sudden, and violent showers, or “aguaceros,” a clear sky clouding over in a few moments, and as rapidly clearing off again, instead of the long, steady, and comparatively moderate downpour to which we are accustomed in the north.

There is an average of less than twenty days in the year when it rains both morning and afternoon. There is a peculiar clearness of the atmosphere both before and after the summer rains that is especially delightful; scarcely a cloud is to be seen except when it is actually

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raining. During the winter months there is some cloudy weather without rain. The nights are almost invariably clear the whole year round.

Terrific thunder storms are frequent during the latter part of the rainy season, and while the display of lightning is most imposing, little damage is actually done by it. Hurricanes, or storms which almost reach the dignity of such a title, occur occasionally in the fall months but are rarely serious in their effects, and then generally only in the eastern provinces. The most disastrous of these which have been recorded were in 1844, 1846, 1865, 1870, and 1894, the last one almost exterminating the fruit industry in the northeastern part of the island.

The prevailing winds of the island are the "north-east trades," blowing steadily from between north and east, excepting when disturbed by cyclonic or similar influences, when they may blow from any direction, being governed by the location of the centre of cyclonic or anti-cyclonic activity. The elevations along the shore, or even inland, which are swept by the trade winds referred to are generally healthful and free from yellow fever and malaria, unless there are surrounding local conditions such as would offset the benefits from the inflow of pure sea air. The average velocity of the wind is about $7\frac{1}{2}$ miles per hour, varying, however, with the season, being highest during the winter months, when the average is as high as 8.5 per hour, and lowest in the summer, when its velocity is usually about 6.5. The velocity is also greater on the northern coast than on the southern coast, and the variation between the different hours of the day is greater than that between seasons. This is illustrated by the following tables of the average velocities of wind at Havana during the year, and also during the various hours of the day :

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	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Ann'l.
Average ve- locity, miles per hour.	7.8	8.3	8.7	9.2	7.8	6.7	6.5	6.3	6.5	7.8	8.7	8.3	7.8
Prevailing direction.	e.	e.	e.	e.	e.	e.	e.	e.	e.	n.e.	e.	e.	e.

<i>Time of day.</i>	<i>Miles per hour.</i>
4 A.M.	4.3
6 "	4.5
8 "	6.5
10 "	9.2
noon.	10.7
2 P.M.	11.4
4 "	10.7
6 "	8.7
8 "	6.9
10 "	5.6

The absolute humidity is very great, as will be noted by the following tables, yet, as will be noted also, it is comparatively constant, varying but little during the different months of the year ; between the different hours of the day the variation is considerable. The following averages are from the official records at Havana :

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Ann'l.
Humidity, mean rela- tive p. cent.	75	73	70	69	71	76	74	75	79	78	77	74	74
Mean abso- lute grs. per cu. ft.	6.2	6.4	6.3	6.8	7.6	8.7	8.8	8.8	8.9	8.1	7.4	6.3	7.5

MONTH.	A.M.				NOON.	P.M.				
	4	6	8	10		2	4	6	8	10
January	84	85	82	70	63	63	65	93	77	79
February	85	85	81	68	62	61	63	70	76	79
March	85	85	78	64	58	58	62	70	75	79
April	82	84	73	61	68	59	60	67	73	76
May	85	85	73	63	62	63	65	69	76	78
June	89	89	77	67	67	67	70	74	81	84
July	88	88	76	64	63	64	67	70	78	82
August	87	88	78	64	62	64	67	72	78	82
September	90	90	83	72	70	71	74	78	83	85
October	88	89	80	72	69	69	72	78	81	84
November	86	87	82	71	68	68	72	77	80	82
December	82	82	79	67	64	64	67	72	75	77

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The variation between different hours of the day is greater, proportionately, than the variation of normal temperatures between different days in the same season. This is best illustrated by the following statement of average temperatures at Havana for various hours of the day in all the months of the year :

MONTH.	A. M.				NOON.	P. M.				
	4	6	8	10		2	4	6	8	10
January	64.6	64.2	65.8	70.9	73.6	74.1	73.2	70.9	69.1	67.6
February	66.0	65.7	67.6	72.3	75.6	76.3	75.6	72.9	70.7	69.1
March	67.3	66.9	70.3	75.7	78.4	79.2	78.1	75.0	72.7	71.1
April	70.0	69.6	78.4	79.5	81.3	81.1	80.8	77.9	75.2	73.8
May	72.7	72.9	78.8	82.8	83.1	83.3	82.8	80.4	77.5	76.3
June	75.0	75.6	81.5	84.9	85.6	85.5	84.0	82.0	79.2	77.7
July	75.7	75.9	81.9	86.2	87.1	87.7	85.6	83.5	80.2	78.8
August	76.3	76.3	81.1	85.8	86.9	86.7	85.5	83.3	80.6	79.5
September ...	75.6	75.4	79.3	83.8	85.1	84.6	83.7	81.3	79.3	78.3
October	73.9	73.6	76.6	80.6	81.9	82.0	80.4	78.3	77.0	76.1
November ...	71.1	70.7	73.4	77.5	79.2	79.2	77.9	75.7	74.5	73.4
December ...	67.3	66.9	68.7	73.4	75.2	75.7	74.5	72.3	70.9	69.8

For comparison of the average records at Havana with other points in Cuba, as well as with certain cities in the United States, the following table is given :

AVERAGE MONTHLY AND ANNUAL TEMPERATURE IN DEGREES
FAHRENHEIT OF CERTAIN CITIES IN CUBA AND IN THE
UNITED STATES.

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.	Years Aver.
<i>United States :</i>														
Washington ...	33.2	35.8	41.3	53.0	63.9	73.2	76.9	74.6	67.8	56.2	44.5	36.2	54.7	25
New Orleans ..	53.8	58.1	62.0	69.0	74.6	80.3	82.4	81.5	78.3	69.8	60.7	55.5	68.8	25
Key West	70.6	72.2	73.0	76.4	79.6	83.0	84.4	84.1	82.8	78.9	74.7	70.5	77.5	21
<i>Cuba :</i>														
Havana	70.3	72.0	73.2	76.1	78.8	81.5	82.4	82.2	80.7	78.1	75.3	71.4	76.8	10
Ubajay	64.5	67.5	66.8	70.0	76.0	82.2	83.5	83.2	82.0	76.5	69.2	62.2	73.5	4
<i>Mines of San</i>														
Fernando ...	69.9	71.4	73.2	74.6	77.9	78.9	80.5	79.6	78.6	75.9	72.7	67.9	75.0	1
Matanzas	73.6	72.0	75.6	80.1	80.8	82.2	81.5	80.6	82.3	78.8	77.7	74.8	78.4	2
Santiago	77.0	77.0	77.0	80.0	81.0	83.0	83.0	83.0	82.0	81.0	79.0	78.0	80.0	1

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No better idea of the temperature can be given than to quote the following averages in Havana for each month of the past ten years:

Temperature.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	An'l.
Mean . . .	70.3	72.0	73.2	76.1	78.8	81.5	82.4	82.2	80.7	78.1	75.3	71.4	76.8
Highest . .	84.4	87.6	91.4	93.6	99.0	97.7	100.6	98.6	96.6	91.9	88.7	86.0	100.6
Lowest . .	52.2	49.6	55.0	52.9	64.4	69.1	71.2	69.8	70.9	61.7	56.5	51.8	49.6

With records available from the interior of the island, especially at higher altitudes, it is believed that the average temperatures would be far lower than anything which the tables can show, for it is well known that frosts sometimes occur on the tops of the highest mountains, and it is said that there has been even an occasional fall of snow. There is in Cuba one mountain, Pico de Turquino, 7,670 feet high, and another, Gran Piedra, 5,200 feet high, as well as several above 3,000 feet. Were the temperatures the same as in Jamaica, it would be found that on top of the highest peak the maximum temperature would be about 71 degrees; minimum, 46, and the average temperature, 55.7. On the next highest the maximum would be 69; minimum, 54.6; average, 59.7. It seems to be the peculiarity of altitudes of about 5,000 feet that the maximum temperatures are lower than at higher altitudes, and the minimum never so low.

Throughout Cuba, especially in the winter months, there is a liability to sudden changes in temperature, as great as fifteen degrees in three hours being on record. This, which in our latitude would not be considered serious, in the tropics is a very different matter, especially if accompanied by a "norther," so-called, which is nothing more or less than the effect of one of our cold waves. Though the mercury may not drop very low at such times, the chill is very uncomfortable, and will drive every native into wraps of some kind. As will

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have been seen in the tables which have been given, the maximum is reached between noon and two o'clock, at all times of the year, and the minimum between dawn and sunrise.

In conclusion, a word should be said concerning the peculiar transparency of the atmosphere. Despite the fact that the humidity is so great, objects can be seen as clearly and distinctly at great distances as in the high altitudes of our own Rocky Mountains. This continues into the night, and the light from the stars alone is ordinarily sufficient to guide the traveller on his way. While there is not a long twilight as in northern latitudes, the beautiful brief sunsets, immediately followed by darkness, are entirely different from those to which the visitor is accustomed at home.

SANITARY CONDITIONS AND CARE OF HEALTH

While the great amount of sickness among our troops at Santiago would appear to demonstrate the soundness of the general belief that Cuba is exceedingly unhealthy, the writer must adhere to the belief that such is not the case if the rules which should be followed by residents are duly observed, and there need be no hesitation in saying that if proper steps are taken to correct the evils arising from long neglect of all sanitary measures in the cities and towns, it will be found that, with the exception of certain low and swampy districts, Cuba is one of the healthiest tropical countries in the world. But the visitor or resident from the north should remember that he is in a country presenting conditions and peculiarities to which he is not accustomed, necessitating different methods of living and the observance of certain requirements, new to him, for the preservation of normal health or for the avoidance of endemic diseases.

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Lack of full knowledge on these matters, and the exigencies of military service preventing observance of the essential health rules, are unquestionably principally responsible for the illness of the American troops.

Commencing with the shores of the island, it may be said that while a moderate indulgence in sea bathing at the proper hours is very healthful in the tropics, precautions must be taken as to where the bathing is done, for sand beaches are rare on the Cuban coast, and where they do exist it will frequently be found that points and needles from the underlying coral rock project upward through the covering of sand, and are liable to cut the bather's feet. Again, very few beaches exist from which sea porcupines and similar prickly mollusks are absent, while the deeper adjacent waters may have sharks or poisonous sting-rays. The usual practice, in connection with sea bathing in Cuban waters, is to fence off a carefully prepared portion of the sea front from adjacent waters, removing everything that can possibly be injurious from the area thus enclosed and entirely covering the bottom with clear sand to a good depth.

It must also be remembered that even scratches or slight abrasions of the skin may be dangerous in Cuba, and should be promptly cauterized or dressed with antiseptics, in order to guard against tetanus, which is exceedingly common; hence a bottle of diluted carbolic acid is usually found in the Cuban household. An experienced Cuban physician states that two injections of anti-toxine are practically a specific for the variety of tetanus found in the island, being successful in ninety-nine cases out of a hundred.

The first thing necessary to prevent attacks from dysentery and the serious malarial fevers so common in many portions of the island, is to avoid getting one's clothes or body wet, especially one's shoes and stockings,



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and remaining in them, or sleeping out of doors with no protection from the night dew. Danger from the night dew can be avoided, to a great extent, by building large fires about a camp. Neglect of this precaution also subjects one to risks from yellow fever, the best preventative for which, besides the general rules just outlined, is to indulge freely in the milk of the green cocoanut, which is abundant everywhere on the island, and is the coolest and most refreshing drink imaginable. This causes ready perspiration, and seems to fortify the stomach against disease. The milk is also said to possess wonderful curative properties in kidney and kindred diseases. It should not, however, be taken to excess on a full stomach.

The great majority of streams and springs of the island will be found to contain exceedingly pure water. When this is not the case the native method of purifying it should be followed, which consists in squeezing lime-juice plentifully into the vessel containing it, and then introducing a good-sized lump of charcoal, which quickly clarifies the water, removing, as the Cuban rightly maintains, its impurities.

The use of alcoholic stimulants had better be avoided altogether, if previous habits permit total abstinence. Otherwise, a little wine, preferably red, may be taken at breakfast and dinner, well diluted with water or seltzer. Unfortunately, the wines commonly used are the heavy, alcoholic vintages of Spain, but this defect may be partially overcome, as already suggested, by plentiful dilution with water. An excellent quality of sweet cider, made in Spain, is frequently purchasable, which is not only an excellent substitute for wine, but also appears to act beneficially on the liver.

Some of the tropical fruits can be safely indulged in, such as oranges, lemons, limes, and pineapples, but

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the banana upon its native heath is supposed to be especially dangerous to the unacclimated. The numerous other fruits it is well to avoid, unless some intelligent native advises the eating of some particular variety as being entirely safe.

Personal cleanliness is, of course, important. One should never stir out in the morning without having taken at least a cup of coffee, but a hearty meal should not then be eaten. Adoption of the usual Cuban custom of taking a roll and a cup of coffee immediately upon rising, and then proceeding to do the hardest work of the day, returning to a substantial breakfast at eleven o'clock, cannot be improved upon. Then remain quiet until, say, three o'clock, taking a very short siesta, if possible. In the latter part of the afternoon and evening one may practically do as in this country.

The midday sun should be avoided as much as possible. If obliged to be exposed to it, an umbrella should be carried. Probably the best headwear is the "Jipi-japa," or Panama hat. When overheated, as will inevitably be the case if much exercise is taken, draughts should be avoided, particularly on the back. This injunction it will be found very difficult to carry out, because all doors and windows are constantly open and draughts prevail in all directions. Unless one is greatly heated, these do not seem to be as dangerous as in the north.

It is wise always to have at command the usual remedies for yellow fever; namely, citrate of magnesia, castor oil, and lime-juice, as well as a plentiful supply of quinine. As regards yellow fever, it may be interesting to know that more than five times the number of Cubans die annually from consumption than from this much-dreaded disease, and yet consumption is not nearly as common in Cuba as in the United States. Further, statistics show that with proper treatment less than

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eight per cent. of those attacked with the disease die, if they have prompt medical attendance.

There is probably more leprosy in Cuba than in the Sandwich Islands, and occasionally abhorrent sights are presented by those suffering from the disease. Some of the best physicians, however, state that there is no danger of a clean white man being affected. That peculiar form of it known as "elephantiasis," which produces abnormal swelling of the lower extremities, is constantly seen on the streets of Havana, especially among the professional beggars.

In connection with these suggestions, it may be well to remark that the greatest differences exist between the sanitary conditions of the various parts of the island. The lowlands and swamps are, of course, exceedingly unhealthy. The same may be said of nearly all the cities, but unless situated in localities such as those just referred to, good boards of health would soon change the unfavorable conditions. The plains and hills of the interior are exceedingly healthy, and some of this territory is perhaps as healthy as any in the world, as is evidenced by the longevity of the inhabitants. There could not be a purer atmosphere or a better watered country, the springs and streams being purity itself, while the natural drainage is excellent. In short, there is as much difference between the seacoast swamps and mountains of Cuba, as there is between the seacoast and mountains of Georgia.

An excellent general rule for the preservation of health in the tropics is the apostolic injunction: "Use moderation in all things."

In view of the intense heat of summer, and the force of the sun's rays at midday, it is remarkable that cases of sunstroke are very infrequent.

CHAPTER IV

DESCRIPTIVE GEOGRAPHY

LOCATION AND DIMENSIONS OF THE ISLAND OF CUBA.—THE ADJACENT ISLANDS AND KEYS.—TOPOGRAPHIC AND STRATEGIC FEATURES.—THE MOUNTAINS AND THEIR FORMATION.—CHARACTERISTICS OF THE COAST LINE.—BAYS AND HARBORS, REEFS AND KEYS.—PERILS OF NAVIGATION.—LIGHTHOUSES.—ARABLE LAND ON KEYS.—VEGETATION.—THE SWAMPS AND MARSHES.—THE PLAINS.—RIVERS AND STREAMS.—NAVIGABLE WATER COURSES.—LAKES.—SPANISH AND AMERICAN MAPS.—TRANSLATION OF NAMES AND EXPRESSIONS FOUND ON MAPS.*

CUBA lies directly south of the State of Florida, between longitude 74° and 85° west of Greenwich, and between 19° and 23° north latitude. The longitude of Washington, D. C., is exactly the same as that of the boundary line between the two easternmost provinces of Cuba.

From Key West, Fla., to the nearest point of the island, is a distance of 86 miles; from Key West to each of the two principal seaports of Cuba—Havana and Matanzas—both situated on the northern coast, the distance is approximately 95 miles. As has been stated by nearly every writer upon the subject, the shape of the island is that of a long, irregular crescent, extending from east to west, its convex side being to the northward. Owing to its peculiar form, to give the exact length of the island is somewhat difficult, authorities of equal

* A list, giving the translation of Spanish geographical terms, will be found at the end of this chapter.

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repute quoting it variously from 730 to 810 miles. These discrepancies undoubtedly arise from the different courses followed in making the measurements. Ordinarily the extreme length directly from east to west is considered 760 miles. The maximum width is given by good authorities at from 135 to 160 miles. Avoiding the running of diagonal lines and extending them to the ends of projecting points, it may fairly be said to be from 125 to 140 miles at several points in the eastern provinces. The narrowest point is practically on the line of the western or Mariel trocha, where the distance is only 24 miles. In the locality of Havana, it is about 30 miles across the island. Measured from the extremities of the capes, the extent of the coast line is about 2,200 miles, but including all indentations, is about 6,500 miles. Eliminating shoal-water indentations, the coast line can be considered to reach a length of slightly over 3,000 miles.

The area of the island is variously stated at from 43,500 to 47,000 square miles. This apparent discrepancy depends chiefly upon how many of the adjacent islands and keys are included in the computation, and whether English or Spanish miles are used. For all practical purposes, the extent of the island proper may be considered about that of the State of New York or the State of Virginia. Perhaps the most accurate official statement of extent is: Cuba, 43,319 English square miles; Isle of Pines, 1,214 English square miles; adjacent islands and keys, 1,350 English square miles; making a total of 45,883 English square miles.

Cuba divides the entrance of the Gulf of Mexico, creating two passages; one, the Straits of Florida, separating the island from the coast of the United States; the other, about 150 miles wide, separating the island from the coast of Mexico. Almost from its discovery the strategic importance of Cuba to the Western Hemi-

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sphere was recognized, Columbus designating it as the "Key to the New World." In all the intervening years, admirals, generals, and writers have confirmed this expression, until at present, when it has assumed even greater importance in this respect, owing to the possibility of the construction of the Nicaragua Canal to the Pacific Ocean, which would make it the key to perhaps the greatest pathway of commerce in the world.

As will be noted from the description following later, the coasts are, to a great extent, low, marshy, and unhealthful, but they are not subject to the frequent inundations stated by many of the authorities, for the rise and fall of the tide is only about two feet, except when rarely some extraordinary gale, blowing from some unusual direction, piles up the water; and in such localities there is nothing else to cause floods, for their topography prevents any rush of water from the interior, no matter how great, from having any serious effect along the coast.

MOUNTAINS

It has been frequently stated that the island is "traversed lengthwise by a mountainous range, broken at intervals." Perhaps more properly it could be said that the island is traversed lengthwise by a low watershed, varying from 100 to 400 feet in height, which occasionally sinks to lower levels, and out of which, or adjacent thereto, at intervals, rise mountainous peaks, or short independent ranges, which in the eastern provinces constitute a heterogeneous mass of mountains interspersed with fertile valleys. Along the southeastern coast this mass reaches usually to the water's edge. The formation of the mountains is frequently peculiar, rising in terraces, which, viewed in a practical way, would make road or railway construction comparatively easy, where

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a glance at an ordinary topographical map would seem to show it to be impracticable.

The highest and easternmost of the ranges is that of the Sierra Maestra, designated at various points by local titles, such as Cobre, in the vicinity of Santiago de Cuba. It properly commences near Manzanillo, turning eastward toward Cape Cruz, thence northward along the whole extent of the eastern seacoast of the province of Santiago de Cuba, to Cape Maisí, although certain geographers, as a distinct proposition, consider the range to terminate near Guantánamo. The highest peaks of Cuba are in this range: Pico de Turquino, 7,670 feet; Gran Piedra, 5,400 feet; Yunque and Ojo del Toro, each about 3,600 feet.

Inland from this range, extending well into the province of Puerto Principe, is the mass of hills, lower peaks, and short ranges mentioned.

Reaching the province of Santa Clara, near Trinidad, in the southeastern corner rises the independent peak, known as Pico de Potrerillo, to a height of 3,000 feet. This might almost be considered as the eastern extremity of the southern range so-called, which traverses the lower portion of the province as far as Cienfuegos, out of which rise the peaks of Pico Blanco, Cabeza del Muerto, and Vígla, all from 2,600 to 3,000 feet in height. Distinct from this range, toward the northern coast of the next province, Matanzas, is a range of hills and low mountains which are traceable well westward into the province of Havana. The most conspicuous elevation of the range is the "Pan de Matanzas," usually the first land seen from the sea by the visitor from the United States. It is a bold, conical peak of about 1,300 feet elevation, and derived its title from a supposed resemblance to a loaf of bread. The next highest elevations of this range are the Arcos of Canasí, hills of

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Camoa, and peaks of Managua, varying from 350 to 600 feet in height. Of the remaining province, Pinar del Rio, excepting the extreme eastern portion, it can be correctly stated that it is "traversed lengthwise by a mountainous range broken at intervals." Out of this range rises the highest peak westward from Santa Clara, the Pan de Guaijabon, 2,530 feet high. In the same range are the less important peaks of Cajalbana, Gaucamayras, Peñablanca, Galeras, Peñablanca de Linares, Peñablanca de Sta Cruz, Brujito, Barrabás, Manantiales, and San Diego, from 650 to 1,400 feet in height. In all of this range marble deposits are abundant, although the quality is not so good as elsewhere in Cuba.

The tops of a few of the higher mountain peaks of Cuba are rocky and bare, but generally the mountains are verdure-clad to their summits, and at the higher altitudes the soil is usually but little less productive than that of the plains and valleys, although better adapted to the cultivation of different products, such as coffee and cocoa, and the fruits and vegetables of the temperate zone. The geographical formation of the mountains varies in the different parts of the island, those of the eastern provinces consisting of one great calcareous mass resting on a schistose foundation. In the central and western provinces there is one formation of gypsum, one of clayey sandstone, and two of compact limestone. East of Havana, the secondary geological formations are pierced by syenitic and euphotide rocks united in groups, the syenitic strata being intercalated with serpentine.

COASTS, ADJACENT ISLANDS, AND KEYS

Commencing with Cape Cruz, at the extreme southerly point of the island, which is also the southwest cor-

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ner of the province of Santiago de Cuba, is found a rocky point perhaps seventy-five feet in height, crowned by one of the best lighthouses on the entire coast, which also serves as an important signal station with telegraphic connections. At its rear rises the southern end of the Sierra Maestra range of mountains, out of which, a few miles away, rises the prominent peak Ojo del Toro. About the cape, navigation is unobstructed, and vessels of deep draught might almost touch its precipitous sides. Proceeding eastward along the southern coast of the province of Santiago de Cuba, almost the same can be said of the entire distance to Cape Maisí at the easternmost corner, for, with brief exceptions, the whole shore is bold and mountainous, with deep water washing the base of the cliffs, and an offing free from reefs, shoals, or keys.

The ordinary course of the coastwise steamers is here quite close to the shore, and the panorama presented from the decks of these bears a close resemblance to that from a train moving between Denver and Cañon City in almost every respect, were the water eliminated; mountains in the distance of similar appearance and the same clearness of atmosphere. There are two important harbors on this coast, of which more is said elsewhere; Santiago de Cuba and Guantánamo, both fine, land-locked bays with narrow but deep entrances. There are also a few small, unimportant landing points that are scarcely worthy of the title of harbor, particularly that of Baiquiri or Daiquiri, near which the noted "Boss" Tweed was landed and secreted, and more recently the place of landing for the American army.

Now, proceeding westward along the northern coast of the provinces of Santiago de Cuba and Puerto Principe, from Cape Maisí to Nuevitas, or, more properly, slightly further, to the western extremity of Sabinal

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peninsula, about 200 miles, the same freedom from outlying rocks, reefs, bars, and keys exists as previously recited, except three small keys, Moa, Burro, and Yenas, between Cape Maisí and Nipe. Cape Maisí, while rocky, is not so bold as Cape Cruz. It possesses a similar lighthouse to the other, and there are no intermediate ones of importance.

For the last 100 miles of the distance from Cape Maisí to Sabinal, the shore is much less bold and inland mountains cease to be so conspicuous. After rounding Cape Maisí, the first important harbor and port is Baracoa, where the first European settlement was made on the island. This is not so thoroughly landlocked as the important harbors previously noted. Back of Baracoa rises the famous cone-shaped peak of El Yunque de Baracoa (the Anvil of Baracoa), well known as a mariners' landmark and over 3,000 feet high. Westward from Baracoa are good harbors, in the order named, at Tánamo, Cabonico, and Nipe, while several poor landing places and unimportant capes are met before reaching Point Mulas, an important landmark, which has another lighthouse and signal station. Now come good harbors at Samá, Naranjo, Jibara, Padre, and Nuevas Grandes, interspersed with several other fairly good harbors, landing places, and important projections. A lighthouse and signal station stands on one of these points.

Proceeding westward, the important port and harbor of Nuevitas is reached, at the entrance of which are two lighthouses and signal stations, one on Cape Maternillos and the other opposite; the harbor is thoroughly landlocked.

A short distance west of this point begins the almost continuous, indiscriminately arranged line of keys which extends westward for 300 miles to the vicinity of Matanzas. Close study of a chart can alone give a com-

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prehensive idea of the extent, location, and character of this mass of islands, keys, banks, and reefs, stretching along, or adjacent to, the Old Bahama Channel, and their enumeration by name would be impossible. The eastern end of the archipelago is known as the Jardines del Rey, and the western end as Sabaneque, or Sabana Camaguey, as well as by other titles. The divisional line between the two ends is at the island of Turiguanó, near the boundary of Puerto Principe and Santa Clara.

The largest of the keys and islands constituting the Jardines del Rey is Cayo Romano; and others of lesser size, but of some importance, are Cayo Media Luna, Cayo Coco, Turiguanó Island, Cayo Paredon del Medio, Cayo Guillermo, Cayo Cruz, Cayo Paredon Grande, Cayos del Baul, Guajaba Island, and Cayo Confites. There are lighthouses on Paredon Grande and Cayo Confites; also on the outlying Cayo Lobos. Nearly all of these are covered with a dense growth of mangroves, cocoa-palms, and similar vegetation, and some have springs of fresh water. The narrowest point of the Bahama Channel is between Cape Cruz and Cayo Romano, being only about fifteen miles wide. The shallowest part of the Bahama Banks is also in this vicinity. There are channels, of course, between most of the various islands respectively, as well as between them and the mainland, but even the best charts are of little service in these waters without a pilot.

The adjacent shore of Cuba, fronting the archipelagos, is nearly all of the same general character, and possesses the same class of vegetation, as the keys. Both lie low, and are to a great extent marshy, although on the main shore mountains are frequently to be seen in the distance; and just westward of the imaginary divisional line through the archipelago, near Remedios, the short range of the Sierra Bamburanao commences

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almost on the coast, and a hundred miles further west the still shorter range of the Sierra Morena.

Returning, for a moment, to the eastward, the first port and harbor of any importance back of the Jardines del Rey is Guanaja ; then Morón, which is the northern terminus of the eastern military trocha ; then Remedios. Continuing to follow the shore westward behind the Sabaneque, the next important harbor and port is Caibarien ; then that of Sagua la Grande ; next Chavez, not so good or important ; and then Cárdenas, of well-known importance. Landing places and small harbors are numerous along the section we are describing, but there is little but swamps and everglades shoreward from them.

Now as to the archipelago in front, composed principally of comparatively small keys ; if anything, more confusing and with more intricate channels and passages separating them : Cayo Hicacal, in front of Sagua harbor, has a lighthouse, as has also Cayo Francés, lying in front of Caibarien or Remedios, and Cayo Cádiz, at some distance in front of the less important port of Chavez, further west. Cayo Piedras de Norte, Cruz, and Diana of the cluster before Cárdenas all have lighthouses.

Among this general group of keys are some good harbors, notably Cayo Bahía de Cádiz, and Cayo Francés with its Bay de Calderas. All these keys, especially those in the vicinity of Cárdenas, are attractive in appearance, but the most remarkable in the entire group is the Cayo de Cinico Leguas, which has notably curious coral formations.

Between Cárdenas and Matanzas juts out Punta Francés from the peninsula of Hicacos, unimportant except as being the most northerly point of Cuba ; thence westward about 125 miles, to the important port and harbor of Bahía Honda, the shore is bold but not moun-

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tainous, excepting at a few points, and is entirely free from such outlying obstructions as those just described. In this portion of the coast is first the extremely good and important harbor of Matanzas, southeast of which is situated the famous landmark for those at sea—the Pan de Matanzas.

No important harbors exist between Matanzas and Havana, but attention should be called to the extensive sand beach extending westward from the mouth of the Cojimar River. It was there that the British landed in 1762 when they captured Havana.

Next westward from Havana comes the important city and harbor of Mariel, the northern end of the western trocha; then comes Cabañas, not quite so favorable a harbor; and next, the harbor of Bahia Honda, of which Humboldt said: “. . . the possession of which might well tempt any maritime power at war with Spain.”

From this point to the furthestmost point of the island, in the direction of Cape San Antonio, extends another archipelago of shoals, keys, and reefs, known at its eastern end as Bajos de Santa Isabel, and to the west as the Bajos Colorados, none of the constituent parts of either being worthy of individual notice.

Along this extensive section of coast, for nearly 150 miles there is not a harbor worthy of the name or a town of importance. Stretching along this coast but a short distance inland, from Bahia Honda to within thirty miles of Cape San Antonio, are mountains, the range broken twice at the northern end, but the rest extending continuously over the distance stated, known as the Sierra de los Organos. The shore at the base of these mountains is low and marshy.

Cape San Antonio, with the important lighthouse of Roncali, is at the extreme end of the island on the extensive peninsula of Guanacabibes, which presents a

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bold front to the sea, free from all outlying obstructions to navigation along its extreme southern front, eastward to the small bay of Cortés, a distance of eighty miles. The waters immediately offshore are deeper than at any other point adjacent to Cuba, but in this part there are no important harbors. Inland the peninsula is principally marsh land.

Covering the rest of the coast to the point at which we began our description, Humboldt may be quoted as follows :

“ . . . Between Point Piedras and Cape Cruz, nearly all of the coast is covered with shoals of which the Isle of Pines is but a part, not covered by water. The western portion is known as the Jardines and Jardinillos,—the eastern as Cape Breton, Cayo de Doce Leguas and the Bank of Buena Esperanza. The navigation of all this extent of the southern coast is dangerous, except from the Bay of Cochinos, to the mouth of the River Guanayara. The resistance offered by the elevated lands of the Isle of Pines to the ocean currents may be said to favor at once the accumulation of sand, and the labors of the coral insect which thrives in still and shallow waters. In this extent of 145 leagues of coast but one-seventh of it, lying between Cayo de Piedras and Cape Blanco, a little west of the harbor of Casilda, presents a clear shore with harbors. These are the roadstead of Batabanó and the bays of Jagua (Cienfuegos) and Casilda (Trinidad). East from the latter port toward the mouth of the River Cauto and Cape Cruz (inside of Cayo de Doce Leguas), which is full of springs, is very shallow and inaccessible and almost entirely uninhabited.”

Some slight additions can, however, be advantageously made to the quotation, as follows :

Batabanó, while not possessing a deep-water harbor, is the port of Havana on the south side of the island. The course of coastwise steamships eastward from there, nearly to Cienfuegos, is one of the most delightful sea trips imaginable, the water for a distance of over one hundred miles being so shallow that from the steamer's deck the white coral bottom of the sea, with its wealth

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of marine plants and creatures, can be plainly seen. This condition suddenly changes, however, before reaching the Bay of Jagua (Cienfuegos), and many miles of deep water and open sea in both directions stretch in front of the entrance to this magnificent, extensive, and deep land-locked harbor, which is one of the finest in the world.

Between Batabanó and Cienfuegos the extensive peninsula of Zapata juts out from the shore, covering the entire southern coast of the province of Matanzas, which is one extensive swamp, stretching even further inland than is shown on the maps. This is perhaps the most unhealthy, disagreeable, and least accessible of any extensive portion of Cuba.

Eastward, the harbor of Trinidad is nearly as accessible as that of Cienfuegos, but by no means as extensive or as good in any way as the last named.

Fifty miles further on is Júcaro, not easily accessible nor possessing much of a harbor. Its principal importance is as a cable landing, and it was the southern terminus of the eastern trocha.

Manzanillo comes next, a far more important town, possessing much commercial importance, but the harbor is not easily accessible, and the immediate entrance is especially intricate.

All along the southern coast are small ports visited by light-draught steamers and sailing vessels, but which, from the character of the country inland, are not sufficiently important to be considered as landing places.

The shores of Cuba long formed a safe refuge for pirates, because, although the surfaces of the keys and small islands are elevated but little above the water, still, with their extensive growths of vegetation, they were frequently complete screens for low-lying vessels, which could not be seen from their opposite sides, even at as short a distance as one or two miles.

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Cuba has a total of fifty-four ports, only fifteen of which, however, have heretofore been opened to the commerce of the world. Along the extensive and intricate coast line which has just been described, there are only nineteen lighthouses. An increase in these would make navigation far safer than at present, and is badly wanted. Improvements to many of the harbors are also greatly needed, and better wharfage facilities are required in every port of the island.

Many of the more important keys are cultivated. Cayo Romano, on the northern coast, especially is noted for the extent of its products. It has been owned for a considerable time by a French syndicate, which has conducted an extensive business in raising cattle, hemp, and cocoanuts. Some of the keys have a plentiful supply of fresh water bubbling up in the form of large springs. These are, no doubt, created by some of the numerous subterranean streams of Cuba coming to the surface at such points.

Large, natural salt pans, as they are called, exist also on the keys—that is, natural basins where the sea water is evaporated by the action of the sun, leaving deposits of a superior quality of salt for such a crude method of production. Locally, these pans have constituted an important source of salt supply, and probably, with some attention, could be made to supply a more extended market.

The vegetation which principally covers the keys and smaller islands is the mangrove and similar bushes, which grow to the water's edge, with their branches and offshoots even dipping into the sea, affording a resting place for oysters and similar shell-fish. These conditions give the keys a most attractive appearance at a little distance.

As has been indicated, some of the more import-



WATER FRONT OF CIENFUEGOS

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ant islands have a growth of larger tropical vegetation, usually consisting of some of the same character of tropical trees as those which flourish in Cuba itself. Some qualifications should be made in this respect as regards the Isle of Pines, the largest adjacent island, which is described in connection with the province of Havana, of which it is a part, politically.

Greater uncertainties as regards titles and surveys exist in connection with the ownership of most of the keys and islands than there are in Cuba proper.

Off the coast, at various points, are found springs of fresh water bubbling up in the sea. These are supposed to come from the same source as the fresh-water supply on the keys, viz.: from subterranean streams of the island finding an outlet.

The extensive swamps and marshes of Cuba lie along, or adjacent to, the coast, as has just been indicated, although there are some smaller ones further inland. The character of the seashore marsh differs somewhat from that of the independent inland swamp or from that portion which extends inland, if it be as large in area as some of them are—Zapata, for example. Along the seashore, the character of the vegetation is like that of the keys, or may consist almost entirely of rank reeds and grasses; but as the surrounding conditions become less salty, vegetation becomes larger and more varied in character, finally becoming an impassable mass of good-sized trees, interspersed with aquatic bushes, plants, vines, and creepers, such as can only be produced in the tropics amid similar conditions of soil, climate, and water. Many of these swamps have never been thoroughly explored, and are so unhealthy as to make the undertaking as dangerous as it is difficult. During the recent insurrection, more has doubtless been learned concerning them than ever before, for they have been the favorite haunts

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of the insurgents in the central and western provinces, where the more extensive swamps are located.

PLAINS

The major portion of Cuba's extent is neither mountain nor swamp, and with slight exaggeration the whole island might almost be said to rise in terraces, which have often broad steps. No better description of most of the territorial extent can be given than that of Humboldt :

“The face of the island is gently undulating, like that of England, and is not more than 280 to 380 feet above the level of the sea. At this and still lower levels are located the extensive plains of the central portions of the island in the provinces of Puerto Principe, Santa Clara and Matanzas, and of lesser extent in the other provinces, all richer, better watered and having more timber than those of our own west, and some of nearly as great extent ; all susceptible of the highest cultivation, or affording the best of grazing facilities.”

RIVERS AND STREAMS

The watershed which has been mentioned longitudinally traversing the centre of the island, prevents there being any streams of great length or extent, yet local geographers consider that there are some 200 streams which rise to the dignity of being termed rivers, while both above and below the surface of the earth are innumerable smaller ones. Cuba, perhaps, is the best watered of all tropical countries.

The importance of the streams differs greatly between the wet and dry seasons, or even between different times of the same day, for frequently what has been a dry arroyo or stream bed, after a few moments' rain, will contain a raging torrent, if the descent is rapid, or, if comparatively level, sufficient water to float a ship. The

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character and surroundings of the streams differ greatly according to their location, those of the mountains, hills, and higher plains containing water pure as crystal, while their courses, omitting the rich tropical vegetation, would resemble those of our own eastern mountains. Those located through the rich lands of lower elevation are naturally more sluggish, and cut through the deep soil, presenting the same character of banks and other features as the streams of our best agricultural southwestern States.

Along the lower coasts the streams possess the same characteristics as those of the lower Mississippi valley—very sluggish and brackish water, becoming more salt as it is backed up by the tides.

One peculiarity of the water courses of Cuba is that many streams sink into the earth and follow subterranean passages, never to appear again, or perhaps to reappear at some distance, and then again, perhaps, once more to disappear outright. One of the most striking examples of these is that of the River San Antonio. There are also, undoubtedly, extensive subterranean streams which do not appear on the surface at all.

The largest river of the island is the Cauto, which rises on the western side of the Sierra Maestra or Cobre range, and flows into the sea on the southern coast at the bay of Buena Esperanza, slightly westward of Manzanillo. Its entire length is about 150 miles, about sixty of which are navigable for light-draught boats. This river has served as the most important transportation route for bringing the valuable timber of the interior to the seaboard, and its commerce is almost entirely confined to rafts of such logs. Proceeding westward, the other important streams of the southern coast are the Salado, Sasa, Manatí, Hatibonico, Yateras, Cuyaguaje, Jobabo, Najaza, Hatiguanico, Damují, Arimao, Palacios,

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San Diego, and Güines. The waters of the last named are extensively used for irrigation. Most of the others are said to be navigable for light-draught vessels for certain distances, but correctly speaking, such navigation generally takes place on arms of the sea extending inland, into which these streams flow. Returning to the northern coast, in the extreme northeastern corner of the province of Santiago de Cuba is the River Moa, which forms a magnificent cascade 300 feet high, in a cavern lying within a hill of the same name as the river, and which flows into the sea near Baracoa.

The most important river of the northern coast, and second of the island, is the Sagua la Grande, which enters the sea near the city which bears its name. This is navigable for a distance of twenty miles from its mouth.

Next in location, progressing westward, as well as in importance, is the Sagua la Chica, navigable for something like ten miles. Of less importance are the North and South Hatibonico del Norte, the Sagua de Tánamo Naranjo, Toar, Saramaguacan, Mayarí, Máximo, Palma, Las Cruces, Yumuri, San Juan, Almendares, Marianao, and Camarones. Like kindred rivers of the southern coast, their mouths are arms of the sea which bear their names, and are generally navigable for small craft for a few miles.

There are small streams in nearly all the valleys of the island, but they, and springs, which are numerous in all parts, are slightly more plentiful on the southern coast than on the northern.

Mineral springs of widely varying characteristics are exceedingly common.

LAKES

These are neither numerous nor extensive, unless salt-water lagoons are included under the title ; yet inland

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there are a number of small sheets of water which are frequently attractive, both from the beauty of their tropical surroundings and from their clearness, while some combine curious connections with subterranean streams, either feeding or draining them.

MAPS

The Spaniard, especially in later days, has not been a good or an entirely reliable map maker, while the foreigner who has essayed anything in the direction of producing maps of the island has been compelled to secure the bulk of his data from doubtful Spanish sources, especially as regards the interior. It is not surprising, therefore, that many inaccuracies are to be found in nearly all existing maps, for in addition to the defective basis of their production, many recently published for popular circulation have evidently been prepared by those who have forgotten that the Spanish unit of distance is the kilometre or the "legua" instead of the mile; who have mistaken the most ordinary of country roads for steam railway lines, or who have made equally serious mistakes in the location and importance of cities, towns, and villages. The situation is, perhaps, best illustrated by stating that the writer has examined more than fifty maps of Santiago de Cuba and vicinity published by the daily papers, all of which have been incorrect in important particulars. While, of course, accuracy in such matters is not as important in commercial affairs as in military or naval operations, nevertheless, all who seek knowledge of countries new to them first examine the maps, and while all of such published on Cuba do, of course, give a general idea of the shape of the island, it has been considered well to call attention to the foregoing facts at the outset, as well as to the fact that many

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Spanish terms and expressions are used on nearly all of the available maps, for a correct understanding of which a translation of terms most commonly used thereon is given at the close of this chapter.

It may also be stated that frequently a desire to glorify Spain has animated the Spanish topographers more strongly than a wish to be accurate, for some of the general maps show Cuba as large as the United States, and Spain greater in size than the entire North American continent.

The peculiar Spanish custom of giving everything a name grandiloquent in sound or odd in expression, be it house, farm, bridge, or topographical peculiarity, is frequently misleading in their more detailed map work, these unimportant features often being shown in type as conspicuous as that used to designate far more important features. Much of this peculiarity has crept into some of the American reproductions of the original Spanish maps.

The best American maps of Cuba readily available to all are the two recently produced by our Government.

First, the military map prepared by the Military Information Division, Adjutant-General's Office, War Department, 1897. The only criticism which can be made upon this map relates to the superfluity of meaningless names; this from the cause just above recited.

Second, the map produced by the Hydrographic Office of the United States Navy, 1898. This is an excellent one, and is by far the best for ordinary uses that has yet been published.

In the production of a work like the present, it is practically impossible to introduce single-sheet maps of the same size as either of the two just mentioned; and while several maps are inserted to show the provinces of the island in greater detail, and to designate the loca-

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tion of the various groups of mines in Santiago de Cuba, yet, for a study of the geographical and topographical features of the island, with its surroundings, in their entirety, no better reference can be made than to the above-mentioned official maps.

To avoid confusion in studying any phase of the problem, attention should be called to the frequent duplication of names, such as occur not only in the different provinces, but occasionally in the same province.

TRANSLATION OF NAMES AND EXPRESSIONS FOUND ON MAPS

<i>Spanish.</i>	<i>English.</i>	<i>Spanish.</i>	<i>English.</i>
Abajo,	Down, or below.	Ciudad,	Town.
Agua,	Water.	Cobre,	Copper.
Almacenes,	Warehouses.	Collado,	Hill.
Americano,	American.	Colonia,	Settlement.
Arriba,	Up, or above.	Correo,	Post-office.
Arroyo,	Water course ; small stream.	Embarcadero,	Wharf.
		Ensenada,	Cove ; small bay.
Bahía,	Bay.	Escuela,	School.
Bodega,	Tavern.	España,	Spain.
Bolsa,	Public exchange.		
Bosque,	Forest ; woods.	Ferro carril,	Railroad.
		Floresta,	Forest.
Cabaña,	Hut.	Francia,	France.
Cabildo,	City hall.	Fuego,	Fire.
Calle,	Street.		
Calzada,	Macadamized road.	Ganado,	Cattle.
Camino de hierro,	Railway.	Granero,	Barn.
Camino real,	High road.		
Camino,	Road.	Hacienda,	Farm.
Campo,	Country, or field.	Hierro,	Iron.
Cárcel,	Prison.		
Casa,	House.	Iglesia,	Church.
Cascada,	Waterfall.	Ingenio,	Sugar plantation.
Catedral,	Cathedral.	Inglaterra,	England.
Cayo,	Key, small coral island.	Isla,	Island.
		Italia,	Italy.
Central,	Sugar mill which grinds for several plantations.	Kilometro,	Approx., $\frac{1}{3}$ mile.
Cielo,	Sky.	Lago,	Lake.
Ciénaga,	Swamp.	Laguna,	Lake.

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<i>Spanish.</i>	<i>English.</i>	<i>Spanish.</i>	<i>English.</i>
La Mar,	The sea.	Puerta,	Gate ; door.
Legua,	Approx., 2½ miles.	Puerto,	Port ; harbor.
Loma,	Hill.	Punta,	Point or Cape.
Lugar,	Place ; village.		
Luna,	Moon.	Quebrada,	Gap.
		Rio,	River.
Mercado,	Market.	Santa,	Saint (feminine).
Metales,	Metals.	Santo,	Saint (masculine).
Milla,	Mile.	Silva,	Wood.
Molino,	Mill.	Sierra,	Mountains.
Monte,	Mountain ; country.	Sol,	Sun.
Mundo,	World.	Surgidero,	Anchorage.
Oro,	Gold.		
		Taberna,	Tavern.
Palacio,	Palace.	Teatro,	Theatre.
Plano,	Map.	Tienda,	Shop.
Plata,	Silver.	Tierra,	Land.
Plaza,	Public square.	Torre,	Tower.
Posada,	Hotel.		
Potrero,	Cattle farm.	Valle,	Valley, or dale.
Prado,	Meadow.		
Puente,	Bridge.		

CHAPTER V

TRANSPORTATION AND COMMUNICATION *

PRIVATE RAILWAY LINES ON SUGAR PLANTATIONS.—GENERAL RAILWAY SYSTEM OF THE ISLAND.—DETAILED DESCRIPTION OF ALL OF THE PRINCIPAL RAILWAY LINES.—THE COUNTRY THROUGH WHICH THEY PASS AND THE CITIES, TOWNS, AND VILLAGES WHICH THEY CONNECT.—ROADS AND TURNPIKES.—THEIR IMPORTANCE AND THEIR PRESENT CONDITION.—NEED OF HIGHWAY IMPROVEMENTS.—WATER TRANSPORTATION.—LINES OF REGULAR STEAMERS ; OCEAN AND COASTWISE.—TELEGRAPH LINES.—THE TELEPHONE SYSTEM.—OCEAN CABLE LINES.

RAILROADS

THOUGH detailed descriptions are about to be given of the routes of all the principal railway companies of Cuba, aggregating approximately 1,100 miles of track, some general remarks may properly be made concerning these and other roads of which the writer is unable to furnish any definite details, but of which it can be said that the best authorities on the subject believe that at least 120 of the larger sugar and tobacco plantations have had private railroads. These have been of every description, from a few hundred feet in length of portable railway track to a system of seventy miles of standard gauge, controlled by a single large plantation company. The smaller of these private lines have been utilized simply

* Fuller descriptions of cities and towns than are here given will be found in the chapters dealing with the provinces.

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for the transportation of cane from the fields to some sugar mill; while those of more importance and greater extent have reached out through many plantations from some large *central* (sugar mill), which in turn has a line running to the nearest point on some general public railway, or connecting with some shipping point on the coast. Many of these private lines are found in the Havana and other sugar-producing districts. There are also roads of a similar character in the province of Santiago de Cuba, connecting mines with the seaboard, the most notable of which is that of the Juragua Iron Mine Company, which has some twenty miles of track, with those of the Spanish-American and Sigua companies, while a poor line connects the harbor with the old copper mines at Cobre. The only street railway systems on the island are a short mule line in the city of Puerto Principe and the street railway system at Havana described in connection with that city, part of which consists of the Vedado Steam Dummy Line. Several of the railroads hereafter described, it will be noted, are local lines simply, running back from seaports to the interior and having no junctions with other lines; but of these and of certain of the private lines it can be said, that they may form the nuclei for important extensions which will eventually constitute extensive railway systems.

Now, referring to the general railway system of the island, it should be stated that, as shown by the better maps, it commences in the east at the city of Santa Clara and terminates in the west at the city of Pinar del Rio, the centre of the system, and its great objective point, being Havana; though this statement should be qualified somewhat by pointing out that, for freight traffic at least, the general tendency of Cuban transportation has been to reach the nearest point on the sea-coast from which shipments could be made by water.



STATION AT JARUCO, ON THE RAILWAY FROM REGLA TO MATANZAS

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Owing to the peculiar shape of the island, it being long and narrow, and consequently the distance from any point in the interior to the seacoast not being great, this tendency must always continue to a large extent, and while there is the greatest necessity for an extension of the general railway system eastward from Santa Clara to the city of Santiago de Cuba, a distance of approximately 280 miles, it will be found when this is completed that the operation of the lateral branch lines to the coast, like the branches from the present east and west lines, will be more remunerative than the operation of the trunk lines. The extension of the general system to which reference has just been made has long been contemplated, both by the Spanish Government and private individuals, and no less than three different surveys have been made with that object in view. The country which it would open is the least developed of all the island, is rich agriculturally, and is exceedingly well stocked with timber and minerals.

The existing roads may all be presumed to be of standard gauge, 4 feet 8½ inches, unless special mention is made of any variation in our detailed description. The methods of construction followed are in accordance with both the American and English systems—in the former the rails being spiked directly to the ties, and in the latter the rails being laid in iron chairs and held in position by means of wooden wedges. Some companies have followed both methods of construction. To a great extent the roads are well ballasted with stone, and some heavy steel rails, weighing from sixty to eighty pounds per yard, have been used; but, generally speaking, the tracks are of light weight, and consequently many of them are rough. No doubt, owing to neglect during the later years of the present insurrection, much of the trackage will be found to be in exceedingly bad condition, for on

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account of the heavy tropical rains, unless tracks are well ballasted and drained, constant surfacing is required.

The rolling stock of the various companies has consisted principally of the American type of locomotives and cars, neither being as large nor as heavy as those now used on the American roads, and it is presumed that, owing to the experience of the past three years, both they and the station buildings will be found to be badly run down. Yet as all the railway lines have been used extensively by the Spanish Government for military purposes, this situation may not be so bad as might naturally be expected, and undoubtedly, if the railway companies are able to collect their bills against the Spanish Government for the transportation of troops, they will all be in fairly good condition financially. It is natural to believe, however, that there will be some uncertainty regarding their ability to make these collections. Some of the more important lines are owned by English capitalists; hence it is fair to suppose that serious and perhaps successful efforts will be made to have the bills of these lines paid.

Owing to the excessive tariff on all railroad material, especially rolling stock, it will be found that none of the lines have a surplus of the latter, and the universal tendency has been to use locomotives and cars until they actually fall to pieces. Some of the roads have well-equipped shops, while others are deficient in this respect. The roads in the central and western part of the island use coal-burning locomotives; in the eastern portion, wood burners.

But few facts are obtainable as to the earnings of any of the railway companies, yet occasional references are made to 10 and 15 per cent. and even larger dividends in the past, and it seems as if every line of importance on the island, if properly managed, should make

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large net earnings. Some of the smaller and private roads are owned by Americans, but the majority of the companies are controlled by Spanish and English capitalists. The United Railways Company (Ferro Carriles Unidos) has a very close relationship with the Banco de Comercio, one of the two chartered banking institutions of Cuba. While ostensibly a Spanish institution, it is believed that considerable English and some German capital is invested in this bank. This is the old railway system of the island. The next in importance, the Western Railway Company (Ferro Carril del Oeste), is owned entirely by English capitalists, who have intended to make important extensions. The system was commenced some forty-five years ago by a Spanish company, which continued in control until 1891, without extending the line as should have been done, and without making good returns upon the investment. In the last-mentioned year it was acquired by the present company, which has handled its affairs admirably.

HAVANA TO BATABANÓ BY THE UNITED RAILWAYS COMPANY (FERRO CARRILES UNIDOS).

While formerly the terminus of this road was at Villanueva, in the heart of Havana, since March, 1896, the authorities have not permitted trains to run further into the city than the station at Pueblo Nuevo, which is slightly less than two miles from the former terminus, near the foot of the hill El Príncipe, and about two miles distant from the southern side of the harbor. The station is a rickety, wooden affair, altogether insufficient for the necessities of travel, and is usually crowded with peddlers of lottery tickets, cigars, papers, and trinkets. Two tracks enter the station. These terminate in a single track for a short distance, which again runs into

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a double-track line extending to Rincón, some fourteen miles to the south. The immediate surroundings of the station to the northward are good, the former summer palace of the Captain-General and, on the Paseo de Tacón, other suburban residences of the better class being near it. But to the southward lies one of the most miserable suburban sections of the city, through which the railroad passes. The tracks lie almost under the shadow of the impressive fortification of El Príncipe, and at a distance of four miles from the station enter a valley which extends southward from Havana, through which also runs the Marianao Railroad, and but a short distance eastward, behind a range of hills, is the Western Railroad, which crosses this line at Rincón.

The Hill of the Jesuits (Loma de Los Jesuitas), of some local note, being crowned by the famous Catalan Club, is passed, and at a distance of about one and one-half miles the suburban station of Ciénaga is reached. This is an important junction, the tracks being crossed by the Marianao Railroad, as well as by the tracks of a line extending around the head of the bay to Regla. Connections are made with these roads, and at this point are located roundhouses and railroad shops, while a short but somewhat important bridge is on the connecting road to Regla. The *calzada* of Marianao is also crossed at this point. The route of the railroad to this point has been through a low, open country, although the surrounding scenery at a little distance is somewhat impressive, as a range of hills lies between it and the sea, while eastward are also hills, although the immediate country to the east and north is to a great extent level and open, being devoted principally to market gardening. A mile distant to the southwest of Ciénaga is the small suburban town of Puentes Grandes, a station of the Marianao Railroad. The route now runs through a

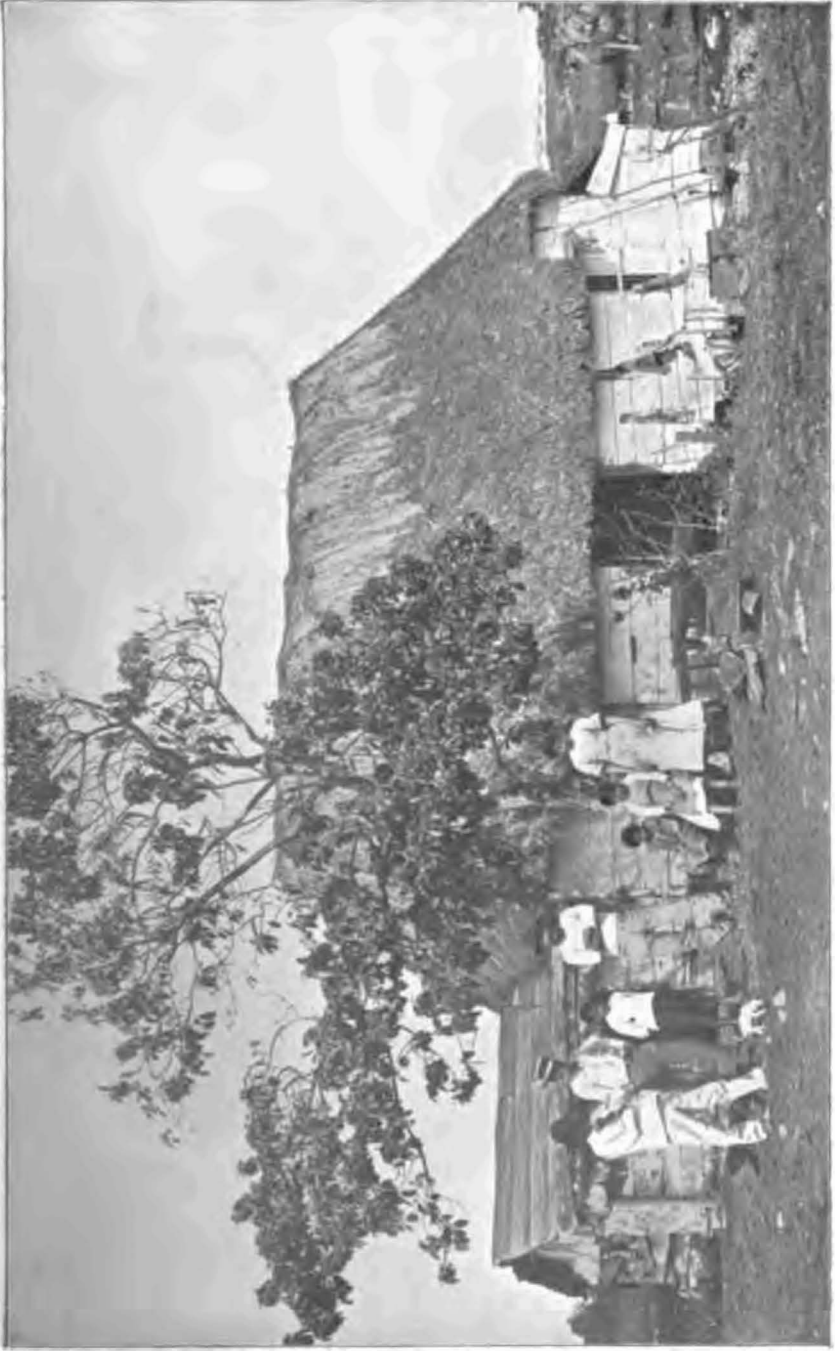
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low, level valley of some width, thoroughly cultivated for market gardening. An unhealthy-looking stream lies to the eastward of the track in an open ditch, which formerly supplied Havana with water. Passing on, low hills are crossed, and at a distance of about seven miles, the main aqueduct of the city is passed, eastward from the track. Here several houses are seen. A short distance beyond, the line crosses the Almendares River on an iron bridge some sixty feet long. On its banks are situated the unimportant town of Almendares, seven and one-half miles from Havana. A short distance further, a branch runs westerly to the sugar estate of Toledo. The immediate surrounding country is rolling and thoroughly cultivated with cane. The country next becomes somewhat rougher, and frequent grades are met; now the tracks lie at the top of an embankment, and then rock cuttings, twenty to thirty feet high, are passed through, until, at a distance of about nine miles from Havana, it is hilly and brushy. To the eastward a glimpse is caught of the Vento water-works, the present sole supply of the city of Havana; then to the westward are the extensive buildings of the lunatic asylum. At a distance of ten and one-half miles from Havana is the unimportant station of Ferro, which is merely a cluster of small houses, and from which, running westward, is an unimportant branch track. The adjacent country is still broken and brushy, which continues until the station of Aguada del Cura is reached, about which there is some cultivation of tobacco, as well as cane and a few bananas, with a little corn. This place is only a hamlet, but possesses a stone station and a wooden platform, and also a water tank. Two miles further on, the country is less broken but perhaps more brushy, and is to a great extent wooded. The boundaries or divisions are indicated more frequently by cactus hedges than by walls of stone. This condition exists

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until the town of Rincón, fourteen and one-half miles from Havana, is reached. Before entering the station a switch branches to the east, connecting it with the Western Railroad system, and 100 yards distant the route which we are following crosses the Western Railway. About one-half mile distant from the station the Guanajay line branches off to the west. The line is, as previously stated, up to this point practically a double track, and is well ballasted to a great extent with stone. The remainder of the road to Batabanó is a single-track line, but equally well ballasted. The next station, Bejucal, described in detail elsewhere, is seventeen and one-half miles distant from Havana. The line parallels a ridge of hills at a distance of 1,500 to 2,000 feet, along the side of which extends the *calzada* from Havana to Bejucal, paralleling same at a distance of approximately one-half mile, the *calzada* being at a greater elevation. The country through which the line travels is level, rich, and well cultivated. Reaching Bejucal, a fine new stone and iron station building is found which is creditable to the company, and there are numerous side tracks and switches.

Just beyond Bejucal, the railroad crosses the *calzada* connecting San Felipe and Bejucal. The country now is rich, thoroughly cultivated with cane and corn, and while open, is to a slight extent rolling. Farms are divided by stone walls, and huts are seen surrounded by patches of bananas. At a distance of twenty miles from Havana, the small hamlet of Buena Vista is passed, and the country is constantly growing more level and open, with a richer soil. Cactus hedges are taking the place of stone walls to separate landed properties. A mile and a half further on is a small, nameless station with a side track, about which stone walls are plentiful. The range of hills which we have been following is now three



A NATIVE FAMILY AT HOME

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or four miles to the north. Two miles further on, the *calzada* from Bejucal to Batabanó is again crossed, and a short distance further, twenty-four and one-half miles from Havana, the station of Quivican is reached. The station is of stone, and there is a large platform for loading sugar. A branch sugar line from the south runs into the station, and there are a number of side tracks, for while the town in itself is unimportant, it has been a junction or shipping point of considerable importance for the surrounding agricultural district. Just beyond the village the tracks cross a double arch stone bridge some forty feet long. The surrounding country is becoming more and more fertile, and cane growing has been extensive. Again the *calzada* from Bejucal to Batabanó is crossed, after passing through a slight cut. The next station, San Felipe, twenty-six miles from Havana, is reached after passing through several small cuts. This town is described elsewhere. It is an old, tumble-down place of 1,500 to 2,000 inhabitants. The railroad station is a small, dilapidated wooden affair, and there are numerous side tracks, storehouses, and water tanks. Shortly beyond the station, a branch runs eastward to Alfonso Doce, while the main line continues on to Batabanó. Once more the railway crosses the *calzada*. Our course is now slightly eastward, and a short distance from Batabanó we cross the river bed on an iron bridge forty feet long, supported by substantial stone abutments, with a pier in the centre. This stream is dry except during the rainy season. Near this point is a large sugar mill, and all the country through which we are now passing is rich with cane. Then comes a good-sized piece of territory which is covered with coarse grass and is uncultivated, but which in the past, strange to say, has not supported many cattle, although to the north huts and cane fields, evidences of cultiva-

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tion, are in sight. Once more we cross the *calzada*. Then the country continues open and slightly rolling, wooden fences taking the place of stone walls and hedges. Grass is plentiful, and some cane is cultivated. A short distance further, the country becomes entirely flat and has been thoroughly cultivated in cane well studded with palms, and as we advance cane cultivation continues, occasionally interspersed with rich meadows, until, a short distance further, there is some grass land, and cane cultivation has practically disappeared. We then reach the next station, Pozo Redondo, distant thirty-one and one-half miles from Havana. This is an unimportant place of less than a dozen wooden houses, but there are side tracks and a water tank. From this point branches a sugar road, connecting with a *central* named Santa Lucia. The immediately surrounding country is quite brushy and shows little cultivation. At this point the *calzada*, which has been following the track, makes a turn to the eastward and runs directly to Batabanó, somewhat over three miles away; but continuing our route, the country remains uncultivated until in the immediate vicinity of the station of Quintana, three-quarters of a mile further west, this station being located in the town of Batabanó, the town proper being one and one-half miles to the east, connected with this station by a good road. About the station are cane fields, although beyond is thick underbrush preventing cultivation, and from this point to the terminus of the road, La Playa del Batabanó, thirty-four and one-half miles from Havana, the ground is low, marshy, and impassable, excepting at the railroad embankments. Considerable sugar is shipped from Quintana, coming from mills lying to the westward. Continuing our route for the last one and one-half miles, on each side of the embankment supporting the road are deep ditches usually filled with water,

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while, as mentioned elsewhere, the surroundings are exceedingly swampy. As we approach the terminus at La Playa, we pass a fine *calzada*, connecting the town of Batabanó proper with its seaport. The road terminates at the "surgidero," or anchorage.

HAVANA AND GUANAJAY LINE—UNITED RAILWAYS CO.

This line of the island's most important railroad company commences at the company's Pueblo Nuevo station, in the city of Havana, and for a distance of fourteen and one-half miles to Rincón is over the tracks of the line running southward across the island to Batabanó, just described. The line is a double track from Ciénaga, a suburb of Havana, to Rincón, where the branch road from the main line running westward to Guanajay begins. From this point to its terminus it is a single-track earthen-ballasted line, somewhat rough at all times and especially so during the rainy season. For the first two miles from Rincón, going westward, the country is slightly rolling, the soil rich, but not so much so as elsewhere, and consequently not so highly cultivated. A few huts are in sight standing amidst the bushes. Soon the country becomes open and level, and a bridge some thirty feet long, with substantial stone abutments, is crossed, and a low cut passed. The country continues level and open, dotted with palm trees and ordinarily showing good crops of corn and tobacco, while cattle and horses are frequently seen. The boundaries between fields and farms are indicated by substantial stone walls, such as exist all the way from Havana, but which are now becoming more conspicuous. The first station of the branch line, Govea, is reached, eighteen miles distant from Havana, and rather less than four from the commencement of the branch. There is only a scatter-

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ing of huts about the station, which is, however, one of some importance as a shipping point for horses and cattle. The soil is of a rich character and naturally fertile. The immediate wagon roads are good in dry weather but abominable in the rainy season. Progressing, the country is still level and open, and palms are still in evidence, as well as bananas, corn, and various agricultural products. About four miles further on, the town of San Antonio de los Baños, described at length elsewhere, is reached, and after crossing a short bridge the train stops before a neat stone depot where are two side tracks and a water tank. Tobacco is now frequently coming into view, with the other agricultural products mentioned. About a mile further on is the suburban station San Antonio, and within sight to the north is a low range of hills, covered with tropical vegetation. At the south the country is slightly rolling but generally open, having many royal palms. Soon the country on both sides of the track becomes open and level, but somewhat brushy, and cut up to a great extent by divisional lines of small stock farms. Corn crops are prominent.

The next station is Seborucal, about twelve miles from the commencement of the branch line and twenty-seven miles from Havana. It has a small stone station with a single side track, and about a mile and one-half distant are some houses. Tobacco now becomes prominent, and cattle and horses have been among the principal products of the locality. Scarcely a mile further the similar village of Saladrigas is reached. The depot here is merely a shed, but large tobacco farms now become prominent, while a little further on bananas are again frequent.

Three miles further on is the more important town of Ceiba del Agua, described in full elsewhere, which is

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entered by a curve. It has a small stone station with stone platforms, and possesses perhaps fifty small houses, mostly huts, and a railway water tank. All the country through which we are travelling is constantly becoming richer, and corn, tobacco, bananas, cattle, and horses have in the past been shipped from here in large quantities to Havana. This continues to the end of the line, slightly over four miles further, at Guanajay, which is entered through a rock cut. At the terminal is a stone station, with an adjoining stone warehouse and all the other facilities of a small railway line. The country to the south is pretty and open, and evidences of agricultural wealth are seen everywhere.

HAVANA TO LA UNION—UNITED RAILWAYS COMPANY.

Leaving Havana over the same tracks as those to Batabanó, this road branches from the main stem of the system at San Felipe, twenty-seven miles from Havana, and about eight miles from the southern terminus of the Batabanó line. The surrounding country is comparatively level and open and is planted with cane. Two miles from the commencement of the branch is a sugar station known as Durán. From thence the surrounding country is very flat and covered with cane, interspersed with meadows a little further on. At a distance of thirty-three and one-half miles from Havana we reach the village of Guara, where there are but a dozen or two of huts and houses, with a wooden station, which has possessed some importance as a cane and cattle shipping point. The wagon roads in this vicinity are said to be exceedingly good—for Cuba. The road passes onward through a country corresponding to that which has just been described, in the past well stocked with cattle and producing cane plentifully. Occasional

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huts are to be seen from the train, and palms are scattered abundantly over the face of the country.

The station of Melena is reached at a distance of thirty-seven and one-fifth miles from Havana, where there are three side tracks, a wooden station, and a water tank, with a large sugar mill a little to the right. The road continues on through a flat, rich, open country, and the small hamlet known as Palenque is reached at a distance of forty-one miles from Havana, where there are but half a dozen huts, but which in the past has possessed some importance as a shipping point for cane. A mile further on is another small station, La Casabería, where there is a small station house of stone, and a small sugar railroad running to the south.

At the distance of forty-two and three-quarter miles from Havana the important town of Güines is reached, described in full elsewhere. Up to this point the railroad is stone ballasted, and has been in excellent condition, but onward to La Union, thirty-eight miles further, the bed of the track is not so good. The intervening country is practically the same as has just been described—rich, and devoted principally to cane cultivation, though many horses and cattle are also raised.

Proceeding on from Güines, the next station is Rio Seco, an unimportant local village distant from Havana forty-nine miles. The next town, four miles further eastward, is San Nicolás. Six miles further, distant fifty-nine miles from Havana, is Vegas, an unimportant station. Five miles further is another unimportant station, Palos. Still further, at a distance of seventy-one and one-half miles from Havana, is another unimportant station, Bermeja. The terminus of the road is finally reached at La Union, seventy-seven miles distant from Havana, where connections are made with the Matanzas Railway system. The town in itself is unimportant.

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MATANZAS, VIA EMPALME AND GÜINES, TO HAVANA— UNITED RAILWAYS COMPANY

For the description of this road between Empalme and Matanzas, the reader may refer to the description of the line from Havana to Matanzas and Jovellanos, for, between Matanzas and Empalme, the tracks of the two roads are side by side. From the former place this road then runs in a southwesterly direction, joining the line from Havana to La Union at Güines, which is covered by a previous description.

Commencing at Empalme the road runs southwesterly through level country which is practically a valley, for there are mountains on all sides. For some distance the country is heavily wooded and the hills are lower. There is but little cultivation in this locality, and the principal product in the past has been cattle. There are a few garden patches and small meadows.

An unimportant station, Xines, is reached, in the vicinity of which some cane is seen, and the country is better cultivated and less broken. The situation, from an agricultural standpoint, improves as we proceed, until Sabana de Robles is reached, a few miles further on. This is about fifty-five miles distant from Havana. There are but few houses, a small wooden station with side tracks, and a wooden warehouse. From this point, running southeasterly, is a branch line to the somewhat important watering place, Madruga. The surrounding country is well timbered, and a little cane grows in this vicinity. To the southeast are hills in the distance. Shortly after leaving the station there is a branch sugar road to the left, and much cane is seen. The country continues level, but there are hills to both the right and left a few miles distant.

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The next station is the town of Catalina, of some size and importance, where there are many side tracks and a large sugar warehouse. With the cane and cattle some banana cultivation is now presented. The road finally approaches, but does not cross, the Mayabeque River, a stream of importance, from whence for some distance the surrounding country is poor and stony, although occasionally beautiful meadows are to be seen. In the past cattle and horses have been plentiful in this locality, and now and then may be seen a field of tobacco. A few miles further on, the road enters the town of Güines over an iron bridge some fifty or sixty feet long.

The road which has just been described is well ballasted and has been in good condition.

A branch line from Sabana de Robles to Madruga should here be mentioned. This is an exceedingly rough piece of single track, which, branching from the main line, runs, first, through a country thoroughly covered with low vegetation, and then through much cane on the left. Just before entering Madruga, which is only three miles distant from the main line, the country is somewhat broken. The surroundings about Madruga are very picturesque. It is a noted mineral water resort, the waters being a specific for indigestion, and also being used for bathing.

HAVANA, MATANZAS, AND JOVELLANOS—UNITED RAILWAYS COMPANY

The terminus of this road is at one of the ferries in Regla on the opposite side of the harbor of Havana, where there is a good station of stone and iron, with adjacent large warehouses of similar construction. These are located at the ferry landing in the southern portion

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of the town, by which connection is made with the custom-house wharf at Havana by good-sized boats, capable of carrying twelve or fifteen vehicles and a large number of passengers. The ferry slips are similar to those in use in the United States.

Leaving Regla, the road runs to the eastward along an arm of the bay, which is at the right of the track and about 600 feet distant, the intervening space being low, marshy ground. On the land side is a natural wall of rock some twenty feet in height. Starting out from the station are four tracks—one for the through line to Matanzas, one for the local line to Guanabacoa, and the others, long sidings.

Leaving the vicinity of the bay, the route is along the top of an embankment fifteen or twenty feet high, from the end of which branches the new line running westerly around the southerly end of the city of Havana and the bay, and connecting with the other lines of this same company at Ciénaga. At a distance of rather less than two miles, after passing through a short cut, perhaps twenty feet high, the *calzada* of Jesus del Monte to Guanabacoa is crossed. Beyond this point, the country becomes open and rolling and covered with grass, through which are scattered occasional rows of palms. The land to the south is all of this character; northward, it is hilly and open. The track is well ballasted with stone, and a high rate of speed, for trains in Cuba, is maintained. About four to six miles from Regla three small streams are crossed on stone culverts, and at a distance of five and one-half miles there is an extensive rocky cut some 600 feet long. The surrounding country is hilly and undulating and principally devoted to grass, where in times past numerous cattle were to be seen. It is well watered, and dotted with huts. The palm trees stand singly and in groups, and but little evidences of cultivation are in

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sight. What little planting has been done has been of corn. At a distance of seven and one-half miles an iron bridge some fifty feet long is crossed, and beyond this are short, rocky cuts twenty or thirty feet high.

The first station reached is Minas, nine and one-half miles from Regla. This is an unimportant hamlet, with a wooden station and three side tracks. Continuing, the country is much the same, with, for a short distance, some corn and cane, but the huts and houses become less frequent. At a distance of twelve and one-half miles from our starting point, huts become more frequent, while yucca, corn, and cane are frequently seen. The country grows more hilly as we progress, and approach the station of Campo Florido, thirteen and one-fourth miles distant from Regla. Here a half-dozen huts and houses surround the wooden station, water tank, and stock shed, and, three or four hundred feet beyond, an iron bridge some fifty feet long carries the track over a stream.

A mile and a quarter beyond, a wooden station, which is nameless, and side track are seen, and about half a mile to the north is a large sugar estate, and the immediate surrounding country is covered with cane, although to the southward, two or three miles distant, are wooded hills. As we advance, the country soon becomes exceedingly hilly, but not rocky, and considerable cane is cultivated, while huts, formerly surrounded by cattle, are quite numerous, and gardens of yucca and vegetables, as well as corn, abound. Many small streams traverse this locality. Once more we are in a thoroughly cultivated cane district, and after passing through a rocky cut some 600 feet long, and twenty or more feet high, we reach the station of San Miguel, seventeen and one-half miles distant from Regla. Here is a small stone depot with two side tracks, and some 1,500 feet to the north is a



RAILWAY FROM REGLA TO MATANZAS

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large *central*. Adjacent to the station is a large sugar warehouse, but only two or three residences. Just beyond the station is a long causeway and stone culvert, and shortly beyond this a short bridge with stone abutments. The country continues well cultivated, and bananas and corn are interspersed with cane. The road passes through numerous cuts and over numerous causeways, while the same character of cultivation just described continues. Four miles beyond San Miguel, the road passes through a peculiar cut in white rock, and from this point approaches the more important station of Jaruco, described in detail elsewhere, where heavy grades are met. This town, twenty-four miles distant from Regla, has a small wooden depot, water tank, and three side tracks. In the vicinity is a banana grove and numerous corn fields. Beyond the town the country becomes more open and level, and cane more prominent. At a distance of two miles is a nameless station and side track, with a branch running to a *central* to the south. As we advance, the country becomes still more open but less cultivated; yet it affords fine grazing, and in the past has been well stocked with horses and cattle. At a distance of twenty-eight miles from Regla is the station of Bainoa, about which is a town of approximately from 300 to 500 inhabitants. The station building is wood, with a somewhat extensive platform and a small warehouse. There are three side tracks, and an intermediate track branching to the south. The surrounding soil is exceedingly rich and favorable for the cultivation of bananas and corn, and many oranges are grown in this locality. For some distance the road now passes between brush hedges, and some three miles beyond Bainoa is a cluster of houses and a short side track. This portion of the railway line is exceedingly good, being ballasted with

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stone. A mile further on is another side track and small station, surrounded by fields of cane. About a mile further are a few more huts and another station, the country being level and cultivated with cane, while a large hill rises to the north. Two miles further on is a nameless side track, surrounded by a few huts among the cane fields, which are once more extensive. Shortly beyond this a small sugar railroad branches to the south. The somewhat important station of Aguacate is then reached, a distance of thirty-six and one-half miles from Regla. The town has about 1,000 inhabitants, the houses are of wood and stone, and there is a large sugar mill about a mile distant to the north. All the surrounding country is rich in cane production, while palms are plentifully interspersed among the fields. The surrounding country now becomes brushy and uncultivated, while we pass through numerous shallow, rocky cuts. Beyond this to the south the country is level, while to the north it is rocky, and as we advance, brushy and rocky hills, not covered, however, with a growth of large trees, appear. The station of Empalme, just within the boundaries of the province of Matanzas, is then reached, a little more than one and one-half miles distant from Aguacate, and about thirty-eight and one-quarter miles distant from Regla. The town is but an insignificant hamlet as regards population, but is a somewhat important junction of the railroads, with a fine, new stone depot into which runs the line from Madruga and Güines, and which continues on to Matanzas, constituting a double track for the remainder of the way to the last-named city.

The country now continues broken, rocky, brushy, and but little cultivated, while the tracks pass through cuts and over culverts until the station of Ceiba Mocha is reached, forty-three and four-fifth miles from Regla. This is a small hamlet of a dozen or two houses with a

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wooden station building. About the place are wooded hills to the southward; open country to the north. Two miles beyond Ceiba Mocha is Benavides, an unimportant hamlet of perhaps 100 inhabitants. A small sugar road branches off to the north; then the main line descends a steep grade, on the side of which are rich meadows and corn-fields studded with native huts. A bridge crosses a river some fifty feet or more in width, and the country, while rolling, becomes more open, although there is a ridge of hills to the south, while to the north are houses and cultivated lands. At a distance of fifty-three miles from Regla the railroads from La Union and Jovellanos join the line from Havana, and a mile and a half further the line enters the outskirts of Matanzas, following it to the south and finally entering a fine station in the city, where there are many side tracks and the usual appurtenances of modern railroading.

Leaving Matanzas for the east, the road ascends a hill at the rear of the city, and curving round the head of the bay intersects another track (Matanzas Railroad), and from thence on it is a double-track line, running at the rear of the *playa* (beach), some 600 to 700 feet away, leaving the bay to the northeast at a distance of three miles from Matanzas, where we find the insignificant station of Gelpi. Up to this point the country is considerably broken, but shortly thereafter it becomes comparatively level, with evidences of cultivation. Five miles out the Matanzas Railroad, which has so far been paralleled, turns southerly. At a distance of six and one-half miles from Matanzas and sixty-one and one-half miles from Regla is the small station of Guanábana, situated in a low country, with scattered hills in the distance. The immediately adjacent country is stony and unproductive. The line is stone ballasted, and ordinarily in good condition. Soon the soil becomes better,

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and cane, bananas, and cattle have been raised in the country traversed. Eight and one-half miles from Matanzas and sixty-three and one-half miles from Regla is the small station of Ibarra, about which are a few stone houses. From thence to the next station the country is rough and stony, and several streams are crossed, one on a bridge at least 150 feet long, while rock cuts are frequent.

Caobas is now reached, at a distance of twelve and one-half miles from Matanzas and sixty-seven and one-half miles from Regla. Here are an old stone station, water tank, and a few houses. The adjacent country, although still hilly and stony, here begins to improve, and some cultivation is seen. At a distance of fourteen and one-half miles from Matanzas and sixty-nine and one-half miles from Regla, the important town of Limonar is reached, where there is an old station and platform, with a sugar railroad branching to the south. The country continues to improve in an agricultural way for a short distance, when some poor territory is seen at the south of the track, back of which are hills, some wooded and others barren and rocky. The roadbed is excellent here—well ballasted with rock. At a distance of eighteen and three-quarter miles from Matanzas and seventy-three and three-quarter miles from Regla is the small village of Sumidero, with a station building of stone, but only a dozen or so residences. For a short distance here the track has a third rail, to permit the operation of narrow-gauge cars. Beyond the town the country becomes more open and with a better character of soil, but there is more grazing land than cultivation. High hills are on either side in the distance. The roadbed, although stone ballasted, now becomes exceedingly rough. Coliseo, the next station, is distant from Matanzas twenty-two and one-half miles, and from

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Regla seventy-seven and one-half miles. There is a water tank as well as a few huts here, and a small sugar road branches to the north. The road now comes to a rich region where cane is plentiful, and where divisional lines are shown by wire fences supported upon bamboo posts.

The station of Tosca is reached at a distance of twenty-five miles from Matanzas and eighty miles from Regla. There are five or six side tracks here, but only a few houses. The country continues rich and level, covered with cane, and sugar mills scattered about, while the population seems more numerous than elsewhere on the road, as is evidenced by huts and houses. Wooded hills are in the distance, and we now enter a low savanna, principally utilized as meadow land. Shortly before reaching the next station a sugar railroad branches to the north, and several streams are in the neighborhood. Cane crops are extensive in the locality, but there is no other cultivation. The station of Madan is reached at a distance of thirty and one-half miles from Matanzas and eighty and one-half miles from Regla. There is little here but a small station building and warehouses, as well as a water tank. The population probably does not number more than fifty. The line then passes through large meadows and extensive cane fields, among which are numerous sugar mills, while the *ceiba* (cottonwood) tree is thickly interspersed with palms. Just before leaving the last station a sugar road branches to the northward, and in the same locality there is a large water tank, the source of supply being from wells. At a distance of thirty-three and one-half miles from Matanzas and eighty-eight and one-quarter miles from Regla, Jovellanos (Bemba) is reached, where a junction is made with the Cárdenas Railroad system. A description of this town has been given elsewhere.

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HAVANA TO PINAR DEL RIO—WESTERN RAILROAD

The station of this company at Havana, known as the "Cristina," is situated not far from that of the two other roads which enter the city proper, and the line runs nearly south, crossing the Batabanó line of the United Companies near Rincón.

Its first suburban station is Pinos, four and one-third miles distant from the city terminus. The next important station is at Arroyo Naranjo, elsewhere described. The railroad here crosses the *calzada* running to Santiago de las Vegas, and the surrounding country assumes a character different from that which has been described in connection with the lines of the United Railways. The town is chiefly to the west of the tracks. Slightly beyond, the country is rolling, and is quite thoroughly cultivated with cane, corn, and pineapples, while there are also rich meadows. A deep valley is crossed by the longest bridge on the line, or in the island of Cuba, to the town of Calabazar, which lies principally to the right of the track. Shortly beyond the town is a branch track running to a stone quarry. To the east it is rolling and wooded, while westward there is less cultivation.

The next station is Rancho Boyero, nine and one-half miles from Havana, where there are a few houses and a small wooden station. The *calzada* from Havana to Rincón is crossed at this point. The country is constantly growing better and more thoroughly cultivated, the principal products being cane, tobacco, bananas, and corn, while the boundary lines are indicated by fine hedges of cactus and other plants.

The town of Santiago de las Vegas, twelve miles from Havana, is next reached. This quite important place, described elsewhere, is situated principally east of the

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tracks. As we proceed, the country is still well cultivated, as already described, but in the distance to the eastward is a long, low ridge of hills paralleling the tracks. To the west the country is flat and very highly cultivated, with numerous houses scattered over the farms.

Rincón is reached at a distance of thirteen and three-quarter miles from Havana, and just beyond this town the Batabanó line of the United Companies is crossed, as already described.

The line now runs through a flat country showing considerable cultivation, with stone walls dividing the farms. Then an ascent is made, passing through a deep rock cut, and again over an embankment, reaching the town of Salud, nineteen and one-quarter miles from Havana. This is a somewhat important place, where there is a big station, with water tank and side tracks. The surrounding country has been highly cultivated with cane, and is level and open. Cattle have flourished in this locality, and the meadow and grazing lands are fine. The soil is of a rich, reddish variety. The town of Gabriel is reached at a distance of twenty-four miles from Havana, and while perhaps not possessing over six or seven hundred inhabitants, it has been an important shipping point for the rich surrounding agricultural district. To the westward, near the town, are one or more large sugar factories, and in the vicinity there is some guava cultivation in addition to the other forms of agriculture mentioned. The country continues of the same rich character, and the town of Güira de Melena is reached at a distance of twenty-seven and one-quarter miles from Havana. About this place are large fields of cane, with good-sized patches of banana. Very few hedges or walls are seen dividing the farms and plantations. The roads in the surrounding country which we have been passing through for many miles are exceedingly poor

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in wet weather. This is owing to the rich character of the soil. Near the station last mentioned a sugar road branches off to the southwest. From this point the country is slightly less cultivated, although flat and open like that which we have been describing, while there are some large sugar plantations, and the country roads improve in character.

After passing Güira de Melena, a town of some importance, Alquizar is reached at a distance of thirty-two and one-third miles from Havana. Large cane fields are once more in evidence, and to the southwest is a large sugar mill, connected with the line on which we are travelling by a narrow-gauge railroad. The railroad is now lined on each side by hedges, but the surrounding country does not show many of these, or stone walls. The next station is the unimportant one of Dagame, thirty-seven and one-fifth miles from Havana. The cultivation becomes less as we progress, until the town of Cañas is reached, at a distance of forty and one-half miles from Havana, this being the first station in the province of Pinar del Rio. At this point are two sugar mills, and a railroad track branches off in a southerly direction. The population is perhaps six or seven hundred. Outcroppings of rock are now noted on the surface of the surrounding country, yet the soil is excellent, and there is once more considerable cultivation. The roads in this locality seem to be good. Mountains can now be seen further to the westward.

The next station is Artemisa, at a distance of forty-three and one-half miles from Havana. The surrounding country has grown better, and sugar raising is carried on to some extent. The country now becomes more undulating, and once more there is less cultivation, no cane at all being in sight. The next station, Mangas, five miles further on, has but a handful of huts about it, and in

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this vicinity are some excellent meadows, with a little corn and tobacco cultivation. The road now becomes rougher, and the surrounding country wild and uncultivated, although occasionally fine meadows are seen. The railroad no longer has fences or walls beside it, and very few such indications of boundary are now visible. Occasionally some corn, cane, and tobacco may be seen, while in the distance glimpses are had of extensive pine forests. Punta Brava, the next station, distant fifty-one miles from Havana, is little more than an ordinary wooden station. The country continues much the same as that last described, although in the past some cattle have been raised, and the meadows are better and more extensive.

The next station is the somewhat important town of Candelaria, fifty-seven miles from Havana, at which point the mountains come to within two or three miles of the track. The immediate country continues flat, but is somewhat heavily wooded. Little cultivation is in sight until we approach the town of San Cristóbal, sixty-two and one-half miles from Havana, which is reached by crossing the river on a fine iron trestle bridge some 150 feet long, and, immediately afterward, one of the more important *calzadas* of the province. In this vicinity fine meadows are once more common, and close to the town the country, which is more hilly, is better cultivated with corn, tobacco, and banana. Leaving the town, embankments, trestles, and cuts are met with, and wire fences are observable dividing the farms, which resemble those seen before reaching San Cristóbal. The station of Taco-Taco, sixty-nine miles from Havana, is the next on the line. This is an unimportant hamlet. Leaving this place, a long trestle of perhaps 175 feet is crossed, and culverts, cuts, and small trestles are frequent. The country near the railroad continues level, but there are hills in the distance.

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The next station is the unimportant one of Palacios. There are mountains four or five miles away, but the immediate country becomes less broken, and, as Paso Real is reached, at a distance of eighty-three and one-half miles from Havana, tobacco fields become common. In the past it has been a good locality for cattle raising. The town is small, consisting of but twenty-five or thirty houses, but it has possessed some importance as a shipping point. Just beyond this town a river is crossed on a wooden trestle bridge probably 150 feet long, and while no important villages exist, scattered huts and hamlets are observable, and at a distance of about eighty-seven miles from Havana there is a nameless station from which, probably, a branch line has been built to the baths of San Diego, while there are some good roads in this locality running in the same direction. A growth of timber is now passed through, and the station of Herradura, eighty-nine and one-half miles from Havana, is reached. This is an unimportant town, but there is a fairly good agricultural country close to it, devoted principally to tobacco culture and cattle raising. The mountains now lie five or six miles to the north, and we advance onward over a few trestles, stone bridges, culverts, and through cuts until the town of Consolación del Sur is reached, ninety-four and one-half miles from Havana, and six miles distant from the city of Pinar del Rio. Here we are in the heart of the tobacco district. For some time this was the terminus of the railway line, which has since been extended to Pinar del Rio, about 105 miles from Havana.

MARIANAO RAILROAD (FERRO CARRIL DE MARIANAO)

This is a local steam railway line from Havana to Marianao and the beach, La Playa de Marianao, having

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a total of about nine miles of single track, well constructed with sixty-pound steel rails, thoroughly ballasted, and while owned by an English company the equipment is American. There are no intermediate stations of importance, with the exception of Puentes Grandes, where a good water power has been partially developed. The route followed from the city is in the main similar to that of the United Railways Company.

Good views are had of the city, and the suburban district traversed is attractive and interesting, presenting first, after leaving Havana, market gardens in a high state of cultivation, then handsome country homes, a small old-fashioned cemetery or two, and then glimpses of pineapple and tobacco culture. The business of the company can hardly have been other than profitable, for while it has little freight traffic, it carries annually about 800,000 passengers, averaging, perhaps, about thirty cents fare each, and from the nature of the service the operating expenses must be comparatively low.

REGLA AND GUANABACOA RAILROAD

The Regla and Guanabacoa Railroad is a local line, only two and one-half miles long, connecting the two towns mentioned, one of the termini being at one of the ferries at Regla, and the other at the outskirts of Guanabacoa, with no intermediate stations. It is owned by a single individual, who is also proprietor of one of the ferry lines from Havana to Regla. While the ferry is said to have been a successful financial venture, the railroad itself is not considered to have been so, owing to the fact that it did not go far enough into the city of Guanabacoa. The road is well constructed, however, and has valuable terminal facilities at the Regla end.

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MATANZAS RAILROAD (FERRO CARRIL DE MATANZAS), FROM MATANZAS TO CUMANAYAGUA

This is a well-constructed line, stone ballasted for most of its route, traversing rich sugar districts, such as have been described in connection with the other railroads in Matanzas Province, with the exception of the country in the vicinity of the city of Matanzas itself. It commences at the García station in the city of Matanzas, and, as described in connection with the Jovellanos route of the United Railways Company, on leaving Matanzas closely parallels that line to beyond Guanábana, the stations up to this point being identical with those of the United Railways Company; namely, Gelpí, four and one-third miles distant from Matanzas, and Guanábana, seven and one-half miles distant. From this point the road takes a more southerly course to the next station, which is the somewhat important village of Cidra, distant from Matanzas twelve and one-half miles. The next station is Sabanilla del Encomendador, sixteen and three-quarter miles from Matanzas, a still more important point. At a distance of twenty-one and three-quarter miles from Matanzas, Unión is reached, also important, especially as connection is there made with one of the lines of the United Railways Company. From this point the road turns almost directly east, and the next station is Bolondrón, nearly twenty-eight miles from Matanzas. This is a place of some importance. Next is Güira, an unimportant station, slightly over thirty-one and one-half miles from Matanzas, which should not be confounded with the more important place of similar name in the province of Havana. Next is Montalvo (Navajas), thirty-six miles from Matanzas, another junction with the Cárdenas-Júcaro system, which has been mentioned

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in connection with that road. Still proceeding eastward, at a distance of thirty-eight and one-half miles is Corral Falso, an unimportant station. Still further, at a distance of forty-four and one-half miles from Matanzas, is La Isabel, nothing much but a hamlet, which should not be confounded with the more important place of similar name in the province of Santa Clara. Fifty-eight miles from Matanzas is Cuevitas, a place of considerable importance, which has been described in detail elsewhere. Next is the unimportant village of Baró, a little over fifty-seven and one-half miles from Matanzas. Then at a distance of nearly sixty-four miles from Matanzas is Guareiras, mentioned in connection with the Cárdenas-Júcaro Railroad, at which point the line which we are following intersects a branch of that road. Next, at a distance of sixty-nine and one-half miles from Matanzas, is the unimportant station of Carrillo. This part of the country is exceedingly rich in cane production for many miles in all directions. The next and last station is Cumanayagua, the railroad station for the important town of Colón, where connection is made with the Santa Clara line of the Cárdenas-Júcaro road.

NAVAJAS-JAGUEY BRANCH OF THE MATANZAS RAILROAD

This leaves the main line at Montalvo (Navajas), running for a distance of about twenty-five miles in a south-southeast direction, through a rich agricultural district. There are no stations of importance thereon, but such as there are come in the following order, proceeding south from Montalvo: Pedroso, Torriente, which is shown on the maps as the southern terminal of the road, but which is actually not so; Crimea, Jaguey Grande, and finally Murga.

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THE CÁRDENAS-JÚCARO. RAILROAD; CÁRDENAS—SANTO DOMINGO—SANTA CLARA

This general system—the Cárdenas-Júcaro Railroad—commences at a fine terminal station in the city of Cárdenas, and runs in a generally southern direction as far as the town of Jovellanos. Leaving the city of Cárdenas, it crosses a marshy tract on the outskirts of the town, passing the large railroad shops of the company, and going on to a country which is little cultivated, but is more solid in its character, and plentifully sprinkled with cactus hedges. No elevation is in sight, excepting hills far away to the east. Some two and one-half miles from the town cane appears, stone walls are frequent, and huts are seen surrounded with banana plants. At a distance of four miles the cane has become much denser and a ridge of hills is seen. A mile or so to the westward a small sugar railroad comes in from the east. Rich, red soil covered with cane continues, and at a distance of five miles a sugar railroad runs off to a large *central* to the westward.

At a distance of seven and one-half miles the first station is reached—that of Contreras, where there is a good stone depot, with a stone warehouse, and platforms for handling sugar and cattle, although only some fifteen frame houses constitute the hamlet. The country continues level, but for two or three miles there is little cultivation and the surrounding country is brushy and plentifully sprinkled with palms. Then there are slightly greater evidences of cultivation, and again, at about eleven miles distant from Cárdenas, there is a fine, level prairie, with a sugar road running to the west. Wire fences are more common in this locality than stone walls and hedges. Once more cane is plentifully cultivated,

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and in the vicinity of the next station, Cimarrones, some bananas are seen. We are now thirteen and three-quarter miles from Cárdenas, and are at an important shipping point for sugar, where there is a good stone station, a stone warehouse, and stock chute, for many cattle have been raised in this vicinity. The same level country continues, producing much cane, and Jovellanos (Bemba), sixteen and three-quarter miles from Cárdenas, is reached. Connection is here made with the Matanzas line of the United Railways Company. Large sugar mills are frequently seen in the vicinity. At a distance of twenty and one-half miles from Cárdenas are the ruins of a stone station, while a sugar railroad branches off to some estates to the south. There is almost an entire absence of wagon roads in this vicinity. While cane continues, the land is less fertile, and projecting through the soil are "dog teeth," so-called, being sharp, pointed pieces of rock underlying the soil.

At a distance of twenty-three and one-half miles from Cárdenas a narrow-gauge sugar railroad parallels the main line and the station of Quintana is reached, where there is a good stone building, but practically no surrounding residences of any kind. The dog teeth referred to, which have been disappearing, reappear at a distance of about twenty-six miles from Cárdenas; but a mile further on the cultivation is better, and with the cane, which has been so common, is seen some banana cultivation.

Perico is the next station, twenty-eight and one-half miles from Cárdenas. Here is a large station warehouse, and a town of perhaps 1,000 inhabitants, a good portion of which are Chinese. Beyond the town are extensive grazing meadows, which in the past have been filled with cattle. These are divided up by wire fences. The road, which for a considerable distance has been ballasted with

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earth only, and, consequently, is exceedingly rough in wet weather, is once more stone ballasted and in fair condition. The country continues flat and open, being divided between grazing and cane lands. The station of Retamal is next reached, being distant thirty-three and one-half miles from Cárdenas. This consists of little more than the stone station itself. A sugar road branches off to the south at this point, and a short distance beyond the station a bridge 100 feet or more in length is crossed. The surrounding country is not cultivated, but is fine grazing land.

The important town of Colón is reached, thirty-six and one-half miles from Cárdenas. Immediately beyond the town the railroad passes over a new bridge, on stone abutments, about which are beautiful meadows. Just beyond this is seen a large sugar mill, from which a small railroad runs in a southerly direction, and a mile or so further a similar road branches to the north, cane once more being seen. Half a mile further another bridge is crossed, and we continue on through a country of meadows and cane fields, reaching the station of Agüica, forty-three miles from Cárdenas. Here there is little but a stone station building. From the station the railroad descends a steep grade and crosses another bridge perhaps 100 feet long. Just beyond this a branch track runs to a sugar mill to the north, and other extensive bridges are crossed within a distance of not much over a mile. Then another sugar road branches to the south, and again a mile further a similar road branches to the north.

Macagua, which is described elsewhere, is now reached, at a distance of forty-eight and one-half miles from Cárdenas. Here are station buildings proportionate to the size of a town of 5,000 people. In addition to the usual cane, bananas and corn are cultivated in this locality, which is one of the richest agricultural regions

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in all Cuba. As we continue on, the country becomes less populated and the soil poorer, while the railroad track is once more earthen ballast. The next station is San Pedro, fifty-seven miles distant from Cárdenas. This has a population of only about one or two hundred, but has possessed some importance as a shipping point. Proceeding onward, the surface of the country possesses cane fields interspersed with brush fields, and the town of Alvarez is reached at a distance of sixty-two and one-half miles from Cárdenas. This is the centre of the charcoal industry. The surrounding conditions continue the same, and the station of Mordazo is reached, sixty-seven and one-half miles from Cárdenas. Here there are only about a dozen houses and a wooden station. The form of vegetation in this locality is of a different variety from that which has heretofore been seen. The country now becomes wilder and less cultivated, and is to a certain extent heavily wooded.

The town of Manacas is reached at a distance of seventy-five and one-half miles from Cárdenas. There are sugar estates in the vicinity, but none in sight. The town has a population of perhaps 300 native Cubans, with a liberal sprinkling of Chinese. A little beyond the town a sugar road branches off to the left, and corn and cane are to be seen. Still further on, the cane becomes plentiful to the south, and then to the north, and bananas and corn are also seen. The next station is Santo Domingo, distant eighty-one and one-quarter miles from Cárdenas. Here there is a wooden station and warehouse, surrounded by only a few dwellings, although a town of the same name lies three-quarters of a mile away, with possibly 300 inhabitants. Here junction is made with the Sagua Railroad, which affords connection for the city of Santa Clara and other points in the province of that name.

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CÁRDENAS-JÚCARO RAILROAD, MONTALVO (NAVAJAS) LINE

The route of the Montalvo line is over the same track as the company's Santa Clara line, already described, as far as Jovellanos (Bemba), and from this point it continues about ten and one-half miles further, branching off from the main line at nearly right angles in a southwesterly direction. There are only two stations beyond Jovellanos, both unimportant—Medina, twenty-four and one-fifth miles from Cárdenas, and Montalvo (Navajas), twenty-seven and one-quarter miles from Cárdenas. At the last-named point it intersects with the line of the Matanzas Railway Company, affording connections with the east and west. The country surrounding the extension which we are now describing is very similar to that mentioned in our description of the main line about Jovellanos; the roadbed of the branch, however, not being in so good a condition.

CÁRDENAS-JÚCARO RAILROAD, AGUADA LINE

The Aguada line is second in importance to the company's main line, and starts from the same station in Cárdenas, but almost immediately after passing the railroad shops turns southeastward, and following this general direction, constitutes an independent route fifty-nine and one-half miles long.

The first station from Cárdenas is San Antón, an unimportant point in the sugar belt, eleven miles from Cárdenas. Three miles further is the similar station of Recreo, and seven and one-half miles further, still another unimportant station, Artemisal Nuevo, from which a branch line goes to Macagua. Three miles beyond is

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the slightly more important village of Laguna Grande de Pijuan, distant from Cárdenas nearly twenty-five miles. Five and one-half miles further, at a total distance of thirty and one-half miles from Cárdenas, is the important town of Colón, described elsewhere. At this point the branch crosses the main Santa Clara line of the company, and then proceeds southward. The next station is Retamal, two and one-half miles from Colón and thirty-three miles from Cárdenas, possessing no special importance. Gispert is the next station, four and one-half miles further, which is a similar hamlet. Six and one-half miles beyond is Guareiras, at a total distance of forty-three and one-half miles from Cárdenas. Slightly short of four miles distant is Calimete, the most important town after passing Colón, slightly over forty-seven miles from Cárdenas. Nearly all of the maps show this railway line as terminating at this point, but it actually extends further. Four and one-half miles distant is Amarillas, which is little but a hamlet, fifty-one and one-half miles from Cárdenas. Still further is Aguada de Pasageros, the terminus of the branch, fifty-nine and one-half miles from Cárdenas. The character of construction of this line, while good in many respects, is not up to that of the main stem, but the country traversed is similar in all respects.

CÁRDENAS-JÚCARO RAILROAD, BRANCH FROM RECREO TO ITABO

The route from Recreo to Itabo starts from Recreo, on the Aguada line of this company, and runs in a north-easterly direction, the first station being the small hamlet of Sabanilla de la Palma, four and one-third miles distant. Nine and one-half miles from Recreo is the next station, Hato Nuevo, which is also unimportant, and the

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terminal of the branch at Itabo is reached, at a distance of thirteen and three-fifth miles from Recreo. The terminus is a point of not much greater importance than the intermediate stations. The country adjacent to the branch is rich agriculturally, being similar to that described in connection with the main stem of the system. The branch is standard gauge, like the other routes of the company, but is in poor condition.

BRANCH LINE FROM ARTEMISAL NUEVO TO MACAGUA

A branch line from Artemisal Nuevo to Macagua leaves the Aguada line of the Cárdenas-Júcaro Railroad from the first-named town. The country surrounding it is similar to that described in connection with the other routes of the company, and the general direction which it follows is easterly. After leaving Artemisal the first station is Banagüises, an unimportant town eight and three-quarter miles distant. Slightly less than five miles beyond this is the more important town of San José de los Ramos, and four miles further is the terminal of the branch at Macagua, seventeen and one-third miles distant from the main line. As will be noted from the special description of the last-named town elsewhere, it is an exceedingly important point, and the surrounding country through which the branch line passes is rich in sugar, which is worked on as large a scale in this locality as in any portion of the island; consequently, numerous sugar mills are seen.

CIENFUEGOS TO SANTA CLARA

Proceeding from a fairly good station in the city of Cienfuegos, in the province of Santa Clara, the Cienfuegos-Santa Clara line crosses a river on an iron girder

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bridge some sixty feet long, almost immediately entering a fine agricultural country in which there is much cane and many sugar mills. At a distance of five miles the country becomes hilly and brushy, although still well cultivated, and the road passes over embankments and through rock cuts, which character of territory continues until the first station of importance, Palmira, is reached, at a distance of nine miles. This is an active, commercial town of about 3,000 population. The country, although similar to that which we have described, becomes more open, and is rich in cane, and was formerly rich in cattle. At a distance of thirteen miles is a flag station called Arrieta. Further on a small bridge is crossed, and shortly beyond is a nameless hamlet, in the vicinity of which the line is intersected by a small sugar road. This immediate locality is exceedingly rich in cane, and several sugar mills are in existence, and at a distance of fifteen and one-half miles is the small town of Camarones. From this point the country becomes more rolling, although still rich, until Cruces is reached, at a distance of nineteen and one-quarter miles, where a junction is made with the Sagua la Grande road. The line now turns more toward the northeast, the country continuing rolling, and four miles further on is the unimportant station of Angelita. Five miles further, at a distance of twenty-seven and one-half miles from Cienfuegos, is the somewhat important town of Ranchuelo, the country continuing of the same character as that before described, only less cultivated, and more devoted to cattle raising. Slightly over six miles further, at a distance of thirty-three and one-third miles from Cienfuegos, is the important town of Esperanza. This is in the midst of an especially rich and formerly well cultivated country. From this point the line turns almost at right angles in an easterly direction toward the city of Santa Clara, the

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only intermediate station being the insignificant hamlet of Azotea. Santa Clara is reached at a distance of forty-two and one-half miles from Cienfuegos.

CONCHA TO CRUCES (FERRO CARRIL SAGUA LA GRANDE)

This system commences at Concha, known also as La Isabela, and by one or two other local titles, all of which practically mean the seaport for the important town of Sagua la Grande. The terminus proper of the road is at that portion of the town known as La Boca, which is in the midst of a low, brushy marsh. For some two or three miles the route is along the top of a raised embankment, with no cultivation, but on each side of the track are low meadows, which in times past have been filled with cattle. The road follows a "bee line," and is well ballasted with stone. Five miles from the terminus is a small, nameless side track, and a station with a stock chute. The adjoining country has become hard and firm, although still low and uncultivated, being used for grazing purposes, with but few division fences; at a distance of seven and one-half miles, however, cultivation begins, and there are large sugar estates, with a number of narrow-gauge railroads in the vicinity. Just before entering the first station there is a large sugar mill at the west of the track. At a distance of eleven miles is the important station of Sagua la Grande. The railroad station is of brick and stone, modern and roomy. Interesting sights are seen as the traveller passes through the town, one being an old loop-holed tower in ruins, built originally for protection against pirates, while a good view is also had of the cemetery. The adjoining wagon roads are exceedingly poor. Some two and one-half miles from Sagua, a long wooden trestle is crossed, and the surrounding country is not cul-

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tivated, being given up to cattle and a growth of underbrush. Shortly beyond this is an iron girder bridge, the centre of a causeway finely maintained. The country is now becoming rich in cane, and hills are seen in the distance. Sitiecito, the next station, is fourteen and one-half miles from La Boca, and consists of a wooden station and eight or ten houses, yet from this insignificant station there have been made large shipments of sugar.

Proceeding, the country becomes somewhat hilly, but is still open and well cultivated with cane, while an occasional corn-field is seen, and at a distance of three miles from the last station a long trestle and bridge of probably 200 feet is passed. Near this to the eastward is a large *central* with railroad accommodations. The country once more becomes level, and consists principally of meadows and grazing land, which in days gone by were well stocked with horses and cattle. At a distance of twenty-three and one-half miles from La Boca is the small station of Rodrigo, where there is a good stone depot, ample platform accommodations, and warehouses for sugar and molasses. The town has some 250 inhabitants. Its immediate surroundings are somewhat brushy. Passing onward through a low country, principally given to cattle raising, within a short distance we come to a highly cultivated district, growing corn and bananas, and at a distance of three miles from the last station is a small, nameless flag station, where there is a large sugar mill, and a small sugar road branching to the east. Further on, corn is interspersed with cane, and the district in the past has been noted for the fine quality of horses raised there. The road, which has been stone ballasted for nearly its entire length, passes by, at a distance of about a mile, the town of Santo Domingo, where it connects with the Cárdenas and Júcaro system, at a distance of thirty-three miles from

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La Boca. From this point the line runs southeasterly to Esperanza, from which connections are made to the city of Santa Clara. Whether this is controlled by the road we are describing, or is an extension of the Cárdenas and Júcaro system, is not quite clear. Continuing southward, the country is still level, but the soil changes to one of a sandy character, very similar to the tobacco lands of Pinar del Río. For some distance from Santo Domingo, corn, cane, bananas, and garden truck, as well as some tobacco, are raised, but further on there is but little cultivation of any kind. The station of San Marcos is reached at a distance of six and one-half miles from Santo Domingo, and thirty-six and one-quarter miles from La Boca. Beyond San Marcos cultivation once more begins, and the character of the country continues level and improved, and about three and one-half miles further on there is much cane to the westward, followed by extensive meadows and grazing land, and again with cane. The line has been partly ballasted with earth, and is correspondingly rough, but at a distance of about six miles from Santo Domingo it is once more stone ballasted. Crossing two or three small bridges, the town of Las Lajas is reached, at a distance of thirteen miles from Santo Domingo, and about forty-three miles from La Boca. This is a remarkably clean-looking town of some size, where there is a stone depot, a storehouse, and side tracks.

The country now continues good, but the roadbed is exceedingly bad. Cane becomes more abundant than ever, and many sugar mills are to be seen in the distance. Before reaching the terminus, great meadows are passed through, and hills are seen in the distance.

The terminus, Las Cruces, is forty-eight and one-third miles from La Boca. Junction is here made with the Santa Clara and Cienfuegos railroads, the trains of

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both lines entering the same station, which is a modern structure.

ENCRUCIJADA LINE

This is a branch of the main system running southeasterly from Sitiecito, for a distance of approximately twenty miles. It runs through a rich cane and cattle country, of which we cannot give a detailed description.

The first station upon the line is an insignificant hamlet, Sitio Grande, four and one-half miles from the junction. Four and one-half miles further on is the small station of Cifuentes, and eight miles further on is the slightly more important one of Mata, and nearly four and one-half miles further the terminal of the line, Encrucijada, a town of a few hundred inhabitants, which possesses some importance as a shipping point.

SAN CAYETANO-VIÑALES RAILROAD

This line is a narrow-gauge road, two and one-half feet wide, fifteen miles in length, not shown on ordinary maps, but running from the little port of San Cayetano to the town of Viñales. The only other stations are at Dolores and Soledad.

TRINIDAD RAILROAD

It is questionable if the above is the correct title for this particular road, of which the writer can find no official description, yet he personally knows that it is in existence and is of standard gauge, with a somewhat rough roadbed, and in bad condition generally. Its seashore terminus is at Casilda, the harbor for the important city of Trinidad on the southern coast, which is four miles distant from the port. It runs through a somewhat mountainous country, northeasterly, terminating at Fernandez, about

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twenty-two miles from the seashore terminal, and there are no important way stations. This road is shown on the military map.

LAS TUNAS RAILROAD, FROM ZAZA TO VALLE (OR SANCTI SPÍRITUS), PROVINCE OF SANTA CLARA

This is purely and simply a local line, intended, however, to be eventually extended northward to connect with the line running to the northern coast from Placetas.

The southern terminus is at the port of Las Tunas, also known as Zaza, Saza, Sasa, and Tunas de Zaza, and the road was recently built to afford means of transportation from Sancti Spíritus to the seaboard, but does not quite reach this important town, the inland terminal station being at Valle. There are no intermediate stations on this line, unless the town proper of Zaza, the southern terminus, which is five and one-half miles from the seaport proper, be considered such. The others are Guasimal, ten miles distant from the seashore end, and Jarao, eighteen and one-quarter miles therefrom. The northern terminus, Valle, is twenty-four and one-fifth miles distant from the southern terminus. While the line passes through some rich territory, it is not well cultivated and there is some rough country along the route. The road is of standard gauge, somewhat poorly constructed and ballasted.

CAIBARIEN TO PLACETAS (FERRO CARRILES UNIDOS DE CAIBARIEN), NORTH COAST OF SANTA CLARA

This is a purely local line, which, however, was intended to extend to Sancti Spíritus to the south, there connecting with a line running to the southern coast. Its terminus, as is indicated by the title, is at Caibarien,

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the seaport for the important town of San Juan de los Remedios. A complete description of the entire road is not at command, but the country through which the line runs is an exceedingly rich one in sugar and tobacco.

The first station, after leaving Caibarien, is Remedios, slightly over five miles distant therefrom. The next, thirteen miles from the terminus, is the unimportant village of Taguayabon. Three miles further is a similar village, Vegas de Palma, and two and one-half miles further the hamlet of Camajuaní. Four miles more brings us to the slightly more important village of Salamanca, at a distance of twenty-three miles from Caibarien, and six miles further on is San Andrés, a place of rather more importance. The end of the line is Placetas, about thirty-three miles from Caibarien, and the most important of the towns here enumerated.

The line is standard gauge, and fairly well constructed.

ZAZA RAILROAD

This is a private railway of only three feet gauge, the title of which is somewhat misleading, as Zaza is situated miles away on the northern coast of the province of Santa Clara. The line has exactly the same termini as the public railway between Caibarien and Placetas, and in the main parallels that road. The first station after the seashore terminus at Caibarien is the somewhat important town of Rojas, five miles distant. Two and one-half miles further is the unimportant village of Viñas. Next, five and one-half miles further, is Zulueta, sometimes called Coloradas, which is unimportant, except that it is the station for the rich district in the vicinity. Four and one-half miles further, at a distance of twenty-two and one-half miles from Caibarien, is Placetas, the terminus of the line.

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JÚCARO-MORÓN RAILWAY

This is a standard-gauge military line, built along the trocha of the same name, and entirely for military purposes, yet in the future it may possess considerable importance, affording, as it does, a means of transportation from the northern to the southern coast of Cuba, at a convenient point, there being no similar route to the eastward, nor for eighty miles to the west. Proceeding from Júcaro north, the first town or station of importance is Ciego de Avila, sixteen and one-half miles distant. Twelve miles further is the less important town of Las Piedras. Next is the more important town of Morón, ordinarily supposed to be the northern terminus of the road, which, however, actually extends for slightly over two miles further, to the unimportant town of Estero, the port for Morón.

This road runs for nearly its entire distance through what have been unbroken forests and swamps—a wilder country for most of the distance it would be hard to conceive.

If the road has no other commercial advantages in the future, it must prove of importance in bringing timber to the seacoast from the interior, as there is at present no line in Cuba that has so much timber closely abutting on it. The most swampy district along the route is at the southern end, which extends inland for several miles; and again, in the vicinity of Morón, the line passes through some six miles of swamp, which is rich in timber.

PUERTO PRÍNCIPE TO NUEVITAS (FERRO CARRIL DE PUERTO PRÍNCIPE-NUEVITAS)

This line is entirely local in its character, commencing at Nuevitas, or more properly that portion thereof

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known as Victoria, at the northeasterly corner of the province of Puerto Príncipe, and extending in a south-westerly direction for a distance of forty-five miles to the important interior city of Puerto Príncipe. The district through which it runs is somewhat broken, but is exceedingly rich though not entirely cultivated, it having in the past been devoted principally to cattle raising, although some sugar and tobacco have been produced. The first station on the line, seven and one-half miles distant from the seashore terminal, is Buena Vista, an unimportant hamlet. Nine and one-half miles further on is the similar station of Ramblazo, and some five and one-half miles further, the small hamlet of Aguada Josefina. Somewhat less than two miles away is the more important village of Minas. Seven miles beyond is Altagracia, an unimportant hamlet, the last intervening station before reaching Puerto Príncipe.

While this would seem to be a somewhat unpretentious line, its earnings have been exceedingly large, averaging as high as from 15 to 20 per cent.

GUANTÁNAMO RAILROAD

This is a short line, ten and one-half miles in length, extending from Caimanera, the seaport of Guantánamo, northward, and from the latter city for a distance of three or four miles. There are no other towns of importance on the line. It runs through a rich sugar district, and its business is said to have been exceedingly profitable in the past.

GIBARA-HOLGUÍN RAILROAD, NORTH COAST OF PROVINCE OF SANTIAGO

This road is intended to connect the two towns from which it takes its name, but unless it has been

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extended recently, it runs only from Gibara nine and one-half miles inland to the insignificant town of Auras. The sole intermediate station is that of Cantimplora, six and one-fifth miles from Gibara.

The road, so far as constructed, is of standard gauge, fairly well built, and for a short time previous to the insurrection it did a very prosperous business, running through one of the best fruit-producing districts of the island, it being stated that there were 7,500 acres planted with bananas alone; while its extension would give it important business in the city of Holguín, as well as from the timber trade of the interior. This particular locality has, however, suffered very severely from the insurrection, and it is likely that some years must elapse before its prosperity is fully reestablished.

SANTIAGO RAILROAD

This road at the present time has probably some thirty-three miles of well-built standard track, winding through rich valleys between high mountains, gradually ascending, and affording a good route to the eastern seaboard for the long-contemplated central railway, which must eventually connect Santiago de Cuba with the general railway system of the island, more than 200 miles away, at Santa Clara. The line starts with a wooden station at the water front of Santiago de Cuba, and runs northward, where, some two miles distant, a branch runs east to El Caney, memorable in connection with recent military operations. The first station, which is unimportant, is Bonito, five and one-half miles from Santiago de Cuba. The next station, ten miles from Santiago, is the more important town of El Cristo, around which there are mineral deposits, which have been mined to a certain extent. At a distance of twelve

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and one-half miles from Santiago is Morón, a place of several hundred inhabitants. The original line, at this point, turns to the northwest, while the new branch line turns to the northeast. Following the old line, the next station is Dos Caminos, a small town of a few hundred inhabitants. Next is Enramadas, a smaller place, distant from Santiago twenty-one miles. The line then turns directly west, and its terminus is at San Luis, a somewhat important place, with perhaps a thousand inhabitants.

Returning to the new line, the station of Alto Songo, perhaps four miles distant from Morón, is reached, in the neighborhood of which there is abundant cane and coffee, as well as cocoa cultivation, as there is in all the country traversed by the lines of this company. Just prior to the insurrection, this town was growing quite rapidly, but the whole surrounding district has suffered so severely from warlike operations that it is questionable if any town now exists. The next station met, two miles further on, is the unimportant hamlet of Socorro, and perhaps a mile further on the slightly more important hamlet—the terminus of the branch—Sabanilla, in the vicinity of which are mines which it was expected would develop considerable traffic for the company. The ownership of this company is practically the same as that of the Juraguá Iron Company, which has done so much for the development of Eastern Cuba.

ROADS AND TURNPIKES

A number of good roads are shown on the large maps, but this fact should not be considered as proof positive of their actual existence.

A word concerning all ordinary routes of travel can

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be said which will as fittingly apply to the railway systems of the island as to the wagon roads.

Internal means of communication on an extensive and improved scale seems never to have been considered as essential in Cuba, although not entirely for the reason stated by Steele, as follows :

“Road-making is not a lost art among the Spaniards, but rather an art not yet acquired. Anything that a mule can traverse gives general satisfaction to the community.” This assertion is certainly too sweeping; yet there is still some foundation for that brilliant author’s sarcastically stated reason for the too common condition of means of internal communication which generally exists.

But the island is long and narrow, possessing numerous harbors, and consequently it is no great distance from any point of the interior to some convenient port, from whence coastwise or other water transportation can be had. The utilization of such means has been far more extensive, especially as regards the local travel and traffic of the island, than is indicated by any list of steamers plying between the various ports, much of such trade being carried on by sailing vessels or small steamers not advertising their perhaps irregular sailings.

The natural tendency of travel and transportation on land has therefore been to the nearest seaport. When this is an important town, a scanty railway system has perhaps been extended into the interior, possibly intersecting or connecting with a similar system reaching other like towns, as is clearly shown in the preceding description of railroads; but this is more to satisfy pressing local needs than growing out of a desire to create a comprehensive railway system. Or, on the same lines, possibly a limited system of fairly good highways may have been considered. But either railways or improved



STUCK IN THE MUD ON A COUNTRY ROAD

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roads, wherever found, can, in the main, be considered abbreviated main stems of travel, extending inland in a local way from some seaport, and terminating short of the points which they should reach, without intent to create any good continuous or connected internal system of communication. The highways, especially, generally show fewer improvements and less care as they extend away from their supposedly important termini, or perhaps they may be continued with an entire absence of improvement for many miles, fairly good conditions again appearing as approach is made to other important towns. A few miles of bad road in any direction from a main line of travel are not considered a serious drawback by the natives, or even by some of the map makers.

Many good roads are indicated on the maps, and many others will be said to exist locally by the peasantry; but when inquiring travellers come to traverse them, these supposed good roads will often be found to be exceedingly bad, with an inconceivable depth of mud in wet weather. This mud, before pulverizing into a most objectionable dust, dries into hard, sharp ridges and ruts, which will cut man or beast almost like a knife. Some roads will also be found so rocky as to be impassable under the best of conditions for everything except the native *volante*, ox-carts, and horsemen, while others are mere bridle paths.

In a general way it should be said that the country roads in the provinces of Pinar del Río, Havana, and portions of Matanzas are the best on the island, while, as progress is made eastward, they continue to grow worse, until Puerto Príncipe and Santiago de Cuba are reached, where, it might almost be said, none exist outside the immediate vicinity of the towns, and those in such localities are none too good.

While, as intimated, numerous good roads do exist

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for short distances in the immediate vicinity of the larger towns throughout the island, their extent and termination are generally as we have described; and as a partial excuse for such conditions it should be stated that, in addition to the frequently quoted claims of Spanish official dishonesty in the expenditure of highway funds, road building in Cuba is an expensive undertaking, for, owing to the characteristics of the soil and force of the tropical rains, little can be done toward permanent improvement of a roadway, except by macadamizing or by paving it, or by giving it a heavy dressing of cinders, any one of these methods constituting, in local parlance, a *calzada*, or paved road.

The more extensive of these in existence and shown by the large maps are as follows :

The Western Calzada, extending westward to Guanajay, and from there known as the Southwestern Calzada, to Pinar del Río, is one of the most important, and of the greatest length of any, approximately 100 miles. Although officially described as being improved for the entire distance, this is not the case. From Havana to San Cristobal, about sixty miles, it is a fine, hard road, but from the latter place to Pinar del Río it is in little better condition than the unimproved roads of the country.

A *calzada*, which is virtually an extension of the above, running westward from Pinar del Río to Colón, a distance of fifteen miles, is in a very superior condition, and runs through a naturally rich and productive district.

The Southern Calzada, officially described as running from Havana to Bejucal, fifteen miles, is believed by the writer to extend entirely across the island to Batabanó, something over thirty miles; as recollected by him, this road is of the same general character for the entire distance, and was thoroughly improved and main-

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tained, as is also a short extension of two and one-half miles at the Batabanó end.

The Southeastern Calzada, running from Havana to Güines, a distance of approximately thirty miles, is also in good condition for that distance, but eastward from Güines it is not considered as improved above natural conditions to any great extent.

The *calzada* running eastward from Havana, about fifteen miles, to Santa María del Rosario, is well improved between these two points; but the eastward extension to Matanzas is considered, during the rainy season, one of the worst of the important roads of the island.

The *calzada* which connects Guanabacoa with the local system of streets about Havana, passing through Luyanó and Jesus del Monte, is in good condition between these points. This road, as shown by the military map of Cuba, parallels the track of the Ferro Carriles Unidos for a distance of about six miles from Guanabacoa, to the town of Minas.

The *calzada* from La Canoa to Nuñez, twenty-six miles, is said to be in good condition for the entire distance, but of this the writer has no personal knowledge.

The Camino Central (Central Road), that extensive continuous highway extending lengthwise through the centre of Cuba from Havana to Santiago de Cuba, which, with its radiating branches, is generally shown on the smaller maps so conspicuously as to be mistaken for a system of steam railways, is not a *calzada* at all except to a very limited extent at infrequent intervals in the vicinity of the larger towns. Although it practically reaches all important points eastward from Havana, either directly or by means of branches, it has little improvement except as recited. It is an actual fact that its condition in Eastern Cuba is such, during the rainy season,

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that the mules used for transportation of mails thereon learn to leave the roadway wherever they can and walk on top of the low stone walls bounding it for much of the way.

Probably the first thing essential to the future commercial development of Cuba will be extensive road building and highway improvements. Just how this can be accomplished by public means for some time to come, owing to the impoverished state of the island, it is difficult to determine. It would not be surprising if the incoming Government of the island, owing to the pressing necessity for such improvements, should consider it advisable to grant concessions to private parties for the construction of turnpikes and toll roads. These undertakings, if properly planned and carried out, should afford excellent investments for capital, and should constantly increase in value. In all Cuba there is but a total of 250 miles of improved highway, nearly all of which is in the province of Havana, Pinar del Río coming next. The province of Santiago de Cuba has less than six miles of improved roads, and Puerto Príncipe and Santa Clara even less. Within the last thirty years only eighty-four miles of surfaced road have been built on the entire island.

WATER TRANSPORTATION

The detailed statistics on the commerce of the various ports and the descriptions of the coast and harbors quite clearly indicate the past extent and possible future of foreign and coastwise marine traffic. Great changes are sure to occur in the nationality of the vessels which will conduct this trade, for hitherto the Spanish flag, through subsidized mail steamers, and craft equally favored by special wharfage accommodations and other ex-

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traordinary courtesies at the various ports, has been credited with nearly all the profits of this traffic. Probably new lines of regular steamships to foreign ports will be established, and new coastwise lines may also appear; while, with onerous port regulations and charges modified or discontinued, the already enormous water traffic of the island must greatly increase.

The most important of the principal lines of regular steamers are those of the *Compañía Transatlántica Española*, ordinarily known as the Spanish Steamship Company, which has received an annual subsidy of about \$800,000 from the Spanish Government. Its New York line has despatched good steamers from that port to Havana on the 10th, 20th, and 30th of each month, some going on afterward to Vera-Cruz, Mexico. Its line between Havana and Cadiz has also run large ocean steamers regularly every ten days, and in later years many extra ones. Some of these steamers, on their way to or from Spain, have stopped at Puerto Rico.

The next Spanish lines of importance are those of the Havana Company, which have touched at the principal ports of Cuba on both the north and south coasts. Some of those run on the northern route go as far westward as Mexico, and eastward as Puerto Rico. The local steamers on both routes have been despatched about tri-monthly, and many extra boats were in service before the blockade. Both of the companies referred to, it is believed, have been very successful financially, and are presumed now to have large claims against the Spanish Government for the transportation of troops and military supplies.

The New York and Cuba Mail Steamship Company (Ward Line) is perhaps the best known company operating regular lines to the island. It is under progressive and able American management and well deserves the

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praises which travellers to and from Cuba have given it. It has run steamers from New York to Havana every Wednesday and Saturday, every alternate boat going through to Tampico. It has also despatched boats semi-monthly from New York to Santiago and Cienfuegos, via Guantánamo.

No less conspicuous has been the Plant Company's semi-weekly line from Havana to Key West and Tampa, the steamers "Olivette" and "Mascotte" of this line being among the most welcome and frequent sights of Americans in Havana.

The Munson Steamship Line of New York has also operated frequent and good steamers from New York to Matanzas, Cárdenas, and Sagua la Grande; also a steamer to Vera-Cruz, Mexico, stopping at Havana.

Waydell & Company of New York have also despatched steamers with some regularity from New York to Matanzas, Cárdenas, Sagua la Grande, Caibarien, Guantánamo, Santiago, and Cienfuegos.

A monthly Morgan Line steamer has run between Havana, Key West, and New Orleans.

There is a German line from Havana to Hamburg; a British line from Vera-Cruz to Southampton, which stops monthly at Havana; and a French line from Saint Nazaire, which runs an occasional steamer to and from New Orleans and Vera-Cruz, stopping at Havana.

During the winter months the vessels of the Quebec Steamship Company occasionally stop at Havana, going north from the other West Indies.

While through the lines above mentioned good connections are made with the Central American and Mexican ports, and with Puerto Rico and Nassau, no regular connections have existed with the other West India islands, although tramp steamers have sometimes given direct communication between these points.



THE BOAT LANDING

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With almost as great regularity as those of the public lines, steamers are despatched from Boston, New York, Philadelphia, and Baltimore to various Cuban ports by some of the companies engaged in the mining industry and fruit trade, this being especially true of the Jura-guá Mining Company and the Boston Fruit Company, both of which operate good boats, those of the former being larger than many of the regular liners. The Boston Fruit Company has small, fast steamers, up to the usual American standard. Many of the other steamers engaged in the fruit trade, however, are Swedish and Norwegian, which carry freight at lower rates than American steamers can afford to, and the traveller will do well to avoid taking passage by these boats. The writer speaks on this matter from hard experience.

The coastwise traffic of Cuba has been carefully fostered by some of the lines above mentioned, as well as by smaller lines and irregular steamers. Every port of the slightest importance has connections with the more important places on the coast every few days by a steamer of some kind, but this service is usually more frequent than regular, and the expectant traveller must watch time-tables and sailing notices with the greatest care.

In all the coastwise traffic, companies having close affiliations with the Spanish Government have been specially favored, and their employees have, to a great extent, been former men-of-war's-men. Yet the native coast-bred Cuban is well known to be the best pilot through the intricacies of local channels. With a total of fifty-four harbors of various descriptions, and many miles of coast so protected from the open sea by keys as virtually to constitute extended harbors, good pilots are indispensable to navigation. Even the best charts do not show all the uncertainties of rocks, reefs, and keys,

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and there are only nineteen lighthouses on the entire coast. The entrances to some of the best of the harbors, moreover, have bars or other complications which make navigation difficult. This is especially true of Nuevitas, Gibara, Baracoa, and Santiago de Cuba, as well as of others equally prominent. Future improvements will, no doubt, make navigation safer, for despite the fact that the Spanish Government has never spent any money for such purposes, it has conducted numerous investigations as to what might be done toward improving the entrances of several ports, the conclusions generally reached being that slight expenditures would make these channels deeper and often straighter.

In the subsequent descriptions of the more important towns, it will be noted that practically all the business of loading and discharging cargoes is done by lighters, which results in much expense and delay. While in certain of these harbors this course must continue, as the water shoals for a considerable distance from the shore, yet, looking at the problem in a general way, it can be said that no public improvement is more badly needed in Cuba than better wharfage facilities, and the writer cannot imagine a better investment for private capital than in such improvements at the proper places. It is believed that the cost of their construction would, on the whole, be comparatively less expensive than in the United States.

TELEGRAPH LINES

According to a Spanish official statement of the present year there is a total of 2,300 miles of telegraph line in Cuba, upon which are located 153 offices, handling about 360,000 public messages annually. The entire system has been owned by the Government, and always has been operated under the strictest censorship,

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this having been especially the case during the past few years, the telegraph being considered an adjunct to the military establishment. The lines have of late been greatly extended by the authorities, so that, in the writer's opinion, several hundred miles more of line will be found than are officially reported. Likewise it is possible that extensive submarine cables will be found to have been laid at certain points along the coast, as part of the telegraph system, which do not show in the descriptions of the line, or in those of the lines of the ocean cable companies.

TELEPHONES

The telephone system has been in general use in Havana and vicinity for a number of years, as well as in some of the other large cities of Cuba. Like the telegraph, these exchanges are owned by the Government, but in Havana a lease to a private corporation, the Red Telefónica de la Habana, has been in force for several years. Up to a comparatively recent date, nothing like a long-distance system was in existence, but it is believed that within the past few months, as a matter of military necessity, quite an extensive one has been installed in connection with the telegraph system.

OCEAN CABLES

Quoting from a recent official record, there are four cable lines connected with Cuba: The International Ocean Telegraph Company has a cable from Havana to Florida; the Cuban Submarine Company has a cable connecting Havana with Santiago de Cuba and Cienfuegos; the West India and Panama Company has a cable connecting Havana with Santiago de Cuba, Jamaica,

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Puerto Rico, the Lesser Antilles, and the Isthmus of Panama ; and the Compagnie Française de Cables Sous-Marins has a line connecting Havana with Santiago de Cuba, Haiti, Santo Domingo, Venezuela, and Brazil.

The only three towns in Cuba publicly acknowledged by the Spanish Government to have cable communication with foreign countries are Havana, Cienfuegos, and Santiago de Cuba.

CHAPTER VI

CURRENCY, BANKING, AND GOVERNMENT FINANCE

VARIOUS CIRCULATING MEDIUMS.—DIFFERENT TRANSACTIONS ON DIFFERENT BASES.—ISSUES OF THE SPANISH BANK.—NECESSITY OF A UNIFORM STABLE CURRENCY.—BANKING FACILITIES INSUFFICIENT FOR THE NEEDS OF THE ISLAND.—ONLY TWO CHARTERED BANKING INSTITUTIONS IN CUBA.—NO BANK WHICH PAYS INTEREST.—THE SPANISH-CUBAN DEBT.—HOW IT IS DIVIDED.—ENTIRELY A SPANISH OBLIGATION.—HISTORY OF THE CUBAN DEBT.—A SIGNIFICANT PER CAPITA COMPARISON.—THE ANNUAL REVENUES OF THE ISLAND.—CROWN REVENUES.—THE TAX ON REAL ESTATE AND RURAL PROPERTY.—OTHER SOURCES OF REVENUE.—ANNUAL YIELD OF THE CUSTOMS REVENUE.—MUNICIPAL DEBTS.

CURRENCY

CUBA has never had a distinctive currency of its own, although its monetary unit has been the peso, or dollar, worth in United States gold 92.6 cents, instead of the peseta, worth 19.3 cents, as in Spain. While theoretically the system is a decimal one, the coins constituting the circulation are of varied amount, description, and issue—Spanish, Mexican, and American coinage having circulated with equal freedom. The only attempt to conform to the theoretical system is the recent issue of paper money, in denominations of \$5,000, \$1,000, \$500, \$300, \$100, \$50, \$10, \$5, \$1, 50 cents, 10 cents, and 5 cents, together with a previous issue by the Spanish Bank of Cuba—which must not be confounded with the

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Bank of Spain, at Madrid, of which it is only the agent—of some bills of denominations of \$10 or over. Prior to 1892, the smallest coin in circulation was a silver one, of the value of five cents. Since then, Spanish copper coins of smaller denomination have been introduced and made legal tender up to the amount of \$2.50. The bulk of the actual circulating medium has, however, been silver, although not a legal tender above 10 per cent. of the amount of any one payment. This has been represented by the peso, ordinarily known as a dollar, though sometimes called either a five-pesetas piece or a twenty-reales piece. The subsidiary Spanish coins are usually of the values of one, two, four, and ten reales, or, considering the value of the peso as one dollar, the values of these coins are respectively five, ten, twenty, and fifty cents; but there are also in circulation older Spanish coins of erratic and uncertain denomination and value, because of their worn and battered condition, while American silver, although commanding a slight premium in quantities, has, so far as a single coin is concerned, been considered of the same value as the Spanish coin to which it most closely approaches. With Mexican silver the same practice is substantially followed, although this, in bulk, has sold at a discount. The gold coin in most common circulation has been the Spanish centen, to which the arbitrary value of \$5.30 has been affixed in Cuba. Practically the only other Spanish gold coin in circulation is the old onza (doubloon), representing a value of \$16 in Spain, \$15.50 in foreign countries, and again an arbitrary value of \$17 in Cuba. American and British gold and paper are at a premium above the Spanish gold, and, of course, at a good premium above the silver. The intricacies of the currency as it has existed are almost past the comprehension of the ordinary stranger. For instance, it can be stated in a general way that ordinary wholesale

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transactions are conducted upon a Spanish gold basis; and retail transactions upon a silver basis, to which are perhaps added, at the present time, complications in connection with the more recent issues of paper money. All of this has resulted in the existence of a very large number of petty brokerage firms, or money exchange offices, in all the cities, where daily are posted the valuations of the respective kinds of currency, the same as stock quotations in our cities. But let us follow out a typical transaction. The visitor from the United States with a letter of credit, or actual cash in large bills or gold pieces, arrives at Havana. For purposes of convenience, he proceeds to convert this into Spanish gold, and receives a trifling premium thereon, thus apparently increasing the amount of his assets, but not their purchasing power. He then converts some of the Spanish gold which he has received into Spanish silver, with a similar result; and, again, should he convert the silver into Spanish paper money another apparent increase would follow. He may make a small purchase at some retail store and give in payment a gold coin, receiving back in change, in silver coin or paper currency, more money in face value than his original payment. Fascinating as the apparent increase in his wealth from these causes appears to a stranger, the system has its dangers as well as its illusions, for without the exercise of the greatest care the stranger will invariably find himself in the possession of obsolete coins, or he will have mistaken denominations or issues, which will subject him to a net loss.

As illustrating one of the peculiarities of different kinds of currency, it should be said that Spanish gold, to prevent its export, for several years past has been given a local arbitrary value of 6 per cent. or more above the face value of the denomination for which it has been issued. The value of the British pound sterling in 1897

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was exchangeable in Spanish gold at the rate of \$5.50 or more.

Many superficial arbitrary attempts have been made to keep gold within the country, but the natural tendency of governmental practice and of trade has been to cause its exportation, because customs duties, until recently, have been entirely payable in gold coin, and since the change 90 per cent. of such payments have been required in the same way, the balance being paid in silver. Including Government remittances, the general balance of trade has been against Cuba; \$19,000,000 in cash per year being required to adjust its commercial balances with Spain alone. Again, in late years, a great number of Spaniards have returned to Spain from the island, many taking with them large sums in cash, while, just previous to the war with the United States, large sums were shipped abroad for safety. All this has had a tendency to drain Cuba of actual cash, and at the present moment it is impossible to say what the total amount of the circulating medium is. In fact, owing to the peculiarities of financiering followed, it would be difficult to determine what it has been at any time since 1868, just prior to the commencement of the previous insurrection, when the total amount was \$30,000,000, or about \$20 per capita. During the Ten Years' War there was a partnership between the Government and the Spanish Bank of Cuba for the issue of treasury and bank notes aggregating \$72,000,000. This peculiar currency was irredeemable, and was never circulated throughout the entire island, rarely reaching further east than Santa Clara; but in certain ways remaining in circulation in connection with ordinary transactions in the western provinces, up to 1892 or so, at large discounts, so that at the time of its nominal cancellation in 1892, \$100 in gold would purchase \$249 in bills. It

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should also be stated that this joint issue of bills from 1870 to 1874 was a legal tender, and was accepted by the Government in payment of public debts. This practice was discontinued early in the latter year, and naturally a large shrinkage occurred in the purchasing power of the notes, ultimately reaching a depreciation of 60 per cent. from their face value. Just prior to the Government redemption the bank bought in its own share of the notes at the discount stated. On the 24th of October, 1891, in the Government's behalf, the Spanish Bank of Cuba proceeded to redeem the Government's share of the issue, following a no less peculiar and dishonorable plan than that which it had adopted concerning its own share. This plan was as follows: Notes of three dollars or less in denomination were to be redeemed at 50 per cent. of their face value in silver. Those of a larger denomination at 49 per cent. of their face value in gold, or, more properly, in a peculiar form of gold certificate not immediately redeemable in the coin.

The confusion resulting from this transaction, with its attendant speculation, resulted in a financial panic, causing the bank temporarily to suspend payment, it being said that, incidental to the other confusion then existing, the Bank of Spain at Madrid, as the Government's fiscal agent in Spain, had failed to remit sufficient funds to Havana to complete the redemption, although these were said to have been deposited with it by the Government, but to have been diverted for other uses by the bank officials. Redemption was resumed on August 12, 1892, and completed March 12, 1893. About \$4,500,000 of the entire issue was not presented and was thereafter barred from redemption. Consequently, the Government and the bank realized a handsome profit out of the so-called act of redemption, besides buying their own obligations at 50 per cent., or greater, discount.

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In 1893, the Spanish Bank of Cuba made a new issue of \$6,000,000, in redeemable notes payable in gold on demand, though only about half of these were then placed in circulation, and it is believed that since that time a large portion of the remainder has been issued. Whether or not this last issue was used partially to retire several smaller issues of \$100 bank bills of the same character made previously, the writer is unable to ascertain, but considers that it was. The probabilities are that the bank possesses sufficient specie reserves, or other assets, to redeem the issues of its own bills, but of course the severing of profitable Spanish governmental connections which it has had must seriously affect its future. This issue of bills by the Spanish Bank of Cuba in 1893 should not be confounded with other issues made by it for the Government, as the bank has always been the medium through which the Government has issued its paper currency.

The history of later Government issues, so far as they are known, is as follows: On June 8, 1896, Captain-General Weyler, under authority from Madrid, ordered an unsecured issue of paper money, nominally redeemable in gold, and provided severe penalties for failure to recognize it as legal tender. These bills were not accepted for customs duties. Despite the arbitrary attempt to force the circulation upon the public, supported as it was by all the power and vindictiveness of the Captain-General, the issue was a practical failure and was almost immediately subject to large discounts from its face value. Consequently, on November 8, 1896, a second decree from Captain-General Weyler cancelled and retired the issue, but created another, amounting to \$20,000,000, upon a different basis, these notes being secured by a deposit in the Spanish Bank of Cuba of a reserve in silver to the amount of one-third of their face

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value, and further by pledging the receipts from an increase on the customs duties for their redemption. This increase in customs duties was 5 per cent. ad valorem on all official values, equivalent to a 25 per cent. increase on previous tariff rates. Though these notes were made receivable for certain forms of taxes at their face value in silver, and though still further strenuous edicts were issued to compel their use as legal tender for all general obligations, they were subject to a discount of 20 per cent. from their face value on a silver basis and 34 per cent. on a gold basis, within a few weeks after they came into circulation, and have continued to shrink in value ever since. It is believed that a fresh issue of \$5,000,000 or so of these notes has been made since the beginning of the war.

One of the most difficult problems which the future government of Cuba will have to face must be the retirement and cancellation of bills of fluctuating value and of worn, obsolete, and foreign coin ; together with the establishment of a uniform and stable currency, sufficient for the business needs of the island.

BANKING FACILITIES

The banking facilities of the island have, during recent years, at least, been altogether insufficient, there having been but two chartered banking institutions in all Cuba, the headquarters of these being at Havana, with branches in the largest cities. The better known of these is the Banco Español (Spanish Bank), which has the sole right of issuing notes for public circulation. The other is the Banco de Comercio (Commercial Bank), which practically controls the main railway system of the island—Ferro Carriles Unidos.

The financial experience of both of these institutions

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in later years has not been as favorable as could be desired ; neither has public confidence in them been altogether unshaken, for at various periods they, and especially some of their branches, have temporarily suspended payment, while, owing to the retirement of the Spanish authorities, their future prospects are somewhat uncertain. During the past they have, however, endeavored to make loans only on first-class security, and have no doubt received handsome returns from so doing ; yet, owing to the uncertainty of titles and similar causes, it has frequently been the case that planters or others, who have desired banking accommodation, have been unable to offer to the chartered institutions the character of security which they demanded. Hence, the commercial development of the island, through local channels alone, has been seriously restricted.

In all Cuba there is not a single bank in which money can be placed at interest, nor a savings bank in which the artisan or laborer can deposit his earnings.

According to the best authority, it can be said that banking, as it is understood in Europe and the United States, does not exist in Cuba. There are a few large business houses which make an approach to it, by doing a legitimate private banking business, and still another class, known as "banqueros," who would correspond to what are ordinarily known in this country as "note shavers ;" and it is to the mercy of the latter and a still worse class of usurers that those who desire financial accommodation have been obliged to appeal, pledging crops or real estate in the most improvident manner. It can be safely said that there is nothing which Cuba so seriously requires as a new banking system, especially one of such character as will advance money at what would there be reasonable rates of interest during the first few years of the island's reconstruction.

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In connection with the foregoing, it may be interesting to know that the British Foreign Office's estimate of the investment of capital in Cuba by France, England, and the United States, at the commencement of the war just ended, amounted to \$50,000,000. The partiality for American money within that section of Cuba occupied by American troops, clearly indicates that the Cuban currency of the future, no matter by whom issued, must be a decimal system of the same general character as that of the United States and Canada, the strong conviction existing among all classes of natives that American coins or bills will always bring their face value at least.

FINANCES

A question which will undoubtedly excite much discussion in the near future is that of the Spanish-Cuban debt, and the proper disposal of it. It should be frankly stated, however, that Spanish statesmen of the highest repute have recently admitted publicly that it is impossible to tell just what the amount of this debt was, or the present condition of the securities and of the circulation representing them. But the following is a close approximation of the official statement made in May, 1897, to the Cortes about the debt, in connection with the presentation of the Spanish budget for 1897-1898 :

5% loan of 1841 due to the United States	\$650,000
1% redeemable loan	600,000
6% redeemable loan of 1886	174,200,000
5% redeemable loan of 1892	116,500,000
Due to Spanish treasury	50,000,000
	<hr/>
	\$341,950,000
Interest unpaid up to 1897	16,800,000
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Total	\$358,750,000

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Besides this, elsewhere is shown in the statement the Government's indebtedness to the Bank of Spain in Madrid on account of Cuba to the extent of \$38,100,000, which should be added to the foregoing, making the total of the so-called Cuban debt above \$396,950,000 in the summer of 1897. In view of the enormous war expenditures incurred since that time, which Spain has unquestionably charged to the account of Cuba, it is certainly a conservative estimate to place the total of the present Spanish-Cuban debt at \$500,000,000, or about \$350 per capita for the present population of Cuba, and greater than the past value of the entire agricultural and industrial interests of the island, which have been its great sources of income and actual wealth. Overwhelming as is this statement, the average American mind will revolt at anything which savors of repudiation in connection with the debt of a municipality, state, or country, yet will be equally quick to see the injustice of attempting to hold one country responsible for the debts incurred by another; so it may be well to state some facts, as briefly as possible, which will conclusively show that the so-called Cuban debt is entirely a Spanish obligation, from which the future government of the island, be it what it may, should be wholly relieved. From the discovery of the island the government of Cuba has been a system of "Taxation without representation"; taxation, not only for the supposed necessities of its own government, the support of a horde of foreign office-holders, the maintenance of an alien army to uphold this system, and the supplying of enormous funds for the illegitimate use of both civil and military officials, but, above all else, for the purpose of furnishing a cash revenue to the Spanish home government, and for affording it a credit upon which to borrow for its own necessities elsewhere.

According to Spanish official bookkeeping, from the



A TROPICAL HOME

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discovery of Cuba in 1492 up to 1820, the home government expended \$167,000,000 over and above its receipts in connection with the colonial government of Cuba ; but as no itemized public statement of the long unbalanced account was made, there is every reason to suppose that serious overcharges have been included and proper credits omitted, and there is good evidence to corroborate such a supposition.

According to a semi-official historical statement, made about 1820, it appears that from the settlement of the island in 1511, the home government for many years was drawn on at the rate of \$20,000 per year to make good a deficit in the budget ; that such sums were charged in the foregoing account ; but the historian also shows that these advances were more than made good by subsequent cash remittances, while other Spanish historians, of the two preceding centuries, refer to other remittances to the Spanish Government.

For over 250 years prior to 1810, Havana acted as a sort of clearing house for the distribution of the so-called "situados" (subsidies), collected in Mexico and expended in the maintenance of the Spanish military, naval, and civil establishments in all of the Spanish West Indies, as well as in Florida. These sums frequently aggregated over \$250,000 per annum ; and if Mexico did not contribute promptly, Cuba advanced the necessary funds. The extent of the Spanish colonies during this period is well known to the reader, as well as the fact that almost constantly during this period Spain was at war with some one—England, France, Holland, the Buccaneers, and, later, with her revolutionary South American colonies. Certainly, Cuba was not responsible for these wars, nor the consequent necessity of heavily fortifying its own coasts as well as those of the other colonies referred to, nor for more than its proportionate share of the other

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heavy expenses incidental to these wars. Some idea of the extent of these expenditures can be had from the fact that at the navy yard at Havana, between 1723 and 1800, the following vessels were built for the Spanish navy :

Ships of the line.....	51
Frigates	16
Corvettes	7
Mail ships	7
Brigs.....	9
Schooners	14
Receiving ships	2
Dredging ships.....	2
Dredging lighters.....	6
Total	<hr style="width: 100%; border: 0.5px solid black; margin-bottom: 5px;"/> 114

Despite the fact that probably not over 10 per cent. of these funds, distributed from Havana on behalf of the Spanish Government, should have been legitimately charged to Cuba, the whole amount was so charged in the balancing of the books, so to speak, in 1820, while no credit was given for numerous contributions, remittances, and local confiscations of property, so that, without a chance to audit the account, Cuba stood debited on the books of Spain to the extent of \$167,000,000; and, as soon as the condition of the island would warrant it, collection was begun at the rate of \$2,500,000 per year, and continued until 1868, up to which time there had been paid in round figures \$86,000,000. Besides, Cuba had also been assessed and had paid something like \$8,000,000 for the expense of the Spanish occupation of San Domingo in 1861-3, and also on the Spanish share of the expense of the Maximilian fiasco in Mexico in 1861-2, to say nothing of some \$10,000,000 on account of Spain's war with Chili in 1866, and \$1,500,000 in interest on the debt of Spain to the United States, to

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which we will refer presently. If these expenditures by Cuba on Spain's account since 1820 had been credited, only \$61,500,000, out of the \$167,000,000 alleged to be due in 1820, would have been left unsettled. Further, Cuba made payments for the mother country in connection with the Carlist and other wars, and for diplomatic and consular services. These amounts, up to 1868, if credited, would have reduced the amount of the ledger account, if it may be so termed, to, say, \$50,000,000. This estimate of the net balance due by Cuba to Spain is more conservative than the statements made in the Spanish Chamber of Deputies would make it, the latter placing the amount at but \$30,000,000.

After 1868 the ledger account, as we have termed it, commences to be so confused with issues of securities that no Spanish statesman has been able to follow it so as to determine the actual amount of the debt; consequently, we will not make the attempt, but instead turn to the security issues, in order to follow the history of the debt as best we can up to the present.

The creation of the funded debt, or, more properly, the issuance of bonds on Cuba's credit, without any special regard to what the proceeds were applied, began in 1841, when Spain caused her to assume an obligation to the United States of \$570,000, incurred in the settlement of claims against Spain in connection with her wars in South America. This was followed in 1864 by the issue of \$3,000,000 for the general use of the Spanish Government. During the Ten Years' War, and subsequently, this was followed by other issues, with little regard to system or method, simply to raise funds for the Spanish treasury. The expenses of the Ten Years' War, charged to Cuba, are recorded as having been \$300,000,000. During this war a loose practice was followed of advancing funds to Spanish military officers to pay

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troops and to purchase supplies, taking their personal receipts for vouchers. Many of these officers proved unfaithful to their trust, and payments had to be made a second time by the Government of claims which officers were supposed to have settled. The amount of these peculations was estimated by the best informed Cubans at \$80,000,000. By Spanish military authorities it was officially stated to be at least \$40,000,000. Therefore it cannot be unfair to consider that our old ledger account of \$50,000,000 was offset by these thefts. So that the present Cuban debt can be considered to be the expenses of Spain's attempts, from 1868 to 1878, and from 1895 to 1898, to prevent the Cubans from establishing their independence.

Having now shown who should bear the onus of the debt, let us continue to trace its course. A royal decree of September 27, 1890, provided for the issue of \$175,000,000 in bills of credit, otherwise bonds, in denominations of \$100 each, to convert the entire Cuban debt in the following manner :

- 1st. To liquidate the floating debt arising from certain deficits in the annual budgets.
- 2d. To resume specie payments.
- 3d. To redeem bills of credit issued in 1882.
- 4th. To convert the issue of bills of credit of 1886.
- 5th. Expenses of converting the debt.

A very small portion of this new issue of securities was, however, applied to the purposes intended, or as shown by the list of old securities outstanding in 1897, which have already been given. The conversion was stopped in 1895 by the Cortes authorizing the suspension of the refunding scheme, and the sale or pledging of the remaining securities of the new issue to raise funds for the prosecution of the war in Cuba.

A glance at the statement of 1897 shows that either

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the amount of the Cuban debt was underestimated when the royal decree was promulgated in 1890, or that some of the old securities have since been reissued. The latter, apparently, is the case, for, considering the total expenditure for the Ten Years' War at \$300,000,000, as has been frequently stated officially, \$80,000,000 of this amount can be accounted for by extraordinary war revenues raised on the island from 1868 to 1878. During this period the entire revenue was \$415,776,996, or an average of \$41,577,699 per annum, while for the seventeen years of peace thereafter such revenues averaged \$33,400,000 annually. Deducting the extraordinary revenue from the total expenditure would leave a balance of \$220,000,000 to be accounted for. From this should be deducted \$72,000,000, represented by the treasury notes which we have referred to under the title of currency, and which were redeemed at a discount in 1890, thus presumably leaving an interest-bearing debt of \$148,000,000, which, it is true, does not harmonize with the issues of securities which have apparently been made. Nevertheless, if we add to this 50 per cent. of the face value of the bank notes, at which price they were redeemed, we reach a total of \$174,000,000, which would seem to be about the plan followed in the Spanish calculation to reach what they considered the debt of the island. Yet, of course, this does not harmonize with the large amount of interest-bearing securities which were in existence. The intricacies of recent Spanish financiering it is useless to attempt to go further into, with its issues of securities sold at a sacrifice and its various loans made at high rates of interest. Suffice it to say that the estimate of this total which we have already made, *i. e.*, \$500,000,000, cannot be far from correct. As to where this is held there is considerable uncertainty, the general impression being that it is principally in the

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hands of French and Hebrew bankers, which is doubtless true to a great extent; yet, unquestionably, were the total known that is in the hands of Spanish investors, the sum would be found to be surprisingly large.

As an illustration of the burden of debt resting upon the people of Spain and Cuba respectively, let us turn to 1897, when the amount of the Cuban debt can be definitely established, and compare the per capita principal of the debts of Cuba and Spain with those of other countries :

<i>Country.</i>	<i>Population.</i>	<i>Debt.</i>	<i>Per Capita.</i>
Bulgaria	3,309,816	\$43,600,000	\$13.17
Denmark	2,209,564	51,024,305	23.09
Russia	88,906,921	2,363,611,715	26.59
Roumania	5,038,342	236,583,340	46.97
Germany	49,428,470	2,916,000,000	58.99
Austria-Hungary .	41,384,956	2,586,600,000	62.50
Greece	2,187,208	146,195,835	66.84
Spain	17,565,632	1,450,000,000	82.55
Belgium	6,262,272	433,946,040	69.29
England	38,779,031	3,223,400,000	83.12
Italy	30,724,897	2,580,000,000	83.97
Holland	4,732,991	458,527,500	96.88
France	38,343,192	5,195,806,640	135.50
Portugal	4,708,178	748,390,125	158.96
Cuba	1,400,000	396,950,000	283.54

Though the burden of debt per capita upon the Cuban is so much greater than upon the peninsular Spaniard, the former has by no means been dealt with more lightly than the latter on the question of taxation, upon which now let us make some comparisons.

We have already referred to the excessive amounts raised in Cuba during the Ten Years' War, but wishing to treat the question upon an equitable basis, we will exclude this period, as well as that of the present insurrection, when a similar condition of affairs has existed,

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and we will take for our purpose the seventeen years of peace from 1878 to 1895. During this period the average annual revenues of Spain were approximately \$151,000,000. Considering the population of Spain to be the same as in the above table, namely, 17,565,632, we find that the annual taxation per capita was only \$8.03. During the same period the annual amount raised by taxation in Cuba was \$33,400,000. Estimating its population at 1,630,000 (this being before the present decrease), the annual taxation per capita was \$20.48, or more than two and one-half times that in Spain. Again, during this period the expenditures of Spain exceeded the revenues by over \$270,000,000. In Cuba the revenues exceeded the expenditures by over \$27,700,000.

As to the distribution of expenditures for actual public benefit, during time of peace, in 1894-1895 about \$1 per capita was expended in Spain on public improvement; in Cuba, forty-seven cents. For the support of the army, each Spaniard paid about \$1.40; the Cuban, \$4. For the navy, in Spain, per capita, twenty-seven and one-half cents was paid; in Cuba, sixty-eight and one-half cents. In Spain, the expenditure for pensions, every dollar of which went to Spaniards, was sixty-four and one-half cents per capita; in Cuba, where not a cent went to Cubans, \$1.07. The Spaniard paid less than \$4 as interest on the public debt, the Cuban over \$6. For the maintenance of the other various branches of the civil government, and the support of the Church, the Spaniard paid per capita about \$1.83, and his countrymen received full benefit; while the Cuban was forced to contribute about \$4.60, and received little benefit from it. That the impression may not be formed that the excessive taxation of Cuba, and the application of its revenues to purposes of little benefit to its people, is of comparatively recent origin, and in some way an out-

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growth of the former insurrection, we should go back to 1856, from which time dates the wholesale plundering of the island, which began in a time of peace prior to any serious internal disturbances, although the collection of the bogus claim against Cuba began in the twenties, as already recited.

Prior to 1856, the annual revenues of the island, although being gradually increased, averaged not far from \$15,500,000; suddenly, within twelve months, the burden was nearly doubled, and from 1856 to 1868 the average annual amount was above \$28,200,000, which there was even less excuse for levying than in the more recent years, for then there was not the heavy interest charge to absorb so large a portion as more recently. During the sixties, moreover, annual expenditures for public improvements averaged only about \$700,000, and a good share of this was for the assistance of immigration and similar purposes, which should hardly have been considered public improvements.

From what has previously been stated in this chapter, it is clearly apparent that the enormous contributions exacted from Cuba, and the heavy debt as it stands at present, have been of little benefit to her, and represent chiefly expenditures for the support of the military and naval establishments. One result of the wars that should be remembered, is the enormous direct losses of the unemployed laboring class and property owners, not only during the Ten Years' War and the recent insurrection, but in the earlier wars of Spain for which they were in no wise responsible, amounting to millions upon millions of dollars. Made responsible without any warrant in equity or law for all this vast expenditure, the richest island of the world naturally has become devastated, bankrupt, and partially depopulated. Who, in any spirit of fairness, can say that she should be held further

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responsible for the results of Spanish persecution, greed, blundering, and wholesale theft?

A more delicate question of finance and fair dealing arises in connection with the outstanding bonds of the so-called Cuban Republic. While the writer would be one of the last in any way to belittle the efforts or underestimate the losses and sacrifices of certain of the Cuban people in their struggles to throw off the Spanish yoke, yet the "greatest good to the greatest number" should hereafter be the motto of Cuba's government, no matter by whom it may be directed, and should be made to apply as forcibly to financial as to political questions. Hence it is considered that, secondary only to the injustice of imposing responsibility for the Spanish debt upon Cuba, would be the unfairness of recognizing any issue of Cuban securities, emanating from a so-called Cuban governmental organization in the establishment or recognition of which the whole people of the island have not had a voice. This course may work a hardship to speculative holders of such an issue, and even to some who have given up much for *Cuba Libre*; but nothing like that hardship which, at the commencement of the new era, would involve the burdening of the depressed industries and of the entire people with another war debt, and which does not represent a single expenditure for public improvements, the betterment of sanitary conditions, the fostering of trade and commerce, or for general educational purposes. True, the foundation for these may have been laid by the insurrection, and the effort has cost Cuba much in blood, suffering, and treasure, but no equitable method of remunerating individuals for their respective shares of one or the other that have contributed to the cause or its effects, would ever be possible. So why make the attempt at all, or, if it is to be made, why should not the United States,

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which has made the present situation possible, and saved the Cuban people and the industries of the island from annihilation, charge up to Cuba the expenses of her war with Spain? There would be far more justice in such a claim than in any theory which can be advanced for the payment by Cuba of either of the other forms of her so-called indebtedness. But justice and equity demand that the new Cuban government, be it what it may, should start free from incumbrances, and that hereafter the revenues should be expended for the direct benefit of all of her people; and if bonds have to be issued, let the proceeds be expended for such much-needed improvements as will be for the benefit of the present and future generations.

While the methods followed to raise revenues and rates of taxation have differed considerably at different times during the past few years, some specific information concerning them may be desired, so we may state that the first item that has always appeared at the top of the general revenue lists and estimates is "crown revenues." This has represented special taxes upon the transfer, inheritance, or lease of real estate, which have ordinarily aggregated from \$1,000,000 to \$2,000,000. The next item is that imposed on the mining industry, a trifling affair, amounting to from \$15,000 to \$20,000 per year. Next is the tax on city real estate, which has been at the rate of from 12 to 18 per cent., and is of course exorbitant, but not so much so as might appear, for the assessment valuation has been very low, the total for the entire island having been only from \$12,000,000 to \$15,000,000. The next item is a tax on rural property, the rate ordinarily being 2 per cent., but, as in the case of city real estate, assessment valuations have been very low, the total for the entire island being about the same as for the city real estate. Certain peculiarities concerning real estate taxes



A CUBAN PARLOR

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should be explained. If a proprietor cultivates his land himself he pays the 2 per cent. general tax and 2 per cent. also as a municipal tax upon the low valuation stated. If he leases his property, he must pay 2 per cent. on rentals, while the cultivator also pays 2 per cent. on product and 2 per cent. to the municipality. As the result of this peculiar method of assessment all these collections do not show under the heading we have mentioned, but are often included in the next item. This is tax on industries, commerce, arts, and professions. The methods of assessment and collection of this tax are too complicated to admit of lucid explanation. Suffice it to say that the total revenue from these sources has been from \$1,500,000 to over \$3,000,000. Next is the insignificant item of personal passes, or permits, amounting from \$250,000 to \$300,000. Then come taxes and licenses on liquors, amounting from \$1,500,000 to \$2,500,000. Revenues on railway passenger traffic have yielded \$250,000 per year and over. This means that each passenger has been obliged to pay to the Government 10 per cent. above the schedule price of his ticket. The customs revenues, including import, export, and transit duties, have yielded annually from \$10,000,000 to \$20,000,000, according to the rates of duties at different periods. Fiscal revenues, so-called, corresponding in the main to our internal revenue law, have yielded from \$1,200,000 to more than twice such amount. It should be said, however, that the list requiring the affixing of revenue stamps has been much more extensive than in this country. The revenues of the post-office department have never been above \$600,000. The expenses of conducting the postal service are unknown. A great source of revenue has been from the lotteries, conducted under Government control. This has aggregated \$3,500,000. Rentals of state properties, so-called, have aggregated

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\$250,000 per year or more, and of these it should be said that they principally consist of confiscated church properties, actual control of which has never been entirely assumed by the state. There have also been a host of minor sources of taxation and revenues, other than those which have just been enumerated.

The problems which we have been considering have related entirely to insular government. It should be said, however, that there are municipal debts besides, the validity of which cannot probably be questioned, although, perhaps, the proceeds have not been honestly expended. Little information is obtainable about these, however, either as to their character or amount. The sum that has been raised for municipal purposes in Havana is about \$3,000,000 per year, and about \$1,500,000 in all the other municipalities of the island. While the expenses for the provincial assemblies, and for similar purposes, have probably aggregated \$300,000 more, none of these sums, raised by local taxation, is included in the general budget of taxation, to which we have devoted so much space.

CHAPTER VII

LEGAL AND ADMINISTRATIVE SYSTEMS OF THE PAST AND FUTURE

ROMAN LAW THE FOUNDATION OF THE CUBAN SYSTEM.—
REAL ESTATE TRANSACTIONS.—CONCESSIONS FOR PUBLIC OR
SEMI-PUBLIC WORKS.—THE JUDICIAL SYSTEM.—HOW JUDGES
HAVE BEEN APPOINTED.—DESPOTIC AUTHORITY OF THE
CAPTAIN-GENERAL IN LEGAL MATTERS.—ADMINISTRATION
OF CRIMINAL LAW.—PECULIAR METHODS OF PROCEDURE.—
NECESSITY OF GREAT CAUTION.—RECORDS AND SURVEYS.—
COLLECTION OF DEBTS.—DISTINCTION BETWEEN LEGAL OB-
LIGATIONS AND DEBTS OF HONOR.—SPANISH TERRITORIAL
DIVISIONS AND GOVERNMENT.—POLITICAL DIVISIONS OF THE
ISLAND AS ESTABLISHED BY THE INSURGENT GOVERNMENT.
—LAWS OF THE CUBAN REPUBLIC, 1895-1898, ESTABLISH-
ING NEW TERRITORIAL DIVISIONS—SIGNIFICANCE OF THE
REARRANGEMENT.

COURTS AND LAWS

WHILE, at this writing, the future government of Cuba is an uncertainty, and the future laws and method of administering them are unknown, a knowledge of the character of the existing civil law, with the courts which are to interpret it, is so intimately related to all commercial development and future business transactions that it is necessary to give some account of the legal system to which Cubans are accustomed.

The foundation of the prevailing laws, as in other Latin countries, is the Roman law, differing in essential features from the Common Law of England, which is the

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basis of the prevailing law in all of the United States except Louisiana. Upon the foundation mentioned, there has been built up, by statutory enactments, royal decrees, and clerical precedents, a legal system that, to say the least, is unique and cumbersome, and which would be little understood or appreciated by the average American. And although, during the past twenty years or so, many natural groups of legal subjects have been elaborately codified, so that to-day one may purchase in separate volumes the Penal Code, the Code of Criminal Procedure, the Civil Code, the Code of Civil Procedure, the Code of Commerce, the Mortgage Law, the Mining Law, the Banking Law, the Law of Literary Property, the Law of Patents and Trademarks, and the Law of Corporations, these official declarations of the law as it stands have hitherto not been worth the paper they are printed on, having been liable at any moment or in any particular case to be set aside by the mere fiat of the Captain-General, besides having been habitually disregarded by judges who were always subservient to the executive administration, were often corrupt on account of personal or pecuniary considerations, and were not seldom densely ignorant of even the rudiments of jurisprudence. These codifications, therefore, never having been boldly and righteously administered, have not taken firm hold of the popular imagination. The great mass of the people still think out and argue their cases in terms of the older and better-understood customary law, so that it is difficult to say whether it would be more equitable to enforce rigidly the codifications from the first, or whether a period of preparation under the present happy-go-lucky system should precede the enforcement of statutory enactments which have only been partially operative. Of course, following legal precedents elsewhere, it is to be presumed that existing laws of

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some kind must be applied until supplanted by the new enactments of the future governing power of Cuba. Meanwhile, military tribunals may be expected to administer temporarily either customary or statutory law, or a mixture of the two, setting aside such of their provisions as would come in direct conflict with the authority of the United States or be greatly at variance with principles of its Constitution, or with sound public policy.

It can, however, be safely asserted that the burdensome conditions of the present Spanish law will prevail in ordinary commercial transactions until supplanted by something better; hence it will be wise for those contemplating immediate commercial investments on the island to seek the counsel of able Cuban attorneys on every matter contemplated. This should be especially the case in regard to all real estate transactions; for, under the present laws, a heavy transfer tax is imposed on somewhat the same theory as the inheritance tax in certain of our States, while there are other complications not so easily understood. These facts naturally making transfers infrequent, will also undoubtedly tend later to bring about a simplification of the making of abstracts of titles back to original Spanish grants, which will unquestionably be held as valid by whatever courts have future jurisdiction in such matters.

It is reasonable to suppose, however, that neither the more recent Government grants, nor titles conferred by it to property that has from time to time been confiscated from private owners because of their presumed revolutionary tendencies, or for other political reasons, will be recognized as against the former owners by either United States courts, or those of the Republic of Cuba, whichever may be established, unless, mayhap, the present possessors be citizens of some foreign country who

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have purchased such properties in good faith, and whose governments insist that the validity of such titles shall be recognized. Fortunately, there are not now many cases of forfeiture to be considered.

It should be stated, however, that there is trustworthy information to the effect that for some months past the Spanish holders of confiscated properties have been actively engaged in transferring them to persons of other nationalities.

The wording of franchises and similar concessions by the Spanish Government has generally been so peculiar and ambiguous in its character that, even were some specific clause not often introduced to permit the authorities to terminate at their pleasure the privileges granted, means might easily be found for so doing, if desired, through the uncertainties of the language used.

Probably concessions for public or semi-public works, upon which adequate work has been done, will be upheld by future courts, but the interpretation which will be given to the conditions implied in some of these is, of course, open to conjecture. It can hardly be expected that concessions made directly by the Spanish Government, or by the municipalities whose acts required not only the concurrence of the Captain-General but also that of the home government at Madrid, will be recognized, unless at least some expenditures have been made on them in good faith, and unless in addition it can be clearly shown that they were not granted in anticipation of the downfall of Spanish rule in Cuba. A number of such concessions, under which no development has been made, will doubtless be brought before the American investment public.

The Spanish courts in Cuba have not been noted for their freedom from corruption or for their perfect equity in dispensing justice, and we shall now proceed

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to describe some of their peculiarities, as proofs of the necessity of wiping out the entire system on account of the dangers which would result from continuing any portion of them.

The able but somewhat sarcastic writer, Steele, correctly says of governmental decrees which have the force of law : " There is a fashion in Cuba, strangely at variance with the origin and growth of our Common Law, of permitting many of these decrees to fall into desuetude while unrescinded. They seem in many instances to have been made to be disregarded. People forget all about them, for there is no such thing as a statute book or code. In a few weeks, that which was solemnly proclaimed becomes obsolete ; a long time thereafter, some man who has violated it because everybody else did, or because he never heard of it, gets himself into trouble about it."

This may seem somewhat irrelevant to the courts, but when such decrees are not summarily enforced by a file of soldiers, their enforcement falls upon the judicial branch of the Government. While the authority of the Captain-General even in judicial matters has been supreme, he having authority, under a royal decree of June 9, 1878, to overrule any decision of any court on the island, as well as to suspend the execution of any law or order emanating from Spain itself, the form of a judicial system has been maintained, at the head of which are two superior courts called " audiencias." One of these is located at the city of Puerto Príncipe, and has jurisdiction over the province of that name as well as over the province of Santiago ; the other holds sessions at Havana, having jurisdiction over the provinces of Santa Clara, Matanzas, Havana, and Pinar del Río. Under these is a complicated system of minor courts, reaching down to the local magistrate courts held by

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the *alcaldes* (mayors) of the smallest towns. The word "alcalde" is practically synonymous with both mayor and local judge.

All appointments of judges and attendants of the higher courts have hitherto been made from Madrid. Not an appointment of this character is made locally, except messengers and constables, and these must be former Spanish soldiers. According to Spanish law, appointments of the municipal judges must be made by the presidents or presiding judges of the superior courts, selections of names for such positions to be made from a list of three prepared for each position by the judges of the courts next below the superior court, but in reality the Captain-General dictates who shall receive the appointment.

The Spanish Constitution reads: "Magistrates and judges are irremovable, and they shall not be deposed, retired, or transferred except in the cases and in the form prescribed by the law"; but under the despotic authority of the Captain-General this has been promptly set aside, and the judges have been compelled to acquiesce in every move desired by him under penalty of being promptly transferred or removed. Hence the past judicial system can be considered little more than a method of indirectly complying with the whims and ideas of the Captain-General. The criminal law of the island has been so administered as to afford a source of revenue to the Government. Frequently over \$200,000 per year has been realized from this source.

In criminal cases the clerks of the courts have been obliged to give their services free, and even personally to pay for the services of assistant clerks and other expenses incidental to their positions. Municipal judges have also been obliged to conduct preliminary examinations in criminal cases and to take charge of certain records, with-

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out compensation, their only legitimate emoluments being those derived from fees in civil cases ; but, to quote from the excellent work of Mr. Quesada :

“ Notwithstanding all this, these positions are sought after and they are given as prizes to the friends of the Government, because they afford chances for making big steals that can only be exceeded by the shamefulness of the proceedings.”

Such a condition has not tended to keep the judicial ermine as pure as could be desired, and numerous cases could be cited of incompetent and corrupt men holding high judicial positions.

A curious provision of the civil law is one which permits either party to a civil suit to reject the judges before whom it is to be tried. This process can go on indefinitely, so that practically either party to a civil suit can prevent it from ever going to trial, if he so desires. One of the most remarkable confessions concerning this system was that made in the Spanish Senate, May 3, 1890, by Mr. Vasquez Queipo, a former judge in Cuba :

“ Perhaps the measure adopted had its origin in some private remarks of my own concerning a certain fraud in Cuba involving about five millions of dollars which occurred eight years ago and which we seem to have forgotten, though I raised my voice several times in Congress to demand an explanation from Mr. Balaguer, then Minister of the Colonies. I told him at the time some poor clerk might possibly be found guilty, but no one else. Subsequently, I, myself, seated as judge, had to pass sentence in the case. Everybody was proven innocent, except a poor clerk with a salary of five hundred dollars a year.”

Cabrera, the great Cuban writer, says of this system :

“ It is not that we are lacking in laws ; no—from the Charter of Rights to the latest recompilation ; from the Ordinances of Castile and Arragon to the Royal Decrees and Rescripts and Compilations and new Codifications, we enjoy in Cuba the same tremendous conglomeration of laws as in Spain. With all the Commissioners of Codification—

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which we pay for in great part—it has not been possible to unify and systematise these laws. What we very sadly need are judges; of judges in the true sense of the word we have very few indeed.”

As the same writer, and others of almost equal note, intimate that few if any of the present presiding judges can intelligently interpret the existing laws, we trust that our readers will concede the wisdom of the suggestion that able Cuban counsel be retained in connection with the transaction of even minor business matters. In fact, too much caution can hardly be exercised until a comprehensive, adequate, and uniform system of equitable law has been established under the administration of competent and impartial judges. In connection with this, it might be well to state that the present Government of the so-called Cuban Republic has prepared and passed what is said to be a most excellent civil code, based practically on the American system—a number of good lawyers educated in the United States being prominent in the councils of the Cuban Government.

RECORDS AND SURVEYS

The greatest difficulty which will be encountered in the purchase of real estate in Cuba is the uncertainty and unreliability of existing surveys, in spite of the existence of elaborate maps which seem to prove the contrary. This unfortunate situation exists with city lots and mining claims as well as in the less serious question of boundaries between farms and plantations, while, in the wilder portions of the island, timber and similar lands are exceedingly difficult to locate with any degree of certainty.

Real estate records have been kept by notaries public for a fixed term of years, and then turned over to the custody of local registry offices. The contents of

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these registries are now said to be claimed by the Spanish as part of the archives which they intend to take with them to Spain. If, upon the withdrawal of Spanish governmental authority, permission is given to remove official records of this character, it is apparent that serious complications may hereafter arise as to abstracting and determining titles. No doubt the future permanent government of Cuba will provide legal methods for overcoming the embarrassments which are liable to surround real estate transactions from the causes recited ; yet, until such action is taken, no one should proceed in such matters without the best local legal advice, and without giving the most careful attention to the location of boundaries. It should be said, however, that if the records remain available, the abstracting of titles will be a comparatively simple matter, as the whole tendency of the past has been for titles to real property to remain continuously in the same families.

COLLECTION OF DEBTS

Regarding the practice of paying debts in Cuba, an authority on such matters has said that debts of honor are more often paid in full, in proportion to the amounts involved, than legal debts. Theoretically, the methods of debt collection in the past seem to have been good, but in practice courts have held very peculiar views on such matters. For instance, there are cases on record where a creditor has brought suit for the collection of some honest and legal obligation, yet the debtor has actually secured a judgment for damages as the result, on his allegation that to be sued at that particular time impaired his reputation and credit, or otherwise injured him.

The following statement from an official source per-

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haps describes as fairly as is possible the whole practice as regards the collection of debts, and the very fine and somewhat peculiar distinction that is drawn between legal obligations and debts of honor :

“ The various obligations that have no legal or binding nature except the honor of the debtor are debts contracted at prohibited games, and outlawed indebtedness.

“ As regards gambling debts, there is a distinction made between those contracted at prohibited games and those at lawful games. The first named are debts of honor, and it is customary to pay them inside of twenty-four hours. These debts are declared by law to be non-collectible. Debts incurred at lawful games may also be considered as debts of honor, inasmuch as the law stipulates that the amount played for must not exceed what an honorable man of family could conveniently hazard, thus leaving (in case of action at law) to the discretion of the judge the amount he considers should be paid. At cock-fighting (a legal game) a large amount was lost, and the loser, for some cause, refused to pay ; the matter was taken to court, and the loser was condemned to pay \$17, this amount being what the judge considered an honorable man of family could conveniently hazard. As a rule these debts are paid without recourse to the law.

“ Drinking debts are of the same character as any other debts contracted at a store ; they are outlawed at the expiration of three years, however, if no attempt of any kind has been made in that time to collect them.

“ There are obligations for professional services that are debts of honor—in cases where a criminal who is insolvent is defended by a lawyer. If discharged, the court does not pay for the services of the lawyer, and the accused thus contracts a debt of honor. If condemned, the court pays costs and charges and increases the term of imprisonment at the rate of one day for every \$1.20 thus paid. In such cases, however, it is customary for the lawyers to refuse any remuneration, thus saving the culprit from these extra days of imprisonment.

“ Debts of honor are generally paid, or, when the amount is very large, excused by the creditor.

“ In cases of insolvency, debts of honor are usually paid if the debtor subsequently retrieves his position. In cases of insolvency when the merchant regains his position, if he has made an agreement with his creditors, he is obliged to pay. If he has not made any agree-

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ment, the debts may be by law collected in full. In some cases, where the insolvent retrieves his position, he makes a private and separate agreement with each and every creditor for the purchase of his indebtedness. The reason for this is that, having once failed, no matter under what just or plausible circumstances, he is incapacitated to make a contract or to require the fulfilment of one, or to hold any property in his own name. After the purchase of his indebtedness he files a request in the court for his rehabilitation. Outlawed indebtedness is not paid. The fact that it becomes outlawed is due, in every instance, to the ignorance or neglect of the creditor, as the time for prescription dates from the day that an effort is made to collect it. For instance, a promissory note is outlawed at the expiration of ten years. At the end of nine years and six months the creditor, through the courts, by notary public, or before witnesses, attempts to collect it ; under such circumstances the law does not consider the nine years and six months as having expired, but counts the time for the second prescription from the date of attempted collection."

SPANISH TERRITORIAL DIVISIONS AND GOVERNMENT

The question of the Spanish form of government for Cuba is not essential for our consideration, yet it is necessary that some reference should be made to it, and as the present territorial divisions of the island will probably be retained in the main, they should, of course, be given. It should be noted, however, that some of the actual or proposed divisions made by the insurgent Government differ materially in their boundaries, and even in their names, from the old-established divisions.

The head and front of all Spanish authority in Cuba was the Captain-General, who, despite some little show of the form of a constitutional government, possessed absolute power over all affairs of the island, practically unrestricted even by the Spanish Government at Madrid, except so far as it might exercise the power of removal and of the appointment of his successor.

Between 1879 and 1898 Cuba had a farce-like repre-

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sentation in the Senate and House of Deputies at Madrid. Of the thirty delegates which it has lately had in the House, three-fourths were said to be Spaniards. The seventeen members of the Senate were selected in the following peculiar manner: three for the province of Havana, two for each of the other five provinces, one for the Society of Friends of the Country, and one for the University of Havana. The remaining two Senators were always the Archbishop of Santiago and the Bishop of Havana, in virtue of their ecclesiastical offices.

The thirty members of the House of Deputies were elected according to population, one approximately for each 50,000 inhabitants. In the last delegation twenty-six out of the thirty deputies were Spaniards, but the influence or power of the entire delegation at Madrid was unimportant.

The greatest approach to free government was made by the Council of Administration, sometimes called the Cuban Cortes, supposedly a general legislative body of the island, in which there was a faintly discernible theory of its being the local legislative branch of the government of which the Captain-General was the executive. As fifteen of the members were appointed by the Government at Madrid, however, and as the popular elections of the others were carefully manipulated, it could scarcely be called a representative body of the people; and as the Captain-General could, at his pleasure, suspend any of the members up to the number of fourteen, not much outspoken sentiment could be expected. If anything so unexpected had happened, then the Council of Authorities, so-called, a peculiar body hereafter described, had the privilege of suspending the entire body and assuming all of its functions. Neither glory nor profit was possible for a member of the Council of Administra-

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tion, for no compensation was paid for services, yet all were responsible in suits at law to any private individual who might consider himself injured by the official acts of a member. While theoretically grave governmental responsibilities rested upon the council, they were practically powerless, and naturally they did nothing of importance, merely constituting a cloak for the acts of the Captain-General, or, if more convenient, putting forth his sentiments as their own.

The Council of Authorities referred to might be called an *ex-officio* organization, it being composed, by virtue of their offices, of the Archbishop of Santiago (the primate of the Church in Cuba), the Bishop of Havana, the Captain-General, Commander of the Navy in Cuban waters, Chief Justice of the Havana Superior Court, the Attorney-General, the Director of Finances, and the Director of Local Administration. The body was called together only on extraordinary occasions, and for extraordinary purposes. It acted practically in an advisory capacity for the home Government, except as above recited.

The island is divided into the following provinces: Pinar del Río, Havana, Matanzas, Santa Clara, Puerto Príncipe, and Santiago de Cuba, the administration of each of which was conducted by a governor appointed by the home Government at Madrid, who was a military officer generally of the rank of brigadier or major-general. The officials were directly responsible to the Captain-General of the island. Each province also had an elective assembly, numbering not more than twenty nor less than twelve members. Their term of office was four years, and one-half were replaced every two years. They were elected during the month of September, and held sessions semi-annually. Their first act on assembling was to ballot for a list of three candidates for

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speaker, from which the Captain-General made a selection, but he had the privilege of disregarding all recommendations and appointing any member whom he might see fit. The governor of a province might also, at his pleasure, assume the function of speaker; and if at any time he considered that the public interest would be better served by dissolving the assembly, he might exercise this power, and report the fact to the Captain-General, who had also the authority to suspend any of these assemblies, reporting his action to the Minister of Colonies at Madrid. From the members of the assembly, the provincial governor selected five to be appointed as members of the legal council or cabinet, if the Captain-General so willed it; but as the whole authority of the provincial governor was about equivalent to that held by boards of county commissioners in the United States, it may be seen that home rule and representation of the people did not play a very important part.

The city governments have been moulded in the same form as those of the provinces. A number of laymen, not less than five nor more than thirty (such number being based upon the population of the town) were elected, one of their number being elected for mayor, or *alcalde*; but the Captain-General might overrule their action and appoint any other member he might see fit.

The number of deputies in each one of the provincial assemblies has been as follows:

<i>Province.</i>	<i>No. of Deputies.</i>	<i>Province.</i>	<i>No. of Deputies.</i>
Havana	20	Santa Clara	17
Matanzas	15	Puerto Príncipe	12
Pinar del Río.....	12	Santiago de Cuba	18

The following has been the allotment of deputies to the Spanish Cortes:



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<i>Province.</i>	<i>Seat.</i>	<i>No. of Deputies.</i>	<i>Province.</i>	<i>Seat.</i>	<i>No. of Deputies.</i>
Havana :			Puerto Príncipe :		
	Havana	6		Puerto Príncipe . .	1
	Guanabacoa	1			
	Jaruco	1	Santa Clara :		
	Güines	1		Santa Clara	4
Matanzas :				Sancti Spíritus . . .	1
	Matanzas	3		Remedios	1
	Colón	1			
	Cárdenas	1	Santiago de Cuba :		
Pinar del Río :				Santiago de Cuba .	3
	Pinar del Río	3		Holguín	1
	Guanajay	1		Manzanillo	1

This allotment may be taken as fairly representing the proportionate strength of the various provinces in any new scheme of government.

The various provinces are divided into judicial districts, as follows :

	<i>Districts.</i>	<i>Population.</i>
<i>Matanzas.—</i>	Alfonso XII	33,887
	Cárdenas	53,882
	Colón	79,340
	Matanzas	86,249
<i>Santiago de Cuba.—</i>	Baracoa	18,057
	Guantánamo	30,044
	Holguín	58,900
	Manzanillo	25,735
	Santiago de Cuba	62,600
<i>Havana.—</i>	Bejucal	43,709
	Guanabacoa	32,344
	Güines	45,577
	Havana	213,577
	Jaruco	38,403
	Marianao	7,352
	San Antonio de los Baños	32,961
<i>Santa Clara.—</i>	Cienfuegos	72,187
	San Juan de los Remedios	15,358
	Sagua la Grande	79,126

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	<i>Districts.</i>	<i>Population.</i>
<i>Pinar del Río.</i> —	Guanajay	59,348
	Guane	56,393
	Pinar del Río	70,565
	San Cristóbal	44,700
<i>Puerto Príncipe.</i> —	Morón	57,620
	Puerto Príncipe	66,457

The character of these divisions is somewhat less in political importance than those of county lines in the United States. It will be noted that each of the districts bears the name of the most important municipality therein. Township lines are even more shadowy than those of the provincial districts. Where they run, how they run, and why they run, is more than a puzzle to the average American; while the question of records, either entirely local or relating to important matters, is nearly as difficult to understand, for these may perhaps be confined to some municipality or headquarters of the judicial district, the former Captain-General's office in Havana, or even in Madrid. It can generally be taken for granted, however, that everything of importance centred about the Captain-General himself, and that intimation, at least, can be had there as to where more complete information exists, if it is not actually present; yet the writer knows from personal experience that certain important records and information, which by all known processes of reasoning should be kept in Havana, were actually in Madrid, and no copies of them were to be found in Cuba. Should the archives of the Captain-General be removed to Madrid, when Spanish authority is withdrawn from Cuba, it can be safely prophesied that complications will exist in provincial, municipal, and personal affairs which it will be well-nigh impossible thoroughly to adjust.

The political divisions of the island, as established by the insurgent Government, differ somewhat in name and

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boundaries from those which we have given, and of course the proposed and actual present form of government therein is radically different from that which we have recited. Whether or not the new or the old divisions and titles will prevail is of course now a question of uncertainty, yet it is to be hoped that there will be no innovations as regards names, for already the greatest confusion exists in many localities, as regards the use of a number of names to designate the same place or thing. It may be well here to quote from the admirable work of Col. A. S. Rowan, as regards certain merely popular divisions of the island, in order to illustrate the point which we have just raised. It will be seen that the boundaries of these popular divisions vary considerably from the provincial lines :

“ Popularly the Island is divided into four regions, known respectively as the Vuelta Abajo (lower turn), Vuelta Arriba (the upper turn), Las Cinco Villas (the five towns), and the Tierra Adentro (the interior country).

“ From the meridian of Havana to Cape San Antonio lies the Vuelta Abajo. This is again popularly subdivided by giving the name of Los Partidos de Fuera (the outlying districts), or simply Los Partidos, to the part between the meridian of Havana and that of San Cristóbal in Pinar del Río.

“ From the meridian of Havana eastward to that of Santa Clara lies the Vuelta Arriba.

“ From the meridian of Santa Clara to that of Puerto Príncipe, or even as far east as Holguín, the term Las Cinco Villas is now applied (formerly called La Cuatro Villas, the four towns, from the four towns of Trinidad, Remedios, Sancti Espiritu, and Santa Clara). The new designation is taken from the jurisdictions of Sagua, Santa Clara, Trinidad, Remedios, and Cienfuegos ; but the original ‘ five towns ’ have since been elevated to the rank of cities.

“ The Tierra Adentro (the interior) may be roughly defined as lying between the meridian of Caibarien and the extreme eastern point of the island.

“ It will be seen that there is frequently an overlap in the limits of these popular divisions, but this is of no definite importance. It is

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extremely convenient, however, to be familiar with these designations, as they are referred to constantly in writings and in conversation."

LAWS OF THE CUBAN REPUBLIC, 1895-1898, ESTABLISHING NEW TERRITORIAL DIVISIONS

The proper division of the island, according to the views of the so-called Cuban Republican Government, is contained in the following articles :

Article I. The Republic of Cuba comprises the territory occupied by the Island of Cuba from Cape San Antonio to Point Maisí, and the adjacent Islands and Keys.

Art. II. This territory shall be divided into four portions, or states, which will be called Oriente, Camagüey, Las Villas or Cubanacán, and Occidente.

Art. III. The State of Oriente includes the territory from Point Maisí to the port of Manatí and the river Jobabo in all its course.

Art. IV. The State of Camagüey includes all the territory from the boundary of Oriente to the line which starts in the north from Laguna Blanca through the Esteros to Morón, passing by Ciego de Ávila, follows the military trocha of El Júcaro in the southern coast, it being understood that the towns of Morón and Ciego de Ávila belong to this State.

Art. V. The State of Las Villas has for boundary on the east Camagüey ; on the west the river Palmas, Palmillas, Santa Rosa, the Hanabana River, and the bay of Cochinos.

Art. VI. The State of Occidente borders on that of Las Villas, extending to the west to Cape San Antonio.

Art. VII. The Islands and adjacent Keys will form part of the states to which they geographically belong.

Art. VIII. The State of Oriente will be divided into ten districts, which shall be as follows : Baracoa, Guantánamo, Sagua de Tánamo, Mayarí, Santiago, Jiguaní, Holguín, Manzanillo, Bayamo, and Tunas.

Camagüey comprises two,—the eastern district and the western district.

Las Villas comprises seven,—Sancti Espíritus, Trinidad, Remedios, Santa Clara, Sagua, Cienfuegos and Colón.

That of Occidente comprises sixteen, Cárdenas, Matanzas,

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Unión, Jaruco, Güines, Santa María del Rosario, Guanabacoa, Habana, Santiago de las Vegas, Bejucal, San Antonio, Guanajay, San Cristóbal, Bahía-Honda, Pinar del Río, and Mantua.

Art. IX. Each of these districts will be divided into prefectures, and these in their turn into as many subprefectures as may be considered necessary.

Art. X. For the vigilance of the coast there will be inspectors and watchmen appointed in each state according to the extent of the coasts and the number of ports, bays, gulfs, and salt works that there may be.

Art. XI. On establishing the limits of the districts and prefectures, the direction of the coasts, rivers, and other natural boundaries shall be kept in mind.

NEW TERRITORIAL DIVISIONS

Illustrating the changes thus made in the former boundaries of the provinces is an accompanying map, from which will be noted that the new state of Oriente practically comprises the province of Santiago de Cuba; that the state of Camagüey covers about four-fifths of the province of Puerto Príncipe, the rest being added to the new state to the westward; that Las Villas, or Cubanacán, includes the territory just mentioned, all of the province of Santa Clara, and a small portion of the eastern side of the province of Matanzas. The state of Occidente includes the remainder of the province of Matanzas, all of the province of Havana, and all of Pinar del Río.

While we have designated these divisions as "new," in reality they are but a revival of former names applied to territorial divisions of the island existing many years ago, and the new boundaries are much the same as then. It will be noted that these conform quite closely to the popular divisions to which we have elsewhere alluded.

CHAPTER VIII

ANIMAL AND VEGETABLE LIFE

DOMESTIC ANIMALS.—HOW THEY ARE DISTRIBUTED OVER THE ISLAND.—NECESSITY OF RESTOCKING.—CUSTOMS DUTIES ON CATTLE.—CUBAN HOGS, MULES, AND HORSES.—THE CULTIVATION OF BEES.—GAME AND OTHER WILD ANIMALS.—NATIVE BIRDS.—REPTILES AND INVERTEBRATE ANIMALS.—ANNOYING INSECTS.—FISH AND FISHERIES.—TIMBER AND FORESTRY.—GREAT VARIETY AND VALUE OF THE WOODS.—FRUIT AND VEGETABLE PRODUCTS FULLY DESCRIBED.—OPPORTUNITIES FOR AGRICULTURAL DEVELOPMENT.

DOMESTIC ANIMALS

MODERN Cuba has not had a fair chance to exhibit its natural resources for raising domestic animals at cheap prices. Each recurring insurrection has resulted in a large decrease in the number of cattle, partly owing to the neglect in rearing them engendered by the general insecurity, and partly by the raids of the rebels and the forced sales of them to the Government. As no attention has been paid to the selection of economical breeds, the quality of all domestic animals must be set down as poor. In spite of the fact that the facilities for raising cattle are excellent, and that hogs will fatten themselves on the seeds of the palm trees without any attention from their owners, dried beef and hog products have been the two largest items of import for many years past. The hog products, are, for the most part, obtained from the United States, while the dried beef has hitherto been brought in Spanish vessels from the Argentine Republic.

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Now that the discrimination in favor of everything Spanish has been removed, it may be pointed out that Texas has the natural climate for preparing dried beef, the Indians and early Spanish settlers of this section of the United States having always used this method of preserving it.

As will be noted from statistics following, cattle raising has been an important industry in the past, but was never developed to the extent which natural conditions would seem to warrant, for the whole island of Cuba is well watered, the central and western provinces being especially so. No shelter is ever required, and there is vegetation upon which the animals should fatten every day in the year; while for the localities mentioned, it can be said that it is questionable if real estate equally productive can be found as near to civilization which is not valued at much higher figures.

As a result of war and insurrection, this industry has disappeared, but before it is reestablished a glance should be given at the causes which, in the past, have been responsible for its not having reached very large proportions and complete financial success. These have been: 1st, lack of ordinary business intelligence; 2d, disregard of breeds; 3d, lack of transportation facilities to market.

In connection with the last, it can be said that in addition to the difficulties and expense of getting animals from the interior to the seaboard, it has cost more per head to bring cattle 200 miles by water to Havana, than it does to bring them from Chicago to New York by rail.

While very late statistics of the number of animals on the island are not obtainable, the following table shows the number of domestic animals in various provinces of Cuba in 1891, according to official statistics:

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<i>Provinces.</i>	<i>Horses.</i>	<i>Mules.</i>	<i>Cattle.</i>	<i>Pigs.</i>	<i>Sheep.</i>
Havana	91,172	9,414	336,141	106,716	19,250
Matanzas	89,504	7,800	289,786	34,124	17,611
Pinar del Río	83,069	7,807	312,875	111,429	9,508
Puerto Príncipe	42,213	1,437	362,250	109,880	2,012
Santa Clara	121,354	6,989	739,695	132,619	16,670
Santiago de Cuba	104,104	9,862	445,021	75,426	13,433
Total	531,416	43,309	2,485,768	570,194	78,484

As previously remarked, practically all of these animals have disappeared, and consequently the pastures of the island must be restocked; but it should be remembered that practically the same condition of affairs existed in this respect at the close of the previous insurrection, the Spanish troops and even the people of the island being obliged to rely upon the United States and upon the other West Indian islands for their meat supplies, so that the figures which we have given would practically represent the increase in such animals for a period of thirteen years prior thereto; and it will therefore be noted that the natural tendency to increase on the island must be favorable. It is true that this tendency was encouraged by legal enactment, which provided that for a period of three years after the close of the Ten Years' War no cows or heifers should be killed, and customs duties were removed on all classes of animals for the same period. Yet, since that time, the duty on the importation of animals of any character has been almost prohibitive; of late years being \$85 per head on horses; \$32 on mules; \$22 on oxen; \$10 on cows; \$8 on calves, heifers, and steers; and \$7 on hogs, to which were added burdensome landing and port charges.

During the latter part of the last insurrection, cattle were once more admitted free of duty, but the development of this industry in the past has been much retarded by excessive taxation, for, according to one of the best



A CUBAN PLOUGHMAN

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of authorities, this has ordinarily averaged much more than 40 per cent. on the value of the stock.

There were formerly some wholly wild cattle on the island, but these have probably now disappeared.

While Cuba has never raised more than sufficient pork—and of late years not nearly enough—for its own consumption, the possibilities which it affords for raising hogs in enormous quantities at very little expense can be better appreciated after the following statement is made: Those familiar with the subject say that the average palm tree constantly supplies sufficient berries not only to support but fatten one of the animals, and such berries are their usual food. When it is remembered that there are millions of these palm trees scattered everywhere on the island, the number of animals which could be raised at practically no cost is almost beyond calculation. In the past, practically no attention has been given the breeding of these animals, and the usual variety seen is the semi-wild razor-back hog of our Southern States, with a still wilder and smaller variety.

Sheep and goats, while common, have not been plentiful; and while fine specimens of the mule are frequently seen, their actual failure to meet the demand can be appreciated by the fact that their purchase price has been from \$300 to \$400 each, or about twice that of a good draught horse. But this should not be considered a reflection on the Cuban horse, which is an excellent beast. The oxen, used generally for draught purposes and for tillage of the soil, have been of a strong, tough native breed, which has probably nearly disappeared owing to the scarcity of food during the recent insurrection and the American blockade which followed. It is questionable if animals imported from the north to replace them will be able to perform the heavy work required, although their acclimated progeny a few years hence may.

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The dog exists, but is usually found of only two different breeds: the Havana spaniel and the Cuban bloodhound, so-called. This latter is, however, not a native of the island. Cats are common, but from the prevalence of insects are usually moth-eaten in appearance.

Among the fowls the English gamecock is the favorite, and possibly its breeding has been conducted more scientifically than in Great Britain itself. All kinds of barnyard fowls have been as common as with us.

Bees flourish naturally, as indicated by the island's exports of honey and wax. The honey varies greatly in quality; that produced in the cultivated uplands being excellent, while that of the swampy districts, where the bees have fed on the natural flowers of such localities, is poor. Beside the ordinary bees known to us, one species of bee, said to be indigenous, termed the "abeja criolla," has a sting so short that it can scarcely make itself felt. Another species, also said to be indigenous, carries a large protuberance on its back. As to these last two being natives, Humboldt maintains that all varieties of bees on the island were originally imported from Europe through Florida.

GAME AND OTHER WILD ANIMALS

Throughout the island game is plentiful; deer, though said not to be indigenous, have flourished and multiplied until their number has become so great in certain localities that the killing of eight or ten is considered an ordinary day's sport for a small hunting party, who generally do their driving on horseback. Rabbits are also plentiful.

The wild boar, so called, although in fact he is simply the domestic animal run wild, is as plentiful as the deer, and affords even more exciting sport, for, if

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cornered, he will fight, especially if the leader of the herd is, as is usually the case, a tough and experienced old fellow, called by the Cubans "un solitario." These frequently weigh from 200 to 300 pounds, and possess tusks five or six inches long. The Cuban will attack them with his machete, but, unless a good shot, the American sportsman should be careful in doing so with anything less than a magazine rifle.

Wild fowl, especially ducks and pigeons, are abundant; the former crossing from the Southern States during the winter season, while the latter remain on the island the year round. Their principal food during its season is the mangle berry of the swamps and lowlands, and during the early morning they visit these localities in such numbers that it is not uncommon for a single sportsman to bag several hundred in two or three hours. The birds have a white topknot and bluish body.

Pheasants, quail, snipe, wild turkeys, and wild guinea fowl are also numerous, with several varieties of game birds with names new to the American, such as the per-diz, rabiches, tojosas, and the guanaros.

The usual hunting season is during the winter months, and as the weather is usually clear and delightful, no more enjoyable spot can be found for this sport than in Cuba during such periods, and no more healthful surroundings are to be had than in the mountainous regions at such times.

The only distinctively native animal is the jutía, or hutía, rat-like in appearance, and black, which grows to a length of sixteen or eighteen inches, not including the tail. It lives ordinarily in hollow trees or clefts of the rocks. In its habits it is a vegetarian. While eatable, it is not especially palatable.

The wild dog (perro jíbaro), quite common and constantly increasing in number, is simply the domestic

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animal run wild. The change in his methods of living has caused him to become more diminutive in size, and to assume a lanky appearance. No matter what his previous color may have been, it changes to a blackish hue, and his coat becomes rough. He is ferocious and carnivorous, yet rarely attacks men unless driven into a corner, which he generally avoids, although constantly hunted by the natives because of his destructiveness among the smaller domestic animals.

The gato jíbaro is the ordinary domestic cat, likewise run wild. It is particularly destructive in the poultry yard, and occasionally attacks the smaller domestic animals.

Bats are very common among the surroundings where they would naturally be expected, and reach a size never seen in this country. The caverns, denser forests, and some old ruins seem to be actually alive with them at times.

Cuba has more than 200 species of native birds, including those already mentioned as game birds, many possessing the most beautiful plumage, but those with song are rare among them. None of these need detain us except the turkey buzzards and vultures, which, in their repulsiveness and great number, are seemingly a nuisance, yet are the natural scavengers of the country, and, no doubt, it is wise to prevent their destruction by law, as has been done.

In swampy localities alligators are found, and although these frequently grow to an enormous size, but little attention is paid to them by the natives; and it is not uncommon, in the neighborhood of the River Cáuto in southeastern Cuba, to see the raftsmen along the coast and in the small streams clubbing them out of the way, if necessary.

Chameleons, small lizards, tree toads, and similar

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harmless silurians of diminutive size are very common, while occasionally the iguana and other larger varieties of the lizard species are seen; but these are equally harmless, although more formidable in appearance.

REPTILES AND INVERTEBRATE ANIMALS

Few varieties of snakes exist in Cuba. One of these, the "majá," is a semi-domesticated reptile, if such a term may be used, for he is most frequently found about huts, farmhouses, and small villages, his favorite living place being in the palm-leaf thatches of the older buildings, while his favorite food is poultry. Although specimens are met of large size—sixteen to eighteen feet in length and seven or eight inches in diameter—this snake is entirely harmless and a coward in every sense of the word, never attacking, or even resisting, human beings. Another snake, named the "juba," is more vicious in disposition than the "majá," although never reaching more than one-third his size. Its natural home is among surroundings similar to those chosen by the ordinary black snake of the United States. While this reptile is courageous, it is not poisonous. The other varieties are still smaller in size, are seldom seen, and are never poisonous.

One of the most repulsive sights along the eastern coast of the island, or even in the interior, for they cross from shore to shore, is the land crabs, which are frequently as annoying as their appearance is repulsive. They travel inland, in armies numbering millions, and while not especially destructive to anything, they are vicious in their humble way, which makes walking or driving among them somewhat difficult. The noise resulting from their progress is sometimes unpleasant, and when crushed, as they always are along lines of travel, the stench which arises is disagreeable, to say the

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least. They vary in size from that of a small coin to eight inches or more in diameter, and they will actually climb a vertical wall, and frequently so undermine roads and bridle-paths as to make travel thereon dangerous.

Another harmless but annoying creature is the flying cockroach, which frequently reaches a length of from two to three inches. He does no special harm, but every stranger mistakes him for something more alarming than he really is.

Scorpions, centipedes, and kindred vermin are plentiful, and although they are poisonous, their bites are rarely, if ever, fatal. The worst of all of these are the tarantulas, large spiders, of which there are two varieties—one red, the other black. The former, which is the larger and more poisonous, is generally found along the coasts; the other, inland. The bite of either, if neglected, will produce a more or less serious fever. It is said, however, that crushed raw garlic, or an onion, promptly applied to the bite, is an effective antidote.

There is, as might be expected, a superabundance of annoying insects, varying greatly in different localities; for instance, the points on the hills along the coasts and higher elevations which are swept by the trade winds are troubled but slightly from mosquitoes, whereas in the swamps and lowlands they are an almost unbearable nuisance. The same thing may be said of the ordinary flies, which in certain localities are very numerous, and elsewhere are scarcely seen. In this connection it should be remarked that the natives consider the presence of flies indicative of a healthy locality, and their absence suggestive of the existence or approach of a yellow-fever epidemic.

There are ants of infinite and boundless quantity; one, termed the vivijagua, is very destructive, especially in orchards and coffee plantations. Another variety will

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eat its way through wood and timber, working from the inside ; while still others are annoying, if not destructive. One large white variety, common about sugar plantations, is said to be a blessing, for the planters attribute to it the absence of rats from Cuban cane-fields, which are a pest in nearly all other sugar-growing countries. The experiment has been tried of transporting these ants to other countries for the purpose of eradicating the rats there, but favorable results have not been attained from so doing.

The large and beautiful fireflies and other phosphorescent insects are very common, being frequently mistaken at night for the light of a cigar, and the natives often collect a number of the largest species (the cocuyo), enclose them in cages, and use them for subdued interior illumination. By bathing them regularly, and feeding them with fragments of sugar-cane, these fireflies may be kept alive for months. The light emitted from the cage is of a brilliant greenish hue, and it is said that one can read by it, which, from personal experience, the writer doubts, unless the number of insects collected is very large.

The worst of all the pests on the island are the nigua, or jiggers, so called, sometimes described as a cross between Satan and the woodtick ; and the torment from their attacks is said to be worse than would be possible from either of their reputed progenitors. They burrow under the skin like the tick, and can be removed only by being dug or cut out. The usual native treatment of the wound after the removal of these is to fill it with tobacco ashes. These insects thrive and breed in woollen garments, whereas a person dressed throughout in cotton or linen is rarely troubled with them. Body lice are everywhere, and care must be taken to avoid them.

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FISH AND FISHERIES

According to naturalists, 641 species of fish exist in Cuban waters, and the quality of crustaceans, such as lobsters, crabs, and shrimps, is exceedingly fine. The fishing industry has existed simply to meet local requirements, which in itself has made this industry of considerable importance. It has been practically in the hands of Spanish sailors who, earlier in life, served out their time in the navy. Cold-storage facilities in connection with transportation might increase the extent of this business.

Oysters are very plentiful on nearly all the reefs and keys, and literally grow on trees and bushes; that is, on the branches of the mangrove and similar vegetation wet by water at high tide. The Cuban oysters are very small, and have a peculiar flavor which is greatly relished by many epicures. They are too small to cook, although they may, perhaps, be used in sauces, but they are generally eaten raw, at the commencement of repasts, as in the United States and elsewhere.

The Cuban lobsters have only rudimentary claws, and average about two pounds each. The methods followed in catching them are different from ours, owing to their different habitat. They frequent shallow water at night, and by the light of a torch the fisherman catches them with a harpoon and net.

Among the fish which will be sought by the sportsman are the pargo, or red snapper; the garfish; the cherna, which sometimes weighs sixty pounds; the lista; the gallego; the ronco, which is very gamey, but which plays 'possum when taken out of the water, and snores; and the aguja, an enormous, eatable fish, which reaches a weight of 500 pounds or over. The catching of the large sharks,

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which are so common, affords sport and excitement, though not profit commensurate with the risks involved. Porpoise shooting or harpooning also has its attractions, which can be easily gratified. The manatee is here in its natural habitat. Big schools of smaller fish of all descriptions, yet large enough to delight the heart of the fisherman, are rarely absent from the coast waters inside the keys, or in the larger harbors.

TIMBER AND FORESTRY

The uncleared and almost untouched forests of Cuba aggregate not less than 15,000,000 acres, and have been estimated at as high as 18,000,000 acres, while there is, of course, a wealth of scattered tree growth over almost the entire island. Considering the geographical location of Cuba, its flora presents some curious features, which have long excited the attention of botanists and students of forestry, including the great scientist Humboldt, who says :

“As the vegetation of Cuba presents an identity of character with that of regions near the equator, it is very extraordinary to find there, even in the plains, a vegetation of the colder climates, identical with that of the mountains of southern Mexico. In other works, I have called the attention of botanists to this extraordinary phenomenon in the geography of plants. The pine (*pinus occidentalis*) is not found in the Lesser Antilles, and according to Mr. Robert Brown, not even in Jamaica (between $17\frac{1}{2}^{\circ}$ and 18° north latitude), notwithstanding the elevation of the Blue Mountains in that island. Further north only do we begin to find it, in the mountains of St. Domingo, and throughout the island of Cuba, which extend from 20° to 23° north latitude. There, it attains a height of sixty or seventy feet, and what is still more strange, the pine and the mahogany grow side by side in the plains of the Isle of Pines. The pine is also found in the southeastern part of Cuba, on the sides of the Cobre Mountains, where the soil is arid and sandy. These anomalies of position are very rare under the torrid zone, and depend probably less on the temperature than on the soil.”

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The number and variety of important trees, or even of separate species, are great, for there are over thirty-five kinds of palm alone, nearly all of which have some specific value, or serve some peculiar purpose.

The most striking of all these is the royal palm, which is found all over the island, but more particularly in the western provinces. It well deserves the title bestowed upon it, for it is surely the king of tropical vegetation. Rising, as it does, to a height of from sixty to eighty feet, it has a perfectly straight shaft of whitish-brown color for many feet from the earth, gradually swelling in diameter, and then terminating in a column of green, crowned with a large bouquet of leaves eighteen or twenty feet in diameter. While not bearing fruit or affording much shade from the tropical sun, every particle of the tree or of its products is available for some use by the native. Its foliage forms the thatch for his cottage, the bark forms its sides ; its younger foliage is utilized as a vegetable, tasting like the most tender young cabbage, while for its timber many uses are found. Its blossoms are a constant source of nectar for the bee, and the seeds from a single tree will, it is said, support one good-sized hog. The appearance of the trunk covered with a fine white lichen has been described as being not unlike unpolished marble. The crowned top referred to stands some six feet high, and is in reality the stalks of the leaves, of which there are twenty, one of which is shed every three or four weeks. Its life is said to be about 200 years. The effect of these trees has been very correctly stated as resembling a marble column supporting artificial arches of foliage, and when in flower the sight is most magnificent.

Another member of the palm family, not so impressive, but perhaps even more useful, is the Yarez. The leaves of this tree are exceedingly strong and very large.



AN AVENUE OF ROYAL PALMS

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Hats and baskets are manufactured from them, a few of which are exported to Europe, and meet with ready sale there at good prices. Hats made from this material are almost equal in appearance to Panama hats of the finest quality.

Another variety of the palm species, the Guano de Cana (*Chamærops*), produces leaves which are said to furnish the best material for thatch, and on this particular variety alone the vanilla parasite grows.

Cocoanut palms and the ordinary African palm are exceedingly common, while among the other more prominent varieties are the Guano de Yuraguano and Guano de Costa, the wood of the latter being strong and elastic, besides being practically waterproof.

Leaving the palm family, the Majagua, for commercial purposes, is one of the remarkable trees of the island. It is magnificent in appearance, growing to a height of nearly forty feet, with wide-spreading branches, and bearing a dull red flower. Its fibrous bark is very strong, and is used almost exclusively by the natives in making heavy ropes. Some attention to its scientific manufacture would unquestionably produce cordage as strong as that made of the best Manila hemp. The timber of this tree is also one of the finest of the hard woods on the island.

The Granadillo, a more diminutive tree, growing only in the richest soil to a height of twelve feet, has exceedingly hard timber of beautiful color, suitable for making expensive walking-sticks, and for fine cabinet work.

The Baría, another valuable tree, produces timber harder than the best American live-oak, noted for its great durability. Its appearance is imposing, as it usually grows to about forty feet in height, and bears a fragrant flower.

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Cuban ebony grows all over the island. The trees reach a height of from sixteen to eighteen feet, with a diameter of about one foot. It is blacker than the same material generally found in the American market.

Lignum-vitæ is plentiful in many localities, but not so widely scattered as the ebony, yet it is considered the finest that comes to the American market, average lots selling at from \$25 to \$40 per ton, while the best quality sells as high as from \$45 to \$50.

The best known of all Cuban woods in the American market is the famous Cuban cedar. Though large quantities have been shipped in the past, owing to interference from the insurrection and poor transportation facilities this trade has practically disappeared. Another tree, the Sabina Cimarrona, closely resembles the cedar and is even more valuable, as it is more solid and is as easily worked.

Cuban mahogany is well known both in Europe and America as being the best in the market, and the commonest variety easily sells at from \$110 to \$180 per thousand feet. A still rarer kind, known to the trade as figured, or birdseye, brings as high as from \$400 to \$600 per thousand feet, and has sold even as high as \$1,250 per thousand feet for very fine specimens.

A valuable wood, less known than those just mentioned, is the Ácana, which is used for rafters or exposed bridge work. It is exceedingly durable and will last for many years, even if constantly exposed to moisture. Of the same order are the Roble Blanco and the Roble Amarillo, extensively used for window and door frames, as well as for carriage and ship building. The latter variety especially is extremely durable.

The Jiquí is an extremely hard wood which will last in the ground a number of years, and is consequently principally utilized for purposes for which such qualities are necessary.

ANIMAL AND VEGETABLE LIFE

The Caimitillo is elastic and very strong, and is used for rafters, carriage shafts, and barrel hoops.

Yaya, Maboá, and Cuero are all fine, hard, building timbers, while the Cuia lasts well in water.

The Manzanillo, a tree which grows to a height of twenty feet and is found along the eastern coast, is said to furnish a useful timber, but its fruit is exceedingly poisonous.

The oddest tree in Cuba is the Jagüey, or *Ficus Indica*, which is so striking in appearance that it is always sure to attract attention. It begins as a parasite, and gradually sends down from the branches of some large tree, preferably the cottonwood tree, a series of fine threads, which take root and, after growing to a considerable size, send out side shoots which gradually encircle the great tree from which the parasite has started, gradually choking out its life until it dies. The parasitic branches mould themselves together until they finally stand by themselves as a curious specimen of vegetable growth. Its timber is valuable for the manufacture of various small articles, such as walking-sticks. During the month of May, when they are covered with fruit, the branches of these trees during the darker hours are fairly alive with bats, which are especially fond of its product. An incision in its bark gives off a peculiar resin, which, mixed with a similar product from the Maboá, is used for making bird lime, and for certain medical purposes.

The Cottonwood tree, or cotton tree (*Ceiba*), is abundant and grows to an enormous size.

The Sandbox tree is so called because of the curious pods which cover its branches amid a mass of thorns, producing the rustling sound which its title would indicate.

The Trumpet tree, with its hollow trunk, is another curiosity, while the Mangrove, which lines all the shores

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and adjacent keys, with its branches continually taking root, is still another.

Logwood and other similar dye woods are plentiful, while rosewood exists in like quantity in certain localities.

The Caiguaràn is found occasionally, and is more durable in the ground than either iron or steel.

With all this great wealth of forest, the total export of lumber and timber from Cuba has never been much above \$220,000 per year. The cause of this is lack of transportation facilities, which has perhaps affected the development of this industry more seriously than that of any other common to the island. This is so much the case that, while the product of some of the woodlands of Cuba would be worth hundreds of dollars, such lands when at a short distance from lines of transportation have been offered for sale at less than one dollar per acre; and while the uncertainty as regards surveys, elsewhere mentioned, should be borne in mind by purchasers of such lands, nevertheless, with titles and boundaries fully established, probably no greater opportunity for acquiring wealth in Cuba exists than in the purchase and utilization of its timber lands.

FRUIT AND VEGETABLE PRODUCTS *

As might be imagined from its wide range of forest trees, Cuba is splendidly endowed with a great variety of soil, from the richest black earth, or a reddish loam of perhaps equal worth, to the poorest sandy loam; while the rainfall, even in the driest months of the year, ordinarily leaves abundant moisture in the ground, and the atmosphere is always damp. The island has also a wide range of temperature, running from tropical heat at the

* Sugar and tobacco are treated separately in the next chapter.

ANIMAL AND VEGETABLE LIFE

sea level to comparative coolness at the higher altitudes. It is little wonder, therefore, that the island, as a whole, should be capable of furnishing an inexhaustible supply of fruits and vegetables, as well as the rarer products of the coffee plant and cocoa tree, which are now indispensable to mankind in all regions of the earth, though their cultivation must always be confined to favored spots in tropical and sub-tropical countries. Bananas, cocoanuts, pineapples, limes, and melons flourish here with tropical luxuriance. The yam and other members of the sweet-potato family are found nearly everywhere. Oranges of a delicious flavor, lemons, figs, and dates only await the advent of the skilful cultivator to give large and profitable returns. The mango, the guava, the zapote, the pomegranate, the anón, and other distinctively tropical or sub-tropical fruits, which have hitherto not been able to bear transportation in their natural state, are found in abundance, and are sold at prices which would speedily be doubled or trebled if some genius could find a means of bringing them with their flavor unimpaired within the reach of consumers farther north. Up to the present, little has been done to develop the fruit products of Cuba. Bananas are shipped in large quantities to the United States from the northern coast of Santiago; pineapples have been grown for export in a half-hearted kind of way, though the demand for them is practically unlimited. In early spring vegetables, such as onions and potatoes, Cuba might easily usurp the place now held by the Bermudas with reference to the United States.

Now that the island has been released from the bitter necessity of purchasing most of her supplies of manufactured articles through Spanish channels, exports of fruits and vegetables to the United States may be expected to increase as payment for imports of manufactures. The truth, however, must be confessed, that

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the native Cuban lacks both the enterprise and the capital necessary for the building up of a large export fruit trade, even where he has little to do except to pick the fruit when it is ripe for transportation, and it will not be until American energy has organized this business on wholesale lines, as in the sugar industry, that we can expect to see the natives realizing the sources of wealth, now running wild or rotting on the stalks, they have at their doors. The following is an alphabetical list of the more important fruit and vegetable products, with some particulars attached where needful :

AGUACATE.—Often known as the alligator pear, or vegetable butter. Its leaves are thick, firm, and greasy. It is used as a salad, but is not quite so crisp and succulent as that grown in colder climates.

ANÓN.—A much-prized fruit which will not, however, stand shipment, being very soft, pulpy, and luscious. It much resembles the guanábana.

ASPARAGUS (*Espárrago*).—This grows plentifully, but is small and inferior to that grown north, owing to the want of cultivation.

BANANA (*Platano*).—This flourishes practically wherever its cultivation has been attempted on the island. As a commercial industry, however, its cultivation has been carried on only on the north coast of the province of Santiago de Cuba, the principal export points being Baracoa and Gibara. Reference to the exports of these cities will show that an annual trade of millions of dollars has been done in bananas, while thousands of acres of land in that vicinity are devoted to banana culture. There is one variety of the fruit, found in the local market, too delicate for shipment, which is the most delicious of all.

BEAN (*Frijol*).—This exists and flourishes in the greatest variety, and constitutes one of the principal articles of food among the poorer classes. While natural

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conditions would warrant its cultivation to such an extent as to make it an important article of export, not enough has been raised in the past to meet the local demand; hence large importations have been made.

BEET (*Remolacha*).—This grows in a most flourishing way, but has only been considered as a market-garden product for local consumption.

BREADFRUIT TREE.—This was introduced about 1790 and great results were expected therefrom; but, so far as is known, it has not been commercially cultivated since that time.

CABBAGE (*Col*).—This grows very abundantly and is of excellent quality. No attention, however, has been given to its exportation. On the contrary, large quantities are imported from the United States.

CASSAVA OR MANDIOCA.—This root, which was formerly abundant, is used by the natives of the interior to some extent for making bread. There are two varieties of the cassava root—the sweet and the bitter. The root of the sweet cassava is known as yuca. The bitter variety gives the largest yield, and is considered the more valuable of the two. Unfortunately, in the raw state it is impregnated with hydrocyanic acid, and is therefore very poisonous until the acid is removed, either by squeezing the grated root in a handpress, or by heat. The sweet variety is innocuous, and is often used in the raw untreated state as a table vegetable. These two varieties have exactly the same relation to each other as sweet and bitter almonds, hydrocyanic acid being also the poisonous quality in the latter. The flour of cassava root, which the bitter variety is chiefly used to make, when parched in pellets on a hot pan, is well known in temperate climates as tapioca.

CELERY (*Apió*).—This is grown in local market gardens without much attention being paid to its scien-

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tific cultivation. Consequently, it is small and inferior in quality, but it is believed that this latter could be greatly improved.

CINNAMON (*Canela*).—In the latter part of the last century, the cinnamon tree was introduced by La Casas, the then progressive Captain-General of the island; and while he made great prophecies for its future, it seems to have never been commercially cultivated to any extent.

COCOA (*Cacao*).—As will be noted from the lists of exports given elsewhere, this is an important article of commerce, and the production is considerable, although its cultivation has not been as great, comparatively, as previous to the Ten Years' War. Probably no better conditions exist anywhere for its cultivation than upon the higher lands of Cuba, especially in the eastern provinces, where the industry is principally carried on. The development of this industry, like that of all others in the island, has been seriously hampered by excessive taxation, which has been as follows on all exports, and on that raised for local consumption the same less the custom duty quoted:

<i>Custom duty per lb.</i>	<i>Special duty.</i>	<i>Municipal duty.</i>	<i>Total.</i>
2.5 cents.	1.6 cents.	1.6 cents.	5.7 cents.

COCOANUT (*Coco*).—This flourishes almost everywhere on the lowlands where the cocoanut palm has been introduced, and frequently wild groves are found. The principal places of export for the nuts are the northern ports of the province of Santiago de Cuba, from the trade statistics of which it will be noted that an extensive foreign trade already exists. There is an enormous consumption of the green fruit on the island, the milk being the coolest and most healthful drink obtainable, while from the meat is prepared a delicate and very perishable jelly. It is estimated that even at past prices the

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annual yield of the average tree is worth at least one dollar, and as cocoanuts require no care whatever, it will be seen that they afford a very profitable crop.

COFFEE.—The cultivation of coffee in Cuba first began in the middle of the last century, and a few years later received a great impetus from the large emigration of French refugees from Santo Domingo, as the result of the insurrection there. For many years the crop was a very profitable one, and coffee was one of the largest articles of export from Cuba.

The coffee estates of the earlier days were almost ideal places of residence. As coffee must grow in the shade, the wealthy planters furnished this protection by systematically planting fruit trees and other trees valuable for their timber, under which the fragrant and almost ever-flowering coffee plants flourished, covered with berries of gradually changing hues, affording a crop twice each year. As wide avenues for the passage of wagons to collect the coffee were a necessity, the plantations seemed almost like carefully laid-out and beautified parks. One of these estates required years to reach perfection, but when in this stage could scarcely be equalled in appearance by any other rural scene. A large amount of labor was required in the earlier days in cultivating, picking, drying, and shelling the berries, but the competition from Brazil, Java, and the other countries, where improved agricultural machinery was used to reduce the cost of production, greatly disheartened the Cuban coffee planter. The first great blow to the industry, however, was the serious hurricanes of 1843 and 1846, which devastated many of the estates. These were subsequently turned into sugar plantations, which required less care and labor. Ten wet years completed the destruction of many of the estates, and since then the industry has languished. While the quality

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of Cuban coffee has a world-wide reputation for its excellence, since the Ten Years' War the island has not produced a sufficient quantity for home consumption, although the higher ground in the central and eastern provinces, and similar locations elsewhere, seem to possess all the conditions of soil and climate requisite for its profitable cultivation, and it is to be expected that this once important industry will be revived with the return of general prosperity and the establishment of a stable government. Among other burdens and difficulties which have retarded the revived development of this industry have been the excessive taxation on all exportations and the internal revenue duties on that for local consumption, as follows :

<i>Custom duty per lb.</i>	<i>Special tax.</i>	<i>Municipal duty.</i>	<i>Total.</i>
2 cents.	2.7 cents.	2.7 cents.	7.4 cents.

CORN.—See Indian Corn.

COTTON (*Algodón*).—No attention is now given to this product. Despite the fact that the finest quality of sea-island cotton can be raised at many points along the coast, and on the adjacent keys and islands, its cultivation cannot be said to exist as a commercial industry. Why this is so no good explanation can be given. During the Civil War in the United States the industry attained some prominence, and, it is claimed, showed large profits.

CUCUMBER (*Pepino*).—This flourishes everywhere, and possibly may furnish a source of supply for the winter and early spring demands for the United States.

DATE (*Dátil*).—This can be advantageously grown, and of fine quality, but no attempts to cultivate it in a commercial way have been made.

FIG (*Higo*).—This flourishes naturally, but its commercial cultivation has not been attempted.

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GRAPES (*Uvas*).—These are rarely seen, but there are a few fine cultivated varieties, and numerous wild varieties usually little thought of. Yet Humboldt, writing in the early days of this century, says: "Even the people of Cuba are not aware, perhaps, that in the first years of the conquest by the Spaniards, wine was made from the juice of the wild grapes in their island." He does not, however, encourage the theory that grape culture will ever become an important industry.

GUANÁBANA.—This is a native fruit, large in size, with a green skin, white flesh, and black seeds, highly prized by the Cubans for making a refreshing drink. It is also eaten to some extent. The production could easily be made enormous, but it probably has little commercial value, being too perishable for shipment.

GUAVA (*Gayaba*).—This fruit exists, and naturally flourishes, but no serious attempt has been made at its commercial cultivation. The production of guava jelly in Cuba is much less, proportionately, than in any of the other West Indian islands.

HAY (*Heno*).—This crop has not been grown to any great extent in the past, but where tried it has proved a profitable one, and no reason exists why the production of hay in the central plains of the island should not become an important industry.

HENEQUÉN.—A native fibre plant which grows in the greatest abundance and of excellent quality, the leaf being larger and the fibre more silky than that of the Mexican plant. It is said that in Cuba the plants last twelve years, and twenty-eight leaves can be picked yearly, each leaf being from five to nine feet long and weighing from four to seven pounds.

The poorest lands of the island bountifully produce many plants noted for the excellence of their fibre. These are especially Henequén, Sauseveria, and Lengua

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de Vaca. Yet but little has been done toward their cultivation or utilization in a commercial way, although some years since the Cuban Fibre Company, an English corporation, was organized to encourage the industry, and a French syndicate is said to have successfully prosecuted it on Cayo Romano, the largest key on the northern coast, while in the references to individual towns will be found mention of similar experiments elsewhere.

INDIAN CORN (*Maiz*).—Consular statements to the contrary, this is an important product for local consumption in many portions of the island, especially flourishing on the uplands. Two crops can be raised annually, and while the variety usually planted is smaller in both kernel and ear than the usual American varieties, it is said to possess greater nourishing qualities. It is extensively grown as forage for cattle and horses in the same way as in the United States.

INDIGO (*Añil*).—Many attempts have been made to introduce the cultivation of this plant, but never successfully in a commercial way, yet it is said to grow flourishingly.

LEMON (*Limón*).—This, like the lime and orange, is very abundant, and is of large size and fine quality, yet little effort has been made to cultivate it for export.

LETTUCE (*Lechuga*).—This grows most plentifully, and is in the market all the year round.

LIME (*Lima*).—This grows wild and is thoroughly indigenous to the soil. It is so abundant and its local value so small that no one seems to have ever considered it worthy of attention, although enormous quantities are consumed locally in the preparation of fruit drinks and for similar purposes.

MAMEY.—There are numerous varieties of this fruit, the best known being the Mamey Zapote, so-called. All

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are largely eaten by the natives, especially negroes, but are rarely liked by foreigners, their taste being somewhat sickish. They are somewhat difficult to transport, and can scarcely be said to be cultivated commercially. They are principally grown in a small way on the farms of the natives.

MAMONCÍLLO.—This is a small, delicate fruit of the Anón family, and grows plentifully in clusters.

MANGO (*Mango*).—This delicious fruit flourishes everywhere, usually in a wild state. Little attention has been given to its cultivation, and practically none to its exportation, which is difficult. During the season many of the natives practically live upon the fruit, but it is considered somewhat unhealthy for those not acclimatized to eat in large quantities.

MELON (*Melón*).—Melons, of the muskmelon or cantaloupe varieties, grow in the greatest abundance with but little care or cultivation. Their quality, however, is generally poor; yet, in certain localities, they are of large size and of fine flavor, and it is believed that proper selection of the kinds to be planted would produce the same results as in some portions of Puerto Rico, which are said to produce the finest melons in the world. It seems almost useless to remark that the early spring markets of the United States could be supplied from this source.

The Watermelon (*Sandia* or *Melón de Agua*) also grows freely, and the foregoing remarks will apply with almost equal force to the methods followed in its cultivation, and as to its ordinary quality.

MILLET (*Millo*).—This is raised extensively in a purely local way for feeding fowls.

ONION (*Cebolla*).—This is easily raised in large quantities and in great variety, but has been principally consumed locally, this vegetable being one of the principal articles of local food consumption. Apparently, con-

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ditions for cultivation are far more favorable than in the Bermudas, and it seems as if the winter and spring markets of the United States could be supplied from Cuba more advantageously than from anywhere else.

ORANGE (*Naranja*).—The Cuban orange is, perhaps, the sweetest and most delicious in the world; growing, flourishing, and taking care of itself, with a lack of attention that would surprise the Florida or California orange grower. No attempt has ever been made at scientific culture, yet the yield of all trees is most abundant. Little effort has been made to export the fruit in a commercial way, but there is no reason that in the future the growing and exportation of oranges should not proportionately develop more rapidly than any other industry on the island, until it becomes one of the most important of all.

PEANUT (*Mant*).—Two crops of peanuts can easily be grown each year, and the yield is very great. Up to the present, however, they have not been raised commercially for export.

PINEAPPLE (*Piña*).—This fruit has been the most actively cultivated of all in Cuba in a commercial way, with the single exception of bananas. The fruit is of superior quality, and the yield per acre is very large. The methods of cultivation have been crude; yet the profits of the business have been large. With improved methods of cultivation it is believed that the output would be enormous, with profits proportionately increased.

POMEGRANATE (*Granada*).—This flourishes as in other tropical countries, but does not afford an item of commerce.

POTATO (*Papa*).—The cultivation of this crop has been greatly neglected, but, with some care, should be made a very important one for export to the United

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States during the winter months. The yield is very abundant, and the tubers are of fine quality. The first year the seed is brought from the United States; but to maintain the quality it is necessary to bring the seed from the north each year. If, however, such course is followed, the crops are enormous; yet the locally raised potatoes ordinarily bring at Havana \$1 per bushel more than those imported from the United States, from which the principal supply has come. Two crops can easily be raised yearly.

RADISH (*Rábano*).—This grows abundantly, and is of excellent quality all the year round.

RICE (*Aroz*).—This grows very abundantly in the swampy lands of the coast and elsewhere if irrigation is available. Although a large quantity has annually been produced, it has never been sufficient to meet the requirements of home consumption, which is very great in proportion to the population. The grains are somewhat smaller than those of Carolina rice, but the Cuban product is said to be superior to it in quality.

ROSE FRUIT (*Poma Rosa*).—This is a small, native fruit, yellow in color, and round in shape—somewhat like the apple. It has a strong rose odor as well as flavor. It is very popular among the natives, but its commercial cultivation has not been undertaken. It is believed that it will stand transportation, and that if its cultivation is carried on to any extent its exportation would be popular and profitable, as its pleasant odor and flavor would be sure to attract attention in the American market.

RUBBER (*Goma*).—But one serious attempt, perhaps, has ever been made at the cultivation of the rubber tree in Cuba. This was in the province of Santiago, a few years ago. The results there obtained were most encouraging, so far as the growth of the trees was concerned, and the quantity of gum obtained; but following

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the usual practice, the infant industry was crushed out by excessive taxation, which necessitated the abandonment of the plantations. The gentleman who had charge of this experiment has personally told the writer that he believed that rubber trees in Cuba could be more profitably cultivated than in South America. It should be remembered that the Maboia and other ficus trees, similar in their nature to the rubber tree, exist in Cuba, the one named being said to furnish a considerable amount of gum. These trees, unfortunately, are generally found scattered, instead of in groups, as would be desirable, if they can be utilized, which has probably never been determined.

SAGO (*Sagu*).—The sago palm, from which the flour of that name is made, flourishes, yet but little attention is paid to its cultivation.

SPINACH (*Espinaca*).—This grows in the greatest abundance, but is only cultivated in the market gardens at present.

STRAWBERRY (*Fresa*).—This fruit grows two abundant crops yearly, but it is rarely cultivated, the natives remarking that it requires too much labor.

SWEET POTATO (*Boniato*).—There is no limit to the extent of the crop of this vegetable that could be raised. It grows on almost any kind of Cuban soil with very little care, and gives an enormous yield. It is, perhaps, the most important article of food consumed by the native population, and during the recent insurrection the insurgents and others in the country would have starved had it not been for the existence of the sweet potato.

TAMARIND (*Tamarindo*).—This grows in enormous quantities in a natural way, with but little, if any, cultivation. It is used extensively on the island in the preparation of a refreshing drink, but has not been ex-

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ported to any great extent, although there is no good reason why large exportations should not be made.

WATERCRESS (*Berro*).—This is found in abundance along the streams of the island, and is of excellent quality.

WHEAT (*Trigo*).—While, as is well known, practically all flour used in Cuba is imported, and consular reports state that not a flour mill exists on the island, several scientists have stated that wheat could be cultivated to as great advantage on the higher elevations of the island as is done at similar elevations in Mexico, yet there is little prospect of it ever becoming an important agricultural product.

YAM (*Ñame*).—This, as is well known, is much like the sweet potato, being of the same general family, and, like it, is extensively cultivated for local consumption all over the island, flourishing with but little care.

YUCA.—See Cassava.

ZAPOTE.—This brown, apple-like fruit much resembles the Medlar, and is eaten, like the latter, when thoroughly rotten. It is one of the fruits most abundantly produced and consumed in the island.

CHAPTER IX

SUGAR AND TOBACCO

INVESTMENTS PER ACRE AND RESULTS THEREFROM ON SUGAR PLANTATIONS.—PROFIT IN SUGAR.—CULTIVATION AND MANUFACTURE OF SUGAR.—PRODUCT AND DISTRIBUTION IN TONS.—TABULATION OF EXPORTS FROM VARIOUS PORTS OF CUBA.—STOCKS ON HAND AT CLOSE OF SEASONS.—THE WORLD'S PRODUCTION OF CANE AND BEET-ROOT SUGAR.—STATISTICS REGARDING CONSUMPTION.—MOLASSES.—RUM.—TOBACCO CULTIVATION.—CIGAR MANUFACTURE.—EXPORTS OF LEAF AND SCRAP TOBACCO AND OF CIGARETTES.—STATISTICS FROM OFFICIAL SOURCES REGARDING ALL ASPECTS OF THESE INDUSTRIES.

MAGNITUDE OF THE SUGAR INDUSTRY

ALTHOUGH it has been stated officially that the cultivation of the sugar cane was not begun in Cuba until 1595, unofficial Spanish historians trace back the beginning of sugar production on the island to 1530. The probability of the earlier date being the true one receives corroboration from the fact that the industry began in the adjacent island of Santo Domingo in 1523, but the explanation of the discrepancy may be that, during the sixty-five years in dispute, only sufficient sugar cane was raised to supply the local demand, and that on this account the Spanish Council of the Indies had no official knowledge of its existence. Even taking the year 1595 as a starting point, the growth of the industry was slow, because, at the end of the last century, after two hundred years of effort, the total product had reached only 28,500 gross tons a year. Since then, how-



CRUSHING MILL OF A SUGAR PLANTATION

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ever, Cuba's production of raw sugar has expanded rapidly. In 1823, the total product was 75,000 tons; in 1848, or fifty years ago, it had risen to 225,000 tons; and in 1894, the last clear year before the outbreak of the recent insurrection, it reached the enormous total of 1,054,214 tons. It may therefore be assumed that under normal conditions it would have been at least 1,100,000 tons during the present year, or more than one-third and less than one-half of the world's entire present annual output of cane sugar.

The great increase in the production of beet sugar has taken place since 1840, when only 50,000 tons were extracted, chiefly in France. Since then, through the stimulation of liberal bounties, the world's output of beet sugar has increased 7,680 per cent., while, during the same period, the increase in the quantity of cane sugar has been only 268 per cent. In Cuba, however, the increase since 1840 has been 448 per cent., or, if Cuba's share in the growth of the world's cane-sugar production be deducted from the total, the increase of the remaining countries would be only 200 per cent. In other words, while Cuba's output of cane sugar has nearly quintupled in little more than half a century, the output of all the other cane-sugar countries has only doubled. It must be borne in mind, too, that Cuba has been under the heel of a mediæval autocracy during this period; that she has been taxed like a Christian province of the Turkish empire; that every conceivable restriction to her development has been in full force, such as almost prohibitive duties on imported machinery, a complex and uncertain system of land transfer, inferior transportation facilities, and clumsy efforts to prevent the export of specie; and that she has suffered from the effects of two insurrections, not including the recent one, with the insecurity

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to life and the destruction of property which were their natural consequences. Looking at the growth of the sugar industry, in the face of such obstacles, we can only come to the conclusion that, so far as cane-sugar production is concerned, Cuba is the country most favored by nature in the world.

In following the history of the industry, certain features of interest are noticeable. Seventy-five years ago, the value of improved sugar-cane land was from \$80 to \$100 per acre; at present it is from \$30 to \$35 per acre. Then, only the very largest plantations produced an average of 350 tons of sugar per year. Now, some of the largest *centrales* produce as high as 18,000 tons in a season. Then, a large plantation consisted of about 1,650 acres of land, the total value of which, including land, buildings, machinery, negroes, etc., according to Humboldt, was \$470,000; the annual gross revenue \$60,500, and the expenses of operation \$30,000, leaving a net income of \$30,500. The price of sugar was then about seven cents per pound, and rum and molasses brought high prices.

We will contrast with this a modern plantation within our knowledge. It contains about 25,000 acres of land; it has thirty-five miles of railroad, and a large *central* equipped with the most modern machinery. The value of the investment is \$2,000,000. The total annual gross revenue is approximately \$1,000,000. We regret our inability to state the expenses of operation and the net profit, but it has been a well-managed successful property, and the net annual profit is estimated at about \$200,000. This has been accomplished on a selling price of sugar of about $3\frac{1}{4}$ cents per pound, with rum and molasses sold at much lower prices.

From what we have just said, and from statistics of forty-five years ago, which are not printed in full, we can draw some comparisons, which may be of value, by divid-

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ing the essential items by the acreage of plantations at the three periods, taking one acre as a unit for comparison :

INVESTMENTS PER ACRE AND RESULTS THEREFROM ON SUGAR PLANTATIONS.

	1823.	1853.	1894.
Investment per acre.....	\$285.00	\$311.00	\$80.00
Gross income.....	36.67	63.34	40.00
Operating expense.....	18.18	45.89	32.00
Net income.....	18.45	17.45	8.00

The large initial investment per acre during the first two periods will doubtless be surprising, but it is explained by the fact that the value of slaves employed is included in it. In 1823 and in 1853, this amount was \$81.80 and \$163 per acre, respectively. These sums may be considered a fair offset for the present investment in machinery, and hence are properly included in the comparative table.

The net percentage earned on total investment in 1823 was 6.4 per cent.; in 1853, when the price of sugar was 5½ cents, 6.5 per cent.; in 1894, 10 per cent. Hence it will be seen that improvements in machinery, so far as net results are concerned, have more than offset the decline in the prices of the product. While later experience and the improvement in the varieties of beets grown seem to demonstrate in a practical way that Humboldt was not quite accurate in his calculations when he reckoned that a given weight of sugar cane would produce six times as much raw sugar as the same weight of the best sugar beets, it is still pertinent to put the queries: Are not the scientific attention and bounties bestowed upon beet cultivation in Europe more responsible for the enormous development of that industry than any natural advantages which it possesses? And is not the question between economy of beet and cane sugar production one of "art *versus* nature," as has been very curtly stated?

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Fifty years ago the total number of sugar plantations in Cuba was at least 1,750; the total number in 1894 was 1,100. But, as we have already said, the size of plantations has greatly increased, while the number has decreased. In 1853 the world's total production of beet sugar was 200,000 gross tons; in 1897, according to Czarnikow, it was 4,950,000 tons. The world's total production of cane sugar in 1853 was 1,200,000 tons; last year, according to Czarnikow, it was 2,524,000 tons.

CULTIVATION AND MANUFACTURE OF SUGAR

A recent report to the British Foreign Office by Mr. Alexander Gollan, consul-general at Havana, gives an interesting account of the sugar industry in Cuba, as follows :

“Cuba in normal times may be said to be one of the most favored countries of the world for the economical production of sugar. The present condition of affairs greatly burdens the sugar industry, owing to the necessity for protecting the estates, the loss of cane through incendiary fires, and the difficulty at all times of getting enough hauled to the works to use them to their full capacity.

“Under normal conditions, the contrast between the Cuban industry and that of the West Indian Islands, or any American sugar-producing country, is remarkable. The total sugar crop of any other island is equal only to the output of three or four of the largest Cuban manufactories, and with the exception of Demerara, all these countries show considerable inferiority to Cuba in methods of manufacture, and in the class of machinery in use. The neglect of the other West Indian planters to advance with the times is the main cause of this lack of prosperity at the present moment. Of the other cane-sugar countries of the world, Java is the only one which comes within 50 per cent. of the amount of sugar produced annually in Cuba in normal times, and Java and the Hawaiian Islands are the only ones which are generally advanced in the process of manufacture.

“Until a very recent date the manufacture of sugar and the growing of the cane in Cuba were extremely profitable undertakings, and the reasons for their prosperity may be stated as :

“1st. The excellence of the climate and the fertility of the soil,

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which allow of large crops and good cane. The rainfall, about 50 inches, is so distributed that irrigation is not necessary, though it would, in many cases, be advisable.

" 2*d.* The great movement toward the centralization of the estates which took place in the early eighties; planters having understood the value of large sugar houses, and overcome their difficulties in this way.

" 3*d.* The proximity of the United States, affording, as it does, a cash market for the sugar.

"It is a matter of surprise to many with experience in other sugar-producing countries, that, even with the above advantages, the Cuban sugar crop should have reached the great amount of 1,000,000 tons, for, while elsewhere the sugar industry is fostered by bounties, as in Europe and in the United States, or by special treaty with the country where the sugar is sold, as in the Hawaiian Islands, in Cuba the growth of production is hindered by direct taxation, and by enormous duties on the various necessaries of manufacture. Besides this, the want of ordinary roads and bridges is severely felt at times. Further, the freight charged on railroads and coasting steamers is excessively high.

"The Cuban grinding season lasts from about December 1st until the spring rains begin, May 15th. During this time very little rain falls, and the crop may be harvested without damaging the roots of the cane—a very important consideration, where land will continue to yield well for from eight to twenty-five years without replanting. The crops vary from 40,000 to 120,000 arrobas per caballeria, or from 12 to 50 tons per acre, and the cane contains from 13 per cent. sugar in December, up to 18 per cent. in March and April. The manufacturers' aim is therefore to begin as late as possible in order to profit by the refining of the cane. Very little manuring has been tried yet, and in a few places only is there any well conducted cleaning of the fields of cane in the dead season, or proper ploughing before planting. Old wooden ploughs prevail in many districts. No irrigation works of any account exist, and no trials of any scientific value have yet been made to determine the kind of cane best suited to the soil and climate. In fact the natural agricultural advantages of the country have been relied on up to now, and have been found sufficient to insure large profits. Most of the cane is transported to the sugar houses by narrow-gauge roads built for this purpose, and are often from ten to forty miles in extent and connecting with the main lines. The cost of producing sugar in Cuba may be said to be an unknown quantity in respect to the great bulk of the estates, owing to their

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lack of commercial organization, but it can be said that a great many can make sugar of 96 degrees for about $2\frac{1}{2}$ cents per pound at the sugar house, and that few can do it for less. The great factors in the cost of production in any sugar house are :

“ 1. Cost and quality of cane or value of sugar in the cane.

“ 2. Daily capacity of sugar house.

“ 3. Price of labor and method of manufacture.

“ The cane in Cuba is paid for in a certain percentage on its weight of ‘first’ sugar, or the cash value of this sugar at the time of delivery of the cane. This is a very equable and scientific arrangement, and compares favorably with anything in vogue elsewhere, even in beet-sugar countries. The amount of sugar varies from four to six arrobas per 100 arrobas of cane, an arroba being equal to 25 pounds.

“ In respect to daily capacity, the Cuban sugar houses are in advance of those in any other country. Many can grind 1,000 tons of cane in twenty-four hours, and not a few can do more than this. There are a few places in France and Belgium, known as ‘Usines Centrales,’ where the juice is conveyed by a system of pipes from small juice stations to a central establishment, which equal or excel the Cuban houses in capacity, but elsewhere there are none so large.

“ The cost of labor in Cuba is not high. An ordinary laboring hand earns from \$12 to \$20 per month, according to the season of the work, and is fed and lodged besides.

“ The methods of manufacture in Cuban sugar houses are good as regards the kind of machinery used. Immense sums have been spent in the last ten years in this direction. The mills, evaporators, vacuum pans, and centrifugals are usually first-class, but the general internal management of the sugar houses leaves much to be desired, except in a few instances. A good deal of sugar is usually lost by crude methods, and in very few places is there exercised that chemical control which has brought the best of the sugar houses to their present state of perfection.

“ Considerable advances will doubtless be made in time in the control of the sugar houses, and the growing of cane, and with good administration it is likely that Cuba will soon again become the largest cane-sugar producing country in the world.”

To this statement of the consul general’s we might add from another source the information that 120 sugar plantations in Cuba already possess portable railways for the transportation of cane directly from the fields to the

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grinding mills, though personally we doubt if the number is so large. While this indicates that the business of extracting the sugar was largely conducted with the best modern apparatus, and that but little additional economy could be expected in that quarter, it is nevertheless undoubtedly true that the methods of cultivation of the cane in the field have been as crude as those of handling it afterward have been scientific, because very little agricultural machinery is used for this purpose, and even the tools with which the farm hands have been equipped are clumsy and ill-adapted for the work, except so far as cutting it is concerned. Neither is it probable that much attention has ever been paid to the particular varieties of cane planted, nor has scientific consideration been given to similar features of its production. There are more varieties of cane, by far, than there are of Indian corn or wheat, each possessing some peculiar advantage or disadvantage. These have been carefully studied elsewhere in the world in connection with the sugar industry, yet it is questionable if the average Cuban planter is aware that there are more than one or two varieties.

During the year 1897, a British royal commission, consisting of Sir Henry Norman, Sir Edward Grey, and Sir David Barbour, was appointed to investigate the causes of the depression in the sugar industry of the British West Indian Islands and in Demerara. Sir Henry Norman had previously been governor of two sugar-producing colonies, namely, Jamaica and Queensland. Sir David Barbour had been financial secretary to the government of India, and Sir Edward Grey, as a former under-secretary of the Foreign Office, was familiar with questions of international trade, including sugar bounties. This commission, with the assistance of Dr. D. Morris, of Kew Gardens, first heard testimony in London, and afterward visited the West Indian Islands

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and Guiana, where more testimony was taken, and plantations and mills were closely examined by its members. It is safe to say that no more highly qualified body of men ever investigated the complex subject of sugar production, and the report of the commission is a perfect storehouse of facts.

Among other things this report gives, upon trustworthy evidence, the actual cost of production of a gross ton of cane sugar in a well-managed central factory, equipped with modern machinery, in the island of Trinidad, for each year between 1882 and 1896, inclusive. For the convenience of American readers, these figures have been expressed in their equivalents in United States money, and the pound avoirdupois substituted for the ton as the unit of comparison. The second column of the following table shows the average price of raw centrifugal sugar, 96 degrees test, on the London market, which is free from tariff complications ; the third column shows the actual cost of production at the central factory, including the price paid for cane :

<i>Date.</i>	<i>Cents per lb. in London.</i>	<i>Factory cost per lb. in cents.</i>
1882	4.56	4.06
1883	4.50	4.04
1884	2.47	3.42
1885	2.87	2.53
1886	2.43	2.49
1887	2.42	1.93
1888	2.85	2.46
1889	3.42	2.53
1890	2.66	2.24
1891	2.90	2.90
1892	2.83	2.24
1893	3.33	2.28
1894	2.57	2.77
1895	2.00	2.00
1896	2.05	1.99

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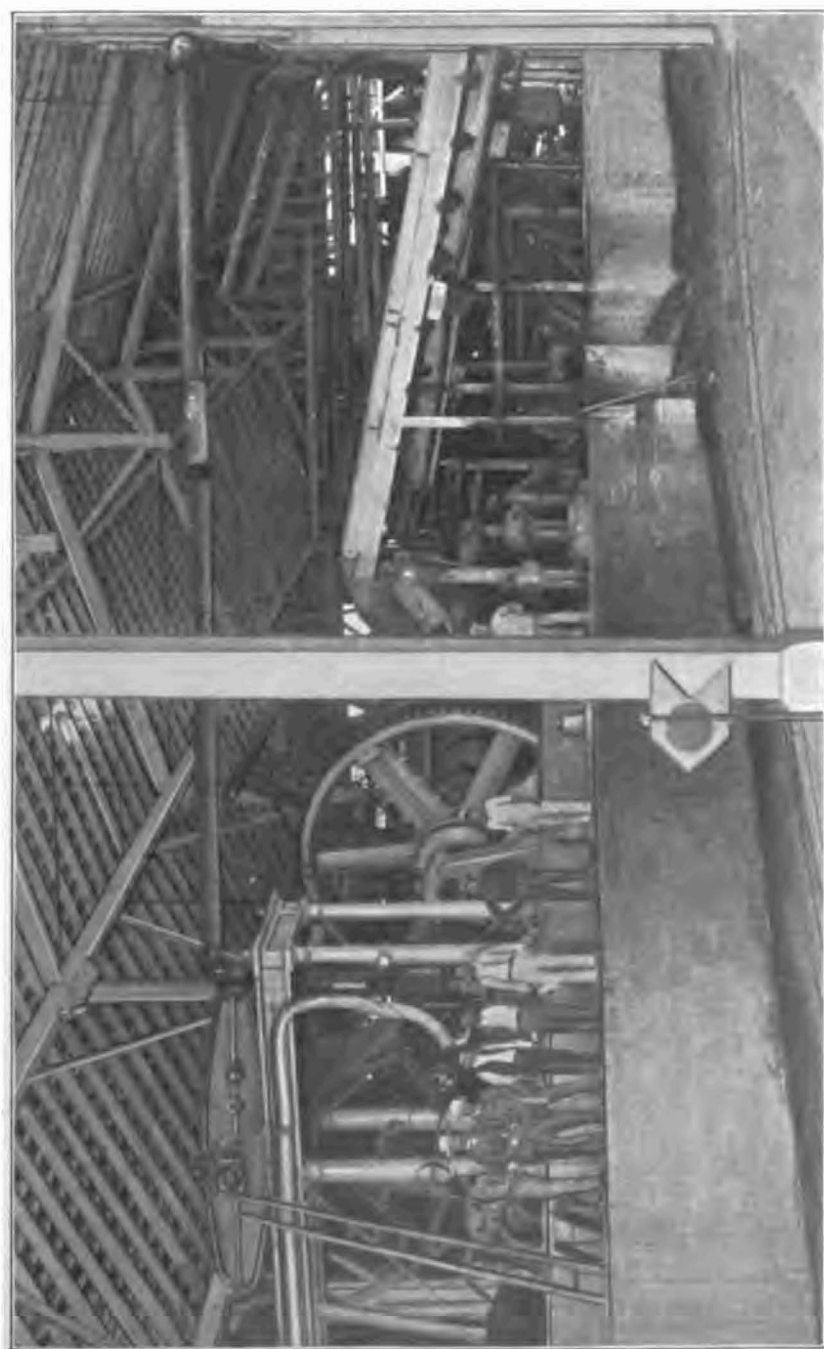
Assuming that the charge for freight, insurance, and wharfage kept within the limits of from .20 to .30 of a cent per pound, we can see that there was a fair profit in the sale of this sugar during the years 1882 and 1883, while during the remaining years of the table there was either an actual loss or only a nominal profit. The marked decline in the price of sugar in the open market from 1884 on was due to the great increase in the quantity of bounty-fed beet sugar. Between 1889 and 1893, consumption showed a tendency to catch up with production, and prices were consequently higher, but in 1894 and 1895 there was another increase in the output of beet sugar, and the price of cane sugar fell again. The comparatively higher prices recently obtained for cane sugar have been due entirely to the loss of three-quarters of the Cuban production on account of the recent insurrection, as Germany and Austria doubled their bounties on beet sugar in August, 1896, while France increased hers by 18 per cent. in May, 1897.

Reverting now to the column in the table which gives the factory cost, we find that there has been an almost continuous decline in the expense of producing cane sugar from 1883, when it was 4.04 cents, to 1896, when it was only 1.99 cents. Dr. Morris, the expert of the royal commission, finds that this decrease is chiefly due to improved machinery, and can only be realized in large central factories. In British Guiana, Dr. Morris has calculated that in 1884 the factory cost, including the price of cane, in a well-managed, modern mill, was 3.48 cents per pound, while in 1896 it was only 1.94 cents per pound. Neglecting the cost of cane delivered at the factory, and taking the expense of manufacture by itself, he finds that this amounted to 2.09 cents per pound in 1884, and to 1.02 cents per pound in 1896. Evidence was laid before the royal commission that the factory

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cost in Barbadoes, under favorable conditions, was as low as 1.86 cents per pound, but the cane on this island is exceedingly rich, and may possibly not be duplicated elsewhere. Testimony was also adduced which showed that in a comparatively well-managed factory in British Guiana, where the factory cost was 2.45 cents per pound, an analysis of the items demonstrated that taxes took 2.69 per cent. of this amount, and maintenance of machinery, 4.87 per cent.

We have already seen that Mr. Gollan, the British consul-general at Havana, estimates the factory cost of sugar in Cuba at the best managed *centrales* to be 2.50 cents per pound, although in exceptional cases it may be less. But during the month of October, 1898, the selling price of raw centrifugal sugar, 96 degrees test, in the New York market, has ranged between 2.40 and 2.60 cents per pound, neglecting United States import duty, which is a fixed rate of 1.685 cents per pound. If we take this selling price at 2.50 cents per pound, and deduct .22 cent per pound for freight, wharfage, and commission, we get 2.28 cents as the price paid for raw sugar free on board at Cuban ports. From this amount must be taken export charges of 5 cents per 100 kilos, lighterage at the port of shipment, and the cost of transportation from the *central* to the seaboard. These together must sum up not less than .10 of one cent, which would leave the net price at the *central* 2.18 cents. But we have already seen that the factory cost of the product has been as low as 1.99 cents in Trinidad, 1.94 cents in British Guiana, and 1.86 cents in Barbadoes. These three costs give an average of 1.93 cents. Deducting from 2.18 cents, which we have calculated as the present selling price at the *central*, 1.93 cents, the present possible minimum cost of production, we shall get .25 cent, equal to 12.95 per cent., as the margin of profit.



INTERIOR OF SUGAR MILL. AT CONSTANCIA

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With American methods and machinery, and under American direction, the cost of production which we have just given is quite practicable. The soil of the best sugar-growing districts of Cuba is equal, or even superior, to that of Barbadoes; while the opportunities for the wholesale economies of large plants and the efficiency of the labor procurable are greater than those found in any of the British tropical American possessions. There is no fear that cane-sugar cultivation will cease, though in the keen competitive struggle it may ultimately be confined to those soils which are capable of giving the largest yield under the most economical conditions, to the great advantage of Cuba.

There is no indication that the United States, the largest single sugar consumer in the world, will abandon its present policy of placing countervailing duties upon bounty-fed sugars; and there is no likelihood that the domestic production of the United States will show any considerable increase over its present proportions. It must also be remembered that while the soil of Cuba has always been favorable for the economical production of cane sugar, the system of government has not. It is impossible to get any exact statement of the burdens which have been laid upon the sugar industry of the island, the legal taxes being sometimes nominal, while the black-mail levied by government officials was enormous. The Cuban saying, referring to government expenditures, that "sugar pays everything in the long run," is at least significant. If, as we have already shown, taxes and maintenance of machinery in well-governed British Guiana together amount to 7.56 per cent. of the cost of production, what must their amount have been in Cuba? We must add that the sugar planters of Cuba are in favor of annexation to the United States, as this would give their product free entry.

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While it is not our purpose to go into a scientific discussion of sugar culture, or the source from which the sugar supply of the world must come in the future, we cannot but believe that if the same scientific consideration and government assistance are given to the cultivation of cane in Cuba, which are shown in connection with the beet-sugar industries of Europe, or with wheat in our own country, sugar can be produced cheaper per pound in Cuba than in any other country on the face of the globe.

As the large modern central factory has supplanted the antiquated mill of the small plantation, so must the cane-planting machine and cultivator, with the mechanical harvester, take the place of the laborer with his cumbersome hoe and keen machete, while the agricultural chemist and botanist will study the varieties of cane to be planted, thus creating an economic revolution in the cane plantation.

The following tables show the relations which exist between the sugar crop of Cuba and the world's production and consumption of this article :

TOTAL PRODUCT OF CUBA AND ITS DISTRIBUTION IN TONS OF
2,240 POUNDS.

	1893	1894	1895	1896	1897	Up to August, 1898
Total product and stock from previous year. }	815,894	1,054,214	1,004,264	348,124	262,434	226,888
Local consumption	30,000	50,000	50,000	40,000	40,000	24,500
Exported to U. S.	680,642	956,524	769,962	251,522	209,433	202,388
Exp. to Canada ..	25,069	24,372	28,324			
" Spain	9,448	23,295	28,428	14,642	1,466	
" England .	3,045	10,526	5,674			
" Morocco .	.....	.....	43			
Stock on hand	47,690	19,405	121,833	31,960	1,515	
	815,894	1,054,214	1,004,264	348,124	262,434	226,888

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Interesting as following this is a statement showing the sources of sugar supply in tons to the principal ports of the Atlantic seaboard of the United States for a portion of this period. Slight discrepancies will be observed in statements as to quantities received from Cuba, attributable, according to the two tabulations, to some shipments starting in one year and not arriving until the next :

	Entire Year, 1897	Entire Year, 1896	Entire Year, 1895	Entire Year, 1894
	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>
Cuba	209,453	251,522	816,687	951,439
British West Indies ..	99,241	84,527	61,360	97,652
Trinidad, West Indies	29,003	23,449	27,264	17,864
French West Indies ..	.....	.....	.....	127
Puerto Rico	32,312	29,841	28,276	31,402
St. Croix	5,186	3,571	5,649	7,041
Demerara	69,467	66,973	54,384	45,957
Central America				
Belize				
Surinam	9,203	5,951	5,660	5,959
Mexico				
Santo Domingo	47,024	48,899	38,784	39,261
Brazil	51,822	68,519	61,645	87,646
Peru	1,313			
Europe	637,246	523,232	115,049	164,320
Philippine Islands ...	11,657	61,382	31,345	29,255
Java	215,794	312,592	142,963	106,639
Sandwich Islands ...	89,890	46,185		
Egypt	49,060	41,793		
Mauritius				
Sundries	27,630	31,048	35,572	15,137
Foreign	1,585,301	1,599,484	1,424,638	1,599,699
Domestic	9,662	1,411	23,691	26,261
Total tons	1,594,963	1,600,895	1,448,329	1,625,960

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TABULATION OF SUGAR EXPORTS FROM VARIOUS PORTS OF CUBA.

	1893		1894		1895	
	Sacks.	Hhds.	Sacks.	Hhds.	Sacks.	Hhds.
Havana	810,352	1,587	1,729,938	985	839,924	315
Matanzas	1,153,586	2,085	1,376,502	1,394	1,281,864	658
Cienfuegos	842,090	1,017	949,068	627	948,820	324
Cárdenas	671,829	587	1,098,203	.....	978,366	
Sagua	631,440	6,922	791,576	5,555	657,091	1,568
Caibarien	338,622	.....	534,322	.....	442,656	
Guantanamo	222,485	.....	320,236	.....	291,087	
Santiago de Cuba..	101,153	.....	136,637	.....	153,299	
Manzanillo	152,023	230	196,123	.....	183,996	
Nuevitas	64,685	.....	62,164	120	76,500	
Gibara	55,542	748	60,362	380	59,952	548
Zaza	41,213	300	37,174	495	39,950	330
Trinidad	32,010	1,039	57,111	.....	42,767	
Total	5,117,030	14,515	7,349,416	9,556	5,996,272	3,743
	or 718,204 tons.		or 1,023,719 tons		or 832,431 tons.	

NOTE.—In this and subsequent tables: sacks of 320 pounds; hhds. of 1,550 lbs.; tons of 2,240 pounds.

TABULATION OF STOCK OF SUGAR ON HAND AT VARIOUS PORTS OF CUBA AT CLOSE OF SEASONS.

	1893		1894		1895	
	Sacks.	Hhds.	Sacks.	Hhds.	Sacks.	Hhds.
Havana	268,677	211	86,647	32	812,867	56
Matanzas	25,740	...	2,487	...	68,236	
Cienfuegos	1,770	...	1,831	...	8,172	184
Cárdenas	42,984	5	3,149	...	30,385	
Sagua .....	.....	.....	.....	.....	1,429	
Caibarien	36,861	...	1,933	...	44,394	
Guantanamo .....	.....	.....	600	...	3,106	
Santiago de Cuba..	.....	.....	400	...	2,104	
Manzanillo .....	.....	.....	.....	.....	2,950	
Nuevitas .....	.....	.....	.....	.....	.....
Gibara .....	.....	.....	1,300	90	1,200	150
Zaza .....	.....	.....	5,530	.....	.....
Trinidad .....	.....	.....	.....	.....	.....
Total	376,032	216	103,877	122	974,843	390
	or 52,190 tons.		or 14,600 tons.		or 135,181 tons.	

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STATEMENT OF EXPORTS AND STOCK OF SUGARS JANUARY 31,
1896, COMPARED WITH THE SAME DATE IN 1895.

Exports.

PROVINCES.	1895			1896		
	Sacks.	Hhds.	Tons.	Sacks.	Hhds.	Tons.
Havana	68,497			298,182		
Matanzas	31,220			33,608		
Cárdenas	46,019					
Cienfuegos	66,438			2,500		
Sagua la Grande.	28,339					
Caibarien				19,500		
Guantanamo....	9,790			2,810		
Santiago de Cuba	21,270					
Manzanillo				8,900		
Nuevitas						
Gibara						
Zaza						
Trinidad						
Total.....	271,582		37,585	365,390		50,595

Stock.

PROVINCES.	1895			1896		
	Sacks.	Hhds.	Tons.	Sacks.	Hhds.	Tons.
Havana	257,750	32		314,287	50	
Matanzas	193,438			13,289		
Cárdenas	124,045			11,985		
Cienfuegos	66,293			11,908	178	
Sagua la Grande.	36,766					
Caibarien	72,060			4,050		
Guantanamo....	31,724			30,514		
Santiago de Cuba	10,166			2,890		
Manzanillo	34,334			15,300		
Nuevitas	4,150			6,980		
Gibara	3,208					
Zaza	2,106					
Trinidad	8,500					
Total.....	844,540	32	116,900	401,203	228	55,681

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	1895.	1896.
Total exports and stock.....	154,485 tons.	106,276 tons.
Local consumption, one month....	<u>4,200</u> “	<u>4,200</u> “
Grand total.....	158,685 “	110,476 “
Stock, January 1st, old crop.....	145,337 “	23,809 “

RETURN OF THE WORLD'S PRODUCTION OF CANE SUGAR.

<i>Country.</i>	1892-1893.	1891-1892.
	<i>Tons.</i>	<i>Tons.</i>
Cuba.....	900,000	920,000
Puerto Rico.....	65,000	60,000
Trinidad.....	55,000	50,000
Barbadoes.....	70,000	60,000
Jamaica.....	30,000	30,000
Antigua, St. Kitt.....	30,000	30,000
Martinique.....	35,000	25,000
Guadeloupe.....	55,000	55,000
Demerara.....	120,000	100,000
Reunion.....	35,000	40,000
Maurico.....	80,000	114,000
Java.....	430,000	435,000
British West Indies.....	60,000	60,000
Brazil.....	200,000	185,000
Manila, Cebu, Iloilo.....	250,000	245,000
United States.....	200,000	170,000
Peru.....	45,000	37,000
Egypt.....	65,000	55,000
Sandwich Islands.....	<u>125,000</u>	<u>135,000</u>
Total.....	2,850,000	2,806,000

The following is the estimate of the sugar crop of the world for 1894-95, as given by Mr. Licht :

<i>Beet-root Sugar Crop.</i>	<i>Tons.</i>
Germany.....	1,900,000
Austria-Hungary.....	1,100,000
France.....	830,000
Russia and Poland.....	630,000
Belgium.....	285,000
Holland.....	90,000
Other countries.....	<u>140,000</u>
Total.....	4,975,000

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<i>Cane Sugar Crop.</i>	<i>Tons.</i>
Cuba	1,000,000
Java	470,000
Louisiana.....	325,000
Brazil	250,000
Philippine Islands.....	225,000
Hawaiian Islands	140,000
Mauritius.....	120,000
Demerara.....	115,000
Egypt.....	75,000
Peru	70,000
Puerto Rico.....	60,000
Barbadoes	60,000
Trinidad.....	45,000
Guadeloupe.....	40,000
Reunion.....	38,000
Martinique.....	35,000
Jamaica	30,000
Antilles.....	27,000
Total ..	3,125,000
Grand total.....	8,100,000

According to the evidence given by Mr. C. Czarnikow before the British royal commission, the world's production of beet sugar in 1882 was 1,783,200 tons; while the production of cane sugar for the same year was 2,016,084 tons. The production of beet sugar rose from the quantity just given for 1882, to 2,545,889 tons in 1885.

While not quite recent, the following extract from the famous text-book of the sugar industry, "Sugar," by Lock and Newlands Bros., is suggestive:

"People of every country and race are fond of sugar—when they can get it. But as a matter of statistics, it is a curious fact that the greatest consumers of sugar in our time are the peoples of Gothic and Teutonic stock, and, beyond all others, the English and their offshoots. Thus, this group consumes 2,460,000 tons yearly, of which the English-speaking countries alone take 1,850,000 tons, while the

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Latin group (supplying Italy, Brazil, Spain, America [*i. e.*, Mexico, Central and South America] and a few omissions) does not appear to consume more than about 465,000 tons, nor the Slavonic more than 265,000 tons. But for overloaded customs and excise tariffs, the people of the European continent would probably use two or three times as much sugar as they do, and yet be far behind England and North America. While the 32,000,000 of the United Kingdom take 900,000 tons, the 268,000,000 of the European continent appear to use no more than about 1,280,000 tons of sugar yearly, being only 42 per cent. more for eightfold the number.

	Year.	Aggregate Consumption.	Lbs. per Head.
		<i>cwt.</i>	
United Kingdom.....	1875	18,374,543	62.80
Holland	1874	8,000,000	25.03
Belgium	1874	1,000,000	23.19
Hamburg (imports).....	1873	2,223,733	
Germany	1874	6,120,000	16.60
Denmark	1873	533,831	33.30
Sweden.....	1873	630,741	16.90
Norway	1873	193,086	12.70
France	1874	5,000,000	15.50
Austria-Hungary.....	1874	3,400,000	15.10
Switzerland	1873	381,295	15.90
Portugal.....	1874	300,000	8.40
Spain	1873	81,817	.54
Russia and Poland.....	1874	4,000,000	5.40
Turkey.....	1874	500,000	3.80
Greece	1871	86,800	6.60
Italy	1873	865,350	3.60
United States	1873	13,040,500	37.80
British America.....	1875	1,721,386	51.40
Brazil	1874	642,857	8.00
Peru	1874	570,000	5.61
Argentine Republic.....	1874	1,000,000	43.90
Other Southern and Central Amer- ican States.....	1874	500,000	
West Indian Islands (British and Foreign)	1874	1,000,000	
North and South Africa.....	1874	1,000,000	
Australia	1874	1,713,142	85.90
India, China, and Eastern and Pacific Islands.....	1874	25,000,000	

NOTE.—Cwt. = 112 lbs.

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As illustrating the immense growth in the consumption of sugar per capita, a later British authority gives the following figures on consumption in the United Kingdom per inhabitant at different periods :

1840.....	15 lbs.	|	1880.....	64 lbs.
1860.....	33 “	|	1895.....	81 “

MOLASSES

In 1892 there was a total of about 8,000 hogsheads of molasses exported from Cuba ; in 1893, about 7,700 hogsheads. Practically all of this went to the United States. Owing to the improved methods of sugar making, the quantity of molasses is gradually decreasing, and what was formerly a by-product is now being made into a cheaper grade of sugar, so that molasses is fast becoming an unimportant article of commerce. The price of molasses has also fallen, during the last few years, from 40 cents to 6 cents a gallon.

RUM

Concerning the decline of this industry in Cuba, perhaps no better reasons can be given than those expressed in an official publication signed by some of the largest producers on the island in May, 1892 :

“The molasses and residues of the elaboration of sugar are transformed into excellent alcohol, which is the only application that can be made of them at the present time. They represent in Cuba an important figure, as we may say that they correspond to about 800,000 tons of sugar. This portion of our wealth has been subjected for many years in the markets of Spain to the same duties as those imposed upon foreign alcohols. In spite of these unfavorable measures the Cuban ‘aguardientes’ were forced to go to their only market, the Peninsula ; but now even that market, the only one that the want of foresight of our legislators has left for the Cuban alcohols, is to be

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closed, with the sole object of stimulating the distillation of the residues of the grapes. In order to reach their object, the use of the Cuban "aguardientes" for the preparation of Spanish wines has been prohibited. It is proposed even to go further than this, though one would scarcely believe it. It is proposed to put such an impost upon the Cuban alcohols as to exclude them completely from the mother country. This will be a severe blow to the sugar industry in Cuba, and upon the collateral industries of the distillation of alcohols. There will be a loss therefore of about 300,000 tons of molasses."

Independent of this, the price of rum in the open market has fallen heavily during recent years; Demerara rum selling at 28 cents a gallon in 1896, as against 60 cents a gallon in 1891.

The details of home taxation on Cuban alcohols have been :

<i>Custom duties per gallon.</i>	<i>Special taxes per gallon.</i>	<i>Consumption and municipal taxes per gallon.</i>	<i>Total.</i>
8 cents.	3 cents.	22 cents.	33 cents.

TOBACCO

Originally the cultivation of tobacco was undertaken more for luxury than as a source of profit, the plant, in its present superb quality, being indigenous to the western portion of Cuba, and of less commercial value throughout the rest of the island. Up to almost the present time the industry has been considered secondary to that of sugar, although all conditions surrounding it have been more favorable than those experienced with the larger industry, for, to quote an authority on the subject :

"Other countries grow tobacco, and foreign governments in various ways encourage its growth, besides importing Cuban seeds and young plants, but it was found that only Cuban soil produced the finer aromatic

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kind of leaf. After a while the imported seeds and seedlings fell back to the level of the native plant, which they had been designed to supplement, and the Cuban plant remained faithful to its native earth, where it lives still, unrivalled in the world."

By appealing to the natural inclinations of both the white and black Cuban, tobacco cultivation has always been free from the difficulties of a scarcity of labor, being more favorably situated, in that respect, than sugar cultivation. With the exception of an occasional reduction of the prices of the poorer qualities, the competition from tobacco produced in other countries has not materially affected the Cuban tobacco industry, and practically the only serious blow that it has ever received from outside sources has been from recent tariff legislation in the United States, which has more particularly injured the business of cigar manufacturing. Of the tobacco cultivation itself a very true statement has been made by an authority that, as regards this plant, nature has placed Cuba above competition. It is this which has made her tobacco trade a certainty, a natural monopoly, which only universal abstention from smoking or extraordinary climatic changes can break up. This valuable natural privilege has been a mainstay for the colonists in their commercial disasters, for large fortunes have been made already in this trade, and want of capital is the only drawback to the attainment of greater successes. Very large profits have in good years been realized, averaging from 10 per cent. to 35 per cent. on invested capital.

As is generally known, the superior qualities of tobacco come from the Vuelta Abajo district, which covers all of the province of Pinar del Río and the western portion of the province of Havana. All that is grown east of this section is known by the general term "Vuelta

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Arriba" tobacco, although there are many varieties and qualities raised in different localities within the central and western provinces, some of which are almost as eagerly sought to meet some special peculiarity of European trade as is the "Vuelta Abajo" to meet the general requirements of the world.

Frequently, the leaf is found stronger and larger in the eastern than in the western portions of the island, but it is lacking in the delicacy of flavor and aroma which characterize the so-called genuine Havana tobacco.

It is said that, with the exception of a few Germans, foreigners who have made investments directly in tobacco culture are hard to find. This is owing to the prevailing belief that only the natives can successfully manipulate the tobacco in all its stages. It is possible, however, that after acquiring large interests in the cigar manufactories of Havana, British and other foreign capitalists may have purchased "vegas" or plantations of their own, but in recent years it has been a debatable question in connection with cigar-making whether it is more advisable for a manufacturing company to own the source of supply for the raw material, or to purchase it from others. The argument in favor of the former course is that the owner of a plantation can, to a certain extent, be independent of others in securing his supply in extraordinary years when unusual prices may prevail. The argument for the alternative course is that the product of any single plantation is never alike for two successive years, so that to secure the best varieties at all times it is advisable to go into the open market and purchase a supply. It is almost unnecessary to say that only the longest experience can give that almost instinctive knowledge which is successful in the selection and determination of the quality of tobacco under all circumstances.

A very full description of the methods of culture and

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treatment of tobacco is given in the description of Pinar del Río, the great source of production for the finer qualities, and this description will apply fairly well to the practice followed elsewhere in the island, although, in the latter case, no such thorough care is given to cultivation. There is also a difference in the sizes of the bales in the different localities.

About 80,000 persons are, on an average, engaged in tobacco cultivation. It should be remembered that this industry, as usually carried on, does not require any great amount of initial capital. Knowledge, care, and patience are the great essentials; these have produced as high as \$3,000 worth of tobacco from a single acre of land.

CIGARS

Nearly all of the prominent cigar manufactories have been established by Spaniards, mostly from the provinces of Asturias, Galicia, and Catalonia, although the labor chiefly employed is Cuban. Of late years, however, both German and English capitalists have acquired some of the more important of these manufactories, leaving the direct management principally to Spaniards or Cubans, and it is said that since the commencement of the Spanish-American war many cigar manufactories, other than those acknowledged to be owned by foreigners, have been purchased by English, French, and Germans. The most prominent of the manufactories known to be controlled by foreign capital is the Partagás Co., a London corporation having a capital of about \$1,500,000, which, in addition to the manufactories in Havana, is said to own 18,000 acres of the best tobacco land in the Vuelta Abajo district, for which it paid \$1,000,000. The daily product of these manufactories is about 2,000,000 cigarettes, and 35,000 cigars. The Henry Clay and Bock

COMMERCIAL CUBA

Co., known all over the world, is also a London corporation, having a capital stock of \$2,500,000. It comprises the two large factories which its title indicates, and its production of goods is enormous. The H. Upmann Co., a German concern, as its name would indicate, is one of the largest manufacturers of cigars in the city, besides doing a large banking business, and being engaged in other commercial transactions. It is said to have lately extended its investments in cigar manufactories.

In addition to these larger companies, there are also numerous smaller German and French owners of manufactories.

Although of late years the effect of the American tariff has been to keep Havana-made cigars out of the United States until annual imports into this country have now fallen to 60,000,000, it is also true that the methods of conducting the business in Cuba and prices obtained there have a greater effect than anything else has upon the annual production of 4,000,000,000 cigars in the United States.

In addition to the handicap which the cigar industry in Cuba labored under from the high tariff of the United States, it has also been burdened by an export duty of \$1.80 per 1,000.

Close study of the following statistics of the tobacco industry, covering production, manufactures, and exports, either as leaf tobacco, scrap, cigars, or cigarettes, will reveal an apparent discrepancy, which is accounted for by the fact that a large amount of Puerto Rico and other foreign tobacco is naturalized, so to speak, by being brought to Cuba, and repacked or manufactured into cigars and then exported. The writer has himself smoked cigars in Havana made in that city of Connecticut wrapper and Havana filler, and has been able to prove the identity of the tobacco.



THE CORONA CIGAR FACTORY

SUGAR AND TOBACCO

TOTAL EXPORTS OF LEAF TOBACCO.

<i>Year.</i>	<i>Bales of 110 lbs. each.</i>	<i>Year.</i>	<i>Bales of 110 lbs. each.</i>
1889.....	178,000	1893.....	227,865
1890.....	194,000	1894.....	232,994
1891.....	205,000	1895.....	298,733
1892.....	240,000	1896.....	152,936

In May, 1896, an edict was issued forbidding all tobacco exportation, except that to Spain.

An average crop of tobacco in this island is estimated to yield in:

Pinar del Río	260,000 bales.
Havana (Partido).....	20,000 “
Vuelta Arriba	280,000 “
Total	560,000 bales.

Of this quantity, in normal years, about 220,000 bales are used in cigar and cigarette manufactories of Havana, and about 338,000 bales are taken for export. The average weight of one bale is computed to be about 110 pounds.

The produce of Pinar del Río and Havana provinces amounts, under ordinary circumstances, to about 280,000 bales, but in 1896 showed a decrease of about 70 per cent., caused by destruction by the insurgents, and the whole crop did not amount to more than 85,000 bales.

TOTAL EXPORTS OF SCRAP TOBACCO.

<i>Year.</i>	<i>Kilos of 2,2046 lbs.</i>	<i>Year.</i>	<i>Kilos of 2,2046 lbs.</i>
1892.....	304,197	1894.....	431,085
1893.....	371,232	1895.....	741,821

TOTAL EXPORTS OF CIGARETTES.

<i>Year.</i>	<i>Packages.</i>	<i>Year.</i>	<i>Packages.</i>
1892.....	42,540,753	1894.....	38,089,685
1893.....	39,581,493	1895.....	48,163,846

The total exports of cigars will be found in the statistical tables of the city of Havana.

CHAPTER X

SOME GENERAL STATISTICS

THE TRADE AND RESOURCES OF THE ISLAND AS A WHOLE.—RELATIVE NUMBER OF SUGAR, TOBACCO, COFFEE, CATTLE, AND FARMING INDUSTRIES.—THE VALUE OF AGRICULTURAL INTERESTS.—THE VALUE OF THE ANNUAL PRODUCTS.—THE ISLAND'S FOREIGN COMMERCE.—AMERICAN FOOD PRODUCTS CONSUMED IN CUBA.—TABLES SHOWING PRINCIPAL IMPORTS FROM CUBA INTO THE UNITED STATES AND OUR EXPORTS TO CUBA.—THE TRADE OF CUBA WITH SPAIN AND WITH OTHER COUNTRIES.—CHARACTER AND VALUE OF OUR EXPORTS TO CUBA.—CUBA'S COMMERCE WITH SPAIN.—WEIGHTS AND MEASURES.

MOST of our statistics and commercial information are grouped in subsequent chapters under the titles of provinces and cities to which such data relate, but, necessarily, before proceeding to these, we should give some statistics covering the entire trade and resources of the island. In explanation of these it should be stated that since the commencement of the insurrection in 1895 the affairs of the island have not been in a normal condition, which has not only caused great confusion in trade, but has also interfered with the procurement of complete statistics for the later years, which, however, if obtainable, would be of little value in determining what has been the natural extent of trade and the true commercial basis of Cuba.

It is believed that the future development of the island will be so rapid and extensive, that quotations

SOME GENERAL STATISTICS

from the past will not approximate the commercial results that will shortly be demonstrated. Yet these will be found useful as indicating the lines of probable development and the possibilities of attaining it.

As to the statistics, and the possible discrepancies that may appear therein, the usual Spanish official has not been an enthusiastic statistician or always an entirely trustworthy one. And the difficulty in obtaining accurate data concerning Cuba's commerce and industries has, consequently, been officially deplored, in their reports, by the resident consuls of every foreign government.

As a result, also, discrepancies will be found in statements upon the subject in the consular reports of various countries, and occasionally in the same report. These, however, are not of serious importance in determining general results; and as we have done our utmost to harmonize such conflicting statements, it is hoped that the few remaining discrepancies will not confuse the reader.

According to an official Spanish statement in 1894, the extent of Cuba was 47,156 square miles. This, it will be noted, exceeds by 3,000 square miles or more the calculations of geographers. The square miles said to be in use were 29,732. This cannot mean land under cultivation, for it is well known that less than 25 per cent. of the island's surface has actually been cultivated. Presumably it covers all land upon which has been placed an assessable valuation, whether city property, plantations, farms, grazing land, or timber.

The total number of houses and buildings in the towns is stated to be 89,435.

Referring to the figures on taxation, which give the total value of assessable city property at about \$12,000,000, it will be seen that one of the customary discrep-

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ancies in official Spanish figures exists, or that assessable valuations have been exceedingly low, as it is seen that, not allowing for unimproved city property, the average value of buildings in the cities was only about \$134. The following were the statistics on agriculture :

Sugar plantations	1,100
Coffee "	191
Tobacco "	8,875
Cattle ranches	4,298
Number of farms.....	23,238
Total	<u>37,702</u>

Referring to the assessable valuation of rural property, given as \$12,000,000, in connection with taxation, it is seen that the average rated value of the foregoing was about \$315 ; seemingly a very low figure.

As to actual values of real property and the industries, few recent facts are obtainable.

Cabrera gives an enumeration of rural property and the industries in 1862, with their valuations, as follows :

2,712 stock farms.	1,731 apiaries.
1,521 sugar plantations.	153 country resorts.
782 coffee " "	243 distilleries.
6,175 cattle ranches.	468 tile works.
18 cocoa plantations.	504 limekilns.
35 cotton " "	63 charcoal furnaces.
22,748 produce farms.	54 cassava bread factories.
11,738 truck " "	61 tanneries.
11,541 tobacco plantations.	

The value of this property, together with its appurtenances, was estimated at \$380,554,527, with a net income of \$38,055,452.70.

The slaves (appurtenances) in that year aggregated

SOME GENERAL STATISTICS

367,370 on the entire island, of whom it is considered that at least 275,000 were employed in connection with the agricultural interests. Considering the actual value of these, when a forced emancipation by purchase was contemplated, at only \$400 each (the average selling value was much more), we get \$110,000,000, which must be deducted to give us a basis for comparison with the present ; so we will consider the value of the agricultural interests without the slaves to be \$270,554,527. While the population of Cuba has increased about two and one-half times since 1862, it is a noted fact that there has been little, if any, increase in these agricultural interests during this period. Comparison of the facts here given will, to a great extent, demonstrate this, while every writer upon the subject bemoans the decline of agricultural industries during the past few years. In the chapter on sugar, we have given some detailed illustrations of this, as regards the shrinkage in the value per acre of the plantations ; yet, nevertheless, it is presumed that there must have been some actual increase in values because of the extension of certain industries, and hence we consider it fair to estimate that their total value in 1894 was not far from \$300,000,000. The total value of their annual products in 1894 was probably not far from \$85,000,000, although no exact data can be obtained. Against this the total annual taxation has not been far from \$23,000,000. In making this calculation, it may be stated that we have not allowed for industries unconnected with land, but these are comparatively trifling, and the total amount of the budget for the year 1894 was some \$2,500,000 above these figures. We have, however, dealt with this question of taxation in our chapter on "Currency, Banking, and Government Finance."

Cuba has never been free to regulate her own foreign

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commerce. Spain has always held tenaciously to the doctrine that colonies are so many cows to be milked as dry as possible for the directly apparent benefit of the mother country. Except during the short continuance of the reciprocity treaty between Spain and the United States in regard to Cuba, which was in existence between the years 1891 and 1893, there was always a heavy discriminating duty in favor of Spain imposed on all foreign imports into Cuba. The amount of the discrimination was never nominally less than 40 per cent., and was usually much more, so that it was only by a scarcely concealed system of official connivance and corruption at the Cuban custom-houses that foreign manufactured products had any chance at all of competing with the far dearer and less serviceable goods exported from Spain. To give one concrete illustration which tells the whole story, it was always cheaper, except under the reciprocity treaty, to ship a barrel of flour from New York to Spain, and to have it reshipped from there to Cuba, than to send it from any of the United States ports on the Gulf of Mexico to Cuba direct.

The severance of the colonial ties which bound Cuba with commercial fetters to Spain will effect such a complete reversal of her trade that statistics of the past will be found of little value in forecasting the development of future trade. At the same time these statistics are of considerable importance, as showing the absolute needs of Cuba, since nothing was imported from foreign countries except under the stress of dire necessity, and also as showing the productive exporting power of Cuba under a system of blighting taxation and official corruption. It must be remembered, too, that the discriminating import duties in favor of Spain, left the Cuban agriculturist with small capital no option but to buy his farming implements from the one Christian country in Europe which has

SOME GENERAL STATISTICS

never, since the expulsion of the Moors, displayed any mechanical ingenuity, and which pursues on its own soil methods which are far behind those of Servia or Bulgaria at the present day. The removal of this discrimination, therefore, must mark the beginning of a new era in Cuba by the importation, perhaps gradual at first, of all those modern mechanical appliances for planting, gathering, and transporting produce, in the manufacture of which Americans so greatly excel all the other nations of the world.

Up to the present the principal direct exports from the United States to Cuba have been hog products, flour, and dressed lumber, in the order named. The direct flour exports, however, are believed to represent only one-third of the total quantity of American flour consumed in Cuba, the remainder of it being introduced by way of Spain for the reason already stated. As soon as prosperity has regained its sway in Cuba, the consumption of food products imported from the United States may be expected largely to increase, and we are justified in believing, upon elementary principles of political economy, that the more expensive and luxurious articles of food produced here will keep pace in exports to Cuba with its growth in wealth, relieved, as it will be, from the burden of an exorbitant taxation for the benefit of a distant country. With the reduction of duties on machinery to at least a reasonable amount, it is probable that Cuba in a few years will be able to dress her own lumber with tools imported from the United States for that purpose. The reader himself may go through the list of imports from the United States, balancing the question as to each item of whether it will prove cheaper to send machinery to Cuba to work up the raw materials there, or whether the raw materials should be brought to this country for manufacture into the finished product.

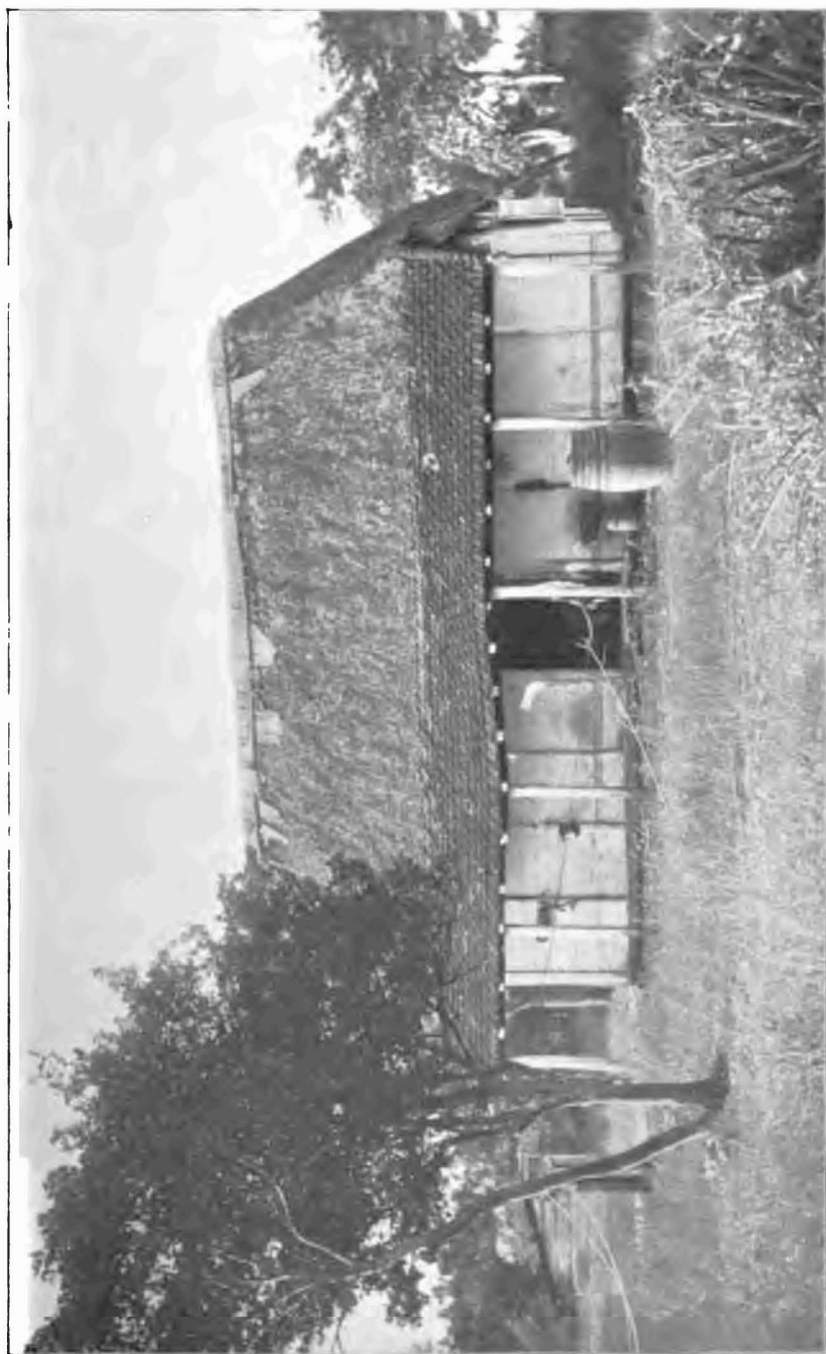
COMMERCIAL CUBA

Generally speaking, the dividing line will be found to be between those articles which are made here in immense quantities by highly specialized machinery, and those which require a simple process of manufacture in smaller quantities or which have great bulk in proportion to first and final cost. In the former case, the rule should be to bring the raw materials here; in the latter, to export the tools to Cuba. For example, it will probably be a long time before sugar-mill machinery or locks and other building hardware can be profitably manufactured in Cuba; on the other hand, building materials of wood, excluding furniture of every kind, should be made cheaper in Cuba, with its immense forests, than in the United States.

According to the latest reports of the British Foreign Office, the value of the imports of Cuba for the fiscal year ended April, 1896, was \$66,166,754, and of the exports, \$94,395,536. This would seemingly demonstrate a large balance of trade in favor of the island, but when it is considered that the Government revenues exacted from Cuba were probably \$40,000,000, it will be seen that the opposite is the case.

The trade of the United States with Cuba since 1891 has been as follows:

DESCRIPTION.	1891	1892	1893	1894
Imports :				
Free	\$26,044,502	\$66,140,835	\$66,049,369	\$67,418,289
Dutiable ..	35,669,893	11,790,836	12,657,137	8,259,972
Total ...	\$61,714,395	\$77,931,671	\$78,706,506	\$75,678,261
Exports :				
Domestic ..	\$11,929,605	\$17,622,411	\$23,604,094	\$19,855,237
Foreign ...	295,283	331,159	553,604	270,084
Total ...	\$12,224,888	\$17,953,570	\$24,157,698	\$20,125,321



THATCHED HOUSE OF A RECONCENTRADO

SOME GENERAL STATISTICS

DESCRIPTION.	1895	1896	1897
Imports :			
Free	\$17,684,765	\$2,074,763	\$1,270,059
Dutiable	35,186,494	37,942,967	17,136,756
Total	\$52,871,259	\$40,017,730	\$18,406,815
Exports :			
Domestic	\$12,553,260	\$7,312,348	\$7,599,757
Foreign	274,401	218,532	660,019
Total	\$12,827,661	\$7,530,880	\$8,259,776

The trade in the principal articles with the United States in 1893 (when it reached its maximum of value since 1874) and in 1897 was:

PRINCIPAL IMPORTS FROM CUBA INTO THE UNITED STATES.

<i>Articles.</i>	1893.	1897.
Free of duty :		
Fruits, including nuts.....	\$2,347,800	\$154,422
Molasses	1,081,034	5,448
Sugar	60,637,631	.....
Wood, unmanufactured.....	1,071,123	63,670
Dutiable :		
Tobacco, unmanufactured ..	8,940,058	2,306,067
" manufactured	2,727,030	1,971,214
Iron ore	641,943	475,281
Sugar .....	.....	11,982,473
Total	\$77,446,619	\$16,958,575

PRINCIPAL EXPORTS FROM THE UNITED STATES TO CUBA.

<i>Articles.</i>	1893.	1897.
Wheat flour	\$2,821,557	\$564,638
Corn	582,050	247,905
Carriages and street cars, and parts of.....	316,045	3,755
Cars (passenger and freight) for steam railroads	271,571	9,202
Coal	931,371	638,912
Locks, hinges, and other builder's hardware.	395,964	49,386

(Continued on page 242.)

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<i>Articles.</i>	1893.	1897.
Railroad bars, or rails, of steel.....	\$326,654	\$14,650
Saws and tools	243,544	34,686
Locomotives	418,776	20,638
Stationary engines	130,652	1,189
Boilers and parts of engines.....	322,384	35,578
Wire	321,120	35,905
Manufactures of leather.....	191,394	39,753
Mineral oil.....	514,808	306,916
Hog products	5,401,022	2,224,485
Beans and peas.....	392,962	276,635
Potatoes.....	554,153	331,553
Boards, deals, planks, joists, etc.....	1,095,928	286,387
Household furniture.....	217,126	34,288
Total	\$15,448,981	\$5,153,471

The trade of Spain with Cuba for a series of years has been as follows :

DESCRIPTION.	1891	1892	1893	1894	1895	1896
	\$	\$	\$	\$	\$	\$
Imports from Cuba	7,193,173	9,570,399	5,697,291	7,265,120	7,176,105	4,257,360
Exports to Cuba	22,168,050	28,046,636	24,689,373	22,592,943	26,298,497	26,145,800

It is to be regretted that complete statistics of the trade between Cuba and all foreign countries are not obtainable, but we are able to give below that for 1896 with a few countries, chiefly taken from the United States consular reports for July, 1898 :

<i>Country.</i>	<i>Imports from Cuba.</i>	<i>Exports to Cuba.</i>
United Kingdom.....	\$174,187	\$5,843,892
Belgium	208,304	1,089,239
France.....	3,338,900	424,600
United States.....	42,314,383	9,632,974
Spain	9,681,120	33,474,680
Mexico.....	363	26,700

SOME GENERAL STATISTICS

CHARACTER AND VALUE OF OUR EXPORTS TO CUBA IN A YEAR

The approximate value and character of the total exports from the island of Cuba to the United States, in a prosperous year, compiled from United States records, are as follows :

Asphaltum	\$11,500	Horns	\$2,500
Beeswax	86,500	Honey	68,000
Birds	10,300	Iron ore	300,000
Bones	24,000	Lance-wood spars	20,000
Bananas	1,215,000	Lignum-vitæ.....	13,000
Cigars and cigarettes..	2,300,000	Logwood.....	137,000
Coffee	500	Metals (old).....	61,500
Cedar	410,000	Molasses	1,425,000
Cocoanuts.....	70,000	Mahogany	143,000
Cocanut oil.....	25,000	Palm leaf	13,000
Cocus wood	400	Sugar.....	52,269,000
Dye wood	1,000	Sponges	51,000
Dagame spars	1,000	Syrup.....	3,100
Fruit	720,000	Tobacco (leaf).....	8,875,000
Glycerine (crude)	6,000	Manganese ore	12,000
Hides.....	87,500	Tortoise shell.....	1,500
Hair (raw)	3,500	Guava jelly.....	500
Hide clippings.....	16,000	Mahagua wood	100
Hoofs	5,500		\$68,388,900

CUBA'S COMMERCE WITH SPAIN

The importance of Cuba's commerce with Spain can best be illustrated by stating that from 1891 to 1895 it averaged 10.2 per cent. of the entire external commerce of that country, combining both exports and imports, or \$32,139,518 per annum, being the third largest with all countries. Following are the figures for each year for the period stated :

COMMERCIAL CUBA

TOTAL COMMERCE BETWEEN CUBA AND SPAIN.

1891	1892	1893	1894	1895
\$29,361,223	\$37,617,035	\$30,386,664	\$29,858,063	\$33,474,602

EXPORTS FROM CUBA TO SPAIN.

1891	1892	1893	1894	1895
\$7,193,173	\$9,570,399	\$5,697,291	\$7,265,120	\$7,176,105

Average per year, \$7,380,418.

Percentage to Spain's total imports from all countries, 4.46.

CUBA'S IMPORTS FROM SPAIN.

1891	1892	1893	1894	1895
\$22,168,050	\$28,046,636	\$24,689,373	\$22,592,943	\$26,298,497

Average per year, \$24,759,100.

Percentage to Spain's total exports, 16.53.

COMBINED VALUE OF IMPORTS AND EXPORTS FROM CUBA TO SPAIN, CARRIED IN SPANISH VESSELS.

1891	1892	1893	1894	1895
\$29,219,957	\$37,411,331	\$30,369,928	\$29,856,762	\$33,468,794

Average per year, \$32,064,536.

Percentage to total entire shipping of Spain, 22.92.

VALUE OF EXPORTS FROM CUBA TO SPAIN, CARRIED IN SPANISH VESSELS.

1891	1892	1893	1894	1895
\$7,054,741	\$9,398,088	\$5,696,847	\$7,263,819	\$7,167,321

Average per year, \$7,316,163.

Percentage to total of all imports to Spain carried in Spanish vessels, 10.08.

VALUE OF IMPORTS FROM SPAIN TO CUBA, CARRIED IN SPANISH VESSELS.

1891	1892	1893	1894	1895
\$22,165,216	\$28,013,243	\$24,673,081	\$22,592,943	\$26,297,383

Average per year, \$24,748,373.

Percentage to total exports from Spain carried in Spanish vessels, 36.77.

SOME GENERAL STATISTICS

TOBACCO

VALUE OF EXPORTS OF TOBACCO FROM CUBA TO SPAIN.

1891	1892	1893	1894	1895
\$907,109	\$1,060,531	\$1,775,238	\$1,293,434	\$1,297,404
Average per year, \$1,266,743.				

SUGAR

VALUE OF EXPORTS OF SUGAR FROM CUBA TO SPAIN.

1891	1892	1893	1894	1895
\$4,244,463	\$5,670,162	\$996,290	\$2,340,184	\$2,081,006
Average per year, \$3,066,423.				
Percentage of sugar imported by Spain, 63.09.				

COFFEE

VALUE OF EXPORTS OF COFFEE FROM CUBA TO SPAIN.

1891	1892	1893	1894	1895
\$39,892	\$82,484	\$25,000	\$21,029	\$153,851
Average per year, \$64,451.				

COCOA

VALUE OF EXPORTS OF COCOA FROM CUBA TO SPAIN.

1891	1892	1893	1894	1895
\$430,690	\$523,940	\$415,243	\$579,070	\$532,486
Average per year, \$516,286.				

TONNAGE

METRIC TONNAGE OF MERCHANDISE TRANSPORTED FROM SPAIN TO CUBA, BOTH ENTERED AND CLEARED.

1891	1892	1893	1894	1895
254,427	326,141	222,028	231,617	265,814
Average per year, 260,005.				

FROM CUBA TO SPAIN.

1891	1892	1893	1894	1895
53,168	79,241	39,717	43,237	63,948
Average per year, 55,862.				

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FROM SPAIN TO CUBA.

1891	1892	1893	1894	1895
201,259	246,900	182,311	188,380	201,866
Average per year, 204,143.				

WEIGHTS AND MEASURES

While the metric system is in general use throughout Cuba, and is, consequently, given below with the English equivalents, for the convenience of our readers, there are also in common use a number of old Spanish weights and measures, which, as is usual with such old systems, vary somewhat from what they may be in other countries where they are used. In Cuba, these signify as follows :

Arroba (dry measure)	25.3664 pounds.
“ (liquid measure)	4.263 gallons.
Caballeria.....	32½ or 33½ acres.
Fanega (dry measure), rarely used	1.599 bushels.
“ (liquid measure).....	16 gallons.
Kilo (abbreviation of kilogram of the metric system)	2.2046 pounds.
Legua	Approx. 2¾ inches.
Libra (pound).....	1.0161 pounds.
Vara (linear measure).....	33.384 inches.

METRIC WEIGHTS AND MEASURES.

Milligram ($\frac{1}{1000}$ of a gram) equals	0.0154 grain.
Centigram ($\frac{1}{100}$ of a gram) equals	0.1543 grain.
Decigram ($\frac{1}{10}$ of a gram) equals	1.5432 grains.
Gram equals	15.432 grains.
Decagram (10 grams) equals	0.3527 ounce.
Hectogram (100 grams) equals	3.5274 ounces.
Kilogram (1,000 grams) equals	2.2046 pounds.
Myriagram (10,000 grams) equals	22.046 pounds.
Quintal (100,000 grams) equals	220.46 pounds.
Millier or tonelada (ton, 1,000,000 grams) equals	2,204.6 lbs.

SOME GENERAL STATISTICS

METRIC DRY MEASURE.

Millilitre ($\frac{1}{1000}$ litre) equals 0.061 cubic inch.
Centilitre ($\frac{1}{100}$ litre) equals 0.6102 cubic inch.
Decilitre ($\frac{1}{10}$ litre) equals 6.1022 cubic inches.
Litre equals 0.908 quart.
Decalitre (10 litres) equals 9.08 quarts.
Hectolitre (100 litres) equals 2.838 bushels.
Kilolitre (1,000 litres) equals 1,308 cubic yards.

METRIC LIQUID MEASURE.

Millilitre ($\frac{1}{1000}$ litre) equals 0.0338 fluid ounce.
Centilitre ($\frac{1}{100}$ litre) equals 0.338 fluid ounce.
Decilitre ($\frac{1}{10}$ litre) equals 0.845 gill.
Litre equals 1.0567 quarts.
Decalitre (10 litres) equals 2.6418 gallons.
Hectolitre (100 litres) equals 26.418 gallons.
Kilolitre (1,000 litres) equals 264.18 gallons.

METRIC MEASURES OF LENGTH.

Millimetre ($\frac{1}{1000}$ metre) equals 0.0394 inch.
Centimetre ($\frac{1}{100}$ metre) equals 0.3937 inch.
Decimetre ($\frac{1}{10}$ metre) equals 3.937 inches.
Metre equals 39.37 inches.
Decametre (10 metres) equals 393.7 inches.
Hectometre (100 metres) equals 328 feet 1 inch.
Kilometre (1,000 metres) equals 0.62137 mile (3,280 ft. 10 in.).
Myriametre (10,000 metres) equals 6.2137 miles.

METRIC SURFACE MEASURE.

Centare (1 square metre) equals 1,550 square inches.
Are (100 square metres) equals 119.6 square yards.
Hectare (10,000 square metres) equals 2.471 acres.

CHAPTER XI

THE PROVINCE OF PINAR DEL RÍO

THE FAMOUS VUELTA ABAJO DISTRICT.—CRUDE METHODS OF CULTIVATING THE FINEST TOBACCO IN THE WORLD.—OTHER INDUSTRIES OF THE PROVINCE.—COMMUNICATION WITH HAVANA.—NOT SO MUCH NEED FOR CAPITAL HERE AS ELSEWHERE ON THE ISLAND.—GENERAL VIEW OF THE PROVINCE.—BADNESS OF THE ROADS.—OCCURRENCE OF TOBACCO, SUGAR, BANANA, COFFEE, CORN, AND RICE CROPS.—CONSUL—GENERAL GOLLAN'S DESCRIPTION OF PLANTING AND SAVING VUELTA ABAJO TOBACCO.—PECULIAR GRASSES OF THE PROVINCE.—PLANTATIONS DESTROYED IN THE RECENT INSURRECTION.—CITIES AND TOWNS ALPHABETICALLY ARRANGED.—ARTEMISA.—BAHÍA HONDA.—CABAÑAS.—CANDELARIA.—GUANAJAY.—MARIEL.—THE CITY OF PINAR DEL RÍO.—SAN CRISTÓBAL.—SAN DIEGO DE LOS BAÑOS.

POPULATION OF 1887—OTHER STATISTICS OF 1894.

Total square miles	5,764		Number of houses in towns.	5,296
Square miles utilized in province	2,861		Sugar plantations	70
Population	225,891		Coffee plantations	33
Number of inhabitants per square mile	39.19		Tobacco plantations	6,050
			Cattle ranches	599
			Number of farms	1,392

THE province of Pinar del Río covers nearly the whole of the Vuelta Abajo district, which has a natural monopoly, due to a unique combination of soil and climate, of the world's finest cigar tobacco. This, of itself, suffices to place the Vuelta Abajo district on a level with the most famous wine-growing districts of

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France and Germany, and to make certain of its tobacco plantations, like certain vineyards on the Rhine, the most valuable cultivated spots on the earth's surface. Many of the plantations, however, unlike the vineyards referred to, have not been cultivated so as to give the utmost yield. It is usual for the natives who own plantations to select patches of about ten acres each from the richest soil under their control, leaving the intervening land to go to waste. The extreme care which the choicest growths require is their justification for not attempting to turn to profitable use the less-favored parts of their plantations, and yet it seems a pity that a single rood of such precious soil should be exempt from paying its tribute to mankind. This regret is increased when we reflect that the crop varies greatly in quality from year to year, even on the largest and best-managed plantations, so that enlarged cultivation of this favored district would increase the chances of a greater yield of tobacco of the finest quality, even in comparatively bad years. Observers from abroad have often been struck by the amount of time apparently wasted by the laborers in the Vuelta Abajo district, as well as by the crude methods which they use in planting and saving the tobacco crop ; yet they are, so to speak, bred to and for its cultivation, and they have an intuitive knowledge of all the peculiarities of the plant, and of the essential rules to follow in order to bring it to perfection for the market. Doubtless, labor-saving inventions will follow a closer acquaintance with Americans and their ways, and the industry is then likely to become more prosperous than ever before in its history. It must not be assumed, however, that tobacco is the only resource of the province of Pinar del Río. A glance at the statistical summary prefixed to this chapter will show that sugar is also one of its important sources of

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wealth, while cattle and coffee have done well in the past, and are likely to do better in the future.

While the province has connection with Havana by two lines of railway—one a branch of the United Railway system, the other the main line of the Western Railway, both described in Chapter V.—there is not a line of public railway connecting any of its own ports with the interior; and while the system of *calzadas* is the best of any of the provinces, with the possible exception of Havana, it is by no means as extensive as it should be, or as systematically arranged; so that it can be said of Pinar del Río, as of all other provinces, that its greatest requirement for the future is better internal transportation facilities, especially since it has no good ports on the southern coast.

The character of the industries does not make additional banking facilities so important to immediate development and prosperity as they are in other parts of the island; yet additional capital would prove a blessing. It can be said, however, that better transportation, labor-saving devices, and additional labor will produce wonderful results in the near future with but little financial assistance.

While, as shown by the maps, various hills and mountains exist in the province, it is, in the main, low and comparatively level. Some glimpses are given of it in the description of railroads, and others in that of the various towns following this, but it will, perhaps, be well, also, to give a more general view.

Along the northern coast, from Mariel to Cabañas, fifteen miles, over which distance there is a fairly good *calzada*, the country is mostly hilly and, to a certain extent, wooded with large timber, although there is considerable open land, rolling, and covered with a rich loam. Much cane is grown here, and, consequently,

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there are a number of sugar mills, but the industry is not generally conducted in so extensive a way as farther east; yet one or two of the plantations are sufficiently large to maintain private railways. Some corn and bananas, as well as a little tobacco, are also grown in this locality.

Proceeding westward, paralleling the coast to Bahía Honda, two and one-half miles further, we find the topography and character of the soil are practically the same; certain localities being well cultivated with cane, others entirely neglected and covered with timber and brush. A sugar railroad reaches the coast at Cabañas, and one or two large *centrales* are met. The roads are exceedingly bad, and some of the country is wild and picturesque. The latter end of the route, about Bahía Honda, is well cultivated with cane. Westward from Bahía Honda, along the coast, there are no further seaports, very few roads, and less cultivation than in the portion of the province we have been describing. The topography, however, is much the same, only there are more swamps and marshes along the coast. The principal occupation of the residents in this locality has been raising cattle, and it is said that there is some good timber in this region.

Returning to the northeastern corner of the province, it should be said that a fairly well improved road runs further inland, from Guanajay to Cabañas, than the route we have been describing, and a branch road from it goes to Mariel. The eastern end of this route is exceedingly well cultivated with tobacco—its most prominent feature—cane coming next, then some corn and bananas. The same relative proportion of crops prevails for most of the route, cultivation decreasing and the land becoming more hilly toward the western end, mountains being in sight toward the south-

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west. In fact, the almost continuous range which runs through the centre of the province begins only a few miles west of Guanajay. While these mountains have a few small coffee plantations and patches of corn, with some small tobacco fields along their base, they are mostly given up to grazing, and some are well timbered. The only road across the range shown conspicuously on the maps is one from Bahía Honda on the northern coast to Candelaria on the southern side of the range. This, however, is a typical Cuban country road, impassable in the wet season and in drier weather practicable only for horsemen, *volantes*, and ox-carts.

Returning eastward once more to the southern side of the range, we find, south from Guanajay, a very rich, well-cultivated district, with several improved roads. This is the Vuelta Abajo in reality, with its wealth of tobacco culture. This situation continues westward, south of the mountains, beyond the city of Pinar del Río, practically to the bay of Cortés, although the cultivation grows less as progress is made westward, and the numerous tobacco farms are interspersed with an occasional corn patch or a strip of banana land, while there is also some woodland and grazing land. Along the southern coast are also some sugar plantations.

THE CULTIVATION OF TOBACCO

No better description of the general industry of this province has ever been written than one in an official report of the British consul-general at Havana, Mr. Alexander Gollan, so we quote it in full :

“ Pinar del Río, the western province of Cuba, is given up almost entirely to the cultivation of tobacco. The plantations are scattered about in all directions, generally a mile or two apart. They consist of a number of small fields (*vegas*) of about ten acres each, selected



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wherever the land is richest. The rest of the land is entirely uncultivated. The tobacco seed is sown in nurseries, about ten pounds being used per acre.

"In October and November the young plants, when about three inches high, are bedded out in the tobacco fields in furrows two feet apart. During the three months the plants take to reach their full size the greatest care is taken of them. Each plant is constantly examined, the green tobacco caterpillars killed and the furrows kept perfectly clean with the plough. When the plant has grown its big leaves, generally about ten in number, all the small leaves are picked off the stalk, and on reaching its full height the head of the plant is also picked off. This allows the leaves to expand and spread out in the sun. The female plant gives the best leaves for *capas* (the outside wrapper of a cigar), as the leaves are larger and stronger. The color of the leaf is bright green until ready for picking, when it begins to turn yellow and spotty. They are then gathered by cutting the stalk in such a manner that two leaves remain on each piece of stalk. The leaves are then strung over thin poles in the drying houses, one leaf each side of the pole, and left to dry about five weeks. The drying houses are large, airy barns, thatched with palm leaves, the inside being arranged with rows of poles one above another. On being taken down the leaves are put together in bundles of about 100 leaves, which are made into bales of usually 80 bundles and wrapped up in palm leaves.

"The bales are then ready for sale and are taken in this state to the storing rooms of the cigar manufactories of Havana, or for exportation."

The grasses of the province have peculiar qualities, perhaps more distinctively marked than elsewhere on the island. Along the streams grows the variety known as "Yerba del Pará," attaining a height of six feet or over, and of which horses and cattle are extremely fond. It also forms a mat, preventing them from sinking in the soft places, and performs much the same function as the willows of Holland in protecting the banks of streams from being washed away. Another variety, exactly the opposite in its characteristics as regards growth, is the "Pata de Gallina" (hen's foot), greatly liked by the stock. The ordinary bunch grass is similar to the same variety in our Southern States. There is another variety

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much like that of our southwestern prairies, while there is also the "Yerba de Don Carlos," which no animal will eat because of its sharp edges, and which is the pest of the sugar planters whose cane fields it invades.

The hillsides of the province are said to be well adapted to grape culture, but it has never been attempted in a serious way. Some rice is grown at points along the seacoast, and similar lands are said to be well adapted to cotton culture, yet this has never been seriously undertaken. The few coffee plantations do not now produce sufficient for local consumption. Among the timber of the province, which is plentiful, pine is conspicuous in certain localities. Few, if any, mineral deposits exist in the province, and, as already shown, its natural resources are entirely agricultural, though these are of the richest kind, and could easily support a population several times as large as that which they are at present called upon to sustain.

PLANTATIONS DESTROYED

The following is a partial list of important sugar and tobacco plantations that have been destroyed during the recent insurrection, compiled from official Spanish sources, 1897:

<i>Name.</i>	<i>Owner.</i>	<i>Industry.</i>
Asentista	Guillermo de Zaldo.....	Sugar.
Begoña	Conde de la Reunión.....	"
Corojal	Abelardo Ledesma.....	"
Dos Hermanos.....	Conde de la Reunión.....	"
Gerardo.....	Vicente Cagigal	"
Guacamaya.....	I. Fernandez.....	"
Loboria	Gunting Aldave	"
Manuelita	Eduardo Delgado.....	"
Mercedita	Ernesto Longa.....	"
	Pedro Unnias.....	Tobacco.
Nueva Empresa	Gunting Aldave	Sugar.

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<i>Name.</i>	<i>Owner.</i>	<i>Industry.</i>
Recompensa	Marqués Veitia.....	Sugar.
Redencion	Emilio Kessel.....	“
Rojas....	J. Barbina	“
San Agustin	F. del Valle.....	“
San Claudio	Eduardo Delgado	“
San Gabriel	Conde Lombillo.....	“
San Joaquin.....	Joaquin de Mier.....	“
San Juan Bautista.....	Gunting Aldave	“
Santa Isabel.....	A. Otamendi.....	“
Santa Teresa.....	Vicente Cagigal.....	“
Santiago	J. Abascal.....	“
Veula.....	E. Uzubiaga.....	“

CITIES, TOWNS, AND VILLAGES IN THE PROVINCE

ALONZO ROJAS.—An unimportant town of not over 200 inhabitants, situated about twenty miles southeast of the city of Pinar del Río. It was totally destroyed during the insurrection. The total population of the township in 1887 was 4,156.

ARTEMISA.—An important town of approximately 5,000 population, and in ordinary times rich and prosperous. The surrounding country is naturally one of the best sugar and tobacco districts of Cuba, but lies low and is unhealthy. The city is about thirty-five miles west of Havana, on, or more properly adjacent to, the main line of the railroad from Havana to Pinar del Río, the station being about a mile and one-half from the city, with which it is connected by a passably good improved road. It is connected with the important town of Guanajay, which lies nine miles to the north, by a good paved road, or *calzada*, over which a regular service of 'busses is maintained, thus making connections for Havana with another railroad which terminates there. Artemisa is about twenty-two miles distant from Havana “as the crow flies.” The town is irregular in shape and

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somewhat scattered; the buildings are principally stone and brick, of the ordinary one-story Cuban type, with tiled roofs. The town is beautifully shaded, there being one remarkable grove of palms in the suburbs, near the railroad station, which is about half a mile beyond the city limits. The streets are generally unpaved and in poor condition, and other public improvements are needed. It was one of the more important towns on the line of the western or Mariel trocha of the recent war. The population of the township is about 9,300.

BAHÍA HONDA.—While having a population of but 2,000, nearly all of whom are colored, this is the chief town of the district and one of the most important seaports on the northern coast. It is distant about fifty-five miles west of Havana and has the last of the important harbors in that direction. The town proper, however, is situated about two miles inland, to the south, among hills and at an elevation of about fifty feet above the sea level, and cannot be seen from the harbor. The harbor is about five miles long and three miles wide, and the land immediately surrounding it on the western, southwestern, eastern, and southeastern sides, especially in the two last named directions, is low and marshy and naturally unhealthy, but the adjacent hills are directly the opposite in this respect. Projecting into the bay is one miserable little wooden wharf about which are perhaps a half dozen huts and houses, the only ones close to the shore. From this wharf, the only road in the vicinity of the bay runs back to the town. It is of good width, but practically unimproved, and impassable in wet weather. The surrounding country is an especially rich cane-producing locality, and there is, or was, one large sugar mill situated west of the harbor. Tobacco does not seem to have been cultivated to any great extent in the im-



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mediate vicinity, but whether this is from the unfavorable character of the soil, or from the entire attention of cultivators being devoted to sugar production, is unknown to the writer, but probably the latter is the cause. Although settled as early as 1779, and located in a rich agricultural district upon one of the fifteen best harbors of Cuba, the growth and visible prosperity of the town have never been remarkable, and it has never been made a port of entry. It is almost unnecessary to say that it is woefully deficient in public improvements. The lack of progress is generally attributed to the total absorption of the inhabitants by the sugar industry.

Emigration and judicious road and railroad building in the vicinity would transform Bahía Honda into something more than a mere local town, and, in fact, should cause one of the most astonishing changes possible to any town on the island. The town was partially destroyed during the insurrection. The present population of the township is about 8,500.

BAJO.—An unimportant town, with a population of 165, situated well in the western part of the province, near the north coast. It was totally destroyed during the insurrection. The present population of the township is 4,400.

CABAÑAS.—This town lies about forty miles west of Havana, on the eastern shore of the bay of the same name, which, though extensive, being about seven miles one way by four miles the other, and having a narrow entrance which makes it a landlocked roadstead, is considered only a harbor of the second class. The population of the town is only 1,500. It was founded in 1818, and is, at present, of only local importance. Better means of transportation to and from the interior would probably give it some commercial importance in the

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future. This town was captured by General Maceo, during his famous march through this province, despite the presence of a Spanish cruiser in the harbor, and was partially destroyed. The population of the township is 8,650.

CAÑAS.—An unimportant station on the Western Railroad, near the boundary of the province of Havana.

CANDELARIA.—A prosperous inland railroad town, located about six miles east of San Cristóbal, on the *calzada* running to Batabanó. The population is approximately 1,200. It is the centre of a good local trade. It is, however, cheaply built of wood and stucco, with unimproved, filthy streets, and devoid of many essentials to health and comfort. The water supply is entirely from wells and cisterns. The surrounding country is low and flat, yet is said not to be especially unhealthy. The soil is excellent for tobacco and sugar, and is noted for the quality of the coffee produced. Famous mineral springs are also located here. The town was partially destroyed during the insurrection. The population of the township is 6,300.

CAYAJABOS.—A poorly built inland town, twelve miles southwest of Guanajay, with a population of about 1,350. It lies in a rich surrounding country. The population of the township is 8,150.

CHIRIGOTA.—A small but pretty railroad town, adjacent to the line from San Cristóbal to Candelaria, and about five miles distant from the former place.

COLOMA.—A collection of a score or more of palm-thatched huts, whose sole importance consists in being the port of the city of Pinar del Río, from which it is distant about fifteen miles to the south, over the *calzada*. The location is among the swamps and brush near the

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mouth of Coloma River, yet the surface, though low, is said to be firm, and the locality is reputed not to be so unhealthy as it has every appearance of being. At the landing place is a good and somewhat extensive wharf, at the shore end of which stands a large warehouse.

CONSOLACIÓN DEL SUR.—Commercially, this is the second town of importance in the province. It is situated about twelve miles east of the city of Pinar del Río, on the railroad line to Havana. The population is over 2,000. It is in the heart of the famous Vuelta Abajo tobacco district, having, in its immediate vicinity, more than 800 plantations noted for producing the very finest tobacco. It has always been a prosperous town for one of its population, but among so much natural wealth greater advancement should have been made. The town was partially destroyed during the insurrection. The population of the township exceeds 16,000.

GUANAJAY.—This town lies inland, but is only about seven miles distant from the seaport of Mariel, on the northern coast, and is twenty-six miles southwest from Havana, with which it has direct railroad communication by a branch line. It has a population of nearly 6,000, and is the junction of *calzadas* running to Havana, Mariel, Cabañas, and Artemisa, from which last-named town it is nine miles distant, and to which there is a line of stages. The western, or Mariel, trocha passed through the town. The surrounding country has been well cultivated and prosperous, and the town has been somewhat progressive, being of more than mere local importance. It was partially destroyed during the insurrection. It has chances of future growth and needs additional improvements. The population of the township is about 9,500.

GUANE.—An unimportant town of about 500 inhabi-

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tants. It is situated thirty miles southwest of the city of Pinar del Río, and is the terminus of the Southwestern Calzada. The locality is considered unhealthy. The population of the township is 5,000.

HERRADURA.—An important station on the Western Railroad, in the western-central portion of the province.

LA BAHÍA.—An unimportant town on the road from Cabañas to Bahía Honda, about four miles distant from the former. It is situated about a mile and a half from the bay, on comparatively high ground. It consists of only a few houses and a larger number of huts, containing a population of 100 or so.

MANGAS.—A small town of 210 inhabitants, situated fourteen miles southwest from Guanajay, on the *calzada* from Havana to Pinar del Río, and also on that from San Cristóbal to Batabanó. It is an insignificant, filthy village, in a flat agricultural district, which is susceptible of greater cultivation than it has heretofore had. The town was totally destroyed during the insurrection. The population of the township is 3,600.

MANTUA.—This is the most westerly town of any size in the province and island. It lies near the river Mantua, eight miles from the western coast, and has a population of 1,380. It marks the end of General Maceo's famous march through the province, and although a great majority of the inhabitants are Spaniards, he received a warm welcome from them all. The town was partially destroyed during the insurrection. The population of the township is 8,000.

MARIEL.—This town is situated on the eastern bank of the harbor of the same name, which is one of the best in Cuba. It has not been developed to any extent, although founded as early as 1762. Its location is about twenty-six miles west of the city of Havana, with which

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it is not connected by a railroad, though there is a very good macadamized road. The population is about 1,637. It is located at the northern end of the western trocha, and was a point of military importance during the recent insurrection. It certainly seems as if proper internal transportation facilities would develop the town and harbor into a commercial importance far higher than they now possess. The population of the township is 9,200.

NUEVA EMPRESA.—A small hamlet near Candelaria, the scene of one of the most severe engagements of the recent insurrection, between the Cubans under the command of General Maceo and the Spaniards under General Cornell.

PALACIOS.—An unimportant station on the Western Railroad, in the central portion of the province.

PINAR DEL RÍO.—This city is not only the capital of the province, but also its most important commercial town. It is located near the centre of the province, fifteen miles from the southern coast, and 118 miles southwest of Havana. The distance to the northern coast, at the nearest point, is about twenty-five miles. The town is built upon the summit of a hill seventy feet high, at an altitude of 160 feet above the sea level. It was founded in 1776, and has a population of 8,000. The buildings are principally of stone and brick, substantially built, but low. The narrow streets are roughly paved, and are generally filthy. The population is about evenly divided between whites and blacks, and there are scarcely any foreign residents, excepting a few French. It is connected with Havana by a railroad as well as by a paved highway, by which connections are made with other important points, both in its own province and in that of Havana.

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It has great need for more paved roads, to connect it with other cities, the construction of which could not fail to aid the growth of the town materially. Other public improvements of almost every character are also needed, and would be warranted by its future prospects. The river which skirts the town could be utilized as a source for a pure water supply. In a mercantile way, it should become more of a trade centre than it has been in the past. There are beautiful mountains in the distance, and there are other picturesque features in the vicinity. The city is noted as the great centre of the Vuelta Abajo tobacco district, which produces the finest tobacco in the world. The general business of the town is in the handling of this commodity.

PUNTA BRAVA.—An unimportant station on the Western Railroad, in the eastern portion of the province.

SAN CRISTÓBAL.—This is an interior railroad town of considerable importance about seventy miles southwest of Havana on the line to Pinar del Río. It is about eighteen miles distant from both the northern and southern coasts. It is situated in a dry and healthy location, almost in the centre of the great Vuelta Abajo tobacco district. It has a population of 3,522. Its inhabitants are noted for their business energy and activity, and the town is in every way prosperous. It is one of the oldest towns on the island, and its buildings are of the earlier Spanish type. It is the terminus of one of the *calzadas* to Havana, and there are other good roads in the vicinity. The town was partially destroyed during the insurrection. The population of the township is 16,610.

SAN DIEGO DE LOS BAÑOS.—This health resort is noted for its marvellous sulphur baths, which are on the left bank of the Caiguanabo River. It is reached by a journey from the railroad by steamer and stage. The

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Government assisted in building up the town until it possessed numerous houses and hotels, as well as public improvements. The four springs for which the town is noted are named the Tigre, the Templado, the Paila, and the Santa Lucia. They are all enclosed under a single roof, and have an average temperature of 90 degrees. They are claimed to have great curative properties for all skin diseases, including leprosy, and are also of great value in rheumatic diseases. The claims made for them seem incredible, but if they are substantiated, the resort cannot fail to become one of the most popular in the world, as it now is in Cuba. The surroundings of the town are beautiful and picturesque, and numerous instances of concrete petrification may be seen. In the famous caves of Arcos de Caiguanabo, which are formed by the passage of the San Diego River, are many peculiar rock formations. The town was completely destroyed during the insurrection.

SAN JUAN Y MARTINEZ.—This town is located about three miles from the southern seacoast, and sixteen miles southwest from the city of Pinar del Río, on a good *calzada* running to that city. It has a population of about 2,100. The surrounding country is rich in tobacco. The town was partially destroyed during the insurrection. The population of the township is 19,000.

SAN LUIS.—This town has a population of 3,556, and is located near the San Sebastián River, about nine miles southwest of the city of Pinar del Río. The surrounding district is noted for its tobacco production. It has no good roads, although it is but four miles distant from the *calzada* between Pinar del Río and Guane. The township has a population of 9,125.

SANTA CRUZ.—An inland railroad town of about 2,000 inhabitants, on the line from San Cristóbal to

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Candelaria, about six miles from the former. It has a good local trade, and is in the rich tobacco district. It is well built of stone and wood.

TACO-TACO.—An unimportant station on the Western Railroad, in the central portion of the province.

TACO-TACO DEL SUR.—A small inland town about a mile and a quarter distant from Santa Cruz, composed entirely of small wooden structures.

VIÑALES.—This town is situated about thirteen miles north of the city of Pinar del Río, and is the interior terminus of the railroad running to the north coast twelve miles distant. It has a population of about 925. The surrounding country is part of the rich Vuelta Abajo tobacco district, and adjacent to the town are the celebrated San Vicente Mineral Springs, which will undoubtedly bring the locality into greater prominence. The population of the township is 11,727.

CHAPTER XII

THE CITY OF HAVANA

ITS POPULATION.—HAS BEEN MORE OF A SPANISH THAN A CUBAN CITY.—PROBABLE EFFECT OF THE OUTCOME OF THE WAR UPON ITS INHABITANTS.—ITS MAGNIFICENT HARBOR.—STATISTICS OF ITS HOUSES.—THEIR HIGH RENTS.—THEIR POROUS WALLS.—THE DWELLINGS OF THE WEALTHY CLASSES.—THE OLD AND NEW PARTS OF THE CITY.—THE PRADO.—THE PARISIAN CAFÉS OF THE PARQUE CENTRAL.—THE CATHEDRAL.—THE BONES OF COLUMBUS.—OTHER CHURCHES.—THE STREETS.—BAD PAVEMENTS AND POOR SEWERAGE.—FILLED-IN MANGROVE SWAMPS, THE NATURAL HOME OF YELLOW FEVER AND MALARIA.—THE LOW ALTITUDE OF THE CITY PROPER.—THE STREET RAILWAY COMPANY.—THE CITY'S AMPLE SUPPLY OF PURE WATER.—EXTRACT FROM E. SHERMAN GOULD'S ACCOUNT OF ITS CREATION.—CURIOSITIES OF SPANISH CONTRACTS.—QUANTITIES AND PRICES OF WORK DONE.—THE FIRE DEPARTMENT.—VITAL STATISTICS.—THE MANUFACTURE OF CIGARS.—THE PRICE OF ICE.—CUSTOM-HOUSE REGULATIONS.—HOW GOODS SHOULD BE PACKED.—EXPORT AND SHIPPING STATISTICS.

HAVANA, or, to give it its correct full title, San Cristóbal de la Habana, which was originally borne by a small settlement about twelve miles from Batabanó, the port for the metropolis on the southern coast of the island, is not, strictly speaking, a Cuban city, for its population is, to a large extent, Spanish, and its predominating political and social influences have been in accordance with this fact. Yet it is so much greater in population than any of the other cities of the island that in a way it must be considered to bear the same re-

For plan of city of Havana, see end of this volume.

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lation to Cuba that Paris does to France ; though while Paris is French, Havana is not Cuban. It is filled with incongruities as regards itself, and even more so as regards general Spanish and Cuban life on the island. That it is an attractive and interesting city, all must concede ; while its commercial advantages and influences must make it eventually one of the most important emporiums of the Western Hemisphere. As to what its present population is, or what it will be in the immediate or remote future, is very uncertain. Various sources of statistics quote the present population as being all the way from 200,000 to 300,000, these discrepancies occurring, to a great extent, from the inclusion or exclusion of some or all of its suburbs by the various authorities in their estimates. As to the future, there will undoubtedly be a great outflow of many of the present Spanish residents back to Spain or the Canary Islands, while their departure is likely to be made more than good by an influx of Americans, and by Cubans returning from the United States or from other foreign countries. It is therefore considered safe to estimate the future population at fully 300,000.

Havana possesses many natural advantages as a large commercial city, for the magnificent harbor, thoroughly landlocked, meets all the possible requirements of commerce, while the conditions for agreeable residence are very favorable, since the city is swept by the healthful trade winds ; and had the very difficult problem of drainage and sewerage been successfully solved, as would have been done long ago in the case of an American city, the sanitary conditions would have been very different from the most deplorable ones which have prevailed ever since its foundation. Seen from the open sea, from the harbor, or the surrounding country, the variegated reds, yellows, grays, and blues of the build-

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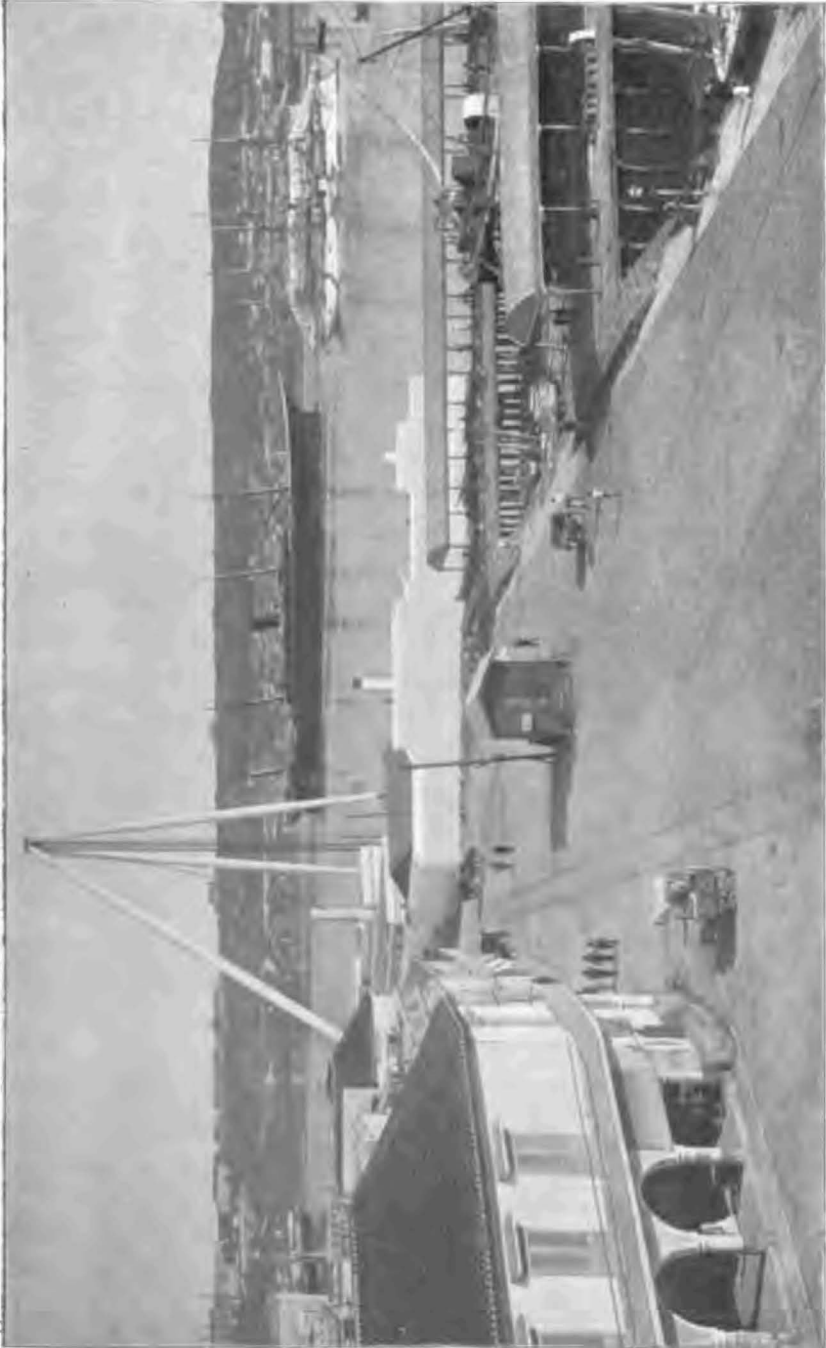
ings give the city an oriental aspect, which is attractive and impressive. Perhaps this impression is more strongly conveyed than by that of any city in eastern Europe.

We may begin our description by stating the peculiarities of the harbor. The entrance is narrow, being only 1,000 feet in width at its westerly extremity, widening to about a quarter of a mile, and narrowing down again at its easterly extremity to the same width as the westerly. On the western side of the entrance, near the city itself, is the Punta, an antiquated fortress. Returning to the eastern shore, adjacent to the Morro will be found La Cabaña, which, as prison rather than fortress, has played such a tragic part in the history of the late insurrection; and at other points on the surrounding hills, and adjacent to the edges of the harbor, are bastions and ramparts which tell of the bygone glories of Spain and a higher architecture than it now possesses. But as our object is commercial rather than military, we will not dwell upon these features. The western edge of the harbor entrance is a portion of the city itself, occupied principally by government buildings, places of business, and commercial warehouses. On the east is the village of Casa Blanca, which lies at the base of the bluffs upon which stands the fort of Cabañas. From the inner end of the entrance bends an irregular harbor, in which there are three principal coves, termed *ensenadas*, while there are many other small indentations, as shown by the map. The extreme length of the harbor is about three miles, and the maximum breadth is one and one-half miles. The available extent is slightly over one mile in length, and a little less than that in width. The greatest depth of water available is about forty feet, and vessels drawing above eighteen or twenty feet are restricted to comparatively limited bounds. The tide rises and falls an average of about two feet. While the maps show two

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rivers, the Luyanó and Martín Pérez, with some four or five other streams, as running into the harbor, it should be said that these are all insignificant, excepting in the rainy season. The city proper lies entirely to the north-west of the bay, the suburbs of Cerro and Jesús del Monte being on the south and west, and Regla lying to the east. Two ferry lines connect Regla with Havana. The most unhealthy portion of the harbor and the shores adjacent thereto is said to be toward the southwesterly corner, in the vicinity of the military hospital and arsenal shown on the map, the tendency of the trade winds being to force an accumulation of filth against the shores in that locality. Nearly the whole water front of Havana is docked in a substantial manner with stone, presenting a business-like look and an attractive appearance. There are some piers jutting out beyond these docks at which the comparatively large steamers of the north side coastwise companies land their passengers and freight. There are docks and piers at, and in the vicinity of, Regla and Casa Blanca, the chief coal depots being on or adjacent to the docks of the last-named place. The principal commerce is, however, done by means of lighters to and from the vessels anchored, or, more properly speaking, attached to buoys in the harbor, this practice being followed because the bottom of the harbor is so filthy that ships, on raising their anchors, find them so coated with the foulest mud that it is necessary to wash them off before stowing them.

Everywhere about the harbor is seen a class of boats used both for purposes of business and pleasure that seem strange to American eyes, being covered with a basket-like framework to support and cover the awning, while the cut of their sails and their general appearance are as picturesque as is the city itself. Government regulations in the past have been very strict in petty



THE NAVAL CRANE AT LUZ WHARF

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ways, as regards the conduct of all water transportation, while the port and custom-house regulations have been more than arbitrary unless the proper officials were "satisfied." These grievances, it is supposed, will be remedied, and Havana become, in practice, the open port of commerce which it has been, in theory, for nearly ninety years.

The city is said to possess a total of 17,259 houses, of which 15,494 are one-story structures; 1,552 have two stories; 186 three stories; while twenty-seven have four stories, which is the limit. It will thus be seen that more than two-thirds of the population live densely crowded together. The average extent of house lots is 27 by 112 feet, and as twelve out of every thirteen of the inhabitants live in one-story houses, it will be seen that there are about twelve inhabitants to each lot. House rent is exceedingly high owing to excessive taxation; consequently, the tenements are cut up into small rooms, each of which is usually occupied by a whole family. The rent of one of these small one-story houses of the poorer class is often between \$50 and \$100 per month. Houses of this description usually have no back yard other than a small flagged court or narrow space on which sleeping-rooms open at the sides. Generally close to these, at the rear of the small court, is located the kitchen, and not uncommonly a compartment given over to animals, while a similar recklessness as regards the arrangement of other sanitary conditions exists. None of these houses of the poorer class have storerooms, pantries, closets, or other conveniences for housekeeping. Supplies are ordinarily purchased from meal to meal at the nearest corner grocery, or, more properly speaking, general store, which custom, prevailing to a great extent in every Cuban town, leads to the existence of a numerous class of small shops of this character.

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The walls of the ordinary houses in the city are composed of rubble masonry, not unlike the cochina seen in some of our Florida towns. It is designated as "mampostería." It is exceedingly porous and absorbs moisture almost like a sponge. It also draws up moisture from the earth, so that at the sides of the buildings the line of saturation can be easily traced at a height of from three to eight feet from the floor level. The roofs of all buildings are solid and substantially built, being constructed of terra-cotta half-round tiling. Frequently these roofs are almost flat. Both windows and doors of all classes of houses are very high, and the better the house the higher they are. Glass is never used in the windows, which, on the ground floor, are protected by outside iron bars as strong and conspicuous as those of a prison, while on the interior are solid wooden shutters, which, like the doors, are secured by heavy bars and bolts, so that when these are closed in rainy weather, the house is almost hermetically sealed, for chimneys and fire-places do not exist, except for cooking purposes. The accumulation of dampness generates mildew and disease, for usually all flooring is laid directly upon the earth, and frequently the earth itself is the floor of the poorer habitations. Rarely is the floor of any building more than a few inches above the level of the adjoining sidewalk, and frequently it is below it. This is also quite true of nearly all other Cuban cities.

From the foregoing the impression should not be gained that Havana has no fine residences, for it has many, both in the closely built portions of the city and in the suburbs; but within the city there is the most curious intermixing imaginable of houses of the rich, small business shops, and places of questionable resort. Ordinarily the exterior of the house of the wealthy resident, while solid and substantial, is not beautiful or impressive.

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He lives in the interior, and the house really fronts upon an inner courtyard ; yet, as shutters are drawn back and doors and gateways are almost continually open, except at night, a fair idea of the interior life can be had by the passer-by on the street. The sights usually presented are a clean, stone-paved courtyard, perhaps containing a few palms and other tropical plants or flowers, and a glimpse is obtained of the principal living-room of the interior, with a tiled or polished wooden floor, without a carpet, upon which are placed a large number of chairs, neatly ranged in parallel lines. Indeed, the general impression which one receives from the appearance of these rooms is that a meeting of some kind is about to be held.

There are many extensive government buildings, substantially built, but antiquated and worn in appearance. The wholesale trade is conducted principally in a curious combination of stone warehouses and offices. Even the banking business, with the exception of two chartered institutions, is carried on under such conditions. The retail trade is principally done by small dealers in correspondingly small stores, bearing disproportionately high-sounding or unique titles. These stores display a great part of their stocks in the show windows, and the appearance of the shopping streets is brilliant and attractive on this account.

The many cigar factories are generally located in large and substantial stone buildings, which are scattered throughout the city.

Separating the older portion of the city, which is devoted almost entirely to commercial pursuits, from the newer portion, is the celebrated Prado, a broad street parked in the centre and nearly two miles in length. Abutting on it, or closely adjacent, are the finest buildings and most attractive portions of the city proper. An

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enlargement of it, known as the Parque Central, is the very centre of fashionable society, presenting one of the most lively and attractive features of the city. Either fronting it, or close by, are nearly all the principal hotels and theatres. It is surrounded by open-air cafés, brilliantly illuminated by night, which make it as enticing as the Parisian boulevards under the same circumstances. A military band plays on certain evenings in the park, while crowds of well-dressed people of both sexes promenade in the vicinity, or fill the adjoining balconies and cafés. Fronting this square is the Hotel Inglaterra, the best and largest hotel in all Cuba; the Tacón Theatre, the third largest in the world; the Spanish Casino; the Albisu Theatre, and other notable buildings.

Churches are everywhere. Some are imposing; others are interesting from their antiquity and surroundings; but many can lay claim to neither age nor impressiveness, and are anything but clean or attractive. The best known of these edifices is naturally the Cathedral, noted especially as the repository for the remains of Columbus; yet upon this point even experts among the faithful seem doubtful of their genuineness. The Cathedral is located in the lower part of the city, near the Captain-General's palace. It is built of the usual soft, calcareous sandstone, originally of a yellowish-white color, but now dingy and battered in appearance. The exterior is gloomy and possesses little architectural beauty, being built in the unimpressive style of Spanish renaissance architecture. In the interior, which is gorgeously decorated in many colors, two ranges of massive columns support a high ceiling. About the sides are numerous shrines of saints, the most conspicuous of which is that of Saint Cristóbal, the patron of the city. The interior effect is imposing, and the visitor will probably linger



THE PRADO AND INDIAN STATUE

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some time among its colonnades and chapels. At the right of the altar is a small recess in the wall, supposed to contain Columbus's remains. This is covered by a tablet upon which is a bas-relief, and the dust of the great discoverer is supposed to be resting behind a slab. Below are various naval symbols, and a Spanish inscription, the translation of which is, "O remains and image of the great Columbus, a thousand ages may you endure guarded in this urn and in the remembrance of our nation." At the time of the writer's last visit a fine sarcophagus was being erected within the main entrance of the church, to which the remains were to be transferred. A general statement may here be made which will apply to all churches in Cuba. None are furnished with pews or fixed seats, but long benches and chairs are plentifully provided. A great majority of the poorer worshippers, however, kneel directly upon the floor; all do at the elevation of the host.

Next in importance to the Cathedral must be placed the church of the "Merced," or Mercy, which is the most fashionable church of the city. The church of Santa Catalina, situated at the corner of Compostela and O'Reilly streets, dates from 1658. The altars, decorated in white enamel and gilt, are extremely gorgeous, while there is some fine hard-wood carving about the church. The Belen church, at the corner of Luz and Compostela streets, is, perhaps, the most extensive and attractive of any of Havana's churches. It occupies nearly a whole block, and has the largest dome and tower in the city. There are hospitals and an important school connected with this church, as well as residential buildings for the Jesuits who have charge of it. The school has a laboratory, an observatory, and the necessary apparatus for experiments in natural philosophy, as well as a museum of natural history containing the best collec-

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tion extant of the natural woods of the island. The church of St. Augustine, corner of Amargura and Cuba streets, one of the largest in the city, was built in 1608, and possesses some fine old paintings. The church of Santa Clara, corner of Cuba and Sol streets, has a large number of fashionable worshippers, and the attendance of the male sex there is, perhaps, greater than at any other. Whether this is to gratify religious longings, or to catch a glimpse of the fashionably dressed ladies, is a question often raised by the natives themselves. Another church worthy of mention is that of Santo Angel, its peculiar-shaped tower calling attention to it as one approaches the city.

Let us now turn our attention to the extent and variety of the streets. One of the best descriptive writers has begun, in reference to those of Havana, by stating the axiom that "the older a Cuban city, or any part thereof, the narrower the streets." One-fifth of the population of Havana lives within the area once surrounded by the now demolished walls, and this intramural population, including the chief commercial portion of the city, possesses streets so narrow that on many street corners are placed sign-boards, signifying either "up" or "down," to indicate to all drivers of vehicles that they must pass only in the direction indicated. The present Prado pretty nearly marks the site of the old city walls, and owing to the narrowness of the streets in the commercial portion of the city, there is but one practical route for street-car operation, although many American promoters have had, during the past few years, schemes for building intramural lines. As the city has extended beyond the limits of the previous walls, the streets have gradually been made wider, until, in the newer portions, they have the width of streets usual in the United States. The streets in the older extramural district are

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about twenty-two feet wide, of which the sidewalks may be as much as seven and one-half feet, although in many places the width of the sidewalk is not more than eighteen inches. There are no sidewalks at all in many of the narrow streets of the intramural portion, or even in some of the older extramural portion. In the newer part of the city the width of the streets averages thirty-three feet, about ten feet of which is given up to the sidewalks. While the broader avenues of the city are well paved, or macadamized, probably fully one-half of the entire street mileage is entirely without improvement, and is, consequently, almost impassable during the rainy season. The narrow streets in the older portion of the city are generally paved with stone blocks, but these are usually either too large or too small, and rest on an exceedingly poor foundation. Generally, all of the streets are far from clean, yet some improvement may be expected in this respect, following the laying down of a more easily cleaned pavement. Before the breaking out of the recent war with the United States, a leading American contractor, Mr. Michael Dady, of Brooklyn, N. Y., had entered into a contract with the municipality of Havana to construct a sewerage system, and to do extensive paving. Outside of that part of this work completed by Mr. Dady, Havana has but few sewers, which were built at infrequent intervals since 1880, and do not conform to any general plan of drainage. These have been generally ineffective for the purpose designed, as they have been rarely, if ever, cleaned, and are generally obstructed with sediment from the surface of the streets. From the odors which they exhale, it seems as if they must breed disease. Practically all the drainage of the city flows on the surface of the streets into the harbor. Underneath most of the city of Havana lies solid rock, frequently not more than one or two feet

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below the surface. This is of such an absorbent character that, in all the northern, and over the greater portion of the rest of the city, water percolates through it almost as readily as it would through sand. In the southern portion of the city the rock is less porous. Overlying the rock is either red, yellow, or black soil, all of which in the wet season are transformed into as sticky and disagreeable mud as can be conceived. About one-tenth of the city's population live on made land—formerly mangrove swamps filled in with garbage. The poor sanitary condition of this locality is not open to question, for it is the natural home of malaria and yellow fever. The whole city is very low-lying, the highest point of the city proper being at the junction of Belascoaín, Reina, and Tacón districts, the elevation of which is about seventy feet above tide water.

When the wind blows hard from the north, creating high tides in the harbor, many of the lower floors in certain portions of the city are inundated. The highest point closely adjacent to Havana is in the suburb of Jesús del Monte, 220 feet above sea level.

The present water supply of Havana is excellent, being derived from the pure and extensive springs of Vento, about nine miles distant from the city. The present aqueduct, completed in 1893 or 1894, was begun in 1861, and is known as El Canal de Albear. At the source of supply there is a large stone basin, into which the springs, or, more properly, subterranean streams, bubble. At one side is a magnificent gate-house. From this runs the aqueduct, which is an egg-shaped brick tunnel, generally underground, but marked at frequent intervals along its route by turrets of brick and stone. The present water supply enters the city through the suburb of Cerro, which formerly had few, if any, connections with it; the population of this suburb purchasing their water from the street

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carriers. There is an old aqueduct also running into the city, built as early as 1597, known as the Zanja. The source of this water supply was, or is, the Almendares River, only about two miles away, the water of which was unquestionably impure. There are but few wells and cisterns in the city, and to-day nearly all of the water used is pure. It should, perhaps, be said that the water-works enterprise is a municipal affair.

There are fine gas-works, owned by a Spanish-American company, located at the southeastern side of the harbor. The capital of this company is principally American, and its chief office is in New York City. On the site of its old plant, adjacent to the harbor front, in the city proper, is located an extensive electric lighting station, owned by the same company. The management of the company is progressive and alive to its future possibilities.

A Spanish corporation controls all of the street railway lines, operating under municipal concessions granted by the home government at Madrid. It has three horse railway lines, known respectively as the Príncipe, the Cerro, and the Jesús del Monte, each of which terminates in the suburb indicated by its title, and all of which run over the same track—practically a loop about two miles in length—within the city. The same company also owns a steam-dummy line, whose only terminus is on the sea front, near the Punta, and which extends along the outer water front, closely skirting it through the beautiful and fashionable suburb of the Vedado, and terminating at the Chorrera, or mouth of the Almendares River. The river should be bridged, and this line permanently extended to La Playa de Marianao. It is said that this has recently been done by the military authorities across a pontoon bridge, for the purpose of bringing in sand with which

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to construct defensive works. In the past, the street railway company was strong financially, its stock selling as high as 110, but since the depression caused by the insurrection it is understood to have shrunk to about one-half that sum. The gross receipts of the company in the past have been approximately \$500,000 per annum. The total mileage of tracks which it controls is less than twenty-seven, or about one-fifth of that which would exist in an American city of the same size, and which does exist in certain of our cities of not over 150,000 people. It is almost unnecessary to say that the existing lines should be extended, and that the service, which is of the most uncertain and infrequent character, should be improved. Probably no phase of public improvement in Havana has been so frequently and conspicuously brought to the attention of the American investing public as has this particular company, for during the last three years not less than twenty different promoters have attempted to float schemes in connection with it in New York, either involving new franchises or extensions of the old one. It is said that at the present moment a powerful English syndicate has an option on the property. Several suggestions have been made to equip this system electrically, which is sadly needed, but as the authorities would not permit the erection of poles and wires, and as the underlying rock and poor drainage make the construction of a conduit system practically impossible, nothing has been done in this direction. While the company owns valuable real estate, its roadbed and rolling stock are in such poor condition that it possesses little tangible value. In opposition to the street railway there is an extensive bus system, operating its vehicles over the same routes, and in certain other directions, reaching points beyond the termini of the railway lines. While the amount of its receipts is not obtainable, it is

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said that its annual gross income is about three times that of the street railway company. As a further means of transportation, there was also available a very large number of cheap cabs, said to aggregate over 6,000; these, however, have been reduced to one-twelfth their former number by the privations of war. The rates of fare within the city limits proper are, however, only about twenty cents American money, and every one liberally patronizes them. They are even used by the washerwomen and ordinary laborers.

Havana has a good local telephone system extending through the suburbs. This is controlled by the Government, but leased at present to a Spanish company, called the Red Telefónica de la Habana. It operates lines to a distance of twenty-one miles from the exchange, and has 1,500 subscribers.

There is a large, but rather unclean, public market, with the usual surroundings of small stores and small individual stands and markets, at which everything is sold in the line of personal or household necessities. The fish market, situated upon the harbor front, and built by the celebrated Captain-General Tacón, is one of the notable features of the city. The greatest care is taken by the authorities to see that everything sold there is exceedingly fresh. All fish must be alive when sold. The abattoir, where all animals for public consumption are slaughtered, is situated on the outskirts of the city. A new and greatly improved abattoir has been erected of late years near the old one.

Contrasted with the large number of churches is the extensive and popular bull ring, where the performances are always supervised by the Captain-General or his representative, and where also each distinguished official and his family have their private box as they would at the opera.

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Of the same character, though not so elaborate, is the famous cockpit, which is more liberally attended every Sunday morning than is any church in the city.

Lying on the ridge to the southwest of the city is the principal cemetery, that of Colón; bounding which, separated only by its walls, are similar cemeteries for those whose bodies cannot lie in consecrated ground. In the principal portion of this cemetery are handsome monuments, some of which have cost large sums to erect. Stretching well out toward this cemetery from the heart of the city is the famous Paseo de Tacón, a wide and magnificent street, having two lines of roadway, parked in the centre, each containing a row of trees, commencing at the fine botanical gardens and continuing to Belascoaín, where it joins the fine avenue de la Reina, extending to the Campo de Marte. This wide and elegant street is a striking contrast to the narrow commercial streets in the lower portion of the city, which are practically roofed in with awnings of striking color and equally gaudy signs from the abutting business houses.

In the suburbs of Havana is the Vedado, fronting on the open sea to the northward, and separated from the remaining portion of the city by a high range of hills, crowned with the formidable and impressive Castillo del Príncipe. Most of the residences in the Vedado have ample grounds around them filled with a luxuriant tropical growth, which is in striking contrast to the remainder of the city.

Cerro lies southward from the range of hills alluded to, and is at present largely populated by the poorer classes, though once the most fashionable part of the city. Next this, to the east, is Jesús del Monte, a suburb occupied principally by the middle classes of the population. There is low ground between both of the last-named suburbs and the city proper. On the opposite

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side of the harbor is the independent town of Regla, described under its own title. About two miles eastward from this place is the important city of Guanabacoa, also described under its title; while northward, as already mentioned, opposite the city is the village of Casa Blanca, the population of which consists chiefly of seafaring people and those employed about the docks. The beautiful suburban village of Marianao, elsewhere described as an independent town, lies six miles southwest of Havana, and near it is the bathing resort of La Playa de Marianao. Puentes Grandes is a nearby suburb on the Almedares River, about two miles from its mouth. The railroad to Marianao passes through this place, as does the *calzada* to the south. Chorrera is an unimportant settlement at the extremity of the Vedado district. La Ciénaga is another nearby suburb, about four miles distant from the city proper, the literal interpretation of its title being "Swamp," and the immediate surroundings are such as its name implies, although there are hills about it. It is somewhat of a railroad town, being at the intersection of two or three lines, where there are workshops and railroad round-houses, the village itself being located about half a mile from the Cerro terminus of the Havana street railway system. Tulipán is an insignificant residence suburb, really part of the Cerro. It is clean and healthy, and has a plaza surrounded by attractive houses, mostly of wood.

The majority of the outlying country roads about Havana are good, most of them being *calzadas*, while the city is naturally the objective point of all the long-distance *calzadas* throughout the richly cultivated central portion of the island.

What has been said of the general *calzada* system is also true of the general railroad system. Within Havana proper there are at present but two railroad stations: that of the Western system, called Cristina;

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the other, that of the suburban line, Marianao, termed Concha. There was formerly a station for the Havana road close to the heart of the city, near the plaza, but this has been abandoned, and its terminus is now at Pueblo Nuevo in the suburbs. As has elsewhere been stated, there are two railroad stations at Regla, across the bay; one for the local line to Guanabacoa, and the other for the through line to Matanzas and the east.

WATER SUPPLY OF HAVANA

So many erroneous statements have been made in print concerning the water supply of Havana, even in recent official Government publications, that it seems well to treat this subject fully, not only to demonstrate the fact that this city has one of the best and purest sources of supply in the world, but also to show what it is possible to do in this way elsewhere in Cuba; and incidentally thereto, give to those of our readers who may be interested some idea as to past methods, prices, and costs of contract work on the island, which will, to a certain extent, afford guidance for the future on similar work. To this end, quotations are made by permission from a very able paper read before the American Society of Civil Engineers, September 16, 1896, by E. Sherman Gould, of Yonkers, N. Y., chief engineer of the American contractors who completed the undertaking:

“The first attempt to supply the city of Havana with water was made in 1835, by the construction of the Aqueducto Fernando Séptimo, which introduced the water of the Almendares River for public use. The supply was very inadequate. The water was diverted at a point about $4\frac{1}{2}$ miles from the city, and after passing through a rude and defective filter, was brought into the city in an 18-inch cast-iron pipe. This supply amounted only to about 1,333,000 gallons per 24 hours, and was liable to become very turbid from surface wash, the clarifying effect of the rude filtration being of slight account.

“In order to obtain a better and more abundant supply, it was



GATE HOUSE, HAVANA WATER WORKS

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decided to collect in a suitable basin a large number of springs which were found in the neighborhood of Vento, situated upon the River Almendares, about ten miles from Havana. . . .

“ This new project was inaugurated November 28, 1858. The two following years were spent in surveys, examinations, collecting materials, and other necessary preliminaries.

“ The springs, some 400 in number, giving a calculated yield of about 40,000,000 gallons per 24 hours, were collected in a large masonry-lined basin, with suitable overflows and sluices. These springs are situated near the river, on the farther bank from the city, and a high retaining wall, forming one side of the basin, prevents the entrance of the water of the river when it is swelled by freshets. A tunnel was constructed under the river, in which two lines of cast-iron pipe 1 metre in diameter were laid. These pipes connect with a masonry aqueduct about six miles long, leading to the distributing reservoir at Palatino. This aqueduct is oval in section, about 8 feet high and 6.5 feet in maximum width, with a total sectional area of $41\frac{1}{4}$ square feet and an area below the spring line of the arch $24\frac{1}{2}$ square feet. The slope is $\frac{1}{8000}$, and the estimated velocity, when running to the level of the spring line, 2.43 feet per second, delivering 59 cubic feet per second, or about 38,000,000 gallons per 24 hours.

“ The first stone in the main wall of the collecting basin was laid June 26, 1861. The first stone of the tunnel was laid in May, 1865. The water first ran through the pipes laid in the tunnel March 1, 1872. . . . As it would evidently have been unwise to delay the delivery of at least a part of the water until the completion of the work, it was determined to connect that portion of the aqueduct already built with the old distribution. Accordingly, in June, 1872, the aqueduct was connected with the filter beds already mentioned, and a partial supply of water, of improved quality, was thus obtained.

“ The total actual cost of the works executed up to October, 1887, according to official statements, was under \$3,500,000. These works included the receiving basin, tunnel, and aqueduct. Of the thirty years which intervened between the commencement of the work in 1859 and its resumption in 1889, about to be described, there were only ten in which actual work was done, owing to want of funds and political disturbances. . . .

“ The new works were inaugurated January 31, 1890. The author, after a preliminary visit to Havana to report upon the project, was engaged by Messrs. Runkle, Smith & Co. as their engineer for the execution of this contract. He reached Havana in February, 1890, and preparations were at once commenced for work.

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“ The contract for the entire work, including furnishing and laying the pipe, and building the reservoir, was taken at the engineer's estimate. The system of estimating public works in Cuba is somewhat peculiar. The plans having been prepared, an estimate is made of the exact quantities of each class of work required, down to the minutest detail. The plans, quantities, and estimates, accompanied with a report, are then forwarded to the home government, in Spain, and if approved are forwarded back and can be acted upon. After such approval, it is extremely difficult to have any changes made, anything radical involving first acceptance by the proper authorities in Cuba and then submission to the home authorities, and a royal order for the change. A feature which is frequently embarrassing is that the quantities of work must stand by themselves. If, in the execution of the work, the quantity, and consequently the cost, of one class should fall short of that estimated, the surplus would not be available for making up the deficit in any other class which might overrun the estimate. Hence, the anomalous circumstance might occur, of being obliged to ask for a new appropriation for extra work, while there was still an unexpended and unexpended balance on hand. The full set of documents of such a project comprise planos, mediciones, presupuesto, and memoria. The planos are the general drawings, illustrating the entire project, but only in a general way; the mediciones, or measurements and quantities, must be given, if expressible in cubic measurements, by the number of similar pieces of work, with their common length, breadth, and thickness, which factors, multiplied together, give the total cubication. It will be readily perceived how inconvenient this rule is when dealing with pieces of masonry of irregular shape. In such cases the actual cubature must be first calculated, and then the amount divided up in such a way as to be expressible under the three dimensions of length, breadth, and thickness.

“ There is another singular rule regarding the execution of public works in Cuba, which it is believed holds good in Spain also, which is, that implicit conformity to all plans and instructions given by the chief engineer does not relieve the contractor from the responsibility of failure, should it ensue, unless, before commencing the work, he file a written protest. In other words, his acceptance of a contract after examination of the plans and documents is held to be an approval of the design, which then virtually becomes his own, and for the success of which he, and not the engineer, is responsible. The want of reasonable foundation for this extraordinary regulation made it impossible for the author to believe in its existence until it was affirmed to him by unimpeachable authority.

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“ The work to be done under the contract contemplated, besides the furnishing and laying of the pipe, the building of the distributing reservoir already mentioned. This reservoir is about four miles from the city. It is almost wholly in excavation and consists of two compartments, or tanks, each containing about 8,000,000 gallons. The bottom is covered with a concrete floor and the sides are formed of rubble masonry retaining walls. From outside to outside of foundations of both tanks, the area covered is 245 by 500 feet or about 2.8 acres. The elevation of the bottom above city datum (which is understood to be mean low water) is 95.57 feet. The elevation of the lip of the overflows is 114.83 feet. The height of the retaining walls, from the level of the concrete floor to the top of the wall, is 20.5 feet. The top thickness of the wall is 2.79 feet ; its bottom thickness, not counting a small offset, is 6.73 feet. The face has a batter of 1 in 10, and the back is built in offsets. The area of the cross section is 97.20 square feet.

“ Water is admitted to this reservoir through an influent gate chamber. It may be admitted into either side of the reservoir, or both sides at once ; or it may be shut off from either or both, and run through a masonry culvert directly into the effluent gate chamber. The water may be also entirely shut off from the reservoir and gate chamber and turned into a waste culvert passing around the reservoir. Each side of the reservoir has an overflow, discharging into the culvert, and there is another overflow in the aqueduct just before entering into the influent gate chamber. All the above operations are effected by sluice gates.

“ The effluent gate chamber contains a number of openings controlled by sluice gates, of which there are twelve in all used at the reservoir. From these openings the water enters a collecting pipe 42 inches in diameter, running parallel to the side of the reservoir. Out of this pipe run the various other pipes destined for the distribution of the water to different parts of the city. These pipes, as well as the collector, are governed by valves. . . .

“ The amount of money called for by the estimates was furnished by the Spanish Bank of the Island of Cuba and was paid to the contractors in monthly installments as the work progressed, the estimate being signed by the engineer director of the works, and the engineer inspector appointed by the bank. . . .

“ The excavation for the reservoir was immediately commenced under the charge of Mr. Hector Simonetti. Disappointments occurred at the start from not getting the amount of Decauville plant of track and cars which had been ordered, but work was nevertheless started with all the means at command. . . .

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“ Early in May, 1890, the author returned to the United States to collect plant, engage a force of American masons, and prepare for an active prosecution of the work as soon as the rainy season should be past. . . . A gang of masons was made up in New York, and Mr. A. G. Midford was engaged as superintendent of the works. Four pipe calkers were also engaged, who soon trained a gang of Cuban calkers to do good work. . . .

“ The author reached Havana with his assistants early in October, 1890. Work had been continued in excavating for the reservoir and pipe line . . . until July 31st, when the rains made it expedient to suspend the work.

“ Many delays occurred at the start incident to the commencing of such a large and complicated undertaking in a foreign country and under foreign direction, so that, although the masons were immediately set to work preparing stone and doing whatever building they could be put at along the line, it was not until November that laying concrete and masonry commenced at the Palatino reservoir. . . .

“ The concrete bottom is one foot thick, and was laid in two courses of about 6 inches each. This was covered later with a finishing course laid with a slight slope toward the discharge pipes which served to empty the reservoirs. The main course, one foot thick, was continuous over the entire area. It extended beyond the back of the retaining walls a short distance, so as to give a good footing for them, and was put in, generally, about one foot thicker under these walls as an additional foundation for them. This formed a large volume of concrete, in all about 5,500 cubic yards, to be spread in so thin a sheet over so large an area. Great care was necessary in preparing the ground for its reception. The specified thickness was obligatory, and on the other hand no extra thickness would be paid for. The ground had therefore to be dressed to as nearly a perfect level as possible at the exact elevation of the bottom of the concrete.

“ The stone mostly used for this concrete was in every respect admirably adapted for the purpose, being an exceedingly hard, crystalline limestone, breaking readily in a crusher with a sharp conchoidal fracture. The sand used for all the work was calcareous, there being no siliceous sand procurable. It was sharp, very clean, and gave excellent results. . . . The keeping of the concrete thoroughly wet for long periods of time after being placed was inflexibly insisted upon. This precaution was doubly necessary in such a climate as that of Cuba, and was enforced for all classes of masonry. . . .

“ In executing the masonry work great difficulty was experienced in getting sufficiently large stones for rapid work in the rubble mas-

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onry. The quarries were badly worked by the parties furnishing the material, who were without proper appliances for the purpose. All the stone used in the rubble and cut stone work might probably be classed as coral limestone and limestone conglomerate, a good quarry of this latter being found in the immediate vicinity of the work. The material for cut stone could be obtained in almost any size desired. It was a peculiar class of the above mentioned coralline, very soft and easily cut by stone axes into any required shape. It was quarried by chopping channels with axes, and then wedging the blocks out. It was easily worked, but was naturally an inferior material as regards durability.

“ The inside faces of the reservoir walls were plastered with one part cement, one part sand, and one part lime. The author objected to the use of lime, but as this was a mixture ordered by the director, it was, of course, put in. It stood well, however, and so far as the author knows is still standing. The floor of the reservoir was finished with a plastering of one part of cement and two of sand. . . .

“ The rain caused great delays. The author had been led to believe, both by common report and his own experience on previous visits, that the winter months would be quite free from rainfall, and so, in general, it is believed they are ; but during this and the succeeding year, copious rains fell at intervals through the winter months and between the legitimate rainy seasons. On the other hand, in June, 1891, dry weather occurred where rain had been anticipated and provided for by putting on extra gangs, at a heavy expense, to complete the concreting of the floor before June 1st. As it proved, this extra expense might have been spared, but this was only by a chance, which could not have been counted on. . . .

“ Late in August, 1891, the work was suspended for the season, the concrete flooring being completed with the exception of the finishing course, and the retaining walls on all sides finished with the exception of a gap left for drainage and some intervals left for subsequent construction.

“ Work was resumed early in November of the same year, and carried on vigorously, although there was a great deal of rain both in this and the following month. It was now determined to dispense with all help brought from the United States, and from the suspension of the work in August to its completion, only local help was employed, with the exception of a few Italian-American masons, who had drifted down on their own responsibility. . . .

“ After the resumption of the work, the centre wall was built, as well as the influent and effluent gate chambers. This last was an

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extensive and imposing structure. It comprised much cut stone work. . . .

“ Early in November, 1892, rather less than two years from laying the first stone, the work was practically completed with the exception of some exterior work, and both tanks were filled with water, experimentally. Everything proved to be all right. In January, 1893, the principal part of the piping of the city having been completed, the reservoir and pipes were filled, preparatory to the official inauguration of the works. This took place January 23d under the auspices of the Captain-General and the Bishop of Havana. . . .

“ The final estimate for the Palatino Reservoir is as follows, the quantities being reduced to English measures and the prices paid to American currency :

Excavation	89,474	cu. yds., at \$0.70 =	\$62,631.80
Embankment	126,983	“ .49 =	62,221.67
Terracing	30,796	“ .42 =	12,934.32
Concrete	8,860	“ 15.22 =	134,849.20
Rubble, 1st class	10,576	“ 12.78 =	135,161.28
“ 2d “	272	“ 10.88 =	2,959.36
“ 3d “	946	“ 7.57 =	7,161.22
“ arches	96	“ 13.00 =	1,248.00
Cut stone, cornices	57.31	“ 38.94 =	2,231.65
“ bridge stones	69.47	“ 37.84 =	2,628.74
“ patterns	1,186.66	“ 33.72 =	40,014.18
“ plain	597.50	“ 29.52 =	17,638.20
“ two beds	410	“ 25.23 =	10,344.30
Brick	741	“ 17.09 =	12,663.69
Dry stone	296	“ 5.26 =	1,556.96
Plastering, 1st class	5,448	sq. yds., at 1.51 =	8,226.48
“ 2d “	19,540	“ .92 =	17,976.80
Paving, concrete	1,424	“ 2.29 =	3,260.96
“ brick	690	“ 1.15 =	793.50
Face work on cornices	106	“ 2.75 =	291.50
Gravelling terrace	500	“ .69 =	345.00
Tile drains, 1,305 running feet, at . . . . .		.67 =	874.35
Timber grillage, 10,100 feet B. M., at		28.60 =	288.86
Gates, valves, etc.			13,832.41
Iron work, stairs, railings, etc.			12,434.81
Miscellaneous			1,917.27

\$566,486.51

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“The quantities and prices, in English measures and United States currency, of the pipe system, according to the final estimate, were as follows :

Cast-iron straight pipe, 7,930 tons, at \$85.39	\$677,142.70
Lead, 320,682 pounds, at 6 cents.....	19,240.92
Hauling 7,930 tons, at \$2.50.....	19,825.00
Pipe laying, 465,655 linear ft., at \$1.022 (average price).	475,899.41
Gates, valves, hydrants, and various specials, 88.19 miles, at \$1,272.....	112,177.68
House connections and services, 88.19 miles, at \$760.10.	67,033.22
Masonry, earthwork, pile driving, etc., on 42-inch pipe line, 2.51 miles, at \$60,025.50	150,664.00
Unclassified	44,391.65
	\$1,566,374.58

“The manner of making up the engineer's estimate for this class of public works, according to Spanish rule, is to calculate as nearly as possible the actual cost at which it can be done, and then add 19 per cent. for contractor's profit. In the above statement, the 19 per cent. is added in for each item separately, as giving a clearer idea of the actual prices paid.

“The length and weight of pipe, and the weight of the lead used for the different diameters, were as follows :

<i>Diameters, inches.</i>	<i>Length, feet.</i>	<i>Weight (tons), 2,240 lbs.</i>	<i>Lead, pounds.</i>
42.....	13,236	2,380	88,950
20.....	21,650	1,273	61,812
12.....	26,858	797	47,761
8.....	34,712	590	3,042
4.....	338,431	2,715	113,566
3.....	30,768	175	5,561
Totals	465,655	7,930	320,692

“Four pipes ran out from the collecting pipe in the effluent gate chamber. One 12-inch pipe was for the supply of the Cerro district, adjacent to the reservoir ; one 20-inch for that of the Jesús del Monte district, also near by ; another of 20-inch diameter to be connected, if necessary, with the old or Fernando Séptimo system, and the main 42-inch pipe for the general supply of the city. This last pipe extended about 2½ miles, crossing two valleys on masonry arcades, not included in the estimate for the reservoir, to an elevated point in the city, whence branches were run through the various streets.

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"The service pipes of wrought iron rapidly corroded in the impure soil in which they were laid, and were the cause of much trouble and expense for renewals. . . .

"The benefits accruing to the city of Havana by the execution of this work have been enormous. An abundant supply of exceptionally pure water has been introduced into all parts of the city, including those districts which previously were unprovided with any water except what was brought in pails from public plugs. It is true that as the draught upon the supply increases, the pressure diminishes and inconvenience has been already experienced from this cause. This inconvenience was apprehended and pointed out by the author when the work was commenced, and a diameter of 48 inches recommended for the 13,236 feet of main running out of the reservoir, instead of the 40 inches originally contemplated. The extra cost was regarded, however, as prohibitive, and a diameter of 42 inches was finally settled upon. The 48-inch main would in this distance have given over 15 feet additional head at the point where the smaller mains branched off. That is, the calculated piezometric head at this point being at elevation 83.6 feet with a 42-inch main, would have been at 99 feet with one of 48 inches, a gain of about 18 per cent., which, under the circumstances, would have been of immense benefit.

"As a growing interest is taken in work in Spanish-American countries, some general reference to this class of enterprise may be looked for in this paper. The experience and observation of the author in Cuba and elsewhere lead him to the following conclusions :

"*First* : The hope of reaping extravagant profits from such undertakings must not be entertained. No matter how favorable the contract or concessions may be, a host of unforeseen difficulties are sure to arise owing to many causes, the partial enumeration of which, even, cannot be entered into here.

"*Second* : The work must be carried on with precisely the same economy, energy, and attention to detail which would be considered essential to success at home.

"*Third* : As far as possible local help and materials should be employed and methods of work made to conform to local usage.

"*Fourth* : No such enterprise should be undertaken unless sufficient capital has been secured to start and carry on the work rapidly and vigorously. The author is convinced that the striking success which, in spite of all obstacles, crowned the work just described, was very largely due to the sound and liberal basis upon which the undertaking was financed by its promoters."

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HAVANA FIRE DEPARTMENT

There are two fire brigades in Havana: the "Bomberos Municipales," and the "Bomberos del Comercio." The latter is supported by public subscription, and the members of the corps give their services entirely without payment. It is chiefly composed of the well-known young men of the town, and great pride is taken in the splendid equipment of the corps.

The "Bomberos Municipales" are supported by the municipality, and the corps includes a large number of colored men, who also work without payment. There are about 150 telephonic alarm stations, and both corps are noted for their efficiency in carrying out their duties.

FIRE RISKS

Below is the fire record of the city for six years prior to 1891:

	<i>Fires.</i>	<i>Attempts.</i>	<i>False alarms.</i>	<i>In wooden houses.</i>
1885.....	20	50	1	6
1886.....	15	38	8	1
1887.....	12	38	5	4
1888.....	14	39	..	5
1889.....	7	21	2	1
1890.....	15	40	4	2

Owing to the character of the construction of the buildings, fires are rarely serious and almost as rarely occur, and judging from the secrecy maintained by fire underwriters concerning all of their affairs, the business must be a profitable one. It is said that not in many years has the total of losses by fire been over \$500,000 in any one year; this despite the fact that arson, perhaps next to murder, is the favorite course followed for revenge.

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VITAL STATISTICS

Vital statistics are difficult to obtain, but the following official figures for 1893 will serve to illustrate conditions in this respect in ordinary times.

The death rate of Havana in the year 1893 was 33 per 1,000. The total number of deaths amounted to 6,610 persons of the following nationalities :

<i>Nationality.</i>	<i>Number of deaths.</i>
Cuban	4,095
Spanish	1,773
African	222
Other countries	520
Total	<u>6,610</u>

It is noteworthy that of the total number of deaths, 1,312 persons were said to have died of consumption.

Yellow fever was unusually severe. During the six summer months, 26.8 per cent. of the entire mortality was due to that cause, the number of such deaths being 645. It was noticed, however, that among the British sailors there were but few deaths, although many of these were sent to the hospital with the disease, most of whom fortunately recovered.

There were 4,175 births in Havana during the year. Of the 3,423 white children born, 916 were illegitimate.

Comparing the general mortality with the total number of births there is a net loss to population of 2,435.

There were 945 marriages in Havana during the year.

The above figures refer to the city of Havana alone and do not include the numerous suburbs.

THE MANUFACTURE OF CIGARS

There are 120 first-class cigar manufactories in Havana, and several times that number of small con-

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cerns. Many of the larger factories have each over 400 employees, and while a few women are employed in washing and preparing the leaves, all cigar-makers are able-bodied men, and all work is done by the piece. In good times an expert workman can easily earn five dollars a day.

A curious custom prevails in all of the factories in respect to employing readers; each establishment having at least one of these, while the larger concerns each have several. These men read aloud almost constantly during the working hours while the cigar-makers deftly ply their fingers. The selections are generally from Spanish romances and similar works, which are sometimes given with dramatic effect. So firmly has the custom become established that it is said that attempts to dispense with it have always caused labor troubles or a material decrease in the output of the manufacturer who ventured upon its suppression.

The comparative retail price of various sized Havana cigars there and in the United States will interest the smoker:

<i>At Havana.</i>		<i>At New York.</i>
3¼ cents.		12½ cents.
4½ “		15 “
8½ “		20 “
10 “		25 “
15 “		35 “
30 “		75 “ to \$1.

All of the first-class Havana factories have practically the same prices for the same size and character of goods, and on cigars of the same name or grade there is supposed to be no difference in the quality of tobacco of which they are made, although the wrappers for those of the larger sizes are far more expensive.

However, as in this country, the same quality of

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tobacco does not always get into the same kind of cigar, this difference being noticeable between the crops of various years.

THE PRICE OF ICE

While there are three ice factories in the city, the price up to a comparatively recent date has been from 80 cents to \$1.20 per 100 pounds, and refrigerators are not in general use. Of these, it is said that most of them are imported from the United States, some few from France, and others are manufactured locally. The preference seems to be for those arranged in two compartments: one for cooling water, as many of the inhabitants, while liking cold water, object to drinking it when it contains ice; the other, for food.

COMMERCIAL PRACTICE AND CUSTOMS

Goods are brought to Havana from the United States either in sailing vessels or steamships. After being loaded in the United States, they are not subjected to any further handling until they reach this port.

UNLOADING AND LANDING.—After the arrival, entry, and obtaining of custom-house permits, goods are discharged into lighters, if the vessel anchors out in the bay, or over the bow down an inclined plane (wooden staging) connecting the vessel with the custom-house wharf. On the wharf the goods are protected from the weather by tarpaulin or canvas coverings. The same lighters convey sugar, tobacco, etc., from the warehouses to the vessels, into which they are loaded for export. Coal is discharged either on the Casa Blanca and Regla or on the Havana side of the bay, at private wharves convenient for distribution. Lumber is either unloaded from the vessel in the bay and rafted ashore by the crew,

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or discharged on some private wharf to which the vessel is hauled, such as the San José warehouse wharves, from whence it is carted away to the several lumber yards situated in different parts of the city.

WAREHOUSING.—The custom house provides stores or warehouses under its own roof for fine goods, such as dry goods, etc., where they are safely cared for until examined, appraised, despatched, and delivered to the order of importers on their satisfying the duties. The old San Francisco convent, facing on the plaza of the same name, which now serves as the Havana custom house, covers from two to three acres of ground. If goods are left here by the importers longer than the given time for hauling them away after being despatched, storage is charged at a fixed rate. The custom-house wharf is allotted for the keeping, till despatched, of such heavy and bulky merchandise as flour, lard, hams, iron manufactures, and hardware unloaded there either from lighters or from the vessels. The wharf is a very substantial structure, about 1,500 feet long by 100 feet wide, with an iron gabled shed about twenty-five feet wide and twenty-two feet high at the ridge, running midway the full length of the wharf. In addition to the private warehouses in the city, there are others on both sides of the bay with immense capacity for the storage of goods, such as the Regla, Hacendados, and San José stores. Heavy goods are not carried into the custom-house store, but are taken charge of by receiving clerks, with laborers at their command, who, under the direction and inspection of the custom-house officials, arrange them in lots in the order of invoice entries and cover them over with tarpaulins. In addition, these goods are faithfully guarded by private night watchmen, as well as by customs guards. Should the goods be on the wharf in a hurricane during August, September, and October, they are liable to be

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damaged. Proper precautions are, however, usually taken by the importers at that season of the year by hauling them off to the store or warehouse as soon as they are despatched by the custom house.

GOODS FOR THE INTERIOR.—All goods are forwarded to the interior by railroads or coasting vessels, and receive good handling and usage *en route*. From the railways in the interior, and from the wharves at the outports, they are transferred to the distributing centres, generally in carts drawn by oxen or mules. Around Havana pack horses and porters are but little used for this purpose.

OUTSIDE PACKAGES.—Packages of the sizes and kinds adopted by universal convenience and usage, with the covers judged by the trades from experience and observation to be best, are such as are accepted here. The merchants and tradesmen of Cuba, being among the most practical and intelligent in the Spanish-American countries in their respective branches, are not over-fastidious, but readily accept that which, by universal custom, is acknowledged to be best for the purpose. Accordingly, dry goods should be packed in wooden cases properly lined on the inside, and if necessary to preserve the contents from getting wet, they should also be covered on the outside with a suitable oiled material. The most suitable method of packing breadstuffs and provisions for the Cuban market is that now practised by the American millers and packers. Flour, in cotton or jute bags, weighing about 203 pounds gross; lard, in tierces of about 450 pounds gross, and in tin cans of about four, eight, and eighteen pounds, with package; hams, in tierces weighing from 350 to 400 pounds gross; bacon, (clear bellies) in boxes weighing from 500 to 700 pounds gross; beans and pease, in barrels weighing 300 pounds gross; and maizena, in boxes weighing about twenty

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pounds. All these articles reach here in good condition, and receive good handling and usage on the part of those engaged in their delivery for consumption. One of the few liquids imported into Havana from the United States is beer in barrels, kegs, and cases, the latter containing from two to eight dozen bottles, according to mark. Iron manufactures and hardware are imported from the United States in casks, boxes, crates, bales, and barrels, according to instructions from the importers, except heavy iron pieces, which come loose. All packages should be sufficiently protected against damage by water; but this does not mean that they should be absolutely waterproof; otherwise there would be no necessity for sheds, tarpaulins, and other coverings.

The present methods of packing American goods exported to this port give great dissatisfaction; breakage and damage occurring to an altogether unjustifiable extent, owing to the fragile boxes used and the very careless packing of their contents.

STATISTICS OF EXPORTS

The consuls of every nation, at Havana, have for years constantly complained of the difficulty which they have experienced in securing definite statistics, harmoniously arranged, upon any of the industries of the island, as their reports laboriously testify. What has been impossible for the official commercial representatives of the largest nations of the earth to accomplish can hardly be expected of a private individual; therefore, if the figures immediately following, or elsewhere given in this work, should appear to be disjointed and lacking in harmony of arrangement, or even not agreeing as to amounts on all details, it is trusted the foregoing will be borne in mind, and that all figures quoted are the official ones of

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some consulate, and have been so certified to some one of the principal nations. But though our quotations, gleaned from many different sources, may present such incongruities as mentioned, it is believed that they are sufficiently accurate to indicate the relative commercial importance and character of industry in the various localities, and of the island as a whole, giving to the average commercial mind a comprehensive basis of past transactions from which to calculate the possibilities of the future under radically changed conditions which should greatly aid the development of all Cuban industries.

A detailed account of the imports of Cuba through the port of Havana has already been given in Chapter X.

The following tables give the principal exports of Havana to Spain, to foreign countries, and to the United States :

STATEMENT OF EXPORTS OF THE PRINCIPAL ARTICLES OF CUBAN PRODUCE FROM HAVANA FROM JANUARY 1
TO DECEMBER 31, 1892.

(Taken from the British Consul-General's Report.)

DESTINATION.	Sugars.		Refined Sugars.		Molasses.	Honey.	Wax.	Rum.	Cigars.	Tobacco.	Cigarettes.	Scrap.
	<i>Bags.</i>	<i>Hhds.</i>	<i>Barrels</i>	<i>Boxes</i>	<i>Hhds.</i>	<i>Tcs.</i>	<i>Arrobas</i>	<i>Pipes.</i>	<i>1,000</i>	<i>Bales.</i>	<i>Packages.</i>	<i>Kilos.</i>
United Kingdom.....								221	42,594	285		
Holland						50		36	20	573		
Germany						655			18,419	33,837	260,950	230
Belgium						50			810	547		
France	1			2	12	1,146	1,492	1,734	7,816	2,149	2,391,026	18,577
Spain, Canaries, etc...	328,521		1,785	6,523	1,081	104	8,967	17,103	11,856	30,578	2,399,142	21,234
United States.....	1,154,193	6,995			6,544	254	2,486	162	81,512	176,086	7,979,199	80,712
British Provinces of North America... }	2,500								257		4	100
Mexico and Guatemala.....							40	13	89		5,078,306	32
Puerto Rico, Hayti, etc.....							60		915	50	17,553,658	364
South America and Central America. }	10			5			12	1,972	2,424	201	5,878,468	182,948
Total to December 31.	1,485,225	6,995	1,785	6,530	7,637	2,259	13,057	21,241	166,712	244,306	42,540,753	304,197

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COMPARATIVE STATEMENT OF THE EXPORTS OF THE PRINCIPAL CUBAN PRODUCTS FROM HAVANA FROM JANUARY 1 TO DECEMBER 24, 1895 AND 1894.

(Taken from the British Consul-General's Report.)

DESTINATION OF GOODS.	HONEY.		WAX.		RUM.		CIGARS.		TOBACCO.		CIGARETTES.		SCRAP.	
	1895	1894	1895	1894	1895	1894	1895	1894	1895	1894	1895	1894	1895	1894
	<i>Bbbs.</i>	<i>Bbbs.</i>	<i>Cwts.</i>	<i>Cwts.</i>	<i>Pipes</i>	<i>Pipes.</i>	<i>1,000</i>	<i>1,000</i>	<i>Bales.</i>	<i>Bales.</i>	<i>Packages.</i>	<i>Packages.</i>	<i>Kilos.</i>	<i>Kilos.</i>
United Kingdom.....	.....	.....	.....	.....	1,019	25	40,372	31,684	594	586	5,000	5,750	.....	38
Holland and Belgium.....	173	81	40	.....	.....	4	840	872	2,547	4,301	.....	.....	.....	.....
Germany	90	853	3,300	908	301	54	22,360	17,671	46,986	39,436	56,260	379,658	260	122
France	537	203	366	348	1,231	1,490	12,451	8,244	2,191	451	639,378	609,808	28,237	15,566
Spain, Canaries, and Portugal.	48	179	3,956	2,356	3,751	4,339	15,438	11,605	32,435	34,650	16,147,721	8,735,922	78,147	62,926
Morocco	13	.....	.....	.....	2,073	.....	.....	.....	.....	.....	37,500	.....	.....	34
Sweden .....	.....	.....	.....	.....	.....	.....	.....	42	44	.....	.....	.....	.....	.....
United States	402	721	12,220	17,168	97	.....	60,919	58,961	212,178	153,381	6,595,803	4,357,762	117,725	63,936
British North America.....	.....	.....	.....	.....	.....	9	155	195	5	.....	.....	.....	.....	230
Mexico, Guatemala, etc .....	.....	.....	.....	.....	148	30	46	45	41	10	1,588,321	2,065,280	148	307
Puerto Rico, Hayti, etc.....	.....	.....	72	60	.....	2	730	532	55	33	18,203,126	18,509,537	1,020	1,816
South and Central America...	.....	.....	80	.....	2,157	2,809	3,202	2,214	1,657	146	4,890,737	3,425,968	516,284	286,110
Total to December 24....	1,263	2,037	20,034	20,840	10,777	8,762	156,513	132,065	298,733	232,994	48,163,846	38,089,685	741,821	431,085

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DECLARED EXPORTS TO THE UNITED STATES FROM THE PORT OF HAVANA FOR THE TWELVE MONTHS ENDING MARCH 31, 1895.

Asphaltum	\$8,705	Hoofs	\$173
Beeswax	4,491	Horns	1,278
Birds	6,082	Lancewood spars....	8,628
Bones	19,944	Mahogany	3,009
Cigars and cigarettes..	2,179,730	Metals (old).....	55,522
Dyewood	458	Molasses	653,163
Fruit	578,912	Palm leaf	2,480
Glycerine (crude)....	5,404	Sponges	28,554
Hair (raw).....	2,972	Sugar.....	9,375,047
Hides	19,125	Sundries	70,892
Hide clippings	14,908	Tobacco leaf	8,080,943
Honey	2,800	Tortoise shell.....	1,230
Total	\$21,124,450		

During the same period the declared exports to the United States from the whole of Cuba amounted to \$66,574,805. It follows, therefore, that nearly 32 per cent. of the total exports to the United States came through the port of Havana. Of the total declared exports of cigars to the United States, Havana furnished over 99 per cent.; of leaf tobacco, 96 per cent.; and of sugar, nearly 20 per cent.

SHIPMENTS OF CIGARS—HAVANA.

YEAR.	Total Exports.	United States.	Great Britain.	Germany.	France.	Spain.	Other Countries
1888	219,892,000	188,755,000	.....	.....	11,375,000	17,119,000	2,643,000
1889	250,476,000	101,700,000					
1890	211,823,000	95,100,000					
1891	196,664,000	52,115,000					
1892	166,712,000	54,000,000					
1893	147,365,000	67,492,000	30,668,000	21,857,000	10,080,000	12,118,000	4,150,000
1894	134,210,000	*60,000,000					
1895	156,513,000	*60,000,000	*40,000,000				
1896	132,065,000	*60,000,000	*40,000,000				

* Approximate.

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The foregoing statistics of cigar shipments are complete as to total exports, as well as those shipped to the United States. It is regretted that they are incomplete as regards shipments to other countries, yet these last are sufficient to show that there has been an increase in such trade, while the tremendous decrease in exports to the United States, and the consequent effect upon the total, are apparent. This condition has been caused by the high tariff which has prevailed in the United States for the past few years, which has tended to develop the cigar manufacturing industry in that country; but, considering the average value of Cuban cigars to be \$40 per 1,000, as is generally done, it will be seen that it has affected the trade in Havana over \$5,000,000 a year.

SHIPPING STATISTICS

The following tables show the number and tonnage of the vessels of the principal maritime nations entering the port of Havana :

FOREIGN VESSELS ENTERED AT THE PORT OF HAVANA.

	1891	1892	1893	1894	1895	1896
American	450	459	556	603	507	
Spanish	323	322	419	409	422	
French	25	30	33	25	24	
British	?	224	219	202	172	133
Danish	1					
German	18	30	33	27	13	
Norwegian	7	32	45	31	16	
Swedish	0	1				
Italian	1	4	9	9	1	
Belgian .....	....	....	....	....	1	
Dutch	2	1	
Others	1	2	1	3	2	
Totals	826	1,104	1,317	1,309	1,159	133

(Others not recorded.)

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TONNAGE OF SAME.

	1891	1892	1893	1894	1895	1896
American ...	489,343	491,642	631,958	776,229	667,664	
Spanish	492,630	476,556	666,601	677,907	729,894	
French	47,420	55,077	78,590	65,969	45,634	
British	?	196,167	204,763	207,667	204,458	144,492
Danish	300					
German	28,620	39,208	45,685	39,727	21,141	
Norwegian ..	3,471	17,776	25,345	20,652	8,666	
Swedish		530				
Italian	751	1,951	4,470	4,482	406	
Belgian					1,801	
Dutch			189		612	
Others	832	570	314	1,964	1,049	
Totals ..	1,063,367	1,279,477	1,657,915	1,794,597	1,681,325	144,492

The foregoing does not include vessels engaged in the coastwise trade.

CHAPTER XIII

PROVINCE OF HAVANA

(INCLUDING THE ISLE OF PINES)

BY FAR THE MOST DENSELY POPULATED PROVINCE.—ITS LARGE SUGAR PLANTATIONS.—ITS VALUABLE TOBACCO PLANTATIONS.—MARBLE, SLATE, PETROLEUM, ASPHALT, GOLD, AND COAL FOUND IN IT.—ANALYSIS OF ITS COAL.—ANALYSES OF ITS TOBACCO-BEARING SOIL.—LIST OF PLANTATIONS DESTROYED DURING THE RECENT INSURRECTION.—DESCRIPTION OF THE ISLE OF PINES.—SANTA FÉ, ITS NOTED HEALTH RESORT.—BATABANÓ.—ITS UNHEALTHFULNESS AND ITS SPONGE INDUSTRY.—BEJUCAL AND THE LONGEVITY OF ITS RESIDENTS.—GUANABACOA AND ITS MINERAL DEPOSITS AND SPRINGS.—BEAUTIFUL GÜINES.—REGLA'S FINE SUGAR WAREHOUSES AND POPULAR BULL-RING.—SAN ANTONIO DE LOS BAÑOS, THE COMING SARATOGA OF CUBA.

POPULATION OF 1887—OTHER STATISTICS OF 1894.

Total square miles.....	4,111		Number of houses in towns	35,289
Square miles utilized in province.....	1,709		Sugar plantations.....	166
Population.....	451,928		Coffee plantations.....	24
Number of inhabitants per square mile.....	109.93		Tobacco plantations.....	250
			Cattle ranches.....	1,262
			Number of farms.....	6,920

THE province of Havana is by far the most densely populated division of the island, has the most extensive system of public railways, and has more and better public highways than any of the other provinces; while, considering it from all standpoints, it is the most thoroughly cultivated and best developed. Some idea of this is obtainable from the foregoing statistics, while the great importance of the city of Havana itself, above

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all other cities of the island, reflects the relative importance of the entire province as compared with any of the other territorial divisions of Cuba. Its sugar plantations, while not so numerous as some of the others, are immensely large, and have been successfully cultivated. Its tobacco plantations in the western portion approach in value those of Pinar del Río. Its cattle ranches have produced the best horses and cattle, while its fisheries and sponge industries are of considerable importance. Its commerce, it is needless to say, is greater than that of all the rest of Cuba. While not considered a mineral country, it has such deposits to a considerable extent, and in the very suburbs of the city itself. At Guanabacoa and elsewhere, excellent marble and slate are abundant. Petroleum exists in the same localities, even bubbling up from the waters of Havana harbor. Gold deposits exist in certain portions of the province, and there is no question as to the existence of asphalt and similar bituminous products.

An analysis of the coal found near Guanabacoa is as follows:

Volatile matter.....	63 per cent.
Carbon	35 “
Ashes and residuum.....	2 “

This analysis indicates a very inferior quality of coal, which gives off considerable flame and smoke, and cakes badly, leaving a light, bulky coke. It has never been mined to any great extent.

There are many mineral springs in various parts of the province, the more important of which will be described in connection with the towns in which they are situated. Among them are those at San Antonio de los Baños, Guanabacoa, and Madruga.

An analysis of the richer soils of the province from

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two different localities on the edge of the great tobacco district may be of interest. They are as follows :

Organic matter	18.40	23.20
Silica	70.80	68.20
Lime .....	.40	4.60
Alumina .....	.40	Traces.
Oxide of iron.....	10.	4.

The Isle of Pines is politically a part of the province of Havana. In addition to its cattle and agricultural products, it is noted for possessing a fine marble deposit, as well as for having an extensive growth of large pine timber at a lower altitude than it exists anywhere else in the tropical world.

Below is a partial list of the plantations destroyed during the insurrection :

<i>Havana.</i>	<i>Owner.</i>	<i>Industry.</i>
Aljovín.....	Cándido Matos	Sugar.
Carmen	U. Crespo	"
Concordia.....	J. Romay	"
Eluco	Pedro F. de Castro.....	"
Emilia	Manuel Escobedo.....	"
Encarnacion	Julio Hidalgo.....	"
Esperanza.....	Conde Romero	"
La Victoria	Viida de Elijalde.....	"
Luisa	José M. Herrera.....	"
Manuelito	Conde Duany.....	General.
Plazaola	Ignacio Herrera.....	Sugar.
Purísima Concepcion ...	Carlos Mazorra.....	"
Salvador	Conde Barreto.....	"
San Agustín .	Francisco Casuso.....	"
San Antonio.....	M. Pulido.....	"
San Isidro.....		
San José.....	Carolina Lacoste.....	"
San Leon	Herederos de Toscano	"
Santa Ana		"
Santísima Trinidad.....	José Arroyo	"
	Herederos de Arango.....	"
Teresa.....	Domingo Arango	"
Two-Five.....	Herederos de Macías.....	"

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ISLE OF PINES

The Isle of Pines is the largest island adjacent to the coast of Cuba, and forms, politically, a part of the province of Havana. It was discovered as early as 1494 by Columbus himself, and named by him Evangelist Island. It is about sixty miles in length from east to west and its greatest width is fifty-five miles. Its estimated population is 2,000. The two principal towns are Nueva Gerona, with a population of about 900, and Santa Fé, with a permanent population not far from the same number. Santa Fé is a noted resort for invalids, its mineral springs being said to possess marvellous curative properties, while the atmosphere is exceedingly pure and balmy, and, despite the fact of the isle being surrounded by the sea, its air is considered dry by the Cubans. The town itself is squalid and unpretentious, although it possesses one fairly good hotel. No doubt when Cuba is regenerated there will be others, and the spot will become a famous winter resort for invalids from the United States. The Isle of Pines in reality consists of two islands, separated by a swamp, through which are rocky ledges, upon which has been constructed a connecting causeway. The inhabitants of the island are almost a distinctive race from the ordinary Cubans, and are noted for being naturally hospitable to strangers, and honest in their dealings. The growth of pines which covers a great part of the island is something remarkable, while cedar, mahogany, and other valuable woods are also plentiful. The island, as already stated, possesses a fine marble deposit, as well as deposits of quicksilver, iron, and silver, which have never been worked. The turtle fisheries of the island are of some importance, and cattle raising has been one of the industries successfully

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followed by the natives, while a few pineapple plantations exist.

CITIES, TOWNS, AND VILLAGES IN THE PROVINCE

AGUACATE.—Near the boundary of Matanzas province. It is situated on the railroad, but is unimportant. It has an estimated population of 1,427, and is located about thirteen miles from Jaruco. It was partially destroyed during the insurrection. The population of the township is estimated at 4,028.

AGUADA DEL CUBA.—A small railroad town on the road from Havana to Batabanó, eleven and one-quarter miles from Havana.

ALFONSO DOCE.—A small railroad town ; the terminus of the branch of the Havana and Batabanó railroad starting eastward from San Felipe.

ALMACENES DE JARUCO.—This is a small settlement about the warehouses of Jaruco, three miles distant from that town. There is no way of communication between it and the town except by river, and it consists of cheap rubble houses and palm huts.

ALMENDARES.—A small railroad station on the line to Batabanó, about seven and one-half miles from the city of Havana.

ALQUIZAR.—A fairly good town of nearly 3,000 inhabitants, distant about six miles from the boundary of Pinar del Río, and located on the line of the Western Railroad running between Havana and the city of Pinar del Río. The surrounding country is rich, and is ordinarily well cultivated for sugar and tobacco, but it and the town itself lie low, and the locality is considered unhealthful. The town is comparatively well built for one of its size, the buildings being principally of stone, brick, or stucco.



ELECTRIC LIGHT PLANT—SAN ANTONIO DE LOS BAÑOS

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The streets are paved, but they are not in very good condition. It has no water supply other than that from wells and cisterns, and is lacking in other public improvements. The town was partially destroyed during the insurrection. The population of the township is 8,700.

ARROYO NARANJO.—Almost a suburb of the city of Havana, being situated only about seven miles south of it. It is long and narrow, being built along the Southern Calzada, the paved highway running out of Havana, which is the main and almost the sole street of the town. It has about 3,000 inhabitants. It is fairly well built of stone and brick, but needs all kinds of public improvements.

BAINOA.—An important inland railroad town of approximately 1,000 population, situated five miles east of Jaruco. The town was partially destroyed during the insurrection. The population of the township is 3,500.

BATABANÓ.—This is practically the seaport of Havana on the southern coast, and originally bore the name of that city, which, however, was transferred to the larger city at the time it was founded, shortly after the other, early in the sixteenth century. There are actually two towns: one, the seaport proper, La Playa de Batabanó, sometimes designated as Surgidero de Batabanó; the other, situated two miles and a half inland. The population of the two towns is approximately 1,900, and is engaged principally in connection with the coastwise traffic and the railroad terminus at the port. Both towns are cheaply built with wooden houses having tiled roofs, and there is a general air of neglect, filth, and shabbiness about them; yet they are connected by a very good paved road, which is virtually an extension of the Southern Calzada of Havana, extending clear across the island to Batabanó, a distance of thirty-three miles in an

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almost southerly direction. It is also connected with Havana by one of the best and most important railroad lines of the island. The location of the towns is only about three feet above the sea level, and they are surrounded by as unhealthful and as disagreeable-looking swamps as there are in all Cuba, which naturally breed fevers of the most serious character, and produce swarms of annoying insects that are a torment to existence. Despite the objectionable conditions and surroundings, as well as the fact that practically no harbor exists, and that only light-draught craft can approach within many miles of the town, it is, nevertheless, a port of much local importance. Vessels are fairly well protected by the outlying far-away reefs and keys, and its location is such that it must always command Havana's coastwise trade to and from the south side of the island, as well as with the Isle of Pines. It is the western terminus of the important south side line of steamers, which have touched weekly at all the important southern ports. After leaving Batabanó, by this water route or others, one of the most peculiar nautical experiences imaginable is had. For hours the bottom of the sea is distinctly visible, with its wealth of tropical marine vegetation and underlying surface of white coral, while the bright-colored fish are seen darting in every direction, occasionally followed by a vicious-looking shark, the whole producing an almost indescribable effect. Similar scenes are frequently presented off other portions of the Cuban coast, but nowhere so strikingly to the ordinary traveller as in this locality. The range of temperature at Batabanó is somewhat higher than the average elsewhere in Cuba, being 64.4° to 91.4° F.

The population of the township or tributary district is about 8,500. The town was partially destroyed during the insurrection.

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While sponges exist plentifully and in great variety all along the coasts of Cuba, the greatest centre of this industry is Batabanó, from which port an extensive fleet of sailboats, averaging from five to twenty tons burden, operates along nearly the entire southern coast of the island. These vessels, carrying crews of from four to eight men, are manned entirely by "matriculados" so-called—former seamen of the Spanish navy, until recently subject to naval duty if called upon. Accompanying each sailing craft are four or five rowboats, from which the diving is done by these men, without armor or any appliances for securing the sponges other than those provided by nature. Yet crude as are the methods followed, the annual extent of this trade at Batabanó has been about \$600,000. No reef sponges abound anywhere along the Cuban coast, but the finer varieties of sheep's wool and velvet, with some hard-head, yellow, grass, and glova, are common. About 800 men are employed in the industry.

BEJUCAL.—One of the most important interior towns of the province, which has a population of about 6,200. It was settled in 1710, and lies about fifteen miles south of Havana on the railroad and *calzada* to Batabanó. It is situated in a healthful locality, at an elevation of about 300 feet above the sea level, and is closely surrounded by still higher elevations, from which these a can be seen. Though noted for the longevity of its inhabitants, and as being a resort for invalids, the streets are unimproved and filthy, and the general appearance of the town is anything but attractive. While a good many of the buildings are of stone, much of the town is composed of the typical palm-thatched huts of the island. A stream nearly encircles the town, which, excepting in the rainy season, would anywhere else be considered as possess-

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ing the conditions necessary to breed malaria. The surrounding country is naturally productive, and has been highly cultivated. The town was partially destroyed during the insurrection. The population of the township is 9,000.

BUENAVENTURA.—A small railroad station on the line of Batabanó, twenty miles distant from Havana.

CAMPO FLORIDO.—An unimportant hamlet on the railroad from Havana to Matanzas, thirteen and one-half miles from Regla.

CATALINA.—An unattractive and unimportant town in the northeastern corner of the province, on the railroad from Güines to Matanzas, about seven miles northeast from the former. It has a population of 1,165, and is poorly built. It was partially destroyed during the insurrection. The population of the township is 7,000.

CEIBA DEL AGUA.—While small, having a population of only 892, this town is situated in the attractive and formerly highly cultivated district adjacent to San Antonio de los Baños, from which it is only three miles distant, almost on the boundary of the province of Pinar del Río. The population of the township is 3,252.

COJÍMAR.—A fishing hamlet situated on a beautiful little inlet about four miles eastward from Havana. Unimportant from the standpoint of population or commerce, it is naturally one of the best places for sea bathing in the vicinity of Havana, and is already popular. Such sand beaches as it has are exceedingly rare on the Cuban coast; consequently, the locality is susceptible of development. A good macadamized road extends to Guanabacoa, over which a line of stages is run from the railway stations there to the beach, which is now practically unimproved. It was at this locality that the British landed in 1762, and there are interesting old

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fortifications antedating that period, to say nothing of some of the very latest Spanish defensive works.

DAGAME.—An unimportant station on the Western Railroad almost on the boundary of the province of Pinar del Río.

FERRO.—A small railroad station on the line to Batabanó, ten and one-half miles from the city of Havana.

GABRIEL.—An inland town of about 700 inhabitants, situated twenty-three miles southwesterly from the city of Havana, on the railway line to Pinar del Río. The surrounding country is rich, and has been highly cultivated.

GOVEA.—A small railroad station, with a half-dozen huts, on the route to Guanajay, eighteen miles from the city of Havana. The surrounding country is open and level, and dotted with a profusion of palms. Its soil is of the rich reddish variety, growing tobacco and corn principally. It has fine grazing land, and is, in part, well stocked with horses and cattle. The roads in the vicinity are good in dry weather, but bad in the rainy season.

GUANABACOA.—This is one of the most attractive cities near Havana, from which it is only about two and one-half miles distant, on the opposite, or eastern, side of the harbor. The most direct method of communicating between the capital and Guanabacoa is by one of two ferries across the harbor to Regla, and from thence by rail, either by the local steam-dummy line, which terminates in the outskirts of Guanabacoa, or by one of the through lines to the east which enters the city. The city has an estimated population of 25,000, is at an altitude of about 150 feet, and all the attendant conditions are naturally healthful. The drainage conditions are excellent. The altitude of this locality means that the full benefit of the healthful trade winds is always enjoyed.

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There are numerous good wells and springs, the water of some having medicinal qualities. The average temperature is several degrees lower than that of Havana; yet the streets are narrow, unpaved, and filthy, without sidewalks; and, with the exception of a good market and an electric lighting plant, few public improvements exist. The important roads in the vicinity are, however, macadamized. The houses are small and badly crowded together. Variegated serpentine marble is found practically in the town, and there is much more in the immediate vicinity. With it are indications of magnesia, and occasionally copper and iron pyrites. Some specimens of chalcedon, which are said to be among the finest in the world, have also been found in the locality. From the fissures of the rocks in the vicinity mineral bitumen issues, of about the consistency of wax or half-melted resin, and is supposed to indicate the presence of petroleum. The mineral baths of Santa Rita are somewhat famous, and are taken daily by many of the residents of Havana. At the baths considerable expenditures have been made, fitting them with stone bath-tubs and separate rooms for ladies and gentlemen. The city has three religious shrines, to which there are pilgrimages, and also a church which is dignified by the name of cathedral. Outside the city is the old church and cemetery of Potosí, quaint and interesting.

GUARA.—An inland railroad town, with a population of 4,650, situated eleven miles west of Güines, and on the line to Rincón. It was partially destroyed during the insurrection.

GÜINES.—This beautiful and flourishing town is situated thirty miles by wagon road, and forty-four miles by rail, southeast of Havana. The journey by either route from the metropolis is one of the most beautiful

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and attractive that can be imagined. For the entire distance, in times past, was found a rich soil, highly cultivated, with luxuriant vegetation in every direction. The town is one of the best situated in the interior of the island. It has a population of about 7,000. The River Catalina passes through it, and is crossed by ten bridges. The climate is particularly healthful, and as a result the place is a favorite resort for invalids. The surrounding country is generally open and level, but on three sides, at a distance, are ridges of hills and mountains impressive and beautiful in appearance. There is no richer locality in Cuba, nor one more noted for its agricultural products or fine quality of cattle raised. The horses are said to be the best in Cuba. The town has one of the best hotels, as well as one of the finest railway stations, on the island, and there is a general air of thrift about the entire place, although there is necessity for additional public improvements. The town was partially destroyed during the insurrection. The population of the township is 12,500.

GUIRA.—An inland town of some importance, situated eight miles from Güines. It has a population of nearly 5,000. The surrounding country is good. It should show greater prosperity in the future, and needs internal improvements. The population of the township is 14,000.

GÜIRA DE MELENA.—Situated on the railroad line to Pinar del Río, this town lies twenty-five miles south of Havana. It has a population of approximately 3,500. The town is composed of cheap wooden houses and huts. The surrounding country is flat and unhealthy, yet productive. The town has never been particularly conspicuous or prosperous.

JARUCO.—This is a somewhat important railroad

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town of the interior, eight miles distant from the north coast, and twenty-two miles eastward from Havana. It was founded in 1770, and is well built of stone and stucco. It has a population of about 2,200, principally white, and is one of the few comparatively clean and healthy towns of the island. There are no wells or cisterns, water being brought from a distance and sold in kegs. The town was partially destroyed during the insurrection.

JIBACOA.—An unimportant town near the northern seacoast, about thirty miles eastward from Havana. The population is approximately 700, principally residing in palm-thatched huts. The town was partially destroyed during the insurrection.

KEY HILL, OR JACOMINOS.—A hill hamlet, situated about two and one-half miles south of Havana, close to the suburb of Jesús del Monte. It has a few scattered houses of the poorer class, but while important from a military standpoint, is not essential for our consideration.

LA BOCA.—A small village situated on a fairly good harbor of no great depth at the mouth of the Jaruco River. It has a population of only 200, which is scattered along a single street. The houses are of rubble. It has no interior communication with Jaruco, nine miles distant, or elsewhere, excepting by a narrow and difficult bridle path. The members of this isolated community are principally seafaring people.

LA CASABERIA.—A small railroad station near Güines, where cattle and sugar are plentiful.

LA CIÉNAGA.—This is a railroad junction in the suburbs of Havana about four miles distant from the heart of the city. Its population is included in that of the city. See Chapter XII.

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MADRUGA.—This is a very popular watering place, noted for its warm springs. It is situated about fifty-five miles from Havana, and is reached by a branch of the railroad from Güines to Matanzas. The popular season is from March to October, when the several hotels are filled with guests. In addition to the warm sulphur springs used for bathing, it has other mineral waters of dietetic value. While the town itself is not particularly attractive, the surrounding country is, having high hills with a beautiful valley, dotted with palms and other tropical vegetation. The town is principally built of stone, although some wooden houses and hotels are seen. The streets are narrow and little improved, and there is a general air of decay about the place, although it is said to possess considerable wealth. The surrounding country is devoted entirely to the cultivation of cane, the shipment of which is the principal commercial industry. The other trade of the town is entirely of a retail character. The two-wheeled ox cart of the country is particularly conspicuous in this locality. The population is about 1,000, of which there is a liberal sprinkling of negroes with a few Chinamen. The whole air of the place and vicinity is restful, and with a larger population on the island, and public improvements, it could not fail to become a populous resort. The character of the palm houses in the adjacent country is good—for Cuba. The town was partially destroyed during the insurrection.

MANAGUA.—This town is situated twelve miles south of Havana, at the terminus of a *calzada* from the capital. It has a population of about 900. The town was partially destroyed during the insurrection. The township has a population of 6,000.

MARIANO.—This small but thrifty place is a suburb of the city of Havana, from which it is about six miles

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distant, and with which it is connected by an independent local railway already described. It includes the town proper, that of Quemados on the same range of hills and one-half mile nearer to Havana, and also the *playa* or beach, which is a small but popular bathing resort, perhaps the most convenient of access from any part of Havana, next to Vedado. There are many beautiful country residences in the vicinity, as well as the ruins of two or three magnificent places of this character. The town proper is situated on the range of hills which run southwest from Havana at an elevation of about 150 feet. It has been said that it is the cleanest, most attractive and beautiful town in Cuba. The natural drainage is excellent, and it enjoys an enviable reputation for general healthiness and entire exemption from yellow fever. With the increasing population of Havana the growth of Marianao as a popular fashionable suburb seems almost assured. The water supply is, to a great extent, from wells sunk in the solid rock to depths from twenty to seventy-five feet, but about one-eighth of a mile distant is a large spring noted for the purity of the water, which is carried to, and sold throughout, the town. The houses are either of brick or stone, well ventilated, and with their floors elevated much higher than is the usual custom on the island. The streets are broad and unpaved, although some attempt has been made at macadamizing them. With additional public improvements, and when its attractions are better understood, prophecies of its future prosperity will surely be made good. The present population is 1,225. As can naturally be imagined, the population is mostly of the better class. The township, which contains 666 houses, has a population of 1,752.

MELENA DEL SUR.—An inland railroad town, on the

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branch line, eight miles from Güines. It has a population of 1,082, and is in a good locality, where improvements would be beneficial. The town was partially destroyed during the insurrection. The township has a population of 5,275.

MINAS.—A small hamlet on the railroad from Havana to Matanzas, nine and one-half miles from Regla.

NUEVA PAZ.—This town lies in the extreme southeastern corner of the province, eight miles from the shore. It has a population of 2,737. The locality is considered unhealthful, but should be rich in an agricultural way. The township has a population of 9,071.

PALENQUE.—A small railroad station near Güines.

PALOS.—An unimportant railroad station on the route from Güines to Unión, near the boundary of Havana and Matanzas provinces.

PINOS.—A suburban station of the city of Havana on the Western Railroad.

POZO REDONDO.—An unimportant railroad station on the Havana and Batabanó Railroad, three miles north of the latter place.

PUEBLO NUEVO.—A suburban railway station of the city of Havana, which the United Railways Company now uses as its Havana terminus.

PUENTES GRANDES.—This is a suburb of Havana, situated on the Almendares River, about three miles from the Plaza de Armas. Its population is included in that of the city of Havana. It is a well-known summer resort, and has the only nail factory on the island, all the labor employed therein being Chinese.

QUIVICÁN.—This town is situated three miles west of San Felipe, near Bejucal. It has a population of

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1,950. The surrounding country is a famous cattle-raising district. The town was partially destroyed during the insurrection. The township has a population of 5,600.

REGLA.—Though an independent town, Regla is essentially a part of the city of Havana, being situated on the eastern shore of the harbor, directly outside the business portion of the city proper. There are two lines of ferries which connect it with the city, traversing the distance of three-fifths of a mile every few minutes. The town slopes upward from the water front, and the natural conditions for drainage are consequently good; yet the attempts to take advantage of them have been but feeble, and there can scarcely be said to be a sewerage or drainage system. The general appearance of the town is filthy and dilapidated, and its reputation for healthfulness is not good. It has an electric lighting plant and gas works of its own, but no other public improvements. It is the terminus of a local railway line to Guanabacoa, and of another line to the westward, while there are several fairly good local *calzadas*. As is the case with towns similarly situated, it has very little local trade, and no special commercial importance, although adjacent to it are the headquarters of the entire kerosene trade of western Cuba, said to be controlled by the Standard Oil Company of the United States. The city has a famous bull-ring, located near the ferries, which is almost as popular as the one in Havana itself. In the suburbs, a fine, variegated serpentine marble is found, and there is also a fair quality of building slate in the vicinity. The sugar warehouses are said to be the most extensive and finest in the world.

RINCÓN.—This is a small but important railway town thirteen or fourteen miles westerly from the city of

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Havana. It has means of communication by road and rail to Batabanó and to Guanajay, and from those points to the more important towns in Pinar del Río. There are two railroads and one *calzada* connecting it with the city of Havana, while there are other ordinary roads, connecting it with the entire locality. It seems as if later it should become an important local town.

RIO SECO.—A small railroad station four miles eastward from Güines.

SABANA DE ROBLES.—An unimportant railroad junction on the line from Empalme to Güines, from which a branch line runs to Madruga.

SALADRIGAS.—A very small railroad village on the line from Havana to Guanajay, twenty-seven and one-half miles from the metropolis and near the boundary of Pinar del Río. The surrounding country is level, open, and rich. Many cattle are raised in the vicinity, and the district of large tobacco *vegas* begins here. There is also a good deal of corn raised.

SALUD.—An unimportant railroad town nineteen miles south of Havana on the line of Pinar del Río. The population is about 800. It has been a somewhat important point for shipment of cattle to the Havana markets. The town was partially destroyed during the insurrection. The township has a population of 5,000.

SAN ANTONIO DE LAS VEGAS.—This is an important interior town, founded in 1688, lying thirteen miles south of Havana, adjacent to the railroad running to Bejucal and Güines. The location is considered an exceedingly healthful one, being at a considerable elevation above the sea level, and, to a certain extent, it is a summer health resort, yellow fever being practically unknown there. The town itself is flat, being built chiefly of one-story stone houses. It has a population

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of about 6,000, about one-third of which is colored. The town was partially destroyed during the insurrection. The township has a population of 11,000.

SAN ANTONIO DE LOS BAÑOS.—Literally, St. Antonio of the Baths. This town is both important and popular. It has a population of 7,500. Its location is twenty miles southwest of Havana on the railroad running from Guanajay. It lies about twelve miles from the northern, and fifteen miles from the southern, seacoast. It is situated on the high ground which marks the watershed between the two coasts of the island. The houses are well constructed, principally of stone and rubble, and the unpaved streets and adjoining roads are good in the dry season, but they are almost impassable in wet weather. The city is noted for its mineral springs and the healthful peculiarities of its climate, which, however, is humid. While already popular, in the future it should become the Saratoga of Cuba. Near the city is one of the peculiar streams of the island which disappears entirely underground. This drains the wonderful Lake Ariguanabo, although apparently the stream flows into the lake. The township has a population of 11,730.

SAN ANTONIO DE RÍO BLANCO DEL NORTE.—This unimportant town is situated six miles from the northern coast, about twenty-five miles eastward from the city of Havana. Its population is 1,200. It was totally destroyed during the insurrection. The township has a population of 5,800.

SAN FELIPE.—This is a town with a population of 2,300, located in a rich cane-producing district, between Havana and Batabanó. The buildings are chiefly of wood, and the streets are roughly paved with stone. It has railroad connections with Alfonso XII., Matanzas, and Güines, while two or more good wagon roads touch



CAVE IN THE CENTRE OF THE ISLAND WHERE THE RIVER ARIGUANABO DISAPPEARS

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it. The town was partially destroyed during the insurrection. The township has a population of 9,250.

SAN JOSÉ DE LAS LAJAS.—This town is located about fifteen miles from the northern and twenty miles from the southern coast, and is eighteen miles southeast of Havana on the excellent *calzada* to Güines. It has daily connection with Havana by stage. It has a population of 2,170. The surroundings are very picturesque. Its elevation is nearly 350 feet above the sea level, and it is noted for its exemption from yellow fever; yet, owing to the neglect of all sanitary conditions, malarial diseases are common. This tendency could easily be overcome by some slight attention to drainage. The appearance of the town is anything but attractive, a good portion of it being composed of palm-leaf huts with earthen floors. The township has a population of 7,000.

SAN JULIAN DE LOS GÜINES.—Previously described as Güines.

SAN MATÍAS DE RÍO BLANCO.—An unimportant coast town, with only 400 inhabitants, located near San Antonio de Río Blanco del Norte. It is frequented by coasting vessels, and is practically a port for the larger place just mentioned.

SAN MIGUEL.—An unimportant hamlet on the railway between Havana and Matanzas, seventeen and one-half miles from Regla. The surrounding country is rich in cane production.

SAN NICOLAS.—An unimportant inland railroad town, nine miles from Güines, having a population of 1,100. It is surrounded by a good agricultural country. The town was partially destroyed during the insurrection. The township has a population of 6,600.

SANTA MARÍA DEL ROSARIO.—This village lies about eight miles southeast of the city of Havana, near the

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calzada to Güines. It has a population of only 660 ; but there are nearly 5,000 people in the township. It derives considerable local prominence and popularity from excellent mineral springs, which bring daily visitors from Havana.

SEBORUCAL.—A railroad hamlet of eight or ten huts, with a stone station, situated twenty-seven miles from Havana on the line to Guanajay. The surrounding country has rich, reddish soil, and is level and open. Some corn and a good deal of tobacco are raised here. Much of the country is devoted to small stock farms, which in the past have produced fine horses and cattle.

TAPASTE.—An inland town situated on the great central wagon road, with a population of 1,130. It possesses more commercial importance and trade than would be indicated by its population. The township has a population of 6,125.

TOSCA.—A small railroad station on the line from Jovellanos to Matanzas, twenty-five miles from the latter.

TULIPÁN.—See Chapter XII.

VEGAS.—An unimportant railroad station on the route to La Unión, fifteen miles east of Güines.

CHAPTER XIV

PROVINCE OF MATANZAS

THE PROVINCE RICH IN AGRICULTURE.—MATANZAS AND CÁRDENAS ITS CHIEF PORTS.—SUGAR INDUSTRY CONDUCTED ON AN EXTENSIVE SCALE.—ROOM FOR MORE HIGHWAYS AND RAILWAYS.—HONEY AND WAX IMPORTANT PRODUCTS.—ABUNDANCE OF ASPHALT FOUND.—THE GREAT APTITUDE OF CÁRDENAS FOR MANUFACTURING INDUSTRIES.—PARTIAL LIST OF PLANTATIONS DESTROYED DURING THE INSURRECTION.—CURIOUS ASPHALT WELLS IN CÁRDENAS HARBOR.—TABLES OF EXPORTS AND IMPORTS OF CÁRDENAS.—MATANZAS, THE SECOND COMMERCIAL CITY OF CUBA.—ITS SPLENDID HARBOR.—ITS HEALTHY SUBURBS.—THE MAGNIFICENT VALLEY OF THE YUMURÍ.—TABLES OF EXPORTS FROM MATANZAS.—CONDITIONS AND PRICE OF LABOR.

POPULATION OF 1887—OTHER STATISTICS OF 1894.

Total square miles	3,265	Houses in towns	15,133
Square miles utilized in province	2,668	Sugar plantations	434
Population	259,578	Coffee plantations	3
Number of inhabitants per square mile	79.50	Tobacco plantations	0
		Cattle ranches	224
		Number of farms	3,664

THE province of Matanzas in an agricultural way is one of the richest and most thoroughly developed provinces of Cuba. A reference to the special descriptions of its two important seaports, Matanzas and Cárdenas, will give a good idea of its commercial importance, and also of the enormous sugar production which consti-

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tutes its principal industry. Next to Havana, it is the most densely populated province of the island, and it stands next to it also in railroad facilities. As regards highways it ranks third, being preceded by Havana and Pinar del Río. Like all other sections of the island, its prosperity would be greatly increased by additional and improved transportation facilities, and the density of population and frequency of plantations would warrant the extensive construction of many more miles of good wagon roads at once, to say nothing of extensions of the general railway system.

As the sugar industry is principally conducted on an extensive scale, private railways are, perhaps, as frequently found here as in any portion of the island, yet these do not entirely meet the existing requirements of the plantations which have them. In addition to the industries mentioned, there are some big rice plantations along the coast. Corn is also produced in considerable quantities, and, as elsewhere in the sugar districts, honey and wax are important products. No attention has been given to fruit cultivation, yet all those of tropical varieties flourish as well here as elsewhere in Cuba. The grazing lands, while not so extensive as in the provinces further east, have in the past furnished some of the best horses and cattle on the island.

Little attention has been given to coffee production or to cocoa, and practically none to tobacco, yet the last can unquestionably be raised to advantage. Of the fertility of the province, it can be said in a general way that the soil, excepting about some of the hills and mountains of the northern coast, is as rich as could be desired for any agricultural purpose, and while in our description of its railroads we have referred to certain localities where there are sharp outcroppings of rock, known as "dogs' teeth," their extent is very limited.



GENERAL VIEW OF MATANZAS FROM THE MONSERRAT SIDE

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While not especially noted at present for its mineral products or deposits, it possesses rich beds of asphalt, or still more curious deposits of it in the sea along its coasts, as explained further on in our description of Cárdenas.

Petroleum is said to be abundant in certain localities, while copper mines have been worked in the past not far from the city of Matanzas. Extensive peat beds exist in certain localities along the coast. The province has also a number of important mineral springs.

Next to improved means of transportation, the great necessity of the province for the future is improved banking facilities, the industries already established being sufficiently important to warrant the investment of large amounts of foreign capital in its financial institutions to meet these requirements. We may here note the fact that the greatest manufacturing centre of Cuba, outside of the large cigar manufacturing industry of Havana, is Cárdenas, and both its capitalists and people show a greater bent toward manufacturing industries than those of any other city in the island. The area of the province of Matanzas makes it the smallest of the six provinces into which Cuba is divided.

A PARTIAL LIST OF PLANTATIONS DESTROYED DURING THE INSURRECTION.

<i>Matanzas.</i>	<i>Owner.</i>	<i>Industry.</i>
Amistad.....	Huldo de Maria.....	Sugar.
Arco Iris.....	L. de Ulzurruín.....	“
Atrervido.....	Hoyo y Diaz.....	“
Capitolio.....	H. de Maria.....	“
Carlota.....	J. G—.....	“
Diamante	L. Angulo.....	“
Diana.....	Herederos de Baró.....	“
Esperanza.....	Herederos de Pelayo.....	“
Laberinto	Serafin Mederos.....	“

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<i>Matanzas.</i>	<i>Owner.</i>	<i>Industry.</i>
Peñón	Viuda de Duquesne.....	Sugar,
Perla	Pedro Martints	“
San Blas.....	J. M. Ponce.....	“
San Joaquin.....	Gonzalo Pedroso.....	“
San Luis.....	Ignacio Herrera.....	“
Saratoga.....	Drake & Company.....	“

MATANZAS

Founded in 1693, the flourishing city of Matanzas has long maintained its position as second only to Havana in commercial importance on the island. It has a population of at least 50,000, which must naturally increase rapidly with the return of peace and prosperity, for all its natural surroundings are such as should tend to create a large city of great commercial importance, while it is sufficiently distant from Havana not to have its development checked by the direct influences on trade and commerce of the larger community. Its protection from this danger lies in the admirable water transportation facilities which it possesses.

The location of the city is superb, both from a commercial and æsthetic point of view. It is situated on the northern coast fifty-four miles east of Havana in a direct line, its distance therefrom by rail being seventy-four miles. The bay, or harbor, bearing the same name as the city, is one of the most beautiful in the world, and while shoaling gradually from the shore, especially from the city's front, it affords very safe anchorages. Although apparently not landlocked, as its mouth is nearly three miles wide, it is well protected from the surf by a fine, natural breakwater of coral rock, which lies in front of the entrance. The bay is about two and one-half miles long on its northwestern side and five miles long on its southeastern side. The width at the usual point of

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anchorage is about seven and one-half miles. This is off that section of the city known as Versalles, at a distance of from one-third of a mile to a mile. The San Juan and Yumurí rivers, which run through the city and empty into the bay almost together, during the rainy season bring down such a quantity of soil, which is deposited in the bay near their mouths, as to prevent the building of any extensive system of wharves directly in front of the city, yet such constructions can be made elsewhere on the bay. At present there is practically but one wharf, a dilapidated pier some 200 feet long, at which only lighters and similar light-draught vessels can lie. Some of these craft run for short distances up the rivers, which, at their mouths and for a little way inland, are in reality tidal inlets, soon changing their character to the unnavigable, yet beautiful, typical streams of Cuba. At its mouth the San Juan is about 100 feet wide; the Yumurí, about forty feet.

These streams divide the city into three districts: Matanzas proper, in the centre between them, with a population of about 25,000; Pueblo Nuevo, south of the San Juan, with about 10,000; Versalles, with about 5,000. The last named is the healthiest and best situated of any of the sections, standing on higher ground, at an elevation of from twenty to forty feet above the harbor. The natural drainage of this portion of the city is good, but there are no sewers. In Matanzas proper the elevation of the houses is from two feet above water level near the harbor, to nearly 100 feet further inland. Conditions for perfect sanitary engineering, it will thus be seen, exist, yet there are sewers on only two streets, and practically no connections made with these. The lower portions of the district are, naturally, unhealthy.

Pueblo Nuevo lies but three or four feet above water level on the site of what was previously a swamp;

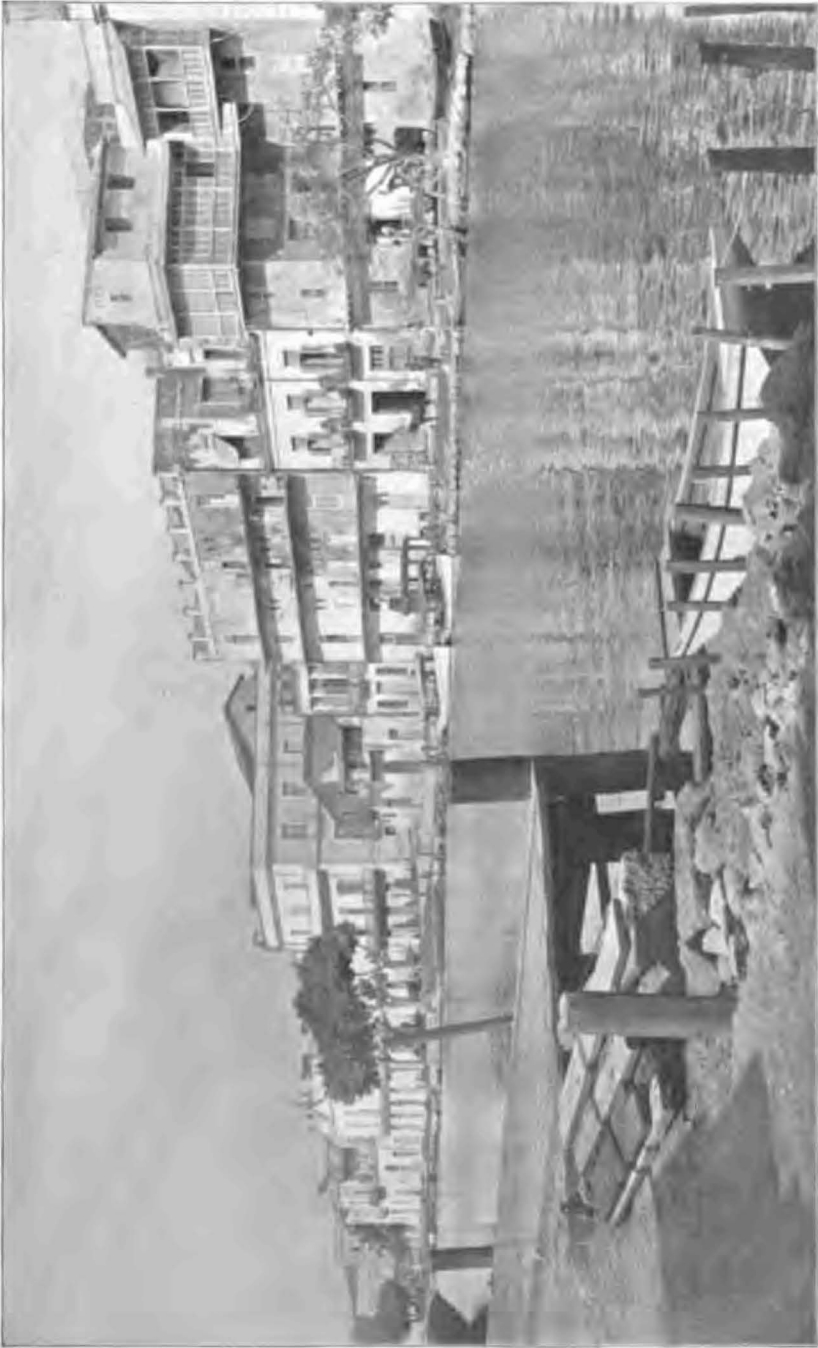
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it has no natural drainage or artificial sewerage, and is, naturally, very unhealthy.

Since 1872 Matanzas has had a pure and almost unlimited water supply from the Bello Springs, seven miles distant, of which, however, the residents, manifesting a native trait, have neglected to take full advantage. The city has a total of 4,710 buildings, 840 of these being outside the present district covered by the water mains, while of the remainder but 2,000 have had connections made with the water system. The great majority of the citizens either purchase water from street hawkers, who may obtain it from the city system, or from local wells, rich with the germs of typhoid and yellow fevers. There are some public fountains, yet the effort seems too great for even the poorer classes to carry water therefrom to any great distance. Here, as elsewhere in Cuba, the most stringent board of health regulations should be inaugurated as regards the water supply.

The city has a fairly good gas works, and a modern electric lighting plant equipped with American machinery, but sadly needs a street railway system. The streets are ordinarily thirty feet wide, with a twenty-four foot roadway, the remaining space being for sidewalks. Few are paved, yet in Versalles and Matanzas proper some of the streets are underlaid with rock at the surface, or so near to it that it suffices for paving ; yet when the rock does not quite come to the surface, and a few inches of the natural soil covers it, about as slippery, uncomfortable, and even dangerous condition of travel is created as can be conceived. For Cuba, the streets and the roads in the immediate vicinity outside the city are fairly good, although never clean.

The houses are generally built of porous limestone, and, while not so badly crowded together as in many



ON THE SAN JUAN RIVER—MATANZAS

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Cuban cities, thus giving more air space about them, their floors are low, and, consequently, frequently flooded in heavy rains, while the whole structures freely absorb moisture, giving the town a reputation for dampness which, from its ordinary appearance, is well deserved.

The city has a fine public square—the Plaza de Armas; the famous Esteban Theatre, the finest on the island, and almost in America. Other good places of amusement are the Casino and Lyceum. The leading hotel, the Louvre, is one of the best in Cuba. Churches are numerous, some of which are notable. The most popular street or drive is the Boulevard Santa Cristina.

At the rear of the city, overlooked by Mount Monserrat, a peculiar-shaped, though not high, elevation, is the extensive and beautiful valley of the Yumurí, one of the finest natural parks of the world. Were it located in a northern clime, even with the vegetation which there exists, its attractiveness would have long since made it famous, but with its wealth and beauty of tropical vegetation it ought to become one of the greatest attractions in Cuba for tourists, and the Mecca of art students seeking tropical scenes.

Mount Monserrat, locally named after the scene of Loyola's fastings and visions in Spain, from a resemblance thereto, is crowned by the Catalan Church, said to be a duplication of that on Mount Monserrat in Spain, and the same marvellous cures are said to occur. As a result, it is a similar shrine for the afflicted, and evidences of some of the miraculous cures that have been effected are shown by an extensive collection of canes and crutches, left behind by those who have gone forth rejoicing as a result of their pilgrimage. The view in all directions from the plateau on which the church stands is superb.

Three and one-half miles from the city in an opposite

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direction (easterly) around the edge of the bay are the extensive caverns of Bellamar. Although badly smoked by the torches of the guides, perhaps no finer limestone formations exist than are found in these caves. The temperature in them is very high, however, which makes it uncomfortable for the ordinary visitor; yet the air of the caverns is said to possess wonderful curative properties for certain diseases; consequently, they are a resort for invalids. A hotel of comparatively recent date stood near the entrance, but was destroyed by the insurgents. The drive from Matanzas to the caverns is most interesting. After passing through Pueblo Nuevo, the route is over a fine road, along the shores of the bay, termed *la playa* (or the beach), which is a fine stretch of sand utilized as a bathing resort, and fenced off seaward by iron gratings to keep off sharks and other pests of tropical waters. Along the beach is a line of suburban cottages of attractive architecture and with beautiful surroundings. Leaving the beach, the road is rough beyond description, and can be travelled only on horseback, or in a *volante*, as the immediate surroundings, as elsewhere in the vicinity, are hilly, and rough with outcroppings of rock and loose boulders, everywhere interspersed with brush and cactus in profusion, except along the edge of the bay. This locality has numerous quarries of building stone scattered over it, and many more could be opened. Very few palms are found in this section, and while most of the tree growth is scrubby, there are some good specimens of the native trees other than palms.

The character of the adjacent country inland is entirely different from that just described; it being rich, productive, and, in the past, highly cultivated.

No *calzadas* run from Matanzas to the rich interior, but important, yet bad, dirt roads stretch out toward

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Havana and other important points. There are three railroad lines, as described in Chapter V.: one to Havana, *via* Guanabacoa and Regla, called the Bay Line ; another to Havana *via* Güines ; and still another to Cárdenas and the east, branching to Cienfuegos and Remedios, and connecting Santa Clara and the other eastern central towns.

Matanzas has had a larger gathering of "reconcentrados" than any other Cuban city, and the suffering and fatalities among them are said to have been greater than elsewhere. The poverty and pauperism engendered by their presence will undoubtedly have a bad effect upon the character of the population, although previously it ranked high.

COMMERCIAL PRACTICE AND CUSTOMS OF MATANZAS

GOODS FROM THE UNITED STATES.—Goods reach this district almost entirely by steamship from New York, Tampa, New Orleans, and Pensacola. They are not liable to any other handling or usage than that which is common to all regular steamship routes. On all these routes American goods are handled with ordinary care, and, when properly packed, are little liable to injury, except in extraordinary weather.

LANDING AND WAREHOUSING.—As in most Cuban ports, for want of sufficient depth of water at the wharves steamers anchor in the bay, half a mile or more away, and discharge by means of lighters. This, of course, adds somewhat to the danger of damage by handling and weather, especially as the laborers employed in the transfer are not always either very intelligent or very careful. The only wharf, where all goods save lumber, coal, and bricks are landed from the lighters, is provided with an open shed of ample dimensions for all ordinary importations. This shed has a water-

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tight roof, and extends to within a few feet of the water's edge. There is little or no danger of damage on account of weather, either in transit, on the lighter, or on the wharf. The lighters are all provided with canvas covers, which can be spread quickly on the approach of a shower. All goods while in this shed are guarded by custom-house officers night and day. Sometimes in the busy season, which is usually the season when there is little or no rain, this shed becomes crowded, and it is necessary to leave machinery, iron pipe, lard, and perhaps some other articles little liable to injury from rain, in the open air. The writer has been frequently on this wharf, and has never seen goods that are liable to damage exposed to rain.

GOODS FOR THE INTERIOR.—As a rule, goods are shipped to the interior by rail. They are liable to go from Matanzas, and from distributing points in the interior, short distances by pack mules. Generally speaking, there are no roads other than the railroad and the mule paths, and wagons such as do the transportation in the towns in the United States away from railroads are unknown. It is scarcely necessary to have regard for either size or shape of packages liable to transportation by mules. They carry almost anything that can be carried by any means of transportation, and with safety. It is only necessary to keep in mind that the limit of a mule's load is 400 pounds, which must be divided and carried half on each side. The limit of the weight of packages is, therefore, 200 pounds. There is little danger of damage by rain, as the packages are covered.

OUTSIDE PACKAGES.—The best material for outside covering is that which is found reasonably secure, tight, and strong for long-route transportation in the United States and Canada, be it bale, box, barrel, sack, or bag. As to packages for goods specially liable to damage by water, it is not worth while to try to make them abso-

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lutely waterproof. In this, as in the nature of the package, dealers in Matanzas have told the writer that it is a question of expense. Competition is sharp, and what they desire is that goods shall reach their warehouses as cheaply as possible, and that no unnecessary expense be put into the packing and charged.

The following tables show the quantity and value of the principal exports of Matanzas :

PRINCIPAL ARTICLES EXPORTED FROM MATANZAS.

IN 1892.

COUNTRY.	Sugar.		Wool.	Rum.	Honey.
	<i>Sacks.</i>	<i>Hhds.</i>	<i>Hhds.</i>	<i>Hhds.</i>	<i>Tons.</i>
United States..	1,421,734	4,209	48,220	200	310
Canada.....	97,192				
Spain.....	35,662		2,256	4,419	
Montevideo....				1,779	
England and Germany.. }				740	
Total.....	1,554,588	4,209	50,476	7,138	310
Value.....	\$16,456,310	\$185,615	\$640,515	\$279,808	\$17,395

IN 1893.

COUNTRY.	Sugar.		Rum.	Molasses.
	<i>Sacks.</i>	<i>Hhds.</i>	<i>Hhds.</i>	<i>Hhds.</i>
United States.....	1,022,608	2,066		19,550
British Possessions....	146,114			
Spain.....	4,086		1,162	
Montevideo.....			3,259	
Bremen.....			1,100	
Buenos Ayres.....			341	
New York.....			431	
Liverpool.....			200	
England.....				1,146
Total.....	1,172,808	2,066	6,493	20,696
Value.....	\$12,183,017	\$94,696	\$133,672	\$297,773

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IN 1894.

COUNTRY.	Sugar.		Rum.	Molasses.	Honey.
	<i>Sacks.</i>	<i>Hhds.</i>	<i>Hhds.</i>	<i>Hhds.</i>	<i>Tons.</i>
United States..	1,227,878	1,394	14,459	154
England.....	59,708	.....	.....	5,359	
Spain.....	1,390	.....	983		
Canada.....	79,081				
Coastwise.....	3,168				
France.....	.....	.....	.....	2,800	
Montevideo.....	.....	.....	1,040		
Total.....	1,371,225	1,394	2,023	22,618	154
Value.....	\$12,500,000	\$19,600	\$337,120	\$31,850	\$5,800

IN 1895.

COUNTRY.	Sugar.		Molasses.	Rum.	Honey.
	<i>Sacks.</i>	<i>Hhds.</i>	<i>Hhds.</i>	<i>Hhds.</i>	<i>Tons.</i>
United States..	1,207,998	658	4,304	.....	77
Canada.....	103,853				
Spain.....	28,421	.....	.....	1,170	
Montevideo.....	.....	.....	.....	2,453	
Hayti.....	.....	.....	.....	200	
Total.....	1,340,272	658	4,304	3,823	77
Value.....	Not given.				

IN 1896.

COUNTRY.	Sugar.		Honey.	Molasses.
	<i>Bags.</i>	<i>Hhds.</i>	<i>Tons.</i>	<i>Hhds.</i>
United States.....	97,592	425	12	
Coastwise.....	10,890	.....	.....	2,000
Total.....	108,482	425	12	2,000
Value.....	\$895,000	\$11,000	\$525	\$20,000

PROVINCE OF MATANZAS

The approximate value and character of the exports to the United States for a prosperous year, compiled from official records, are :

Sugar.....	\$9,820,000
Molasses.....	150,000
Beeswax.....	1,000
Honey.....	3,000
Total.....	\$9,974,000

SHIPPING

Full reports of all shipping are not obtainable, but the following statement, showing the number and tonnage of British vessels alone that have visited the port for a few years, may be of interest :

YEAR.	Steamers.	Tonnage.	Sailing Vessels.	Tonnage.	Total Vessels.	Total Tonnage.
1892..	106	114,362	14	5,766	120	120,128
1893..	95	109,743	8	4,806	103	114,549
1894..	93	115,734	5	2,905	98	118,639
1895..	118	155,961	6	5,738	124	161,699
1896..	12	15,988	1	599	13	16,587

The marvellous decline for the last year of the period is due to the effect of the insurrection on sugar production. In 1895, 125,600 tons were shipped from Matanzas on British vessels ; in 1896, only 5,900. Central sugar factories of the largest size, equipped with the latest and best machinery for commercial production, were becoming especially numerous in this locality just prior to the insurrection, thus placing the business upon a more promising basis, so that the blow has been, perhaps, more severely felt here than elsewhere.

The black labor of the locality is said to be good

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and industrious, and the women of this class furnish excellent domestic service. The average wages paid to men on the plantations are from \$20 to \$25 a month each, in addition to their board.

Up to 1893, there was a branch of the Spanish Bank of Cuba located in Matanzas, which was obliged to suspend payment that year, according to the British consul's report for 1893; so that, in a city of 56,000 inhabitants, with an estimated value of upwards of \$15,000,000, and with credit to nearly that amount, there is practically no banking institution of any kind. While the British consul attacks the methods of the chartered banking institutions, he says that a private bank or banker, with capital enough to be independent, could do a conservative business reaching very large figures, and realize above 10 per cent. per annum in good times. Bank discount on three months' time is from 8 to 9 per cent., but since 1893 the rate has been above 12 per cent., and lately, double that figure.

Just prior to the insurrection, some attempts were made at public improvements; a new bridge having been commenced across the River San Juan, costing something like \$150,000, and said to be of fine architectural design. A new lighthouse had been built at Punta Maya, at the entrance of the harbor; one new park had been opened in the city, and some experiments made in paving short lengths of street with brick manufactured from iron slag in England.

Until a recent date, at least, the ice used here has all been brought from Havana, and as late as 1890 brought a price as high as six dollars in Spanish gold for one hundred pounds. The market for refrigerators has averaged about fifty a year of the smaller sizes.

The total annual imports of coal have averaged about 45,000 tons, about 65 per cent. of which have



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come from the United States, and the remainder from England. The gas works, railroad company, and the Spanish warships have ordinarily used English coal, American coal being principally used by the rest of the shipping. Duties in the past have been approximately \$1.07 per ton, with some discrimination shown against the United States.

CÁRDENAS

Though the city of Cárdenas has been only seventy years in existence, it is probably the most flourishing city in all Cuba. It was settled in 1828, and has an approximate population of 21,000. The location is thirty miles east of Matanzas, on Cárdenas Bay, which makes the city the third commercial port on the island. This bay is twelve miles long by eighteen miles wide; yet, unfortunately, shoreward it is so shallow that vessels of deep draught are obliged to anchor from three-quarters of a mile to two miles from land. There are, however, more than twenty piers from 300 to 1,000 feet in length, at the outer ends of which there are from eight to ten feet of water. The city is substantially built, and possesses many fine buildings. The streets, which average about forty feet in width, are unpaved and without sewerage; which is particularly unfortunate, as the location was formerly part of a mangrove swamp, still flanking the city on either side. Most of the city is located at a height of from four to ten feet above the present swamp, yet it runs back toward higher ground, which, continuing to rise, reaches a ridge of mountains about a mile and a half distant to the west. Much of the surrounding country is swamp. Despite this, and the local sanitary drawbacks mentioned, Cárdenas is considered healthy. The city, since 1872, has had an excellent

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water supply, furnished through a substantially built aqueduct from a subterranean river about a mile distant ; yet a considerable portion of the population still adhere to the use of brackish well water, or the unhealthy contents of cisterns. A thriving business, however, is carried on by street peddlers, who sell the aqueduct water for drinking purposes to those too poor to pay the regular water rates.

There are modern gas works and a modern electric lighting plant equipped with American machinery.

In addition to being an extensive centre for those industries for which the island is noted, the city has probably more varied manufactures peculiar to itself than any other town on the island—such as metal work, soaps, fabrics, liquors, beer, etc. It is noted for its wealth and prosperity.

The railroad connections are good, for Cuba, although the distance by rail to the city of Matanzas is about double that straight across the country. Connections are made with the general railway system of the island, as described in Chapter V., and a number of fairly good roads radiate inland ; which, however, could be improved. A considerable share of the commercial interests have been in the hands of Americans, who have constituted an influential class of the community. Chinese and negroes are conspicuous among the lower classes of the population. The city has one or two good hotels, and several excellent cafés. Adjacent to the city is the "Flor de Cuba," one of the largest sugar plantations on the island.

The population of Cárdenas, according to the British Foreign Office report for 1892, was as follows : Whites, 15,776 ; blacks, 7,060 ; Chinese, 844—total, 23,680.

Of the negroes, the British consul says (page 15, report of 1892) :

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“But it is satisfactory to note that the condition of the blacks is much improved. They are industrious and avail themselves readily of the facilities offered by the municipal schools for the education of their children. They have also their little clubs and societies, and may be said generally to be advancing in the path of moral and intellectual progress.”

The average rates of wages in the locality in 1894 were from \$1.00 to \$3.25 per day, but the situation of the laboring class for the past three years has been most disheartening.

The following tables show the exports of sugar and molasses for the four years ending in 1896, with the nationality of the vessels employed :

SUGAR.

NATIONALITY OF VESSELS.	1893		1894		1895		1896	
	Sacks.	Hhds.	Sacks.	Hhds.	Sacks.	Hhds.	Sacks.	Hhds.
British.....	439,417	646	674,917	.....	810,153	.....	89,393	
American.....	108,627	.....	323,412	.....	161,145	.....	22,040	
Spanish.....	74,833	.....	59,297	.....	25,000	.....	26,819	
Norwegian.....	70,223	.....	24,833	.....	10,000	.....	
German.....	21,660	.....	19,000	.....	7,754	.....	
Russian.....	8,200	.....	.....	.....	4,469	.....	
Totals.....	722,960	646	1,101,459	.....	1,018,521	.....	138,252	

MOLASSES.

NATIONALITY OF VESSELS.	1893	1894	1895	1896
	Hhds.	Hhds.	Hhds.	Hhds.
British.....	4,538	268	351	None
American.....	2,079	11,057		
Totals.....	6,617	11,325	351	

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The effect of the insurrection, it will be noticed, is clearly apparent on the sugar trade of this locality during the last two years of the period given.

FOREIGN VESSELS ENTERING THE PORT OF CÁRDENAS.

The following tables show the number and tonnage of foreign vessels entering the port of Cárdenas for the three years ending 1896 :

	1894.	1895.	1896.
British.....	112	108	18
American.....	87	50	9
Spanish.....	49	56	22
Norwegian.....	7	1	1
German.....	6		
Austrian.....	1		
Russian.....	...	1	
Belgian.....	...	1	
Totals.....	262	217	50

TONNAGE.

	1894.	1895.	1896.
British.....	201,338	195,443	21,514
American.....	72,397	33,032	5,385
Spanish.....	74,998	85,450	41,770
Norwegian.....	4,039	691	473
German.....	5,365		
Austrian.....	545		
Russian.....	.....	711	
Belgian.....	.....	1,397	
Totals.....	358,682	316,724	69,142

VALUE AND CHARACTER OF PRINCIPAL EXPORTS TO VARIOUS COUNTRIES FOR YEARS 1892 AND 1894.

The value and character of the principal exports, the value of the imports, and the tonnage of coal imports were as follows :

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<i>Country.</i>	<i>Nature of Export.</i>	1892. <i>Value.</i>	1894. <i>Value.</i>
Great Britain.....	Rum	\$15,000	\$15,750
Canada.....	Sugar	100,000	230,795
United States.....	Sugar	10,000,000	9,682,335
".....	Molasses	100,000	
Spain.....	Molasses	12,500	
".....	Rum	150,000	53,000
Canary Islands.....	Rum	.....	10,000
Montevideo.....	Rum	.....	16,685
		<u>\$10,377,500</u>	<u>\$10,008,565</u>

VALUE OF IMPORTS FROM VARIOUS COUNTRIES.

	1892.	1893.
Great Britain.....	\$1,200,000	\$900,550
United States.....	3,350,000	2,480,000
Spain.....	200,000	100,000
Other Countries.....	150,000	250,000
	<u>\$4,900,000</u>	<u>\$3,730,550</u>

IMPORTATION OF COAL TO CÁRDENAS, ALL FROM UNITED STATES,
AND NATIONALITY OF VESSELS TRANSPORTING SAME.

	1893. <i>Tons.</i>	1894. <i>Tons.</i>	1895. <i>Tons.</i>	1896. <i>Tons.</i>
American.....	16,760	18,946	26,333	3,176
British.....	7,800	10,294	5,950	2,051
Norwegian.....	1,118			
Totals.....	<u>25,678</u>	<u>29,240</u>	<u>32,283</u>	<u>5,227</u>

Official records on imports of other commodities are not obtainable.

APPROXIMATE VALUE AND CHARACTER OF EXPORTS TO THE
UNITED STATES IN A PROSPEROUS YEAR, COMPILED FROM
OFFICIAL RECORDS.

The following table shows the exports from Cárdenas to the United States in a prosperous year :

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Sugar	\$8,500,000
Molasses	100,000
Honey	4,000
Beeswax	8,100
Lancewood spars	800
Cigars and cigarettes	1,000
Logwood	100
Guava jelly	100
Total	\$8,614,100

The surrounding country is one of the richest agricultural districts of the island, but there are no mineral deposits other than those of a bituminous character, and probably of petroleum, of which there are many indications. Not far distant from the city, though fifteen miles from a railway, is said to be one fine deposit of asphalt capable of producing from 3,000 to 5,000 tons per year. In the bay of Cárdenas are four deposits, or, more properly speaking, sources of securing asphalt, most peculiar in their nature. So far as is known, no scientific investigation has yet been made of this phenomenon, but the following is believed to be the correct explanation of it :

The adjoining formation is of limestone character, as is much of the rest of Cuba, inlaid with extensive subterranean passages, through which flow underground streams. In the city of Cárdenas are two of these underground rivers furnishing the city's water supply. As the mines, if they may be so termed, in the harbor, are slowly but surely re-supplied with asphalt, it is at least probable that the product comes from the interior and finds its course therefrom through these or other subterranean streams.

The bed of the bay seems to have been never thoroughly examined to discover whether there are other sources of asphalt supply similar to those already found. These are at present located as follows :

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No. 1 is in the western part of the bay, and furnishes a very fine grade of practically pure asphalt, used in the manufacture of varnish. A very fine quality of varnish is said to be made by simply dissolving this particular asphalt in turpentine. Large quantities have been taken from this mine for more than twenty years. There is a hole or shaft in the bottom of the harbor, extending to a depth of about eighty feet below the surface of the water, into the bottom of which the asphalt filters. Recently, some difficulty has been experienced in securing the product, owing to the caving in of the sides of the shaft. The methods followed for securing the material are somewhat crude. A long iron bar with a pointed end is raised by a winch on board a lighter and allowed to fall, so as to detach portions of the asphalt, which is about as friable as cannel coal, and of much the same structure; the gloss, however, is very brilliant. After a sufficient quantity has been detached, a common scoop net is sent down, and filled by a diver without a diving suit. The average quantity obtained is from one to one and a half tons. The price for this grade, delivered in New York, ranges from \$80 to \$125 per ton of 2,240 pounds.

The other three mines are of a lower grade; the product being used chiefly for paving purposes, and occasionally for roofing materials. No. 2 is northeast of Cayo Cupey. No work has been done there since the hurricane of 1888, which caused the shaft to be filled up with silt. Previous to that time, several cargoes were taken from the deposit. Nos. 3 and 4 contain asphalt of the same grade as No. 2, and adapted for the same purposes.

No. 3 is situated at the mouth of the River La Palma, about twenty miles from Cárdenas. It is in the same condition as No. 2.

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No. 4 is situated near Diana Key, fifteen miles from the city of Cárdenas, and is the largest of all. It is called the "Constancia Mine," and is owned by persons residing in Cárdenas. It has been under operation for more than twenty years. Probably 20,000 tons have been taken from it, and it appears to be practically inexhaustible. Vessels of from 150 to 200 tons have been moored over the deposit, and have been loaded by the joint labor of their own crews and the crew of the lighter usually engaged in this work. The depth of the water is about twelve feet. As there are several shallow wells, the facilities for procuring the asphalt are abundant. The deposit is enclosed within a circumference of about 150 feet, and the asphalt seems to be continually renewed in every part of this space. In 1882 an American vessel took on board, in the manner just described, over 300 tons in the space of three weeks.

That the deposits of asphalt in the bay can be profitably worked, as at present, with methods seriously lacking in economy, suggests very strongly that considerable profits can be derived from the introduction of efficient machinery; the advantage would undoubtedly be increased in the case of the opening up of accessible mines in the interior.

OTHER CITIES, TOWNS, AND VILLAGES IN THE PROVINCE

The following is a descriptive list of the other cities, towns, and villages of the province of Matanzas, arranged alphabetically:

AGUADA.—The terminus of the Aguada line of the Cárdenas-Júcaro Railroad, fifty-nine and one-half miles from Cárdenas.

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AGÜICA.—A railroad station forty-three miles from Cárdenas, on the Cárdenas-Júcaro Railroad.

ALFONSO XII.—This town has a population of approximately 3,000. It lies well toward the north of the province, about four miles from La Unión, one of the more important stations on the main line of the railroad between Havana and Matanzas, which is connected with Alfonso XII. by a branch line.

ALTAMISAL NUEVO.—An unimportant town on the Aguada line of the Cárdenas-Júcaro Railroad, twenty-one and one-half miles from Cárdenas.

ALVAREZ.—A railroad station of 200 inhabitants, sixty-two and one-half miles from Cárdenas, on the line of the Cárdenas-Júcaro Railroad. It is the centre of the charcoal industry.

AMARILLAS.—A small hamlet fifty-one and one-half miles distant from Cárdenas, on the Aguada line of the Cárdenas-Júcaro Railroad.

BANAGÜISES.—An unimportant town on the Altamisal-Macagua branch of the Matanzas Railroad, eight and three-quarter miles from Altamisal.

BARÓ.—An unimportant station on the main line of the Matanzas Railroad, fifty-seven and one-half miles from Matanzas.

BEHEMAS.—A railroad station without population, on the Cárdenas-Júcaro Railroad, thirty-three and one-half miles from Cárdenas.

BEMBA.—See Jovellanos.

BENAVIDES.—A railroad village with 100 inhabitants; last station on the line from Havana before reaching Matanzas.

BERMEJA.—An unimportant railroad station on the

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line from Güines to La Unión, near the boundary of Havana and Matanzas provinces.

BOLONDRON.—This is a comparatively unimportant inland town near the western boundary of the province, having a population of 1,758. It is about thirty miles distant from Havana. The township has a population of 11,816.

CALIMETE.—The most important town on the Cárdenas-Júcaro Railroad (Aguada branch) after passing Colón; situated forty-seven miles from Cárdenas.

CANASÍ.—An unimportant town with a population of about 700 inhabitants. It is situated about seventeen miles from the city of Matanzas. The township has a population of 8,600.

CAOBAS.—A station and hamlet on the railroad from Matanzas to Jovellanos, twelve and one-half miles from the former city.

CARRILLO.—An unimportant station on the main line of the Matanzas Railroad, sixty-nine and one-half miles from Matanzas.

CEIBA-MOCHA.—A small hamlet on the railroad from Havana to Matanzas, near the boundary of the two provinces.

CERVANTES.—An inland railroad town situated on the line from Matanzas to Santa Clara, about eleven miles west of Colón. It possesses some local importance, and has a population of 1,560. The township has a population of 4,000.

CIDRA.—An unimportant inland town, three miles distant from Santa Ana, and ten miles southeast from Matanzas. The population is 700. The town was totally destroyed during the insurrection. The township has a population of 4,200.

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CIMARRONES.—An unimportant inland town on the railroad between Matanzas and Cárdenas, twelve miles south of the latter. It is also located on the *calzada* between the two cities. It has a population of 400. The township has a population of 8,750.

COLISEO.—A railroad station on the line to Jove-llanos, twenty-two and one-half miles east of the city of Matanzas.

COLÓN.—An important commercial town, with a population of 6,500. It is situated in the eastern part of the province, on the railroad connecting Matanzas and Cárdenas. It is in the very heart of the sugar-producing district of the north coast, and has been prosperous and somewhat progressive, but needs additional public improvements. The township has a population of nearly 17,000.

CONTRERAS.—A station on the Cárdenas-Júcaro Railroad, seven and one-half miles from Cárdenas.

CORRAL FALSO.—An unimportant station on the main line of the Matanzas Railroad, thirty-eight and one-half miles from Matanzas.

CORRAL NUEVO.—An inland town, seven miles west of the city of Matanzas. It possesses some local importance, being situated in a good district, and has a population of about 2,100. It needs improvement. The township has a population of nearly 13,000.

CRIMEA.—A small town on the Navajas-Jagüey Grande branch of the Matanzas Railroad.

CUEVITAS.—An inland railroad town, situated in the rich sugar district of which Colón is the centre, about seventeen miles west of that town. It has a population of approximately 1,650. It needs improvement. The township has a population of over 6,500.

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CUMANAYAGUA.—Practically the station for Colón, where connections are made with the Santa Clara line of the Cárdenas-Júcaro Railroad. It is also the present terminus of the main line.

GABRIEL.—This is simply a railroad junction near the Havana boundary of the province ; lines connecting there from Havana and Güines to Matanzas. The railroad station is a good new stone building.

GELPÍ.—A small suburban station of the city of Matanzas, eastward on the line to Jovellanos.

GISPERT.—An unimportant town on the Aguada branch of the Cárdenas-Júcaro Railroad, seven miles from Colón, and thirty-seven and one-third miles from Cárdenas.

GUANAJAYABO.—An inland town with a population of nearly 3,000. The township has a population of over 8,000.

GUAREIROS.—A small town on the Cárdenas-Júcaro Railroad, forty-three and one-half miles from Cárdenas.

GÜIRA.—An unimportant station, slightly over three and one-half miles from Matanzas, on the main line of the Matanzas Railroad.

HATO NUEVO.—A small hamlet on the Recreo Itabo branch of the Cárdenas-Júcaro Railroad.

IBAÑEZ.—A small railroad station, eight and one-half miles east from Matanzas, on the line to Jovellanos.

IBARRA.—A small hamlet where the standard of revolution was first raised in the recent insurrection, February 24, 1895.

ITABO.—A small town, the terminus of the branch line of the Cárdenas-Júcaro Railroad from Recreo.



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JAGÜEY GRANDE.—The terminus of the Navajas-Jagüey Grande branch of the Matanzas Railroad.

JOVELLANOS OR BEMBA.—This is an important inland railroad junction, eighteen miles south of Cárdenas. It has a population of approximately 8,000, principally negroes. The surrounding country is flat and overgrown with brush, but is naturally rich and susceptible of cultivation. The locality is considered somewhat unhealthy. The sole hotel is kept by Chinamen.

LAGUNA GRANDE DE FIGUI.—An unimportant town on the Aguada line of the Cárdenas-Júcaro Railroad, twenty-four and one-half miles from Cárdenas.

LAGUNILLAS.—This town is situated inland, seven miles from Cárdenas. It has a population of only 520. It is, however, in a good district. The township has a population of 7,030.

LA ISABEL.—A small hamlet on the main line of the Matanzas Railroad, forty-four and one-half miles from Matanzas.

LIMONAR.—An unimportant railroad town, twelve miles southeast of Matanzas, on the line to Jovellanos. The *calzada* from Matanzas also passes through it. Population, 330. The township has a population of 2,000.

MACAGUA.—This is a flourishing place of 4,100 inhabitants. It is a railroad junction between Colón and Santa Clara, about twelve miles east of the former town. It is the centre of the great sugar-producing district, and there are some enormous *ingenios* (sugar plantations) in the vicinity. Additional transportation facilities and public improvements would materially assist its further growth. The township has a population of 31,410.

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MACURIJES.—A country town with a population of 3,650; in the township, 13,500.

MADAN.—A small railway station, thirty and one-half miles from Matanzas.

MEDINA.—A small railroad station on the Montalvo line, seven and one-half miles south of Júcaro.

MONTALVO OR NAVAJAS.—An unimportant town, the southern terminus of the Montalvo line of the Cárdenas-Júcaro Railroad, where connection is made with the Matanzas Railroad system.

PALMILLAS.—An inland town on the Palma River, near the eastern boundary of the province, on the railroad between Matanzas and Santa Clara. It has a population of 1,470. The surrounding country is good. The township has a population of 8,818.

PEDROSO.—An unimportant town on the Navajas-Jagüey Grande branch of the Matanzas Railroad.

PERICO.—A railroad station of 1,000 inhabitants, twenty-eight miles from Cárdenas, on the Cárdenas-Júcaro Railroad.

QUINTANA.—Merely a station on the Cárdenas-Júcaro Railroad.

RECREO.—An unimportant town on the Aguada line of the Cárdenas-Júcaro Railroad, fourteen miles from Cárdenas.

RETAMAL.—An unimportant town on the Aguada branch of the Cárdenas-Júcaro Railroad, two and one-half miles from Colón and thirty-three miles from Cárdenas.

ROQUE.—This is a small inland town of about 800 inhabitants. It lies in a rich agricultural district noted for the production of sugar, coffee, and bananas. The township has a population of 6,750.

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SABANILLA DEL ENCOMENDADOR.—A somewhat important railroad town between the city of Matanzas and La Unión, thirteen miles south of Matanzas. It has a population of 3,000. The surrounding country is good. The township has a population of 9,000.

SANTA ANA.—An unimportant inland town seven miles south from the city of Matanzas. It has a population of about 600. The town was totally destroyed during the insurrection. The township has a population of 8,240.

SAN ANTON.—An unimportant town on the Aguada line of the Cárdenas-Júcaro Railroad, eleven miles from Cárdenas.

SAN ANTONIO DE CABEZAS.—An inland town in a fairly good location, with a population of 1,500. The township has a population of 10,200.

SAN JOSÉ DE LOS RAMOS.—An unimportant interior railroad town on the line between Cárdenas and Santa Clara, twelve miles from Colón, with a population of 570. The surrounding country is famous for its sugar production. The township has a population of 9,500.

SAN MIGUEL DE LOS BAÑOS.—This is a small watering place, noted for its hot sulphur springs, which are said to be effective in the cure of many diseases. It is located twelve miles southeast of Matanzas, and twenty miles southwest of Cárdenas. It is about two miles from the railway line between the two cities. It is much frequented by the wealthy classes of the locality, and in the future should have more than a local patronage.

SAN PEDRO.—A small station fifty-seven miles from Cárdenas, on the line of the Cárdenas-Júcaro Railroad.

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SUMIDERO.—A small railroad station on the line to Jovellanos, eighteen and three-quarter miles eastward from Matanzas.

TORRIENTE.—A small town on the Navajas-Jagüey Grande branch of the Matanzas Railroad.

CHAPTER XV

PROVINCE OF SANTA CLARA

ONE OF THE RICHEST AND EARLIEST SETTLED PROVINCES.—HAS MANY LARGE SUGAR PLANTATIONS, FITTED UP WITH THE MOST MODERN APPLIANCES.—USUALLY CONSIDERED AN AGRICULTURAL PROVINCE, AND HAS SOME OF THE FINEST GRAZING LAND IN THE WORLD.—GOLD FOUND BY THE EARLY SETTLERS.—SILVER AND COPPER DEPOSITS IN THE MOUNTAINS.—BITUMEN AND PETROLEUM FOUND.—QUICK-SILVER.—THE PROMISING FUTURE OF SANTA CLARA TOBACCO.—THE MORTALITY, DUE TO RECONCENTRATION, IN THIS PROVINCE.—CIENFUEGOS A PROSPEROUS AND WEALTHY CITY.—SAGUA LA GRANDE, WITH ITS LARGE SUGAR EXPORTS TO THE UNITED STATES.—THE EFFECT OF RECONCENTRATION ON THE CITY OF SANTA CLARA.—FASHIONABLE TRINIDAD.

POPULATION OF 1887—OTHER STATISTICS OF 1894.

Total square miles	8,878	Sugar plantations	332
Square miles in use	5,477	Coffee plantations	46
Population	354,122	Tobacco plantations	317
Inhabitants per square mile	39.90	Cattle ranches	1,250
Houses in towns	16,289	Number of farms	4,852

SANTA CLARA is naturally one of the richest provinces of the island, as well as one of the earliest settled. Along both its northern and southern coasts, as well as to a great extent in the interior, are some of the largest sugar plantations of Cuba, where the industry has been as scientifically conducted as anywhere else on the island. The reports of the commerce of

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its larger seaports, which will be found later, give a clear idea of the former extent of its business. It may be said, however, that all the industries of the province can be greatly enlarged and increased, and new ones founded. Descriptions of the railroad lines, given in Chapter V, show so much of the character of the various portions of the interior, that no extended description of it need be attempted here. It should, however, be remarked that, ordinarily, Santa Clara is considered a grazing province, despite the magnificent showing of exports made by its seaports. Unquestionably, its plains are among the richest grazing lands in the world, which we hope soon to see once more covered with cattle and horses. Of its other agricultural products and possibilities, the tobacco industry already possesses considerable importance, and while the quality of the leaf is not so much appreciated as that raised on the western end of the island, it is much larger, and is especially in demand in certain markets of Europe. Fruit cultivation has not been seriously undertaken for export; yet all varieties of tropical fruits flourish here, and, consequently, there is practically no limit to the extent to which this industry may be developed. In addition to tropical fruits, some of those of the temperate zone flourish on the higher elevations of the interior, and the possibilities of supplying northern markets with early berries are well worthy of consideration. These higher altitudes are also well adapted to coffee-growing, yet the few plantations in existence, at present, do not produce sufficient for local consumption. What has been said of coffee holds good as regards cocoa. Timber, consisting of the best hard woods, is very abundant in certain localities.

Like the other provinces, Santa Clara has serious need of better transportation facilities, both locally to the seaboard at various points, and by an extension of

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the general railway system of the island, from where it now terminates at the city of Santa Clara, to the most easterly extremity of Cuba. The lack of public railroads has, to a certain extent, in a local way, been obviated by the private railroads of plantation owners; yet by no means has a comprehensive general railway system been constructed. The system of wagon roads is, apparently, much worse than the railway system, and no extensive *calzadas* exist, except such as extend out for a few miles only from the larger towns. In this respect, the province is much worse off than the others lying west of it. It has suffered seriously from the want of banking facilities; perhaps more so than any of the other provinces, and, consequently, the development of all the industries, excepting those in the hands of wealthy foreigners, has been retarded.

The mineral resources of the province are considerable, but of late years have received little attention; much less, in fact, than in the province of Santiago. The early Spanish settlers were confident that gold existed in paying quantities, and it is said they did, for a time, secure a fair quantity of it by the method now known as placer mining. So far as it is found now, the gold generally exists in a sand of granitic quality, and the principal early placers were in the vicinity of what is now Sagua la Grande, along the river of that name and the River Agabama. A little later, similar placers were located along the streams running into the bay of Jagua (Cienfuegos), and Humboldt states that, at the time of his visit early in this century, gold was still being washed up from the sands of the rivers Damují and Caonao, two of such streams, while it is known that similar placer mining was followed along other streams of the province in localities not now possible to locate with exactness. In 1827, silver combined with copper was

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discovered in a section known as Manicaragua, south of the city of Santa Clara, and is said to have yielded about seventy-five ounces to the ton of ore ; the product of copper therefrom, however, is not ascertainable. This industry does not seem to have ever been extensively prosecuted, nor, in later years, does there seem to have been any prospecting done for other similar deposits ; but according to the statements of an experienced mining engineer, who has been through the mountains, made personally to the writer, there are undoubtedly strong indications of silver and copper there, while there can be no question as to the plentiful existence of iron ore, probably in truer veins than that of the well-known deposits of Santiago de Cuba. In the vicinity of Trinidad, in the southeastern corner of the province, marble of good quality is plentiful, as is also building slate, some of which makes a superior quality of writing slate. Manganese is supposed to exist in the same locality. Asphalt and similar bituminous products exist in this region, and are said to be plentiful elsewhere in the province. Talc and amianthus exist near Trinidad, as well as in the wide belt extending to the north. There are rumors of the presence of coal in various parts of the province, but it is questionable if these are more than solidified bodies of bitumen. Petroleum undoubtedly exists in several localities. Quicksilver at one time was found in the low, open country near Remedios.

Before concluding these general remarks, perhaps some reference should be made to apiculture. In this, as in other provinces in the island, much honey and wax have been produced, with little if any attention being given to them in a scientific way. Were there no sugar plantations it could, of course, be appreciated that in a country where there is perpetual blossom, bees must flourish and their products be large. When we supple-

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ment this with the statement that the bees all feed about the sugar mills, some idea can be gathered of the possibilities of increasing the industry were the slightest attention given to its scientific development. There is but one drawback to the sugar mills in connection with honey production, and that is the tendency of the bees to become inebriated, for they prefer the by-product of rum to the sugar itself, and actually become so frequently intoxicated that they lose their natural habits of industry.

THE TOBACCO INDUSTRY IN THE PROVINCE

Situated in the southern central portion of this province is the rich valley of Manicaragua, noted for its fertility as well as for its mineral wealth. Its total extent is nearly 60,000 acres, and it is claimed by authorities on the subject, to quote their own words, that "it produces tobacco possessed of all the qualities of aroma, combustibility, elasticity, and fineness of texture equal to that of Vuelta Abajo tobacco." It is only of late years, however, that it has attracted much attention, and only about 3,000 acres have been cultivated. The River Arimao runs through the district, and it is well watered thereby. The soil is said to be almost identical with that of Pinar del Río, and it is also said that the locality is free from drought, and other troubles, which occasionally interfere with large crops in the western districts.

The following description of the methods followed in connection with the cultivation and other peculiarities of the trade, is given in a statement written by one of the planters of the district a few years since :

"The seed is sown broadcast from about the 15th of August to the 8th of September in a sheltered piece of ground to form the nursery (*semillero*) ; the plants are left to attain a height of four

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inches. No fertilizers are used, the land being sufficiently rich. To prepare the land for planting, all brush, grass, and weeds are removed, and the ground is ploughed four times, and afterwards furrowed to receive the plants. The plants are taken from the nursery in the morning, and planted in the evening of the same day. This has been shown by experience to be the best way. Care must be taken to keep the ground free from weeds, and to prune the tops of the plants, in order to make them spread; also, the suckers from the roots are to be removed. The pruning is done with the nails of the thumb and forefinger. Care must also be taken to remove the insects which attack the plants. The natural enemies of the plant are the *cachazudo* (our tobacco worm), the *babosa* (a slimy slug, which leaves its trace on the leaf and destroys it), the *cogollero volador* and the *mariposa* (a butterfly produced by the former, which lays its eggs on the leaf and destroys it). These insects have to be picked off by hand and destroyed as fast as they appear, giving much work. The first cutting is made from three to four months after planting, varying according to circumstances; the other cuttings from thirty to forty days after the first. After cutting, the leaves are hung on poles twelve feet long, placed horizontally on forked sticks, and left in the open air for a day or two (not, however, during the night or in rainy weather, as any drop of water falling on the leaf is injurious to it). After this, the poles, filled with leaves, are taken to the drying house, and placed horizontally to cool for twenty-four hours. At the end of this time the poles are placed as close together as possible, and left so for three days. This is called the first heating (*calentura*). After this the poles are separated again to allow the leaves to cool. The tobacco is left on the poles a sufficient time to become perfectly dry, the length of time depending upon the weather. In making the heaps, preparatory to packing, a time is chosen when the leaves are softened by the atmosphere, and the leaves are then taken off the poles and placed in a heap in a sheltered spot. A preparation is then made of tobacco stems left in water until fermentation takes place, and with this liquid each layer is sprinkled before another layer is placed. The tobacco is packed for transport in bales made of the fine bark of the top of the palm tree, and tied with ropes made of the majagua bark; in each bale fifty, sixty, or eighty bunches are placed. The tobacco is assorted into seven classes, from first to seventh class. The ruling prices are from \$30 to \$44 the horse load, four bales, without choice. Sales are made in Cienfuegos, Havana, Santa Clara, Esperanza, and Sagua. The crops have of late varied from 5,000 to 6,000 bales. One man can attend to 15,000 plants, and in a *caballería*

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(thirty-three acres), 250,000 plants may be raised. No calculation can be made of the area in cultivation, as all are small farms and raise but little. There is room for much more cultivation. By mules and carts the crops can be taken to Santa Clara, Esperanza, Ranchuelo, Cruces, and Cienfuegos, and from these points there are railroads. The prices for hauling are \$1 to \$2 per horse load (four bales), according to the distance. This is generally on the buyer's account."

Elsewhere in the province, tobacco is also raised, principally in the vicinity of Quemado de Güines, Calabazar, Encrucijada, and Santo Domingo. That raised in the neighborhood of the first two places is not of the best quality, while that of the last two is coarser and of a heavier grade.

VITAL STATISTICS

Some idea of the horrors and fatalities from reconcentration can be obtained from the following official mortality list of the districts of the province from January 1 to November 15, 1897:

Santa Clara.....	27,900	Remedios.....	11,415
Sagua.....	16,585	Sancti Spiritus....	5,482
Cienfuegos.....	14,263	Trinidad.....	4,946
Total.....			<u>80,589</u>

Add to this 25 per cent. for the number of which no record has been kept, which would make a grand total of 100,736 deaths in ten and one-half months.

DESTROYED PLANTATIONS

The following is a partial list of the plantations destroyed during the recent insurrection:

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<i>Santa Clara.</i>	<i>Owner.</i>	<i>Industry.</i>
Carmen		Sugar.
Lotería.....		“
Rosario.....		“
San Antonio.....	C. Y. Cia.....	“
San José.....	“	“
San Narciso.....		“
Santa Leocadia.....	Rossell Hermans.....	“

SANTA CLARA

Santa Clara is more popularly known among the natives as Villa Clara. It is the second largest inland town of Cuba, and is the capital of the province bearing its name, which is also frequently called Las Cinco Villas. The population is approximately 20,000. It is located 200 miles east of Havana, almost in the centre of its own province, about thirty miles from the northern coast and forty miles from the southern.

The general railway system of the island terminates there, giving it a connection with all the important central and western cities, while local railroad systems give it a connection with the more important seaports of the province on both the northern and southern coasts. It is situated at a considerable elevation above the sea level, and is substantially built and well laid out with comparatively broad streets, some of which are improved, but there has been little attempt at macadamizing some of the adjoining country roads. There is one good theatre in the city. A fine and extensive agricultural and grazing country surrounds the city for many miles, in which there is much mineral wealth only slightly worked. Gold is found in small quantities; plumbago is plentiful; copper exists to an extent as yet unknown; while asphaltum and kindred bituminous products will eventually prove a great source of commercial revenue.

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Annual shipments of asphalt have already reached 10,000 tons. While not stated by the authorities, it is believed that there is such an affinity between bitumen and petroleum in Cuba, that the latter must also exist in the locality. Less than a mile and a half from the city is a gasoline mine, so-called, which would indicate the presence of natural gas.

The location of the city is naturally very healthy, but the usual neglect of sanitary measures makes malarial fever and dysentery frequent. There is, however, an almost entire absence of yellow fever. Both air and soil are dry, and the peculiar clearness of the Cuban atmosphere is especially noticeable in this locality.

The city was founded as early as 1689, and possesses all the characteristics of the earlier-built Cuban cities, except narrow streets. It has always been noted for its comparative wealth and the exceptional beauty of its women. The general character of the population is good, and the city has great possibilities for an inland town.

In 1827 silver was discovered in this locality in comparatively paying quantities. Certain specimens of the ore yielded above \$200 per ton, but, so far as is known, the mining of silver here has not proved a commercial success. The mountains close by contain iron deposits, but these have been but slightly prospected, and have not been worked to any extent.

STATISTICS OF DEATH RATE IN SANTA CLARA.

As showing the ordinary death rate in this supposedly healthy inland city, which now contains only 14,000 inhabitants, as well as the awful effect of General Weyler's reconcentration order, the following table is given :

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1890.....	578
1891.....	720
1892.....	596
1893.....	619
1894.....	687
1895.....	872
1896 (epidemic of yellow fever among army and Cubans)	1,417
1897 (no epidemic).....	6,981

The last mentioned figures, while, as stated, no epidemic existed, show the effect of "reconcentration."

CIENFUEGOS

Cienfuegos, a modern flourishing commercial city, is situated on the east side of the magnificent bay of Jagua, which indents the central portion of the southern coast of Cuba. The bay, which is completely landlocked, is about eleven miles long, and from three to five miles wide; the entrance is through a narrow but deep channel nearly three miles long. The town is about five miles distant from the inner end of the entrance. Surrounded by beautiful hills, with mountains lying beyond in the distance, the bay presents a scene to be long remembered by the tourist. Las Casas called it "the most magnificent port in the world." Nearly every other descriptive writer has said "that it could float the navies of the world," and Captain Mahan, our great strategic naval writer, sings its praises, and designates it as perhaps the foremost harbor, from a strategic standpoint, on the Caribbean Sea. The average depth of water is excellent throughout nearly the entire bay, but it shoals gradually at certain points toward the shore. The larger vessels generally anchor at from one-eighth to one-half mile distant from the water front of the city, along which are nearly twenty-five piers, extending out about 300 feet each, at the ends of which vessels drawing not over

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twelve to fourteen feet can safely tie up. A practice is followed of commencing the loading of good-sized steamers at these wharves, and then, as they subside to the limit of draught, to have them hauled out a few hundred feet, in order to complete the task with lighters.

Cienfuegos, the literal meaning of which is a hundred fires, was originally founded in 1819; but being shortly afterward destroyed by a hurricane, it was rebuilt in 1825, since which it has flourished, and is now the most important commercial city of the southern coast, and the fourth or fifth in all Cuba. The city front projects outward into the bay, and this part is only three or four feet above water level; a gradual ascent begins, however, from this portion, and the rear of the city is at an elevation at least seventy feet higher. Better material conditions could not be imagined for an effective sewerage system, but none exists. The streets are the widest of any city in Cuba, none being less than forty feet. Some attempt has been made at macadamizing them, but in wet weather they are exceedingly muddy and filthy. The commencement of a water-works system has been made, and the water tower, standing at an elevation of over 100 feet above the harbor level, is one of the striking features of the landscape; but at last accounts the company had not begun to furnish water, and the sole source of supply was from underground cisterns, the owners of which derive a handsome revenue from selling water to their less fortunate neighbors. There are gas works, and there is an electric light plant. The built-up portion of the city covers about 150 acres, and it has a population of 27,000, while there are about 41,000 in the township. While it is a rich city, as evidenced by signs of prosperity in all directions, and by some fine buildings, the most notable of which is the famous Terry Theatre, the major portion of the build-

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ings are cheap one-story wooden structures, the floors of which rest almost, if not quite, on the earth. As more than one-third of the city's extent was originally a mangrove swamp, it is not to be wondered at that it is considered unhealthy, and a breeding spot for yellow fever, which is never entirely absent. Adjacent to the Terry Theatre is one of the largest and finest public plazas in all Cuba, ornamented with many statues, some of which are artistic. In the same locality is a fine old church. Southeast of the city rise the Southern, or San Juan Mountains, which are picturesque, and greatly enhance the beauty of the surroundings. Two fair-sized rivers empty into the bay north of the city, and one south of it, as do a number of lesser streams at various other points.

Owing to some peculiarity of the surroundings, it becomes exceedingly cold for the latitude during northers, and frost and hail are sometimes seen under such conditions in the neighboring mountains. The railroad facilities are good for Cuba, connections being made with the general railway system of the island, by which route the city is 190 miles from Havana. The local railway system, described in Chapter V, is one of the most complete in Cuba. Subsequent statistics given show the general importance of the water traffic, in connection with which it should be stated that Cienfuegos is a stopping point for the regular line of south-side steamers, while there are a number of small steamers and a large number of sailing craft engaged in the coasting trade. The city has one good hotel. It may be interesting to note that practically the only serious labor trouble which ever occurred in Cuba happened here in 1891, it being a strike of the 'longshoremen. It was promptly suppressed by the authorities, who deported all the strikers as criminals to the Isle of Pines.

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The district of Cienfuegos lies between those of Batabanó and Trinidad on the coast line, and Sagua, Colón, and Villa Clara in the interior of the island. It is approximately 100 miles in length and twenty-five miles in breadth.

The population, taken by the last census in 1892, was divided as follows :

<i>Description.</i>	<i>Population.</i>
Male whites.....	32,331
Female whites.....	22,856
Male blacks.....	13,945
Female blacks.....	15,603
Male Chinese.....	2,760
Total.....	87,495

These figures differ somewhat from those given elsewhere, which are from the general census of 1887.

Of the black population mentioned, it can be said that they, to a great extent, reside in the rural districts, and either work upon the plantations or cultivate their own farms. The female blacks are generally employed as family servants either in the city or country. Rates of wages have been, for men in the city, from \$1 to \$1.50 per day, and from \$15 to \$20 per month, with meals, as plantation hands. The women as servants have received from \$10 to \$20 per month.

The average water freight on sugar to the United States has been from 12 cents to 15 cents per 100 pounds. The district is almost entirely devoted to sugar production, for which it is noted as being naturally exceedingly well adapted. That the sugar industry has been as thoroughly developed here as in any part of the island, is evidenced by the following statements of the exports; but possibly no section has suffered so greatly from the effects of the insurrection, the sugar production for 1896

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and 1897 having practically disappeared. Thousands of acres of cane have been burned, and many of the mills destroyed as well; these having been as modern and as fine as any on the island.

SHIPPING STATISTICS.

The following is a statement of the nationality, number, and tonnage of foreign vessels visiting the port of Cienfuegos :

<i>Nationality.</i>	1892.	1893.	1894.	1895.
British.....	51	67	50	42
American.....	118	108	105	102
Spanish.....	129	118	103	112
Norwegian.....	8	12	9	7
Swedish.....	3			
German.....	1	4	13	8
Italian.....	1	3	1	1
Russian.....	1	..	..	1
Haytian.....	2	2	1	
Austrian.....	..	1		
Danish.....	..	1		
Totals.....	314	316	282	273

<i>Tonnage.</i>				
	1892.	1893.	1894.	1895.
British.....	39,433	51,534	45,309	38,462
American.....	93,934	91,059	95,194	92,239
Spanish.....	190,079	180,696	164,530	183,050
Norwegian.....	4,945	6,881	4,770	2,717
Swedish.....	1,566			
German.....	768	6,512	20,292	10,813
Italian.....	412	1,615	494	530
Russian.....	677	.....	.....	649
Haytian.....	280	289	146	
Austrian.....	468		
Danish.....	594		
Totals.....	332,094	339,648	330,735	328,460



SHIPPING—CIENFUEGOS

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EXPORTS TO THE UNITED STATES.

The approximate value and character of the exports to the United States in a prosperous year, compiled from official records, are :

Beeswax.....	\$30,000
Cigars and cigarettes.....	1,000
Fruit	100
Guava jelly	200
Hides.....	4,000
Honey.....	13,000
Lancewood spars	2,400
Mahogany.....	5,000
Molasses.....	30,000
Sugar.....	9,500,000
Tobacco.....	240,000
Total.....	\$9,825,700

IMPORTS OF COTTON TEXTILES.

Following are approximate calculations by Don Gregorio Castillo, of Cienfuegos, of the amounts of cotton textiles most in demand imported during an average year:

ARTICLES.	Pieces.	Contents of Piece.	Weight per Yard.	Number of Threads per Centimetre.	Place of the Manufactory.
White shirting....	4,000	<i>Yards.</i> 36.5	<i>Grams.</i> 64	14-16	Manchester*
“ “	1,500	30	50	10	“
Striped shirting...	2,500	65-70	55	10	“
White sheeting....	1,000	30	90	10	“
“ “ ...	1,250	30	75	16	“
Printed percales...	2,500	55-60	90	13-16	Barcelona
Dress goods.....	3,000	65-70	27	12	Manchester
“ “	2,000	65-70	40	14	“
Drills.....	4,000	30-35	110	..	Barcelona†

* Imported through Liverpool. † Imported through Santander, Spain.

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The importations of cotton textiles during an average year, estimated by Celestino Cazes & Co., of Cienfuegos, are :

	<i>Value.</i>
Goods wholly cotton.....	\$115,000 to \$120,000
Goods mixed cotton.....	145,000 " 150,000
2,350,000 yards.....	\$260,000 to \$270,000

Weight of the above goods, 281,750 kilograms; average weight per yard, 120 grams.

Conditions of purchase, four months' time from date of bill of lading.

PLACES OF MANUFACTURE AND EXPORTATION.

Barcelona.....	\$160,000 to \$165,000
Manchester.....	85,000 " 90,000
Paris.....	10,000 " 12,000
New York.....	2,000 " 2,500

IMPORTS OF BEER.

The following is a statement of the average yearly importations of beer at this port :

<i>Month.</i>	<i>Country.</i>	<i>Port.</i>	<i>Quarts.</i>
January.....	United States.....	New York.....	93
"	Great Britain.....	Liverpool.....	2,781
February.....	Germany.....	Bremen.....	772
"	Great Britain.....	Glasgow.....	5,253
March.....	Germany.....	Bremen.....	371
"	Great Britain.....	Glasgow.....	3,142
April.....	"	Liverpool.....	1,854
May.....	Belgium.....	Antwerp.....	3,554
"	Great Britain.....	Glasgow.....	3,605
June.....	Germany.....	Bremen.....	1,648
"	Great Britain.....	Glasgow.....	7,648
"	United States.....	New York.....	139
July.....	Great Britain.....	Liverpool.....	17,510
August.....	United States.....	New York.....	46

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<i>Month.</i>	<i>Country.</i>	<i>Port.</i>	<i>Quarts.</i>
August	Great Britain	Glasgow.....	19,142
September.....	“	Liverpool.....	6,978
October.....	United States.....	New York.....	463
November.....	Germany.....	Bremen.....	3,461
“	United States.....	New York.....	148
December.....	Great Britain	Glasgow.....	6,489
“	United States.....	New York.....	185
Total			85,282

NOTE.—In bottles only ; none imported in the wood.

From the foregoing, it will be seen that 87 per cent., or 74,402 quarts, have come from Great Britain. This comes almost entirely from Tennant & Co., of Glasgow. It is imported in casks of ten dozen bottles each, and has cost about \$4 Spanish money per dozen quarts. Eleven per cent. of the importation has been Salvator beer, from Bremen. This is sold somewhat dearer than Scotch beer, at about \$5 Spanish money per dozen quarts, or two dozen pints. Only 2 per cent. has come from the United States, this being principally from the Anheuser-Busch brewery, of St. Louis, and a little from the Empire brewery, of New York. American beers have sold retail at approximately the same price as German—thirty cents per bottle. It is believed that American beer is generally preferred to that of any of the foreign breweries, and is likely hereafter to control the trade.

SAGUA LA GRANDE

This town, one of the most important on the island, is situated near the northern coast, 160 miles east from Havana. It has a population of 14,000. Railroad connections exist with Havana, Santa Clara, and intermediate points. It is built on the banks of the River Sagua, which should not be confounded with a stream of

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the same name farther east. It lies about ten miles inland from its seaport, La Isabela (also called Concha la Boca and Isabela de Sagua), which, unfortunately, has not a very good harbor. The streets are wide and the buildings generally good, although principally wooden structures. There are many shops, lumber yards, and other evidences of commercial importance. The immediate adjacent country is low and swampy, and many large plantations exist, some of which possess their own private railways running to the seacoast. The local railway transportation facilities are good, but good wagon roads are few. The township has a population of nearly 24,000.

The population of the district of Sagua la Grande, covering about 800 square miles, according to a local census of 1892 was as follows: White, 12,000; black, 5,000; Chinese, 500—total, 17,500.

About one-half of these, it is officially stated, can read and write; yet the black people of this locality do not seem to compare favorably with Cuban negroes elsewhere, it being said that they are so immoral and unthrifty that the planters have seriously considered the wholesale importation of labor of a different character.

Sugar growing is the principal industry of the locality, although some tobacco is raised.

The town itself suffered severely from a terrible flood in 1894, which destroyed a large amount of property. It had not recovered from the effects of this when the insurrection came on, and since then its situation has been as bad as that of any section of the island, for many of the surrounding plantation buildings have been destroyed and cane fields burned.

It is to be regretted that but very incomplete statistics on the commercial business of this town are available, but we are able to give the following :

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EXPORTS DURING THE YEAR 1892.

<i>Destination.</i>	<i>Description.</i>	<i>Value.</i>
Great Britain.....	None.
Halifax, Nova Scotia.....	Sugar.	\$827,900
United States.....	"	2,922,000
Other Cuban ports (for U. S.)..	"	974,000
Other countries " ..	Molasses.	9,740
Total (sugar and molasses, almost the only ex- ports).....		\$4,733,640

The following is a statement of the value of exports during the year ending June 30, 1895, and of the means by which they were exported :

In American vessels.....	\$1,241,187.19
In British vessels	2,397,215.20
In Spanish vessels.....	818,550.21
In German vessels.....	78,804.57
In Norwegian vessels.....	215,129.67
Total.....	\$4,750,886.84

The value of imports in American vessels alone for the same period was : coal, \$84,236 ; lumber, \$14,812—total, \$99,048.

The approximate value and character of the exports to the United States in a prosperous year, compiled from official records, are : sugar, \$6,210,000 ; molasses, \$25,000—total, \$6,235,000.

The imports for 1892 were :

<i>Country.</i>	<i>Description.</i>	<i>No. Vessels.</i>	<i>Tons.</i>
From Cuban ports (starting from Great Britain).....	.....	14	17,000
From Nova Scotia.....	Lumber,	6	1,000
From United States.....	General cargoes and machinery.	20	13,000

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The sugar exports for 1894 and 1895 were as follows :

<i>Year.</i>	<i>Quantity, Sacks.</i>	<i>Quantity, Hogsheads.</i>
1894.....	700,653	4,922
1895.....	645,105	2,223

The other articles of export were unimportant.

Both British and United States consular agents have reported, during later years, that with a few exceptions all the sugar estates in this locality were insolvent, and that the plants were, to a great extent, in the hands of usurers, who have exacted rates of interest as high as 18 per cent. per annum, with first-class collateral security. Naturally, under such conditions, money has been exceedingly scarce.

The consumption of coal has averaged between 15,000 to 20,000 tons per annum, about 70 per cent. of which has come from the United States, the rest from England.

Ice is manufactured in Sagua la Grande, but until recently has sold wholesale as high as \$16 per ton, and retail at \$3 per 100 pounds. The refrigerator, as known to us, is used but to a small extent, ice being ordinarily kept in home-made chests, consisting of two ordinary boxes, the inner one lined with zinc, and the intermediate space between it and the outer one packed with ordinary salt. The two largest chests, or refrigerators, in town hold about five tons of ice each. Owing to the price of ice, no attempt is made at cold storage as known to us, meat being eaten almost as soon as killed, which is a necessity, as it becomes tainted within twenty-four hours thereafter. As elsewhere, poultry is sold alive, and killed within a few minutes prior to being eaten, while vegetables and fruits come upon the tables of the inhabitants almost as soon as they are brought to market.

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In this immediate district, in 1894, it is stated that there were 23,500 head of horned cattle, 4,500 horses, 450 mules, 4,000 hogs, and 700 sheep. These are considered to have almost entirely disappeared.

TRINIDAD

Trinidad is one of the oldest Cuban cities, having been founded in 1514. It is situated near the southern coast, about forty-two miles southeast of Cienfuegos. It is distant about three miles from its seaport, Casilda, which has a population of about 3,000. From Casilda a local railway line runs inland through Trinidad, terminating at Fernandez, eighteen miles to the north-east. The course of the River Guaurabo lies within half a mile of Trinidad, and by means of it some vessels of light draught approach almost to the city, and carry on a part of the coastwise trade. Trinidad is especially well built, the houses being of stone. The streets, as in nearly all of the older cities, are exceedingly narrow and crooked, but well paved to a certain extent. As usual, they show a lack of care, and are generally in a filthy condition. The location has an elevation of between 180 to 360 feet above the sea, the average altitude being 220 feet. It has the full benefit of both the sea and mountain breezes, and is said to be the healthiest town of any extent in Cuba. The Plaza de Serrano is a fine public square in the centre of the city, around which are many fine buildings. The Plaza de Carrillo, which is slightly north of the centre of the city, is a broad stone *paseo*, and inside there are magnificent shrubbery, pines, and tropical vegetation, all of which are brilliantly illuminated by gas lamps at night. In the winter season Trinidad is a centre of social life and gaiety, while the picturesque drives and surround-

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ings of the city are attractive to the Cubans from other cities at all times of the year. One especially fine drive is the Loma del Puerto. The harbor, sometimes known as that of Casilda, but more frequently Trinidad, is three miles long by one and one-half miles wide. It has a wide entrance, about which, however, are some dangerous coral reefs. While stated by many writers as being a harbor of the first class, this is scarcely true, as it is shallow and not well protected from the open sea. The loading and unloading of vessels are done by means of lighters. The population of Trinidad is about 18,000, divided in about equal proportions between black and white. The usual industries of this locality have been much depressed for several years, and it is said that the city shows evidences of that fact.

The approximate value and character of the exports to the United States in a prosperous year, compiled from official records, are :

Sugar	\$900,000
Mahogany.....	1,000
Coffee	500
Honey.....	2,200
Total.....	<u>\$903,700</u>

OTHER CITIES, TOWNS, AND VILLAGES OF SANTA CLARA

The following is a descriptive list of the other cities, towns, and villages of the province of Santa Clara, arranged alphabetically :

AMARO.—An unimportant typical interior town, having a population of 320. It was totally destroyed during the insurrection. The township has a population of 7,251.



COUNTRY MULE TEAMS

PROVINCE OF SANTA CLARA

ANGELITA.—A small, unimportant station on the line between Cienfuegos and Santa Clara.

AZOTEA.—An insignificant station on the line between Cienfuegos and Santa Clara.

CAIBARIÉN.—This is the seventh town, in commercial importance, on the island, and is of comparatively recent origin, having been founded in 1822. The dwelling houses are principally of brick, with tile roofs, while the warehouses are large modern stone structures. Its location is in about the centre of the northern coast of the province. The site was formerly a mangrove swamp at the mouth of the river from which it takes its name, and little, if any, of the surrounding country is more than ten feet above the sea level; yet, strange to say, the locality is claimed to be a healthy one. The population is about 5,500. The harbor, while important commercially, is poor and shallow, and vessels ordinarily anchor back of Francés Cayo, twenty-five miles to the northeast. It is the seashore terminus for a line of railroad twenty-eight and one-half miles in length, running to the important town of Remedios, five and one-half miles away, and thence to San Andrés, in the interior. There are also some good wagon roads in the vicinity, and it is the centre of a productive sugar district. The town is quite progressive for its size, but there is room for additional public improvements. A weekly steamship line has connected with Cárdenas, and it also has a somewhat extensive coastwise traffic, carried on by sailing craft. The township has a population of 8,200, of whom only 12 per cent. are black.

The sponge industry of Caibarién, while conducted in a crude way, is full of promise, and up to the present has reached an annual amount of from \$300,000 to \$400,000. At present, all those employed in the trade

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are "matriculados," so-called former Spanish naval conscripts, who, with but little more investment than that for good-sized rowboats, do the sponge fishing without additional appliances. The principal varieties of sponges found are sheep's wool, velvet, hardhead, yellow, grass, and glova. These find a local market of great extent; consequently, statements of exports do not set forth the importance of the industry.

CALABAZAR.—An inland town on the railroad, twenty miles southeast of Sagua la Grande, with a population of 1,500. The town is situated on the Calabazar River, which is there crossed by the longest railroad bridge in Cuba, substantially built of stone and iron. The town in itself is of little importance, but the surrounding country can be made productive. The township has a population of 9,000.

CAMAJUANÍ.—A small unimportant station on the line between Caibarién and Placetas, eighteen and one-half miles from the former station.

CAMARONES.—An unimportant inland town, situated fifteen miles northeast of Cienfuegos, with a population of 550. The township has a population of 8,500.

CARTAGENA.—A railroad town north of Cienfuegos, on the branch line to Rodas, and near the River Damují. The population is approximately 1,500. The town was partially destroyed during the insurrection. The township has a population of 9,000.

CASARIEGO.—An unimportant town on the line between Zaza and Valle, or Sancti Spíritus, fifteen and one-half miles from the seashore terminus at Zaza.

CASILDA.—See Trinidad.

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CIFUENTES.—An unimportant town on the branch line running from Sitiecito.

CONCHA.—See La Isabela.

ENCRUCIJADA.—A somewhat important town; the terminus of the branch line of the same name running from Sitiecito.

ESTERO.—An unimportant town, situated two miles from Morón, on the Júcaro-Morón Railroad. It is the seaport for Morón.

FERNANDEZ.—The northern terminus of the Trinidad Railroad. A thriving town of 500 inhabitants.

GUASIMAL.—An unimportant town on the line between Zaza and Valle, or Sancti Spíritus, ten miles from the seashore terminus.

GÜINES.—This should not be confounded with the important town bearing the same name in Havana Province. The one which we are now describing lies twelve miles west of Sagua la Grande, somewhat inland. It has a population of 2,000. It is in a low, rich agricultural district, devoted principally to the cultivation of cane, and is not very healthy. The township has a population of 10,000.

JARAO.—An unimportant town on the line between Zaza and Valle, or Sancti Spíritus, eighteen and one-quarter miles from the seashore terminus.

LA BOCA.—See La Isabela.

LA CRUCES.—An important railroad town of the province, situated in its southwestern corner. It is the junction of the Sagua la Grande, Santa Clara, and Cienfuegos railroads, and has had great commercial prosperity, having been an important shipping point for horses, cattle, sugar, and some tobacco. The inhabitants of this

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locality are noted for their business shrewdness, and are designated on the island as the "Yankees of Cuba." They are almost universally active, energetic, and consequently prosperous. The population is estimated at several thousands.

LA ESPERANZA.—This is a flourishing town situated about ten miles northwest of the city of Santa Clara, with which it is connected by a *calzada*. It has a population of 2,150. It has been prosperous, and will doubtless remain a flourishing small town; the centre of distribution, to a limited extent, of a rich rural district. It is a most dismal place in appearance. The township has a population of 10,733, and, besides the town, includes fifteen settlements, ninety-two grazing farms, and 647 farms under cultivation.

LA ISABELA, OR CONCHA.—Called La Boca by the inhabitants, this town is the seaport for Sagua la Grande, which is ten miles distant. The intervening country is low, marshy, and unhealthy. The town itself is built on piling, and where solid land exists it is filled-in ground. It has a population of about 5,000. Its commercial importance is greater than such number would indicate. The houses are principally small wooden structures, but there are extensive warehouses, railroad shops, ship offices, etc. The location is at the mouth of the Sagua River, and the harbor there is not very good. The population is quite cosmopolitan, and the lower classes have not, on the whole, the best of reputations. Across the marshes in this vicinity are a number of private railroads, leading back to the rich plantations a few miles away. It is the seashore terminus of the railroad to Santa Clara.

LAS LAJAS.—A fairly important town of between one and two thousand inhabitants, between Concha and

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La Cruces ; thirteen miles from Santo Domingo and forty-three miles from La Isabela. It looks remarkably clean and prosperous.

LAS PIEDRAS.—A rather important town on the line of the Júcaro-Morón Railroad and trocha, twenty-eight and one-half miles from Júcaro.

MANACAS.—A small station on the line of the Cárdenas-Júcaro Railroad, seventy-five and one-half miles from Cárdenas.

MATA.—A small, unimportant station on the branch line running from Sitiecito.

MORDAZO.—A small station on the Cárdenas-Júcaro Railroad, sixty-seven and one-half miles from Cárdenas.

PALMIRA.—This town is in the immediate vicinity of Cienfuegos on the southern coast, from which it is distant nine miles, and with which it has direct connection. The population is about 3,000. The township has a population of 5,000.

PLACETAS.—An unimportant town ; the terminus of the road between Caibarién and Placetas ; thirty-three miles from the former.

RANCHO VELOZ.—A small inland town with a population of 656, twenty-five miles from Sagua la Grande. The township has a population of 8,257.

RANCHUELO.—An inland town near the southern coast, twenty-five miles northeast of Cienfuegos. It is located on the railroad between that city and Santa Clara, and has a population of 1,533. The town was partially destroyed during the insurrection. The township has a population of 10,733.

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REMEDIOS.—This is an important commercial town, frequently included in the descriptions of Caibarién, its seaport, five and one-half miles distant, with which it is connected by a railroad, which runs some twenty-five miles further inland. Its location is about sixty feet above the sea level, and is considered healthy. Its population is nearly 7,500. This is a town which has future prospects commercially, because of the fertility of the surrounding soil, and is susceptible of improvement in almost every way.

The approximate value and character of the exports to the United States in a prosperous year, compiled from official records are: sugar, \$3,680,000; tobacco, \$20,000—total, \$3,700,000.

RADRIGO.—A small railroad station on the line between Concha and La Cruces, twenty-three and one-half miles from La Isabela.

ROJAS.—A somewhat important town on the Zaza Railroad, five miles from Caibarién.

SALAMANCA.—A somewhat important town on the line between Caibarién and Placetas, twenty-three miles from Caibarién.

SAN ANDRÉS.—A somewhat important town on the line between Caibarién and Placetas, twenty-seven miles from Caibarién.

SANCTI SPÍRITUS.—This is one of the oldest cities in Cuba, having been founded as early as 1514. It is located about thirty miles from the northern, and forty miles from the southern coast, and about fifty miles southeast of the city of Santa Clara. A considerable amount of its commercial business is done through Zaza, which is located on the southern coast, not far from and a few miles above the mouth of the River

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Zaza, which is navigable to that point. A railroad about twenty-five miles in length connects the two towns. The surroundings of the city are generally good and healthful. The population is over 17,000. The city streets are narrow, crooked, and filthy. Improvements of every kind are needed. It is, perhaps, the least known city of its size in Cuba.

SAN DIEGO DEL VALLE.—An interior town, having a population of 1,400. Its surroundings are good. The township has a population of 10,000.

SAN JUAN DE LAS YERAS.—An inland town on the line from Cienfuegos to Santa Clara, twelve miles southwest of the latter. It has a population of 2,267. The township has a population of 7,808.

SAN JUAN DE LOS REMEDIOS.—This has already been described under its original title of Remedios. The first site of this town, originally founded in 1545, was on an island or key, not far from its present location.

SAN MARCOS.—An unimportant railroad town between Concha and La Cruces; six and one-half miles from Santo Domingo, and thirty-six and one-quarter miles from La Isabela.

SANTO DOMINGO.—An unimportant interior town on the railroad between Havana and Santa Clara, as well as on that from Sagua la Grande to Cienfuegos. It is also situated on the Sagua la Grande River, and on the high road between Havana and Santa Clara. It is twenty-three miles northwest from Santa Clara, and has a population of only 1,750. The surrounding country is a rich agricultural and grazing district. The township has a population of 17,000.

SANTO ESPÍRITU.—See Sancti Spíritus.

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SANTA ISABEL DE LAS LAJAS.—An important inland town, twenty-five miles north of Cienfuegos, having a population of approximately 5,000. It is quite influential commercially, having a good trade in sugar and cattle. Cienfuegos is naturally its seaport, with which it has railroad connections. The township has a population of 9,000.

SITIECITO.—A small railway station on the line from Concha to La Cruces, fourteen and one-half miles from La Isabela.

SITIO GRANDE.—An insignificant town on the branch line running from Sitiecito on the line between Concha and La Cruces.

TAGUAYABON.—An unimportant town on the road between Caibarién and Placetas, thirteen miles from the terminal, Caibarién.

VEGAS DE PALMA.—A small unimportant town on the railroad between Caibarién and Placetas, sixteen miles from Caibarién.

ZAZA, OR TUNAS DE ZAZA.—This is a small place, with a total population of about 1,500, and is the seashore terminus of the Tunas and Sancti Spíritus Railway. Although the town is considered healthy, the surrounding country is unfitted for agricultural purposes, and even vegetables have to be transported to it by rail. There is no supply of water in the immediate neighborhood, which gives the railway a practical monopoly of this commodity. The climate is pleasant in winter, but very hot in summer. The surrounding country was formerly noted for its cattle.

Approximate value and character of exports to the United States in a prosperous year, compiled from official records :

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Sugar.....	\$360,000
Cedar.....	86,000
Mahogany.....	4,134
Honey.....	3,500
Beeswax.....	6,400
Molasses.....	10,000
Logwood.....	600
Lancewood.....	150
Cigars.....	100
Total.....	<u>\$470,884</u>

ZULUETA (OR COLORADOS).—Unimportant excepting as being the station for a rich district on the Zaza road, thirteen miles from Caibarién.

CHAPTER XVI

PROVINCE OF PUERTO PRÍNCIPE

A LARGE TERRITORY WITH A SMALL POPULATION.—ITS TOPOGRAPHY RESEMBLES THAT OF SANTIAGO DE CUBA, THOUGH ITS MINERAL WEALTH HAS NEVER BEEN EXPLOITED.—ITS TRACKLESS, MOUNTAINOUS FORESTS CONTAIN MUCH VALUABLE TIMBER.—THE NATURAL HOME OF INSURRECTIONS.—CATTLE RAISING HAS BEEN NOMINALLY ITS CHIEF INDUSTRY.—MAHOGANY AND CEDAR PLENTIFUL.—A GREAT FUTURE PREDICTED FOR APICULTURE.—RICH DEPOSITS OF IRON ORES IN PLACES NOW INACCESSIBLE.—COPPER, GOLD, SILVER, NICKEL, AND COBALT ARE SAID TO EXIST, THOUGH THEIR LOCATION IS UNCERTAIN.—NUEVITAS, WITH ITS SMALL POPULATION AND LARGE COMMERCE.—THE CITY OF PUERTO PRÍNCIPE, WITH 40,000 POPULATION AND NOT A SINGLE HOTEL.

POPULATION OF 1887—OTHER STATISTICS OF 1894.

Total square miles..... 12,400 Square miles utilized in province..... 674 Population..... 67,789 Number of inhabitants per square mile..... 5.46 Number of houses situated in towns 6,479		Number of sugar planta- tions..... 5 Number of coffee planta- tions..... 0 Number of tobacco planta- tions..... 0 Cattle ranches..... 399 Number of farms..... 1,109
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PUERTO PRÍNCIPE is the second largest province on the island, and has the least density of population, averaging less than six per square mile of territory. It is situated next westerly from the province of Santiago de Cuba, and possesses many of the same

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natural characteristics, and possibly as great mineral wealth, although the latter has never had the development, or received the attention, which that at Santiago de Cuba has had. The natives still frequently designate this province as Camagüey, its former title. To a great extent it is mountainous, and contains thousands of acres of forest which are filled with the most valuable woods, and through most of which it is probable that the foot of man has never trod.

The seat of the recent insurrectionary government was located in this province, and it has always been the centre of similar outbreaks, the peculiar natural conditions and lack of transportation facilities making it particularly favorable for the operation of guerrilla warfare.

The individual description of the more important towns, given below, will show clearly what the most flourishing industries of the province have been, and what its future possibilities are, but a brief glance at them as a whole will not be out of place here.

The principal industry of the past has been cattle raising, which has flourished, with as little care as it receives at present in certain parts of South America, or has received in the past on our own western plains. It has now virtually disappeared, nearly all of the cattle having been killed to feed either the insurgents or the Spanish troops; but, prior to the insurrection, it was estimated that there were at least 800,000 head of beef cattle in the province, and annually some 50,000 head were shipped to the Havana market. There have also been some exportations of cattle to the other West Indian Islands, and the adjacent countries of Central and South America, while some attempts have been made to ship them to the coast cities of the United States. This latter movement, however, was not successful, as the animals were not sufficiently large to be popular in the American

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trade. This, of course, could be changed by improving the breed, and it would not be surprising to see, within a few years, this locality furnishing its fair share of the beef for our Atlantic seaboard.

Sugar cultivation has not been so important an industry as in the other provinces of the island, but was expanding rapidly at the outbreak of the recent insurrection. The total product in recent peaceful years was about 40,000 hogsheads annually, as against 20,000 hogsheads a few years previously.

There is an almost unlimited supply of mahogany and cedar, as well as other valuable woods, awaiting only the return of tranquillity and the providing of better facilities for transportation to the seaboard. As will be noted from the individual exports of the various cities, mahogany has already been an important industry. The ordinary price of valuable timber lands, in tracts of from thirty to forty acres, has been \$1.50 per acre. The price of these lands has fallen to less than half this sum, on account of the insurrection.

Though no attempt at systematic apiculture has been made, the exportation of wax and wild honey have been important industries, as will be seen from the statements of exports. As bees can be busy 365 days in the year, systematic production of wax and honey should become an important industry in this province, as in every other part of Cuba.

Some attempts, in a small way, have been made to introduce the cultivation of hemp, and although conditions seem very favorable, up to the present no great commercial success has been attained; but it is believed by those who have given most attention to the subject, that with proper management and machinery to obtain the fibre, which is said to be of remarkable length, strength, and whiteness, there is no reason why it should

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not prove profitable. In the vicinity of Nuevitas, some 1,800 acres have been planted with sisal hemp.

In the vicinity of the Cubitas Hills, in this province—one of its least explored sections, where the seat of the insurrectionary government was located—are enormous deposits of different kinds of iron ore, such as hematites, chromic iron, and proto-sesquioxides. An American company was formed to work these deposits, but was prevented from carrying out its plans by the insurrection. The location of the deposits is distant two and one-half to twenty miles from any existing railroad, yet the intervening country is open, making railroad building a comparatively simple undertaking. There is, moreover, chromic iron ore in almost inexhaustible quantities along part of the route which has been several times surveyed for the extension of the general railway system of the island from Santa Clara to Santiago.

Large deposits of copper, nickel, and cobalt are said to exist, but their location does not seem to be well defined.

There are said to be deposits of gold and silver in this province, but in recent years there seems to have been no thorough prospecting for them, and the slight indications that have been found are in the beds of rivers and small streams.

There is but one railway in the entire province, which runs from Nuevitas to the city of Puerto Príncipe, forty-two miles in length. This has been an exceedingly profitable property, paying annually 15 per cent. dividends.

There is but one bank in the entire province, its rate of discount in the best of times being 10 per cent. on short time and paper, with the best security. Private individuals have customarily made loans at from 12 to 24 per cent., which excessive rate has been greatly increased during the recent troubles.

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THE CITY OF PUERTO PRÍNCIPE

Puerto Príncipe is the largest inland city on the island, and is the capital of the province bearing its name. It is more frequently referred to by the Cubans as Camagüey, the original name of the city and of that portion of the island which now forms the province. It was founded as early as 1515, and though located in the interior, was for a long time the second city in size on the island. It has a population of over 40,000. It is located at a distance of about thirty-five miles from the northern and forty-five miles from the southern coast. Its seaport is Nuevitas, forty-five miles to the northeast, with which it is connected by a local railway line. It has no other outside railway connection. A small portion of its commerce is conducted through the port of Santa Cruz del Sur on the southern coast, forty-five miles away, but communication therewith is over a difficult wagon road. The surrounding country is the largest grazing district in all Cuba, while much of it is forest land producing valuable woods. Its location is on a broad plain, at an elevation of several hundred feet above the sea level, and all the surroundings are naturally healthful. A prominent writer has called it "the most antiquated town in Cuba, a relic of the middle ages, having narrow, tortuous streets, many being unpaved and without sidewalks." This description is absolutely accurate, and indicates the necessity for public works of every character. In the past, the surrounding country has been noted for cattle raising, and possibly nowhere on earth could the industry be more profitably conducted, although it is now practically destroyed. The population is perhaps the most distinctly Cuban of the entire island, although, like any other city on the island, it has a large share of

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negroes. The buildings are solid, and substantially built of stone and brick in accordance with the earlier Spanish ideas. There is a small stream which runs through the city. Better communications with the adjoining country and to the exterior would do much to develop the city. There is not a hotel in the city and but few cafés. The people are, however, noted for their hospitality to strangers. The township has a population of nearly 60,000.

NUEVITAS

Having a population of approximately 7,000, Nuevitas possesses commercial importance much greater than these figures would indicate, it being the seaport for the city of Puerto Príncipe, the largest inland city in Cuba, with which it is connected by a railroad line, forty-five miles long. It is situated upon a bay of the northern coast which is fifty-seven miles in area. The entrance to this bay is about four and one-half miles long, and is exceedingly narrow. From this entrance extend two bays—one called Nuevitas; the other, Mayanabo—into each of which empty two rivers. In the bays are some good-sized islands, the largest of which is Los Ballenatos (Young Whales). Nuevitas harbor proper is circular in form, about six and one-half miles in diameter. Mayanabo is thirteen miles long and three miles wide. It is somewhat more shallow than the other bay, yet both furnish good anchorage for deep-draught vessels at, say, one or two miles from the shore. The town is situated upon the west bank of the harbor, some fifteen miles from the open sea, and rises from the water upon rocky terraces, so that at the rear it reaches an elevation of about 130 feet. The surface soil is a peculiar clay, which in wet weather makes the unimproved streets of the city

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almost impassable. The natural conditions for health are good, and the climate is, perhaps, the most favorable of any seaport town of the island. There are no swamps in the vicinity. Water is exceedingly scarce, and sells at fabulous prices during the dry season, there being no steady supply. So promising a town sadly needs public improvements of all kinds to aid a growth which is almost sure to come, as the country behind it is rich and productive. There are several plantation and other small railroads in the vicinity, and a short public railroad of five and one-half miles in length, running to San Miguel del Bagá, a suburban town of about 1,400 inhabitants. The north-side coastwise steamships of the Havana Company have sailings for the other ports of the island three or four times each month, and the other coastwise traffic is extensive. A peculiarity of the town is the existence, on its water edge, of a nondescript aquatic tribe, who live in huts erected on poles in the water, and who devote their energies to and are expert in the sponge and turtle fisheries.

FOREIGN VESSELS VISITING THE PORT OF NUEVITAS.

The following tables show the commerce of Nuevitas :

	<i>Vessels.</i>		<i>Tonnage.</i>	
	1892.	1893.	1892.	1893.
Spanish.....	25	19	36,615	20,980
American.....	34	20	11,543	7,534
British.....	35	40	10,403	8,995
Norwegian.....	14	16	4,068	5,900
Swedish.....	3	5	967	1,507
Danish.....	1	0	283	0
Dutch.....	1	0	188	0
German.....	1	9	205	5,881
Totals.....	114	109	64,272	50,797



A NATIVE FRUIT SELLER

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	<i>Destination.</i>			
United States.....	43	30	14,086	11,651
Europe.....	23	29	6,478	8,293
Nassau.....	17	24	576	956
In transit.....	25	18	42,021	25,358
In port.....	6	8	1,011	4,529
Totals.....	114	109	64,172	50,787

EXPORTS TO THE UNITED STATES.

The approximate value and character of the exports to the United States for a prosperous year, compiled from official records, are :

Sugar.....	\$860,000
Molasses.....	105,000
Honey.....	25,000
Beeswax.....	12,500
Hides.....	30,000
Cedar.....	40,000
Sponges.....	1,000
Mahogany.....	2,000
Total.....	\$1,075,500

OTHER CITIES, TOWNS, AND VILLAGES OF PUERTO PRÍNCIPE

The following is a descriptive list of other cities, towns, and villages of the province of Puerto Príncipe, arranged alphabetically :

AGUADA JOSEFINA.—A small, unimportant station on the railroad between Puerto Príncipe and Nuevitas, twenty-two and one-half miles from the seashore terminus.

ALTA GRACIA.—An unimportant hamlet twenty-four and one-half miles from the seashore terminus of the railroad between Puerto Príncipe and Nuevitas.

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BUENA VISTA.—An unimportant hamlet on the railroad line between Puerto Príncipe and Nuevitas, seven and one-half miles from the seashore terminus.

CIEGO DE ÁVILA.—This town lies toward the northern coast, but inland, and is located on the line of the Júcaro-Morón trocha. It is distant from the city of Puerto Príncipe about sixty-five miles. The locality is low, heavily wooded, and exceedingly unhealthy. The population is 1,167. The township has a population of 7,000.

CUBITAS.—An unimportant hamlet on top of the mountain, which was the headquarters of the Cuban Government during the recent insurrection.

JÚCARO.—An unimportant seaport at the southern end of the eastern trocha. The locality is exceedingly unhealthy, and the harbor is unprotected, shallow, and unsafe.

MINAS.—An unimportant railroad town between Nuevitas and Puerto Príncipe. It has a good-sized roundhouse and some other railroad buildings. The population is small, but the name of the town became well known during the recent insurrection, and also during the Ten Years' War.

MORÓN.—This is a somewhat important port commercially, situated on a poor harbor on the northern coast. It has a population of 3,000. The exports are tobacco, sugar, cedar, mahogany, and ebony, which should increase materially in the future. The surroundings are exceedingly unhealthy, and probably cannot be greatly improved. It had much military importance during the recent insurrection, and is the northern terminus of the famous eastern trocha. It is also the terminus of a somewhat important *calzada*.

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The town was partially destroyed during the insurrection. The township has a population of nearly 8,000.

RAMBLAZO.—A small, unimportant station eighteen miles from the seashore terminus of the railroad between Puerto Príncipe and Nuevitas.

SAN FERNANDO DE NUEVITAS.—See Nuevitas.

SANTA CRUZ DEL SUR.—An unimportant seaport town of the southern coast, about fifty miles south of the city of Puerto Príncipe, with which it is connected by an almost impassable wagon road. Its location is a little west of the mouth of the Santa Cruz River. The population is about 1,000. The harbor is not enclosed, and is so shallow that there is only a depth of nine feet at a distance of half a mile from shore, while it is two miles before a depth of twenty-four feet is reached. The town was partially destroyed during the recent insurrection.

The approximate value and character of the exports to the United States in a prosperous year, compiled from official records, are :

Cedar.....	\$102,000
Logwood.....	136,000
Mahogany.....	134,000
Honey.....	2,200
Total.....	<u>\$374,200</u>

CHAPTER XVII

PROVINCE OF SANTIAGO DE CUBA

THE LARGEST PROVINCE OF THE ISLAND.—ITS RICH MINES, AND SUGAR, COFFEE, AND COCOA PLANTATIONS.—THE TOBACCO OUTPUT CHECKED BY THE INSURRECTION.—SYNOPSIS OF THE MINING LAWS AND TAXES.—RATE OF WAGES PAID TO MINERS.—A DETAILED DESCRIPTION OF THE MINES OF SANTIAGO.—THE MANGANESE GROUPS NEAR THE CITY OF SANTIAGO, AND THE CARNEGIE COMPANY'S CONNECTION WITH THEM.—THE IRON GROUPS.—THE FAMOUS JURAGUÁ MINES.—RICH COPPER MINES, WHICH HAVE BEEN ABANDONED.—A GOLD FIELD NEAR HOLGUÍN.—HOW TOBACCO IS GROWN AND CURED.—BAT GUANO.—BARACOA AND ITS EXTENSIVE SHIPPING TRADE.—THE GREAT SHRINE OF COBRE.—THE YARA TOBACCO OF MANZANILLO.—THE CITY OF SANTIAGO DE CUBA.—AN EPITOME OF SPANISH COLONIAL HISTORY.—THE HARBOR.—VITAL STATISTICS OF THE CITY.—COMMERCIAL TABLES, GIVING EXPORTS AND IMPORTS.

POPULATION OF 1887—OTHER STATISTICS OF 1894.

Total square miles.....	13,530	Sugar plantations.....	93
Square miles utilized.....	1,271	Coffee plantations.....	85
Population	272,397	Tobacco plantations.....	2,258
Inhabitants per square mile	20.13	Cattle ranches.....	364
Number of houses in towns	10,949	Number of farms.....	5,301

SANTIAGO DE CUBA is the easternmost province of the island, as well as the largest, and although in many ways less developed than any of the other provinces, it perhaps possesses greater resources and more natural wealth. While very mountainous, its valleys and sea-coasts are extremely rich for agricultural purposes, and,

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at a considerable elevation, the same statement is true of its hills and mountain sides, which present facilities for the culture of certain crops which do not flourish at a lower level. A better idea of this topographical condition than it is possible to give in a written description can be had by referring to any good-sized map. In a general way, it may be said that the southern coast is exceedingly abrupt to the water's edge for nearly its entire length, except where certain harbors and other indentations intervene. There are practically no outlying islands or keys along this coast. The eastern end of the northern, or, more properly, northeastern shore is nearly as abrupt as the southern; but to the westward of this there are outlying islands and keys, and there are more frequent indentations, and some swamps and marshes, especially at the extreme northwest of the province. The western coast, at its southern point, is also abrupt; but further north there is much swamp and marsh land, while there are outlying keys practically along the entire water front. The largest streams of the island are in this province, and it is well watered throughout. There are no railroads crossing it, and but few which run for a short distance inland from important seaports. Good roads are also exceedingly scarce, and practically no means of communication, except bridle paths, exist across a great part of the interior.

The principal portion of the interior of the province is heavily wooded with most valuable timber—mahogany, cedar, ebony, and similar forest products of a rich tropical country. The mineral deposits of its mountains cover a much wider range than those of any other portion of the island, and are undoubtedly richer than the average. This important source of natural wealth we will dwell on in detail. Suffice it to say here, that gold, copper, manganese, mercury, zinc, asphalt, coal, marble, ala-

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baster, rock crystal, and gems are found. It is to be regretted that statistics are not as complete as regards the smaller ports of this province as they are for the city of Santiago de Cuba ; from those given for it, however, some conclusions can be drawn as to the future possibilities of the smaller towns.

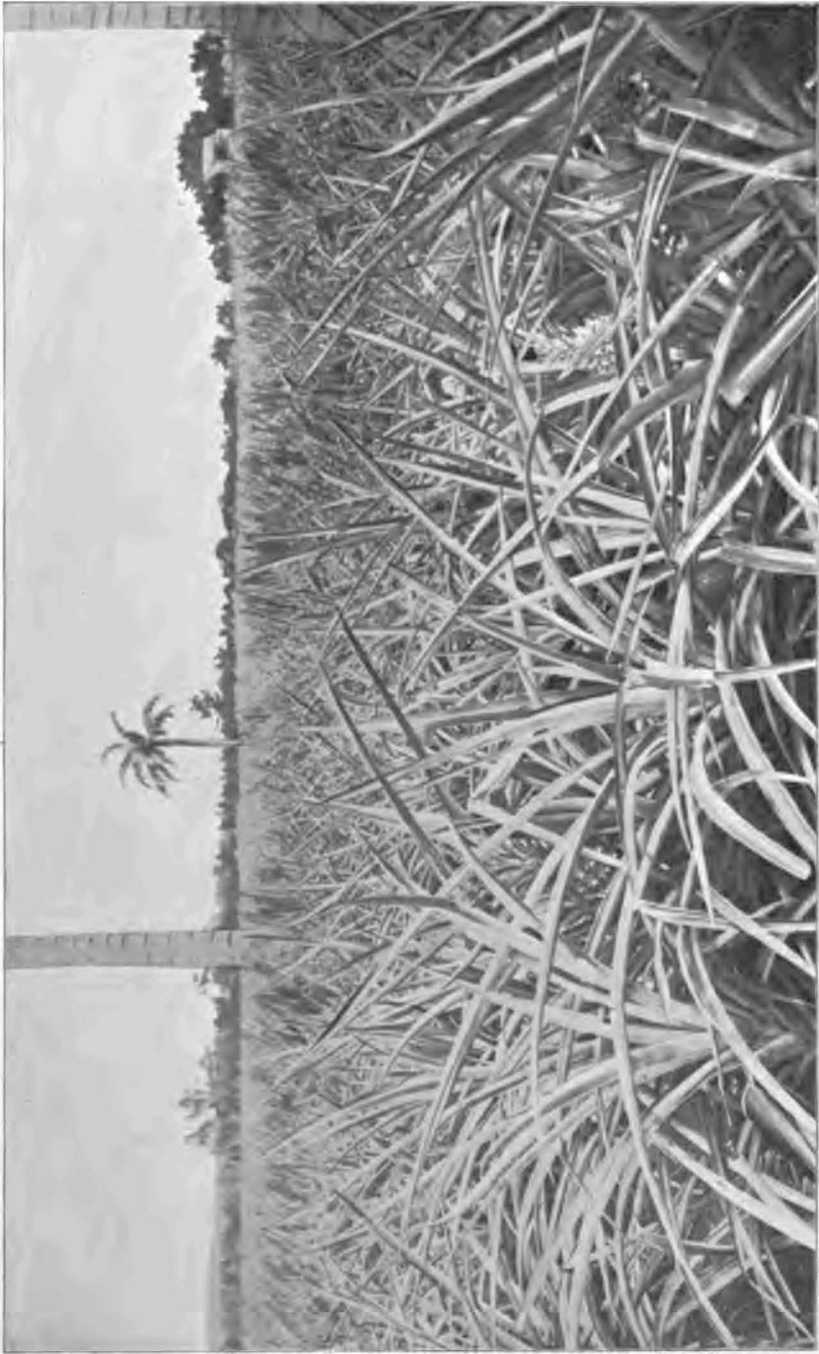
All around the coast of the province, and, to a certain extent, in the interior, are sugar plantations ; while at higher altitudes cocoa and coffee have been produced, though these crops have not been developed as they should have been. The mining industries of the southern coast are already extensive, while along the northern shore there have been numerous fruit-producing districts. The interior presents normal conditions for an enormous and profitable timber trade. Some general statistics, showing the returns from agriculture in the entire province, may prove of interest.

The total output of sugar for a series of years was as follows :

<i>Year.</i>	<i>Tons.</i>
1890.....	76,626
1891.....	64,264
1892.....	98,068
1893.....	90,757
1894.....	111,273
1895.....	94,173
1896.....	63,267

The total tobacco production of the entire province was as follows :

<i>Year.</i>	<i>In Bales of 220.5 lbs.</i>	<i>Year.</i>	<i>In Bales of 220.5 lbs.</i>
1890.....	24,036	1894.....	60,175
1891.....	27,347	1895.....	71,500
1892.....	51,590	1896.....	12,500
1893.....	56,404		



A PINEAPPLE PLANTATION

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The effect of the insurrection on the sugar and tobacco products may be noted for the last year given. Coffee and cocoa production has decreased in even greater proportion from the same cause, being only about one-fifth of what it was formerly. The ordinary production of bananas on the northern coast, averaging about 4,000,000 bunches per year, has shrunk to less than 1,000,000.

The tendency in connection with agriculture, especially as regards sugar, has been here, as elsewhere on the island, toward the merging of the small plantations in the larger ones; thus permitting the construction of larger modern mills and more economical operation. This is illustrated by the statement that in 1868 there were 129 sugar estates in the vicinity of Santiago de Cuba and Guantánamo, while at present there are less than twenty. Nevertheless, the total quantity of sugar produced up to the outbreak of the late insurrection has been as great as ever before. The change in conditions has caused many of the smaller estates to be abandoned from lack of capital properly to develop them. There are doubtless tremendous possibilities in store for those who will purchase and concentrate such properties, erect modern mills, and manage them according to the most improved methods. The statistics of the export of minerals are given subsequently in connection with the city of Santiago de Cuba, but the importance of the mineral deposits seems to warrant a special description of them, so far as the material available makes it possible. In dealing with this subject it will be advisable to separate the locality adjacent to the city of Santiago de Cuba, which is best known, and in illustration of which a special map is given, from the other portions of the province.

In connection with the mineral industries as a

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whole, it should be stated that Spain, in recent years, has departed from its usual policy, and has offered some encouragement to the development of mining. For a period of ten years prior to 1893, and probably up to its evacuation of the province, it has permitted the importation of materials required for that purpose free of duty. The mining laws, while somewhat complicated, have been, on the whole, favorable, being briefly as follows :

The cost of the government title was \$8.75, no matter what its character or extent; then, for iron, a charge was made of \$2 for the first fifteen hectares (a hectare is about 2.47 acres), and fifty cents for each additional hectare. For other minerals, the charge was \$2 for the first twelve hectares, and \$1 for each hectare after the first twelve. Certain charges were also made for engineers' services, a deposit being required to guarantee the survey, the official charge for which was about \$5 each for the first twelve hectares, and \$2 for each additional hectare. For eight years prior to 1891, the government mining engineers' records show that about \$50,000 had been received in fees for mines to which titles had been granted, and about \$15,000 for surveys that had been made, but upon which no titles had been issued. This will give some idea of the extent of the surveys. In 1890 a ground tax was placed on mining lands of \$2 per hectare on iron mines, and \$5 per hectare on mineral land of other character. This was increased 50 per cent. in 1891. It is understood, however, that the ground tax of 1890 did not apply to those for which titles had been granted prior to that date, and that they would be charged only the amount fixed by the law of 1891. Just what construction has been placed on these laws is not known to the writer, or how thoroughly they have been upheld, but the mining laws of 1883, which were the foundation of the development of the mining

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industry, provided that mining lands should be exempt from taxation for a period of twenty years, or until 1903. This law encouraged speculation to its fullest extent, as well as legitimate development; for any one, by merely paying for the government title and the official survey, could obtain ownership of mining claims, no matter on whose property they were located, such titles being granted in perpetuity, no obligation to do work on them being incurred, and exemption from taxation promised until 1903. This law resulted in the filing of a very large number of claims by persons who had no intention of working them. If the more recent laws referred to have been upheld, undoubtedly many titles to such properties have reverted to the original owners, but this is not understood to be the case, and it is believed that the laws of 1883 and of 1887, which were to the same import, were restored in 1893 or 1894. The law of 1890 provided for a duty of 2 per cent. ad valorem on all ore exported.

The revenue received by the Government for the whole issue of titles for the eight years prior to 1891, aggregated about \$15,000, but it is known that a far greater number of concessions were granted during such period than this amount would indicate.

In the development of the mining industry native labor has not been a great factor, although employed to a certain extent, for the Cuban has preferred agricultural pursuits to those of the mines. This has caused, in the past, the importation of Hungarian and Italian labor, as well as some negroes from the United States and the British West Indies. The most numerous class employed, however, has been former Spanish soldiers. The average rate of wages paid was \$1.00 to \$1.50 per day in Spanish silver. The occupation has been shunned to some extent because of the liability of laborers to catch

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malaria by making excavations, especially in the rainy season.

The following is a list of the mining claims of various kinds for which titles have been granted up to 1891, with their extent :

<i>Description.</i>	<i>Mines.</i>	<i>Hectares.</i>
Iron	138	7,737
Manganese	88	4,015
Copper.....	53	1,160
Gold.....	5	232
Asphalt.....	1	60
Zinc.....	3	99
Lead.....	2	166
Quicksilver.....	2	27
Chrome Iron.....	1	56
Coal	2	115
Antimony.....	1	60

It is almost unnecessary to state that while many of the mines covered by the above list are rich in minerals, the fact that title has been secured for others is no indication that they are all equally so.

THE MINES OF SANTIAGO DE CUBA*

MANGANESE ORES

Let us begin with the manganese mines in the vicinity of the port of Santiago de Cuba.

HATILLO MINES.—These are located west of the bay of Santiago, and closely adjacent thereto. They contain 160 hectares and are not considered especially rich.

COBRE GROUP.—These are close to the village of

* The mines referred to on this and the following pages may easily be located on the special mining map.

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that name. There are two of these, together aggregating 186 hectares.

MACÍO GROUP.—These are located on the seacoast, thirty-five miles west of Santiago, at the small port of Macío. There are four of these mines, which occupy a total of 1,738 hectares. The ore is principally maniferous iron, but is stated to contain a large percentage of silica. The location is convenient for water transportation, but the mines have not been developed. In 1891 they were owned by Messrs. Amrich, Duany, and Colás, who, it is said, about that time refused an offer of \$50,000 for them from an American syndicate.

PORTILLO MINES.—These are further westward, near the coast. There are eight of these mines, aggregating 281 hectares. These were worked some six years ago, and shipments of ore commenced to the United States, a total of 700 gross tons having been despatched ; but as the ore contained only 36 per cent. manganese, it was not found profitable to continue operations, so they have been virtually abandoned.

Analysis of Portillo Mines.

Metallic manganese.....	38 per cent.
Silica.....	12 “
Lime.....	6 “
Iron	3 “
Phosphorus.....	.082 per cent.

BONIATO MINES.—These are located inland, four miles from Santiago, on the railroad. There are seven mines, covering 189 hectares. These were owned, in 1891, by Messrs. Baralt, Bosa, Causse, Colorado, Ferrer, and Hereu. At this period four of the mines were being worked, but the ore was said to contain a large amount

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of silica and to be not as good as that of mines further inland.

DOS BOCAS.—There are eleven of these mines, covering 362 hectares, situated about eight miles distant from Santiago, within one mile of the railway station at Cristo. Eight of these mines have been worked, and the quality of the manganese is said to be fairly good. The following are two analyses of the ore :

	<i>Per Cent.</i>			<i>Per Cent.</i>
Manganese binocide.....	82.36		Metallic manganese.....	52.04
Iron peroxide.....	3.10		Metallic iron....	2.16
Silica.....	2.60		Phosphorus .....	.06
Phosphoric acid.....	.113			
Lime carbonate.....	2.0			
Combined water, alumina, etc.	9.81			

MARGARITA.—This group is adjacent to those just described, being one and one-half miles distant from the Cristo railway station. It is presumed that a track has now reached it. There are four of the mines, covering 431 hectares. The owners, in 1891, were Messrs. Portuondo, Jiralde, and Gutierrez. The ore is said to be of good quality, but there is not a large quantity of it. These mines were originally opened in 1887 by an American corporation—the Empire Manganese Company, which leased them, with eighteen others in the same locality. This corporation expended large amounts in opening many of those which they had leased, and otherwise accepted a burdensome contract, which yielded no profit. It was forced into liquidation in 1890. Its first shipment of picked ore to the United States netted \$100 per ton, and was sold for chemical purposes; but, of course, no such average could be maintained, while the expenses, which were as follows, were excessive :

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Royalty.....	\$1.00	per ton.
Cartage.....	1.10	“ to Cristo.
Freight.....	1.27	“ to Santiago.
Packing bags.....	3.25	“
Lighterage.....	.60	“
Water freight to United States....	3.68	“
Cost of mining.....	4.65	“
Total cost per ton.....		
	\$15.55	

QUEMADO.—These mines are located slightly to the eastward of those just mentioned. There are five mines, covering 131 hectares, which in 1891 were owned by Messrs. Ferret, Gutierrez, Equilor, and Jiraldes. Two of these mines were then being worked. The ore is supposed to be of about the same quality as that of the Margarita.

AVISPERO OR BOSTON GROUP.—These are close to the others just previously mentioned. There are ten mines, covering 266 hectares. They were owned in 1891 by Messrs. Causse, Jiraldes, Venturas, Hereu, Colorado, and Rousse. Six of them were being worked at that time. The ore is of remarkably fine quality, and the group was among the mines leased by the Empire Manganese Company, before referred to.

The two analyses made in the United States of ore from the Margarita and Avispero groups are as follows :

<i>Description.</i>	<i>Per Cent.</i>	<i>Per Cent.</i>
Silica.....	5.40	.81
Metallic iron.....	1.64	.30
Metallic manganese.....	54.025	56.888
Phosphorus.....	0.059	0.030
Alumina.....	1.911	
Baryta.....	1.105	
Moisture.....	0.600	2.0
Sulphur.....		0.005

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SAN JUAN GROUP.—These are near the Boston group. The ore is supposed to be of the same quality. They were owned in 1891 by Messrs. Hereu, Rouse, and Jiraldes.

THE CARNEGIE COMPANY'S DEALINGS WITH THE MANGANESE MINES

The vicissitudes of the manganese mines described above, after the collapse of the Empire Manganese Company, mentioned in connection with the Margarita group, is admirably described as follows in a report to the British Foreign Office, made by Her Britannic Majesty's consul at Santiago de Cuba, the late Fred W. Ramsden, which can be considered as describing their general condition up to the time work was discontinued because of the insurrection :

“Some mine owners then began to work the mines themselves, and others hired out their properties to parties desirous of working them, on royalties varying from \$1 per ton to \$1.75 per ton. The mines were then worked somewhat more cheaply, and the cost of the ore landed in the United States from the near mines, including royalties, was reduced to \$10.75 or \$12.50 per ton, according to locality of mine and royalty paid. A fair average of the cost of putting the ore from these mines alongside ship here at Santiago would be \$8.50 per ton to \$9 per ton, in Cuban money, say £1 11s. 6d. to £1 13s. 4d. sterling. The mines further away, such as Ponupo, had to pay a higher rate of cartage, and the cost to this mine was as follows : Mining, \$1.25 per ton ; cartage to railway, \$5 per ton ; royalty, \$1 per ton ; expenses at station and wear and tear of bags, \$2 per ton ; railway freight, \$1.27 per ton ; lighterage and expenses in town, \$1 ; making \$11.52 Cuban money, or £2 2s. 8d. sterling alongside ship at Santiago ; and adding to this, freight to United States, \$3.75 per ton, and shipping commission, and calculating exchange, we have a result of \$14.25 United States currency for the ton of ore laid down there.

“ In this way the total shipments of manganese from these mines to the end of 1889 amounted to 2,646 tons ; those for the year 1890 to 21,810 tons, and 9,487 tons for the year 1891, the falling off in the latter year having been caused by a reduction in the price obtained.

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“All this manganese—I refer to that from the mines in this neighborhood—is sent down to this city by rail, and is shipped to the United States through agents here. The sole purchaser in the States is the Pittsburg firm of Carnegie & Co. At first they were giving 36 cents per unit, which, on manganese of 54 per cent. of metal, and containing only a moderate amount of silica, gave \$19.25 (United States currency) per ton landed, which, of course, left a good profit on the cost of \$14.25 (United States currency), referred to above. It would, however, be hardly possible to ship a cargo of such high-quality manganese as 54 per cent., the usual run being 45 per cent. to 52 per cent. manganese; 2 per cent. to 3 per cent. iron; 2 per cent. to 12 per cent. silica; 5 per cent. moisture; 0.025 per cent. phosphorus. Nevertheless, calculating on manganese of 50 per cent., with 2 per cent. iron, and taking the rate per unit at 32 cents, the result would be \$16.20 (United States currency) per ton of really good manganese, which would always leave a profit.

“The Carnegie Co. very soon reduced their rate to under 30 cents per unit, but finding the miners could not ship at those prices, they had again to raise them in order to get the ore, which will not be shipped at under 32 cents per unit. Finally, their agents here fixed rates in Spanish gold, to be paid to the miners for their ore delivered here in town, and in June, 1891, I find these were as follows :

For 55 per cent. ore	\$14.35		For 49 per cent. ore	\$12.37
“ 54 “ “	14.17		“ 48 “ “	11.49
“ 53 “ “	13.81		“ 46 “ “	10.29
“ 52 “ “	13.45		“ 44 “ “	9.14
“ 51 “ “	13.09		“ 42 “ “	7.56
“ 50 “ “	12.73			

“Any iron in the ore is credited at 10 cents per unit. Silica over 8 per cent. deducted for at the rate of 15 cents per unit. Deduction for moisture at the rate of \$4.50 per ton weight thereof.

“The quality of the ore was determined for the purpose of purchase, by analyses of cargoes made for the Carnegie Company by chemists in the United States, but as these analyses were frequently found to differ from those made, also in the United States, of samples of cargoes taken here by the miners, these latter were much dissatisfied, and Carnegie & Co., therefore, sent out a chemist to reside here and analyze for their purchases. This, however, did not seem to mend matters much, and he was taken away, and the old system resumed.

“Shipments have gone on in this way until now, the quantity

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varying according to the prices paid, but things now look as if they were going to change.

“Attempts have been made to find a market in England for this manganese ore, but it has not been possible, so far, to do anything, owing to the difficulty of finding freight at less than 25s. per ton to 30s. per ton in bulk, and 17s. per ton to 20s. per ton packed in bags, and also owing to the circumstance of not being able to contract with certainty for a specified quantity of ore of a certain quality, as the numerous mine owners are not possessed of means, and might find themselves quite unable to fulfil contracts, for the failure of which there would be no satisfactory redress. . . .

“The Carnegie monopoly would have been broken up long ago had it not been for this last-mentioned circumstance. There were parties in the States willing and able to build furnaces for working this manganese ore and making the ferro-manganese, but they required a contract here from responsible people guaranteeing a certain amount of ore each year, and, for the above-named reason, no one in this place, who could be considered really responsible, cared about taking it up.”

IRON PROPERTIES NEAR SANTIAGO

DOROTEA AND RECREO.—This group is nearest to the city, only five miles away in an easterly direction. In 1891 they were owned by Don J. Vaillant, and were for sale. There are four mines in the group, containing 120 hectares.

SEVILLA AND OCAÑA.—This group, numbering eleven mines and covering 520 hectares, lies next in an easterly direction. Some of them are said to belong to the Jurguá Iron Company, and others to private individuals; those of the latter being for sale. All are near the Iron Company's railroad, which affords excellent transportation facilities.

CARPINTERO AND ARROYO DE LA POZA.—These are still further east, among the great cluster of mines shown thereabouts. There are nine mines, covering 520 hectares. These are said to be for sale.

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ANALYSIS OF CARPINTERO GROUP.

	<i>Per Cent.</i>	
Metallic iron	61.0	to 68.50
Silica	5.0	" 10.50
Phosphorus	0.009	" 0.036
Sulphur	0.045	" 0.148

JURAGUÁ GROUP.—This extensive group of seventeen mines, covering 951 hectares, is principally owned by the Juraguá Iron Company, a powerful, progressive, and well-managed American corporation, which has done more to develop the mining industries of Cuba than all other interests combined. Eleven mines of this group, aggregating 750 hectares, are in its hands. The remainder are owned by private individuals, and are for sale. The group lies about the outer terminus of the Iron Company's railway, which affords the best facilities for water shipment in Santiago harbor. The Juraguá Company, since its establishment in 1884, has continued to produce ore regularly up to the outbreak of the recent war, the ore being all shipped to large iron and steel works in the United States located near the seaboard. Following are the statistics of its output :

	<i>Tons.</i>		<i>Tons.</i>
1884	23,777	1891.....	156,585
1885	80,090	1892.....	326,245
1886	112,780	1893.....	303,865
1887	92,910	1894.....	153,690
1888	204,225	1895.....(approximate)	330,000
1889	258,406	1896.....	" 350,000
1890	357,060		

The Juraguá Iron Company has maintained a fine fleet of iron steamers solely for carrying on its own trade with the United States, and its fine pier, situated in the harbor of Santiago, is probably the best and most convenient loading place in all Cuba.

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DEMAJAYBO.—This is a single mine of 60 hectares in the same locality as the Juraguá group, and is said to be for sale.

MADALENA AND NARANJITO.—This group of eight mines, covering 407 hectares, is located still further east than the others. Four of the mines are said to be owned by private individuals and to be for sale; the others are the property of the Spanish-American Mining Company, which purchased them for \$300,000 in 1889, and which has built a railroad to the small port of Daiquirí, three miles away. It was here that the American army of invasion recently landed. Though its mines are small, the ore is of excellent quality, and considerable outlay has been made by the company to afford cheap facilities for the mining, handling, and transporting of their ore. The port, however, is not a good one, as it is open to the sea; consequently, landings cannot be made in bad weather. The company commenced ore shipments to the United States late in 1894, and since then has made some shipments to England. Its output has, however, not yet reached any large figures.

PROVIDENCIA.—This group consists of three mines located a little farther east, which are said to be for sale.

ECONOMÍA AND RETIRO.—These constitute a group of nineteen mines, aggregating 1,062 hectares. They are said to be owned by various private individuals, and to be for sale. Their location is still further east.

CAJOBABO AND GÜIRA.—These are close to those last mentioned. There are eight mines in the group, said to be owned by Mr. S. Causse, and to be for sale.

BERRACOS GROUP.—This group consists of four mines of 210 hectares, said to be owned chiefly by Mr. S. Causse, and to be for sale. They are said to contain rich ores. The following is an analysis of the ore :

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Metallic iron.....	65.10	to	68.05	per cent.
Silica.....	.065	“	2.49	“ “
Phosphorus.....	.036	“	.042	“ “

In 1889 this group was about to be purchased by an American syndicate for \$230,000 in cash, but at the last moment the transaction fell through. Subsequently, the owners received another cash offer of \$150,000 for the properties, which they declined, but it is believed that they would now be willing to accept a reasonable offer.

UVERA AND JAQUECA GROUP.—This group consists of twelve mines, aggregating 623 hectares. They are owned by private individuals, and are said to be for sale, with the exception of two which belong to the Sigua Iron Company. As will be noted, they are close to those just described.

ARROYO DE LA PLATA.—This group consists of nine mines. Six of the principal ones, aggregating 390 hectares, are owned by the Sigua Iron Company. The location of the group is twenty-five miles from the town of Santiago de Cuba. The Sigua Iron Company was organized in Philadelphia, in 1890, with a capital of \$5,000,000, and purchased these mines on a royalty basis, as follows :

Thirty cents per ton for the first 60,000 tons exported each year. Twenty-five cents per ton for the next 40,000 tons. Twenty cents per ton for anything over 100,000 tons per year.

It also made an advance of \$10,000 to the owners, to be paid out of the royalty.

The mines are excellent, and there are others of the same character adjacent, which could be operated to advantage in connection with the present properties. The company also purchased for \$50,000 a large tract of land, extending for nearly twelve miles along the coast, which included some of its own mines, and some

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new ones not previously under its control ; so that it has great possibilities for extensions in any direction. Its principal mine is situated five miles from the coast, at Sigua, a small port, where it has built a large breakwater to protect the harbor. It has also constructed a large wharf there, and connected it by railway with the mines. It has also built two villages, making altogether expenditures amounting to \$1,550,000. It is said that the Sigua Iron Company could make cheaper shipments than any other American mining company. It began forwarding ore to the United States in October, 1892, shipping 9,400 tons that year. In October, 1893, it shipped 12,700 tons. Internal dissensions, however, arose within the company, which compelled a reorganization. Shortly afterward, operations were abandoned, and have not since been resumed, conditions in Cuba naturally not being attractive to capitalists.

Turning now westward of the harbor of Santiago, the iron mines in that direction are as follows :

NIMANIMA.—This group lies nearest the city in the direction stated. There are seven mines, variously estimated at from 243 to 466 hectares in extent. They are said to be owned by private individuals, and to be for sale.

CUERO GROUP.—These lie a few miles southwest of the Nimanima group, and fourteen miles distant from the city. There are six of these mines, covering 304 hectares. They are said to be owned by Messrs. Roca, Ferrer, and Ferret, and to be for sale.

GUAMÁ MINES.—The Guamá group appears to be an important one. It belongs to Mr. F. Bacardí, and consists of the mines "Old England," of ninety-six hectares ; "Gran Victoria," of ninety-one hectares ; "New England," of seventy-five hectares ; "Pittsburgh," of

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eighty-five hectares; and "All Right," of forty hectares—in all, 387 hectares, or 956 acres. Mr. Ziegenfuss, manager of the Juraguá iron mines, a well-known American authority on such matters, says about the Guamá mines:

"These may be divided into two groups: one group of 171 hectares, comprising the mines of 'Old England' and 'New England,' at a height of 190 metres above the sea level, and two kilometres from the coast. In this group the ore appears at the base on the slope of the hill, while at the very top there is a large deposit twenty-four feet high and forty-three feet at the base. The other group, 216 hectares, is composed of the mines 'Gran Victoria,' at 204 metres above sea level; 'All Right,' at 510 metres, and 'Pittsburgh,' at 344 metres. The summit of the 'Gran Victoria' is crowned with an uninterrupted chain, more than 300 metres in length, of blocks of ore."

The natural port for these mines would be Chirivico, about thirty-five miles from Santiago, and six miles from the nearest mine, with no topographical difficulties between Chirivico and the mines for building a railway. Chirivico is not a shipping port, but could be made one, for navigators report it as having a depth of from twenty-five to forty feet of water, as being protected from winds, and as having a natural breakwater of coral reefs which secures it from the effects of hurricanes.

An analysis of the ore from these mines, made by Mr. Ziegenfuss, is as follows: Metallic iron, 68 per cent.; silica, .08 per cent.; phosphorus, .021 per cent.; and a trace of sulphur.

BAYAMITAS GROUP.—Situated further westward comes another important group, that of Bayamitas, belonging to Messrs. Frederick and Boves. It is located about sixty miles from Santiago, and twenty miles further to the west than the Guamá group, and is near the coast. The mines are, "Catasagua," 220 hectares; "Cachita," ten hectares; "Little Lehigh," forty hectares; "Second Detroit," and "Second Michigan," 100 hectares each.

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Their elevation above the sea level varies from thirty to 1,510 feet, the lowest being that of the "Second Detroit" and the highest at the summit of "Catasagua." The surrounding country is healthy and well watered by the River Bayamita.

A mining engineer who has examined these mines states that there is a very large body of ore, especially in the Catasagua mine, where he traced it for three-quarters of a mile, until he reached the Cachita mine, which is of the same nature; both containing a large quantity of magnetic iron ore of excellent quality. The "Second Michigan" is also well spoken of, and its ore is also magnetic. The "Little Lehigh" contains a large body of red hematite. The first ore to be seen on the Detroit mine is three-quarters of a mile from the coast, and thirty feet above sea level, and the grade is easy over this and the Michigan mine. The other three would probably be better operated by means of inclined planes and wire rope until reaching a point where a railway system would be cheaper.

The output of all these mines could be brought through the Detroit mine to the bay of Papayo, five miles distant from it, in the direction of Santiago. The bay is stated to be large enough for two steamers of 4,000 tons each at once, with a depth of from twenty-three to twenty-seven feet of water; and a good breakwater could be made on a reef which lies in front of the entrance.

Six analyses of these mines show as follows :

	<i>Per Cent.</i>					
	66.	64.	58.	72.	63.	61.
Metallic iron...	66.	64.	58.	72.	63.	61.
Manganese.....	6.55	4.52	1.25	8.40	3.65	2.25
Alumina.....	.05	.46	3.80	.55	1.70	.90
Lime.....	4.46	10.28	10.44	6.55	10.85	12.95
Silica.....	16.10	16.36	18.35	10.	14.30	16.28
Sulphur.....	.80	.255	2.148	.50	1.855	1.102
Phosphorus.....	Trace	.125	.002	Trace	.045	.018

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LAS VEGAS.—These lie still further to the west. They contain 407 hectares. Little information regarding them has been obtained.

COPPER MINES

Still keeping to the west of the city of Santiago, the copper mines may now be taken up, as follows :

COBRE.—This group is closely adjacent to the town of the same name. The mines were formerly successfully worked by an English company, and large quantities of rich ore taken out, but being troubled with a great influx of water, were abandoned some years since, so far as actual mining is concerned. The water, however, which flows from the openings made, was discovered to hold a large quantity of copper in solution, and for several years back a Cuban corporation has utilized this to a small but profitable extent, by passing such water through sluices filled with scrap iron, upon which the copper deposits.

There is said to be, in this district, one of the largest veins of copper in the world, and at the time when it was worked shafts were sunk to a depth of 1,100 feet. A competent English mining engineer, who has examined this locality in recent years, states that unquestionably there are still large quantities of rich ore in existence which it will pay to work, despite the troubles which have been experienced from water. Various American syndicates have, during the past few years, entered into negotiations with a view to purchasing the property, which, however, were not successful. There is still a good chance that this district may again become famous for its copper ore.

PINAR MINES.—These are southwest of Cobre, between it and the coast. They were worked to a slight extent some years ago, but never very successfully.

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SEVILLA MINES.—These lie still further west, and are marked No. 3 on the mining map. These are said to be quite extensive and rich mines, but have never been thoroughly investigated.

Now, returning east and northward of the city, on the line of the railway to Cristo, at a distance of two miles, the mines are as follows :

SAN PEDRO GROUP.—There are six mines in this group, comprising 193 hectares.

CANEY GROUP.—These lie but a short distance from the San Pedro group, in an easterly direction. There are seventeen mines in all, covering 511 hectares. It is said that the deposits of copper are large here, but they have never been worked.

OCAÑA MINE.—This is a single mine, situated due east from the city at a distance of nine miles, near the properties of the Juraguá Iron Company. It covers sixty-five hectares.

GÜIRA MINE.—This is a single mine, situated sixteen miles east from the city, and covers twenty hectares. The ore is said to contain some gold.

PIPO MINES.—These are still further east and slightly further inland. They cover about sixty hectares.

AFRICAN MINE.—This lies three miles north of the Pipo mines. It covers thirty-six hectares, and is located at a high elevation on the Sierra Maestra range.

It may be said in a general way of copper mining in this locality that it has not been popular of late years; and of the mines mentioned and certain others, that there is some uncertainty about titles. Nearly all of those mentioned have been worked to a greater or less extent in the past, and there is undoubtedly good copper in nearly all of them.

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LEAD MINES

LOMA DE GATO MINES.—These are situated about twenty-five miles west of the city and five miles from the coast. They are known as “Washington” and “Jehovah.” The amount of work done has uncovered an ore vein about twenty inches wide at the top, containing lead, zinc, and a little gold. The following is an analysis of the ore :

	<i>Per Cent.</i>	<i>Oz. per Ton.</i>	<i>Per Cent.</i>	<i>Oz. per Ton.</i>
Lead	46.	.....	46.60	
Zinc	14.34	.....	12.50	
Silver .....	.....	19	.....	22
Gold .....	.....	$\frac{8}{100}$	.....	$\frac{8}{100}$

Various American promoters have endeavored to capitalize this property, but without success, and probably no development has been made.

TRAS CORRALES.—This mine is said to be rich in argentiferous galena, but has not been thoroughly investigated.

MINES OUTSIDE THE VICINITY OF SANTIAGO DE CUBA

The iron mines which are situated at a considerable distance from the city of Santiago de Cuba are as follows:

TURQUINO MINES.—These are not far from the coast, adjacent to Turquino Mountain, and are said to have extensive deposits of ore; but no information is obtainable about them, and it is probable that no titles have ever been taken out for them.

MOA MINES.—In this locality, on the northern coast of the province, is a large extent of country reported to contain iron ore, which has been worked to some extent,

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but has been abandoned owing to the comparatively large amount of titanium contained in the ore. The locality, however, is situated very favorably for shipment.

The following is an analysis of the ore from this group:

	<i>Per Cent.</i>		<i>Per Cent.</i>
Metallic iron	43.43	Manganese.....	0.21
Titanic oxide.....	4.09	Chromic oxide.....	15.31
Silica.....	4.19	Phosphorus .....	.024

On the north coast also are said to be deposits of chrome iron, but title has been granted for only one mine of fifty-six hectares. None of these deposits have been worked.

OUTLYING MANGANESE MINES

There are many manganese mines in the province covered by the mining map, principally lying north of the city of Santiago. The most important of these is the Panupo group, lying sixteen miles northeast of Cristo; the railroad from Santiago having been recently extended thereto. There are seven of these mines, covering 301 hectares, and the ore is of excellent quality. An English mining engineer, who has carefully examined two of the mines, gives it as his opinion that they contain at least 120,000 tons of ore, while there is probably much more, as the remaining five mines were not covered by his investigation.

These mines, it is said, have been leased by an American company, who are to pay a royalty of 9 per cent. on the value of the ore that they take out, shipped without washing, and 7½ per cent. on ore that may be washed before shipment. They claim that they can lay this ore down alongside ship in the harbor of Santiago at a cost not exceeding six dollars per ton.

RAMOS AND SABANILLA GROUP.—This group is situ-

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ated a short distance northeast of Panupo, and consists of three mines, covering 132 hectares. They are believed to have not been opened.

SAN ANDRÉS GROUP.—These mines are situated six miles from the Dos Caminos railway station, on the railroad from Santiago de Cuba to Sabanilla. There are five mines in the group, aggregating 156 hectares, said to belong to Messrs. Rouse, Gonzales, Palencia, and Bory, and are for sale. Two of them have been worked.

SANTA FILOMENA.—This group, consisting of two mines of 120 hectares, not yet opened, is not far from the Cobre group, westward of the harbor. They are considered unimportant.

BUEYCITO.—This is said to be a somewhat important group, situated thirty miles west of Manzanillo, which will naturally be its port for shipment. But few titles to mines have, however, been taken out in this locality, and, while they have been examined by representatives of American syndicates, no development has been made. Their successful operation would necessitate the construction of a railroad from the mines to Manzanillo, which has been contemplated, and which should unquestionably be built.

GOLD

A somewhat extensive gold field has been known for a long time to exist in the northwestern corner of the province about Holguín, but it has never been successfully worked.

An English mining engineer, who came out expressly to examine these deposits, reported, according to Consul Ramsden, "that the grains of gold were too minute and too much disseminated throughout all the rocks to be worked at a profit."

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Consul Ramsden's report continues :

“He found the alluvial part of the deposits to contain gold to the value of 40 cents (1*s.* 9*d.*) per ton, but there was not sufficient water to allow the plan of California hydraulic working, which mode, also, would not take out nearly all the gold, owing to the extreme minuteness of its grains, and that chlorination would be the only way to obtain a full percentage. He accounts for the presence of this alluvial gold by degradation of the rock, and very small veins of quartz and calc spar traversing the magnesian and serpentine formation in the irregular network. He examined one of the old shafts, and could not discover a regular vein, but found the gold scattered among magnesian limestone and serpentine or talcose rocks, and too much so to be worked to advantage. His opinion was that, so far, only small ramifications, and no true vein, had been found, and that, until such a vein was discovered, it would not be prudent to expend capital for working the mines. I may add, however, that his investigations were confined to two places, and that, owing to the difficulty of getting the water out of the shafts without adequate means, and the fact that the owners were not inclined to spend more money on investigations, his examination was by no means as thorough as it should have been, and I am still under the impression that one day, when the matter is properly taken up, these mines will prove to be valuable, the more so as the transport of the ore will be easy, now that the railway is completed from Holguín to the port of Gibara.”

QUICKSILVER

This valuable mineral is frequently found in ravines and water courses, but no large deposits of the ore itself have ever been found, nor does there seem to have been any serious attempt to prospect for it.

COAL

It is claimed that there are large deposits of coal throughout the entire province, especially in the interior, but, so far as discoveries have been made, they are all in places at present difficult of access, and great doubt exists as to whether it is actually coal or a form of lignite.

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Where it has been attempted to use it practically, objection has been made to the quantity of sulphur and earthy matter which it contains.

A deposit of coal has been found twenty-five miles north of the Dos Caminos railway station, or about twenty-five miles northwest of Santiago. The analysis of a sample sent to the United States is as follows :

	<i>Per Cent.</i>	<i>Remarks.</i>
Moisture.....	13.20	Specific gravity, 1.368. One cubic yard weighs 2,303 lbs. This sample is fairly black ; when powdered it contains visible layers of pyrites and no appreciable bitumen.
Volatile combustible.....	47.76	
Fixed carbon	27.04	
Ash	9.12	
Sulphur	2.88	

It is said, however, that since the sample was analyzed the mine has been more thoroughly opened, and that the quality of the coal has greatly improved. The geological formation in the locality, as elsewhere, is said to be favorable to coal deposits.

PETROLEUM

Thirty-three miles east of Manzanillo a good deal of raw petroleum trickles out of the rocks, as it does out of those of other portions of the island, especially in the country north of Manzanillo, toward Bayamo. No borings or other tests have, however, been made to indicate the quantities which could be obtained in a practical way, nor have tests been made of the quality, although the crude product is exceedingly clear and clean in appearance. It is said that in the streets of Manzanillo itself there are places where it bubbles up.

TOBACCO

Tobacco is widely cultivated in this province ; there being, as we have already shown in our summarized statis-

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tics, 2,258 plantations devoted to its growth. While it is not the chief source of wealth here, as it is with the inhabitants of Pinar del Río, and while its quality is not so fine, yet the crop meets with a ready demand for export to some foreign countries which show a preference for it at its market value. Much of it is made into cigars for local consumption, while some of it is used for working up with the more highly estimated varieties of Cuban tobacco.

The following interesting account of the cultivation and the curing of tobacco in this province is taken from an official report, and is given here in order that the Santiago methods of handling it may be contrasted with those previously quoted in Chapter XI and Chapter XV :

“ Tobacco is cultivated in this consular district on the same principle as the Vuelta Abajo, only, owing to the cheap price it brings, the plants are not as carefully selected, and when ripe for drying the whole plant is cut at once, instead of as in the Vuelta Abajo, where leaf by leaf is taken as soon as ripe.

“ The fact of taking at once the whole plant naturally deteriorates the quality, as some leaves are riper than others ; and all undergoing the same process of drying at the same time, some leaves undergo more curing than others, which spoils them.

“ It would be well here to give a description of the mode of cultivating and curing the tobacco, as practised in this province of Santiago de Cuba. Care is taken to choose level land, if possible, near some running stream. Light sandy subsoil, with rich alluvial soil, is necessary. Guano is never employed, as it is in the Vuelta Abajo, to supply the defects of the soil ; and it is asserted by people well informed on the subject that fertilizing tobacco fields in this manner gives to the leaf a peculiar aroma which is not agreeable.

“ As the young tobacco plants when replanted are extremely delicate, care is taken to free the soil from all living vegetable matter, break up all lumpy earth, and remove all stones. The tobacco is sown in November in what is called the *semillero*. After the young plants have grown to a proper height, which takes about fifty days, they are transplanted. This transplanting has to be done when the soil is soft, as should the smallest root of the young plant be damaged,

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it will die. The young plant is then carefully transplanted in the field which has been prepared for its reception as described. The distance left between each plant is about eighteen inches. Then the plant is left to itself, and although not needing much irrigation, light showers are necessary to further its growth.

“ From the 15th of March to the 15th of April the tobacco is cut, not as in Havana, leaf for leaf and the leaves at once assorted, but the whole plant is taken out and conveyed at once to the drying houses, where it is suspended on long poles placed horizontally for thirty to forty days, according to the weather, in order to cure it. In very damp weather, even fires are lighted in these drying houses to prevent the leaves from sweating. Then for four days the plants are put in heaps in rooms (where there is no ventilation) to produce a second fermentation and kill all resinous matter which is natural to the plant. The second fermentation gives a uniform color to the leaves. After these processes the leaves are stripped from the stalks and bunched (*manogados*) and baled, of course after being properly assorted.”

Much of the tobacco from this section is worked up with the Vuelta Abajo tobacco, and there is a constant demand by cigar manufacturers in Germany for the unmixed leaf of this province. The best quality is said to be raised in the vicinity of Gibara, or perhaps near Mayarí, while that raised in the vicinity of Manzanillo is also of fine quality. The quality of Sagua tobacco does not rank much higher than that of Gibara.

There are a number of cigar factories in the city of Santiago de Cuba, and while their product does not enjoy the reputation of Havana-made cigars for finish, they are popular with strangers who visit the city. At Manzanillo, among other factories, is the large Gordilla factory, noted for the fine quality of its goods.

BAT GUANO

Bat guano, though a somewhat strange commodity, may prove to be the basis of an important industry of the future. Many of the caves with which the province

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is filled have extensive deposits made by the innumerable bats which inhabit them. No special attention has ever been given to the development of this industry, although it is said that a total of 600 tons has been shipped to the United States.

THE CITY OF SANTIAGO DE CUBA

Situated at the centre of the eastern seacoast, on a magnificent landlocked bay, Santiago de Cuba is probably the third port of commercial importance on the island, although certain recent writers claim for it the second place. The full title is frequently abbreviated into simply Cuba or Santiago; the normal population has been over 40,000, but under American occupation will doubtless increase rapidly. Santiago is the capital of the province which bears its name, and is the centre of a rich agricultural and mineral district which is tributary to it alone, there being no railroad system or good wagon roads which extend beyond its contributory area. The local railway system at present consists of about thirty miles of track, branching right and left a few miles out of the city, and reaching the more important points in the immediate locality. Yet it will doubtless be the nucleus from which will grow an extensive system, stretching westward to meet the present trunk lines of the island, which now come no further east than Santa Clara, more than 200 miles distant. The Juraguá Mining Company has, in addition to the local system mentioned, about twenty miles of railway, connecting a few long iron piers on the harbor with the company's mines, and used entirely for the transportation of iron ore, except for some slight local traffic along the line. It is in the vicinity of a portion of this road that the more important recent military operations resulting in the sur-



STREET IN SANTIAGO DE CUBA, LOOKING DOWN HILL TOWARDS THE HARBOR

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render of Santiago to the United States troops occurred. Across the bay is the indifferent tramway line to Cobre, already mentioned.

Santiago was founded in 1514, and is the second city established by the Spanish in Cuba. Famous names in early American history are linked with it—De Soto, Diego Columbus, Velasquez, and others. De Soto was its first governor. Much of the town still shows the solid character of its original construction, but in those portions of the city built after the destruction wrought in the Ten Years' War, and in the suburbs to a great extent, the buildings are cheap, shabby, wooden structures. The streets are narrow and hilly; and, where any attempt has been made at pavement, are exceedingly rough. Elsewhere they are filled with ruts and mud-holes, and all are filthy beyond description, except so far as they have been recently cleaned by the United States military authorities. While the surrounding mountainous country is naturally healthy and comparatively cool for the latitude, Santiago is considered an exceedingly hot and unhealthy city. The high temperature is caused by its being so much shut in by mountains, which keep off most of the sea breezes; the unhealthy conditions arising principally from the neglect of all sanitary measures and precautions. From this combination of natural and artificial circumstances, a condition has arisen which it may be found impossible to remedy entirely, for the drainage of the town for over 380 years has all gone into the harbor, which is so completely landlocked that little, if any, of the sewage is carried out to sea. This has resulted in an accumulation of disease-breeding filth in the bottom of the bay that it seems impossible to remove. So far as the construction of a system of sewers for the city itself is concerned, the problem is simple enough, for it slopes quite rapidly upward from the

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water's front ; but the proper disposal of sewage from that point, at a reasonable cost, is a most serious matter. The city has a good water supply, furnished through an aqueduct named El Paso de la Virgen. This, it will be recollected, was cut by the American troops during the recent siege. There are gas works adequate for the town's present necessities, but no electric lighting plant or street railway. The success of the former would be more than probable ; of the latter, doubtful ; the shape of the town not being favorable, while the expenses of construction and operation in the steep, narrow streets would be excessive.

There are many good cafés in the city, but no hotel worthy of the name. There are a few good clubs, among which is a fine Spanish casino, as usual in all good-sized towns of the island ; a prominent Cuban club, and last, but not least, the Anglo-American Club, the most comfortable and hospitable abiding place for one of Anglo-Saxon blood in all eastern Cuba. The Anglo-American Club has less pretentious quarters than some of the others, but it excels in cleanliness in a country where this virtue is hardly to be expected. That its membership may increase, that its treasury be filled, and that continued harmony may prevail among its members, is the best wish of the writer. The cathedral, one of the oldest and largest edifices of its kind on the island, stands on one side of the Plaza de la Reina. It has suffered from earthquakes several times in the past, and, consequently, has been repaired, extensively, if not entirely rebuilt. This is the metropolis of the Roman Catholic Church in Cuba, the Archbishop of Santiago being the Primate. The remains of Velasquez are said to be buried here. Adjoining the plaza are also the more prominent government buildings, the military headquarters for a district, the best hotel, and a number

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of cafés. The streets reaching the square are narrow and unprepossessing in appearance.

From the situation of the city, it can be readily understood that the retail trade is large. This is divided among many small stores running into the square. At the rear of the city, at a considerable elevation, is the Campo del Marte, which commands a superb view of the bay and surrounding mountains. The most fashionable street and drive is the Paseo de Concha. So many descriptions have recently been published of the harbor of Santiago, as well as the city itself, that it seems unnecessary to give many more details. It may be stated, however, that the harbor is about five miles long, and that the city is situated on the northeast side, about four miles from the narrow entrance. The greatest width of the harbor is about three miles; from the city directly across it is a distance of about half a mile. There are piers jutting into the harbor from the water front, but vessels drawing over ten or fifteen feet of water cannot tie up to them; consequently, most of the foreign traffic is conducted by lighters to and from the larger craft anchored several hundred feet from shore. An exception to this, however, should be cited in the case of the shipment of iron ore, which is made from the magnificent iron pier of the Juraguá Mining Company, at which the largest steamers can safely lie. A number of streams empty into the harbor, the principal one of which is the Caney River. The difference in tides between low and high, as elsewhere in Cuba, is only about two feet. The city is said to contain about 5,100 houses; the surrounding fortifications will, of course, all be interesting to American visitors, but those of early Spanish construction in the vicinity, especially the Morro, at the mouth of the harbor, will always prove the greatest attractions. It should be remembered that Santiago is in that portion of the district most afflicted

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by hurricanes. These usually come in September and October. It has also suffered more than any other city in Cuba from the effect of earthquakes.

VITAL STATISTICS.

It may be interesting to go somewhat more thoroughly into this question than the brief reference which has been already made. For ten years prior to 1891 the average annual death rate from all causes was 33.3 per thousand among the inhabitants. Except for 997 who died from an epidemic of smallpox in 1887, the annual average on a ten years' period would be 29.8 per thousand, which, it will be noted, is little above the average in certain American cities. During the period quoted, the deaths from yellow fever averaged only 12.5 persons per year, or only slightly over one per cent. of the total. The minimum number of deaths from this cause in any one year was 5, and the maximum, 25. As elsewhere in Cuba, the deaths from consumption were many times as great.

It is to be regretted that figures are not obtainable of deaths from all causes in 1892, 1893, and 1894, but for the two years following the totals were as follows :

	<i>Civilians.</i>	<i>Military.</i>	<i>Total.</i>
1895.....	2,176	634	2,810
1896.....	3,578	423	4,001

There is some uncertainty as regards the civilian population of the town during these years, but estimating it at 42,500, the death rate among them will be seen to have been 51.20 per thousand in 1895; 82.77 per thousand in 1896. These are very high rates indeed, but are principally due to the horrors of war and reconcentration. In 1896, there were also 509 deaths from smallpox.

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During the five years just referred to, deaths from yellow fever alone were :

	<i>Civilians.</i>	<i>Military.</i>	<i>Total.</i>
1892.....	5	1	6
1893.....	..	4	4
1894.....	35	21	56
1895.....	66	578	644
1896.....	14	358	372

The enormous increase of the last two years is attributable to the great influx of unacclimated troops from Spain, who were so susceptible to the disease that epidemics were the result. It should be said in connection with this disease that the refrigerating process for its treatment, now coming into prominence, is the invention of Dr. García, of Santiago, and was first tried there by him about five years ago.

ICE.

There is an ice factory here, but until recently it has charged \$2.50 Spanish gold per 100 pounds at wholesale and \$5 per 100 pounds at retail. The native Cubans use but little, if any, of the commodity; the entire consumption being by Spaniards and other foreigners. It is said that there has been but one refrigerator in the city. As elsewhere in Cuba, meat is eaten as soon as killed; poultry is sold alive; and fruits eaten as soon as brought to market.

PACKING GOODS FOR IMPORT.

The methods of distributing goods after reaching this port are : (1) by small steamers which deliver them at minor points along the coast; (2) by railroads (two in number) that reach twenty-five miles each to the interior; and (3) by pack horses and mules. A large pro-

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portion is conveyed by the last method. These animals carry from 200 to 225 pounds of merchandise, which should be divided so that equal weights may be placed on either side of the horse or mule. The 200 or 225 pounds may be in two or more packages, but should be capable of nearly an equal division. Long packages are not desirable for this trade. No complaint is made of any form of package, provided it be strong and as light in weight as is consistent with strength. There is no necessity for waterproof packages, as goods are not exposed, except those transported on animals, and each horse or mule is provided with a waterproof covering.

COMMERCE OF SANTIAGO.

The following tables show the commerce of the port of Santiago :

NUMBER AND NATIONALITY OF VESSELS IN FOREIGN TRADE VISITING SANTIAGO DE CUBA.

NATION-ALITY.								PROPORTION EACH OF STEAM AND SAILING VESSELS, LAST TWO YEARS.			
	1890	1891	1892	1893	1894	1895	1896	Steam. 1895	Sailing. 1895	Steam. 1896	Sailing. 1896
British.....	149	144	178	158	96	137	121	127	10	117	4
Spanish.....	182	187	169	170	172	116	192	111	5	183	9
American....	62	87	80	80	80	51	71	24	27	55	16
Swedish and Norwegian.	17	6	9	11	12	16	7	16	.....	6	1
Haytian.....	2	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
French.....	.....	2	.....	1	.....	.....	.....	.....	.....	.....	.....
German.....	4	1	.....	.....	17	9	11	9	.....	11	.....
Belgian.....	.....	.....	.....	.....	.....	7	15	7	.....	15	.....
Russian.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	.....
Grecian.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1	.....
Venezuelan..	.....	.....	.....	.....	.....	1	.....	.....	.....	1	.....
Totals....	416	427	436	421	377	338	418	294	44	388	30

PROVINCE OF SANTIAGO DE CUBA

TONNAGE.

NATIONALITY.	1890	1891	1892	1893	1894	1895
British.....	175,527	133,580	196,357	201,533	102,937	186,137
Spanish.....	218,365	283,347	226,448	231,390	238,862	209,532
American.....	180,077	96,088	88,654	100,204	97,611	34,051
Norwegian.....	16,193	2,358	4,322	4,677	5,605	7,114
Haytian.....	290	.....	.....	146	.....	.....
French.....	.....	864	.....	903	.....	.....
German.....	4,007	1,513	.....	.....	25,713	12,590
Belgian.....	.....	.....	.....	.....	.....	12,607
Russian.....	.....	.....	.....	.....	.....	765
Grecian.....	.....	.....	.....	.....	.....	92
Venezuelan.....	.....	.....	.....	.....	.....	.....
Totals.....	594,459	517,750	515,781	538,853	470,728	462,888

TONNAGE.

NATIONALITY.	1896	PROPORTION EACH OF STEAM AND SAILING VESSELS, LAST TWO YEARS.			
		Steam. 1895	Sailing. 1895	Steam. 1896	Sailing. 1896
British.....	166,727	181,816	4,321	165,428	1,299
Spanish.....	287,766	207,309	2,223	285,178	2,588
American.....	101,351	19,100	14,951	92,688	8,663
Norwegian.....	3,976	7,114	.....	3,208	768
Haytian.....	.....	.....	.....	.....	.....
French.....	.....	.....	.....	.....	.....
German.....	14,578	12,590	.....	14,578	.....
Belgian.....	27,015	12,607	.....	27,015	.....
Russian.....	.....	.....	765	.....	.....
Grecian.....	.....	.....	92	.....	.....
Venezuelan.....	1,500	.....	.....	1,500	.....
Totals.....	602,913	440,536	22,352	589,595	13,318

The large proportion of vessels under the British flag is to a great extent accounted for by the fact that practically all of the steamers used or owned by the American mining companies, in their trade with the United States, have a British registry.

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In the foregoing is, of course, not included statistics on coastwise traffic, of which, it is to be regretted, there are no statistics available. There is, however, a greater number of arrivals and clearances annually of craft engaged in such local trade than of vessels engaged in foreign commerce; while their tonnage has also reached a very large figure, although not so great as the other.

TOTAL ANNUAL VALUE OF EXPORTS.

The official figures of exports given include those for both Santiago and Guantánamo, and there is no available means of disentangling these returns, which are approximately as follows:

<i>Year.</i>	<i>Value.</i>	<i>Year.</i>	<i>Value.</i>
1890.....	\$6,070,000	1894.....	\$6,066,000
1891.....	4,550,000	1895.....	6,765,000
1892.....	5,570,000	1896.....	4,943,000
1893.....	5,539,000		

The approximate value and character of the exports to the United States in a prosperous year, compiled from official records, are:

Sugar	\$1,380,000
Iron ore.....	180,000
Beeswax	16,000
Honey	4,000
Mahogany.....	18,000
Lignum-vitæ.....	9,400
Lancewood spars.....	500
Cedar.....	12,000
Majagua wood.....	100
Manganese ore.....	14,000
Hides.....	2,400
Tobacco.....	2,700
Cocoa.....	5,000
Molasses.....	3,800
Cigars.....	500
Palm leaf.....	3,650
Total.....	\$1,652,050

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SUGAR.

Exports of sugar from the port of Santiago de Cuba, and average price of same :

<i>Year.</i>	<i>Tons.</i>	<i>Price per 100 lbs.</i>
1890	13,065	\$2.69
1891	12,250	2.98
1892	15,784	2.79
1893	14,015	3.18
1894	19,494	2.83
1895	21,575	1.98
1896	3,117	2.37

Local consumption is small, having averaged only about 700 tons per annum in the entire province ; so the above statement can be considered fairly to represent the entire annual sugar production of the immediate vicinity about Santiago. Over 90 per cent. of each year's crop has gone to the United States, such percentage continually growing larger.

Following is a partial list of the sugar plantations in the vicinity of Santiago de Cuba, with an approximation of their annual crops :

	<i>Tons.</i>		<i>Tons.</i>
Belleza	900	San Luis	1,500
California	500	San Sebastian	1,400
Hatillo	1,500	Santa Ana	1,400
Palmarejo	600	Sileno	200
Palmira	300	Unión	3,500
Sabanilla	1,200		

RUM.

This is an important article of commerce wherever sugar is grown and manufactured, being practically a by-product. At Santiago, the rectifying and distilling of the raw product, both for home and foreign consumption,

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has become an important and profitable industry, utilizing, as will be noted below, a good share of the ingredients of the wash produced on the plantations of the immediate vicinity, as well as much that comes from other localities.

The following are the statistics of the crude product in the locality of Guantánamo, as well as of Santiago itself, for the past few years; the ordinary unit of the trade is the puncheon of 125 gallons:

YEAR.	Total Product in Gallons.	Gallons Exported.	Gallons Utilized Locally.	Average Price per Gallon.	Portion of that Exported Shipped to England.
1890	759,375	507,500	251,875	\$.22	267,250
1891	618,875	464,375	154,500	.25	415,875
1892	750,000	506,125	243,875	.28	161,000
1893	750,000	366,500	383,500	.43	135,125
1894	750,000	340,500	409,500	.32	None
1895	750,250	283,750	466,500	.16	None
1896	313,250	340,375	Unknown	.44	None

The charge made for the puncheon itself, in which shipments are made, is about \$10.

In 1892, Spain took 562 puncheons; Germany, 433.

In 1893, 151 were shipped to Spain.

In 1894, 710 went to Germany.

In 1895, 272 were exported to Spain.

In 1896, 135 went to Spain.

Owing to the low prices prevailing in 1895, but little rum was made on any of the plantations, while, as naturally would be expected, the product had been curtailed somewhat as the result of the insurrection. The apparent discrepancy between the total product of 1896 and the exports stated for that year, is explained by the fact of there having been a stock on hand from previous years.

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TOBACCO.

Annual production of tobacco, and average price of same in the districts of Santiago and Palma centring about the port of Santiago de Cuba :

<i>Year.</i>	<i>Pounds Produced.</i>	<i>Average Price per Pound.</i>
1890	600,000	\$.117
1891	650,000	.102
1892	229,000	.091
1893	320,400	.057
1894	567,500	.067
1895	300,000	.067
1896	100,000	.088

Ordinarily, the local consumption would be nearly 600,000 pounds, some of which, as well as that exported, being grown outside the immediate district, whose product is above given.

In 1890, there were 3,776 bales of 100 pounds each exported, nearly all going to Germany, which affords the best foreign market for this particular quality of tobacco. There were 4,208 bales exported in the year 1891; 2,290 bales in 1892; 3,204 bales in 1893; 5,675 bales in 1894; only 328 bales in 1895, all to Germany; and 1,048 bales in 1896, all to Germany. In 1895, however, there were also 156 bales, and in 1896, 793 bales, shipped to local ports.

COFFEE.

The following is the production of coffee in this district :

<i>Year.</i>	<i>Pounds Produced.</i>	<i>Average Price per Pound.</i>
1890	2,087,390	\$.148 to \$.207
1891	739,400	.207 to .212
1892	761,500	.149
1893	1,418,500	.21
1894	3,390,400	.15
1895	3,849,800	.18
1896	1,801,500	.151

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None of this was exported, the local demand of the island absorbing it all. Coffee raised in this district is, of course, an important item of coastwise traffic. The usual unit of shipment and commercial designation used in connection with the coffee trade is the quintal, of 100 pounds.

COCOA.

The following is the production of cocoa in this district :

<i>Year.</i>	<i>Pounds Produced.</i>	<i>Average Price per Pound.</i>
1890	1,484,200	\$.19
1891	1,135,100	.186
1892	1,161,100	.162
1893	962,500	.171
1894	1,453,200	.117
1895	3,361,000	.095
1896	4,282,000	.10

Practically the entire product was exported to Spain. The unit of the cocoa trade is the "bag," or quintal, of 100 pounds. The great decline in prices during the last three years was attributable to the fact of extensive smuggling in cocoa being practised in Spain, which brought in there enormous quantities of the article clandestinely, seriously affecting values; yet, under trade regulations, the Spanish market has been practically the only one open to the cocoa producers of Cuba.

MAHOGANY.

The following are the exports of mahogany:

<i>Year.</i>	<i>Exports in Feet.</i>	<i>Year.</i>	<i>Exports in Feet.</i>
1890.....	62,500	1894.....	542,000
1891.....	578,000	1895.....	31,500
1892.....	1,240,000	1896.....	54,642
1893.....	1,180,000		

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Practically all of this was exported to the United States, and prices have been steadily advancing. A few years since, the customary price was about \$80 per thousand feet, whereas at the present it is above \$175. As the timber has been cut along the few existing lines of transportation, it has naturally become scarce, so that logs above fifteen inches in diameter are now rarely seen, although in days gone by many were found at least two feet in diameter. To reach its shipping port at the present time, the shortest haul to a railway station is twenty-seven miles over the roughest roads. It is unnecessary to remark that the insurrection has prevented almost any attempt to procure mahogany for the past two years. There are enormous quantities of timber of this description still in existence well inland, which new lines of transportation will bring to market. Some of the smaller timber has been sold as low as \$75 per thousand feet.

CEDAR.

The following are the exports of cedar :

<i>Year.</i>	<i>Exports in Feet.</i>	<i>Year.</i>	<i>Exports in Feet.</i>
1890	140,000	1894	963,000
1891	134,000	1895	167,000
1892	290,000	1896	12,008
1893	784,000		

This kind of timber has been exported only to the United States and Spain, in about equal quantities to each. The same conditions of production exist as in the case of mahogany, and the industry has suffered likewise from the insurrection. The more recent prices have been about \$35 per thousand feet at the seaport.

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HONEY.

The following are the exports of honey :

<i>Year.</i>	<i>Exports in Tierces.</i>	<i>Year.</i>	<i>Exports in Tierces.</i>
1890.....	589	1894.....	396
1891.....	214	1895.....	381
1892.....	369	1896.....	159
1893.....	430		

The United States has been the sole market for this product. While there are enormous quantities of wild honey in the interior, the insurrection has interfered with the bringing in of any large quantity during the past two years, while from the same cause apiculture has been practically abandoned. Wax has also been an important article of export, amounting, in favorable years, to over 100,000 pounds.

IRON ORE.

The following are the exports of iron ore :

<i>Year.</i>	<i>Exports in Tons.</i>	<i>Year.</i>	<i>Exports in Tons.</i>
1890.....	340,945	1894.....	153,690
1891.....	261,594	1895.....	372,220
1892.....	335,645	1896.....	398,626
1893.....	316,565		

This entire output is shipped to the United States, and is taken from the mines of the Juraguá Mining Company and the Spanish-American Company, both American corporations. The extent of their operations was but little curtailed by the recent insurrection, and shipments went on almost as usual until the outbreak of the war between the United States and Spain. The labor employed just before the war was composed principally of former Spanish soldiers.

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MANGANESE.

The following are the exports of manganese:

<i>Year.</i>	<i>Exports in Tons.</i>	<i>Year.</i>	<i>Exports in Tons.</i>
1890.....	20,524	1894.....	None
1891.....	11,935	1895.....	450
1892.....	16,525	1896.....	300
1893.....	13,617		

All of the foregoing has gone to the United States, with the exception of about two hundred tons shipped to Germany. Low prices, the insurrection, and lack of transportation facilities to the coast have caused the virtual abandonment of the industry for the last three years just given. It is understood, however, that railroad facilities are now available for future shipments from some of the important mines.

IMPORTS.

There are no custom-house or other records which give anything like an actual statement as to the money value of imports, although, as stated in detail below, the quantities of various articles can be ascertained. As regards the total value of these, it may be said that the late Fred W. Ramsden, Her Britannic Majesty's consul at Santiago, who was the best authority on commercial matters in the locality, estimated the amount to be about equal to that of the exports. The sudden increase in the quantity coming from America in certain years quoted, is attributable to the operation of the reciprocity treaty.

As illustrating the requirements of the market, it is considered well to give tables of the various imports, as far as possible.

CODFISH.—The imports of this article were :

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<i>Year.</i>	<i>Total in Quintals of 100 lbs.</i>	<i>From United States.</i>	<i>From Canada and other British Col's.</i>	<i>From England.</i>
1890.....	22,502	10,806	11,696	
1891.....	19,318	8,022	11,296	
1892.....	24,577	1,536	22,322	719
1893.....	29,670	18,312	10,464	894
1894.....	29,920	22,334	7,086	500
1895.....	18,822	15,260	2,737	825
1896.....	17,037	15,544	.....	1,493

The greater portion of this commodity shipped from the United States originated in Newfoundland and Nova Scotia, while that from England is of Norwegian origin.

COAL.—While there are undoubtedly in the province of Santiago large deposits of coal, these are undeveloped, and up to the present all used has been imported. The following tables show the importation of coal for a series of years :

<i>Year.</i>	<i>Total Received in Tons.</i>	<i>From United States.</i>	<i>From England.</i>	<i>From Canada.</i>
1890.....	8,988	8,988		
1891.....	10,897	9,674	.....	1,223
1892.....	12,337	10,962	1,375	
1893.....	12,162	11,656	506	
1894.....	8,727	8,727		
1895.....	25,398	19,567	5,831	
1896.....	24,040	14,206	9,834	

The natural tendency of this trade for several years has been toward buying in the United States. This is because of cheap freight rates obtainable on steamers in the ore-carrying trade, which would otherwise return in ballast. During the last two years, however, the demands of Spanish naval vessels, which prefer the Cardiff coal, have run up the importations from England.

RICE.—This commodity is one of the principal articles of food consumed by the poorer classes throughout Cuba, and while conditions for its cultivation are such on the island that this demand should not only be

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met by local production, but also large quantities exported, yet from the following statistics on its importation it will be seen that such a condition does not exist :

<i>Year.</i>	<i>Total Imports in Pounds.</i>	<i>From United States.</i>	<i>From England.</i>	<i>From Spain.</i>	<i>From Germany.</i>
1890....	2,713,700	.....	2,713,700		
1891....	2,408,800	.....	2,408,800		
1892....	2,683,100	101,000	2,551,100	31,000	
1893....	2,493,000	9,000	2,454,000	25,000	5,000
1894....	3,065,900	.....	2,080,300	33,000	952,600
1895....	5,824,000	.....	5,730,600	93,400	
1896....	4,234,600	8,000	4,201,600	25,000	

The importations for the last two years are abnormal, having reached such large quantities because of the requirements of the Spanish army and navy.

FLOUR.—The following tables show the importations of flour for a period of five years :

<i>Year.</i>	<i>Total No. of Bags.</i>	<i>From United States.</i>	<i>From Spain.</i>
1892.....	48,175	47,107	1,068
1893.....	47,429	44,396	3,033
1894.....	45,037	41,673	3,364
1895.....	62,097	26,464	35,633
1896.....	46,129	7,171	38,958

The great decrease in the importation from the United States for the past two years of the period was caused by the abrogation of the reciprocity treaty, which made the duty upon American flour at Cuban ports ten times what it was upon the same commodity brought in from Spain ; yet the great bulk of the latter has in reality been American flour, “naturalized,” as it has been termed—*i.e.*, originally shipped to Spain, and reshipped to Cuba. As elsewhere in Cuba, bakers and house-keepers in Santiago prefer American flour, claiming that it makes better bread and requires less kneading.

DRY GOODS.—In 1891 there were importations of this kind from Spain amounting to \$275,000 ; from other

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countries, \$900,000. Since that year, figures are not obtainable. During the past few years, strenuous efforts were made by discrimination in duties to force this trade toward Spain. As its future course will, to a great extent, be determined by the incidence of the tariff, it is now useless to speculate as to the markets which will supply it.

Following is an estimate of the annual imports of cotton textiles into Santiago de Cuba :

<i>Where from.</i>	<i>Weight, Kilograms.</i>
United States.....	8,606
Spain.....	121,374
France.....	934½
St. Thomas.....	1,406
England.....	33,704
Glasgow.....	113,550
Total.....	279,574½

An explanation accompanying the samples of cotton textiles principally sold in this province of Santiago de Cuba shows :

<i>Number.</i>	<i>Weight in Kilograms.</i>	<i>Per</i>	<i>Manu- factured in</i>
1	4,300	70 metres	Spain
2	6,260	70 "	"
3	1,900	40 yards	England
4	1,185	40 "	"
5	2,870	40 "	"
6	2,102	40 "	"
7	2,500	61 "	"
8	1,220	40 "	"
9	2,320	40 "	"
10	2,600	68-70 yards	"
11	4,153	50 metres	France
12	2,150	68-70 yards	England
13	8,200	68 metres	Spain
14	7,200	40 yards	"
15	3,388	40 "	England
16	4,300	70 metres	Spain

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PLANTATION MACHINERY AND SUPPLIES. — While statistics are not available as to the quantities of plantation machinery and supplies that have been imported, it should be said that practically everything of this character has and must, for the present at least, come from abroad. This trade has been forced toward the Spanish markets, so far as could be done by discrimination in duties; yet the other European countries and the United States have participated therein. Unquestionably, the natural preference has been for machinery of American manufacture, but owing to the closer study of the requirements of the market, and more liberal terms of credit granted by European concerns, much of this trade has gone there, in addition to that received by Spain through tariff manipulation. This class of business has been large, and cannot but increase several-fold in the future, the principal articles required being as follows :

Sugar cane grinding mills.	Iron piping.
Vacuum pans.	Steel rails.
Defecators.	Cars for carrying cane.
Clarifiers.	Castings of various descriptions.
Tanks.	Hardware.
Triple effects and machinery pertaining thereto.	Agricultural implements and other tools.
Centrifugals, with their engines, or better, electric motors.	Barbed wire.
Filter presses and their engines.	Galvanized and other sheet iron.
Steam boilers.	Tin, sheet copper, lumber, staves, shingles, etc.

OTHER IMPORTS.—The ordinary demand for articles from abroad covers a wide range to meet the necessities of the community, which is practically without sources of local manufacture, and where full advantage has never been taken of natural productions of the soil to raise all of its own food supply. Owing to the present devastated condition of Cuba, the ordinary demand will be

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increased by need of almost every kind of edible commodity, while rebuilding, reconstruction, and probable immediate and extensive development of natural resources will create an extensive demand for every kind of machinery and tools.

MANZANILLO

Manzanillo is situated on the southwestern coast of the province. While ranking only twelfth in importance of the Cuban ports, it nevertheless has an extensive coastwise traffic. Strictly speaking, it has no harbor; yet its water front is secured by an outlying line of keys, which protect vessels at anchor. The city was founded in 1784, and has a population of above 9,000. It is practically the seaport for Bayamo and Jiguaní, as well as for a rich sugar-producing district. It is also the centre of a considerable lumber trade, coming from the River Yara, which empties into the sea less than a mile away; as well as from the River Cauto, the most important navigable stream of the island, which is about ten miles distant. While a number of long piers project from the shore front, vessels of ten or twelve feet draught only can land there. The town itself lies at an elevation of some twenty feet above the harbor, gradually rising inland, and there are hills and mountains practically encircling it landward. There are also extensive mangrove swamps in the vicinity, which breed malarial and kindred diseases, while yellow fever is not at all uncommon. The streets are regularly laid out at right angles, and have an average width of about forty feet. They are improved but little, and probably the worst kind of mud on the island is found there. Though the city has some good buildings, its major portion consists of small houses and huts. The military plaza in the centre

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of the city is noted for its extent and beauty. The water supply formerly came from the River Yara, but proved to be so unhealthy that now the inhabitants rely entirely upon cisterns. There are no gas works, electric light plant, or other public improvement, although there is great necessity for them. The city saw much of the recent insurrection from the first, and was in constant alarm from the beginning of 1895. Perhaps as extensive and unique a collection of Spanish fortifications exist about the town as there is in all Cuba. In the immediate district is produced the celebrated Yara tobacco, which is principally shipped from Manzanillo, and is better known in the markets of Europe than in those of the United States. The township has a population of 26,000.

The following tables show the commerce of this port :

NUMBER AND NATIONALITY OF VESSELS IN FOREIGN TRADE
VISITING MANZANILLO.

NATION- ALITY.	1890	1891	1892	1893	1894	1895	1896	PROPORTION EACH OF STEAM AND SAILING VESSELS, LAST TWO YEARS.			
								Steam. 1895	Sailing. 1895	Steam. 1896	Sailing. 1896
American ...	19	21	32	42	46	36	32	4	32	12	20
British.....	17	24	16	22	16	20	10	.....	20	1	9
Norwegian ...	21	17	12	17	18	18	4	8	10	4	0
Swedish	8	6	1	7	2	1	1	.....	1		1
Spanish.....	10	11	5	21	16	16	17	8	8	10	7
Dutch.....	5	3	2	6	3						
German.....	6	10	8	15	13	9	5	6	3	5	
Danish.....	1	1	2	2		
Haytian.....	1	1						
Austrian.....	1	1						
Russian.....	1									
Totals	87	93	77	132	116	102	69	26	76	32	37

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TONNAGE OF THE FOREGOING.

NATIONALITY.	1890	1891	1892	1893	1894	1895	1896
American. . . .	7,819	8,989	14,053	20,496	21,634	27,532	37,630
Norwegian . . .	10,221	7,043	4,919	7,112	8,909	8,462	2,196
Swedish	2,742	2,015	417	3,008	913	434	422
Spanish	1,806	2,105	901	6,115	7,725	23,271	26,729
Dutch	480	198	132	396	207		
German	6,237	11,468	9,788	22,964	24,321	15,092	9,208
Russian		675					
Danish	255			222		476	
British	5,223	11,617	7,229	7,797	10,489	8,605	6,164
Haytian			145		310		
Austrian				430	407		
Totals	34,783	44,110	37,584	68,540	74,913	83,872	82,349

TONNAGE OF THE FOREGOING.

DIVIDED STEAM AND SAILING TONNAGE, LAST TWO YEARS.				
NATIONALITY.	Steam. 1895	Sailing. 1895	Steam. 1896	Sailing. 1896
American	11,042	16,490	27,600	10,030
Norwegian	4,141	4,321	2,196	
Swedish		434		
Spanish	21,266	2,005	25,325	1,404
Dutch				
German	13,784	1,308	9,208	
Russian				
Danish		476		
British		8,605	2,114	4,050
Haytian				
Austrian				
Totals	50,233	33,639	66,443	15,906

This does not include a large number of steam and sailing craft employed in coastwise traffic.

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TOBACCO.

The annual production of tobacco, and the average price of the same in the district of Manzanillo, including that of the adjoining district of Yara, are as follows :

<i>Year.</i>	<i>Bales, 220.5 lbs.</i>	<i>Average Price per 100 lbs.</i>
1890.....	6,803	\$19.50
1891.....	7,256	17.10
1892.....	12,000	14.80
1893.....	15,000	11.50
1894.....	18,000	7.30
1895.....	10,000	7.30
1896.....	.....	13.20

Statistics are not available on the production or shipment of coffee, sugar, and other products, for recent years, from Manzanillo, these being included in the total returns for the province.

The following, however, is a statement of timber exports for previous periods :

In 1892, 2,000,000 feet of mahogany were exported ; in 1893, 1,300,000 feet ; in 1894, 700,000 feet. In 1892, 1,000,000 feet of cedar were exported ; in 1893, 800,000 feet ; in 1894, 300,000 feet.

The same reasons may be given for the cessation of this industry as those described elsewhere in connection with it at Santiago de Cuba.

The approximate value and character of the exports to the United States in a prosperous year, compiled from official records, are :

Sugar.....	\$1,915,000		Palm leaf	\$500
Cedar	90,000		Cocus wood	300
Lancewood spars.....	3,300		Alunqui wood	350
Dagame spars	1,000			
Mahogany	29,600		Total.....	\$2,040,050

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Following is a partial list of the sugar plantations in the vicinity of Manzanillo, with an approximation of their annual crops :

	<i>Tons.</i>			<i>Tons.</i>
Cuentas Claras	200		Santa Teresa.....	3,700
Dos Amigos	2,500		San Ramón	4,600
Esperanza	1,300		Santa Sofía	350
El Salvador	875		Tranquilidad.....	1,300
Isabel	2,800			

GUANTÁNAMO

The bay and town of Guantánamo, or Santa Catalina de Guantánamo, have recently become conspicuous in connection with the American military operations in eastern Cuba. The entrance to the bay, as has so frequently been stated, is somewhat narrow, and extends inland until it widens into the bay proper, which is about seven miles in diameter. It may be here remarked that this formation is characteristic of all the Cuban harbors, perhaps without exception. Throughout, it is very deep, permitting vessels of the greatest draught to approach close to the shore. Nearly surrounding it are high and picturesque mountains, but the immediate shore is at many points low and marshy. As a port it ranks in commercial importance with the best on the island. The city lies some seven miles inland from the harbor, the actual seaport being the village of Caimanera, located on the harbor's western bank. Connection is made between the port and town by a railway which runs a few miles inland beyond Guantánamo. The location of the city is on a plain, averaging about 115 feet above the sea level. The intermediate country between it and the sea is comparatively low. About the town, in all other directions, however, are

PROVINCE OF SANTIAGO DE CUBA

hills and mountains. The population is approximately 9,000.

Like all other towns of importance in eastern Cuba, Guantánamo is practically the centre of a district of its own, noted especially for coffee production ; but, as will be seen from the statistics following, it has other important exports, and the rich soil of the surrounding country is interspersed with valuable mineral deposits. Though a comparatively modern town, having been founded as late as 1843, it is deficient in public improvements, and needs additional transportation facilities to the interior. While admirably situated for drainage, being upon the banks of the River Guaso, and having smaller streams all about it, neglect of sanitary care and of taking advantage of the natural conditions recited, cause malarial fevers and kindred diseases to be exceedingly prevalent.

The following tables show the commerce of Guantánamo :

NUMBER AND NATIONALITY OF VESSELS IN FOREIGN TRADE VISITING GUANTÁNAMO.

NATION-ALITY.	1890	1891	1892	1893	1894	1895	1896	PROPORTION EACH OF STEAM AND SAILING VESSELS IN LAST TWO YEARS.			
								Steam. 1895	Sail. 1895	Steam. 1896	Sail. 1896
British	22	28	25	28	28	28	14	6	22	2	2
Spanish	26	27	25	22	25	14	35	12	2	19	2
American	36	36	54	56	74	55	21	12	43	13	22
Norwegian	12	2	1	5	4	1	..	1
German	1	1	2	2	2	..	1	1	..
Swedish	1	1
Totals	97	94	107	113	133	98	72	31	67	35	37

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TONNAGE OF THE FOREGOING.

NATIONALITY.	1890	1891	1892	1893	1894	1895	1896
British	9,564	12,872	9,890	21,393	24,571	18,907	5,737
Spanish	27,185	26,173	33,865	25,972	34,239	22,332	34,003
American	21,744	19,755	43,190	49,593	56,051	40,597	32,606
Norwegian	6,525	594	216	2,573	1,855	411	.....
German	414	659	2,657	955	3,040	.....	536
Swedish .....	.....	.....	.....	.....	.....	.....	.....
Totals	65,432	60,053	89,818	100,486	119,756	82,247	72,862

DIVIDED STEAM AND SAILING TONNAGE FOR LAST TWO YEARS.				
NATIONALITY.	Steam. 1895	Sailing. 1895	Steam. 1896	Sailing. 1896
British	8,980	9,927	734	5,003
Spanish	21,814	518	33,380	623
American	20,226	20,371	21,788	10,818
Norwegian	411	.....	636	.....
German .....	.....	.....	.....	536
Swedish .....	.....	.....	.....	.....
Totals	51,431	30,816	56,538	16,980

SHIPMENTS OF SUGAR

	Tons.		Tons.
1890.....	33,150	1894.....	48,818
1891.....	25,190	1895.....	47,904
1892.....	36,292	1896.....	23,916
1893.....	35,145		

Following are the approximate value and character of exports to the United States, for a prosperous year, compiled from official records :

Sugar	\$3,500,000
Mahogany.....	1,700
Lignum-vitæ	1,000
Honey.....	1,000
Beeswax.....	1,000
Total	\$3,504,700

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Following is a partial list of the sugar plantations in the vicinity of Guantánamo, with an approximation of their annual crops :

	<i>Tons.</i>		<i>Tons.</i>
Confluente	1,400	San Ildefonso	800
Esperanza	2,800	San Miguel.....	2,100
Isabel	3,200	Santa Cecilia.....	3,300
La Canos.....	2,100	Santa Fé.....	3,200
Romelie	2,400	Santa María.....	2,100
San Antonio.....	2,500	Santa Rosa.....	2,300
San Carlos.....	1,800	Soledad.....	4,150
San Emilio.....	700		

BARACOA

Baracoa is the easternmost port of any importance on the northern coast, and is the sixth of importance on the entire island. The population is approximately 5,000, and it was the first permanent Spanish settlement in Cuba, having been founded in 1512 by Velasquez, the chief lieutenant of Diego Columbus, son of the great discoverer, whose house is still shown there. While the harbor is small, only a mile in width, it is an excellent one, and has been the centre of an enormous fruit trade, of which statistics are given hereafter. The immediate vicinity of the harbor is unhealthy, being noted for serious malarial fevers, but the adjacent interior country is as healthful as any in the world, while it is one of the most picturesque, being filled with caverns, cascades, and curious natural formations. The caves are noted for their stalactites, and for the petrified remains, both human and of the lower animals, which have been found in them. While as yet little known to the tourist, this locality cannot fail to become popular, and must prove a favorite winter resort. Though possessing some public improvements of the earlier Spanish kind, these are not

COMMERCIAL CUBA

up to date, and good sanitary engineering would do much for the city. Immediate improvements in this respect are badly needed. Water communication has been well established, the port being a stopping place for the tri-monthly north side line of coastwise steamers running from Havana to Santiago de Cuba, and on the line of coastwise traffic of the smaller craft, as well as having frequent fruit steamers to the United States. What the town wants above all else is communication with the interior by good wagon roads and railroads, there being practically none of the former, and actually none of the latter. The population of the entire township is above 18,000. Originally, the city was called Nuestra Señora de la Asunción (Our Lady of the Assumption). It was once the capital of the island and the residence of the Governor-General, being then also the second place of importance in ecclesiastical matters, Santiago being the bishop's see.

The standard of living in this district is good. All the flour comes from the United States. Wheat is not imported into this district. The imports of flour during the years 1891, 1892, 1893 (years ending June 30th) were 347,600 pounds, 650,436, and 690,110 pounds, respectively.

The consumption of beer at this port is about 19,000 pints annually, which have originally been mostly imported at either Havana or Santiago de Cuba and reshipped. The bulk of the trade has been in Robert Younger's pale ale, shipped in earthen pint bottles. This costs, wholesale, delivered in Baracoa, \$1.95 per dozen pints, and is retailed at 23 cents per bottle. A small amount of Salvator German beer has also been used. This costs \$2.55 wholesale per dozen pints, and has retailed at 28 cents per bottle. There have also been some small importations of Milwaukee beer, which

PROVINCE OF SANTIAGO DE CUBA

has cost \$2.07 per dozen pints wholesale, and has been retailed at about 25 cents per bottle. It is believed that the trade will hereafter be controlled by the American product.

The following tables show the commerce of this port :

**NATIONALITY AND NUMBER OF VESSELS IN FOREIGN TRADE
VISITING THE PORT OF BARACOA.**

NATIONALITY.	1890	1891	1892	1893	1894	1895	1896
Spanish	26	24	24	25	24	24	26
British	33	15	24	29	47	16	4
American	43	29	29	13	15	6	0
Norwegian	205	143	107	94	86	62	3
Swedish . . . . .	.....	.....	2	9	2		
German . . . . .	.....	.....	3	0	6		
Danish . . . . .	.....	.....	0	5	10	1	0
Haytian . . . . .	.....	.....	.....	.....	.....	.....	1
Totals	307	211	189	175	190	109	34

TONNAGE OF THE FOREGOING.

NATIONALITY.	1890	1891	1892	1893	1894	1895	1896
Spanish	14,014	16,464	16,094	16,404	18,240	53,871	56,754
British	13,427	5,278	15,244	19,685	33,342	8,829	1,254
American	7,283	5,463	8,864	2,769	3,048	2,421	
Norwegian	74,942	67,813	48,113	43,660	36,994	26,446	1,419
Swedish . . . . .	.....	.....	1,162	4,314	980		
German . . . . .	.....	.....	2,625	.....	4,500		
Danish . . . . .	.....	.....	.....	2,362	3,735	366	
Haytian . . . . .	.....	.....	.....	.....	.....	.....	10
Totals	109,666	95,018	92,102	89,194	100,839	91,933	59,437

During the last two years of the above period, all vessels were steamers, with the exception of five, which had a tonnage of only 880. The large Spanish tonnage

COMMERCIAL CUBA

is accounted for by the stopping of mail boats on the way to Puerto Rico.

<i>Shipments of Cocoanuts.</i>	<i>Shipments of Coconut Oil.</i>
	<i>Barrels.</i>
1890..... 5,354,500	1890..... 1,172
1891..... 3,398,000	1891..... 300
1892..... 4,878,125	1892..... 50
1893..... 6,268,000	1893..... 50
1894..... 3,825,000	1894..... 550
1895..... 3,671,788	1895..... 1,050
1896..... 35,000	1896..... 1,500

<i>Shipments of Bananas.</i>	<i>Shipments of Cocoa.</i>
<i>Bunches.</i>	<i>Pounds.</i>
1890..... 1,266,480	1894..... 1,384,740
1891..... 773,300	1895..... 222,705
1892..... 1,472,200	1896..... 1,323,000
1893..... 1,484,300	
1894..... 1,552,700	
1895..... 1,019,567	
1896..... 2,000	

Records of the shipments of coffee show only 37,400 pounds in 1894 and 44,100 pounds in 1896.

The insurrection seriously interfered with the fruit trade of this locality, the crop being allowed to rot on the ground. The decline of this industry, however, dates from the great hurricane of September 23, 1894, which destroyed plantations in the adjoining district of Sabara. The town of Sabara was burned in 1895 by the insurgents.

The approximate value and character of the exports to the United States for a prosperous year, compiled from official records, are :

Bananas	\$1,250,000
Cocoanuts.....	70,000
Coconut oil	25,000
Total	\$1,345,000

PROVINCE OF SANTIAGO DE CUBA

GIBARA

Gibara, sometimes spelled "Jibara," especially on the maps, the pronunciation being identical in either form of spelling, is commercially an important city of the northern coast of the province. Although the depth of water in the bay or harbor, which averages only about two fathoms, does not permit the entrance of any but light-draught craft, and even these are obliged to anchor at some distance from the shore, nevertheless an extensive coastwise traffic has long existed, which will undoubtedly increase in future. It is the port for the important interior town of Holguín, which is situated seventeen miles to the south, and with which it is connected by rail and by the royal highroad, which high-sounding term does not, by any means, enhance the character of the road, which is far from good. In fact, good roads and railroad facilities to the interior are sadly needed to develop to large proportions the export trade in sugar, coffee, tobacco, fruits, and hard woods. For hard woods, improved transportation facilities are most needed of all, and with these provided, the growth of this trade would be enormous.

The population of the city is nearly 5,000. The city and bay being surrounded by mountains, the situation is naturally picturesque. The average height of the city is from fifteen to twenty feet above the harbor, and conditions are favorable for the construction of a sewerage system, which, with other public improvements, are badly needed. The city is generally healthy, except during the rainy season, when malarial troubles are common. The township has a population of 27,600.

The following tables show the commerce of this port :

COMMERCIAL CUBA

EXPORTS.

The approximate value and character of the exports to the United States for a prosperous year, compiled from official records, are :

Sugar.....	\$575,000	Syrup.....	\$3,500
Bananas.....	550,000	Tobacco.....	7,000
Cedar.....	15,000	Lancewood spars.....	4,000
Honey.....	8,775	Lignum-vitæ.....	1,000
Beeswax..	7,500	Tortoise shells.....	200
Hides and skins.....	8,500		
Mahogany.....	17,000	Total.....	\$1,197,475

THE COMMERCE OF THE PORT.

The nationality and number of vessels in foreign trade visiting the port of Gibara were :

NATIONALITY.	1890	1891	1892	1893	1894	1895	1896
British.....	13	7	31	19	42	42	50
American.....	13	17	16	21	22	13	18
Spanish.....	78	78	79	82	87	40	40
Norwegian.....	43	81	124	112	159	142	98
German.....	2	1	.....	.....	2	1	8
Swedish.....	.....	.....	2	10	4	.....	.....
Danish.....	.....	.....	.....	1	5	0	8
Italian.....	.....	.....	.....	.....	1	.....	.....
Totals.....	149	184	252	245	322	238	222

The tonnage of the foregoing was :

NATIONALITY.	1890	1891	1892	1893	1894	1895	1896
British.....	7,782	3,131	19,213	11,420	24,479	31,082	38,156
American..	4,683	5,912	5,092	5,617	7,621	3,961	7,356
Spanish...	52,125	57,067	65,235	65,345	72,287	40,202	40,316
Norwegian..	16,899	46,585	58,500	51,520	76,059	71,431	53,045
German....	1,800	1,280	.....	.....	1,663	315	7,571
Swedish...	.....	.....	1,022	5,111	1,985	.....	.....
Danish....	496	1,575	2,520
Italian....	356
Totals...	83,289	113,975	149,062	139,509	186,025	146,991	146,991

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<i>Shipments of Sugar.</i>		<i>Shipments of Tobacco.</i>	
	<i>Tons.</i>		<i>Bales.</i>
1890.....	7,608	1890.....	28,488
1891.....	2,150	1891.....	21,766
1892.....	14,280	1892.....	31,259
1893.....	10,670	1893.....	20,324
1894.....	9,026	1894.....	50,456
1895.....	9,423	1895.....	18,957
1896.....	8,626	1896.....	6,426

The average price of tobacco per bale during the same period was :

1890.....	\$17.05	1894.....	Not quoted.
1891.....	13.50	1895.....	"
1892.....	6.62	1896.....	"
1893.....	7.26		

<i>Shipments of Bananas.</i>		<i>Shipments of Hides.</i>	
	<i>Bunches.</i>		
1890.....	257,129	1890.....	5,143
1891.....	544,500	1891.....	9,890
1892.....	1,149,500	1892.....	10,227
1893.....	1,027,064	1893.....	9,664
1894.....	1,671,000	1894.....	6,123
1895.....	1,415,000	1895.....	3,033
1896.....	1,305,000	1896.....	1,620

<i>Shipments of Mahogany.</i>		<i>Shipments of Cedar.</i>	
	<i>Feet.</i>		<i>Feet.</i>
1890.....	734,207	1890.....	621,266
1891.....	93,711	1891.....	99,585
1892.....	428,141	1892.....	136,049
1893.....	320,963	1893.....	323,475
1894.....	947,655	1894.....	930,892
1895.....	40,047	1895.....	255,199
1896.....	2,296	1896.....	21,000

The production of fruit has been less interrupted in this locality by the insurrection than elsewhere on the

COMMERCIAL CUBA

northern coast. The lumber trade, having its source of supply further inland, has been interrupted as elsewhere.

The production of tobacco in this district, including that of Holguín adjoining, which, it will be noted, differs from the quantity shipped, has been as follows :

	<i>Bales, 220.5 lbs.</i>		<i>Bales, 220.5 lbs.</i>
1890.....	6,349	1894.....	30,000
1891.....	6,803	1895.....	40,000
1892.....	30,000	1896.....	5,000
1893.....	30,000		

It will be noted that this rapidly growing industry has been practically obliterated by the insurrection.

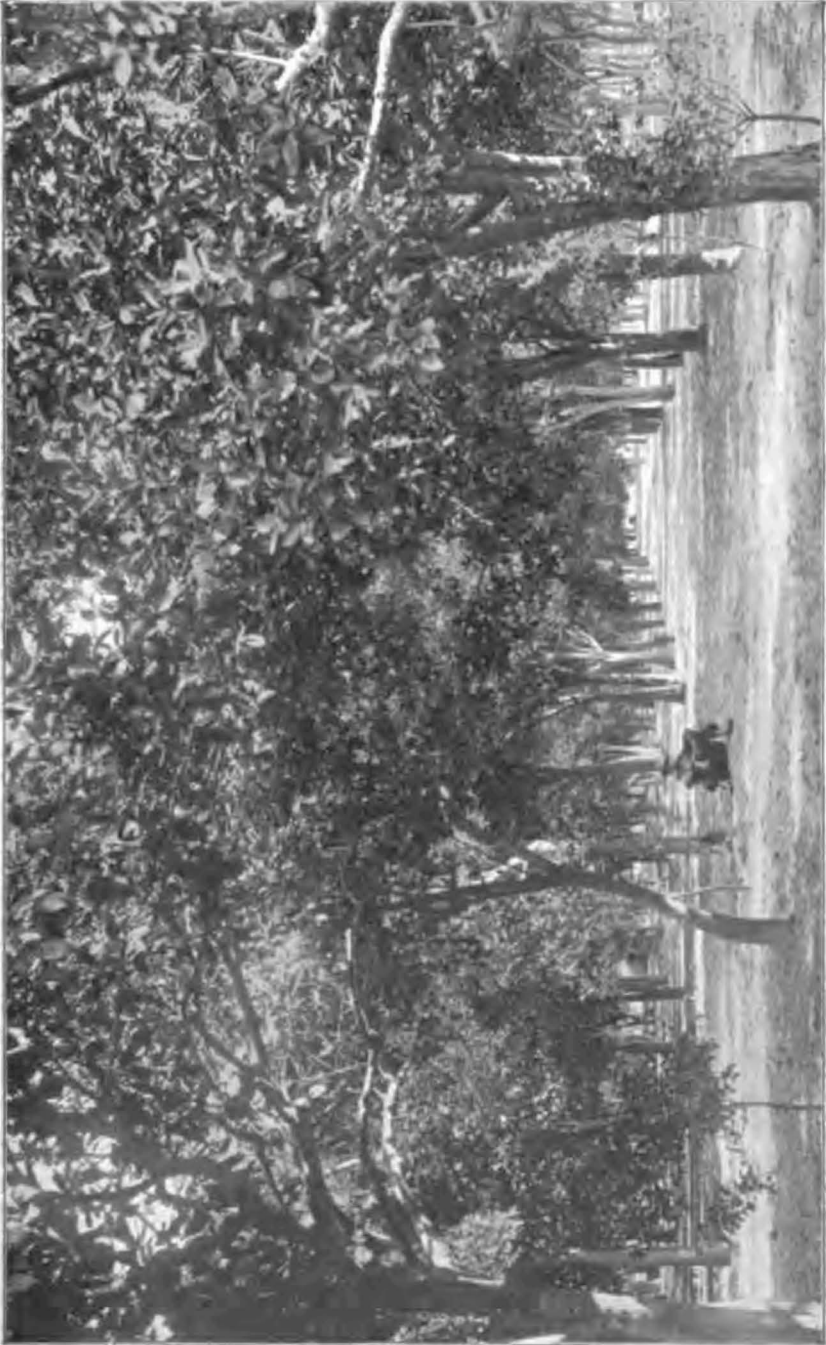
OTHER CITIES, TOWNS, AND VILLAGES OF THE PROVINCE

The following is a descriptive list of the remaining cities, towns, and villages of the province of Santiago de Cuba, arranged alphabetically :

ALTO SONGO.—An unimportant town of huts and wooden houses, containing a population of about 400, about fifteen miles northeast of Santiago de Cuba, and is the present terminus of one of the branches of the railroad running to that city. The surrounding country is naturally rich, but not highly cultivated. There are also minerals in the locality, as may be seen by referring to the mining map. The population of the entire township is about 12,000.

AURAS.—An unimportant town, practically the terminus of the Gibara-Holguín Railroad, nine and one-half miles from Gibara.

BANES.—An important fruit-shipping port on the northern coast of the province. It has chiefly been noted for its exports of bananas, which amounted to



ORANGE PLANTATION

PROVINCE OF SANTIAGO DE CUBA

1,028,000 bunches in 1894. The cultivation of the pineapple was also making rapid strides in the surrounding district, until its entire export trade was practically cut off by the insurrection after 1896. In August of that year, the town was evacuated by the Spanish, and shortly afterward burned by the insurgents. The number of pineapples exported is not known for any year, except 1894, when it amounted to 32,000.

The shipments of bananas for a series of years were:

SHIPMENTS OF BANANAS.

	<i>Bunches.</i>		<i>Bunches.</i>
1890.....	180,000	1894.....	1,028,000
1891.....	393,000	1895.....	807,000
1892.....	792,000	1896.....	755,000
1893.....	696,000		

NATIONALITY AND NUMBER OF VESSELS IN FOREIGN TRADE VISITING THE PORT OF BANES.

NATIONALITY.	1890	1891	1892	1893	1894	1895	1896
British.....	4	6	20	13	18	24	32
American.....	0	1	9	8	11	8	11
Norwegian.....	33	60	68	56	84	70	50
Swedish.....			2	10	3		
Totals.....	37	67	99	87	116	102	93

TONNAGE OF THE FOREGOING.

NATIONALITY.	1890	1891	1892	1893	1894	1895	1896
British.....	1,716	2,786	10,000	6,500	10,846	13,518	18,579
American.....		163	3,609	3,208	4,411	2,308	4,411
Norwegian...	13,402	37,600	31,280	25,740	42,462	39,041	23,736
Swedish.....			1,022	5,111	1,551		
Totals...	15,118	40,549	45,911	40,559	59,270	54,867	46,726

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During the last two years of this period all vessels were steamers.

BAYAMO.—This exceedingly old city, founded in 1551, is situated inland upon the river of the same name, about ninety miles northwest of the city of Santiago de Cuba, and twenty-five miles east of Manzanillo, which is its seaport. It is substantially built of stone, in the older Spanish style, and has no less than eleven churches, some of which are excellent specimens of the earlier architectural style followed in the palmy days of the Church in Cuba. The population is between 3,500 and 4,000, and while some evidences of street paving are to be seen, the city is lacking in public improvements. It has no railroad facilities whatever, and although on the highway from Santiago to Manzanillo, this, and all other roads connecting it with the sea, are bad and impassable in the rainy season. The locality is naturally a healthy one, the surrounding country being high ground, and mostly well timbered. The population of the township or district directly tributary to the city is about 18,800.

BONITO.—A small town on the Santiago de Cuba Railroad, five and one-half miles from Santiago de Cuba.

CABONICO.—A small port, forming with Sama and Naranjo a single custom-house district.

NATIONALITY AND NUMBER OF VESSELS IN FOREIGN TRADE
VISITING PORTS OF CABONICO AND NARANJO.

	1890	1891	1892	1893	1894	1895	1896
Norwegian . . .	6	19	46	47	69	72	44
American . . . . .	.....	8	.....	.....	.....	3	5
Danish . . . . .	.....	.....	.....	1	5	.....	8
British . . . . .	.....	.....	.....	.....	.....	.....	11
German . . . . .	.....	.....	.....	.....	.....	1	5
Totals	6	27	46	48	74	76	73

PROVINCE OF SANTIAGO DE CUBA

TONNAGE OF THE FOREGOING.

	1890	1891	1892	1893	1894	1895	1896
Norwegian ...	1,781	8,080	22,080	21,420	31,419	32,400	27,300
American.....	.....	3,200	.....	.....	.....	1,203	2,240
Danish.....	.....	.....	.....	496	1,575	.....	2,520
British.....	.....	.....	.....	.....	.....	.....	10,800
German.....	.....	.....	.....	.....	.....	315	5,415
Totals....	1,781	11,280	22,080	21,916	32,994	33,918	48,275

SHIPMENTS OF BANANAS.

	<i>Bunches.</i>		<i>Bunches.</i>
1890	28,506	1894.....	643,000
1891	750,501	1895.....	608,000
1892	357,000	1896.....	550,000
1893	381,000		

In the latter part of 1896 the plantations in this vicinity were abandoned because of the insurrection.

CANTIMPLORA.—A small, unimportant town on the Gibara-Holguín Railroad, six and one-fifth miles from Gibara. It is the sole intermediate station between Gibara and Auras.

COBRE.—Although founded as early as 1558, this at present unimportant town can be considered merely a mining settlement; yet the surrounding mineral wealth will probably make it a place of some importance in the future. It is located on the southern side of the Cobre mountain range, nine miles west of the city of Santiago de Cuba, and its port is the hamlet of Punta de Sol, on the west side of Santiago harbor, about two miles distant from the city proper, with which it is connected by a small ferry. From the landing mentioned, to Cobre, a railroad, or more properly a tramway, has existed since

COMMERCIAL CUBA

1848, alternately operated at various periods by mules and steam, but which is now said to have been abandoned. Cobre possesses, perhaps, the most famous shrine for the attraction of pilgrims in all Cuba. This is the sanctuary of Nuestra Señora de la Caridad del Cobre, an elegant edifice, containing a battered statue of the Virgin only fifteen inches high, and called the "Virgin of Charity," which, it is claimed, possesses the most miraculous powers. The image, it is said, was originally found floating in the water during the early days of Spanish settlement, bearing an inscription from which the present title is given. At first temporarily worshipped in a palm-thatched hut, the image was afterward located in an insignificant church on the mountain side; but the rapidly accumulating votive offerings in a few years permitted the creation of the present magnificent edifice. Once yearly, the image is exhibited to the public in a parade, with the most imposing pomp and veneration.

DOS CAMINOS.—A town of a few hundred inhabitants, on the old line of the Santiago de Cuba Railroad.

EL CANEY.—An unimportant town, with a population of 700, recently made famous in connection with American military operations against the city of Santiago de Cuba. The township has a population of 8,600.

EL CRISTO.—A town on the Santiago de Cuba Railroad, near which are located rich mineral deposits. It lies ten miles from Santiago de Cuba.

ENSRAMADAS.—A small town, twenty-one miles from Santiago de Cuba, on the old line of the Santiago de Cuba Railroad.

HOLGUÍN.—This is one of the more important island towns of eastern Cuba, being situated about fifteen miles south of Gibara, a seaport of the northern coast,

PROVINCE OF SANTIAGO DE CUBA

through which communication with shipping is had. It lies upon a plain, at a high elevation, and has naturally healthy conditions. All the surrounding country is high, but not attractive, and a good deal of mineral wealth exists in the vicinity. It was founded in 1720, and is substantially built of stone and brick. Its streets are narrow, and generally unpaved, all being in filthy condition. The population is approximately 5,500. It needs transportation facilities in all directions, especially to aid the development of the hard-wood industry, in connection with which Holguín is most favorably situated. It has the usual lack of public improvements, but which, it would seem, must come, as the city's prominence and importance will doubtless increase. During the recent insurrection, Holguín and its immediate vicinity were almost constantly the theatre of military operations. While the city has a large proportion of white population, that of the surrounding country is, to a great extent, black. This city was captured by the insurgents in the early days of the recent insurrection, but afterwards was recaptured by the Spanish.

JIGUANÍ.—This lies in the extreme northeastern corner of the island, fourteen miles inland from Bayamo, connecting with which is a fairly good *calzada*. The population is approximately 1,400, and the surroundings are mountainous and picturesque. Crowning one elevation in the immediate vicinity is an old-style castle. This place ought to be a favorite one with tourists. The surrounding country is rich in an agricultural way as well as in minerals. Better transportation facilities are needed. Much of the insurgents' operations were in this locality during the recent insurrection.

The following tables show the production and price of tobacco at Jiguaní:

COMMERCIAL CUBA

TOBACCO PRODUCED.

	<i>Bales of 220.5 lbs.</i>		<i>Bales of 220.5 lbs.</i>
1890.....	907	1894.....	1,000
1891.....	816	1895.....	1,500
1892.....	1,200	1896.....	None
1893.....	1,500		

The average prices per 100 pounds were :

1890.....	\$16.06	1894.....	\$7.19
1891.....	11.51	1895.....	7.19
1892.....	12.19	1896.....	11.50
1893.....	10.60		

MAYARÍ.—An unimportant village situated on the west bank of the navigable river of the same name, about five miles south of the harbor of Nipe, and is, perhaps, the most promising location for a future port of importance in the locality of, or adjacent to, the bay. It has, however, at present no internal communication except bridle paths and very heavy roads. That improvements in this respect would mean its development into a good-sized town is almost certain, as the location is in one of the best tobacco districts of eastern Cuba.

The following tables show the production and price of tobacco in the district of Mayarí for a series of years :

TOBACCO PRODUCED.

	<i>Bales of 220 lbs.</i>		<i>Bales of 220 lbs.</i>
1890.....	3,175	1894.....	4,500
1891.....	5,895	1895.....	15,000
1892.....	5,000	1896.....	5,000
1893.....	5,500		

The average prices per 100 pounds were :

1890.....	\$22.40	1894.....	\$7.40
1891.....	19.10	1895.....	7.40
1892.....	12.20	1896.....	11.65
1893.....	10.75		

PROVINCE OF SANTIAGO DE CUBA

MEJORANA.—An unimportant inland hamlet, where the recent insurrection was formally organized by Generals Marti, Gomez, and Maceo.

MORÓN, OR SAN NICOLAS DE MORÓN.—This town should not be confounded with the more important town of the same name in Puerto Príncipe province. It is a small inland village, situated about nine miles north of the city of Santiago, which has come into some prominence in connection with military operations during the recent insurrection.

PERALEJO.—A small inland hamlet, the scene of the most severe engagement between the Spanish and Cubans during the recent insurrection, in which General Campos, then Captain-General of the island, narrowly escaped capture. The result was a complete victory for the Cubans.

PUERTO PADRE.—A small town on an unimportant harbor of the north coast, fifty miles east of Nuevitas. The harbor, though well protected, is shallow. The town is little but a fishing village, but the locality has attained some notoriety in connection with filibustering expeditions during the recent insurrection.

SABANILLA.—A somewhat important town on the old line of the Santiago de Cuba Railroad, in the vicinity of which are located mines; it is eight miles distant from Morón.

SAN LUIS.—Terminus of the old line of the Santiago de Cuba Railroad. A somewhat important town of perhaps 1,000 inhabitants.

SAGUA DE TÁNAMO.—An unimportant port of the northern coast, situated on the River Sagua, near its mouth. It is thirty miles east of the bay of Nipe. The population is approximately 1,000. The locality

COMMERCIAL CUBA

is mountainous, and probably minerals exist in it; while coffee and other industries, especially lumber, could probably be developed. The principal product of the locality at present is tobacco.

The following tables show the production and price of tobacco in the district of Sagua de Tánamo for a number of years :

TOBACCO PRODUCED.

	<i>Bales of 220.5 lbs.</i>		<i>Bales of 220.5 lbs.</i>	
1890.....	3,175			1894.....
1891.....	4,081			1895.....
1892.....	1,100			1896.....
1893.....	1,200			

The average prices per 100 pounds were :

1890.....	\$17.05		1894.....	\$7.20
1891.....	13.18		1895.....	7.20
1892.....	12.15		1896.....	11.50
1893.....	10.60			

SOCORRO.—An unimportant hamlet on the new line of the Santiago Railroad, six miles from Morón.

VICTORIA DE LAS TUNAS (also known as Tunas, or Las Tunas).—It is, or was, an inland town of about 2,000 inhabitants, founded in 1759, and located about thirty miles from Nuevitas, and nineteen miles from the southern coast, between the important inland towns of Puerto Príncipe and Holguín. Its commerce was conducted through the harbor of Manatí, some thirty-five miles to the north. The entire town was, however, destroyed by General García, September 4, 1897, and it is now impossible to tell whether or not it will be rebuilt.

APPENDIX

CUBAN BUSINESS DIRECTORY

(1896)

This directory of names is given solely for the purpose of aiding those who may wish to open a correspondence on business matters with the permanent residents of particular localities in the island. It ought to be almost unnecessary to add that, in view of the recent unsettled state of Cuba, the presence or absence of any name is not to be regarded as a proof of financial soundness, or the reverse.

AGUACATE.

BOOTS AND SHOES.

Alvarez, José.
Calderón, Ramón.

DRUGS.

Alvarez, Agapito.
Marín, Domingo.
Quián, José Carlos.

SADDLERY AND HARNESS.

Alvarez, José.
Montero, Secundino.

SILK GOODS.

Gonzalez, Domingo.

TOBACCO.

Alonso, Emiliano.
Jorba, José.
Serdeña, José.

ALQUIZAR.

BOOTS AND SHOES.

Lopez, Vicente.
Llorens, Miguel.
Rodríguez, Clemente.
Sanchez, José.

DRUGS.

Martinez, Moné.

GROCERIES AND PROVISIONS.

Alonso, Venancio.

BARACOA.

BOOKSELLER.

Fernandez, José.

BARACOA.

COMMISSION MERCHANTS.

Bonell & Ruiz.
Crespo, José A.
Cuervo, Arango.
Dumois, H. & Co.
Gomez, Francisco & Co.
Soto, José María.
Tur, José.
Vidaillet, José.

HARDWARE.

José Pastor, Gonzalez.

IMPORTERS.

Cuervo, Manuel & Co. (general merchandise).
Dumois, H. & Co. (fruits).
Gomez, Francisco N. & Co. (fruits).
Monés & Co. (fruits).
Tur, José (fruits).
Vidaillet, José (fruits).
Vidaillet & Monroig.

JEWELLER.

Castro, Pedro Fornel.

MANUFACTURER OF COCOANUT OIL, CHOCOLATE, ETC.

Vidaillet, José.

PETROLEUM REFINERS.

Vidaillet & Monroig.

PRINTING OFFICES.

Castañón, César P.
Cuevas & Pera.
Timoned, José.

APPENDIX

BARACOA.

SADDLERY.

Soler, Enrique.
Tamayo, Patrocinio.

SILK GOODS.

Beruff, Angel.
Casanova Ruiz & Co.

TOBACCO.

Albert, Carmelo.
Arrúe, Miguel.
Berthlemy, Lizardo.
Cordero, Primitivo.
Fernando, Lino.
Osorio, Julio.
Rodríguez, Gabriel.

UNDERTAKERS.

Dominguez, Vicente.
Rodríguez, Francisco.

BATABANÓ AND HARBOR.

(B signifies Batabanó; H signifies Harbor.)

BOOTS AND SHOES.

Azarloza, Rufino, B.
Barceló, Juan.
Garnilla, Gregorio, B.
Pradera, Nicolás, H.
Ramírez, Francisco, B.
Rivero, Pedro, B.

DRUGS.

Cortada, Benito, B.
Perez, Aristides, B.

HARDWARE.

Caballero & Co., H.
García, Cipriano, B.
Jaime, Francisco, H.
Martínez, Bernardo, B.

NOTIONS.

Cereijo, Esperanza, H.

SADDLERY.

Leon, Cristobal de, B.

TAILORING ESTABLISHMENTS.

Caridad, Pablo, H.
Lois, Felipe, H.

TOBACCO.

Colmenares, José F., H.
Gomez, Francisco, B.
Herrera, Francisco, B.
Monaga, Vidal, H.
Reynals, Ignacio, B.
Rodríguez, José R., B.
Roselló, Lorenzo, B.
Vazquez, Rosario, B.

BATABANÓ AND HARBOR.

UNDERTAKER.

Rodríguez, Salvador.

BEJUCAL.

BOOTS AND SHOES.

Alvarez, José.
Niebla, Manuel.
Pando, José María.
Simonte, Arturo.

DRUGS.

Campos, Francisco.
Espinosa, José María.

HARDWARE.

Méndez, Felix.

PRINTING HOUSE.

Nicolás, Abad H.

SADDLERY AND HARNESS.

Sierra, Faustino.

TAILORING ESTABLISHMENT.

Mendivil, José.

TOBACCO.

Alvarez, Francisco.
Fondevilla, Martínez.
Govantes, Francisco.
Perez, José.
Velasco, Antonio.

BOLONDRÓN.

BOOTS AND SHOES.

Campos, Alejandro.
Rodríguez, Felipa.
Romero, Luis.
Sanchez, Arturo.
Sang, Leon.

DRUGS.

Fernandez, Arturo.
Sanchez, M.
Telot, Julio.

HARDWARE.

Urréchaga, Rodrigo.

SADDLERY.

Campos, Alejandro.
Gonzalez & Co.
Lezcano, Rafael.
Sanchez, Antonio.

SILVERSMITHS.

Castellanos, Manuela.
Gras, Manuel.

APPENDIX

BOLONDRÓN.

TOBACCO.

Ansman, Pedro.
Duarte, Juan.
Fernandez, Ramón.
García, Javier.
Ginés, Gregorio.
Valle, Zacarías.

CAIBARIÉN.

BOOTS AND SHOES.

Achón, Enrique.
Alegre & Bergues.
Cabo, Manuel.
Casasús, José.

COMMISSION MERCHANTS.

Ariosa, Viuda de.
Garvalena & Co.
Zozaya & Co.

DRUGS.

Bofill, Joaquin.

FURNITURE.

Cigoña, J. F.

GENERAL MERCHANDISE.

Barquintero, E.

GROCERIES AND PROVISIONS.

Birba, Pedro.
Carabia, G. & Co.
García, Domingo.
Lanza & Co.
Romañada, Antonio & Hno.

HARDWARE.

Meade, Guarch & Co.

HATTER.

Alverdí, F.

IMPORTERS.

Alvarez & Co.
Meave Ymas & Co.
Zozaya & Co.

PRINTING HOUSE.

Sobrado & Jorge.

SILK GOODS.

Barrenas, C.

SILK GOODS AND SMALL HARDWARE.

Alegre & Bergues.

TAILORING ESTABLISHMENTS.

Cao & San Pedro.
Cruz, R. de la.

WOVEN GOODS, CLOTHS, ETC.

Alvarez & Co.
Menendez, Soriano & Co.

CÁRDENAS.

BANKS AND BANKERS.

Balsells, J. & J.
Banco Español, Sucursal.
Rabel & Co.
Rojas & Bacot.
Tellado, Mayol & Co.

BOOTS AND SHOES.

Díaz, Manuel.
Díaz Prieto, Manuel.
Faumith, Claudio.
Febles, Plácido.
Gillienan, Antonio.
Hoza, José de la.
Izquierdo, Dolores.
Lastra, Brea & Co.
Milian, María.
Sobrevié, Felipe.
Socias, Arnaldo.
Valero, Sobrevié.

CHINESE GOODS.

Aship, Juan.
Loy Lay.
Young Leny.

COAL.

Vieta, Ramón.

COMMISSION MERCHANTS.

Balsells, J. & J.
Bringas, Pedro.
Hamel, J. B.
Muñiz & García.
Pedemonte & Co.
Rabel & Co.
Rojas & Bacot.
Tellado, Mayol & Co.

CROCKERY AND CHINAWARE.

Alvarez & Co.
Gonzalez & Mori.

DRUGS.

Barrinat Smith, Francisco.
Figueroa, Juan Fermin.
Herrero, Emilio & García.
Planas Rodriguez, Manuel.
Saez, José María.

FOUNDRY.

Labourdelle & Echegoyen.

FURNITURE.

Artigas, José & Co.
Gonzalez, Morejon.
Madruga, Juan.
Martinez, Celedonio.
Mederos, Quintin.
Meras & Co.

APPENDIX

CÁRDENAS.

GROCERIES AND PROVISIONS.

Alvarez & Cuervo.
 Arango & Co.
 Bermudez & Menendez.
 Bermudez, Vega & Co.
 Carol & Co.
 Coto, Hermano & Co.
 Gutierrez, Francisco.
 Martinez, Manuel.
 Pedemonte & Co.
 Piñero, Juan.
 Suarez, Villazón & Co.
 Urbistondo & Co.

HARDWARE.

Alvarez & Co.
 Arechaederra & Zabaleta.
 Buñuelli & Ruiz.
 Larraurri & Co.
 Linares & Pasch.
 Maribona, Perez & Co.
 Otero & Co.
 Ruiz Austin, Leandro.
 Torre & Framil.

HATTERS.

Alcantara & Hijos.
 Castro Huergo, Pedro.
 Fernández, Francisco & Co.
 Ferrera & Co.
 Mariño & Co.
 Prieto, Carlos.
 Rubira & Alvarez.
 Soto Hevia, Pedro.

HIDES AND SKINS.

Crespo & Alvarez.
 Diaz & Co.
 Fernandez & Co.
 Gutierrez, José.
 Lastre, Brea & Co.
 Nadal, Bartolomé.
 Palacio, Pedro.
 Pascual & Garcia.
 Perez, José.
 Signo & Lorenzo.
 Villanueva, Ramón.

IMPORTERS.

Balsells, J. & J.
 Barrinat, Roberto.
 Cueto & Co.
 Larraurri & Co.
 Maribona, Perez & Co.
 Sazerac & Sauvalle.
 Tellado, Mayol & Co.

JEWELRY.

Riestra, Vicente.
 Sala, Esteban.

CÁRDENAS.

MANUFACTURERS.

Arechavala, José (spirits).
 Diaz, Echavarría & Co. (spirits).
 Domenech, Salvador (liquors).
 Elizondo, Ometay & Co. (beer).
 Lezcano & Co. (barrels).
 Mesa, Juan (liquors).
 Rosell, Viuda de (hogsheads).
 Ruiz, Hilario (trunks).

PHOTOGRAPHER.

Busto, Juan G.

PRINTING OFFICES.

Martinez, F. & Co.
 Nuñez & Pagés.
 Pestana, J.
 Puig, Segundo.
 Sancho, Juan M.
 Trujillo, Enrique.

SADDLERY.

Delgado, Tomas & Perez.
 Gonzalez Santana, Vicente.
 Hernandez, José.
 Hernandez, Manuel Mederos.
 Jiminez, Miguel.
 Medero, Manuel.
 Prieto Sanchez, Angel.
 Roger, Ramón.
 Viera Romero, Francisco.
 Villanueva, Ramón.

SEWING MACHINES.

Fernandez, Guillermo & Co.
 Gutierrez Fernandez, José.
 Lastra, Brea & Co.
 Nadal Togores, Bartolomé.
 Signo, José & Lorenzo.
 Villanueva, Ramón & Ortiz.

SILK GOODS AND NOTIONS.

Bujan & Granda.
 Campa & Co.
 Garcia, Prudencio.
 Lanza, Amalia.
 Márquez, Juan.
 Vales, C. & Co.

TOBACCO AND CIGARS.

Bujan & Granda.
 Fernandez, José.
 Firigola, Pablo.
 Prado, José E. & Moya.
 Rotger, Guillermo.
 Vales & Co.

UNDERTAKER.

Cabezola, Hipólito.

APPENDIX

CÁRDENAS.

WOOD AND CLAY.

Tolón, S. T. & Co.
Vilá & Hnos.

CIENFUEGOS.

BOOTS AND SHOES.

Balmaseda, Donato.
Bouza, Carlos & Co.
Crespo, Antonio.
Fernandez, Andrés.
Fontela, Carlos.
García, José.
Hernandez, Antonio.
Irrebarregaray, Miguel.
Jiminez, Gabriel.
Martinez, Aniceto.
Muñoz, Andrés.
Ros Ferrer, Jaime.
Roselló, Gabriel.
Vilches, Antonio.
Vilches, Baldomero.

CHINESE GOODS.

Alonso, Ignacio.
Cano, José.
Cervantes, Benito.
Lung & Co.

COAL MERCHANTS.

Ross & Co.

CROCKERY.

Gutierrez, Felipe.
Perez & Hno.

DRUGS.

Figuroa, Dolores.
Figuroa, Leopoldo.
Figuroa, Rafael.
Gonzales, Francisco.
Novoa, Ramón.
Pedraja, Antonio.
Planas, Pedro.
Terry, José.

DRY GOODS.

Cases & Co.
Castillo, Gregorio.
Garrido, Vicente.

FOUNDRIES.

Castello, Carlos.
Clarck, Diego.

FURNITURE.

Alvarez, Manuel.
Gomez & Co.
Gomez, Feliciano.
Gonzalo, Benito.
Ovies, Suarez & Co.
Villapol, José

CIENFUEGOS.

GROCERIES AND PROVISIONS—WHOLESALE.

Alvarez, Cateafio.
Alvarez, Llanos & Co.
Avello & Hno.
Cardona, Hartasánchez & Co.
Castaño & Intriago.
Francesch, Pons & Co.
Gándara & Hno.
García & Co.
Menéndez & Monte.
Planas Gil & Co.
Planas & Sanchez.
Pons & Co.

HARDWARE.

Arana, Perez & Co.
Cabruja & Robert.
Coperi, Antonio.
Llovio, José.
Palau, José.
Perez, Lorenzo.
Perez, Olascoaga & Co.
Perez & Hermano.
Trujillo, Carlos J.

HATTERS.

Alvarez, Luis.
Barquin & Co.
Castrillón, Manuel.
Dorrego & Hermano.
Gonzalez Posada, Antonio.
Menendez, José.
Rodríguez, Francisco.
Sanjuan, Benito.

IMPORTER OF CROCKERY, CHINA, AND GLASSWARE.

Gutierrez, Felipe.

DRY GOODS.

Castillo, Gregorio.
Cazés, Celestin & Co.

FANCY WARE, PERFUMERY, BASKET WARE, ETC.

Torres, J. & Co.
Villar & Co.

HARDWARE, CUTLERY, AGRICULTURAL IMPLEMENTS, ETC.

Coppire, Antonio.
Llovio, José.
Perez, Olascoaga & Co.
Trujillo, Carlos.

PROVISIONS.

Cardona, Hartasánchez & Co.
Castaño, Nicolás—Importer and Exporter.
Francesch, Pons & Co.

APPENDIX

CIENFUEGOS.

PROVISIONS (*cont'a*).

Gándara & Hermano.
García & Co.—Importer and Ex-
porter.
Llano, F. & Co.
Menendez & Mont.
Planas, J. & Co.

IMPORTERS—GENERAL

Cabrera & Acosta.
Cardona, Hartasánchez & Co.
Castaño & Intriago.
Castaño, Nicolas.
Castillo, G.
Cazes, C. & Co.
Copperi, Antonio.
Francesch, Pons & Co.
García & Co.
Gelhay, Hermanos.
Murray, J. T.
Stillman, O. B.
Suarez, Ovies & Co.
Torres, J. & Co.
Velasco & Ruiloba.
Yriondo Hermanos & Co.

JEWELLERS.

Bauriedel & Co.
D'Acosta, Antonio.
Villar & Co.

LUMBER AND CLAY.

Castañer & Co.
Castaño & Co.
Garriga, Hno & Co.
Gomez & Co.

MANUFACTURERS OF CIGARS.

Alfonso & Co.
Avello, Sabino.
Borges, Ventura.
Cabrera, Joaquin.
Cabrera & Acosta.
Couto & Benito.
Fernandez, Serafin.
Fernandez & Co.
Gutierrez, Francisco.
Lorente, Gabriel.
Palacios & Co.
Rodriguez, Diego.
Sanchez, Manuel.
San Pedro & Co.
Suarez, Francisco.

MANUFACTURERS—GENERAL

Balta, José (soap).
Castille, Carlos (ice).
Castillo, Ramón (soda waters).
Estevez, Vicente (trunks).
García, Francisco (chocolate).
Gomez, Manuel (liquors).

CIENFUEGOS.

MANUFACTURERS—GENERAL (*cont'd*).

Guerra & Hermano (liquors).
Lavin & Co. (liquors).
Lopez, Manuel (liquors).
Osta, Narciso (liquors).
Pagés, Pedro (ardent spirits).
Perez, Amaro (brooms).
Planos, Gil & Co. (chocolate).
Revolta, Gavina (corn-meal).
Romagosa & Anleo (soda).
Salcines, Victor (brooms).
Santin, José (liquors).
Serpa, Ramón (trunks).
Suarez, Alvarez Ramón (liquors).
Suarez, Antonio R. (trunks).
Utset, Francisco (chocolate).

MERCHANTS AND BANKERS.

Avilés, J. & A.
Cardona, Hartasánchez & Co.
Castaño & Intriago.
Dorticós, Teresa, Viuda de Terry.
Fowler & Co.
García & Co.
Hunicke, Federico.
Jova, José R.
Menendez & Co.
Peña & Co.
Robés, Faustino G.
Terry, Francisco & Emilio.
Torriente & Hnos.

PHOTOGRAPHERS.

Carbonell, José.
Cotera, Efasio.
Wigaud, C.

PRINTING OFFICES.

Amat, Federico.
Andrew, José Y.
Bayas, Fermín.
Gamboa, Nicolás.
García, Ricardo.
Medin, Francisco.
Monteagudo, María.
Muñiz, Manuel.
Seguret, Federico.
Valero, Belisario.
Vila, Vistor.

SADDLERY.

Echarte & Iribarregaray.
Loza, Adolfo.
Loza, Pastor.
Roselló, C.
Rupalé, Hipólito.

SMALL HARDWARE AND SILK GOODS.

Alonso, José.
Anglada, Salvador.
Castillo, Gregorio.

APPENDIX

<p style="text-align: center;">CIENFUEGOS.</p> <p>SMALL HARDWARE AND SILK GOODS (<i>cont'd</i>).</p> <p>Coca, Juan. Gil, E. Gonzalez & Gándara. Llaguno & Sierra. Rivas, Joaquín. Torres & Co. Villar & Co.</p> <p>STATIONERY.</p> <p>Rodriguez, Benito. Torres, J. & Co. Villar & Co.</p> <p>TOBACCO-LEAF.</p> <p>Avello, Sabino. Cardona, Hartasánchez & Co. Iglesias, Francisco. Sanchez, Eloy.</p> <p>UNDERTAKERS.</p> <p>Alvarez & Goiri. Alvarez & José. Pujol, Juan.</p> <p style="text-align: center;">COLÓN.</p> <p>BOOTS AND SHOES.</p> <p>Buena, Francisco. Curbelo, Pedro. Mendez, José. Montoro & Hermano. Rodriguez, José. Vega & Hermano. Velasqui, Juan.</p> <p>DRUGS.</p> <p>Conde, F. Gómez, Juan. Valdés, Eduardo. Xenes, Pablo.</p> <p>FOUNDRY.</p> <p>Atkinson, Tio & Co.</p> <p>FURNITURE.</p> <p>Molinos, Pablo.</p> <p>GROCERIES AND PROVISIONS.</p> <p>Lastra & Co. Oroza, Bereijo & Co.</p> <p>HARDWARE.</p> <p>García & Co.</p> <p>HATTERS.</p> <p>Casona, Segundo. Fernandez & Co. Rodriguez, Alvaro.</p>	<p style="text-align: center;">COLÓN.</p> <p>MANUFACTURERS OF CIGARS.</p> <p>Las Horas, Angel. Ramírez, José.</p> <p>PRINTING OFFICES.</p> <p>Loreto, Francisco. Peña, Joaquín de la.</p> <p>SEWING MACHINES.</p> <p>Molinos, Pablo.</p> <p>SMALL HARDWARE.</p> <p>García, Prudencio.</p> <p>TINWARE.</p> <p>García, Adolfo. Inchaustiz, Juana.</p> <p>UNDERTAKERS.</p> <p>Corbella, José. Rimbau, Pablo. Santavalla, José.</p> <p style="text-align: center;">GIBARA.</p> <p>BANKERS AND MERCHANTS.</p> <p>Beola & Co. Longoria & Co. Silva, Manuel.</p> <p>BOOKSELLER AND STATIONER.</p> <p>Bim, Martin.</p> <p>BOOTS AND SHOES.</p> <p>Gonzalez, Antonio. Jimenez, Estéban. Santiesteban, José A. Torres, Viuda de.</p> <p>COMMISSION MERCHANTS.</p> <p>Anguera, Federico. Garrido & Co. Torre & Co.</p> <p>DRUGS.</p> <p>Munilla, Fermin. Pardiñas, Francisco.</p> <p>DRY GOODS.</p> <p>Bolívar & Co. Fernandez, Sartorio & Co. Longoria, Benito. Longoria, Demetrio.</p> <p>GROCERIES AND PROVISIONS.</p> <p>Cabrera, Manuel. García, Francisco. Garrido & Co. Martinez, Aja Manuel. Muñiz, Garcia & Co. Peña & Co. Roca, Martinez & Co. Rosal & Sanchez. Vecino, Juan.</p>
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APPENDIX

GIBARA.

IMPORTERS.

Silva & Rodriguez.

MANUFACTURERS.

Gándara & Co. (liquors).
Guillaume, Pedro (liquors).
Riera & Co. (tobacco).

PRINTING OFFICE.

Cuestra, Rafael.

SADDLERY.

Castillo, José.

SILK GOODS.

Guarch & Co.

SILVERSMITHS AND WATCHMAKERS.

Caramés, Manuel F.
Márquez, Abelardo.

SMALL HARDWARE.

Magariño, Tomás.

UNDERTAKER.

Rodriguez, Francisco.

GUANABACOA.

ALE AND BEER DEALERS.

Anedo, Rafael.
Ayats & Romaguera.

BOOTS AND SHOES.

Bulfill, Tomás.
Fernández, Carlos.
Longué, Sebastian.
Palacios, Francisco.
Perez, Dionisio.
Quintana, Juan.

DRUGS.

Gonzalez, Antonio.
Herederos de Espinosa.
Montané, Domingo.
Suarez, Juan.
Tosar, Federico.
Valdés, Valenzuela.

FURNITURE.

Guanche, Francisco.

GROCERIES AND PROVISIONS.

Angel, Castro.

HARDWARE, TOOLS, ETC.

Alfo, Serafin.
Arronte, Baltasar.
Arronte, Diego.
Longoria, Agustin.
Mayol, Jaime (small hardware).
Piedra, Francisco.
Vicente, Crego (small hardware).

GUANABACOA.

HATTERS.

Agüero, Eugenio.
Fernandez, Carlos.
Mogro, Agustin.

MANUFACTURERS OF TOBACCO.

Alvarez, Genaro.
Arenal, Lucio.
Cazañas, Cesáreo.
Diaz, Ernesto.
Diaz, Francisco.
Grado, Emilio.
Granich, Juan.
Linares, Benjamin.
Miraben, José.
Muñiz, Antonio.
Muñiz, Manuel.
Murias, Pedro.

PRINTING ESTABLISHMENTS.

Huguet, José & Belarza.
Mauro Suárez, Juan.

SADDLERY.

Fernandez, Nicolás.
Longue, Sebastian.
Palacio & Co.

SILK GOODS.

Hervas, Francisco.

UNDERTAKERS.

Chassagne, Cirilo.
Parejo, Benigno.
Ruiz & Ramos.

GUANAJAY.

BOOTS AND SHOES.

Gandía, Pánfilo.
García & Hermano.
Hernandez, Luciano.
López, Ramón.
Navarro, Juan.
Pedroso, Jorge.

DRUGS.

Alvarez, Miguel.
Rojas, Enrique.
Zamora, Narciso.

FOUNDRY.

Sanchez, Patricio.

GROCERIES AND PROVISIONS.

García Barbón, Francisco.

HARDWARE.

Granda, Bernardo.
Lopez, Ambrosio.
Menendez, Santos.
Monet, Pedro Andres.
Sigarreta, Paulino.

APPENDIX

GUANAJAY.

HATTERS.

Cairo, José.
García Blanco, Ramón.
García & Hno.
Fernandez, Antonio.
Fernandez, Barbón.

JEWELLERS.

Núñez & Hno.

MANUFACTURER OF TOBACCO.

Rodríguez, Manuel.

PRINTING OFFICE.

Rodríguez, Manuel.

SADDLERY.

Alvarez, Manuel.

SEWING MACHINES.

Fernández & Hermanos.

SMALL HARDWARE.

Fábregas, Emilio.
Saavedra, Jacobo.

GUANE.

BOOTS AND SHOES.

Lopez, Fernando.
Lozano, Domingo.
Martínez, Bonifacio.
Muriedas, Justo.
Otega, Juan.
Santollo, Luis.

DRUGS.

Fernandez, Miguel.
Rubio, Alejandro.

HARDWARE.

Bejarano, J. de la C.
Vico, José María.

GUANTANAMO.

ARMS AND AMMUNITION.

Aguilar, Silvestre.
Cabal, Alfredo.
Juanneau, Constantino.

BANKERS AND MERCHANTS.

Baro & Hno.
Brauet, C. & Co.
Brooks & Co.
Bueno, J. & Co.

BOOTS AND SHOES.

Armesto & Vicens.
Carrey, Juan B.
Marqués, Francisco.
Martí, Viuda de.
Massó & Co.
Vicens, Ramón & Co.

GUANTÁNAMO.

CHINA, GLASSWARE, ETC.

Adero & Co.
Callico & Co.
García, Juan.

DRUGS.

Carcasés, Porfirio.
Guerra, Pedro.
Lacavalerie, José & Co.
Sierra, Estevan A.
Planas, Manuel & Tur.

HARDWARE.

Brauet, C. & Co.
Escobar, Bernardo.
Esteban, José.
Juglada, Arturo & Co.
Larot, Julio.

HATS.

Pageó, Ramón.

IMPORTERS.

Soler, P. & Co.

MANUFACTURERS.

Beltrán, Salvador (bricks and tiles).
Cano, Francisco (bricks and tiles).
Duboc, Pedro (bricks and tiles).
García, Juan (hats).
Gaulhiac, Ernesto (lime).
Gaulhiac, I. & Co. (ice).
Jacas & Co. (liquors).
López Pedro (lime).
Mestre, Antonio (liquors).
Moné, Llorzas & Co. (liquors).
Planes, Sucesión, S. (bricks and tiles).
Sánchez & Co. (bricks and tiles).
Soler, Esteban (lime).
Soler, P. & Co. (liquors).

PROVISIONS.

Callico, Gerónimo.
Gonzales, Ramón.
Jacas & Co.
Mestre, Antonio.
Mola, Evaristo.
Moné, Pedro.
Moné, Liossas & Co.
Pi, Juan.
Rifa, Hno & Co.
Rosés, Hermanos & Cc.
Soler & Co., Pablo.

SADDLERY AND HARNESS.

Jalowasky, Eduardo.
Lobaina, María.
Prince, Juan.
Velez, Carlós.

APPENDIX

GUANTÁNAMO.

SMALL HARDWARE AND NOTIONS.

Aders & Co.
Garcia, Juan.

SUGARS.

Barcó, J.
Brault, C. & Co.
Brooks & Co.
Bueno & Co.

HAVANA.

AGRICULTURAL IMPLEMENTS — IMPORTERS.

Alvarez, Benito & Co.
Amat & Co.
Arambalza & Hno.
Ferran, Jorge.
Isasi & Co.
Uresandi, Alvarez & Co.

ARMS AND AMMUNITION.

Fisher, Enrique.
Iriarte, José Mariá.
Mayor & Arzola.
Romero, Antonio.
Romero, Faustino.
Uresandi, Alvarez & Co.

BANKS AND BANKERS.

Balcells, J. & Co.
Bances, J. A.
Banco del Comercio.
Banco Español de la Isla de Cuba.
Borges, J. M. & Co.
Bridat, Mont'ros & Co.
Codes, Loychate & Co.
Crédito Territorial Hipotecaria.
Gelats, N. & Co.
Hidalgo & Co.
Lawton Brothers.
Piñón, B. & Co.
Rafecas, J. & Co.
Romero, R. & Co.
Ruiz, L. & Co.
Upmann, H. & Co.
Wickes, C. L. & Co.

BOOKBINDERS.

Cortinas, José.
Fernandez, P. & Co.
Howson, Hnos.
Merelo, Cipriano.
Perez Villamil, Ramón.
Ruiz & Hno.
Solana, B.
Torroella & Lopez.

BOOKSELLERS.

Alarcia & Co.
Alorda, Viuda de.

HAVANA.

BOOKSELLERS (*cont'd*).

Chao, Alejandro.
Fernandez Casona, Elías.
Garcia Vazquez, Francisco.
Gonzalez, Juan.
Gutierrez, Julian.
Gutierrez & Cueto.
Lopez, Santiago.
Martinez, Julian.
Merino, José.
Pozo é Hijo, E.
Pozo é Hijo, Viuda de.
Ricoy, Manuel.
Riesch, Cárlos.
Rodriguez, Ramos M.
Sala, Clemente.
Turbiano, José D.
Turbiano, Rafael.
Valdeparés, José.
Valle, P. del & Arribas.
Villa, Viuda de Miguel.
Wilson, Edwin W.

BOOTS AND SHOES.

Albeac, Enriqueta.
Arias, Bernardo.
Assen, Pedro J.
Basanta, Manuel.
Boadella, Enrique.
Cajeti, Antonio.
Carbajal, Tiburcio.
Carreras, Sebastian.
Cruet, Juan.
Cuesta, Angel.
Diaz, Zoilo.
Fusté, Juan.
García, Andrés.
García, Benito.
García, Francisco.
Garroti, Vicente.
Gaspar, Francisco.
Groset, Sebastian.
Laiseca, Bernabé.
Martin & Co.
Mogica, José.
Montané, Próspero.
Naranjo & Vazquez.
Noguera & Rosés.
Pardiñas, Narciso.
Paz, Ramón.
Peñez, Ramón.
Perez, Aniceto.
Perez, José.
Pla, Juan.
Pol, Juan.
Puig, Manuel.
Riesgo, Isidro.
Robles, Manuel.
Rodriguez, Manuel.
Rojas, Ignacio.

APPENDIX

HAVANA.

BOOTS AND SHOES (*cont'd*).

Rubira, José.
 San-Pons, Joaquin.
 Torrado, Ramón F.
 Urzia, Mercedes.
 Vazquez, Francisco.

CHEMICALS.

Anelle, J. T.
 Astudillo, Francisco.
 Caro, Antonio.
 Engel, Luis.
 Garrido, Ignacio.
 Herrera & Orúe.
 Quevedo, Benito.
 Sandoval, Aurelio.
 Vila & Vendrell.
 Zardoya, Maximino.

CHINA AND GLASSWARE.

Abascal, Valeriano.
 Alonso & Co.
 Argudin & Diaz.
 Callantes & Hnos.
 Cañizo, José S.
 Conejo, Angel.
 Diaz, Manuel.
 Fernandez, Tomás & Co.
 Gomez & Co.
 Humara & Co.
 Lavielle, J. & Co.
 Lopez, Hilario.
 Martinez, Carlos.
 Ortiz, Pedro.
 Ortiz, Rosendo.
 Perez & Co.
 Yarto & Garcia.
 Zapata, Vidaurrazaga & Larrate.

CHINESE GOODS.

Alam & Asan.
 Cham Dió.
 Chong To Wo.
 Lo Wing.
 Luong Sang.
 Weng, On & Co.
 Wing, Tung.

CIGAR AND TOBACCO MANUFACTURERS.

Alvarez, Casimiro.
 Alvarez, Genaro.
 Alvarez, Inocencio.
 Alvarez & Alvarez.
 Alvarez, Victor.
 Alvarez & Co.
 Alvarez, Justo & Co.
 Alvarez, Segundo & Co.
 Allones, Antonio.
 Arce & Garcia.
 Arenal, Lucio.
 Arguelles, R. & Co.

HAVANA.

CIGAR AND TOBACCO MANUFACTURERS (*cont'd*).

Arias, Pedro.
 Arizaga, Vicente.
 Azcano, Sebastian.
 Bances & Lopez.
 Barquinero, Adela.
 Barranco & Co.
 Barreto, Manuel.
 Beci, M. de & Hno.
 Bejar, Manuel.
 Boher & Hno.
 Bustamante, Manuel.
 Bustillo & Hno.
 Cabal, Francisco.
 Calvo & Co.
 Camacho, Manuel.
 Cambas & Hno.
 Carreras, Cláudio.
 Carvajal, Leopoldo.
 Carvajal & Co.
 Castillo, Gabino.
 Celorio, B. & Co.
 Celorio & Mora.
 Cocina, José.
 Coll, P. & Co.
 Cortina & Gomez.
 Cueto, Juan & Co.
 Chao, Juan.
 Diaz, Cristóbal.
 Diaz & Alvarez.
 Diaz, Tomás.
 Diaz & Hno.
 Diaz, Zóilo.
 Dubróca, Ardalio.
 Estanillo, Junco & Corujó.
 Estanillo, P. Antonio.
 Faedo & Co.
 Faya, Faustino.
 Fernandez, Corral & Co.
 Fernandez, García Antonio.
 Fernandez, José.
 Fernandez & Fernandez.
 Fernandez & Garcia.
 Fernandez & Palaez.
 Garcia, Candido.
 García, Ramón & Co.
 García, Gumersindo.
 García, Manuel.
 García, Domingo & Co.
 García, Marcelino & Co.
 Gener, José.
 Godinez, Francisco.
 Gonzalez, Gabriel.
 Gonzalez, Ignacio & Onofre.
 Gonzalez, José.
 Gutierrez & Co.
 Henry Clay & Bock & Co.
 Herera, Dorotea.
 Ilbaceta, José.

APPENDIX

HAVANA.

CIGAR AND TOBACCO MANUFACTURERS (*cont'd.*).

Inclan, Diaz & Co.
 Larrea & Hno.
 Looft, Wm. & Co.
 Lopez, Antonio.
 Lopez, Bencomo M.
 Lopez, Juan.
 Lopez & Co.
 Lopez, Calixto & Co.
 Lopez, Manuel & Co.
 Luque, Cristóbal F.
 Maceda, José.
 Marinas, Manuel.
 Marinas & Posada.
 Mendez, Francisco.
 Mendia, Domingo.
 Menendez, Francisco.
 Menendez, José.
 Mora & Co.
 Moreda, Pedro.
 Morales, José & Co.
 Murias, Pedro.
 Murias, Felix & Co.
 Nogueira, Alfredo.
 Olmo, Ignacio.
 Ortiz & Hno.
 Parrondo, Evaristo.
 Partagás & Co., Ltd.
 Peñeflori, Alvarez & Co.
 Pereira, Manuel.
 Pereda, Luis & Co.
 Perez del Rio, Francisco.
 Perez, Juan.
 Perez, Sabino.
 Pijuan, Viuda de.
 Piñera, Rosendo & Hno.
 Pino & Villamil.
 Posada, José Antonio.
 Rabell, Prudencio.
 Ramirez, Angel.
 Real, Tomás del.
 Rencurrell, José M.
 Rendueles, Rosendo.
 Rivero, Manuel.
 Rivero, Martinez & Co.
 Rodriguez, Andrés.
 Rodriguez, Emilio.
 Rodriguez, José.
 Rodriguez, Manuel F.
 Rodriguez, Melchor.
 Rodriguez, Rosendo.
 Roger, Viuda de Pedro.
 Saavedra, José & Co.
 Sanchez, Gabriel.
 Sanchez & Co.
 Selgas & Garcia.
 Sosa, Manuel.
 Suarez, Benito.
 Suarez, Cayetano.

HAVANA.

CIGAR AND TOBACCO MANUFACTURERS (*cont'd.*).

Suarez & Armas.
 Tirado, Faustino.
 Trotcha, Miguel.
 Upmann, H. & Co.
 Valerio, J. & Co.
 Vales, J. & Co.
 Valle, Alejandro.
 Valle, M. & Co.
 Ventura, Juan.
 Yurre, Ignacio de.

COAL DEALERS.

Artau, Gaspar.
 Barrio & Coello.
 Barceló & Cova.
 Cao, José.
 Capellá, Nonell & Sagaz.
 Fernandez & Castrillón.
 Gamiz, Pablo.
 Lage, José.
 Llano & Hermano.
 Lopez, Pedro Paz.
 Lopez, Ramón.
 Piñero, Manuel.
 Planiol, Fernandez & Co.

COMMERCIAL AGENTS.

Artiaga, Luis (publications).
 Betancourt, Frank A. (typewriters).
 Corominas, Adolfo.
 Extremera, José (Spanish newspapers).
 Garrido, Francisco.
 Hernandez, Domingo (machinery).
 Marin, Ricardo (undertakers' supplies).
 Molina, Nicolás & Alvarez (undertakers' supplies).
 Molinas & July (publications).
 Pozo, Viuda de & Hijos (newspapers).
 Reyling & Co. (railroad and building supplies).
 Sala, Clemente (newspapers).
 Tomati, Ambrosio (machinery).
 Wilson, Ed. (foreign newspapers).

COMMISSION MERCHANTS.

Alegret, José.
 Alfonso, Pastor.
 Almeida, N.
 Alvarez, Juan.
 Armand, E. & Co.
 Arrojo, Serafin.
 Balcells, J. & Co.
 Bances, J. A.
 Barrios & Co.
 Batista, Fernando.

APPENDIX

HAVANA.

COMMISSION MERCHANTS (*cont'd*).

Beck, C. E.
 Berndes, J. F. & Co.
 Betancourt, Lucio.
 Blanch, C. & Co.
 Brú, Alberto.
 Bosselmann & Schroder.
 Bridat, Mont'ros & Co.
 Broderman, F. H.
 Calvo, M. & Co.
 Camara, José J.
 Carbó & Co.
 Codés, Loxchate & Co.
 Conill & Archbold.
 Deulofeu, Hijo & Co.
 Diez, Francisco.
 Dominguez, Luis.
 Droop, Otto D.
 Dussag & Co.
 Fabra & Co.
 Falk, Rohlsen & Co.
 Fariñas & Hijos.
 Fariñas, Pedro.
 Fernandez, Carrillo & Co.
 Francke, Hijos & Co.
 Fuentes, Nicasio.
 García, Serra & Co.
 Gelats, N. & Co.
 Giberga, Samuel & Co.
 Gomez, Joaquin.
 Gomez, Manuel & Co.
 Gonzales, Pablo.
 Goudie, J. & Co.
 Hamel, Henry B. & Co.
 Hayley & Co.
 Hernandez, Pablo.
 Hernandez, Ruperto.
 Heydrich, Emilio.
 Hidalgo & Co.
 Higgins & Co.
 Illas, Juan.
 Jané & Co.
 Jané, Pascual & Co.
 Lange & Lemhardt.
 Lawton Brothers.
 Lay, Jorge.
 Looft, William & Co.
 Lopez, Guillermo.
 Lopez, Calixto & Co.
 Lozada, Andrés.
 Marquette, Jr., J. R.
 Martinez & Co.
 Martinez, Pinillos & Co.
 Martinez, Tomás.
 Matas, Juan Lino.
 Mayos, Miguel.
 Mena, Manuel.
 Millington.
 Moenck, D. H.
 Mojarrieta, L.

HAVANA.

COMMISSION MERCHANTS (*cont'd*).

Muller & Co.
 Neo Pensado, Juan.
 Neuhaus, Neumann & Co.
 Noriega, Prudencio.
 Ohmstedt, Enrique.
 Ordetx, Julio.
 Ordoñez, Hnos.
 Otamendi, Herrmano & Co.
 Pages, Pedro.
 Pardiñas, Francisco.
 Pastell, Miguel.
 Perkins, Ricardo.
 Pinon & Co.
 Poblet & Casanueva.
 Puig, Baldomero.
 Pujol & Mayola.
 Rafecas & Co.
 Rexach, Ulpiano.
 Rodriguez, Francisco Alvarez.
 Romero, R. & Co.
 Rovirosa, Francisco A.
 Ruiz, L. & Co.
 Sanchez, Antonio J.
 San Juan, Francisco.
 San Miguel, Manuel.
 San Roman & Pita.
 Santamaria, Rafael Perez.
 Schmidt & Co.
 Schwab & Tillman.
 Seidel, J. S.
 Serpa, Antonio.
 Serrapiñana, Enrique.
 Serrapiñana & Heuser.
 Smith, Enrique H.
 Sobrinos de Herrera,
 Someillan & Hijo.
 Stevenson & Diaz.
 Sturz, B. & Co.
 Suarez, Jacinto.
 Truffin & Co.
 Ubago, Angel & Hijo.
 Upmann, H. & Co.
 Van Assche, Stroybant & Co.
 Varona, Enrique.
 Veiga, Santiago.
 Veiga, Solá & Co.
 Verdini, Francisco.
 Villalonga, Narciso.
 Vionnet & Co.
 Wickes, C. R. & Co.
 Will, Hermanos.
 Zabala, J. D.
 Zabarte, Candido.
 Zendegui & Co.

DEALERS IN WOOD AND CLAY.

Balbi, Domingo.
 Carreras & Giol.
 Diaz & Alvarez.

APPENDIX

HAVANA.

DEALERS IN WOOD AND CLAY (*cont'd*).

Diaz, Ladislao & Hno.
 Lens, Dosal & Co.
 Ortoll, Bartolomé.
 Planiol, Fernandez & Co.
 Pons, Hnos.
 Rio, J. & Co.
 Rio, Andrés del & Perez.
 Sureda, Juan & Roselló.
 Talleria, Antonio C.
 Vila, Antonio.

DISTILLERS.

Aleman, Florencio.
 Alvarez & Echeguren.
 Ayarza, Gabriel.
 Casanova, Pablo.
 Castals & Garay.
 Gil, Francisco.
 González, Julian.
 Menéndez & Domenech.
 Miguel, F. & Co.
 Miré, F.
 Otermin & Otamendi.
 Oyarzabal & Co.
 Peralta, Camilo & Co.
 Quiroga, E. & Co.
 Rada, José Maria.
 Romaña & Co.
 Trespalacios, Aniceto.
 Trueba & Hnos.
 Vivanco, Braulio.

DRUGS.

Alacan, Valentin.
 Alvarez, Augusto.
 Alvarez, Francisco.
 Aragon, Ernesto.
 Arnautó, Martin.
 Baguer, José.
 Barata, Miguel.
 Barbero, Francisco.
 Barrinat, Arturo.
 Betancourt, Mauricio.
 Bosque, Alfredo.
 Bosque, Arturo C.
 Botet, Ramón.
 Brito, Benjamin L.
 Bueno, J. A. Vedado.
 Cabrera, Felipe.
 Cajigas, Juan.
 Castellanos, Pedro.
 Castells & Co.
 Castro, Emilio de.
 Castro, Pedro N. de.
 Catalá, Viuda de.
 Consuegra, Adolfo.
 Consuegra, Ricardo.
 Delgado, Manuel E.

HAVANA.

DRUGS (*cont'd*).

Diaz, Gabriel.
 Diaz, Joaquin.
 Diaz, José Guillermo.
 Ecay, Manuel de J.
 Estevez, José C.
 Fernandez de Cordova, E. A.
 Ferrer, J.
 Fina, Ricardo.
 Fontanills, Luis Felipe.
 Formel, Julio Z.
 Frias, Julio.
 Gardáno, José.
 Gomez de la Maza, José.
 Gonzalez Curquejo Antonio.
 Guilhamelou, Carlos.
 Hernandez, Domingo.
 Hernandez, Felix.
 Hernandez, Ladislao.
 Hierro, C. F.
 Johnson, Manuel.
 Larrazabal, Raimundo.
 León, Viuda de Tomás.
 Lopez, Clemente.
 Lopez, Leopoldo.
 Marquez, Luis J.
 Martinez, Justo L.
 Martinez, Tomás.
 Maza, Ildefonso de la.
 Maza, Miguel de la.
 Militar.
 O'Farrill, Gabriel.
 Orts, Tomás & Linares.
 Palú, Eduardo.
 Pardifias, Emilio.
 Perez Carrillo, Alfredo.
 Perez, Mamerto.
 Poey, Rodolfo.
 Portocarrero, Manuel R.
 Regueyra, Santiago.
 Reyes, José.
 Rodriguez Ecay, Gaspar.
 Rodriguez, Manuel.
 Rovira, José de J.
 Ruiz, Viuda de.
 Sanchez, Arturo.
 Sarrá, José.
 Sell, Manuel & Guzmán.
 Silva, Francisco.
 Solano, Manuel & Molina.
 Torralbas, Antonio.
 Tremoleda, Agustin.
 Ulrici, Carlos.
 Valdes, José Belen.
 Valdes, J. Tirso.
 Villavicencio, Eligio N.
 Villiers, Manuel.
 Villiers & Suarez.
 Xenes, Francisco.
 Zardoya, Maximino.

APPENDIX

HAVANA.

DRY GOODS.

Alonso, Modesto.
 Alvarez, Puente & Co.
 Alvarez, Valdes & Co.
 Arcos, Angel A. & Co.
 Arenas, Juan F. & Co.
 Arriaza & Selma.
 Bandujo, Ramón.
 Barbón, Hno. & Co.
 Casuso & Dirube.
 Cobo Hnos. & Co.
 Diaz, Benito.
 Doyle, Perez & Co.
 Escandón, M.
 Falk, Rohlsen & Co.
 Fargas, Hno. & Co.
 Fernandez Hno. & Co.
 Fernandez, Junquera & Co.
 Galan, José María & Co.
 Galindez, M. C.
 Gamba, F. & Co.
 García Alvarez, José.
 García Tuñón, Segundo.
 Garrido, Calvo & Co.
 Gomez & Sobrinos.
 Goyenechea & Villanueva.
 Grau, Lastra & Co.
 Guezala, Cárlos.
 Herrera, Manuel.
 Herrero, Demetrio.
 Ibañez, L. & Co.
 Inclán & Co.
 Lenzano, Adolfo.
 Lopez, San Pelayo & Co.
 Maribona, García & Co.
 Martinez, Rodriguez, Valdés & Co.
 Maturana, R. & Co.
 Miquelarena, J. A.
 Morante, Alfredo.
 Nazabal, Ulacla & Co.
 Pella, Martin F.
 Prendes & Co.
 Quirós, Oriente & Co.
 Revuelta & Co.
 Rodriguez, Gonzalez & Co.
 Rodriguez, Martinez & Co.
 Ruiz & Co.
 Solís & Co., Francisco.
 Somonte & Pola.
 Suarez & García.
 Sueyras, Pedro.
 Taladrid & Hno.
 Teran, Aréna & Co.
 Valle, G. del & Co.
 Villasuso, Muela & Co.
 Zamanillo, Ricardo.

ELECTRICAL APPARATUS.

Morena, Manuel.
 Morgue, Fernando.
 Riquero, Francisco.

HAVANA.

ENGRAVERS.

Arvier, Hipólito.
 Bertolay, David.
 Coopat, Eduardo (of jewelry).
 Miarteni, Páblo (of precious stones).
 Palmas, M. R. (of metals).
 Ruiz, M. & Co.
 Santa Coloma, J.
 Sureda, Juan (of glass).
 Taveira, Alfredo.
 Torre, Nicasio de la.

EXPORTERS OF CIGARS AND TOBACCO.

Bances, J. A.
 Beck, C. E.
 Bosselman & Schroder.
 Broderman, F. H.
 Carvajal, L. H. & Co.
 Clay, Bock & Co.
 Gener, José.
 Looft, William & Co.
 Mayoz, Miguel.
 Neuhaus, Neumann & Co.
 Ordet, Julio.
 Upmann, H. & Co.

EXPORTERS OF FRUIT

Barrios & Co.
 Betancourt, Ignacio.
 Calafat, Antonio.
 Gonzalez Lopez, Diego.
 Leon, Bernardo.
 Oliva, Julian R.

EXPORTERS OF OLD METALS, RAGS, ETC.

Hamel, H. B. & Co.

FANS AND UMBRELLAS.

Amando, Andrés.
 Carranza, Manuel (manufacturer).
 Charavay & Lacoste (manufacturers).
 Rivera, Antonio (manufacturer).
 Rodriguez, José.
 Tamarit, Antonio (manufacturer).

FOUNDRIES.

Baloyra, Manuel.
 Estapé, Enrique & Puig.
 Lambden, Amelia.
 Madurell, José.
 Velo, Angei.

FURNITURE.

Albo, Manuel.
 Alonso, Antonio.
 Alvarez, Eduardo.
 Baquiola, Juan B.
 Betancourt, Cárlos.
 Bombalier, J. J.
 Borbollavy, J. & Co.
 Canelly & Hermano.

APPENDIX

HAVANA.

FURNITURE (*cont'd*).

Carral & Fernandez.
 Castillo, Florentino.
 Cayón, Ramón.
 Comas, José.
 Fernandez, Antonio.
 Fernandez, Francisco.
 Gándara & Co.
 Hierro, Eladio.
 Hourcade & Co.
 Laburu, Antonio.
 Martinez, Ricardo.
 Maxenchs, José.
 Pardo, Vicente.
 Ponte, Manuel.
 Quintana, Francisco.
 Raventós, Mocesto.
 Riera, Jaime.
 Rigol, Juan.
 Rivera, Antonio.
 Rodriguez, Manuel.
 Rodriguez, Nicolás.
 Rodriguez & Co.
 Rodriguez & Reymunde.
 Ros & Novoa.
 Salgado, Mercedes.
 Sanchez, Inocencio.
 Suarez, Manuel.
 Suarez, Aurelio & Co.
 Suarez, Manuel & Suarez.
 Tuero, Francisco.
 Tuero & Tuero.
 Vazquez & Hermano.
 Villarnovo, Pedro.

GENERAL COMMISSION MERCHANTS—IM- PORTERS AND EXPORTERS.

Abascal, Valeriano.
 Ablanedo, Polidoro.
 Aguilera & Co.
 Albertí & Dowling.
 Albuerne, A. M.
 Amat & Co.
 Amiel & Co.
 Armand, E. & Co.
 Badia & Co.
 Baguer & Co.
 Balcells, J. & Co.
 Bances, J. A.
 Barkhausen & Remmer.
 Barrios & Co.
 Basterrechea, José.
 Bauriedel, Federico & Co.
 Beck, C. E.
 Berndes, J. F. & Co.
 Betancourt, Ernesto A.
 Blanch, C. & Co.
 Bordenave & Co.
 Bosselmann & Schroder.
 Bridat, Mont'ros & Co.

HAVANA.

GENERAL COMMISSION MERCHANTS—IM- PORTERS AND EXPORTERS (*cont'd*).

Broderman, F. H.
 Bulnes & Millás.
 Calvo, M. & Co.
 Cámara, José I.
 Carbó & Co.
 Conill & Archbold.
 Conill & Co.
 Cordés, Loychate & Co.
 Cuadra, Francisco.
 Desvernine & Co.
 Deulofeu, Hijo & Co.
 Diago, Federico G.
 Droop, Otto D.
 Durán & Co.
 Dussaq & Co.
 Fabra & Co.
 Falk, Rohlsen & Co.
 Fernandez, Carillo & Co.
 Francke, Hijos & Co.
 García, Eustaquio.
 García, Serra & Co.
 García & Trascastro.
 Gelats, N. & Co.
 Geyer, Ricardo.
 Giberga, Samuel & Co.
 Gomez, Manuel & Co.
 Gonzalez Lopez, Diego.
 Goudié, J. & Co.
 Grosch, H. V.
 Hall, D. B.
 Hamel, Henri B. & Co.
 Heesch, Enrique.
 Hernandez & Acosta.
 Herrera, Sobrinos de.
 Heydrich, Emilio.
 Hidalgo & Co.
 Higgins & Co.
 Ibern, A. & Hno.
 Jané, Pascual & Co.
 Jané & Co.
 Jimenis, Alberto.
 Jover, Francisco.
 Lange & Leonhardt.
 Larrabide & Fernandez.
 Lawton, Hnos.
 Llata, Aurelio.
 Looft, William & Co.
 Lopez, Calixto & Co.
 Marquette, Higo, J. R.
 Martinez, J. M. de Pinillos & Co.
 Martinez & Co.
 Mayoz, Miguel.
 Medero, J.
 Millington, J. F.
 Moenck, D. H.
 Mojarrieta, L.
 Muller & Co.
 Neuhaus, Neumann & Co.

APPENDIX

HAVANA.

GENERAL COMMISSION MERCHANTS—IMPORTERS AND EXPORTERS (*cont'd*).

Noriega, Prudencio.
 Nuñez & Herrera.
 Ohmstedt, Enrique.
 Ordetx, Julio.
 Ordoñez, Hnos.
 Otamendi, Hno. & Co.
 Pagés, Pedro.
 Perez Santamaría, Rafael.
 Perkins, Ricardo.
 Pigné, Agustin.
 Piñan & Ezquerro.
 Piñon, B. & Co.
 Pujol, José & Mayola.
 Pulido, José F.
 Rafecas, J. & Co.
 Rodriguez Alvarez, Francisco.
 Romero, R. & Co.
 Roviroza, Francisco A.
 Ruiz, L. & Co.
 San Juan, Francisco.
 San Roman & Pita.
 Sanchez, Antonio J.
 Schmidt, F. C. & Co.
 Schwab & Tillman.
 Seidel, J. S.
 Serpa, Antonio.
 Serrapiñana, Enrique.
 Serrapiñana & Heuser.
 Smith, Enrique H.
 Someillan & Hijo.
 Stevenson & Diaz.
 Sturz, B. & Co.
 Suarez, Jacinto.
 Truffin, R. & Co.
 Ubago, Angel & Hijo.
 Upmann, H. & Co.
 Van Assche, Straybant & Co.
 Veiga, Solá & Co.
 Vionnet & Co.
 Wickes, C. R. & Co.
 Will, Hnos.
 Zabala, J. D.
 Zabarte, Cándido.
 Zendegui & Co.

GLASS.

Baez, Carlos & Hermano.
 Fernandez, Genaro.
 Fernandez, Inocencio.
 Lopez, F. & Co.

GROCERIES AND PROVISIONS.

Abascal, F. & Co.
 Abellano & Fuente.
 Aguiar, Salvador.
 Aguirre, Juan.
 Alonso, Garin & Co.
 Alonso, Jauma & Co.

HAVANA.

GROCERIES AND PROVISIONS (*cont'd*).

Alonso Lavin, Francisco.
 Alvarez, Aurelio & Co.
 Amiel, Ignacio & Co.
 Arechaga, Ricardo.
 Arxer, Benito.
 Astorqui, Juan.
 Avendaño, Paulino.
 Baguer Hno. & Co.
 Balaguer, José.
 Barraqué & Co.
 Beci & Hno.
 Bedia & Co.
 Berenguer & Negra.
 Berriz, José M.
 Bilbao & Co.
 Blanch, C. & Co.
 Blanco, José.
 Brocchi, Juan.
 Bulnes & Millás.
 Caño & Co.
 Carbonell, Rosell & Co.
 Cobo, Agustin.
 Coca & Armengol.
 Codina & Hno.
 Coll, José.
 Colom & Co.
 Colo & Quesada.
 Costa, Vives & Co.
 De Beche, H.
 Diaz, Manuel.
 Echezarretta, D. & Co.
 Fabra & Co.
 Fernandez, Canto & Co.
 Fernandez, Garcia & Co.
 Fernandez, Eusebio & Co.
 Fernandez, M. & Co.
 Fors & Co.
 Galban, Rio & Co.
 Galbe & Hijo.
 García, Castro & Co.
 García, Cué & Co.
 García, Landeras & Co.
 García, Serra & Co.
 Garri, C. & Co.
 Garviso, Hereds de J.
 Gili, Quadreny & Co.
 Gonzalez & Carreño.
 Gonzalez, J. & Co.
 Gutierrez, Arrese & Co.
 Gutierrez & Co.
 Herrera, A. & Co.
 Jané, Pascual & Co.
 Larrea, Eguillor & Co.
 Lezama, J. & Larrea.
 Lloveras, Baldomero.
 Loredó, J. & Co.
 Martinez, Mendez & Co.
 Menendez, Carratalá & Co.
 Miró & Otero.

APPENDIX

HAVANA.

GROCERIES AND PROVISIONS (*cont'd*).

Muñiz & Co.
 Nazabal & Co.
 Otamendi Hno & Co.
 Pastorino & Schultz.
 Perez, Muniategui & Co.
 Perez, Ortiz & Co.
 Perez, Ceferino & Co.
 Piñan & Ezquerro.
 Pino, Juan L.
 Pujol, José & Mayola.
 Romagosa & Montejo.
 Romaña, Juan.
 Rossi, Romualdo.
 Ruiz, S. G.
 Ruiz & Co.
 Salceda, Roda & Co.
 San Roman & Pitá.
 Santa Marina, J.
 Sociedad Socorros Mútuos, Ejér-
 cito y Armada.
 Soler, Francisco.
 Suero, Andrés & Co.
 Tabernilla & Sobrino.
 Vega, Gregorio de la.
 Veiret, Lorenzo & Co.
 Villaverde & Co.
 Yarto, Nemesio.

GROCERIES AND PROVISIONS (FINER CLASS).

Alvarez & Coll.
 Arechaga, Ricardo.
 Berenguer & Negra.
 Berriz, J. Maria.
 Borrás & Llambés.
 Canales, Fraga & Co.
 Carrera, Ricardo.
 De Beche, H.
 Fernandez, Canto & Co.
 Fuentes, Saturnino.
 Gonzalez & Hno.
 Gonzalo, Toribio de.
 Masagué & Caviedes.
 Mendy, Recalt & Co.
 Miró, Isidro.
 Miró, Juan.
 Noguera, Juan.
 Nolla, Miguel.
 Remus & Baguer.
 Salvat & Bustillo.
 Seva, José R.
 Zayas & Hno.

HARDWARE.

Adecoa, Serrano & Co.
 Aguilera & Garcia.
 Alvarez, B. & Co.
 Alvarez, Barnardo & Co.
 Amat & Co.

HAVANA.

HARDWARE (*cont'd*).

Araluce, Martinez & Co.
 Arambalza & Hno.
 Builla & Co.
 Cajigal & Co.
 Ferran, Jorge.
 Gutierrez, Alonso & Co.
 Isasi & Co.
 Larrazabal & Astuy.
 Lastra & Co.
 Martinez, Seña & Co.
 Maza, Francisco de la.
 Pardo, Ramón.
 Perez, Ricardo.
 Presa & Torres.
 Prieto & Co.
 Quintana, J.
 Ramso & Castillo.
 Soto, A. & Co.
 Tijero & Co.
 Torre, C. & Co.
 Uresandi, Alvarez & Co.
 Urquiola, Diaz & Co.
 Vila & Coto.

HARDWARE (AGRICULTURAL).

Achagavia, Santiago.
 Armas, Eliseo.
 Echavarría, Inés.
 Fernandez, Francisco.
 Ferreior, Manuel.
 Ferreiro & Co.
 García, Cándido.
 Garcia, Manuel.
 García & García.
 Iguzquiza, Angel.
 León, Justo.
 Lopez Seña, Juan.
 Mendez, José.
 Solá, Elvira.
 Suarez, Francisco.
 Villar, Antonio.

IMPORTERS OF

CHINESE GOODS.

Alamy Asan.
 Cham Dió.
 Cong To Wo.
 Lo Wing.
 Wing Tung.

COAL.

Barrios & Co.
 Calvo, M. & Co.
 Gomez, Pablo.

DRUGS.

Gonzales, Antonio.
 Lobé & Torralba.
 Sarrá, José.

APPENDIX

HAVANA.

IMPORTERS OF FANCY GOODS.

Alvarez & Hermano.
Castro, Fernandez & Co.
Coll, Miguel.
Gandasegui & Vega.
Garcia & Hermano.
Sanchez, F. & Hermano.
Taladrid & Hermano.

FURNITURE.

Gandara & Co.
Rigol, Juan.

HARDWARE.

Aguilera & García.
Amat & Co.
Arambalza & Co.
Diaz, Urquiola & Co.
Ferran, Jorge.
Gutierrez, Alonzo & Co.
Isasi & Co.
Lastra & Co.
Presa & Torres.
Tijero & Co.
Torre, C. & Co.

HATS, AND MATERIALS FOR MANU- FACTURING SAME.

Fernandez, G. & Co.
Lopez, Ramón.
Menendez & Hno.
Ortiz & Avendaño.
Perajon, Hno. & Co.
Rubiera & Muñiz.
Trápaga & Puente.
Viadero & Co.

HORSES.

Redding, W. H.

LUMBER.

Duran & Co.
Jimenis, Alberto.
Mojarrieta, L.
Santamaria, Rafael Perez.
Sastre, Gabriel.

MACHINERY.

Alexander, H.
Amat & Co.
Cail & Co.
Cotiart, J. B.
Droop, Otto T.
Hyatt, George W.
Krajewski & Pesant.
Lawson Brothers.
Moenck, D. H.
Schmidt, F. C. & Co.
Schwab & Tillman.
Smith, James.
Verastegui, Alberto.
Vionnet & Co.

HAVANA.

IMPORTERS OF PROVISIONS, FLOUR, ETC.

Abascal, F. & Co.
Baquer, Hermano & Co.
Balaguer, José.
Barrios & Co.
Berenguer & Negra.
Blanch, C. & Co.
Codina & Hermano.
Colom & Co.
Galvan, Rio & Co.
Goudie, J. & Co.
Kicherer, J. E.
Lawton Brothers.
Mojarrieta, L.
Ruiz, S. G.
Truffin, R. & Co.
Wick, R. & Co.

SEWING MACHINES.

Alvarez & Hinse.
Gonzalez & Co.
Sopeña, José & Co.
Xiquez, Felipe E.

SHOES AND LEATHER.

Aedo, Viuda de & Co.
Blanco, Tomás.
Diaz, Mariano & Co.
Estramy, Dalman & Co.
Garan, Mateó.
Martinez, Ramón.
Menendez, Rafael.
Torres, J. & Co.
Veiga, Solá & Co.
Vidal, Hermanos.

STATIONERY.

Ruiz, M. & Co.
Wilson, Edwin.

WATCHES AND JEWELRY.

Bernard, A. B.
Cuervo, R. Fernandez.
Fischer, Enrique.
Hedman, Juan.
Hierro & Co.
Kramer & Co.
Masson, Emilio.
Odoñez, Hermanos.
Oltmans, Guillermo.

JEWELLERS.

Alvarez, Francisco.
Bauriedel, F. & Co.
Bernard, A. B.
Borbolla, J.
Carmona, Matías.
Cores & Hno.
Dufau, Esteban.
Fernandez Cuervo, Ramón.
Fernandez, Evelio.
Garcia Corujedo Hnos.

APPENDIX

HAVANA.

JEWELLERS (*cont'd*).

Hierro & Co.
Ibern, Juan.
Jimenez, J.
Kramer & Co.
Lancha, Tomás.
Lopez, Santos.
Martinez, Gutierrez & Co.
Masson, Emilio.
Menendez, Francisco.
Ordoñez, Hnos.
Palacio, Taracena & Co.
Sanchez & Hno.
Santa Maria, Bermudez & Co.
Sauter, T. & Co.

LAMPS, ETC.

Alvarez, Saturnino.
Candales, Alonso & Co.
Loredó, Federico.
Masino, Enrique M.
Papiol, José.
Perez & Mendez.
Ramirez, A. P.
Rodriguez & Leiro.
Villadoniga, José.
Villaverde, Pedro.

LITHOGRAPHERS.

Abadens, Viuda de.
Caballero, R. & Hijos.
Cuesta, Tiburcio V.
Fernandez, Rosendo.
García, Manuel & Co.
Guerra & Rius.
Lamy, E.
Lastra, Benito C.
Moré, Alvaro.
Navas, Francisco.
Palmas, M. R.
Sopeña, Silvino.

MACHINERY.

Alexander, H. (importer).
Amat & Co. (importers).
Anderson, Juan R. (agent).
Cotiart, J. P. (importer).
Diaz, Silveira Tomás (commission).
Droop, Otto D. (commission).
Estany & Borrell (agents).
Heesch, Enrique (agent).
Heydrich, Emilio (agent).
Hyatt, G. W. (importer).
Krajewski & Pesant (engineers).
Leblanc, Alfredo (importer).
Moенck, D. H. (agent).
Piqué, Agustín (agent).
Schmidt, F. C. & Co. (importers).
Schwab & Tillmann (agents).
Supervielle, Juan B. (engineer).
Tatger, Juan (engineer).

HAVANA.

MACHINERY (*cont'd*).

Verastegui, Alberto (agent).
Vionnet & Co. (importers).

MANUFACTURERS.

Alvarez & Gomez (coffins).
Ardavin, Joaquin (medals).
Arnavat, Luis (medals).
Baez & Hnos. (screens and lamp shades).
Bandin, Francisco (trunks).
Barba, Manuel (brooms).
Benitez, Sobrino & Co. (vermicelli).
Bofill & Co (crackers).
Brito & Llenrra (coffins).
Buch, Francisco (medals).
Cabal & Granda (loaf sugar and sirups).
Carballás, Dionisio (steel-yards).
Carranza, Manuel (gloves).
Castro, Fernandez & Co. (envelopes and paper cartridges).
Crusellas, Carbonne & Co. (beer).
Crusellas, Hno. & Co. (soap, candles, and perfumes).
Cuadrado, José (brooms).
Cuervo & Co. (mineral waters).
Cuesta, Manuel (canes).
Del Monte, Viuda de G. (trunks and valises).
Diaz, Fernando (jackets).
Ezcofet, José (trunks and valises).
Fernandez, Francisco (small boats).
Fernandez, Generoso (mirrors and screens).
Fornells, Antonio (hat blocks).
Fornet, José (paper boxes).
Forteza, J. (billiard tables).
Galloso, José (trunks).
Gomez, J. & Co. (crackers).
Gonzalez, José (loaf sugar).
Grovas, Alfredo (trunks).
Guddeman, M. F. (mineral water).
Heydrich, A. & Co. (cordage).
Iglesias, Ramón (artificial coal).
Illa, Manuel (collars and cuffs).
Laplume & Diaz (champagne biscuits).
Llanos, José M. (hat linings).
Llinas, Antonio (window curtains).
Lopez, A. (paper boxes).
Lopez, Aurelio (coffins).
Lopez, José C. (canes).
Martinez, Antonio (hats).
Nadal, Narciso (billiard tables).
Perez, Francisco (trunks and valises).
Pomares, Pedro (hats).
Rabassa & Co. (brooms).
Rigol, Juan (furniture).

APPENDIX

HAVANA.

MANUFACTURERS (*cont'd*).

Roca, Emilio (trusses).
 Roca & Varela (brooms).
 Rodriguez, Fernandez, José (boxes for guava preserves).
 Roqué, Pablo (macaroni).
 Rousset, Ricardo & Co. (paper boxes).
 Ruiz, M. & Co. (rubber stamps).
 Sabatés, Hno. & Co. (soap, candles, and perfumes).
 Sampayo, Martin (coffins).
 Sariol, José (trunks and valises).
 Urtiaga, Sabino (loaf sugar).
 Valverde, Soriano & Co. (wax candles).
 Varela & Rodriguez (mineral waters).
 Vila, Lorenzo (gas fixtures).
 Vilaró, José (soap and candles).
 Viloplana, Guerrero & Co. (English biscuits).
 Zaldo, Carvajal & Co. (ice).
 Zardon & Vallina (candles).

MANUFACTURERS AND DEALERS IN MATCHES.

Artiz, Zabaleta & Co. (manufacturers).
 Coll, P. & Co. (manufacturers and dealers).
 Costa, Vives & Co.
 Gispert, Antonio (manufacturer).
 Hernandez, Urtiaga & Co.
 Muguerra & Co. (manufacturers and dealers).
 Perez, Barafano, Diego.
 Portas & de Pau (manufacturers and dealers).
 Puig, Pedro.

MANUFACTURERS OF CHOCOLATE.

Baguer, José.
 Iriarte, José María.
 Martinez & Co.
 Menendez, Villar & Co.
 Perez, R.
 Romero, Faustino.
 Vilaplana, Guerrero & Co.

MANUFACTURERS OF PRESERVES.

Estapé, José.
 Gomez, J. & Co.
 Puig, J.
 Rabentós, Francisco.
 Viadero, Antonio.

MILITARY GOODS.

Acea, Andrés.
 Gutierrez, Bonifacio.

HAVANA.

MILITARY GOODS (*cont'd*).

Pereda, José.
 Sañudo, Revuelta & Co.

NAUTICAL, CHEMICAL, AND SCIENTIFIC INSTRUMENTS.

Zarrabeitia & Azurmendi.

OPTICAL INSTRUMENTS AND SUPPLIES.

Alarcia, Manuel.
 Alvarez & Hno.
 Cuervo, Ramón F.
 Fischer, Enrique.
 Gonzalez, A.
 Gonzalez, Rafael.
 Kramer & Co.
 Riquero, Francisco.
 Sanchez, F. & Hno.
 Zarrabeitia & Azurmendi.

ORTHOPEDICAL INSTRUMENTS.

Dominguez, Antonio.
 Gallegos, Antonio.
 Galvez Guillem, Felipe.
 Giral, A.
 Gros, José.
 Martinez, Antonio.
 Vega, Higinio A.

PAPER MANUFACTURERS.

Castro, Fernandez & Co.

PELTREY IMPORTERS.

Aedo, Viuda de & Co.
 Blanco, Tomás.
 Dalmau, Estrany & Co.
 Diaz, Mariano & Co.
 Fernandez & Narvaez.
 Garau, Mateo.
 Lliteras & Co.
 Martinez, Juan.
 Martinez, Ramón.
 Martinez, Suarez.
 Menendez, Rafael.
 Ortiz & Hno.
 Parets, Antelo & Co.
 Pons & Co.
 Torres, J. & Co.
 Veiga, Solá & Co.
 Vidal Hnos.

PETROLEUM REFINER.

Agencias de las refinarias.

PHOTOGRAPHERS.

Castellote, Félix.
 Cohner, S. A.
 Maceo, N. E.
 Misa, Ignacio.
 Mestre, Narciso.
 Rodriguez, José.

APPENDIX

HAVANA.

- PHOTOGRAPHERS (*cont'd*).**
 Suarez, Viuda de & Co.
 Stenger, Francisco.
- PHOTOGRAPHERS' SUPPLIES.**
 Lopez, J. S. & Co.
- PIANOS AND MUSICAL INSTRUMENTS.**
 Curtis, T. J.
 Esperez, Nicolás.
 Lopez, Anselmo.
 Marin, Varona A.
 Pomares & Rivas.
 Xiqués, Felipe E.
- PICTURES, MIRRORS, AND PAINTINGS.**
 Balsa & Gottardi.
 Fernández, Genaro.
 Fernández Cibrian, Manuel.
 Lecanda, Bernardo.
 Pola & Co.
 Valdés Castillo, Quintin.
- PRINTING OFFICES.**
 Abadens, Viuda de.
 Alonso de Rivero, Herminia.
 Alvarez, A. & Co.
 Arazoza, Francisco P.
 Chao, Alejandro.
 Farres, Juan.
 Fernandez, Casona E.
 Martinez, Saturnino.
 Perez, Cayetano.
 Pulido & Diaz.
 Romero Rubio, M.
 Ruiz & Hno.
 Spencer Heredero de S. S.
 Valdés, Teresa.
- SADDLERY IMPORTERS.**
 Arce, Vellon & Co.
 Castillon, Briol & Soler.
 Garcia & Co.
 Martinez, Juan.
 Sala, José.
 Vallés, M. G. & Co.
 Veiga, Solá & Co.
- SEWING MACHINES.**
 Alvarez & Hinse.
 Fernandez, Constantino.
 Gonzalez & Co.
 Raño & Sobrino.
 Solares, Luciano.
 Sopeña & Co.
 Xiqués, Felipe E.
- SILK GOODS, NOTIONS, AND PERFUMERY IMPORTERS.**
 Ablanado, Fernández & Co.
 Alvarez & Perez.
 Bidegain, Prudencio.

HAVANA.

- SILK GOODS, NOTIONS, AND PERFUMERY IMPORTERS (*cont'd*).**
 Bulnes, Manuel F.
 Castro, Fernandez & Co.
 Coll, Miguel.
 Del Monte, Viuda de G.
 Fernandez Gomez, Angel.
 Gandasegui & Vega.
 Garcia Corujedo Hno.
 Garcia & Hno.
 Giral, Zorrilla.
 Martin, José A.
 Martinez, R. & Co.
 Medero, J.
 Menendez, Villar & Co.
 Perez del Molino, Luis.
 Perez, Manuel P.
 Pernas, Hno. & Co.
 Piélago & Co.
 Pis, C. & Co.
 Rodriguez, Gonzalez & Co.
 Saiz, Ovies & Co.
 Sanchez, F. & Hno.
 Taladrid & Hno.
 Tenreiro & Roldan.
 Toca & Gomez.
 Torresagasti.
 Uriarte & San Martin.
- SMALL HARDWARE, NOTIONS, AND PERFUMERY.**
 Alvarez & Hno.
 Blanco, Nicolás.
 Castro & Co.
 Doria & Milhau.
 Dufau, E.
 Fernandez, Evelio.
 Garcia Corujedo Hnos.
 Hierro & Co.
 Lambrini & Co.
 Llanio & Muniz.
 Palacio, Taracena & Co.
 Reboredo, J. & Co.
 Sanchez, Manuel.
 Sanchez, Roman.
 Sanchez, F. & Hno.
 Valle & Co.
 Wilson, Edwin W.
- STATIONERY.**
 Barandiarán Hnos.
 Bárcena & Co.
 Canalejo & Xiqués.
 Castro, Fernandez & Co.
 Castro & Gutierrez.
 Chao, Alejandro.
 Costa, Pablo M. Co.
 Fernandez, P. & Co.
 Gomez, Ramón.
 Gonzalez, Juan.
 Gutierrez, Julian.

APPENDIX

HAVANA.

STATIONERY (*cont'd*).

Gutierrez & Cueto.
 Palmas, M. R.
 Ruiz & Co.
 Ruiz, M. & Co.
 Ruiz & Hno.
 Solano, B. & Co.
 Torres, J. & Co.
 Uriarte & San Martin.
 Valdeparés, José.
 Wilson, Edwin.

SUGAR MILLS.

Bernavon, Vicente.
 Nadal, Miguel & Benitez.
 Ugarte, José.
 Villalba, Enriquez & Co.

SUGAR REFINERS.

Ordoñez, Hnos.

TINWARE.

Abad, María.
 Abad, Tomás.
 Alvarez, David.
 Alvarez & Co.
 Arcas, Andrés.
 Armenteros, Socorro.
 Baloyra, Manuel.
 Caballero, María.
 Duran, Eusebio.
 Fernandez, Joaquin.
 Fernandez, Narciso.
 García, Antonio.
 Gilí, Antonio.
 Gonzalez, Carlós.
 Gonzalez, José.
 Gual, Francisco.
 Gutierrez, Eustaqui.
 Hierro, Ceferino.
 Maruri, Federico.
 Menocal, Carlos.
 Navarrete, Diego.
 Navarrete, Polonia.
 Paniagua, Juan.
 Perez & Mendez.
 Piñera, Cárlos.
 Piñera, Telesforo.
 Puenté, Joaquin.
 Rigual, José.
 Rocatagliata, Enrique.
 Rodriguez, Jaime.
 Rodriguez, Josefa.
 Rodriguez, Juan M.
 Triana, Francisco.

TOBACCO—LEAF.

Acosta, Manuel.
 Aguiar, Rosendo.
 Allesta, Lorenzo.
 Alvarez, José.

HAVANA.

TOBACCO—LEAF (*cont'd*).

Arango, Ramón.
 Argudin, Manuel.
 Argüelles, Donato.
 Argüelles, R. & Co.
 Bacallao, Antonio.
 Bernal, Juan.
 Bernheim & Son.
 Blanco, Ceballos & Co.
 Cadenaba, Gabriel.
 Cano & Hno.
 Carvajal, Leopoldo.
 Cepa, Jose.
 Cernuda, Joaquin.
 Cifuentes, Ramón.
 Codina, Jaime.
 Cueto, Manuel.
 Diaz, Hnos.
 Echevesta, Joaquin.
 Fernandez, Fernando.
 Fernandez Pulido, José.
 Fernandez, Ramón.
 Fernandez, Joaquin & Co.
 Fernandez, Eugenio & Hijo.
 Fernandez & Ruiz.
 Font & Hijo.
 Garcia, Francisco.
 Garcia, Hnos & Co.
 Garcia & Suarez.
 Garcia, M. & Co.
 Gonzalez, A. & Co.
 Gutierrez, Ramón.
 Hernandez, José.
 Iglesias, Manuel.
 Leon, Manuel.
 Lezama, José.
 Lopez, Calixto & Co.
 Lozano, Pendas & Co.
 Llerandi, José.
 Mantecon, Manuel.
 Marti, J. & Co.
 Martinez, José.
 Marx Blun & Co.
 Menendez & Gonzalez.
 Muñiz & Hno.
 Navas, Lorenzo.
 Palacio, Gregorio.
 Paula, Luis & Co.
 Perez, Blanco & Co.
 Perez, Ehmer & Co.
 Prendez, Manuel.
 Puente, J. & Co.
 Rabelo, Miguel.
 Rodriguez & Santalla.
 Salomon, G. & Hno.
 Sanchez, Bartolome.
 Santalla, Echevarria & Co.
 Santana, Nicolás.
 Suarez Cuétra, Manuel.
 Suarez, José Antonio.

APPENDIX

HAVANA.

TOBACCO—LEAF (*cons'd*).

Torres, Pablo.
 Valdés, Manuel.
 Valle, Pascual del.
 Vega, Francisco.
 Vega, José.
 Vidal, Pio.
 Viña, José de la.
 Wagenfuehr, Eduardo A.

UNDERTAKERS.

Alvarez, R.
 Caballero, Francisco.
 Campos, Manuel.
 Díaz, Felipe.
 García, Ramón.
 Gomez, Francisco.
 Gomez, Juan A.
 Guillot, Ricardo.
 Gutierrez, Alejandro.
 Infanzón, Matías.
 Lopez, Serapio.
 Lozano, Leandro.
 Medina, Andrés.
 Ramos, Adolfo.
 Surís, Francisco.
 Urrutia & Co.

WATCHES—IMPORTERS.

Bernard, A. B.
 Fernandez, Cuervo, R.
 Ordoñez, Hnos.
 Zarrabeitia & Azurmendi.

WINES AND LIQUORS.

Brocchi, Juan.
 Garcia & Trascastra.
 Gil, Francisco.
 Gonzalez, Santiago.
 Muñoz, Manuel.
 Norelga, Prudencio.
 Parejo, J. M.
 Rodriguez, Domingo
 Seijo & Hno.
 Vega, Diego.
 Vidal, Francisco.

HOLGUIN.

BOOTS AND SHOES.

Alvarez, Juan R.
 Cornet, Eleuterio.
 Viña, Manuel.

CHINAWARE, BOOKS, ETC.

Luque, Heliodoro.

DRUGS.

Goya, Francisco.
 Tamayo, Viuda de.

HOLGUIN.

GROCERIES AND PROVISIONS.

Camafreita, Vicente.
 Garcia, José A.
 Garcia, Juan.
 Nates, Bolívar Manuel.
 Perez, Alvarez & Co.

IMPORTER.

Picazo, D. José.

ISABELA DE SAGUA.

EXPORTER OF HIDES, BONES, AND WOODS.

Belt, Benjamin.

IMPORTER OF COAL AND COOPERAGE.

García, Torres & Co.

JARUCO.

BOOTS AND SHOES.

Borjes, Agustin.

DRUGS.

González, Rufino.
 Páez, Julio María.
 Rodriguez, Carlos.

FURNITURE.

Aguirre, Julian.

HARDWARE.

Castillo, Aquilino.

JEWELRY AND WATCHES.

Delgado, José.

JOVELLANOS.

BOOTS AND SHOES.

Achin Apó, José.
 Beltran, Agustin.
 Echaide, Francisco.
 Estevez, José.
 Fernandez, Manuel.
 Luna, Dolores.
 Ruiloba, Ricardo.
 Sobrenca, Valera.

DRUGS.

Cadenas, Isidro.
 Figueroa, Fermin.

FOUNDRIES.

Paniagua, Ricalt.
 Ressler & Co.

FURNITURE.

Alboniga, Juan.

APPENDIX

JOVELLANOS.

HARDWARE.

Murillo, Remigio.

PRINTING OFFICE.

Gonzalez, Cármen.

TOBACCO—LEAF.

Santillano, Higinio.

UNDERTAKERS.

Rodriguez, Rafael.
Soto, José María.

LAS VUELTAS.

BOOTS AND SHOES.

Ferrer, Juan.
Rodriguez, Simón.
Visiedo, Miguel.

DRUGS.

Hernandez, Enrique.
Hernandez, Manuel.
Nuche, Genaro.
Puget, José.

SEWING MACHINES.

Lopez & Cortiñas.

MADRUGA.

BOOTS AND SHOES.

Almio, Gervasio.
Coll, Rafael.
García, José.
Pino, Anselmo.

DRUGS.

Reyes, Manuel.

MANAGUA,

BOOTS AND SHOES.

Alvarez, Celestino.
Suarez, Manuel.

DRUGS.

García, Emilia.

MANZANILLO.

BOOTS AND SHOES.

Castropeña, Venancio.
Estrada, Roque.
Martinez, Paulino.
Mata, Laureano.
Mejia, Pedro.
Quesada, Clotilde.
Romeu, Juan.
Tamayo, Antonio.

MANZANILLO.

DRUGS.

Céspedes, P.
Mojarrieta, Miguel A.
Sanchez Sanz, Ramón.

DRY GOODS.

Almirall & Llopiz.
Vazquez & Co.

FOUNDRIES.

Fandiño, Juan.
Perez & Ibarra.

GROCERIES AND PROVISIONS.

Aguirre, Emilio.
Covani & Bruschini.
Menendez, Saturnino.
Planas & Hnos.
Sanchez, José.
Sisa, Feliciano.
Solis & Co.

**GROCERIES AND PROVISIONS, DRY
GOODS, CROCKERY, ETC.**

Bonet, Asnaldo.
Granda Hno., Baltasar.
Guerrero, Inocencio & Co.
Martinez, Ramón García.
Merladet & Manday.
Planas, Miguel.
Plascoaga, Perez & Co.
Ramirez & Co.
Sandser, José Suarez.
Torres, Rafael.
Venecia, José.

HARDWARE.

Brunell, José & Blanco.
Treserra, Angel & Guitart.
Urquijo & Carbajosa.

HATTER.

Vazquez, Marcelino.

IMPORTERS.

Aces, Boeras & Co.
Beattie & Co.
Muñoz, J. & Co.
Ramirez & Oro.
Rigney, J. & Co.
Venecia, José M.

MERCHANTS AND BANKERS

Boeras & Co.
Ferrer & Co.
Ferrer, Mori & Co.
Muñiz, J. & Co.
Ramirez & Oro.
Roca Vivas Hnos.
Roca & Co.
Rouvira, Celestino.

APPENDIX

MANZANILLO.

MERCHANTS AND BANKERS (*cont'd*).

Sanchez, José.
Segura, Guillermo.
Soler, Pedro.
Tornés, Rafael.
Venecia, José M.

PHOTOGRAPHER.

Ochoa, Oscar.

PRINTERS.

Fernández de Córdova, Fernando.
Fernández, Esteban.

SADDLERY AND SHOES.

Celcis, Bonifacio.
Ginestá, Emilio Urgas.
Gonzalez, Salustiano.
Lagrista, Vicente Comas.
Tano, José Miranda.

TOBACCO MANUFACTURERS.

Gordillo, Emilio.
Merladet, Eusebio.
Planas & Gordillo.
Porro & Nuñez.

MARIANAO.

DRUGS.

Cuesta, Severiano.
Iglesias, Abrahán.
Nuñez, Jorge.

MATANZAS.

ARMS AND AMMUNITION.

Mons, José María.
Rodríguez, Antonio & Hno.

BANKERS AND COMMISSION MERCHANTS.

Bea, Bellido & Co.
Brinkerhoff & Co.
Collado, Rufino.
Deetjen, C. L.
Galindez, Aldama & Co.
Heidegger & Co.
Juris & Garriga.
Lacerat, Pablo.
Molins, Emilio.
Zanetti, Dubois & Co.

BOOKSELLERS AND STATIONERS.

Albuerne, Manuel.
Carreño & Sobrino.
Rodríguez & Co.

BOOTS AND SHOES.

Betancourt, Ambrosio.
Calderin, Francisco.
Escolano, Francisco T.

MATANZAS.

BOOTS AND SHOES (*cont'd*).

Gayart, Francisco.
Hernandez, José.
Hernandez, Juan.
Herrero Monje, Domingo.
Lopez, Juan.
Ramón, Carolina.
Rodriguez, Francisco & Rodriguez.
Sanchez Hernandez, Pedro.
Sanchez, Pedro.
Sántana, Juan.
Silva, Domingo.

CROCKERY, ETC.

Ampudia & Fuentes.
Ampudia & Mardonell.
Menéndez & Co.
Querol, Prudencio.
Rivas, Joaquin.
Rodriguez, Julio.
Sanchez & Quirós.
Schweyer, Alberto.
Tapia, Luis E.
Tomás, Vicente A.
Trelles, Jorge.
Ulmo, Andrés.
Valdés Anciano, José A.
Vera, Felix.
Zambrana, Manuel.

COAL.

Bea, Bellido & Co.
Galindez & Aldama.
Zamboa, Juan.

DRUGS.

Artiz & Zanetti.
Betancourt, Antonio.
Calle, Pedro de la.
Colfil Feliú, Joaquin.
Ginoulhiac, Eugenio.
Lecuona Madan, Domingo.
Lluria & Co.
Rusignol Miralles, Bernardo.
Sol, Digna América del.
Triolet, Ernesto.

ELECTRIC LIGHT COMPANY.

Hoffman, Jorge, Superintendent.

FURNITURE.

Angulo, Andrés & Gil.
Cabarrocas & Co.
Fernández, Josefa.
Fernández Lario, José.
García, Gregorio.
Gonzalez, Manuel & Co.
Romero & Villa.
Urcola, Sebastian.
Venero, Casimiro.

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MATANZAS.

GROCERIES AND PROVISIONS.

Abav & Hno.
 Alvarez & Co.
 Barriñe, Pons & Hijo.
 Bernales, José.
 Boda & Sobrino.
 Cancela, Lino.
 Cariezo & Co.
 Grau & Co.
 Martínez & Buset.
 Ortiz, Angel & García.

HARDWARE.

Alegria & Hno.
 Alvarez & Hipólito.
 Amizaga & Co.
 Bea, Bellido & Co.
 Fernández Zorilla, Francisco.
 Iturralde, Eugenio.
 Ortiz, Juan Francisco & Gutierrez.
 Rechaga, Pablo.
 Rodriguez, N. Rechaga.

IMPORTERS.

Amezaga & Co.
 Dubois, Zanetti & Co.
 Gons, Pedro & Co.
 Heidegger & Co.
 Hoffman & Co.
 Laso, Gabriel.
 Lluna, Francisco de.
 Marzol, Adolfo.
 Zanetti & Co.

LUMBER AND CLAY.

Amézaga, García & Co.
 Galindez, Antonio & Aldama.
 Zabala, José & Bea.

MANUFACTURERS.

Arencibia, Manuel (flour).
 Bellido, Heydrich & Co. (ice).
 Benitez, Isabel (flour).
 Cano, Gabriel (scales).
 Dallí, Tomás (flour).
 Durbase, Miguel (soap).
 Galtraiht de Pérez, Elisa (brooms).
 Hernandez, Albuerne (liquors).
 Inchaustueta, José María (liquors
 and vinegar).
 Josa & Co. (soap).
 Luera, Antonio (soda water).
 Maceda Sánchez, José (matches).
 Marzol, Adolfo (liquors).
 Méndez, Enrique de (soda water).
 Mons, José María (trusses).
 Montero, Ramón (trunks).
 Pérez, Josefa (liquors).
 Pons & Co. (liquors).
 Purcalla, Pablo (charcoal).
 Rodríguez, Antonio & Hno.

MATANZAS.

MANUFACTURERS (*cont'd*).

Serna & Calero (candles).
 Tejeiro, Balbino (trunks).
 Valdés, Herederos de Adelaida
 (brooms).
 Zardoya, M. & Co. (liquors).

PHOTOGRAPHERS.

Hernandez, Junco & Co.
 Otero, A.
 Ruiz de Castro.

SEWING MACHINES.

Collado, Benito.
 Gutierrez, Gerardo & Co.
 Salgueiro, Manuel.
 Venero, Julian.

SMALL HARDWARE.

Galvez & Rusignol.
 Ruiz Diaz, Pedro.
 Ruiz Rodriguez & Co.
 Soriano & Celeuja.
 Sotelo, Estanislao.
 Vila, A. & Co.

SUGAR AND MOLASSES.

Almirall, Peralta.
 Amezaga, García & Co.
 Bea, Bellido & Co.
 Brinkerhoff & Co.
 Capó, Simon.
 Castañer, Joaquin.
 Galindez, Antonio & Aldama.
 Lersia, Manuel.
 Sainz, José & Co.

TOBACCO—LEAF.

Aguirre, Hermano & Co.
 Fuentes, Lorenzo.
 García, José.
 García, José de la Rosa.
 Lombano, Cayetano.
 Lombano & Hermano.
 Martinez, Manuel de la Rosa.
 Perez Menéndez, Celestino.

MINAS.

BOOTS AND SHOES.

Lopez, Angel.
 Miranda, Ramón.

DRUGS.

Ferreras, Mariano.

MORÓN.

DRUGS.

Arnaiz Fernandez, Segundo.

PRINTING OFFICE.

Cueto, Antonio & Martinez.

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NUEVITAS.

- BOOKSELLER.**
 Calaforra, Primo.
- BOOTS AND SHOES.**
 Quesada, Gil.
- CROCKERY.**
 Calaforra, Primo.
- DRUGS.**
 Fornos Perez, J.
 Moya, Antonio.
- GROCERIES AND PROVISIONS.**
 Rodriguez, Alonso J.
 Rodriguez, José.
 Tomeu, Janer & Co.
- HARDWARE.**
 Rodriguez, José.
- IMPORTERS.**
 Gibbs, Ricardo.
 Rodriguez, Vicente & Co.
 Tomeu, F. & Co.
 Yriarte Hno. & Co.
- MERCHANTS AND BANKERS.**
 Rodriguez, Vicente & Co.
 Sanchez, Adan Bernabé.
 Tomeu, Janer & Co.
- PRINTING OFFICE.**
 Arrebola, Vicente.
- UNDERTAKERS.**
 Ferrer, Bartolomé.
 Varona, Gregorio.

PINAR DEL RÍO.

- BANKERS.**
 Suárez, Girbal & Co.
- BOOKSELLERS AND STATIONERS.**
 Fernandez, Agapito.
 Fernandez, Guerra & Hno.
 Gil, José María.
 Gonzalez & Hno.
 Mijares, Marcos.
- BOOTS AND SHOES.**
 Castro, Domingo.
 Morales, Jacinto.
 Paban, José.
 Puig, Domingo.
 Santamaria, Luis.
- CIGAR MANUFACTURER.**
 Mijares, Julian.

PINAR DEL RÍO.

- CROCKERY.**
 Fernández, Paulino.
 Rodriguez, Eleuterio.
 Rodriguez, F. Ricardo.
 Sanchez & Barrero.
- DRUGS.**
 Dominguez, Dolores & Legorburu.
 Garcia Suárez, José.
 Porta, Alfredo.
 Rodriguez, Jacinto.
 Rodriguez Sanpedro, Manuel.
 Vila, Tito.
- GROCERIES AND PROVISIONS.**
 Diaz Lopez, Francisco.
 Gonzalez & Hno.
 Lopez, G. & Co.
 Sordo, A. & Co.
 Suárez, Girbal & Co.
 Viñas, Prieto & Co.
- HARDWARE.**
 Diaz Lopez, Francisco.
 Fernandez, Paulino.
 Rodriguez, Eleuterio.
 Rodriguez, F. Ricardo.
 Solarez, Luis.
 Sordo, A. & Co.
- HATTERS.**
 Alonso, Manuel & Co.
 Carriles, Lucio & Co.
 Cobian & Alea.
 Gonzalez & Hno.
 Guerra & Hno.
 Navarro & Vigueira.
- PHOTOGRAPHER.**
 Pi, Antonio.
- PRINTING OFFICES.**
 Fernández & Vives.
 Ruiz, Angel.
- SEWING MACHINES.**
 Alonso, Manuel & Co.
 Carriles, Lucio & Co.
 Gonzalez, J. & Hnos.
 Lopez, Saturnino & Co.
 Menendez, Constantino & Co.
 Navarro & Vigueira.
 Suarez, Girbal & Co.
- SILK GOODS.**
 Alonso, Manuel & Co.
 Carriles, Lucio & Co.
 Gonzalez, J. & Hnos.
 Rodriguez, Anastasio.

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PINAR DEL RÍO.

SMALL HARDWARE AND NOTIONS.

Fernandez, Agapito.
 Fernandez, Paulino.
 Gonzalez & Hno.
 Guerra, F. & Hno.
 Mijares, Marcos.
 Rodriguez, Anastasio.

TAILORING HOUSES.

Alonso, Manuel & Co.
 Carriles, Lucio & Co.
 Lopez & Co.
 Navarro & Vigueira.

UNDERTAKER.

Bertran, José.

PLACETAS.

BOOTS AND SHOES.

Rodriguez, Rafael.

DRUGS.

Fumero, Nicolás.
 Pérez, Lorenzo G.
 Tejada, Diego.

IMPORTERS.

Castañon, Leandro.
 Fortun, José M.

PRINTING OFFICES.

Castañon, L.
 Lagomasino, L.

SMALL HARDWARE AND NOTIONS.

Moa, Ramón.

PUERTO DEL PADRE.

BOOTS AND SHOES.

Gonzalez, Catalino.
 Lopez, F.
 Negrete, José.
 Risco, Carlos.

GROCERIES AND PROVISIONS.

Martinez & Querol.
 Rodriguez & Pereda.

TIMBER.

Miguel, Tomás & Co.
 Zenon, Torrens & Co.

PUERTO PRÍNCIPE.

ARMS AND AMMUNITION.

Gonzalez, Luciano.
 Lavadens, Juan.
 Zayas, Adriano.

BANKS.

Banco Agrícola.
 Banco Español de la Isla de Cuba.

PUERTO PRÍNCIPE.

BOOKS.

Garcia, José Serapio.
 Ginferre, Isidro.

DRUGS.

Betancourt, Fernando.
 Blanco, Alberto W.
 Casas, Alfredo.
 Herrera, Enrique.
 Mendez, Salustiano.
 Ramirez, Francisco.
 Socarrás, Aurelio.

ELECTRIC LIGHT COMPANY.

Ruiz Toledo Muñoz, Ramón, Su-
 perintendent.

FURNITURE.

Torres Alvarez, José.

GROCERIES AND PROVISIONS.

Cásares, Blas.
 Gonzalez Celis, Juan.
 Margenats & Burzoza.
 Rodriguez, Isaac & Co.

IMPORTER.

Roura, Ramón.

MANUFACTURERS.

Fernandez, Santos (tobacco).
 Forcadas, Salvador (bricks).
 Lopez, Segundo (liquors).
 Mas & Margenats (chocolate).
 Mestre & Pijuan (liquors).
 Rodriguez, A. & Co. (tobacco).

PHOTOGRAPHERS.

Delmonte, Rafael.
 Fernández & Naranjo.

SEWING MACHINES.

Cabada & Co.
 Gonzalez Solares, Rudesindo.
 Maribona & Hno.
 Pagés, Benito.

SILK GOODS.

Rodriguez & Hno.

TOBACCO—LEAF.

Oyer, José & Robert.
 Vidal, José & Robert.

RANCHO VELOZ.

BOOTS AND SHOES.

Azcarrate, Cecilio.
 Martinez, Manuel & Co.

DRUGS.

Figueroa Marti, Enrique.

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<p style="text-align: center;">REGLA.</p> <p>COAL. Barrios & Coello. Mendez, Benito.</p> <p>DRUGS. Avila, José G. Denias, Bernardino. Echavarria, Antonio. Gonzalez, Polonia.</p> <p>FOUNDRY. Bartalot, Tomás.</p> <p>HARDWARE. Cajigas & Co.</p> <p>LUMBER. Mocunill, Batet & Co.</p> <p>MANUFACTURERS. Amesuca & Garcia (soap). Diaz, Antonio (rope). Ferrol & Co. (soap). Giralt, José (rope). Lopez, Fernando (chocolate).</p> <p>UNDERTAKERS. Bonet, Francisco. Chassague, Cirilo.</p> <p>REFINERS OF PETROLEUM. Herederos de Moré & Co.</p> <p style="text-align: center;">SAGUA LA GRANDE.</p> <p>BANK. Banco Español Sucursal.</p> <p>BANKERS AND COMMISSION MERCHANTS —IMPORTERS AND EXPORTERS. Amézaga & Co. Arronte, Manuel. Arronte & Co. Corrales Hnos. La Condesa, Viuda de Casa-Moré. Larrondo & Co. Millares, Radelat & Co. Mora, Oña & Co. Prieto & Co. Puente, Arenas & Co.</p> <p>BOOKS AND STATIONERY. Ramos, Miguel.</p> <p>DRUGS. Figueroa, Alfredo. López, Luis. Oña, Eugenio. Prieto, Alberto. Roa, Camilo.</p> <p>FOUNDRY. Bustillo, Antonio.</p>	<p style="text-align: center;">SAGUA LA GRANDE.</p> <p>FURNITURE. Blanco & Rivas. Gispert, Martin. Pita, Juan.</p> <p>GROCERIES AND PROVISIONS. Aróstegui & Alzúa. Ciriz, Fernandez & Co. (importers). Corrales & Hno. De Leon, King & Co. (importers). Gallegos, Lucio & Co. Gonzalez & Hno. Menendez & Concha (importers). Noriega & Co. Perez, Manuel & Co. Puente, Arenas & Co. (importers). Radelat & Arenas (importers).</p> <p>HARDWARE. Carbonell & Hijos. Jorin & Nadal. Lorenzo, J. & Co. Maribona, Laya & Co. (importers). Ramirez, Inés.</p> <p>HATTERS. García & Fernández. Lapuente, Domingo.</p> <p>IMPORTER OF HIDES, HONEY, BONES, AND WOODS. Pelletier, Antonio.</p> <p>LUMBER. Escandon & Co. Llacuno, Diego.</p> <p>PHOTOGRAPHER. Alvarez, Eduardo.</p> <p>SILK GOODS AND NOTIONS. Andreu, Victor. Cabeza & Primo. Gutierrez, Felipe.</p> <p>UNDERTAKERS. Chavez & Parajuelos. Ponce de Leon, Luis.</p> <p style="text-align: center;">SAN ANTONIO.</p> <p>DRUGS. Esparolini, Blas. Fernández Cadena, F. Luna, Genaro.</p> <p>FURNITURE. Gómez, Eliseo.</p> <p>GROCERIES AND PROVISIONS. Perez, Capote, José Maria.</p>
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SAN ANTONIO.

HARDWARE.

Gómez, Eliseo.
Tejedor & Alonso.

HATTER.

Rodríguez, Bernardo.

SILK GOODS AND NOTIONS.

Argüelles, Agustín.
Carranza, Rudesindo.
Gómez, Eliseo.
Gutiérrez, C. Manuel.

UNDERTAKER.

Ebra, Rafael.

SAN JOSÉ DE LAS LAJAS.

DRUGS.

Fernandez, Tomás.
Hernandez, Celestino.

SAN JUAN DE LOS REMEDIOS.

CROCKERY, ETC.

Pascua, Rodríguez & Co.

DRUGS.

Escobar, Luis A.
Gonzalez, Joaquin.
Pujet, Esteban.
Rio, Joaquin del.

HIDES AND SKINS.

Bidegaray & Co.

SMALL HARDWARE.

Fuentes Pando, Manuel.
García, Manuel R.
Valdés, Juan Bautista.

UNDERTAKER.

Testar, Alejandro.

SANCTI SPÍRITUS.

DRUGS.

Barceló, Viuda de Francisco.
Galí Diaz, Ferreol.
García Cañizares, José.
Rabell Marin, Francisco J.
Trelles Figueroa, Landelino.

FURNITURE.

Newmann Schröder, Federico.

MERCHANT AND BANKER.

Gruppe, Augusto.

PHOTOGRAPHER.

Trelles Figueroa, José.

SANCTI SPÍRITUS.

PRINTING OFFICES.

Canto Cueto, Carlos.
Taboada & Hno.

SMALL HARDWARE.

Alvarez Miranda, Eduardo.
Blasón Correa, Luis.

UNDERTAKERS.

Torres, Salustiano & Co.

SANTA CLARA.

BANKERS.

García, C. A. & Co.

BOOTS AND SHOES.

Calzadilla, Marcelino.
Leon, Rufino de.
Meulener, Fernando.
Perez, Federico.
Ulacia, D. & Hijos.

CIGARS AND TOBACCO.

Fernández, Vega S.
Ramos, Eduardo.
Vizcaino, Miguel.

DRUGS.

Acosta, José F.
Cristo, Juan N.
Onís, J.
Silva, Rafael J.
Torrens, Miguel A.

HARDWARE AND CROCKERY.

Bengochea, Manuel.
Calvo, Domingo.
García, C. A. & Co.
Gonzalez del Valle, José.

HATTERS.

Blanco, Francisco.
Calvo, Juan C.
Fernández, Rafael.
Fernández, V.
Martínez & Cruz.

JEWELLERS AND WATCHMAKERS.

Benítez, José.
Meulener, Agustín.
Tobió, José María.
Valdés, Antonio.

LUMBER.

García, C. A. & Co.

PHOTOGRAPHER.

Valdés León, Antonio.

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SANTA CLARA.

- PRINTING OFFICES.**
 Alemán, José B.
 Bengochea, Manuel M.
 Casañas & Fernández.
 Muñiz, M.
- SMALL HARDWARE.**
 Anido, Antonio.
 Olavarrieta, Serafin.
 Ruiz, Aurelio.
- TOBACCO—LEAF.**
 González Coya, Sabino.
- UNDERTAKERS.**
 Dupuy, Beltrán.
 Pérez, Manuel.

SANTA CRUZ.

- IMPORTERS AND EXPORTERS.**
 Voigt & Hencke.

SANTIAGO DE CUBA.

- BOOKSELLERS.**
 Aders & Co.
 Lopez & Co.
 Perez Dubrull, Enrique.
- BOOTS AND SHOES.**
 Arias & Co.
 Campo & Co.
 Coll & Hermano (importers).
 Comas, Juan (importer).
 Flaguer & Co. (importers).
- CROCKERY AND GLASSWARE.**
 Idel, Castillo & Co.
 Valiente, Ricardo.
- DRUGS.**
 Bottino, Luis Carlos.
 Causse, Emiliano.
 Guerrero, Antonio M.
 Martinez, Alfredo.
 Millan, Miguel.
 Padró Griñán, Tomás.
 Padró, Jaime.
 Padró, Tomás.
 Planas, Manuel & Co.
 Quintana, Ambrosio.
 Ramirez Ortiz, Juan.
 Trenard, Teobaldo.
- DRY GOODS.**
 Herrera, Martinez & Co.
 Hill & Casas.
 Sánchez & Hno.
 Serradell & Co.

SANTIAGO DE CUBA.

- EXPORTERS AND COMMISSION MERCHANTS.**
 Brooks & Co. (sugar).
 Bueno, J. & Co. (sugar, mahogany, and cedar).
 Castillo, J. del & Co. (woods).
 Cuevas, J. (general products and manganese ore).
 Hill & Casas (tobacco on commission).
 Inglada, Arturo (tobacco on commission).
 Marques Hnos. & Co. (woods, as agents).
 Mas & Co. (tobacco on commission and manganese ore).
 Masfarrol, Manuel (cocoanuts).
 Schumann & Co. (woods).
- FLOUR.**
 Cuevas, J.
 Ferrer, J. F.
 Ros, E. & Co.,
 Schumann & Co.
- FOUNDRIES.**
 Arragon, A.
 Empresa del Ferrocarril.
- FURNITURE.**
 Casals, Enrique.
- GROCERIES AND PROVISIONS.**
 Abascal & Co.
 Berenguer, José.
 Bruna, Antonio.
 Castillo, J. del & Co.
 Eguillior, José Maria.
 Ferrer, J. F.
 Font, Pedro.
 Jaime & Lluhiz.
 Llopiz, Enrique.
 Lluhi & Co.
 Mas & Co.
 Miret Crespo & Co.
 Ros, Eligio & Co.
 Salas & Fornello.
 Trillas & Co.
- HABERDASHERS.**
 Carreño & Sirgo.
 Castillo & Suarez.
- HARDWARE.**
 Brauet & Co.
 Camp & Badillo.
 Font & Falp.
 Inglada, Arturo & Co.
 Juglada, A.
 Llovet & Boix.
 Llovet, J. & Co.
 Márquez Hno. & Co.

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SANTIAGO DE CUBA.

HARDWARE (*cont'd*).

Mustelier, Asunción.
Soler & Francoli.

HATS.

Arias, Manuel.
Balart, Domingo.
Catalá & Costa.

IMPORTERS.

Bueno, J. & Co.
Brooks & Co.
Hill & Casas.
Inglada, Arturo & Co.
Marquez Hnos. & Co.
Martinez, Herrera & Co.
Mitchel, José.
Trillas & Co.
Valiente, Ricardo.

LUMBER.

Cardonne, Pablo.
Hereaux, Oscar & Emilio.

MANUFACTURERS.

Bacardi & Co. (liquors).
Bermúdez, Hermida (candles).
Camps, C. & Co. (liquors).
Crossi, Mestre & Co. (liquors).
Hernandez, Reguera (conserves).
Misser, José (candles and con-
serves).
Reaud, Alfredo (ice).
Rifá Hnos. (macaroni).
Rovira & Guillaume (liquors).
Sarabia & Hno. (conserves).
Torres, José (cigars).
Trenard & Muiry (tiles).
Vidal, V. (soap).

MERCHANTS AND BANKERS.

Bosch & Co.
Brauet & Co.
Brooks & Co.
Bueno & Co.
Inglada & Co.
Mas & Co.
Ros & Co.
Saenz & Co.
Schumann & Co.

PHOTOGRAPHERS.

Babastro, R.
Baxarias, Manuel.
Desquiron, Antonio.
Ortiz, Pedro.

PRINTING OFFICES.

Massana & Co.
Morales, Manuel.

SANTIAGO DE CUBA.

SADDLERY—IMPORTERS.

Coll & Hermanos.
Comas, Juan.
Flaguer & Co.
Rio & Hermanos.

SEWING MACHINES AND LAMPS.

Flaguer & Co.
Rio Hermanos.
Valiente, Ricardo.

SILK GOODS.

Aders & Co.
D'John, David S.
Felise & Roget.
Fuertes & Co.
Gené, M.
Marti, Diaz & Co.

TAILORING HOUSES.

Castillo & Suarez.
Castillo, Manuel.
Corredor & Hnos.
Magrans & Co.
Marino, El.
Palomo & Rubio.
Planas & Co.

TOBACCO MANUFACTURERS.

Fabré, Bartolomé.
Massana & Co.
Mestre, Ramón & Mestre.
Polanco, Camps & Co.
Rovira & Guillaume.
Yofré Hnos.

UNDERTAKERS.

Bravo Carreoso, Eligio.
Casamor, Justo.
Corona, Benigno.
Ruis, Luis Felipe.

TRINIDAD.

DRUGS.

Baslida, Julio.
Caillá, J.
Mascorto, Narciso.

FURNITURE.

Torres, Domingo.

GROCERIES AND PROVISIONS.

Fuente, Martinez & Co.
Garmendia, Victoriano.
Perez, Gabriel & Co.
Rubiés, Jaime.
Vila & Portilla.

MERCHANTS AND BANKERS.

Meyer, Thode & Co.
Schmidt, Guillermo & Co.
Vila & Portilla.

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TRINIDAD.

PRINTING OFFICES.

Diario, El.
Iznaga, Mariano.
Sociedad Anónima.

TRUJILDO.

IMPORTERS.

Castillo, Prospero.
Julia, José.

UNIÓN DE REYES.

DRUGS.

Lastres, Nestor.
Telot, Jorge.

FOUNDRY.

Marcelin & Co.

VICTORIA DE LAS TUNAS.

GROCERIES AND PROVISIONS.

Fajardo & Cardona.
Fernández, Emilio.

VILLA DE GÜINES.

DRUGS.

Espinosa, Joaquin.
Fernández Guerrero, Tomás.
Moreno, Eduardo.

HARDWARE.

Aldecoa, Juan Antonio.
Garzón, Esteban.

PHOTOGRAPHER.

Flores, Emilio.

PRINTING OFFICE.

Cuesta, Valentin & Rendueles.

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