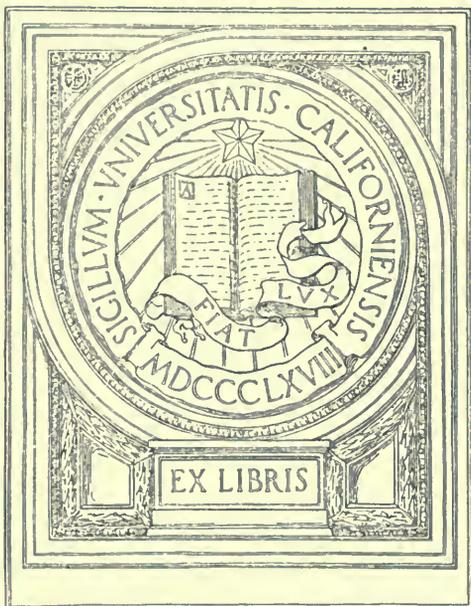


COLUMBIA:
A COMMERCIAL AND INDUSTRIAL
HANDBOOK

—
REVIEW OF FOREIGN AND DOMESTIC COMMERCE.

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FIG. 1.—NATIONAL CAPITOL OF COLOMBIA AT BOGOTA.

DEPARTMENT OF COMMERCE

BUREAU OF FOREIGN AND DOMESTIC COMMERCE

SPECIAL AGENTS SERIES—No. 206

COLOMBIA

A COMMERCIAL AND INDUSTRIAL HANDBOOK

BY

P. L. BELL

Trade Commissioner



PRICE, 70 CENTS

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LETTER OF SUBMITTAL.

DEPARTMENT OF COMMERCE,
BUREAU OF FOREIGN AND DOMESTIC COMMERCE,
Washington, April 15, 1921.

SIR: There is submitted herewith a handbook of the Republic of Colombia, by P. L. Bell, a trade commissioner of this Bureau. The information presented in it was obtained by Mr. Bell during the course of a thorough and comprehensive personal investigation in the country. It is believed that American business men who are interested in selling merchandise to Colombia, purchasing its products, or investing in its enterprises will derive substantial benefit from a study of the data appearing in the pages of this book.

This is one of a series of handbooks on South American countries to be issued by the Bureau. One entitled "Paraguay: A Commercial Handbook," by Trade Commissioner W. L. Schurz, has recently been published, and another, on Bolivia, will soon come from the press. Trade Commissioner Bell, the author of the present monograph on Colombia, is preparing a handbook of similar character on the neighboring Republic of Venezuela.

Respectfully,

C. E. HERRING,
Acting Director of Bureau.

TO HON. HERBERT HOOVER,
Secretary of Commerce,

COLOMBIA: A COMMERCIAL AND INDUSTRIAL HANDBOOK.

INTRODUCTION.

GENERAL ECONOMIC POSITION, PAST AND PRESENT.

Possessing the unique distinction among the countries of South America of having a coast line on both the Atlantic and the Pacific Oceans, Colombia is also the nearest of the South American Republics to the United States. Occupying a large territory (sixth in area in South America) in the northwestern part of the continent, Colombia lies at the very gates of the Panama Canal, the country's geographical position being the most favorable for commerce of any in South America. It has a coast line of about 465 miles on the Pacific Ocean and of about 640 miles on the Caribbean Sea. The distance from Cartagena to New York is only 1,900 nautical miles (as compared with 4,500 miles to Liverpool) and to Colon at the Panama Canal only 266 miles by sea.

Possessing also a great variety of natural resources, and occupying third place in population, Colombia was, at one time, the best known country in South America and the foremost in development. It was the richest colony of Spain in South America, Cartagena being the principal seaport of the continent during the early colonial period. When the sovereignty of Spain was cast off more than a century ago, great predictions were made concerning the achievements for which the country was destined, and Colombia became very well known to Europe, receiving the attention of scientists and business men who understood its potentialities.

For various reasons, these hopes of development and progress have not been realized to the fullest extent. The country has been neglected by foreign capital and immigration and has been outdistanced by other nations of the continent. But, even under unfavorable conditions, progress in commerce and industry has been constant, showing a steady modern development; and during the last 15 years the country has entered upon a new epoch of economic activity in which the exploitation of rich natural resources in cattle and sugar-cane lands, coal deposits, and petroleum bodies, and the increase in production of such products as coffee, bid fair to make the development of Colombia rival that of Argentina and Mexico in the near future.

Notwithstanding its proximity to the United States, Colombia's commercial and intellectual intercourse in the past was mainly with Europe. With few exceptions, such development of transportation and resources as was carried out in the country was effected with European capital, and European influence predominated in the business life of the country up to the beginning of the World War. The United States has been for many years the principal market for

Colombian exports of coffee, hides, etc., but this trade connection did not create a full reciprocity in exchange of products between the two countries.

Conditions brought about by the war have changed these factors very much—so much that, from buying goods in the United States of necessity during the war, Colombian merchants are taking on permanent lines of American goods and the business element of the country is looking to the United States as a source of capital with which to develop natural resources, transportation, and badly needed public utilities, as well as domestic manufacturing industries. During and immediately following the war there were increasing visits of Colombian merchants to the United States, where they became better acquainted with American manufactures and products and with American business methods. Colombia was very little known in the United States prior to the war, but this better acquaintance, combined with the prosperous condition of Colombia, is rapidly bringing about a widespread knowledge which will surely result in still greater intercourse and the cementing of mutual interest. A very important factor in this development of better relations will be the interest now being taken by American capital in the country's natural resources of petroleum and coal, which will certainly be followed by aid in the construction of badly needed means of communication, leading, in turn, to still further development of the resources of the country in the interior.

Comparatively, Colombia's commerce is not large at the present time, but its growth has been steady in the past and great strides have been made during the last few years. The new spirit of the country, stimulated by prosperity and increased wealth, will inevitably result in industrial, educational, and civic growth, and the lasting commercial and business friendships now being formed with the United States will certainly bring a large and increasing trade, which should be fostered in every way.

EUROPEAN VERSUS AMERICAN TRADE WITH COLOMBIA.

Europe knew and valued this trade with Colombia for many years, and, though the United States took the bulk of Colombia's exports, less than 50 per cent of Colombia's total imports of foreign merchandise came from the United States prior to the war. In 1915 Colombia purchased 52 per cent of its imports in the United States; in 1916, 55 per cent; in 1917, 56 per cent; while in 1918 it is estimated that the United States furnished more than 80 per cent of the total imports, this percentage amounting to more than \$11,000,000. Of Colombian exports the United States took 78 per cent in 1915, 88 per cent in 1916, 90 per cent in 1917, and 93 per cent in 1918. It may be predicted that, when statistics for 1919 are available, the percentage of imports purchased in the United States during that year will surpass previous percentages. During 1919 buying in the United States was very brisk on account of the favorable coffee situation in Colombia and the continued disruption of industry in Europe.

In considering the future aspects of Colombian trade with the United States, one must remember the long years of commercial association with Europe, during which connections became established on a basis of mutual understanding and acquaintanceship,

and the fact that there is no background of the past upon which to base, to any such extent, Colombia's trade with the United States. Colombian merchants appreciate the treatment long received from Europe, and, since the war has given them the opportunity of knowing both markets, the future volume of trade with the United States will depend upon the ability of the American manufacturer and exporter to meet European competition when conditions return to normal and to foster the trade by means of a closer study of Colombian commercial conditions and necessities and an endeavor to cement personal relations in every way possible.

The United States possesses the great advantage of closer proximity to Colombia (the market centers of Europe being nearly two and one-half times farther than the American), and also the important advantage of being the best market for Colombia's exports—an important factor on which to base future trade relations.

The principal factors in determining the volume of the future trade of Colombia with the United States may be summarized as follows:

1. The ability of the United States to continue to provide rapid and cheap means of ocean transportation to and from Colombian ports. This also implies ability to increase this ocean transport service to meet the growing needs of Colombian commerce.

2. The ability to furnish credits and provide a system to take care of the financing of Colombia's trade, both export and import—this being necessary on account of the limited capital available in Colombia in proportion to the country's resources. An important determining factor will also be the ability and willingness to furnish the capital and credit for the development of transportation and public improvements.

3. Last, but not least, the willingness on the part of American manufacturers to study the needs and conditions of the country (separating it into the different commercial districts formed by the topography of the interior), to pay more attention to detail, and to foster friendly relations to the maximum extent.

LANGUAGE.

The language of Colombia is Spanish. Many business men understand English, however, and there is an increasing desire on the part of the younger element to learn English. All business correspondence should be in Spanish unless otherwise indicated. A knowledge of Spanish is necessary for the transaction of general business in the country and is indispensable for the salesman traveling in Colombia.

CURRENCY.

Colombia is on a gold-standard basis, and its monetary system is modeled upon those of England and the United States, the unit being the gold coin (of 5 dollars) having the same weight and fineness as the English sovereign. One hundred cents make a dollar, equal in value to one-fifth of the pound sterling, or \$0.9733 United States currency.¹

¹ The actual exchange rate of the Colombian gold dollar, in terms of United States currency, since the beginning of 1919 has been given as follows by the Director of the Mint, United States Treasury Department: Jan. 1, 1919, \$1.15; Apr. 1, 1919, \$1.08; July 1, 1919, \$0.91; Oct. 1, 1919, \$1.01; Jan. 1, 1920, \$1.015; Apr. 1, 1920, \$0.9615; July 1, 1920, \$0.9733; Oct. 1, 1920, \$0.8333; Jan. 1, 1921, \$0.87; Apr. 1, 1921, \$0.84.

The coins are the 5-dollar gold piece called the "Condor," the 10-dollar gold piece called the "Condor Doble," the 50-cent silver coin or half dollar, the 20-cent silver coin, the 10-cent silver coin, and the 5-cent nickel piece. There is also the 1-cent copper coin called the "centavo." Of paper money there are 5 and 10 dollar bills of the National Government in general circulation, and in some parts of the country, notably around Bogota, another form of paper is in circulation, known as "cédulas hipotecarias," these being mortgage notes issued by certain banks in denominations of 1, 2, 5, 10, 20, and 50 dollars. A new decree in 1919 made English paper money legal tender and acceptable by the customhouses, but this act was not well received by the general public and the English paper money could not be put into circulation except at a heavy discount of 30 per cent.

In June, 1919, another decree made American gold coin—at that time coming into the country—acceptable at par with Colombian and English gold coin at the customhouses, the effect being to put American gold coin into general circulation throughout the country at par with Colombian and English gold coin, although the American gold coin is worth intrinsically about 14 cents more on every 5 dollars. At the present time there is no tangible reserve behind the Government issues of paper currency, and there is a shortage of paper circulating medium which has been met with several expedients. No banks, at present, have the right to issue paper currency other than the "mortgage notes" mentioned.

WEIGHTS AND MEASURES.

The metric system is in general use and is the legal standard for Colombia. However, many of the old Spanish Colonial units are still commonly used throughout the country. The old Spanish "arroba" (25 pounds) is common.

Freight in the interior is reckoned by "cargas," or the usual load for a pack mule—variously estimated at 250 to 300 pounds, the most usual "carga" being 280 pounds, in two packages. A certain fixed sum per "bulto," or package, is charged, all packages for animal transport being of necessity more or less uniform in size and weight.

Textiles are sold by the meter measurement and also by the "yarda" or yard of 36 inches, this latter being the basis upon which these goods are purchased in foreign markets and the price calculated for domestic sale.

Other commodities of small volume, such as lard, rice, etc., are sold on the "pound" basis, the pound being made up of 500 grams or half a kilo.

Coffee, the largest export of the country, is purchased from the producer on the basis of "cargas" of two sacks each weighing 65 kilos or 143 pounds net weight. Prices for export coffee are quoted in pounds, American standard.

The following are some of the weights and measures used in Colombia, with their equivalents:

COLOMBIAN LAND MEASUREMENT.

1 fanegada=6,400 square meters=10,000 square varas=1.9768 acres.

1 hectare=10,000 square meters=15,625 square varas=2.471 acres.

1 vara=80+ centimeters=31+ inches.

100 varas=80+ meters.

LINEAR, DRY, AND LIQUID MEASURES.

- 1 vara=0.83591 linear meter.
- 1 square vara=0.69875 square meter.
- 1 cubic vara=0.58409 cubic meter.
- 1 botella=0.70 liter (liquid).
- 1 almude=0.791 liter (dry).

GOLD AND PLATINUM WEIGHTS.

- 1 Colombian pound ("libra") of 16 ounces=2 marcos.
- 1 marco=50 castellanos.
- 1 castellano=8 tonines.
- 1 tonine=12 "granos" (grains).
- 16 Colombian ounces=460.093 grams (metric).
- 1 pound (English)=453.598 grams (metric).
- 1 pound (troy)=373.240 grams (metric)=81 castellanos + 12 grains ("granos").

In Colombia it has become customary to give 500 "gramos," or grams, for a pound instead of figuring 460 grams, to be exact. All scales and balances are in the metric system, and merchants estimate prices over the counter on the 500-gram basis when selling lard, sugar, coffee, chocolate, and the like.

As regards the weights used for buying platinum and gold, it can readily be seen that the employment of the above system, handed down by the Spaniards, is very much to the advantage of the traders who sell at United States standards, the gain being something like 20 per cent, on a rough average.

POSTAGE.

The postal administration of Colombia having agreed to put in effect, commencing February 1, 1921, pending ratification, the provisions of the special postal convention concluded at Madrid in November, 1920, between the Americas and Spain, the announcement has been made that on and after the date named the United States domestic rates will apply to letters and post cards, as well as to newspapers and periodical publications of the second class (1 cent for each 4 ounces or fraction thereof), addressed for delivery in Colombia, while the domestic rates of that country will apply to articles addressed for delivery in the United States in all cases where such domestic rates are less than the international rates.

Effective on the date above named, the maximum weight limit for newspapers, other printed matter, and commercial papers will be 8 pounds 12 ounces (4 kilos), while the maximum weight limit for single volumes of printed books will be 11 pounds (5 kilos); and the maximum dimensions for this class of mail matter in the form of a roll will be 40 inches in length and 6 inches in diameter.

Another provision of this convention requires the full prepayment of all mail matter except letters, which, however, are required to be prepaid at least one rate (2 cents).

The Colombian domestic postal rates were increased in April, 1918, as follows:

	Colombian dollars.
Letters: For each 15 grams (approximately $\frac{1}{2}$ ounce) or fraction . . .	0. 03
Post cards:	
Single . . . . .	.02
Double . . . . .	.03
Printed matter: For each 50 grams ($1\frac{1}{2}$ ounces) or fraction . . . . .	.01
Documents:	
For first 100 grams ($3\frac{1}{2}$ ounces) . . . . .	.03
For each 100 grams excess . . . . .	.02
Samples:	
For first 100 grams ($3\frac{1}{2}$ ounces) . . . . .	.03
For each 50 grams excess . . . . .	.02
Registry fee . . . . .	.15
Post-office boxes: Yearly rental	7. 50
City rates:	
Letters . . . . .	.01 $\frac{1}{2}$
Post cards . . . . .	.01 $\frac{1}{2}$
Special delivery . . . . .	.09
Foreign mail:	
Letters: For each 15 grams or fraction . . . . .	.05
Registry fee . . . . .	.15

The distribution of mail throughout the country is often slow and attended with difficulties on account of the frequently interrupted navigation of the rivers, which are the principal highways into the interior, and the necessity of long routes in the mountainous interior where mail is carried on pack animals and is exposed to bad weather conditions.

There is a parcel-post service with the United States and also in the interior of the country. This means is being used to a rapidly increasing extent for sending small lots of high-class merchandise between the United States and Colombia, and the increase in the maximum weight limit of parcel-post packages from 5 kilos (11 pounds) to the present maximum of 10 kilos (22 pounds), effective early in 1919, caused an extraordinary increase in imports by parcel post into Colombia from the United States, it being estimated that up to September, 1919, the business was eight times as large as in previous years.

Parcel-post rates are fixed between the United States and Colombia by the Parcel Post Convention of January 19, 1889, which allows extra charges on matter from the United States that do not obtain in the case of European countries. The parcel-post rates from the principal countries are as follows (based on the old maximum weight of 5 kilos, or 11 pounds):

	Colombian dollars.
United States	1. 32
United Kingdom	1. 45
France	1. 28
Germany	1. 28
Italy	1. 54
Spain . . . . .	. 70

The rate of 70 cents from Spain was fixed by special agreement in 1916 and applies to the Caribbean coast only. Packages from Spain to the Pacific coast of Colombia pay 1 dollar.

Besides postage, parcel-post shipments are subjected to the following extra charges: Import duty; 2 per cent for "conversion fund;"

5 per cent for road tax; 5 per cent for consular invoice; "corretaje" or "brokerage"; a charge for appraisal; and a municipal tax. The municipal tax amounts to 10 cents on each package and the "brokerage" to a flat rate of 5 cents for each package from European countries but to 5 cents for each 460 grams of weight and 1 cent for each 115 grams or 4 ounces of excess if the package is from the United States.

There are more than 700 post offices in Colombia.

TELEGRAPH, CABLE, AND WIRELESS SERVICE.

The country is fairly well served by telegraph lines which are owned and operated by the Government. There are more than 500 telegraph offices, with 20,000 kilometers (12,000 miles) of lines in operation. These lines, in many places, traverse long stretches of rough and sparsely inhabited country, and communication is often interrupted by floods and storms, which damage the wires. The equipment is antiquated and is being improved by the installation of duplex instruments at the principal cities.

Rates per word for domestic service are divided into various classifications, as follows: "Ordinary messages," 2 cents; "urgent messages," 4 cents; "extraordinary messages," 8 cents; foreign-language messages (not Spanish) or codes, double rates; press messages of general interest, 1 cent. The name of the addressee, the address, and the signature are charged for, the words all counting. Each figure used is counted as one word; for example, the number 69 would be charged for as two words. No charge is made for place of sending or for the date—all other matter counting in the charges. There is no reduced rate for night service.

"Extraordinary" messages take precedence over all other messages except Government communications. Next come those of the "urgent" class, and last of all the "ordinary" telegrams, which, if the distance should be great and the press of business at that particular office heavy at the time, might not be sent for a week or more. During 1919, when business in the country became active, the telegraph system of the country between commercial centers became inadequate and business was hampered and delayed.

One wireless station that was used for commercial work at Cartagena was dismantled during the war, as it belonged to a German company. The Marconi Co. has a contract to install at Barranquilla, within two years' time, a large wireless station with a range as far as Habana. Another large wireless station will be installed by the same company at Bogota to afford rapid communication with the interior. The United Fruit Co. maintains a wireless station at Santa Marta, with communication as far as Colon and Bocas del Toro in Panama.

On October 24, 1920, service was inaugurated on the direct cable connecting Cartagena with Colon. Cartagena had previously been connected with the outside world by means of land telegraph to the cable station at Buenaventura on the west coast of Colombia, thence by cable through Panama to the United States. The average length of time required for the transmission of messages under these conditions was about five days. The opening of the new cable gives

Cartagena direct connection, and messages ordinarily require but one day for transmission to the United States.

The Central & South American Cable Co. has an office at Buena-ventura, the cable rates from that port being as follows:

Groups (in United States).	Cost per word.	Countries.	Cost per word.
	<i>Cents.</i>		<i>Cents.</i>
Connecticut.....	50	British Columbia.....	52
Mississippi.....	52	Montreal.....	65
New York-Washington.....	53	Mexico.....	43
Alabama.....	56	Germany.....	65
Kansas.....	59	Austria.....	72
California.....	62	Spain.....	80
		England.....	65
		France.....	65

GEOGRAPHY, TOPOGRAPHY, AND CLIMATE.

GEOGRAPHIC POSITION.

The Republic of Colombia lies between latitudes $12^{\circ} 24'$ N. and $4^{\circ} 17'$ S. and between longitudes $66^{\circ} 7'$ and 79° W. Certain of the salient features of its geographic position have already been mentioned, at the beginning of the "Introduction."

The opening of the Panama Canal makes it possible to steam from Buenaventura, the principal seaport of Colombia on the Pacific coast, through the canal to Cartagena and Puerto Colombia, on the Caribbean, in less than four days, thus enabling transportation to be effected between the Pacific coast and the Caribbean coast of the country in much less time than it would take to proceed through the interior, which is very broken. The extension of the Pacific Railway (Buenaventura-Cali) to Bogota will give the country the full advantage of its geographical position and cause the importance of the Pacific coast territory to become equal to that of the Caribbean coast.

In normal times and with fairly equal steamer service, goods ordered from the United States can be received within 30 days from date of order as compared with three months (ordinarily) from Europe. With delivery service and terms of credit important factors in international commerce, trade between Colombia and the United States has a great advantage on account of the proximity of the two countries. The distance from Puerto Colombia and Cartagena (the former the seaport at the mouth of the Magdalena River, which is the highway into the interior of Colombia) to New Orleans is only about 1,300 miles, and easy and quick access is thus afforded to the gateway of the rich and productive centers of the American Middle West.

AREA AND BOUNDARIES.

The total area of Colombia can only be given approximately, as certain boundaries are in dispute. The various estimates give the total areas as 431,000, 440,846, 466,000, and as high as 476,000 square miles.

The official figures of the Colombian Government in 1912 gave the total area of the country as 463,155 square miles, not including the territory of the Choco Intendency, a long, narrow strip of land along the Atrato River in the west-coast section of the country. These figures were obtained from the totals of the areas of the various political divisions of the country, of which there are 14 Departments or States, three Intendencies, and one Territory. The total of 463,155 square miles included, however, the area of the present Republic of Panama, estimated at 31,917 square miles. The Choco Intendency is much smaller than Panama, probably covering less than 20,000 square miles.

In order that the reader may form an idea of the relative size of Colombia, it may be added here that the country is equal in area to the States of the Atlantic coast of the United States from Maine to

Florida with the addition of Ohio and West Virginia. It is larger than Germany and France together.

Colombia is bounded on the north by the Caribbean Sea; on the east by Venezuela, whose territory extends as far south as the headwaters of the Rio Negro, one of the northern tributaries of the Amazon; on the southeast by Brazil, on the south by Peru and Ecuador; and on the west by the Pacific Ocean and the Republic of Panama.

The Caribbean coast of Colombia extends from the boundary line with Panama (west of the Bay of Uraba) as far to the east as the Gulf of Maracaibo. The Pacific coast line extends from the boundary with Panama (at Kelley Inlet) as far to the south as Panguapi Bay on the Ecuadorian border.

SUMMARY OF TOPOGRAPHICAL CONDITIONS AND THEIR EFFECT.

The prominent topographical features of Colombia are (1) the Andean Mountain System, divided into three main ranges running from north to south and united at the boundary with Ecuador, these ranges being known as the Western Cordillera, the Central Cordillera, and the Eastern Cordillera; (2) the high group of mountains in the northeastern part of the country, lying between the Goajira Peninsula and the Magdalena River Valley and known as the Sierra Nevada Range; (3) the high table-land of Bogota, in the eastern-central part of the country along the western side of the Eastern Cordillera; and (4) the great "llanos" or plains of the southeastern part of the country, which extend from the line of the Eastern Cordillera to the east, southeast, and south and comprise the watersheds of the Orinoco and Amazon Rivers, being in area much larger than the mountainous and inhabited part of the country.

The great plains of the Orinoco and Amazon watersheds are not inhabited except by small tribes of savage Indians, the Colombian people living on the level coast lands, in the river valleys of the interior, or in the more favored regions of the high mountains.

The mountains are the dominating factor, affecting all conditions of life and commerce. Transportation is made extremely difficult and costly, and this has hindered the amalgamation of the nation. This condition has divided the country into several regions, each one different from the others in respect to climate, products, racial tendencies, and commercial needs. A separate study of each region is therefore necessary when one is making a commercial survey of Colombia. (See p. 185.)

Commercially, the inhabited part of Colombia is divided by geographical barriers into five main regions, which may be roughly designated as follows:

Caribbean coast country.—A tropical, low-lying coast region, dry and semiarid from the Peninsula of Goajira as far as Santa Marta, with the rainfall and vegetation increasing from Barranquilla and Cartagena until the region of the Atrato River is reached, where extreme tropical conditions prevail and the rainfall is as heavy as anywhere in the Tropics, being equal to that of Panama.

Department of Antioquia.—Occupying the central-northern part of the country, entirely mountainous in character and including tropical climate to the north, where the low coastal plain is reached, and

temperate climate in the interior at elevations over 5,000 feet above sea level.

Central plateau, Bogota.—A region having a large extent of level land on a high plateau, situated in the eastern-central part of the country just to the west of the Eastern Cordillera of the Andes.

Pacific coast section.—Mountainous in the south from the boundary with Ecuador to the Cauca Valley and also along the Pacific coast near the ocean. This territory, or division, may be said to include the western slopes of the Central Cordillera of the Andes in the central-western part of the country (considering the area as a whole) and also the level and rich agricultural valley of the Cauca River from Cali to Cartago, in the Department of El Valle. Another subdivision of the Pacific coast territory is that of the valley of the Atrato River to the north, extending as far as the Caribbean Sea at the Bay of Uraba or Gulf of Darien.

Eastern section.—Embracing the territory between the Magdalena River Valley and the Venezuelan border and north of the high tableland of Bogota. This region is tropical and very mountainous and includes the district of the town of Cucuta, which lies near the Venezuelan border and exports via Lake Maracaibo in Venezuela, having no important commercial connection with the rest of Colombia.

TOPOGRAPHICAL FEATURES, DIVISIONS, AND CHARACTERISTICS.

It is apparent that Colombia presents three main divisions for study—namely, the coast regions; the great mountainous interior, with its river valleys, plateaus, and mountains; and, last, the low-lying, level eastern and southeastern territory, which may be again subdivided into the “llanos” or “pampas” of the northern part, consisting of open, grassy plains, cut by numerous shallow rivers, and the southern part covered by impenetrable tropical forests called the “selvas,” populated only by savage tribes of Indians and very inadequately explored.

In addition to the three main ranges of the Andes mentioned, one finds in the northern part of Colombia, near the Caribbean Sea, the great mountain group called the Sierra Nevada, geographically independent of the Andean System and running, in general, east and west. First there are the low hills of the Goajira Peninsula and then to the west, back of Santa Marta, the great Sierra Nevadas, which ascend from the sea to snow-capped peaks as high as 23,000 feet.

There is a small, independent range of low hills lying between the Orinoco and Amazon watersheds, of which it forms the dividing line. These hills are called the Sierras of Padavida, Tunahi, and Cocuy. They are little known or explored.

Still another small, independent formation is that of the Serrania de Baudo, a line of low hills extending along the Pacific coast from north of the mouth of the San Juan River to the boundary with Panama. These are regarded as belonging to the same range as the littoral mountains of the Caribbean and Central America. The true Western Range of the Andes in Colombia lies just to the east and is separated from the Baudo line of hills by the valleys of the San Juan River in the south and the Atrato River in the north.

WESTERN CORDILLERA.

The western slope of the Western Cordillera receives an excessive rainfall, making vegetation tropical, while many places on the eastern slope receive much less rain and are semiarid. The range begins (in Colombia) at the great peak of Chiles (15,680 feet) and also that of Cumbal (15,710 feet), on the boundary with Ecuador, Chiles forming also the connecting link with the Central Cordillera. To the north, along the western littoral of Colombia, this Western Range is not very high, averaging between 6,000 and 12,000 feet above sea level and being broken by two passes, notably that of the River Patia, which breaks its way through the Western Range and reaches the Pacific just north of the port of Tumaco.

CENTRAL CORDILLERA.

The Central Cordillera is the highest and largest range of mountains in Colombia. It forms the most inhabited part of the country. In the southern region of this Central Range there are several high peaks, the centers of mountain groups, and there are two large plateaus, those of Pasto and Popayan, which, however, are not as large as the great table-land of Bogota. Near Pasto there are two active volcanoes, Purace and Sotara, and north of Popayan one of the highest peaks in Colombia, Huila (17,700 feet), which can be seen from the Cauca Valley. From Huila to the peak of Tolima (18,400 feet) the range averages 12,000 feet, with heavy vegetation on both sides. North of Tolima are two high mountain groups, those of Santa Maria and Ruiz, the latter being a great mountain covered with snow for an extent of 40 miles and situated in the Department of Caldas.

North of Ruiz, in Caldas and Antioquia, the Central Cordillera spreads out into broken ranges, with a general northerly direction, gradually diminishing in size and height until they disappear in the region where the Cauca River makes its turn to the east toward the Magdalena River, in the northern part of the Department of Antioquia, at about 8° north latitude.

EASTERN CORDILLERA.

The Eastern Cordillera also separates itself from the large mountain group near Pasto and the Ecuadorian border and strikes to the northeast at an average height of about 8,000 feet. However, in the south it has several high peaks, including those of Chita and Cocui, the latter having an elevation of 16,800 feet. The Eastern Cordillera is the dividing line between the mountainous part of the country (made up of the three main ranges of the Andes) and the great plains of the Amazon and Orinoco watersheds. The rivers that flow into the Amazon rise in the Eastern Cordillera and flow in a general southeasterly direction to the Amazon south of the ranges of low hills called the Serrania of Padavida, while the rivers that feed the headwaters of the Orinoco rise in the central and northern sections of the Eastern Range and flow east or northeast to the Orinoco.

At about 3° north latitude the Eastern Cordillera broadens out into the most remarkable topographical feature of the entire country—the high table-land of Bogota, called the “Sabanas de Bogota” or the “Alta Planicie,” the most densely populated section of the

country and distant about 700 miles from the Caribbean coast to the north. This high plateau is 150 miles broad by 300 miles long, interspersed with hills and mountains, and extends from just south of the city of Bogota far north into the heart of the Department of Boyaca, the average elevation being about 8,500 feet above sea level.

The Eastern Cordillera may be subdivided into three zones, the table-land of Bogota forming the central zone, and the northern zone comprising the main range which lies to the east along the Venezuelan border and the irregular mass of ranges which cover the Departments of Santander and Norte de Santander and die out in the Goajira Peninsula after sending an important range into Venezuela.

RIVER SYSTEMS.

The three divisions of the Andes in Colombia give the key to the river systems of the country. The largest is that of the Magdalena River, which has its source far south in the Department of Huila, near the point where the Central and Eastern Cordilleras separate, and flows between the Central and Eastern Cordilleras for a distance of 1,060 miles to the Caribbean Sea, being joined by the Cauca River, the second largest river of Colombia, which rises near Popayan, between the Central and Western Cordilleras, and flows to the north until the end of the Central Range is reached, when it turns to the east toward the Magdalena, which it joins about 200 miles from the sea. With the exception of the Cauca and the San Jorge, which also flows into the Magdalena just below its junction with the Cauca, the Magdalena has no important tributaries on its western side. However, on the eastern side there are a number of important rivers—several of them navigable for small steamers during seasons of high water—which come from the western slopes of the Eastern Cordillera; there are the Rio Carare and the Rio Sogamoso and also the Rio Lebrija in Santander and the Rio Cesar in the Department of Magdalena, this latter stream flowing from the north to the south from the region between the Eastern Cordillera and the Sierra Nevada.

Two great valleys are formed by the two principal rivers mentioned. That of the Magdalena begins north of the rapids at Honda but is not very wide until the river passes Banco, below the junction of the Rio Cesar from the east, whence it opens out into the great alluvial plains of Atlantico and Bolivar and the swampy region to the east. The valley of the Cauca River is between the Western and Central Cordilleras. This valley is very different from that of the Magdalena and may be called an interior valley, where the climate is not the extreme tropical one of the lower Magdalena Valley but a semitropical climate of 3,500 feet mean elevation above sea level. This statement refers to the Cauca Valley between a point just north of the city of Cali and a point as far north as the end of the territory of the Department of El Valle at Cartago, where broken ranges of the Central and Western Cordilleras come together and cut off farther navigation of the river to the north—dividing the river into two navigable sections, the lower communicating with the Magdalena and the upper extending between Cartago and Cali. The Cauca Valley is a long and more or less narrow stretch of territory lying between the limits given above; and it forms one

of the three regions of the country (the others being the table-land of Bogota and the plains of the Magdalena near the Caribbean coast) where there is any great extent of level land suitable for agricultural development on a large scale.

In each of these regions conditions of climate, soil, and rainfall are very different and may be summarized as follows:

The table-land of Bogota, at 8,500 feet elevation, is cool and temperate with little variation in seasons or temperature; living conditions in general approach those in certain portions of Europe and the United States; wheat is grown in abundance and the rainfall is more or less constant all the year around, with no defined dry and wet seasons.

The Cauca Valley is not temperate but still is not nearly so tropical as the lands of the Caribbean coast; the mean elevation is between 3,000 and 3,500 feet, and the soil is shallower than that of the deep alluvial fill of the Magdalena Valley, in its northern part, nearer to the sea.

The northern plains in Atlantico and Bolivar are very tropical and covered with a dense jungle where they are not cleared for cattle raising or planting; there are well-defined dry and wet seasons and rains are heavy (more so than in the Cauca Valley).

The Sinu River is an independent river situated to the west of the Magdalena and rising in the foothills of the Western and Central Cordilleras where they come together in the north. It flows directly north to the Caribbean Sea through a level country in the Department of Bolivar and is separated from the Atrato River Valley by a low range of hills running north and south.

The Atrato River flows between the low coastal range called the Serrania de Baudo and the Western Cordillera and empties into the Bay of Uraba on the Gulf of Darien near the boundary with Panama. Its source is at a point where the Western Cordillera and the low coast range are united by a group of low hills. From this place the San Juan River also takes its source but flows to the south toward Buenaventura, emptying into the Pacific near Point Chirambira, which forms the northern part of the Bay of Choco, on which the harbor of Buenaventura is situated. The Atrato receives a great deal of water from the torrential rains of the region and is navigable for quite large steamers when once the sand bars of its mouth are passed. Regular steamer traffic is maintained throughout most of the year with Cartagena. The region of the San Juan and Atrato Rivers is perhaps the most tropical in Colombia, and there are many miles of great swamps along these rivers, throughout which the canoe is the only means of transportation, though the rivers themselves are, as has been said, navigable during a part of the year for small steamers for certain distances from their outlets at the sea.

The Patia is the largest river of the west-coast regions that flows into the Pacific. It has its source in the mountain group near Pasto, where the three main ranges separate, and has cut its way through a wonderful series of gorges to the Pacific Ocean just north of Tumaco. By means of this river and one of its affluents, the town of Barbacoas, situated in the interior back of Tumaco, has communication with the Pacific by means of small steamers. In the region of Barbacoas the Patia River forms an extensive valley well

sued for tropical agriculture and mostly devoted to cattle raising. The valley is most tropical, though rains are not nearly so heavy as farther north in the San Juan or the Atrato River country.

For a period of 250 years, during the colonial period, the rivers of Colombia afforded the only means of transportation from the interior to the coast or from one district to another, with the exception of the pack mule and pack ox, which carried exports down to the rivers from the mountains of the interior or took back into these mountains imported goods of all kinds. Railways that have been built since then have all been connecting links with the rivers for points in the interior. From this fact it is readily understood how important a part the rivers of the country have played in its commerce and development. However, even the great Magdalena and the Cauca are not deep, well-channeled streams, and their navigation even by small, shallow-draft craft has always been attended with danger, expense, and great delays on account of insufficient water during the protracted dry seasons. The time has arrived when the rivers are no longer adequate to carry the commerce of the country, and the great problem is that of railway building, in order to afford a more rapid, sure means of export and import trade and to facilitate the business of the country in general.

(For details concerning the Magdalena River, see the discussion beginning on p. 203.)

GOAJIRA PENINSULA.

The Goajira Peninsula juts out into the Caribbean on the north-eastern corner of Colombia between Santa Marta and the Gulf of Maracaibo in Venezuela. The area of the Territory of Goajira is 5,019 square miles. It is inhabited by 75,795 people, principally Goajira Indians, a sturdy and warlike tribe, or rather group of tribes, which have consistently repulsed the advances of civilization—this being probably due to the semiarid character of the land of the peninsula, containing little attraction for development enterprises.

The land is fairly level in character, and is mostly sandy and arid along the coast, where grow the divi-divi trees (*Caesalpinia coriaria*), producing the principal article of commerce of these regions. This type of country alternates with heavy clay lands where little but cactus grows—with here and there swampy "pantanos." In the center of the peninsula are rather large areas of savana lands which are covered with an excellent short grass (*Arestida*) in October but are dry and arid during most of the year, not affording sufficient pasture for cattle all the year round and also being more or less subject to overflows during the short rainy season.

In the southwestern part of the peninsula vegetation alters and becomes more luxuriant toward the mountains of the Sierra Nevada, where there is more rainfall. Here are found extensive pastures of "guinea" grass, which was originally imported by the Spaniards in colonial times. As many as 10 leagues of good pasture are seen in one place, and it is this region of the peninsula that is capable of development in the way of cattle raising, the problem being to get the cattle out to market in good condition.

The principal town is Rio Hacha, on the Caribbean, where there is a small, very shallow harbor. The trade is not important.

In the region of Rio Hacha there are very extensive areas of natural "fique"—a species of henequen—said to be capable of producing large quantities of fiber.

Cattle and goat skins, brazil wood, and divi-divi are the principal exports.

A very complete description of the lands of the Goajira Peninsula and the eastern slopes of the Sierra Nevadas is contained in "An Account of a Journey Down the Magdalena River and Through the Magdalena Province and Peninsula of Goajira, Colombia," by Prof. M. T. Dawe, F. L. S., agricultural expert for the Colombian Government. "Colombia," by Phanor J. Eder, also contains a good description.

Large beds of lignite are reported in the peninsula near the mountains at Serrajon, and there are deposits of a very good quality of kaolin near the Gulf of Maracaibo, but these are little worked.

The route from Bahía Honda, a deep-water natural harbor near the extreme eastern end of the peninsula, through the peninsula and via the Valle Dupar to the east of the Sierra Nevadas has often been considered as an excellent rail route to Bogota—the reason being the long stretch of practically level land, through which construction would not be as costly as in the mountains of the interior.

As a result of recent explorations in the Valle Dupar country, deposits of copper have been reported in the region of Soldado and Fonseca.

CLIMATE AND RAINFALL.

In a mountainous country like Colombia, climate is a matter of elevation, and, where elevations vary from sea level to the snow line at 16,000 feet, all varieties of climatic conditions are encountered. It is this difference in climate that has had such a great influence on the development of the country. The early Spanish colonists sought the cool elevations of the interior rather than the hot tropical lands of the more level coast on the north, and to-day the greatest development and most dense population are still found on the high and cool table-land of Bogota.

Colombia is situated in the Tropics, so far as latitude is concerned, but it is not wholly a tropical country by any means, the elevations of the mountains of the interior bringing about many changes in climate.

CLIMATIC ZONES.

Climatically, the country is divided into zones just as it is topographically. There are four principal climatic zones:

First, that of the coasts, both Atlantic and Pacific, very hot and damp all the year round.

Second, the region farther in the interior, composed of foothills up to an elevation of 3,000 or 4,000 feet. Here the climate is still very hot and the vegetation dense, but the atmosphere grows cooler as the higher elevations are reached. For example, at 3,500 feet the climate would be considered semitropical, varying according to location and rainfall.

Third, the first low ranges of the mountains, up to 6,000 feet above sea level, in which the climate is mild and equable, with moderate rainfall.

Fourth, the higher ranges of the mountains and the high plateaus of the interior, such as those of Bogota, Popayan, and Pasto, all above 6,000 feet, where the climate is cool, with the temperature ranging from 40° to 64° F. and occasional frosts above 9,000 feet. In this zone there is little variation in the seasons, there being no well-defined wet or dry season. Rains are frequent but light in character, the tropical downpours of the lower river valleys and the coast being entirely absent.

CLIMATE OF THE CARIBBEAN COAST.

As has been said, the territory of the Goajira Peninsula is very dry and arid along the coast. Light rains usually occur in the summer months, beginning in May, but they are not dependable. The central part of the peninsula receives more moisture, being nearer to the slopes of the Sierra Nevadas, which lie to the west and south and send down numerous small streams. These are shallow on the level plain of the interior of the peninsula, and the land is often flooded by water from the mountains during the rainy season, which begins in May and lasts until October.

The Santa Marta region receives slightly more moisture than Rio Hacha (to the east in the Goajira country), but not enough to mature crops, irrigation having to be resorted to in the banana district south of Santa Marta harbor. The annual average precipitation in this latter region does not exceed 14 inches. [The 30,000 acres of bananas in this region are irrigated from the numerous streams coming down from the Sierra Nevadas on the western slope. Farther to the south, in the region of the Rio Cesar, there is more abundant rainfall, often exceeding 60 inches per year, and the country is swampy as far as the Magdalena River, being covered with heavy tropical vegetation.

The Santa Marta region suffers frequently from high wind storms, or hurricanes, which come from the southeast and do great damage in the banana plantations by blowing down the tender and heavy banana plants, involving a loss of five to six months in cutting fruit on the areas damaged by winds.

The Caribbean coast in the region of Barranquilla and Cartagena receives more rainfall than Santa Marta, but still not sufficient to mature field crops very well, there being frequent years of extreme drought lasting from October until May. The annual average precipitation is about 26 inches. Seasons in which excessive rains and violent storms cause damage occur about every eighth year.

The coast between Barranquilla and Cartagena is dry and rather arid for a distance of 30 miles inland, though certain low areas are subject to flooding from the waters of the Magdalena during seasons of high water in the river, which is fed by its many tributaries and heavy rains in the higher regions of the interior. More rain occurs farther south of Cartagena, where the land is better, in the great alluvial fill stretching from the Dique south to the San Jorge River and west to the west side of the Sinu River.

In the Sinu region the rainfall is still heavier, and, except in abnormal years of extreme drought, there is sufficient rainfall to mature field crops, the average annual precipitation being about 42 inches. As one proceeds south in this district the soil is found to be more moist and to hold moisture better.

Still farther west the rainfall increases rapidly, becoming excessive in the region of the Atrato River, where rains are almost continuous and the precipitation is as heavy as that of Panama, being about 160 inches per annum—or even greater farther in the interior, in the region of the town of Quibdo. (See p. 218.)

It has been said that the coast regions are very hot and damp, being extremely tropical. However, the extreme heat of the coast at Santa Marta, Barranquilla, and Cartagena, and also farther to the west, is tempered during the fall and winter months by the northeast trade winds, which blow steadily during the day from October until April—that is, during the dry season.

During the spring equinox a short period of light rains is usually expected and relied upon to mature field crops planted in the fall. These spring rains sometimes fail, however.

CLIMATE OF THE INTERIOR.

Farther inland from the Caribbean the heat is even greater than along the coast, since the cooling effect of the trade winds is not felt. Vegetation becomes very dense and tropical, and the temperature goes every day to as high as 95° F. This region includes the Magdalena Valley as far up as Girardot and the country around the San Jorge and Lower Cauca Rivers in Antioquia and Bolivar. There are two well-defined seasons—the rainy season, from May or June to December, and the dry season, from December to May.

Farther south along the ranges of the Central Andes, in the region of the city of Medellin, the climate changes. There are two wet and two dry seasons, the former occurring during April, May, and June and during November and December. The temperature varies with the elevation. That of Medellin, at 5,000 feet above sea level, is like warm spring weather in the United States, the temperature varying between 64° and 84° F. every day, with an average of 76° F.

Still farther south along this range—as, for example, at Manizales, at 7,000 feet elevation—the seasons and the amount of rainfall (averaging about 60 inches per annum) are the same, but the temperature is cooler and may be called ideal—not too cool like the table-land of Bogota nor just a trifle too warm, as in Medellin, but just right all the year round. Manizales has the best climate of any large town in Colombia.

In the Cauca Valley conditions are about the same as for the second zone, with two wet seasons and two dry seasons, the climate being called semitropical and the temperature averaging 76° F.

Along the Pacific coast and the western slope of the Western Cordillera and the small northern coast range of hills, rains are incessant and very heavy, equaling the fall in the Atrato region and that of Panama. At the Pacific port of Buenaventura it rains every day, and the annual precipitation is more than 160 inches. This heavy rainfall of the coast diminishes farther south and in the neighborhood of the port of Tumaco is reduced to the normal amount of 60 inches per annum on the average.

The third zone, that of elevations up to 6,000 feet, also has two wet and two dry seasons, the rains coming about one month earlier than on the lower levels but in approximately the same amount. The temperature varies between 58° and 72° F.

EFFECT ON TRADE OF CLIMATIC VARIATIONS.

From the foregoing it is seen that Colombia possesses a great variety of climates, necessarily affecting the habits and mode of life of the people, their characteristics, racial tendencies, and, in fact, every phase of existence. For example, on the coast only the very lightest clothing is worn—cotton drilling, linen, Palm Beach, white canvas shoes, straw hats, etc. Medellín uses both light, white clothing of the Tropics and also lightweight woolens, serges, etc.; and the people of Antioquia are more energetic, their houses are better furnished and more modern, and a greater variety of merchandise is needed than throughout the coast regions, where life is generally more primitive among the lower classes. The Manizales district takes medium-weight cloths and light woolens, while Bogota uses heavy woolens and affords a market for the usual goods sold in the United States. At the same time, lighter weight materials are also in demand in Bogota because this center furnishes goods at wholesale to a wide and varied district, selling light cotton goods to the Magdalena Valley and Santander, as well as Tolima and Huila, and carrying stocks to meet the conditions of climate of the different zones from the extreme Tropics of the river valleys to the cold lands of Bogota. In Bogota there is a market for waterproof garments, rubbers, umbrellas, etc., and in Medellín and Manizales for lightweight raincoats, etc., while these garments are not worn on the coast, because the extreme heat makes their use insupportable and soon damages them.

On the coast and in the interior hot valleys, celluloid fastenings for suspenders, garters, belts, etc., are in demand because this material does not corrode and rust with the moisture and thus stain and damage the cloth of the clothing worn. In the cooler regions metal fastenings can be used. This small example shows how a study of these climatic conditions will help to promote trade and add to the usefulness of American goods sent into these different regions of such a country as Colombia.

CLIMATE OF THE "LLANOS."

Taking the great plains of the "llanos" as a whole, it may be said that the climate is extremely tropical throughout their extent. As has been said, this immense region is not inhabited and at the present time has little commercial importance. In the northern part, throughout the watershed of the Orinoco, the land is more open and covered with grasses, with copses of trees only along the water courses. The southern regions, called the "selvas," throughout the watershed of the Amazon, are covered with a dense tropical forest. Rains are very heavy in the southern region and last from May until December. During the rainy season the rivers, which are shallow, overflow their banks and inundate enormous stretches of country, making it impassable for men on foot or horseback, the canoe being the only means of transportation. All sorts of tropical fevers are prevalent in this region, and there are also diseases peculiar to this territory.

POPULATION AND LIVING CONDITIONS.

STATISTICS OF POPULATION.

The following table shows the population of Colombia by political divisions in 1896 and 1912 (the census of 1918 being incomplete):

Departments.	Area.	Population.			Number of Provinces.	Number of municipalities.
		Census of 1896.	Census of 1912.	Census of 1918.		
	<i>Sq. miles.</i>					
Antioquia (capital, Medellin).....	24,401	648,190	741,816	817,530	10	85
Atlantico (capital, Barranquilla).....	1,082	112,261	114,887	.....	2	19
Bolivar (capital, Cartagena).....	23,938	202,945	425,975	463,165	10	58
Boyaca (capital, Tunja).....	17,654	508,989	586,499	.....	13	128
Caldas (capital, Manizales).....	7,915	246,368	341,198	428,137	5	29
Cauca (capital, Popayan).....	21,882	211,891	211,756	.....	5	29
Cundinamarca (capital, Bogota).....	8,629	632,847	721,615	.....	12	109
Huila (capital, Neiva).....	8,687	154,641	158,191	.....	3	29
Magdalena (capital, Santa Marta).....	20,463	127,806	149,557	.....	5	32
Narino (capital, Pasto).....	10,039	244,330	311,791	.....	8	44
Norte de Santander (capital, Cucuta).....	6,708	164,290	204,481	.....	3	28
Santander (capital, Bucaramanga).....	19,161	377,393	400,084	.....	9	71
Tolima (capital, Ibague).....	10,811	218,840	283,333	.....	5	3
El Valle (capital, Cali).....	4,179	217,096	217,147	.....	6	29
Intendency of the Meta.....	85,328	7,497	14,220	.....	1	3
Intendency of the Caqueta.....	187,258	45,856	.....	.....	.....	.....
Intendency of the Choco.....	13,761	.....	266,950	.....	2	6
Territory of La Goajira.....	5,019	75,795	75,795	.....	1	15
Islands of San Andres and Providencia.....	.....	5,311	6,953	.....	2	.....
Total.....	476,915	4,539,088	5,038,803	6,000,000	.....	.....

¹ The figures for the Intendencia del Meta include those of the Comisaria de Arauca.

² The figures for the Intendencia del Choco include the population of the leper colony and the Comisarias de Jurado and Uraba, latterly assigned to the Department of Antioquia.

³ The total of the census for 1912 includes a population in the leper colonies of 6,555, and an additional 200,000 may be added for savage tribes on which no official figures are available at this time. These tribes would include those of the "Motillones" in Santander, the various tribes of the "llanos" and "selvas," and the Indians of the Choco Intendency.

⁴ The total given for 1918 is estimated, being calculated on the increase between 1896 and 1912, and the figures available for some Departments in the census of 1918, which, late in 1919, had not yet been approved on account of discrepancies not accepted by the National Government.

The large increase in the population of the Department of Bolivar between 1896 and 1912 is due to the fact that additional territory was added from the Departments of Atlantico and Antioquia.

The Departments of the coast received considerable influx of population from the interior, principally from Antioquia. The natural increase is not very large in relation to population, the infant death rate being very high in all tropical regions of the country—more so than in the more healthful areas of the interior.

The largest increase in population is shown in the Department of Antioquia, where the percentage of increase between 1896 and 1912 was 11.3 per cent and between 1912 and 1918 10.2 per cent. The Antioquia increase is from natural causes and is even higher than is indicated by these figures, since people from Antioquia emigrate to the Cauca Valley, Caldas, Tolima, Cundinamarca, and Boyaca.

The most populous Department is Antioquia, with Cundinamarca a close second and Boyaca third. Antioquia is also the largest in area,

with Bolivar a close rival and Cauca third. The Intendencies of the Caqueta and Meta are much larger, but these are the great uninhabited lands of the Orinoco and Amazon watersheds, which are not considered commercially in this report.

The islands of San Andres and Providencia lie off the coast of Costa Rica in the Caribbean Sea and are administered from Cartagena by a territorial military government. They have no commercial connection with Colombia, and even the language is English and not Spanish, these two small islands being inhabited by West Indian Negroes. The principal industry is the growing and exportation of coconuts.

RACIAL CHARACTERISTICS OF THE PEOPLE.

As in all other Latin American countries, wide differences in race and social strata exist in Colombia, and there has been a large infusion of Negro blood throughout the coast and river regions. In describing the racial characteristics of Colombia, one of the best-known modern writers on the country (Phanor J. Eder, "Colombia," pp. 199-201) says:

It was to the interior mountains and plateau regions, at altitudes where the climate was more like that of home, that the Spaniards were invariably attracted, no matter what the distance from the coast. High up in cool regions throughout Spanish America important capitals were founded—Mexico City, Cartago, Quito, Caracas, La Paz—all situated out of the debilitating lowland heat and incidentally safe from the attacks of enemies besetting the coasts. In Colombia, too, the same rule was observed; the Spaniards sought out the Andine regions to found their homes. In the old cities like Bogota and Popayan, Benalcazar's capital, the aristocratic families held sway and preserved the purity of their race, except occasionally in the earlier days when it was considered no dishonor for a "conquistador" to marry the daughter of an Indian chief. Elsewhere there is a strong admixture with the Indians and with the Negroes.

As a consequence of the intermixture, of the varying characteristics of the Indian stocks thus absorbed, and of the lack of homogeneity among the conquering Spaniards, themselves of various races (Celt, Teuton, Basque, Moor, Jew) and of widely differing types (Castilian, Andalusian—the latter the most numerous settlers in Colombia—Galician, Catalan, etc.), plus the different environments in which these complex blood mixtures found themselves, several distinct characters of type have in the course of centuries developed in Colombia. For, though we speak of the mass of the Andine population, yet local conditions of altitude, climate, and soil have differed greatly. Here life came easy, there hard work was necessary for subsistence; here an exuberance of nature, there dry air and an arid soil; here blazing sunlight, there cold mists and fogs. By the time of the Independence, the types now generally recognized among the "white" Colombians—the term "white" often including Indian mixtures—had become fairly fixed. The further evolution has been complicated by the gradual dispersion and intermarriage of folk from the various regions, and the somewhat slower infusion into the best circles of drops of color from parvenus. Each locality has its own peculiar characteristics well worthy of study.

INHABITANTS OF CARIBBEAN COAST REGIONS.

INDIANS OF THE GOAJIRA PENINSULA.

Mention has been made of the Indians of the Goajira Peninsula, who are probably descendants of the Caribs who made such an heroic defense against the invasions of the Spaniards. In modern times the Goajiras maintain their independence and are a hardy and warlike race but are divided into tribes which carry on tribal warfare.

Commerce is carried on with the whites, and these Indians are nominally submissive to the authority of the Government, but they are resisting all attempts at subjection or civilization. They trade

cattle, horses, hides, pearls, brazil wood, and divi-divi for bright-colored cotton cloth, hardware, arms, corn, and rum. The Indians along the coast live principally on fish and those of the interior on meat. Several Catholic missionary organizations, aided by the Government, have established missions in the peninsula, where the children are educated by the priests in "orfeñinos" (literally, orphanages). The Goajiras of the east coast, along the Gulf of Maracaibo, trade with Venezuela by that route.

INHABITANTS OF SANTA MARTA, BARRANQUILLA, AND CARTAGENA REGIONS.

Back of Santa Marta, in the higher elevations of the Sierra Nevadas, live the Ahruaco Indians, a docile tribe very unlike the Goajiras. The latter wear little clothing, while the Ahruacos wear heavy cotton cloths and long mantles. These Indians live in permanent villages of tiny huts and are agricultural, raising diversified crops, from plantains to wheat, but only enough for their subsistence. They also raise cattle, which is their means of barter with the towns of the lower regions like Santa Marta. The region of the mountains inhabited by these Indians is well suited for coffee growing up to an elevation of over 10,000 feet, but these Indians do not form a supply of labor, which is the factor that has determined the slow development of the coffee industry in the Sierra Nevadas.

To the east and south of the Sierra Nevadas lies a varied and rich region very sparsely inhabited except for a few small towns. The country has no roads and is inaccessible, and the white settlers have been driven away very often by the depredations of the Motilones Indians from the Eastern Cordillera.

Along the Caribbean coast, in the Santa Marta, Barranquilla, and Cartagena districts, the predominating population, among the lower classes, is mulatto or Negro. In the banana plantations of Santa Marta a good many of the laborers are West Indian Negroes. Colored men from the West Indies also work on the docks at Santa Marta, Barranquilla, and Cartagena. Negroes and mulattoes have also replaced the Indians up the great valley of the Magdalena, but are not found in the high lands of the interior in any numbers—a Negro being a rare sight in Bogota, for example, where the climate is cold and damp and the Indian population predominates in numbers.

During colonial times there was a considerable group of tribes of Carib Indians living on the Sinu River, but, like the Indians of the Magdalena Valley, these Indians have disappeared almost completely, being replaced by the Negroes imported by the Spaniards to work the placer mines and the plantations of the rivers and to build the great fortifications of Cartagena.

An important element on the coast is the number of foreigners engaged in business and trade. There was a large and flourishing German group, especially at Barranquilla, where the Germans for more than half a century led in trade and enterprise, being the first to bring out steamers for the river traffic. Their numbers have diminished as a result of the war.

Syrians—erroneously called "Turcos," or Turks, by the natives—form possibly the most numerous and important foreign element in the trade and commercial life of the coast centers. These people have some of the largest stores and do a large wholesale business with



FIG. 2.—GOVERNMENT BUILDING, SANTA MARTA.



FIG. 3.—SANTA MARTA RAILWAY CO.'S SHOPS AND WHARVES AT SANTA MARTA.

the interior, principally among traders of their own nationality. They are also buyers of Colombian exports and have taken a leading part, through branch houses established in Quibdo (on the Atrato River), in the platinum and gold export trade. Their principal line, which they know exceedingly well, is cotton goods, but they also import a general line of merchandise. The Syrians, while not Catholics, are generally well received by the natives and take important parts in the business and social life of the towns and cities where they reside, becoming members of the chambers of commerce, directors in local banks, etc. However, they do not readily assimilate with the natives; they bring their wives out from Damascus and Beirut, and each store is the center of a large family group with many ramifications all over Europe and the United States as well as in Colombia.

Their main advantage lies in their ability to resist the terrible tropical climates of the coast and river regions better than any other foreigners, or even the natives themselves who have lived there all their lives, and Syrian traders are to be encountered in the most out-of-the-way places of the almost unexplored interior. The wealthier members of the Syrian colonies invest in local enterprises, such as hat factories, shoe factories, sawmills, cattle ranches, etc., and may be considered one of the most progressive and energetic elements of the country. Syrians are found all over Colombia except in Antioquia and Bogota.

Next in importance to the Germans and the Syrians in the foreign colony of the coast cities are the Italians, who manage large importing and wholesale houses at Barranquilla and Cartagena, but are far outnumbered by the Syrians.

There are also a few French, a few English, and a few Americans, all engaged in trade, the most important group being the English representatives of British textile houses.

In the interior of the Department of Bolivar, throughout the rich alluvial plain and on the Sinu River, the predominating type is that of the Negroes who are seen here in almost pure type, being the direct descendants of the Negro slaves imported by the Spaniards during colonial times. These Negroes live in a very primitive manner and can not be considered a reliable source of good labor.

West of the Sinu River, along the Gulf of Morosquillo and toward the Atrato, there is a scanty population, consisting mostly of Negroes engaged in growing coconuts along the immediate coast, the interior being almost entirely uninhabited as far back as the Cauca River in Antioquia. At the mouth of the Atrato River there are a few very small and unimportant settlements of Negroes and a few Indians.

Up the Atrato River there is a rather large Negro population which works in the platinum and gold placers of the rivers to the south. Small towns have been established along the Atrato River, where plantains and corn are grown and some cedar is cut and transported down the river at certain times of the year. "Tagua," the so-called "vegetable ivory," is also gathered, as well as some rubber, chicle, and medicinal plants such as sarsaparilla and ipecac. The total population is estimated at about 80,000, of which less than 5 per cent is white. There are a few Indian tribes, very primitive but peacefully inclined. These Indians do not mix with the Negroes except in very rare cases. They do not work in the placer mines of the rivers but live on fruits and fish.

INHABITANTS OF PACIFIC COAST.

From the boundary of Panama to Buenaventura, the Pacific coast of Colombia is almost uninhabited except for a few Negro villages, very small and poor. As on the Atlantic coast, the Negro predominates at Buenaventura and farther south at Tumaco. As a general thing, these Negroes are shiftless, content with a bare existence in a land of plenty, where there are means of wealth always at hand for the gathering. However, they are naturally intelligent, though uneducated.

INHABITANTS OF THE INTERIOR.

THE MULATTO.

No better description of the Colombian mulatto can be found than that given in "Colombia," by Phanor J. Eder:

The mulatto of the interior and the Atlantic coast towns is an * * * interesting type and constitutes an important element in Colombian life. He has often gained great prominence in the law, journalism, and in politics and revolutions, where he is usually on the Liberal side. To generalize: He is lively, passionate, subject to alternate moods of energy and indolence, * * * is extremely sociable, artistic, and musical, * * * is capable of arduous labor and often displays great bravery, and takes readily to education and literature. Physically he favors his African ancestors, but is somewhat more attenuated; intellectually and temperamentally he has assimilated much from his Spanish progenitors.

INHABITANTS OF ANTIOQUIA.

In Antioquia is presented the most interesting racial problem of the entire country. The people of this Department are different from any other regional population in Colombia. Medellin was first colonized by the Spaniards under Robledo, and it is said that a number of Spanish Jewish families who had accepted Catholicism in Spain immigrated to Colombia, settling in what is now Antioquia. This theory is certainly borne out by the characteristics and physical type of these people, who are light complexioned (many having blue eyes and fair hair even among the lower classes), slight of build as a rule, very energetic and laborious, thrifty and saving, and with a passion for the possession of property of their own—something not found elsewhere in the country among the lower classes. As an example, in Medellin the scheme of selling city building lots on the partial-payment plan has been very successful, the buyers being principally working people of very small means who have saved, a dollar at a time, to buy a plot of ground that they could call their own. The same influence is seen in the great number of tiny farms and small holdings, even the tops of the mountains being cultivated wherever there is a patch of tillable soil large enough for a few stalks of cane or plantains.

The topography of Antioquia has had a great deal to do with the development of these hard-working people. Mining has always been the principal industry, and that requires ingenuity, perseverance, and hard labor. It has been harder to extract a living from the mountains than on the coast lands, and this condition has made the Antioqueño more practical and self-asserting than any other people of the country. He is noted in Colombia for his business ability and as a shrewd trader, and has invaded almost every region of the country, engaging in all pursuits of life.

In Antioquia is found the largest development of industry; to-day it is the richest, most populous, and most progressive Department of Colombia and is a very powerful political factor, as well.

The new Department of Caldas, to the south along the same range of the Andes, was formerly a part of Antioquia, and the same racial aspects are presented.

INHABITANTS OF CAUCA VALLEY AND REGION TO SOUTH.

The Cauca Valley and the region to the south comprise the present Departments of El Valle, Cauca, and Narino—formerly the State of Cauca. In the Cauca Valley proper (an area of level valley approximately 15 to 25 miles wide and about 150 miles long, lying between the Western and Central Cordilleras and reaching from Cali to Cartago), the bulk of the population is mulatto. However, there are still many old Spanish families of pure race in the Cauca Valley, and these are the leaders in politics and business.

Farther south, in Popayan, was the stronghold of the Spaniards during the wars of independence, and here the old traditions are held in reverence and preserved to this day. Coats-of-arms, family lineage, and similar considerations are factors in social life, but the place is commercially stagnant and the younger generation has, to a large extent, removed to Bogota to engage in politics or to the Cauca Valley for business and cattle raising. The city of Popayan is situated on a high but irregular plateau at 5,900 feet elevation, giving it a cool climate, like perpetual spring, but disturbed by violent storms and subject to frequent earthquakes caused by the proximity of the active volcanoes to the south near Pasto. In this region there are Indians related to those of Bogota and the races of the highlands of Ecuador—an ugly people, of short stature, without ambition, unreceptive to modern influences, and of little use as labor.

Farther to the south, around Pasto, are the Pastuso Indians, a more energetic and intelligent tribe who engage in agriculture, make hats, weave cotton and woolen cloth, and have their arts—something unknown among the other tribes of the country. They are Catholics and are called civilized, though in reality they are uneducated and backward to the verge of fanaticism.

INHABITANTS OF CUNDINAMARCA AND BOYACA.

The region of Bogota presents the greatest contrast of races. Here was the most intensive settlement of the Spaniards and here also the greatest number of Indians, the Chibchas, different from the Carib types of the coast but similar to the Indians of Ecuador. To-day there are the direct descendants of the old Spanish families, many being still of almost pure race; there are the pure Indians, more or less civilized but sunk in fanaticism and ignorance and unreceptive to all modern influences; and there is a comparatively small class of "mestizos," of mixed Spanish and Indian blood, who constitute the middle class and are the artisans, small shopkeepers, etc., of the community. The Indians of the highlands of Bogota and in the Department of Boyaca furnish a plentiful supply of fairly efficient labor, and they are good farmers. They also carve woods and weave in wool, at which task they are expert.

In this region there are no Negroes or mulattoes except along the river valley of the Magdalena, which is hot and tropical. The mulatto or Negro does not penetrate into the high, cold plateaus of the country nor into the mountains.

INHABITANTS OF SANTANDER.

In Santander the mulatto predominates along the Magdalena River, while in the interior of this Department the people are more like those of Antioquia, though not as energetic or resourceful.

IMPORTANCE OF RACIAL CONSIDERATIONS FROM A COMMERCIAL STANDPOINT.

The great differences in the inhabitants of the country—differences of race, character, and mode of life—form a subject that is important from a commercial standpoint and should be studied; for this reason considerable attention has been paid to this subject in the section covering each commercial division of the country (see p. 185).

In summing up the various racial components of the population from a commercial standpoint, it may be said that the wealthy white Colombian, the merchant, the banker, the politician, or the business man, is very much interested in all foreign subjects, new articles of commerce, new modern conveniences, new machinery, new methods, new industries, and new markets for export products of the country, and, by reason of this interest, many new articles of commerce, not previously used in Colombia, are now being imported and slowly introduced into general use.

The mulattoes and the mestizos are also alive to modern influences and are quick to appreciate new conveniences, more especially those of personal and domestic use. These classes are obtaining better remuneration for their services or products than ever before (this having been especially true during 1919 on account of the coffee situation), and they are consumers to an increasing extent of better grades of foreign merchandise. These classes constitute by far the largest purchasing element of the country, and it is in the increase of purchasing power, due to better prices for export products such as coffee and hides, that one finds the reason for the phenomenal increase in Colombian imports from the United States during 1919.

Concerning the future of the Indians, little of an encouraging nature can be said. They are satisfied with little and, as has been said, are not receptive of modern influences. In numbers they are decreasing rather than increasing, being slowly absorbed into the mestizo class; and their purchasing power per capita is very small as compared with that of the mestizos or mulattoes, who form the bulk of the population.

LIVING CONDITIONS.

Living conditions in Colombia vary just as much as the topography, the climate, the character and race of the people, and the general conditions of each region into which the country is primarily divided.

The people of the upper class—composed of the descendants of the old Spanish families and comprising the governing class of the country, the principal merchants, bankers, and business men—are usually quite wealthy, as wealth is measured in Colombia, and live

in modern style, surrounded by comforts and conveniences. Fine residences are built embodying every new feature of construction and following the French style of architecture rather than the English or American. Baths and running water are provided, and the more modern houses are located in individual lots surrounded by gardens and, in the suburbs, usually removed from the street. One thing lacking in most cases is the improvement of the streets leading to these beautiful homes, and, also, there is often no means of waste drainage, but these defects are rather the fault of the local governments than of the owners of these residences.

In earlier times this same class built large houses on the old Spanish style of architecture—that is, the rooms laid out around a central court or “patio” and often occupied by offices and stores on the street floor level. Many of these old-style houses are being remodeled, fitted with up-to-date plumbing and lighting fixtures, and made modern in every possible way. In the newer houses of this wealthy class is seen the individuality of these people; no two are alike, and many of them are beautiful residences.

Persons of this class consume imported wines and liquors, canned and preserved fruits and meats, etc., and wear imported clothing, shoes, and hats. They are interested in the latest styles, new domestic conveniences, such as all electrical devices for the household, new developments in housing, sanitation, and education, and are quick to seize upon new ideas of foreign countries and endeavor to adapt them at home. Most of these people have been educated abroad; prior to the war most of them went to Europe, but many are now coming to the United States for this education and professional training and experience.

It is also this element that establishes branch houses in New York, Liverpool, Manchester, Hamburg, and elsewhere and keeps the country in touch with other countries with which it trades.

Hospitality is the pride and enjoyment of upper-class Colombians, combined with formal courtesy, which is by no means absent from the business life of the country. These wealthy people are accustomed to a household of servants recruited from the other classes, and their style of living will compare with that of any similar class in Europe to-day, the high cost of imported luxuries being compensated by the low wages of servants and the low cost of domestic staples.

The masses of the people, made up of the mulattoes and mestizos, live in a manner in great contrast to that of the whites (who constitute about 10 per cent of the total population, while the mulattoes and mestizos combined number at least 75 per cent). Even among this class there are many differences in manner of living. The clerk and the artisan reside in fairly good brick or adobe houses, usually of one story, and having a certain amount of modern furniture and conveniences such as electric lights. Sometimes a servant is employed to do the heavier work of the household. The more common worker of this class, either laborer or craftsman, lives in smaller and more congested surroundings, with an average income of less than \$50 per month (as compared with \$75 to \$100 for the expert artisan or clerk) and consumes much less foreign merchandise—except textiles—taking the bulk of the domestic manufacturing output in all lines. Few of this class wear leather shoes, and the field and town laborers all go barefoot or wear a fiber sandal instead of shoes,

which are much too costly for them. Their principal diet is the universal plantain and corn, though much meat is consumed per capita—more than the average in Europe for similar strata of society.

The Negroes of the coast and river valleys of the interior can next be considered. They live in a very primitive manner, to say the least, residing in tiny, palm-thatched huts of one room, with no modern furniture or conveniences of any kind whatever, and their principal article of purchase is the commoner grade of cotton cloth; this and an occasional machete are about all the foreign-made goods taken by these people. Food for them is cheap and plentiful (almost to be had for the picking, it might be said), and in the tropical climate little clothing is needed at any time.

The various tribes of Indians are on a par with the Negro of the interior valleys.

Towns and cities of importance—say those of 20,000 or more inhabitants—have electric lighting plants and a water system (often inadequate, however). There are tramways in Bogota and Barranquilla, and hack service and telephones are provided in Bogota, Medellin, Cartagena, and Barranquilla. The automobile is also coming into its own in Colombia, and numbers of cars are beginning to be seen at Barranquilla, Cartagena, Medellin, Bogota, and Cali. Even as far south in the interior as the mountainous region of Pasto the automobile has penetrated, and it is being used on the new wagon road that is being built from Pasto north toward Barbacoas and Tumaco to furnish a highway from Pasto to the sea. The road was started from Pasto, and this made it necessary for the first cars to be packed on mules and oxen overland by mule trail from the river port of Barbacoas to the end of the road constructed. A recent order called for 72 American cars, of moderate price, for one agent who covers Barranquilla and Cartagena. New roads are being built and others extended, and, with cheap gasoline at New York prices produced in the country (according to the Government's contract with an American oil company), the automobile and auto-truck may be considered a factor of the future in Colombia, notwithstanding the very mountainous character of the interior.

SANITATION AND HEALTH.

Sanitation and health constitute perhaps the greatest problem of the Colombian Government, and many laws have been passed concerning sanitation of seaports and river towns, etc. The curse of the Tropics is malaria and tropical anemia. Physicians in Colombia report that 90 per cent of the diseases treated are caused directly or indirectly by malaria, which undermines the strength and physique of the people. In 1917 Prof. Dawe, agricultural expert for the Colombian Government, reported that many of the Goajira Indians were dying of malaria, the epidemic being caused by excessive rains in the region, causing flooding of the lands and hence an increase in the mosquitoes. The same condition obtains along the Magdalena and other populated river regions of the country. In times of floods there always follows an epidemic of pernicious malaria, such as that of 1916 on the Magdalena, which assumed serious proportions and caused considerable concern. All the coast towns are affected to a very great degree, as are entire river valleys, conditions being

especially bad in the Atrato Valley, where the precipitation is very heavy and the population of Negroes in a condition of ignorance.

SANITARY MEASURES AT SANTA MARTA AND SINCERIN.

The United Fruit Co. at Santa Marta has made wonderful progress in the way of sanitation and can be given the credit for the first real practical effort to combat malaria in Colombia. A large and modern hospital has been established for the treatment of the foreign (American) employees and also the natives, no one being barred. The service of this hospital is also extended to include the various plantations farther inland from the seaport of Santa Marta, and every effort is being made to educate the natives and bring about some sort of individual cooperation on the part of the people, which, in the last analysis, is the only sure method of keeping this insidious disease within bounds where such conditions obtain as in many parts of Colombia. From a practical standpoint it is very good business policy for this company, employing thousands of men in the banana plantations, where they are constantly exposed to malarial infection, to organize and maintain this sanitary service, since otherwise the efficiency of the men would be reduced by at least 50 per cent.

Carrying this discussion further, it may be said that no large industry or enterprise—especially agricultural—could be permanently successful in the coast or river country unless sanitary measures were carried out on a large scale. This is one of the reasons why a small or individual effort on the coast is almost sure to be doomed to failure and also why large enterprises are always to be recommended.

Aside from the United Fruit Co.'s hospital and service at Santa Marta, there is only one other organization along these lines in the coast regions (or for that matter in the entire country) and that is at the sugar estates of Sincerin south of Cartagena. Here the management, which is entirely Colombian, has provided a clean town for its workers, who live in carefully screened houses, up from the damp ground. Medical inspection is obligatory, even the children being watched for evidences of malaria or tropical anemia ("hookworm"). The result is seen in the fact that at Sincerin is found the pick of the common labor of the district, adding greatly to the efficiency of the organization in many ways.

MENACE OF MALARIA AND EFFORTS TO COMBAT IT.

Malaria presents itself in many forms, some pernicious and some more or less latent and modified. All that local doctors can do is to cure individual cases in the more or less advanced stages, when the real evil lies in public surroundings and the lack of sewage, drainage, and an intelligent understanding of sanitation on the part of the lower classes of the people. Many young Colombian doctors have spent years in study and clinical work in Europe and the United States and fully understand conditions, but are helpless in the face of the general apathy and failure to appreciate the great necessity for improvements in the towns and cities themselves.

Many lumber, mining, and forest-products companies have been organized in the past to exploit the natural resources of the country, and many have failed on account of the malaria which has undermined the strength of the foreign managers, killing some of them

and wrecking others physically, the ultimate result being failure. Whole American dredging crews have been wiped out on the Atrato River in a few weeks by pernicious malaria.

English, American, and other foreign mining companies in the San Juan and Atrato River districts of the west coast and in the Zaragoza district of Antioquia, two of the worst malaria localities, have found by experience that malaria may be held in check and kept within reasonable bounds by means of clearing away the jungle for a considerable distance around the camps or dredgers used in these districts and by draining or spraying with oil the areas of stagnant water, which are breeding places for the fever mosquitoes. Quinine soon ceases to have the desired effect when once the fever has gained full force, and is valuable only as a specific for prevention. When the fever has gained headway, other and more powerful medical agents have to be employed, or the quinine injected either interveinously or hypodermically in very large doses.

Each individual case is different in manifestation and treatment required, so the only real preventive is that of cleaning up the surroundings, providing sewage and drainage, and introducing general public sanitary and health measures having to do with the population as a whole, as has been done in the Panama Canal Zone.

The example of what has been accomplished on the Canal Zone by the Panama Canal Commission in preventing malaria and yellow fever, as well as the example of Cuba, shows what can be done in Colombia, given sufficient funds for the necessary work and the determination to educate the people. Little or nothing has been done, however. The National Government is fully alive to these conditions and necessities, but financial difficulties and other obstacles have always prevented anything being done on a large scale, though there are trained and experienced men in the country competent to take charge of such work.

YELLOW-FEVER EPIDEMICS—CONDITIONS AT BUENAVENTURA AND CARTAGENA.

From time to time there have been epidemics of yellow fever at Cartagena and Buenaventura, as well as at Cucuta, on the Venezuelan border, and the strict quarantine regulations enforced from the Canal have forced the Government to take notice of conditions and do something about them. However, after the scare is over matters usually resume their former course.

In February, 1916, the Canal authorities requested that Colombia clean up the Pacific port of Buenaventura, where conditions were very bad and an epidemic of yellow fever had broken out. The Government appropriated \$20,000, and two experts were dispatched from the Canal to establish a quarantine station in the high hills back of the town. Materials also were sent down, such as sulphur pyretrum, canvas, screening, and garbage cans. The epidemic was checked and has not recurred, but Buenaventura is still under strict quarantine at the Canal, and all vessels touching there have to be fumigated under the direction of an inspector working with the Canal Sanitary Corps.

Cartagena also is under quarantine by the Canal and American ports; though it has been a number of years since yellow fever has been epidemic there, it is known that there are always latent cases, not virulent but constituting a real danger.

It may be thought that the colony of foreign residents should take some local action and act as an influence to bring about needed improvements. The difficulty is that they are so few in number and the local governments have such limited funds.

Yellow fever, while a more deadly disease than malaria, is only epidemic and does not do as much damage as the latter malady. Malaria is always present, reinfection constantly takes place wherever there are mosquitoes (and no spot on the coast is free from them), and the very generality and intangibility of the causative factors makes the disease hard to combat.

SANITARY AND HYGIENIC MEASURES BY INDIVIDUALS.

Foreigners resident in Colombia on the coast or hot lands of the interior, where there is malaria, should secure living quarters on the second story (if possible). Both doors and windows should be wire-screened and their closing watched, since the servants have no idea of what this means. The mosquito net should always be used on the bed and should be carefully inspected. Rooms should be selected facing the sea (if at Santa Marta, Barranquilla, or Cartagena), so as to get the benefit of the trade winds, which carry away insects such as mosquitoes and temper the heat at night and during the day. The native custom of filling the patio or yard with all sorts of plants, which are daily deluged with water, should be avoided, as these make breeding and resting places for the mosquitoes, which leave them in myriads at nightfall. Refuse should be taken care of. It is very necessary to select servants and household attendants personally, with great care, and to force them to keep things clean.

The matter of food is also of primary importance and is a hard problem to solve anywhere on the coast. Food is badly prepared. Too much grease and too much meat are used. Good cooking is an unknown art, except in the houses of the wealthy. Fresh vegetables, so necessary in the Tropics, are almost unknown except for potatoes, the ever-present "yucca," the very starchy cassaba, and the universal plantain, which last is always palatable and forms the principal article of diet. Milk must be watched carefully and the supply be well known. Water must be boiled and filtered, as typhoid is always present in the cities of both the coast and the interior. Most foreign residents import tinned butter, vegetables, and fruits for their own table use.

Even with all these precautions it is impossible to escape malaria. In the evening, when one is away from a screened interior, one's hands, ankles, neck, and face are exposed to the bite of the mosquito, and quinine in some form is resorted to as a specific for prevention.

HEALTH CONDITIONS IN THE INTERIOR.

In cities such as Medellin, Manizales, and Bogota there is no malaria, as the fever mosquito does not breed at elevations above 5,000 feet and the mountainous nature of the country makes the streams small and swift, allowing no collection of stagnant waters. The natural drainage is good, and nature has provided healthful surroundings, in which the average European or American can live with comfort and enjoyment, so far as climate is concerned. Man, however, has not been as proficient as nature, and the lack of sewage,

drainage, and a sanitary and adequate water supply causes ever-present typhoid and typhus fever, from which rich and poor suffer alike. Water is carried down from the near-by hills in open canals and becomes contaminated before reaching the consumer. The average member of the public has no knowledge of hygiene or sanitation, and there is a constant menace to health.

IMPROVEMENTS UNDER WAY OR CONTEMPLATED.

Improvements are under way. The city of Medellin is completing a cement aqueduct, and plans are ready for a sewage system. Cali has the pipe on the ground for a covered underground water system, including sewage. Bogota has endeavored to secure a foreign loan of \$5,000,000 with which to carry out improvements, including an extension of the water-supply system, sewage, etc.

Very comprehensive plans were made in 1912 by Pierson & Son (Ltd.) for the improvement and sanitation of the port of Cartagena, including a sewage system for the town. The towns of the coast, Barranquilla and Cartagena, need such work more than the interior cities, but, unfortunately, these places have less municipal revenue than the towns of the interior, on account of the more transient nature of their trade and the greater numbers of poorer people who live there. Barranquilla has the great swamps of the Magdalena at its door, stretching away to Santa Marta and south for a hundred miles. Cartagena is little better off; it is immediately on the sea on one side, but along the coast to the south and southwest there are enormous swamps, and swamps surround the town on two sides in the immediate vicinity.

However, if there were sewage and pavement in Cartagena itself, if the suburbs were cleaned up, if the shallow swamps were filled in with silt dredged from the harbor, and if a campaign were instituted among the lower classes of people, forcing them to use covered garbage cans and screened doors and windows (as at Panama and Colon), the town would be transformed into one of the healthiest places in the Tropics. It would attract thousands of tourists annually, if good hotels were provided for the winter season, by reason of its great ancient forts and other features of historical interest, which would well repay a visit of a week. Tarpon and robalo fishing is very plentiful in the protected bay, and there is an extraordinary ocean beach over which an automobile can be run for miles, stretching away to the northeast of the city and terminating at a picturesque headland. However, under present conditions, without sewage, paving, etc., Cartagena's possibilities can not be realized and the place certainly can not be recommended as a health or tourist resort now.

TRAVEL OUTFIT, CLOTHING, ETC.

To the salesman or engineer intending to travel extensively in Colombia, items of equipment are important and are worthy of mention here. On account of the varied conditions of climate encountered and also the great contrast in living conditions between the rich and the poor, the town and the country, as set forth above, the outfit should be prepared with the idea in mind of meeting all conditions of the Tropics and Temperate Zones, regardless of the time of year in which the trip is made. The outfit, exclusive of the samples of

the salesman or the instruments of the engineer, may be enumerated briefly as follows:

1. The usual travel outfit, toilet articles, etc.
2. Medium-weight and heavy clothing such as is worn in the United States. This is for Manizales and Bogota.
3. Light clothing, suits of duck, Palm Beach, etc., usually white in color. White canvas shoes, etc. Straw hat or Panama.
4. Towels, sheets, etc., including bath towels. Plenty of good soap—enough to last entire trip, if possible.
5. Folding camp cot (air mattress, or other kind), or a hammock, as some prefer. Two woolen blankets for crossing the snow mountains. A light cotton blanket or cover for the river. Mosquito bar. Electric torch. Waterproof rubber poncho for cover when riding in the country rains.
6. Medicine outfit: Quinine in some form. Bismuth or sun-cholera mixture. Boric acid for prickly heat. Ammonia. Alcohol. Insect powder. Oil of lavender to avoid mosquitos. (Some travelers also use mosquito boots made of light canvas, and also a head net.)
7. Riding saddle equipped with broad covered stirrups, pockets, etc. Leggings, spurs, halter and bridle, etc.
8. Baggage should be packed in small, military-size trunks which can be packed on a mule—two packages to the pack, each not exceeding 100 pounds in weight if good time is to be made in riding across the country. All packs should be covered with waterproofing material when on the trail. A good pack is the rawhide valises made in the country for the purpose. These are just the right size for a mule pack, are cheap and waterproof, and stand all sorts of hard usage on the trail.

Except in Bogota, the food at the hotels and on the river steamers is very poor. A good supply of bottled water has to be carried on the river, and a supply of canned fruits and vegetables is also essential.

TUBERCULOSIS.

At Santa Marta and Barranquilla tuberculosis is very prevalent, possibly because of the dust from the decomposed limestone formation. The natives of the lower classes who live in dark, damp, and congested houses, with no sanitary measures, are subject to the scourge—so much so that in 1915 the Government passed stringent laws to prevent the spread of tuberculosis. All doctors were required to report cases coming under their observation, and other requirements were written in the new law.

EDUCATION IN CONNECTION WITH HYGIENE.

Hygiene is not taught in the schools, where much good might be accomplished for the people, nor, as a usual thing, is the example set by the teachers. Even if there is not enough money with which to carry out the sanitation of whole regions, as on the Panama Canal, no additional cost would be involved in teaching and setting the example of hygiene and sanitation in the public schools.

There are almost no good doctors except in the larger cities. The small country town or village is too often without any physician or with only indifferent medical talent available.

GOVERNMENT, EDUCATION, AND NATIONAL FINANCE.

GOVERNMENT.

By the constitution adopted August 4, 1886, which is the one now in force, the Republic of Colombia abolished the Federal Union and the sovereignty of the several Departments or States and adopted the unitary republican form of government, with legislative, executive, and judicial branches.

LEGISLATIVE BRANCH.

The Senate and the House of Representatives, constituting the National Congress, are entrusted with the legislative power, the former chamber consisting of 35 members and the latter of 92 members. Senators are elected indirectly for a term of four years by electors chosen for the purpose, and representatives are elected by the direct vote of the people for a term of two years, at the rate of one for every 50,000 inhabitants. Two substitutes are elected for each senator and representative, to replace him in case of absence or inability to serve. Congress meets every year at the national capital, Bogota, on July 20, for a period of 90 days. It may prolong its sessions for an extra period of 30 days, or be called in extra session by the President.

EXECUTIVE BRANCH.

The President is elected by the direct vote of the people for a term of four years. There is no vice president, but two "designados"—first and second—are elected annually by Congress to succeed the President in the event of his absence, death, or inability to serve.

The President is assisted by a cabinet of eight members, who are heads of their respective departments.

The Department of the Interior (Ministerio de Gobierno) is entrusted with the administration of the various Departments and National Territories, the post and telegraph offices, the hospitals and charitable institutions, sanitation, and the maintenance of public health; also of the courts and penal institutions, since Colombia has no Department of Justice. This department is charged with the supervision of the press of the country. The rural and national police also come under its jurisdiction.

The Department of Foreign Affairs (Ministerio de Relaciones Exteriores) has charge of the diplomatic and consular corps and the maintenance of foreign relations through them, as well as the settlement of international boundary disputes.

The Department of Finance (Ministerio de Hacienda) collects and disburses all public funds, has charge of the service of the public debt, of the customhouses, and of the internal-revenue offices, and controls the valuable salt and emerald deposits.

The War Department (Ministerio de Guerra) has charge of all matters pertaining to the army and the navy, and attends to the in-

struction and training of citizens of the reserve forces of the country. The military and naval colleges are also under its control.

The Department of Public Instruction (Ministerio de Instrucción Pública) exercises supervision and control over the public schools, high schools, colleges, normal schools, and institutes for special instruction, among the last-named being the National School of Commerce, the National School of Fine Arts, and the National Academy of Music. It also has control of the National Museum, the National Library, and the National Observatory. Also, through its various sanitary commissions and health boards, it frequently intervenes in matters concerning the public health.

The Department of Agriculture and Commerce (Ministerio de Agricultura y Comercio) is charged with the work of promoting agriculture and commerce in the broadest sense. Among its duties are the encouragement of education in all branches of agriculture, veterinary science, and horticulture, the establishment of practical and experimental schools, and the administration and development of national forests and mines. Under the heading of commerce comes the study and control of savings banks, chambers of commerce, patents and trade-marks, weights and measures, and investigations of economic and commercial needs, costs of transportation and insurance, production and consumption statistics, imports and exports, crop zones and areas, and rents and property movements.

The Department of Public Works (Ministerio de Obras Públicas) is entrusted with the encouragement and regulation of manufacturing industries, mines, agriculture, forests, and public lands, the regulation of navigation, the administration of the national railways, the construction and maintenance of roads, bridges, public buildings, and other public works.

The Department of the Treasury (Ministerio del Tesoro) is charged with all matters pertaining to the budget. It also has charge of the mints, the printing and issuance of bank notes, and the emission of bonds.

JUDICIAL BRANCH.

The Supreme Court of Justice is vested with the judiciary power of the Republic and consists of nine magistrates; the judicial system also includes a superior tribunal for each Department (State) and a number of minor judges. The Supreme Court is elected by Congress (from names submitted to it by the President) for a period of five years. The justices of the superior tribunals of the Departments are elected by the members of the Supreme Court for a period of four years and are chosen from names suggested by the respective departmental assemblies.

MILITARY FORCE.

The permanent army of Colombia consists of about 6,000 men. The President is, however, authorized to increase this number to 20,000 men in case of public necessity. The total war strength of the armed force, including trained reserves, is estimated at 120,000. The military service is compulsory in the sense that the standing army is drafted by lot, one third every year, so that the entire army is renewed every third year.

Three gunboats perform coast-guard, revenue-cutter service along the coasts. More small cutters are needed for the proper guarding of the Caribbean coast against smuggling.

CONSULAR AND DIPLOMATIC CORPS—FOREIGN REPRESENTATIVES IN COLOMBIA.

Colombia maintains diplomatic representatives in the United States, England, France, Germany, Spain, Ecuador, Venezuela, Chile, Peru, and at the Holy See.

A minister is maintained at Washington, a consul general at New York, and consuls at Mobile, Chicago, New Orleans, San Francisco, Seattle, Los Angeles, Baltimore, Boston, Newark, St. Louis, Cincinnati, Philadelphia, Norfolk (Va.), and in Ponce and San Juan, in Porto Rico. Vice consuls are maintained at New York, New Orleans, and Norfolk and a consular agent at Gulfport (Miss.). There is also a postal agent who acts as vice consul at Colon and Panama City, Panama.

The United States maintains a minister at Bogota and has consuls at Barranquilla and Cartagena, with consular agents at Santa Marta, Medellin, and Buenaventura.

Other foreign countries that maintain legations in Colombia are Great Britain, France, Germany, Spain, Belgium, Bolivia, Chile, Cuba, Ecuador, Italy, Mexico (assigned to Venezuela also), Peru, Venezuela, and the Holy See. The countries that have consuls at Bogota are Germany, Argentina, Austria, Belgium, Bolivia, Costa Rica, Chile, Denmark, Guatemala, the Netherlands, Mexico, Norway, Paraguay, Peru, Portugal, Salvador, the Dominican Republic, Sweden, Uruguay, and Venezuela.

The countries that have consuls at Santa Marta are Chile, France, Great Britain, Norway, and Spain.

The countries that have consuls at Barranquilla are Germany, Argentina, Belgium, Bolivia, Brazil, Costa Rica, Chile, Cuba, Ecuador, Spain, France, the Netherlands, Great Britain, Italy, Mexico, and Norway.

The countries that have consuls at Cartagena are Germany, Argentina, Belgium, Costa Rica, Ecuador, Spain, France, Guatemala, the Netherlands, Honduras, Great Britain, Italy, Mexico, Nicaragua, Norway, and Sweden.

The countries that have consuls or consular agents in Buenaventura are Spain, the United States, France, Peru, and Great Britain.

The countries that have consuls or consular agents in Cucuta are Germany, Cuba, Italy, and Venezuela.

The countries that have consular agents in Medellin are the United States, Great Britain, Ecuador, Spain, and France.

France has a consular representative in Rio Hacha.

The countries that have consular representatives in Pasto are Bolivia, Ecuador, Spain, and Great Britain.

Great Britain also has consular agents in Honda and Cali, as have Germany and France.

CONSTITUTION.

The early constitution of Colombia, like those of so many of the Latin American nations, was modeled on that of the United States, and the present constitutional structure, notwithstanding the change from State sovereignty to the centralized system, bears many points

of resemblance to the fundamental charter of the United States. (See "Colombia," by Phanor J. Eder, pp. 56-71.)

However, as writers have pointed out, the old foundation was the Spanish civil law, and this fundamental influence is still felt. The ministers are appointed by the President and are freely removable by him, though responsible to the legislature, in whose deliberations they participate. In actual practice the executive power is much greater than all others. Governors of Departments are appointed by the President, and they in turn appoint and control prefects of the Provinces and alcaldes of the municipalities. The power of the departmental assemblies and municipal boards, elected by popular vote, is nominal, considering the direct interest of the executive department. The municipal boards or town councils are usually made up of merchants and professional men of the community, and do very well within their limited powers. The prefects and alcaldes are usually politicians and adherents of the Government.

TAXATION AND REVENUES.

There is no adequate system of internal taxation, the principal revenues of the Government being derived from the duties levied on imports into the country, which are very heavy, averaging year by year about 42 per cent of the invoice value of the goods imported and amounting to at least 75 per cent of the total national revenue. There is also the revenue derived from the national monopoly of the salt mines and emerald mines and the small tax on such exports as coffee, gold, platinum, etc. Other sources of income are the stamp tax (so much used in Latin America but more or less ignored in Colombia), the fluvial tax for river and harbor improvement work, and the earnings of railways owned or controlled by the Government. Other sources of income are negligible.

Formerly the National Government also controlled the tobacco tax, the liquor tax, and the slaughter tax, but these revenues have had to be turned over to the Departments and now constitute the principal income from which the Departments, no longer seeking the usual assistance from the Government in Bogota, are paying their own way and, in some cases, accumulating surpluses with which to carry out road building and other much-needed public improvements.

CODES OF LAW.

Concerning the laws of Colombia, the following may be quoted from "Colombia," by Phanor J. Eder, pages 69-70:

French and Spanish legal influences are predominant in shaping the laws of the country. The writings of the English, German, and American jurists are scarcely known, except as they filter through French sources. French commentators are regarded as high authority and usually control the decisions of the courts where the Colombian codes are obscure.¹ This is very natural, as the basic one of these codes, the Civil Code, is largely founded on the Code Napoleon. The Colombian code is a copy, for the most part, of the Chilean code, modeled after the French code, but improved upon.

¹ The principal Colombian codes have been translated into English as follows: By F. L. Joannini, "The Civil Code of Panama in Force in the Canal Zone" and "The Law of Civil Procedure in Force in Panama and the Canal Zone" (a part of the Judicial Code), published by the Isthmian Canal Commission, Washington, D. C., 1905; by Edward S. Cox-Sinclair, "The Commercial Laws of the World," Vol. 11, "Colombia," edited by Dr. A. J. Uribe (London and Boston, 1912); by Phanor J. Eder, "Mining Laws of the Republic of Colombia" (Washington, D. C., 1912). The remaining codes not mentioned in the above text of this note are chiefly administrative, viz, the Fiscal Code, the Military Code, the Code of "Fomento," the Police Code, and the Code of Public Instruction.—Phanor J. Eder, "Colombia."

The Commercial Codes (there are two, one dealing with maritime law especially) are based on the Spanish law, with French influences throughout. They could be revised with profit to meet modern commercial conditions; they are pervaded by a certain formalism, not consistent with the elasticity and freedom which modern business development requires and which is consequently evaded or neglected in actual practice. Separate commercial tribunals have not been established, although provided for in the Constitution, and the collection of debts, the settlement of business disputes, and the winding up of insolvent estates is a long, tedious process; if improvements were made, no doubt Colombian merchants could secure better credit abroad.

The various laws, fundamental and recent, pertaining to lands and agriculture will be mentioned in the chapter devoted to agriculture in this report, and a similar procedure will be followed in the case of laws on petroleum and mining.

Pertinent laws governing commerce and business will be treated in the chapter of this report dealing with trade, in which will also be covered items referring to customs regulations, "to-order shipments," insurance, installment-plan sales, etc.

EDUCATION.

PUBLIC SCHOOL SYSTEM.

The public school system of Colombia was established in the seventies of the last century, but has had many setbacks and is only now beginning to be increased to any extent. According to the law, attendance on the public schools is free, but not obligatory. Primary education is under the direction of the Departments and the municipalities, which have to provide the buildings, the equipment, and the pay of the teachers. In the larger towns and cities there is a fair chance for the children to receive at least primary instruction.

The number of primary students increased by about 13 per cent from 1911 to 1918, while the increase in population between the census of 1912 and that of 1918 was at least 10 per cent for the entire country and at least 20 per cent in the coast regions of Baranquilla and Cartagena.

There is an elaborate sanitary code for the schools, but very unhygienic conditions are allowed to prevail in the schoolhouses and out of them, and the elements of hygiene are not taught, even by example. This condition is especially true of the towns of the interior.

The fundamental law in Colombia provides that all education shall be organized and directed in accordance with the Catholic religion. Public advertisements call the attention of the teachers, directors, professors, etc., of all public and private schools and colleges to the obligatory profession of faith.

The neglect of the sciences in favor of the humanities in early studies has its effect upon the intellectual life of the country. Another phase of the general neglect of the sciences is the total lack of agricultural colleges, which, in this rich agricultural country, are urgently needed. In this same connection may be cited the absence of manual training in the primary and secondary schools. There is a lack of mechanics and artisans in the country.

INFLUENCE OF YOUNG MEN WITH AMERICAN TRAINING.

An element that is beginning to make itself felt in Colombia (and whose influence is much stronger than is generally realized) is that of the young men who have come to the United States to study or engage in business or work in the factories. These young men, recruited from the middle and upper classes, represent the most courageous and independent element of the country, and there are said to be about 16,000 of them in and around New York City alone, with others scattered throughout the United States in industrial and educational centers.

These men return to their country thoroughly imbued with the spirit of progress and ambition and bring with them many ideas of practical work and progress, and it is through these young men that there exists in Colombia to-day a changing thought and a spirit of progress on a practical basis. Their influence will be felt more and more as time goes on.

On every hand the effect of this contact with American methods and organization are apparent. The young Colombian who has worked in the factories of the United States returns to his district with ideas of starting a new industry, and the result is seen in new factories. Stock companies are formed for the purpose, and these new industries have, almost without exception, been very prosperous.

EDUCATIONAL STATISTICS.

In 1912 the number of schools of every kind, public and private, was 4,371, with 272,873 students.

The school system of the country is under the supervision of the Minister of Public Instruction, and the National Government furnishes the textbooks, supplies, and appliances, while the Departments and municipalities furnish the buildings and pay the teachers. Appropriations of the Departments are very inadequate, with the notable exceptions of Antioquia, Caldas, and El Valle, where, in the larger towns and cities practically all of the children of school age are attending the public and religious schools and at least learning to read and write. In 1918 the pupils in the public schools of the municipality of Medellin included 17.1 per cent of the population, which, compared with 19.65 per cent in the United States in 1908, speaks very favorably for primary education in this progressive Department of Colombia. In 1918 7.31 per cent throughout the entire Department of Antioquia were attending school, as compared with an average of only about 3 per cent for the rest of the country outside of the Departments of Caldas and El Valle.

Along with the Government public schools there flourish in the larger towns the parochial schools taught by the priests and nuns, as well as a few private schools. It is to these schools that people of the well-to-do class send their children.

In 1912 the primary schools were as follows (no detailed figures are available for 1918):

Departments.	Number of schools.	Number of pupils.	Percentage of total population.
Antioquia.....	649	54,263	7.31
Atlantico.....	67	4,273	3.71
Bolivar.....	208	11,871	2.77
Boyaca.....	346	17,577	2.95
Caldas.....	248	24,556	7.59
Cauca.....	138	9,382	4.43
Cundinamarca.....	563	27,027	3.75
Huila.....	124	7,589	4.77
Magdalena.....	104	4,614	3.61
Nariño.....	176	15,103	5.33
Norte de Santander.....	153	10,566	5.16
Santander.....	389	14,614	3.65
Tolima.....	206	9,062	3.19
El Valle.....	285	18,925	8.16
Total public schools.....	3,656	220,422	.....
Private schools.....	354	13,584	.....
Grand total.....	4,010	243,006	5.15

The Department of El Valle, with a total budget for the year 1919-20 of 1,154,780 Colombian dollars (1 dollar = \$0.9733 United States currency), appropriated 162,461 dollars for public instruction, and the governor has strongly recommended a system of more practical education along industrial lines. The fact that the young men prefer political and literary pursuits to engineering or agriculture is unfortunate in a country so greatly in need of development and presenting all sorts of problems in sanitation, engineering, industry, and transportation. With no lack of native talent or native intelligence, experts have had to be imported from foreign countries to solve the economic problems of the country, and great opportunities for the development of rich natural resources go unnoticed and belittled by the Colombians themselves.

HIGHER EDUCATION.

The secondary, or high, schools, called "colegios," are too few in number for the attendance offered and are found only in the larger cities. There are 230 of these high schools throughout the country, with a total attendance of approximately 20,000. The largest are San Bartolome and the School of Commerce in Bogota, each with more than 600 students.

In all Colombia there are 9 normal schools for men and 12 for women, for the education and training of the primary-school teachers, these institutions being maintained at a total annual cost of about \$180,000. Their equipment is very poor, lacking laboratories, etc.

The national institutions of higher learning are the National University, the new Medical College (not yet finished), the Conservatory of Music, and the National Art School, all at Bogota.

There are also departmental universities at Medellin, Popayan, Cartagena, and Pasto, and the National School of Mines at Medellin. The largest is the departmental university of Cartagena, with 260 students (1918) in three faculties—law, medicine, and philosophy. The chief reason for the small importance of the departmental

universities is the universal preference for the National University at Bogota on account of its higher cultural attainments. The law faculties overshadow all others, with medicine second in importance, and the literary and journalistic lines are overcrowded in Colombia, where they represent the predominating public influence.

CHARACTER OF PERIODICALS—GENERAL CULTURAL POSITION OF COLOMBIA.

Periodicals are scarcely newspapers; they usually represent the personality of one man and are published primarily for the purpose of expressing his political views, containing also much poetry, but showing a decided dearth of cable news or natural items of import other than political. Colombia's public men have nearly always been men of letters or journalists.

The people take great pride in the fact that purer Spanish is used in Colombia than in any other Latin American country, and Bogota is called by the Colombians "the Athens of America." A favorite way of spending an evening in Bogota is at a recital of local poets, in which keen interest is manifested. However, the prosperity of the country is bringing about a more definitely practical era of progress and attention to the development of natural and industrial resources. Colombian engineers leave nothing to be desired so far as their technical education is concerned; what is needed is a greater degree of practical field experience.

NATIONAL FINANCES.

In times past the paper money of Colombia represented the most serious problem of the country. It constituted a damper on commerce and industry, and, on account of its violent fluctuations in exchange value, a very real danger in trade. However, great strides have been made to correct this condition, and at the present time Colombia's monetary system leaves little to be desired and a sound financial basis is being rapidly approached.

Out of Colombia's former difficulties grew the necessity of compromising the foreign debt of the country with the foreign bondholders, and the resulting lack of confidence in the past has held the nation back from the full measure of advancement that could have been attained with ample foreign capital.

This condition had been rapidly improving after the end of the last domestic disturbance in 1903, and renewed interest in Colombia was beginning to be manifested by European and American capital when the advent of the Great War put a stop to any development in this line. Since the termination of the war conditions have greatly improved.

In spite of grave internal disorders and successive crises brought about by the paper currency during the period up to 1903, the exports of Colombia have steadily increased in tonnage and value (see p. 311), and, during the war and immediately after it, the high prices obtained for exports and the heavy coffee crop of 1919 (sold at extraordinarily high prices in New York) have materially added to the prosperity of the country in general. Another factor has been the establishment of American banks in the country, affording a medium of investment advice and guidance and lowering the rate of interest locally. Still another factor has been the influx of gold

from the United States during 1919 and the exchange situation with foreign countries, which has operated to keep the domestic production of gold (about \$4,000,000 per year) in the country for coinage, whereas it was formerly exported.

The old paper money, whose value was in the ratio of 100 to 1 after it had been stabilized by the Government, has been taken up and a new paper currency issued (see p. 58), but during the war the National Government was forced to use for immediate needs the reserve behind this issue, thus leaving this issue without metallic backing and causing the Government to be unable to issue more money to meet the fast-growing demands of Colombian business.

The retention for domestic coinage of gold produced in the country, the influx of American gold coin during 1919, and the increase in revenue received by the National Government during 1919 on account of the increase in imports, give the country a more sound financial basis and one on which to work out the national monetary problem, by increasing the circulating medium of the country to a point where it becomes adequate for business needs.

HISTORY OF COLOMBIAN FINANCES AND BANKING.

In order to understand the financial needs to-day, it is necessary to have some knowledge of the past history of finance in Colombia and of the many financial crises and vicissitudes through which the country has passed. The following is quoted from "Colombia," by Phanor J. Eder (written in 1911-12):

Till about 1881, Colombia had been on a bimetallic basis; the currency of the country was gold and silver, and there was no paper. For some years previously prosperity reigned; the exports were relatively large. But in 1883, notwithstanding the gold basis, foreign exchange was at a premium of 20 per cent. There was a financial crisis. One of the principal exports had been "cinchona" bark (quinine); in 1875 over £2,000,000 of that article alone had been exported, but the enormous product from cultivation in Java and the British East Indies reduced the price; whereas in 1879 the sulphate of quinine had reached the high price of 16s. 6d. an ounce, in 1883 it had dropped to 3s. 6d. (In 1885 the price had dropped to as low as 2s. 6d. an ounce and the "cinchona" trade received its death blow in Colombia.) The low prices of coffee and tobacco, the other chief exports of the country, added to the gravity of the situation. The balance of trade was against Colombia. Already there had been a steady and progressive exportation of gold currency, as free coinage of both gold and silver was allowed, and the value of silver as legal tender and as prescribed by law was higher than its market value. Soon, little gold being left, the silver money, too, began to leave the country. It is said that during the crisis of 1883 the money in circulation in Bogota, the capital, a city of 100,000 inhabitants at that time, was reduced to as low as \$200,000. Private banks began to abuse the right which the law allowed them to issue notes, and still further contributed to the elimination of metallic currency.

After the triumph of Nuñez in * * * 1885 * * * it was decreed that, dating from May 1, 1886, the monetary unit of the country should be the dollar (peso) bill of the national bank. The Banco Nacional was an institution founded with enormous privileges in 1880 by Nuñez; its shares had been offered to the public, but none were taken; the Government became the sole owner, investing \$1,047,009.30 out of an authorized capital of \$2,500,000. It was given and availed itself of the right to issue bills *redeemable in specie*. In 1886, however, it was granted the right to issue \$4,000,000 in bills without any obligation to so redeem them. This was the beginning of fiat money in Colombia. By the law of 1881, private banks were bound to accept the national bank bills at their face value, under penalty of losing their own right to issue notes. Worst of all, it was prohibited by law to make contracts, either for cash or credit, in any other money.

In spite of this unsound basis and a mass of confusing laws and decrees, the country did not materially suffer for a number of years. There was no excessive issue of

paper money, although the amount kept on steadily increasing. It enjoyed a certain credit, as it was deemed to be ultimately, even if not immediately, redeemable; exchange did not greatly fluctuate, and paper was at almost a parity with silver.

Nickel pieces were coined, and there was free coinage of silver, but at .500 fine. In 1892 the President's message reported the base money in circulation in the country to be as follows:

	Dollars.
National Bank bills.....	12,000,000
Silver coins .500 fine.....	4,243,298
Nickel.....	3,427,298

Besides this there was a considerable amount, believed to be some \$2,000,000, of paper money illegally issued. Issues continued. In 1894 a law was passed prohibiting any new issue, *except in case of foreign war or internal disturbance*. * * * In 1895 * * * the privilege was availed of. When Caro went out of office in 1898 there was in circulation, in round numbers, \$31,400,000 of Banco Nacional bills.

EFFECT OF DISTURBANCES BEGINNING IN 1899.

The next year a revolution broke out * * *. The Government needed money * * * to carry on the war. The printing presses were at hand. * * * Paper money was issued, not merely by the millions, but by tens and hundreds of millions. The National Government issued it. The Departments issued it. Even some generals in the field issued it. The rate of exchange, which had been from 300 to 335 before the revolution (that is, the paper dollar had been worth about 30 cents gold, almost on a parity with the silver dollar) began to go up and up. In 1900 exchange rose above 1,000; the paper dollar was worth 10 cents gold. By the end of 1901 it had reached 5,000; the [paper dollar] was then worth only 2 cents. The most violent fluctuations occurred—thousands of points a day, with the various successes or rumors of defeat of the Government. In 1902 matters became even worse; exchange rose at one time to as high as 26,000; the value of the paper peso was then merely the fraction of a cent. But the Government was winning. Exchange began to drop. At the end of the war (1903) it was impossible to tell how much paper money was outstanding—what with the various issues and the amounts of counterfeit, often better engraved than the genuine. The amount was certainly not less than a billion; the national issues alone, since 1885, amounted to \$746,801,420 p/m. [Note: P/m means "papel moneda" or paper money.] There was no hope, no pretence that this would ever be redeemable, but it was legal tender. Old debts were paid off in this depreciated currency. The creditor who had loaned a thousand dollars gold * * * was by law compelled to receive a thousand pesos paper money—worth ten dollars in gold.

In the absence of gold and silver money, which had entirely disappeared, except in a few privileged regions (the Choco, Pasto, and the frontier towns, where the inhabitants had obstinately declined to receive paper money), some medium of exchange was necessary. By a sort of common consent the paper was received in trade after the revolution at a rate of exchange fluctuating around 10,000—about 1 cent on the dollar. * * *

REMEDIAL MEASURES ADOPTED—THE BANCO CENTRAL.

A remedy for the more pressing evils had to be found. A law passed in October, 1903, * * * prohibited further issues of paper money and fixed the rate of exchange; fixed a gold standard; permitted the circulation of foreign money, and permitted full freedom of contract to stipulate for payment either gold or paper ("libre estipulación"); and, finally, created a Council or Junta of Amortization. This board was authorized to collect certain national revenues, some of which were payable in gold, and it was its duty to auction the gold so received and to destroy the paper thus received as the purchase price of the gold, as well as that received in payment of certain other revenues payable in paper.

By this law, too, customs duties could be paid either in gold or (most important privilege) in paper money at the current rate of exchange. Some tangible value was at last given. The Junta de Amortización performed its duties well; weekly, mountains of the fiat money were publicly burned. Its work, however, was cut short by General Reyes, who ordered the funds destined for amortization to be paid into the public treasury for the general expense fund of the nation; to replace the Junta, he conceived and carried out the idea of reestablishing a national bank. It was called the Banco Central and received extraordinary privileges, with the object not only of handling the money problem but of aiding in the solution of the fiscal questions of the

Government. Organized by a syndicate of Colombian capitalists * * * and of powerful financial interests, its shares were offered for sale throughout the country, but were not overfavorably received. Of the authorized and intended capital of \$8,000,000 gold (shares, 80,000 at \$100 each) only some 31,925 shares were eventually taken, \$50 a share being paid cash down, the remaining \$50 to be subject to call of the board of directors (but it has never been called).

Among the duties, or rights, of the bank * * * were: To collect certain of the Government revenues, receiving a commission of 10 per cent of the net proceeds for so doing, the expense of collection being for the account of the Government; to exchange the current paper money for a new and well-engraved edition ordered from England; to be the Government depository; to loan the Government (from its own revenues in process of collection, it will be noted) moneys necessary to pay the interest on the foreign debt and to arrange such payment; to issue bank notes, to the exclusion of all other institutions, to twice the amount of the paid-up capital, keeping a cash reserve in gold or in Government paper equivalent to only 30 per cent of the amounts issued; [to have the privilege of] telegraph and postal franks and minor exemptions from customs duties and recording fees; to do all in its power to maintain the rate of exchange at 10,000; to amortize the Government paper money with 25 per cent (to be increased later to 50 per cent) of certain revenues collected; and to open a blank credit to the Government of \$1,000,000, to be increased later to \$2,000,000.

This bank certainly rendered many useful services to the Government, not the least of which were in paying the interest on the foreign debt, in powerfully contributing to the stability of exchange, and in reducing the rate of interest—which, at the time of its foundation, was currently 2 per cent and had reached as high as 7 per cent per month—to 1 per cent a month and even less for prime bills and discounts. But the extraordinary privileges it possessed * * * aroused opposition. After the retirement of Reyes, consequently, the Government contract with the bank was rescinded; any damages to which it may have been entitled for such reason were to be set off by the interest which the new Government claimed to be due the treasury. The Banco Central was continued thereafter merely as a private bank on the same footing as other banks.

SUBSEQUENT LAWS.

Laws subsequent to that creating the Banco Central, by fixing the rate of exchange of paper money for gold at 10,000 for the payment of duties and taxes and many other purposes, have helped to maintain the stability of that ratio; and by legislation also, the outworn, dirty old bills have been replaced by a newer issue (the last edition was engraved in the United States) and a small amount of nickel and silver currency has been coined and put into circulation. The most recent important law dealing with the currency has been No. 69 of 1909, which created a Conversion Board—Junta de Conversión—modeled after the former Junta de Amortización, charged with the duty of exchanging old bills for new and for silver (.900 fine) and nickel, and of taking such steps as may be deemed proper to avoid fluctuations in exchange. In 1912 the old Government Mint at Medellín was reopened also for the coinage of gold; but gold coin could be exported as easily as gold dust or bars, and, under this condition, will be whenever foreign exchange makes it profitable to do so.

The insufficiency of the total amount of money in circulation for the needs of the country's business has, however, been disturbing. On the other hand, the provisions of the last-named law, by which certain Government revenues (namely, the product of the emerald mines of Muzo and Cosquez and of certain other mines, the 2 per cent surcharge on customs, the premium on coinage of gold and silver, and, looking to the future, returns from the cession of the right to issue bank notes and any possible surplus) are set aside to form a metallic reserve to guarantee the conversion of the paper money, coupled especially with the improving condition of the national finances, have been the greatest factors in maintaining the stability of exchange at near the legal rate [of 10,000].

PRESENT CONDITION OF CURRENCY AND GOVERNMENT FINANCE.

Since the above account was written in 1911-12, a great improvement has been effected in the national finances. The Junta de Conversión, having been again reorganized by the Government, was authorized to exchange new gold notes for the remaining old paper currency, the time allowed being from November 1 to December 19, 1917. This measure effectively retired all the old paper money worth

100 to 1 at the fixed rate of exchange, and of this new money (paper) there is now 10,180,000 dollars in circulation (1919), quoted at par with the pound sterling in spite of the fact that during the financial difficulties of the Government in the war period (due to the falling off of imports and the consequent decline in customs receipts, which constitute 75 or 80 per cent of the national revenue), the Government was forced to use for other purposes the metallic surplus that had been accumulated by the Junta de Conversión as backing for the issue of the new paper money.

In 1918 and during the first half of 1919 New York exchange was at a heavy discount, at times as high as 15 and 16 per cent, the demand being for the new Colombian paper currency on account of the lack of circulating medium, of which there was not enough to meet the ordinary business needs of the country. However, later in 1919, the heavy importations of American gold coin, estimated at about \$9,000,000, and the extraordinary demand for merchandise and materials from the United States, induced by the high coffee prices and purchased at very high figures, wiped out the unfavorable balance of trade against the United States, and New York exchange was quoted during the latter part of the year at nearly par, the average rates being between $98\frac{1}{2}$ and 99.

At first great difficulty was encountered in putting American gold coin into circulation on account of the high cost and danger of its transportation in the country and the habitual preference of the people for paper money, except possibly in Antioquia, where they were used to handling gold. This necessitated the coinage of American gold coins into Colombian gold coins of the same weight and fineness as the English gold coins, but again difficulty was encountered on account of the small capacity of the mint, which had been swamped with the coinage of gold that was produced in the country and was no longer exported on account of the prevailing condition of foreign exchange. The possessor of gold in Colombia could convert it into New York or London exchange at a profit of 15 to 20 per cent, and the gold stayed in the country. The mint at Medellín could not turn out the gold coin fast enough to meet the demand for it. Finally, in July, 1919, the Government declared that American gold coin was to be accepted at par with English and Columbian gold coin at the customhouses and for all taxes payable in gold. [NOTE.—Persons receiving American gold gain approximately \$0.14 on every \$5 on account of the difference in weight between the American and the English gold coin.] The result was that American gold coin was put into free circulation throughout the country.

In May, 1919, a presidential decree declared an export tax of 5 per cent on all platinum exported from Colombia after June 15, 1919. The same decree prohibited the exportation of gold of whatever quality without the prior consent of the Government, as long as the existing restrictions on the exportation of gold should be in force in Europe and in the United States. This decree provided also for permission to export gold from Colombia after satisfactory proofs had been submitted that like amounts had been imported from Europe or the United States. There was no change in the export tax on gold from Colombia.

To meet the demand for more circulating medium in the country, another presidential decree in January, 1919, declared English paper

money receivable by the customhouses at par with Colombian money, and every effort was made to put English paper money into national circulation, but without result. Some English money was imported, having been secured at a discount by reason of the low rate of London exchange, and this was used by merchants to pay import duties at the customhouses. The customhouses protested to the Government because they could not use this money again except at a heavy discount of 20 to 30 per cent in the local markets, and the decree was finally rescinded.

A report submitted at the beginning of 1921 by the American Legation at Bogota has the following to say concerning the exportation of gold, its influence upon Colombian exchange (which had undergone a sharp reversal since 1919), and the amount of gold in circulation in Colombia:

The Colombian Congress on November 20, 1920, passed a law permitting the free exportation of gold in all its forms except money, upon proof that such gold is not the result of the melting down of gold coins. It is apparently the general belief here that this permission, together with the decrease in imports incident to the high rate of exchange, will, for a time at least, effect a gradual lowering of this rate. There is scarcely room for doubt that this exportation has tended to lower the rate, in spite of the fact that up to the present time the latter has been the subject, on the whole, of a continued upward movement. This has been occasioned by the fact that the amount of foreign drafts coming due from month to month has been more than sufficient to offset the effect of the gold exported. For example, it is stated that foreign drafts to the amount of \$5,052,435 were drawn, through Bogota banks alone, for the single month of September, 1920.

The very active exportation of gold that has been carried on for some months past by speculators on the coast has been closely correlated with the fact that the rate of exchange has averaged considerably lower on the coast than in the interior. This, of course, has had the effect of drawing gold from the interior for the purchase of drafts on the United States.

The amount of gold in circulation in Colombia June 1, 1920, according to the official report of the Colombian Ministry of the Treasury, was 23,291,642 Colombian dollars, and the figures given by the board of conversion for the same date are 23,948,492 dollars. This is the latest official information available. Since the date given it has become increasingly difficult, because of the hoarding of gold brought about by the unsettled economic condition of the country, to determine the amount of gold in circulation. Nevertheless, in connection with an investigation made by the legation, the national inspector of monetary circulation stated that while it was virtually impossible to give anything like exact figures in this regard, he would place the amount of gold coin, at the end of November, 1920, in the country at between 7,000,000 and 9,000,000 dollars. A circular information sheet has been issued by the official mentioned, showing the stocks of the various circulation media in the Bogota banks on various dates during 1920. It is probable, however, that no deductions may be validly drawn therefrom as to the actual gold circulation of the country, since it has naturally been to the interest of the banks to lower as little as possible their gold reserves.

FINANCIAL DIFFICULTIES OF THE GOVERNMENT—INTERNAL LOANS.

Law No. 43 of 1916 authorized the issue of internal-loan bonds in three denominations—A, 10 dollars; B, 50 dollars; C, 100 dollars—interest at 8 per cent per annum, payable quarterly, and principal and interest to be received in payment of all national taxes. The primary purpose of this loan was to stimulate agriculture throughout the country, but the proposed law failed in its application on account of the scarcity of ready money in the country. Surplus capital was not attracted by the rate of interest offered, since the returns from private enterprise were very much higher. In December, 1918, Law No. 58 changed this law, increasing the interest rate to 10 per cent,

payable monthly instead of quarterly—the proceeds to be used to meet the immediate urgent expenses of the Government and to promote railway building.

The same condition of scarcity of surplus capital in the country confronted the new internal loan, which was not well received by the business men of the country, who argued that foreign capital should be allowed and attracted to build the railways and carry out public-utility improvements, leaving the small surplus capital of the country for industrial development.

Up to the end of the fiscal year 1919, a total of 2,500,000 Colombian dollars had been issued in these internal-debt bonds, called "Cédulas de Tesorería," having been allotted to the Departments for railway and road building and, in many cases, on account of the failure of the business people to invest in them freely, having been disposed of by popular subscription for some badly needed road or railway work, such as the 500,000 dollars allotted to Santander for the Puerto Wilches-Bucaramanga Railway. When disposed of at all on the open market, these bonds sold at a discount of 30 per cent.

BANK LOANS.

Opposition to the Government was aroused late in 1918 by legislation unfavorable to the flour-milling and salt industries of the Caribbean coast, and this resulted in the formation of the "Liga Costeña," an organization of the coast interests for the protection of their local industries. The outcome was a trip to the coast by the President in January, 1919, during which all of the principal cities were visited, including Medellín en route, and a total of 1,600,000 Colombian dollars was borrowed from the various native banks and wealthy merchants to meet the pressing needs of the Government, which was beginning to feel the lack of the usual revenue received from customs duties paid on imports into the country, which fell off during the war.

In the meantime the Government was doing all in its power to economize, the President's message of November 5, 1917, cutting the annual appropriations by 1,000,000 dollars, as follows (Colombian dollar = \$0.9733 United States currency):

	Colombian dollars.
Reduction of charities.....	65, 000
Jails expense to be paid by the Departments.....	600, 000
Reduction of the army by 1,000 men.....	200, 000
Reduction in the schools department.....	55, 000
Reduction in number of Federal employees.....	80, 000
Total.....	1, 000, 000

FINANCIAL CONFERENCE.

On June 17, 1918, a national financial conference, composed of the members of the chambers of commerce of Bogota, Manizales, Barranquilla, Cucuta, Tunja, Pasto, Medellín, Cartagena, and Bucaramanga, was held in Bogota with the object of studying the financial needs of the country and discovering some method whereby the circulating medium could be increased in sufficient amount to meet the commercial necessities of the country at large, and also to aid the Government in meeting the fiscal crisis. Out of this meeting grew the plan to make American bills legal tender, a measure wanted

by the coast communities but bitterly opposed in Government circles in Bogota and by the business people of Medellín. The Minister of the Treasury was a strong supporter of this plan and finally resigned in January, 1919, on account of the failure of Congress to pass the proposed law that would have made this plan effective. It will be recalled that the Government could not issue more paper money because of the fact that the reserve funds of the Junta de Conversión had been used to meet current expenses, and there remained no reserve on which to base such an increased issue, which, it was feared, would cause the Government paper currency to become depreciated, as was the case with the fiat money of past times—a condition which it was sought to avoid at all costs.

FAILURE OF FOREIGN LOANS DURING THE WAR.

Out of the mass of new laws and legislation having to do with foreign loans during the period of the war, there are two principal laws that authorized the Executive to contract for large foreign loans with which to meet the more pressing needs of the Government and to carry out harbor works, sanitation, and railway building.

The first of these laws was No. 55 of 1916, which had to do with the Pacific Railway (see p. 272) and authorized the Government (the Executive) to make a new contract with the Pacific Railway Co. (superseding all old contracts and that of 1905), whereby the company agreed to receive a reduction of 8,000 Colombian gold dollars per kilometer for new line constructed and to cede to the Government the right to certain lands acquired under the old contracts, some of which contained valuable and extensive deposits of coal; and the Government was to cooperate with the company to secure a loan of 10,000,000 dollars for which the company would be responsible, the Government paying the regular funds allotted to the Pacific Railway work. One million dollars of this sum was to be used by the company for the improvement and sanitation of the port of Buenaventura and 700,000 dollars for the reconstruction of the line between that port and Cisneros (the old part of the railway, some of which is 30 years old and in very bad condition, having to be relocated on account of the danger to the line down the Dagua River). The company finally refused to accept the conditions of this new law, though an effort was made to secure the loan in both the United States and England during the first half of 1919, and the ultimate result was the taking over of the Pacific Railway by the Government in September, 1919.

In law No. 77 of 1917 Congress authorized the Executive to contract for a foreign loan of 15,000,000 Colombian dollars to be used for the sanitation of seaports and other public works. The product of the national salt mines and other revenue guaranteed the payment of principal and interest. The privilege of liquidation at any time was reserved by the Government. Nothing came of this on account of the general condition brought about by the war.

OUTLINE OF FISCAL CONDITION.

In order to show the high increases in governmental expenses, out of which have grown the various fiscal crises of the last few years, a comparison is given below between the year 1911 and recent budgets.

The calculated income of the national Government for 1911 from all sources was 9,779,500 Colombian dollars, with the authorized expenditures amounting to 11,768,450 dollars. As provided by law, the Executive scaled down these authorized expenditures to avoid a deficit, and, in fact, cut them down, in accordance with the new policy of strict economy, to 8,937,688 dollars—a relatively small sum for a nation of 5,000,000 inhabitants. The total revenue in 1911 exceeded the estimated amount, being 12,685,200 dollars, with items as follows:

	Colombian dollars.
Customs duties, port fees, etc.....	9,072,099
Consular fees.....	451,273
Posts and telegraphs.....	455,831
Succession duties.....	85,285
Sabana Railway.....	1,263,203
National properties.....	10,323
Patent and trade-mark fees.....	486
Marine salt mines.....	598,716
Terrestrial salt mines and springs.....	797,958
Mining taxes and leases.....	49,158
Stamp taxes and law paper.....	476,680
Stamp taxes, cigarettes and matches.....	56,060
Territorial revenues, Choco and Meta.....	59,022
River navigation tax.....	116,918
Miscellaneous revenue.....	192,188
Total.....	12,685,200

The total revenues during the Restrepo administration, 1910-1914, were as follows:

	Colombian dollars.
August to December, 1910.....	4,940,276
During 1911.....	12,480,581
During 1912.....	13,995,492
During 1913.....	17,347,101
January to July, 1914.....	8,831,966
Total.....	57,595,416

The total revenues during the Concha administration, 1914-1918, were as follows:

	Colombian dollars.
August to December, 1914.....	4,814,626
During 1915.....	12,638,449
During 1916.....	21,045,224
During 1917.....	13,366,623
Mar. 1 to July 31, 1918.....	4,197,846
Total.....	56,062,768

The first-named administration secured a foreign loan of £300,000 and the second took the 1,500,000 dollars metallic reserve fund of the Conversion Board for Government uses, by authority of Congress.

¹Spent 234,630 dollars for improvements.

²January, 1916, to Feb. 28, 1917.

Both administrations faced a deficit on entering office and left a deficit upon leaving, notwithstanding measures for greater economy. A comparison may be made from the following figures for 1910 and 1918, showing the increased expenses of the minor departments of the Government:

Departments.	1910	1918	Departments.	1910	1918
	<i>Colombian dollars.</i>	<i>Colombian dollars.</i>		<i>Colombian dollars.</i>	<i>Colombian dollars.</i>
Council of State.....		42, 839	Circuit Courts.....	310, 266	495, 735
Tribunals of Contention.....		65, 990	Posts.....	303, 185	842, 737
Medicine (legal).....		58, 147	Telegraphs.....	543, 178	1, 186, 374
Hygiene.....	10, 157	133, 191	Police Service.....	484, 196	1, 017, 475
Fiscal Department.....	31, 845	57, 931	Prisons.....	109, 500	824, 120
Tribunals of Justice.....	136, 950	216, 620			
Superior Courts.....	40, 282	64, 653	Total.....	1, 969, 559	5, 005, 812

The above table shows how expenses have mounted faster than revenues.

In his message to Congress on November 7, 1918, President Suarez called attention to the fact that, upon his taking office on the 7th of August, there was a deficit of 3,824,497 dollars, that the national deficit by February 28, 1919, was estimated at 5,548,285 dollars, and that, if the budget as adopted by the Congress for 1919 were maintained, another deficit of 4,747,786 dollars would have to be faced on February 28, 1920—or a total deficit of more than 10,000,000 dollars gold. Law No. 23 of that year was also criticized on the ground that the 8,000,000 dollars' worth of internal-loan bonds, authorized to draw only 8 per cent interest annually, would not be acceptable to the country at large and that the rate of interest should be materially increased.

The following table shows the proposed and the "reformed" budget of expenses for 1920:

Departments.	Proposed.	"Reformed."	Departments.	Proposed.	"Reformed."
	<i>Colombian dollars.</i>	<i>Colombian dollars.</i>		<i>Colombian dollars.</i>	<i>Colombian dollars.</i>
Interior (Gobierno).....	6, 392, 301	5, 937, 842	Agriculture and commerce...	207, 248	116, 744
Foreign relations.....	351, 321	372, 609	Public works.....	1, 133, 719	1, 296, 367
Finance.....	995, 298	796, 116	Treasury.....	3, 606, 897	3, 965, 088
War.....	1, 785, 549	2, 045, 406			
Public Instruction.....	835, 017	1, 056, 061	Total.....	15, 307, 350	15, 596, 233

The "reformed" estimate, finally adopted, was supposed to be more economical but really resulted in an addition of 278,883 dollars. Salaries of all cabinet officers were reduced by 20 per cent, but the consular service received 85,000 dollars, instead of the former 70,000 dollars, and the diplomatic service was given 120,000 dollars. The estimate for 1920 of the Department of Agriculture and Commerce was cut by 43.7 per cent, leaving this important department of the Government with its hands tied and with no hope of being able to do any constructive work for the country. This was the cause of the discontinuance of the new Government Agricultural Experiment Station on the Dorada Railway in Tolima, from which great things

were expected in the future for the betterment of Colombian agriculture.

In 1918 and 1919 the several departments received the following percentages of the national funds:

Departments.	1918	1919	Departments.	1918	1919
	<i>Per cent.</i>	<i>Per cent.</i>		<i>Per cent.</i>	<i>Per cent.</i>
Interior.....	35.9	38.0	Agriculture and commerce...	1.2	0.8
Foreign relations.....	1.8	2.4	Public works.....	10.3	8.2
Finance.....	8.1	5.1	Treasury.....	22.0	25.3
War.....	13.7	13.2			
Public instruction.....	7.0	7.0	Total.....	100.0	100.0

EXTERNAL DEBT.¹

In 1889 the Republic of Colombia, which had changed its name from the United States of Colombia, arranged a plan to provide for the consolidation of the debt assumed by the Republic. The new bonds for which this plan provided were to be known as the "Consolidated External Bonds of 1890," to be issued to the amount of £2,420,000, and to bear interest at the rate of 3 per cent until December 31, 1899, and at 4 per cent per annum thereafter. The principal of the old bonds was to have been converted into the new bonds at par and interest in arrears at 50 per cent of the nominal value. Twenty per cent of the gross customs receipts of the country were to have been assigned for the payment of the interest on the new bonds, and the sum of £12,000 per annum was assigned as a sinking fund, the Government having the right to redeem the bonds by drawing at 70 per cent of par until December 31, 1894, and at 80 per cent thereafter.

This plan, which had been agreed upon by the representatives of the Government and the Committee of Foreign Bondholders, of London, representing the bondholders, did not meet with the approval of the Colombian Congress, and in 1896 the above agreement was modified, the interest rate being placed at 1½ per cent for the first three years, 2 per cent for the second three years, 2½ per cent for the third three years, and 3 per cent per annum thereafter. The sinking fund was placed at one-half per cent, cumulative, for the first three years, 1 per cent for the second three years, and 1½ per cent thereafter, cumulative.

In 1900 the interest on the loan was not met; payments were resumed July 1, 1905, and the sinking fund, which had likewise been suspended, was resumed January, 1910. The unpaid coupons were exchanged for noninterest-bearing certificates, 70 per cent of which were paid off in 1907 and 1908, the remaining 30 per cent being subject to settlement of certain alleged claims of Colombia against another Government.

In 1906 the Government issued £300,000 5 per cent bonds, secured on the property of the Bogota-Sabana Railway, the proceeds of the loan to be used to convert the old paper currency of the country. The sinking fund of this issue was fixed at 1 per cent per annum,

¹ As far as the paragraph on p. 66, beginning "The report of the legislative committee on national credits," this section is reproduced from "Investments in Latin America and the British West Indies," by Frederic M. Halsey, published by the Bureau of Foreign and Domestic Commerce as Special Agents Series No. 169.

cumulative. Approximately £275,000 of these bonds remained outstanding in 1916.

In 1911, 7,560,000 francs (£300,000) 6 per cent bonds were issued in France, being offered for public subscription at about 98 per cent. These bonds were declared redeemable in 30 years through the operation of a cumulative sinking fund, and the entire service on the loan is guaranteed by the assignment of 3 per cent of the entire customs revenue. This issue is known as the 6 per cent gold loan of 1911.

During the year 1913 £1,500,000 bonds were authorized, practically all of which were issued in exchange for the 6 per cent bonds of the Colombian National (Girardot) Railway, on the following terms:

Class of former bonds (Colombian National Ry.).	Former amount of railway bonds outstanding.	Percentage of new bonds offered for old bonds.	New bonds.
6 per cent first-mortgage debentures.....	£200,000	107	£214,000
6 per cent second-mortgage debentures, including £84,000 overdue interest.....	400,000	85	340,000
6 per cent customs-guaranteed bonds.....	430,000	95	408,500
6 per cent customs-guaranteed debentures.....	450,000	95	427,500
Total.....	1,480,000	.....	1,390,000

Approximately £1,224,360 of the Government bonds were issued in exchange for the railway bonds, and of those issued approximately £987,000 remained outstanding at the close of 1917. The bonds were quoted at 70 in January, 1918, this comparing with the high price since 1911 of 88½, and the low price of 55. These Government bonds are to be redeemed by purchase in the market, or by drawing at par, on or before March 1, 1947. The yearly service is secured by the hypothecation of 7 per cent of the annual customhouse receipts of the Republic, any deficiency to be made up out of general revenues.

Referring again to the consolidated external debt, the present interest rate on which is 3 per cent per annum, it may be stated that interest has been regularly maintained since 1906, even during the extremely difficult war period. The sinking-fund payments were suspended during a portion of 1915 and of 1916. The amount of bonds outstanding just prior to the close of 1917 was £2,078,400, which total has since been reduced slightly. The £590,000 bonds purchased for redemption by the Government cost £291,195, an average of 49.35 per bond. The price of bonds under the issue in January, 1918, was 49½, as compared with 50½ at the closing of the London Stock Exchange, July 27, 1914.

The Government of Colombia has guaranteed interest on a small amount of bonds of railway companies operating in the Republic.

The report of the legislative committee on national credits, made to the Colombian Congress October 3, 1919, shows that the consolidated debt at 3 per cent per annum had been reduced to £1,868,200, from £2,700,000 in 1905, marking a reduction of one-third. The report also shows that the bonds of this debt were quoted as low as 14 per cent when service was suspended, but that the present rates are 69 and 70 per cent, which signifies a valorization of approximately 50 per cent. The rise in the market value of the consolidated bonds in London is attributed to the good effect of the Government's

manifest ability and willingness to meet all foreign obligations, even during the financial stress of the war years. The committee recommends that every effort be made to increase and maintain service on the foreign debt, seeing in the return of confidence the key to future loans and prosperity for the country at large.

The same committee reports that the total internal debt of Colombia is £4,079,870, or 20,399,350 Colombian gold dollars (1 Colombian dollar equals \$0.9733 United States currency). In this amount is included the guaranty by the Government of the Girardot Railway bonds and debentures, secured by this public utility of great value and hopeful future. It is pointed out that the entire public debt only reaches the small total of \$3.30 per capita, being the lowest for any nation, and that the external debt amounts to only the product of the national revenues for one year or about 1 per cent of the national wealth.

This report states that, of the 4,000,000 dollars issued in the new "Cédulas de Tesorería" (internal-loan bonds, see p. 69) 140,907 dollars had been amortized, in strict accordance with the promise of the Government. The product of the stamp act has been assigned to the amortization of these internal-loan bonds.

Lazard Bros. & Co. are the fiscal agents of the Colombian Government in London, under contract extended for five additional years from the end of 1916. The monthly and quarterly balances of the Colombian Government with this firm are published in the *Diario Oficial* regularly; Nos. 16,057, 16,227, 16,390, and 16,507 contain the list of payments made on the foreign debt for the last months of 1916, the two semesters of 1917, and the first semester of 1918. During the last half of 1918 the Colombian Government paid in London the following sums on account:

	Colombian dollars.
Consolidated foreign debt, 3 per cent.....	359,691
Loan of 1913.....	335,949
Sabana Railway loan.....	35,294
Northern Central Railway loan.....	13,065
Loan of 1911.....	52,085
Total.....	796,084

During the previous war years Colombia also paid in London the following amounts through Lazard & Co. to apply on loans:

	Colombian dollars.
Consolidated foreign debt, 3 per cent:	
1915.....	445,331
1916.....	359,692
Total.....	805,023
Sabana Railway loan:	
1915.....	55,297
1916.....	35,297
Total.....	90,594
Loan of 1913, Girardot Railway:	
1915.....	423,709
1916.....	429,161
Total.....	852,870

	Columbian dollars.
Puerto Wilches Railway:	
1915.....	26, 634
1916.....	26, 513
Total.....	53, 147
Loan of 1911:	
1915.....	109, 787
1916.....	103, 761
Total.....	213, 548
Perier loan (emeralds deposited in Paris), 1916.....	34, 375
Grand total.....	2, 049, 557

From the above it will be seen that the Government has been paying back indebtedness at the rate of over 1,000,000 Colombian dollars per year, and the amount paid during the last half of 1918 was increased to about 800,000 dollars, notwithstanding the very difficult internal fiscal situation and the mounting expenses. If strict economy could be maintained in all Government expenditures, Colombia's financial future would be more than satisfactory, and the placing of a new loan, large enough to take up all the outstanding and diversified items, would greatly assist the country financially and would help to solve the fiscal problems.

The industries of the country are steadily progressing. Exports have consistently increased in tonnage and value year by year, and the year 1919 saw the country in a more prosperous condition than ever before and with the Government's revenue greatly increased by the influx of imports which followed the coffee crop of 1919, sold at extraordinarily high prices in New York. Exports of merchandise from New York to Colombia increased 900 per cent during the last half of 1919 as compared with the similar period in normal prewar years. The per capita debt is the lowest for any Latin American nation.

There is every evidence of increasing confidence and of a new era of progress and prosperity, in which the development of the country's natural resources of coal and petroleum will play a leading part if legislation can be made compatible with the just interests of foreign capital. And last, but not least, the increased wealth of the middle and lower classes, with the added opportunities for education and advancement, are fast bringing about a new condition in the country and a new thought imbued with modern conceptions.

Certain conditions militate against foreign loans in Colombia. The Government has suffered in the past from mistakes and ill-advised contracts for railways and loans, which have saddled it with a heavy burden not at all commensurate with the benefits received, and the country is still paying for those mistakes at a time when the money is most needed for new improvements, especially in transportation (railways).

Also, there may be quoted an extract from Phanor J. Eder's "Colombia":

Diplomacy of a high order is * * * required to carry through negotiations to a successful termination; the Colombian Government and people * * * are not willing to jump at the first offer of a loan, on any terms whatever; some clauses in

contracts which the foreign banker, in view of his home markets, insists upon, the Colombian is loath to grant. For instance, the very reasonable requirement that upon default in the payment of interest the principal shall become due and payable meets with * * * opposition.

It is a fact that certain recent (1919) negotiations for large loans in Colombia (one of them a departmental loan for 6,000,000 dollars) have fallen through because of the failure of the parties to agree upon terms. The security offered was adequate, the financial condition of the political division was excellent in every respect, with ample income to meet its obligations, and the investment of the money was to be in paying utilities. The only difficulty was the inability to agree upon terms.

A brighter aspect is shown, however, by two loans—one for 1,000,000 dollars and another for 2,500,000 dollars—made by American interests to Departments in Colombia during the year 1919, and it is expected that the way will be opened for a better understanding in the near future regarding such questions. The value of the influence of such loans on trade relations can not be overestimated.

Failing to secure foreign loans during the war, as provided for in the new laws of 1916 and 1917, the Government turned to the policy of internal loans along the line of the bonds called "Cédulas de Tesorería," referred to herein, but this method has been strongly opposed by the business men of the country on the ground that the Government thereby takes what little surplus capital there is in the country and uses it for public improvements, principally railways, which should be built by foreign capital, thus leaving only a small amount for the development of domestic industries and national resources which will provide a tonnage for the new railways.

INTERNAL DEBT.

As has been seen, the principal revenue of the Government is derived from the import duties on merchandise shipped into the country, these duties amounting to about 75 or 80 per cent of the total national revenue. Next in importance comes the revenue derived from the national salt mines, and, third, the product of the stamp tax. Ready funds are secured by drawing on the customhouses in the form of "vales," or vouchers, which are really treasury warrants payable by the customhouses of the country. These treasury bonds are accepted as part payment of duties on imports and are bought up by the merchants and banks, who use them to pay import duties, national taxes, etc. As their local market value is determined by the law of supply and demand, they are often sold at as low as a 30 per cent discount.

The internal debt of Colombia is divided into two classes, the "Consolidated Public Debt" and the "Floating Public Debt." The first is constituted of the so-called "nominal taxation," and also of the annual sum to be paid to the church according to stipulations now in force of the "Concordato" between the church and the Government.

By virtue of Law No. 23, of 1918, all of the old principals of the Consolidated Public Debt were considered as imposed in silver money values and to be reduced to the new gold standard at the rate of 250 for 100. This disposition, though considered inequitable, has not been opposed by the interested parties, and is therefore enforced.

The following items were allowed in January, 1919:

	Colombian dollars.
Public instruction.....	660, 662
Charitable institutions.....	149, 500
Hospital of San Juan de Dios:	
At 6 per cent.....	179, 728
At 12 per cent.....	89, 864
Various ecclesiastical foundations.....	854, 048
Nonreligious foundations.....	436, 680

The principal of the amount owing to the Department of Public Instruction earns 10 per cent per annum; that of the charitable institutions earns 6 per cent per annum, and in this is included that of the religious foundations and the San Juan de Dios foundations (the former at 4½ per cent per annum) and the nonreligious foundations at 3 per cent per annum. These total interest charges cause an annual charge (outlay) of about 137,340 Colombian dollars, and to this must be added the annual sum of 82,000 dollars, in cash, received by the church as indemnity according to the Concordato (the treaty between the Colombian Government and the Holy See). Service of this debt is made every six months, but was suspended during 1918 and 1919 on account of the financial difficulties of the Government.

The Floating Internal Public Debt consists of the following items:

- Vouchers of the war of 1898.
- Vouchers of the war of 1899.
- Military compensation vouchers.
- Colombian bonds.
- Treasury notes.
- Camboa Road bonds.
- Amaga Railway drafts.
- Antioquia Railway drafts.
- Caldas Railway drafts.
- Tolima Railway drafts.
- Cauca (Pacific) Railway drafts.
- Foreign vouchers.
- Internal-debt bonds.
- Treasury promises to pay.

The grand total of all these obligations reached the sum of 18,989,861 Colombian dollars, but 14,802,406 dollars had been retired up to the beginning of 1919, leaving only an effective total of 4,187,453 dollars. Many writers on economics in Colombia have urged the unification of the internal debt and the cession of the perpetual character of the "nominal tax" and the annual indemnity paid to the church, but this has not been done. New obligations of a like character are constantly being created on account of the fiscal situation of the Government during the war, when many similar expedients were adopted to meet pressing obligations. A full list of these internal obligations follows, with a statement of their actual status at the end of 1918:

Class of obligation.	Total.	Paid.	Balance due.
	<i>Colombian dollars.</i>	<i>Colombian dollars.</i>	<i>Colombian dollars.</i>
Treasury bills	40,860	23,257	17,603
4 per cent bonds (special issue)	385,700	382,700	3,000
3 per cent floating bonds	15,861,158	15,582,343	278,815
Colombian Government bonds	166,722	165,765	957
Camboa Road bonds	127,500	115,000	12,500
Internal-debt bonds	120,000	63,330	56,670
Dorada Railway drafts ¹	281,460	228,800	52,660
Cartagena Railway drafts	710,000	683,500	26,500
Antioquia Railway drafts	1,138,134	1,022,351	115,783
Pacific Railway drafts	190,000	183,000	7,000
Pacific Railway special drafts	215,000	78,000	137,000
Do	2,536,129	2,294,971	241,158
Pacific Railway construction drafts	2,972,520	1,228,800	1,744,398
Girardot Railway drafts	300,000	263,000	37,000
Tolima Railway drafts	303,187	301,987	1,200
Occidental Railway drafts	887,300	877,300	.....
Amaga Railway drafts	542,328	481,750	60,578
Caldas Railway drafts	150,000	.....	150,000
Treasury promises to pay:			
Old	82,034	150	81,884
New	827,000	826,425	575
Vouchers of war of 1895	57,334	55,605	1,729
Vouchers of war of 1899	3,554,841	3,180,789	374,052
Foreign drafts	2,860,400	2,853,560	6,840
Vouchers, military damage	821,229	805,421	15,808
Treasury vouchers (new)	1,426,000	369,114	1,056,886
Treasury vouchers	2,382,339	2,370,653	11,686
Tax vouchers, treasury	8,182	500	7,682
Vouchers, export "primas"	458,222	457,664	558
Vouchers, military "Ceses"	244,768	244,766	2
Total	39,640,347	35,139,823	4,500,524

¹ The "railway drafts" are treasury warrants given in lieu of cash payment of subsidies allowed by railway legislation, usually at the rate of 10,000 or 15,000 Colombian dollars per kilometer of line constructed, though the allowance for some railways is higher, according to contract.

From the foregoing figures it will be seen that at the end of 1918 the internal public debt of Colombia amounted to 4,500,524 Colombian dollars, carrying an annual interest charge of approximately 220,000 dollars. The figure given above nearly agrees with the previous total of 4,187,455 dollars, the difference being accounted for in the time of taking off the balances and in the inclusion in the one amount of various small items not taken into consideration in the first figures quoted.

The balance of the actual fiscal condition, published by the Minister of the Treasury on June 30, 1919, showed the following figures:

	Colombian dollars.
Total of the present budget, including former items	21,800,000
Expenses not ordered in budget	2,500,000
Balance of ordered expenses	19,300,000
	Colombian dollars.
Product of actual revenue	10,300,000
Treasury vouchers issued	1,100,000
Bonds issued	2,500,000
Bank loans	1,600,000
	15,500,000
Difference	3,800,000
	19,300,000
	19,300,000

To the above deficit should be added the bank loans of 1,600,000 dollars and also the treasury vouchers retired, which reduce the product of the revenues by 500,000 dollars, leaving a total deficit for February, 1919, of 5,900,000 dollars, in round numbers. There is also a difference of about 1,000,000 dollars in the amount of expenses ordered for April and March of 1919 and the estimated amount of the total income for these two months, making the probable deficit 6,900,000 dollars. If the amount of "Cédulas de Tesorería" (internal-loan bonds) issued up to February 28, 1919, or 1,900,000 dollars, is deducted from the above, the net deficit is then 5,000,000 dollars, roughly.

According to the presidential message of June 30, 1919, there was the following money in circulation in Colombia at the close of the fiscal year (all values in Colombian gold dollars, 1 dollar equalling \$0.9733):

	Colombian dollars.
Colombian gold coin	7,700,000
Colombian paper currency	10,180,000
Colombian silver coin	6,460,000
Colombian nickel coin	1,194,000
Treasury notes and vouchers	3,200,000
Bank mortgage notes	1,200,000
Total	29,934,000

To the above amount there should be added a small amount of English gold coin in the country and approximately \$9,000,000 in the United States gold coin imported into Columbia during 1919.

The final calculation of the 1919-20 budget shows: Revenues, 19,740,750 Colombian dollars; authorized expenditures, 19,324,000 dollars; balance in favor of revenue, 416,750 dollars. A very large increase in imports was noted between May and September, 1919, due to heavy buying in the United States of all sorts of merchandise, and the total revenue was undoubtedly much greater than the sum estimated.

GENERAL CONDITIONS AFFECTING NATIONAL INDUSTRIES.

The industries of Colombia may be divided roughly into four great classes, agriculture, mining, forest products, and manufacturing—the last-named being of relatively small importance. The most important of the national industries, agriculture, may be again divided into planting and cattle raising. Mining, of next importance, includes gold and platinum placer mining, vein mining, coal, salt, and petroleum, the last-mentioned promising to be of primary importance in the near future and attracting more attention at present than any other branch of development in the country. Forest products embrace medicinal plants, gums and balsams, and lumber.

Just as the people, living conditions, transportation, etc., of Colombia are affected by the broken topography of the country, so are the industries affected and divided into zones or districts, each very different from the other and therefore necessitating a separate study. This is especially true of agriculture.

With two or three notable exceptions, agriculture is carried on in Colombia in the most primitive manner. Modern machinery and implements are almost unknown, and there are entire regions without a steel plow of modern make, the only implement being the universal machete. However, local capital is being attracted by agriculture in the coast districts, which have been the most backward in development of agricultural resources, and it may be predicted that machinery will be imported in greater quantities during the next few years, principally for sugar cane, rice, and cotton.

In mining, great contrasts are seen in the country. The native placer miners do not even make rockers or sluice boxes, but depend largely upon the wooden "pan" or "batea" for washing; while near by one may find some of the most modern dredgers, dams, and placer-mining equipment, costing millions of dollars and owned by foreign companies, principally English and American. The same contrast may be observed in the case of quartz and vein mines.

In manufacturing, greater improvement and modernity are seen than in any other line. Textile plants are very well equipped, and the newer mills contain the very latest textile machinery and equipment. It is in this line that the greatest development may be expected during the next few years. Orders for new textile plants and equipment and extensions for old plants are limited only by the manufacturers' ability to deliver the machinery, and recent new mills have capitalizations as high as 600,000 Colombian dollars. In the interior there is an abundance of easily developed hydro-electric power, and new plants are designed to use this class of power. Many small towns, heretofore lacking electric lighting plants, are now ordering equipments.

The location of a petroleum refinery at Barranca Bermeja on the Magdalena River by the Tropical Oil Co. will increase the purchase and use of many different kinds of machinery, principally those of

small units. The production of residual fuel oil by this refinery will also greatly assist river-steamer navigation by reducing the weight of the fuel (wood is now carried). It will allow more tonnage or less draft when the river is low and will obviate the loss of time in loading wood fuel, thereby facilitating the movement of freight on the main transportation highway of the country, the Magdalena River.

Large quantities of wheat, cotton, lard, and rice were formerly imported by Colombia—principally from the United States, prior to the war. During the war these commodities could not be secured in sufficient quantities, very high prices prevailed, and there was difficulty on account of the shortage of ocean tonnage; so efforts were made to stimulate domestic production of these staples. As a result, the importation of lard has been entirely suspended, the country now producing enough for its own use and even exporting to Cuba and Panama. More wheat has been produced in the interior, principally on the high table-land of Bogota, and shipped to the coast regions or milled in Bogota and Medellin. More corn has been raised in the country, and during the war a small surplus was even shipped to the United States, because of the high prices obtaining here at that time. The production of cotton for the local textile mills has been increased in the Barranquilla district, cotton being sent into the interior as far as Medellin, where there are several large textile mills. Attention has been given to rice cultivation in the Cartagena-Sinu region, where conditions of soil, climate, and moisture are good. Up to 1920, however, the yield has not been sufficient to supply the demand even of the coast region, where rice is an important staple formerly imported in large amounts from the United States, but it can be predicted that the production will be greatly increased in the near future through the adoption of modern methods of rice cultivation on a scale never before attempted in Colombia.

Manufacturing also received an impetus from the trade restrictions of the war period. Prices of domestic manufactures are fixed by the cost of the imported articles of the same quality, and the heavy advance in price of all merchandise spelled increased profits and prosperity for the Colombian manufacturer, allowing large surpluses to be created for ultimate investment in increased production facilities at such time as deliveries can be secured on machinery and equipment for factories of many kinds.

Colombian industry (consisting principally of textile mills) is protected by a high import tariff, which, combined with the low labor wage, more than offsets the disadvantage to the Colombian manufacturer of having to import most of his raw materials and all of his machinery, equipment, and factory supplies. It may be predicted that domestic manufacturing will be greatly increased during the next few years.

As a direct result of the scarcity and high prices of imported articles and the increasing cost of living, wages in all lines have been increased, and these increases have been continued to keep pace with the steadily advancing prices of necessities. The effect has been felt, to a greater extent than elsewhere, in Santa Marta, Barranquilla, and Cartagena and up the Magdalena River Valley in transportation lines of labor. The interior districts of Bogota and Boyaca

have not been so much affected in agricultural lines, though office employees and others have received substantial increases.

There was a shortage of labor in 1919 for the heavy and very valuable coffee crop, which commanded such high prices in New York, and wages never before known were paid to coffee pickers and cleaners, averaging, in some districts (notably Caldas), as high as \$1.20 gold per day.

Mining in all branches was greatly affected in Colombia during the war, this being true not only of the native placer miners using very primitive methods but also of the large foreign companies operating large placer and vein mine holdings equipped with modern machinery, dredges, etc.

The extraordinarily high prices obtained for platinum, a war necessity—the price being fixed by the United States Government at \$105 per ounce during the war and reaching still higher levels after the armistice—attracted an increased number of workers from the coast river regions to the west of Cartagena, from western and northern Antioquia, and from the Buenaventura coast region to the placer ground of the upper Atrato and San Juan Rivers, and production was increased despite the unfavorable weather conditions of 1918, when abundant rains were lacking and in many districts there was not enough water for platinum washing.

The principal production of gold is by large dredging companies located in northern Antioquia and in the west-coast gold-platinum districts. These companies were directly affected by the restrictions imposed on production through war taxation—the very high income (or production-profits) tax making it better policy for the companies to hold over the richest ground until after the high taxes had been removed and in the meantime only work low-grade ground to meet expenses and keep their organizations together, thereby curtailing the production of gold, even though operating expenses had enormously increased on account of the extraordinary cost of new machinery, equipment, and supplies.

The demand for platinum during the war and the shutting off of the Russian supply stimulated interest in platinum production in Colombia, where combinations of old dredging companies were formed, new plants were introduced, and new ground was opened up for dredging. However, the delays in the delivery of machinery and its installation on the ground prevented this increased production from being felt very greatly until after the armistice, the main increase in platinum production coming from the native miners.

The war also affected the development of new vein mining and hydraulic properties in the interior. Deliveries could not be obtained on new equipment, and the high cost of new machinery and equipment, and the very high operating costs, curtailed new development except in a few cases of very rich and proven properties. Since the armistice, however, there has been an increased interest in Colombia in mining properties, and it may be predicted that this industry will receive more attention.

FOREST PRODUCTS.

GENERAL SURVEY OF RESOURCES.

Unlike the agricultural products of the country—which are of all kinds, both tropical and of the temperate zone—the forest products of Colombia are all tropical in their nature. They may be divided into several large classes, namely, medicinal plants, gums and balsams, tanning-extract materials, and lumber—the last-named being of relatively small importance so far as exportation is concerned. Oil nuts, coconuts, and fibers are also potentially important products, but are little developed. There exist in many places large natural supplies of oil nuts, such as those of the corozo palm, and also large areas of native fibers, such as the “fique,” a specie of henequen, and the “pita,” related to the pineapple family and producing a very long, fine, and strong fiber that is little used except by the natives. Varnish gums are little known or exploited but exist in large quantities. Another important forest product is the “tagua” or vegetable ivory, which is of interest to the United States now that this country is becoming the largest button-manufacturing nation in the world.

The relatively low value and large bulk of most forest products, combined with the lack of transportation facilities in the country, restrict the exploitation to areas that are more or less accessible from either the Caribbean or the Pacific coast or the many navigable rivers of the interior which afford an outlet to the coast. Vast areas of the more isolated interior contain great quantities of “tagua,” “cinchona” bark, rubber, chicle, divi-divi, fibers, and the like, but are untouched because of the lack of labor and population and the absence of transportation even by pack mule or canoe.

Among the forest products of Colombia are the following:

MEDICINAL BARKS, ROOTS, AND EXTRACTS.

Cinchona bark (quinine).
Ipecac.
Sarsaparilla.
Cascara amarga (“Honduras bark”; tonic).
Winter’s bark (*Drimys Winteri*; tonic and scurvy remedy).
Simaruba (tonic; bark of root).
Krameria (phatany bark).
Spigellia (worm remedy).
Aloes extract.

BALSAMS AND GUMS.

Balsam of copaiba.
Balsam of Tolu.
Copal gum (“algarrobbillo”).

RESINS, WAXES, AND VARNISHES.

Carnauba wax (*Carnahubera*).
Quika resin (*Cercidum spinosum*, *Tulsane*).
Ceroxylon (*Ceroxylon anticola*).

VEGETABLE OILS.

Corozo palm nuts (also "cuesco"; like "cohune" nut of West Indies).
 Noli palm nuts (species, *Elaeis*, related to West Africa commercial oil palm).
 Coconuts.
 Tagua (vegetable ivory).

TANNING BARKS AND EXTRACTS.

Mangle bark.
 Divi-divi.
 Algarroba bean.
 Ginger (found wild near Rio Hacha).

RUBBER AND CHICLE GUMS.

Balata (plant, *Sapotaceae*).
 Lirio gum.
 Chicle.
 Rubber ("caucho negro").
 Rubber (Para rubber, *Hevea* or *Sirigna*).

DYEWOODS AND DYES.

Brazil wood (exported from Rio Hacha district).
 Indigo.

MEDICINAL PLANTS.

QUININE.

Fifty years ago Colombia led in the production of "cinchona" bark or quinine. In 1875 about \$9,733,000 worth of this article alone was exported, but the cultivation of quinine in Java and the British East Indies, where the alkaloid content was greatly increased by scientific methods of cultivation, destroyed the industry in Colombia through the resulting drop in price. It was no longer profitable to gather the bark in Colombia, where production was also gradually reduced by wasteful and careless methods of collection, the trees producing the valuable bark being in many cases destroyed. Also, the Colombian product was discredited by reason of the adulteration with other barks similar in appearance but not containing a high alkaloid content. In Colombia there is a great variety of cinchona trees, with the alkaloid content varying greatly.

In 1879 the sulphate of quinine reached the high price of 16s. 6d. (\$4.01) an ounce, but in 1883 it dropped to 3s. 6d. (\$0.85) and in 1885 quinine was worth only 2s. 6d. (\$0.61) an ounce and the industry in Colombia received its death blow.

The great areas of production at that time were the tropical forests and plains of the Amazon watershed to the south, along the head waters of the Apaporis and Caqueta Rivers, the tree being found also on the slopes of the Andes east and south of Pasto.

In 1917 Colombia was visited by Dr. H. H. Rusby, dean of the College of Pharmacy of the city of New York, accompanied by a corps of assistants, the principal object of the expedition being to search for medicinal drugs, particularly different varieties of cinchona, with the idea of discovering a species that would yield a higher percentage of the valuable alkaloid than the kinds ordinarily known.

It has been thought that the quinine industry of Colombia can be revived by the discovery of some simple method of refining the crude bark in the forests—the alkaloid thus procured to be refined at the

laboratories later. There have been no recent exports of cinchona bark from Colombia.

The country is exceedingly rich in all sorts of medicinal plants, wax palms, oil seeds and nuts, dyes, etc., but, as has been remarked, exploitation has been carried out only in the accessible regions adjacent to navigable rivers or to the coast.

IPECAC.

The principal supply of ipecac comes from the port of Cartagena and is gathered in the valley of the Sinu River, southwest of Cartagena, where the plant grows wild. In recent years a considerable portion of the supply has also been gathered along the valley of the Atrato River.

The ipecac of commerce is shipped from Cartagena in the form of the dried roots, the quantities exported to the United States being as follows:

Years.	Pounds.	Value.
		U. S. currency.
1915.....	115, 078	\$248, 524
1916.....	64, 781	155, 323
1917.....	26, 453	42, 506
1918.....	47, 181	98, 564
1919.....	28, 071	59, 167

SARSAPARILLA.

Sarsaparilla grows in the drier forests of the cordilleras on both sides of the Magdalena River Valley and is sold principally in Cartagena. The root is obtained from a species of smilax (probably *Smilax Ornato*, *Hook. F.*), a wide climbing plant ascending lofty trees. The plant has a stout rhizome which throws off slender cylindrical roots that creep for several feet a few inches below the surface of the ground. These roots are gathered by the natives, dried, and packed in bundles for shipment to the coast for export.

No statistics are available to show the exact amounts of sarsaparilla exported from Colombian ports, but the total quantity is small as compared with the ipecac exports mentioned above.

The work of gathering these plants is desultory and seasonal, the natives usually choosing the dry season for penetrating into the forests to gather them. There is no organized system for the work, though numerous concessions have been granted to foreigners and natives alike for the exploitation of forest products on a large scale. These efforts have all come to naught on account of the topographical and climatic conditions and the small and unreliable labor supply available—the Negroes and mulattoes of the river regions being persuaded to go into the interior of the valleys only when impelled to do so by a bad crop season or lack of other employment along the river.

A few of the general-merchandise traders of Cartagena and Barranquilla have a knowledge of medicinal plants and for years have carried on a business in them, receiving them from agents in the interior who trade goods (principally cheap cotton textiles) for these products, with the native gatherers.

"BALSAM OF COPAIBA" AND "BALSAM OF TOLU."

"Balsam of copaiba" and "balsam of Tolu" are exported from both Cartagena and Barranquilla and are gathered over a wide range of country, including the Magdalena River Valley and the region south and west of Cartagena. The balsam of Tolu takes its name from the town of Tolu, on the Bay of Morrosquillo, southwest of Cartagena and near the mouth of the Sinu River, since from this port the principal supply is shipped to Cartagena.

Cartagena and Barranquilla have exported balsams to the United States in the following values:

Years.	Cartagena.		Barranquilla, all balsams.
	Balsam of copaiba.	Balsam of Tolu.	
	<i>U. S. currency.</i>	<i>U. S. currency.</i>	<i>U. S. currency.</i>
1913.....	\$1, 887	\$10, 165	\$29, 638
1914.....	14, 189	.....	15, 584
1915.....	12, 517	.....	27, 944
1916.....	.....	3, 726	22, 150
1917.....	1, 750	1, 463	13, 180
1918.....	3, 804	.....	42, 066
1919.....	1, 767	.....	119, 198
1920.....	(a)	(a)	97, 264

^a Figures not available.

The "canime" or "copaiba" tree (*Copaifera officinalis*, L.), which yields the balsam of copaiba, an important oleo-resin contained in the secretion ducts throughout the entire length of the tree, is found in all tropical and semitropical Colombia, including the area to the east of the Magdalena River Valley, the southern interior, and the west coast. It is collected by cutting a deep V-shaped incision into the trunk of the tree near the base and penetrating to the center of the tree. Into the plate-like cavity thus made is discharged the oleo-resin, which is transferred to old kerosene tins. From three to four of these tins—holding, when full, 5 gallons each—are frequently collected from a single tree; the yield, however, is very variable, and some trees yield but little balsam. A tree yields this valuable product only once, since the incision reaches the heart of the tree and prevents it from secreting the balsam the second time.

As is the case with the medicinal roots and barks, and also with chicle and rubber, there is little organization connected with the gathering of balsam products, the work being carried on in a casual and seasonal manner by the natives. In some cases the mulattoes and Negroes of the river valleys have preempted large areas of the forests around their villages and exercise some sort of a recognized claim on mutually understood areas so long as trails are kept open with the machete and the trees tapped regularly in season.

The number of copaiba trees on a given area varies very greatly, and at best they are scattered through the forests, with only a few trees to the acre. No attempt has been made to cultivate plantations of this tree, as has been done with rubber trees, but there is no doubt that the production of the balsam of copaiba could be greatly increased in Colombia if the labor situation were better.

OTHER MEDICINAL PLANTS AND PRODUCTS.

Notwithstanding the great variety of other medicinal plants that are abundant in the country, the only medicinal export from Colombia other than ipecac, sarsaparilla, and the balsams of copaiba and Tolu, is the extract of aloes, produced near Rio Hacha on the Goajira Peninsula, on the plantation of a progressive Colombian, Señor Loises C. Henriquez. The quantity exported in 1915 was 253 kilos (557.7 pounds), and during the first six months of 1916, 460 kilos (1,014 pounds). No recent statistics are available. The industry is in its infancy, being new to the locality and also to Colombia, though the plants grow wild in the vicinity. The aloe plant requires a dry soil, and the leaves are ripe for the extraction of aloes in the dry season when they assume a colored hue. Aloes is a well-known domestic drug in Colombia, plants being grown in almost every garden in the tropical and subtropical parts of the country, and the dry leaves are to be found for sale in most public markets of the larger towns. It is presumed that small quantities of the dried leaves have been exported from Colombia, but there are no statistical records to show the amounts.

RESINS, VEGETABLE WAXES, AND VARNISHES.

There is in Colombia a great variety of resins, vegetable waxes, and varnishes, but they are little exploited and almost unknown among the people of the country. There are undoubtedly many of commercial value, but the difficulties are lack of labor and inaccessibility.

The ceroxylon palm is very abundant in Colombia, there being two known and recognized species. The ceroxylon palm of the eastern Andes is apparently distinct from the *Ceroxylon andicola* of the Quindio region of the Central Cordillera, having a slender bole only 20 to 30 centimeters in diameter but growing to a height of 30 meters and presenting a very beautiful appearance. This palm occurs at all altitudes from 1,300 to 9,000 feet above sea level and is found in all the Andine regions of Colombia, sometimes in small groves and sometimes scattered. The species of this palm found in the eastern Andes produces less wax than the Quindio variety, which is very similar in its product to the "carnauba" wax of Brazil and the "candelilla" wax of Mexico, except that the melting point (93° C.) is higher, that of carnauba wax being 84° C. and of candelilla 70° to 72° C.

This wax is produced by the leaves of the palm and also scraped from the trunk in the form of a hard, brittle, yellowish-brown or grayish substance. It is refined by throwing it into boiling water. It has been used for centuries by the natives of the Andean region for making candles, but has never been exported in commercial quantities from Colombia, nor has any organized attempt been made to exploit it.

Like the carnauba palm of Brazil, the ceroxylon palm of Colombia serves a number of domestic purposes. The long boles are used for fencing and for hut construction; the heart, called "palmito," is a palatable food; the roots possess medicinal qualities; and the fibers are employed for the manufacture of crude homemade brooms, ropes, mats, etc. The palm has the ability to withstand extreme drought, which makes it especially valuable. The wax yield varies, but on

an average about 10,000 leaves are required to produce 100 pounds of wax.

The wax is employed in many ways in modern industry. Its high melting point and ability to take a high gloss when polished make it a valuable ingredient in floor and furniture polish, phonograph records, cable coverings, electrical insulation compositions, tailors' chalk, carbon copy paper, etc. The industry in Brazil has increased greatly since the outbreak of the war. Hamburg was formerly the principal market, but large quantities went to Liverpool. There are different grades of carnauba wax—"yellow floor," "yellow prime," and "yellow." The last two grades are derived from the older plants and bring lower prices. Carnauba wax is refined in industry by remelting and straining, and it is bleached by treatment with potassium dichromate or with Fuller's earth. Paraffin is often added to lower its melting point.

"Quika" resin is a new product found throughout the Goajira Peninsula of Colombia. It is produced by a small tree (*Cercidium spinosum*, *Tulsane*), the branches and trunk being covered by this resin, and also the roots when exposed to the action of the air. A single tree is said to yield several pounds of the resin, and, as the tree is very abundant in certain parts of the Peninsula, it is thought that, if the product is commercially useful, it might be exported. Samples have been sent by the agricultural department of the Colombian Government to Europe and the United States for analysis and introduction to commerce.

The Indians of the Pasto region have an ancient industry in making the celebrated "Pasto" varnish, which they color and use for covering gourds and wooden utensils of various kinds. This varnish is also the product of a palm, possibly related to the cyroxylon palm of the regions farther to the north.

OILSEEDS AND PALM KERNELS.

A variety of palm-oil nuts is found in Colombia, but the industry is not exploited to any extent as yet, though a recent effort to establish an oil mill at Barranquilla has been made by an American vegetable-oil expert associated with a Colombian. This new plant is to crush the "corozo" palm nuts and refine the oil for export, principally to France, where there is a better market than in the United States.

The corozo palm is abundant throughout tropical Colombia and is found in great numbers in the Carribbean coast regions, where it grows in the dense forests. Where lands have been cleared for cattle pastures, these palms are left to afford shade, and it is planned at some future date to utilize them for vegetable oil, which these nuts contain in a very high percentage and of rich quality. This oil has long been extracted and used by the Indians and Negroes of the tropical regions as a sort of vegetable butter and food product. The corozo nut is similar to or the same as the "cohune" palm nut of Central America. It grows in all localities of the Magdalena River Valley and also in the lower Cauca Valley, in the west-coast region. The yield of nuts from the palms is very heavy, 100 pounds or more being produced by each plant every season, and the percentage of extraction of oil is also rather high. This product should be important for the coast regions and the Magdalena Valley, since these nuts

are easily gathered in great abundance over a wide area; but the trouble is the lack of labor and the high cost of freight, amounting to about 5 cents per pound from the interior of the Magdalena Valley via the river to the coast towns. In 1915 Señor C. T. Matias, of Bogota, was given a concession by the Colombian Government for 20 years to export corozo and other palm nuts from the region of the Chiriguana River in the Departments of Santander and Magdalena. It is to be hoped that the small oil mill established at Barranquilla will prove to be the beginning of a new and profitable industry for the country.

Other oil-producing palm nuts are the "tucan," commercially known as "Panama kernels," which are harder and tougher than the ordinary palm kernels or copra and yield from 37 to 48 per cent by weight of a cream-colored, fatty oil similar to that of the ordinary palm kernels, but with a slightly higher melting point. The tucan kernels bring \$5 to \$10 less per ton than the fine "palm" kernels of Panama and Central America. Other varieties of palm kernels are produced and shipped from Brazil, Paraguay, Ecuador, and Venezuela.

COCONUTS.

The principal coconut-producing region of Colombia is the coast southwest of Cartagena, where there are a number of small groves owned and farmed by the Negroes and mulattoes of the region. This is the only section of the Colombian coast where coconuts are grown in anything like commercial quantities, though the palms are found from Rio Hacha to the Panama boundary and all along the Pacific coast, where they produce better farther south in the region of Tumaco, out of the heavy-rain belt.

The coconut is a staple article of diet among the people of all classes on the coasts, in the river valleys, and even as far inland as Medellin. Local market prices range at times as high as 20 cents per nut, higher than the export price paid for coconuts at Colon, and this factor, combined with the low production, prevents the nuts from attaining any great importance as an article of export, although there is every indication that conditions are very good for extensive plantations of the palm along the coast from Cartagena toward the Bay of Uraba. At the present time the largest and more frequent groves are along the shore of the Gulf of Morrosquillo, near the mouth of the Sinu River, west of Cartagena, and the nuts are brought into the Cartagena market in small launches and sailing canoes of the natives.

There is also a considerable trade in coconuts with Colon, carried on by small schooners which trade with the natives along the coast, exchanging "trade goods" (principally cheap cotton textiles) for nuts, platinum, gold dust, dried beef, and the like—lard and live poultry also being items in this traffic, which is mainly contraband in its nature.

The value (in United States currency) of the coconuts exported from Cartagena to the United States during six recent years has been as follows: 1914, \$31,798; 1915, \$1,870; 1916, \$35,176; 1917, \$18,626; 1918, \$2,656; 1919, \$5,369.

The falling off of exports of coconuts in 1918 and 1919 has been caused by the increase in schooner trading with Panama, as noted,

and the lower prices being obtained for copra in the United States, making it more profitable to market the raw nuts locally in Cartagena for domestic consumption. The increase of candy making in the interior, principally at Medellin and Bogota, where modern candy factories have been started, is also one of the reasons for the better domestic demand for coconuts. Another factor is the movement of the population, which is coming in from the outlying districts to the coast cities, being attracted by the factory employment, the better living conditions, and also the better wages procured in dock and freight work, etc. This movement tends to decrease the output of foodstuffs in the interior and make the demand greater in the cities of the coast.

For these reasons the values placed on groves is high as compared with those in the islands of the West Indies, Central America, Mexico, and the South Sea islands, a grove being valued at the rate of \$5 for each producing palm over six years of age. Each palm is estimated to produce a net return of \$1 each year and to produce 20 per cent annually of its valuation.

It can not be predicted that the production of coconuts will increase in Colombia; labor is too scarce, even though conditions are good. Recently quite large shipments have been made from Tumaco and Buenaventura. In the first-named region conditions are ideal on the low, sandy islands or coast reaches removed from the line of the open seas and the danger of heavy winds. The production seems to be slightly increasing around Tumaco, but labor is lacking for any great improvement.

TANNING BARKS AND EXTRACTS.

Of tanning materials Colombia exports three kinds, mangrove bark, divi-divi pods, and quebracho wood—the last-named in small amounts, however. The prepared extract of mangrove bark has also been exported to the United States from Cartagena, where a large factory was erected several years ago which finally proved to be a failure and has since suspended operations.

Mangrove bark is gathered in the regions of Barranquilla and Cartagena, the latter district containing the largest fields of mangrove swamps, which are also found in large areas along the delta of the Sinu River to the southwest of Cartagena.

The divi-divi (*Caesalpinia coriaria*) is found in abundance in the region of the Goajira Peninsula to the east and south of Rio Hacha, the tree growing in a sandy soil mixed with clay, in a semiarid region. The pods that contain the tanning extract are gathered by the natives and exported from the port of Rio Hacha. It is one of the principal exports of this part of the country. For particulars of divi-divi and all other tanning materials of Colombia, the reader may be referred to Special Agents Series No. 165, "Tanning Materials of Latin America," pages 16-29.

During the war divi-divi reached a price of \$75 per ton. A firm in Barranquilla contracted with New York importers to deliver divi-divi for \$30 per ton but failed to make such delivery. Ocean freights on divi-divi, which is usually handled by small sailing vessels, were \$8 per ton before the war and are now \$24 per ton from Colombia to New York. Rio Hacha produces 6,000 tons annually,

and most of this has gone to the trading companies at Curaçao in small schooners, although an American firm specializing in the importation of tanning materials did have three schooners of 800 tons each which they sent to Rio Hacha and Maracaibo in Venezuela for divi-divi and mangrove-bark shipments, taking down trade goods in exchange.

The stowage of divi-divi packed in sacks is 110 cubic feet to the ton. The process of baling it for shipment was a failure, and the pods must be packed in fine bags to prevent the loss of the fine powder which coarse material would permit to sift out and become lost in transit. This powder lies against the pods but not in them and, when dry, is dusted off easily.

Before the war the Germans practically controlled the tanning-material market of South America, and American tanners and importers were forced to buy from Hamburg and reship to the United States. The largest depot of supply of divi-divi is at Curacao, or at Rio Hacha in Colombia, where, in December, 1918, there was 500 tons available for immediate exportation, with no ships to carry it.

Imports of tanning materials from Colombia to the United States are shown in the following table:

Tanning materials.	Fiscal year 1916.		Fiscal year 1917.		Calendar year 1918.		Calendar year 1919.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Crude:								
Mangrove bark.....tons..	790	\$13,220	442	\$9,169	3	\$75	230	\$5,764
Quebracho wood....do.....			170	2,887				
All other.....do.....		4,182		37,445		117		410
Extracts, other than quebracho.....pounds..	3,221,955	281,949	2,295,932	142,064	260,687	16,154		
Total.....		304,351		191,565		16,346		6,174

The value of exports of tanning materials from Cartagena to the United States during six recent years is shown below (in United States currency):

Tanning materials.	1914	1915	1916	1917	1918	1919
Divi-divi.....	\$2,600	\$4,132	\$16,414			\$1,336
Tannic extract.....	50,866	125,146	229,174	\$44,223	\$24,764	19

NOTE.—The quantity of tannic extract shipped from Cartagena to the United States in 1917 was 733,751 pounds, and in 1918, 375,881 pounds.

A summary of Colombian Government statistics for eight years gives the following totals of divi-divi exports:

[Kilo=2.2046 pounds; Colombian dollar=\$0.9733.]

Years.	Quantity.	Value.	Years.	Quantity.	Value.
	<i>Kilos.</i>	<i>Colombian dollars.</i>		<i>Kilos.</i>	<i>Colombian dollars.</i>
1906.....	3,531,113	124,389	1910.....	3,998,446	91,369
1907.....	5,831,827	186,118	1915.....	1,375,958	48,047
1908.....	4,688,046	125,766	1916.....	4,688,685	134,826
1909.....	3,873,272	100,588	1917.....	1,615,385	52,474

NOTE.—These figures show the total export returns from all shipping ports of Colombia and include the amounts exported from Rio Hacha, the principal shipping point for this product, whence exports go to Curaçao, Dutch West Indies.

CHICLE.

Although several species of the "zapote" tree are found in all tropical regions of Colombia, in only two regions of the country has the industry of the collection and exportation of chicle gum become of any great importance—namely, the Magdalena River Valley and the Pacific coast. In the river valley the region exploited is that of the Department of Santander, lying to the east of the Magdalena, along the Sogamoso River. On the Pacific coast the principal territory is the Atrato River region above and below the town of Quibdo, though exports of "lirio" gum are beginning to be made from the Pacific port of Buenaventura, which receives chicle and lirio gum from the valley of the San Juan River, south of the Quibdo district—the latter region exporting via the Gulf of Uraba down the Atrato River and via Cartagena.

Prior to 1917 the existence of the zapote tree in Colombia was little known, exports of chicle gum to the United States in 1916 amounting to only 5,218 pounds, valued at \$1,784, and even less in 1917, when 2,010 pounds, valued at \$515, were exported to the United States, the only purchaser of chicle from Colombia.

The disturbed condition of Mexico attracted attention to Colombia, and an inspection of the Colombian forests was made by a Mexican chicle expert, who discovered large areas containing this valuable tree but who was obliged to show the natives how to select the trees for tapping and how to tap the trees, collect the gum, refine it, and pack it for export. Dealers at the principal seaports, Cartagena and Barranquilla, were encouraged to trade for chicle with the natives of the interior, and owners of large tracts of virgin forest lands were urged to organize exploitation of their lands. During the war prices were high, averaging 70 cents per pound and stimulating interest in this product for export, but early in 1919 prices paid in New York by importers dropped to as low as 42 cents; traders were not pushing the business under these conditions and were holding quantities on hand for better market conditions.

It is reported that the zapote tree is very abundant in the tropical forests of Santander and also throughout the entire Atrato and San Juan River regions of the Pacific coast, with additional reports of extensive areas in Narino in the region of the Patia River Valley, from which small quantities have recently been exported through Tumaco. The trees, however, do not occur in dense groves but are scattered throughout the forests, and trails have to be cut through the jungle, camps established, and natives induced to engage in the work. As a rule, labor will work at gathering this gum only during

certain seasons of the year—that is, during the dry season and when not engaged in planting corn, etc., on a small scale along the larger rivers. The Negroes of the Atrato region go into the forests for chicle, lirio, and balata gums when not engaged in placer mining for gold and platinum, and the industry is carried on in a very irregular manner, trading being through stores in Quibdo, Istmina, or Negria. These stores are branches of importers and exporters of Cartagena or Buenaventura, the trade being carried on by exchange, principally of cheap cotton textiles.

It has been found very difficult to get the natives to deliver the unadulterated chicle gum or to adopt better methods of cleaning. Very often the gum is mixed with other more easily procured gums, and the natives seem to be experts at this sort of adulteration for their own gain. Methods of cleaning consist merely of boiling the sap and washing it in water while still warm, when the mass is pressed into wooden molds to form "bricks" for export. As a rule the gum is of a dark brown color, but this depends upon the length of time of boiling and the amount of washing it has received. Very often shipments to the coast from the interior have to be reboiled and cleaned before being exported. Underboiling causes the gum to be quite white but brittle, while overboiling gives it a very dark color and bad appearance. The chicle of Colombia is inferior to that of Mexico and commands a lower price.

The purest and best chicle of Colombia comes from the Sogamoso region in Santander, moving down the Magdalena River from Puerto Wilches by river steamer and being exported to the United States via Barranquilla. On the Pacific coast there are a great number of "lirio" trees (a species of the "zapote"), these being much more plentiful in this region than the true chicle-gum tree. Lirio gum is gathered in the same manner and sold under two local names—"lirio" gum when exported through Cartagena and "cauchillo" gum when exported through Buenaventura from the San Juan region south of the divide between the Atrato and the San Juan Rivers. Lirio gum looks very much like real chicle and is used as a substitute for chicle and rubber. On the Pacific coast, balata gum (rubber) is often mixed with lirio gum, the balata being much more plentiful. Shipments ready for export show no uniformity in character. "Cauchillo" gum should not be confused with some kinds of rubber which are also called "cauchillo" in the southeastern part of Colombia. "Cauchillo" is also the name given to lirio gum handled at Buenaventura.

During 1918, 86,585 pounds of chicle and lirio gum, valued at \$41,450, were shipped from the port of Cartagena to the United States. Exports to this country from Cartagena during 1919 amounted to 84,022 pounds, valued at \$37,445.

From Barranquilla the shipments of cauchillo (chicle) to the United States were: 1918, 226,872 pounds, valued at \$65,233; 1919, 465,043 pounds, valued at \$136,554.

The total imports of chicle and lirio gum from Colombia by the United States in 1918 were 690,496 pounds, valued at \$278,654, while in 1919 the quantity was 1,777,747 pounds and the value \$570,864.

It is doubtful whether production of chicle by Colombia will be much increased in the future. The trees exist in great numbers but

are scattered through the jungles in the most inaccessible regions, and the labor situation, as explained, is also difficult unless very high prices can be obtained for this forest product.

RUBBER.

Various kinds of rubber trees are found in Colombia over a wide range of territory and there have been numerous efforts, on a more or less limited scale, to cultivate the better grades of rubber trees, these plantations being located near the mouth of the Atrato River, in the Department of Santander in the interior, and on the west coast inland from the southern port of Tumaco. At this last-mentioned point, an English rubber planter has been interested in developing what are regarded as ideal tracts of land. The chief difficulty in the development of rubber plantations has been the lack of dependable labor in the tropical districts suited to rubber-tree cultivation; and the low prices obtaining during recent years, based on the supply from Brazil, have been discouraging to native planters, who have always had many other more attractive means of investing surplus capital. A rubber plantation on the Atrato River, owned by a wealthy and progressive Syrian merchant of Cartagena, contains 160,000 trees, but has been allowed to remain idle because of low prices. This is the largest rubber plantation in Colombia. In the region of the Magdalena Valley in Santander there are some 10,000 rubber trees under cultivation by private interests which are endeavoring, slowly, to develop the industry in that region.

Undoubtedly, the largest areas of rubber trees exist to the south in the region of the Amazon watershed, along the headwaters of the Putumayo and Caqueta Rivers. Colombians have established rubber trading posts at various points on these rivers, but this territory has been invaded by the rubber traders from Iquitos in Peru. Rubber gathered in this district moves out through Iquitos in Peru, as that is the shortest and easiest route. The nearest Colombian town of any importance is Pasto, itself inaccessible from the sea. The rubber going through Iquitos is not counted in Colombian export returns as originating in Colombia.

A census taken in 1909 in the Choco Territory showed a total of 1,197,728 rubber trees planted or claimed in ownership in the Rio Atrato district, possibly the largest source of rubber in the country outside of the "selvas" of the Amazon watershed.

Some rubber is brought into Neiva, the capital of Huila, near the headwaters of the Magdalena River, but this rubber is gathered to the southeast over the Eastern Cordillera on the Amazon watershed. This rubber finds its way down the Magdalena to Barranquilla or Cartagena for export. To the east, on the Apaporis and Vaupes Rivers, Colombians have established themselves more firmly in the rubber trade and have brought under their control several tribes of robust Indians. Large areas of the forests have been opened for rubber gathering, of both the balata and the Para species, but the trade is all down the Rio Negro to Manaos on the Amazon. The annual production of rubber from this region is said to be in the neighborhood of 125,000 pounds.

For a complete description of the llanos and selvas of Colombia and of the rubber country to the south along the Caqueta, Negro, and

Putumayo Rivers, the reader may be referred to "Colombia," by Phanor J. Eder.

The rubber industry in Colombia suffers from lack of labor and transportation, and it is doubtful whether the present rate of export of this product will be greatly increased unless extraordinarily high prices for rubber in the United States or Europe attract renewed interest in planting rubber trees and increased activity in the wild forests of the Amazon watershed.

Imports of rubber from Colombia into the United States have been as follows:

Kinds.	Fiscal year 1916.		Fiscal year 1917.		Calendar year 1918.		Calendar year 1919.	
	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.
Balata.....	106, 727	\$39, 206	540, 616	\$243, 322	316, 520	\$136, 058	197, 113	\$80, 425
Gutta-percha.....	696	190						
India rubber.....	750, 126	327, 023	1, 317, 509	492, 432	884, 792	356, 226	699, 790	273, 975
India-rubber substitutes.....				1, 521				

Rubber ranks eighth as a Colombian export, being just ahead of tobacco. The rubber exported from Colombia in 1917, not counting that which moved out of the country via the Amazon River and Iquitos in Peru, was valued at 723,043 Colombian dollars (1 dollar = \$0.9733 United States currency), this including all kinds, from all ports.

The largest rubber-producing area in Colombia (except the "selvas" region) is the territory of the Choco Intendency, in the Atrato River region, where more attention has been given to rubber cultivation and trading. This product is handled through Cartagena, on the Caribbean coast.

As has been said, the rubber-gathering industry is the principal one in the great, wild, little-known southern territory, the rubber hunters and traders from Iquitos and Manaos being the most active agents in this territory. On the banks of the Apaporis and Negro Rivers, Colombians have also organized rubber gathering and trading settlements. Throughout the rest of the country, except in the cases of the few plantations, rubber trading is carried on by merchants of the coast who have branches or agents established in places like Quibdo, in the Choco Intendency; Barbacoas, inland from Tumaco; and Negria, on the San Juan River, in the district north of Buenaventura. These branch stores exchange trade goods (principally cheap cotton textiles and the like) for rubber brought in by the natives, Indians as well as Negroes, who go into the forests during the dry season and tap the trees, the various families or groups having their mutually defined forest areas which they keep open and accessible by cutting trails with machetes. This trade is especially well organized and cared for in the Atrato River region, where the Syrian firms of Cartagena have several important branches, with ramifications throughout the small Negro villages of the river country. These store branches also deal in platinum, gold, lirio gum, chicle, aigrette feathers, cedar and mahogany, and other products such as sarsaparilla, ipecac, etc.

The main stores in Cartagena are always in touch with the New York market through their agents, usually export commission houses, and they keep their branches well informed of price fluctuations, trading then being based upon these prices, with a very careful estimate of freight costs, etc. The main difficulty has been in guarding against adulteration of the gum by the native gatherers, who are well acquainted with the plant life of the forests and are adept in mixing in other gums that are more easily gathered than the valuable rubber and that can not be detected except by expert test and examination. The tales of loss suffered by inexperienced rubber traders at Cartagena alone would fill many chapters, and this is shown to be a business in which only the initiated can engage without the prospect of loss.

The rubber production of the Choco territory was curtailed during the war years by the high prices that were being paid for platinum, which attracted many more workers to the placer rivers and streams of the district.

Conditions of soil and climate appear to be ideal for rubber planting inland from the Pacific port of Tumaco, where there is river-steamer transportation to the seaport and wide areas of suitable land that can be secured for a very low price. Here the climate is not quite so bad as in the Choco region. The difficulties are the usual ones—principally lack of sufficient and reliable labor. The average Negro or mulatto in this region much prefers to work for himself; he erects a tiny thatched hut along some river, puts in a few plantains and a few stalks of sugar cane, and then, with his dugout canoe and with fish and the fruits of the forest for the taking, he is very independent of outside employment of any kind. When money or trade products are needed with which to secure cloth, a machete, or other necessities of domestic or foreign manufacture, he goes into the forest and gathers his own rubber or tagua nuts in a few days, trades them for what he wants, and is again at leisure for a long period.

TAGUA (VEGETABLE IVORY).

The tagua, or so-called ivory, nut is the seed of a species of palm (*Phyteliphas macrocarpa*, Retp.) which grows wild in Peru, Ecuador, the western part of Colombia, and the interior of Brazil. The ivory nut when dried and cut has the appearance of ivory and can be sawn, carved, polished, and dyed with ease, being used extensively in the manufacture of buttons, drawer knobs, toys, and fancy goods, taking the place of bone and ivory.

The tagua palm is of "social habit" and is found in groves over considerable areas, generally in wet and heavy clay lands. The palm is from 10 to 20 feet in height and begins to bear at the age of 6 years. Only the female plants bear fruit, about 50 per cent of the plants being female. The nuts are borne in pods, or heads, which weigh about 20 pounds, are the size of a man's head, and have from six to nine nuts each. The nuts are the size of a small potato, oval in shape, fine grained, of hard, white composition, and approach real ivory in all their characteristics.

The Colombian Government grants free exploitation of the tagua groves to the people of the country but has placed on the nuts a 3 per cent ad valorem export duty, which is collected at the port of export.

Tagua nuts are gathered in many regions of Colombia, but the heavy and bulky nature of the product and its low price in relation to weight and volume confine the industry of gathering the nuts to the regions adjacent to the coasts or navigable rivers through which there is easy and cheap access to the market points. Tagua is gathered all along the Magdalena River in Colombia as far up as Puerto Berrio, the principal river shipping point being Carare, at the junction of the Carare River with the Magdalena, just below Puerto Berrio and about 460 miles from Barranquilla. In this district of the Department of Santander there seem to be large natural groves of the tagua palm—greater than in other accessible places along the river as yet available. Gathering tagua nuts is the principal occupation of the natives of this district. Not much tagua is handled by the river steamers, however, the freight rates being too high. The chief means of transporting the nuts down to the coast is by crude native rafts of lumber and bamboo, which are sold with the cargo of nuts at Barranquilla after floating down the river.

There are great quantities of these palms along the coast to the north of Buenaventura, and many small traders are engaged in gathering the nuts and transporting them to Buenaventura and Panama for marketing, using small sloops and schooners for this trade. The nuts are brought down to the coast in canoes by the negroes inhabiting this region, who receive trade goods in exchange. The same condition applies along the coast to the south, as the tagua palm is very abundant as far down as Ecuador and Peru, Ecuador exporting the largest amount of any country in South America. Considerable amounts of tagua nuts are also shipped from Cartagena, coming in from the Atrato River and coast regions southwest of that port. Barranquilla exports the nuts that come down the river from the Magdalena Valley country.

The gathering of the nuts presents no great difficulties beyond that of transportation. All that is required is to pick the nuts up from the ground after they have been dropped from the ripe pods. Trading is carried on by the merchants of the coast cities, who buy the cargoes of tagua nuts sent in by traders of the interior, thus controlling the market. At the present time these merchants are in turn dependent upon the market in the United States for their sales of the ivory nuts, although before the war Great Britain and Germany took large amounts, Germany being the largest consumer. The cutting off of the German market during the war so affected prices that great quantities were stored at shipping points, principally in Ecuador, to await more favorable conditions. Merchants dealing in tagua nuts were offering such low prices that the natives would not gather the nuts at all.

Button making is, of course, the principal use to which the vegetable ivory is put, though it has many other uses, such as for chess men, umbrella handles, poker chips, etc., and is worked up into a great variety of ornaments and fancy goods of many kinds. The process of ivory button manufacture is varied, complicated, and requires many different kinds of machinery. The West Indies, Central and South America use annually about \$2,300,000 worth of buttons and manufacture no buttons of any kind themselves, according to a report compiled by the Pan American Union (October, 1917). The Button Manufacturers Corporation, of Newark, N. J., has estab-

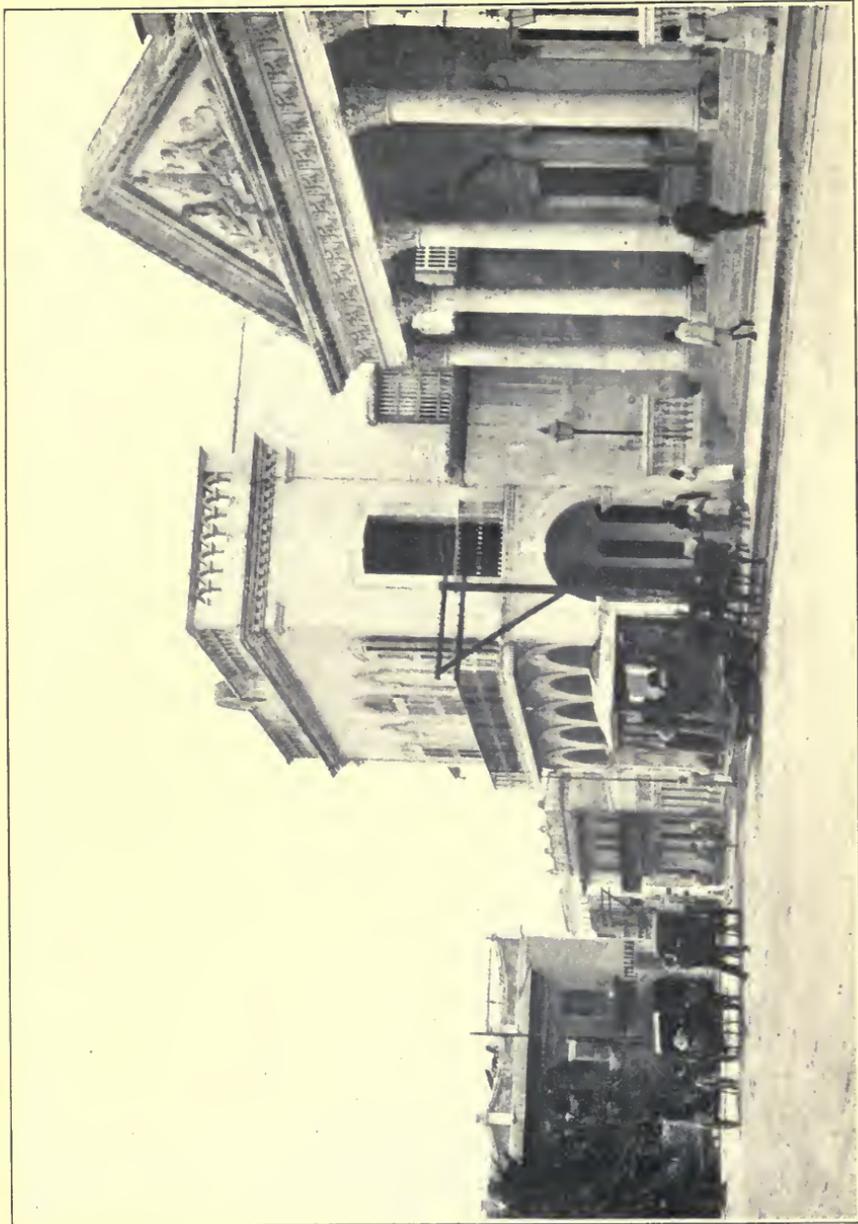


FIG. 4.—PLAZA SAN NICOLAS, BARRANQUILLA (BANCO MERCANTIL AT RIGHT).



FIG. 5.—STREET SCENE, BARRANQUILLA.



FIG. 6.—RIVER BOATS AND DUGOUTS AT WATER FRONT, BARRANQUILLA.

lished a button factory at Panama City (1917) to make buttons from vegetable ivory; this plant is capable of working up 100 tons of raw material per month. It is planned to increase this capacity to 6,000 tons per year. The nuts used come from Ecuador, Colombia, and Panama and must be dried for three weeks before being cut into button slabs. Only native labor is employed.

Nuts shipped from Cartagena are gathered in the-Sinu and Atrato River districts and brought into Cartagena in barkatoons. Usually the lots are mixed and it is necessary to dry and sort the nuts, and sometimes shell them, before they are exported. Naturally, the well-dried, sorted, shelled nuts command the best prices in foreign markets. Little care is used in gathering the nuts and, on account of the mixed lots containing a high percentage of defectives, "Cartagena tagua," as it is known, does not equal the Ecuadorian nut. No attempt has been made to cultivate the tagua palm, probably because it grows in profusion in the districts where wild rubber is found.

In normal times Germany was the best market for Cartagena ivory nuts, and Italy took a smaller share, but required high-grade nuts. Cleaned nuts (shelled) bring as high as \$75 to \$90 per ton at times.

As has been said, Ecuador is the largest producer of the vegetable ivory nut, having, in 1913, shipped nuts to the value of \$2,000,000. Colombia exported in the same year \$900,000 worth, or 11,600 metric tons, giving an average value of \$77.57 per metric ton. Prices for Colombian tagua reached the high level of \$128 per ton in Germany in 1914. The export tax of 3 per cent charged on nuts gathered from Government lands is calculated on the ruling price obtained in the market.

Imports to the United States of tagua from Colombia are shown below:

Years.	Pounds.	Value.
		<i>U. S. currency.</i>
Fiscal year 1916.....	11, 119, 019	\$335, 545
Fiscal year 1917.....	14, 423, 369	494, 806
Calendar year 1918.....	10, 782, 517	386, 720
Calendar year 1919.....	5, 534, 369	254, 828

Colombian Government statistics give the exports of tagua from 1906 to 1917, inclusive, as follows:

[Kilo=2.2046 pounds; Colombian dollar=\$0.9733.]

Years.	Kilos.	Value.	Years.	Kilos.	Value.
		<i>Colom- bian dollars.</i>			<i>Colom- bian dollars.</i>
1906.....	5, 354, 276	192, 661	1912.....	11, 598, 512	754, 708
1907.....	7, 521, 239	262, 657	1913.....	11, 650, 762	819, 422
1908.....	4, 419, 740	178, 334	1914.....	7, 120, 835	327, 086
1909.....	8, 457, 530	468, 796	1915.....	7, 056, 048	343, 264
1910.....	10, 096, 825	788, 096	1916.....	8, 555, 057	451, 292
1911.....	10, 989, 605	739, 420	1917.....	5, 135, 241	300, 898

INDIGO.

During the colonial days in Colombia the country produced large quantities of indigo, the Spanish colonists having large plantations of this product on the coast near Cartagena, where slaves were used for labor. With the attainment of independence and the freeing of all slaves the industry fell into a decline from which it has never recovered, and in modern times the invention of the aniline dyes has affected the market for all vegetable dyes, as is well known. However, small amounts of indigo are still shipped from Colombia. In 1915, \$3,093 worth was shipped to the United States, and in 1916 \$3,298 worth, principally from Cartagena.

HARDWOODS AND CEDAR.

For detailed information concerning the timber and lumber situation the reader may be referred to "Lumber Markets of the West and North Coasts of South America," Special Agents Series No. 117, pages 104-117. This contains the names, prices, uses, etc., of all native hardwoods of merchantable value, figures covering imports of foreign lumber, prices, and all other data.

The natural wealth of the forests of Colombia is very great, but for the most part they are inaccessible, and the many difficulties of transportation, the lack of labor supply, and the tropical climate are serious drawbacks. In the past the Government has given many concessions, often covering enormous tracts of land and with the exclusive privilege of exploiting the forests therein, but these concessions have proved failures, the hoped-for development of roads and new industries not resulting therefrom. There are several kinds of valuable hardwoods, used in the country for domestic purposes, and the forests contain much good hardwood, but the trees are very scattered. They do not occur in groves, and only one or two of the same species may be found on an acre, or possibly on a square mile—often in places where the cost of transporting to market is much too great.

Very little timber cutting has been done. There are a few saw-mills in the country located on the coast or on navigable rivers, the principal one being that of Abuchar Hermanos at Sautata, situated 30 miles up the Atrato River from its mouth and 6 miles from the sea in an air line. This mill has a capacity of 15,000 board feet of cedar daily, and plans call for the planting of 10,000 young cedar trees annually to supplement the supply of logs brought down the river by the natives for sale at the mill. Several American firms have been interested in the development of the lumber industry in Colombia, principally mahogany and cedar, but their experience has not been encouraging. One concern spent \$11,000 in reconnaissance work in the Magdalena Valley, but reported the undertaking as hazardous under any scale of operation. The main difficulty is the small number of trees of merchantable type on a given accessible area. To sum up the situation, the lumber industry of Colombia shows retrogression instead of growth; the demands of the accessible local markets are too small and the delivery costs too high to permit operations on any large scale.

Colombian "mahogany" is in demand in Europe and in the United States, but it is not the true mahogany, though considered the best imitation on the market to-day. True mahogany is said to grow in Colombia, but not in commercial quantities. The ordinary Colombian species is *Cariniana pyriformis*, true mahogany being technically known as *Svietenia mahogoni*. Botanically the two trees are unlike, though the woods are very similar in grain and color.¹

An American company erected a sawmill at the Pacific port of Guapi (in the Department of Cauca), south of Buenaventura, in 1916, being interested principally in the cedar thought to be abundant in this region, but the plant was closed soon after lumbering operations were started, and it is not in operation at the present time.

There are reports of considerable cedar and "mahogany" to be found at points along the coast north of Buenaventura and north of the San Juan River toward the boundary with Panama, but, so far as is known, no attempt has been made to log in this region.

The following are the estimated annual amounts of lumber imported from the United States into Colombia, based on normal demand:

Kinds.	Barranquilla.	Cartagena.	Santa Marta.	Medellin.	Bogota.	Total.
	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>
Southern yellow pine.....	1,000,000	600,000	60,000	.....	.....	1,660,000
American white pine.....	120,000	40,000	20,000	.....	.....	180,000
Native hardwoods.....	2,500,000	1,800,000	300,000	3,400,000	2,960,000	10,960,000
Other American woods.....	100,000	35,000	20,000	.....	.....	155,000
Total.....	3,720,000	2,475,000	400,000	3,400,000	2,960,000	12,955,000

Exports of cedar and "mahogany" lumber from the port of Cartagena to the United States during 1917 amounted to 1,277,249 feet, valued at \$63,863; during 1918 to 1,200,639 feet, valued at \$71,887; and during 1919 to 603,900 feet, valued at \$49,339. The amounts mentioned were composed principally of cedar which came from the Sinu River district and from the Atrato River, the lumber from the latter region being brought in to Cartagena by barges and tugs from the sawmill at Sautata, 30 miles above the mouth of this river, during the season of high water and going chiefly to Porto Rico for cigar boxes.

Colombian Government statistics show exports of all woods from 1906 to 1917, as follows:

[Kilo=2.2046 pounds; Colombian dollar=\$0.9733.]

Years.	Kilos.	Value.	Years.	Kilos.	Value.
		<i>Colombian dollars.</i>			<i>Colombian dollars.</i>
1906.....	4,276,038	92,331	1912.....	686,768	15,268
1907.....	6,342,538	117,381	1913.....	347,839	41,601
1908.....	2,738,458	49,565	1914.....	2,654,702	49,398
1909.....	5,558,957	101,290	1915.....	2,360,114	46,892
1910.....	6,197,184	124,109	1916.....	2,204,464	46,740
1911.....	5,394,742	123,685	1917.....	3,597,607	74,723

¹ See Forest Service Circular 185 (Washington, 1911).

There are no detailed statistics that would show the measurement of this wood or the kinds into which the above quantities are divided. The principal kinds were cedar and Colombian "mahogany."

United States customhouse returns show the following imports of woods from Colombia:

Kinds.	Fiscal year 1916.		Fiscal year 1917.		Calendar year 1918.		Calendar year 1919.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Cabinet woods, unmanufactured:								
Cedar.....	1,000 feet. 25	\$1,250	1,000 feet. 847	\$49,158	1,000 feet. 993	\$84,064	1,000 feet. 450	\$32,322
Mahogany.....	1,444	90,000	413	30,686	318	31,664	368	29,624
All other.....				70		51		
Lumber, sawed.....			35	1,520				

There is a small movement of hardwood and cedar logs from Tumaco and Buenaventura for transshipment at Colon to the United States, consisting principally of "mahogany" and "guayacan" (*lignum-vitæ*). These shipments are handled economically as deck loads on the two small steamers running between the Canal and the two ports mentioned.

GOVERNMENT REVENUE FROM FORESTS—EXPORT STATISTICS.

The Colombian Government receives a small annual revenue from forest products, such as the export tax on tagua at 3 per cent ad valorem. From March 1, 1918, to February 28, 1919, this revenue amounted to 16,721 Colombian dollars. The fiscal year ended February 28, 1918, produced 24,526 dollars.

Colombian Government statistics for 1916, under the general heading of "Vegetable products," give the following exports of forest products:

[Kilo=2.2046 pounds; Colombian dollar=\$.9733.]

Kinds.	Kilos.	Value.	Kinds.	Kilos.	Value.
		<i>Colombian dollars.</i>			<i>Colombian dollars.</i>
Indigo.....	3,070	7,326	Mate tea.....	996	102
Aloes.....	460	80	Mangle bark.....	780,397	9,743
Balsam of copalba.....	5,322	2,823	Woods.....	1,873,047	41,639
Balsam of Tolu.....	49,228	22,076	Brazil dyewood.....	142,000	2,440
Rubber.....	459,883	356,527	Dyewood, quebracho.....	70,000	1,100
Rubber, balata.....	124,011	95,210	Woods:		
Nispero gum.....	10,528	8,947	Mora.....	111,811	1,498
Cocanuts.....	698,265	30,185	Lignum-vitæ.....	7,500	60
Canine oil.....	237	680	Quinine bark.....	860	140
Divi-divi.....	4,688,685	134,826	Ipecac.....	29,717	90,611
Tannic extracts.....	1,261,531	108,039	Sarsaparilla.....	5,379	13,767
Copal gum.....	1,890	691	Tagua nuts.....	8,555,057	452,292

The Government returns for exports of forest products during 1918 are as follows:

Kinds.	Kilos.	Value.	Kinds.	Kilos.	Value.
		<i>Colombian dollars.</i>			<i>Colombian dollars.</i>
Indigo.....	650	1,600	Mangle bark.....	81,120	2,843
Balsam of Tolu.....	48,070	34,034	Mahogany and cedar wood..	2,402,000	73,995
Balsam of Copaiba.....	1,906	1,412	Other woods.....	115,620	3,019
Rubber.....	228,586	155,521	Quinine bark.....	2,925	960
Rubber, balata.....	455,449	315,823	Sarsaparilla.....	22,301	64,856
Canime oil.....	12,914	7,188	Ipecac.....	201	321
Coconuts.....	333,356	10,517	Algarroba resin.....	454	100
Divi-divi.....	3,237,621	123,636	Sande.....	39,854	35,980
Chicle gum.....	12,377	2,743	Cagua.....	6,352,311	387,202
Dyewoods.....	15,608	339	Coconut oil.....	16,546	2,320
Manufactured lumber.....	8,000	260	Co-rozo oil.....	36,200	10,503
Cedar logs.....	66,100	3,652	Castor oil.....	1,695	1,780

MINING.

INTRODUCTION.

During colonial times gold mining was the principal source of wealth and the main industry of the country, Colombia at that time being the chief gold-producing country of all the Spanish colonies in the New World, and second only to Peru and Mexico in all mineral production. It is estimated that, from the time of the conquest (1537) to 1882, a total of 876,774 kilos of gold (kilo=2.2046 pounds) were produced by Colombia, valued at \$582,704,000, with an additional \$47,000,000 worth of silver. Other estimates made in 1875 place the grand total of the production of gold alone as high as \$818,454,000, with an additional 6 to 10 per cent for silver.

Mining is still the principal industry of two great sections of the country, and it is thought by many that the great potential mineral resources of the country will ultimately prove of greater value than the agricultural, commercial, or industrial possibilities and will attract the greater share of foreign capital. The past history of mining in Colombia and the observations of modern investigators in the mineral field more than justify this interest. In three products alone Colombia possesses enormous resources—platinum, petroleum, and coal. Colombia is the chief source of platinum now that the fields in Russia are not being worked to capacity. Petroleum is a recent development, which promises a production of very high-grade crude oil in the near future. Coal is important on account of the proximity of the deposits, in several cases, to the Panama Canal, where coal is needed as fuel for the shipping that uses the Canal.

Iron deposits are found in the region of several of the coal deposits, but far removed from easy transportation to the sea. There are also many indications of copper, both to the east and to the west. Tin, quicksilver, lead, nickel, and other minerals are also found. There are great banks of diatomaceous earth, cement materials, asbestos, etc. In the Upper Magdalena Valley there are large asphalt deposits.

Two iron deposits have been worked, but on a very small scale. The less valuable metals have not been exploited on account of the difficulties presented by the topography and climate of the country and the general lack of easy and cheap means of transportation. The cost of importation and erection of modern mining machinery and equipment is very high because of the generally broken nature of the country, and only high-grade deposits can be worked with a profit under present conditions.

Before the discovery of gold in California and Australia, Colombia furnished the chief supply of gold to Europe. The official figures of the Government give the production of gold from 1876 to 1892 as 79,437 kilos, valued at \$52,792,973, and of silver, from 1880 to 1891, as about 234,000 kilos, valued at \$11,676,000. The following statistics of exports are not strictly accurate, on account of the large amount of gold dust and bars privately shipped out of the country

to avoid the payment of export taxes; the figures may be considered very conservative, to say the least.

Years.	Gold.			Silver.		
	Kilos.	Ounces, fine.	Value.	Kilos.	Ounces, fine.	Value.
1893.....	4,353	.....	<i>Colombian dollars.</i> 2,892,800	52,511	1,688,230	1,320,126
1894.....	4,339	139,516	2,892,800	52,511	1,688,230	1,063,610
1895.....	4,890	154,000	3,183,000	53,500	1,720,025	1,122,965
1896.....	5,416	174,165	3,600,000	51,200	1,646,080	1,104,384
1897.....	5,868	188,679	3,900,000	51,200	1,646,080	985,191
1898.....	5,567	179,003	3,700,000	51,200	1,646,080	971,187
1899.....	3,462	111,272	2,300,000	109,531	3,521,563	2,098,147
1900.....	3,462	111,272	2,300,000	87,089	2,800,000	1,719,480
1901.....	3,114	100,145	2,070,000	78,380	2,520,000	1,485,540
1902.....	3,561	120,831	2,500,000	.....	.....	.....
1903.....	4,098	131,785	2,724,000	.....	.....	.....
1904.....	2,970	95,520	1,974,000	.....	.....	.....
1905.....	2,970	95,520	1,974,000	31,103	1,000,000	603,500
1906.....	3,296	105,966	2,190,522	30,482	980,000	654,552
1907.....	4,898	157,471	3,255,311	.....	.....	.....
1908.....	4,530	145,649	3,010,565	.....	.....	.....
1909.....	4,660	150,000	3,100,500	.....	.....	176,127
1910.....	.....	279,342	3,369,941	.....	.....	407,690
1911.....	10,574	.....	3,751,632	.....	.....	210,233

GENERAL DESCRIPTION OF MINING IN COLOMBIA.

The following account is from "Colombia," by Phanor J. Eder, pages 168-178:¹

In general it may be said that the principal mining districts of Colombia are still those that were discovered and worked by the Spaniards, in the historical political divisions of Antioquia, Cauca, Santander, and Tolima. A mention of the countless placers and places where mines are worked or known would read almost like a gazetteer of those sections of Colombia; we can only mention a few of the more important regions, especially those that have most interested foreign capital.

ANTIOQUIA, THE PRINCIPAL MINING REGION.

Antioquia has always been the chief mining section, and still maintains its lead both for quartz deposits and placers. Many of its mines have been worked continuously from the Spanish, and even the Indian, days, without diminution. A French engineer says:² "The massif of Antioquia alone is perhaps the richest auriferous deposit in the world, and only awaits the hand of capital to show its immense value. * * * One can say of this region, extremely mountainous and full of ravines, cut in all directions by fractures or lodes, which are nearly all gold-bearing, that it constitutes an immense massif of gold. Barely the thousandth part of the deposits has been worked. There is gold everywhere—in variable proportions, it is true, but nearly always in workable and paying quantity."

Of the alluvial mines, the most actively worked to-day are those of the Cauca, Porce, and Nechi Rivers and the numerous mountain streams, "quebradas," that flow into them. The Porce flows into the Nechi near Zaragoza, the chief town of the region, whence there is steam navigation via the Nechi, the Cauca, and the Magdalena to Barranquilla. The vast amount that has been washed from the auriferous sands of this region has not in the least impaired the present yield; the production by the natives, who prefer to work on their own account, even if only on a small scale, is very large and a number of foreigners, especially Americans and French, are successfully working with hydraulic monitors on a large scale, and undertaking extensive ditching and tunneling.

¹ This is reproduced because it presents the most concrete and comprehensive description of mining in general, conveying an excellent idea of the industry in Colombia.

² Demangeon: *L'Industrie Aurifère en Colombie* (Paris, 1906, 1907). See also Granger and Treville: *Mining Districts of Colombia* (Tr. Am. Inst. Mining Eng., vol. 28, 1898).

The most interesting developments now going on are for the dredging operations of the Pato Mines (Colombia) (Ltd.), a subsidiary of the Oroville Dredging Co., which has had such remarkable success in California. The company has already expended (1911)—exclusive of the purchase price of its properties, which were paid for in shares—considerably over half a million dollars, and will require for its permanent dam (to be a concrete structure 65 feet high, and requiring 15,000 cubic yards of masonry—it will be the finest in Colombia) an additional \$174,000, besides other large expenditures. The company's bench gravel deposits in the Pato basin have been thoroughly proved by boring, special attention is being paid to sanitation, and, with the company's experience elsewhere and its resources, this enterprise will undoubtedly prove a success and redeem the rather unfortunate past history of dredging in Colombia. Development on a large scale, preparatory to dredging operations, is also being undertaken in the vicinity of Caceres by another American corporation, the Breitung Mines Corporation.

Vein mines were opened in Antioquia as early as 1581, and worked all during the Spanish dominion, but with comparatively meager results, due to the crude methods employed. In 1825 some rich veins near Anori were worked, and soon after an Englishman, Mr. James, erected the first mills in the country to crush the Anori ore and his example was soon followed, especially at Amalfi, Remedios, the Bolivia, Zancudo, and Frontino mines. In 1851 Mr. Tyrrell Moore, another Englishman, established a smelting plant at Titiribi for the auriferous ores of that rich region, including the Zancudo mines, whose owners, however, erected their own smelter under a German miner, Reinhold Paschke, and Moore's works, after an expenditure of £120,000, failed. Several other disastrous failures, especially of English companies (the British have gone in more for quartz mines, the Americans showing a preference for placers) have marred Colombian mining history, but, where not due to the introduction of machinery at a greater expense than the circumstances warranted, they have been of a character to impeach the quality not of the ore, but of the management, and are more than redeemed by the long and successful history, not only of native enterprises but of other foreign mining companies.

One of the most notable of the latter is that of the Frontino & Bolivia Mining Co. (Ltd.), which in 1852 bought the Frontino mine and several others in the neighborhood of Remedios (the most important of the mining sections of Colombia). After weathering early managerial misfortunes it has had a successful career, and has been almost constantly one of the best managed and most profitable mines in Colombia. Of late years working costs have been very high, expenditures and revenue almost balancing, but it is now making extensive additions in equipment, power plant, and new development, which will insure, according to its engineers, a net working profit of £3,000 per month. They report that its two principal mines, the "Salada" and the "Silencio," are still only in their infancy, and another property, the "Marmajito-Cogete," of great promise. Another important mine in the same district, thought by some to be of the same lode, is the "San Nicolas," worked by a French company; this mine was the first to introduce the cyanide process in Colombia.

Scarcely inferior to the production of the Remedios district is that of Titiribi. Here is the great gold and silver mine of "Zancudo," which we have already mentioned, and its annexes, owned and very ably managed by native Colombians³; originally worked for gold, later the silver output became by far the more important, having reached in some years three-quarters of a million dollars. It has the singular advantage, too, of being situated at the foot of an extensive coal deposit, and is also within convenient access of Medellin, the commercial center and political capital of the Department of Antioquia, the second in the Republic. An assay office was erected in Medellin in 1858 and two others in the early eighties. The mint for the coinage of gold and silver, closed for a number of years, has been recently reopened. There is also a very creditable school of mines where competent engineers are trained; the Antioquia people are born miners. The lower classes furnish an excellent quality of labor,⁴ which gives this generally healthful region [healthful only in the mountains above 5,000 feet elevation] a still further advantage over other parts of Colombia; among the middle and upper classes able engineers and mine managers are to be found. Some of the best-managed and most profitable mines in the country, besides the "Zancudo"—e. g., "La Constancia" and the "Solferino" at Anori, "La Cascada" at Manizales—are operated and engineered entirely by Colombians, and many Antioquenos have become wealthy in the mining industry.

³ A majority of the shares or rights is held by the Compagnie Unifiée du Zancudo (capital, 4,000,000 francs), the shares of which, in turn, are principally held by Colombians.

⁴ Labor, however, is scarce, as the men prefer to mine for their own account, and even high wages often fail to tempt them into the employ of the large companies.

REGION OF MARMATO AND SUPIA.

Another rich region is that of Marmato and Supia. The mines of that name belong to the Government, being leased out. In 1825 the London firm of Goldschmidt & Co. leased the mines and did much to improve the methods of mining. They are now under lease to the Colombian Mining & Exploration Co., of London, which pays the Government an annual rental of £3,200. Electric power is being installed, and a recent report says: "The energetic development at greater depths of one of the numerous group of mines leased to this company has given such excellent results and so fully confirmed anticipation that a 6,000-ton plant has been decided on and shipment already commenced." Near here are the "Echandia" mines, which made a celebrated fortune a few years ago for a Colombian named Chaves, and the "Pantano" mine, which has been successfully operated by the Western Andes Mining Co. All these mines are situated in the Western Cordillera not far from the Cauca River; throughout the whole extent of the mountains surrounding the Upper Cauca Valley some placer and quartz mines are worked, though hitherto on an insignificant scale. Recent purchases by French and Belgian syndicates, however, which in addition have purchased various options, promise a more active development. Farther south, around Pasto and toward the Ecuadorian frontier, a new rich region has been opened up in the last few years; several hundred mines have been denounced [located], especially in the districts of Samaniego and Mallama, and a number of English and Americans have introduced modern machinery and are working good quartz properties.

EASTERN SLOPES OF CENTRAL ANDES—EASTERN CORDILLERA.

On the eastern slopes of the Central Andes there are several localities of interest. The Mariquita region, which had fame in the Spanish days, is again active; in this range, too, are "Santa Ana" and "La Manta," Government-owned mines acquired by inheritance from the Spanish Crown, more interesting historically than of present-day importance. It was here that in 1785 a mining engineer of great note in his day, d'Elhuyar, was imported by the Viceroy to introduce the Freiberg process. During the 11 years he was in charge the expenses were \$232,641, against a gross product of \$27,247. Forty years later the English firm of Herring, Graham & Powles met with a similar experience, erecting smelting works at great expense, and in 13 years spending over £200,000 and taking out silver valued at £28,000. Subsequent working by them, however, was more profitable. The mines are now under lease to the Anglo-Colombian Investment Co., of London. The gold veins in the Tolima district, with few exceptions, are rich superficially but pinch out at a depth of 10 to 20 fathoms, alluvial gold washings being more abundant and giving better results. In this region the most important mines are those of the North Tolima Mining Co., of London, at Frias. Since their rediscovery in 1870 they have been continuously worked; in 1895 the annual output of silver was little less than \$800,000. The company was organized in 1910 with a capital of £100,000 and has been shipping some 1,600 sacks (65 kilos each) of silver a year by mule back to the Dorada Extension Railway.

The Eastern Cordillera is of far less importance than the other two, though gold has been discovered at a number of points. Here, too, was the greatest "bonanza" ever found in Colombia; the mine called "Pie de Gallo" yielded in a few hours 64 kilos of gold, but that was in Spanish days. At present the only important foreign companies are near Bucaramanga, the Francia Gold Mining Co., a French concern, especially having been particularly active in 1911 in acquiring title to additional mining claims.

RIVERS OF THE PACIFIC LITTORAL.

The rivers of the Pacific littoral are nearly all auriferous, several of them being strikingly rich. In the earlier days, the Barbacoas region was especially productive, but the abolition of slavery in 1851 crippled the placers. Again, in the sixties, there was quite a boom and an influx of California miners, but the climate proved a deterrent. Lately there has been a considerable revival of interest all along the coast; a French company has been established on the Timbiqui for a number of years, obtaining a steady, though not very large yield. An Australian company has also been at work, but its first attempts at dredging were unsuccessful. Nothing on a large scale has yet been done; such production as there is from this region is obtained chiefly by native laborers, who still continue the primitive methods of washing the sands in "bateas," the Colombian wooden substitute for the pan.

THE CHOCO REGION.

We have already had occasion in speaking of platinum to refer to the rich placers of the Choco region, the Atrato and San Juan Rivers and their tributaries. This also was a gold field little inferior to Antioquia in the days when slaves could be employed (the annual output at the beginning of the nineteenth century was about a million dollars); but until recently the difficulties of access, the bad climate and reputation for fevers, not wholly undeserved, and the decided inferiority of the labor (almost entirely Negro) to that of Antioquia have been deterrents. With an increased knowledge and modern practice of sanitation and scientific methods of overcoming obstacles, the Choco will again become one of the great gold regions of the world. Robert Blake White, the English engineer, who has contributed much to our knowledge of Colombia, said, speaking of the Choco: "I do not know of any rivers outside of Colombia where such favorable conditions for the extraction of gold exist," and his opinion has been confirmed by subsequent explorers. A well-known American mining engineer, Mr. Henry Granger, who has discovered and located more claims than any other man in this section and perhaps in the whole of Colombia, attempted dredging a few years ago, but failed; nothing daunted, he is at it again, with new financial backing from well-known mining capitalists of New York. And a great stimulus will be given this region by the Anglo-Colombian Development Co., of which mention has already been made. This company, in addition to its exploration work, is rendering a much-needed public service in establishing steamer communication on the San Juan River from Buenaventura.

COLOMBIA "NOT A POOR MAN'S MINING COUNTRY."

A useful note of warning is sounded by Consul Isaac A. Manning in Daily Consular Reports, October 31, 1912: "This is not a poor man's mining country. A prospector without capital stands little show in Colombia, largely because of the lack of transportation facilities, the rugged character of the country, the rigors of the climate, and the difficulties of securing supplies and food except at high prices. Principally, however, this is true because no quantity of 'panning' or 'rocker' ground is to be found from which the prospector can recoup his expenses. Scientific prospecting only will pay in Colombia. Very few paying ledges have been discovered, and they are frequently much disturbed and contain 'horses' of barren rock. That there are numerous deposits yet waiting discovery can not be doubted; but, as a general thing, these will be found, if placers, to carry such an 'overload' of surface materials as to require machinery for satisfactory prospecting or development; if quartz, to be of low grade and, in the main, to carry refractory ores. * * * Most of the gold veins in Colombia are of very refractory nature and can be worked to advantage only with the most modern and improved machinery and systems."

PROVISIONS OF MINING LAWS.

The mining laws are very liberal and every facility is given to the prospector to explore and denounce [locate] mines, not only in public lands, but in privately owned lands. There is liberality, too, in the grant of easements necessary for the proper working of mines, which are treated on the same basis as public utilities and the right of expropriation or condemnation given for their benefit. There is, however, considerable red tape, and sometimes there is apt to be much delay before final title is adjudicated by the Government, but the danger of "jumping" claims is reduced to a minimum. The expenses for locating claims, obtaining possession, and acquiring title are comparatively small, and the annual taxes are very low, and if the equivalent of 40 years' taxes is paid in at once, an indefeasible title in fee is acquired, exempt in perpetuity from future taxes.

Another feature of the law, while attractive from some standpoints, especially that of the large company investing heavily for plant and machinery and naturally desiring reserve ores in the neighborhood, has done much to hinder the mining development of the country, and that is, that so long as the taxes are paid no annual work whatsoever need be done in order to preserve the locator's rights. The consequence is there are a great number of mines which have been denounced and acquired (fully half of them) whose owners, for the lack of capital or of initiative, do nothing but wait for some one to come along and buy them out. And because of exaggerated ideas of the values of the properties, which they themselves have never scientifically explored, they often ask inflated and prohibitive prices. Consequently a large area of known good mines and mining land lies idle and unproductive because the owners will neither exploit them themselves or allow others to do so on reasonable terms. The policy of the law

fluctuated greatly on this point for many years, but the present system was finally adopted in 1896.⁵ There are, of course, two sides to the question: A reconciliation might perhaps be effected by amending the law as to future denouncements [locations], so as to require working except in cases where adjoining or near-by claims are held under the same ownership as mines in active operation. The law in regard to the use of waters might also be advantageously amended, so as to do away with the preference now given to the first discoverer of mines in the neighborhood, whether he works his mine or not, and likewise the procedure for assessing damages is susceptible of improvement, the present system giving plentiful opportunity for petty but annoying extortion.

A valuable privilege appurtenant to mining claims is the preferential right to an adjudication of a large tract of public lands in the vicinity of the "pertencia," as the mining unit of soil granted is called. As, with rare exceptions, the public lands in the mining regions are forest covered, this insures a supply of the necessary timber required for mining operations. The nation can well afford to be generous with its public lands and forests. Even apart from the great "llanos" and "selvas" of the Amazon and Orinoco watersheds, about one-third of the area of the country is still in the public domain.

Almost every known mineral of commercial importance exists in Colombia, but the future importance of the mining industry, other than gold and platinum mining, is dependent upon the development of better transportation by means of railways and roads. Numbers of mines and several rich mining regions are practically inaccessible, and mining costs would be excessive unless very rich deposits were discovered.

Foreign companies wishing to prospect for placer mining in Colombia should be prepared to furnish a large expedition, well equipped and having men experienced in the Tropics. Medical service should also be provided as a necessary requisite to the success of the work. Such properties can only be developed successfully by large capital, and the cost of operation and equipment is very great. The general opinion among practical and experienced mining engineers who know the country and conditions is that only the most valuable ground can be worked at a profit under present circumstances.

At the end of the year 1915 the number of known mines in five of the most important Departments of Colombia was 18,386—12,181 in the Department of Antioquia, 2,452 in the Department of Narino, 2,610 in the Department of Caldas, 641 in the Department of El Valle, and 502 in the Department of Tolima. In addition to this list, minerals, mostly gold, are to be found in the Departments of Santander and Bolivar, in the Choco Intendency, and elsewhere.

COPPER MINES.

Copper was mined by the Indians, and the industry was followed in a very primitive way by the Spaniards in Colombia during colonial times, but for local consumption only, the principal sources of the metal being obtained from rich oxidized ores found very near to, or on, the surface. Old copper mines exist in the Departments of Antioquia, Boyaca, and Tolima, those of Boyaca being worked in a small way and by very crude methods, to secure copper for kettles for sugar and soap making. The mineral is also known in the Departments of Bolivar, Cauca, Cundinamarca, Santander, and in Norte de Santander, where only recently, in the neighborhood of the town of Fonseca and also at Villanueva in the Valle Dupar district, an American engineer reported having examined large deposits of rich copper

⁵ NOTE BY TRADE COMMISSIONER.—See decision of Supreme Court re Petroleum Decree No. 1255 of June 20, 1919, dated Nov. 21, 1919. This recites the history of mining laws and legislation in Colombia.

ore, occurring in series of pockets near the surface and being very near to extensive beds of a fair grade of bituminous coal, about 150 miles from the Caribbean Sea at Rio Hacha, by way of the Goajira Peninsula country to the east of the Sierra Nevada Mountains.

In the Department of Cauca the principal deposits of copper occur at San Lorenzo, Coli, Pichinche, and Andragueda, but, like others in the country, these are not being worked and await better transportation facilities, which will be provided by the southern branch to Popayan of the Pacific Railway. As there is little interest in copper properties in Colombia at the present time, there appear to be no reports or studies of deposits of this ore from which data as to their nature and geology could be obtained.

GOLD MINES.

PRINCIPAL COMPANIES.

Gold is the most important mineral produced in Colombia, the exports of gold bars in 1915 amounting to \$3,580,108, of gold dust to \$1,126,904, and of gold coins to \$415,212. The Breitung Mines Co., a Delaware corporation capitalized at \$1,527,590, acquired some time ago the property of the Marquette Magdalena Co., situated near the town of Cáceres on the Cauca River in Antioquia. These claims were not worked, however, in 1916 and no dividends are being paid.

The Compañía Minera de Zancudo, with headquarters in Medellín, continued to operate the mines of "Zancudo," "Chorres," "Cateador," and "Muriel," carrying gold and silver values, and the small smelter located at Sitio-Viejo. The ores are silver and gold, with a higher percentage of the latter and with some copper as a by-product.

Great Britain has successfully entered the gold-mining field in Colombia, the most important of these British properties being the Pato mines, the Nechi mines, the Frontino-Bolivia mines, etc. The Pato mines cover an area of about 40,000 acres near the town of Zaragoza in Antioquia on the Nechi River, consisting of bench gravel gold-bearing ground. The company has a capitalization of £212,000, 8 per cent income notes and £100,000 shares, being affiliated with the Oroville Dredging Co., of California, which controls the property through ownership of £70,000 of the total £100,000 of the stock. The same company also owns the Nechi Mines (Ltd.), under the same management as the Pato Mines (Ltd.), through ownership of £70,000 ordinary stock. During the 10 months ended June 30, 1916, the yield of gold was valued at \$525,130.

The Pato mines and the other large vein and placer properties of the country were affected to a very great extent by war conditions. Not only was there a great increase in operating expenses and the cost of new machinery, equipment, and supplies, but taxation by the respective countries had the effect of suspending active production of gold, for the reason that the income tax took no account of the condition of the industry and had the effect of inducing the companies to leave the richest ground alone until such time as conditions are more favorable. The gold produced, instead of being exported (as was formerly the case, on account of the premium on London and New York exchange in Colombia), was sent to the Medellín mint for coinage when foreign exchange was at a discount, especially in 1919, the companies thereby reaping an additional profit on the purchase of New

York and London exchange at a heavy discount with Colombian gold coin secured from the Government mint at Medellin. However, the profits on exchange did not reimburse the companies for their extra heavy operating expenses during the war nor for the requirements of the income tax or corporation tax, making it unprofitable for them to work their best ground.

The Frontino & Bolivia Mines was registered in Great Britain in 1911, as the successor to a company of similar name incorporated in 1886, to acquire the original Frontino & Bolivia Co., which began operations in 1864. Mines covering about 5,000 acres are held near Medellin in Antioquia. The exports of gold amounted to £86,972 in 1912-13, £88,311 in 1914-15, and \$115,460 in the period 1915-16.

The Tolima Mining Co., another British corporation, owns the Frias silver mines and water-power rights at Tolima.

The Timbiqui Gold Mines (Ltd.) owns placer claims on the Timbiqui River, the properties covering rights to about 865 square kilometers of territory. Gold produced in 1913 was valued at £33,390 and in 1914 at £38,750.

The Colombian Mines Corporation (Ltd.) owns extensive mines in the Remedios district of Antioquia. Operations were started in 1883, and substantial dividends have been paid in the past. Leases on the "Sucre" and "Providencia" properties expired in 1913, and during the war operations have been suspended, properties being leased to other interests.

The Colombian Mining & Exploration Co., registered in London in 1908, owns leases and mining properties in the districts of Supia and Marmato and in the municipalities of Apia, San Clemente, Ansermaviejo, Sucio, Rio Sucio, Nazaret, and Marmato. The principal property is the Marmato Hill mine.

The Palenque Gold Mining Syndicate, formed in 1898, owns the hydraulic properties located at Palenque, near Honda, Department of Tolima; it leased the mines in 1909 to another company for 25 per cent of the profits.

Another foreign property is that of the Platinum & Gold Concessions of Colombia (Ltd.), a Belgian company, leasing alluvial platinum and gold properties located on the lower Opogado River in the Choco Territory, near the town of Novita, and having an extent of about 15 kilometers (9.32 miles) in length by 2 kilometers (1.24 miles) in width.

A French company known as the San Antonio Gold Mines Co. (Ltd.), acquired gold-mining properties near Cali, Department of El Valle, in 1912, and will install modern equipment as soon as conditions after the war make this possible.

AREA OF GOLD PRODUCTION.

The Department of Antioquia is the chief gold-producing region of Colombia, the interior mountains containing the gold-bearing veins, which occur in great profusion, while in the region to the north, along the Porce, Nechi, Cauca, and many other smaller rivers, one finds the principal alluvial gold mining. Everywhere in the interior where even small streams are encountered, there is seen the debris of old placer operations. In Antioquia the entire length of the Porce River from Medellin down to the Nechi has been worked by the natives,

and there still remain rich benches where machinery and modern methods are necessary to handle the great bowlders and to bring in water for washing. One American company has installed hydraulic equipment with great success near Porce Station in Antioquia.

Antioquia consists of an agglomeration, or cluster, of mountains, forming the end of the Central Cordillera of the Andes where it begins to spread out into the foothills and plains near the boundary of Antioquia and Bolivar. There are many good formations for gold veins. The mountains east and southeast of Remedios, the rivers of Tamar, Ite, and the region called "Alcante" are still unexplored to any extent, as are also the left banks of the tributaries of the Magdalena, such as the San Bartolome, Nare, and La Miel Rivers, where placer and quartz mines have not been seriously prospected as yet. Also, the northeastern region of the Sucio, Dabeiba, Ituango, and Simitaba Rivers, etc., are almost deserted at the present time.

Gold is found not only in quartz formations but also in mica schist, which requires more work and expense than is generally the rule with placers. All old gold mines possess their history, more or less exaggerated by the natives, who are expert surface prospectors for rich, free ores.

The placer gold region of Antioquia begins at Medellin near the headwaters of the Porce River and extends north as far as the San Jorge River in the Department of Bolivar. The Porce flows into the Nechi and the Nechi into the Cauca, and there are innumerable small streams forming a network of rivers and swamps, with gold-bearing gravel found in the benches of the hills of the rivers' courses and also in the beds of the streams. The entire region is alluvial in formation and can be said to have been practically untouched, so far as large mining operations are concerned. There is unlimited opportunity for dredging and hydraulic mining on a large scale. The famous Pato mines are located on the Nechi River near Zaragoza in this region.

The entire placer district is very tropical, consisting of low hills covered with a dense tropical growth, interspersed with small streams. The climate is very unhealthy, and native miners from the interior of Antioquia can hardly be persuaded to come down from their hills into this region on account of the fevers prevalent there. The bulk of the population, which is small, consists of Negroes and mulattoes, who furnish most of the labor for the dredging companies, and who also engage in washing for gold on their own account.

Dredging with small dredges is the only form of gold mining now carried on in the Tigui region. Prospecting and drilling operations show that bedrock is struck at a depth of 12 to 15 feet, and that consequently yardage runs very low, not over 10,000 to 15,000 yards per acre.

Wages of the native washers and placer miners average from \$0.25 to \$1 per day. The earnings of the native miners depend on whether the ground is worked before or after a flood, which causes natural riffles to form in bars along the stream. The labor supply is plentiful.

An American mining and leasing company owns and operates a quartz mine located in this district. The plant consists of a 15-20-ton tube mill, and produces \$15,000 worth of gold monthly.

On the headwaters of the Tigui River is located a mine belonging to another American concern. The property is a large free-milling vein carrying an average value of \$40 per ton. Work was started seven

years ago, and the property has produced more than \$2,000,000 worth of gold up to date. The equipment is a 10-inch California-type stamp mill, operated by electrical machinery. To reach the mine, a river steamer is taken at Barranquilla up the Nechi River to La Raya, thence two days by canoe up the La Raya River. and thence, by mule trail, two days' ride to the mine.

Adjacent to the Tigui district is the Cano Urales district, located in the Department of Antioquia and very promising as a mining center. There are several native stamp mills in this section, which turn out \$25,000 to \$30,000 worth of metal per month. The district has been traveled by American mining men and is a good section for prospectors. Hydroelectric power can be found everywhere and is cheap and easy to develop. The district is isolated, but there are many ranches or "fincas" in the region, and food is cheap and plentiful.

The formation is granite and slate, and there are innumerable quartz veins. Little blasting is done, as mining is carried on with bar and pick. The best mines are at the foot of the Cordilleras and along the contact of the slate with the granite lying east and along the Tigui River. This contact runs practically north and south. Farther away are many large veins of "bull" quartz which carry no value.

There is an opportunity in this district to introduce American electric machinery and to take over old native properties of which a number were abandoned when the water level was reached, but which still carry excellent values.

Going up the Cauca River above the entrance of the Nechi, one finds the alluvial placer mines of the Caceres district, where several American companies are operating. In this territory there are still to be exploited good gravel extensions with excellent hydraulic mining and dredging conditions—abundance of water, proper currents, and dumping facilities, three cardinal requisites for placer and alluvial mining operations. Caceres can, at times of high water, be reached by river steamer from the Magdalena (say during two months of the year), but generally traffic is by launch and canoe down to Nechi and to Zaragoza, the largest town in the district of the placer mines of Antioquia.

In the large territory between the Cauca and the Porce Rivers in Antioquia there is an unexplored area which contains many gold veins and also alluvial deposits at the foot of the hills west of Purificacion, Natagaima, and Nieve. This is a region of low hills, the average elevation being about 3,000 feet above sea level and the climate not so bad as that lower down, to the north and east toward Zaragoza.

PLATINUM MINING.

Colombia has long ranked second in the world's production of platinum, ranking next to Russia, prior to the war, and furnishing about one-tenth of the entire supply. It was in the placers of the Choco that the metal was first discovered by the Spanish scientist, Antonio de Ulloa, in 1737, but for years it was collected with the gold and then thrown away as worthless. The depletion of the Russian yield as far back as 1910 and the increasingly high prices obtained for platinum because of its uses in manufacturing, in the arts, and for jewelry, capped by the climax of the war, when Colombia became the principal source of supply and the industry was greatly

stimulated,⁶ have seriously drawn the attention of miners to Colombia as the chief source of supply of platinum for the future.

In the early days of the gold placers of the Choco Territory, as has been said, platinum was collected with the gold and then separated and thrown away as worthless. In the town of Quibdo, the center of the placer mining of the Upper Atrato River region in the Choco, the very streets and yards of the houses have been mined and washed to recover the old metal thus discarded as worthless when the washing was for gold only. One man extracted a total of 17 pounds of platinum, worth about \$28,500, from around the foundations of his old house.

AREA OF PLATINUM PRODUCTION.

Platinum is found in Colombia throughout the entire western part of the country, from the Atrato River in the north to the Ecuadorian border, but there are two districts where the metal is found in paying quantities—(1) the Barbacoas region along the Patia River and its tributaries in the Department of Narino, reached by river steamer from the Pacific port of Tumaco, and (2) the far more important platinum-mining region of the headwaters of the Atrato and San Juan Rivers. The Atrato flows north through the Choco Intendency between the low Pacific Coast Range and the Western Cordillera of the Colombian Andes and empties into the Gulf of Uraba near the boundary with Panama, while the San Juan River rises just over a low block of hills to the south of the headwaters of the Atrato and flows south as far as the line between the Choco Intendency and the Department of El Valle, where it turns to the west and empties into the Pacific Ocean just below Cape Chirambira, north of the Pacific port of Buenaventura.

The platinum rivers of the San Juan watershed are known as the Condoto, Platina, Iro, Tamana, Berbara, Negua, Andaguada, Certequi, Agua Clara, Negria, etc.

The town of Quibdo is the headquarters for the placer mining industry of the Atrato and is located at the head of navigation on that river, having steamer communication with Cartagena (see p. 217). The town of Tado, located at the head of the Raspadura River, a tributary of the Atrato, is in communication with Quibdo by canoe, and the placer mining district of Quibdo extends from Tado down the streams as far as a point north of Quibdo on the Atrato River. Another river in this section is the Baudo, which flows west into the Pacific directly west of Tado. The town of Baudo is headquarters for mining on the Baudo River.

On the San Juan River, which is reached by small steamer from Buenaventura, the head of navigation is at the town of Negria. From this place Quibdo can be reached by a canoe journey of two days to the mining town of Istmina and then a two-day mule journey, followed by a short canoe trip to Quibdo. In this trip one crosses the divide of low hills between the two watersheds. The Condoto River joins the San Juan 6 miles below Istmina, and at the mouth of this river is located the main camp of the Anglo-Colombian Development Co. (Pacific Metals Co., Adolph Lewissohn & Sons, New York).

⁶ The war price, as fixed by the United States Government during the war, was \$105 per ounce. This figure increased, on the removal of Government control after the armistice in November, 1918, to as high as \$168 per ounce, sales being made in New York at even higher prices.

Platinum is never found in the placers alone, but always with gold. In some rivers gold predominates, and in others platinum. It is a curious fact that much more platinum in relation to gold is found south of the divide between the Atrato and the San Juan Rivers.

The greatest producing center for platinum is the Condoto River district, which has been worked more extensively during 1917, 1918, and 1919 than ever before, and many native miners were attracted from the Quibdo side of the divide to this district when the high price of platinum stimulated the industry. The largest producing section on the Quibdo side during the last two years has been along the Quito River, a small tributary of the Atrato, the mining operations being along the headwaters of the river.

FORMATIONS.

The entire Atrato and San Juan River country is of alluvial formation, and on account of the broken nature of the country and the heavy vegetation no accurate estimate can be made of future production possibilities. However, it has been stated on very good authority that the fields are much more limited than has been supposed, and that, after the richest of the bars and banks have been exhausted by the crude operations of the native miners, it will be a question of large modern dredgers well equipped to handle a large yardage daily of low-grade gravel and sands, somewhat along the lines of placer dredging operations in California during modern times.

METHODS EMPLOYED IN THE INDUSTRY.

The total population (principally Negroes, with a few Indians) of the Pacific coast gold and platinum mining section of Colombia has been estimated at about 100,000 for the entire Choco Intendency, of which 60 per cent are Negroes, 20 per cent mulattoes, 15 per cent Indians, and 5 per cent whites. This population lives in the mining towns along the various rivers—the largest being Quibdo, with about 6,000 people—and in shifting camps along the rivers, the population being mostly of a floating character and following the mining work according to the season of the year and rumors of rich ground, etc. Possibly not more than 6,000 people, men and women, are engaged in placer mining at any one time, the women working as well as the men and handling the wooden "bateas" for washing the bedrock sands recovered and collected by the men. The Negroes engaged in this work seem to care little for wealth, being mostly content to work a few weeks on a rich spot, and then drift down below Quibdo or to the coast, where plantains and fish are more plentiful.

The Negro miners use the canoe universally for transportation up and down the many small streams. Their tools consist of the wooden "batea," the Colombian substitute for the "pan" of the American placer miner, and a species of iron or steel hoe called the "almocafre," about 4 inches wide and tapering in a curve to a sharp point inward toward the operator and carrying a wooden handle about 18 inches long. This tool, usually made by local blacksmiths, costs from \$0.80 to \$2, depending upon whether it is made of iron or steel. The "barra" is also used, this being a drill steel bar, usually 1½ inches in diameter, 32 to 40 inches long, sharpened to a point at one end, with a wide wedge at the other, and used in place of the pick. When

the bar is of iron with a steel point it costs \$1.20 to \$2, but if of pure steel (drill steel) the cost is as high as \$3 in the mining regions. The wooden "bateas" are made locally, and cost \$1 to \$2 each, the trading medium of the entire mining section being silver coin, and not the currency of the country.

The Negroes are very expert in following the rivers and locating gravel banks, etc., and alluvial deposits. It rains a great deal throughout the Atrato and San Juan regions, rains being almost incessant. As heavy rainfall is registered in this region as anywhere in the Tropics. As a usual thing, pits are dug in the banks for the collection of water for washing banks, and even diving is resorted to for the purpose of bringing up rich sands from the pockets in the rock of the stream beds. After a few weeks' work on rich ground the men retire down the river or to the coast until another season.

FOREIGN DREDGING COMPANIES.

French, English, and American mining companies have invaded this region, and several successful dredgers are being operated. The principal companies are the South American Gold & Platinum Co., on the Condoto River; the Paris-Transvaal Gold Mines (Ltd.) (consolidated with the Consolidated Colombian Platinum & Gold Mines, Ltd.), on the Guapi River and the Opogodo River; and the Anglo-Colombian Development Co., on the Condoto River.

The combination of the Paris-Transvaal Gold Mines (Ltd.) and the Consolidated Colombian Platinum & Gold Mines (Ltd.) is known as the British Platinum & Gold Mines Corporation. This company has a new capital of £250,000, of which 150,000 shares were sold to the public. It is reported that prospecting done in the neighborhood of the Opogodo River places an estimate of £2,000,000 on the platinum and gold contained in the new ground acquired. The united dredging properties of the two companies named cover 19 square miles of mineral-bearing placer ground.

The Anglo-Colombian Development Co., of New York, is a combination of English and American interests, and has installed the latest electrically operated dredge at "Antioquia."

The large mining companies acquire large holdings of mineral ground, and this is thoroughly prospected by means of drilling, so that the production of platinum and gold per cubic yard can be accurately estimated in advance.

These companies are also establishing modern and sanitary camps where their dredgers are in operation and are doing much toward making the climate safe for the white man. The greatest benefit has been derived from cutting away the jungle and undergrowth over large areas around the camps, and thereby decreasing the numbers of fever mosquitoes. In the past there have been several ill-advised attempts to take large dredgers up the Atrato River, and entire crews have died of the fevers in a few months' time. One dredger crew lost all but one man (a foreigner).

TRADING METHODS AND PRICES.

The bulk of the gold and platinum produced by the native miners is traded for by the branch houses of the merchant firms of Cartagena and Buenaventura, the former port exporting the largest amounts of

both metals. The Syrian merchants of Cartagena have large branch stores in Quibdo, Istmia, Baudo, Tado, and other places, and general merchandise to the value of approximately \$1,000,000 per year, consisting principally (in the ratio of about 60 per cent) of cheap cotton goods, is imported through Cartagena and Buenaventura into the mining region and used for trading for gold and platinum. (See p. 225.) These traders pay about 30 per cent of the New York quotation on platinum, deducting also about 10 per cent for impurities contained in the metal. With the platinum there is often contained certain amounts of other rare metals, such as iridium, palladium, osmiridium, etc., for which percentages of excess value are paid by the purchasers in the United States (sometimes as high as 25 per cent over the value of the platinum), and this extra value is an additional profit for the traders.

Mining activities in Colombia have been greatly stimulated by the rapidly advancing prices paid for platinum. Before the war prices averaged around \$45 an ounce (troy) in New York, as compared with the normal price of \$20 for gold. From the latter part of 1915 to the present time platinum prices have fluctuated between \$55 and \$105 an ounce. The following are the average prices since 1906: 1906, \$28.04; 1907, \$28.18; 1908, \$22.85; 1909, \$24.83; 1910, \$32.70; 1911, \$43.12; 1912, \$45.55; 1913, \$44.88; 1914, \$45.06; 1915, \$49.63; 1916, \$83.40; 1917, \$105; 1918, \$105; 1919, \$164; 1920 (to March), \$156.

SHIPMENTS OF PLATINUM TO UNITED STATES.

During the three years preceding the war, imports to the United States of platinum, in nuggets, bars, etc., all crude metal, amounted to 100,000 to 120,000 ounces per year, of which Colombia furnished only about 10 per cent. In recent years the figures have been as follows:

Years.	Total imports of platinum.		Imports from Colombia.	
	Troy ounces.	Value.	Troy ounces.	Value.
Fiscal year 1915.....	40,538	\$1,597,124	13,601	\$470,938
Fiscal year 1916.....	89,656	4,205,342	25,588	1,473,553
Fiscal year 1917.....	30,107	2,100,921	21,278	1,536,422
Calendar year 1918.....	54,962	4,949,755	30,543	2,630,614
Calendar year 1919.....	51,550	5,229,309	26,046	2,303,211

The present imports of platinum to the United States from Colombia represent almost the total production of the latter country.

Platinum possesses extraordinary ductility, and will not tarnish (oxidize). It is used in the manufacture of concentrated sulphuric acid, chemical and physical apparatus, electrical equipment (ignition points), and for nitrogen fixation, jewelry, dental work, etc.

COAL DEPOSITS.

Coal is found in almost every region of Colombia. There are coal deposits in the Goajira Peninsula east of the Sierra Nevada Mountains, in the extreme northeastern part of the country; there are coal

deposits near the Gulf of Uraba, in the extreme western region; there are large beds of coal along the San Jorge River in the southern part of the Department of Bolivar; there are coal deposits all along the Eastern Cordillera in the Bogota region; coal exists in large quantities near Medellin (Amaga fields) in Antioquia; the coal fields of Cali in the Cauca Valley are very extensive and well known; coal is also found much farther south, west of Popayan; and there are rumors of large veins of coal to the west of Antioquia in the Western Cordillera, near the town of Urrao, on the proposed route of a railway to run from Medellin to a new seaport on the Pacific.

The coal beds of the interior are not well placed for export, but there are four known fields from which coal could be advantageously exported to the coaling ports of the West Indies and to the Panama Canal:

(a) The deposits of the Goajira Peninsula, near the towns of Cerrejon, Jagiva, and Conejo, lying a little southeast of the main body of the Sierra Nevada, within easy rail distance of undeveloped deep-water harbors on the Caribbean Sea, such as Bahia Honda and El Portito, and capable of being reached by the construction of a light railway not more than 120 miles in length, over fairly level ground. (See description of the Goajira Peninsula, p. 29.)

(b) The deposits near the Gulf of Uraba, which are located in a wild, very tropical territory, and are undeveloped and little known at the present time, except for the fact that they probably belong to the formation extending along the Western Range of the Andes, which includes the veins found near Cali in the Cauca Valley, much farther south.

(c) The deposits of the San Jorge River, in southern Bolivar, reached now by shallow-draft river steamer from the Magdalena via Barranquilla. These had attracted the attention of American engineers interested in supplying coal for railways and shipping on the Caribbean coast. They are easily accessible by means of a light railway from Cartagena, over a fairly level, though tropical country and not more than 120 miles long.

(d) The fields of the Cauca Valley, near the city of Cali, distant by rail (over the Pacific Railway) 200 kilometers or more, according to location, from the port of Buenaventura, which is within 400 miles of the Panama Canal by water. So far as is known at present, the Cali coal beds are the largest, of the best quality, and the most accessible for immediate export in large quantities. (For complete description, see p. 276.)

The approximate distance by water from the loading port for the Goajira coal to the Panama Canal is 500 miles across the Caribbean Sea, and from the Uraba fields less than 200 miles by sea to Colon.

It is impossible to give any accurate description of the many coal fields of Colombia or any estimate of the probable extent of the various deposits, but the country has in its coal a valuable asset, almost untouched and very little explored or even known. The few coal mines that have been opened are all worked superficially and by very crude methods, to supply the small local demand and for the short lines of railways in their respective regions. Only one attempt has been made to export coal from the country. In 1919, about 3,000 tons of coal were shipped from the Cali fields to Chile and Panama as an experiment. This failed to meet with the desired

results on account of the fact that the coal had to be mined by hand in a very crude manner, packed down to the railway in two-wheeled carts and on pack mules, loaded by hand in sacks, and handled in the same manner at Buenaventura into lighters, from which it was finally transferred to ship's deck, there being, at the time, no dock at Buenaventura of any kind.

No geological survey of the Colombian coal fields has ever been made. One has recently been ordered by the Government but held in abeyance on account of fiscal difficulties. The known coal measures of Colombia are as follows:

1. Bogota coal fields.
2. Tequendama, south of Bogota.
3. Zipacon, west of Bogota.
4. Subachoque, near Pradera iron mines, north of Bogota.
5. Cajica, near Government-owned salt mines at Yapaquira (Zipaquira).
6. Nemocon mines, near Nemocon.
7. Sequilla and Guatativa (Bogota region).
8. Suebca and Pacho iron mines and coal deposits, northwest of Bogota.
9. Outcroppings at Ubate, Fuquene, and Velez, in Santander, northwest of Bogota.
10. Tunja, Sogamoso, Santa Rosa, and Gambita, in Boyaca, north of Bogota.
11. Department of Santander, farther north (little known).
12. Magdalena River Valley.
13. San Jorge River in Bolivar.
14. Cerrejon, Conejos, etc., in Valle Dupar region, northeast.
15. Medellin and Amaga in Antioquia.
16. Urrao district, west of Medellin, in western Cordillera.
17. Gulf of Uraba.
18. Cauca Valley (known as the Cali fields).
19. West of Popayan.
20. Santa Marta district.

The deposits named under Nos. 1 to 11 are undoubtedly included in the formation of the Eastern Cordillera, coal being known to exist for a distance of 300 miles north and south of Bogota, which lies near the Eastern Range of the Colombian Andine mountain system. In this same formation it is possible that the deposits of Cerrejon, etc. (No. 14), in the territory east of the Sierra Nevadas, in the extreme north-eastern part of the country, may be included.

Nos. 12 and 13, lying west of the Magdalena River, are included in the formation of the Central Cordillera of the Andes and are undoubtedly (judging from more recent knowledge of the coal formations of the country) continuations of the fields found at Amaga, near Medellin.

Nos. 16, 17, 18, and 19 belong to the Western Cordillera formation, while those of the Santa Marta district can not be placed easily, since little is known about them; perhaps they are connected in some way with the fields known to exist farther to the southeast at Cerrejon and Conejos.

All the coal beds in Colombia belong to the post Cretaceous age and are thought to underlie extensive areas. The formation is all coarse sandstone and clay shale interbedded with partings of slate.

The coal is a light bituminous, usually with a very high percentage of volatile matter. Three seams occur, varying in thickness from 0.6 to 2.2 meters (meter = 3.28 feet) each. The three seams are very well defined in the Bogota region but are not so plain in the Cali region, where only two main veins or strata are proven. The average width in the aggregate is 2 meters, though in the Cali district there are places where one vein measures 22 feet in thickness.

The estimated reserve supply of Colombia is said to be 27,000,000 tons.

Investigations by foreign engineers, which were supported by an American coal expert who visited the region of Cali in 1914, led to the belief that the Cali fields occupy a great area beneath the floor of the valley, the statement being made that drillings in the floor of the valley would show underlying beds of very good coal. (See p. 276.) This theory of the formation in that section was subsequently proven erroneous when extensive drilling was done in the Cali region by American engineers during 1919. No coal was found even at a depth of 300 feet below the lowest point in the Cauca Valley near Cali, and an exhaustive examination of the entire district furnished an entirely new theory regarding the coal formations, which would also seem to apply (by reason of their great similarity) to all the coal deposits of the country, including those of the Bogota region as well as those of Amaga and the San Jorge River in the line of the Central Cordillera. This new theory of the coal formation of Colombia is that the coal veins were originally formed horizontally at a considerable elevation above the present floors of the valleys, which have been cut away by erosion, breaking down the coal veins, which are now seen in outcropping to be lying in almost vertical positions, but that the main veins lie in curves, or folds, dipping into the cordilleras on either side of the valleys, all surface indications being much broken by volcanic action and affected by heat and other factors.

In 1916 the Minister of Public Works handed down a decision regarding titles and rights of coal lands to the effect that coal mines do not come under the provisions of the Mining Code laws regarding such minerals as gold, silver, copper, and platinum and are not denounceable under the Mining Code. Owners of lands adjudicated prior to the land laws of October 26, 1873, own the subsoil and the minerals found therein such as coal, asphalt, petroleum, lead, zinc, etc. The ownership of lands which have been since adjudicated by the Government does not carry ownership of the subsoil, and coal found therein can be worked only with the consent of the Government. The Government also owns and controls the coal found on all public lands (baldios).

For a more detailed description of the various coal fields of the country, including analysis of the coal, extent of mines, tonnage consumption, and local uses, the reader may be referred to the sections on coal in the various commercial-district reports beginning on page 185. See also Special Agents Series No. 160, "Construction Materials and Machinery in Colombia," page 21.

MINERAL EXPORTS FROM COLOMBIA AS A WHOLE.

The tables below are presented in order to enable the reader to compare the metal exports of Colombia during the prewar period and during the war. The first table shows the metals exported, by countries, in 1911 (includes gold and platinum):

[Kilo=2.2046 pounds; Colombian dollar=\$0.9733.]

Countries of destination.	Kilos.	Value.	Countries of destination.	Kilos.	Value.
		<i>Colombian dollars.</i>			<i>Colombian dollars.</i>
France.....	14,469	574,329	United States.....	158,236	2,008,545
Germany.....	77,481	45,728	Other countries.....	4,175	6,140
Panama.....	1,480	415			
Spain.....	1,800	270	Total.....	1,737,222	4,507,761
United Kingdom.....	1,479,581	1,872,334			

During 1916 the mineral exports from Colombia were as follows (values in Colombian gold dollars and at average schedules of prices):

By customhouses.	Kilos.	Value.	By countries of destination.	Kilos.	Value.
		<i>Colombian dollars.</i>			<i>Colombian dollars.</i>
Barranquilla.....	809,498	4,703,176	Dutch East Indies ¹	539	102
Buenaventura.....	727	724,158	Ecuador ²	1,520	52
Cartagena.....	28,198	1,617,182	France.....	3,040	1,700
Cucuta (via Maracaibo).....			Italy.....	8	3,860
Ipiales.....	1,520	52	Panama ³	92	54,500
Meta.....			United Kingdom.....	717,568	365,170
Rio Hacha.....	539	102	United States.....	118,459	6,863,682
Santa Marta.....			Other countries.....	29	4
Tumaco.....	773	244,400			
Total.....	841,255	7,289,070	Total.....	841,255	7,289,070

¹ Salt and kaolin from the Goajira Peninsula.

² Via Ipiales.

³ Platinum from Cartagena, mined in the Atrato region.

The above exports in 1916 were made up of the following articles listed under "Mineral products":

Kinds.	Kilos.	Value.	Kinds.	Kilos.	Value.
		<i>Colombian dollars.</i>			<i>Colombian dollars.</i>
Mineral waters.....	520	50	Gold amalgam.....	30	13,830
Sulphur.....	1,370	28	Gold and silver mixed (bars)	5	1,000
Coal.....		70	Silver in bars.....	3,681	180,180
Copper.....	27,456	7,260	Platinum.....	827	1,635,565
Concentrates (gold, etc.).....	7,174	5,972	Stone and clay.....	400	4
Iron ore.....	92	43	Petroleum.....	150	24
Samples of ores.....	57	3	Mineral earth.....	753,098	125,987
Gold in bars.....	11,725	4,381,889	Zinc.....	24,630	5,000
Gold dust.....	1,784	835,921			
Gold precipitates.....	8,067	77,644	Total.....	841,255	7,289,070
Gold, broken.....	36	18,600			

During 1918 the production of gold was curtailed on account of war conditions, but the amount of platinum exported increased as compared with the Colombian Government returns for 1916. The table below is given to show this comparison and how, while the

quantity remained practically the same, the total value of mineral exports was reduced to 5,740,752 Colombian dollars. Following is the list of mineral products exported during 1918:

Kinds.	Kilos.	Value.	Kinds.	Kilos.	Value.
		<i>Colombian dollars.</i>			<i>Colombian dollars.</i>
Mineral waters.....	98	13	Platinum dust.....	487	1,329,255
Asbestos.....	344	50	Silver in bars.....	3,534	469,967
Sulphur.....	925	28	Silver with gold.....	136	23,966
Asphaltum.....	125	11	Lead.....	50	1,800
Coal ¹	545,360	8,087	Iron ore.....	105	50
Copper.....	4,798	7,526	Petroleum.....	680	70
Iron.....	40,275	12,000	Gold and silver ore.....	540	5,923
Gold in bars.....	4,724	1,894,445	Mining samples.....	20,004	15,603
Gold dust.....	1,133	615,124	Mineral earth.....	218,821	40,798
Gold amalgam.....	15	8,300			
Gold nuggets.....	15	4,300			
Platinum.....	620	1,303,436	Total.....	842,789	5,740,752

¹ Coal from the Cali fields, exported from Buenaventura to Chile as an experiment; also to Panama.

The mineral products listed above were distributed as follows:

Countries of destination.	Kilos.	Value.	Countries of destination.	Kilos.	Value.
		<i>Colombian dollars.</i>			<i>Colombian dollars.</i>
France.....	64	57,750	Other countries.....	537,759	55,472
Panama.....	208,460	2,607			
Spain.....	1,000	30	Total.....	842,789	5,740,752
United States.....	95,506	5,624,893			

Figures for the production of gold and platinum in Colombia during pre-war years may be quoted as follows from the Memoria del Ministro de Hacienda:

Years.	Gold.		Platinum.	
	Kilos.	Value.	Kilos.	Value.
		<i>Colombian dollars.</i>		<i>Colombian dollars.</i>
1912.....	19,642	6,634,913	875	594,188
1913.....	10,819	4,100,114	470	583,994

Declared exports of precious metals from Colombia to the United States during recent years, as recorded by American consular officers, have been as follows:

Kinds.	1915	1916	1917	1918	^a 1919
Gold:					
Bullion.....	\$903,441	\$2,009,079	\$1,926,332	\$1,616,159	\$127,451
Dust.....	17,909	57,862	44,302	30,020	
Platinum.....	504,302	1,456,684	2,146,088	2,759,396	2,682,950
Silver:					
Bullion.....		1,322	25,135	12,298	51,961
Ore.....	7,242	1,614			

METAL EXPORTS FROM BARRANQUILLA.

Figures compiled by the Colombian Government customhouse at Barranquilla on December 10, 1919, showed that the total value of precious metals exported through Barranquilla in 1917 was 4,022,947 Colombian dollars, made up as follows:

	Colombian dollars.
Gold and platinum precipitates (concentrates).....	3,555,557
Gold, in dust and nuggets.....	202,552
Gold coin.....	232,512
Silver, in bars.....	29,937
Silver coin.....	2,389
Total.....	4,022,947

The gold coin was exported as follows: To Spain, 149,064 dollars; to the United States, 83,448 dollars.

The area of production of the above amounts is mainly that of the vein and placer mines of Antioquia in the Nechi-Zaragoza district. Farther to the west, a small amount of platinum is found mixed with the gold in the placers, this being true more of the Caceres region than farther east around the Nechi River. The silver came from the Frias mines and the surrounding region, being shipped down the Magdalena River for export.

According to the returns of the American consulate at Barranquilla, the United States has received from that port in recent years the following amounts of precious metals:

Kinds.	1916	1917	1918	1919	1920
Gold:					
Bullion.....	\$1,598,639	\$1,794,534	\$1,085,174	\$21,899	\$543,322
Dust.....		44,302	30,020		
Precipitates.....	48,255	38,900			
Coin.....		17,261			
Silver bars.....	1,322	25,135	12,298	41,787	118,163
Platinum.....		299	3,889	2,573	3,183

The port of Barranquilla exports the gold and silver from the mines of the interior in Antioquia, etc. Cartagena ships the product of the Atrato River and its tributaries, and Buenaventura that of the San Juan River and its tributaries. Tumaco exports the product of the Barbacoas region on the Patia River and its tributaries. The mining products from farther south, around Pasto, find their way out of the country via Ecuador (Quito).

METAL EXPORTS FROM CARTAGENA.

The exports of precious metals from Cartagena in the year 1914, as given by the American consulate, were as follows:

Kinds.	France.	Germany.	Great. Britain.	United States.
Gold:				
Bars.....		\$6,003	\$257,204	\$248,111
Dust.....	\$5,660	3,000	91,038	330,457
Coin.....			8,300	6,545
Gold and platinum.....				64,009
Gold and silver coin.....				64,501
Gold and silver ore.....				39,391
Platinum.....	3,224		19,061	310,194
Silver:				
Bars.....		865	15,825	7,605
Coin.....		4,400		

In recent years the declared exports of precious metals from Cartagena to the United States have been:

Kinds.	1915	1916	Kinds.	1917	1918	1919
Gold:			Gold, concentrates, etc..	\$256,366	\$346,341	\$38,882
Cyanide precipitates	\$17,909	\$9,606	Platinum.....	1,439,505	1,325,481	1,352,894
Dust and bars.....	352,342	320,292	Silver and gold bars.....		389,059	
Platinum.....	11,046	1,215,830	Silver currency.....		9,598	33,355
			Silver, mineral of.....	22,933	26,568	29,882

METAL EXPORTS FROM BUENAVENTURA AND TUMACO.

In 1920 Buenaventura exported 3,629 ounces of gold to the United States, valued at \$258,095, and 12,089 ounces of platinum, valued at \$1,088,516, according to the figures of the American consular agency.

The exports of gold from Tumaco in 1911, a prewar year, were valued at 381,892 Colombian dollars. In 1916 this port's mineral exports amounted to 244,398 dollars and in 1918 to 202,776 dollars. There has been a steady decrease in the amount of placer gold exported from Tumaco, while the exports of platinum and gold from Buenaventura have increased on account of the dredging activities of the large companies using modern methods and the stimulation of the platinum industry as a result of the high prices obtained during and after the war.

MINING LAWS—POSSESSION OF CLAIMS AND TITLES.

GENERAL PROVISIONS.

On pages 100 and 101 there is given a synopsis of the development of the mining laws of Colombia.

An executive decree in 1916 restricted the granting of concessions of mining lands in the national lands; concessions were limited to an area of 3.86 square miles, being granted for 25-year periods for placer mines and alluvial formations. Within 18 months from the date of the approval of his contract with the Government, the concessionaire must file with the Ministry of Public Works the precise location of the claim or claims, plans of the workings, and samples of the minerals found therein. A period, in addition to the 18 months, is allowed in which to begin active mining operations.

The Government claims the right to 15 per cent of the gross receipts of the workings and authorizes the concessionaire to erect all the buildings necessary and to construct roads, light railways, cableways, telegraph and telephone lines, etc., that may be found necessary for the exploitation of the property. It is under such a contract that the American company, the Anglo-Colombian Development Co., previously mentioned, is operating placer ground in the Condoto River region. Inspection and collection are performed by an appointed Government agent, who visits all mining properties operating under these new contracts.

According to the prescriptions that regulate the exploitation and ownership of mines (Mining and Fiscal Codes), all gold, platinum, silver, and copper mines and mines of precious stones belong to the State in eminent domain, irrespective of the ownership of the land where such mines are located, but they may be acquired as to posses-

sion and ownership, by both Colombian and foreign citizens, by the legal "denouncement" (location) and process in each case. (Note: A decree of Aug. 17, 1916, prohibited the location of mines in Colombia by foreigners unless they could show reciprocal privileges for Colombians in their country.)

Americans wishing to acquire mining land by denouncement in Colombia are obliged to have the location made for them by trusted Colombians and transfer made to them later, since the law does not prohibit native citizens from transferring mining property to foreigners if the permission of the Government is secured previously.

During the period from 1910 to 1914 there were 3,821 mining claims, chiefly gold mines, located in Colombia, and the Government granted 1,018 titles to mines in all parts of the country. There are records of 18,386 mines in the country, but their exploitation is on a scale very inferior to their merits as mineral deposits.

In his annual report for 1918, the Minister of Public Works stated that, although the total export of precious metals from the country reached nearly \$6,000,000 annually, the net product for the National Treasury was only \$18,000, and it was recommended that mining contributions and taxes be increased and new legislation carried through to correct this condition. A presidential decree of July 9, 1918, prohibits the adjudication of placer or alluvial mines in the beds of navigable streams. A special permit from the Minister of Public Works is necessary in order to obtain permission to work placer ground in the bed of a navigable stream. An examination by Government engineers has to be made in each case. In all legislation pertaining to mining there seems a decided tendency toward Government control.

MINES IN GOVERNMENT LANDS.

All mines located on Government lands are also denounceable, whether they are metal-bearing or of any other substance with the exception of coal, asphaltum, crude oil, sulphur, guano deposits, and rock salt and salt springs above 6 per cent of saturation, whose ownership is reserved by the State. But the exploitation of the latter class of mines may be effected by specific contracts with the Government, which need not be submitted to Congress for approval provided they contain the following stipulations:

- (a) That the contract shall not be for more than 30 years' duration.
- (b) That, once the contract expires, all the machinery, appurtenances, and other elements used in the exploitation of the mines revert to the Government free of charge.
- (c) That the compensation to the Government from the exploitation of the mines be not less than 15 per cent of the gross product. (Prior to 1916 the minimum was placed at 10 per cent; it was increased by the decree of 1916, which also restricted the area formerly allowed.)

MINES OUTSIDE OF GOVERNMENT LANDS.

All mines that are not of gold, silver, platinum, copper, or precious stones and that are found on private lands belong to the owner of the soil and their ownership and acquisition is, therefore, a matter of agreement with the owners of the land. This applies to owners of lands adjudicated by the Government or held under old titles prior to the land laws of October 26, 1873, under which landowners were

given one year in which to enjoy preference for the exploration and location of mining claims on their lands, after which any mineral rights passed to the Government and became liable to public denouncement for gold, silver, platinum, copper, precious stones, coal, asphalt, petroleum (hydrocarbons), sulphur, etc.—being the property of the Government and as such subject to special contracts with the Government for their location and exploitation. Lands held under the old Spanish grant system of titles, or adjudicated by the Government prior to October 26, 1873, also carried the ownership of the subsoil for all minerals, with the above-cited exceptions of gold, silver, platinum, copper, and precious stones—emerald mines, however, being a Government monopoly, like salt mines and springs of more than 6 per cent saturation.

A detailed explanation of the mining laws of Colombia and references to old and present laws will be found in the decision of the Supreme Court of Justice in regard to petroleum land rights, dated November 21, 1919 (see p. 134).

MANNER OF ACQUIRING MINING PROPERTY IN COLOMBIA.

As previously stated, the mines of gold, silver, platinum, copper, and precious stones belong to the State whoever may be the owner of the land where they are located, but the State cedes their possession to any person, national or foreign (if the latter can show reciprocal privileges in his own country for Colombians), who may have due legal status and right to acquire property. The proceedings necessary for the acquisition of a mining property—that is to say, for obtaining its transfer from the Government to the individual or company—are given in detail in the Mining Code.¹ The steps are, in short, (1) the “denouncement” (i. e., location) of the property, (2) the possession, and (3) the title.

By “denouncement” is meant the notice given to the political authorities of the location of the property so located, the boundaries, and the nature of the deposit.

“Possession” is the actual location and delivery of the mine field or area by survey, made in the presence of an official representative.

“Title” is the legal document issued by the authorities in favor of the locater (denouncer) of the mine, whereby he may attest and prove that the State has duly ceded the possession and ownership of the mining property in question.

The ownership of a mining property is acquired definitely by title, and it is maintained by the payment of the taxes on the property, no annual assessment work being necessary; therefore any person who acquires a mine is protected in its ownership by the authorities until he abandons it. A mine is considered “abandoned” if the owner should fail to pay the annual taxes on it, in which case the property automatically reverts to the Nation and the mine may then be “denounced” by another person. Twice annually lists of new locations and abandonments are published by the gazettes of the departmental governments, and these records are open for public inspection at all times.

Attention is called to the point that in the acquisition of mining property located on Government (public) lands or “baldios,” the

¹ Translation by Phanor J. Eder, “The Mining Laws of Colombia,” Washington, D. C., 1912.

locator of the mine has a preferential right to the adjudication of as many as 500 hectares (1,235 acres) of land contiguous and adjacent to the mine denounced.

Mining property and rights are declared public utilities so far as concerns the condemnation of necessary lands, timber tracts, water rights, etc., necessary for the proper working of the property.

TAXES ON MINING PROPERTY.

Mine taxes are of two kinds—(1) the taxes required to obtain the adjudication, and (2) the annual tax required to keep the possession.

The first taxes are:

	Colombian dollars.
Denouncement of each claim of gold, silver, copper, platinum, etc.	10
Cost of issuing title.....	50

The second, or annual, taxes are:

	Colombian dollars.
Tax on each "pertenencia": Claim.....	20
Tax on each "pertenencia": Placer claim area.....	30
Tax on each "pertenencia": Precious stones; 1 square kilometer (0.36 square mile).....	50

One "pertenencia" is a rectangle of 600 by 240 meters (1,968 feet by 787 feet) according to the Mining Code.

LEGAL EXTENT OF CLAIMS.

The largest extent allowed for a mining claim is as follows:

For a lode (vein) mine, three pertenencias, each consisting of a rectangle 600 by 240 meters—giving a total of 1,800 meters (5,904 feet) in length by 240 meters (787 feet) in breadth. (Art. 2, Law 292 and 23 of Mining Code.)

For an alluvial mine (placer), the extent allowed is that of a square of 3 kilometers (9,840 feet) per side, or else of a rectangle whose base is 2 kilometers (6,560 feet) and depth 5 kilometers (16,400 feet). (Art. 313, Law 38 of 1887.)

For a sedimentary mine or blanket deposit, the claim allowed is a square of 2 kilometers on each side. (Art. 313, Law 38 of 1887.)

For precious stones, 1 square kilometer on each side is allowed. (Art. 2, Law 38 of 1887.)

The claimant may, in each case, accept a smaller area; and he may also denounce a larger area, but as a separate claim and denouncement, which may form a continuation of the original claim.

To one familiar with the mining laws of Mexico and of other Latin American countries, it will be at once apparent that the mining laws of Colombia are very similar to the others in character and construction. For further details, see page 131, under "Petroleum."

PETROLEUM.

INTRODUCTION.

The existence of petroleum in Colombia has been known for many years. As in the case of coal, there are surface indications of oil in many parts of the country, and these have been the subject of exploration from time to time, the leading pioneers being two Colombian engineers and explorers of French descent, Sr. Virgilio de Barco, of Cucuta, and Sr. Roberto de Mares, of Bogota. After many years of effort they are destined to see success result from their early efforts, as is proved by recent drillings of producing wells on lands which they originally explored for petroleum many years ago.

Other pioneers in the petroleum industry of Colombia have been Diego Martinez & Co., of Cartagena—wealthy land and cattle owners of the Sinu River district, the largest merchants of Cartagena in both hardware and general merchandise, and the promoters of the Cartagena Oil Refining Co., established at Cartagena in 1908 with an initial investment of \$150,000 (since increased). They were instrumental in securing the cooperation of the Standard Oil Co. in 1914 for the purpose of drilling for oil in the Sinu River district southwest of Cartagena, in which unsuccessful attempt approximately \$750,000 was spent up to 1916, when the properties were abandoned. The Martinez firm also drilled near Turbaco, 20 miles from Cartagena.

A Canadian company also drilled for oil in the region of Turbo, between Barranquilla and Cartagena, during 1908 and 1909 on lands held under the concession known at the time as the "Armella-De Mares concession," which included the lands of the Repelon concession in the Department of Bolivar.

An American, Mr. J. W. Kelley, organized a company to take over the lands comprising about 150,000 acres between Cartagena and Barranquilla, and several wells have been drilled near Puerto Colombia. The work has progressed very slowly, but was still being continued in 1919, when new equipment was imported.

Subsequent to the failure of the Diego Martinez interests and the Standard Oil Co., and also of the Canadian company, to produce oil in paying quantities in the western Caribbean coast region, however favorable the surface indications were (and these are many and varied in character), the Tropical Oil Co., of Pittsburgh, Pa., took over in 1916 the De Mares concession lying along the Magdalena River and up the Rio Sogamoso in Santander (del Sur) and actively engaged in prospecting this territory for oil. As a result, three flowing wells of very high-grade petroleum were brought in 30 miles from the Magdalena River on the Rio Colorado, a small tributary of the Magdalena in Santander, joining the Magdalena at the town of Barranca Bermeja, approximately 365 miles up the Magdalena from Barranquilla. The estimated production of these wells, three in number, is 6,000 to 8,000 barrels of 35.5° to 40° Baumé crude oil per day. Two kinds of oil are found, of paraffin base and of asphalt

base, the latter not exceeding 3 per cent content held in suspension and burning clean in the open air.

It is this success by the Tropical Oil Co. that has so greatly stimulated interest on the part of American oil companies in Colombian petroleum. The entire country has been actively prospected and explored for the past two years, and actual drilling operations are soon to begin on the lands of the De Barco concession in the extreme northern part of the Department of Norte de Santander near the boundary with Venezuela. Some of the largest oil companies in the United States have sent their men to Colombia during 1918 and 1919, others following in 1920, and some companies have maintained their engineers on the ground for a period extending over two entire years. Judging from the showing of the Tropical Oil Co.'s properties,¹ the many surface indications in other parts of the country, and the interest being taken in oil in Colombia by the large oil companies, it may be predicted that petroleum presents a very promising future in Colombia.

REGIONS IN WHICH OIL IS FOUND.

The prospective oil fields of Colombia may be roughly divided into six districts:

(a) That of the Caribbean coast from Rio Hacha to the Gulf of Uraba.

(b) The area of the northern part of the Department of Norte de Santander, near the headwaters of the Catatumbo River, which flows east from Colombian mountains into Lake Maracaibo in Venezuela.

(c) The region covered by the original De Mares concession, lying in the Department of Santander (del Sur) east of the Magdalena River.

(d) The region lying along the foothills of the Central Cordillera between the headwaters of the Sinu River and the San Jorge River, partly in Antioquia and partly in Bolivar.

(e) The region to the west of the Magdalena River, along the eastern sides of the Department of Antioquia and Tolima, in the Magdalena Valley.

(f) The region west of the city of Popayan, in the Department of Cauca, near the Pacific coast, as well as the area between Quibdo and Cali.

There are also rumors of surface indications of petroleum said to exist west of Medellin, in the region of the town of Urrao, situated west of the Cauca River Valley in the uplands of the Western Cordillera.

SURFACE INDICATIONS.

Surface indications are said to be more numerous (because better known, perhaps) along the Caribbean coast, where the country is more level and open and also more accessible for observation and exploration. These surface indications consist of gas emanations. The gas escapes through cracks in the tough blue clay or clay shales; it may be readily ignited, and in some places, notably near the village of Rotane, about 25 miles east of Cartagena, in the Repelon district, it escapes at the rate of about 5 cubic feet per minute or about 10,000

¹ Recently purchased by the International Petroleum Co.; see p. 130.

cubic feet per day. Near the town of Turbaco, on the railway between Cartagena and Calamar, there are a hundred or more mud volcanoes within a space of about 3 acres, all emitting gas; and a similar surface indication is seen near Monteria and near other places along the Sinu River farther to the southwest of Cartagena.

Seepages of crude oil are found along the line of low hills that form the southern boundary of the level alluvial plains of Bolivar, about 60 miles south of Cartagena in an air line. The natives have found places in the tropical jungle where they can collect bottles of oil which they sometimes use for lighting purposes in crude earthenware lamps.

In Antioquia, near the Magdalena River, just south of Puerto Berrio, there is a spot where, at times, crude petroleum is forcibly ejected from cracks and seams in the mud, spouting in a thin stream to a height of 20 and more feet and wetting the foliage of the trees near by.

The same surface indications are found in Santander on the De Mares concession, including seepages of crude oil from between crevices in shale and clay formations (surface), and also farther north in Norte de Santander on the lands of the De Barco concession, already mentioned.

In the valley of the Sinu there exist petroleum springs from which the natives also take small quantities of a very high-grade oil for lubricating purposes and for illumination. One spring produces oil of sufficiently high grade to burn in a common kerosene lamp.

Samples of very good oil have been brought in to Medellin from the country around the town of Urao, which lies across the Cauca Valley west of Medellin.

DIFFICULTIES OF PROSPECTING.

A review of the general topography of the country will convey a very good idea of the difficulties to be encountered in exploring for oil in Colombia. The Caribbean coast is more open than most other regions, not being always covered with a dense tropical growth, but it is broken by low hills; and the region farther to the south, while fairly level until the hills along the west bank of the Cauca are reached, is covered with a very heavy jungle. This is true also of the entire Departments of Santander del Norte and del Sur. An extremely tropical climate also prevails, and the topography, climate, and lack of roads and other means of transportation make exploration of the land almost impossible—more especially during the rainy season of the year.

An engineer, or group of engineers, engaged in oil-survey work must be prepared to meet all sorts of conditions of life and travel—using mules, canoes, and native packers on foot through the jungles at times, and always exposed to the rigors of the tropical climate, pestered by poisonous insects, and in danger of venomous snakes, which are found everywhere in the jungles. A party engaged in this work in Colombia must be able to endure fevers, heat, and bad food; and the men who have shown the way in the past deserve the greatest credit for their efforts, since they have risked their health and even their lives. Thus far, in recent years, this exploration work has cost the lives of four young engineers, who succumbed to the ravages of pernicious malaria—two of them Americans in 1919.

TOPOGRAPHY AND GEOLOGY OF THE OIL DISTRICTS.

CARIBBEAN COAST REGION.

Briefly, there is this main distinction between the topography of the eastern and western parts of the Caribbean coast district, which may be roughly described as lying between Barranquilla and the Sinu River and extending as far south as the bend in the Cauca River near the boundary with Antioquia: The eastern part consists of mountainous ground, the western part of flat ground and low hills. In the eastern part, the northern half consists of rough and broken country, rising at the highest point to an elevation of about 1,600 feet above sea level and with many other points 1,200 feet above sea level. To the south, this eastern part becomes more level and less broken (owing to the greater prevalence of shale) but still has points as high as 1,000 feet above sea level. A main watershed runs, roughly, north and south through this eastern tract, the western drainage going directly to the ocean and the eastern drainage flowing down to the Repelon Lake system and thence to the sea at Cartagena.

The western part consists mainly of alluvium lying about 30 to 40 feet above sea level, with similar flats to the south, in which soft shale occurs.

East of Cartagena and rising from the flats are bluffs of sandstone hills, up to 330 feet above sea level—for example, the hills of Rosa Vieja and Arenal, Punta Polonia and Repelon, in which latter there are found shales lying below the sandstones. To the east are the lakes of Guajaro and Repelon, connected by a series of canals and lakes. From the Repelon Lake there runs a deep canal which connects with the Cartagena Dique. The lake system and the lowlands around it are subject to overflow from the Magdalena River during the rainy season.

Southwest of Cartagena, toward the Sinu River, the country is level and there is a chain of swamps along the eastern bank of the river, becoming larger as the ocean is approached. Low hills border the Sinu at some distance on the western side, the geological formation being the same as that of the hills east and northeast of Cartagena toward Barranquilla.

The formation occurring in the Caribbean region may be classified thus, the order of sequence being from the uppermost and youngest beds downward:

1. Alluvium.
2. Sandstone and pebbly sandstones, forming the bluff-like hills.
3. An alternation of coarse and fine grained sandstones with blue shales, and gray shales, flags, fine-grained grits, and massive conglomerates.

Groups 2 and 3 are probably conformable to each other as part of the same succession.

Group 1.—It is sufficient to say of the alluvium that the older formations undoubtedly exist below it.

Group 2.—The sandstones and conglomerates are usually loose and pebbly, the latter containing quartz pebbles up to $1\frac{1}{2}$ inches in diameter. All sandstones are usually iron stained along the breaks. This group is about 400 feet thick and does not carry any shale. The dip of this group is usually low, not over 15° and at times 7° and even 2° ; in places it is bent over to dip in the opposite direction.

Group 3.—The older series of mingled sandstones, shales, etc., occupy all the mountainous section of the region, and toward the sea in the northern part they are steeply inclined, as a rule, striking approximately north and south, with dips of approximately 40° to the east (in extreme cases as much as 80°). Some of the grades of sandstones throughout this district are coarse grained and some fine grained, found always interbedded with shale and fine-grained flags, interspersed with beds of heavy conglomerates. Limestone capping is found still farther to the east toward the Magdalena River and the ocean in the direction of Puerto Colombia. Limestone is not in surface evidence in the hills west of the Sinu River.

Farther to the south the proportion of shale increases in these rocks and the conglomerates appear to die out; the strike remains the same, but the average dip becomes less, being about 30° to the east. In the southwestern part of the eastern section of this region, the formation is very much disturbed and may dip to the west, and this is also true of the formation of the hills along the western side of the Sinu.

From the above it may be gathered that the whole of the formations, speaking generally, dip eastward and strike north and south. This strike, farther south and southeast, swings around to bear north 30° east—a direction which is plainly seen in the second group, sandstones, etc., and which is considered to be followed by the underlying mixed shale and sandstone group, though there are no outcrops to prove this point.

Anticlinal structures are noticed in the hills east of Cartagena and in a few instances near the Sinu to the southwest. To the south the anticlinal formation disappears under the surface alluvium. The crest of the anticline has been eroded, exposing red weathered shale. The anticline noted in this district has a strike of north 30° east (magnetic).

For a detailed account of the geology of the Repelon district east of Cartagena, the reader is referred to the "Report by Dr. Andrews on Property of Repelon-Colombia," namely, the Armella-De Mares concession.

CAUCA-SINU REGION.

There are no detailed data available covering the formations that exist in the Cauca-Sinu region, which has been superficially inspected by engineers recently and also penetrated by geologists of the Tropical Oil Co. entering from the south (Medellin).

The strong dip of the strata outcropping along the coast region above described and the failure of the various drilling operations near Cartagena and on the lower Sinu River to bring in a flow of oil, coupled with such reports of the Cauca hill country as are known at present, have given rise to the belief among petroleum engineers in Colombia that further drilling in the coast region, even to great depths, will not tap bodies of oil and that drilling will have to be done farther south along the line of hills on the west bank of the Cauca River.

It is interesting to note that an American, Mr. Plotts, of California, associated with Sr. Armella, of Cartagena (who was also an associate of Sr. de Mares in the Repelon concession near Cartagena), owns or

controls two enormous properties in this more southern region, extending between the headwaters of the Sinu River on the west and the San Jorge River on the east. Of these properties, 500,000 acres are held under the terms of an original concession from the Colombian Government secured in 1913 and still having 18 years to run, while an additional 700,000 acres in the same region, containing deposits of coal and indications of petroleum, are held in fee and situated adjoining to and south of the lands held under the terms of the Government concession, extending as far south as the boundary with the Department of Antioquia. The principal outcrops of coal are located on the San Jorge River near the town of Playa Rica. This region is thought to be the source of the seepages of oil found on the coast, and the near future will see prospecting work done to prove the existence of oil.

West of Medellin, on the western side of the divide between the headwaters of the Porce River and the watershed of the Cauca, the formation changes very notably, a form of blue diorite being observed. Indications of petroleum and samples of oil brought in to Medellin come from the Urrao region across the Cauca River and farther to the west in the Western Cordillera.

Recent explorations by an American engineer prove the existence of oil indications, similar to those of the coast region, in the district west and southwest of the city of Popayan in the Department of Cauca, south of Cali. It is thought that these indications are comparable with those of Ecuador and belong to the same general formation of the Western Andes, being connected with the formation farther north in western Antioquia and along the same line as the coal formations of the Western Range.

SANTANDER FORMATIONS.

The indications of oil in the De Barco concession, which covers the entire width of the Department of Norte de Santander in its extreme northern end, consist of oil springs, mud volcanoes, and gas emanations, with here and there small asphalt pools mixed with subterranean mud, found in the region of the headwaters of the Catatumbo River northwest of the border town of Cucuta in Colombia and along the line of the western branch of the Eastern Cordillera north of the point where this range sends off an important range into Venezuela. Oil indications have been found on both sides of this range, both toward the lowlands of the Maracaibo watershed and to the west and northwest toward the Sierra Nevada Mountain group. The De Barco concession covers about 1,500,000 acres, the tract measuring 320 by 80 kilometers. The surface oil found is of both paraffin and asphalt base and of as high as 40° Baumé gravity.

This region was explored by the engineers of the Carib Syndicate, owners of the De Barco concession, in the spring of 1919, and drilling machinery is being imported via Venezuela for the development of the property.

While there are no geological reports available for publication which would convey a more intimate idea of the formation occurring in this region, it is significant that there appears to be a very definite connection between the oil deposits of the Maracaibo region in Venezuela, those of the De Barco concession, those of the Tropical

Oil Co. in Santander near the Magdalena River, surface indications in southern Antioquia and in Tolima, and the recent reports of oil in the Department of Cauca west of Popayan. Oil has been developed in the Maracaibo region of Venezuela; the Caribbean Petroleum Co. and a Canadian-English company are drilling for oil in Venezuela near the De Barco concession, which lies in Colombian territory, and a study of the relief map of Colombia will show that these indications of oil and wells actually developed are all along a well-defined line running from the producing wells near San Lorenzo in Venezuela to the south by southwest through the De Barco concession, down through Santander through the properties of the Tropical Oil Co.¹, (De Mares concession), through the region of the indications in Antioquia and Tolima, and on down to the Pacific west of Popayan—forming a line slightly curved to the east.

This line represents the line of the great anticlinal formation which has been traced throughout its entire extent, and, from the reports of a number of independent geologists (each having covered a separate region), the theory has been evolved that the oil formation extends along this line, cutting through almost the entire mountainous part of Colombia. It is this theory which presents the most interesting factor involved in the study of the development of petroleum in Colombia.

OIL-LAND CONCESSIONS AND DEVELOPMENTS IN THE PAST.

MARTINEZ INTERESTS—STANDARD OIL CO.

Taking the history of the oil-land concessions and development work by foreign companies in chronological order, one finds that the oil springs of the Sinu River region first attracted attention, together with the indications to the east of Cartagena near the towns of Turbaco, Repelon, and Rotane, and led to the obtaining of a concession from the Colombian Government by Diego Martinez y Cía., of Cartagena, in 1905. This concession was to run for 20 years, and gave what was considered practically a monopoly of the oil-refining industry for the Caribbean coast of Colombia.

These concessionaires brought in a boring apparatus and sunk two shallow wells of 300 feet near the town of Turbaco, 20 miles from Cartagena, on the Cartagena-Calamar Railway. Gas and other signs of oil were found, and it was thought at the time that deeper borings would have discovered petroleum.

In 1908 the Cartagena Oil Refining Co. was formed, being an American corporation, the stockholders of which, however, were Colombian citizens, headed by the Diego Martinez interests. This company, in 1915, had an investment of about \$150,000, including the work at Turbaco, and the oil refinery at Cartagena was paying an annual dividend of 60 to 90 per cent, using imported crude oils from the United States and supplying the coast and interior with refined petroleum products.

In 1914 the Pearson interests, of London, engaged in making surveys and plans for the improvement of the harbor of Cartagena, became interested in the oil development of Colombia and were offered the refinery and oil lands of the Cartagena Oil Refining Co.

¹ Now owned by International Petroleum Co.; see p. 130.

for \$800,000, which offer they refused. Later this same offer was made to the Standard Oil Co. but was again rejected. In the meantime the Pearson interests were endeavoring to obtain an oil concession from the Colombian Government which involved a heavy loan to the Government and constituted what was practically an exclusive right to explore for and exploit oil in the country. The advent of the European war apparently brought to an end these negotiations on the part of British interests.

Subsequently the Standard Oil Co. entered into an agreement with the Martinez interests to take over the control of the oil refinery at Cartagena and to explore for oil in the district covered by their concession reaching from Turbaco on the east through to the Sinu River to the west and as far as a part of the Atrato River Valley. During 1914 and 1915 a well-organized attempt was made by the Standard Oil Co. to prospect the district for oil; camps were established, equipment imported, and several wells drilled to considerable depth, encountering shales and a thin ooze of oil but no large quantities. This company definitely withdrew in 1916 from this field, not because the prospects for oil were not good, but on account of certain other unpropitious conditions.

ARMELLA-DE MARES CONCESSION EAST OF CARTAGENA.

Another oil-land concession in the Caribbean district was that known as the Armella-De Mares concession, secured by the old Armella-De Mares Co., of Barranquilla, from the Colombian Government prior to 1900. This concession covered a tract of land having a total area of about 210 square miles and extending east from Turbaco, taking in the surface indications around the towns of Repelon, Rotane, and Rosa Vieja, east of Cartagena and about 40 miles southwest of Barranquilla. Most of this property was covered by local concessions granted to the promoters by the municipalities of Arenal and Repelon. The rights and titles were somewhat clouded by reason of disputed boundaries and ancient claims of the two municipalities and were further jeopardized by the policy of the National Government.

This concession was taken over by a Canadian company in 1907 and several wells were put down, the work being in charge of American oil-well men of experience. Oil was discovered at a depth of 600 feet, but the drilling had to be suspended when a formation was encountered that prevented further drilling with the tools and machinery employed. This work was suspended in September, 1908. In the summer of 1909 a second well was sunk, with the same tools but with a new crew of workmen; and, after many vexatious delays due to heavy rains, floods, unskilled labor, and transportation difficulties, oil was found at the depths of 500 and 1,000 feet, of excellent quality (testing as high as 47° Baumé gravity) but in small quantity. This well was capped, and engineers sent out from England recommended the further prospecting of the property, but this was prevented by the advent of the Great War.

A new company is now being promoted in the United States by a prominent Colombian of Cartagena to take over the old Martinez concession and other lands farther to the south with the purpose of prospecting them for oil.

DE MARES CONCESSION IN SANTANDER—WORK OF TROPICAL OIL CO.

One of the pioneers in oil exploration in Colombia, Sr. Roberto de Mares, secured a concession from the Government prior to 1900 covering a very large tract in the Department of Santander (del Sur)—Sr. De Mares having also been associated with Sr. A. Armella, of Barranquilla and Cartagena, in the concession covering the Repelon tract on the Caribbean coast. The first efforts to interest foreign capital in this property met with failure on account of the revolution of 1898–1904, the party of engineers brought down in 1904 not being able to land at Barranquilla on account of the disturbed condition of the country at the time. The concession was renewed in 1905 and again in 1916, and the Tropical Oil Co., of Pittsburgh, Pa., was interested in the project; this resulted in active prospecting of the property during 1917, 1918, and 1919, and the bringing in of three flowing wells.

The subscribed stock of the Tropical Oil Co. amounted to 1,500,000 shares, with approximately \$4,000,000 available for development work. A total of about \$800,000 had been spent up to the summer of 1919.

The lands of the De Mares concession front on the Magdalena River in the Department of Santander, extending to the north as far as the Sogamoso River (a tributary of the Magdalena on the eastern side), to the east as far as the high mountain range, and south as far as the Carare River (also a tributary of the Magdalena). The frontage on the Magdalena is approximately 30 miles, and the depth from the river to the mountains averages 75 miles—the area containing in all about 1,300,000 acres (another estimate gives 3,000,000 acres).

The concession is subject to third-party rights and does not include the right to the subsoil of lands adjudicated prior to the land laws of October 28, 1873. (See p. 133.)

The headquarters of the company are located at the river port of Barranca Bermeja, at the outlet of the Colorado River, where this company has built houses for quarters and offices, a machine shop and workshop, storehouses, etc. Launches are operated on the Colorado River during the wet season to the oil wells, which are located at the junction of the Oponcito River with the Colorado 30 miles southeast of Barranca Bermeja. The known oil fields lie between the Colorado River and the Sogamoso River, in the Department of Santander.

The land is level for 4 or 5 miles back from the river and then becomes very broken and covered with a dense tropical jungle and hardwood timber. The country becomes more difficult farther to the east and south toward the high mountains of the Eastern Cordillera.

The Colorado River can not be navigated, even by canoes, during about seven months of the year, so the company is now engaged in constructing a good wagon road from Barranca Bermeja to the oil wells, over which a pipe line (diameter 6 inches) is also to be run to bring the crude oil down from the wells to the small refinery being erected at the river at Barranca Bermeja. The total length of this wagon road and pipe line will be 35 miles, and the road will be so constructed as to take tractor traffic. The camp at the wells will be the headquarters of the new prospecting work being done farther to

the northeast in lands of the concession, in which there is every prospect of obtaining still greater supplies of high-grade crude oil.

The small refinery being installed at Barranca Bermeja will have a sufficient capacity to supply the entire country with petroleum products such as gasoline, kerosene, lubricants, etc., which, according to the conditions of the Minister of Public Works, published in July, 1919, will be sold in Colombia "at not greater than New York prices." Barranca Bermeja is approximately 400 miles from the Caribbean coast at Cartagena, and Bogota is distant about 300 miles by river and rail. A large center of consumption—the second largest, if not the largest, in the country—is Medellin, the capital of Antioquia. From the site of the refinery it is about 125 kilometers (77 miles) by river to Puerto Berrio, from which point Medellin is reached by rail over two divisions of the Antioquia Railway, 181 kilometers (109 miles) long. The largest consumption in Colombia will be that of residual fuel oil for the river steamers, of which there are about 140 plying on the Magdalena and its tributaries, a number of which are more or less navigable for shallow-draft boats. It may be expected that fuel oil will take the place of the wood now used for fuel and will greatly facilitate the operation of river transportation.

The wells have respective depths of 1,700, 1,900, and 2,300 feet, and are located very near each other (within a few hundred yards). They are flowing wells, pumping not being necessary to secure a production estimated at 6,000 to 8,000 barrels per day of 24 hours. Two of these wells produce both grades of oil—paraffin base and asphalt base—the latter coming from the lower level and not exceeding 3 per cent in suspension. The gravity is 35.5° Baumé scale. These wells remained capped during 1919, pending the erection of the refinery and the completion of the pipe line to the river from the wells.

It is considered that this property can produce a much greater flow of oil through other drillings on what is considered proven ground, but the problem is one of transportation to tidewater and thence to the world's refineries. It is necessary to construct a pipe line 400 miles long from the wells to the Caribbean coast, the cost of this line being estimated at \$20,000,000 to \$30,000,000, including pumping stations, tank storage, and loading facilities at Cartagena.¹ It is estimated that a daily capacity of 50,000 barrels would be necessary in order to justify fully the cost of this line; but it has also been pointed out that while the Colombian oil fields will have to compete with Mexico, Texas, and California production, the Colombian oil found in the wells mentioned is of a much higher gravity than the Mexican or American petroleum and as such will command a much higher price at refineries. Another advantage is the shorter distance by sea from Cartagena to the refineries on the Atlantic seaboard of the United States than from Tampico in Mexico. This Colombian oil is of too light a gravity to use as fuel oil for steamers without refining.

In March, 1919, there arrived at Barranca Bermeja an increased force of engineers, pipe-line men, refinery experts, etc., and the work on the new wagon road to the wells was being pushed.

In the early months of 1920 the holdings of the Tropical Oil Co. in Colombia were taken over by one of the subsidiary companies of the

¹ See footnote on next page.

Standard Oil Co. It is rumored that the new owners will construct the pipe line to Cartagena and provide for the exportation of oil from the De Mares concession lands, and, also, that new prospecting and drilling for increased production will be actively pushed during the next two years.¹

STIMULATION OF INTEREST—MISCELLANEOUS ACTIVITIES.

This development of high-grade oil in paying quantities on the De Mares concession by the Tropical Oil Co. has done more than anything else to stimulate the interest in oil prospects in Colombia, and many American and several British oil companies have had experts on the ground during the past two years. At one time during 1919 there were as many as nine representatives of large oil companies in the country and not a few individual promoters interested in securing options, leases, concessions, etc., on oil lands.

Among these companies may be mentioned the Colombian Petroleum Co., owners of the De Barco concession in Norte de Santander; the Tropical Oil Co., which had engineers out in the San Jorge River region already mentioned; the St. Clair Oil Co.; the Island Oil & Transport Co.; the Gulf Oil & Transport Co.; the Ohio Cities Gas Co.; the Aaronson interests, of Tulsa, Okla.; the Union Oil Co., of California, which sent a party of engineers down in February, 1920, to report on properties adjoining those of the Tropical Oil Co. in Santander; and two engineers of the Balfour-Williams Syndicate (British), which owns extensive oil properties in Peru and has also explored for oil in Ecuador recently.

DE BARCO CONCESSION IN NORTE DE SANTANDER.

The De Barco concession was originally granted by the Colombian Government to Sr. Virgilio de Barco, of Cucuta, in 1905. Fifty years was the period of time allotted, and the concession called for the payment to the Government of 5 per cent of the gross proceeds of the production of the field, which occupies the entire northern part of the Department of Norte de Santander, northwest of the border town of Cucuta and lying directly opposite known and proved oil fields in the Maracaibo region of Venezuela. This concession carried also the privilege of exploitation of asphalt and coal and was taken over by the Carib Syndicate, an American promotion company, in 1917. The Colombian Government formally allowed the transfer of this concession to the Carib Syndicate in April, 1918, but with certain modifications of the terms of the original concession, the amount of the gross product to be received by the Government being increased to 10 per cent and other measures of control added. The Carib Syndicate explored the region of the concession in 1919 and that same year transferred its rights in this concession to another American oil company formed by the Doherty interests of Pittsburgh, Pa., and known in the United States as the Colombian Petroleum Co. and in

¹ EDITOR'S NOTE.—In the Petroleum Age for May, 1921, the following item appeared: "The International Petroleum Co., a Standard subsidiary, has purchased an island at the mouth of the Magdalena River, on which the company plans to erect the greatest oil refinery in the world, having a daily capacity of 25,000 barrels at the start. The Standard interests are spending millions of dollars in developing the tract recently purchased from the Tropical Oil Co. The property is estimated to be between two and three million acres, for which the Standard interests paid about \$25,000,000. More than \$25,000,000 is now being spent in developing the property. Three wells have been brought in * * *. The company is laying a pipe line from the field to tidewater—over 300 miles—at a cost of some \$3,000,000." This item is reproduced here merely as the statement of an American periodical that is supposedly well informed on petroleum matters. It may be noted that there is a marked discrepancy as to the cost of the pipe line between this statement and that of Trade Commissioner Bell.

Colombia as the *Compañía Colombiana de Petroleo*, the latter company constituting practically the holding company in Colombia.

The Colombian Petroleum Co. is to do the actual work of drilling and prospecting for oil on this concession under an arrangement on a royalty basis with the Carib Syndicate, which retains a 25 per cent interest in the concession and its future possible production. The Colombian Petroleum Co. has recently been able to secure permission to bring in its equipment and machinery through Venezuela via Maracaibo and the Catatumbo River, which rises in Colombian territory and, during part of the year, is navigable for small steamers from Lake Maracaibo for a considerable distance. This route is much easier of travel and access than that from the Magdalena River overland to the concession in Norte de Santander, on account of the topography of the intervening country. It is impossible to transport heavy machinery from the Magdalena overland to the concession without the construction of a very costly road. The country is much more level and easy on the eastern watershed toward Lake Maracaibo.

The De Barco concession measures approximately 320 kilometers (198 miles) in length by 80 kilometers (50 miles) in depth and contains about 1,500,000 acres. Surface indications contain crude petroleum of as high as 40° Baumé gravity and of both asphalt and paraffin base. During 1918 difficulty was encountered in securing permission to import the machinery and equipment for drilling by way of Maracaibo on account of the opposition of interests owning oil-land concessions directly opposite in Venezuela, who claimed that drilling in the lands of the De Barco concession would drain their properties, since the De Barco lands are of much lower level. As has been said, permission was finally secured, and in June, 1919, part of the drilling equipment of the Colombian Petroleum Co. had already arrived at Maracaibo and preparations for its transportation into the interior and for drilling operations were going forward rapidly, in charge of American oil-well crews with experience in similar work in Mexico.

The Carib Syndicate has opened offices in Cartagena, from which point expeditions of engineers have covered other parts of the country, the company being interested in the acquisition of other oil lands for exploration and development purposes.

Colombian citizens have been very much interested in oil lands and are taking an active part in the development of the industry in the way of the acquisition of prospective oil-bearing lands and the promotion of new oil companies, as well as the presentation of apparent opportunities in prospective oil properties to large American petroleum interests.

OIL-LAND TITLES AND LEGISLATION.

CONDITIONS IN SPANISH COLONIAL TIMES.

Legislation dealing with oil-bearing lands in Colombia has, in the past, been incomplete and very indefinite, but based principally on the old mining laws of the country handed down since Spanish colonial times. As a rule, the Spanish Crown reserved the rights to deposits and mines of the precious metals such as gold, silver, platinum, copper, and precious stones, and such mines were obtainable

under the right of discovery and location, it being the policy of the Spanish Crown to promote in all possible ways the production of precious metals in the American colonies, where mining was the principal industry and source of wealth for several centuries. The Spanish Crown also granted tracts of lands to colonists—always to those who were judged capable of opening and developing these lands, the areas so granted being limited in size only by the ability of the favored party to stock with cattle or plant thereon. The object was to secure the development, and consequent wealth for revenue, of the various colonies.

The "conquistadores," such as Quesada in Colombia, Pizarro in Peru, Cortez in Mexico, and their captains who had rendered valuable services in the discovery and conquest of new Indian kingdoms, were also given enormous grants of land—always, or nearly always, carrying the exclusive right to the mineral wealth found thereon, which was not the case when lands for agricultural or stock-raising purposes were granted to other colonists, when the mineral rights were reserved for the Crown.

On account of the little known and explored condition of Colombia during colonial times, its broken and tropical nature, and the rather crude means of survey obtaining at the time, boundaries were vague, being described as from one river to another or from one mountain range to another (peaks being designated as corners, etc.); and from this condition there come down to modern times many conflicting titles of lands, which have caused endless litigation.

As regards mines and mining properties, the Spanish Crown often reserved certain rich properties for itself and for operation by the Viceroy, and other rich properties were ceded to organizations of the church which had previously acquired them by right of discovery through influence among the Indians—the Indians, who knew the country well and were expert surface prospectors, being encouraged to seek for rich surface indications of precious metals.

FROM ESTABLISHMENT OF INDEPENDENCE TO 1919.

After the establishment of Colombian independence, the new Republic declared itself the inheritor of the Crown properties and also made new laws which were amplifications of the old Spanish laws dealing with mining rights. A famous pronouncement in this connection was that of the Liberator, Simon Bolívar, promulgated in Quito, Ecuador, in 1829, to the effect that the subsoil (all mines) belonged to the nation (then including Venezuela, Colombia, and Ecuador under the title of "La Gran República de Colombia"); and this declaration has more recently been the inspiration of similar legislation in modern Colombia, being cited in the now famous presidential decree of June 20, 1919, on petroleum, in which the subsoil was declared the property of the nation under whatsoever title.

Mining titles have already been explained and described in the chapter on mining. Briefly, the mining laws of the State of Antioquia, where mining had reached a higher development and production than in any other part of the country, were generally adopted in 1887 after the system of confederated sovereign States had been abandoned by Colombia in favor of the unitarian Republic system that is now in force, thus doing away with the many conflicting laws of the former

sovereign States and centralizing mining legislation at the capital, Bogota. According to this arrangement, all emerald mines and salt mines belonged to the nation, to be operated for the national fiscal benefit, all gold, silver, platinum, and copper mines belonged to the States (Departments), and all other mines to the owner of the land—this bringing petroleum, asphaltum, sulphur, lead, zinc, clays, coal, and other similar substances of low value under the ownership of the owner of the land.

However, previous land laws—notably that of October 28, 1873, which provided for the readjudication of all land titles in the country emanating from the old Spanish Crown grants—reserved for the nation the rights to mines and to the subsoil on public lands adjudicated after that date to private individuals and companies; hence, lands secured from the Government subsequent to that date do not carry ownership of the subsoil either for precious metals or for coal, asphaltum, or petroleum. The situation was that mines of minerals such as gold, platinum, copper, and precious stones were the property of the nation, held in eminent domain and subject to location by right of discovery, according to the provisions of the mining code, whether located on private or Government lands of whatever title, while deposits of coal, petroleum, clays, and the like belonged to the owner of the lands whose title predated the land law of 1873 above referred to—the Government reserving to itself the right to coal, petroleum, clays, and the like on public lands still open for adjudication under the land laws or on those that had been adjudicated subsequent to 1873.

Such was the condition when, in 1913, a new law proposed modifications of the existing laws dealing with oil lands, and requests for the adjudication of lands supposed to contain oil reservoirs or for oil-land concessions were suspended by the Government. In the meantime four concessions had been granted—that of the Martinez interests in the Cartagena region, that of the Armella-De Mares Co. near Repelon on the Caribbean coast, that of Virgilio de Barco in Norte de Santander, and that of Roberto de Mares in Santander (del Sur). Each of these concessions was granted by the Government under special contract, providing for noninterference with private land titles held prior to 1873, as noted, and covering only public land that was open for adjudication or that had been adjudicated subsequent to 1873, with the condition that the national Government was to receive a certain percentage (usually 5 per cent) of the gross product of the exploitation.

Up to 1919 the situation was one of uncertainty as to the ultimate attitude of the Government regarding the free exploitation of oil lands, arguments being divided between the policy of free location and exploitation of public lands for oil, coal, etc., and the policy of Government ownership which has been making such headway in Colombia during the past 20 years. Matters were brought to a climax by the development of oil in paying quantities on the property of the Tropical Oil Co. (De Mares concession) in Santander, and by the consequent increase of interest in petroleum in the country, augmented by the activities of so many foreign engineers and representatives of foreign oil companies.

It would appear that the policy of the administration in Bogota was one of Government ownership and control, the same as for rail-

ways and all transportation and public utilities; and matters pertaining to petroleum legislation were further brought to a climax by the executive decree of June 20, 1919 (No. 1255).

RECENT LEGISLATION AND PRESENT STATUS.

The executive decree of June 20, 1919, above referred to, declared for the policy of Government ownership of the subsoil under whatever title and established a Bureau of Statistics for Petroleum Mines. It made, in fact, all land and mining laws retroactive to the decree of Bolívar in Quito on October 24, 1829, mentioned on page 132; it made the permission of the Government necessary for exploration of oil lands; and it established Government control and supervision in all lines of the business.

Suit was brought in the Supreme Court of Colombia (by Colombian citizens) in the form of a petition which declared that this decree was unconstitutional according to article 41 of the legislative act No. 3 of 1910, in which lands adjudicated prior to the land law passed October 28, 1873, and effective October 28, 1874, were declared not to be Government or State property in the sense of public lands. The decision handed down by the Supreme Court of Justice on November 21, 1919, sustained the petition in that part referring to articles 3, 4, and 5 of the decree (those articles proclaiming petroleum "mines" situated on private lands of any kind to be the property of the nation) and declared that such can only be the case when lands adjudicated from the public domain since October 28, 1874, are in question. The court decided that those articles of the decree violated article 120 of the constitution and also article 41 of legislative act No. 3 of 1910, and it recommended legislation by the Congress that would resolve these difficulties and settle all doubts regarding oil-land rights, titles, etc. A translation of this decision of the Supreme Court of Colombia and also one of the executive decree of June 20, 1919, have been submitted in connection with this report and may be examined by interested persons upon application to the Latin American Division, Bureau of Foreign and Domestic Commerce, Washington.

This decision by the Supreme Court of Justice of Colombia was followed by the legislative act No. 120 of December 30, 1919,¹ which, while making the provisions for exploration and exploitation somewhat more liberal and protecting the subsoil rights of the owners of lands adjudicated prior to the land laws effective October 28, 1874, still makes effective Government control of oil activity throughout the country and fixes a high rate of taxation on the gross production of oil wells and properties found in the country.

Several features of this new and latest law governing petroleum exploitation in Colombia have given rise to criticism, chief among these being the fact that, on forfeiture of an exploitation contract, all property within the concession (*ipso facto*) becomes the property of the Republic; the high rate of taxation on the gross product (a ground tax also is provided for); the onerous technical requirements providing for delivery to the Ministry of Public Works of copies of all geological, technical, and topographical reports and maps; the short time limit of the leases, fixed at only 20 years, whereas it will take from two to four years to develop any oil property in the

¹ Translated copy submitted; available in Latin American Division.

country (not to mention the time required for the construction of pipe lines and other export facilities); the right of the Government to cancel contracts almost at will; and the export tax of 6, 4, and 2 per cent of the gross product in addition to the exploitation tax of 10, 8, and 6 per cent of the gross, according to the zones in which the oil is found. It would appear as if the doctrine of Government control had been sustained by the Congress, the new law of December 30, 1919, being really an amplification of the decree of June 20, 1919, above described—with, however, provisions for the protection of the subsoil rights of property owners whose titles antedate the land laws effective October 28, 1874, who are left at liberty to negotiate their lands for the exploitation of oil, subject to the supervision of the National Government according to the provisions of this later law.

In the meantime, in July, 1919, the Ministry of Public Works published the conditions under which the Government would consent to the transfer of the De Mares concession to the Tropical Oil Co., which had developed the property, as has been explained. The important points of these conditions were as follows:

First, the area of the concession, originally containing some 1,300,000 acres (also estimated at as high as 3,000,000 acres), was reduced to 100,000 hectares, or approximately 247,000 acres.

Second, the company does not acquire any real right to petroleum deposits or to Government lands, operating virtually under a lease.

Third, the Government fixes the minimum tax on the gross product at 10 per cent but does not fix what the maximum rate shall be (this action being similar to that in the new and later law of Dec. 30, 1919).

Fourth, the company is obligated to erect a refinery of sufficient capacity to supply the country with petroleum products, within two years' time, and to sell such products at New York prices.

Fifth, the company renounces all right to Government lands covered by the original concession of 1905.

Sixth, the company renounces all right to diplomatic reclamation and binds itself to abide by all decisions of the Colombian courts.

SUMMARY OF PETROLEUM PROSPECTS.

In conclusion, in summing up the prospects for the development of large production of high-grade petroleum in Colombia, it may be said that these prospects are very good indeed and that the country undoubtedly possesses the source of much national wealth in its oil resources.

However, there exists an exaggerated idea among the Colombian people regarding the actual value of the natural resources in general and that of petroleum in particular, and there is little knowledge of the magnitude of such undertakings or of the very great expense and risk involved. It would seem that the people themselves expect too much in the way of national wealth from their oil bodies. Good producing wells will doubtless be brought in; but, as in Mexico, Peru, and other oil-producing countries, oil will not be found everywhere and there will be several good producing districts while a great deal of time and money will be spent in other places that will not fulfill the hopes of the nation or of the persons directly concerned.

On account of the adverse conditions of climate, topography, and lack of transportation facilities, oil work in Colombia takes from twice to four times as long and costs from twice to four times as much as in more favored regions such as Texas or the Tampico fields of Mexico. The exploitation of the petroleum in the fields of the interior is fraught with many difficulties, principally that of transportation. The Magdalena River offers a slow and expensive route, at best, and is extremely difficult throughout five or six months of the year during the season of low water (November to April); and the most serious transport troubles really begin after the river is left behind.

OPERATING COSTS AND LABOR CONDITIONS.

All skilled labor, with the possible exception of donkey-boiler men (in some cases available from the men already trained in the river steamer service), must, at first, be imported from the United States. This means the regular drillers, tool men, and others, who will receive the United States scale, plus medical attendance free, plus transportation to and from the country under at least a one-year contract. This imported labor will not and can not be nearly as efficient in the Tropics as in colder climates.

Natives can be used for packers, canoe men, machete and ax men in cutting trails and building roads, etc.; and a few fairly good carpenters, blacksmiths, and similar workmen could be contracted for in the country. Such men do not know rough wood construction work, however, and the blacksmiths could not be expected to sharpen tools, etc., until trained. This native skilled labor is slow and requires a great deal of supervision. Medellin would be the best source of supply of this class of labor, but high wages would need to be offered to get these men away from their homes and into the hot country (which they fear, with reason).

The only way in which the common labor can be handled at all is by the "tarea" system, or piecework basis, and this should be employed whenever possible. The Colombians are not as good mule packers as the Mexicans, and their equipment is not nearly so good as the famous Mexican leather "aparajeo," since adopted by the United States Army for use in mountain mule transport.

Common laborers in the Caribbean district get, in the country districts, an average of \$0.60 per day for rough machete and ax work, etc. In the towns of Barranquilla and Cartagena where work is to be had handling cargoes, the average wage is now as high as \$1.20 per day for this class of labor. Usually sufficient seasonal labor can be recruited from near-by towns for this class of work around oil wells. Packers receive about the same, and head packers and good men are paid as high as \$1 to \$1.20 per day, in addition to their food allowance, when on the trail, away from their homes.

Native carpenters, blacksmiths, masons, and similar workmen can be contracted for at about \$75 per month and expenses of transportation, lodging, etc., when away from their home towns.

It should be borne in mind, however, that the high cost of living has reached Colombia and that wages everywhere in the country and in all lines of work have been increased by at least 60 per cent during 1918 and 1919, except in the Departments of Cundinamarca and Boyaca, where there is found a very large number of people who earn, in the fields, only \$0.30 per day, but who can not be persuaded

to go down into the hot country for any wages, however large they may appear to them.

It will take any new drilling outfit some time to collect a fairly efficient crew of natives for all classes of work necessary, and it is to be expected that unusually high wages (for Colombia) will have to be paid to get the men to go into the jungles of the interior and stay on the job for any length of time.

One thing is favorable. These men are not exacting as to their accommodations, shelter being all they require; feeding arrangements have to be provided only for the foreign drill crews, since the Colombians usually have their women along with them. In fact, the peons, or common laborers, expect to put up their own shelters, made of the ever-present bamboo poles and palm thatched, etc. This they do in a few hours, using only the machete for the purpose. This is the only tool they know how to use and all they need in the way of equipment.

Supplies of beef (on the hoof), corn, yucca, etc., can nearly always be obtained if the camp is near one of the many rivers or small villages. If it is in the interior jungles, these supplies and everything else would have to be packed in from such supply points.

Each camp should be supplied with a good medical outfit and special equipment to combat malarial fevers, dysentery, etc. A good doctor (perhaps one experienced at Panama, where special work has long been done to combat malaria) is the best asset a camp can have, and his services will go a long way toward the efficiency of the work and the success of the enterprise. In view of the past experiences of dredging, mining, lumber, and oil camps in Colombia, there can be no doubt about the necessity and value of a good doctor with the camp.

CATTLE RAISING.

RÉSUMÉ OF GENERAL CONDITIONS.

Colombia is not a cattle country in the sense the term is applied to the western part of the United States, parts of Argentina, Uruguay, and the southern part of Brazil. Though there are a number of important cattle-raising districts, there is, with possibly two exceptions, no "open range" such as existed in the American West two decades ago. The principal exceptions are (1) the great "llanos" of the Orinoco watershed lying to the east of the inhabited portion of the country and (2) the plains of the Sogamoso in the Department of Boyaca, north of Bogota, which form the northern half of the great table-land of the Eastern Andes. Another region, across the low ranges of the Eastern Cordillera southeast of the city of Neiva (capital of the Department of Huila), lying near the headwaters of the Manzanares and Guaviare Rivers but composed only of the high benches or series of plateaus on the eastern side of the range, is beginning to attract attention as a new cattle-raising section and is receiving the benefit of capital and immigration from Bogota and Medellin. These interests are being attracted by the steadily increasing prices and demand for beef cattle in Colombia. Prices have doubled during the last two years. In the beginning of 1918 beef steers four and five years old were worth only \$40 each on the hoof from the Sinu district (where the feed is artificially planted Para grass), while at the present writing, early in 1920, they were reported as selling for an average price of \$80 per head, delivered on the property.

This increase in the value of cattle has greatly stimulated the industry of cattle raising. More capital is being attracted to invest in the business; new lands are being cleared and fenced in the more favored regions of the country; and it is safe to predict that within 10 years the total number of head of beef stock will be doubled.

Cattle raising has always been one of the principal industries of Colombia and, from colonial times, one of the chief and most stable sources of national wealth. But the cattle have been principally for domestic consumption, though a certain number have been exported—first to Cuba and more recently to the Canal Zone at Panama. For several years past the commissary department of the Panama Canal has been taking an average of 40,000 head per year from the Sinu River district in Bolivar, and during 1919 contracts for this district alone amounted to 100,000 head, to be delivered during that year and up to March, 1920.

During the colonial period there was a great surplus of land and a lack of labor in many districts of the country, and the natural development was in cattle, since this required less capital and skilled labor, was more easily transported to market (on the hoof), and found a steadier local demand than other products. The same conditions apply to a great extent to-day. On the Caribbean coast there are great areas of excellent level lands of alluvial formation

which are said to rival those of Cuba for sugar-cane, tobacco, rice, etc., but which are planted in Para grass and devoted to cattle raising on account of the scarcity and poor quality of available labor and the lack of large capital in the country with which to engage in the more costly agricultural developments. Taken as a whole, cattle raising may be said, in view of its wide distribution, the number of head actually in the country, and their value as compared with other products, to form the chief wealth of Colombia—outranking coffee as a national resource, though coffee is the chief export on which the country relies for its basis of exchange in trade for imports of foreign manufactured merchandise.

In order to convey some idea of the value of the cattle industry, it may be stated that in the Department of Boyaca alone, as long ago as 1908, there were 862,550 head of beef cattle. They were valued, at that time, at only a trifle more than \$8,000,000, or about \$10 per head, but would now be worth—in the open market, on the hoof—at least an average price of \$30 per head. In addition, one must consider the large cattle-raising districts of the Sinu River in Bolivar on the Caribbean coast, the Cauca River Valley in western Colombia, the great Magdalena River Valley, the "llanos" east of the Eastern Cordillera, and the region of the Patia River in Narino, south of the Cauca district—all of which produce a surplus of cattle, which are sent into other more populous regions of the country at constantly increasing prices. It is worth noting also that statistical returns for cattle in Colombia are much below the actual number of head, on account of the fear of taxation, apprehension concerning possible disturbances, and the difficulties encountered in obtaining accurate returns in this broken and undeveloped country.

On account of the varying conditions in the different regions of Colombia, the details and figures with regard to cattle-raising activities are given mainly in the separate district reports beginning on page 185.

VARIED CHARACTER OF THE INDUSTRY.

Because of the topography of Colombia, the lands devoted to cattle raising are of varied character, but they may be roughly divided into two main groups—the level valley or plateau lands and the foothill lands. The first division may be roughly subdivided into (1) the lands of the coast (or rather river valleys accessible to the coast, such as that of the Sinu and the interior of the great Magdalena Valley), (2) the high interior plateaus, such as that of Bogota, which takes in the plains of Boyaca, and (3) the great undeveloped and very sparsely inhabited "llanos" or "pampas" of the Orinoco watershed east of the Eastern Cordillera, which have practically no means of access to markets and from which it would be impossible to export cattle in any form under present conditions.

Conditions in the first-named subdivision are, in general, those of the Tropics. The lands consist of the level valley lands lying along the Rivers Sinu, Magdalena, Cauca, and Patia, and similar less developed districts of the interior, such as the region to the south of the Sierra Nevada near the Cesar River. The Cauca Valley is not so tropical as the other valleys mentioned, being situated in the interior between the low range of the Western Cordillera and the great Central Cordillera and having an average elevation above sea level of 3,000

feet. However, conditions of cattle raising along the Cauca are very similar to those in the more tropical regions named.

In these districts, the lands were originally covered with a heavy tropical growth and hardwood timber and had to be cleared and burned off. It was necessary to plant artificial grass, such as the Para, guinea, etc., and to fence the pastures. Ticks and diseases are rife, and cattle have to be treated with serums for the prevention of disease.

In the second subdivision—that of the high interior plateaus, such as the table-land of Bogota, the smaller table-lands of Popayan and Pasto, and the new region spoken of as lying east of Neiva—the climate is much cooler, the elevation being between 7,000 and 9,000 feet, with a more open country covered with a good short grass of excellent feed qualities. In these highlands imported breed stock thrive, and it is around Bogota that the most attention has been paid to breeding and improving live stock of all kinds found there. However, these more suitable cattle-raising sections do not export the products of the industry—the distance and transportation costs to the coast being too great. They are dependent upon the local markets.

In the third subdivision, the “llanos,” conditions are again different. The great plains slope gently down from the Eastern Cordillera toward the low and very hot regions traversed by the many shallow rivers tributary to the Orinoco. Here are hundreds of thousands of acres of level land, the best of which, from the standpoint of cattle raising, is said to be the area around the headwaters of the Casanare River, a tributary of the Meta, which in turn flows into the Orinoco. The Casanare is the part of this great region most developed in cattle at the present time, and there are said to be about 300,000 head there. Some ranches possess as many as 20,000 head. There are, in all, about 200 ranches running cattle in the region, but some of them have only a few hundred head and a few horses. The difficulty with these great plains seems to be their isolation and the general inaccessibility of markets. Cattle can not be driven even into the Bogota market, because the distance is too great and the trip over the range is too hard for them to make. Only hides find their way over the range and down via Tunja into the Bogota market for eventual export via the Magdalena.

It should be noted that there is a distinction between the words “llanos” and “selvas,” the former being used to designate the open treeless plains of the northern portion, belonging to the Orinoco watershed, and the latter to designate the great wooded plains farther south, which drain into the Amazon.

Many wonderful descriptions of these “llanos” may be heard and read; some describe them as an undeveloped region of limitless wealth, while others state that their fertility and value have been greatly overrated. Certainly, to-day, they can not be recognized as an economic factor in the general wealth of Colombia, since they are too distant and inaccessible, and their possible productivity is lost to the country and to the world.

There is natural grass—long grass—in abundance, but the opinion has been given that this grass is not very good cattle feed. However, great herds could undoubtedly be raised on these vast plains, and in the course of many generations this may come to pass through economic necessity as cattle lands are put under cultivation in the United

States, Argentina, and elsewhere. But there are many present-day difficulties and disadvantages, chief among these being (1) the distance from the ocean and the fact that the "llanos" are cut off from the rest of Colombia by great ranges of mountains through which there are no roads or even trails worthy of the name; (2) the great swamps and morasses; (3) the pestilential climate; and (4) the lack of uniform seasons. For eight months in the year there is an excess of rain, during which period the level lands become shallow lakes of great extent and the cattle have to be driven into the benches and low hills along the range. During the dry season the shallow rivers soon run dry (leaving great swamps and mud sinks), there is little water left in the highlands to the west, and the cattle have to be taken down to the better areas of the lower plains again, where the grass soon dries and there is a lack of water. (See "The Llanos and the Selvas," in "Colombia," by Phanor J. Eder.)

In the second main division of cattle-raising territory one may include the great variety of lands situated above the level valleys and consisting of the foothills and slopes of the mountain ranges at elevations ranging from 4,000 to as high as 10,000 feet above sea level. Here there is cattle raising on a small scale; that is to say, there are no large herd owners or large extensions of fenced lands, but, in the aggregate, the number of cattle raised in the hill lands is quite large. Near the mountain towns and villages are often found, also, small pastures of artificial grass for the better run of cattle and milk stock, etc. This is particularly true of the Department of Antioquia.

The cattle found in the hilly lands are always of a poorer grade than those in the richer valleys, the average breed not going over an average fat weight of 600 to 800 pounds, whereas a 5-year-old steer from the Cauca or Sinu Valley, will run up to 1,000 and even as high as 1,200 pounds live weight. Diseases are rife in the hill country and cattle have to be inoculated. Ticks are also prevalent, and there are many other insect pests that bother the cattle.

OPPORTUNITY FOR FOREIGN CAPITAL IN CATTLE RAISING.

There undoubtedly exists an opportunity for good and safe investment in cattle raising in Colombia, but, as has been pointed out, conditions are very different from what an American cattleman would expect to find or would be accustomed to. Large areas of public lands can still be secured from the Government at a very low figure, but these lands, suitable for cattle, would be too far from the ocean and too inaccessible to afford any possible immediate return on the investment—or it would be a question of another very large investment to afford a means of transportation. Usually, on such an investment, returns could be expected only in the very distant future.

The better lands lying in the accessible river valleys, from which cattle can be either exported or easily sent to the markets of the interior, have long ago been taken up by the Colombians and a few foreigners—that is to say, in all places where conditions are right and the lands are not subject to floods or other damage. Tracts of good land that could have been purchased in Bolivar for a few dollars per acre a few years ago have recently increased in price tenfold (or more, where the lands have been exceptionally well located),

and the Colombians, as has been said, are being actively attracted to cattle as an investment, and all available and suitable new lands are being rapidly cleared and put into cattle pasture. Even under present conditions, such an investment would prove to be an excellent one if good judgment were used as to character of soil, location, etc. There can be no question that the value of cattle in Colombia will steadily increase as time goes on, because not only is the consumption of beef in the country itself increasing rapidly, but the demand for export and for the packing houses soon to be established in the country will also increase the value of cattle and cattle lands.

Another factor to be considered in connection with such an investment is the increasing value of these lands (if properly located) for sugar cane, cotton, rice, and tobacco; and it may be predicted that the rich alluvial plains of the Department of Bolivar will eventually rival Cuba, this development being already started.

The Magdalena Valley contains many areas of good undeveloped land, where, in certain respects, conditions are similar to those on the Sinu River. But the Magdalena districts are not so near the coast and are dependent upon the river as a means of transportation. And there is the additional disadvantage that they are subject to floods and the possibility of being cut away by the constantly changing channel of the river. Generally, in the Magdalena Valley, it is necessary for the cattle to be provided with prepared pastures in the foothills or higher lands out of the valley during the stages of high water.

Even in the Cauca Valley there is little suitable land left for sale or location, so far as the acquisition of a large undeveloped tract is concerned, though there is room for the expansion of the cattle industry there. The number of head now pastured could easily be doubled, according to a careful survey and estimates made in 1919. If handling facilities were improved or a packing house provided, the Cauca Valley could, at the present time, export a surplus of 40,000 head per annum, besides the great numbers now being taken by the Department of Antioquia; and this surplus cattle production could be easily doubled. Good lands here are also increasing rapidly in value and are being more and more used for sugar cane and rice cultivation, though this latter development is greatly hampered by the lack of sufficient and efficient labor—the same condition obtaining in the Sinu and Magdalena River Valleys and elsewhere in the country with the exception of the Bogota region. A great deal can be accomplished, however, even in the face of these conditions, with the application to agriculture of modern methods and machinery.

Viewing the cattle-raising and agricultural problem in Colombia from the standpoint of investment, the experiences and decisions of Danish experts who surveyed the entire country in 1919 may be cited here. These people were large owners of fine stock and modern farms in Denmark and in the Pacific Northwest of the United States and were looking for large tracts of cheap land for development in a new country. After spending some time on the Sinu River, around the Cartagena district, and south of the Sierra Nevada mountain group, reviewing the Magdalena River Valley, inspecting the tablelands of Bogota and Boyaca, and visiting the famous Cauca Valley, they came to the conclusion that, for them, the coast, while most accessible and valuable, was too tropical for their people and that

the better lands in the higher altitudes of the interior were too inaccessible for present development on a large scale by a colony from northern countries.

The official census of cattle compiled by the Colombian Government in 1915 places the total number of horned cattle in the country at 7,000,000. As has been remarked, these official figures may be regarded as extremely low, and the figure of 9,000,000 or even 10,000,000 would probably be more accurate.

MARKET FOR SERUMS, CONDITION POWDERS, ETC.

On account of the ticks, and the general prevalence of diseases among the live stock of the country, Colombia presents a ready and wide market for live-stock serums and remedies of many kinds. The practice of inoculation is becoming very general. In 1919 there was a shortage of syringes for inoculation purposes, since a sufficient supply could not be obtained from France, which furnished most of such articles prior to the war. Colombian firms interested in the sale of live-stock remedies were endeavoring to secure a supply in the United States.

The Pasteur Institute cattle and live-stock serums are very well known in Colombia, being handled by a well-organized firm in Medellin. In 1919 an American laboratory firm became interested in the market, its agent having headquarters in Bogota.

A Colombian firm manufacturing condition powders from materials imported from the United States was enjoying wide success in 1919 and was doing considerable advertising, which was paying more than well. The main difficulty confronting the introduction of American condition powders and similar veterinary remedies lies in the high import duty, which makes it impossible to compete on an equal basis with similar goods manufactured in the country, there being a great saving effected in duties if the materials alone are imported and put up in the country.

A laboratory firm in Bogota, of which one of the partners is a foreigner, is endeavoring to put cattle serums on the market in Colombia and, in time, will be able to compete very favorably with the imported articles in this line.

COLOMBIAN EXPORTS OF LIVE STOCK AND ANIMAL PRODUCTS.

Notwithstanding the number of cattle in the country, the favorable rate of increase, the improved attention to the industry, and the increased investments in cattle as compared with the population, conditions for the future of cattle exports from Colombia are not very favorable, on the whole, on account of the fact that the Colombian people are meat eaters and the consumption of beef, even among the poorest classes, is very high—higher, in fact, than in any other Latin American country. Judging from the consumption of beef cattle in Antioquia in relation to the population, it would appear that beef forms the principal article of diet of the people as a whole; and, while the numbers of cattle and the new pastures opened have increased greatly during the past few years, the domestic consumption has also increased, beef cattle being the chief article of trade between one Department and another and

between one district and another. The Magdalena River Valley is little developed in cattle, as yet, and on account of conditions there can not be counted on for any large production of beef cattle. The plains of Boyaca are too far in the interior to be counted on for export until a railway taps them, as has been projected by the Department of Antioquia, which is surveying a line across the Magdalena via the coal fields of Velez in Santander and on into Boyaca (this line aims primarily to develop the cattle lands of Boyaca and to obtain coal for the Nus division of the Antioquia Railway). This situation practically confines the sources of export to the Sinu region, the alluvial plains of Bolivar south of Cartagena (where the number of head can be doubled in 10 years' time), and the Cauca Valley (which can, by increasing artificially planted lands and the number of breed cattle, export possibly 80,000 head per annum).

The Colombian Government has paid a great deal of attention to the encouragement of the cattle industry and of packing-house projects. New laws have been passed regulating packing houses and providing also for the loan of additional capital by the concessionaires to cattle and land owners for the stimulation of the industry.

The drying and salting of meat for export has been inaugurated in Tolu, Department of Bolivar, according to a report from the American consulate at Cartagena. The enterprise at present is comparatively small. The animals are kept from feeding 36 hours before being killed, in order to season the meat. After it is stripped off the meat is carried into the sea and dipped for salting. After this treatment it can be conserved for four or five months. In the Cartagena markets the dried meat has a fair sale.

On September 18, 1919, the Panama Star and Herald published an article announcing the fact that an American concern associated with prominent cattle raisers of Colombia had formed an organization to engage in meat packing at Cispatá, Colombia. The contract between this new company and the Government of Colombia was signed about August 29. Construction of the plant was expected to start at an early date.

Cispatá, which is the port on the north Colombian coast at the mouth of the Sinu River, has shipped large numbers of cattle to Panama during the past few years. Pasture land sufficient to take care of 75,000 to 100,000 head of cattle a year has already been acquired by the company, and it is estimated that in 3 or 4 years the Colombian plant will have an annual output of 150,000 head of cattle. The plans of the company, moreover, provide not only for the erection of a packing plant, but also for the development of the cattle business. Money will be advanced to the cattle raisers, and thoroughbred cattle will be imported for the improvement of the herds. Experienced cattle raisers from the great cattle-raising districts of the United States and South America will be employed as instructors in aiding the cattlemen to improve the breed of their herds.

Colombian Government statistics for 1911, a prewar year, give a total value of 92,852 Colombian dollars for the live animals exported, of which the United States took 4,558 dollars' worth, Cuba 78,716 dollars' worth, and Panama 8,481 dollars' worth. These returns

represent chiefly live beef cattle shipped to Cuba, with which country there was carried on for many years a small trade in cattle by means of small sailing vessels and trading schooners, plying between Cuban ports and Cartagena and the Sinu. The cattle trade with Panama, small in 1911, has since rapidly increased to the high figure of 100,000 head in 1919-20, the Canal commissary department taking an increasing amount of beef for the supply of the Canal Zone and for ships' provisions there. Packing and refrigeration facilities at Panama have been doubled recently, and the Canal will need a steadily increasing amount of beef as traffic becomes heavier.

In 1911 animal products—chiefly hides—exported from Colombia were as follows: Germany, 554,974 kilos (kilo=2.2046 pounds), valued at 206,308 Colombian dollars; Spain, 189,348 kilos, valued at 75,739 dollars; United States, 2,717,042 kilos, valued at 1,050,115 dollars; France, 130,928 kilos, valued at 67,637 dollars; Great Britain, 721,759 kilos, valued at 256,835 dollars; Panama, 1,185 kilos, valued at 104 dollars; other countries (principally Cuba), 735,215 kilos, valued at 303,670 dollars; total 5,050,452 kilos, valued at 1,960,409 dollars.

In 1916 Colombia exported live animals to the value of 521,905 Colombian dollars, principally beef cattle to Panama and Cuba. This same year animal products—chiefly hides—amounted to 7,215,022 kilos, valued at 3,115,250 dollars. Cartagena shipped a total of 467,086 dollars' worth of live animals, principally beef cattle on the hoof, to Panama. The exports of animal products by ports in 1916 were as follows:

[Kilo=2.2046 pounds; Colombian dollar=\$0.9733.]

Ports of shipment.	Kilos.	Value.	Ports of shipment.	Kilos.	Value..
		<i>Colombian dollars.</i>			<i>Colombian dollars.</i>
Barranquilla.....	4,800,016	1,938,689	Rio Hacha.....	108,409	55,263
Buenaventura.....	630,513	330,122	Santa Marta.....	196,978	103,974
Cartagena.....	1,082,951	492,581	Tumaco.....	234,779	116,673
Cucuta.....	111,159	58,274			
Meta.....	50,216	19,675	Total.....	7,215,022	3,115,251

The above table furnishes a very good idea of the chief hide-exporting regions of the country. Barranquilla ships hides from the Magdalena Valley, Santander, Tolima, Antioquia, northern Bolivar (part), Boyaca, Huila, and Cundinamarca, as a general thing, while Cartagena is credited with a small portion of the movement of hides down the Magdalena (possibly 25 per cent of the total) and those from the Sinu region and northern Bolivar. Buenaventura handles the hides from the Cauca Valley and the Popayan district, Tumaco handles those from the Patia River and Pasto districts, while Cucuta ships the hides from the region of Norte de Santander out by way of Maracaibo in Venezuela. Rio Hacha handles the hides from the cattle ranches of the Goajira Peninsula and the Valle Dupar region farther to the south, and Santa Marta ships hides from the region south of the banana district as far as the Cesar River and the district south of the Sierra Nevadas.

To convey an idea of the relative values of the exports of the different live animals, the following table is given, covering the year 1916:

Kinds.	Head.	Kilos.	Value.
			<i>Colombian dollars.</i>
Live animals, n. e. s.	39	600	232
Birds.....	1,163	1,785	1,013
Snakes.....	11		
Canaries.....	35		
Cattle (beef).....	15,809	6,826,686	514,441
Horses.....	21	2,600	2,430
Hogs.....	76	3,943	1,121
Asses.....	3	100	100
Mules.....	28	3,040	960
Sheep.....	1	12	1
Lizards ("Iguanas").....	25		
Parrots and parakeets.....	235		
Monkeys.....	45	50	30
Red owls ("Mochuelos").....		500	600
Tigers ("tigrillos").....	1		50
Total.....	17,492	6,839,316	520,978

The exports of animal products in 1916, given above by ports, are shown below by articles:

Kinds.	Kilos.	Value.	Kinds.	Kilos.	Value.
		<i>Colombian dollars.</i>			<i>Colombian dollars.</i>
Crocodile skins.....	24	5	Turtle shell.....	83	496
Cattle hides.....	7,003,233	2,993,919	Salt beef.....	65	13
Calfskins.....	5,551	3,233	Eggs.....	380	468
Goatskins ¹	74,855	44,428	Wool.....	548	132
Tiger skins.....	22	53	Hog lard.....	55	20
Sheepskins ²	57,627	38,614	Butter.....	23	33
Deerskins.....	5,732	1,937	Pearls.....	1.9	1,200
Bird skins.....	213	2,898	Heron plumes (aligrettes).....	225,65	8,740
Horns.....	44,543	8,409	Cheese.....	200	30
Tortoise shell.....	4,360	8,211	Tallow.....	3,657	563
Horsehair.....	1,034	925			
Pearl shell.....	12,589	924	Total.....	7,215,021.55	3,115,251

¹ Principally from Rio Hacha.

² From Bogota and Manizales.

Hides rank third in importance among the exports from Colombia, coffee being first and minerals second. Of the animal products listed, beef hides constitute a little more than 96 per cent of the total. Exports of hides from Colombia for the past 13 years have been as follows:

Years.	Kilos.	Value.	Years.	Kilos.	Value.
		<i>Colombian dollars.</i>			<i>Colombian dollars.</i>
1906.....	4,822,894	1,251,446	1913.....	5,234,593	3,180,782
1907.....	3,659,171	1,151,338	1914.....	4,662,724	2,704,380
1908.....	3,626,321	1,216,826	1915.....	6,333,175	3,859,005
1909.....	5,588,205	1,849,640	1916.....	7,003,231	2,993,919
1910.....	4,694,002	1,533,098	1917.....	7,904,398	4,374,440
1911.....	4,449,475	1,779,790	1918.....	4,527,147	2,987,917
1912.....	5,167,639	2,661,722			

The low export return for 1918 is due to the entrance of the United States into the war and the consequent lack of tonnage for ocean transport. Hides steadily increased in the country in direct relation to the increasing herds of cattle, but were to a great extent stored during 1918. Exports of hides from Colombia to the United States were exceptionally heavy during all of 1919, particularly during the first half of that year (representing part of the 1918 production of hides in the interior), this movement being stimulated by the high prices being obtained in 1919 for good beef hides.

METHOD OF TRADING IN HIDES AND SKINS.

Nearly all the hides and skins shipped from Colombia are handled by exporters and merchants of the coast who have agencies or branches in the interior. Merchants receive shipments of hides from their clients in the interior and also from their branch houses, which trade goods for them to the natives and small dealers of the interior. Contractors for the municipal slaughterhouse privileges are also direct exporters of hides, usually dealing with some commission house in New York for their disposal and sale on open account.

The following table shows the United States customs returns of hides and skins received from Colombia during four recent years:

Kinds.	Fiscal year 1916.		Fiscal year 1917.		Calendar year 1918.		Calendar year 1919.	
	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.
Calfskins:								
Dry.....	10,334	\$2,461	50,407	\$15,120	26,681	\$10,622	125,075	\$58,498
Green or pickled.....			743	171	244	61	27,078	8,809
Cattle hides:								
Dry.....	10,622,874	2,535,402	14,789,299	4,102,029	7,064,013	2,278,091	12,878,893	4,469,615
Green or pickled.....	113,804	17,326	550,742	128,506	458,811	96,671	2,100,484	576,507
Goatskins.....	135,515	41,835	316,938	134,485	110,531	53,345	360,835	246,133
Sheepskins.....	95	57	7,080	3,988	4,995	1,368	16,631	9,204
All other.....	11,715	2,846	5,540	2,430	58,230	7,095	258,145	38,615
Total.....	10,894,337	2,599,927	15,720,749	4,386,729	7,723,505	2,447,253	15,767,141	5,407,381

During and since the war the United States has been receiving at least 90 per cent of all the hides and skins shipped from Colombia.

The standard for packing hides for shipment is that of the ruling by the United States Railroad Administration, Official Classification Committee, adopted in 1918. The rulings of the Department of Agriculture apply with regard to inspection and prevention of diseases. All shipments of hides from Colombia have to be certified to by the American consular representatives regarding fumigation and sanitary treatment, to comply with the requirements of the Department of Agriculture concerning prevention of disease.

LIVE-STOCK BREEDING.

Except in the Bogota district, there has been little attempt in Colombia to improve the breed of cattle, although the native stock, with the exception of that in Antioquia, is not bad. In the Bogota region there are a number of Polled Angus, Durhams, and Ayrshire cattle, and a few "Cebu" bulls have been imported into the Sinu River Valley and the Magdalena Valley, where they give excellent results

in producing a crossbreed which is free from ticks and less bony, carrying more beef, and being, in general, more free from tropical cattle diseases than the native stock. This crossing has given very excellent results with the herds of the United Fruit Co. at Santa Marta, where oxen are used in the banana plantations for hauling—oxen working better in the soft, wet ground than mules of the country, which are too small and light.

Law No. 73 of 1916 provided for a one-third rebate on the cost of animals imported for breeding purposes into Colombia. This cost includes the original cost of the animals, freight, insurance, etc., to delivery point. The pedigree, certificate of inspection, etc., from the country of origin must be presented, and the original owner in Colombia can not resell the animals on which this rebate is secured within four years' time. The maximum rebate allowed for bulls is 300 Colombian dollars, for horses 300 dollars, and for hogs 40 dollars. As high as 80 dollars is allowed for rams.

The Colombian Government maintains no organized veterinary service, and there is room for much work in this line, since cattle suffer from many diseases, including tuberculosis.

Law No. 73 of 1916 provided for an annual appropriation of 50,000 Colombian dollars for the promotion of cattle fairs throughout the chief trading centers of the country, and a like sum to be distributed for the aid of the importation of breed stock into Colombia.

It has been estimated that the great plains of the Orinoco watershed are capable of supporting 180,000,000 head of cattle, and that there are 250,000 square miles of cattle lands in the country. The industry is undoubtedly capable of large expansion.¹

HOG RAISING.

Prior to the war, not enough hogs were raised in Colombia to supply the country with sufficient lard for domestic consumption, and this was true especially of the coast regions, where large quantities of lard were imported every year from the United States. At the present time—as a result of the increase in local production—no lard is imported for local consumption on the Caribbean coast, the small quantities imported going to the Pacific coast, which is not as developed as the Atlantic seaboard. The Bogota region now produces a surplus of lard, which is shipped to Santander, Tolima, and Antioquia (lard was never imported in large amounts that far in the interior, on account of the high freight cost). The industry has been protected by a higher import tariff, and hogs are being raised all over the country, not on a large scale in any case but, in the aggregate, very numerous and more than sufficient to supply domestic needs. Little attention is paid to breeding, however, and the average native hog is small and of the razorback variety. In the rural districts and in the small villages of the country, nearly every house and hut has from one to half a dozen hogs tied in the yard for fattening, and the breed may be said to have become as numerous as the chickens, being

¹ Persons desiring additional information concerning cattle and live stock in Colombia may be referred to "Colombia," by Levine, pp. 108-109; South American Yearbook 1915, p. 504; Panama Canal Records, Jan. 16, 1918; Bulletin of the Pan-American Union, Feb., 1918, pp. 182-183; "Disposiciones Legales y Reglamentarias de los Packing Houses en Colombia, 1917." A comprehensive article on the cattle-raising industry in the Department of Bolivar was published in Commerce Reports for July 2, 1919. An account of the Colombian law on packing houses appeared in Commerce Reports for June 12, 1918.

found everywhere. Drovers of hogs are frequently encountered on the trails between the towns of the interior, on their way to market.

Exports from the Sinu River region to the Panama Canal average 400 head of live hogs per week, with approximately 1,000 40-pound cans of lard.

With the establishment of the large packing house at Cispata, near the mouth of the Sinu River, which will have a yearly capacity of at least 20,000 head of "smaller animals" (i. e., hogs), the industry of hog raising will receive an additional impetus in this region and should prove to be a very profitable business, since corn is easily grown without the use of plows or other tools than the ax and machete and at least two (and, in the better lands nearer the river, three) crops can be secured annually. With the instruction and help of experts to educate the people in the proper care of these animals, and with the importation of good breed stock to secure increased size and lard weight, hog raising in the Sinu and Bolivar region will provide an additional source of wealth.

DAIRYING—IMPORTS OF CHEESE AND BUTTER.

As an industry, dairying is almost unknown in Colombia. Except in three districts, dairy products are almost unknown, and it is only in the Bogota region that fine dairy cattle are found and that attention is paid to the industry in a modern and scientific way.

Throughout the coast regions and in the interior hot valleys and low foothills, dairying is in a very primitive state. Cows give an average of only 2 quarts of milk a day, and do not give up their milk unless the calf is tied to them. A very poor, tasteless grade of cheese is made, but butter is made only near Medellin (of very poor grade) and near Bogota, where only about 10 per cent of the people use butter at all. In the coast regions butter is almost unknown, except of the imported tinned variety; a small creamery, near Cispata, of the Diego Martinez Co., is now making small amounts of tinned butter for local consumption, but this product is used only on the tables of the very wealthy (and even then not as a general thing).

Near Bogota there are a number of very fine ranches owned by wealthy people of the capital who have imported small creamery outfits of machinery, separators, etc., and manufacture a very excellent quality of butter, which is sold in the Bogota market. Here also several kinds of very good cheese are made, competing in quality and price with the best foreign Camembert, Rochefort, etc. The dairy industry even here, however, is limited.

In other parts of the country cheese is made thus: The milk is put in a long, narrow, handmade wooden trough. Then the rennet (calf's stomach) is immersed to curdle the milk. The curdled milk is pressed by hand until the whey rises, and when this has all been removed, the stuff remaining—called cheese—is rubbed for about half an hour with the hands. When it is of the right consistency, coarse salt is added and the mass is pressed into wooden molds of various sizes. This so-called cheese sells at an average price (in 1919) of 30 cents per pound of 500 grams (half a kilo).

In most of the so-called "dairies" or milking ranches where the cows are collected during the calving season, blackleg is very prevalent, as the calves are separated from the cows for long periods with no protection from the sun and without food or water. In the dry seasons the corrals are covered with inches of dust and in the rainy season with even deeper mud.

In 1916 Colombia imported a total of 37,104 kilos of tinned butter, valued at 19,613 Colombian dollars (1 dollar = \$0.9733 United States currency), on which duties of 6,175 dollars were collected by the Customs. Imports of cheese during the same year amounted to 100,021 kilos, valued at 18,052 dollars, on which duties of 3,113 dollars were collected. The duty on cheese amounts to 9 cents per pound on the gross weight of the package. Most of these imports are handled by the fancy-grocery importers, and Bogota is the best market. A well-known American brand of tinned cheese is becoming very popular with the better class of people. Only about 10 per cent of the population can afford to buy imported cheese or tinned butter.

These imports of tinned butter and cheese will increase and may be said to have almost doubled in 1919 over the figures given above for 1916. However, the great bulk of the population is so poor and the climate so bad for shipments that no great market can be looked for.

AGRICULTURE.

INTRODUCTION.

Agricultural products in Colombia are as varied as the topography and the climate. All sorts of soil and climate are found, from those of the extreme Tropics to those of the Temperate Zones; and the products vary accordingly, from bananas, sugar cane, and tobacco in the low, hot lands to wheat, barley, potatoes, etc., in the high plateaus of the interior.

The topography of the country greatly affects agriculture. The inhabited portion of Colombia is in the main extremely mountainous; the areas of level, accessible lands suitable for the development of agriculture on a large scale are few and, in comparison with the vast size of the country, are limited in extent. This statement is made in relation to the country as a whole and does not mean that there is not room for great expansion in agriculture in Colombia. As a matter of fact, in view of the general fertility of the soil and other conditions, there is vast room for expansion of the industry in many of its branches. Colombia's production of vegetable products is limited only by the general scarcity of efficient labor in the coast regions and in the two important interior valleys and by the general lack of capital with which to undertake development on a large scale.

Coffee is the economic salvation of this mountainous country. Colombia is now, since the war, self-supporting so far as other staple foodstuffs are concerned, with the exception of rice, in which domestic production is being rapidly increased and bids fair not only to supply the needs of the country but in a few years to furnish a small surplus for export. But coffee furnishes the basis for the balance in foreign trade, outranking all other exports by a very wide margin. The situation of the coffee crops of the country constitutes the key to the buying power of Colombia as regards imported goods and articles.

Coffee grows on the steep slopes of the mountains at elevations varying from a few hundred feet to as high as 9,000 feet above sea level, in nearly all parts of the country, on lands that could not be used for any other purpose. Few tools or equipment other than the universal machete are required, and there is no cultivation other than that of chopping out the larger weeds between the rows of trees. Very little labor is required other than that for picking the ripe berries, for which unskilled labor is employed. Women and children work as well as the men, the ripe coffee berries containing the beans being merely stripped from the branches of the low coffee trees and carried to the drying places. The machinery required for shelling and husking the beans is not complicated or expensive, and large plants are not necessary.

To give an idea of the relative importance of the several divisions of Colombian exports, the following figures are reproduced from the Colombian Government returns for 1918:

[Colombian dollar = \$0.9733.]

Groups.	Value.	Percent- age of total.	Groups.	Value.	Percent- age of total.
	<i>Colombian dollars.</i>			<i>Colombian dollars.</i>	
Live animals.....	1,432,184	3.80	Miscellaneous.....	22,148	0.06
Animal products.....	3,090,378	8.19	Money.....	35,589	.10
Mineral products.....	5,740,752	15.21	Parcel-post exports.....	98,612	.26
Vegetable products.....	25,784,369	68.34			
Manufactured products.....	1,524,527	4.04	Total.....	37,728,550	100.00

The group of vegetable products is composed chiefly of coffee, which forms more than 80 per cent of the total, or 56 per cent of all exports—the coffee exported during 1918 being valued at 20,675,024 Colombian dollars.

The values above indicated are arbitrary ones placed by the Government on exports, the valuation for each month's returns being taken from the average price for the preceding three months, as the statistics are being made up. Compared with actual market prices obtained, these figures are quite low.

TOPOGRAPHIC AND CLIMATIC AGRICULTURAL DIVISIONS.

Colombia may be roughly divided into four main zones—first, the coast zone, including both the Atlantic and the Pacific coast regions; second, the low foothills and valleys of the interior up to an elevation of about 3,000 feet above sea level; third, the low hills and first ranges of the Andes up to elevations of possibly 6,000 feet (the coffee country); and, fourth, the higher ranges and plateaus more than 6,000 feet above sea level.

Conditions of climate are very different in these four main zones. The difference between the Caribbean and the Pacific coasts is also very marked; in the former region the seasons are well indicated—from December to May, dry, and from June to December, wet—while on the Pacific coast, especially in the northern part above Buenaventura, it rains nearly every day and the precipitation is as heavy as anywhere in the Tropics. Both coasts are hot and damp, the temperature registering a high average of 95° F. Conditions throughout the Magdalena Valley, as far up as Girardot, are the same, in general, as for the Caribbean coast, though the upper valley usually receives somewhat more rain than the lower, more level reaches of the river valley and the seasons become more erratic as the coast is approached.

In the second zone, which includes the Cauca Valley, all of Antioquia, etc., there are two wet and two dry seasons, alternating—January, February, and March, dry; April, May, and June, wet; July, August, and September, dry; and October, November, and December, wet. The average daily temperature varies between 64° and 84° F., with an average temperature of 76° F. The most torrid part of the

year is during July, August, and September, though the climate all the year round may be called semitropical.

In the third zone the climate and the divisions of wet and dry seasons are about the same, though the precipitation is somewhat heavier. From 5,000 to 7,000 feet the climate is ideal, not too cool or too hot, with little variation in temperature all the year round, the high and low averages being 72° and 58° F.

In the fourth zone, from 6,000 to 9,000 feet above sea level, there are occasional frosts on the higher levels, the average temperatures being about 40° low and 64° F. high. The seasons are not well defined, and rains are frequent, with little variation in seasons. The best coffee comes from the lower levels in this zone; and on the higher plateaus, such as the table-land of Bogota, such products as wheat, barley, etc., do very well despite the lack of definite seasons.

PRODUCTS OF VARIOUS ZONES.

In the first zone, the northern part of the Pacific coast is suitable only for tagua and rubber, on account of the practically incessant rains. Plantains, corn, and bananas are raised, but on a very small scale. The population (mostly Negro) is small, and there does not seem to be any immediate future of opportunity for this region, which is broken by the low coast range lying along the ocean west of the Western Cordillera of the Andes. South of Buenaventura the climate changes, with less rain in the region of Tumaco and Barbacons, and cattle are found in the valley of the Patia River, where the land is also suitable for cotton, sugar cane, tobacco, rubber, etc., but where the sparse population and the climatic conditions preclude any immediate development of real importance. This latter region—and, in fact, the entire Pacific coast—produces considerable tagua (vegetable ivory) and rubber.

The Caribbean coast and the valleys of the Sinu and Magdalena Rivers produce bananas, corn, tobacco, cotton, sugar cane, tagua, and rubber, and it is in this region that cattle raising has become of such importance. Bananas are exported in large quantities (from Santa Marta). Sugar and rice promise to become important items of wealth in the near future. Tobacco, in sufficient amount to permit exportation, is also grown.

The second zone, that of the low foothills and interior low valleys, is suitable for corn, cotton, sugar cane, cacao, tobacco, coffee, and a small variety of vegetables such as the universal yucca.

The third zone yields corn, coffee, beans, and table vegetables such as the potato.

The fourth zone produces wheat, barley, and other cereals, as well as Temperate Zone fruits and vegetables, including potatoes, which do better in this colder climate than down in the third zone.

There are four products of domestic consumption that are found universally in Colombia—corn, sugar cane, plantains, and yucca; all these seem to be more or less productive under nearly all conditions of climate in Colombia, and they constitute the great food staples of the country, in addition to beef, which is also much used by all classes. Corn is grown in small patches everywhere in the country. Sugar cane is also found even in the higher reaches of the Cordilleras, growing in tiny patches on the mountain sides, but it is

only in Bolívar (see p. 218) and in the Cauca Valley (see p. 275) that sugar cane is produced in large quantities for sugar mills of modern equipment where white sugar is made.

Plantains form one of the great staples of the country, being used as are potatoes in the United States. They are grown in small patches all over Colombia, even in the high mountains at elevations exceeding 7,000 feet. Plantains and bananas form very important articles in local interchange of products between different localities, and in the country districts no house, ranch, or even hut of the natives is without its few stalks of plantains. The total production of plantains and bananas, like that of sugar cane and corn, must be very great; but only from Santa Marta are bananas exported (by the United Fruit Co.), though an attempt was made by a German company several years ago to establish a large banana plantation on the Gulf of Uraba, without success. There are large areas of excellent banana lands left on the Caribbean coast, principally in the Department of Bolívar south of Cartagena, where there are to-day some rather large plantations supplying the local market and easily accessible to the port of Cartagena. Moreover, this class of industry is well adapted to the native labor, but, unfortunately, the banana industry for export is dependent upon rapid ocean transportation and the business can be successfully organized only by very large companies.

Corn also has been exported. The United States took 6,420 Colombian dollars' worth in 1917, though in 1916 Colombia's total exports of corn amounted to only 37,720 kilos, valued at 1,360 dollars, going to Cuba in small trading schooners.

Sugar in the refined state is now being exported from Colombia, principally to the Canal Zone from Cartagena and Buenaventura, the former exports coming from the Sincerin plantation and the latter from "La Manuelita" in the Cauca Valley near Palmira, 30 miles east of Cali. Exports of refined sugar from the "La Manuelita" plantation via Buenaventura in 1917 amounted to 1,774,743 kilos, valued at 161,736 Colombian dollars, going chiefly to the Canal Zone. This value was greatly increased during 1918 and 1919, the prices paid being higher. Sugar exports from Cartagena in 1915 amounted to 134,037 dollars and in 1916 to 249,239 dollars—all to the Canal Zone from the Sincerin plantation. These amounts were increased to a total of 2,026,164 pounds, valued at 274,341 dollars, in 1917.

RÉSUMÉ OF CONDITIONS.

Each of the important crops of each district have been separately treated in the regional discussions beginning on page 185, in which details of production, methods, prices, etc., are given. Important items of export will be treated later. Reviewing Colombia as a whole, it can not be said that agriculture is developed. This condition is mainly due to the universal lack of roads caused by the broken nature of the country and the great distances separating the centers of population. For this reason, very often imported foodstuffs can compete with the domestic article despite the high import duties levied in protection of the Colombian products; as an example of this condition may be cited the case of wheat, which can be imported from the United States for milling into flour on the Caribbean and

Pacific coasts more cheaply than it can be brought down the Magdalena River from the Bogota region.

Great sections of the Western, Central, and Eastern Cordilleras are practically unpopulated, and this is also true of parts of the Magdalena Valley and other regions. The centers of population are in Cundinamarca, Boyaca, Antioquia, Caldas, the Cauca Valley, parts of Santander, parts of the Atlantic coast, and parts of Narino, in the south, around Pasto. The chief products of the various Departments and regions are as follows:

Boyaca.—Wheat, barley, potatoes, beans, corn, vegetables, cattle and horses, a few sheep, and a very little sugar and coffee.

Cundinamarca.—Coffee, wheat, corn, cattle, horses, sheep, and sugar. Agriculture is more advanced in Cundinamarca than in any other place in the country, and the labor is plentiful, being mostly Indian.

Antioquia.—Coffee, a little cotton, sugar cane ("panela"), and plantains.

Tolima.—Cacao, sugar, coffee, rice, and cattle (the last named not very good).

Atlantic coast.—Bananas at Santa Marta, corn, sugar, tobacco, cacao (not much), cotton near Barranquilla, and rice south of Cartagena.

Narino.—Wheat, aniseed, potatoes, vegetables, and cattle (poor). Population nearly all Indian.

Caldas.—Coffee, corn, beans, and potatoes. Labor good, nearly all white.

Cauca River Valley.—Cattle, sugar, rice, corn, and beans. Labor, mulattoes.

Department of Cauca.—Coffee, cattle, wheat, and corn. Labor, nearly all Indian.

Santander.—Coffee, tobacco, cacao, corn. Labor white, of very fair quality.

Pacific coast.—Practically all tropical forest. Cattle, corn, rubber, and a little sugar in the Patia Valley and around Tumaco.

Sierra Nevada region of Department of Magdalena.—Coffee is raised, but to only a small extent, on account of the lack of labor. Indians also raise small amounts of wheat and potatoes.

OPPORTUNITIES FOR DEVELOPMENT—FUTURE PROSPECTS.

Two regions of Colombia attract attention for agricultural development on account of their accessibility and proximity to the ocean and foreign markets—(1) the Sinu River Valley and the plains of Bolivar south and southwest of Cartagena, and (2) the Cauca Valley. The former region has been compared, in soil, climate, and general conditions, to the best lands of Cuba and is undoubtedly very suitable for the development of sugar cane, rice, tobacco, bananas, and cattle on a large scale. The principal difficulty is the labor factor. There is at the present time a small surplus of labor in this district, and possibly 3,000 to 4,000 men (mulattoes and Negroes) could be recruited within six months' time, but several large plantations would soon absorb this small surplus and the problem of the importation of labor—always a difficult one—would be faced. Labor can not be obtained from the West Indies or Central America, as the sugar fields of Cuba and Porto Rico have already taken all the available surplus from the islands and labor is even being recruited in Colombia for the Cuban fields. Panama also needs many thousands of men on the Canal Zone. Labor is very plentiful and cheap in Cundinamarca and Boyaca, in the interior, but the Indians from that section will not come down into the hot lands of the coast, since they can not live in the Tropics, being used to the high and cool altitudes of the tablelands.

The Cauca Valley also possesses almost ideal conditions for sugar cane—level lands, plenty of moisture, etc—though it takes cane longer to mature than on the Atlantic coast, where crops are taken off the same as in Cuba and the Antilles—that is, from December

until May, since, from June on, the heavy rains prevent the work. In the Cauca Valley cane matures in 15 to 18 months, as there are alternating dry and wet periods of three months each, but cane is often cut in 12 to 15 months' time. Cutting and manufacture can go on all the year round, with the possible exception of the months of April and November, when the heaviest rains occur in this region and the field work is delayed for three or four days at a time. No fertilization is necessary in either region, and there are plantations that are known to have produced cane continuously for 120 years, the only cultivation being weed cleaning with shovels. However, the same labor conditions prevail in the Cauca Valley as on the Atlantic coast: the population is small compared to the areas considered, and the men much prefer, as a rule, to put up their own tiny huts here and there in groups of small villages, keep a few head of cattle or pigs, and plant small patches of cane and plantains—just enough to support life and enable the people to lead a very independent existence. The Colombian, even of the lower class, does not take easily to organization, being too individualistic and excitable in disposition and much preferring to work for himself.

The lands of Bolivar have already attracted favorable attention from sugar planters of Cuba and Porto Rico, and the results obtained on the lands of the Sincerin plantation near Cartagena fully justify this favorable notice. Predictions of new developments in this region were fulfilled early in 1920 by the taking over of property on the Atrato River near Uraba by sugar interests from Porto Rico and the promotion in the United States of another sugar plantation south of Cartagena. The demand for sugar and the development of all available good lands in Cuba and the West Indies, combined with the favorable conditions in this Colombian region, will certainly result in its development, especially since foreign capital is being attracted to investments in packing houses, banking, etc., which will have the tendency to make the region better known and developed in the near future.

Similar considerations, together with the prospective completion of the Pacific Railway across the Central Andes, to connect with Bogota, and the improvement of dock and harbor facilities at Buenaventura, will attract new capital to the Cauca Valley.

A very prosperous future in agriculture may be predicted for both of these favored regions.

LAND TITLES AND LAND LAWS.

Tracts of land suitable for clearing can be obtained either from the Government or from private owners at a reasonable cost. Titles are secure and generally date back for a long period of time, emanating from old Spanish crown grants of colonial times. The chief difficulty encountered is in the case of "indivisos," where there are a number of owners in common; such estates have been handed down for generations without any partition proceedings. The disentanglement of an "indiviso" is a tedious and costly proceeding, dragging on for years.

Another prolific source of trouble with titles is that connected with boundary disputes arising from the vagueness of early grants in defining boundaries. Lands were measured by means of "a well-twisted cord" and points were given from one mountain or hilltop

to another. The vast majority of land titles in Colombia are good, however, and the foreigner can purchase with safety when acting under good legal advice. In bidding for undeveloped lands the foreigner will often encounter an exaggerated idea of values.

Following is a translation of certain articles of the text of the public-land law of Colombia:¹

The Minister of Public Works may grant dominion in public lands and national forests as follows:

METHODS OF ACQUIRING LANDS.

ART. 2. (1) By adjudication to agriculturists; (2) by cession to promoters for enterprises of an industrial character or of public utility; (3) for the foundation of new cities or to the citizens of towns already established; (4) in exchange for territorial bonds or titles of concession; (5) with title of sale for cash.

ART. 3. Proceedings for the transfer of dominion in public lands under the first four clauses will be in conformity with the respective laws and decree governing the matter. The sale for cash will be subject to the following rules: (1) The maximum amount of land that can be sold to one person for cash is 5,000 hectares (hectare=2.471 acres); (2) the sales for cash will be made by the Minister of Public Works at public auction, and must be approved by him and by the President of the Republic, after hearing in the Council of Ministers.

PROCEDURE FOR PURCHASING LANDS.

ART. 4. Those desiring to acquire public lands for cash will direct an application to the Minister of Public Works, describing the location, area, and boundaries; also the improvements of any character, with an indication of the owners, the intrinsic condition, and the amount offered by the would-be purchaser. With this application should be presented proof that the land is public land, and in possession of the nation; that it does not contain petroleum wells, asphalt, deposits of salt, breeding places and habitat of the heron, guano deposits, or medicinal waters. It must also be accompanied by a map approved by the official engineers.

ART. 5. The minister, if he considers it advisable, shall direct the local authority or special commissioners to make an ocular inspection of the lands, at the expense of the applicant, as to the fitness of the land for agriculture or grazing or for the establishment of colonies or towns.

ART. 7. According to the result of the inspection, and after 30 days of publication of the notice referred to, the minister will decide whether he will decree the sale or not.

LAND APPRAISED, MINIMUM OFFER, DEPOSIT, ETC.

ART. 8. When lands have been surveyed for the Government and maps are made thereof, the Government having decided to offer them for sale, they will be appraised in lots, and this appraised value will serve as a basis for the offer for their purchase. The intending purchaser shall satisfy himself of the true amount in the lot before purchasing, the Government not being responsible for errors in measurement. The minister will provide for the publication of the maps and data respecting the geographical location of the lands and of their fitness for agriculture, and 30 days after the publication thereof he will fix the day for the sale at public auction.

ART. 9. In all sales of land for cash, preference shall be given to those who may already have considerable improvements thereon.

ART. 10. In the sale of lands for cultivation, the lowest amount that may be offered is \$5 gold per hectare, and for lands suitable for grazing, 50 cents per hectare.

ART. 12. Before making an offer for lands at public sale, the would-be purchaser must deposit 10 per cent of the value of the land, which amount will be forfeited in case of failure to pay the remainder within 24 hours after the adjudication of the sale.

ART. 14. If the purchaser at the sale shall be other than the applicant for the lands, he shall pay in cash the expenses the applicant incurred before the sale.

ART. 21. Persons acquiring lands by purchase shall be required to fence or otherwise mark the boundary lines within a year from securing possession thereof.

¹ For some pertinent comments on public land and immigration in Colombia, the reader may be referred to "Colombia," by Phanor J. Eder, pp. 156 and 179.

NECESSITY FOR LARGE INVESTMENT.

On account of the lack of means of transportation, the distance from foreign markets, the ever-present labor difficulties, and the tropical climate, the development by foreigners of agricultural projects in Colombia should be attempted only with large capital. A great deal can be accomplished by the use of modern agricultural machinery such as tractors, gang plows, harvesting machines, grain-cleaning machinery, etc., and organization is absolutely necessary. Sanitary measures must be carried out, medical service provided, housing facilities bettered and organized, roads and docks built; and all of this takes capital. The possible results can best be judged by those obtained by the Sincerin sugar plantation near Cartagena (see p. 218), which pays enormous annual dividends and is carrying out extensive improvements with the object of doubling the production of sugar within two years' time. This plantation is owned and managed by native Colombians, but there is not sufficient surplus domestic capital in the country to carry out other developments along the same lines, and foreign capital is needed.

INCREASE IN PRICES OF AGRICULTURAL PRODUCTS.

Colombia has not escaped the universal high cost of living brought on by the war. Wages have had to be increased throughout the country (especially in the Caribbean coast regions), except in the populous and productive region of the table-land of Bogota, from which products can not be shipped to the coast to compete with imported staples on account of the difficulties of transportation and the high freight charges.

In January, 1920, the Colombian Government issued a temporary decree which exempted the following foodstuffs from import duty, in an attempt to attract foreign products and thereby reduce the cost of living to the people, affecting principally the regions of the Caribbean and Pacific coasts: Unrefined sugar, sweet potatoes, and other vegetables, beans, peas, carobs, lentils, corn, lard, eggs, common cereals, as well as rice, oats, barley, rye, and corn flour. This exemption went into effect on February 1 and was continued until July 20, 1920, but was productive of little or no result on account of the universal shortage of food staples and the large demand from Europe at very high prices.

COLOMBIA'S EXPORTS OF VEGETABLE PRODUCTS.

Under the group heading of "Vegetable products," which included forest products—already treated in a separate chapter—Colombia exported in 1911 a total of 180,789,664 kilos (kilo = 2.2046 pounds), valued at 14,375,300 Colombian dollars, of which 37,899,968 kilos, valued at 9,500,000 dollars, was coffee. In 1916 the exports of vegetable products amounted to 170,626,976 kilos, valued at 19,460,479 dollars, of which 72,571,610 kilos, valued at 15,979,833 dollars, was coffee. In 1918 the exports of vegetable products totaled 204,641,761 kilos, valued at 25,784,369 dollars, of which 68,916,745 kilos, valued at 20,675,023 dollars, was coffee, the price of which had greatly increased. The price of coffee still further increased—to more than double any

previous high price—during 1919, the returns for which are not yet available. The highest total in weight is that of bananas, which reached the high figure of 114,781,116 kilos, valued at 2,447,628 dollars, in 1918, a war year when the export of fruit was cut in half by the lack of the necessary tonnage.

These figures do not include the exports of sugar, which in 1916 amounted to 2,270,228 kilos, valued at 211,587 Colombian dollars, and in 1918 to 1,601,910 kilos, valued at 182,079 dollars. The exports of sugar in 1918 were curtailed by the lack of means of ocean transportation during the war and the constantly increasing domestic consumption. Sugar was shipped from the Cauca Valley over the Central Andes (by pack mule most of the way), to Bogota, and at Sincerin orders were refused for sugar wanted for the Canal Zone, on account of the demand on the Caribbean coast of Colombia. However, during 1919, an increased amount of refined sugar was exported, principally to Panama by reason of the high prices offered there.

To give a good idea of Colombia's exports of vegetable products, the following table is presented, taken from the Colombian Government export returns for the year 1918:

[Kilo=2.2046 pounds; Colombian dollar=\$0.9733.]

Kinds.	Kilos.	Value. ¹	Kinds.	Kilos.	Value. ¹
		<i>Colombian dollars.</i>			<i>Colombian dollars.</i>
Achi.....	3,571	451	Lentils.....	10,237	1,714
Alligator pears.....	5,797	296	Corn.....	1,034,321	51,292
Indigo.....	650	1,600	Oranges.....	10,909	388
Peas.....	20,649	2,370	"Name" (yams).....	237,511	6,131
Rice.....	20,818	2,873	Potatoes.....	166,917	6,890
Bananas.....	114,781,116	2,447,629	Cotton seed.....	616,910	10,945
Cacao.....	19,899	8,540	Pasture-grass seed.....	17,234	1,808
Coffee (1,102,667 sacks of 62½ kilos each).....	68,916,745	20,675,024	Castor beans.....	21,181	2,728
Oats.....	24,558	993	Castor beans ("resino").....	59,776	5,215
Henequen fiber.....	33,174	6,165	Sisal fiber.....	5,280	2,533
Other fibers.....	1,560	260	Leaf tobacco.....	4,207,636	1,004,693
Beans.....	292,214	38,034	Yuca ("casaba").....	4,668	640
"Garbanzos" (chick- peas).....	4,577	863			

¹ These values are arbitrary, the value used in the calculations for any given month being computed from the average prices obtained for the article under consideration during the preceding three-month period.

Under "Manufactured products" the following exports of agricultural products are shown for 1918 (only the principal ones being given):

Kinds.	Kilos.	Value.	Kinds.	Kilos.	Value.
		<i>Colombian dollars.</i>			<i>Colombian dollars.</i>
Coconut oil.....	16,546	2,320	Wheat flour.....	840,117	287,342
Corozo-nut oil.....	36,200	10,503	Banana flour.....	746	191
Castor oil.....	1,695	1,780	"Panela" (unrefined su- gar).....	683,025	47,977
Starch.....	54,767	6,168	Sisal-fiber sacks.....	80,324	33,827
Sugar, refined.....	1,601,910	182,080	Barley.....	48,004	2,570
Chocolate.....	809	422			

Rice is not only exported but also imported, and is a staple in the country. In 1916 Colombia imported a total of 8,558,177 kilos of rice, valued at 725,376 Colombian dollars. The quantity of rice exported in 1916 was only 1,400 kilos, valued at 292 dollars.

Of the total export of corn in 1918, the United States received a total of 23,426 bushels, valued at \$27,303 (United States currency); the remainder went to Cuba, the Dutch West Indies, and, in small amounts, to Panama.

During the war the high prices offered for castor-oil beans, or the oil, brought attention to bear on this field crop in the Barranquilla district, where a few attempts were made to grow the castor-bean plant on a fairly large scale. There seemed to be every prospect of success, since the plant grows wild everywhere in the country and is well known to the natives—this crop having the added advantage of not being subject to any insect pests (which destroy other crops in this region) and also that of being able to resist long periods of drought, etc. However, the efforts failed on account of the inadequate labor supply in the district and the lack of knowledge on the part of the planters, who made no really well-organized attempt to grow the plant on a large scale.

Starch is made in Colombia from the yucca plant. This industry is capable of considerable development, and already the domestic product has about taken the place of the imported article.

After coffee, the most important of American imports of Colombian agricultural products has been sugar, which outranks cacao. The following table shows certain imports from Colombia to the United States during four recent years (according to official American statistics):

Articles.	Fiscal year 1916.		Fiscal year 1917.		Calendar year 1918.		Calendar year 1919.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Refined sugar (cane).pounds..	3,376,700	\$136,133	7,605,556	\$370,141	844,802	\$40,453	74,411	\$4,486
Tobacco, leaf:								
Suitable for cigar wrap-								
pers.....pounds.....	1,478	1,013	46,809	5,094				
Other.....do.....	391,300	34,312	1,038,399	108,872	1,212,807	154,671	865,273	120,124
Beans and lentils...bushels..	980	2,466	42	500	2,462	13,221	230	1,415
Cacao.....pounds.....	293,931	41,784	422,777	50,563	157,605	20,619	478,910	104,006
Cotton:								
Raw.....do.....	38,537	7,374	700	115	53,000	13,218		
Waste, etc.....do.....	9,708	441	42,757	2,109				
Corn.....bushels.....					3,119	4,688		
Fruits:								
Bananas.....bunches..	2,710,047	1,264,992	3,578,500	1,789,713	4,628,504	2,323,562	4,094,940	2,030,193
Other.....do.....		4,122		5,496		734		2,997
Plants, shrubs, etc.....		7,602		24,861		2,082		8,534

CACAO.

Cacao is little cultivated in the country. The Colombians do not care much for this crop, because of the fact that it does not begin to produce until the sixth or eighth year from the time of setting out the trees and the plant requires from 10 to 12 years to reach full-bearing maturity. The cacao is rather delicate and requires more care and attention than the average native is willing to bestow upon it.

The cacao plant flourishes in the second agricultural zone of Colombia—that is, in the low hills and interior valleys at elevations of 2,000 to 5,000 feet above sea level. In general, it is grown in nearly every region of the country, but in comparison with coffee or sugar cane, the industry is little developed. More attention has been paid to cacao in the region around Ocana than elsewhere, with the exception of the Cauca Valley, but in the Ocana region planters have suffered in the past from depredations of the Motillonos Indians and banditti from the Venezuelan border, and the outlying plantations have been practically abandoned. The industry is also heavily handicapped by the lack of roads and easy means of transportation to the Magdalena River for exporting.

There is an increasing demand for chocolate in Colombia, and the domestic supply of the cocoa bean is not adequate to supply the demand in many places—Medellin and Bogota, for example. Small amounts of cacao are exported simply because, in certain places, it is easier to export via Buenaventura or Barranquilla than it is to ship to Bogota or Medellin over the mountains with a high pack-mule freight rate, or up the river, as the case may be. There are chocolate factories in almost every town of any size in Colombia, and the manufacture of chocolate is one of the most important of domestic industries.

The production of cacao is much better developed in Ecuador, whence several cargoes were shipped to Colombia via the Panama Canal in 1919, this movement being caused by the excessive accumulation of cacao in Ecuador during the war and the high prices offering in Colombia at the time.

Next to the Ocana region the Magdalena Valley and the Cauca Valley produce the most cacao.

Trees are planted about 270 to the acre, and 12 cents net profit per tree per year may be reckoned on if the trees are well looked after, year in and year out. There is little work in harvesting; not much labor is required, and no machinery of any kind is needed for cleaning, etc. When land intended for cacao is cleared, the larger trees of the jungle are left, particularly that one known in the country as "madre de cacao," which forms a shade for the delicate and much smaller cacao trees.

Chocolate-making machinery is now being manufactured in Medellin and is much in demand in the country.

The Chiriguana cacao district lies to the east of the Magdalena River, toward Ocana; it was, at one time, a large producer of cacao, but is now more used for cattle raising, on account of the damage inflicted by the cacao beetle. Products are exported via the Cesar River and Chiriguana swamps to the Magdalena. In 1919 cacao plantations suffered from the protracted dry season; production was considerably reduced and the business rendered speculative in the extreme. Experts who have visited this region are of the opinion that irrigation should be resorted to, but this is too costly for the limited capital available, and it is easier to set out plantations in more favored regions.

The Carare River region in Santander produces the best cacao of the country, and, notwithstanding the small amount of attention paid to the plantations, the crop presents a fine appearance and the

beetle gives the planters little trouble. It is said that the industry has a promising future in this region, only limited by the lack of sufficient labor and capital.

There are no data available that would show the extent of plantations or production in Colombia, but it is estimated roughly that the entire crop is worth between \$2,000,000 and \$3,000,000 annually, the bulk of the consumption being domestic. Exports in 1916 totaled 99,669 kilos, valued at 37,778 Colombian dollars, according to the Colombian Government export returns for that year. For cacao from Colombia received by the United States, see table on page 160.

The chief reason for the backwardness of the industry in Colombia is the general lack of capital and labor and the long time necessary before returns are secured—returns from other industries, such as cattle raising, being more rapid and profitable at the present time. In colonial times the Spaniards had larger plantations in Colombia than now exist, and cacao was one of the principal products of the country for export to Europe. Prior to 1914 shipments of cacao were made regularly to Germany and France, but this trade has been interrupted by the war, and the small production, combined with the domestic demand, has further curtailed exports to Europe, New York offering a better market for available shipments.

RICE.

Rice is one of the necessary food staples of the people of Colombia of all classes and has been imported year by year in increasing amounts. However, during the past few years, especially when supplies could not be obtained during the war, attention has been given to the local production of rice, and a rice mill is being completed at Cartagena to take care of the increasing production in that region.

Conditions of soil and climate are said to be ideal in the region south and southwest of Cartagena, near Monteria, on the Sinu River, and there are many other areas of natural overflow lands suitable for rice planting in the Cartagena district. Capitalists of Cartagena have been attracted by the high local prices, rice of inferior grade bringing from \$12.50 to as high as \$14 per 100 pounds. In 1918 the owners of the flour mill "La Heroica" began the construction of a four-story, reinforced-concrete, rice-cleaning mill on the Bay of Cartagena, near the port, where wharves will also be constructed to facilitate handling of the product. The building was completed early in 1919 at a cost of \$70,000, and machinery to the value of \$50,000 or \$60,000 was delayed on account of the inability to secure its delivery at that time. The decorticating capacity of this mill will be 2,000 barrels of cleaned rice, of 160 pounds each, per day of 24 hours. (One-half of the gross product is chaff.) Lands near Monteria, about 54 miles from Cartagena, had been secured, and 2,000 hectares (4,942 acres) were being cleared and prepared for rice cultivation in 1919; this area was to be gradually increased to 8,000 hectares (19,768 acres). Some rice has already been planted in this region by the natives, but only in small patches of insufficient production to supply even the local demand.

The first attempt to grow rice in this district on a large scale, using modern machinery, was in the season 1918-19 on the ranch

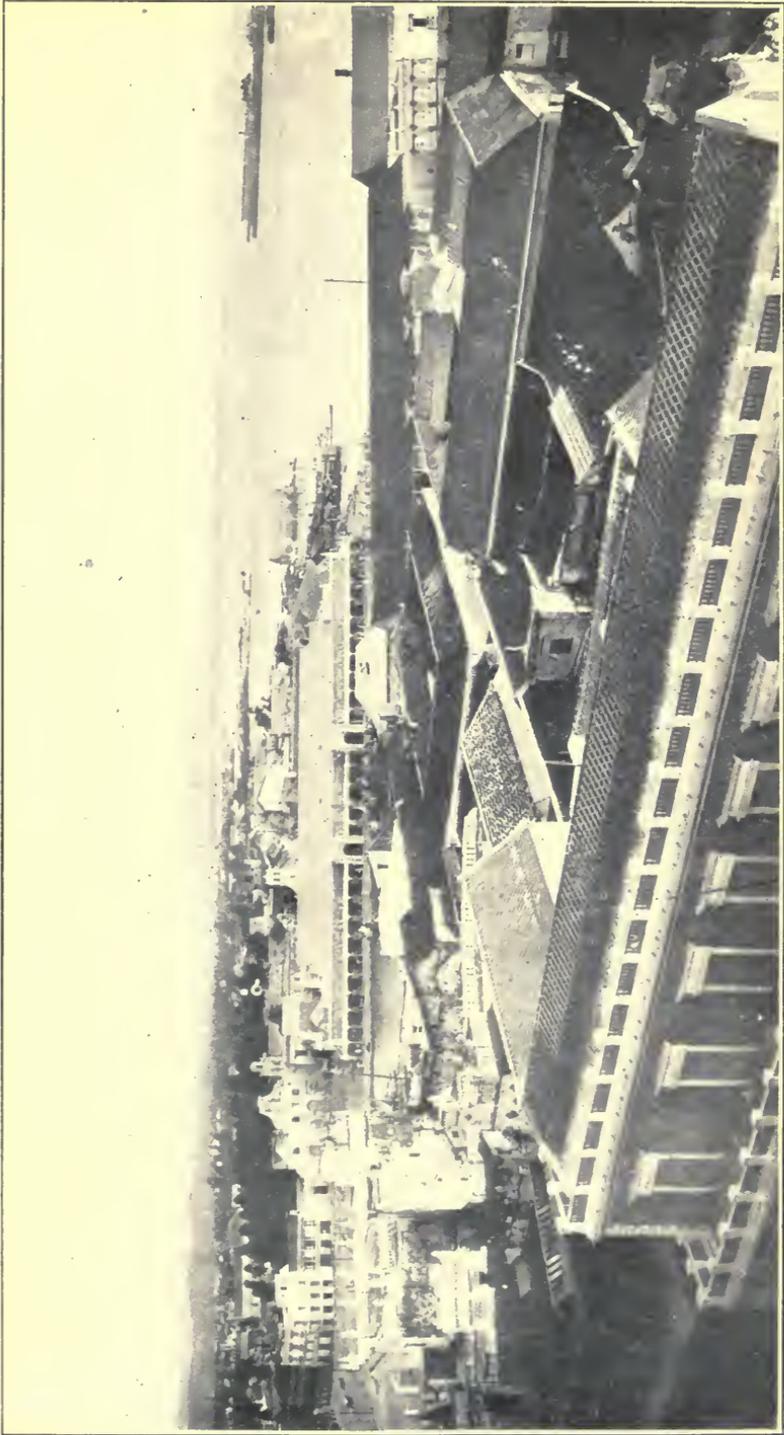


FIG. 7.—GENERAL VIEW OF CARTAGENA.

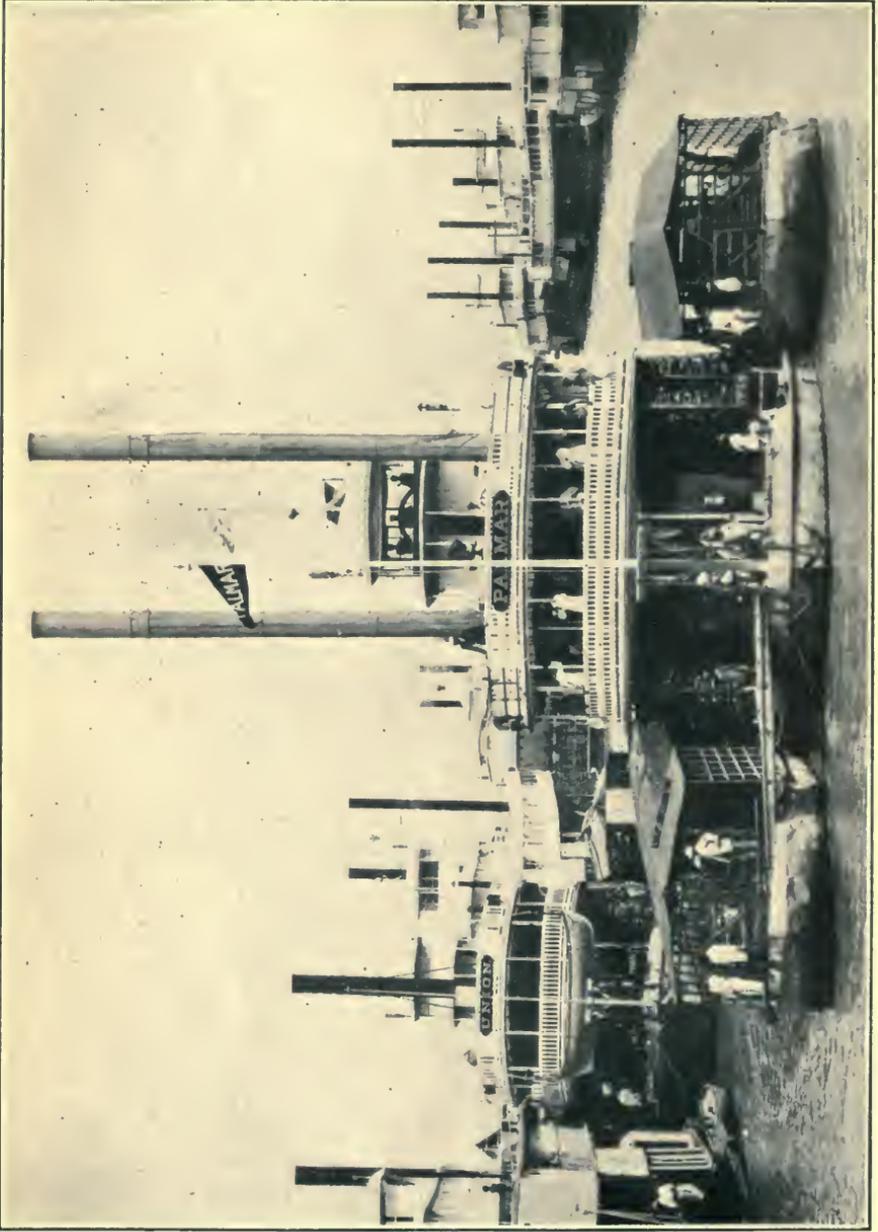


FIG. 8.—STEAMERS ON MAGDALENA RIVER.

known as "Honduras," located about 30 miles south of Cartagena, southwest of the Sincerin sugar plantation, and owned by Sr. A. Meluk and Gen. Francisco Escobar in partnership. This large property contains 6,000 or 7,000 hectares of cattle pasture (hectare=2.471 acres) in Para grass, the principal object being cattle raising. In 1918 a steam tractor of 25 horsepower, with an equipment of gang (disk) plows, reaping and thrashing machinery, etc., was imported, and 600 hectares (1,482 acres) was planted in rice without irrigation provisions of any kind. Despite the fact that the expected spring rains (counted on to mature the crop) failed completely in 1919 and the rice received no moisture other than that of the soil during a period of five months—less than one-fifth of the expected normal crop being harvested—the returns paid for the cost of the equipment purchased and left a small profit besides, all the rice harvested being cleaned on the property and sold in small lots in the open market in Cartagena at prices ranging from \$12.50 to as high as \$14 per 100 pounds.

A little rice is also grown in the Magdalena Valley above Calamar, but only in very small patches for local consumption. The next largest rice-producing region is that lying between the towns of Buga and Palmira in the Cauca Valley, where, in one small district, rice planting has become of some local importance, though not enough is produced to supply the Cauca Valley demand and there are no figures showing the extent of the fields or the annual production. Modern agricultural machinery is not used for rice cultivation in the Cauca Valley.

With the exception of the 600 hectares noted near Cartagena where modern machinery and equipment are used, and that of the lands now being prepared for rice near Monteria where modern equipment will also be used, methods of rice cultivation in both the Sinu River and the Cauca Valley regions are very primitive. The land is not even plowed; it is merely surface-sowed after the water has drained off, and the seed is worked in by means of brush "drags." When harvested, the rice stalks are "topped" by hand, a stalk at a time (a very slow and laborious process), and the grain is pounded out in wooden mortars, a little at a time, to supply a few days' needs, this work being done by the negro women.

Plows and modern agricultural machinery and implements have never been used anywhere in Colombia to any extent, except on the wheat farms of the table-land of Bogota, and the people of the rural districts on the coasts and in the valleys of the interior have no idea of their management, care, application, or value in relation to results obtained. As a matter of fact, it is the general belief that plows and the like are not needed in the tropical part of the country because the soil is so fertile and vegetation so prolific that no help or stimulation is necessary—only the work with the machete to keep down the weeds until the crop can top them and take care of itself.

There ought to be a small market at Cartagena and Cali for small rice-cleaning plants, including roasters, polishers, etc.; but the first plants installed would require painstaking supervision on the part of the manufacturers or sales agents on the ground. This latter provision would also apply to all agricultural equipment, such as harvesters, tractors, and the like, until their use becomes better known.

Imports of rice into Colombia during 1916 amounted to 8,558 metric tons, valued at 725,376 Colombian dollars. In 1916 only 1,400 kilos of rice were exported, valued at 292 dollars, while in 1918 Colombia's exports of this cereal amounted to nearly 21 metric tons, valued at 2,873 dollars.

Exports of rice from the United States to Colombia during four recent years have been as follows: Fiscal year 1916, 8,934,829 pounds, valued at \$343,105; fiscal year 1917, 3,383,644 pounds, valued at \$142,775; calendar year 1918, 7,104 pounds, valued at \$444; calendar year 1919, 1,598,200 pounds, valued at \$118,525.

Taking the high year of 1916, it is seen that the United States furnished about one-half of the rice shipped into Colombia. The falling off of rice imports during the later war years was caused by the trade restrictions on foodstuffs imposed by the Allies and the lack of ocean tonnage for cargoes, and also by the increasing domestic production, making heavy foreign purchases of rice no longer so necessary. However, as has been pointed out, the Colombian production is, as yet, far from the point of satisfying the domestic demand, and in the early part of 1919, as soon as trade restrictions were beginning to be removed, merchants of Cartagena, Barranquilla, Medellin, and Bogota were endeavoring to place heavy orders for rice shipments from the United States at high prices. Before the war about one-half of Colombia's rice came through British channels.

It is thought that, with the inauguration of a direct steamship service between New Orleans and Colombian Caribbean ports (see p. 375), any surplus of rice production in Louisiana and Texas will find a ready and favorable market for several years to come by this route and that, also, shipments could be made to advantage from San Francisco to Buenaventura, intended for the interior of Colombia, after the completion of the Pacific Railway over the Central Andes.

TOBACCO.

One of the most important items of export from Colombia is tobacco, which promises to be of increasing importance, not only as an export but also as a domestic industry, since cigar and cigarette making has reached large proportions in Colombia during recent years. Shipments of leaf tobacco have been made for many years to France for the account of the French Government, constituting the principal item of export from Colombia to France. Since the war and the general disarrangement of normal shipping, the surplus crop of Colombia has gone to the United States, as a rule—shipments to this country in 1918 amounting to 1,212,807 pounds, valued at 154,671 Colombian dollars.

There are three principal regions of the country where tobacco is produced in sufficient quantities to allow a surplus for export—namely, the Department of Bolivar, near the town of El Carmen, south-west of Cartagena; the Department of Santander, around Bucaramanga, in various small valleys; and the Department of Tolima, near Ambalema, on the Upper Magdalena River. Some tobacco is also produced in Antioquia, in the Cauca Valley, in the entire Magdalena Valley, and in many other places, but only in small patches and in a very desultory manner, the industry being important only in the regions named above.

In 1918 Santander exported 1,634 bales of leaf tobacco, weighing 101,308 kilos, the total production of leaf and of manufactured cigars and cigarettes amounting to 1,082,857 kilos, valued at \$688,346 (all manufactured tobaccos being for domestic consumption, however). Leaf tobacco to the value of about \$50,000 is exported annually from the Ambalema region of Tolima, going principally to England in normal times. Exports of tobacco, both wrapper and filler, amounted in 1916 to 923,698 pounds, valued at \$101,549, and in 1917 to 131,139 pounds, valued at \$13,292—all to the United States. Most of this production went to Germany before the war, \$149,371 worth being shipped to Germany in 1914, with only \$3,051 to the United States, \$378 to France, and \$25,976 to all other countries.

The total exports of tobacco from Colombia since 1906 have been as follows:

[Kilo=2.2046 pounds; Colombian dollar=\$0.9733.]

Years.	Kilos.	Value.	Years.	Kilos.	Value.
		<i>Colombian dollars.</i>			<i>Colombian dollars.</i>
1906.....	3,756,523	665,918	1914.....	2,639,476	392,095
1907.....	7,466,747	518,939	1915.....	2,036,692	334,641
1908.....	3,815,357	355,230	1916.....	2,075,378	373,525
1909.....	5,049,205	428,199	1917.....	2,878,532	611,277
1910.....	4,479,604	376,903	1918:		
1911.....	3,911,012	332,935	Tobacco.....	4,207,636	1,004,692
1912.....	3,262,343	442,461	Cigars and cigarettes..	18,921	16,096
1913.....	6,282,107	820,099			

Next to the cotton mills, cigarette factories constitute the largest domestic industry in Colombia. This is the principal manufacturing industry of the Departments of Tolima and Santander, and both Barranquilla and Cartagena have large tobacco factories which ship their product all over the country. The total annual consumption of tobacco in the country is enormous.

The cultivation of tobacco in Colombia is carried on with more care and attention than is given to any other agricultural product. Hoes are used and the soil is cultivated to a certain extent in small patches. There has been, however, no large undertaking in tobacco, and there is vast room for improvement in the matter of seed selection, care of the plants, drying, and curing. Experts who have visited the country from the Valle Nacional in Mexico and from Sumatra have declared that soil and climatic conditions are ideal for the very finest long-leaf wrapper quality and that scientific methods would produce as fine a tobacco in flavor and aroma as any in the world. There exists an excellent opportunity for tobacco planting on a large scale in the accessible Cartagena region, between Sincerin and Monteria, and, like sugar, tobacco could be made one of the country's leading items of export, established on a firm basis of quality, regular demand, and high prices (like that of Cuba) and not, as now, subject to all market fluctuations and more or less speculative, as is the case with the poorer qualities of the leaf.

Exports of tobacco from Colombia are handled by the merchants of the coast cities such as Barranquilla and Cartagena, and it is customary to send agents into the tobacco-producing sections to buy up the crops in season, most of the growers disposing of their

crop, baled on the ground, for cash. Long-leaf tobacco for cigar making is packed for export in rawhide-covered square bales, each weighing 62.5 kilos (137.5 pounds) net.

A considerable contraband trade is also carried on along the Caribbean coast in leaf tobacco, which is picked up by small 100-ton trading schooners plying out of Curaçao, whence the tobacco has ordinarily found its way to the Netherlands and from there to Germany. This trade from the El Carmen district alone has been estimated to run as high as 12,000 pounds per annum.

The best quality of long-leaf tobacco comes from the Ambalema district in Tolima, where the English owner of a large cigar factory has done much in the way of introducing better methods of cultivation and care of the leaf.

The invoiced value of export qualities prior to 1915 averaged 8 cents per pound but dropped to as low as 6 cents as the result of the curtailment of shipments during the war. Prices obtained in 1919 averaged much higher, 12 and 14 cents being paid in many cases.

COFFEE.

As has been pointed out in preceding paragraphs, coffee is the principal export of Colombia, far outranking all other articles of export and furnishing the necessary basis of exchange and the balance of trade through which the country supplies itself with a great assortment of foreign-made goods as well as raw materials for domestic manufacture. If its exports of coffee were taken away the country would lose more than 50 per cent of its foreign buying power and imports would fall off in direct relation to that decrease. Around the coffee crop and coffee prices revolves the economic condition of the entire country, directly affecting even such regions as produce no coffee, because, when coffee-producing sections have sold a large crop at high prices, the resulting proceeds flow into the other nonproducing sections in trading for other products such as corn, tobacco, gold, platinum, rubber, chicle, cattle, mules, horses, sheep and goats, hides and skins, cotton, salt, etc., and the result is general prosperity. Such a condition developed during the latter half of 1919, as a direct result of the large coffee crops of December, 1918, and April-May, 1919, when the country harvested the largest crop in its history and marketed it at prices that were more than double the previous high averages in New York. Just as cotton in the south of the United States affects all commercial activity in that part of the country, so does coffee affect Colombia—or even more so, on account of the more pronounced lack of other important products to take its place.

IMPORTANCE OF COFFEE SITUATION AS INDICATING SALES POSSIBILITIES.

An exporter in the United States or Europe, if possessed of an accurate estimate of the coffee crop of Colombia and the foreign-market price tendencies based on the probable supply and demand, can very closely estimate the year's import of the country and know whether the time is advantageous for the introduction of new lines of goods, whether advertising will bring results, and what percentage of staple, necessary lines will be purchased and what percentage will be classed

as medium and high priced luxuries. Houses interested in machinery and engineering equipment and supplies, if possessed of a knowledge of the coffee situation in Colombia and foreign markets, can also gauge the ensuing demand for new lighting plants, railway extensions, and public improvements of all kinds. For a good coffee crop sold at high prices means larger investment in real property and increased building activity; it affects municipalities whose tax returns are augmented, and increased expenditures in improvements result immediately. It also means brisk buying in foreign markets of all sorts of merchandise, from the importation of which the Government receives its greatest portion of revenue, in the form of import duties; it therefore directly affects the financial condition of the National Government, which is reflected in that of the various Departments. It also means an influx of capital, which is invested in new industrial plants (such as extensions of old and erection of new cotton mills), in cattle raising, and in the production of more coffee, cotton, sugar, etc.

After nearly five years of partial stagnation of trade and financial difficulties resulting from the war conditions, it was the coffee crop of 1919 that pulled the entire country out of the slough of industrial and commercial despondency and started it on the most prosperous era in its entire history.¹ As an example of just what this means, one may cite the case of one small native bank. This bank, located in Manizales, the headquarters for a large coffee-producing section of the country, transacted in the single month of June, 1919 (the end of the coffee season), a total gross business of over 1,000,000 Colombian dollars more than the total for the entire year 1918.

EFFECT ON TRADE CONDITIONS.

When a condition such as that outlined above is brought about by the coffee crop in Colombia, the time is very opportune for manufacturers and exporters interested in developing new foreign markets to send good salesmen to the country to cover it thoroughly, introducing their new lines and cementing trade relations for the future. Advantage should be taken of such a condition, even if the lines handled are enjoying an excellent domestic demand at high prices. New articles should be carefully introduced in the most promising centers of trade in the country and placed in the hands of good agents or distributors, with the idea of selling at least a sufficient quantity to gain the attention of the market and hold it for future reduction in home demand. Large manufacturers in the United States are pursuing such a policy all over the world to-day, preparing for the time of overproduction and the decrease in exports to Europe.

In connection with the above remarks concerning the opportunity for introduction of new lines in Colombia in relation to the coffee crop and market, it may be mentioned that the best sources of information in the United States are the various large export commission houses. Many of these are composed of Colombians who know the coffee industry very well from first-hand knowledge and maintain branch houses and agencies throughout the country in all important com-

¹ EDITOR'S NOTE.—A marked change in the general business situation in Colombia—a depression following the period of prosperity mentioned by Trade Commissioner Bell—took place after Mr. Bell had prepared the material included in this handbook. Mr. Bell's data and observations are based mainly on conditions obtaining during 1919 and at the beginning of 1920.

mercial centers. Through these establishments they keep themselves well informed and watch the coffee situation keenly, as they are the heaviest buyers of coffee, which they export for their own account in large quantities to the United States. These export commission houses are also interested in new lines of goods and articles of manufacture for introduction in Colombia and welcome cooperation in those lines.

Another important source of information is that of the American branch banks now established in the country, one of which has 11 subbranches covering all important commercial centers in Colombia.

The study of production and import statistics is a great help in obtaining a general knowledge of the coffee situation.

EXPORT STATISTICS.

The production of coffee in Colombia has doubled since 1906, exports having been as follows:

[1 sack=62½ kilos (138 pounds) net weight.]

Years.	Sacks.	Years.	Sacks.	Years.	Sacks.
1906.....	605,705	1911.....	601,600	1916.....	1,153,000
1907.....	541,300	1912.....	888,800	1917 (estimated).....	1,063,000
1908.....	577,900	1913.....	972,000	1918.....	1,102,667
1909.....	673,350	1914.....	983,000		
1910.....	543,000	1915.....	1,074,600		

NOTE.—The coffee exported during 1919 was estimated to be at least 1,300,000 sacks. The crop was reported to be at least 25 per cent heavier than that of any previous year, and new plantations set out in 1914 and 1915 came into full bearing in the 1919 season.

QUALITY OF COLOMBIAN COFFEE.

Colombian coffee is characterized by its heavy body and delicious aroma and flavor. On account of the heavy body it is usually blended with other lighter grades from either Venezuela or Central America. It is also much used as a blend for the still heavier Brazilian grades, and this fact is well known to coffee buyers and speculators, who take advantage of its better quality.

A movement has been initiated among the larger of the Colombian coffee exporters, who are acquainted with the New York market, to put Colombian coffee on the market in the United States as a distinctive brand, the idea being to create a demand and thereby better the wholesale prices of the Colombian product.

The Hispano-Pan American Association investigated coffee marketing conditions in the United States in 1918, with the result that a scheme was presented to establish cooperative warehouses for Colombian coffee in the United States, where roasters would be provided and provision made for advertising in an endeavor to educate the people to a preference for Colombian coffee.

Among the Latin American nations Colombia occupies second place—after Brazil—as a coffee-producing country.

REGIONS OF PRODUCTION—GRADES, PRICES, SHIPMENTS, ETC.

Prior to the European war about 70 per cent of Colombia's coffee exports came to the United States, while during the war and in 1919 more than 90 per cent came to this country. Roughly, the value of

the coffee exported in 1913 was 18,300,000 Colombian dollars and in 1914 16,098,000 dollars. New York alone received in 1914 as many as 700,000 sacks of Colombian coffee, not counting "Cucutas" produced in the region of Cucuta in Norte de Santander and exported via Lake Maracaibo in Venezuela.

To show the principal regions of coffee production and their relative standing, the following is given:

Departments:	<i>Production, season of 1913-14.</i>	Sacks of 138 pounds.
Antioquia.....	185, 000
Cundinamarca.....	200, 000
Caldas.....	199, 000
Norte de Santander ¹	200, 000
Santander (Sur).....	105, 000
Cauca.....	30, 000
El Valle.....	50, 000
Tolima.....	60, 000
Magdalena.....	40, 000
Total.....	1, 069, 000

Shipments of coffee from the various regions of the coffee-producing Departments are routed approximately as follows:

From the sections of Antioquia south and southwest of Medellin, coffee is routed via the railway to Puerto Berrio and thence by the Magdalena River to Barranquilla and Cartagena for export. Some of the coffee grown in the extreme southern part of Antioquia finds its way out to seaboard via Manizales and the cableway down to Mariquita on the Dorada Extension Railway. Also, coffee produced farther to the west in this extreme southern region moves by pack train down to the Cauca River at Cartago, thence by steamer up the Cauca River to Cali, and is thence exported via the railway to Buenaventura.

All coffee produced in Cundinamarca, on the slopes of the tableland toward the Magdalena River, moves down to the river at Girardot for export via the Magdalena River route. Upon the completion of the Pacific Railway across the Quindio Pass via Ibague, Armenia, and the Cauca Valley to Palmira, this coffee, and other export products of this entire region, will move out through Buenaventura. These statements apply also to the production of the Department of Tolima.

Caldas exports principally over the range by pack animal to the present end of the cableway (see p. 263), thence down to the Dorada Extension Railway at Mariquita, and thence down the Lower Magdalena for export through either Barranquilla or Cartagena. Coffee produced on the western side of the range of the Central Andes has two trading centers in Caldas, one being Manizales for the most northern section of the Department and the other Armenia in the southern section; the latter is the center of greatest production in this Department and is situated in the heart of the famous Quindio coffee district. Of late an increasing amount of this coffee is being diverted from the old route over the range (to the river at Girardot) to the easier and shorter Pacific route via Cali and Buenaventura,

¹ Exported chiefly through Lake Maracaibo in Venezuela and graded as "Cucutas."

pack trains coming down off the range at or near Zarzal on the Cauca River and even moving in as far as Palmira overland.

Santander ships its coffee out via the Lebrija River to the Magdalena and thence to Barranquilla or Cartagena for export.

Cauca, of which Cali is the trading center, and also El Valle ship via Buenaventura.

Magdalena exports via the seaport of Santa Marta, this coffee being grown on the northern slopes of the Sierra Nevada, where production is only restricted by the lack of sufficient labor supply.

The table of production by Departments given on page 169 is for the season 1913-14 and will serve as an aid in forming some idea of the proportion from each district. It should be remembered that the crop of 1918-19 was increased by 25 per cent and that Antioquia and Caldas (especially the latter) led in this increase, though more attention has been given to proper care and cultivation in Cundinamarca than anywhere else in the country.

The grades are named according to the regions of production. "Medellin" is the Antioquia grade, this designation also covering a great deal of the Caldas coffee. "Quindio" takes in El Valle, Tolima, and the southern part of Caldas, while the brand "Cundinamarca" covers the production from the Department of that name. "Medellin" ordinarily commands the highest prices and is generally regarded as of slightly superior grade, but this is rather the result of the better business methods of the Antioquians in pushing their products than of any exceptional excellence of quality. Three conditions are necessary for good coffee—first, elevation, the plant being at its best at about 6,500 feet above sea level; second, moisture; and third, a certain amount of volcanic-ash impregnation in the soil. A great deal of the "Quindio" coffee is bought up by exporters of Medellin and shipped under the "Medellin" brand. Also, many Colombian firms with offices in New York buy up large amounts of the crops and market them under their own brands, the total representing a collection from several main districts but about the same in quality and grade.

Prior to the war, prices in New York for Colombian coffee fluctuated between 12 and 14 cents per pound, with the latter price as a high average, although as high as 16 cents had been paid and was considered a very high price. Immediately following the signing of the armistice in November, 1918, and in view of the expectation of immediate renewal of ocean freight service to Europe, the coffee market reacted in New York and became extremely speculative in character, most of the buying being for reexport to Europe, where there was known to be a great shortage of coffee and a strong demand at very favorable prices. Advances of as much as 4 cents per pound were registered in one single day, and, from then on until the close of the 1919 season in August, coffee prices steadily advanced to the extraordinarily high level of 31½ cents in New York for the Colombian grades "Medellin" and "Quindio," with 28½ cents for "Cundinamarca" and "Santander." As the harvest was late, because of the shortage of labor for picking in most districts (especially Caldas and the Quindio), and the bad condition of the river for export cargoes, Colombia reaped almost full benefit from the high prices being paid in New York, and disposed of its crop at an average of about 26 cents per pound, considering both early and late consignments. If one

takes the estimated yield of 1,300,000 sacks (which is probably a little low, if anything) at the average estimated price in New York of 26 cents per pound, the total value of the 1919 crop may be estimated at about \$45,630,000, whereas the previous high figure, that of 1913, was approximately \$18,300,000. Deducting freight charges, insurance, commissions, etc., it is estimated that the 1919 coffee crop produced a gross valuation for Colombia of at least \$40,000,000, and it was precisely this influx of new wealth that caused the commercial reaction of the entire country in May, June, July, and August, 1919, and sent the importers (who had been patiently waiting for lower prices after the war) hurrying to the United States to purchase badly needed stocks of goods. Price was no longer an object, and the interior demanded merchandise at any prices.

This same condition also resulted in the importation of more than \$9,000,000 of American gold coin into Colombia, to be minted into Colombian coin or, subsequently, to circulate freely in the country as legal tender.

The general condition of prosperity brought about such heavy and active buying of goods in the United States that New York exchange—which was as low as .83 in January, February, and March of 1919—instead of being still further discounted on account of the large balance of the coffee shipments, reacted and went up almost to par, or $.98\frac{1}{2}$, $.98\frac{3}{4}$, and even $.99\frac{1}{4}$. This plainly indicated that the heavy buying of American products had wiped out the trade balance of \$13,000,000 piled up by Colombia against the United States during the war and had further taken care of the heavy increase in this balance that the coffee situation would have involved if it had not been equalized by purchases of return merchandise in the United States. It had been feared at one time that this coffee situation would mean a trade balance of some \$50,000,000, bringing American dollar exchange to .50 in Colombia, but arguments in this connection did not foresee (1) the stimulation of buying in the United States brought about by the very prosperity of the country resulting from the coffee prices and heavy crop; (2) the fact that Europe, in general, was not yet in a position to renew exporting on a large scale; and (3) the fact that prices in the United States for export goods were as high as, or even higher than, they were during the war. These conditions went a long way toward taking care of the large balance in favor of Colombia.

Another factor making for high prices for coffee in 1919 was the fact that, while during the war the United States, the largest coffee-consuming country of the world, held large surplus stocks of coffee, these were immediately drawn upon for reexport after the armistice and the country was left with about one-half of its normal stock of coffee of all grades. In June, 1919, there were estimated to be only 1,172,000 sacks of Brazilian coffee in the United States and only 385,000 sacks of Colombian and other "soft" (mild) grades, as compared with 2,437,000 sacks of Brazil and 780,000 of "milds" at the same time the preceding year—or less than half the normal stocks and a very small quantity in relation to the consumption demands of the United States alone.

INCREASED BENEFIT TO SMALL PRODUCERS.

Before the war the coffee trade was in the hands of the larger exporters of the country, who were also the larger importing merchants. They made loans to their clients on the security of future crops. Such loans were usually represented by small stocks of merchandise and supplies, together with some cash. These accounts were taken up at the end of the picking season with coffee delivered to the merchant, who had the beans cleaned in the local coffee-cleaning plants, sacked, and shipped for export for his own account, the small planter really receiving a small margin of the profit. During the speculative period in 1919, which was induced by the high prices in New York for Colombian coffee, there was very active competition in coffee buying, intensified by the activity of a large American export and import concern, with the result that the producer received a much larger margin of profit for his coffee, and more actual cash than ever before.

As an example, it may be mentioned that on July 1, 1918, "pergamino" coffee ("pergamino" is the bean with the inner shell or parchment-like skin still remaining) was quoted in Girardot at 17 Colombian dollars (1 dollar = \$0.9733 United States currency) per "carga" of 125 kilos, or 275.6 pounds, while the "cleaned" (that is, the shelled bean ready for export) was quoted at 22.50 dollars per carga. In July, 1919, "pergamino" was quoted in Girardot, delivered at cleaning plant, at 50 dollars per carga and shelled coffee at 62 dollars per carga, with still higher prices offering in Medellin on account of the better grading and lower freight charges down the river to port of export.

This situation has meant a revolution in the coffee trade and industry of Colombia. Instead of coming into "town" (the nearest large commercial center) about twice a year—namely, at the end of the November–December picking season and of the April–May–June picking season—to solicit goods and a small loan from his dealer, the small producer has been sought out for his product with cash offers. He has escaped from the prevailing high interest rates charged him and has been able to buy where and how it has best suited his interests. He is no longer controlled by the local merchants and has money in hand with which to enlarge his plantations, purchase better equipment, and improve his living conditions. To understand fully the far-reaching effect of this situation, it should be borne in mind that, with the exception of the plantations of Cundinamarca, nearly all the coffee in the country is produced on small plantations owned and worked by individual planters of the poorer class of the people.

Importing merchants of the coast cities of Barranquilla and Cartagena are large buyers of coffee in the interior, which they export for their own account, investing their surplus every year in coffee and hides for export, though the Syrians seem to prefer the business of precious metals (such as gold and platinum) to coffee or other lower-priced products.

AMERICAN PURCHASES OF COLOMBIAN COFFEE.

Imports of Colombian coffee into the United States have been as follows during four recent years, according to official American figures:

Years.	Pounds.	Value.	Years.	Pounds.	Value.
Fiscal year 1916.....	109,363,456	\$13,519,545	Calendar year 1918.....	118,909,462	\$14,767,367
Fiscal year 1917.....	150,591,659	17,971,874	Calendar year 1919.....	150,483,853	30,425,162

By a comparison of the above table with the total exports of Colombian coffee, shown on page 168, one may easily estimate the proportion taken by the United States. Prior to the war the United States took about 70 per cent of Colombia's coffee crop, the remainder being about equally divided between England, France, and Germany.

CONDITIONS DETERMINING PROSPERITY OF INDUSTRY.

For detailed descriptions of the coffee-planting industry of Colombia the reader is referred to the sections on "Coffee" in the accounts of the Medellin, Manizales, Bogota, and Cali districts (see p. 185). In these sections there are discussions of the relative importance of coffee in each district, methods of planting, life of the trees, production, labor conditions, methods of trade in coffee, future possibilities, etc.

The coffee production of Colombia has doubled since 1906, even under generally adverse conditions of the markets and lack of transportation facilities in the interior of the country. The great stimulus given the industry during 1919 has had the effect of increasing coffee-tree planting on a very large scale, and it may be predicted that, given fairly good market conditions for the next three or four years to sustain the existing attitude of optimism, Colombia's coffee production will be increased by at least 50 per cent by the end of the next five years, when the new plantings begin to bear in full crop. This increased production will be greatly assisted by the completion of the various transportation lines now under construction, such as the cableway into Manizales from the Magdalena Valley, the Tolima Railway to Ibague, the connecting line between Beltran and Ibague to avoid the Upper River, and, last but not least, the completion of the Pacific Railway over the Central Range on the Quindio Pass, where it will pass through the largest and best coffee-producing section of the entire country. Two other railways are also of importance to the coffee industry—the Caldas Railway from Puerto Caldas (on the Cauca River, just above Cartago) to Manizales, and the southern branch of the Pacific Railway from Cali to Popayan. The tendency is for coffee to move out by the shorter and cheaper Pacific route when these new lines are completed, and Buenaventura will then become the principal coffee-shipping point of Colombia instead of the Atlantic seaports.

The routings of coffee shipments from the various producing sections of the country have been indicated on page 169. In 1917 the seaport of Santa Marta exported 526,799 kilos (kilo = 2.2046 pounds), valued at 139,050 Colombian dollars. In 1916 Barranquilla exported 12,558,884 dollars' worth, and in 1917 the value was 8,828,867 dollars. In 1916 Cartagena shipped 23,140,792 pounds, valued at 2,479,890 dollars, while in 1917 the amount was 27,680,369 pounds and the value 3,418,398 dollars. Buenaventura in 1917 exported 11,087,606 kilos, valued at 2,634,274 dollars. Tumaco shipped a much smaller amount

Prior to the war Great Britain took about one-fourth of the coffee exported through Barranquilla and Cartagena, Germany receiving a much smaller quantity.

The coffee industry needs little labor (except unskilled, in picking time) and small capital, since coffee grows on the mountain slopes that are fit for nothing else. It requires little care or cultivation other than the chopping out of the larger weeds and the provision of shade trees. The larger trees of natural growth are left for this latter purpose, and some of the coffee shrubs are shaded with plantains while they are young. The greatest difficulty encountered is that of the lack of good means of cheap and rapid transportation to market—that is, to the seaports for export. It is true that the Magdalena River steamer companies make every possible provision for taking care of the coffee harvest and allow the lowest possible rates to the large shippers (because coffee forms their largest tonnage and principal source of freight revenue) and that the Colombian Railway & Navigation Co. gives the same down-river export rate on coffee from up-river points to either Puerto Colombia or Cartagena, notwithstanding the longer and more costly rail haul from Calamar to Cartagena. But the condition of the river precludes any improvement, the stream being at its driest stage just as the coffee harvest starts to move down to the river for exportation through the Atlantic ports. The Lower River is bad from December until April and not really good for large boats until late in June, as a general rule. During the unfavorable periods much valuable import freight has collected at ports of importation and is carried up the river as soon as conditions permit. In the meantime, coffee is collecting all along the river at points of river shipment, where there are not enough storehouses and no other protection, the coffee very often receiving weather damage as a result of being left out in the open. The result is a general condition of confusion at all river ports. The large shippers have the best of it because they have preferential contracts on a tonnage basis for their exports of coffee, and very often the smaller shippers are left behind in the race to markets and the higher prices. In 1919 some coffee had been on the river, or on its way down the river, or at port of export, for six months, and the advantage of the high prices obtaining during the season was partly lost to the owners.

To prevent these losses and this congestion at river points, several of the largest coffee buyers in Colombia (Pedro A. Lopez y Cía. and Alejandro Angel y Cía.) have purchased their own steamers with which to handle their own exports of coffee to better advantage. The best solution so far has been the idea of the extension of the Dorada Railway from Beltran to Girardot (Ibague). By this plan the Upper River will be avoided, shipments can continue all the year round, and a much larger tonnage can be carried in a given length of time than by the Upper River steamers. This line is now (1920) under contract with Pedro A. Lopez y Cía. and is to be completed within four years' time. The completion of the Pacific Railway over the Quindio Pass will do more than anything else to relieve the situation.

MARKET FOR AGRICULTURAL IMPLEMENTS AND MACHINERY.

GENERAL METHODS OF CONDUCTING AGRICULTURAL OPERATIONS.

With the exception of the wheat lands of the table-land of Bogota, the two large sugar estates mentioned, and a few individual efforts in modern agriculture, there is, in general, little cultivation of the soil in Colombia. The only lands on which work is done to any extent by hand (other than the universal process of chopping out the larger weeds with the machete) are those of the small sugar-cane patches and the tobacco patches. In these a large square hoe is used for weeding and cultivation, but even this work is generally performed in a very lax manner, and Colombian farms do not present the orderly, clean-cut appearance seen in parts of Europe and in the United States. In the Department of Antioquia, throughout the small valleys of the interior along the river bottoms, are many small cane patches which are well cared for and cultivated with the hoe, but these cane patches have been worked for many years.

Throughout the coast regions and in the Magdalena Valley and other valleys of the interior, there is little attempt at cultivation or the use of modern agricultural implements or machinery. The principal field crops of corn and cotton are handled in the following manner: The land, if new, is first cleared of the underbrush with the machete and then the larger trees are cut down at waist height with the ax. This work is done during the dry season, and the dry brush and other growths are burned off just before the rains begin—leaving the land encumbered with an assortment of stumps, partly charred trunks of hardwood trees, etc., and incapable of being plowed in any case. The burning over kills the seeds of all weeds, as a general thing, and the corn or cotton seed is planted in holes dug with a sharp stick or iron bar at the beginning of the rains. During the growth of the plants nothing further is done, with the exception of periodically chopping out the larger weeds with the machete. Corn is harvested in the ear, with the husk usually left on as a protection against the weevil, and in this form is transported to market in canoes or on burros or mules. On account of the weevil, corn, which is an important staple of the people, can not be stored in bins and there are no elevators equipped with modern chemical apparatus in which the insects could be destroyed and the grain held in quantity. This statement also applies to the other staple, beans. Throughout the high and cold table-land of Bogota, and also that of Pasto, there are few insect pests and grain can be stored as is usual in similar climates.

The destruction caused by the black weevil throughout the hot country retards more than anything else the development of agriculture on a larger scale, nearly all planting now being done by small individual holders, who in many cases manage to eke out a bare existence. On the west coast of Mexico the problem has been solved by the use of small "elevators" or cheaply constructed grain bins, built as air-tight as possible and equipped with a Kipp's generator making carbon bisulphide gas, with which the shelled grain is periodically treated to destroy the weevil. An equipment of this kind, if not too expensive, would meet with a rather large demand throughout the hot country of Colombia, if properly introduced, and would serve a very good purpose in that region.

Lands thus cleared are planted for three or four consecutive seasons, then allowed to lie fallow and grow up in weeds and undergrowth again for a few years, and then again cleared for planting. Fertilization and irrigation are generally unknown, though plans are being made to introduce fertilization into the older sugar fields of Bolivar and the wheat lands of Bogota. The difficulty in the latter region would be the high cost of transporting fertilizers from the port of entry to the interior.

TOOLS AND IMPLEMENTS EMPLOYED.

The universal tool in Colombia is the machete, which is always carried by the people of the country districts. With the machete they clear their land, build their huts, and cultivate their crops. In many parts of the tropical and semitropical regions of the country it is impossible to travel the forest trails without the machete for clearing away the brush, vines, etc., which, in a few days, again partly obstruct these paths.

The machete is used in two forms. The larger, heavy, round-pointed blade with a horn or bone handle, and with the greatest width of blade at about two-thirds of the length from the handle, is the one used for brush work, etc. Then there is the smaller machete of the same general shape but of one-half (or less) the size of the former, which is used for lighter work and is called a "banana knife" on account of its universal use in the banana plantations for cutting bananas. One well-known American brand is the best known and liked throughout Colombia, though there were formerly several popular German makes on the market. The machete outranks all other agricultural implements in volume of sales. In Antioquia no man of the middle or lower classes is without his "peinilla" (in its leather sheath), as the "banana knife" is called there.

Brush-hooks are also coming into general use for heavy brush work. These are not wanted with the imported wooden handles, as the Colombians make their own out of native hardwoods in the field.

The axes used and best liked are those of the long-bladed, wide-eyed variety, with heavy beveled edge suitable for hardwoods; these also take a straight wood handle made by the user in the field. The natives do not know the use of the slender curved ax handles and manage to break them as fast as they can be put in. Workmen engaged in clearing are given the ax head and are expected to make their handles to their own liking. The ordinary fine-bladed, light ax used in northern countries for pine, fir, etc., is useless for hardwoods and soon breaks up.

For tobacco and sugar-cane work there is used a heavy, broad, and square-bladed hoe taking a straight hardwood handle, also made by the natives.

There are very few grindstones in the country outside of the few blacksmith shops. Machetes are sharpened by rubbing on a stone selected from the country rock for the purpose.

Articles much in demand are small, narrow strips of fine steel used for shoeing axes, hoes, etc., and these are carried in stock by all hardware dealers. These dealers are also the importers of nearly

all agricultural implements used in the country, though it is true that most of the large importers of general merchandise purchase large stocks of machetes for wholesaling in the interior to their clientele, as a standard article of commerce. These general importers carry barbed wire, staples, and machetes, for all of which there is a large and increasing demand—especially for barbed wire for fencing.

The average yearly imports of machinery of all kinds into Colombia total about \$2,000,000, of which railway equipment forms about 50 per cent. Twenty-five per cent is industrial equipment, of which about half is textile machinery and 10 per cent mining machinery. Ten per cent is agricultural machinery and 5 per cent electrical equipment and machinery. There is a good and increasing market for small and cheap coffee, rice, and sugar machinery, one of the largest items of importation being small "trapiches" for sugar grinding, operated by oxen or mule power.

"La Estrella" foundry, of Medellin (see p. 235), is turning out a very good line of coffee-cleaning machinery, cacao roasters, and sugar presses, which compete favorably with the imported articles and for which there is a very large demand.

On account of the fact that the import duties are assessed on the gross weight of the package, the demand is for the lightest possible equipment and the most simple in construction and operation, on account of the general want of knowledge in the country of machinery care or adjustment and the lack of repair facilities.

Plows are used only in the Bogota district, for wheat growing. The disk plow has become a general favorite in this region, the 14-inch size with ox draw being the type most used. The native mules are too light for heavy plow work, and oxen are always used.

PROSPECTIVE MARKET FOR GASOLINE MOTORS AND EQUIPMENT.

Now that high-grade petroleum has been developed in Colombia and a small refinery is being erected at Barranca Bermeja, on the Magdalena River, from which oil products will be distributed to the limit of the present transportation system of the country (see p. 129), it may be predicted that Colombia will soon offer a larger field for the sale of small gas engines for heavy work, marine work, small lighting plants, etc., throughout the country. Even during 1918 and 1919 several hundred lighting sets were sold in Colombia, as a result of just one visit by an agent from Panama.

As regards tractors, etc., for farm work, a field is opening up in the region of Cartagena, where there are developments in sugar, rice, tobacco, and other crops. On account of the broken nature of the country and the consequent general lack of roads and means of communication, and also because of the cheaper and more dependable labor in the interior (as around Bogota), tractors will be too expensive outside of the more accessible coast regions of the Caribbean littoral.²

² See circular of Latin American Division published in Commerce Reports for June 10, 1919, covering the automobile, truck, and tractor markets of the West Indies, Central America, and the north coast of South America.

COLOMBIAN IMPORTS OF AGRICULTURAL IMPLEMENTS AND MACHINERY.

The following table, showing Colombian imports of agricultural implements and machinery, has been taken from the Colombian Government import returns for 1916:

[Kilo=2.2046 pounds; Colombian dollar=\$0.9733.]

Kinds.	Kilos.	Value.	Kinds.	Kilos.	Value.
		<i>Colombian dollars.</i>			<i>Colombian dollars.</i>
Plows.....	11,162	2,167	Cane cutters.....	.987	154
Tools (miscellaneous).....	291,914	83,991	Fodder cutters.....	322	92
Cart axles.....	30,951	5,150	Tobacco cutters.....	568	458
Cart and wagon parts.....	1,639	233	Flour-mill machinery.....	64,652	15,105
Wheel tires.....	191	42	Trapehes and parts of.....	23,044	4,887
Wheelbarrows.....	10,041	1,698	Agricultural machinery.....	448,433	88,509
Tools not specified.....	10,359	1,564	Cream separators.....	91	20
Insect destroyers.....	730	168	General machinery.....	438,104	133,044
Brush hooks.....	76	65	Artesian-well equipment..	1,957	1,002
Sugar machinery.....	151,367	35,948	Gasoline motors.....	12,462	5,236
Rice machinery.....	239	135	Rakes.....	1,190	409
Cacao machinery.....	1,076	525	Scythes.....	633	107
Coffee machinery.....	58,650	18,302	Drills.....	1,813	515
Corn machinery.....	2,449	450			

NOTE.—The total of Group 5 in the Colombian returns, covering machinery and implement imports of all kinds, amounted to 3,007,869 kilos, valued at \$30,622 dollars, in 1916. Only those items pertinent to agriculture are given in the above list.

It should be remembered that 1916 was a war year when exports of hardware and iron and steel manufactures were restricted by the Allied nations.

In 1917 the port of Barranquilla handled imports of agricultural implements to the amount of 484,959 Colombian dollars, of which 344,063 dollars came from the United States, 102,640 dollars from Great Britain, 4,556 dollars from France, 7,841 dollars from Spain, and 5,859 dollars from other countries. Machinery amounted to 204,210 dollars, of which 189,008 dollars' worth was purchased in the United States.

Agricultural and mining tools and machinery imported through the Pacific port of Buenaventura during 1917 amounted to 190,862 kilos, valued at 69,990 Colombian dollars.

Agricultural machinery and tools imported through Cartagena amounted to 324,724 Colombian dollars in 1915 and to 193,862 dollars in 1916.

NECESSITY OF PROPER PACKING AND EXPLICIT INSTRUCTIONS.

Packing should be as light as possible, consistent with the proper protection of contents. Machinery and metal articles intended for the interior should be waterproofed.

When machinery such as tractors, gang plows, thrashing machinery, etc., is shipped "knocked down," detailed instructions should accompany the shipment, *in Spanish*, for the assembling of these machines, and a full set of spare and replacement parts should accompany the shipment in every case, since the loss of a bolt or the breakage of any small part may make it impossible to use the machine for that planting or harvesting season, or until the needed part can be obtained from New York, the nearest supply point.

Detailed and explicit instructions for operation should be attached, in Spanish. Blue prints of complicated machinery should be furnished, with all lettering in Spanish. In 1919 there arrived at Cartagena a large shipment of American agricultural machinery, which included a steam tractor, gang plows, reapers, and a rice thrasher, all "knocked down." Not a single blue print of any of the machines accompanied the shipment, even in English; there were also no instructions or anything to show how the machines should be assembled, in either English or Spanish. Spanish would have been best, but with English the buyers could have brought in some English-speaking friend to translate the instructions for them. But, without instructions even in English, these people, who had never seen such machinery before (much less handled it), had to go to work to get the parts together as best they could, puzzling each adjustment out by guesswork, combined with plenty of native ingenuity, and the job took months of time. What was said about the American factories that allowed machinery to be sent to Colombia in this condition, without instructions for assembling it, was, to say the least, extremely uncomplimentary to American export methods, and many comparisons were made with former machinery shipments received at Cartagena from Germany and the United Kingdom.

The Colombians have long suffered in this respect at the hands of careless, thoughtless American exporters, who seem to think that there are as many trained and experienced mechanics in Colombia as there are in the United States. Exporters of all kinds of machinery to Colombia should take the trouble to inform themselves of the conditions obtaining in the district where the shipment is going and to help the purchasers in every way toward the successful operation of the equipment furnished them.

If a machine does not work at all or operates badly because it is not properly assembled, the people of the district, who are watching the results of the pioneers with the new machines, are very likely to say that the machine itself is no good and a failure, and thus future sales in that district are lost to the manufacturer or exporter on account of popular prejudice.

DOMESTIC MANUFACTURING.

STATISTICS OF INDUSTRIAL ENTERPRISES.

At the close of 1915 there were, according to Colombian statistics, 121 manufacturing plants in Colombia, representing an investment of \$12,406,000 United States currency:

Establishments.	Number.	Capital invested.	Establishments.	Number.	Capital invested.
Textiles and thread.....	21	\$3,530,000	Soap and candles.....	18	\$330,000
Sugar.....	2	2,000,000	Shoes.....	6	255,000
Oil refining.....	1	1,200,000	Tanning extract.....	2	200,000
Electric light and power.....	5	1,086,000	Glass and glassware.....	3	150,000
Flour mills.....	6	780,000	Iron foundries.....	3	53,000
Matches.....	5	750,000	Carbonated beverages.....	7	38,200
Chocolate and candies.....	8	515,700	Distilled liquors.....	1	22,000
Cigars and cigarettes.....	8	428,000	Perfumery.....	1	10,000
Cement and artificial stone, tiling, etc.	3	420,000	All others.....	16	205,100
Beer and ice.....	5	433,000	Total.....	121	12,406,000

The above figures do not include several important plants now operating in Colombia. Among other factories not listed, there is an important tannery at Bogota and the rice mill of Cartagena. Textile mills have all increased their capitalization since 1915, and the above amount of \$3,530,000 is too low by half; the total amount invested in textile factories by the end of 1920 will probably reach \$10,000,000.

Of the factories included in the above table, the city of Bogota contains 40, Medellin 30, Barranquilla 18, and Cartagena 12. Recent developments in the increase of textile mills in Medellin and its district, however, tend to put that city in first place as the manufacturing center of the country. There are also a corset factory, a shirt and collar factory, and a large candy and cracker factory in Medellin that are not listed above.

Despite the fact that there were 21 textile plants in the country, goods of this character to the value of 3,343,383 Colombian dollars were imported in 1915.

The domestic factories of Colombia owe their existence to high protective tariffs imposed by the Government on the competing imported articles, and the prices obtained for domestic manufactures are fixed by the c. i. f. and duty-paid cost of imported goods of similar quality. Manufacturers of Colombia have the advantage also of very cheap factory labor, but in turn are handicapped by the necessity of importing nearly all of their raw materials and all of their machinery and equipment.

A number of articles of foreign manufacture are of prohibitive cost on account of the high import duties imposed—chief among these being canned and bottled foodstuffs, tobacco products, wines and liquors, and leathers.

OPPORTUNITY FOR EXPANSION.

The greatest development of manufacturing will be in textile lines. More than \$4,000,000 was invested in this branch of industry during 1919, several large new plants were projected and planned, and two

complete mill equipments were ordered from the United States. The industry is handicapped by the lack of sufficient domestic cotton, and most of the yarns are imported—formerly from England, principally, but now in considerable amount from the United States. Next in importance has been the increase in investments in cigarette factories, notably in Medellin. Tobacco is brought in from Santander and Tolima. An important industry is saddlery, and there is increased interest in tanneries, the domestic leathers enjoying an excellent demand, far in excess of the production.

There is a wide opportunity for investment in textile and knitting mills, tanneries, sugar mills, etc. The small shirt factory at Medellin, recently established, is paying a net profit of 5 per cent per month on the capital invested.

Details concerning Colombia's industrial establishments will be found in the sections covering the several commercial districts (beginning on p. 185).

PANAMA-HAT MAKING AND EXPORTATION.

Hat making is the largest community industry in Colombia, and "Panama" hats (so called) form one of the chief items of export. In 1912 the exports were 60,000 dozen, valued at 1,174,641 Colombian dollars (1 dollar = \$0.9733 United States currency), while in 1913 the value was 966,361 dollars. In 1918 exports of hats amounted to 689,328 dollars. These so-called Panama hats are about the only manufactures of Colombia to be exported on any large scale at the present time. Prior to 1900 Cuba was the only available market for Colombian hats, only a few dozen being imported into the United States, while to-day the United States takes almost all these exports. In addition to the exports, there is a large home consumption.

The principal centers of the hat-making industry are in Antioquia, Huila, Narino, and Santander. From Antioquia come the "Aguadas" (town of Aguada) and "Antioquias" hats; the "Suazas" come from Huila (town of Suaza); the "Zapatocas" and "Girones" are made in Santander; and the "Pastos" and "Tumacos" come from Narino, from the regions around the towns that give the hats their names. The hat trade of Tumaco is increasing.

All Panama hats are made of the "toquilla" palm (*Carludovica palmata*). The young leaf is used for hat making, being cut off the palm, split into thin strips with a wooden knife, and bleached in the sun, to be woven into hats. These palm strips are kept damp to prevent breaking and splitting in weaving. At Sucre in Antioquia the hat weavers go into a series of damp caves near the town to do the weaving, the moist air keeping the splits at the right consistency. At La Union, near Pasto, hats as fine as those of the famous Monte Cristo district of Ecuador are being made to-day.

It takes a person from one day to a week, or more, to weave a hat, according to the fineness. Hats are usually sold to the local merchants, who export them.

The work is done mostly by the women and the children, and, while exports have decreased since 1912, the industry seems to have increased in Colombia on account of the growing domestic demand for the hats, which are universally worn by the working people.

Competition from Japan in the foreign markets is expected. Japan is buying the "toquilla" (stripped and ready for weaving) in Peru, Ecuador, and Colombia in increasing quantities, and, also, the toquilla palm is being cultivated in Formosa and Japan. Labor is even cheaper in Japan and Formosa than in Colombia and Ecuador, and in the South American countries organization in the industry is lacking to a great extent.

Concerning stiff straw hats the following report was submitted in 1918 by Consul Claude E. Guyant, of Barranquilla:

Straw hats are quite generally used in Colombia the year round, but the stiff straw hat has always been imported until recently. The Panama hat is manufactured of native grasses in the interior part of the country and is largely worn, although its cost in the better grades has been always higher than that of the imported straw hat. Within the last few years the latter has been increasing in popularity. Two small factories have been started in the coast country, at Barranquilla and at Cartagena, for the manufacture of straw hats. It is understood that the Cartagena factory has not been very successful, owing to faulty management, but the Barranquilla plant has been placed in charge of a competent manager from New York, and its product is meeting with an increasing demand from all parts of the country. This factory is equipped with 15 sewing machines operated by electric power and 4 presses and has a present capacity of 25 dozen hats per day.

The ordinary stiff straw hat is made in several different styles of braid, also men's hats in soft straw and children's and women's hats in soft straw, white and colored. Prices range from \$9 to \$24 per dozen, according to style and quality. Retail prices are from \$1 up, the most popular grade selling for \$1.50.

Materials for this factory are all imported from the United States, although the braid used comes originally from Italy, China, and Japan, principally from the latter country. Straw braid is imported at the rate of 16,000 pieces of 60 yards each for a year's supply.

The hats manufactured here compare favorably with the imported product, and their reception in the local markets has been very gratifying to the promoters of the enterprise.

BAGS AND SACKS—COLOMBIAN FIBER RESOURCES.

Unable to obtain sufficient jute sacks from abroad for the 1918 or 1919 coffee crop, Colombia has turned to its resources of native fibers, and in 1919 succeeded fairly well in furnishing domestic manufactured sacks for the coffee crop of that year. Small bag factories have sprung up all over the country, in which sacks are made of the native "fique" or species of henequen which grows well in nearly every part of the country and is also cultivated to some extent, though natural plantations are mostly utilized. The fiber, which is extracted from the leaves of the plant by hand, usually brings a higher price in Colombia than could be obtained for it by exporting to the United States—prices averaging around 12 cents per pound of 500 grams, delivered at the town.

Prices obtained for the fique-fiber coffee sacks averaged, during 1919, 1 Colombian dollar each, or 2 dollars for a "carga" of two sacks. In Medellin a company was being organized to start a bag factory on a large scale, using modern sack-making machinery, etc. In Medellin, also, "La Estrella" foundry is making a very good "defiberating" machine like those used in Mexico for henequen, and these machines are being used to an increasing extent in the interior.

"FIQUE" AND "PITA" FIBERS AND THEIR USES.

Near Rio Hacha there are large areas of natural plantations of "fique" (as the plant is known locally), which grows very well on the semiarid, well-drained, lime-impregnated lands of this region.

There are enough of the natural plants to justify exploitation on a fairly large scale, and large plantations could be developed in time from the natural ones now existing. The species of agave produces a better fiber than the sisal of the Bahamas or the henequen of Mexico, being finer, whiter, and of greater tensile strength (samples have been submitted to the United States Department of Agriculture by Prof. Dawe, agriculture expert for the Colombian Government). However, it is not thought that the United States will need to develop new fiber sources for some time, and there is therefore little interest in these fields.

The "fique" fiber of Colombia is used throughout the country for a great many purposes. Sandals are woven of the fiber and are the universal footwear of the natives of town and country—ropes of many kinds are made. Hammocks and mats are made, and local factories are also turning out a very good long house mat or "runner," done in colors, which makes a very good and serviceable covering for the rough brick and tile floors of the country. Small hand bags, called "mochillas," are also woven of this fiber, serving the same purpose as the "moral" in Mexico, though the "mochilla" of Colombia is round in shape and not flat and square like the "moral." The most useful purpose for which the "fique" serves in Colombia, aside from that of making coffee sacks, is in the manufacture of "sobrenjalmes," the packsaddles used on the mules and oxen for transport in the mountainous interior.

The total annual production of "fique" fiber in Colombia must be enormous, but there has been little organized effort to develop the industry. The work is carried on by small operators in an individual manner all over the country, generally supplying local needs only, though there is beginning to develop a considerable domestic trade in coffee sacks made in the country, the exchange being between commercial districts and local markets.

The species of agave *Furcraea macrophylla* grows wild in the Department of Antioquia, and little has been done to exploit the fiber commercially for export, though small lots have been exported in former times. Very few defiberating machines are used, though "La Estrella" shop near Medellin manufactures a good machine of this kind. The usual manner of extraction is by hand, this work being done by the Indians. The largest cultivated plantation is located on the Magdalena River, near Mompos, and contains about 50,000 plants. This plantation has easy access to the river traffic, and the fiber could be easily exported if prices could be obtained to warrant operations on a large scale.

Perhaps the most valuable fiber of Colombia is the "pita." This plant does not belong to the well-known agave family but to the pineapple family (*Bromeliaceae*) and is found in all tropical parts of the country—existing in large natural plantations in the region of the Atrato River, near the Gulf of Uraba, and in the Chiriguaní district of Santander and Magdalena (Cesar River country), where it is found matted in the almost impenetrable tropical jungles.

The leaves of the "pita" plant are much longer and more slender than those of the henequen ("fique"), sometimes attaining a length of 18 to 20 feet. The fiber is finer than that of the henequen, more uniform in construction, and very much stronger—that is, of greater tensile strength. It is used by the natives for making hammocks, nets,

strong cord, and for sewing in leather. It is the finest fiber known for marine work, making a light, hard line (whale line), practically impervious to salt water for a very long period and of great strength, exceeding that of all other lines of the same weight and diameter.

The fiber of the "pita" has not, as yet, been commercially exploited, chiefly because of the difficulties of extracting the fiber from the leaf, which is less "juicy" than that of the henequen, being dry and hard to clean from the fiber itself. Experiments have been made in "rotting" the leaves to make "defiberation" more easy.

IMPORTS OF JUTE AND BAGS.

In 1917 imports of jute into Colombia from the United Kingdom amounted to 225,000 Colombian dollars in value, and prior to the war Colombia purchased more than 1,000,000 yards of jute piece goods in Great Britain. Jute imports in 1916 amounted to 516,420 kilos, valued at 159,426 dollars. In 1918, 80,324 kilos of fiber sacks, valued at 33,826 dollars, were exported by Colombia. Exports to Colombia from the United States of bags, twine, etc., have been as follows:

Kinds.	Fiscal year 1916.		Fiscal year 1917.		Calendar year 1918.		Calendar year 1919.	
	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.
Bags, vegetable-fiber		\$55,258		\$39,473		\$39,062		\$143,566
Cordage	270,599	31,923	212,805	33,437	65,531	18,026	222,426	49,727
Twine, binder, etc.		69,147		120,400		7,143		28,180
All other manufactures of vegetable fibers		16,215		15,021		10,842		28,697

ECONOMIC VALUE OF NATIVE FIBERS.

It would appear that Colombia possesses great natural resources in fibers, almost untouched as yet, and that there are great areas of land suitable for fiber cultivation adjacent to seaports, etc.—where, however, labor is scarce and difficult to secure and retain. Statistics show that imports of jute and bags decreased considerably during the war, because of the lack of tonnage, the consequent inability of the importers to obtain needed supplies, and the fact that the domestic resources in fibers were utilized and were capable of supplying the demand, at least during the period of high prices for sacks in 1919. When shipments of jute are renewed from India, it will be a question whether the domestic product can stand the competition of the cheap imported article.

In 1918 an attempt was made near Barranquilla to cultivate the "malva" plant as a substitute for jute in anticipation of the shortage of bags for the coffee crop of 1919. A considerable acreage was seeded in malva near Calamar (Banco) on the Magdalena River, and a sack-making factory with modern machinery was installed at Barranquilla, the work being in charge of an English jute expert from India who promoted the project. The malva plant itself did very well, but labor was lacking at cutting time, most of the crop was lost, and no sacks were made in the factory. Several tons of the cleaned fiber were sent to the United States as a trial shipment but, from all accounts, did not meet with success on the American market.

ECONOMIC CHARACTERISTICS OF NINE COMMERCIAL DISTRICTS.

INTRODUCTION: NECESSITY FOR TREATING EACH DISTRICT SEPARATELY.

On account of the topographical barriers, Colombia must be considered as a group of commercial districts, each different from the other and each possessing its distinct features with respect to climate, transportation, living conditions, character of the people, and other economic and social factors. All these conditions affect trade in many ways, such as the packing of goods, the kind of merchandise wanted, the buying seasons, and similar considerations. For commercial purposes each of these districts must be regarded as a separate unit, and for this reason a separate section in this chapter has been devoted to each, as follows:

Santa Marta and commercial district.
Barranquilla district, Department of Atlantico, and Magdalena River.
Cartagena and commercial district.
Medellin and commercial district.
Bogota and commercial district.
Manizales and commercial district.
Cali and commercial district.
Bucaramanga and commercial district.
Cucuta and commercial district.

In each of the above-mentioned sections there is a discussion of the economic characteristics of the district—its means of transportation, cities, population, living conditions, education, local manufacturing, imports, agriculture, live stock, mining, banking, and commercial peculiarities.

The country is so broken in character and the distances between the several districts are so great (with the difficulties augmented by the lack of means of transportation) that no single commercial enterprise can cover the entire country in an adequate manner, and branches are necessary in each of the important centers, such as Barranquilla, Cartagena, Medellin, Bogota, Manizales, Bucaramanga, and Cali.

Cartagena and Barranquilla are only 70 miles apart, but there is little intercommunication or commercial exchange between the two seaports, though there exists a rivalry for the trade of the interior to the east of the Magdalena River. Cartagena's territory consists primarily of the Rio Sinu country and the Choco Intendency, with which it has communication by steamer along the coast and then up the Rio Atrato; while Barranquilla receives and ships three-fourths of the products of the interior, having better access to the Magdalena.

Medellin takes care of the territory of Antioquia, importing direct. Manizales, too, imports direct, though manufacturers' agents in Medellin also cover Manizales by a four-day trip through the mountains of Antioquia by mule, making about two trips yearly. The import and wholesale trade of Manizales is well organized, and on account of the capital and foreign connections of its merchants, Manizales is able to sell at wholesale to Armenia and Cali to a great extent.

Bogota is the center of trade and commercial activity for the great region of the table-land and even reaches part of Santander, all of Tolima, and Huila. The trade of Bogota is greatly handicapped by the condition of transportation on the Magdalena River; goods are delayed for months over this route, and freight is very costly. The building of the connecting link of railway between Beltran (on the Upper River) and Girardot, which is now under contract will eliminate the delays and disadvantages of the Upper River navigation and will greatly assist Bogota commercially.

The completion of the Pacific Railway between Cali and Ibague, over the Quindio Pass of the Central Andes, is the most important problem of Bogota, since it will put that city in direct rail communication with the Pacific port of Buenaventura and will contribute more than anything else to the commercial expansion of the Bogota district.

The trade of Cali takes in all of the Cauca Valley, including Popayan to the south, and the completion of the Pacific Railway, mentioned above, will eventually make Cali the second city of the country in commercial importance.

The Departments of Huila and Narino are handicapped by the broken nature of their territory and the lack of population. The completion of the wagon road now being built from Pasto to Barbacoas will greatly assist commerce through the port of Tumaco and via Barbacoas

An agent or branch house located in Barranquilla could not sell to Bogota or Medellin (a letter takes longer to go from the coast to Bogota than from the coast to New York), and the same applies to sales in Manizales, Cali, etc.

The best method for covering the country commercially has been adopted by the Colombian commission houses established in New York. These houses are principally interested in one particular district, such as Medellin, for example, where their main offices for the country are located, including sample rooms, etc. Members of the firm, or others employed as agents, also have opened offices in the other commercial centers of the country—these offices importing directly through the firm in New York and ordering shipments sent in via Barranquilla or Buenaventura, as the case may be. A house located in Cali sends salesmen to Popayan, Tumaco, Barbacoas, and Pasto twice a year. As these houses are also large purchasers and handlers of coffee, hides, and other Colombian products, this arrangement is the most advantageous one.

Mistakes have been made in the past by American exporters in intrusting the entire country to one agent, expecting him to travel and cover the commercial centers other than the one where he resides. This can not be done in an efficient and economical manner. Travel takes too much time, and is too expensive, and moreover, since all lines are fairly well represented in each center by resident agents, the volume of business to be obtained by traveling from one center to another is too small to compensate for the effort involved, unless the representation is of some special article or line in which the margin of profit is very high and the sales sufficiently important to warrant this extra expense.

SANTA MARTA AND COMMERCIAL DISTRICT.

LOCATION OF CITY—CLIMATE—POPULATION.

Santa Marta, the capital of the Department of Magdalena, is a seaport on the northwest coast of Colombia, 60 miles east of Puerto Colombia (at the mouth of the Magdalena River), and has a population of 6,000. The city streets are not paved and there is no drainage or sewerage system of any kind. The soil is sandy and dry and absorbs moisture, to which fact may be attributed the absence of excessive disease, considering the tropical climate. The average annual rainfall is 18 inches. The precipitation is very erratic, some years being exceedingly dry with not more than 6 to 9 inches of rainfall. Irrigation is necessary in the banana region south of the city. The average maximum temperature is 103° F. and the average minimum 70° F. There are two seasons, winter and summer, winter being the rainy season, beginning in May and lasting until September. The rainfall in the Santa Marta district, however, is affected by the proximity of the semiarid Goajira Peninsula region and of the Sierra Nevada. The climate and rainfall of Santa Marta must not be confused with that of Barranquilla and the coast region farther west where the humidity is much greater.

Fifteen per cent of the people are of Spanish descent, the remainder being mestizos, or mixtures of Negro and Indian. There is a very wide social difference, as in all other South American countries. About 80 per cent of the people are illiterate, and the local schools consist of a Jesuit college and six private schools which are assisted by the Government. These private schools are installed in the homes of the masters and have an average attendance of 20 pupils in the primary grades of education. With the exception of the Catholic college where young men attend (studying for the priesthood, principally), there is no higher education.

COMMERCIAL REGION TRIBUTARY TO SANTA MARTA.

The Santa Marta district consists of the rich valley extending south from the town as far as Fundacion, the present terminus of the Santa Marta Railway. The main business of this valley is that of the banana plantations, only sufficient corn, beans, vegetables, etc., being grown for local needs.

The country is arid and rough south from Santa Marta and is not inhabited until the important town of Cienaga, 22 miles distant, is reached. Cienaga is the river port for Santa Marta, as from here the steamers leave for Barranquilla, the route being through the enormous swamps and channels of the delta until the main stream of the Magdalena is reached at Barranquilla, a distance of 50 miles.

Cienaga has a population of 6,000 people, but is not as good a town as Santa Marta, the buildings not being as modern and the entire place having the appearance of an overgrown village. It is the headquarters for the banana workers, many of whom live here, and also for the railway workers. Here the rich banana region begins, the good land opening out into a large valley with the foothills of the Sierra Nevada to the east and the swamps of the Magdalena River delta to the west.

The other towns and villages of the district (beginning at Santa Marta), all of which are on or near the railway, are: Taganga, population 600; Mamatoaca, 800; Gaira, 1,500 (on the Gaira River); Bonda, 600; Masinga, 300; Sevilla, 400.

LIVING CONDITIONS—PUBLIC UTILITIES.

The cost of living in this district is much higher than anywhere in the interior, with the exception of Bogota. The principal articles of diet of the working classes are plantains, "yuca" (cassava), corn, and beef. Much beef is eaten. Fresh and dried fish should also be mentioned. An American family could live in Santa Marta or Cienaga at a minimum cost of \$40 and a maximum cost of \$60 per month. The only hotel in Santa Marta charges \$2.50 per day for room, with meals included. This rate is rather high, considering the accommodations offered.

The water supply of Santa Marta, owned and operated by the municipality, has a gravity aqueduct with a distance of 2 miles to the intake on the Rio Manzanares. There are about 2,000 feet of ditch work, not sided with stone or cement, and thence the rest of the distance is in iron pipe of 6-inch diameter. The service consists of one faucet in each house, the poorer classes using the water from the several irrigation ditches near the town. There is an ice plant having a total capacity of 12 tons daily.

The local manager of the West India & Colombian Electric Co., operates the electric-light plant at Santa Marta and a telephone system at Barranquilla. The generating plant consists of a 100-horsepower Lefell turbine driving a 90-kilowatt alternating 110-volt generator, and is located at Bonda on the Manzanares River, 10 miles from Santa Marta. The company has 600 subscribers using the equivalent of a thousand 25-watt lamps. In Santa Marta there is also an auxiliary generating plant consisting of a 120 B. H. P. Diesel oil engine, belt connected to a 90-kilowatt generator of the same rating as that at the hydroelectric plant on the river. The total investment is \$100,000.

During the dry months there is barely sufficient water in the river to generate 45 kilowatts, which is the average load required in daily service. During the rainy season ten times as much water is available as is needed. The Diesel engine is used only when the water-power plant is out of commission or the water is not sufficient for the requirements. This engine is in very poor condition and has been badly handled by the unskilled mechanics in charge. There is also room for improvement in the way of developing more power by taking the water lower down where an additional 55-foot fall could be secured, greatly increasing the capacity of the plant. The equipment is adequate to take care of the power and light needs of Santa Marta and neighborhood for many years to come at the present rate of development, the only thing necessary being to have water sufficient to run the plant at its capacity.

This company has ordered a number of small motors with the idea of introducing them as a means of power to be used in grinding corn meal, shelling coffee, etc., in the neighborhood. It is also bringing down a small irrigation outfit for purposes of demonstration with the idea of promoting the use of power for irrigation in the surrounding country.

Sufficient corn, beans, vegetables, etc., are produced in the district to supply normal needs, but—with the exception of dried fish, which is shipped to the interior from points on the "Cienaga" between the towns of Cienaga and Barranquilla—there is no export of food-stuffs of any kind. All lard consumed in the district was formerly imported from the United States, but is now produced locally in sufficient quantities to supply the demand. There is one small sugar plantation near Cienaga which produces sufficient panela—a brown-sugar cake—to supply local needs at a price averaging 9 cents per pound. A poor grade of table sugar which is used by the better classes, and which is of a slight brown color, is produced near Barranquilla.

Flour is now being shipped into the district from the interior, near Bogota, but not enough is being received from domestic sources either here or at Barranquilla.

Santa Marta handles few hides, compared with the total production of the region. Most of these are brought in from farther south and go to dealers in Barranquilla via Cienaga. The trade in hides at Santa Marta is only local, with the exception of some brought down from Rio Hacha, which are all handled by one dealer.

The yearly quantity of sun-dried hides in good condition in Santa Marta will not exceed 1,500, this number representing local consumption of beef only. There is only one dealer in hides in Santa Marta; he is also a cattle buyer. He imports 80 tons of barbed wire and 1,000 barrels of cement from the United States annually.

IMPORT TRADE—STOCKS CARRIED.

The chief articles imported by Santa Marta merchants are hardware, directly from the United States since the war, and cotton goods from the United States and England, in about equal proportions.

Formerly the merchants of Santa Marta imported considerable merchandise directly through the port of Santa Marta, buying principally from German houses, being attracted by the 180 days' time given. These terms suited them, and they say they would be glad to return to this system of credit. They are ready to do business with American firms, but want longer terms than the 120 d/d now asked by all New York importers. The United States will have to meet European prices and study tariff laws, packing, and local requirements very closely if it is to increase its trade with this district. Prices and terms being equal, the Santa Marta merchants prefer the American market, on account of the proximity and quick delivery.

During the war Santa Marta became tributary to Barranquilla, buying from there at wholesale, with the exception of small importations of shirts (fancy) and notions. All of the merchants have connections with some export house in New York with which they do most of their business in the United States, but they do not really understand trade conditions in the United States. Before the war they dealt with Germany, because Germany gave them the cheap goods that they wanted for their trade and also had evolved a good system that made it easy for the merchants and that they thoroughly understood. For example, merchants do not understand the United States monetary system and do not know the difference between a Federal reserve bank note, a gold certificate, and bank-of-issue currency. And they do not realize what guaranty is back of our cur-

rency. A great deal of good can be done by education in Colombia along these lines.

The merchants of Santa Marta are progressive and will take chances in overstocking with goods. They like to show a large stock. They do not understand trade-getting methods, and have no idea of how to go about securing the trade of Rio Hacha and the Valle Dupar district, which logically belongs to them.

With the exception of the local trade in native foodstuffs and ample supplies of cotton dry goods, the large \$80,000 stock carried by the merchandise department of the United Fruit Co. and one small stock of hardware of about \$4,000 are the only stocks of goods in Santa Marta. There is a demand for hardware and piping.

Local merchants are carrying good stocks of cotton print goods and dry goods. About one-half of these stocks come from the United States, being imported through Barranquilla by the large Syrian houses. Some are of Barranquilla manufacture.

MANUFACTURING.

There are no local industries of consequence. Brick and tiling are made for local construction, but the yards are small and are worked at long intervals. The native workmen are good cabinetmakers, using the native hardwoods to make nearly all of the household furniture used locally. They work very slowly, however. Special pieces of furniture are imported by a few of the wealthy families, dressing tables with large mirrors being one of the most used.

There would appear to be a good opening for a small furniture factory at Santa Marta or Barranquilla. The duty on imported furniture is 30 and 40 cents per kilo plus 2 per cent surtax. Good native hardwoods can be obtained in the foothills of the Sierra Nevada near the Santa Marta Railway, and the interior offers an excellent market.

AGRICULTURE.

The United Fruit Co. owns a total of 80,000 acres of banana land in the Santa Marta district, of which it has 16,000 acres under cultivation in bananas. There are 300 private growers with a total acreage of about 14,000 in bananas. Banana growing is the principal industry, and little planting of other products is done, with the exception of corn, "yucca," beans, etc., for local consumption. Plantains also constitute one of the principal articles of diet of the people in this district.

Potatoes are well known and used daily by all classes. These are grown by the Indians in the foothill district of the Sierra Nevada, and some are brought down from the Medellin district for sale on the coast. All vegetables grow extremely well with irrigation, fine lettuce, onions, carrots, etc., being seen where foreigners have planted gardens and cared for them. These latter vegetables are not grown or used by the natives.

There has been an increase in the acreage of corn planted during the past two years, but no estimate can be formed of the amount, as the patches are small and scattered. The method of planting is simply to clear away the brush and drop the seed in a hole made in the soil, covering it by means of the foot. The crop is not cultivated in any way whatever and is not thinned. After planting, the only

work done is to go over the field with a machete, chopping down the larger weeds. This is done once or twice until the corn is high. The ears appear to be very good, the grain being large and soft.

No beans or corn can be stored in this region for any length of time on account of a species of weevil which destroys them in the bins. With properly constructed storage and treatment with carbon bisulphide gas (CS_2), grain can be kept indefinitely anywhere in the Tropics, but nothing is known in Colombia about such methods.

Not a single plow is used by the natives in the district. The only implements employed are shovels for digging the irrigation ditches of the banana plantations, the ever-present machetes, and axes for clearing purposes.

These machetes (in South and Central America every district has its favorite design, size, and shape) are of the heavy, long, round-blade type with horn handles, and the best-known brand is made by a firm in the United States. A shorter machete of the same form and shape is used for cutting bananas.

The axes are specially made for the native hardwoods and have a large eye to take the home-made handles, which are straight. The blade is long, with a curved edge, which has a heavy bevel. The favorite brand is also an American make.

FISHING.

A species of buffalo fish is very plentiful in the channels of the Magdalena River and forms a staple market article, both fresh and dry salted. A small quantity of these dried fish have been exported to Cuba recently from Barranquilla, but no statistics on this trade are available in Santa Marta. The town of Cienaga is the center of the fishing industry in the Santa Marta district. From here the fish are shipped to Barranquilla and thence into the interior. No data on production can be obtained. The fish are caught from dugout canoes with small circular casting nets. This local fishing industry competes with imported codfish, which it has practically supplanted during the past four years.

MINERAL DEPOSITS.

There are many reports and rumors of rich copper deposits, coal, and also alluvial gold in the Valle de Upar district near the towns of Fonseca and Villanueva, but no definite information can be obtained. In this connection it should be said that the natives do not understand mining and are therefore unable to give an accurate description of any mineral deposit of any kind. Few American or other foreign engineers have visited the Valle de Upar region, and very little is really known of its mineral wealth or formation. This region is accessible only from Rio Hacha by mule train, a journey of five days, or from Fundacion, the end of the Santa Marta Railway, in about the same time. It was recently visited by an American, W. E. Damé, who spent October, November, and December there. Mr. Damé said on his return to Santa Marta that the copper was in pocket deposits, very rich ore, and, in the aggregate, an enormous amount, which it would well pay to work. He also reported many heavy veins of coal, which he regarded as constituting a splendid opportunity. In this connection it may be said that there is now a proposition on foot in Bogota to secure a concession to build a railway from Bahia Honda,

on the Goajira Peninsula, east of Rio Hacha and south through the Valle de Upar region, crossing good cattle lands and tapping this mining country, the idea being eventually to extend this road to Bogota, since this route is said to be much better than any other. Bahia Honda is reported to be a very fine deep-water harbor. The distance from Bahia Honda to Villanueva, where the principal copper and coal deposits are, is approximately 250 miles, over level ground.

From such information as could be obtained at Santa Marta concerning the mineral wealth of the Valle de Upar region it would appear that this district would justify an extensive scientific examination by experts, who should come prepared to stay at least six months and carry full prospecting and assaying equipment with them.

Great difficulty would probably be encountered in dealing with native land or mineral claim owners for the purchase or contracting of properties. These people do not know the real value or the practical side of mining in any form and are therefore inclined to ask excessive prices for their holdings.

There is a large deposit of cement material 35 miles from Santa Marta at a distance of 2 miles from the railway. The analysis shows: Silica, 70 per cent; iron oxide, 3.95 per cent; aluminum oxide, 20.5 per cent; sulphur trioxide, 0.345 per cent; alkali earth, 0.098 per cent; loss on ignition, 3.44 per cent; and a trace of magnesium oxide. The topography from the deposit to the railway is that of small ravines, and the elevation is 50 feet above the railway. The hill of deposit is 500 feet high on the perpendicular. It can easily be worked with a steam shovel, and the tonnage of material is almost unlimited. A concession for the exclusive cement-manufacturing right for the country could be secured from the Government. The deposit is owned by an American. Colombia consumes an average of \$260,000 worth of cement yearly, and the use of this material in all kinds of construction work is increasing. The present average price is \$5 per barrel.

FOREST RESOURCES.

Sufficient good timber is still obtained on the line of the railway for ties and for bridge and culvert construction. When used for ties the native hardwoods last eight years, whereas imported creosoted ties last only an average of three years. Hewn and squared posts are used for telegraph and telephone wires. Crossties cost, delivered at line, an average of 80 cents apiece.

The western slopes of the lower ranges of the Sierra Nevada which are accessible from the Santa Marta Railway are well wooded, but the large trees of commercial value, such as mahogany, etc., are scattered and would only suffice for local manufactures, such as furniture. They are not found in sufficient numbers to be of any export value.

Aloes are found in the Rio Hacha district, and there is one small plantation of aloes owned by Señor Moises C. Enriques. The industry is in its infancy. In this region are found the largest numbers of divi-divi trees, the pods of which are exported for tanning material.

NEW INDUSTRIES AND WATER-POWER DEVELOPMENT.

A resident of Santa Marta has ordered from the United States a small fish-canning plant which will have a capacity of 250 1-pound, 500 2-pound, and 250 3-pound cans, and it is planned to can in oil a small local species of sardine for local consumption.

A sawmill for the use of the Vista Nieve coffee plantation has been ordered from an American firm. The equipment consists of a 54-inch circular saw, water-power drive 40 by 18 inches, 24-inch bed planer, a small corn-meal grinder, belting, and accessories. The Vista Nieve plantation adjoins the coffee property of the Cincinnati Coffee Co., four hours distant from Santa Marta, and the above-mentioned equipment is to be used to furnish lumber for plantation structures, etc.

A hydroelectric plant is to be installed by a person who has recently been awarded the concession to use the water power on the Rio Gaira, 4 miles above the station and town of that name on the Santa Marta Railway and 7 miles distant from Santa Marta. A 335-foot head of 800 cubic feet per minute is developed here at the lowest period of the year during the dry season. Approximately 450 horsepower will be produced, to be used for the operation of the Santa Marta ice factory and for electric lighting in the village of La Gaira, and the plans are to have 300 horsepower available for factory purposes.

SUPPLY, QUALITY, AND WAGES OF LABOR.

The lack of tonnage during the war for the movement of bananas caused many banana workers to emigrate to Cuba to work in the cane fields and sugar mills. During two recent years 3,000 men have left the district. It would at this time be impossible to secure as many as 500 men to labor on any new project. Nearly all labor is performed by a system of piecework; as, for example, so many bunches of bananas handled or a certain area of land cleared constitutes a day's work. The men are good at machete work and cutting and handling bananas, but do not like heavy labor, such as track work or ditch digging for irrigation.

Although there are many Negroes and a few Indians in the district and most of the people show a heavy infusion of Negro blood, they all appear to be affected by the tropical climate in the banana zone and subject to malaria and anemia to a great extent. This condition unfits them for heavy work, and they are, as a rule, incapable of long-sustained effort.

The United Fruit Co. maintains a large and well-appointed modern hospital at Santa Marta, where climatic conditions are much better than in the banana zone. To this hospital are brought all workmen having diseases of any kind, for medical attention and cure. The hospital is also available to all persons of the region, and many skillful operations are performed here. This institution is rendering a much-needed service for the north coast of Colombia, and its value is incalculable.

BANKING.

No regular banks are established in Santa Marta, but there are two branch agencies of Barranquilla banks—the Banco Dugand (Santa Marta agent, Miguel A. Zuñiga) and the Banco Comercial (repre-

sented in Santa Marta by E. C. Fuentes). Señor Miguel A. Zuñiga also has the temporary agency in Santa Marta for the Banco Mercantil Americano de Colombia, Barranquilla branch, and maintains one extra clerk who attends to the banking work in his store.

POSSIBILITIES OF TRADE DEVELOPMENT.

It would seem that, by an effort, the merchants of Santa Marta could secure and develop the trade of the rich Valle de Upar region and Rio Hacha. The latter has no harbor; there is only a very shallow open roadstead, where small schooners have to lie out at a great distance from shore, and cargo is handled in dugout canoes. At the present time Rio Hacha receives most of its supplies from Curaçao, the trade being carried on by small schooners owned in Curaçao, which return home with divi-divi and hides from Rio Hacha. The distance from Santa Marta is 90 miles by sea, and the trip is slow and difficult in the small schooners (by reason of the strong northeast trade winds), the voyage taking from five to six days. There is a customhouse at Rio Hacha, and merchandise from Curaçao is distributed into the interior of the Goajira Peninsula and the Valle de Upar region. The distance from Rio Hacha to Valle de Upar is approximately 300 kilometers, or 186 miles, and all goods are transported by pack mule.

The route from Santa Marta via the railway, as far as Fundacion, and thence by pack mule to Valle de Upar, is more practical than that from Rio Hacha. The distance is less great and the road passes through a more inhabited region, where there are coffee and cacao plantations and cattle ranches. For this reason it would seem that the merchants of Santa Marta should endeavor to develop trade by this route and, also, should run small auxiliary-powered schooners to Rio Hacha.

The towns at present being supplied through Rio Hacha with goods from Curaçao are: Moreno and Valencia, population 1,500 each; Soldado, population 1,000; Fonseca, 3,500; San Juan, 5,500 (including 20 ranchos); Villa Nueva, 3,500; Valle de Upar, 7,000. The Province of Padilla has a total population, including all ranches and small villages, of 28,000. However, the Santa Marta merchants do not seem to have any idea of how to go about developing this trade and would have to be given assistance. The large coffee plantations in the Sierra Nevada region carry stocks of goods worth \$5,000 to \$8,000, and would also buy in Santa Marta if it were possible to do so. The trade with the Goajira region and the Valle de Upar district can be conservatively estimated as amounting to \$400,000 yearly.

The United Fruit Co. is in a very good position to establish a large wholesale house at Santa Marta and supply the Valle de Upar region, and this would be one of the best and most logical ways of increasing American trade in this district. Goods for transshipment into this region must be packed for mule transport—weight limit 135 pounds per package. Duty is assessed on gross weight so that packing should be as light as possible consistent with safety.

The nine principal business houses of Santa Marta have a capital running from \$5,000 to \$95,000 each, and representing a total of \$205,000. Their annual sales in 1917-18 were \$227,000, and stocks on hand are valued at \$111,000. Analyzing these figures, it will be seen that very little business is being done, compared with the amount

of capital represented, and that the annual turnover is very slow; in fact, complete stocks are cleared but once a year, even in normal times. This latter feature is one of the arguments for longer credits.

The major portion of the stocks now on hand (at least 80 per cent of the total) consists of dry goods, principally cotton-print goods, which are moving very slowly.

There is a small local demand—about two gross annually—for a fair grade of ready-made negligee shirts, which sell readily.

Santa Marta, during 1917, imported \$395,000 worth of general merchandise, almost all from the United States.

HARBOR AND DOCKS.

The Santa Marta Harbor lies on the west shore and is open toward the west-southwest, well protected by the hills surrounding the town and bay. Anchorage is good. The depth of water in the bay varies between 50 and 200 feet. There is a minimum of 16 feet at low water at the face of the wharves, which lie at the extreme north end of the bay. The bottom shelves rapidly seaward to over 27 feet at the keel line of vessels lying alongside. The wharves are owned and operated by the Santa Marta Railway Co. (Ltd.). General cargo is discharged at the rate of about 15 tons per hatch per hour and loaded at the rate of 12 to 20 tons per hatch per hour, depending on the nature of the goods and the facility of stowage. Coffee is loaded at the rate of 250 bags per hatch per hour. The freight is handled on men's shoulders and by hand truck. Heavy packages are moved on rollers by means of tackle and locomotive power when necessary. The piers are strong enough to hold the maximum weight that can be moved, which is ordinarily not over 10 tons. There are no ordinary facilities for handling pieces of freight over 9 by 8 by 28 feet in dimension. There is ample trackage for switching, with a capacity of 235 18-ton cars. A £4,000 fire-insurance policy for account of the Santa Marta Railway Co. protects cargo while on docks or piers.

The charges on inward and outward cargo are \$0.20 per ton wharfage and \$0.60 per ton from ship's side to customhouse or, in the case of export cargo, from station yard to ship's side. There are no lighterage charges, as lighters are not used. The ships use their own springs, mooring lines, slings, etc. The wharf charge for cattle is \$0.30 per head. The charges for berthing are: Wharfage, \$30; boat service, \$7; and use of buoy, \$3, for steamers of any tonnage. Import cargo is transferred from wharves to customhouse in sealed cars and there unloaded for examination. All of these operations are performed by employees of the railway company. In case of loss or damage from the time the cargo is received on dock until it is delivered at the customhouse, the railway company is liable.

No stevedoring is undertaken by contract. Work on board ship is done by the ship's crew or by shore labor, at the request of the ship's officer, in which case the labor is furnished by the railway company. If labor is requested from shore, the average number of men employed is 13—10 in the hold, 2 winch men, and 1 deck tender. Normally there is sufficient labor to work as many hatches as can be brought alongside the wharves. Chiefly West Indian labor is employed, and the regular wages are 15 cents per hour for foremen and 10 cents for laborers. The foreman receives 25 cents and the laborers

15 cents per hour for overtime. Night work is all counted as overtime, as are also Sundays and holidays.

The only steamship line touching at Santa Marta is that of the United Fruit Co., whose vessels load bananas from the company's plantations in the district. The service is not regular, but passage and freight may be booked from Boston, New York, and Philadelphia, and also Baltimore, according to the run of the particular steamer bringing up fruit from Santa Marta. In December, 1918, 14 steamers sailing from the United States called at Santa Marta, 12 of which came direct and 2 by way of Cartagena and Puerto Colombia.

RAILWAY SERVICE AND PROPOSED EXTENSIONS.

The total trackage of the Santa Marta Railway is 97.57 miles, of which 59.65 is main line. There are 30 small branch lines, all in banana plantations. The rolling stock consists of 20 English-made locomotives of 12 to 33 tons each, 17 passenger, 3 baggage, and 213 freight cars. The roadbed is of 3-foot gauge, rock ballasted, heavily ditched, and well kept. There is one heavy earth cut of 600 feet and 17 all-steel bridges in excellent condition.

Fully 85 per cent of the earnings of the railway are derived from the banana traffic. There is not enough local freight and passenger business otherwise to pay operating expenses. Banana handling is costly on account of the perishable quality of the fruit and the necessity of careful and rapid transport to steamers. The trains are made up to run out to the plantations empty when the fruit is cut, making the freight a one-way haul. The line can handle 57,000 bunches of bananas in 24 hours' working time, using 4 large and 8 small locomotives. This time is the elapsed time from the issue of the order for cutting until the fruit is cut, brought to the sidings, loaded on board cars, and delivered to the steamer. The capacity could be increased to 160,000 bunches in 24 hours.

In 1905 the Santa Marta Railway Co. secured a promise that the Government would not levy a tax on the production of bananas for 20 years. This has allowed the United Fruit Co. to enlarge its holdings in banana land and develop the plantations in this district. The railway company has agreed to build a branch loading line into any of the banana plantations, not to exceed 10 kilometers in depth from the main line, if the amount of fruit justifies this extension.

The terminus of the line is at Fundacion, 96 kilometers (60 miles) from Santa Marta, and the road was originally planned to reach the Magdalena River. The present policy of the company is to discourage the building to the Magdalena River until the development of the country would warrant such an extension in this direction. The officials think it better to extend the road 48 kilometers (30 miles) toward Iriguani, throughout which district there is water for the irrigation of bananas, timber is found in abundance, and there is excellent cattle land—the district offering better opportunities of development than that toward the Rio Magdalena. In this connection, the plan is to extend the line eventually to Valle de Upar, tapping the rich copper and coal deposits found there.

The coast route from Santa Marta to Rio Hacha is very rough and broken, and there is not enough traffic to warrant construction in this direction. Such a line would be very costly.

BARRANQUILLA DISTRICT, DEPARTMENT OF ATLANTICO, AND MAGDALENA RIVER.

LOCATION OF TERRITORY.

The commercial district of Barranquilla is not a well-defined region and is not in any sense limited to Atlantico, the Department in which the city itself is located. Barranquilla is Colombia's chief port of entry and the distributing point for a large section of the interior served by the Magdalena River. Its commercial territory includes the Departments of Santander and Norte de Santander

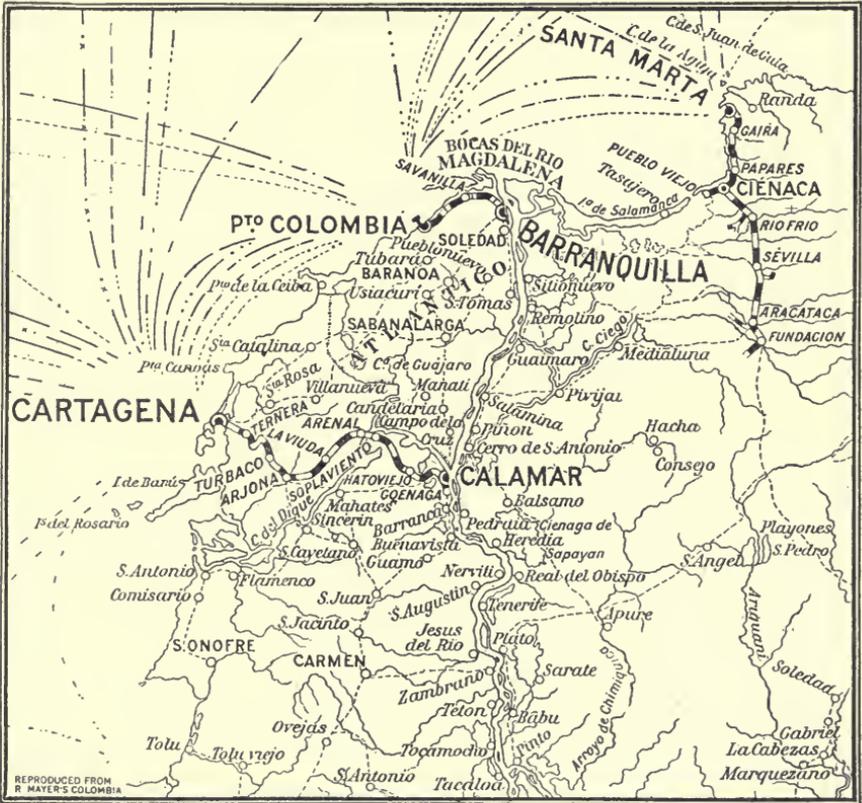


Fig. 9.—Map of Santa Marta, Barranquilla, and Cartagena regions.

and the entire Santa Marta district on the eastern side of the Magdalena; it is the wholesale center for portions of the Departments of Bolivar and Antioquia on the western side of the Magdalena and at times it even receives orders from the distant Cauca Valley in the Department of El Valle.

Barranquilla is located on the Magdalena River about 10 miles from its mouth and about 17½ miles from the seaport of Puerto Colombia, with which it is connected by the Barranquilla-Puerto Colombia Railway. It has 65,000 people, less than 10 per cent of whom are of pure white blood.

The Department of Atlantico has an area of a little more than 1,000 square miles and a population of about 115,000. It is bounded on the east by the Magdalena, on the south and west by the Department of Bolivar, and for some 50 miles on the west and north by the Caribbean Sea. The Magdalena Valley contains considerable areas of level, alluvial land suitable for agriculture, but the remainder of the Department is composed of low, broken hills interspersed with small depressions. This region is arid and unproductive during the dry season, and the valleys are more or less swampy during the rainy season.

CLIMATE AND RAINFALL.

Atlantico has two seasons, a dry season from October until May and a rainy season the other five months. These seasons are exceedingly variable; occasionally rains are so heavy that crops and cattle suffer, but more often there is an insufficient supply of water. The annual rainfall averages about 21 inches, though it is often lower, and in exceptional years it is as much as 42 inches.

The Department is only a few degrees north of the Equator and therefore has a tropical climate. During the rainy season the north-east trade winds moderate the temperature along the coast and as far inland as Barranquilla. During these months the average mean temperature at Barranquilla does not exceed 86° F., with a high average of 96° and a low average slightly less than the mean. During the rainy season it is even hotter than in the dry season.

POPULATION AND LIVING CONDITIONS.

The business element of Barranquilla is composed of Colombians, Syrians, Italians, Germans, and a few Englishmen and Americans. Most of the traders are Syrians, but recently the proportion of Colombians has been increased by an influx from the interior, principally from Antioquia. There are less than half a dozen Americans among the city's permanent residents.

In Barranquilla the lower classes, mainly Negroes, live in low adobe or brick buildings, scantily furnished and with few conveniences; outside the city they live in tiny, palm-thatched huts. As bananas, plantains, and the universal yucca, which are the principal food staples, are cheap and plentiful, it requires little effort to exist. The people are more or less affected by tropical anemia, and work is slow and inefficient.

Potatoes are the only fresh vegetables obtainable in Barranquilla. Fruits are abundant but not good except bananas. Butter is not made in this region, and only tinned butter can be purchased. Milk is scarce and poor.

Malaria and other tropical diseases are prevalent. The greatest precautions should be observed against the pests of mosquitoes and flies, and drinking water should be boiled. The unhealthful condition which would normally result from the lack of sewage and drainage systems in Barranquilla is partially counteracted by the oxidation which the air receives from the clouds of lime dust that are whipped up by the trade winds from the lime formation on which the city is built. This lime dust, however, is said to be one cause of the prevalence of tuberculosis.

SCHOOLS—LABOR CONDITIONS.

The Department of Atlantico has 61 public primary schools. Barranquilla has 12 primary schools, a Government normal school, 3 parochial schools, and 3 so-called "colegios." One of these "colegios" is a Presbyterian missionary school, where elementary courses in domestic science and English are taught. This school is endeavoring to raise the standards of living of the lower classes.

Labor is plentiful in Barranquilla but not in the cotton district in the interior of Atlantico. The transfer of freight from the railway sheds, the customhouse, and the river steamers is the principal occupation of the lower classes in Barranquilla. The catching and drying of fish for the markets of the interior is a thriving industry of the district. Barranquilla has about 3,000 factory employees, mostly women and girls, who work in the cotton mills. These factory employees are paid on a piecework basis and earn an average wage of 30 to 80 cents per day.

Barranquilla was affected by the general strike which took place along the Atlantic coast in January, 1918. This strike was caused partly by political disturbances, partly by the increase in the cost of living, and partly by the lack of employment resulting from the shutting off of ocean traffic. Wages at that time averaged \$0.80 per day for cargo handling, cartage, and similar occupations, and were increased to an average of \$1.20 per day. In July, 1919, a second period of agitation was initiated by the cartmen. They received an advance in wages of \$0.10 per day. The dock and cargo workers of Barranquilla seem to be well organized, and take concerted action for the adjustment of labor differences.

AGRICULTURE AND LIVE STOCK.

Cotton is the most important agricultural product of the Magdalena Valley region near Barranquilla. The production in 1917 was estimated at 2,200,000 pounds, and it is thought that production has increased since then. Prices offered by the Barranquilla and Medellin mills are higher than corresponding prices in the United States, but even so, the mills find it impossible to obtain a sufficient supply of raw cotton and to obtain cotton that is clean enough for ginning. Various attempts have been made to introduce modern methods of cultivation and to establish large plantations but with little success. Most of the cotton is grown on small farms by individual owners or renters. Seed is imported from Mississippi. The fiber of this cotton resembles that of sea-island, often measures from $1\frac{1}{2}$ to $1\frac{3}{8}$ inches in length, and is almost too fine for use in the local mills.

Sufficient corn, beans, yucca, and other native foodstuffs are grown in the Barranquilla district to supply the local demand, with the exception of plantains, which are imported from the banana district south of Santa Marta and Cienaga.

In 1918, "malva" fiber, (a substitute for Indian jute) was planted near Barranquilla, and a bag-making plant was purchased in the city itself. A satisfactory yield of the fiber was obtained, but the impossibility of securing sufficient labor to pick the crop and the difficulty of marketing a trial shipment to the United States discouraged the promoters and the whole project was abandoned.

Enough cattle are raised along the river to supply the population of the Department and a few head are sent up the river to Antioquia.

COAL AND PETROLEUM RESOURCES.

In 1919, preliminary plans were made to work the beds of bituminous coal which lie along the bank of the San Jorge a short distance above the head of navigation. The seams in these deposits vary in width from a few inches to 12 feet; the vein which it is planned to work has a width of 10 feet and a dip of 14° from the horizontal. Surface soil only has to be removed to uncover the coal which lies at a depth of 1 to 2 yards under the topsoil. A preliminary analysis of the coal was made and some work done to clear the river for navigation. An initial shipment of 3,000 tons to Barranquilla has been contracted, and it is planned to float the coal down to Barranquilla in 100-ton barges. The local consumption of coal at Barranquilla, including the needs of the Barranquilla-Puerto Colombia and Santa Marta Railways, is estimated at approximately 1,000 tons per month.

An American company has been drilling for petroleum near Puerto Colombia, and although it has not yet found oil in paying quantities, indications are encouraging. There are also indications of oil to the southwest in the direction of Cartagena, but drilling operations farther to the west near the Rio Sinu several years ago by an American company failed to tap any large body of petroleum.

MANUFACTURING—BANKING.

The making of cotton yarn and of cotton cloth are the chief manufacturing industries of Barranquilla and promise to become increasingly important in the near future. The textile mills have earned large profits during the war, and this prosperity has resulted in an increase in the capitalization of some of the companies, in new equipment, and in the establishment of one large, new yarn mill. The industry is protected by a high tariff on imported goods, and prices are determined by the high cost of the imported articles.

The older mills are equipped with English machinery, and the newer mills with American. The light weight of the American machinery and the automatic features which make less skilled labor necessary for its operation have made it popular, and several large machines were ordered during 1919.

Among the other industrial plants of Barranquilla are small establishments making soap, shoes, hats, carbonated water, cigarettes, and trunks. There are also breweries, a flour mill, a glass factory, a match factory, a nail factory, sawmills, tanneries, a tile factory, and a chocolate factory.

In 1918 machinery was imported and preparations were made for the establishment of an oil-crushing plant at Barranquilla. Corozo nuts from the Magdalena Valley were to be used and the oil shipped to France.

Barranquilla has five banks, two Colombian, one French with Colombian affiliations, and two American. The establishment of a Canadian bank is under consideration. One of the native banks does a straight banking business, while the other adds to this an export and import business.

The general business prosperity of the country which resulted from the increased volume and value of the coffee exports for 1919 was reflected by an increased volume of business and increased earnings

for the Barranquilla banks. The native banks have been accustomed to charge 12 per cent per annum for prime commercial paper, but the establishment of the American banks has already had the effect of lowering these rates by 2 and in exceptional cases even 3 per cent.

PUBLIC UTILITIES.

The city of Barranquilla is anxious to own its public-utility service, but lacks sufficient funds for its purchase and improvement. In the meantime, little encouragement is given to private companies to undertake much-needed improvements in the water-supply system, the telephone system, the street-railway and light systems, and similar enterprises.

The water supply is insufficient and the system antiquated. Water is taken from the river by a small pumping plant, filtered to some extent, and distributed through small mains. The plant is owned by a local company, part of whose stock is controlled by the municipal government. Paving is bad. Here and there the streets in the center of the town are paved with cobblestones, but those on the outskirts of the main business sections are filled with dirt. The problem of street paving in Barranquilla is an important one, and according to estimates will involve an expense of about \$3,000,000. Plans for the financing of this project were recently discussed at a municipal meeting attended by the principal Barranquilla merchants, and it is possible that active steps will be taken in the near future to get this work under way.

The telephone system is operated by an American company which also owns a light plant at Santa Marta. Its concession expired about three years ago and has never been renewed, in spite of the fact that it has promised to install new and modern equipment and to extend its service upon renewal of the concession. In 1918 the municipal council attempted to organize a new telephone company in which it was to retain a controlling interest, but this attempt failed because of the opposition of local business men. The electric light plant is operated by a private company, maintains good service, and is capable of considerable extension. There are several good moving electric signs, the only ones in Colombia outside of Bogota.

The present street-railway service is limited to a small system of mule cars operated by a local company under a concession that expires in 1920. After an unsuccessful attempt to gain control of the reorganized company the municipal government was forced to accede to the demands of the company and grant it a new 40-year franchise based upon the extension and electrification of the present system. This concession had not been approved by the governor at the end of 1919, but an ultimate approval is anticipated. The new system will include 10 kilometers of track and 16 electric cars, with additional equipment to be provided as the needs of the city make extensions necessary. A new steam generating plant is to be provided also.

NEW SUBURB FOR BARRANQUILLA—HOTEL ACCOMMODATIONS.

In 1919 an American company purchased a tract of about 660 acres near the northwestern edge of Barranquilla for the establishment of a new residential suburb. The sum of 65,000 Colombian

dollars (1 dollar = \$0.9733 United States currency) was paid for the tract, a landscape engineer was brought down from the United States to lay out the addition, and it was planned to spend from 25,000 to 50,000 dollars the first year in improvements. Lots were to be sold and houses built and sold on the easy-payment plan when necessary. Such a plan is a distinct innovation in Colombia.

A number of splendid buildings are now nearing completion in Barranquilla. Among these are the new Barranquilla customhouse, the new building of the Banco Dugand, the Barranquilla Club, the A. B. C. Club, and a number of residences.

Hotel service in Barranquilla is not of the best because of the impossibility of training the native servants of the coastal region to keep things clean or to prepare food in an appetizing manner. There are a number of hotels, but only two first-class ones, and even those lack sufficient modern improvements.

HARBOR FACILITIES AT PUERTO COLOMBIA.

The harbor at Puerto Colombia is a large shallow bay with a wide entrance, easily approached by steamers from the open sea. It is protected on the sea side by low-lying sandy islands, but these islands do not break the force of the winds from the sea, and there is little protection for shipping during stormy weather. The Magdalena flows into the ocean through a swamp about 15 miles to the east of the bay. The shallowness of the bay has made it necessary to build the pier a mile in length in order that vessels may have sufficient water to come alongside to load and discharge cargo, and the enormous quantities of silt being constantly deposited in the bay by the Magdalena will eventually make a further extension necessary. At present the water is $5\frac{1}{2}$ fathoms deep at the end of the pier, and the anchorage depth off the pier varies from 5 to 8 fathoms. The maximum fall of the tide is 18 inches.

The pier is owned by the Barranquilla Railway & Pier Co., an English company, which also owns the railway from Puerto Colombia to Barranquilla. It has four tracks at the sea end of the pier for placing cars to receive and discharge freight to and from steamers, and a single-track line to the shore. Merchandise is not stored on the pier or in warehouses or freight sheds at Puerto Colombia, but moves directly to the customhouse at Barranquilla.

The town of Puerto Colombia has a population of about 2,500, most of whom are Negroes engaged in dock and cargo work. Its buildings are for the most part wood, roofed with corrugated iron. Drinking water has to be brought from the river at Barranquilla.

The United Fruit Co. maintains a weekly freight and passenger service between this port and United States ports, W. R. Grace & Co. a monthly freight and passenger service, and the Caribbean Shipping Co. a 10-day freight service. The Compañía Transatlántica de Barcelona maintains a monthly freight and passenger service to Barcelona via Venezuela and the West Indies.

BARRANQUILLA-PUERTO COLOMBIA RAILWAY.

The Barranquilla-Puerto Colombia Railway is the connecting link between Barranquilla and its ocean port, Puerto Colombia. It can handle approximately 50,000 packages or 3,250 metric tons of im-

port and export freight in two days of 24 hours each. Coffee, the principal article of export freight, is used as a basis for comparison when figuring all other goods handled; a package is 65 kilos or 143 pounds gross weight. The company can ship 15,000 pieces of freight for export from a Barranquilla warehouse to the pier at Puerto Colombia and load it on steamer in one day of 24 hours. The average loading rate is 800 sacks of coffee per hour from cars on pier to hold of vessel lying alongside.

The railway's equipment includes 15 locomotives of 20 and 45 tons capacity, 220 box cars whose capacities range from 8 to 20 tons, and 19 passenger cars. Both freight and passenger cars are of wood and in need of repair. Locomotives are worn, and the roadbed is not in the best of condition. The track has a 42-inch gauge. Imported coal was used for fuel before the war. Since that time wood has been substituted, and in 1919 an effort was made to procure native coal.

The Barranquilla Railway & Pier Co. has a capital of £200,000 and a bonded indebtedness of £100,000. The restrictions on exports and imports during the war caused a decrease in revenue during 1918, but in May, 1919, business began to increase rapidly, and the returns for 1919 will undoubtedly show an increased tonnage. During 1917-18 the freight carried amounted to 86,500 tons. Net profits were 100,326 Colombian dollars, and working expenses were 65 per cent of the gross earnings. A 5 per cent dividend was declared.

MAGDALENA RIVER ROUTE TO THE INTERIOR.

THREE SECTIONS OF MAGDALENA RIVER.

The transportation facilities available for the shipping of goods from Barranquilla into the interior are practically limited to the Magdalena, its tributaries, and the railways built from various Magdalena ports into the interior.

The Magdalena rises in the Andes, in the Department of Huila, and flows north down the great valley which lies between the eastern and central ranges of the Andes, passing through more than three-fourths of the central part of Colombia. Its navigable length, about 930 miles, consists of three distinct sections: The Huila section, which extends from Neiva to Girardot, the Upper River from Girardot to Beltran, and the Lower River from La Dorada to Barranquilla.

The Huila section passes through a mountainous country and has a well-defined channel. In the dry season it has scarcely enough water to float a canoe in many places. In the Upper River, a stretch of some 95 miles, the volume of water is greater, but there are many obstructions to navigation and the section is often not navigable during the dry season even for the 80-ton steamers of shallow draft operated between Girardot and Beltran. These boats never draw more than $3\frac{1}{2}$ feet of water when loaded to capacity. The Upper and Lower River sections are separated by a series of impassable rapids, which are bridged by the short Dorada Extension Railway. The current in the Lower River, a stretch of approximately 615 miles, is less swift than in the upper sections, the valley is wider, and the channel constantly shifts. From La Dorada to Puerto Berrio, a distance of 109 miles, the river is still dangerous. Below Puerto

Berrio it becomes steadily better, but not good until the mouths of the Cauca and the San Jorge are passed—the first 214 miles above Barranquilla, the second 174 miles. It is only below Calamar, 67 miles from Barranquilla, that the river is practically free from sand bars, mud banks, snags, and similar obstructions to navigation and can be navigated at all seasons of the year with comparative safety, steamers even running at night during the dry season. The deep channel has about 35 or 40 feet of water at Barranquilla.

TRIBUTARIES OF MAGDALENA RIVER.

The Cauca, the largest tributary of the Magdalena, has its source in the central Andes near Popayan and flows north between the central and western ranges. It is divided into two navigable sections, the first from Cali to Cartago and the second from the mining town of Caceres to the Magdalena, a distance of 170 miles. From the mouth of its tributary, the River Nechi, to the Magdalena, a distance of 74 miles, the Cauca is navigable for steamers of 120 tons burden and 3 feet draft during the entire year. This service is important because it affords means of transportation to the rich placer-mining region of the Nechi and San Jorge Rivers.

The San Jorge flows almost parallel to the Cauca between the Cauca and the western Cordillera. It is not nearly so long a river but it is as wide and as deep in its lower part, and during the rainy season is navigable for small steamers up to Ayapel, 112 miles from its mouth. Its course is impeded, however, by many obstructions.

The Magdalena has three tributaries on the east which are navigable during the season of high water. The Rio Cesar flows south through the Department of Magdalena and joins the Magdalena River at the Lake of Zapatosa approaching the town of Banco. It is navigable for small steamers as far as the town of El Paso, 96 miles from Banco. The Rio Lebrija joins the Magdalena at Bodega Central just above the town of Gamarra, and during the rainy season is navigable for small steamers up as far as La Ceiba, 70 miles from Bodega Central. It serves the Bucaramanga commercial district in the Department of Santander. The Rio Sogamoso flows into the Magdalena a short distance south of Puerto Wilches and is navigable for 22 miles during the rainy season. This river also serves the Bucaramanga district.

Mention should also be made of the Opon and the Carare Rivers, which are navigable for canoes, and of the Rio Colorado, which flows into the Magdalena just above the Sogamoso. An American oil company has wells located 35 miles up this river and ships all the necessary supplies and equipment up the river in small gasoline launches and dugout canoes equipped with motors. The company has spent considerable money in clearing out the river and is now building a wagon road from the river at Barranca Bermeja to the field.

Small 45-ton steamers run through the narrow channels in the swamps of the Magdalena from Barranquilla to Cienaga, a distance of 56 miles. Cienaga is about 14 miles from Santa Marta and is connected with it by the Santa Marta Railway. There is usually so little water in the channels that boats of more than 2 feet draft can not be used. The trip takes from 8 to 10 hours.

DREDGING AND CANALIZATION PROJECTS.

From time to time the National Government has made determined efforts to improve the conditions of navigation on the Magdalena and it now owns a considerable amount of fairly new equipment for this work, including 3 dredgers, 2 pile drivers, 3 steamers of 130, 106, and 136 tons, respectively, 2 mud scows, and 2 cargo lighters. Plans have been discussed repeatedly for the canalization of the Dique, a natural waterway connecting the Magdalena with the sea near Cartagena, and for the dredging of the mouth of the Magdalena so that ocean steamers could proceed directly to Barranquilla. An attempt was made recently to clean out the channel connecting the San Jorge and Cauca Rivers, but the project was abandoned as being too costly.

The Dique extends from Calamar on the Magdalena to Barbacoas on the sea, a distance of 96 miles. A series of swamps extend from the mouth of the Dique at Barbacoas along the coast to Cartagena, 18.6 miles. This entrance to the Magdalena was formerly used by large boats, but it has been allowed to fall into disuse and is now choked with a heavy growth of water plants. In 1919 a concession for cleaning it was granted by the National Government, some preliminary surveys of the canalization work necessary to make it navigable were made, and further work was planned. If these plans should be carried out and the Dique made navigable for river steamers, it is predicted that a large part of the river tonnage would be diverted from Barranquilla to Cartagena.

The Magdalena is 40 to 60 feet deep at Barranquilla, but only about 6 feet deep over the bar at its mouth, about 8 miles below the city. Three separate preliminary surveys of the mouth have been made, and in 1919 a company of local merchants and bankers was organized at Barranquilla to promote the project to dredge the mouth and construct jetties and wharves at Barranquilla. No actual work has been done, however, and the whole project is considered impracticable by many engineers and well-informed people because of the cost and the engineering difficulties.

According to a statement in *El Tiempo*, a Bogota newspaper, in December, 1920, a contract has been entered into between the Colombian Government and the representative of the German firm of Julius Berger, of Berlin, for the study of plans for dredging the Magdalena River. The study proposed is to be carried out as far as Neiva, the necessary plans made, and an estimate furnished. The company has a period of eight months, counted from the date of the definite approval of the contract, to begin the work connected with the study and 30 months more to turn in the plans, estimates, and reports to the satisfaction of experts appointed by the Government. When the present contract is complied with, the company is to have an option, circumstances being equal, for the execution of the works planned.

FUNDS FOR RIVER WORK.

All river work is directed by a Government Canalization Board aided by an advisory committee composed of members of the various steamship companies. For the present, work is being confined to the removal of rocks and sunken tree trunks from the channel of the river and to local dock-repair work, and the accumulating funds are

being held until conditions become more favorable and there is sufficient money to effect some permanent improvements.

Funds for river work are supplied by various fluvial taxes. In 1916 the proceeds of these taxes amounted to 349,000 Colombian dollars and in 1917 to 318,000 dollars. Each year 20 per cent of the proceeds are allotted to work on the Upper River and 10 per cent to the Cartagena Dique.

A tax of 4 Colombian dollars per metric ton is charged on all import freight, 4 dollars per metric ton on all domestic freight not intended for export, and 1.60 dollars per metric ton on all freight intended for export with the exception of certain articles exempted by special laws and certain domestic products which have been protected by special contract with the Government. These exempted products include tagua or vegetable ivory, lumber for construction purposes, dyes, fibers for weaving and cordage, vegetable oils, domestic foodstuffs, supplies for public service, and cotton for domestic use.

Each steamer of 100 tons or more pays a registration fee of 20 Colombian dollars for each 100 tons of register; each steamer of less than 100 tons, 4 dollars for every 25 tons or fraction thereof; each steam or gasoline launch, a fee of 5 dollars; and each lighter or scow of over 1 ton, a fee of 1 Colombian dollar. In addition to the registration fee, an annual license fee of 50 cents for 5 tons or over and 25 cents for less than 5 tons is collected.

MAGDALENA STEAMER SERVICE.

The following table lists the companies which operate steamers on the Magdalena, the number of boats owned by each company, and their total tonnage:

Steamship companies.	Upper River.	Lower River.	Total boats.	Total tonnage.
Colombian Railway & Navigation Co. (Ltd.).....	6	20	25	5,589
Cia. Antioqueña de Transportes.....	2	5	7	1,675
F. Perez Rosa.....		4	4	977
Manuel Betancourt.....		2	2	370
Martin Vasquez.....		2	2	204
Empresa "Palmar" (Pineda Lopez y Cia., managers).....		1	1	300

In addition to the boats listed in the above table, the Santa Marta Wharf Co. operates one 80-ton steamer between Barranquilla and Cienaga, and there are nine steamers of less than 100 tons capacity that handle local freight on the Lower River.

The Magdalena steamers are stern-wheelers, built with rounded "spoon" bows to prevent their plowing too deeply into mud and sand banks. Their hulls are of steel, built in cellular sections, to prevent flooding of the entire hold if one compartment is ripped open on the bottom or sides. Cargo, boilers, and engines are all carried on the main deck. Large steamers customarily tow steel lighters, some of which carry a cargo of 200 tons.

Wood is the usual fuel, but it is expensive and occupies valuable cargo space, and the companies have therefore become interested in the possibility of using oil from the wells on the Rio Colorado.

Boat building has been retarded during the war. In 1913, 55 craft of all classes, with a total tonnage of more than 2,300, were built; in 1916, only 10 boats, with a total tonnage of a little over 400.

PASSENGER AND FREIGHT TRAFFIC.

Some idea of the amount of traffic on the Magdalena may be obtained from the official figures for 1916, the only year for which such statistics are available. During that year, 18,300 river passengers arrived at Barranquilla and 19,100 departed from Barranquilla. The quantity of freight handled during the year at various river ports is shown by the following table:

Ports.	Freight received.	Freight dis-patched.
	<i>Metric tons.</i>	<i>Metric tons.</i>
Barranquilla.....	80,600	53,400
Calamar (entrance to Dique).....	15,400	15,900
Magangué.....	3,300	32
Bodega Central (loading point for Río Lebrija).....	3,300	3,000
Puerto Berrio (loading point for Medellín).....	14,100	16,000
La Dorada (rail point at head of Lower River).....	29,000	37,100
Girardot (rail point for Bogotá, Ibagué, and entrance to Upper River).....	24,300	32,400
Purificación (on Upper River, freight intended mostly for Huila).....	1,500	1,400

Coffee constitutes about 85 per cent of the export freight, and cacao and hides rank next in importance. Import freight consists largely of general merchandise. The movement of cattle forms an important part of the river traffic, it being estimated that no less than 100,000 head of cattle are handled annually. During 1919 exports of coffee were estimated to be at least 25 per cent in excess of those for any previous year, and it therefore seems safe to calculate that export freight was at least 25 per cent greater in 1919 than in 1916. Judging from the heavy buying in the United States, the volume of import freight was nearly twice as great.

FREIGHT RATES.

A flat rate of 21.65 Colombian dollars per metric ton is charged for shipping coffee from Girardot to either Puerto Colombia or Cartagena and delivering it alongside steamer at pier. This rate does not include the fluvial tax of 1.60 dollars. Rate schedules allow a discount to be made to shippers of 1,000 or more sacks of coffee, and in the past large shippers have secured big discounts by means of prearranged contracts with the steamship agents. In 1918 preferential freight contracts were prohibited by law.

Freight rates on coffee for export are lower than the rates on any other commodity. Other rates vary greatly and are different in the Upper and Lower Rivers for any given article. Rates for down-river freight are 25 per cent lower than those for up-river freight. The minimum rate between any points is 1 Colombian dollar, and no shipment for less than 3 dollars is accepted. A loading and unloading charge of 80 cents per ton is made irrespective of the class of cargo, with the exception of heavy lifts, for which an extra charge is made. Storage is at the rate of 2 dollars per ton per month.

Jewels and other especially valuable commodities pay at the rate of $\frac{3}{4}$ per cent of their value either way above Puerto Berrio, and $\frac{1}{2}$ per cent below that point. A 200 per cent excess is charged on dynamite and explosives, 100 per cent excess on inflammables (except

matches and petroleum), and 50 per cent excess on alcohol, caustic soda, etc.

Excess weight charges are figured on a basis of 5 Colombian dollars on all packages weighing more than 500 kilos and measuring over 1 cubic meter. Weights in excess of 2,000 kilos or of more than 4 cubic meters in size are charged 10 dollars for each unit of excess measurement or fraction thereof. Excess weights of 5,000 kilos or over take an excess charge of 15 dollars.

A discount of 10 per cent is allowed on shipments of native raw cotton, wool, fibers, coal, lumber or wood, starch, butter, wheat, horn, mats, coffee, cacao, imported bottles, cement, sacks, print paper, and machinery and tools for agriculture, mining, and industries. Materials and equipment for schools and religious organizations are allowed a discount of 30 per cent. A discount of 50 per cent is allowed on domestic rice, onions, potatoes, "panela" (brown sugar), fish, bananas and plantains, corn, vegetables, coconuts and other fruits, tagua, coal, asphalt, mineral products in bulk, seeds, and natural or chemical fertilizers for export.

VOLUME OF IMPORT BUSINESS AT BARRANQUILLA.

It is difficult to estimate the total amount of imports actually handled by the merchants of Barranquilla, because statistics show only the grand total of imports through the customhouse and from this total must be deducted the merchandise intended for such interior trade centers as Bogota, Medellin, and Manizales. Having made these deductions and calculated the population of the commercial district of Barranquilla, it may be estimated that approximately a fourth of the merchandise imported through Barranquilla is for either Barranquilla merchants or their clients in the interior.

Merchandise imported through Barranquilla in 1917 amounted to 39,683 metric tons, valued at 13,621,206 Colombian dollars, and in 1918 to 22,302 tons, valued at 13,133,840 dollars. About 70 per cent of the imports consists of cheap cotton goods, the remainder being largely machinery, hardware, builders' hardware, iron sheets, rods and wire, paper, cement, resin, paints and oils, caustic soda, medicines, automobiles, office fixtures and appliances, and wines and liquors.

Most of the Barranquilla merchants do a general importing business and handle a wide variety of merchandise, with cotton textiles as their principal line. There are at least half a dozen of these houses that have a capital of more than \$300,000 and as many more with a capital of over \$200,000. The only specialty houses are a few that handle hardware and allied lines. Each importer has his own group of clients in the interior whom he supplies with stocks of general merchandise and from whom he buys coffee, hides, cacao, tobacco, and other products for export. His clients' accounts generally run from one crop season to the next—the coffee harvest season, May and June, being the buying and settlement period.

Before the war, the Barranquilla wholesalers imported most of their merchandise from Europe. Hardware, paper, and chemicals came from Germany; textile machinery from England, and other machinery from Germany; textiles from England; fancy dry goods from France; jewelry from France and Switzerland; liquors and

oils from Spain. Most of the native produce—coffee, for example—was sold in New York.

During the war Barranquilla importers were forced to buy from the United States, and, when once introduced, American merchandise became popular in the Barranquilla territory.

CARTAGENA AND COMMERCIAL DISTRICT.

LOCATION AND TOPOGRAPHY.

Cartagena, the capital of the Department of Bolivar, is a seaport on the northwest coast of Colombia, 63 miles southwest of Puerto Colombia, and has a population of 51,382 according to the census of 1918. At one time it was the principal seaport of Spanish America, but it has suffered a decline commercially. Barranquilla surpasses Cartagena in commercial importance, handling four times the amount of business in imports and exports.

The Bay of Cartagena is 9 miles long by 4 miles wide. Formerly there were two entrances, the larger and more practical entrance, called "Boca Grande," immediately south of the town, being closed by the Spaniards in early colonial times as a defense measure against pirates and hostile fleets. "Boca Chica," as the southern entrance to the harbor is called, is about 8 miles distant from the town of Cartagena. This channel is so narrow and tortuous that the services of an experienced pilot are necessary. Entrance and departure from the harbor take place only during the hours of daylight.

To the southeast the bay extends into shallow water or swamps more or less congested with marine growth, through which there are many narrow channels; these are used by the canoes of the Negroes who traffic with the many small villages bordering the mainland.

Navigation is carried on by means of small sailing canoes and large dugouts, some of which carry two masts, schooner rigged, and even possess cabins aft. These craft bring in the products of the country to the public market of Cartagena. Hundreds of these canoes are seen on market days. The coast to the north and northeast is composed of irregular hills, which extend as far north as Puerto Colombia and as far inland as the Lago de Guajaro. These hills are covered with a sparse second growth of woody tropical vegetation, and during the dry season of the year present a sterile and uninviting prospect to the traveler. The Lago de Guajaro is surrounded by a large level plain, subject to overflow during the rainy season. The soil is poor and unsuited for agriculture. To the south and southwest are low hills rising from the swamps, the formation being decomposed shale with outcroppings of limestone and sandstone.

The good agricultural region begins some 25 miles south of Cartagena. Here the country is a level plain, which extends for a distance of 60 miles until the hills north and west of the Cauca River are encountered. The "Dique," or natural canal, from Cartagena to Calamar on the Magdalena River, may be termed the northern boundary of the good agricultural lands. Just south of this "Dique" are found the sugar plantations of Sincerin, where cane is grown without irrigation all the year round, and many fertile areas devoted to

cattle raising and planted in Para grass. Much of this fertile land is subject to overflow in the rainy season. There are no roads throughout this agricultural region, all transportation being carried on by means of pack mules.

CLIMATE AND RAINFALL.

The climate of the entire district of Bolivar is very tropical, the temperature ranging from 80 to 94° F., with high humidity, but tempered by the trade winds on the coast during the winter months.

Throughout the coast region there are two seasons, the wet, or rainy season, from April to October, and the dry, or winter season, from November to March. The average total rainfall is approximately 44 inches on the coast in the Cartagena district. This rainfall is not always to be depended upon, varying greatly, with long periods of drought, during which crops suffer. Usually the spring equinox brings about two weeks of light rains, which are depended upon to mature the so-called winter crops.

The Caribbean coast of Colombia is extremely unhealthful; tropical diseases of all sorts are prevalent and there is much malaria, tropical anemia, dysentery, etc. Yellow fever is a constant menace.

POPULATION AND LIVING CONDITIONS.

The characteristics of the people inhabiting the coast region of Colombia differ greatly and have a decided effect upon living conditions and the demand for goods. Probably less than 10 per cent of the inhabitants are of pure white blood. These are descendants of the Spanish colonists who settled in Colombia during the three centuries following the conquest of the country. They form the governing class and, on the whole, are well educated; many of them have traveled extensively. The major portion of the population of the coast region, however, is composed of Negro descendants of the slaves imported during colonial days for work on the defenses of Cartagena, in the mines, and on the plantations. In the Rio Atrato and Rio Condoto regions, on the west coast, the Negroes present almost a pure type and are estimated at 150,000 in number. The Negroes have become mixed, to some slight extent, with the native Indians. The "mestizos," representing a mixture of Spaniard and Indian, constitute the numerically small middle class of the coast region. These latter are the artisans of the country. In the interior of the country, however, the mestizos represent the greatest percentage of the population. This is a significant fact and implies a persistence of type that may largely determine the character of the Colombian people, unless the slowly increasing white element is reinforced by immigration. This group, as a whole, offers an extensive market for the cheaper grades of merchandise now being imported into the country.

Living conditions vary greatly. Most of the people live in a very primitive manner, even in the towns. Little attention is paid to sanitary measures. The wealthier people are building homes in which are found every modern convenience and sanitary appliance. On the outskirts of Cartagena are two residence districts, "La Manga" on the south and "El Cabrero" along the ocean beach to the north, both constructed within the past 15 years outside of the ancient walls of

the city. Many fine residences are seen, combining modern artistic architecture with comfort in the tropical climate. In the smaller towns the poor people live generally in palm-thatched huts with dirt walls, the hut consisting of one room and a lean-to for cooking. The example set by the Canal Zone authorities has had its effect in stimulating the desire on the part of the more educated class for better sanitary arrangements and health measures, and it may be predicted that, in the near future, some real work in this connection may be carried out by the Colombian Government.

EDUCATION.

It is estimated that 70 per cent of the people in the coast region are illiterate. Attendance in public schools is free but not obligatory. In 1912 the Department of Bolivar had 208 public schools and 34 private schools, with a total enrollment of 12,800 pupils, or 2.77 per cent of the population. Out of total appropriations for all purposes in 1912 of 548,728 Colombian dollars (1 dollar=\$0.9733 United States currency), the Department of Bolivar had a school budget of 191,218 dollars, or 34.84 per cent of the total expenditure for the year.

The institution of higher learning in the Department of Bolivar is the departmental university at Cartagena, the largest in the country, with about 250 students enrolled in the courses of law, medicine, and philosophy.

CHARACTERISTICS AND TRADE RELATIONS OF BUSINESS MEN.

The business man in Cartagena (as elsewhere in Colombia) represents a very high type. He is well informed on all subjects and very much interested in international affairs, showing keen judgment and knowledge. Modern offices, containing cabinet files, adding machines, typewriters, etc., present an atmosphere of activity and business very pleasing to the visitor. Great changes are taking place in all lines of business. Show windows are being installed where goods may be attractively displayed, sample rooms are fitted out with an eye to the values of display of goods, and there is, consequently, an increasing demand (formerly supplied by France) for show-window fittings, show cases, display counters, etc.

Prior to the war, the influence was mainly European, because of the Colombian's travel in European countries and his business interests there; this tendency is manifested in his liking for the French styles of architecture, furniture, clothing, etc. Of course, the compatibility of the Latin races was also a factor in this preference. Although at that time the merchant of Cartagena looked upon New York as the first market for his exports of coffee, chicle, ipecac, hides, gold, and platinum, he purchased the bulk of his merchandise in Europe—chemicals, hardware, dyes, from Germany; textiles from England. During the war New York became the center of Colombia's export and import business, as well as the financial center, furnishing about 90 per cent of the imports of Colombia and taking 93 per cent of its exports. Thus there resulted a balance of trade of about \$13,000,000 in favor of Colombian exporters.

When the Cartagena merchant was forced to buy in the United States, he found, notwithstanding many difficulties and misunderstandings, that such an arrangement was a very good one, chiefly

because he had his money in New York, but also because of the proximity and the resulting rapid delivery of goods. What the importer especially desires to-day is that more attention be paid to his needs by the American manufacturer and exporter.

Colombian firms established in New York, which act as export commission merchants and also purchase and export goods for their own account, constitute a real benefit to American trade. Through them accurate credit information is obtained; American manufacturers and jobbers receive needed information about Colombian conditions; and (these firms being on the ground in the United States) better selections are made of new lines for introduction and sale in the Colombian market.

INCREASING DEMAND FOR NEW GOODS.

A very modern tendency is noted in the increasing demand for articles of manufacture not previously used in the country. Better cloths, better quality and variety are now being purchased. The people like American styles, and are interested in new things. Wages and purchasing power are increasing. The demand for new goods is being felt in the following lines: Textiles, household utensils, furniture, show cases, office equipment, window display equipment, underwear and hosiery, lighting fixtures, baggage articles, leather goods, toilet articles, medicines, and heavy chemicals for manufacturing purposes.

BUSINESS METHODS—HANDLING OF IMPORTS AND EXPORTS BY SYRIANS.

Practically all commercial business is handled in Cartagena by six large houses which are importing wholesalers and exporters of the products of the region, buying export materials for their own account in the interior through well-established agencies and branches. Several of these large firms are also private bankers, and interested in local manufacturing and agricultural enterprises to a very considerable extent.

Forming a powerful factor in merchandising in Cartagena are the Syrian merchants, who have competed directly with the old-established Colombian houses. By means of intense industry, economy, and their own peculiar system of agencies, branches, and traders in the interior, more especially in the Rio Atrato platinum region, they have been able to win a good half of the entire business of this commercial territory. There is not a town in the interior of 250 people where a Syrian merchant can not be found. These men are seen on all trails with their packs of goods for trade and barter. They are found in the almost inaccessible jungles of the Rio Atrato, where they trade for platinum, gold, tagua, balata, chicle, etc., with the Indians and Negroes, traveling by canoe when they can and at times packing their goods with men over short ranges of hills from one small stream to another.

The Syrian merchants always specialize in cotton-print goods, in which line they are experts. The larger houses are also importers of general merchandise in demand in the country. In spite of the competition with Barranquilla importers, the Syrian merchants of Cartagena have been able, through branches established in the interior, to maintain a fair wholesale trade with towns up the Magdalena

River, and as far east as Ocana and Bucaramanga in Santander. These people have evolved a system of long credits especially adapted to trade with the interior, and the percentage of loss through bad accounts does not exceed 6 per cent.

Other industries are also being invaded by the Syrians. They are interested in agriculture, contracting, and mining. A large saw-mill and cedar plantation near the mouth of the Atrato River has been established by them. Cedar and mahogany lumber is brought to Cartagena and Barranquilla by means of a seagoing tug and lighters from the Atrato River to lumber yards for retail sale. Rubber is also being planted.

Prior to the war the Syrians purchased their goods principally in Europe, making annual trips to buy the year's stock. During the war business was with the United States, but there is a decided desire on the part of these people to return to European methods and markets as soon as possible, on account of the credit terms formerly secured. Long credit terms are the fundamental principle of their business methods. They are shrewd buyers and traders, and very prone to speculate and overstock if opportunity offers.

On the whole, these people may be considered a good element for the country. They adapt themselves absolutely to the customs and living conditions of the country, and are investing their surplus capital in cattle, mines, and agricultural lands and other enterprises offering safety and large returns.

COMMERCIAL TERRITORY OF CARTAGENA.

The town of Magangué, with a population of 14,076, Zambrano, with only 2,702 inhabitants, and Mompos, whose population is 15,435, are situated in the Department of Bolívar, on the Magdalena River, but are tributary commercially to Barranquilla on account of direct communication by river steamer. Mompos is the most important, commercially. It is the center of a rich agricultural and cattle-raising district and also a depot for such river products as tagua, corozo nuts, etc. Montería, Cereté, and Loricá are river ports on the Sinú, and all traffic is with Cartagena. Tolu is a small seaport on the Bay of Morrosquillo and is the outlet for all traffic with the center of the Department, communication with Cartagena being by means of gasoline launches of about 60 tons burden. Communication with the important towns of Turbaco, Arjona, Soplaviento, and Arenal is direct by the railway from Cartagena. Soplaviento and Arenal are situated on the Dique at the point where it is crossed by the railway from Cartagena to Calamar, and have the distinction of being in communication by rail and by water with Cartagena, and by water with Barranquilla, the Dique entering the Magdalena River at Calamar. Arjona is also the rail point for the sugar lands of Sincerín, communication being by means of automobiles for passengers and by pack mule for freight, etc. There is no wagon road from Arjona to Sincerín, but during the dry season the level country can be traversed by automobiles without difficulty. In the rainy season, travel to Sincerín and the country south is by saddle and pack animals only.

HIGHWAY TRANSPORTATION AND ROAD CONSTRUCTION.

There is only one wagon road in the Department of Bolívar. This road parallels the railway from Cartagena as far as La Viuda, a small town on the railway, east of Arjona. This road is of dirt, surfaced with "caliche," a decomposed limestone formation which is the predominating surface formation in this entire region north of the Dique. This road is little used by wheel traffic, there being few wagons or even carts in the country, although it is coming to be used more and more by automobiles from Cartagena. An automobile stage line has been recently established between Cartagena and the town of Turbaco, a distance of 24 kilometers (15 miles), and is popular on account of its affording such a rapid and easy mode of transportation to and from Cartagena. The charge is \$1 per person each way.

Engineers are working out the plans for a continuation of this road to connect with Savanalarga, the present terminus of the Barranquilla highway. The Department of Bolívar is also surveying a new wagon road to connect with river navigation on the Rio Sinu by way of Sincerin, San Juan, Carmen, Corozal, Sincelejo, San Andres, Sahagun, Chinu, Cienaga de Oro, and Monteria. This road is considered a very important transportation measure and will connect all the important towns in the interior of the Department with Cartagena and also furnish land transportation to the rich region of the Rio Sinu. The entire distance is over level country and no great difficulty should be encountered in the construction of this new road so far as topography and grades are concerned. Heavy work will be involved in clearing away the jungle, and the main difficulty will be the type of construction necessary to avoid damage and interruption to traffic caused by overflow water during the rainy season and following heavy rains in the hills and mountains of the interior.

IMPORTANCE OF THE "DIQUE."

The "Dique" is a natural canal or river channel, connecting the Magdalena River with the ocean, approximately 15 miles south of Cartagena. It is an irregular channel about 60 miles in length, which, during and immediately after the high-water stages of the Magdalena River, carries excess water to the swamps which extend over a great area to the south of Cartagena. The main channel is more or less defined, as there is never sufficient current to cut new channels, but the growth of water plants, caving banks, etc., have gradually filled certain places so that, during low water, this important highway can not be used except by small canoes and freight boats. During the rainy season there is sufficient water in the Dique to float river steamers from the Magdalena River to Cartagena, although even then difficulty is encountered in traversing the 15 miles from the outlet of the Dique, at the ocean, through the swamps up to Cartagena, because of the shallow water in these series of swamps and the constantly changing channels.

Another factor making for the neglect of this channel of communication has been the Cartagena-Calamar Railway, which is used for traffic from Cartagena to the Magdalena River at Calamar. This line, for certain reasons connected with the original concession, climbs a series of high hills at Turbaco, that town being situated at a considerable elevation, and the operation of the line is difficult and

costly; only light loads can be handled with the present type of roadbed and locomotive equipment.

There is no doubt that the Dique could easily have been made practicable for river-steamer navigation from Calamar to Cartagena. Also, the upkeep expense would not have been high to maintain a permanent channel. In Spanish colonial times the Dique was used for all traffic and was navigable for quite large boats. At present the Ingenio Central (Sugar Co. of Sincerin) in combination with the departmental and national governments has a small dipper dredge at work on the Dique at Sincerin, where a small port has been constructed to handle the machinery, supplies, and products of the sugar mill. A rail line from the plantation has been extended to the Dique (a distance of about 2 miles from the main buildings of Sincerin), loading sheds have been constructed, etc. It is planned to improve the entire channel from Sincerin to the swamps and thence up as far as Cartagena and make this channel navigable for boats of several hundred tons burden.

PRESENT RAILWAY EQUIPMENT AND PROPOSED CONSTRUCTION.

The Department of Bolivar has only one railway, the line from Cartagena to Calamar, 105 kilometers in length. About four hours is consumed in traversing this distance. The railway was first projected and built by American capital, but was taken over by the Colombian Railway & Navigation Co. (Ltd.), an English concern also interested in Magdalena River navigation.

The rolling stock at present is very poor and needs repair and replacement. It consists of 10 coaches, 3 baggage cars, and 130 freight cars of box and flat types. The roadbed is of 36-inch gauge, rock ballasted. There are 39 grades, the maximum being $2\frac{1}{2}$ per cent. The heavy grade and sharp curves (70-meter radius) at the approaches to the town of Turbaco make it impossible to pull heavy trains with the type of locomotive equipment and fuel used at present. During the war, wood mixed with coal was used by the line. There are water tanks and coal bins along the route, at 15, 26, 69, and 105 kilometers. Cattle chutes are located at intervals, also, along the line.

The shops belonging to the company are at El Espinal, kilometer 2. The equipment includes a small foundry, machine shop, turntable, large water tanks of both cement and wood material, all sufficient for the repair service of the road. Stations on the line are located at Turbaco, Arjona, San Estanislao, Soplaviento, and Calamar. A warehouse is located at Calamar, its loading equipment consisting of 15 tons at 20-foot boom radius. However, there are no loading stages at this point for the river steamers, all cargo being handled by stevedores and carriers.

On account of the state of national finances and the better fiscal condition of the various Departments, the present tendency is for the departmental governments to build railways, the National Government allowing a fixed subsidy or allotment for each kilometer constructed by each Department. These allotments are financed by the new internal-loan bonds.

The Department of Bolivar is now conducting a survey of the proposed route for a new line from Cartagena to Monteria, which

will also connect with the new route of the railway under construction by the Department of Antioquia. The latter has as its objective the seaport afforded by the Gulf of Uraba. The National Government will allow a subvention of 15,000 Colombian dollars per kilometer for this new line, and the finances of the Department of Bolivar are in a condition to warrant the contracting of a large foreign loan for this purpose. The chamber of commerce of Cartagena has also voted the sum of 20,000 Colombian dollars to defray the expenses of the new survey and to stimulate this railway construction. According to the preliminary plans, a light narrow-gauge railway is to be built, the construction and equipment to conform to the present actual needs of the region and traffic requirements, the preference being for an electric line using Diesel-electric locomotives of light weight.

HARBOR AND PORT FACILITIES.

The harbor of Cartagena is landlocked, and the channel up the bay to the dock, while narrow, is deep enough for large oceangoing steamers, the average depth being from 30 to 40 feet. The port's growing trade demands better facilities than are now afforded. The present pier and port improvements were completed by an English concern, the Colombian Railways & Navigation Co., 24 years ago. The wharf located in the bay has three berths. It is 500 feet long by 120 feet wide. A warehouse for the customs is located on the pier; a second warehouse, 305 feet by 40 feet, is used for storing export cargo. Other storage facilities are also afforded. The local bunker capacity of the port is estimated at 3,625 tons.

General cargo is discharged at the rate of about 25 tons per hatch an hour, and loaded at the rate of 30 tons per hatch. The nature of the goods to be discharged and the winch equipment of the vessel determine the amount of time required. Inward-bound cargo is unloaded from the ship to the dock and trucked to the customs warehouse. Railway cars run into this warehouse to take out the released cargo, which is handled by trucks from warehouse to cars and then loaded by hand. Heavy and bulky packages are moved by means of a 15-ton, hand-power crane. Storage capacity at the dock for inward-bound cargo is 3,000 tons; for outward bound, 3,500 tons. Switching facilities are afforded for 12 cars. Cargo is not protected by insurance while on the dock or in sheds. All merchandise is delivered by the ship to the customhouse, its receipt being entirely controlled by the Government.

A charge of \$10 per ship is made for sanitary service rendered. The charges for berthing are: Wharfage, \$0.18 per gross weight of cargo landed; pilotage, \$0.01 per net-ton register of vessel; lighthouse dues, \$0.05 per net-ton register for each ton up to 100 tons, \$0.025 for each ton over 100; tonnage dues, \$2 per gross ton of cargo landed. There are no buoy charges.

Work on the ship is done by a shore crew furnished by the railway company. Usually from 35 to 40 men are employed, although 150 can be supplied on short notice. The regular wage is \$1.20 per day of eight hours with \$0.30 per hour overtime rate during the day; \$2.40 is the wage for night work. The majority of workmen are Negroes and creoles. A few experienced checking clerks who are em-

ployed regularly by the railway receive \$3 per day and \$0.60 per hour for overtime; \$6 is paid for night work.

The shipowners are responsible for breakage on the wharf if the merchandise is still in ship's tackle, otherwise the customhouse is responsible, and after the release of the merchandise the railway company assumes the liability in case of loss or damage. Unclaimed cargo is disposed of after six months if not cleared by consignees, being sold at public auction. Responsibility of the carrier ceases when cargo is received by the customhouse on the wharf.

WATER TRANSPORTATION BY WAY OF SINU AND ATRATO RIVERS.

The regions of the Sinu and Atrato Rivers are tributary, commercially, to Cartagena. Means of communication are small steamers and motor vessels from Cartagena to the seaport of Tolu on the Gulf of Morrosquillo, at the mouth of the Sinu River, and thence to the port of Cispata and up the Sinu River as far as Monteria, when the stage of the river will permit; also from Cartagena to Quibdo, on the headwaters of the Atrato River, via the Gulf of Uraba. Vessels engaged in this traffic call at Tolu both ways, but the same boats do not make the Sinu and Atrato runs. The course is out to sea through the "Boca Chica" and across the Gulf of Morrosquillo. During the dry season of the year these small steamers, drawing not over 6 feet of water loaded, can not go up the Sinu River farther than Loricá, and at times of exceptionally low water, not even to Loricá. When these boats can not reach Monteria, which is the chief town of the region, traffic is continued by means of small launches and large canoes. The mouth of the Sinu does not, however, present the same condition of sand bars, etc., as do the mouths of the Atrato and Magdalena Rivers. The Atrato is a much larger stream than the Sinu and receives abundant water, being in the region of heavy rainfall, but while the river itself is very deep and navigable for even much larger vessels than those used at the present time, its mouth is obstructed by sand bars dangerous to navigation. During exceptionally dry seasons even these small boats can not at times enter the river. Sometimes boats are held up for 10 days at a time, and occasionally they are forced to stay in the river for months. The coast is also dangerous, with no aids to navigation. Accidents are frequent, and several boats have been wrecked on the coast and in the river. About two trips a month is the best that can be done by one boat under the most favorable conditions of weather and high water.

Passenger accommodations are rather limited in regard to facilities afforded. First-class cabins are provided, but contain nothing in the way of furniture beyond a canvas cot. Travelers must furnish their own bedding, towels, and other necessities. The food served on board is very coarse and poorly prepared. The traveler will do well to provide a stock of tinned provisions, bottled water, etc. A good mosquito net is essential. In Loricá, Monteria, and other Sinu River points hotel accommodations ashore are rather primitive. The food is poorly prepared and insanitary conditions are the rule rather than the exception. The climate is tropical and insects abound in large numbers. Mosquitoes are a constant source of discomfort and danger. The Atrato River is still more primitive. There are no large towns until Quibdo is reached, although there are

numerous Negro and Indian villages along the river. Here the Negroes and Indians live in an aboriginal state, the Indians being wholly uncivilized. As a rule, they are peaceful and inoffensive if not disturbed.

Quibdo, located on the east bank of the Atrato River, has a population of about 6,000. The town has always been very rich in platinum. Rains in this region are incessant, causing frequent floods, so that agriculture can not be carried on successfully. Various kinds of rubber are found, as well as the ipecac root and tagua.

OCEAN AND MAGDALENA RIVER FREIGHT SERVICE.

The vessels of nine steamship companies touch at Cartagena. The increasing coffee trade and the amount of freight offered make this an attractive run for steamship companies. However, large freighters coming to Puerto Colombia or Cartagena are sometimes forced to leave without the expected cargoes of exports, such as coffee, etc. This was the case during three months in 1919, when the condition of the Magdalena River rendered it impossible to deliver export freight at the coast, the river points being literally congested with coffee and other exports during this time. Warehousing became a problem and goods were damaged by being left out in the weather.

AGRICULTURE.

SUGAR.

Sugar cane grows without irrigation in the Cartagena region, an average of 60 tons being produced per hectare (2.471 acres) per annum. Some cane fields in the district are 15 years old and are still producing without fertilization or replanting. Good sugar land may be purchased for an average price of \$1.50 per hectare, the cost of clearing and fencing being not over \$20 per hectare, though this estimate does not include stumping and plowing for immediate planting.

There is only one large sugar plantation using modern machinery in the entire coast region. This is the Colombian Sugar Co., with plantations and mill at Sincerin, known locally as the Ingenio Central. The company has a capital of \$2,000,000 and employs from 3,000 to 5,000 men, according to the season of the year. The total extent of the property, including raw lands and cattle pastures, is approximately 18,000 hectares (44,478 acres). Up to the present time a total of \$1,400,000 has been invested, and plans are under way to increase the grinding machinery with three new and powerful units. An average of 2,000 hectares (4,942 acres) of cane are grown yearly without irrigation. The average production is 40 tons per hectare (16.19 tons per acre), though a production of 60 tons per hectare (24.28 tons per acre) is often obtained. The value of the plant is estimated at \$1,500,000. Its capacity is 1,000 tons of cane, and an average of 100,000 hundredweight is turned out in refined sugar per annum. The percentage of extraction on the basis of weight of cane is over 9 per cent.

The management of the Colombian Sugar Co. is very modern and efficient in every respect. The plantation has a complete railway system for handling cane and for shipping by way of the Dique.

Gasoline tractors of both the wheel and caterpillar types are used for plowing. Planting of cane is done by "colonos" or renters, according to the well-known Cuban system. A "colono" is allotted so much cleared land and, in many cases, is practically financed by the sugar company, since all of his supplies are bought from the company's commissary store established for the purpose. Money is also advanced to planters for the purpose of meeting their pay rolls, though at least 75 per cent is taken in merchandise by the workmen. The cane is paid for at the rate of \$2.50 per ton delivered at the mill, all expenses of plowing by machinery, transportation to the mill, etc., being charged to the account of the "colono." A good yield is 60 tons per hectare, though the yield is sometimes as low as 18 tons and often amounts to 30 or 40 tons.

New sugar lands are to be opened up about 6 miles farther south, near the town of Maria la Baja, where better lands are found for the cane, the soil retaining more moisture during the dry season than farther north near the Dique. This condition increases still farther to the south and southwest of Sincerin, and it was noted in March, 1919, after five months' lack of rain, that the Para grass near Maria la Baja was green and the cattle fat and sleek, while around Sincerin the pastures were dry and yellow, the cattle being forced to move to the river and the Dique for green feed and water. These new lands of the Colombian Sugar Co. will necessitate about 6 miles of new railway construction, the material for which is now on the ground. Already large quantities of sugar have been sold to the Panama Canal Commissary Department, one order aggregating 1,000,000 pounds. Sincerin has the advantage of water transportation to tidewater as well as railway connection with the Magdalena River, the highway of the interior.

RICE.

Rice has become one of the great staple articles of food in the country and is used more and more throughout South America. At the present time a very poor grade of native rice sells on the open market, in small lots, for \$12.50 per 100 pounds at wholesale. The price varies from \$11 to \$14 per 100 pounds according to the season of the year, market conditions, etc. Rice from the United States is still being imported in large quantities, in spite of the fact that this grain does very well in this region, with very little preparation of the soil.

A modern concrete rice mill is being constructed near Cartagena at an outlay of about \$10,000. The building is now complete, with the exception of the roof. Because of the war, the arrival of the material for the latter, as well as the machinery for the mill, has been delayed. The mill is situated on the bay, where a wharf will be constructed to receive the raw product and to ship the cleaned rice into the interior of the country, where better prices can be obtained than in a foreign market. The decorticating capacity of the mill will be 2,000 barrels of 160 pounds each, in 24 hours. Rice runs 50 per cent chaff by bulk. This company plans to sow about 2,000 hectares (4,942 acres) of rice in 1919, and gradually increase this acreage to 8,000 hectares (19,768 acres). An attempt was made during 1918 to plant rice on a large scale south of Sincerin. A 25-horsepower steam

tractor, disk plows, harrows, etc., were imported for the purpose. There were 1,482 acres planted in rice, but the winter rains failed and the grain got no water during five months. The crop was a failure, only about 20 per cent being harvested, but notwithstanding these conditions, the small amount produced paid for the machinery and left a small surplus. It is believed that, for certain varieties of rice, some sort of irrigation must be provided, such as diking for the control of flood waters in reservoirs.

COTTON.

Cotton is selling in Medellin, for local mill consumption, at 60 cents per kilo (2.2 pounds). This contains the seed and has to be cleaned at the factory. Local mills on the coast and in the interior can not get enough of the native cotton, though they have offered all sorts of inducements to planters to grow it. Colombian cotton is very fine and of long staple, and for this reason is not well liked by native spinners, since they manufacture only rough and cheap grades of cloth. Although a considerable area has been planted from time to time, little progress has been made in real cultivation of this important crop. At present the cotton is planted without any previous preparation of the soil, with the exception of the cutting down and the burning of the brush. Weeds are chopped out with machetes. During the first three years corn is planted between the rows of cotton plants. Replanting is not necessary for five years. One thousand pounds per hectare are produced the first year, 2,000 the second, and an equal amount the third. American seed is largely used, and it is the opinion of experts that planters would do much better to plant the native varieties, which are of long staple, of high tensile strength, and much less subject to damage by insects. The staple is $1\frac{3}{8}$ to $1\frac{1}{2}$ inches long, when grown from Mississippi seed. It resembles sea-island cotton, but the fiber, which is long and silky, is said to be too fine for local mills. In 1914 Colombian cotton sold in Liverpool for 24 cents per pound. The production in that year was 789,390 pounds of raw cotton. During 1917, \$23,777 worth of Colombian cotton was shipped to the United States. At the present time there are not sufficient staples grown in Colombia to supply the local demand without resort to importation. However, production of any staple on a large scale would necessitate the establishment of market connections with either the United States or the countries of the west coast of South America.

TOBACCO.

In the vicinity of the town of Carmen, tobacco is grown for export as well as for domestic consumption. This region produces a very excellent grade of tobacco, which finds a ready market in France and in the United States, although scientific methods of selection of seed, curing, etc., are not known or used in any manner whatever, the tobacco being planted with a sharp stick and given very little attention in the way of cultivation. Occasionally the weeds are chopped out. In 1919, 341,217 pounds of tobacco, valued at \$35,683, were exported to the United States from Cartagena.

BANANAS AND COCONUTS.

Bananas and coconuts are the principal articles of diet of the common people in the country and smaller towns. Every small hut or house has its banana plants for home consumption. Two varieties are grown—the ordinary banana, which is eaten raw, and the plantain, which is cooked in many different ways. The latter is probably the article of greatest production in the region. In Bolivar there are no plantations growing bananas for export.

Coconuts do well along the coast west of Cartagena, and there are a number of small groves owned by well-to-do Negroes. This industry could be greatly increased throughout the coast region from Cartagena to the Gulf of Uraba. During 1916 coconuts to the value of \$35,777 were exported from Cartagena, going principally to Panama. During 1917 only \$18,626 worth of nuts were exported, according to official reports, though a considerable trade in nuts is carried on by small coasting schooners that run up into the Gulf of Uraba and traffic with Cuba and Panama. In 1918 the value of the coconuts exported to the United States and the Canal Zone did not reach \$4,000. At Medellin and elsewhere in the interior, coconuts sell for 12 cents each at retail, whereas the local market price at Cartagena is 6 to 9 cents each. The meat is used to mix with rice for cooking, and is a staple article of diet for all classes. Certainly there is opportunity here for the development, on a large scale, of both coconut and banana culture for export. Each coconut palm produces \$1 net per year after reaching the age of six years, and it is calculated in selling groves that each palm in production is worth \$5, producing 20 per cent net on that valuation.

AGRICULTURAL AND MILLING MACHINERY.

Of the total of \$2,000,000 worth of machinery imported into Colombia yearly, only about 10 per cent is agricultural machinery. Plows, except at Sincerin, are practically unknown. American plows were first tried out near Monteria, on the Sinu River, but proved a failure because of lack of knowledge in their use. Local planters argue that plows are not necessary in this region, the land being so rich as to need no cultivation. The introduction of modern agricultural implements and machinery into this district will be difficult, and considerable demonstrating will have to be done in order to convince the people of the advantage of modern methods. More capital and a wider knowledge of the opportunities for exportation of products are needed in order to further agricultural development.

At the present time there is a limited market for milling machinery for cereals, rice, oil seeds, and small sugar mills. Since wood is very cheap and plentiful, small boilers are preferred, although, on account of the difficulty of transporting heavy pieces of machinery into the interior of the district, fuel-oil engines are occasionally selected. The oil is secured from the refinery at Cartagena. Later, when cotton is grown more extensively in the Caribbean district, cotton gins will also be in demand. At the present time the chief tools and implements used are machetes, axes, and a few broad, heavy hoes called "coas."

IMMIGRATION NEEDED—LABOR LAWS.

Immigration is needed, not because there is any real scarcity of labor but because foreigners will teach the people to be workers. Improved sanitary conditions will come with development. When young, the average Colombian readily learns to handle machinery and can be taught weaving, etc. The women are quick and patient workers in the textile mills, and are more constant than the men. On heavy work, such as railway construction, mining, and oil-well work, the men average two days of actual work a week. The average is better in the interior. The cities possess a small class of fairly good cabinetmakers and native carpenters, blacksmiths, and other artificers. Excellent finishing work for interior decorations is done with native hardwoods. The average wage paid to agricultural laborers in the Department of Bolivar is \$0.60 per day. The wage is based on the piece-work system. Stevedores, dock workers, and other similar laborers make from \$0.80 to \$1.20 per day.

In 1915 the Government passed a workmen's compensation law. This new law benefits men employed in electric-light plants, street railways, waterworks, railways, breweries, distilleries, match factories, building and construction trades, mines, quarries, manufacturing plants using power, and Government work of all kinds. Employers of labor may also protect their men by taking out "blanket" policies with insurance companies.

During recent years Colombia has experienced labor strikes which have been attended with more or less violence. In January, 1918, there were general strikes throughout the coast region along the Carribean coast. Martial law was declared by the Government in Santa Marta, Barranquilla, and Cartagena. The movement was primarily due to political reasons, and also grew out of war conditions, since the shutting off of ocean traffic caused widespread lack of employment. During the spring of 1919 there were many local disturbances along the Magdalena River among railway workers, stevedores, cargo handlers, and woodchoppers. These strikes have always been settled by the granting of a slightly increased wage to the workers.

FOREST PRODUCTS OF REGION WEST OF CARTAGENA.

The natural wealth of the forest region west of Cartagena is, no doubt, enormous, but this potential wealth is scattered over a wide area and is practically inaccessible for exploitation. The Atrato River region, on the Pacific side, is said to contain much valuable cedar, but the natural difficulties and lack of transportation facilities make exploitation on a large scale impossible. The present supply satisfies the local demand.

During 1918 Cartagena exported to the United States the following quantities of forest products, all of which were gathered by the Negroes and natives of the interior, the work extending as far as the headwaters of the Atrato River:

Articles.	Pounds.	Value.	Articles.	Pounds.	Value.
Balsam copaiba.....	7,365	\$3,804	Ivory nuts (tagua).....	4,063,011	\$156,819
Canine oil.....	11,401	6,148	Palm-kernel oil.....	65,076	9,530
Cedar and mahogany.....	1,200,639	71,887	Rubber (balata).....	395,318	174,761
Chicle.....	86,585	41,450	Sisal fiber.....	20,882	2,671
Ipecac.....	47,181	98,564	Tannic extract.....	733,751	44,223

¹ Fect.

NUTS AND MEDICINAL PLANTS.

Another product that deserves mention is the nut of the corozo palm. This palm is the same as the "cohune" of Central America and is found in great abundance throughout the Bolivar plains and as far west as the Atrato River. There is an unlimited supply of raw material. When pastures are cleared for cattle the corozo palms are left for the gathering of the seeds. There is an opportunity for a small factory for this industry at Cartagena, or at Monteria on the Sinu River. The gathering of the nuts presents no particular difficulty. Two harvests are obtained yearly after the palm has reached maturity, which is attained at the age of four or five years. The nuts are very rich in food value, the oil having been used by the aborigines for centuries. The extraction runs about 25 per cent of pure oil per weight of raw nuts after drying. About 25 pounds of the nuts, which grow in large bunches near the ground, can be expected from each palm, annually. The tagua nut is one of the principal articles of export of Cartagena. The chief supply comes from the region of the Atrato River to Cartagena for export, although the Pacific coast of Colombia exports large quantities also.

The forests of Bolivar and the regions of the Sinu and Atrato Rivers, particularly the latter, are rich in medicinal plants, such as the ipecacuana, or the ipecac of commerce, sarsaparilla, cinchona bark, or quinine, cascara sagrada, and many others. About \$50,000 worth of these products are shipped each year from Cartagena to the United States. There are also several palms that produce gums and varnish material, such as the famous ceroxylon palm, but, so far, little or nothing has been done in this region toward the collection of these gums in marketable quantities.

DEVELOPMENT OF CEDAR INDUSTRY.

A firm of Syrians has established a large sawmill 30 miles up the Atrato River and 6 miles from the coast. It owns 5,000 hectares (12,355 acres) of land along the river. Since the most accessible cedar has been cut, the company has planted 20,000 young trees along the river, and plans to increase this number by 10,000 trees each year, in order to insure a future source of supply of cedar logs for the mill. The Negroes along the river have also been induced to plant from 5,000 to 6,000 trees annually. The present supply is irregular, and not enough logs are delivered to keep the mill working continuously. Owing to the fact that the river branches usually become dry in December, logs can not be handled until the flood season. Considerable work has been done at the mill to afford access to the river, a heavy fill having been built for this purpose. Approximately \$250,000 has already been spent on this property by the

owners since the erection of the mill in 1906. It takes 10 years' time for the seed of the cedar to grow to proper size for lumber in this region, where the tree is native. A full-grown cedar 10 years old is valued at \$10. The cost of cedar delivered at the mill is \$0.01 per board foot. The retail price at Cartagena is \$0.06 to \$0.07 per board foot. The estimated monthly consumption of lumber at Caribbean coast points is, in board feet, as follows: Cartagena, 35,000; Barranquilla, 80,000; and Puerto Rico, 100,000. There is also a market at Colon, Panama, and Curaçao. The owners of this property claim that there is room for expansion. Three waterfalls, from which an aggregate of 5,000 horsepower can be developed, are situated 4 miles distant from the present mill.

PETROLEUM.

In spite of the many surface indications of the presence of petroleum throughout the coast region from Puerto Colombia to the Atrato River, drilling operations have been unsuccessful up to the present time. In the Sinu district, \$750,000 was spent by an American oil company without definite results. Other drilling work near the town of Turbaco also resulted in failure to bring in oil in paying quantities.

Judging from the consensus of opinion of several engineers who have studied the territory, it is believed that no good wells will be found on the flat coast country, and that future drilling operations will have to be carried on in the district farther south of Cartagena, back of the line of foothills just north of the big bend in the Cauca River.

There are many rumors of petroleum indications in the Atrato and Choco river regions, samples of high-grade crude oil being brought in by natives frequently. Exploration work in these regions would be extremely difficult on account of the very bad climate and the dense jungles encountered everywhere.

PLATINUM AND GOLD MINING.

The Atrato and Choco Rivers are tributary to Cartagena commercially. Therefore merchants in Cartagena are the heaviest buyers of platinum and gold from the placers of these rivers, and also supply the merchandise needs of the region through their agencies established in Quibdo, Istmina, and Baudo. The development of water transportation of the San Juan River has taken some of this trade away from Cartagena, and the district has also been invaded by traders from Medellín, in Antioquia.

PRODUCTION OF PLATINUM STIMULATED BY HIGH WAR PRICES.

Colombia produces an average of 30,000 troy ounces of platinum per year, practically all coming from the Quibdo district. The high prices prevailing during the war greatly stimulated the production of this important metal, and entire districts along the coast and rivers west of Cartagena were depopulated, the people emigrating to the platinum district to wash for platinum gold.

During the fiscal year of 1917-18 production in weight of metal fell off on account of the protracted dry season, the usual heavy rains of the Quibdo region not materializing. A great many more

people were engaged in the work, but the production per capita was not normal with relation to former years, when prices were much lower. Water for washing the metal had to be collected during the night in small pits dug in the banks. The work was thus made much harder and considerable time was lost.

Plantains and dried fish are the staple articles of food of the Negro and Indian platinum workers, and these cost 10 times more in the Quibdo district than farther down the Atrato River, the main source of the supply. The fixing of the high price of \$105 per ounce for platinum by the United States Government during 1918 greatly stimulated the work, although, because of the weather conditions noted above, the total production was not proportionate to the greatly increased number of men engaged in the work.

CARTAGENA THE SUPPLY CENTER OF THE QUIBDO DISTRICT.

The Condoto River district is also a great producer of platinum, but it is of an alluvial formation, and, on account of the broken nature of the ground and the heavy jungle, no accurate estimate can be made of the possibilities of future production or of the extent of the platinum-bearing ground. Doubtless the fields are much more limited in extent than is generally supposed. In this region platinum predominates, there being approximately 4 per cent of gold found with the platinum, while on the Quibdo side gold predominates, the platinum content of sands being only about 10 per cent. Another producing section of the Quibdo district is the area near the headwaters of the Quito River, which is being worked now to a greater extent than ever before.

Cartagena is the supply center of the Quibdo region. Approximately \$1,000,000 worth of imported merchandise, principally cotton goods, are shipped into this region every year from Cartagena. Probably 60 per cent of this amount consists of cheap cotton prints. The large importers of Cartagena maintain branch houses in Quibdo and Istmina, Syrians predominating. Traders travel up the small rivers in canoes with trade goods and buy gold and platinum.

The Choco district is said to contain many other minerals, such as copper, lead, silver, palladium, etc., but very little is known of the real extent or value of the veins or deposits. Many rich samples of all of these ores have been brought in by the native prospectors searching for gold and platinum.

LABOR AND CLIMATE.

The labor engaging in this work is unsatisfactory. After working in the river a few weeks and making good pay, they will return down the river for the remainder of the season. Although as many as 300,000 men come into the platinum country during a single year, not more than 3,000 men are working there at one time. The climate is very unhealthful. Several large companies have failed in attempts to use large modern dredgers in this platinum and gold placer district.

MANUFACTURING.

Throughout the coast region there is an increasing interest in local manufacturing. Extensive plans are being made for future development as soon as the importation of new machinery and equip-

ment becomes possible. Textile goods, glass and earthenware, matches, hats, flour, and sugar are some of the principal products in this commercial district. Probably the most important industrial establishment is the Colombian Sugar Co. with a capital of \$2,000,000 and employing from 3,000 to 5,000 men, according to the season. The *Fábrica de Extractos Tánicos* has not been in operation for two years, because of the lack of success in its experiments connected with the chemical process of extraction of tannic acid from the bark of the mangle. About \$200,000 is the estimated capital invested in the plant.

EXPORTS.

Statistics showing the quantities and values of declared exports from Cartagena to the United States give a total of \$9,823,635 for the calendar year 1919, a gain of \$2,947,295 as compared with 1918, when the value of merchandise exported reached \$6,876,340. Coffee forms the most important item, 40,490,072 pounds, valued at \$6,540,558, being exported in 1919. Other important exports were cattle hides valued at \$1,038,516, hats at \$318,569, and rubber at \$125,052.

CURRENCY AND BANKING.

The actual currency is inconvertible paper, gold coin based on the English gold coin in weight and fineness, and fractional silver coin. Exchange rates vary, but the average rate during 1919 was 0.85. Rates of interest are about 2 per cent per month. However, the establishment of branches of American banks has reduced this rate to as low as 11 per cent per year in some cases.

The Mercantile Bank of the Americas has a branch in Cartagena known as the Banco Mercantil Americano de Colombia. The Banco de Bolívar, with a capital of 500,000 Colombian dollars, and the Banco Industrial with a capital of 300,000 dollars, are located here.

MEDELLIN AND COMMERCIAL DISTRICT.

LOCATION, TOPOGRAPHY, AND CLIMATE.

The Department of Antioquia, situated in the north-central part of Colombia, is the largest of the inhabited Departments of the Republic, possessing an area of 24,401 square miles. Its boundaries include the Gulf of Uraba at the mouth of the Atrato River; the Atrato River itself for a distance of approximately 150 miles; the Cauca River throughout its central part, as well as its tributaries, the Nechi and San Jorge; and the Magdalena River on the east.

The entire Department is a mass of mountains and hills with small valleys in between. Climate in such a region, located from 6 to 7 degrees north of the equator, is a matter of elevation above sea level. The entire district along the Magdalena River on the east is tropical, as is the region to the north along the boundary with the Department of Bolívar, where there is a much more abundant rainfall than farther south. That portion of the Department known as the Uraba region, which extends to the ocean at the Gulf of Uraba, is also extremely tropical. The valley of the Cauca River to the south, where the elevation above sea level is approximately 3,000 feet, has a semitropical climate, the average mean temperature

being 76° F. The capital, Medellin, situated in the south at the junction of four mountain ranges, possesses a climate of perpetual spring, and health conditions are found to be much better in this city than on the coast at Santa Marta, Barranquilla, or Cartagena. Almost any temperature desired may be found by climbing into the mountains surrounding the city. There are no well-defined seasons, but the year is divided into two wet and two dry periods of three months' duration, the principal rainy season beginning with March.

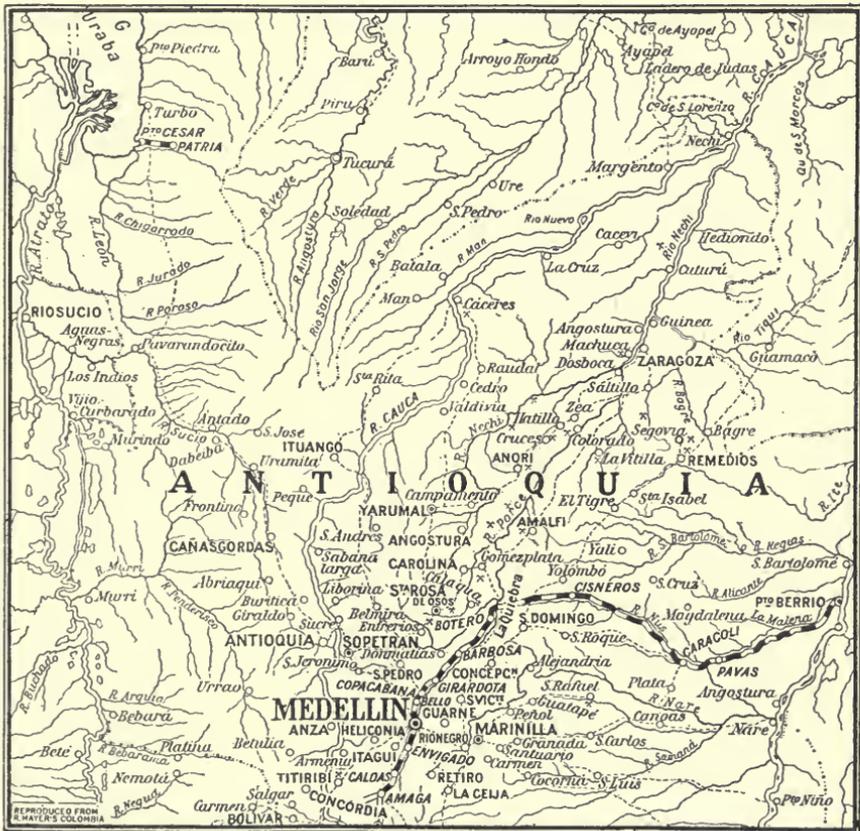


FIG. 10.—Map of Medellin region.

POPULATION AND RACIAL CHARACTERISTICS.

The Department of Antioquia, with a population of 817,530, is divided into 10 Provinces. Medellin, the capital of the Centro Province, as well as the capital of the Department, possessed a population of 79,146 in 1918.

It is said that the people of Antioquia are the descendants of Spanish Jews who emigrated to Colombia during colonial times. There are numerous evidences of the preservation of the purity of the Spanish race even among the lower classes. Few Negroes from the coast regions are seen, although to some extent Indian blood and a small percentage of Negro blood have been absorbed.

The Antioqueños are good workers and possess a great deal of perseverance and ingenuity, since they have had to struggle hard for a living. Moreover, they are good business men and very shrewd traders. One very remarkable feature found here is the great industry of the lower classes and their universal desire to own their own property. These people are economical, saving, and intelligent. In the city of Medellin real estate has been sold with great success on the installment plan to laborers, servants, and others of the less well-to-do classes.

LIVING CONDITIONS.

Like all South American cities, Medellin presents many of the old colonial features, but at the same time displays modern tendencies. Many old adobe buildings are being replaced with modern concrete office and store buildings of attractive design, and there is an active movement for improvements of all sorts. This condition is apparent from the increasing demand for more and better lighting fixtures, plumbing fixtures, electric light and telephone service, and steel products of all kinds.

The wealthy Antioqueño lives in a beautiful house, often of two stories, and provided with interior gardens where open-air baths are built into the ground in the old Roman style. The interior decoration is more European than American, more French than English, in appearance and effect. In contrast to the comfort, and even luxury, of the wealthy merchants and professional people, is the life of the peon who usually lives in a tiny one-room house built of mud blocks situated on the outskirts of the town or in the valley farming district, with no comforts, little or no furniture in the house, and no sanitary provisions whatever. Relations between employer and laborer are still rather feudal and founded upon the old Spanish system of peonage.

EDUCATION.

Medellin, as well as the Department of Antioquia, is second only to Bogota in educational advancement; 82 per cent of the factory and industrial workers of Medellin can read and write. Out of a total population of the district of Medellin, i. e., the municipality, there were in 1910 only 9,091 pupils in all schools. In 1918 this number had increased to 12,530 out of a total population for the district of approximately 80,000 people, according to the census of 1918 (Oct. 12), or 15.6 per cent of the total number of inhabitants. This figure speaks very favorably for the district of Medellin.

The University of Antioquia was founded in 1871 and is the second largest in the country. At present it has 411 enrollments in all lines of study; 236 men are taking philosophy and letters, 59 are enrolled in law and jurisprudence, 116 in medicine; and there are 460 pupils in the preparatory Liceo Antioqueño, an annex of the university. Government primary schools are in charge of the departments, but the various districts and municipalities provide school buildings and equipment. The district of Medellin has recently completed a model school in which all modern and hygienic methods are embodied. This building will be the model for all future school buildings in the district.

The National Government maintains the National School of Mines at Medellin. The latter school was founded in 1887, com-

plete courses being taught in mining and civil engineering. In June, 1919, 80 pupils were in attendance. Normal schools, also, are supported by the National Government. The Medellin Normal School had 97 men and 238 women enrolled in June.

FINANCE AND BANKING.

INFLUENCE OF LOCAL GOLD PRODUCTION.

The financial situation in the Department of Antioquia is different from that in any other part of Colombia. Antioquia is the largest gold-producing State, an average of \$4,000,000 in gold being produced annually. In Medellin gold circulates freely and all transactions are on a gold basis. This was especially true during the year 1919. With New York exchange fluctuating between .86 and .90, and the pound sterling at a discount of 20 per cent and more, gold was not exported but was turned in at the local Government mint for coinage into Colombian gold coin. This gold was then used to purchase New York drafts at the prevailing rate of exchange. Also, during the latter part of 1918 and the first half of 1919, more than \$6,000,000 in United States gold coin was imported into Colombia, and the greater portion of this amount was sent to Medellin for coinage into Colombian gold coin, the difference in intrinsic value as compared with the United States gold coin being approximately 2.75 per cent. As a result, Antioquia is doing business with gold coin while throughout the rest of the country very little gold is seen and paper money of various kinds forms the medium of exchange. Another factor tending to hold this gold in Antioquia is the high transportation rates on specie shipments in Colombia. Because of the fact that Antioquia has always produced large amounts of gold, with gold as the basis of exchange, all new issues of Government and bank paper currency have been looked upon with suspicion by the people of this Department, and it is only with the greatest difficulty that paper currency can be put into general circulation in this district.

COINAGE CAPACITY OF MINT—CERTIFICATES OF GOLD DEPOSITS.

The National Mint at Medellin possesses a complete, though small, electrolytic plant, and improvements made in 1919 increased the coinage capacity from \$500,000 in gold coin to \$2,000,000, with new extensions planned that will make it possible to mint \$6,000,000 worth of gold coin per annum. On account of the great amount of gold presented at the mint for coinage into Colombian gold coin, and because of the limited capacity of the mint, the expedient has been adopted of issuing certificates of gold deposits in small denominations in order to make the commercial use of this gold immediately available for holders of gold awaiting coinage. The certificates of deposit circulate freely and are everywhere accepted in the district, as they call for the delivery of an equal amount of Colombian gold coin on a certain date; gold delivered to the mint for coinage has to await its turn.

BANKS AND LOANS—EFFECT OF FOREIGN BANKS ON TRADE.

Ten banks, six of which are incorporated and four private, take care of the financial business of Medellin and its commercial district. The average net profit of the private bankers in Medellin is approximately 16 per cent per annum, and previous to the establishment of foreign banking institutions in Medellin, these profits were very much greater, rates of interest ranging between 18 and 36 per cent per annum, the usual quotations being by the month. Private money lenders still receive 2 per cent per month for private loans, and at times even a higher rate of interest in the country districts. At present the average commercial rate of interest is 18 per cent. Recent loans have been made to the Department at a rate as low as 11 per cent per annum, whereas formerly the Department paid as high as 18 and 20 per cent for money with which to finance needed public works. The larger merchants can also now secure commercial loans from local banks for six months and one year at rates ranging from 11 to 15 per cent.

The effect on trade in general through the establishment of foreign banks in Medellin has been very beneficial. Interest rates have gradually been lowered and all commercial transactions facilitated.

AMERICAN BANKS INVESTING IN INDUSTRIAL PROJECTS.

Progress during the past five years in the Medellin district has been continuous and based on a better mutual understanding. The American branch banks know the intimate conditions and resources of the country, and are in a position to act as intermediaries in investment and industrial propositions, and furnish a sure basis of international confidence and mutual respect. In fact, they have already begun to assist in certain projected improvements. As an example it may be stated that the branch of a large American banking and commercial institution loaned the Department of Antioquia the sum of \$40,000 gold recently with which to cover the cost of the preliminary engineering study of various new projects. This money was loaned at 12 per cent interest per annum at 10 months' time. Previously the Department of Antioquia borrowed large sums locally at 18 per cent interest per annum. Subsequently this same banking concern offered the Department a loan of \$6,000,000 with which to carry out the new work projected. An American contracting company has had a representative on the ground for the purpose of investigation, and the result will be large orders for material, machinery, and supplies.

DEPARTMENTAL REVENUES.

The Department of Antioquia is one of the few Departments of Colombia able to show sufficient revenue over and above current expenses on which to base a large foreign loan. Never has it been in a more favorable condition. In 1917 revenue for the Department amounted to 1,939,359 Colombian dollars (1 dollar = \$0.9733 United States currency); in 1918 it had increased to 2,069,318 dollars. During the first four months of 1919 returns were 663,056 dollars. The month of June alone yielded 221,860 dollars. Revenues for the city of Medellin have increased correspondingly. In

1917 there was a revenue of 245,997 dollars, in 1918 the figures given were 261,596 dollars, while the first four months of 1919 showed a revenue of 84,029 dollars. The sum of 380,000 dollars was voted by the city of Medellin for improvements during 1919 and to carry out the project of the new Municipal Electric Street Railway.

TENDENCY TOWARD SHORTER CREDITS.

In Colombia there exists no system of discounts and trade acceptances, and, prior to the war, foreign trade was based on long credit terms with the foreign export commission house acting as banker. Since the bulk of trade is at present with the United States, both for exports and imports, the tendency is toward closer commercial and financial relations and the establishment of some system of exchange with shorter credits and more rapid movement of merchandise, in which the American branch banks will take a leading part. The great difficulty seems to be the scarcity of experienced and trained men to place in charge of these important branch banks. The education and training of men for foreign service may be deemed the most important feature necessary for foreign trade expansion in Latin America.

PRINCIPAL CITIES AND COMMERCIAL TERRITORY.

Medellin is the center of all commercial activity for the Department of Antioquia and the commercial territory comprising the mining country of the northern part of the Department and the territory of the Cauca River Valley as far south as Cartago. To a certain extent, also, the Department of Caldas, with Manizales as its center, is commercially tributary to Medellin, though the bulk of the import business in Manizales is handled directly with foreign markets through export and import commission houses which have their headquarters in Medellin, maintaining branch offices in Manizales. However, merchandise imported for the market in the Department of Caldas does not pass through Medellin, but continues on up the Magdalena River to La Dorada, the head of navigation on the lower Magdalena, thence by rail over the Dorada Extension Railway to Mariquita, where goods are transferred to the cableway built over the high mountains and now completed almost as far as the city of Manizales.

The Department of Antioquia contains 35 towns of 10,000 people or more, and the whole commercial territory of Medellin reaches over 2,000,000 people of Colombia. The merchants of Antioquia are actively engaged in expanding their trade with the interior, and traders from Medellin are found in the least accessible regions, even as far west as the platinum-mining country of the Rio Atrato. However, it is thought that Medellin can not compete with Cartagena in the Rio Atrato trade because of transportation difficulties, Cartagena having direct communications by water, while goods for Medellin have to be brought up the Magdalena River to Puerto Berrio, thence to Medellin by rail, from which place they are sent into the interior on pack mules and pack oxen.

The town of Puerto Berrio is the river port for the Department of Antioquia. All goods shipped into Medellin from the coast pass through it. The town itself is unattractive and presents the usual aspect of Magdalena River towns—low, one-story "adobe" houses

with thatched roofs; narrow, unpaved streets; and the usual river population, consisting principally of Negroes and "mestizo" Indians. There is little agriculture in the vicinity, with the exception of small banana and yucca patches for the local market; the principal employment is stevedoring work for the river steamers and railway. The inhabitants number about 2,500. Low hills surround the town and the vegetation is tropical, with rather heavy undergrowth. There is little good level land in sight. While the town has a small electric light plant and a small ice factory, there are no public improvements except the railway freight sheds and track work and the Hotel Magdalena.

On account of the greatly varying stages of the river, the swift current, and other adverse factors nothing has been done at Puerto Berrio to provide docks or landing stages for river-traffic service. All freight is handled up and down the steep bank of the river on men's backs, the distance in extreme low-water stage being nearly 250 yards from the nearest railway storage shed. As a part of the railway's equipment there is a good hand-power crane on the end of a spur track near the river for handling heavy cargo packages. This crane is the only modern facility in Puerto Berrio for freight-handling purposes and is seldom used.

MANUFACTURING.

The greatest industrial development in Colombia is found in the Department of Antioquia. In spite of the broken nature of the country, with the resulting difficulties in transportation, this Department will undoubtedly continue to lead other districts in manufacturing, even though raw materials, with the exception of cotton, must be imported.

The development of local industry is due to two factors: First, the energetic and active character of the Antioquian people; and second, the tariff measures of the Government which protect national industries. At present the volume of production of local manufactures supplies but a fraction of the demand; consequently, on account of the protective tariffs, the prices of foreign-made goods naturally fix the prices for articles of domestic manufacture, the result being that prices remain very high for all goods needed in the country, whether foreign or domestic, and manufacturers make good profits.

COTTON MILLS.

Cotton prints constitute the principal article of import into Colombia, averaging about 60 per cent of the total value of all goods imported into the country. It is therefore in this line that there has been the greatest development in local and national manufacturing.

Local cotton mills are competing successfully with foreign mills, although the former have not improved the quality or appearance of the cloth manufactured. However, the material is strong and wears well and is well liked in the country. Under present conditions of the market there is no necessity for local mills to improve their product. Prices are high and the total production is sold without trouble.

All local mills are very prosperous notwithstanding the high cost of imported raw material, high freight rates, and great cost of new

machinery, repair and replacement parts, etc. Dividends of 14 per cent net are being paid on stock in these mills held locally, and all mills were planning extensive improvements during 1919. The time seems opportune to do some selling work among the Colombian mill people. The mills that are now importing cotton yarn for their looms are ordering spinning machinery with which to make yarn of the native cotton from the coast section; dyeing plants, too, are being installed in many places.

During the war dealers could not secure enough textiles to supply the demand; prices were very high, and as a result the public refused to purchase freely, waiting for better conditions. During this time the domestic mills supplied the bulk of the local demand at war prices. All merchants feared an imminent drop in prices of imported goods, and almost without exception tried to dispose of large stocks of textiles on a stagnant market, but with little success. The market for textiles reacted in June, 1919, and merchants finally became convinced that the local and interior demand was active again and that a business boom was in progress. They realized also that they were without adequate stocks of goods with which to take care of the trade. The result was precipitate buying in all lines, and the bulk of the business (estimated at over 90 per cent of the total) went to New York. Strange to say, this buying activity was initiated, not from large centers, such as Medellin and Bogota, where the larger importing houses would naturally be expected to take the lead in any great commercial movement, but from interior towns, such as Cali, Bucaramanga, Ocana, etc., and this activity stimulated the larger importers to action.

In Medellin, old resident English houses, which handled Manchester textiles for many years and enjoyed the bulk of the Antioquia trade, were obliged to seek new business relations in the United States in order to take advantage of market conditions.

Besides textiles, there is a strong demand for hardware and cutlery, formerly imported from Europe, and also chinaware, cooking utensils, and glassware, the last two lines being almost entirely imported from Europe prior to the war.

Because of the prosperous condition of the country on account of the coffee market and the high prices being obtained for exports of all kinds, there is also a strong demand for women's fancy-wear goods, dress goods, haberdashery, etc. Better quality and more varied lines are wanted than heretofore has been the case in Colombia.

OTHER INDUSTRIAL ESTABLISHMENTS.

Besides the 8 or 10 textile factories located in or near Medellin, other important industrial establishments are situated there. The *Fábrica Nacional de Galletas y Confites* (cracker and candy factory), established in Medellin in 1915 with a capital of 600,000 dollars, is very modern in every way. Products are sold all over the country and are competing with imported bonbons and crackers, which they are steadily replacing in the Colombian market because of the high import duty and freight rates. This factory represents, doubtless, the most definite case in which a local industry has replaced the imported article in Colombia. Another example of the replacing of foreign merchandise in the Colombian market is porcelain. The

factory is located in the town of Caldas, on the Amaga Railway. The company was originally promoted by a German, who utilized the deposits of white and gray clay, quartz sands, feldspar, etc., found near the town of Caldas. In recent years results have been very satisfactory. At present 60 men are constantly employed, and only coloring materials and certain small amounts of flux materials are imported. The products enter all parts of the country and compete with the imported article. Present sales are approximately \$150,000 per year, and plans are being perfected for large extensions in the near future. The company is in the market for new baking ovens, new grinding mills, automatic sizers, screens, etc. Another porcelain factory has been recently formed in Medellin, with a capital of 30,000 Colombian dollars, to develop rich deposits of clay, feldspar, etc., near the town of Pueblito.

Other factories that are producing articles in local demand are Fábrica Nacional de Camisas y Cuellos de Medellin (shirts and collars); Compañía Nacional de Manufacturas de Medellin (corsets); besides several cigarette factories, match factories, soda and mineral-water factories, etc. Most of the raw material used is imported from the United States. Tobacco for the cigarette factories is imported from the United States, Cuba, and the Department of Santander del Sur in Colombia.

FORMATION OF NEW COMPANY TO MANUFACTURE FIBER BAGS.

In June, 1919, a company was being formed in Medellin to make fiber coffee bags. Jute bags were formerly imported from England for handling the coffee harvests for export. During the war this material could not be obtained and sacks were manufactured locally from "fique" fiber, as the native henequen is called. The bags are being made by hand, the raw material or cleaned fiber costing about 12 cents gold per pound of 500 grams delivered in Medellin. However, fiber-cleaning machines are now being made near Medellin by local foundries and machine shops. The company plans to use modern machinery, but up to June suitable machinery for making the bags of this kind of fiber had not been found in the United States. The present cost of fique bags is \$1.12 per "carga" of two sacks, which contain 140 pounds of coffee each. Before the war Colombia imported annually approximately 1,000,000 yards of jute piece goods from the United Kingdom and \$225,000 worth of jute bags.

IRON INDUSTRY OF ANTIOQUIA.

In view of the increasing demand for certain machinery used in domestic industry, the development of foundries and machine shops in Antioquia would seem to be of primary importance as a local and national industry. There are four of these in the Department at present. The Ferrería de Amaga is one of the oldest. Its present volume of business amounts to about \$200,000 per year. No scientific report has ever been made on the extent and formation of the available iron-ore deposits, although surface indications show a large formation, well defined and entirely accessible, with easy mining conditions.

The ore most used is that called "mineral de huevo," or egg ore. This ore is the most common and is picked up by hand from the sur-

face. No mining operations have ever been undertaken either by the old company or by the present owners.

It would seem as if these deposits were of value and capable of greater development and exploitation under scientifically trained direction. Prices will always remain very high on account of the high freight rates on all machinery and steel products from the coast. Local dealers figure over 90 per cent for expense of freight and duty on all iron products from the United States on first cost, f. o. b. New York, and then add a handsome profit over and above these figures. Labor is plentiful, as well as cheap and good; water power is immediately available on the ground at little expense.

The Empresa de Refundición de Metales, located near Medellín on the Amaga Railway, imports pig iron. It makes agricultural implements, such as hoes, machetes, plowshares, etc. A third foundry, the Ferrería de Joaquín Restrepo Izaza, at Sonson, also imports pig iron besides using that of the country. Coffee and mining machinery are its chief products. The foundry and machine shop called "La Estrella," located at Robledo, was established in 1900 with an initial capital of 120,000 Colombian dollars. Pig iron is imported from the United States, the price f. o. b. New York in May being \$28.55 per ton of 2,240 pounds. This pig iron costs 12 cents per kilo, or 5 cents per pound, laid down in Medellín, plus cartage to the factory at Robledo, 4 kilometers distant from the Medellín Railway station. Machinery of all kinds for the coffee industry as well as the tobacco, rubber, cacao, and fiber industries, sugar-cane mills, Pelton water wheels, church clocks, etc., are products of this foundry and machine shop. An average price of 60 cents per kilo is received for all castings turned out. These are clean and free from defects; edges are sharp, and crystallization is very uniform.

TOTAL INVESTMENT IN PLANTS—LABOR SUPPLY AND CONDITIONS.

In 1918 the Department of Antioquia possessed a total capital of 3,190,000 Colombian dollars, invested in 32 plants. It is estimated that there will be an increase of 1,100,000 dollars for 1919 and 1920. The textile plants and existing factories will be chiefly affected. There can be no question of the industrial development of Antioquia or that this region is rapidly becoming the principal manufacturing center of Colombia, however handicapped it may be by the mountainous nature of the country and the lack of good transportation facilities. Many plans and projects are being worked out for the near future, and the prosperous condition of the country will evidently stimulate and advance this development during the next few years.

Approximately 6,000 people are employed in manufacturing plants of all kinds in Medellín and its suburbs, and there is a surplus of labor. Women especially are seeking work in factories where piece-work is the system for operating. All local cotton factories employ this system. Most of the larger mills run 10 hours per day, comparatively few factories working only 9 hours. Little time is lost from work, the average attendance being over 91 per cent. Factory managers state that the people are very quick in learning to handle new machinery and can be trusted with delicate mechanisms. The women earn from 30 to 60 cents per day, the average wage being

about 33 cents. Men earn from 30 cents to \$1.30 per day, the latter wage being that of the most skilled mechanic.

RAILWAYS.

There are two railways in the Department of Antioquia. The more important of these is the Ferrocarril de Antioquia (Antioquia Railway), connecting Puerto Berrio, on the Magdalena River, with Medellin, the capital of the Department, a distance of 120 miles. It is operated in two unconnected divisions, the Nus division, from Puerto Berrio to Cisneros, and the Porce division, from Santiago to Medellin. The La Quiebra Mountain separates Cisneros and Santiago, which are 9 miles apart; present means of travel between them is by wagon road over this mountain, at 5,080 feet above sea level. All imports and exports into Medellin and the interior of the Department of Antioquia pass over this road. The Department has planned a tunnel under the mountain which will be approximately 12,250 feet in length, and an electric line over it is also talked of.

One is impressed by the excellent construction work, the heavy cuts, the fine rock-ballasted roadbed laid with hardwood ties of over-size for narrow-gauge track, and the general appearance of the Antioquia Railway. The gauge is 36 inches, and 60-pound rails are used throughout, being necessary because of the short curves and heavy grades encountered. In spite of the fact that this line passes through a very mountainous region, returns show that each new 5 kilometers of line have paid for the construction of 5 more. The road has doubled its traffic every five years, and is at the present time in a very prosperous condition. Freight rates have been lowered consistently.

The Nus division operates 93 freight cars of various types and capacities, and the Porce division has 58. The locomotives are of the small 25 and 30 ton Mogul type, and on the Nus division they burn wood for fuel. The Porce division uses coal, which is brought into Medellin from the Amaga fields by the Ferrocarril de Amaga (Amaga Railway).

The Amaga Railway runs south from Medellin toward the town of Amaga. The Cauca River is the objective. The road has shown an annual increase of business according as new sections of line have been put into operation by the company. Gross returns in 1918 were 183,643 Colombian dollars. From the returns of the first four months of 1919, which were 72,207 dollars, it is estimated that figures for the year will reach 214,000 or possibly 240,000 dollars. Owners of the line claim that it is the key to transportation in Antioquia. Once this road is completed by connecting Medellin with the end of navigation on the upper Cauca River north of Cali, the Department of Antioquia will have an outlet also on the Pacific coast through Cali to Buenaventura.

The Amaga Railway passes through extensive coal beds, which are found on the western watershed after passing "La Quiebra." In several places the railway cuts pass through three horizontal strata of coal. Locomotives can thus be fired at the tracks. In the valley one coal property alone is said to contain 5,000,000 tons of coal. It is bituminous in character, very light, and highly volatile, from 45 to



FIG. 11.—MEDELLIN STATION OF ANTIOQUIA RAILWAY.



FIG. 12.—MEDELLIN STATION OF AMAGA RAILWAY.



FIG. 13.—PLAZO BERRIO, MEDELLIN.



FIG. 14.—HOTEL MAGDALENA, PUERTO BERRIO.

60 per cent gas. The cost, delivered in Medellin, cartage from railway station paid, is \$4 per ton. The cost to the railway at the coal beds does not exceed \$0.65 per ton mined and sacked on flat cars. Although this coal will not coke, a coking grade can be found just north of Medellin on the Antioquia Railway. Mining operations are carried on in the most primitive manner, the mines being mere one-man incline shafts and the coal being carried out on men's backs. No scientific examination has ever been made of these coal beds, and no data as to their extent or value are available. It is believed, however, that the supply is large enough to furnish all the needs of transportation and industry in Antioquia for hundreds of years.

Three routes are being studied for the new projected railway to the Gulf of Uraba. The Departmental Assembly authorized the government to contract for a loan of \$6,000,000 with which to start this new railway, as well as to finance other construction work, and the money has already been offered by an American banking concern.

Still another road on which preliminary work is being done is from Puerto Berrio across the Magdalena River toward the southeast in the general direction of Chiquinquirá. The line will pass through the town of Velez in Santander, continuing on to the plains of Sogamoso in Boyaca, with the object of developing this region of cattle raising and wheat production. This new line is the result of an agreement between the Departments of Antioquia, Boyaca, and Santander del Sur, and the surveys are under the direction of the Department of Antioquia, whose engineers are now carrying out the preliminary survey work. The business element of Antioquia is very much interested in this new railway, since it will open a new field for the products of Antioquia and also provide access to the wheat and cattle lands of Boyaca, wheat and cattle being two products most needed in Antioquia.

RIVER NAVIGATION.

Three navigable rivers serve the Department of Antioquia. In the rainy seasons river steamers drawing 4 feet of water (loaded) navigate the Magdalena as far as Puerto Berrio, but for several months at a time river navigation is very uncertain, even for the smaller boats.

The Cauca River is a tributary of the Magdalena and is navigable for 200-ton river steamers in the northern part of the Department as far as Caceres; and irregular service is maintained there during the rainy season. This river service benefits the mining and cattle interests in the northern part of Antioquia, although the traffic is not very heavy and is more or less local in character.

A regular steamer service is maintained between Magangué, on the Magdalena River, and the town of Zaragoza, on the Nechi River, a tributary of the Cauca.

AGRICULTURE.

COFFEE.

The Department of Antioquia produces an average of 18,000 tons of coffee annually, the extent of the plantations being estimated at approximately 63,250 acres, containing possibly 36,000,000 coffee trees, valued at 30 cents each. Production in this Department has practically tripled since 1910, when Antioquia exported 100,341 sacks of 145 pounds each. Production in 1915 increased

to 192,807 sacks, in 1916 to 273,175, while it was estimated that the Department would export a total of 300,000 sacks in 1919.

The average cost of freight and other charges on Antioquia coffee is \$0.08 per pound by the time the coffee reaches New York and is delivered to warehouses there. All coffee quotations are made f. o. b. New York in United States currency per pound. Colombian producers or buyers receive or pay Colombian currency for all coffee, and in Antioquia payment was made in gold coin to a great degree during the early part of 1919. Exchange averaged around \$0.85 during the spring months and then slowly advanced to \$0.94 and to \$0.95 in June.

SUGAR.

"Panela" or brown sugar is not exported from the country, but large quantities are shipped into the interior. In 1918 the Department of Antioquia produced 3,366,656 "arobas" (of 25 pounds each), or a total of 84,166,400 pounds, according to statistics compiled by the Chamber of Commerce of Medellin. The principal centers of "panela" production are: Medellin, Cocorna, Barbosa, Sonson, and Yolombo, though sugar cane is grown throughout the entire Department in many small patches. Water is everywhere available for irrigation, the mountains having numerous springs and small streams.

There are no large sugar estates or modern sugar mills in the Department. In 1916, 4,887 small sugar mills were in existence there, the greater proportion of which were made by hand, of wood. The following statement shows the motive power: Small hand power; 2,486 mills; oxen or mule power, 1,650 mills; water power, 744 mills; other power, 7 mills.

A considerable number of small foreign-made iron mills called "trapiches" have been imported, which are carried in stock by all hardware dealers. Local foundries and machine shops are now producing these small sugar-cane mills as standard articles.

RICE—TOBACCO—WHEAT—BEANS.

Rice and tobacco are grown in the northern part of the Department, where there is more level land and a tropical climate. These regions are sparsely inhabited, since the Antioquian prefers the cooler climate of the hills and mountains. In 1915 the Department produced 15,331 cargas (carga = 280 pounds) or 4,292,680 pounds of rice, but even this amount was not sufficient to supply the demand, and the coast and the United States furnished the remainder. Tobacco also was imported, the 864,257 pounds produced by the Department not being enough for the factories. Wheat was imported from Bogota to supply the Department, since only 2,205 cargas were produced in 1915. Beans are grown in sufficient quantities to supply domestic needs.

CATTLE RAISING.

Official statistics compiled in May, 1919, give the total number of cattle in the Department as 415,418 four years old or over. It is estimated that there are 46,666 hectares, or 115,311 acres, under fence and planted with Para, guinea, "India," and "Yaragua" grass (all similar to the Para grass) in the Department. The small native

cattle are also pastured on the short grass of the hills and mountains of the interior regions. These cattle are a very poor breed, not over 600 pounds on the hoof. Approximately 70,000 head of cattle are imported every year from the coast, principally from Bolivar, and are fattened for market in the Cauca Valley. It is said that there is hardly a merchant of Medellin who does not own a cattle ranch in this rich region. A cattle pasture planted in para grass of four years' growth is valued in Medellin at \$70 per hectare (1 hectare = 2.471 acres). All cattle throughout the Department are subject to the diseases peculiar to the country and have to be inoculated with cattle and stock serum; consequently there is an excellent market for stock serums, hypodermic-injection syringes, and other appliances needed.

MINING.

Mining is the oldest industry of the Department, and countless small streams show evidences of old placer operations throughout the Department. The most accessible and easily worked ground has been exploited by the Spaniards and natives, who are good placer miners and expert surface prospectors. Some of the rich gold mines pay handsome dividends in spite of the crude methods employed.

There is evidently an opportunity for development by large mining companies in taking up old low-grade properties or dredging ground and installing modern machinery to conduct extraction where the old crude methods have failed. However, operations would be very expensive because of transportation difficulties. The war curtailed the shipping of machinery and equipment, but new projects are in prospect as soon as conditions become normal again.

MERCHANDISE MOST IN DEMAND IN MEDELLIN.

Because of the heavy exports of coffee already mentioned, great expansion of business is expected during the next few years, and all lines are extremely active. Transactions are almost invariably in cash, i. e., New York exchange in hand, and New York prices rule in the market.

The following table shows the relative volume of imports from the United States by articles most in demand, there being no old European merchandise in stock in Medellin at the time the present report was written:

Articles.	Percentage from United States.	Articles.	Percentage from United States.
Textiles.....	60	Typewriters, specialties.....	100
Hardware.....	100	Musical instruments.....	100
Steel products.....	100	Hats (felt).....	40
Chemicals.....	100	Men's wear.....	90
Medicines.....	90	Women's fancy wear.....	75
Paper products.....	100	Toilet articles.....	80
Machinery.....	100	Shoes.....	100
Kitchen ware.....	100	Jewelry, watches, etc.....	40
Tools, etc.....	100	China, dishes.....	100
Dyes.....	100		

NOTE.—Percentages given are approximate and are for Medellin market only. Great Britain is the chief competitor in textiles and men's wear, Italy in hats, and France in women's wear, toilet articles, and jewelry.

METHODS OF DISTRIBUTION.

The importing business of the Medellin commercial district has always been carried on through commission houses which take care of orders for all kinds of merchandise. Heretofore the amount of business has been too limited, except in textiles, to enable the Colombian importer to deal directly with manufacturers. Moreover, the American market has not been sufficiently well known. Therefore, the Colombian importer relies upon his commission house in New York to fill his orders, make shipments, and take care of all details of the business. Several of these houses established in New York have ample capital; agencies are maintained in Manizales, Cali, Bucaramanga, and even in Bogota, and they are doing the most business with Colombian merchants. These native export houses have the advantage of knowing the country, the credit rating of their clients, and all market and credit requirements. They also act as agents for the handling of all articles of export from Colombia, and do a private banking business in connection with merchandising.

The maintaining of resident agents is an important factor in the future of American export trade. European houses have maintained such commercial organizations, which have been very successful in securing and holding trade for these countries. Agencies of groups of manufacturers operating under the Webb-Pomerene law might well be established in Colombia. Under no circumstances, however, should retailing be attempted by these agencies, but the importing native merchants should be protected and assisted in every possible way. The work of these resident agencies then would be to sell goods to importers, or even to carry standard stocks of goods. Highly trained and experienced men should be required as managers of such agencies.

BOGOTA AND COMMERCIAL DISTRICT.

LOCATION, AREA, AND POPULATION.

The commercial district of Bogota, the most extensive and populous commercial section in Colombia, is located in the central part of the country near the eastern fringe of the inhabited portion. It is composed of the Department of Cundinamarca, in which the city of Bogota, the trade center of the district and the national capital, is located; Boyaca to the north and northwest of Cundinamarca; Tolima to the west and southwest; Huila to the south; and a portion of the Department of Santander, although, strictly speaking, Santander is not a part of the commercial district of Bogota.

Cundinamarca has an area of 13,000 square miles, about one-third that of Antioquia, the largest and most populous Department in the inhabited portion of Colombia. The estimated population of 795,000, however, is nearly equal to that of Antioquia. Boyaca has an area of 17,654 square miles and an estimated population of 645,000, the largest population of any Department with the exception of Antioquia and Cundinamarca. Tolima has an area of 10,811 square miles and an estimated population of 310,000. Huila has an area of 8,687 square miles and an estimated population of 170,000.

TOPOGRAPHY, CLIMATE, AND RAINFALL.

Topographically the outstanding features of this commercial district are the Magdalena Valley, in the Departments of Santander, Tolima, and Huila; the high table-land of Bogota in Cundinamarca; the plains of Sogamoso in Boyaca; and the uninhabited plains of the Orinoco watershed east of the eastern Cordillera. The valley of

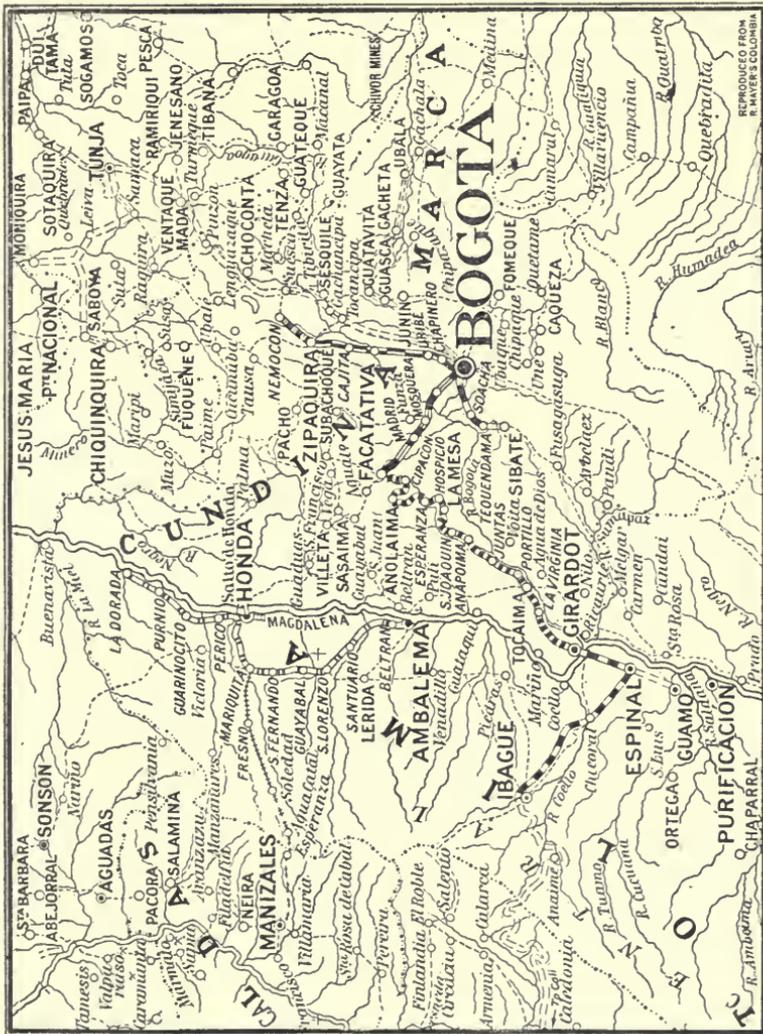


Fig. 15.—Map of Bogota and Manizales regions.

the Magdalena is a tropical region containing little level or useful land. The section near the headwaters of the river in the Department of Huila is subject to heavy rains. The lower Magdalena region has two dry and two rainy seasons, the longer dry season extending from November through March and the shorter from June through July, the longer rainy season extending from August through

October and the shorter from April through May. The region is also subject to terrific windstorms.

The table-land of Bogota, in reality part of the central section of the eastern Cordillera, is perhaps the most remarkable topographical feature of all Colombia. It is a fertile plain about 300 miles long, 50 miles wide, and approximately 9,000 feet above sea level. Rains are frequent throughout the year, and the temperature averages about 45° or 50°. Frost is unknown. The plains of Sogamoso, also part of the central zone of the eastern Cordillera, are similar to the table-land of Bogota, but have an altitude of only about 5,000 feet, and therefore are somewhat warmer.

RACIAL CHARACTERISTICS OF INHABITANTS.

Although the infusion of Spanish blood is evident in the larger towns, the bulk of the population in the region around Bogota and Tunja is Indian in all characteristics. The Negro strain is pronounced in the hot country of the Magdalena Valley. In the main, business and politics are in the hands of the descendants of the Spaniards, although there is a small middle class, sometimes called "mestizo," derived from a mixture of Spanish and Indian blood, and comprising the small shopkeeper, artisan, etc. The more or less pure-blooded Indians work on the plantations, in the coffee groves and wheat fields, and are the common laborers in the towns of the highlands.

As the Indians of this district are apparently apathetic to modern influences, little progress has been made toward their education. The influence of immigration from Antioquia is seen throughout the Bogota district. The Antioquians travel to Boyaca to engage in cattle raising and wheat farming, and carry on trading in every locality. Many Medellin firms have established branches in Bogota.

EDUCATION.

Public schools are free, but attendance is not obligatory in Colombia. In 1912 Cundinamarca had 563 primary schools, with 27,027 pupils; Boyaca, 346 schools, with 17,577 pupils; Huila, 124 schools, with 7,589 pupils; and Tolima, 206 schools, with 9,062 pupils. In addition to its primary schools, Colombia has some 230 high schools, with a total attendance of approximately 20,000. The largest of these high schools are the two in Bogota, each with about 600 pupils. The literate population does not exceed 500,000.

The National University of Bogota, the largest university in the country, had 536 students in 1912. Not more than 30 per cent of the pupils, however, ordinarily complete their courses. There are also an art school and a conservatory of music in Bogota. The lack of agricultural training, the neglect of scientific studies, and the absence of manual and industrial training are generally conceded to be the most serious defects in the educational system of Colombia.

LIVING CONDITIONS IN BOGOTA.

Small villages are numerous in Cundinamarca and Boyaca, but Bogota is the only large city in the whole commercial district. It is situated on the table-land of Bogota near the higher Cordillera on the east and has an altitude of nearly 9,000 feet. Although the cli-



FIG. 16.—CALLE REAL, BOGOTA.

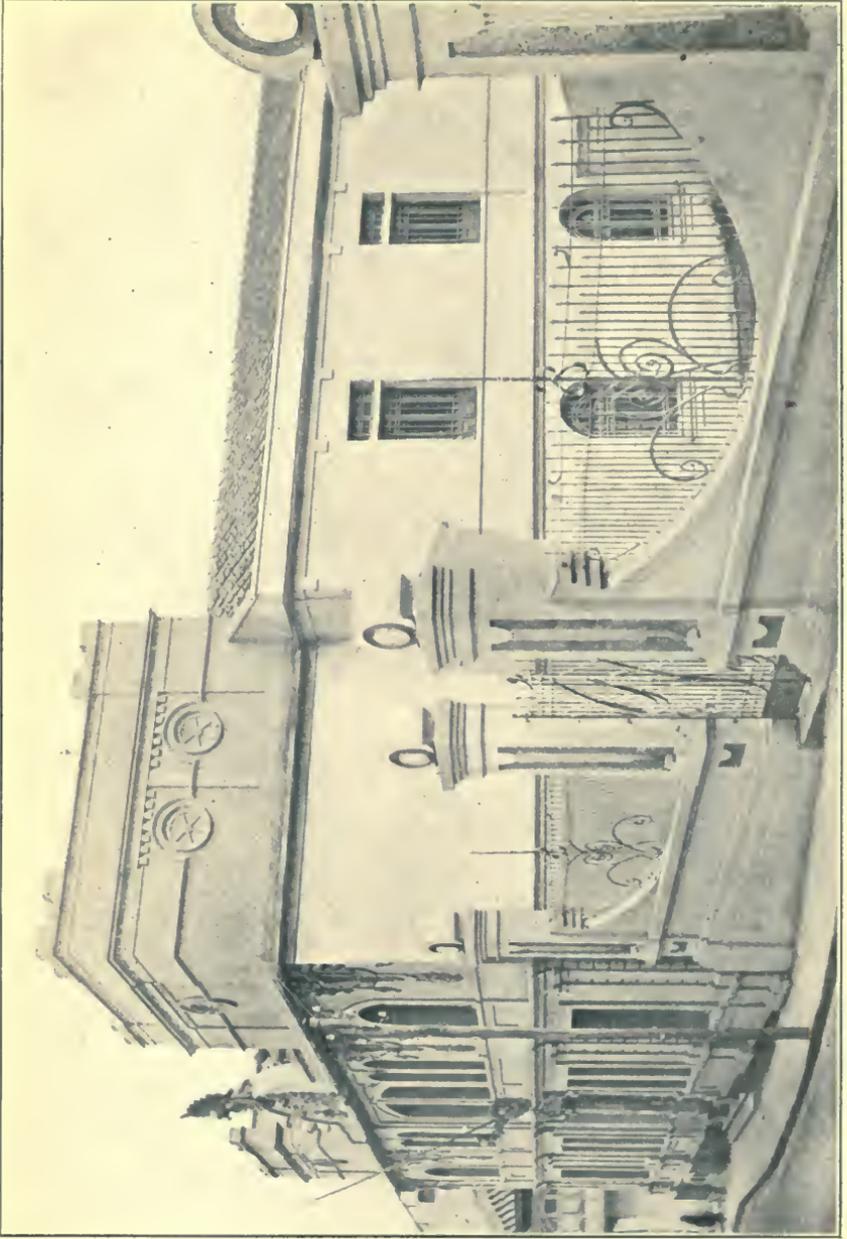


FIG. 17.—SCHOOL OF MATHEMATICS AND ENGINEERING, BOGOTA.

mate is agreeable on the whole, the early mornings and evenings are quite cool. Penetrating rains and heavy mists are frequent throughout the year, but the houses lack heating arrangements of any sort.

As a rule, food in Bogota is cheaper than in the United States. Good butter, ham, bacon, and cheese are produced locally, and vegetables produced in the Temperate Zone are plentiful and cheap. Well-trained servants may be had for 5 to 10 Colombian dollars (1 Colombian dollar = \$0.9733 at normal exchange) per month, and rents seem to be lower than in the United States. Clothing, too, is cheaper if made from domestic cloth by the local tailors, who turn out presentable suits. There is considerable social life among the upper classes, and the people of Bogota welcome foreigners. A new residential suburb, Chapinaro, which is being rapidly built up, has some fine houses, although it lacks paving and proper drainage facilities.

PUBLIC-UTILITY SERVICE IN BOGOTA.

The present tendency is toward municipal ownership of all public utilities. Those now operated by the city are paying good returns, and there seems to be little question of the profit to be derived from the extension of this service. Better water-supply and drainage systems and more paving are needed. The present water-supply and drainage systems are so inadequate that typhus fevers are common. With the exception of the main street and a few blocks in the business section which are paved with asphalt, the streets are either paved with cobblestones and are constantly out of repair or are not paved at all. The street-railway system is owned by the municipal government and is paying good returns. An extension is badly needed.

The electric light and power plant is owned by a Colombian company capitalized at 1,153,200 Colombian dollars. The plant is located 25 kilometers (1 kilometer = 0.62 mile) from Bogota below the Falls of Tequendama on the Bogota River. The transmission lines cover 73 kilometers, and current is supplied to 50,000 lamps for private use and more than 2,000 for public use and street lighting.

Telephone service is supplied by an English company with a capitalization of £37,000 (£1 = \$4.87 at normal exchange). Annual dividends have averaged 16 per cent, and all indebtedness, with the exception of a small margin, has been retired. There are 2,000 instruments in use now, but as this number is no longer adequate, a movement has been started to have the system taken over by the city and extended with additional long-distance service for the entire district.

BANKS AND INSURANCE COMPANIES.

Bogota has four native banks, one American bank, and two native insurance companies. One of the native banks—the Banco de Colombia—was started as a Government agency, but it is now operated solely as a private enterprise, without any unusual privileges. The other Colombian banks have never had any Government connection. All the local banks are conservative.

Colombia has no system of commercial discounts, and the laws preclude the use of mortgage loans to any extent. There has never been sufficient capital to finance the industries of the country, and

interest rates have been high. The establishment by the Mercantile Bank of the Americas of 11 branches in Colombia has tended to lower interest rates and to increase the scope of banking activity and the assistance rendered to commerce and business. The following figures, taken from the published statements of the Mercantile Bank of the Americas, in Bogota, illustrate the rapid growth of the business of this bank, which is said to have a volume of business greater than that of all the other Bogota banks put together: On December 31, 1918—cash and gold in mint, 334,220 Colombian dollars; loans and discounts, 2,734,395 Colombian dollars; and deposits, 341,531 Colombian dollars; on March 31, 1919—cash and gold in mint, 2,455,628 Colombian dollars; loans and discounts, 4,335,406 Colombian dollars; and deposits, 1,225,172 Colombian dollars.

TRANSPORTATION BETWEEN BOGOTA AND THE COAST.

At present it requires from eight days to a month for a person to travel from the coast to Bogota. Often coffee and hides shipped from the interior do not reach the coast for four or even five months, and imports of merchandise from the coast to the interior fare little better. Merchandise intended for Bogota is shipped from the coast up the Magdalena to La Dorada, the head of navigation of the Lower River, a distance of 987 kilometers from Barranquilla; from La Dorada via the Dorada Extension Railway around a series of rapids to Beltran, on the Upper River, a distance of 111 kilometers; from Beltran by smaller steamers to Girardot, a distance of 152 kilometers; from Girardot via the Girardot Railway to Facatativa, on the western edge of the table-land of Bogota, a distance of 125 kilometers; and from Facatativa via the Sabana Railway across the table-land to Bogota, a distance of 40 kilometers; making a total of 1,415 kilometers.

The Magdalena, always a slow and expensive means of communication, is becoming worse year by year. During the dry season boats can not carry half their normal cargo and suffer numerous delays on the Lower River. Navigation often has to be suspended entirely on the Upper River. Unfortunately, the dry season coincides with the coffee harvest, and consequently coffee, the most important article of export from the Bogota district, is held up all along the river waiting for high water. In short, the business and progress of the interior of Colombia is being retarded by the necessity of using the Magdalena, and the construction of a railway from Bogota to the coast is constantly becoming more imperative. Several possible routes have been considered, but the so-called Pacific Route is considered the most feasible by the Government. As now planned, this route will extend from Bogota to Facatativa and Girardot over the railways now in operation, from Girardot to Ibague over the Tolima Railway (almost completed), from Ibague via a line to be built over the Quindio Pass to Palmira, and from Palmira to Buenaventura over the Pacific Railway, now in operation.

FREIGHT TRAFFIC ON MAGDALENA RIVER.

Freight charges between Bogota and the coast are excessively high. The delivery of a ton of wheat produced in the Bogota region to the flour mills at Cartagena or Barranquilla costs about 72 Colombian

dollars, and it costs 60 Colombian dollars to send a ton of coffee from Cundinamarca to the coast for export. The shipment to Bogota of heavy merchandise, such as hardware and small machinery, costs approximately 90 per cent of the New York invoice value.

Despite these high freight rates, however, the Magdalena service is entirely inadequate to handle the freight traffic during the coffee-harvest season, which is also the buying season for the merchants of the Bogota district. The Pool Fluvial maintains 10 steamers on the Lower River which, during seasons of high water, can handle every 20 days about 6,000 tons of through up-river freight and 8,000 tons of down-river freight. During this same time the 8 steamers of the Upper River service can each make six round trips, in good season, bringing down to Beltran 5,796 tons of freight and carrying from Beltran to Girardot 4,500 tons. Also, during this same period as much as 2,000 tons of freight often arrive at Honda from southwestern Cundinamarca and 4,000 tons from the Department of Caldas and the mountains of Tolima. In other words, during the coffee-harvest season, if there is sufficient water in the Upper River, 11,796 tons of export freight may arrive at La Dorada every 20 days, but only 8,000 tons can be shipped farther down. This condition causes great delay in the transfer of freight at this point.

DORADA EXTENSION RAILWAY.

The Dorada Extension Railway is owned by an English company with a capital of 350,000 Colombian dollars and an outstanding bonded indebtedness of 350,000 Colombian dollars. The cost of operation is the lowest of any railway in Colombia with one exception. During 1917 the railway carried 125,145 passengers and 84,045 tons of freight. The gross returns for the year were 534,745 Colombian dollars and the net returns 326,286 Colombian dollars. The railway traverses a comparatively level country, has no tunnels, and only one long bridge. The roadbed is dirt filled for the most part and not well graded. The company owns 78 freight cars with a total capacity of 1,030 tons. Its locomotives are of sufficient size, but in bad condition, and can only pull trains of 8 to 10 cars with a total load of approximately 120 tons. Wood is used for fuel.

At La Dorada and Beltran there are no docks or other freight-handling facilities except a large crane for lifting heavy machinery, and freight is transferred up and down the steep banks of the river between the railway and the river on the backs of native workmen. The sheds at Beltran are more than sufficient for the storage of freight under normal conditions, and during the coffee-harvest season of 1919 held some 2,000 tons of export freight and about 8,000 tons of import cargo. A concession for an extension of this railway from Beltran to connect with Girardot has been secured by a Bogota firm. The country through which this extension will pass is practically level, and the advantages to be derived from the elimination of the trip on the upper Magdalena are obvious.

GIRARDOT RAILWAY.

The Girardot Railway climbs from Girardot, elevation 325 meters (1 meter = 3.28 feet), to the edge of the table-land of Bogota, elevation 2,729 meters, with a maximum gradient of 4 per cent for a short distance. Landslides are frequent along the road, which is often

out of commission for several days at a time during the rainy season. The railway is owned nominally by an English company capitalized at £900,000. It has been operated at a loss and is mortgaged beyond its actual value. One-third of the capital stock is held by the Colombian Government, which also guaranteed several bond issues and is said to have spent 14,800,000 Colombian dollars on the road. Additional payments, however, must be made before it can assume control. The gross receipts for 1918 were 752,352 Colombian dollars and the net returns 316,869 Colombian dollars, out of which 225,520 Colombian dollars were spent in repairs and new equipment. The gross returns for 1918 showed a gain of 32,827 Colombian dollars over those of 1917.

The company owns 17 locomotives, 12 of which are in good or fairly good condition, 26 passenger coaches, and 82 freight cars, with a total capacity of 1,625 tons. About half of the freight cars are in need of repair.

SABANA RAILWAY.

The Sabana Railway, traversing a level and populous district, has considerable local traffic. The roadbed is dirt filled for the most part, but well graded and ditched. The track is of meter gauge. There are no tunnels and only one small bridge. The road is operated by the *Compañía del Ferrocarril de la Sabana*, practically all of whose stock is controlled by the Colombian Government. During 1917 the road carried 653,881 passengers and 116,499 tons of freight. The gross returns for the year were 329,051 Colombian dollars and the net returns 161,453 Colombian dollars.

The difficulty of navigating the upper Magdalena and the high cost of operating the Girardot Railway have induced the Colombian Government to consider the extension of the Sabana Railway to Puerto Nino, 50 kilometers below La Dorada, on the Lower River. A survey was made in 1917, and since that time grading has been completed and the rails ordered for the section between Facatativa and Dintel, a distance of 13 kilometers. The total distance from Facatativa to Puerto Nino is 228 kilometers, and the total average cost per kilometer is estimated at 25,000 Colombian dollars. The population of this district is approximately 95,000; agriculture and cattle raising are the principal industries. The region contains deposits of coal and iron and numerous waterfalls for the development of hydroelectric power. Pacho is the largest town along the proposed route.

DISTRIBUTION OF GOODS FROM BOGOTA.

From Bogota goods are distributed throughout Cundinamarca and Boyaca, often by pack mule or ox, despite the excellent wagon road leading out from the city and the two short railways, both of which render good local service. One of these railways, the Northern, extends north to Nemocon, a distance of 32 kilometers; the second, the Southern, extends southwest to Sibate, a distance of 30 kilometers. The wagon road, the Great Northern Central Highway, connects Bogota with Quinquira and Tunja, the two most important towns of the region north of Bogota. This wagon road, though not much used for wagons or mule carts, is perhaps the most important means of communication which Bogota or that part of the country possesses, with the exception of the railways connecting Bogota with the upper

Magdalena. It is about 200 miles long and passes through the most developed and populous region of the entire district. Passengers travel in automobile stages from Bogota to Santa Rosa, where mules must be taken for the journey into Santander. Zipaquirá is the connecting point between the Northern Railway and the Great Northern Central Highway.

NORTHERN AND SOUTHERN RAILWAYS.

The Northern Railway was built, primarily, to tap the salt mines at Zipaquirá and the coal mines at Nemocon, but was to be extended ultimately to Quiquinquirá, where it was to connect with the proposed southern extension of the Puerto Wilches-Bucaramanga Railway. The portion of the railway between Bogota and Zipaquirá belongs to the Colombian Northern Railway Co. (Ltd.), and the 15 kilometers between Zipaquirá and Nemocon belong to the Colombian Government, which is interested in the extension to Quiquinquirá.

The road has a meter gauge and a heavily graded and well-filled roadbed. There are no tunnels and only three small bridges. The equipment consists of 13 locomotives, 6 new and all of American manufacture; 36 passenger cars, all of American manufacture; and 83 freight cars. During 1917, 612,594 passengers were carried and 90,459 tons of freight. The gross receipts were 402,332 Colombian dollars and the net receipts 262,791 Colombian dollars. This railway has a lower operating expense than any other in Colombia.

The Southern Railway was built to tap the coal beds near Tequendamá and the timberland of the region. It traverses a populous and productive section. The track has a meter gauge, and the roadbed is rock ballasted and heavily graded. The Colombian Government purchased the railway in 1905 for about £60,000, and is now considering three possible extensions, one of which is to tap the coffee region southwest of the table-land of Bogota. During 1918, 173,730 passengers were carried and 59,855 tons of freight. The gross receipts were 133,381 Colombian dollars, and the net returns were 58,697 Colombian dollars.

TOLIMA RAILWAY.

Merchandise intended for Tolima comes up the Magdalena to Honda, and is distributed from there, or continues up the river to Girardot, and is sent inland via the Tolima Railway, now building toward Ibagué, the capital of the Department. From Ibagué it is sent across the Quindío Pass by pack train. Merchandise intended for Huila is sent up the river from Girardot by launch, raft, or even canoe, or sometimes during the dry season by pack train to the town of Neiva, capital of Huila.

The Tolima Railway starts at Flandes, across the Magdalena from Girardot, and extends toward Ibagué, which is situated at an elevation of 1,299 meters near the approach to the famous Quindío Pass across the central Cordillera. It has been completed to Asiestadero. Coffee is the principal article of export freight from this district. Up to 1916 the road cost the Colombian Government 750,000 Colombian dollars, and during that year Congress authorized a loan of 400,000 Colombian dollars, which it was thought would finish the work to Ibagué. It has been found, however, that an additional 600,000 Colombian dollars will be required for this work, and 100,000

Colombian dollars for equipment and rolling stock. Also a steel bridge will have to be built over the Magdalena River to connect with the Girardot Railway, and this will probably cost 600,000 Colombian dollars.

During 1917, 169,407 passengers were carried and 9,857 tons of freight. The gross returns were 49,090 Colombian dollars and the net returns 3,635 Colombian dollars. Considering the high cost of construction, the limited production of the region served, and other adverse conditions, it seems doubtful whether the local traffic will pay an adequate return on the investment. As a connecting link in the Pacific Route, however, the railway is important. An increase in traffic may be expected when the road is completed to Ibague.

PROPOSED NEW RAILWAY BETWEEN IBAGUE AND AMBALEMA.

According to a report by Consul C. E. Guyant, the important firm of Pedro A. Lopez & Co., of Bogota, signed in May, 1919, a contract with the Department of Tolima for the construction of a railway between Ibague, the capital of the Department, and Ambalema (Beltran), on the Magdalena River, to connect at its river terminus with the Dorada Railway and at the other end with the new Girardot-Ibague line, which is a link in the projected Pacific Railway. The importance of the projected line is that it will do away with the necessity for using the upper Magdalena River as a link in the route to Bogota and will provide an all-rail route from La Dorada (head of navigation on the lower Magdalena) to the capital. It will also give the Department of Tolima direct connection with the main river traffic. By the terms of the contract (dated May 22, 1919), work was to begin within three months and to be completed within four years.

AGRICULTURE.

There is practically no waste land on the high table-land of Bogota. The soil is a rich black loam, which retains moisture, and the region is well drained by the Bogota River. Wealthy residents of Bogota own most of the farm land, the value of which varies according to the nature of the soil and the location, the most valuable being that to the north, west, and southwest along the railways radiating from Bogota. This is the one section of Colombia where modern agricultural machinery, such as American disk plows, tooth harrows, cultivators, and harvesting and milling machinery, is used. Labor is plentiful and cheap. The Indian peon is provided with a hut on the hacienda and a small patch of ground on which he may grow his own foodstuffs.

It is estimated that Cundinamarca has some 1,550,000 hectares (1 hectare = 2.47 acres) under cultivation, and that the crops produced annually are worth approximately 33,000,000 Colombian dollars. The Bogota district is capable of great agricultural expansion, especially the northern portion toward Boyaca, but this expansion has been retarded by the lack of cheap transportation between this district and other parts of Colombia needing wheat, cattle, and the other products of the district.

WHEAT.

Cundinamarca is estimated to have had some 30,000 acres planted to wheat each year since 1916. The acreage yield is high, and in 1919 the Department is said to have produced more than 1,166,000 bushels, valued at 4,250,000 Colombian dollars. The average selling price per bushel for the year was 3.65 Colombian dollars, the high price about 4.30 and the low 2.15.

COFFEE.

Coffee is the chief product of the mountainous region between the table-land of Bogota and the Magdalena Valley. Methods of cultivation and harvesting are more modern here than elsewhere in Colombia, and labor is abundant and cheap, but the industry is hampered by the poor transportation facilities of the district. Cundinamarca is said to have 32,900,000 coffee trees, covering an area of approximately 89,500 acres. The yield for the Department in 1918 was about 42,200,000 pounds, valued at 3,804,000 Colombian dollars, and the 1919 yield, the heaviest ever reported, was at least 25 per cent higher. The coffee from this district, known in the world's markets under the trade name of Bogota, has an excellent flavor and aroma, and commands a higher price than the Brazilian product.

Coffee grows best at an altitude of 5,000 feet, but does well up to an altitude of 7,000 feet. Trees begin to bear when they are 3 or 4 years old, are at full bearing at the age of 6 years, and continue bearing until 16 or 20 years old. The average yield of 1 pound of cleaned coffee per tree has been increased in some instances to as much as 2½ pounds where the land has been cultivated, kept well cleared of small undergrowth, and, when necessary, irrigated. Although some coffee picking goes on throughout the year, there are two regular harvest seasons, the principal one from March through May and the second from October through November. Women and children are employed to do the picking.

Prior to 1919 the small producers usually sold their coffee, uncleaned, to the wealthy owners of large plantations or to local merchants, in either case receiving only a small margin of the export selling price. The arrival of foreign buyers to compete with these local traders in 1919 enabled the small producers to obtain a higher price for their product, and this in turn stimulated production. New plantations are being set out and old ones enlarged, so that Cundinamarca's coffee production should be doubled in the next 10 years unless some unforeseen obstacle develops.

OTHER AGRICULTURAL PRODUCTS.

The Bogota district produces a wide variety of agricultural products for local consumption. Bananas, sugar cane, tobacco, yuccas, and other tropical products are raised in the Magdalena Valley and in the river valleys of the mountainous country surrounding the table-land of Bogota. In the higher altitudes, above 6,000 feet, nearly all the products of the Temperate Zone, including potatoes, apples, and many other vegetables and fruits known in the United States, are raised. With the exception of wheat, Huila and Tolima produce enough foodstuffs for their own use but none for export to

other Departments. Some cacao, rubber, and cotton are grown in the Bogota district, but these products are still more or less of an experiment.

LIVE-STOCK INDUSTRY.

The live stock of Cundinamarca is estimated to be worth more than 50,000,000 Colombian dollars. No recent estimates for Boyaca are available; it possesses level and fertile land suitable for cattle raising, but as its present population is largely Indian its future development depends upon immigration from Antioquia and upon improved transportation facilities. The plains across the eastern Cordillera to the southeast of Neiva are reported to be well suited to cattle raising. They are more healthful, easier of access, and more adequately watered than those directly east of Bogota. The Cordillera is easily crossed at this point, and a number of Bogota capitalists have become interested in the region.

More attention has been paid to the breeding and care of cattle in the Bogota table-land than elsewhere in Colombia. Hereford and Durham stocks predominate, and in weight the beef cattle compare favorably with those raised in other countries. Considerable barley and some alfalfa are raised for fodder. Cattle are becoming more valuable each year, a full-grown steer now selling for as much as 80 Colombian dollars, about twice the price received a few years ago. Some sheep and goats are raised in this district, and there is a good local demand for wool at prices equal to the high figures commanded by the imported product. The sheep industry is capable of great expansion in the open mountains surrounding the high plateau, where there is an abundance of short grass and good water, but little is known as yet about the proper care or breeding of sheep.

Before the war, Colombia raised few hogs and imported great quantities of lard from the United States, but hog breeding has now become general throughout the country, and enough hogs are raised to supply the local demand. Prices are high. Mules became scarce during the coffee harvest of 1919, and their value increased from an average price of 60 to 75 Colombian dollars to as much as 200 Colombian dollars for good pack animals.

MINING.

EMERALDS.

Emerald mining is a Government monopoly in Colombia. The best-known mines—the Muzo and Cosquez—are located in Boyaca about 90 miles northwest of Bogota; a third, the Somondoco mine, is about 35 miles east of Bogota; and a fourth deposit, the Cuincha, across the Minero River from the Muzo mines. The two last-named deposits are said to be as rich as the more famous mines of Muzo and Cosquez, but are not easily accessible.

The Muzo deposits lie in a valley on a spur of the eastern Cordillera, two or three days' journey on muleback from Bogota over bad trails through rough country. The emeralds occur in calcite veins traversing black carboniferous limestone. To follow the veins, steel bars and shovels are used to cut down banks, great care being exercised not to injure the emeralds as the veins are approached. No engineering skill can determine beforehand the approximate value of any vein or deposit, but wherever a vein shows it is followed,

even for years, and once a productive formation is found it is worked night and day until exhausted, sometimes over a period of years, as at Muzo. The mines are heavily guarded by military police, and the miners constantly watched and searched.

The Muzo and Cosquez mines have produced as much as 800,000 carats of emeralds of 15 different grades in one year. Since the war has curtailed the market for emeralds, the Government has done little to develop new veins and is said to be holding a large number of stones in Paris awaiting a more favorable market. A Parisian firm of international reputation is also holding a large deposit of emeralds from the Colombian Government as guaranty of a loan. There is no evidence that the Colombian emerald deposits are likely to become exhausted for the next few hundred years.

SALT.

The region north of Bogota contains enough salt to supply Colombia for centuries. It occurs in nearly every district between Bogota and Pacho, to the northwest; around the towns of Sesquite, Chita, and Munque, to the northeast; and at Cuamral and Upin. The Cuamral and Upin mines are not extensively worked, however, because of the lack of transportation facilities. Salt mining is a Government monopoly and one of the chief sources of national revenue. There are eight important Government-owned mines, the total output from which is sold to private firms who refine it by a process of evaporation. These eight mines had a total production valued at 965,894 Colombian dollars for 1918; the total expense of operation amounted to 144,651 Colombian dollars, and the net returns to 821,243 Colombian dollars.

The most primitive methods of mining are employed at all these mines with the exception of the Zipaquira mine, where improvements are being made. The Zipaquira mine, the most important of the mines, is recorded to have produced a total of 739,220 tons of commercial salt between 1778 and 1907. Engineers report that it contains 500,000,000 cubic meters (cubic meter = 3.28 cubic feet) of salt, having a weight of more than a billion kilos (1 kilo = 2.2 pounds).

COAL.

Coal is found through the Bogota region and as far north toward the Magdalena Valley as the town of Velez in Santander del Sur, and as far to the northeast in the eastern Cordillera as the towns of Villavicencio and Guaduas in the Guaduas Valley. The coal is bituminous and uniformly good in quality. An average analysis shows the following composition:

	Per cent.
Volatile.....	23.4 to 31.2
Ash.....	7.65 to 7.6
Sulphur.....	0.79 to 0.99
Free carbon.....	63.68 to 70.1

B. t. u., 14,202 to 14,500.

The ordinary mining laws of Colombia do not apply to coal lands. Deposits found on unoccupied lands belong to the Government and may be worked only with its consent; but coal deposits on lands owned by private individuals may be worked independently. The most important mines now being worked are those at Zipaquira,

which supply the salt-evaporation plant at that place with fuel, and those at Nemecon which supply the railways of the Bogota table-land. The city of Bogota is supplied from exposed ledges of coal on the mountain side directly above it, and the Girardot Railway from the Cipacon mine below Facativa. The Cipacon mine is said to produce the best coal, that with the highest content of free carbon and the least volatile matter. The beds are a coarse sandstone formation interbedded with a clay shale. Three seams of coal usually occur, varying in thickness from 0.6 meter to 1.2 meters and aggregating 2 meters as an average width.

IRON.

Iron is found in the neighborhood of many of the coal deposits of the Bogota district, but the ore has been worked at only two places, at Pacho and La Pradera. The first of these mines has been abandoned, and little progress has been made at the second despite the extensive investment made there a few years ago. Little is really known of the iron deposits, but the ore is said to be refractory and difficult to smelt, and it seems unlikely that the deposits will be a factor in the industrial development of Colombia for many years to come.

MANUFACTURING.

With the exception of the salt-refining plants, a good-sized tobacco factory at Ambalema, and numerous small cigar and cigarette factories, the manufacturing plants of the Bogota district are all located in or near Bogota. These factories are producing flour, chocolate, candy, soap, cotton and woolen cloth, shoes, leather, and crackers, all of which compete successfully with the imported articles.

Bogota has for so many years imported all sorts of manufactured products that the better classes look with suspicion on the domestic articles, even though they may be just as good as the imported ones and a great deal cheaper. Nevertheless, the demand for domestic products of all kinds is gradually increasing. Domestic manufactures are highly protected by existing import duties, and there is undoubtedly a good opportunity to develop manufacturing industries. Leather, iron and steel products, paper and paper products, bags and sacks, and woolen and cotton textiles are needed.

Flour, which has been used only in the larger towns heretofore, is gradually replacing corn meal among the lower classes throughout Colombia. Bogota exports flour to the coast, and to Antioquia, Caldas, and El Valle. In 1918, at the instance of the influential Society of Agriculture of Bogota, the import duty on wheat was increased to such an extent that it became impossible for the coast millers to import wheat at the current prices obtaining in the United States, pay this duty, and compete with the millers of Bogota. However, the flour sent down to the coast from Bogota was expensive, much of it was spoiled in transit, and the quantity was insufficient; as a consequence the import duty had to be reduced again in 1919. A large, new flour mill is being erected in Bogota that will increase production and help relieve the shortage felt by the entire country.

The five chocolate factories of Bogota cater only to the local demand, since nearly every town has its own chocolate factory. Chocolate roasting and cleaning machinery is made in Medellin. The larger factories make various candies and bonbons of good quality,

which are replacing the imported articles. Good domestic chocolate candy retails for 80 cents per pound of 500 grams (1 gram = 0.002 pound), whereas the imported article has to be sold for at least twice that price. Chocolate is used extensively as a beverage throughout Colombia, and especially in Bogota. The retail price of the local product is only about 42 cents per pound of 500 grams. The local cracker and biscuit factories make a great variety of crackers, for which there is a large and increasing demand. Formerly crackers were imported in small quantities and sold at high prices.

A local textile factory makes woolen cloths, which compare favorably with the best English weaves, and a medium-weight, black broadcloth, which is being constantly improved upon, though it can not compare with the imported article in finish. The suitings retail at 5 Colombian dollars per meter (1 meter = 1.09 yards) of standard double-width cloth. Although at present domestic woolens do not supply one-tenth of the demand and large quantities are imported, it seems probable that the local production will be so increased in the near future that it will encroach seriously upon the market for the imported article.

There are also hundreds of small factories making coarse, loosely woven woolen blankets and the square "poncho" blankets worn by the lower and middle classes. Domestic blankets retail for 4.50 to 6.50 Colombian dollars apiece and ponchos for 2 to 6 Colombian dollars, depending upon the size, weight, and color design.

Bogota has one fair-sized shoe factory with modern equipment and a number of small shops that make good-looking and well-finished shoes. These shops ordinarily use imported upper leather and trimmings, but native sole leather, which is of inferior quality. The people of the middle and upper classes wear the locally manufactured shoes, which retail at 6 to 8 Colombian dollars per pair, whereas imported shoes of good quality sell at 12 to 16 Colombian dollars per pair. Ladies' fancy slippers and dress shoes sell better than other kinds of imported shoes. The leather tanned in Colombia has always been of a poor quality, but a modern tannery, recently established in Bogota, is producing excellent leather of many different kinds and grades. The demand for this leather far exceeds the supply, and the tannery is soon to be enlarged. The general prosperity has increased the demand for leather. Middle-class people are wearing more shoes, and more saddles are used, so that the industry has a promising future.

A number of small soap factories manufacture common laundry soap, and a few are beginning to make certain cheap grades of scented toilet soap, which is gradually replacing the imported article. The chemicals and other materials required by these factories, except the animal and vegetable fats, must be imported. The factories have little modern equipment.

VOLUME OF TRADE.

The market for coffee, Colombia's principal export, was poor during the war, but after the signing of the armistice the demand increased rapidly and the price of coffee in New York rose proportionately. The phenomenal crop of 1919 was sold at unheard-of prices, and the people flocked to the local markets to purchase all

sorts of merchandise. This sudden demand precipitated a mad rush among the importers to obtain supplies. The average annual volume of imports into this district may be estimated to be worth about 9,000,000 Colombian dollars.

The city of Bogota has some 240 firms, each capitalized at 10,000 Colombian dollars or more, who are direct importers of foreign merchandise and materials. Three of the oldest and largest textile importers are each capitalized at more than 1,000,000 Colombian dollars, three or four others each have a capital of at least 500,000 Colombian dollars, and 15 have capital ranging between 100,000 and 300,000 Colombian dollars. Eighteen of the 240 firms are factories that import raw materials of various kinds. Five are railways which import rails and various sorts of railway equipment, including paints and lubricants.

TRADE METHODS.

The bulk of the trade with Colombia has always been in the hands of export commission houses, who supply their customers with a wide variety of miscellaneous merchandise. At the same time these houses aid in marketing their customers' shipments of Colombian produce to the United States. In addition to the European and American export commission merchants, and possibly of even greater importance, are the Colombian export commission firms with headquarters in America or Europe and offices and sample rooms throughout Colombia. (See p. 342.)

Resident sales agents have been more successful in Bogota than elsewhere in Colombia. These men sometimes represent a single large commission firm engaged in a general export business, sometimes one which specializes, probably in textiles, sometimes several firms, and often a group of manufacturers with whom the representative has exclusive agency contracts for his territory. Bogota also has a few old and private commission and banking firms. These firms usually specialize in some line, and are often interested in a number of industrial and trade enterprises, for which they do all the buying. They also buy native products for export.

IMPORTANCE OF CARE IN PACKING.

Special care in packing is necessary if merchandise is to reach Bogota in good condition. A damaged shipment is a real calamity to a Colombian merchant. It means not only the loss of the sale of the goods and consequently a loss of profit, but it means the loss of interest on his money (in all probability he has had to accept the exporter's draft before the arrival of the shipment), loss of the money paid out for import duties, and endless trouble if he is to succeed in getting his claims adjusted.

The difficulties of transportation and the fact that import duties are assessed on the gross weight of packages have resulted in some unusual methods of packing which might well be adopted more generally. One Colombian tobacco factory packs its products in cheap light-weight trunks, protects the trunks with burlap or sacking coverings, and charges for the trunks as well as their contents. The French, prior to the war, packed certain kinds of merchandise in light but strong fiber cases, for which a charge was made. (See p. 386.)

POSITION OF AMERICAN AS COMPARED WITH EUROPEAN GOODS.

Many of the older and larger firms in Bogota are exceedingly conservative and are still doubtful as to the advisability of substituting American merchandise for the European goods whose merits they know. Some of them have asked for and failed to obtain exclusive agency privileges for certain lines of American merchandise, and resent the fact that their high credit rating does not gain for them special protection and privileges not accorded to the newer and smaller firms.

Before the war the Bogota merchants were unfamiliar with American goods, and were inclined to view American trade methods askance. They felt that, in general, European staple commodities were superior to American, and they resented the inattention and general ignorance of certain American exporters and manufacturers regarding things Colombian. Europe needed the Colombian trade, and usually took care of it in a complete and detailed fashion. Packing was adapted to Colombian transportation and customs conditions; packing lists agreed with contents of packages; special brands were marked for the benefit of the large importers of textiles, who were protected in their territories for those particular grades or designs of goods; long-term credits were granted. As a rule textiles, both cotton and woolen, were purchased from England, fancy dry goods from France, and hardware and machinery from Germany.

The war finally forced the Bogota importers to seek trade connections with the United States, but they found it difficult to readjust themselves to American methods and to understand the restrictions imposed on American business by the war. In spite of these difficulties, however, American goods have made a place for themselves in the Colombian markets. The merchants appreciate the advantages of the quicker deliveries, which the shorter distance from New York makes possible, and their customers like the novelty and variety of American merchandise. Nevertheless, if American exporters are to retain the predominant position they now occupy in Colombian trade, they must prepare to compete with the older and more experienced European firms who are again entering the field.

MANIZALES AND COMMERCIAL DISTRICT.

GEOGRAPHIC POSITION AND AREA.

The Department of Caldas, formerly a part of the Department of Antioquia, is in the central part of the inhabited regions of Colombia. Its territory lies on both sides of the Central Range of the Andes, extending from the Magdalena River (on its northeast boundary) as far west as the headwaters of the San Juan River, and south, in a narrow wedge of territory, as far as the latitude of Girardot, the Department of Tolima lying between this part of Caldas and the Magdalena River. The Cauca River traverses the Department from south to north on the western side of the mountain range.

In area Caldas is one of the smallest of the Departments of Colombia, containing only 7,915 square miles of territory.

TOPOGRAPHY.

The entire Department is a mass of mountains and hills, except for several small valleys where areas of rolling land are found, such as that around the town of Pereira, in a small interior valley on the western slope of the Andes.

The principal topographic feature of this Department is the snow mountain of Ruiz, which lies to the east and a little south of the town of Manizales and on the boundary between Caldas and Tolima. This has an elevation of 18,300 feet and is covered with snow, above 16,000 feet, all the year round. It is plainly seen on clear days from the river port of La Dorada. The main trail which follows the new aerial cableway from Mariquita passes to the north of this mountain at Soledad and Frutillo and crosses the range at an elevation of 16,000 feet, very near the snow line. This mountain is second only to the peak of Tolima (18,400 feet).

The entire country from Mariquita (in the Magdalena Valley, where the hills begin) to Manizales and as far west as Pereira is a mass of steep mountains with very little good land and all more or less heavily timbered. There is little agriculture aside from the cultivation of coffee.

On the eastern slopes there are a few good mountain streams, the largest of which is the Rio Guali; this passes toward the Magdalena River through a great canyon over which the cableway passes at an elevation of 3,000 feet above the river. This river joins the Magdalena at the town of Honda.

In the rough, hot hills out from Mariquita there are few inhabitants, but higher up, at elevations of 6,000 to 12,000 feet, are several small towns such as Fresno and Soledad, where the hillsides are utilized for bananas, yucca, small patches of sugar cane, and cattle pastures.

The main body of the population appears to be in the many small towns on the western slope around Manizales.

CLIMATE AND RAINFALL.

Climate in Caldas is a matter of elevation. The eastern and western sides of the Department—that is, at Mariquita in the Magdalena Valley and near Cartago on the west—are tropical and malarious.

The city of Manizales (elevation 7,000 feet) possesses one of the best climates in Colombia. The temperature varies very little, and the nights are always cool. Woolen suits, with light underclothing, are worn with comfort, and, at times, a light overcoat may be desirable in the evening.

Seasons are variable, but may be said to be four in number—two rainy seasons, called “*invierno*” (winter), and two dry seasons, called “*verano*” (summer). September, October, and November are wet months, while December, January, and February are dry months. Rains occur during March, April, and May, while June, July, and August are dry months.

There were 141 inches of rainfall in the Manizales district during 1918.

POPULATION, RACIAL CHARACTERISTICS, AND LIVING CONDITIONS.

The Department of Caldas is divided into five Provinces, namely, Manizales, Salamina, Riosucio, Pereira, and Manizales. The national census of 1896 gave the Department a total population of 246,386, while that of 1911 gave the figure as 341,198. The census of October, 1918, gave a total of 428,137, of which the municipality of Manizales had 43,203.

The inhabitants of the Department of Caldas are, in general, much like the people of Antioquia (see p. 227). However, after one leaves Manizales and proceeds down the western side of the range, the character of the people varies greatly. In the lower and hotter lands to the west are found people of darker skin, and many Negroes are seen. These "hot-country" inhabitants are not so industrious as their neighbors of the mountains around Manizales, and a great contrast is noted in the construction of the houses, the appearance of the fields, and, in fact, in every phase of life.

In Manizales all the houses are of wood, with frame construction, except the ground-floor stories of the larger buildings, which, in some cases, are of brick, stone, or adobe. Farther down the western slope and as one approaches Pereira, bamboo is the chief material used for construction of all kinds. Entire houses, including the roofs, are made of this material. Many large groves of gigantic bamboo are seen, and even fences and domestic utensils are made from this useful wood. It may be said that the towns of Pereira and Cartago are built of bamboo.

GENERAL ECONOMIC FACTORS.

Like the progressive Antioquian, the Manizales merchant and business man is branching out toward the Cauca Valley, where he can find level and accessible land for agriculture and cattle raising. However, he does not like to live in the valley (preferring to remain in his cool mountains at Manizales) and only makes periodical trips down the mountains to his properties, which are usually in charge of managers and foremen.

In the Department of Caldas, the land seems to be more divided and the plantations smaller than in Antioquia proper. There are a greater number of individual owners who work their small coffee plantations themselves. For this reason, the middle class is much larger than in other districts, and its members became prosperous during 1919 on account of the high prices received for coffee. This condition will make for better education of the young men from this class and will also create among them a larger demand for more and better articles of foreign manufacture, principally agricultural tools and implements, coffee-cleaning machinery, etc.

The wealthy Manizales merchant and business man does not live as well, nor in so good a house, as his compatriot of Medellin, nor is his store or office as well fitted up. Manizales has long been isolated from the outside world (even from the rest of Colombia) by the mountains, and is, therefore, somewhat old-fashioned. Things are still on a scale fitted to mule-pack transportation.

Traveling salesmen speak very well of Manizales as a business center, and all like to do business there on account of the character of the people and the sound capital of the business houses, which

universally enjoy an excellent reputation for prompt meeting of all obligations.

CITY OF MANIZALES.

Manizales is built on a low ridge extending from the Andes—a "mesa" or table-land of slightly rolling character. The formation is volcanic, with a cap of red clay mixed with decomposed volcanic ash and porphyry.

On each side of the town are two small rivers from which the water supply is obtained. Most large houses are equipped with running water, piped into the building. The streets are narrow, paved with cobblestones, and slightly hilly. Although all houses and buildings are of wood, they are all covered and plastered with lime and mud stucco, so that, with few exceptions, they look just like the buildings common throughout Latin America. There are a number of buildings of two and even three stories in Manizales.

EDUCATION.

There are 248 schools in the Department of Caldas, with a total annual attendance of about 25,000 pupils in the lower grades—or 7.6 per cent of the whole population. In 1918 the school budget amounted to \$267,963. There is no higher school or college in Manizales of any note, as compared with those in Medellin and Bogota, and most of the young men of the better families go to one or the other of the last-named cities for their courses in the professions.

PUBLICATIONS.

The one daily newspaper of any importance in Manizales is the *Renacimiento*, with two pages, which reprints foreign cables and news from Bogota and carries considerable local advertising matter. Its circulation is about 4,000, including copies mailed to the smaller towns of the interior.

Manizales had, a few years ago, a well-organized Chamber of Commerce, which was assisted financially by the National Government and which published an excellent *Boletín Estadística*, containing all new laws, as well as production statistics of coffee, "panela" (brown sugar), imports and exports of all merchandise, etc.; but, unfortunately, this publication has been suspended recently on account of lack of funds from the National Government. However, the departmental government has recently organized a statistical division. New and larger offices are being provided, and trained men are making trips throughout the department to gather first-hand information. The Caldas government has its own printing and book-binding establishment and is turning out some very attractive work.

BANKING.

Manizales has two local, native banks and one branch of a foreign bank. The last-mentioned is the *Banco Mercantil Americano de Colombia* (Mercantile Bank of the Americas), affiliated with the Mercantile Overseas Corporation, of New York. The two native banks are the *Banco de Ruiz*, with a capital of 140,000 Colombian dollars (established in 1916), and the *Banco de Caldas* (*Banco de Manizales*), with a capital of 400,000 Colombian dollars (established in 1915). (Colombian dollar = \$0.9733.)

The Banco de Ruiz earned a net profit of 42,329 Colombian dollars during the first half of 1919 and paid its stockholders the sum of 25,200 Colombian dollars in dividends for this six months. This bank has recently established a mortgage section, and has also loaned the departmental government the sum of 200,000 Colombian dollars for the purpose of pushing the construction work on the Ferrocarril de Caldas (Caldas Railway). The Banco de Caldas is also interested in the loan to the Department and is cooperating with the Banco de Ruiz in the work of its mortgage-loan department.

To give some idea of the great and rapid progress being made by these banking concerns, there are shown below the figures for the capital and reserve fund of the Banco de Caldas since 1915:

Date.	Capital.	Reserve fund.	Date.	Capital.	Reserve fund.
	<i>Colombian dollars.</i>	<i>Colombian dollars.</i>		<i>Colombian dollars.</i>	<i>Colombian dollars.</i>
Dec. 23, 1915.....	200,000	12,184	Dec. 31, 1917.....	400,000	250,000
July 25, 1916.....	200,000	36,000	June 30, 1918.....	400,000	310,000
Dec. 31, 1916.....	350,000	63,828	Dec. 31, 1918.....	400,000	370,000
July 1, 1917.....	400,000	200,000	June 30, 1919.....	400,000	430,000

The Banco de Caldas has loaned the Department of Caldas 400,000 Colombian dollars for the construction of the Ferrocarril de Caldas, of which sum the Department had, in September, 1919, 300,000 dollars still on hand.

To give some idea of what the coffee situation in 1919 meant for the entire country, and especially for Caldas and Antioquia, the following figures may be cited from the ledger of the Banco de Caldas. During the entire year of 1918 this bank did a business of 13,800,000 Colombian dollars, in round numbers. During the single month of July, 1919, the same bank did a total business amounting to more than 14,000,000 dollars. July was undoubtedly the highest month in 1919, on account of its being the end of the coffee season, but this shows the phenomenal increase in all business and points to the extraordinary prosperity of this section of the country. The same is true of all coffee-producing sections of Colombia, such as Antioquia, Santander, Cundinamarca, and Tolima, and is one of the best reasons why American exporters and manufacturers should cultivate these markets locally and make every effort to obtain this trade and hold it for the future.

There has been an increase in the circulating medium in the Department from about 1,000,000 Colombian dollars in paper money to the present estimate of 6,000,000 to 8,000,000 dollars, all but about 1,000,000 dollars of which is in gold coin.

Local banks earn an average profit on their capital and reserve funds of 20 per cent per annum. Rates of interest were much reduced during 1918 and 1919, and commercial money can now be obtained for as low as 12 per cent per annum.

All banks and capitalists of the district are cooperating in industrial development and are also assisting the Department in its work on the new Ferrocarril de Caldas, which will give the Department an outlet to the Pacific via the Upper Cauca River to Cali and from there to the Pacific port of Buenaventura, over the Ferrocarril del Pacifico.

PRINCIPAL CITIES AND COMMERCIAL TERRITORY.

Manizales, though situated in the high mountains, is the center of all commercial activity on the western side of the range and is, to a very great extent, the wholesaling center for the territory as far to the south and west as Cartago, Buga, Tulua, Palmira, and even Cali. Three or four small towns of the Department of Caldas that are situated on the eastern side of the mountains buy retail stocks of goods in Honda; these towns are Manzanares, San Augustin, Marulandia, and Pensilvania. Traffic between Honda and these towns is by means of pack animals up the hills through the town of Victoria, which also is in Caldas. The aggregate of this eastern business is very small compared with that of Manizales.

The reasons for the domination of trade by Manizales over so large a district lie in the greater energy and better foreign import relations of the Manizales merchants, as well as in their larger capital and better facilities for giving long-term credits, as compared with the merchants of the Cauca district, of which Cali is the headquarters.

There are to-day about 50 importing business houses in Manizales and an annual amount of approximately 2,000,000 Colombian dollars in credits is carried on the books of the Manizales merchants with smaller dealers of the interior and of the Cauca Valley.

Another important town in Caldas is Armenia, in the extreme southern part of the Department. The importance of Armenia arises from its location in the heart of the rich coffee-producing region of the "Quindio" and the fact that it lies between two important districts and on the route between them—namely, the upper Cauca Valley (Cali) and Ibague, the capital of Tolima, now on the route to Bogota from west to east. Most of the "Quindio" coffee moves through Armenia and out to the Magdalena River through Ibague and Girardot.

Transportation is by pack animal as far as the railhead of the Ferrocarril de Tolima now being built from a point opposite Girardot toward Ibague; and this is also the famous "Quindio" route from Bogota to the Pacific Coast, via Ibague, Salento, Armenia, and thence down the western side of the Andes to the town of Zarzal, where this route joins the land route from Cartago to Cali. An automobile stage line makes connections at the small town of Buga la Grande and runs into Palmira, where there is rail service into Cali. The ride from Ibague to Buga takes three to four days, depending on saddle animals, weight of packs, and other factors.

VOLUME OF BUSINESS.

The volume of business in the Manizales district can always be fairly well estimated every year by calculations based on the production of coffee and its average prices during the delivery seasons. After deducting expenses of picking, cleaning, and packing to local market centers such as Manizales and Armenia, it may be said that the coffee producers of Caldas received, during the first half of 1919, a total of about 6,000,000 Colombian dollars. This amount may also be estimated to represent the approximate total for imports of foreign merchandise into this Department during 1919, the coffee harvest and prices having a direct and immediate effect on the volume of purchases of foreign goods every year. In other words,

Caldas (that is, the merchants of Manizales) bought about four times as many foreign goods in 1919 as in former good years.

MANUFACTURING.

Because of the lack of easy and cheap transportation and the rough nature of the country, the Department of Caldas has few factories, and none of these are very large. The principal industrial development will be the establishment in the near future in Manizales of a large cotton mill in which local and Medellin capital is interested.

The sum of 600,000 Colombian dollars has recently been subscribed in Manizales and Medellin for this new factory to be located in Manizales, and the work will be in charge of experienced cotton-mill people from Medellin. The plant will be operated by electric power furnished by the municipal lighting plant, which is planning an additional unit of 200 horsepower to take care of this new load.

The new plant will include a complete and modern yarn-spinning department.

A survey by experts from Medellin showed an abundance of labor in Manizales, as well as low construction cost of buildings, etc. It is hoped to introduce cotton in the Cauca Valley and to provide the raw material from this source. In the meantime cotton will be imported from the United States, coming up the Magdalena River from Barranquilla and into Manizales over the cableway (see p. 263).

The smaller factories now established in the Department of Caldas are mentioned below:

The *Cía. Fosforera Colombiana*, at Manizales, turns out 400 gross of boxes of matches per week. It has a capital of 100,000 Colombian dollars. It imports phosphorus, wicking, wax, cardboard, labels, etc.

In Salamina the flour mill of *R. Restrepo e Hijos* has a capital of 50,000 Colombian dollars and produces 300 to 400 arrobas (of 25 pounds each) of flour daily. In Salento there is the flour mill of *A. Herrera*, with a capital of 20,000 Colombian dollars.

The factory "*La Estrella*," in Salamina, has a capital of 40,000 Colombian dollars and turns out 20,000 candles of paraffin and stearine daily, as well as 80 arrobas of soap. It has 12 workmen. There is another very small candle factory in Montenegro.

In Armenia is the soda-water factory of *M. Calle*, having a capital of 3,000 Colombian dollars and employing four workmen.

Two small factories in Manizales making sacks and carpets from henequen fiber are those of *Uribe y Cía.*, with a capital of 5,000 Colombian dollars, and of *J. Soto*, with a capital of 1,000 Colombian dollars.

In manufacturing, possibly the hat-making industry is, at the present time, the largest in this Department. A kind of Panama hat is made, like those of Antioquia and Santander. This class of hat is universally worn by the country people and those of the poorer classes. During 1917 the single town of Aguadas produced 250,000 hats, for which the makers received an average price of 1 Colombian dollar each. Hats are made in the houses of the poorer people, the entire family working in the preparation of the fiber and in weaving the hats.

The prevailing type, or style, of hat does not accord with European or American ideas; the crown is too low, too small, and slightly "peaked," while the brim is too narrow. Inquiries were made with

a view to ascertaining what could be accomplished in the way of organizing this industry for exportation of hats to foreign markets, but the difficulty was said to be the reluctance of the country and small-town people to change their designs, and it was agreed that it would take a great deal of effort to get them to make other types of hats. People from Medellin secured measurements and quality requirements for the popular style of Panama hat so generally worn in the United States during the summer months, and they are now engaged in stimulating the manufacture of these hats for export throughout the Departments of Caldas and Antioquia.

It is a question whether the extra returns obtainable from a larger and finer grade of hat will repay the people for the extra time and labor involved.

TRANSPORTATION.

Lying between the Magdalena and Cauca Rivers, the Department of Caldas and its commercial center, Manizales, are served indirectly by these two water routes to the east and to the west, but, at the present time, a considerable part of the intervening distance must be covered by pack mules or pack oxen.

The logical outlet for Manizales and the populous districts of the Department would seem to be to the west, to connect with Cali and the port of Buenaventura on the Pacific over the Ferrocarril del Pacifico. This railway has now built out from Cali as far as Palmira toward the north, and a fairly good wagon road is now in operation from Palmira as far as Ovedo, about 80 miles in the direction of Cartago, the objective of the railway. The total distance (estimated) from Palmira to Cartago is only 130 miles, and the ground traversed is practically level all the way to Cartago, though there are comparatively few inhabitants except for a number of small towns along the Cauca River. (See p. 410.) The total distance, by trail, from Manizales to Cartago is estimated at 60 miles, but the elevation is from 3,000 feet at Cartago to 7,000 feet at Manizales, and the country is very rough and broken, except around Pereira, where there is some good, open, rolling land for a short distance. After one leaves Pereira, the country becomes very broken, and some engineering problems, such as bridges and tunnels as well as large fills, will be encountered on the new railway now being constructed by the Department of Caldas from Puerto Caldas on the Cauca River to Manizales via Pereira.

Construction work on the wagon road from Ovedo to Cartago is being pushed by the Department of El Valle, but it will take several years to complete this important highway.

RIVER NAVIGATION.

There are at the present time six small steel river steamers on the Cauca River, averaging 60 tons dead-weight carrying capacity. Service is maintained for about half of the year, there being two seasons when the boats have to be laid up, waiting for better water conditions.

The total distance served on the river, by actual river distance, is estimated at 300 kilometers, or approximately 187 miles—between the river port of Mallarino, 6½ kilometers below Cali, and the port of La Virginia, about 10 kilometers below Cartago. Cartago is not on

the Cauca River, but on the Rio La Vieja, the river port for Cartago being La Fresneda, about 2 kilometers from Cartago proper.

Freight going to Manizales from Buenaventura comes up to Cali over the Ferrocarril del Pacifico, thence down to the river at Mallarino, $6\frac{1}{2}$ kilometers below Cali, by means of a small steam tramway, thence down the Cauca River by steamer to the port of Caldas, the terminus of the Ferrocarril de Caldas, and thence 15 kilometers on this line, whence the merchandise is taken into Manizales on pack mules and pack oxen—a journey of four to five days, depending upon the weather and the consequent state of the mountain trail.

Some freight is now moving into Manizales over this route, which is being developed, and it is hoped that transportation by it will be cheaper and more rapid than by way of the Magdalena River route and the cableway from Mariquita, on account of the shorter distance and the better country traversed. Alejandro Angel & Co. (Inc.), of New York and Colombia, owners of the Caribbean Steamship Co. and the Colombian Maritime Co. (Balboa to Buenaventura), and also the largest stockholders of the Cia. Fluvial de Transportes de Manizales (owning three steamers on the Cauca River and now in the market for three more boats for this traffic), are very much interested in the development of this route to Manizales, and their subsidiary company, the Unión Comercial del Pacifico, of Cali, is handling freight for Manizales over this route.

The connecting links will be provided by the completion of the automobile road to Cartago and of the Ferrocarril de Caldas into Manizales. The railway was expected to reach Pereira early in 1920, and Pereira will be for many years the trail shipping point to Manizales for goods coming in from Buenaventura. The wagon road from Palmira will be used when the river is dry.

A comparison of freight costs was made between (1) the route via the Magdalena River, the cableway from Mariquita, and pack animals into Manizales from the east, and (2) the western route above outlined. It was found that at the present time the cost of freight over the Pacific (western) route is slightly higher, but that this route will ultimately have the great advantage of quicker delivery, on account of the better grades.

THE CABLEWAY.

The cableway above mentioned is operated by the Dorada Extension Railway (Ropeway Branch), having a capital of £220,000 (\$1,070,630) of £5 shares, of an authorized issue of 250,000 shares. The original company is known as the Dorada Ropeway Extension (Ltd.), and the majority of the stock is held by the Dorada Extension Railway (Ltd.), of London, England. The gross receipts for 1915 were £7,530 (\$36,645) and the operating expenses £5,500 (\$26,766). During 1916, after the line had reached approximately halfway to Manizales from Mariquita, the gross receipts increased to about £25,000 (\$121,663), and there was a substantial net increase. This company was incorporated in 1912, and the construction of this aerial cableway has been carried on during the past six years.

The cableway line begins at Mariquita Station on the Dorada Extension Railway 51 kilometers (1 kilometer=0.62 mile) from La Dorada and 60 kilometers from the river port of Beltran on the

Upper Magdalena River. The Dorada Extension Railway shops are located at Mariquita. The distance by cableway to Frutillo, the present end of the cableway line, is 37 kilometers, almost in an air line, but the distance by trail is much greater, the ride by muleback taking more than a day. The elevation at Mariquita is approximately 3,300 feet above sea level, while the station at Frutillo has an approximate elevation of 12,000 feet.

The cable is carried on a system of steel towers located at points of "contact" in crossing the high mountain ridges. These towers carry an arm on which the double pulleys carrying the cable are placed. The cable is carried around drums at each end of the line, the steam-power station being located at Frutillo. The cable is a moving cableway—that is, the cable itself runs up and down on each side of the towers, the cargo slings being suspended from the cable by a patent arrangement which provides for their automatic release upon reaching the unloading station. At the point of suspension on the cable itself these carriages have a double set of sheaves which "ride" the pulleys of the tower arms upon passing over these latter when in motion.

Power is provided at Frutillo, consisting of a 35-horsepower steam engine, actuating the drum over which the end of the cable passes.

New tower construction is now completed as far as the highest point on the "páramo" to be crossed by this line to reach Manizales, this point being about 20 kilometers (12 miles) from Frutillo. The total length of the line when completed will be approximately 75 kilometers (46 miles), or the longest cableway in the world.

The principal cargo handled by this cableway consists of coffee from the Manizales district and merchandise for Manizales moving in from the Magdalena River route.

CALDAS RAILWAY.

The construction of the new railway, the Ferrocarril de Caldas, was begun by the Department of Caldas in 1917, but only during 1918 and 1919 has the work progressed to any great extent. The object of this new line is to connect Manizales with river navigation on the Cauca River (at Puerto Caldas) and thereby with Cali and the Pacific coast over the Ferrocarril del Pacífico. Plans also call for the extension of the line to the north to connect with the Ferrocarril de Amaga now being built south from Medellín to the Cauca River, but this latter work is an enterprise for the future. The work is being done by the Department of Caldas mainly with its own funds, aided by a subvention from the National Government of 15,000 Colombian dollars per kilometer.

The number of kilometers constructed and in operation in the fall of 1919 was about 16. The number of kilometers graded was 21. The gauge is 36 inches. The rails weigh 55 pounds per yard. The maximum gradient allowed is 2 per cent, and the minimum curve radius 16 degrees.

The rolling stock includes two locomotives of 20 tons capacity, one locomotive of 40 tons capacity, one second-class passenger car, nine similar cars now on order, five freight cars of 15 tons capacity now on order, five freight cars (box type) in use, six flat cars of 15

tons now in use, two cattle cars of 12 head each, two push hand cars for road work, and four similar hand cars on order.

The Department of Caldas has been supplying its needs for this new railway through two export commission houses in New York. The reason for this method of buying is that these commission houses grant the Department six months' credit for all materials and machinery ordered through them, and at the same time they know how to pack and ship the goods ordered.

Up to December 31, 1918, the total cost of this railway was 665,719 Colombian dollars. The total amount owed by the Department for the railway was 227,683 dollars. The assistance given to the railway by the Department amounted to 473,678 dollars, while the subvention from the National Government totaled 225,000 dollars.

The Department of Caldas has a proposition, approved by the Assembly, for securing a 2,000,000-dollar foreign loan to be used exclusively for the active work on this railway. This loan would be guaranteed by the railway and by various departmental revenues. The entire product of the "renta del tabaco," or tobacco tax, a monopoly of the Department, amounting to an average of 28,830 Colombian dollars monthly, is at present assigned to the railway work.

It is hoped that when this railway line reaches Pereira the gross receipts will be very greatly increased, as the railway will then pass through a populous and prosperous district. This line should pay very well between the Cauca River and Pereira.

DEPARTMENTAL FINANCES.

The total revenues of the Department of Caldas in 1911 amounted to 379,333 Colombian dollars, while in 1918 these had increased to 1,014,524 Colombian dollars. The total revenues for 1919 were calculated at 1,068,428 Colombian dollars. The expenses of the Department during 1918 amounted to the total of all revenues.

The railway earnings in 1918 amounted to a total of 7,763 Colombian dollars, while the total operating expenses were 4,340 dollars, leaving net earnings, for 15 kilometers, of 3,423 dollars.

AGRICULTURE.

The Department of Caldas produces a variety of agricultural products, chief among these being coffee, wheat, potatoes, corn, beans, sugar cane, bananas, yucca ("casaba"), and cacao. Some tobacco is also grown, but in small quantities.

COFFEE.

As in the Department of Antioquia, this region's chief product is coffee. Coffee is the salvation of this land of volcanic mountains and varied climatic conditions. In Caldas the plantations are all small; a large plantation has only 40,000 trees, and there are few that have 25,000. Official statistics for 1911 gave the total number of trees in Caldas as 6,600,000, of which 5,000,000 were full grown. The production was given as about 150,000 sacks. In the 1918-19 harvest season the production was 220,000 sacks, which, at an average of 1½ pounds per year per tree, would give a total number of trees in the Department of 20,000,000.

Production of coffee is a matter of soil, combined with climate and care of the trees. The average production is said to be 1 pound per year—increased in many places to as high as $2\frac{1}{2}$ pounds per tree per year on account of better soil, climate, or cultivation. Manizales coffee grades as high as Medellin, which is better than Tolima, Santander, and Cundinamarca coffee. This grade, known as "Medellin" in the New York market, always commands a few cents per pound more in price.

Departmental authorities state that the planting of coffee trees has been stimulated to a very great extent by the favorable conditions obtaining during 1919 and that an increase of at least 40 per cent can be expected in due time.

The largest coffee-producing district of Caldas is the "Quindio," of which the town of Armenia is the center.

LABOR SITUATION.

From all reports it would appear as if at certain seasons of the year there were a labor shortage in the Department of Caldas. This is due to the fact (already mentioned) that property is divided into small plantations and there are many thousands of families owning and working very small pieces of ground, just sufficient for their own support. These people will not work by the day for others except at certain times of the year when their own plantations do not require their attention. Hence, during the coffee season there is a shortage of labor, and men have to be brought in from Antioquia to the north and from even as far away as Cundinamarca and Boyaca, where there is an oversupply of common labor and wages are much lower. This imported and local labor earned during the coffee harvest of 1919 (March, April, and May) as high as \$1.25 per day, an unprecedented wage for this region.

This same condition also applied to the new railway work of the departmental government. Not enough men could be secured in the Department for that work (2,000 men were wanted), and agents were sent to bring in contract labor from Cundinamarca and Boyaca. However, though better wages were paid than in their own districts, these men proved a failure so far as creating any large body of efficient labor in Caldas was concerned. Many of them dropped out on the way across the mountains and returned home as best they could, and the few who arrived at the work soon became sick in the lower altitude and hotter climate.

The average "peon" (laborer) does not like to work in the coffee plantations on account of the malaria sure to be contracted there, and the better workers of the higher elevations do not go down to the plantations if they can avoid it. The average wage for a 10-hour day paid on the railway work is \$0.691. This is the labor factor taken in figuring the cost of dirt work, etc.

LIVE STOCK.

The town of Pereira is the center of the cattle-raising industry for the Department of Caldas. The estimated number of head of beef cattle is about 350,000, valued at about \$6,000,000. There are said to be about 170,000 steers in addition to the number mentioned. There are about 52,000 horses and 13,000 mules.

As in Antioquia and elsewhere in the Cauca Valley, artificial pasturage is planted in cleared fields for cattle raising. It may be estimated that there are about 150,000 hectares (1 hectare = 2.471 acres) under fence and in pasture in the Department of Caldas.

TOBACCO.

Official statistics for 1918 give the number of tobacco plants in the Department as 3,320,450, in 2,155 plantations. During 1918 Caldas exported to other Departments 50,708 kilos (kilo = 2.2046 pounds) of raw tobacco, principally to Antioquia, El Valle, Tolima, and the Choco, for which the Department collected a tax of 28,921 Colombian dollars. During the same period Caldas imported from other Departments 91,154 kilos of tobacco of all classes, including manufactured, for which the Department collected a rental of 58,633 Colombian dollars.

MINING.

Next to coffee, mining may be said to be the most important industry of the Department of Caldas. During 1918, 31 new mines, or claims, were located in Caldas. All but one of these new claims were for vein mines. Eighteen claims were relocations of old mines, or claims, the others being for new discoveries. It is worthy of note that all claims were taken out in the name of native Colombians. This is due to the new mining laws of the Colombian Government, which prohibit foreigners, whose countries do not allow reciprocal privileges to Colombians for the location of claims, from locating mining property in Colombia. This restriction regarding foreigners is circumvented by having some trusted Colombian agent locate the mine, or mines, in his name. Mining property may be transferred to foreigners by Colombian citizens with the express consent of the National Government.

During 1918 there were abandoned in Caldas, for non-payment of taxes, 62 mining claims, of which 9 were gold placer claims and the rest were all given as veins of gold and silver. During the same year 14 titles to mining claims were authenticated by the Government, of which 2 claims were new-vein mines, 10 old-vein mines, and 1 an old placer mine.

At the present time there are two mines of note in the Department of Caldas—that of "El Sancudo," a rich gold mine owned and operated by Medellin and Manizales capital, and the mines of the Colombian Mining & Exploration Co. at Marmato. These latter mines, consisting of a group of rich gold-bearing veins, have been exploited by this English company for the past 100 years. The properties are on the west bank of the Cauca River in the northern part of the Department near its boundary with Antioquia and west of the town of Salamina across the Cauca River at or near the point of the junction of the Rio Pozo.

This company is purchasing a large amount of new and modern machinery and expects to extend operations in the near future. The Marmato mines are among the richest gold mines in Colombia and are said to be capable of great production.

The eastern slopes of the Central Andes in Caldas show many old placer workings, and there are three or four large properties owned by foreigners, principally English people. However, at the present

time these properties are not being worked to any extent, except by natives here and there by hand-washing methods.

The natives of Caldas, like those of Antioquia, are very good surface miners and may be supposed to have "surface-prospected" their district very thoroughly. It can not be said that any new and large discoveries will be made in the near future in this Department; rather, the opportunity in mining for the foreigner lies in taking over small, rich gold properties in which the natives have exhausted their ingenuity, upon reaching the water level, and modern machinery and methods are required to develop the properties further.

TRADE CONDITIONS AND DEVELOPMENT METHODS.

At the present time the Manizales trade is in the hands of certain New York export commission houses, principally of Colombian origin, such as the Antioquia Commercial Corporation, Alejandro Angel & Co., and others. These houses have been able to obtain and hold this trade by reason of their intimate knowledge of the requirements of this market, of the people with whom they are doing business, and of transportation and shipping conditions. These Colombian firms established in New York are also interested in the local industrial development to a very great extent and cooperate with local capital to this end, helping in every way they can.

Resident agents for European goods (such as English woollens and other textiles), having headquarters in Medellin and maintaining branch houses or agencies in Manizales, secure a large share of the trade in cotton goods and woollens and other European specialties which are in demand in the country and are "stock" articles. One agent from Medellin took £140,000 worth of orders for English textiles in Manizales during one week in June, 1919.

The solution for American trade would appear to be the same as recommended for Bogota and Medellin, namely, resident agencies carrying new lines of samples and becoming well acquainted with the local people and their trade requirements. Such agencies could be combined with those for Bogota, as is being done by several large English houses with headquarters in Bogota and with employees, both Colombian and English, in Medellin and Manizales. From Manizales the trade work could easily be developed to cover the Cauca Valley, Cali, etc., and from Cali the system could be extended in time to Popayan and Pasto. The significant fact to be recognized is the success of the European agents. These men are making money on their commissions and are doing excellent work for their manufacturers and exporters. The main idea is to have a man on the ground who knows conditions intimately and who has a line of samples ready with definite quotations at all times. These agents also take care of trade complaints and disputes and watch the business generally. It may be considered that this system is the most powerful factor in Colombian trade.

CALI AND COMMERCIAL DISTRICT.

LOCATION AND TOPOGRAPHY.

The town of Cali is the trade center for the Department of El Valle, which extends from the Central Cordillera on the east to the Pacific Ocean on the west, and from the Choco Intendency and the Depart-

ment of Caldas on the north to the Department of Cauca on the south. Except for the Cauca River Valley, one of the few accessible stretches of level land in the inhabited portion of Colombia, El Valle is rough and mountainous. The Cauca Valley extends from the southern to the northern border of the department, and is bounded on the east by the lofty Central Cordillera and on the west by the lower Western Cordillera. It is from 3,000 to 3,500 feet above sea level, and averages from 15 to 25 miles in width. Cali is located in this valley near the foothills of the Western Cordillera and is acces-



FIG. 18.—Map of Cali region.

sible by rail from Buenaventura, the ocean port of El Valle, through a depression in the Western Cordillera known as La Cresta del Gallo. This pass has an altitude of 5,250 feet.

CLIMATE AND RAINFALL.

In El Valle, as in all mountainous parts of Colombia, climate depends primarily upon altitude. The Cauca Valley is semitropical and not particularly healthful, but as the elevation increases to the

east and west the climate improves. The average temperature for the summer months at Cali is 90° F. Cartago, farther north and lower in the valley, is warmer.

The Cauca Valley has four irregular seasons. In general, the spring and fall months are rainy and the summer and winter months dry. The fall months constitute the season of heavier rain and the summer months the hotter dry season. The annual rainfall in the valley does not exceed 60 inches, and in the Palmira district it is necessary to provide irrigation for sugar cane and similar crops to insure them against protracted dry seasons. At the port of Buenaventura it rains almost every day, the average annual rainfall reaching 200 inches or more.

AREA, POPULATION, AND SCHOOLS.

El Valle has a total area of 4,179 square miles and a total population of 271,630. Considering the percentage of the total area which is tillable and the comparatively good transportation facilities, the population is small as compared with that of the Departments of Caldas and Antioquia to the north. This is attributed partly to the inefficiency of the available labor in El Valle and partly to the fact that most of the fertile land in the valley is controlled by a few wealthy families; whereas in Antioquia and Caldas the property is divided among many small holders. A comparison of the 1918 and 1911 census figures shows an increase of 25 per cent in the total population of El Valle during the period. This increase is generally attributed to immigration from Antioquia.

In 1917, El Valle had more than 250 primary schools, with about 23,000 pupils in attendance. Cali has four private colleges conducted by various religious orders. The departmental budget for 1919-20 allots 162,461 Colombian dollars, to schools, and the tobacco tax has been increased to provide funds for the erection of modern school buildings and for agricultural courses. (Colombian dollar=\$0.9733.)

ECONOMIC RESOURCES AND DEVELOPMENT.

El Valle possesses land suitable for cattle raising and sugar growing, excellent woods for local building and manufacturing purposes, coal, and a fairly good harbor on the Pacific, which affords an outlet to the markets of the United States and Europe, as well as to those of the west coast of South America. Moreover, the natural trade route for imports to and exports from the rich coffee-growing regions of Caldas, Antioquia, and the Quindio is through Cali and Buenaventura. In view of these facts, it would seem that the Cauca Valley should be one of the most prosperous sections of Colombia; but its development has been retarded by the following conditions:

Nearly tropical climate, which produces a certain amount of physical inertia. The limited amount and inferior quality of labor, a condition which is aggravated by the ignorance and lack of ambition of the lower classes, who are largely Negro, and by the ease of life in this region, where shelter may be obtained by a few days' work with a machete, and food by planting a few bananas and stalks of cane.

The fact that most of the land is held by a few large landowners whose activity is limited to cattle raising, a profitable business which can be carried on with little supervision and few laborers.

Control of capital by these landowners whose interests keep them in Bogota most of the time.

The fact that, although polished and intellectual, the upper-class Caucano lacks the perseverance and practicality possessed by his neighbor, the Antioqueño, who

is fast invading his territory and successfully competing with him in all lines of endeavor.

The former isolation of this rich region from the outside world and from the interior of Colombia, and the long period of political strife and civil wars in which the Cauca took a regional part.

DEPARTMENTAL FINANCES.

El Valle is in excellent financial condition as compared with some of the other Departments, and the officials are bending every effort toward its rapid development. The income from the internal-revenue tax on liquor and tobacco and the slaughter tax, the chief sources of revenue, has increased during the last few years, and now provides a surplus beyond the current expenses.

The actual income from these taxes during 1918-19 was over \$1,046,000, and the income for 1919-20 is estimated at \$1,120,000. Revenues from other sources amounted to approximately \$36,000 for 1918-19, and are estimated at \$34,000 for 1919-20. In addition to these revenues, the 1919-20 budget includes \$3,300 bond interest and the \$1,000,000 Amsinck loan, the proceeds of which are being used largely to build the new pier at Buenaventura. The sum of \$350,000 is being allotted annually to payments on the public debt, including the sum of \$25,000 per month, interest and principal paid on the Amsinck loan. An appropriation of \$277,000 was spent for public works during 1918, and \$108,000 during the first half of 1919. These expenditures for public works represent principally work done on roads and public buildings.

The 1919-20 budget allotted \$1,123,000 to public works, most of this sum to be spent for the new pier at Buenaventura and road work. A careful analysis shows that revenues have been steadily increasing, and it is hoped that the budget will show a surplus, which will be allotted to public works, to extend the work of road and bridge building already begun, and to begin the canalization of the Cauca.

El Valle desires a foreign loan of approximately \$2,000,000, the proceeds to be used for public improvements, especially road building and river work. The fiscal condition would seem to warrant such a loan, but as yet no definite plan has been worked out.

CALI AND ITS COMMERCIAL RADIUS.

Cali has a population of about 26,000. On the whole, the town presents a rather Spanish-colonial appearance in spite of the fact that many of the old adobe buildings are being demolished in the business district and replaced by two and three story brick buildings which are modern and attractive. The streets are paved with cobble stones. The town lacks adequate drainage and water supplies, but pipes have already been laid for the new sewerage and water-supply systems that are being installed, and it is planned to improve the paving as soon as this work is completed. The present accommodations for travelers are inadequate, and the town is badly in need of a new and modern hotel.

Theoretically, the commercial radius of Cali should extend north into the lower Cauca Valley as far as Cartago, east as far as the town of Armenia in the Quindio coffee region, and south to Popayan in the Department of Cauca. In reality, however, the Cali merchants have been content, until very recently, with the limited field

presented by the immediate Cauca Valley. Business has been conducted on a smaller and more restricted scale than in Manizales or Medellin. The Cali merchants do not carry large stocks of standard goods, such as textiles for the interior trade, as the Manizales and Medellin merchants do, and do not specialize in particular lines. Instead, they carry small stocks of a variety of merchandise on which they can make a quick turnover, and competition for the local trade in fancy dry goods and women's and men's wear is keen.

The Cali merchant has habitually invested his profits in cattle instead of using them to increase his capital from year to year, and his connections with his foreign markets have been unsystematic or haphazard. Consequently, it is often better business for him to buy wholesale from the Manizales and Medellin merchants who have more capital and good foreign trade connections than to buy abroad. He may pay more for these goods, but the credit terms offered are correspondingly better.

PACIFIC RAILWAY.

The Pacific Railway extends from Cali to Buenaventura, a distance of 174 kilometers (1 kilometer=0.62 mile), from Cali northeast to Palmira, a distance of 25 kilometers, and from Cali south to Guachinte, a distance of 34 kilometers. The line between Buenaventura and Cali was begun in 1878; but it was not finished until 1914, construction being difficult on account of the engineering problems involved, inefficient labor, the incessant rains, and the unhealthfulness of the tropical coastal region. The branches northeast and south from Cali are still under construction. The Palmira branch is to extend down the Cauca Valley to Cartago, a total distance of 172 kilometers from Cali, and the southern branch to Popayan, a total distance of 160 kilometers. This southern branch is already nearly completed for about 20 kilometers beyond Guachinte. A branch from Palmira to Santander, a distance of 70 kilometers, is planned but has not been begun.

The present Colombian Government favors the so-called Pacific Route from Bogota to the ocean, the advantages of which have been repeatedly discussed. This plan, which involves the extension of the Pacific Railway from Palmira over the Quindio Pass of the Central Cordillera through Armenia to connect with the Tolima Railway, now under construction, would give Cali direct connection with Ibague and Girardot, and would greatly increase its commercial radius.

From Buenaventura to the town of Caldas or Dagua, a distance of 82 kilometers, the Pacific Railway follows the Dagua River, a swift mountain stream, which it crosses many times. At Dagua, altitude 2,730 feet, it begins the ascent to La Cresta del Gallo, altitude 2,250 feet, a distance of 135 kilometers. This portion of the Pacific Railway on the western side of the Western Cordillera could not accommodate heavy traffic in its present condition. For many miles the track is in constant danger of being washed away by floods from the Dagua, and the reduced curve radius and the heavy grades make it impossible for a locomotive to haul more than 10 freight cars. That portion of the Buenaventura-Cali line on the eastern side of the mountains is of heavier construction, with greater curve radius and smaller grades. There are 12 tunnels between Cali

and Buenaventura, with a total length of 2,116 feet. Two of these tunnels have been blasted out of solid rock, and the others are lined with concrete. All bridges are of steel, the longest spanning the Cauca between Cali and Palmira. At present the railway has no dock at Buenaventura, but one is under construction.

The company's principal repair shops are at Dagua, while smaller repair shops and the principal supply stores are at Cali. It owns 23 locomotives ranging in weight from 20 to 55 tons, 40 passenger cars, and about 200 freight cars. The locomotives use bituminous coal from the Cali fields.

A contract made between the National Government and the Pacific Railway Co. in July, 1919, gave the entire control of this road to the Government. Total receipts of the company for 1918 were \$424,788, and expenses, including work on the Popayan branch, amounted to \$444,461, which left a deficit of \$19,673. During the first six months of 1919, the company netted a gain of about \$19,000, which it was estimated would be increased to \$40,000 by the end of the year. This is the first time in the history of the road that the annual returns have shown a profit.

NAVIGATION ON CAUCA RIVER.

The Cauca River flows near the western side of the valley and is fed primarily by small streams from the Central Cordillera. It is navigable for five or six months of the year, though it is never a very dependable means of communication because it has many snags, sand bars, mud banks, and rocks, and is subject to floods and long droughts.

Two companies operate lines of steamers from Mallarinto, 7 kilometers from Cali, north to the port of La Virginia, a distance of approximately 300 kilometers by river. One of these companies, La Compañía de Navegación del Río Cauca, has its head office in Cali and operates three steel-hulled steamers of 59 tons capacity. Wood is used for fuel on these boats, and their stern-wheel engines can develop about 100 horsepower at 180 pounds of steam pressure. The other company, La Compañía Fluvial de Transportes de Manizales, operates three steamers, one of 50 tons capacity, one of 35 tons, and one of 20. This company is particularly interested in business with Antioquia, Caldas, and the Quindío region. Both these companies benefited from the increased amount of coffee sent from the Quindío region to Buenaventura during 1919, and both are apparently prosperous.

Passenger and freight service reaches the towns of Yumbo, Palmira, and succeeding stations to Zarzal (where the trail leaves for the Armenia and Quindío route to Bogota), and on to Cartago, Puerto Caldas (the river port for the new Department of Caldas Railway now building toward Pereira), and La Virginia, about 10 miles below Cartago. As a rule, these towns are built some distance from the river bank, and freight must be carried to and from the landing places on mule back. Freight rates are quoted on each "tercio" (half mule cargo of 300 pounds) or on separate packages. Both passenger and freight rates are higher for the upriver trip than for the downriver trip.

ROAD AND TRAILS.

An automobile road follows the eastern side of the Cauca River north from Palmira to Buga la Grande, from which point pack animals must be used to carry goods to such interior points as Armenia. At the present time there are only two autotrucks in use on this road, few carts, and no large wagons. Freight is also sent north from Palmira by pack train to Cartago and from Cartago north along the Manizales-Pereira-Cartago trail, especially during the dry season when the river is not navigable.

CATTLE RAISING.

The quantity of good pasture land available and the ease with which cattle raising can be carried on with limited capital and in spite of the scarcity of efficient labor have inevitably made this industry the most important one in El Valle. The most accessible and best cattle land is in the level valley and has been purchased by local people, who are making large profits on their investments and do not care to sell their land except at a very high price. In the vicinity of Palmira, where the valley is nearly 40 miles wide and the soil very rich, the natural pasturage is used; but farther north where the timber is heavier, the land is cleared and planted with artificial grass. The natural pasture land will support about one head of cattle per hectare (2.47 acres), and well-watered ground along the river, planted to artificial grass, will feed two head per hectare. It costs about \$20 per hectare to clear, plant, and fence new cattle land. In addition to these more desirable pastures in the valley, there are small pastures scattered along the hillsides; but these are considered less valuable, because it often becomes necessary to drive the cattle from them down into the valley during the protracted droughts to which this region is subject.

About 700,000 hectares, approximately 28 per cent of the total area of El Valle, is now being utilized for pasturage, and it is estimated that the Department contains some 580,000 hectares of unused land suitable for pasturage in the hill districts and 180,000 hectares in the valley. Deducting from the total amount of unused land an amount to be utilized for agricultural purposes equal to that now under cultivation, 370,000 hectares, there remains about 390,000 hectares of unused land suitable for pasturage.

In 1915, when the last census was taken, the Department contained 429,000 beef cattle, which number was estimated to have increased to 524,000 in 1918. The Government estimates that this number could be increased to a million if all available pasture land were utilized.

It is estimated that approximately 37,600 beef cattle were consumed locally during 1917, and that the Department's consumption is increasing by 10 per cent annually. About 40,000 cattle are marketed outside the Department each year, the largest number in Antioquia and Caldas, and a small share in the Choco Territory. During 1919, fat beeves, 4 to 5 years old, sold for \$80 per head in the local market and two-year olds for \$35. The west coast of South America and the Canal Zone constitute a large potential market for the beef products of this district, and the feasibility of establishing a packing house is being discussed.

AGRICULTURE.

Sugar is perhaps the most important agricultural product of the valley. The latest statistics show a total of 8,000 hectares planted to sugar cane and a total annual production of 5,250,000 kilos (1 kilo = 2.2046 pounds) of refined sugar, 10,300,000 kilos of panela (unrefined sugar), and 4,000,000 kilos of molasses. Converting these production figures to American standards, the average yearly yield is found to be about 2,200 pounds per acre. When considering this figure, it must be borne in mind that there is only one large, scientifically cultivated sugar estate in El Valle and that the remainder of the crop is raised on small patches of ground which receive little care. The soil and climate are exceedingly favorable to this industry; and estimates agree that, if sufficient capital and labor could be obtained, the amount of refined sugar available for export each year could be increased by 20,000 tons over the present figure.

The Cali Chamber of Commerce has long advocated the planting of cotton in the Cauca Valley. The Antioquia mills afford a ready market for all that could be produced, and the soil and climate are said to be suitable, but all attempts to introduce the industry have failed.

Small patches of corn, yucca, and bananas are planted throughout the Department, and a sufficient quantity of these products are raised to supply the local demand. Their market price is steadily increasing.

MANUFACTURING.

There is almost no manufacturing in the Department of El Valle. The largest textile mill, capitalized at 12,000 Colombian dollars and employing 14 operatives, makes a cheap cotton shirting for the trade of El Valle, Cauca, Caldas, and Narino. There is one small chocolate factory which supplies the local demand, one small soap and candle factory, a branch of a soda-water factory, and a cigarette factory using tobacco from Antioquia and Santander and selling its output in El Valle and the Choco Territory. Popayan has a factory which makes henequen fiber bags and mats, is capitalized at 24,000 dollars, and has 14 employees. Cali has a similar factory, but it is too small to supply even local demand. There are a few other small factories in the district, including three coffee-cleaning mills.

The practicality of establishing a tannery in Cali is under consideration at the present time by a firm that is now erecting one at Manizales, and the feasibility of starting a cotton factory has been discussed. It is urged that a cotton factory could not fail to be a profitable investment, but it has been impossible to attract local capital to such an undertaking. The laboring classes prefer light factory work to the heavy work of the cattle ranches and are moving in a constantly increasing stream from the country into the towns, so there would be a sufficient supply of labor for a cotton factory. Fuel is plentiful and cheap. Such a factory could market its products throughout the Cali and Tumaco commercial districts and could make at least half the types of cheap cotton goods now imported at Buenaventura. These imports amount to approximately \$1,115,000 a year.

Perhaps the most interesting industry of the Cauca Valley is the manufacture of brick and tile. The plant belonging to Alejandro

Vallejo y Cía., the most important in the valley, has a capacity of 5,000 to 10,000 bricks and tiles every 10 hours, and makes 42 varieties of hollow tile and building brick. It is equipped with modern brick-making machinery and employs what is known as the stiff-mold process. The clay used comes from the near-by hills and is so fine in grade and texture that bricks made from it have almost the appearance of Italian terra cotta. It is particularly suited to the tropical climate and excessive dampness of this region, and is being used in the construction of many of the new buildings in Cali.

COAL DEPOSITS.

The general dip of the outcroppings of coal found in the foothills of the Western Andes near Cali, and the shape and position of the valley, are generally conceded to indicate the presence of coal beds under the level floor of the valley. The veins so far discovered extend from Guachinte, southeast of Cali, to Punta Yumbo, northwest of Cali, a distance of approximately 83 kilometers. This coal is bituminous, somewhat friable, steams easily, and will coke nicely. The following analysis indicates its quality: Volatile matter, about 23 per cent; ash, between 5.38 and 7.66 per cent; sulphur, about 0.77 per cent; and free carbon, between 68.05 and 70.58 per cent.

The importance of this coal reserve so near the Panama Canal is well understood, and it is confidently predicted that coal mining will be one of the important industries of the future. Good coal is badly needed for both rail and water transportation on the west coast of South America; engineers who have examined the Cali deposits agree that their exploitation for commercial purposes is entirely practicable; and the Government officials are anxious to encourage the development of the Department. There is one serious drawback to the development of these reserves, namely, the limited carrying capacity of the Pacific Railway between Cali and Buenaventura.

Five or six mines are now in operation near Cali with a total monthly output of approximately 3,000 tons, but the work is not carried on steadily, and the mine equipment is antiquated. About 250 to 300 men are employed at the mines, but the tonnage production per man is low, and the mining costs are high. At present, little coal is used locally except by the Pacific Railway, which purchases most of the output of the Cali mines. Some coal was shipped recently to Peru and Ecuador, but the high cost of handling made it an unprofitable business. The cost of coal at Cali, delivered at railway freight sheds, is \$7 per ton.

No real development work has been undertaken by foreign interests. Some prospecting was recently started by two Americans; and the Canal Commission at one time offered to take steps toward the exploitation of the Cali coal beds, but abandoned the idea because of the excessive prices demanded by the owners of local lands for the purchase of their property. Coal lands do not come under the existing mining laws, and are, therefore, not open for location of claims. Coal reserves are generally held to be the property of the Government unless the title of the owner of the land antedates the land laws of 1876. Most titles in the Cali district do antedate 1876 and therefore give the owners free right to sell or work their coal fields, but any foreign company entering the field in the future should have

some arrangement with the Government before making any purchases.

PORT OF BUENAVENTURA.

Buenaventura is only 360 miles from Panama and is the first port of call to the south of the Canal. The Colombian Navigation Co. and the Pacific Steam Navigation Co. maintain regular, monthly, round-trip services to Colon; and a boat belonging to the Rolph Navigation & Coal Co. makes monthly calls. The Bay of Buenaventura is about 8 miles long and the navigable channel is very narrow. There are no aids to navigation. The mouth of the bay is wide, but the water on both sides of the channel is very shallow; and the harbor, which is more or less filled with silt, would require dredging for vessels of over 3,000 tons burden.

The town of Buenaventura is situated on a small, low island, originally a swamp, and is separated from the solid mainland by great mangle swamps through which the Dagua River flows into the bay. Because of the danger from river floods and from the tides, which have an average rise and fall of about 15 feet, the town has been practically built on piles. The present population is approximately 4,000, of whom 90 per cent are Negroes.

The town has no water supply other than the rain water caught in barrels on the roofs of the wooden houses, and there is constant danger of disease. Because of unhealthful conditions a strict quarantine is maintained against Buenaventura by canal authorities, although there has been no epidemic of yellow fever since 1916. To improve these conditions it would be necessary to fill in the town with dredgings from the river and completely rebuild it with a proper sewerage system and an adequate water supply.

Ships anchor about one-half mile from shore, and cargo is transferred by means of large covered steel lighters. Eight of these lighters are available, and they are drifted to and from shore on the tidal current, which at times runs $4\frac{1}{2}$ miles an hour and is sufficient to drift loaded lighters of 500 tons capacity. Tugs are never used. The lighters are landed at the railway freight sheds and the cargo unloaded by hand. The cost of handling freight varies greatly because of the heavy rains which interfere with loading and unloading throughout the year, but labor, lighter hire, and miscellaneous charges may be estimated to average about \$2.10 per ton for export cargo and \$2.70 for import cargo. As many as 500 men can be recruited at short notice for steamer work. This labor is performed by native, unskilled negroes, who receive an average daily wage of about \$1.20.

A new pier is being built at Buenaventura 393 feet from shore, where the water is 18 to 20 feet deep at lowest tide. It will have two railway approaches and one wagon road, and will accommodate two steamers alongside. June, 1920, has been set as the date for the completion of the construction work, which is being performed by Jamaican laborers, and is in charge of American experts from Panama.

Freight will be loaded directly into railway cars, and it is estimated that the freight-handling costs on export cargo will be lowered by approximately \$1.70 per ton, and on import freight by about \$2.20 per ton. The Department of El Valle is to be permitted to charge \$1.50 per ton for handling import cargo and \$1 for export

cargo, 50 centavos per head for live stock exported and \$1 per head for live stock imported. The Department plans to administer the pier until its cost has been repaid, plus interest on the investment at 6 per cent.

BUENAVENTURA AS DISTRIBUTING CENTER FOR NORTHERN MINING REGIONS.

With the exception of the coal mines near Cali, there are no producing mines in the Department of El Valle; but its port, Buenaventura, is the principal shipping port for the rich platinum and gold mining district of the San Juan, Condoto, and Opondo Rivers in the Choco Territory. This trade does not move through Cali, but directly to Buenaventura from the Choco Territory via the San Juan River.

All freight for this district is handled by the Linea Costañera Fluvial de Vapores, which operates two small, steel-hulled steamers between Buenaventura and Negria. This journey takes from four days to two weeks and the trip to Istmina two days more. The whole trip is not an easy one and should not be undertaken without ample provision for camping in the tropical jungle and special arrangement for the river passage. There are no fixed passenger or freight rates. Freight charges are levied per package and are almost prohibitively high. All merchandise must be packed for canoe and mule shipment and waterproofed, and all machinery has to be shipped in knocked-down condition. Special arrangements should be made for the shipment of heavy machinery such as large dredgers.

In addition to the boats operating on the San Juan River, several small sloops trade along the Pacific coast near Buenaventura buying balata, chicle, rubber, hides, cedar, gold, and platinum from the natives and selling them small lots of merchandise, principally cheap cotton goods, purchased from wholesalers at Buenaventura.

GOLD AND PLATINUM PRODUCED IN SOUTHERN CHOCO TERRITORY.

The most important placer grounds of this district are located along the Condoto River. One large mining camp is located 6 miles below Istmina at the junction of the Condoto and San Juan Rivers, another some distance up the Condoto. The district contains numerous small streams, all of which are worked in a more or less desultory and very primitive manner by the native Negroes, who roam from place to place, living on dried fish and plantains. The country is very tropical and subject to heavy rains throughout the year.

The exports of gold dust and platinum from Buenaventura indicate the amount produced in this district, though they do not include the considerable quantities shipped out of the country privately each year, and therefore do not represent the total production. During 1917, 247 kilos of platinum were declared for export at the Buenaventura customhouse and 396 kilos of gold dust. During 1918, 352 kilos of platinum and 326 kilos of gold dust were declared.

Foreign mining companies owning rich dredging ground in this territory have been seriously affected by income-tax legislation both in the United States and in England, and have allowed some of their richest claims to lie idle until the repeal of the tax laws. This policy has greatly decreased the production of both gold and platinum.

VOLUME OF BUSINESS AT BUENAVENTURA.

During the first half of 1919 imports at Buenaventura amounted to 1,092,335 Colombian dollars, of which total the United States furnished merchandise valued at 777,117 dollars, or about 71 per cent, and Panama 110,790 dollars' worth, largely merchandise of American manufacture. Returns for the entire year of 1919 are not yet available, but they were probably much in excess of the total indicated by the returns for the first six months.

Exports valued at \$9,164,577 (U. S. currency) were sent to the United States during the whole calendar year 1919, representing about 98 per cent of the total exports. In 1920 the value was \$13,784,522.

Buenaventura had an excess of exports over imports amounting to 2,567,049 Colombian dollars at the end of 1918. Total imports for 1918 at Buenaventura amounted to 2,211,612 dollars; imports from the United States to 1,438,711 dollars, or 65 per cent of the total; and from Panama to 104,545 dollars. Total exports from Buenaventura for the same year amounted to 4,778,578 dollars, and exports to the United States to 4,370,112 dollars, or 91 per cent of the total. The principal articles of export and their values were (Colombian dollar = \$0.9733):

	Colombian dollars.		Colombian dollars.
Coffee.....	2, 378, 783	Cattle hides.....	481, 236
Platinum.....	1, 299, 255	Sugar.....	133, 674
Gold dust.....	218, 393	Balata.....	168, 842

The fact that the actual volume of imports decreased more than 100 per cent during the period 1914-1918, while the value remained practically stationary, shows the increased prices paid for foreign goods. The exports for the period do not show the same percentage of price increase, both the actual volume and the value for 1918 being more than twice what they had been in 1914.

The following table gives the quantity and value of the imports and exports by years for the period 1914-1918:

[Metric ton=2,205 pounds.]

Years.	Imports.		Exports.	
	Metric tons.	Colombian dollars.	Metric tons.	Colombian dollars.
1914.....	16, 676	2, 824, 953	6, 845	2, 220, 177
1915.....	14, 161	2, 847, 214	6, 815	2, 375, 612
1916.....	12, 932	2, 932, 393	9, 749	3, 370, 013
1917.....	11, 806	2, 636, 755	14, 446	4, 741, 794
1918.....	7, 545	2, 211, 529	13, 128	4, 778, 579

CUSTOMS REVENUE.

The total revenue collected by the customs officials at Buenaventura during the year 1917-18 was 1,470,798 Colombian dollars, and the total expenses amounted to only 89,098 dollars, or about 7 per cent of the amount collected.

The revenue received from imports and exports for the period 1914-1918 is illustrated by the following figures, given in Colombian gold dollars:

	Import duties.	Export duties.		Import duties.	Export duties.
1914.....	1,323,730	43	1917.....	970,296	12,620
1915.....	875,622	62	1918.....	510,494	17,139
1916.....	1,188,797	369			

The Government collects as customs duties a high percentage of the total value of imports. An analysis of the 1914 statistics shows that more than 45 per cent of the total value of imports was received by the Government in duties during that year.

PARCEL-POST IMPORTS.

Competition for the local trade in fancy dry goods and articles of ready-made clothing is keen in Cali. The merchants carry only small stocks, but make quick turnovers, and are constantly ordering small quantities of a variety of goods. The parcel-post service affords the most convenient shipping medium for these small orders, and parcel-post imports have increased notably during 1919. This increase has been attributed to the insistent demand for goods for immediate delivery during the coffee-harvest season, and to the delay in the delivery of large orders occasioned by the congestion of traffic caused in part by the movement of the coffee crop. The increase in the maximum weight limit for parcel-post packages has undoubtedly benefited this trade also.

Customhouse returns have never shown the value of parcel-post imports separately prior to 1919, but will do so for that year. Duty on parcel-post shipments is assessed on the value per kilo of the highest-priced article contained, multiplied by the gross weight.

BANKING FACILITIES IN CALI—CHAMBER OF COMMERCE.

Cali has one local bank and branches of two American banks. The local institution is very old and has many of the wealthy families of the valley among its shareholders. It buys local products for export and acts as commission agents for clients, and it has several correspondents in the United States. Local merchants are retained as its agents in interior towns, but little interest is shown in local industrial development and no loans are made to the departmental government for public works. Its business is understood to have increased greatly during 1919 and its earnings to have been three times those of any previous normal year.

A straight foreign banking and exchange business, the negotiation of commercial loans, etc., is carried on by one of the American banks at Cali. The second bank is affiliated with an exporting and importing corporation. It has a branch in the Quindio coffee district and is said to be partly responsible for the diversion of much of the coffee traffic from the Magdalena River route to the west coast. The recent establishment of these foreign banks in Cali has lowered local interest rates from 24 per cent to 15 and even 11 per cent already, and

further reductions are contemplated. This reduction of interest rates and the better credit facilities afforded will undoubtedly do much to aid the merchant in his efforts to establish direct connections with foreign exporting houses.

The Cali Chamber of Commerce has been very active during the past few years and is one of the best in Colombia. It publishes a monthly bulletin, which discusses recent national and departmental legislation, freight rates, possible means of improving general commercial conditions, development of agriculture and cattle raising, and also contains valuable statistical data.

ADVERTISING MEDIUMS AND METHODS.

The Cali merchant desires a personal acquaintance with the people from whom he buys; therefore, the impersonal circular letter is of little value in this district. If catalogues are sent, they should be in Spanish, with weights and measures quoted in both the metric and American systems so that duties can be estimated and market comparisons made. List prices should not be changed unless market conditions make it absolutely necessary.

Advertising matter containing a quantity of small-type reading matter without much display attracts little attention; but pictures, especially if they show the article used in surroundings similar to those of the locality, are a good advertising medium, and attractive containers which enable the merchant to enhance the display of a new article are a distinct asset. Local dealers announce the arrival of novelties and fancy articles with handbills and placards—a most successful system of advertising, since novelty and style count for even more in Cali than in the United States. Another means of advertising highly esteemed by the local merchant is the American show window, which is being rapidly introduced into the district. Newspapers are a good advertising medium. Rates for space are not high, the papers are read and reread, and, in the country districts, are passed about from hand to hand.

Cali has six papers. The two leading ones circulate throughout the entire valley, print telegrams and foreign cable news as well as local news, and carry considerable local and foreign advertising. A general trade directory was published in Cali in 1916, but was incomplete because it was not generally supported by the business men of the district, who did not appreciate its advertising value. A new publication, the *Anuario Comercial*, is now being published and has gained much better support; 10,000 copies of the present edition are to be printed and distributed throughout the district, and it is proposed to issue a new edition each year.

FUTURE OF AMERICAN TRADE WITH CALI DISTRICT.

The building of more roads and of the new pier at Buenaventura, the increase in the amount of coffee sent from the interior to Buenaventura for export, and the renewal of the steamship service interrupted by the war have all stimulated commercial activity in Cali. The merchants are moving into new and larger quarters. They are planning to extend their business by the establishment of agencies and small branches in Armenia, Popayan, and other important interior towns.

Before the war few American traveling men visited Cali, only two American firms were represented in the district, and resident agents in Colombia usually handled European goods. During the war and the early part of 1919, however, these agents were forced to substitute American goods for the European merchandise which they could not obtain, and the Cali merchant liked the novelty and variety of the American goods with which he became familiar. He is intelligent, knows how to figure costs, and is well versed in the art of market comparison; and he is quick to realize the advantage of the earlier deliveries which the shorter distance to New York makes possible. The establishment of the two American banks in Cali offers him better credit facilities than were previously obtainable, and he is coming to the United States desirous of establishing new and permanent trade connections.

Under these conditions the American exporter has a good chance to obtain a permanent place in the increasingly important trade of the Cali district; but if he wants this place he must work for it. Lack of sufficient shipping space from Colon to Buenaventura and the absence of personal representation in Cali are at present handicaps to this trade. English and French firms reentered the market in the latter part of 1919, and the volume of trade that they have already regained is conclusive proof of the strength of their former position. If the American exporter wishes to succeed in this field he must familiarize himself with the conditions peculiar to this market; he must pay more attention to the details of exporting to Colombia, especially to the care and dispatch with which merchandise is transshipped at Colon; and last, but not least, he must lose no opportunity to form a personal acquaintance with his customers.

COMMERCIAL DISTRICT OF TUMACO.

LOCATION—STEAMSHIP SERVICE—HARBOR.

Tumaco, Colombia, some 200 miles south of Buenaventura, is the port of entry for the trade of the district south of Popayan in the Department of Cauca and for the Department of Narino, except for a negligible amount of commerce carried on through Ipiales on the Ecuadorian border. It is the only Pacific port of call in Colombia besides Buenaventura, and it is served by two steamers, one belonging to the Pacific Steam Navigation Co. (Ltd.) and the other to the Colombian Navigation Co. (Ltd.), which maintain monthly round-trip services between Buenaventura and Colon.

The Tumaco harbor is semicircular in shape, about $1\frac{1}{2}$ miles in width at the town and about 4 miles in length. The tidal currents are not so strong as at Buenaventura, but the harbor is not so good. It has dangerous shoals and sand bars, and it would have to be thoroughly dredged before it could be made a port of call for steamers of more than 3,000 tons. The land around the harbor is not sufficient to break high winds or storms, and though steamers enter and leave without pilot service, they do not attempt the entrance at night.

The town is situated on a small, low, sandy island which has been encroached upon by the sea to such an extent that it is in danger of being submerged unless the proposed harbor defense measures are carried out soon. It is south of the heavy-rain belt and is a

more pleasant and healthful place than Buenaventura. Its present population is about 6,000. Stimulated by the building of the new pier at Buenaventura, the Department of Narino has had plans drawn for harbor improvements and a new pier at Tumaco, and is now having estimates of the cost prepared. At present, however, Tumaco has only one small wharf, the property of a steamship company which operates a line of boats up the near-by coast and up the Patia River. Steamers of only a few hundred tons burden and not over 8 feet draft, such as are employed in the local trade, land directly at this wharf, but larger steamers must anchor in the bay about three-quarters of a mile from the town and be unloaded by means of lighters. Steel-hull lighters of 300 to 500 tons capacity are used.

COMMERCIAL TERRITORY SERVED BY TUMACO.

Pasto, situated on the high table-land southeast of Tumaco, Barbacoas on a tributary of the Patia River, and Tumaco are the chief commercial centers of this district. Pasto serves the largest part of the territory, but Barbacoas and Tumaco are equally important because of their proximity to the Patia Valley.

Considerable parts of the district served by Tumaco are entirely undeveloped, and the population is made up largely of Indians and Negroes with very limited purchasing power. The lower valley of the Patia River, north of Tumaco, is a good cattle-raising section, but farther inland, in spite of its fertility, it is still undeveloped, and, like other tropical sections of Colombia, has the reputation of being unhealthful. The coast south of Tumaco is sparsely populated and is very tropical and inaccessible.

Rubber, chicle, and other forest products are found both in the Patia River region and in the section south and east of Tumaco, but lack of transportation and scarcity of labor make their exploitation difficult. Fish abound at the mouth of the Patia River and the Bay of Tumaco, and black whales are found in the vicinity, but so far no extensive fishing industry has been developed. Pearl fishing is carried on by the Negro boatmen, and a small quantity of shell is exported annually. Some quartz gold mines are being worked near Pasto by foreigners, and the product is exported through Ecuador. Placer mining is carried on by the natives around Barbacoas and farther south toward the Ecuadorian border. Some prospecting has been done also by foreigners, but the region is very broken, the climate hot, transportation difficult, and labor scarce and inefficient. No large mining companies are interested in the region at present, and no modern machinery is used.

TRANSPORTATION FACILITIES.

Rivers and trails are the only means of communication between Tumaco and the interior. Three new, steel-hull steamers with propeller drive are operated from Tumaco up the coast to the Patia and up this river and its tributary, the Telembi, to Barbacoas. These boats can carry about 120 tons of freight and are amply able to accommodate the trade between the two towns. The river presents some difficulty to navigation, however, during the dry season from July to October. The traveler bound for Pasto must make a two days' jour-

ney inland from Barbacoas over a mule trail to the wagon road now being built out of Pasto toward Barbacoas. Here an automobile can be secured for the rest of the journey, a distance of 58 miles. Freight destined for Pasto follows the same route, and must be packed and waterproofed for mule shipment.

The Department of Narino is making every effort to complete this road, which is to extend through Barbacoas to Tumaco, and has planned to build a second road from Pasto to Tumaco through the potentially rich district to the south and east of the port. The completion of these roads will greatly facilitate the distribution of goods through Tumaco, thus increasing the commercial importance of the district.

TRADE STATISTICS.

Exports from Tumaco for the year 1918 amounted to 1,236,902 Colombian gold dollars (1 dollar = \$0.9733 United States currency), of which amount about 94 per cent was sent to the United States. Exports for the first half of 1919 totaled 575,364 Colombian dollars, an amount slightly larger than that of the corresponding period of 1918, and the United States took about 82 per cent of this total. Tagua nuts, Panama hats, rubber, and gold dust are the most important articles of export. During 1918 tagua nuts valued at 245,869 dollars, Panama hats at 244,194 dollars, rubber at 225,953 dollars, and gold dust valued at 160,240 dollars were exported to the United States. The exportation of hides to the United States is handicapped by the lack of a consular agent at Tumaco, and hides must be sent to Buenaventura to receive certificates of disinfection.

The high prices obtained for exports and the improved economic conditions prevailing in the interior will undoubtedly be reflected in the imports for the last half of 1919, but formerly imports varied little from year to year. In 1911, a normal pre-war year, imports were valued at 1,052,494 Colombian dollars. Imports at Tumaco pay only 50 per cent of the basic tariff charged at Colombia's Caribbean ports.

BUSINESS METHODS.

Merchants in the Tumaco district carry general stocks, and a large part of their buying and selling is done through New York commission houses. The more important lines handled are the cheaper grades of cotton goods, drills, denims, light-weight dress goods, and men's clothing suitable for the Tropics. The principal buying season extends from March to the end of May.

Business is hampered by the fact that there is no bank at Tumaco. Pasto has a native bank, but the length of time required for communication between these towns renders it almost valueless to Tumaco merchants, who do most of their banking through Cali. There is no American resident sales agency in Tumaco or in either of the interior towns of the district. If such an agency were established, it should represent some large, general export house, and be prepared to find a market in the United States for the products of the district as well as to sell American merchandise.

BUCARAMANGA AND COMMERCIAL DISTRICT.

LOCATION, TOPOGRAPHY, AND CLIMATE.

Bucaramanga is the trade center of the Department of Santander. Santander belongs to the group of Departments comprising the Eastern Cordillera region of Colombia and is mountainous throughout its entire area except for the stretches of low, level land along the

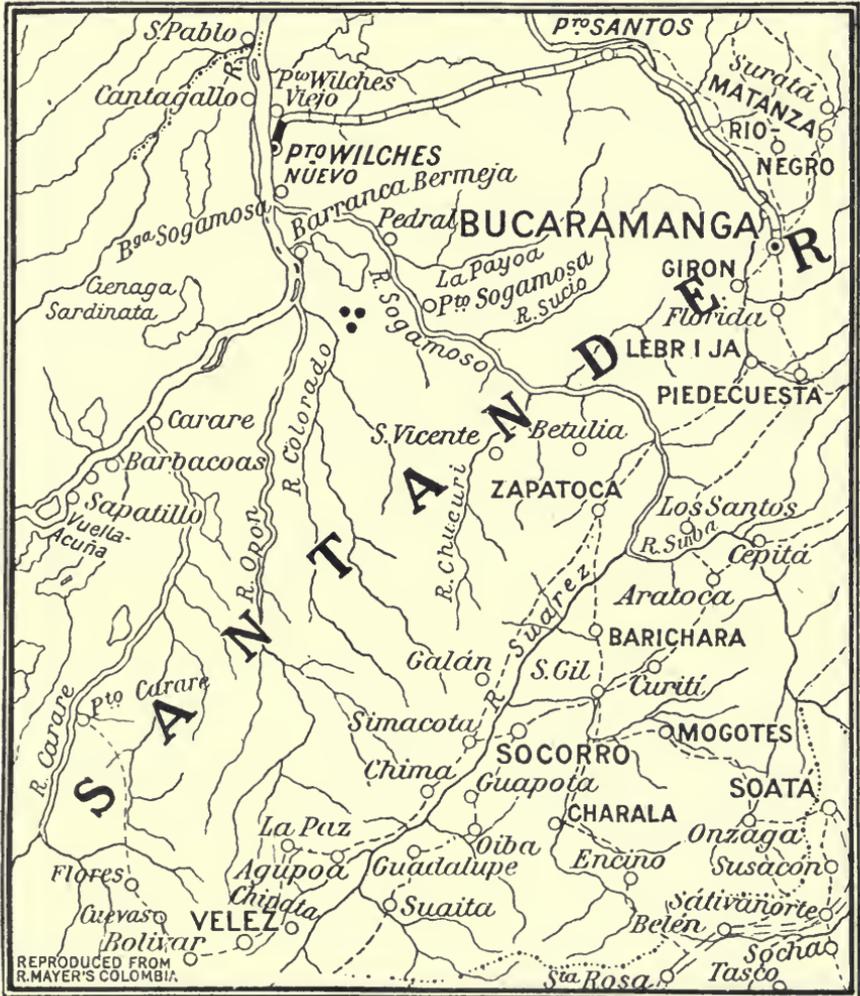


FIG. 19.—Map of Bucaramanga region.

Magdalena River, which forms its western boundary for about 190 miles. It is west of the main range of the Eastern Cordillera and contains no very high mountain peaks, but is crossed by several of the lesser ridges, which extend through it in a long curve from the southwest to the northeast.

The valleys of the Magdalena and the small rivers near it are tropical and unhealthy, but the climate improves with increase in

altitude in the interior. At 5,000 feet the climate is good, and at 7,000 feet it is never extremely hot or cold. Bucaramanga, at an altitude of 2,850 feet, has an average mean temperature of about 89° F., and a maximum of over 100° F. The annual rainfall averages about 63 inches throughout the Department. The dry seasons prevail from November to April and June to September, and the season of heaviest rain is from September to November. The dense jungles in the south are subject to sudden windstorms which cut great paths of destruction through the forest, making travel very difficult.

AREA, POPULATION, AND SCHOOLS.

The Department of Santander has an area of 19,161 square miles and an estimated population of about 425,000. Bucaramanga has a population of approximately 26,000. Most of the people live in the small, alluvial valleys of the interior. The northern part of the Magdalena Valley has a few small towns, but the southern part is uninhabited except by primitive peoples, and much of it is practically unexplored. The highest section of the Department toward the northern boundary is very sparsely populated.

Except along the Magdalena, where the original Spanish settlers were comparatively few and where there has been a heavy infusion of negro blood, the people of Santander, like those of Antioquia and Caldas, prefer to own the land which they cultivate. Their holdings are usually tiny patches in the river valleys or small coffee or cacao plantations on the hillsides above the villages. They have always been handicapped by their isolation, however, and are less progressive and active than the Antioquians.

The Department has about 380 public schools, with approximately 14,600 pupils. Bucaramanga has one national normal school and two high schools, one of which is parochial.

VOLUME OF TRADE.

The volume of the Bucaramanga trade is indicated by the following statistics obtained from the reports of the river freight movement at the river ports of Puerto Santos, Santa Maria, and Puerto Wilches. The exports consist chiefly of coffee and cacao, and there are small shipments of hides. Amounts of exports and imports are given below in packages or bales, of approximately 65 kilos (1 kilo = 2.2 pounds), or one-half a mule cargo:

Years.	Imports.	Exports.	Years.	Imports.	Exports.
	<i>Packages.</i>	<i>Packages.</i>		<i>Packages.</i>	<i>Packages.</i>
1912.....	52,415	119,326	1916.....	35,362	97,098
1913.....	53,001	108,167	1917.....	32,350	95,417
1914.....	44,230	103,907	1918.....	17,215	114,846
1915.....	28,178	103,906			

It will be noted that the trade declined during the war years and that exports increased during 1918, probably because of the heavy coffee crop of that year. Imports for 1918 were small, but the commercial activity of the district was greatly stimulated by the high prices obtained for the large coffee crop of 1919, and this increased

activity will undoubtedly be reflected by an increase in the volume of imports for the year.

TRADE DISTRIBUTION AND METHODS.

There are 8 or 10 leading merchants in Bucaramanga whose aggregate capital is probably about \$500,000 Colombian. (The Colombian dollar is equal to \$0.9733 United States currency.) The merchants of Bucaramanga are handicapped by their lack of capital, their isolation, and their unfamiliarity with conditions in foreign markets. Many of them have established connections in the small towns of the district, through which they purchase coffee, cacao, and hides for sale to the large trading and exporting houses of Barranquilla. They generally make one trip each year to the coast to settle old accounts and to buy new stock.

The towns of Ocana and Pamplona do not import through Bucaramanga, though in a sense they are part of the same commercial district. Ocana, with a population of about 20,000, is situated 3,600 feet above sea level in the heart of a coffee and cacao growing region in the north of the Department of Santander. It sends to the ports of the Magdalena an average of 104,200 packages, or 6,760 metric tons, of freight for export each year, and its imports average about 2,500 tons. Pamplona and Cucuta, though also in this section of Santander, generally export and import through Venezuela.

The Bogota importers formerly sold to the Bucaramanga merchants, and even to those of Pamplona and Ocana, but most of this business is now in the hands of Barranquilla importers, some of whom maintain branches or hold shares in local stores in Bucaramanga, Ocana, and Pamplona. Many Syrian traders of Barranquilla and Cartagena have strong commercial connections in Bucaramanga, Ocana, and Pamplona.

TRADE ROUTES.

During the dry season, merchandise destined for Bucaramanga is sent up the Magdalena from Barranquilla to Puerto Wilches, a distance of 404 miles, and then 90 miles overland by mule train to Bucaramanga. During the rainy season, merchandise is sometimes unloaded at Gamarra, 317 miles up the Magdalena from Barranquilla, and sent up the River Lebrija to El Choco, a distance of 63 miles, or to La Ceiba, a distance of 69 miles. From either of these points shipments must be packed overland by mule trains to Bucaramanga, a four or five days' journey. It is also possible to unload goods at Bodega Sogamoso and send them up the Sogamoso River about 22 miles during part of the rainy season. This is a much shorter route than the Lebrija, but the shallowness of the river makes it impracticable most of the year, and it is little used.

Travelers wishing to reach Bucaramanga from the coast generally choose the Puerto Wilches route. It requires from two and one-half to three days to make the journey from the end of the short Puerto Wilches-Bucaramanga Railway to Bucaramanga. There are no good stopping places along the route, and the trip is a very uncomfortable one through a rough country covered with tropical jungle.

Work has been started on a road which is to extend from Tamalameque to Ocana, a distance of 160 miles, and eventually from

Ocana to Pamplona and Cucuta. The plans call for an automobile road capable of sustaining tractor and truck traffic at all seasons of the year. A short section of macadam has been completed from Ocana toward Tamalameque, and a beginning has been made on the section between Cucuta and Pamplona, but the cost of building a road in this country is said to be even greater than the cost of building a narrow-gauge railway, and the work is progressing very slowly because of lack of funds.

PUERTO WILCHES-BUCARAMANGA RAILWAY.

About 12 miles of the proposed meter-gauge railway from Puerto Wilches to Bucaramanga have been completed out of Puerto Wilches, and on this section hand-car service is maintained. In 1917 this line carried 2,014 passengers and 808 tons of freight, the expenses for the year being about \$18,000, or more than twice the amount of the gross receipts. The railway was originally owned by an English company, but is now controlled by the Department of Santander, which holds it in trust for the National Government.

In 1919, a portion of a new internal-loan bond issue was assigned to the Department of Santander to be used for construction work on this railway, and the Department itself assigned the total proceeds of the internal-revenue tax on tobacco to the railway work. Work was started in August, 1919, but progress is necessarily slow, and it is not definitely known how much money will be available. It is estimated that the line will cost more than \$50,000 per kilometer (0.62 mile). The total length will be about 90 miles. In addition to the construction of the railway itself, a landing place will need to be built at Puerto Wilches for the river steamers, which, in seasons of low water, can not approach within several miles of the town under present conditions.

It was originally planned to connect the Puerto Wilches-Bucaramanga Railway with the projected extension of the Northern Railway to Chiquinquirá, thus forming a link in the proposed trunk line from Bogota to the Caribbean. The project for such a trunk line seems to have been abandoned in favor of the so-called Pacific route, however. As the country between Bucaramanga and Chiquinquirá is very rough and sparsely populated it seems doubtful whether this extension will ever be built.

BANKING.

Although several of the larger business houses of Bucaramanga do more or less of a private banking business, the city has only one company engaged in general banking. This firm, the *Compañía Colombiana de Mutualidad*, also carries on a mutual savings and cooperative life insurance business. The company's balance sheet showed a net profit of \$29,228 for the first six months of 1919. Out of this amount, \$16,066 was distributed as dividends, \$6,343 added to the guaranty fund, \$1,461 allotted to the directors, and the remainder distributed among a number of small funds. This banking institution takes an active part in the development of the Department, aiding in the installation of lighting plants, telephone systems, and other public utilities.

AGRICULTURE AND LIVE STOCK.

Tobacco cultivation and manufacture are the most important industries of Santander, raw tobacco, cigars, and cigarettes being shipped to the Atlantic coast, to Boyaca, to Cundinamarca, to Antioquia, and into the State of Tachira in Venezuela. Antioquia is the most important of these markets, the raw leaf being manufactured at Medellin for shipment to other parts of Colombia.

From the data available it may be estimated that about 920,000 kilos of cigars, 60,000 kilos of cigarettes, and 100,000 kilos of leaf tobacco for export were produced in the Department of Santander during 1918; and using these production figures as a basis it may be concluded that approximately 2,100 acres were planted in tobacco. Santander has the usual local consumption tax on manufactured tobacco.

Chief among the other agricultural products of Santander are coffee and cacao. It may be said that the Department produces annually an average of 60,000 sacks of coffee and 20,000 sacks of cacao. The output of cacao is declining, but it is predicted that the high prices of 1919 will stimulate the production of coffee to such an extent that it will show an increase of 60 per cent within the next four years.

Good grazing land in Santander is limited, but sufficient cattle are raised to supply the local demand. The breeding of mules for pack service is a profitable business, the demand for these animals being especially good during 1919.

CHICLE INDUSTRY.

In 1917 a chicle expert went from Mexico to Colombia to promote the work of collecting the gum in that country. His first well-organized expedition was made through a large tract of private property extending along the Sogamoso River south of Bucaramanga. He found that the chicle of this region differed somewhat from the Mexican variety, and that it must be mixed with the Mexican product in the manufacture of chewing gum.

During the calendar year 1918 chicle to the amount of 690,496 pounds, valued at \$278,654, was imported into the United States from Colombia; probably about half of this amount came from the Sogamoso River region. In 1919 American imports of this gum from Colombia amounted to 1,777,747 pounds, valued at \$570,864.

Laborers as a rule will work at chicle gathering only during the dry season when placer mining is impossible and when they are not engaged in planting corn or tobacco or picking coffee. They will not go into the jungles to gather the gum at all except for high wages, so exports of chicle from Colombia will probably be negligible except when market prices are high. One of the gravest difficulties has been the securing of the pure chicle gum, for the laborers soon learn to mix it with other gums more easily procured in order to obtain payment for additional weight.

ATTEMPT TO INTRODUCE SILK CULTURE.

An attempt is being made to introduce silk culture into the Bucaramanga district. Mulberry trees have been grown successfully and a very good quality of raw silk has been produced. In 1915 the Colom-

bian Government authorized an annual appropriation to be devoted to the promotion of the silk industry; part of the first sum was to be used for the purchase of three spinning machines for Bucaramanga. In 1918 and 1919 special courses in silk production were offered in Bucaramanga and were taken by about 30 people. However, silk culture requires considerable time and manual dexterity. The raising of coffee and cacao is easier, and the people of the lower classes are not anxious to attempt anything new. It therefore seems doubtful whether the efforts to introduce silk culture will be very successful.

CUCUTA AND COMMERCIAL DISTRICT.

LOCATION AND GENERAL CHARACTERISTICS.

The city of San Jose de Cucuta is situated on a level plain surrounded by low hills, at an elevation of about 1,000 feet above sea level, near the boundary with the Venezuelan State of Tachira. Cucuta is the capital of the Colombian Department of Norte de Santander, and it is in the extreme eastern part of the Department.

To the south lies the important interior city of Pamplona, connected with Cucuta by a new wagon road (not yet completed; see p. 293). In time it is hoped to build this road as far as Bucaramanga, but the intervening country is mountainous and very rough. Pamplona has a population of about 16,500 and is situated at an altitude of about 7,100 feet above sea level. It is surrounded by coffee plantations, together with some cacao plantations. Hats are also exported. Its trade goes to Cucuta, where its merchants buy at wholesale.

Ocana is the town next in importance in the Department of Norte de Santander. It has a population of about 20,000 and is located farther to the north and nearer the Magdalena River, on the side of the range west from Cucuta. The elevation is 3,600 feet. The region produces some coffee and cacao, and Panama hats are also exported, but this trade moves out by pack mule to the Rio Lebrija and thence down the Magdalena River. This district is commercially tributary to Barranquilla, and some goods are purchased at wholesale in Cartagena. The eastern and northern parts of the Department of Norte de Santander are sparsely inhabited, and the country is broken and mountainous, making transportation slow and costly.

AREA, POPULATION, AND CLIMATE.

The area of the entire Department is 6,708 square miles, divided into three districts, and the total population is about 250,000. The capitals of the Provinces are Ocana, Pamplona, and Cucuta.

The city of Cucuta has a population of about 24,000. Most of the inhabitants are mulattoes, while possibly 10 per cent are pure white. There is a small colony of foreigners, the largest merchants being Germans, who have been long established there.

The climate of Cucuta is hot and unhealthful; there is much malarial disease and occasional epidemics of yellow fever.

APPEARANCE AND PUBLIC UTILITIES OF CUCUTA.

The town has suffered from frequent earthquakes in the past and was almost totally destroyed in 1875 by a series of severe shocks. The city was rebuilt, however, and has prospered in modern times. At the time of the rebuilding, the town was laid out in wide, open

streets, fringed with trees—in great contrast to the narrow streets of other small Spanish American towns, where the old Spanish colonial design still remains. The city has a steam tramway, electric lights, telephone service, a theater, a covered public market, and a slaughterhouse.

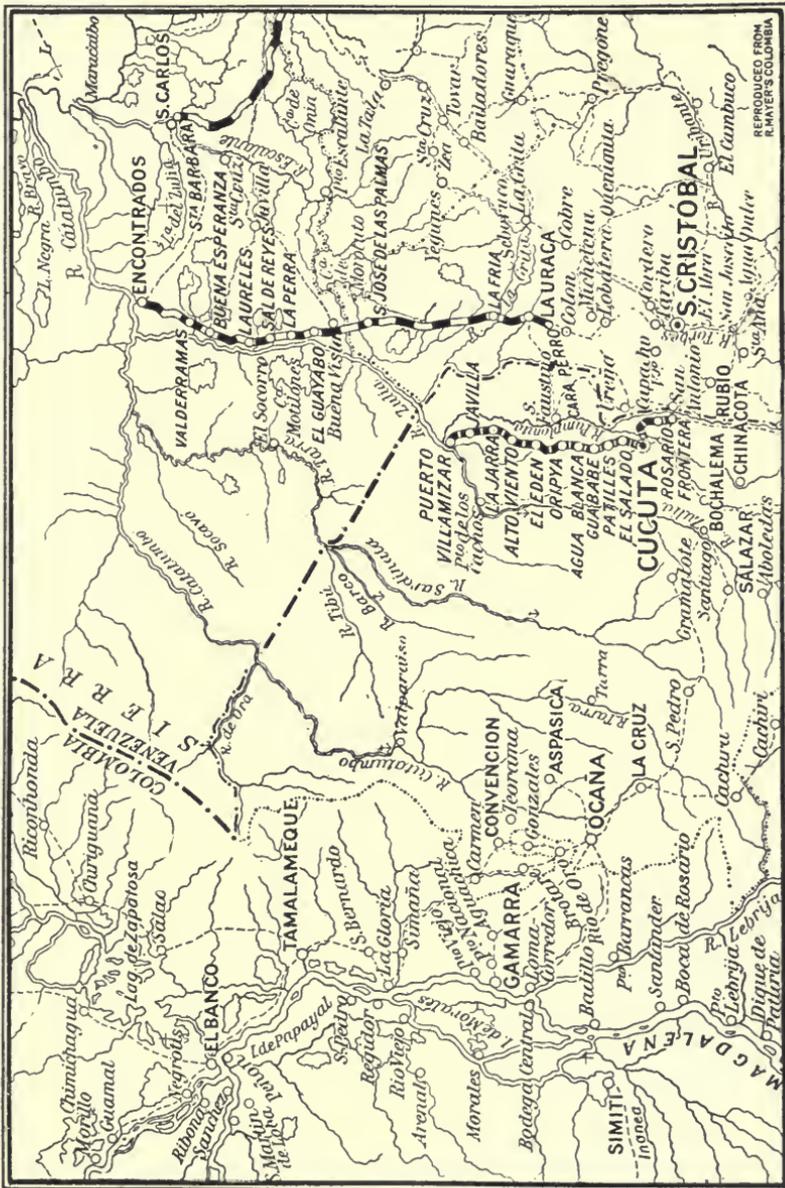


Fig. 20.—Map of Cucuta region.

COMMERCE AND TRADE.

Shut off from the rest of the Republic by the barrier of the Eastern Cordillera and the distance to the Magdalena River, Cucuta is politically part of Colombia but is actually dependent upon Venezuela

for means of access to foreign markets. Coffee and other exports find their way out over the Cucuta Railway to the River Zulia (which rises in Colombia south of Cucuta but is not navigable until it has flowed some distance into Venezuela) and thence by river steamer to Lake Maracaibo and the port of Maracaibo, where transfer is made to small coastwise steamers that finally convey exports to ports of embarkation for ocean vessels, such as Puerto Cabello or La Guaira.

For a number of years there have been projects of road building to connect Cucuta with the Magdalena River and thereby liberate its commerce from the restrictions and impositions of the Venezuelan Government. Some work has been done recently on the wagon road each way from Ocana, but the high cost of this work and the difficult ground to be covered, combined with the lack of population and production, make this rather a matter of political necessity to be solved by the National Government.

Nearly half the trade of Cucuta is in the hands of four large German firms, closely affiliated with the German firms of Maracaibo; there are also a few firms of native Colombians.

Exports for 1918 were as follows:

[Kilo=2.2046 pounds; Colombian dollar=\$0.9733.]

Articles.	Kilos.	Value.
		<i>Colombian dollars.</i>
Coffee (92,768 sacks).....	5,375,500	788,338
Hides (7,734).....	91,564	42,020
Flour (302 sacks).....	17,036	5,519
Bags ("fisque").....	16,656	6,188
Total.....	5,500,756	842,065

Imports for 1918 were as follows:

Articles.	Kilos.	Value.
		<i>Colombian dollars.</i>
Oil and greases.....	21,323	2,873
Foodstuffs ¹	812,820	47,568
Combustibles.....	61,414	11,819
Agricultural implements, etc.....	11,310	5,114
Arts and trades.....	9,133	2,960
Paints, varnishes, colors.....	6,589	2,057
Wines, liquors, etc.....	15,567	3,747
Crystal, glass, chinaware.....	20,685	2,876
Rubber, celluloid, etc.....	44	211
Shell, bone, etc.....	176	302
Leather manufactures.....	210	1,277
Drugs and medicines.....	37,296	15,145
Electrical supplies.....	3,104	3,719
Musical instruments.....	169	85
Locomotives and railway equipment.....	3,202	3,364
Metals and manufactures of.....	50,346	11,279
Paper and paper products.....	27,552	8,029
Soaps and perfumes.....	569	565
Textiles.....	37,901	87,098
Miscellaneous.....	1,922	741
Totals.....	1,121,332	² 210,819

¹ Including 739,247 kilos of salt, valued at 21,113 Colombian dollars.

² Duties of 72,599 dollars were collected.

The larger merchants of Cucuta purchase through export commission houses of New York and Europe, about one-half of the trade in textiles going to England. Shipments are consigned in care of forwarding agents at Maracaibo for transshipment to Cucuta via the River Zulia and the railway to Cucuta.

MEANS OF COMMUNICATION.

RIVER TRAFFIC.

Cut off from commercial intercourse with Colombia, the trade of Cucuta and Pamplona has sought the easiest route of egress via the River Zulia, which flows into the River Catatumbo in Venezuelan territory and affords steamer navigation to Lake Maracaibo (called a lake but in reality a deep-sea gulf of shallow water). The voyage from the city of Maracaibo to Puerto Villamizar, via Lake Maracaibo, the River Catatumbo, and the River Zulia takes about three days, passengers and freight having to be transferred, at the junction of the two rivers, to the smaller steamers plying on the Zulia. Puerto Villamizar is 35 miles from the city of Cucuta by the old road.

CUCUTA RAILWAY.

The Cucuta Railway was built in 1888 from Cucuta to Puerto Villamizar to serve as the connecting link between river navigation, and later the same company, the Compañía del Ferrocarril de Cucuta, extended its line 10 miles to the Venezuelan border, making a total of 45 miles. In spite of the competition created by the construction of a near-by railway in Venezuela, and the unfavorable attitude of the Venezuelan Government toward Colombian trade, this company, composed entirely of native capital (of which the municipality of Cucuta is owner of a one-third interest), has managed to hold its own, pay dividends, and reduce its bonded indebtedness. The gauge of the track is 1 meter (3.2808 feet). Wood is used as fuel. There are no tunnels or large bridges. In 1917 the line handled 112,340 passengers and 21,150 metric tons of freight, the gross returns being 221,564 Colombian dollars and the expenses 172,551 dollars, leaving a profit of 49,013 dollars—expenses being 77.87 per cent of the total returns.

ROADS.

From time to time there has been agitation in Colombia for a road from Cucuta to the Magdalena, and in 1917 Law No. 42 declared this projected road to be of the first class and contracted with the Department of Norte de Santander for its construction and exploitation, including the roads of Pamplona, Sarare, and Tame. The sum of 50,000 Colombian dollars was authorized to be spent in the Ocana section and 24,000 dollars on the Sarare road from Pamplona to Arauca (this latter not being a wagon road).

The section from Cucuta to Pamplona now has 19 kilometers under construction, and at Pamplona there has been built a large dam serving as the approach to the town. A total of 220,567 Colombian dollars has been spent thus far on this road, which is planned as a wagon road of 6 per cent grade, carrying a macadam surface 4 meters wide.

The wagon road from Cucuta to the Magdalena was declared to be of urgent national necessity in 1917, the work was placed in charge of the departmental government, and 50,000 dollars was appropriated from the National Treasury to bring about greater activity on this important work. About 8 kilometers have been constructed between Ocana and Las Animas toward the river (the total distance being 260 kilometers), and 40,079 dollars of the national appropriation has been spent up to the present time, while an additional 18,703 dollars has been spent by the departmental government.

Work on these roads has been going on for years past, but mistakes have been made in their location and the early fills and cuts have been partly destroyed by slides and washouts, so that very little has been accomplished. The main difficulty seems to lie in the great length of these roads, which cross a very broken country, all mountainous, and many small and swift streams. There have never been sufficient funds on hand at any one time to make the work count, and the districts traversed are sparsely populated and not rich enough to support the expense of road building on the scale required. As a matter of fact, past experience has shown that it costs at least as much, on an average, to construct 1 kilometer of good and permanent wagon road in this rough and broken country, where steep grades and torrential rains have to be contended with, as it does to build the same length of narrow-gauge railway, and the cost of maintenance is higher. About 50 roads are planned in Colombia, and only two of these are to-day of sufficient length to make them of actual utility—the Great Central Northern Highway out of Bogota to the north and the road from Palmira to Buga in the Cauca Valley.

The appropriation of 24,000 Colombian dollars, mentioned above, was for the pack trail from Pamplona to the border town of Arauca, where there is access to the plains of the Casanare, as well as some small trade with the Upper Orinoco, principally in hides and rubber.

TRANSPORTATION.

RAILWAYS.

An account of the railways of each commercial district of Colombia will be found in the appropriate district report (see p. 185). Additional information with regard to certain of the lines is given in the "Travel notes" beginning on page 393. Consequently, it is not considered necessary to repeat in the present chapter the detailed data that are available elsewhere in the book.

The following discussion will be confined, therefore, to a consideration of the broader aspects of Colombia's railway problems, with special emphasis on the projected line from Bogota to the Pacific and on the national legislation governing railway construction and operation.

PREVIOUS EXPERIENCES AND PRESENT OPPORTUNITIES IN RAILWAY BUILDING.

Viewing the transportation problem in Colombia in a general way, and judging from the past experience of foreign companies which have built roads in this country, it is evident that the construction of main trunk lines presents a very difficult problem. Many natural difficulties are encountered, such as the climate, the floods of the low coastal region, and the mountainous character of the interior; these all make railway construction very costly—entirely out of proportion to the actual tonnage of traffic available in the country at this time. The previous experience of the National Government with railway promoters and foreign companies has been very unsatisfactory; the authorities are suspicious of new offers and constantly fear the intervention of powerful foreign governments in the affairs of foreign companies who may have claims against the National Government growing out of railway contracts and transportation schemes. The present plan of financing new construction by means of internal loans appears harmful to the country in general, since it takes Colombia's small amount of available surplus capital which should rather be invested in the country for national, industrial, and agricultural development. Business men are therefore in favor of the building of all new main lines of railway with foreign capital; but at the present rate of progress of national construction it will take many years of slow and painful work to secure a trunk outlet from the interior to the sea, on either the Atlantic or the Pacific Ocean. In the meantime the country is suffering from the lack of transportation and its inability to take full advantage of the present market conditions. The national development is thus retarded and hindered.

Several existing lines should never have been built or are badly located, and foreign concessions have cost the Government a great deal of trouble and money, with meager results in actual lines constructed (an example being the Puerto Wilches contract in Santander). The Girardot Railway is badly located and should have been built to the Lower instead of the Upper River (over the same distance and at practically the same cost), thus avoiding the delays and excessive costs of the Upper River navigation. In the opinion of experts, the Cartagena-Calamar line and the Puerto Colombia-Barranquilla line

should never have been built; the opening of the Cartagena "Dique" would have cost less, would have afforded a better seaport at Cartagena, and would have made possible direct connections between river steamers and ocean vessels, thus eliminating the necessity for the railways and providing lower freight and handling costs. The Antioquia Railway from Puerto Berrio to Medellin (as yet uncompleted) was also badly located; it should have been constructed down the Porce Valley to the north from Medellin to seek a direct rail outlet to the sea at Cartagena, thus obviating the necessity of the long 400-mile river haul, always slow and costly, and at the same time opening up a rich mining and agricultural section in the Departments of Antioquia and Bolivar. Plans are now under way for the building of this road from Cartagena to Medellin, the construction work to be performed by the departments of Bolivar and Antioquia in their respective territories; the Bolivar section, to go by way of El Carmen and Monteria, is now declared national and subsidized by the National Government. The building of this railway presents an opportunity for foreign capital, because the line will pass through a producing and potentially rich cattle and agricultural region capable of great development, and also a rich mining region farther to the south in Antioquia.

The building of the new link between Beltran on the Upper River and Ibague, via Girardot, is another much needed and potentially profitable investment, as this line will eliminate the navigation of the Upper River and will connect with the Pacific Railway, tapping the two most productive coffee districts of the country. This line is now under contract with Pedro A. Lopez & Co., of Bogota.

CONTEMPLATED LINE FROM PACIFIC COAST TO BOGOTA.

The largest and most important railway project of Colombia is that for the completion of the Pacific Railway from Palmira, in the Cauca Valley, via Zarzal and thence east over the Quindio Pass of the Central Cordillera to Ibague, thus placing Bogota in direct rail connection with the Pacific coast and diverting a very large portion of the tonnage of the country from the Magdalena River route to the Pacific port of Buenaventura. Although this line will have to cross the mountain range at an elevation of about 12,000 feet, the ascent and descent are easy, with no difficult engineering problems. Even in the most mountainous sections, the line will pass through a rich coffee-producing country, and the local traffic will also be great. It is estimated that the tonnage available and to be diverted to this line will be more than sufficient to take care of the interest on the bonds covering the cost of construction. The exploitation of the coal fields of Cali is closely related to the improvement and extension of the Pacific Railway.

The total cost of the completion of the Pacific System through to Bogota and the rebuilding of certain parts of the present line between Cali and Buenaventura, with the erection of coal docks at Buenaventura, is estimated roughly at \$50,000,000.

Two connecting links in the proposed Pacific-coast-to-Bogota line have already been constructed—namely, (1) the Pacific Railway, from Buenaventura to Palmira (25 kilometers, or 16 miles, east of Cali), and (2) the Girardot and Sabana Railways, from Girardot, on the Upper Magdalena River, via Facatativa to Bogota. Another link, the Tolima Railway, is now under construction and will

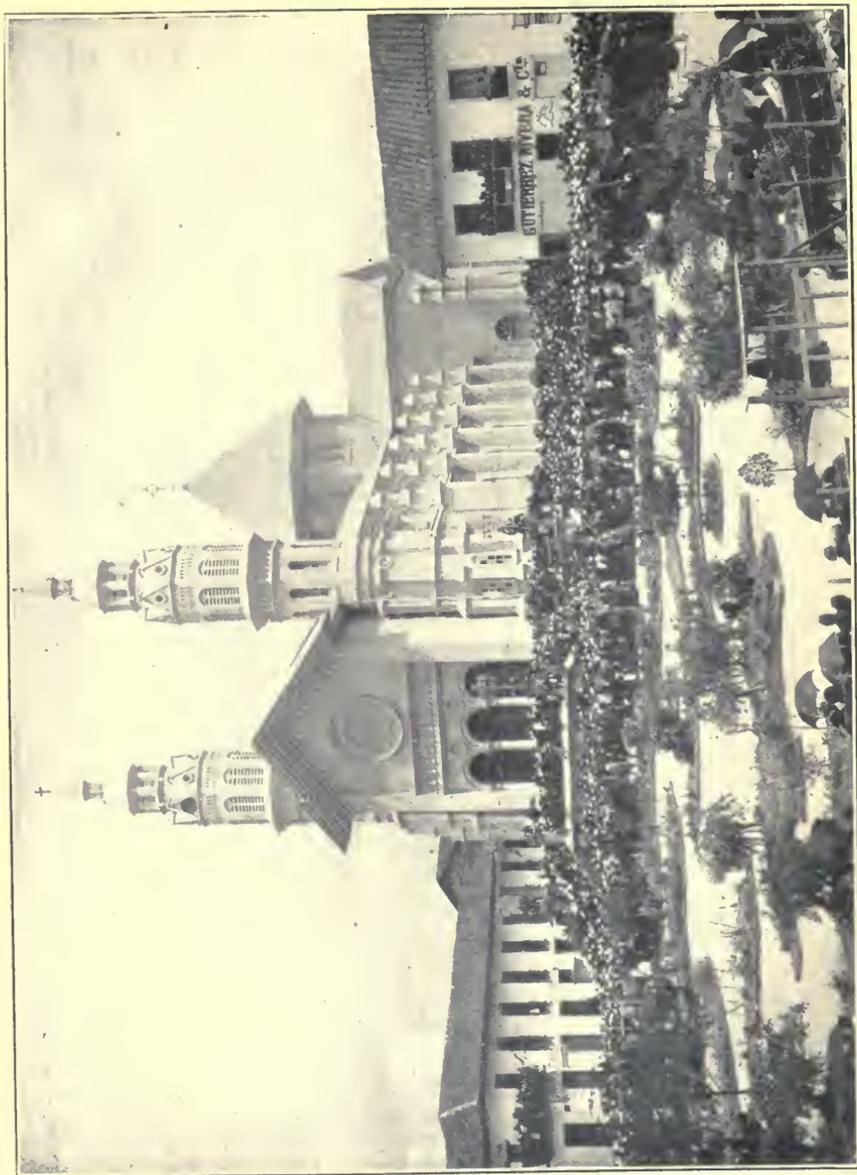


FIG. 21.—PARQUE DE BOLIVAR, MANIZALES.



FIG. 22.—TRAIN ON PACIFIC RAILWAY, BUENAVENTURA TO CALI.



FIG. 23.—STEAMER ON CAUCA RIVER.

soon be completed—from the Magdalena River, opposite Girardot, to Ibague, the capital of the Department of Tolima.

The Colombian Government has definitely decided to push the work on this Pacific route, an important step in this direction being taken in September, 1919, when the existing Pacific Railway (Buenaventura to Palmira) was taken over by the Government with the intention of going ahead with new construction, down the Cauca Valley and approaching the Quindio Pass. The Girardot Railway also is now under the control of the central Government, but the Tolima Railway is departmental and is being rushed to completion as far as Ibague by a Colombian banking house under contract with the Department of Tolima.

The Government paid 40,000 Colombian dollars per kilometer for the Buenaventura-Cali part of the railway, and the subvention for the Palmira-Cartago line was to be 38,000 dollars per kilometer. The 232 kilometers (144 miles) of line constructed, including the Popayan branch, has cost the Government 10,800,000 dollars, which sum includes the cost of reconstruction of that part of the line near Buenaventura, built many years ago. Payment was made by the assignment to the railway company of one-half of the proceeds of the Buenaventura and Tumaco customhouses and with drafts against customs receipts which earned 8 per cent interest. The revenue thus assigned to the railway did not meet the cost of the work, and the Government, when it took over the railway in 1919, still owed large sums to the company for arrears in these payments. The company also collected from the Government one-half of the deficit in the operation of the road.

The following statement shows the distances on the Pacific route:

Lines constructed:	Kilometers.	Miles.
Sabana Railway.....	40	25
Girardot Railway.....	132	82
Tolima Railway.....	30	19
Pacific Railway.....	233	145
Total constructed.....	435	271
Lines to be constructed:		
Tolima Railway, to be completed.....	130	81
Pacific Railway, Palmira to Zarzal (approximately).....	100	62
Zarzal to Ibague via Quindio (approximately).....	200	124
Total to be constructed.....	430	267

The line from Palmira to Zarzal, the point of leaving the Cauca Valley for the Quindio Pass, will be over practically level country, and the work should not exceed 18,000 Colombian dollars per kilometer (0.62 mile) for a 3-foot track. But the mountain work in the Quindio will cost very much more, with many kilometers of track costing as high as 100,000 dollars each. Only an approximate estimate can be made of the probable costs, since there has been no survey of the Quindio Pass and the actual rail distance is not known at this time.

Accurate figures were obtained by the writer, comparing the cost of freight from Manizales to New York via the Magdalena River route and from Manizales to New York via the Pacific route (products in the latter case being shipped out by way of Buenaventura). With coffee as a unit, the charges on the Pacific route per ton of 2,240 pounds were \$16 less than on the Magdalena route. With the extension of the Pacific Railway from Palmira to Ibague and the

completion of the Tolima Railway, freight charges from Bogota to Buenaventura would amount to about one-half of what it now costs to lay 1 ton of freight from Bogota down in Barranquilla. The charges to Barranquilla at the present time are all the way from \$75 to \$102 per ton, according to the class of goods handled.

RAILWAY LAWS.

The basic railway law in Colombia is that of 1892, No. 104, which is still in force. By virtue of this legislation the Executive may grant railway concessions and subsidies without further confirmatory legislation within the prescribed limitations of this law.

A subsidy may be either (1) a grant of not more than 300 hectares of public lands and a sum not exceeding 10,000 Colombian dollars per kilometer of line constructed, payable in 6 per cent bonds, amortizable by 10 per cent of the gross customs receipts of all the customhouses of the country, or (2) a guaranty of interest not exceeding 7 per cent per annum for 20 years on the capital actually invested, not greater than 30,000 dollars per kilometer of line constructed. If the road's net income should, however, during three consecutive years be sufficient to cover the interest guaranteed, the Government's obligation terminates, regardless of future earnings.

Also, concessions may be for the term of 100 years, the Government reserving the right to purchase the property for cash at any time after 50 years at the appraised valuation and after 75 years at one-half this valuation. At the end of the full term of the 100-year concession the railway, together with its equipment and rolling stock (all to be in good condition), becomes the property of the Government without payment.

The subsidy of 10,000 Colombian dollars per kilometer amounts to about \$16,000 United States currency per mile. This is for track of 3-foot gauge or wider, construction to be according to the official specifications, on level ground; and the subsidy has been increased to 15,000 dollars per kilometer for roads built in the mountains. The official specifications are given below:

Single track with sidings according to traffic requirements, 1-meter gauge.

Maximum grade, 3 per cent, compensated on curves.

Minimum radius of curvature, 80 meters (262.4 feet) on line and 50 meters (164 feet) on sidings.

Between two opposing curves there must be a tangent of not less than 30 meters (98.4 feet).

The limits fixed for curves, grades, and tangents are not to be construed by concessionaries or constructors as averages, but are limits to be used only in exceptional cases.

Changes of grades must be conveniently effected by vertical curves. Changes of grade on horizontal curves must be avoided.

On curves the outside rail must have a superelevation corresponding to a velocity of 30 kilometers (18.64 miles) per hour. Straight stretches of track must approach curves by means of convenient transitional curves.

Before leveling in forest country, timber must be cleared 20 meters (65.6 feet) on each side of center of track, and heavy trees that menace the track must be felled, no matter what their distance from the track may be.

When the track is on the side of a mountain, clear 25 meters (82 feet) above and 15 meters (49.2 feet) below center of track.

Width of base will be 4 meters (13.12 feet) at bottom of cuts, including ditches, and 3 meters (9.84 feet) at top of graded track.

Slope of cuts must be as follows: In hard rock necessitating explosives, one-quarter to one-fifth of base to one of height; in soft rock, one-third of base to one of height; in hard earth without filtrations, one-half of base to one of height; in sand or gravel, one and one-half to two of base to one of height.

Slope of roadbed must be: With sandy or ordinary soil exposed to action of water, two or three for one; with earth not exposed to the action of water, one and one-half for one; with stone placed by hand, three-quarters or one-half for one.

In no roadbed may there be ditches with less than 60 centimeters (1.97 feet) to 1 meter (3.28 feet) of berm, according to height.

Ditches in cuts must be parallel to the axis of track and must have a slope of one-half of base to one of height.

In constructing the line along river valleys, ravines, etc., the base of the roadbed must be higher than high-water mark, and where this is not possible retaining walls must be built to prevent washouts. This must be done wherever the roadbed is exposed to attack from water. All work of this kind must be of a permanent nature, so only first-class materials must enter into the composition, such as iron, stone, brick, etc.

In the case of important structures, such as station buildings, bridges of more than 10 meters (32.8 feet) span, etc., all plans must be approved by the Minister of Public Works.

In retaining walls, bridge abutments, etc., faced stone must be used so that all parts present a smooth surface. The copings of walls must have a convenient slope.

Ballast for track must be of crushed stone or rubble of good quality, with a thickness of not less than 20 centimeters (7.87 inches) below the cross-ties, must rise to the level of these, must be of such nature as to distribute the pressure of the trains over the rails, and must be porous, to keep the ties dry.

Ties must be of guayacan or any long-lived wood without cuts or whiteness and conveniently worked, or of iron or steel, at discretion of constructor. They must be 2 meters long, and if of wood must be 20 centimeters (7.87 inches) in width and 15 centimeters (5.9 inches) in thickness. The number of ties per kilometer (0.62 mile) must not be less than 1,650.

Rails must be of good-quality steel of the Vignolle type and of a minimum weight of 45 pounds per yard. Rails must be fastened to ties by means of spikes or screws, and joints must be of angle bars, with a resistance in each pair conforming to established technical rules and having the usual coefficient of safety for the operation of the heaviest engine on the line. Angle bars must have grooves equidistant from the center, to receive the spikes, in order to prevent the track from spreading. Each joint must have four bolts with steel washers, so that the trepidation produced by trains will not loosen the nuts. Rail joints must be opposite to each other on straight track and between ties.

Grades and curves must allow of the heaviest locomotive in the service pulling a weight of 100 tons at a minimum velocity of 30 kilometers (18.64 miles) per hour.

Necessary drains and waterways must be made to keep track in good condition.

On road crossings, whether public or private, passageways must be made either overhead or underneath so as not to disturb the traffic, and in the case of grade crossings guard rails must be provided, with gates or barriers for the security of the public.

In the terminal stations at the ends of the line the construction shall be of masonry, with tile or metallic roofing. At intermediate points secondary construction shall be provided to meet the approval of the supervising engineer.

The rolling stock must consist of at least one engine, three passenger cars, and six freight cars per kilometer (0.62 mile) of road. Passenger cars, in addition to being solid and safe, must be comfortable and decent.

Tunnels must be sufficiently wide to permit trains to pass without injuring workmen who might be in the tunnel.

On swampy ground macadam roadbeds must be made, or pontoons supported on iron girders or masonry.

Some of the concessions in the past have been more liberal than the terms of the law outlined above. The original Puerto Wilches-Bucaramanga contract guaranteed 7 per cent per annum on the sum of 40,000 Colombian dollars per kilometer, and the Pacific Railway Co. received as high as 65,333 dollars per kilometer of narrow-gauge track over the most mountainous divisions of the road between Buenaventura and Cali, and in easier parts 38,000 and 40,000 dollars per kilometer of track constructed—payment being secured by 50 per cent of the gross receipts of the Buenaventura and Tumaco customhouses (amounting to more than half a million dollars a year) and being made every month. A recent (1919-20) concession for the completion of the Pacific Railway over the Quindio Pass of the Central Andes Range confirmed this old contract in its general terms.

The Amaga Railway, which is being built by Medellin capital, receives 10,000 and 15,000 Colombian dollars per kilometer, according to the basic law, though some stretches of this line cost 120,000 dollars to construct and the average cost has been much higher than the subsidy allowed by the Government.

When contracts call for annual interest guaranties of 7 per cent on the basis of cost of 30,000 dollars per kilometer (about 50,000 dollars per mile), interest generally begins as soon as a certain number of kilometers (usually 20) have been constructed and are open for service. Besides the interest on the cost, builders are granted in ownership an area of public lands, on either side of the right of way, not to exceed 300 hectares (about 738 acres) per kilometer. The subsidy bonds and land titles are delivered to the builders in the amount corresponding to each 20 kilometers (12 miles) that are opened to traffic.

The railway and all its appurtenances are exempt from the payment of direct or extraordinary taxation, and the building materials, machinery, and equipment do not pay any import duties or road or river tonnage tolls.

The building company may issue bonds or debentures guaranteed by the proceeds of the railway, and it may also mortgage the railway for the period of the concession. The concessionaire may also transfer the contract or concession to any person or corporation with the consent of the Government, but never to a foreign government. The organization of the companies or corporations engaging in railway building and operation in Colombia are subject to the Colombian laws.

STATISTICS OF OPERATION OF ALL COLOMBIAN RAILWAYS.

The following table shows the length, gauge, movement of passengers and freight, and operating account of all the railways in Colombia for the year 1917, the most recent year for which such statistics are available. Interest charges, outstanding bonds or debentures, etc., are not taken into consideration; only the actual operating receipts and expenditures are included.

Railways.	Length.		Gauge.	Passengers carried.	Freight carried.	Operating account.			
	Kilometers.	Miles.				Gross revenues.	Expenses.	Net revenues.	Operating ratio.
			<i>Inches.</i>		<i>Metric tons.</i>	<i>Colombian dollars.</i>	<i>Colombian dollars.</i>	<i>Colombian dollars.</i>	<i>Per cent.</i>
Antioquia.....	181.0	112.5	36	1,290,741	114,279	895,211	528,751	366,460	59.06
Amaga.....	41.5	25.8	36	772,424	36,537	155,229	96,242	58,987	62.00
Barranquilla.....	28.0	17.4	42	191,059	98,792	385,716	196,465	139,251	58.52
Caldas ¹	10.0	6.2	36	11,139	1,004	2,141	1,302	839	60.82
Cartagena.....	105.0	65.2	36	52,615	46,901	307,571	268,348	39,223	87.24
Cucuta ²	72.0	44.7	(*)	112,340	21,150	221,564	172,551	49,013	77.87
Girardot.....	132.0	82.0	36	172,761	77,386	719,524	434,597	284,927	60.40
La Dorada.....	111.0	69.0	36	125,145	84,045	534,745	208,459	326,286	38.96
La Sabana.....	40.0	24.8	(*)	653,881	116,499	329,051	167,598	161,453	50.93
Northern.....	62.5	38.8	(*)	612,594	90,459	402,332	139,541	262,791	34.68
Pacific.....	233.0	144.8	36	202,301	37,682	454,081	475,462	* 21,381	104.71
Puerto Wilches.....	20.0	12.4	(*)	2,014	808	9,181	18,839	49,638	205.11
Santa Marta.....	94.0	58.4	36	187,325	166,275	563,905	461,887	132,518	77.67
Southern.....	35.0	21.7	(*)	172,389	53,809	122,296	69,020	55,676	54.38
Tolima.....	30.0	18.6	36	169,407	9,837	49,090	45,455	3,635	92.59
Total.....	1,195.0	742.3	.....	4,728,135	955,933	5,131,637	3,281,617	1,850,020	63.95

¹ Caldas Railway began operation in August, 1917.

² Cucuta Railway does not give earnings of branches.

* Gauge 1 meter (3.28 feet).

† Loss.

RIVER NAVIGATION.

For an account of river navigation, which forms one of the most important means of passenger and freight transportation in Colombia, the reader is referred to the sections on the several commercial districts (especially the discussion of the Magdalena River system, p. 203) and also to the series of "Travel notes" beginning on page 393.

PUBLIC HIGHWAYS.¹

PRINCIPAL ROADS—TECHNICAL CONDITIONS GOVERNING CONSTRUCTION.

The roads and trails of Colombia are divided into three groups—national, departmental, and municipal. The national highways are 8,603 kilometers (5,346 miles) in length, according to surveys; they comprise those that unite the capital with the frontier and strategic points, those that lead to regions for colonization, and those that unite the Department capitals with river or sea ports. The principal ones are as follows:

The Central Northern Highway from Bogota to Cucuta, via Tunja, Tequia, Malaga, Chinacota, and Pamplona, with 171 miles in service. This great highway is constructed as far as La Paz, and the plans are made as far as Capitanejo on the border of the Department of Santander, representing approximately 62 miles more. Close to this road are to be found iron, lime, coal, building stone, etc. This highway, when completed, will connect Bogota with the Venezuelan frontier.

The highway from Cucuta to the Magdalena, partly under construction and partly under survey.

The Southwestern Road, destined to unite Bogota with the extreme southern part of the country, passing through Ibague, Calarca, Tulua, Popayan, and Pasto; this has some sections in service and others under construction.

The trail from Pasto to Puerto Asis by the Putumayo River, passing through the villages of San Francisco and Mocoa, two-thirds of which is constructed.

The Northeastern Road from Bogota to Gamarra above the Magdalena River, passing through Chiquinquirá, El Socorro, and Bucaramanga, some parts of which are cart roads that it is planned to improve from time to time.

The Sarare trail between Pamplona and Tame destined to unite the northern part of the Department of Santander with the plains of Casanare; part constructed and part under survey.

The Eastern Road, destined to unite Bogota with Calamar on the River Unilla (an affluent of the Vaupes in the Meta country), passing by Villavicencio and San Martin; this road is in service to Villavicencio and in survey from there on.

The Quibdo trail on the Atrato in the Intendency of Choco to the town of Bolivar in the Department of Antioquia.

The Guadalupe Road in the Department of Huila to a point on the River Ortegusa via Florencia; all in service.

The Yarumal Road from Yarumal in the Department of Antioquia to Monteria in the Department of Bolivar; projected.

¹ As far as the heading "Recent Road Legislation," on p. 302, this account is from "Construction Materials and Machinery in Colombia," Special Agents Series No. 160, by W. W. Ewing.

In addition to the above, which are classed as preferential, there are many others of equal importance covered by ordinance No. 422 of 1917.

The law assigns to public highways 700,000 Colombian dollars per year, which is paid by surtax of 5 per cent of the customs dues. This fund is called the special road fund. Conservation of roads is provided for by road tolls.

Departmental roads are financed by road taxes levied by the departmental governments within the Departments. The amount of these taxes may be estimated at 50,000 Colombian dollars per year for each section. Municipal roads are financed by the municipalities from local taxes and amount to about 500 dollars per year for each municipality.

The technical conditions called for in all new roads are as follows: First-class roads—Maximum grade, 6 per cent; minimum radius, 30 meters (98.4 feet); minimum tangent, 20 meters (65.5 feet). Second-class roads—Maximum grade, 8 per cent; minimum radius, 20 meters (65.6 feet). Third-class roads—Maximum grade, 10 per cent; minimum radius, 15 meters (49.2 feet).

The road system is mostly in mountainous country of high relief, as the towns are usually situated on the plateaus or slopes of the Andes, the three ranges of which traverse the country from south to north and at many points reach above the line of perpetual snow.

The cost of highway construction in the mountains, the road having a base of 8 meters (26.24 feet) and wearing surface of 5 meters (16.4 feet), with macadam 18 centimeters (7.09 inches) thick, was calculated in 1917 as varying from 5,000 to 16,000 Colombian dollars per kilometer (\$4,867 to \$15,573 United States currency), equivalent to \$7,837 to \$25,077 per mile. In 1919 construction costs had increased by 30 per cent.

Machinery is beginning to be used in road making, with good results, and there are in use several stone crushers, excavators, and steam tractors of English manufacture belonging to the Government.

The country is rich in silicious and calcareous rock.

Labor is abundant in the cold country and scarce in the hot. There are no laws as to what constitutes a day's labor, but the custom is nine hours in the cold and seven hours in the hot country. Laborers in the cold country are strong, energetic, sober, and obedient; in the hot country they are not so satisfactory.

RECENT ROAD LEGISLATION.

During the past few years there has been increased agitation for good roads in the country, but the actual work of construction encounters many difficulties, such as the general lack of sufficient funds, the broken nature of the country, and the lack of labor (except in the Departments of Cundinamarca and Boyaca, where there is an abundance of cheap labor and the country is more level and has a cool climate).

Law No. 70 of 1916, known as the "General Law on Roads," declared all previous laws relative to road construction reformed and changed to meet modern conditions.

Law No. 7a of 1917 authorized the investment of 10,000 Colombian dollars (dollar = \$0.9733 United States currency) in five months' time

in the part of the Southwestern Road between Ibague and Calarca, in the Department of Tolima.

Law 8a of 1917 increased the amount assigned to the Northwestern Highway to 42,000 dollars annually (18,000 dollars for the division between Bogota and Socorro, 12,000 dollars between Socorro and Gil Blas (San Gil), and 12,000 dollars between Piedecuesta and La Florida) and elevated this road to the first class, as also that between Tunja and the Magdalena River.

Law No. 12 of 1917 provided for the survey and location of the continuation of the Central Northern Highway (Bogota to Tunja) into the Department of Santander as far as Bucaramanga.

Law No. 36 of 1917 authorized the construction of a steel bridge over the Sumapaz River to connect Cundinamarca with Tolima.

Law No. 42 authorized a contract with the Department of Norte de Santander to continue the construction of the Sarare-Pamplona road.

The roads and trails of the country have been divided into first, second, and third class wagon roads and first, second, and third class trails for mule transport and travel.

HIGHWAY PROJECTS OF NATIONAL GOVERNMENT.

The following table shows the annual assignment of funds for road-building provided by the surtax of 5 per cent on all imports, amounting in 1917 to 361,755 Colombian dollars, of which only 327,899 dollars was paid out by the Treasury in 1917, with an additional 33,388 dollars produced by road tolls throughout the Republic for the purpose of maintenance and repair:

[Colombian dollar=\$0.9733.]

Name of road.	Class.	Annual assignment.	Condition.
Central Northern Highway (Bogota to Tunja).	Wagon road, first class.	250,000	171 miles in service. Upkeep and repairs. No new construction.
Highway, Cucuta to Magdalena River.	Wagon road, first class.	50,000	7 miles in use—Ocana to Las Animas. Remainder under survey.
Southwestern Highway (Bogota to Pasto).	Trail, first class...	42,000	Calarca section under construction. Survey to Popayan.
Pasto to Puerto Asis (Putumayo River).	Trail, second class.	24,000	Formerly under private contract. Work by Government being organized.
Northeastern Highway (Bogota to river via Bucaramanga).	Trail.....	54,000	Repairs only, Bogota to Socorro.
Sogamoso to Puerto Garcitas (on Caqueta River).	Trail, first class...	12,000	Repairs and survey only.
Eastern Highway (Bogota to Calamar).	Trail, first class...	12,000	Repairs, Bogota to Villavicencio. Survey to Calamar.
Quibdo to Bolivar, Antioquia..	Trail, first class...	12,000	Active construction for mule transport under direction of Antioquia.
Guadalupe to Ortegusa.....	Trail, second class.	12,000	Survey from Ortegusa to the south.
Yarumal (Antioquia) to Monteria (Bolivar).	Trail, third class..	16,000	Survey under direction of Antioquia. Important for bringing cattle from Sinu River district.
La Plata to Cali.....	Trail, third class..	12,000	Construction work between towns of Caloto and Taula.
Tolu to Sincelejo.....	Wagon road, third class.	12,000	Construction, Tolu to Pichelin.
Ei Meta Highway (Bogota to Cabuyaro).	Wagon road, first class.	12,000	Repairs only. Not used as wagon road, except for a few miles out of Bogota.
Carare River Highway (Tunja to Puerto Aquileo).	Wagon road, third class.	12,000	Repairs of part built between Tunja and Arcabuco.
Carmen to Zambrano (Bolivar).	Wagon road, third class.	6,000	Survey only.

Name of road.	Class.	Annual assignment.	Condition.
Progreso Road (Tunja to Chameza).	Trail, third class..	Colombian dollars. 6,000	Repairs between Miraflores and Chameza and work between Tunja and Ramiriqui.
Alban to Lower Magdalena.....	Wagon road, third class.	6,000	Survey to Villeta. Work from Alban to Salsama, using Federal prisoners.
Santander to Cauca River (El Valle).	Wagon road, third class.	6,000	Government engaged in condemnation of right of way. No construction work yet.
Quindio Trail (Tolima), Ibaguè to Zarzal via Armenia.	Trail, third class...	3,000	Repairs, under supervision of Department of Tolima. Important trail through Quindio Pass, etc.
Pasto to Barbacoas (Narino)....	Wagon road.....	36,000	53 miles constructed, Pasto toward Barbacoas. Remainder under survey, with old trail to Patia River and Barbacoas. Under direction of departmental government.
Campoalegre to Caguan.....	Trail, second class.	20,000	Work suspended on account of lack of funds.
Las Delicias Road.....	Trail, third class..	3,600	Repairs only. Under supervision of Department.
Moscopan Road.....	Trail, third class..	4,800	Repairs only. Under supervision of Department.
Southern Highway, Sibate to Fusagasuga (Cundinamarca).	Trail, first class...	6,000	Construction and survey. Well-traveled and important local pack road.

All the above-mentioned roads and trails have a definite assignment of funds annually and are either under survey (route location, etc.) or under construction.

The following roads and trails also have assignments of funds, but no survey has been made and no work done thus far:

Name of road.	Class.	Annual assignment.	Condition.
Pamplona to Sarare (Norte de Santander).	Trail, first class...	Colombian dollars. 24,000	Contracted with Department of Norte de Santander. No funds allocated yet.
Cauca Valley to Istmina.....	Trail, third class..	12,000	No survey or work yet.
Barranquilla to Cartagena, via Uslacuri.	Wagon road, third class.	12,000	15 kilometers from Barranquilla to Galapa and from Cartagena to Arjona in Bolivar are in use by automobiles. Remainder is not even good trail.
Monteria to Maganguè (Bolívar).	Trail, third class..	12,000	Survey and work held up by lack of funds.
Western Highway, Mariquita to Choco.	Trail, first class..	6,000	Survey and work held up by lack of funds.
Riohacha to Chiriguana (Magdalena).	Trail, third class..	12,000	Survey and work held up by lack of funds. See old pack trail via Valle de Upar, Soldado, etc.
Tunja to Meta River, via Macanal.	Trail, third class..	12,000	Survey and work held up by lack of funds.
Ambalema to Manizales (Caldas and Tolima).	Trail, third class..	6,000	Repairs only. Good pack road. Important highway in local trade. Crosses the Ruiz páramo south of the Mariquita-Manizales trail.
Nare to Medellín.....	Trail, third class..	3,000	Repairs only, by Department of Antioquia.
Honda to Medellín via Sonson (Antioquia).	Trail, third class..	4,000	Repairs only. Old trail known as the "Sonson Road." Good pack trail.
Pitalito to Mocoa.....	Trail, third class..	10,000	No survey or work, on account of lack of funds.
Las Hermosas-Chaparral to Palmira (El Valle).	Trail, third class..	.....	Survey and work held up by lack of funds.
El Paso to Maganguè.....	Trail, third class..	6,000	Survey and work held up by lack of funds.

The following roads and trails have been projected and planned, but they have no assignment of funds, and surveys or locations have not as yet been made:

Name of road.	Class.	Name of road.	Class.
Medellin to Turbo (Antioquia). Soata to Cocuy (Boyaca).....	Trail, third class. Wagon road, third class.	Southern Highway, Las Papas to Santa Rosa (south from Bogota).	Trail, first class.
Jaraguay to Turbo.....	Trail, third class.	Colombia to San Martin (Department of Huila).	Trail, second class.
Tucura to Riosucio (Choco Intendency).	Trail, third class.	Micay Road.....	Trail, second class.
Atrato River to Pacific (Tebada to Cupica).	Trail, third class.	Apia to San Juan River.....	Trail, third class.
Duitama to Socorro.....	Trail, third class.	Simiti to Magdalena River.....	Trail, third class.
Eastern Highway of Cundinamarca.	Wagon road, third class.	Chiquinquira to Magdalena River.	Trail, first class.

WORK BY DEPARTMENTAL GOVERNMENTS.

The Department of Antioquia is the most advanced in road and trail building. Fifty steel bridges for highways have been erected, and six more are under construction, at a total cost of 220,938 Colombian dollars. The entire Department of Antioquia is very mountainous, but the mule trails are very good and can be traveled with ease at all seasons of the year.

The Department of Bolivar has erected 14 new steel bridges on highways over small streams.

The Department of Caldas, following the example of Antioquia, has been very active in trail construction and has completed the following pack trails:

	Kilometers.	Miles.
Irra trail, Manizales to Riosucio.....	50	31
Manizales to Corregimiento de Brazil (Tolima).....	30	19
Armaviejo trail, Pacora to Rio Arma (Antioquia).....	20	12
La Hermosa trail; Santa Rosa de Cabal to Pereira.....	13	8
Santuario to La Virginia.....	30	19
Herveo trail, Manizales to Marulanda.....	25	16
Marulanda to Pensilvania.....	30	19
Anserma to Quinchia.....	15	9
Los Medios trail, Belen to San Joaquin.....	15	9
Belen to San Juan de Antioquia.....	60	37

Other small branches have been built in Caldas to many small towns; they total 82 kilometers (51 miles) in length, all being excellent pack-mule trails, 2 meters (6.5 feet) wide and paved with stone in the bad places where mud collected in the rainy seasons. Seven large steel bridges have also been put in place—two of them 40 meters (131.2 feet) in length between abutments. There are also two large steel bridges—one, 115 meters (377.2 feet) in length, over the Cauca River on the Manizales-Riosucio trail, and another, of 120 meters (393.6 feet) over the Arauca River. The total trail length for this Department, which is entirely mountainous, is 1,500 kilometers, or 931 miles. The trails are wide and of easy grade, allowing heavily loaded pack animals to pass in the most narrow places.

The Department of El Valle has recently erected 5 steel bridges, 43 of brick and mortar, 4 arch bridges, and 7 new wooden bridges, with 1 suspension bridge. The important new roads and trails are: The Southern Wagon Road, from Cali to Guachinte (toward Popayan),

to be 50 kilometers (31 miles) in length, of which 12 kilometers (7 miles) are now constructed; the Western Highway, from Cali to La Torre, to be 150 kilometers (93 miles) in length, of which 41 kilometers (25 miles) are now constructed; the Central Highway, from Cali to Cartago, on the eastern side of the Cauca River, to be 200 kilometers (124 miles) in length, of which 58 kilometers (36 miles) are now constructed, passing through Palmira, Buga, Buga la Grande, etc. (over which there is automobile stage service), and the Sevilla-Valle trail of 35 kilometers (22 miles) now under construction.

The Department of Cauca (capital, Popayan) has erected recently 9 small steel bridges over highways (trails) and has carried out important repairs on the steel bridges over the Guachicono, Aganche, and Palo Rivers, on the wooden bridge over the Palace River near the town of Polindara and another in the district of Corinto near La Maria, and has also done some canalization work in the River La Paila. Fifteen other small bridges of brick have been built recently.

The Department of Tolima has erected recently two new steel bridges over the Coello River between Espinal and Coello, and another over the Saldana River between Purificacion and Guamo. Seven small wooden bridges have also been newly erected, and a steel ferry has been placed at Natagaima at the ford over the Magdalena River to Girardot.

The Department of Huila has constructed only two new bridges—one at Garzon over the stream of that name and another over the Venado River where the trail for the town of Colombia passes Baraya. There are three bridges of importance over the Magdalena (which is narrow and swift in its upper reaches, in Huila)—one at Maito, another at Guayabal, and a third at Balseadoero. The Department has managed to maintain existing roads (trails), but has done no new trail construction work on account of lack of sufficient funds for this purpose.

The Department of Narino is exerting every effort for the completion of the very important wagon road from Pasto to Barbacoas, in order to secure an outlet to the Pacific port of Tumaco.

The Department of Magdalena (capital, Santa Marta) has erected four new steel bridges—one at the River Zurra in the Tenerife district, one over the Rio Remolino (slough), another at Las Gallinas (slough) on the La Gloria-Simana trail, and another over the slough called Ciego near Concordia. Considerable dredging work has been done at the market place of Cienaga, where the steamers dock from Barranquilla.

Road building in the Department of Atlantico (capital, Barranquilla) has been confined to the prolongation of the Barranquilla-Cartagena Highway, on which an additional 26,000 dollars has been spent, chiefly in small brick culverts and new work toward Barona. The Eastern Highway from Barranquilla to Palmar de Varela, passing through Sabanalarga, is now in service as far as Soledad (about 18 miles). The Barranquilla-Cartagena wagon road is in service as far as Galapa, a distance of 15 kilometers (9 miles).

The Department of Santander has completed the construction of 2 kilometers (1.2 miles) of the wagon road between San Gil and Socorro on the Northwestern Highway; 7 kilometers (4.3 miles) of the wagon road between Velez and the bridge site on the Liberitas River, known as the Carare River Road; and 64 kilometers (40 miles) of trail have

been completed between Puerto Wilches and Puerto Santos on the Lebrija River. Several small wooden bridges have been constructed and all old trails kept in fair repair.

Santander del Norte has confined road building to the maintenance of the Cucuta-Pamplona road via Raizon and repairs to the Salazar-Arboledas trail, the La Arenosa-Zulia River trail, the trail between El Carmen and the Magdalena River via Portachuelo, and the trail from San Pedro to La Cruz.

NATIONAL REVENUE FOR ROADS.

In 1918 national revenue for roads amounted to 58,417 Colombian dollars from tolls, of which collection expenses took about 8,000 dollars. This sum is spent for the repair and maintenance of the existing roads. The product of the 5 per cent surtax for roads on all imports amounted in 1918 to only 233,638 dollars, against 361,755 dollars in 1917. The budgets of the Departments for 1919-20 amounted to a total of 10,479,891 dollars, their principal revenue being derived from the liquor, tobacco, and slaughter taxes. Of this sum it was estimated that at least 1,500,000 dollars would be spent for new road building in the period from June 30, 1919, to July 1, 1920, the largest road appropriations being for Antioquia, Caldas, and El Valle, in the order named. (See "Departmental finances" in the reports on the several commercial districts, beginning on p. 185.)

MARKET FOR ROAD-BUILDING MACHINERY.

It may be stated that there is a fair market for road-building machinery in Colombia, but what is most lacking is a practical knowledge of actual construction work and of the best methods of using local materials, which are of good quality and plentiful in most cases. Roads for wheel traffic are badly needed throughout the Atlantic littoral, but, unfortunately, the three Departments, Magdalena, Atlantico, and Bolivar, have a small and poor population and lack sufficient revenue to undertake much construction work in a large way. The introduction and demonstration of machinery would be easy in this district during the dry season of the year. The importation of heavy machinery into Antioquia would be costly on account of the distance from the seaboard and the high freight rates, though Bogota may be said to be a good market, and a considerable number of steam rollers are now in use on the Great Northern Highway. Cali offers a good market and can be easily reached by water from Panama. In this region (the Cauca Valley) labor is scarce and inefficient, and the departmental officials are interested in road-building equipment.

In all parts of the country oxen would have to be used on scrapers, plows, graders, etc., as the native mules are too small and light for heavy draft work; or else gas tractors would have to be used. At present it is customary to use the round washed gravel of the stream beds for surfacing, but this has proved unsatisfactory, and there is a market for rock crushers that can be made portable, shifting with the progress of the work.

In view of the prosperous condition of the country and the increased revenues of the various departmental governments which are most interested in road building, it is thought that the sending of a representative to the country for a few months to study conditions and

cooperate with the engineers and officials would be productive of some very good business in road machinery. Such a representative would necessarily have to speak Spanish and be practically familiar with road making under all sorts of conditions, the company being prepared to lend his services to the various governments for a certain period after the delivery of the machinery, in order to assure correct operation and results.

MARKET FOR MOTOR VEHICLES.

The present rapid growth of automobile sales in Colombia indicates a recognition of the motor car as an important factor in overcoming the transportation difficulties which have long retarded that country's development. With an area of 440,000 square miles and a population of about 6,000,000, Colombia has only 740 miles of railway, and must depend to a great extent upon its rivers and its highways for the transportation of native products from the interior to the seaports and for the distribution of imported merchandise.

The Magdalena River has been called Colombia's great natural highway, but, as already mentioned, sections of this river are not navigable during the period of low water, and other sections must always be avoided because of dangerous rapids. Colombia has 5,000 miles of national roads, but only a comparatively small part of this mileage can be used for motor traffic. However, in the dry season level stretches of dirt roads, covering only a few miles, are utilized by automobile enthusiasts, and, as indicated in the preceding pages, plans for new road construction and street paving are being put into execution in many districts. The pressing need of more transportation facilities brings the automobile into almost inaccessible places, where cars must be brought in knocked-down condition on the backs of mules. Once introduced, these cars lead to improvements in the pack trails and wagon roads, and so find a continually widening field of operation.

An indication of the growing popularity of the American automobile in Colombia and of the increasing prosperity of the Colombian people appears in the following table of the exports of motor vehicles from the United States to Colombia from the beginning of the fiscal year 1913 to the end of April, 1920, not including the six months between the close of the 1918 fiscal year (June 30) to the first of the 1919 calendar year, when the exports included 30 passenger cars and 2 motor trucks. Of the 1,333 motor cars and trucks shipped in this period, 1913-1920, 25 per cent were exported in the first four months of 1920. The table follows:

Periods.	Commercial cars.		Passenger cars.		Parts.	Tires.	Motor cycles.		Total value.
	Num-ber.	Value.	Num-ber.	Value.			Num-ber.	Value.	
Fiscal year:									
1913.....	3	\$6, 112	110	\$113, 334	\$18, 676	\$16, 211	4	\$900	\$155, 233
1914.....			79	69, 620	19, 970	18, 925	9	2, 066	110, 581
1915.....	1	1, 237	39	34, 956	9, 695	15, 239	11	2, 359	63, 486
1916.....	4	1, 236	91	58, 525	18, 967	28, 617	12	2, 607	109, 952
1917.....	2	4, 998	173	118, 937	27, 777	39, 298	11	2, 128	193, 138
1918.....	3	7, 100	164	121, 422	40, 717	54, 648	13	2, 472	226, 359
Calendar year 1919.....	38	39, 341	253	298, 383	77, 159	124, 238	8	2, 067	541, 188
Jan.-Apr., 1920.....	39	61, 440	302	374, 732	53, 044	51, 578	18	5, 815	546, 609

The exports of motor trucks have increased more than any other item in the motor class, indicating the growing use of this vehicle for highway transportation. In addition to the 39 trucks shipped in the first four months of 1920, 15 motor-truck chassis were exported to Colombia in the same period, pointing to the use of locally produced bodies. The value of the motor trucks increased 52 per cent that year, the 1919 exports having averaged \$1,035 and the 1920 shipments \$1,575 each. Passenger cars increased in average value from \$1,179 in 1919 to \$1,240 in 1920, and motor cycles from \$258 to \$323.

The use of motor trucks for moving freight has only recently been adopted to an important extent, most of the hauling having been done in two-wheel burro carts or on the backs of mules. However, these primitive methods prove expensive, and they are always slow and particularly difficult when the freight consists of heavy or bulky articles. The few importers who now use trucks to bring their goods from stations and wharves to their warehouses find this modern means more economical as well as more satisfactory in other ways. In view of the growing attention given to road improvement, the market for trucks for long-distance hauling to supplant the mule and cart is promising. The use of trailers would be difficult in the narrow city streets with their sharp turns, but trailers could be used to great advantage for hauling cotton and other produce from the country. At present motor trucks cost too much for the average trader or farmer, since even the cheapest cars are sold in Colombia at twice their cost in the United States, because of the expense of transportation, customs duties, etc.

The Department of Bolivar, according to a report of the American vice consul at Cartagena, lends itself readily to the use of automobiles and tractors, and road-building materials are easily accessible. Toward the mouth of the Magdalena River the land is broken by low hills, running south as far as Calamar. To the south of Cartagena and extending to the valleys of the San Jorge and the Cauca the land is one great plain, with only a few undulations. This country is heavily wooded, and it must be cleared by natives who cut out the vines and underbrush, felling and burning the large hardwood trees. Stumps and half-burned logs soon disappear under the action of the heavy rains and the intense heat. A few tractors have been introduced to work this rich land, and the plans for more extensive rice and sugar production make this a promising field for motor cars and machinery.

Cartagena offers opportunities for greatly increased sales of automobiles. The lack of street railways has led to the use of passenger trucks and private cars for transportation from the city proper to the suburbs, 14 motor busses doing a capacity business in this line. About 36 miles of the road between Cartagena and Barranquilla are now passable for automobiles.

The largest market for motor cars is Bogota, the registration in that city in 1919 having reached 237. Barranquilla was second with 150 cars, Cartagena third, Cali fourth, and Medellin fifth. The vicinity of Cali may be considered the most active market for motor cars and trucks, on account of the enlarging stage service in that section. Last year 56 cars were operated as stages, most of these cars being of the medium or low-priced type. Even in the mountainous region at Pasto the motor car is in use on the highway run-

ning north from Pasto toward Barbacoas, which is to extend later to the seaport of Tumaco.

Motor cycles have not been popular in Colombia because of the poor streets and roads, but there has been a considerable increase in their use recently, following road improvements. During the rainy season most roads are impassable for motor cycles, and after rains the roads become caked and rutted and even more difficult for motor cycles than for four-wheeled vehicles.

The customs duties on motor cars and trucks imported into Colombia amount to about \$0.49 (American gold) per 100 pounds, gross weight, including all surtaxes. On automobile parts the duties amount to \$0.97, on tires to \$0.97, and on motor cycles to \$2.43 per 100 pounds. All costs of shipping, entry, etc., from the factory in the United States to the salesroom in Colombia may be estimated, for a car of average size, at about \$300.

Local Colombian firms act as agents for American automobile manufacturers, and they usually sell cars on time payments, requiring \$500 cash and from \$50 to \$100 a month on cars selling at \$1,500 to \$1,800. At the present time all the automobiles in use in Colombia are of American make, with the exception of a few French and Italian cars imported before the war.

The American consul at Cartagena reports that cars from the United States received at that port have usually arrived in satisfactory condition. He adds that knocked-down cars, like heavy parts of machinery, should be encased in materials of substantial quality and should be well braced, cross braces and blocking being recommended to prevent any movement of parts in the cases. For cast-iron parts and delicate machine pieces, sectional braces should be used in packing. All bolts should be countersunk. No packages should weigh more than 500 pounds, for the facilities for unloading heavy packages from the vessel and for transporting them into the interior are inadequate.

While gasoline has been high in Colombia, the recent development of local oil fields and the establishment of a refinery (see p. 129) is expected to provide an adequate supply of gasoline at prices no higher than those prevailing in the United States. This local fuel will undoubtedly prove a great advantage to the automobile trade in Colombia.

FOREIGN TRADE.

INTRODUCTORY REVIEW.

In spite of many difficulties, not the least of which is the broken nature of the topography, making communication extremely difficult, the commerce of Colombia has shown a steady growth ever since the country's liberation from Spanish rule. The population has steadily increased from 1,686,000 in 1834 to 5,472,000 in 1912, and there has been a satisfactory increase in exports and imports per capita.

During the period from 1834 to 1854, with an average population of 2,000,000 people, exports averaged only \$1.30 per capita and imports \$2.05 per capita, showing an unfavorable balance of trade and a very low production. Between 1854 and 1868, with an average population of about 2,250,000 people, exports averaged \$4 per capita and imports \$3.25 per capita, showing an increase of exports over imports and giving the country the first favorable balance of trade. Between 1869 and 1904, with a population of possibly 3,000,000 people, exports had increased to \$5.43 per capita and imports to \$3.21. Since then expansion has been much more rapid, as, during the period from 1905 to 1918, with the population around 5,500,000, exports increased to \$6.90 per capita and imports to \$4 per capita. It is during this last period that commerce has experienced its greatest expansion, imports having doubled in value and exports tripled in value, as is shown in the table on page 313.

Even during the war years (1914-1918) Colombia held its own very well and did not suffer nearly so much as some of its Latin American neighbors, though a serious effect was felt after the entrance of the United States into the conflict in 1917. In 1905 exports and imports were about equal in value, but by 1918 exports had increased over imports to the extent of 14,694,555 Colombian dollars—exports totaling 37,728,559 dollars and imports 22,034,004 dollars—giving the country the largest trade balance in its commercial history. (Colombian dollar = \$0.9733.)

Exports for 1919 (definite figures for which are not yet available) were expected to total, in value, about 60,000,000 Colombian dollars, this unprecedented amount being caused by the heavy coffee crop; 1,300,000 sacks of coffee were shipped, instead of the former high average of 900,000, and at prices about double the previous high averages. Hides also swelled this grand total of exports, a rather large quantity having been held over during 1917 and 1918, on account of the difficulties of shipment, and sold in 1919 at prices averaging about 53 cents per pound, whereas 28 cents had been a previous high price.

It is also estimated that official figures for 1919 will show the imports to have been very great in value (though not much greater in tonnage), almost wiping out the previous favorable trade balance of Colombia. All these imports were chiefly purchased in the United States during a period of high prices for all classes of merchandise, prices being rather higher even than during the war.

The great advantages of the entire situation brought about by the heavy crop and high prices of coffee in 1919 lay in the influx of gold into Colombia from the United States; in the retention in the country of its own production of gold, formerly exported; in the consequent increase of the circulating medium to about \$40,000,000 (including all kinds of currency); and last, but not least, in stimulating American interest in the country, thereby bringing about a better knowledge of Colombia and its natural resources, which is resulting in a better understanding, more liberal credits, the investment of capital, and loans for public-utility projects long needed. Another important factor is the interest being taken by American oil companies in Colombian petroleum development, which will mean a source of new wealth for the country and will lead to investment in other enterprises worthy of development.

CONDITIONS AFFECTING ESTABLISHMENT OF CLOSER RELATIONS WITH UNITED STATES.

As a result of the war, Latin America is coming more and more to believe that future development is dependent upon help from the United States and Great Britain, and the business element of Colombia is looking to the United States for capital and assistance in many lines. Generally speaking, however, it would appear that, before closer relations can be brought about, certain modifications may be necessary in respect to legislation and administrative procedure in Colombia in order to bring about a greater similarity of methods in the two countries, forming a basis for mutual protection and confidence and, at the same time, stimulating business in Colombia itself.

In this connection, the example of the existing customs laws may be cited; these are regarded by many persons as antiquated and as having the far-reaching effect of penalizing business and commerce. It is felt by students of the question that some adequate means of internal taxation should be worked out so that import duties could be placed on an ad valorem basis and the National Government escape from its dependence upon import duties, which now constitute about 80 per cent of the national revenue. One hears suggestions, also, that measures should be passed to eliminate the present system of release of goods from customhouse to the holder of the consular invoice irrespective of the bill of lading, and thereby make "to order" shipments to Colombia possible.

Also, under the present system, the possession of the interior shipping documents does not necessarily give the foreign buyer or lender complete control of goods of export from Colombia unless he also has the ocean bill of lading.

Operating as another deterrent to trade are the existing laws (Code Napoleon) covering mortgages and chattel mortgages, which do not give the lender full protection unless he is in actual possession of the security.

A wider knowledge of foreign banking systems and requirements on the part of Colombians would also help toward a closer mutual understanding and agreement.

GROWTH OF FOREIGN TRADE.

The slow but steady growth of Colombia's foreign trade is shown in the following table:

[Colombian dollar=\$0.9733.]

Year.	Exports.	Imports.	Year.	Exports.	Imports.
	<i>Colombian dollars.</i>	<i>Colombian dollars.</i>		<i>Colombian dollars.</i>	<i>Colombian dollars.</i>
1832.....	1,236,850	1,454,142	1909.....	16,040,198	12,117,927
1842.....	2,386,967	3,423,288	1910.....	17,786,806	17,385,039
1855.....	3,393,251	4,168,468	1911.....	22,375,899	18,108,863
1865.....	6,772,017	7,897,206	1912.....	32,221,746	23,964,623
1870.....	8,247,817	5,759,018	1913.....	34,315,251	28,535,779
1880.....	15,836,943	12,121,480	1914.....	32,632,884	20,979,228
1885.....	14,171,241	6,879,531	1915.....	31,579,131	17,840,619
1895.....	15,088,316	11,523,222	1916.....	36,006,821	29,660,206
1905.....	12,314,916	12,281,720	1917.....	36,739,881	24,758,844
1908.....	14,998,744	13,513,891	1918.....	37,728,559	22,034,004

NOTE.—For a complete table, year by year, of Colombia's foreign trade since 1834, see "Informe del Ministro de Hacienda" for 1918, pp. clxxxiv and clxxxv.

STATISTICS OF COMMERCE IN A NORMAL YEAR.

In a modern prewar year, 1911, the principal exports were as follows:

Articles.	Kilos.	Value.	Articles.	Kilos.	Value.
		<i>Colombian dollars.</i>			<i>Colombian dollars.</i>
Coffee.....	37,899,968	9,475,448	Bananas.....	109,785,748	2,172,000
Gold.....	10,574	3,751,632	Tobacco.....	3,911,012	332,935
Hides.....	4,449,475	1,779,790	Hats.....	93,874	1,088,821
Rubber.....	576,760	900,856	Platinum ¹	2,554	345,896
Ivory nuts.....	10,989,605	739,419			

¹ Greatly increased in value since 1911.

Total exports for 1911 amounted to 22,375,900 Colombian dollars, of which the United States received goods to the value of 12,248,995 dollars, Great Britain 4,596,138 dollars, Germany 1,910,354 dollars, Spain 119,655 dollars, France 769,189 dollars, Panama 42,977 dollars, and all other countries 2,688,591 dollars.

Imports amounted to 18,108,863 Colombian dollars, as follows:

	Colombian dollars.
Great Britain.....	5,838,790
United States.....	5,404,976
Germany.....	3,242,635
France.....	1,718,748
Spain.....	397,733
Panama.....	31,791
Other countries.....	1,474,191
Total.....	18,108,864

Analysis of the export trade before the war shows that more than two-thirds of the coffee went to the United States, the remainder going to England, Germany, and France, with England taking the largest share. Gold, silver, and platinum went to the United States to the extent of nearly 50 per cent, with Great Britain next and

France third. Hides and skins went principally to the United States, as did bananas, hats, rubber, cacao, woods, and medicinal plants and herbs. Germany ranked first as a market for Colombian tanning materials, tobacco, and vegetable ivory.

The proportions of the imports to Colombia from foreign nations may be illustrated by the following statements of the most important items, taken from the returns for 1911, as a normal prewar year.

The principal item of import into Colombia is textiles, of which a total of 8,025,856 Colombian dollars' worth was imported during 1911, coming from the various countries as follows:

	Colombian dollars.
Great Britain.....	4, 202, 734
Germany.....	1, 194, 529
United States.....	1, 089, 945
France.....	897, 993
Spain.....	98, 643
Panama.....	6, 940
Other countries.....	535, 072

Foodstuffs amounted to 2,191,009 dollars, from these countries of origin:

	Colombian dollars.
United States.....	1, 078, 387
Germany.....	540, 132
Great Britain.....	181, 324
France.....	62, 221
Spain.....	46, 029
Panama.....	4, 418
Other countries.....	277, 598

The next important item was metals, amounting to 2,004,081 dollars, furnished by the several nations as follows:

	Colombian dollars.
United States.....	679, 628
Great Britain.....	652, 501
Germany.....	487, 204
France.....	92, 039
Spain.....	5, 793
Other countries.....	87, 916

The next highest item was locomotives and railway equipment, of which 726,048 dollars worth was imported in 1911:

	Colombian dollars.
United States.....	441, 113
Great Britain.....	151, 110
Germany.....	60, 810
France.....	8, 890
Other countries.....	64, 125

Another important item was that of drugs and medicines, amounting to 762,209 dollars in 1911:

	Colombian dollars.
United States.....	327, 832
France.....	154, 005
Germany.....	127, 912
Great Britain.....	109, 011
Other countries.....	43, 449

In the class called "Arts and trades," 702,856 dollars' worth of goods were imported, of which the United States furnished 518,486 dollars. Wines and liquors amounted to 628,595 dollars, of which

the United States supplied 42,059 dollars, France 196,058 dollars, and England 78,232 dollars. Germany led in earthenware and glass, with the United States a close second. Imports of paper products amounted to 453,701 dollars; of this the United States furnished 190,191 dollars, with Germany second. Of electrical machinery and equipment the United States furnished half.

PREWAR TRADE CONDITIONS.¹

Methods of trade and business in Colombia vary little from those in most other Latin American countries. Specialization has not been carried very far as yet, with the possible exception of the hardware trade, and merchants are both importing wholesalers, retail merchants, and exporters, all under one roof and combined. Many such firms are likely to be composed of foreigners settled in the country, or of merchants of foreign parentage, and among these the Germans were conspicuous before the war. Another numerous and important element is that of the Syrians, who are very strong on the Caribbean coast and are even invading the interior at such centers as Girardot, Honda, etc.

Very often, when the Colombians engaged in trade are successful, they come to the United States or to Europe, where they engage in a general export and import commission business or purchase for their own account for their branch stores in Colombia, and these men manage to obtain a very considerable share of the Colombian business. Colombian firms so established in New York have been very successful during the war and have become a powerful factor in Colombian trade, since they maintain branches in all the important commercial centers of the country and even engage in transportation ventures in order to further facilitate their business.

Except for the bananas from Santa Marta and a few special articles, nearly all the exports of the country go to the commission houses of the United States and Europe; before the war, New York, London, and Hamburg, in the order named, were the principal markets. Even a very large part of the gold, silver, and platinum went to the same firms.

The commission houses that receive and sell the larger part of Colombian exports also control a large share of the purchases made by that country abroad. Few jobbers or manufacturers have been able to make a success of branch houses in Colombia, on account of the great distances between the various commercial centers of the country, the difficulties of intercommunication, etc.—the total volume of business in any one line not being sufficient to pay for the extra expense. For this same reason, the commission houses have controlled the bulk of the business with Colombia, and the average Colombian importer prefers to deal with one or two reliable commission houses with which he can place all of his orders for miscellaneous assortments of goods and be taken care of on one or two accounts, thus greatly simplifying his business and making possible the choice of a wide market selection.

Since the war there has been a decided tendency in Colombia toward greater specialization, and merchants are endeavoring to get

¹ Certain parts of this section are based on statements appearing in "Colombia," by Phanor J. Eder.

in touch with manufacturers or jobbers of certain lines in demand. Men's-wear stores are among the commercial innovations, as are also millinery stores, exclusive shoe shops, etc. The largest stores make a specialty of textiles, of course, and cheap cotton goods usually make up at least 75 per cent of their stocks.

Normally, many manufacturers and jobbers maintained agents in Colombia, located in the various centers of greatest commercial activity. These agents were selected from the native or foreign merchants already established in the country, who combined several lines, besides handling their own business, and so were not in a position to give the best attention to any one line entrusted to them.

Although the United States, even before the war, was the largest buyer of Colombian products and the largest purveyor of merchandise, very little attention was given to Colombian trade outside of the commission houses directly interested in the business of the country. American manufacturers often refused agencies or demanded a large initial order for goods; in general, liberal credit were not extended, stocks were not allowed to be carried, and shipments were not made on consignment.

Before the war, European houses had a greater appreciation of Colombian trade than Americans did, and there were numerous Europeans settled in the country and engaged in trade—quite in contrast to Americans, of whom there were almost none. European houses were also more generous in the matter of credits, granting six and even nine months and sometimes a year, with 90 days as the least. Samples were furnished free of charge. The Europeans had a much better general knowledge of conditions in Colombia, their foreign-trade education was much better, they paid more attention to details of packing, billing, invoicing, etc., and they cooperated to a much greater extent. Colombian merchants had many grounds of complaint against American manufacturers and exporters and much preferred to do business with Europe. It is significant that most of the commission houses in New York that lead in trade with Colombia are composed of foreigners—Germans, West Indians, native Colombians, or other Spanish Americans.

CONDITIONS AFTER THE WAR.

The Colombian merchants and business people, long accustomed to relations with Europe, failed to grasp the full significance of the economic situation in Europe following the armistice. They confidently expected England, France, and even Germany to begin exporting, the same as before the war, immediately following the armistice; and during 1919 they refrained from buying for months and months, hoping that their old European suppliers would make quotations. During the war buying had been done chiefly in the United States, though Great Britain managed to keep up a fair trade with Colombia in spite of the lack of tonnage and the restrictions of trade in general; but the Colombian merchants, while interested in many of the American products, liked the old lines and customs better and carefully watched both markets until the reaction of the domestic market and the brisk demand for goods forced them to place heavy orders in the United States in 1919 in the face of a speculative and rising market. With the exception of textiles (and

more of these were taken from the United States than ever before), the principal buying by Colombia after the armistice was in the United States.

It was during this time of active demand in Colombia following the reaction in May, 1919, that the Colombian merchants fully realized the importance and value of the proximity of the New York markets; there was no time to wait for delivery from Europe in six months when deliveries could be secured from the United States in four to six weeks; and, besides, all balances for the coffee crop were in New York, which made financial arrangements very easy.

So sure were the Colombians of immediate resumption of shipments of goods from Europe after the conclusion of hostilities that many merchants canceled orders at war prices by cable upon the news of the armistice, expecting prices to fall at once. The general public also expected a drop in prices after the war. Buying was very slow for goods bought during the war (further affecting the action of the importers canceling), and textiles were offered at very low prices to clear stocks. The receipt of cabled advices from New York in January of considerable reductions in prices of various lines further complicated the situation, with the result that the older houses and more conservative merchants did not place their usual spring orders, and buying in Colombia, or for Colombian stocks, became a matter of speculation. However, a few shrewd merchants of the coast and Medellin, understanding the fundamental situation, bought heavily at the lower prices induced by the heavy cancellations in New York, and later reaped a rich reward of profit when the Colombian market reacted in May and June on account of the coffee situation.

After the market had reacted in May, buyers from the interior flocked down to the coast and to Medellin to buy goods at any prices; stocks were soon exhausted there, and merchants hurried with orders to New York—in many cases not being able to obtain the full assortments or qualities wanted and in most cases being forced to content themselves with smaller quantities of goods than they had expected to purchase for the home demand at that time. The necessity was to take care of the immediate demand in Colombia for the interior trade, but in this merchants were handicapped by the slow deliveries, the lack of ocean freight service, and, still worse, transportation difficulties in the country itself during this rush season.

During the war Colombian merchants found that there were a great many articles called "American specialties" that sold well in Colombia, and merchants were particularly anxious to pick up new lines and new items of trade. Among such "American specialties" the following lines were in active demand:

Clocks.	Wire, barbed and round.
Kitchen ware.	Cutlery.
Spices.	Leather shoe findings.
Drugs and heavy chemicals.	Corn-grinding mills.
Office equipment (files, cabinets, etc.).	Electric-light fixtures.
Show cases and show-window fittings.	Haberdashery.
Lubricating oils and greases.	Heavy hardware and building hardware and fittings.
American white goods.	

STATISTICS OF COMMERCE IN 1918.

Following is a summary statement of Colombia's foreign trade for 1918 (the 1919 returns are not yet available):

Classes of trade.	Kilos.	Value.
Imports:		<i>Colombian dollars.</i>
Through the customhouses.....	54,247,137	19,900,905
By parcel post.....	390,739	2,133,099
Total.....	54,637,876	22,034,004
Exports.....	¹ 234,702,239	¹ 37,728,559

¹ Included in these figures are 9,492 kilos, valued at 98,611 dollars, that were exported by parcel post.

It is apparent from the above statement that in 1918 the balance in favor of exports amounted to 15,694,556 dollars.

The exports during 1918 may be summarized as follows:

By groups.			By countries of destination.		
Groups.	Value. ¹	Per-centage.	Countries.	Value. ¹	Per-centage.
	<i>Colombian dollars.</i>			<i>Colombian dollars.</i>	
Live animals.....	1,432,184	3.80	Dutch West Indies.....	122,717	0.32
Animal products.....	3,090,378	8.19	France.....	778,864	1.47
Mineral products.....	5,740,752	15.21	Great Britain.....	284,728	82.52
Vegetable products ²	25,784,369	68.34	Italy.....	21,443	2.06
Manufactured products.....	1,524,527	4.04	Panama.....	1,649,769	.75
Miscellaneous.....	22,148	.06	Spain.....	554,764	.06
Money.....	35,589	.10	United States.....	31,134,005	4.38
Parcel-post exports.....	98,612	.26	Other countries.....	3,182,769	8.44
Total.....	37,728,559	100.00	Total.....	37,728,559	100.00

¹ Values based on prices obtained in foreign markets.

² Mainly coffee.

The following table shows the weight and value of the imports to Colombia, and the duties collected on them, during the last nine years for which statistics are available:

Years.	Kilos.	Value.	Duties collected.
		<i>Colombian dollars.</i>	<i>Colombian dollars.</i>
1910.....	90,721,516	17,385,040	7,431,657
1911.....	116,087,811	18,108,863	7,704,677
1912.....	135,819,367	23,964,623	9,322,860
1913.....	158,774,092	28,535,780	12,635,185
1914.....	127,752,061	20,979,229	9,554,386
1915.....	101,983,208	17,840,350	7,400,481
1916.....	115,215,155	29,660,206	11,387,212
1917.....	99,743,409	24,758,845	7,978,896
1918.....	51,637,876	22,034,004	4,880,002

The above table shows the high year of 1913 prior to the war, during which 158,774 metric tons of merchandise were imported into Colombia, having a total value of more than 28,000,000 dollars. Imports decreased gradually during the war years of 1914, 1915, and 1916 until the entrance of the United States into the war, after which the

quantity of Colombian imports was cut to almost one-third in 1918. The Government received only about one-third of the usual revenue collected on imports, and this precipitated a financial crisis. One can readily see how the high prices paid for all imports affected returns. In 1913, 158,774 metric tons were valued at 28,535,779 dollars, while in 1918 only 54,637 metric tons cost 22,034,004 dollars. From this it would appear that an ad valorem system would better answer the needs of the Government. The main difficulty lies in the lack of experienced appraisers and the fear that this system might bring about fraud.

Imports by principal classes were as follows during 1918:

Classes.	Value.	Percent- age.	Classes.	Value.	Percent- age.
	<i>Colombian dollars.</i>			<i>Colombian dollars.</i>	
Oils and greases.....	213,838	0.97	Electricity.....	275,382	1.25
Foodstuffs.....	881,511	4.00	Explosives, etc.....	130,588	.59
Combustibles.....	915,282	4.15	Musical instruments.....	77,662	.35
Animals.....	14,952	.07	Locomotion.....	707,726	3.21
Agriculture, mines, etc.	854,966	3.88	Woods and manufactures of.	124,074	.56
Arts and crafts and profes- sions.....	240,186	1.09	Metals and manufactures of.	2,320,769	10.53
Arms and ammunition.....	68,148	.31	Paper and paper products..	710,691	3.23
Paints, varnishes, etc.....	192,884	.88	Soap and perfumery.....	101,057	.46
Wines and liquors.....	294,116	1.33	Plants and seeds.....	6,454	.03
Glass, crystal, chinaware, etc.....	506,321	2.30	Textiles.....	9,587,893	43.52
Rubber, celluloid, etc.....	78,169	.35	Tobacco and manufactures of.....	193,492	.88
Shell, bone, etc.....	42,904	.20	Miscellaneous.....	35,573	.16
Leather and leather prod- ucts.....	332,235	1.51	Parcel-post imports.....	2,133,099	9.68
Drugs and medicines.....	994,032	4.51	Total.....	22,034,004	100.00

It will be seen that parcel-post imports constituted nearly 10 per cent of the total imports; these were chiefly made up of fancy dry goods, men's and women's wear, etc.

The largest percentage was in textiles, amounting to more than 43 per cent of the total imports. In previous years this percentage had been still higher, at times reaching 60 per cent.

Following is a summary of the imports in 1918 by countries of origin:

Countries.	Value.	Percent- age.	Countries.	Value.	Percent- age.
	<i>Colombian dollars.</i>			<i>Colombian dollars.</i>	
Cuba.....	35,592	0.16	Panama.....	482,181	2.19
Dutch West Indies.....	45,862	.21	United States.....	330,480	1.50
France.....	195,203	.88	Other countries.....	1,814,871	8.24
Great Britain.....	12,497,707	56.72	Total.....	22,034,004	100.00
Italy.....	697,472	3.17			
Netherlands.....	5,934,636	26.93			

POSITION OF UNITED STATES IN COLOMBIAN TRADE.

Out of the total exports, amounting to 37,728,559 Colombian dollars, the United States received 31,134,004 dollars' worth in 1918, or 82.52 per cent; and of the total imports, amounting to 22,034,004 Colombian dollars, the United States furnished 12,497,707 dollars' worth, or 56.72 per cent. Of imports the United States furnished 56 per cent in 1917 and 53 per cent in 1916. The United States received 92 per cent of all exports in 1916 and 89 $\frac{3}{4}$ per cent in 1917.

The chief article competing with the United States in Colombian trade was cheap cotton textiles from England, which country furnished in 1918 2,857,956 kilos of such goods, valued at 5,033,570 Colombian dollars—representing almost the entire amount of Great Britain's shipments to Colombia.

CUSTOMS TARIFF AND IMPORT DUTIES.

INTRODUCTION: GENERAL CONSIDERATIONS.

The import duties of Colombia are specific and assessed on the gross weight of the contained merchandise, including wrapping, boxes, etc. Imports are divided into a series of groups for tariff classification purposes (see "Código de Aduanas de Colombia"). Import duties on merchandise imported through the usual freight channels are not now assessed according to the highest value of article contained in a mixed package, as was formerly the case; the law has been changed so as to permit "mixed" shipments in the same container, packing cases being opened and inspected in the customhouses at the ports of entry and the goods classified according to the invoices and packing lists provided for the purpose. The weight of the container or packing is divided proportionately among the different kinds of articles in determining the respective duties. Formerly, before this reform was put into practice, a machine, consisting principally of cast iron but with brass fittings attached, was assessed according to the high rate of the brass articles found thereon. However, the change mentioned does not as yet apply to shipments by parcel post, in which goods are assessed according to the highest value—that is, the highest rate for any group of contents. (See p. 328.)

The fundamental system for levying import duties on the gross weight, regardless of value, imposes a heavy tax and an onerous restraint on commerce in general.

A purpose to protect infant native industries exists in Colombia. Flour, shoes, cotton goods, wheat, sugar, etc., are protected by a high import duty, which, in view of the small volume of domestic manufacture in many of these lines, really operates to the disadvantage of the public by bringing about an increase in cost, since the prices of the domestic products have a direct relation to the competition with imported articles. For example, in 1918 the import duty on wheat was increased with the idea of stimulating the native industry, which flourishes on the table-land of Bogota. The result was that wheat could no longer be imported by the cities of the coast, where there are flour mills, and, moreover, could not be brought down from Bogota on account of the very high freight charges down the Magdalena River and the damage received in transit in consequence of the climate. The result was a shortage of flour on the coast, and the law had to be altered and the duty reduced enough to allow the coast to continue the importation of wheat from the United States for local milling into flour.

From time to time there have been movements to secure the remodeling of the present system, but the Government has been reluctant to undertake this. It is argued that, if the ad valorem system were to be adopted, skilled and experienced appraisers would be necessary (and that the country could not supply them), that the cost of collection and administration would be increased, and that

evasion of proper payment would be more usual than is now the case. The only ad valorem duty now in force is on precious stones, which pay 10 per cent.

All other goods are arranged into 16 groups, or classes, the duties ranging from the minimum of 1 cent per kilo (gross weight), as on machinery. Canned goods are practically excluded, as are also many other lines. Cheap shoes pay the same rate as the best quality, and similar conditions exist in other classes. Many articles are admitted free of duty, such as railway equipment and materials, instruction equipments, books for schools, etc., construction materials, live animals for breeding purposes, etc.

Invoice and technical requirements are complicated and difficult to follow and understand, while violations result in fines, more or less heavy. There is a system in vogue of paying the denouncer of a fraud (or mistake) one-half of the proceeds in duties and in fines, and the result is that advantage is taken of every small oversight and mistake in connection with the declaration of imports. Exporters are best advised to follow strictly the instructions of the Colombian customer regarding declarations of goods in consular invoices; they make a close study of all classifications, and in the event of disputes are very often able to secure a more favorable classification and ruling by the officials at the port of entry. They possess the latest rulings and are best equipped to take the responsibility. The duties being so high, it is vitally essential that merchants should study import tariffs in Colombia in order to price goods properly and meet competition. Their instructions as to invoicing should always be followed by exporters.

There are surtaxes as follows: 2 per cent for the conversion fund, 5 per cent for roads, 3 per cent for consular invoices (parcel post is 5 per cent).

Some ports have different schedules. Tumaco pays only 50 per cent of the original rates.

Treasury bonds are accepted as part payment of import duties. These bonds sell at as much as 30 per cent below par and are bought up by the merchants and local banks and used in the payment of import duties. Banks buy these bonds, which have been issued in payment of Government salaries, obligations for subsidies of railways, etc., and sell them to the merchants, making a profit on the transaction. Rates of exchange vary according to the local supply and demand. Merchants are able to effect a considerable saving in this manner.

In 1914 customs duties were reduced to some extent by new, reformed laws. In an analysis of the reductions it was found that during a period of two years the average value per 100 kilos of imported merchandise under the old law was \$17.59 and under the new law \$16.74. The average import duty collected under the old tariff was \$7.36 per 100 kilos and under the new rates \$6.83—a reduction of 7.2 per cent in the average duty collected on all imports. This reduction in revenue was, however, more than compensated by increased rates on oils and greases, cotton goods, flour, etc. The average duty on all imports amounts to 42 per cent of the value.

It is also noticed that imports have decreased in the case of the more expensive articles, which pay lower duties in proportion to their value, and that most imports have risen in value in the countries

of origin, indicating that, if prices had remained the same, there would have been an even greater reduction in the duty collected.

As all import duties are assessed on the gross weight of the entire package, every pound of unnecessary weight used in packing containers, wrapping, etc., means a dead loss to the buyer, or an increase in the cost price.

In the second place, it must be borne in mind that when a package contains articles that pay different rates of duty—being what is called a “mixed” package—the whole package is taxed at the rate of the highest-rated article contained, *unless the net weight of each different article is stated in the consular invoice and the weight of the container and packing is given separately to make the total gross weight.* The best plan is to pack separately articles taking a different rate of import duty.

DEVELOPMENT OF PRESENT TARIFF SYSTEM.

The present customs tariff of Colombia was adopted December 6, 1913. Before that time the tariff divided imports into 16 classes, on each of which a specific rate of duty was provided.

The new tariff definitely incorporated the increases made by the surtax of 70 per cent imposed in 1905. It contained a number of other increased rates of duty, especially on rice, tea, flour, wheat, butter, sewing machines, laboratory instruments, and ready-made clothing, on all of which the rates were advanced by 20 to 100 per cent. Separate specific rates of duty are prescribed for each article, the articles being arranged under 26 groups, with subdivisions. Articles not specified in the tariff are dutiable at 60 per cent ad valorem. This duty is not to be applied, however, on articles that the customs board (Jurado de Aduanas) decides may fairly be assimilated to articles that are specified in the tariff.

Colombia has a general law providing that changes in the tariff rates shall be made gradually. Accordingly the increases in the rates of duty made by the tariff adopted December 6, 1913, were applied in three monthly installments, beginning one month after the approval of the law, and hence came into full force on March 6, 1914. Reductions in duty are postponed three months, and then are divided into 10 equal installments. Accordingly, on March 6, 1914, one-tenth of the difference between the old and the new rate was taken off, and a similar reduction was made each succeeding month until the lower rate as prescribed by the new tariff became fully effective on December 6, 1914, exactly one year after the approval of the law.

A number of important changes in the classifications and import duties fixed by the tariff law of 1913 are contained in a law of December 19, 1916.

In 1919 the Colombian Congress increased the customs duties on certain imports.

CUSTOMS DUTIES AND CHARGES.

Aside from the tariff duties proper, there is a surtax of 2 per cent of the duties and various additional charges as follows: Unloading and transfer to warehouse, warehouse charge (if goods are not re-

moved within 15 days), stamp taxes on manifests and consular invoices, brokerage charges, internal-revenue taxes on certain articles, and a river tax for goods transported on the Magdalena River to the interior of Colombia.

SURTAX.

Besides the surtax of 70 per cent of the ordinary duties, which, being incorporated in the rate prescribed by the law of 1913, was naturally discontinued as a separate charge, a surtax of 2 per cent of the duties is still in force.

CUSTOMS CHARGES.

A vessel entering a Colombian port is subject to tonnage tax, lighthouse dues, and consular fees on the manifest. While the lighthouse dues are based on the registered tonnage, the tonnage tax is fixed at \$2 per 1,000 kilos of goods unloaded at the Colombian port, and the consular fees amount to one-eighth of 1 per cent of the value declared in the consular manifest. While all these taxes are levied on the vessel, they undoubtedly influence freight rates, and thus, indirectly, affect the importer.

The importer must pay directly a stamp tax on the manifest that he presents. The document must be in quadruplicate, and the forms themselves cost 10 cents a set. To three of these copies stamps to the amount of 80 cents must be attached, so that the total outlay in connection with the importer's manifest is \$2.50. Forty cents in stamps must also be attached to the consular invoice which accompanies the manifest.

At Cartagena the same company that has the wharf concession operates the railway between the wharf and the city. A charge of \$1.40 per ton is made for the unloading and transfer of merchandise from the ship to the railway warehouse in the city.

Customs storage is not obligatory. No charge is made if goods are removed within a period fixed by the collector of customs not to exceed 15 days. If goods are not removed within the time set, the following storage charges are collected: For each of the first 30 days, 2 cents per package not exceeding 75 kilos in weight; for each of the next 90 days, 5 cents per package; and thereafter 10 cents a day per package until a year from the date of importation of the goods. If goods are not removed within that time, they are put up for sale at public auction.

The regular customs storage charges apply only to goods deposited before the payment of duties. According to a decree of December 3, 1917, duty-paid goods may remain in the customs warehouse for a reasonable time, not to exceed 15 days, after which storage will be charged. The charge for such storage was fixed, by a decree of March 11, 1918, at \$0.20 per metric ton for each day (above the allotted time) during which the goods remain in storage.

Customs brokers usually charge from \$3 to \$5 for each shipment, and in addition there is a charge of 10 cents a package for opening and examining the goods in the customhouse.

CUSTOMS PROCEDURE.

CONSULAR REQUIREMENTS.

For a discussion of consular requirements, the reader is referred to page 375.

NECESSITY OF CARE IN FILLING OUT INVOICES.

Consul Isaac A. Manning emphasizes strongly the need for extreme care in filling out invoices of merchandise intended for the Republic of Colombia:

When merchandise imported into Colombia has been wrongly manifested in order to evade the payment of the customs duty rightly due, such merchandise can not be abandoned in the customhouse by the importer. The importer is held liable for the payment of the duties on such merchandise at the rate rightly applicable to it, and is further liable to a fine.

If the importer, in view of the discovery of fraud, should attempt to abandon the goods, they are sold at auction and if the amount of duty is not realized from such sale, restitution for the amount remaining due must be made by the owner of the goods.

"TO ORDER" SHIPMENTS.¹

The Colombian customs law authorizes the clearance of merchandise from the customhouse on presentation of the certified consular invoice, together with four copies of the customhouse manifest, this latter to be made and signed by the importer or his agent; but it does not require the presentation of a bill of lading for this purpose. The clearance must be effected within five days from receipt of the shipment at the customhouse.

Should the importer fail to receive his copy of the invoice, he may ask the customs collector to issue an extra copy of the certified invoice, for which a small fee is charged for stamped paper.

Consignments "to order" are not recognized by Colombian fiscal laws, and the only manner in which such shipments could be made would be by consigning the shipment, under previous agreement with the bank or import agents and the importer, to a bank or import agent. This is done only on rare occasions in this country. The usual custom among European and American exporters is to ship the merchandise direct to the importer and, if a draft is to be presented for acceptance or payment on delivery at Barranquilla, this is sent through some bank. The house on which the draft is drawn must accept or pay the draft in accordance with its contract with the exporter, or find its credit damaged by failure to do so.

American exporters who are doing large business with Colombia find this regulation acceptable, if not entirely satisfactory, and continue doing profitable business with Colombian merchants on the basis mentioned.

While it might be possible to bring about an amendment to the customs law, so as to provide for the requirement of the certified bill of lading before delivery of the goods, this might result in other complications, even to the confiscation of the merchandise by the Government for failure to clear same from the customhouse within the five days specified. Much of the merchandise intended for the

¹ By Isaac Manning, American consul.

interior of the country must be cleared by customhouse brokers before mail leaves Barranquilla for the interior, and if clearance of merchandise for Bogota or Medellin, etc., had to await the acceptance of a draft by the importer in those places, it would mean a delay of at least two months in many cases for the merchandise to reach him.

According to article 12 of the customs regulations, enacted December 9, 1915, it is provided that the shipper who is found to have committed fraudulent declarations in invoices shall thereafter be prohibited from making any declarations regarding shipments to Colombia, and therefore consuls shall withhold certification from any invoices that such shipper may thereafter present.

MANIFESTS.

Within 24 hours after the entrance of a vessel in a Colombian port the captain or consignee of the vessel shall present a manifest to the collector of customs and request a permit to unload. Within 48 hours thereafter—that is, 72 hours after the arrival of the vessel—the importer must present a manifest (or entry) in quadruplicate, “which shall contain the same data as the consular invoice.” If entry is not made within the 72 hours allowed, a fine of 10 per cent of the duties is imposed. After the payment of this fine, however, goods are allowed to remain in customs warehouse, at least at Cartagena, for one year without additional charge. On each of three copies of the manifest an 80-cent stamp must be affixed, and on the accompanying consular invoice a stamp of 40 cents. Since the set of documents costs 10 cents, the entire expense connected with the declaration is \$2.90.

No other document is required to make entry of goods. The presentation of the bill of lading is not requisite, the consular invoice being deemed sufficient proof of ownership. Even if the consular invoice has not been received by the importer he may obtain, by an expenditure of \$1 in stamped paper and repayment of the cost of preparing the document, a copy of the invoice that has been transmitted by the consul to the customhouse.

If no invoice has been received either by the collector or importer, a fine of 25 per cent of the amount of duties on the entire shipment must be paid.

The manifest not only serves to register the transfer of the goods from the vessel to the custody of the customs, but likewise is the document used in the appraisalment of the goods and the liquidation of the duties.

APPRAISEMENT AND FINES.

If the manifest is found to conform to the consular invoice, the collector of customs designates an appraiser, a weigher, and one other employee to make the examination, and the appraiser notes on the manifest any discrepancy.

If the actual weight of goods is found to be less than that recorded on the manifest, and the difference does not exceed 15 per cent, the duty is assessed on the actual weight, not on the (higher) weight declared. If the declared weight exceeds the actual weight by more than 15 per cent, or if the actual weight exceeds the declared weight

by more than 10 per cent, a fine is imposed equal to 20 per cent of the duties on the difference.

If on examination it is found that the articles in the shipment are subject to higher rates of duty than are declared in the invoice, the importer must pay, besides the regular duties on the goods found by the appraiser, a fine equal to double the difference in duty.

If it is found that the description of the goods is incorrect in more than two packages, all the packages in the shipment must be opened, and if the false declaration affects more than five packages in the shipment, the regular fine is increased by one-half.

If the invoice contains goods dutiable at different rates it must show the weight of each article separately. Otherwise each package covered by the invoice must be opened and an increase of 5 per cent of the duties is applied.

The customs regulations in each case refer to differences between the "invoice" and the findings of the appraiser. This brings out clearly the exact conformity that is necessary between the invoice and the manifest.

LIQUIDATION AND PAYMENT OF DUTIES.

Upon the completion of the appraisement the liquidator calculates on the fourth copy of the manifest all import duties and other customs charges. If more than one fine has been incurred each is calculated on the amount of duties involved; the first fine is not added to the duties to serve as a basis for calculating a subsequent fine. The manifest on which the duties have been liquidated is handed over to the importer, who, upon payment, obtains a receipt from the cashier on the manifest.

Importers having any considerable dealings with the customs usually give a time bond, under which they are permitted to postpone payment of duties for 15 days. In the absence of such a bond duties must be paid in cash.

APPEALS.

Appeals may be taken within six days after liquidation of duties to a customs board (Jurado de Aduanas), consisting of the Minister of Finance, another Government official, and a man in private life elected every two years by the House of Representatives. The importer is required to make a deposit of the liquidated amount of duties.

The functions of the board are to decide appeals from fines imposed by collectors of customs, to determine matters of classification which shall be applied at all customhouses until superseded by an act of Congress, and to make an annual report to Congress on all questions of classification that have been decided.

EXEMPTION FROM DUTY.

Special regulations are in force to insure the strict application of laws or decrees according exemptions from duty or reduced rates of duty. To obtain admission of mining supplies, for example, at the reduced rate applied in that case, it is necessary to produce proof in the form of a certificate from the governor of the Department

in which the mine is located, stating that the supplies are intended exclusively for the operation of the mine.

Specially exempted articles must always be invoiced separately from articles subject to duty. Such articles, if imported by parcel post, lose their right to free entry.

TEMPORARY ADMISSION.

Clothing, machinery, musical instruments, and other properties of musical or theatrical companies may be imported free under bond upon presentation of an invoice giving a complete list of the articles. Should any of the articles entered be missing at the time of reexportation the corresponding import duty must be collected.

Somewhat similar regulations apply to the free admission of scientific instruments imported by exploring or scientific expeditions. In order to obtain their free admission, official credentials must be presented to the Minister of Foreign Affairs of Colombia, and information in regard to the proposed itinerary, as well as any other data that may be requested, must be furnished to the Government.

The way to obtain free admission of samples is indicated on page 390.

PARCEL-POST IMPORTS.

Imports by parcel post should be accompanied by an invoice, which, however, need not be certified by the Colombian consul. On all such imports a surtax of 5 per cent ad valorem is imposed in place of the consular fee levied on imports shipped by freight. This tax, unlike the regular import duties, is calculated on the invoiced value of the articles imported, exclusive of transportation and similar charges. If the addressee wishes immediate delivery of goods received by parcel post, but is unable to present the invoice because of loss or delay, the value is fixed by appraisement. After payment of the 5 per cent tax no correction will be made if the importer should later present an invoice showing a lower value than that on which the tax was based.

Gold coin, for which no consular fee is prescribed when shipped through ordinary commercial channels, is likewise exempt from the 5 per cent surtax when imported by parcel post.

Imports by parcel post are uniformly dutiable according to the regular tariff; the reduction allowed on imports through commercial channels entered at certain ports is no longer extended to imports by parcel post.

If articles dutiable at different tariff rates are mailed in the same parcel they are all dutiable at the rate applicable to the article paying the highest rate of import duty.

Only samples of no commercial value may be admitted free of customs duties when imported through the mail. Single gloves, single stockings, and single shirt cuffs, unless mutilated so as to render them unfit for use, are explicitly excluded from free entry. This ruling was made because of the claim that certain importers were seeking to evade the payment of customs duties by importing such articles in different shipments.

The Government has also decided that articles for which a special exemption from duty has been granted lose that privilege if imported through the mail. The special case on which the decision

was rendered had to do with the importation of supplies, implements, and sundries for use in a match factory, to which special exemption from customs duties had been granted. The Minister of Finance decided that free importation should be allowed only on goods imported through the customhouse, since customs officials alone were in a position to apply strictly the special regulations governing the remission of duty. The ruling has bearing on the importation of material by railroad, navigation, and manufacturing companies to which special exemption from duty has been accorded, and duty is therefore payable at the regular rate unless the importation is made through the customhouse.

INTERNAL REVENUE AND RIVER TAX.

In addition to import duties and customs charges, certain internal taxes are imposed on imported tobacco, beverages, perfumery, and playing cards. The following is a complete list of the internal taxes, which are levied on gross weight and paid by means of stamps affixed to the containers:

[Colombian dollar=\$0.9733.]

Articles.	Colombian dollars.
Tobacco:	
Leaf, smoking, or chewing, imported..... per kilo..	0.80
Cigarettes, imported or containing imported tobacco—	
Per package not exceeding 30 grams..... per package..	.02
For each additional 15 grams or fraction thereof..... do.....	.01
Cigars, imported or made of imported tobacco..... per kilo..	1.00
Imported liquors:	
Brandy, whisky, gin, rum, and other distilled liquors, containing more than 22 per cent of alcohol—	
Per bottle not exceeding 200 grams..... per bottle..	.10
For each additional 200 grams or fraction thereof..... do.....	.10
Imported wines:	
Red or white, in pipes, casks, or demijohns—	
Containing not more than 15 per cent of alcohol..... per kilo..	.02
Containing more than 15 and not more than 22 per cent of alcohol..... do.....	.05
Full-bodied wines, red, such as port, muscatel, malaga, sherry, and vermouth..... do.....	.05
Sparkling wines, containing not more than 22 per cent of alcohol—	
Red..... do.....	.10
White or yellow..... do.....	.20
Champagne..... per liter..	1.00
Imported beer..... per kilo..	.05
Fermented extracts for the manufacture of beer..... do.....	.02
Ginger ale, cider, and similar fermented beverages..... do.....	.10
Perfumery containing alcohol, imported or domestic, including cosmetics, toilet powders and waters and dentrifices, of a retail price per kilo (including container)—	
Not more than 10 pesos..... per kilo..	.50
More than 10 and not more than 50 pesos ¹ do.....	2.50
More than 50 pesos ¹ do.....	5.00
Playing cards, in packs not exceeding 52 cards..... per pack..	.20

¹ Perfumed soap is not subject to these duties.

On shipments destined to points in the interior of Colombia transported on the navigable rivers a "river tax" is imposed. The rates now in force, fixed by decree of December 4, 1914, are much higher than those previously applied. On most imports the current rate is \$4 per metric ton, and on exports, except ivory nuts, construction and dye woods, and agave, palms, and similar products for the manufacture of cloth or cordage, \$1.60 per metric ton. The increased rate affects some of the principal exports of the Magdalena Basin, such

as coffee, hides, Panama hats, medicinal plants, and asphalt. In view of the increase of the river tax and the fact that customs duties in Colombia are collected on gross weight, shippers to the interior of Colombia will see the advantage of combining lightness and strength in the packing of their merchandise.

Upon the abolition of the old salt monopoly consumption duties were imposed on salt produced by private concerns ranging from 25 to 45 cents per arroba (25.35 pounds), according to quality. Salt intended for export was exempted from this tax.

TRADE-MARKS AND PATENTS.

The importance of the trade-mark in Colombian trade has been pointed out. Care should be taken to register trade-marks, and this should be done before and not after starting to export. The regulations for Colombia are given below:

Office of registration.—Ministerio de Agricultura y Comercio, Bogota.

Duration.—Twenty years; renewable.

Fees.—Registration of mark, 25 Colombian dollars; renewal, 30 dollars; legalization and translation of power of attorney, 4.50 dollars; publication of application and certificate, 5 dollars. (Colombian dollar=\$0.9733 United States currency.)

Formalities of registration.—Application must be made on stamped paper of 20 centavos, and should state the distinctive mark adopted, the products to be marked, the place of manufacture, and the name and address of the applicant. There should also be presented at least three copies of the mark, each bearing a stamp of 20 centavos, and an electrotype not over 12 by 12 centimeters, and a receipt showing that the fee has been paid. The application must be published three times in the official gazette, and after 60 days the mark may be registered. The certificate of registration must also be published three times. If registration is denied, one-half the fee is returned. There are three classes of marks—manufacture, commerce, and agriculture—but a mark registered in one class may not be registered in another class by a different person.

Registration should be in the maker's own name and not in that of the agent. So long as an exclusive agency continues there are usually no difficulties, but if the agency is changed or different distributing arrangements made, the principal may find that the former agent has it in his power to prevent the importation of the trade-marked goods except when consigned to him and under such terms as he may dictate.

In a trade-mark for the Colombian trade an outline of some well-known animal or bird, such as the crocodile, frog, snake, or parrot, or of a palm, canoe, or other object familiar in Colombia, is better than any geometrical design, no matter how simple in character.

The Colombian laws guarantee the right of property over patents of inventions. Every citizen or foreigner who invents or perfects a machine, mechanical device, combination, or a new method or process of useful application in industry, art, or science, or any product of manufacture or industrial product, may obtain from the Government a patent which insures to the inventor the rights for a term of 20 years—either for himself or for whoever may represent his rights—to the exclusive manufacture, sale, and use of his invention or improvement.

Inventors who have already obtained patents in foreign countries and who make application for patent rights in Colombia are granted the patent provided the thing invented or discovered has not become public. When the patent has been granted for the invention or article already patented in foreign countries, the privilege conceded by the Colombian Government lapses as soon as the period for which the foreign patent was obtained expires.

The application for patent rights must be made to the Executive, and in it must be stated, in a specific manner, in what the patent may consist and also the period for which the patent is asked. After the patent is obtained, any forgery or any act committed against the

property of the articles or inventions patented, constitutes a misdemeanor which the law punishes accordingly and which gives the patentee ground for claiming and obtaining damages. (See Law No. 35 of 1869 and Decree No. 670 of 1907.)

The protection of trade-marks relating to commerce, industry, and agriculture is regulated by Law No. 110 of 1914. In accordance with this law, any person, a citizen or legal resident, a Colombian or foreigner, has the right to distinguish his articles of manufacture, commerce, or agriculture by means of a special mark and to register that mark. There are two kinds of trade-marks—(1) "national," which are those that are filed or registered in Colombia first; and (2) foreign, which are those registered in Colombia after having been registered in a foreign country first. Both enjoy the same privileges.

Any denomination, mark, or sign that distinguishes any industrial or agricultural product may be used as a trade-mark; but any sign or marks similar to one already registered or used in trade—and, in general, any sign that may tend to create confusion with articles previously registered or used—can not be granted the usual protection.

The ownership of a trade-mark is established by the title issued by the Government. The mark must be used on the article to protect it, and if it is not so used within two years after being granted, or if its use is suspended during one year, the right lapses. But in the case of a foreign trade-mark, the immediate importation into Colombia of the article protected is not necessary to preserve the right, which will not lapse provided the same mark is in use abroad to protect the article within the time specified above (two years).

The application for registration of trade-marks is addressed to the Minister of Agriculture and Commerce, on stamped paper and with all the specifications that distinguish the mark in question. Registration can be made for 20 years, and may be renewed by application for an additional 20 years. The Colombian law permits the inheritance and the transfer of trade-marks. After registration of trade-marks, the owner has the right to prosecute in the courts all those who may forge the mark or infringe upon his interest; the prosecution may be for damages in the form of a criminal suit to have the infringer punished according to the Penal Code.

Any act of bad faith that may tend to create confusion between the articles of two manufacturers, merchants, or agriculturists, or that may, without creating confusion, tend to discredit a rival in the market, is considered an act of unfair competition and as such is punishable by the Colombian laws. When evidence of unfair competition has been established, the person prejudiced is entitled to obtain damages, which are settled in the courts of common law.

BANKS AND BANKING.

LIST OF NATIVE AND FOREIGN BANKS.

A list of the banks in Colombia is given below. The capital given is as of 1915, and later particulars, including recent increases in capitalization, etc., will be found in certain cases under the heading "Banks and banking" in the accounts of the several commercial districts, beginning on page 185.

NATIVE BANKS.

[Colombian dollar=\$0.9733.]

Name of bank.	Location.	Capital.
		<i>Colombian dollars.</i>
Banco Central.....	Bogota.....	2,300,000
Banco de Colombia.....	do.....	780,000
Banco de Bogota.....	do.....	500,000
Banco Hipotecario (Mortgage Bank).....	do.....	600,000
Banco de Sucre.....	Medellin.....	1,000,000
Banco Aleman-Antioqueño (Colombian and German).....	do.....	750,000
Banco Republicano.....	do.....	200,000
Banco de Bolivar.....	Cartagena.....	500,000
Banco Unión.....	do.....	200,000
Banco de Cartagena.....	do.....	100,000
Banco Comercial.....	Barranquilla.....	180,000
Crédito Mercantil.....	do.....	250,000
Banco de Ruiz.....	Manizales.....	140,000
Banco de Caldas.....	do.....	400,000
Banco de Oriente.....	Rio Negro.....	100,000
Banco de Sonson.....	Sonson, Antioquia.....	50,000
Banco de Boyaca.....	Tunja.....	40,000
Banco de Giraldo y Garces.....	Cali.....	Private.
Banco de Popayan.....	Popayan.....	55,000
Banco del Sur.....	Pasto.....	500,000
Banco de Mutualidad.....	Bucaramanga.....	500,000
Banco Dugand (Colombian and French).....	Barranquilla.....	2,000,000
Banco de Cucuta (Colombian and German).....	Cucuta.....	150,000

NOTE.—Nearly all of the above-listed native banks increased their capitalization during 1919. For more detailed statements of balances, etc., see "Banks and banking" in the several district sections (beginning on p. 185).

FOREIGN BANKS IN COLOMBIA.

Name of bank.	Location of branches.	Year established.
International Banking Corporation (National City Bank of New York).....	Medellin.....	1912
National City Bank of New York.....	Bogota.....	1920
	Barranquilla.....	1920
	Bogota.....	1919
	Barranquilla.....	1918
	Cartagena.....	1918
	Medellin.....	1919
	Manizales.....	1919
Mercantile Bank of the Americas (Mercantile Overseas Corporation).....	Armenia.....	1919
	Cali.....	1919
	Girardot.....	1919
	Honda.....	1919
	Bucaramanga.....	1919
	Cali.....	1919
	Cartagena.....	1918
American Foreign Banking Corporation, New York.....	Cali.....	1919
All-America Banking Corporation (Royal Bank of Canada).....	Cartagena.....	1918
Commercial Bank of Spanish America.....	Medellin.....	1912

COMMERCIAL EFFECT OF AMERICAN BRANCH BANKS IN COLOMBIA.

Progress in the establishment of American branch banks throughout Latin America has been continuous during the past few years, and further developments along these lines are desirable in order that additional accommodation to trade may be furnished and existing exchange relations enlarged. In three ways the American foreign banks are laying the foundation for the expansion and financing of the foreign trade of the United States—(1) by the direct establishment of branches, (2) by the willingness of the banking community to undertake and organize foreign banking corporations, and (3) by the creation of discount companies dealing in paper growing out of the foreign business. Without the aid of the branch banks in Colombia and the system of discounts at home, it would be impossible for exporters to finance the entire volume of trade now on hand, and the branch banks are also helping their local merchants with additional commercial loans and information and are materially assisting them in enlarging their business—all these activities being of direct benefit to American foreign trade. Also, one of the most valuable services rendered by these branches to American exporters is in the furnishing of more and more accurate credit information, many large American exporters having reported this service as being extremely helpful and entirely adequate. In every country—and Colombia is no exception to the rule—credit forms the basis of all commercial transactions, and on this foundation is built the prosperity of the country.

FORMER BANKING CONDITIONS AND RECENT PROGRESS.

The financial history of Colombia has already been summarized under "National finances" (p. 55). The history of banking in Colombia has been rather a stormy one and involved in the several domestic disturbances and financial crises. Great strides have been made during the past 15 years of domestic peace and prosperity; the commerce of the country has increased rapidly, doubling since 1906, and the banks of the country have taken their part in this advance and received their share of the benefits. During 1919 the capitalization of nearly all the native banks was heavily increased, large dividends were paid to stockholders, and the reserve funds were increased.

BANKING LAWS OF COLOMBIA.

The issuance of paper money is exclusively a Government function (since 1887), so that the only banks allowed by law are banks of deposit and discount and mortgage banks.

The laws governing banks of deposit and discount are No. 57 and No. 153 of 1887 and No. 77 of 1890. In accordance with the provisions of these laws and of article 120 of the Constitution, the Government has the right of inspection of all credit establishments. Before establishing such a bank it is necessary to obtain the authorization of the Government (see art. 54, Law No. 57 of 1887). Such institutions may fix their own rates of interest, discounts, and commissions, and change the same at will provided they give notice in the newspapers 90 days in advance of the date when such change of rates is to become effective. These banks are also authorized to loan

money on real estate. They are obliged to keep a cash reserve amounting to at least 20 per cent of the value of their deposits and accounts current (see arts. 1 to 4 of law No. 77 of 1890).

Mortgage banks are subject to law No. 24 of April 17, 1905. This law was enacted for the exclusive purpose of encouraging the establishment of mortgage banks in the country. In accordance with the provisions of this law, mortgage banks may be established purely as such, but the banks of deposit may also establish mortgage branches or departments. In either case they are entitled to the privilege of issuing mortgage certificates ("cédulas hipotecarias") and to loan money at long terms, the loans to be paid in installments, or annual payments with which the certificates issued are amortized—both principal and interest.

In order to establish a mortgage bank, it is necessary to make a contract with the Government whereby the founder of the bank shall obligate himself:

(1) To present to the Government an authentic copy of the by-laws and of any amendments made thereto.

(2) To advise the Government of all appointments of officers of the bank.

(3) To publish a monthly statement or report, being an authentic copy taken from the books.

(4) To allow the Government examiners access to the books once a month, at least, in order to ascertain that mortgage certificates have not been issued in excess of the value of the mortgage loans.

On the other hand, the Government grants to the mortgage banks:

(a) The right to issue mortgage certificates or credit notes to pay, payable to the bearer ("cédulas hipotecarias").

(b) The validity in all courts of law of said certificates, even when not issued on official stamped paper, and their exemption from the revenue stamp tax.

(c) A military or police squad for protection in case of need, if asked for by the president of the bank, at his discretion.

(d) That in all judgments in favor of the bank arising from debts guaranteed by special mortgage, the only exceptions admitted are the pleas that the payment was duly effected or that there is an error in the account. The former plea can be proved only by the presentation of the voucher attesting the payment to have been made.

(e) That in case of creditors' meetings, the judgments in favor of the mortgage banks shall be kept out as preferential claims and the other creditors shall be paid pro rata out of the balance left in excess of the value of the properties mortgaged to the bank, once the bank has been paid in full (i. e., principal, interest, and costs).

Besides the foregoing advantages, it is also specified that no matter where the real estate be located, legal proceedings may be instituted and carried out at the place where the bank is domiciled.

Mortgage banks may handle loans and are also authorized: To make loans on special mortgages; to accept annuities for the constitution of capital funds in favor of the depositors; to accept deposits for the establishment of annuities in favor of depositors; to issue bonds or notes to bearer or to persons named, guaranteed by the mortgage titles obtained by the bank; to buy, sell, and lease real estate properties which the bank may receive in payment of its claims.

The sinking fund of a mortgage bank must be at least 10 per cent of the amount of the profits declared as dividends to the stockholders of record. The rate of interest, the commissions, the amount of amortization, and the time of loans are left to the discretion of the bank's officers; but the total value of the bonds or notes in circulation just represents the total value or amount of the mortgage loans—that is, the effective volume of its transactions and the capital. The maximum face value of each bond or mortgage note can not exceed 100 Colombian gold dollars.

The concession for the bank may run from 40 to 100 years, and, the contract once legalized, the Government is not supposed to change the terms of the concession; but in case it does so, the bank in the case is entitled to damages in the amount of one-half of its capital.

According to article 54 of Law No. 57 of 1887, "banks already established are entitled to continue as authorized, under the conditions imposed by the law. In order to establish new banks the authorization of the Government is necessary." (See "Commercial Laws of the World," Vol. II, pp. 216 and 184.)

In 1916 the Government appointed a committee to investigate and report on savings banks for the Republic. The *Compañía Colombiana de Mutualidad de Bucaramanga* is the first mutual savings, building, and loan bank of the country (see p. 288).

The report of the Minister of Hacienda for 1916 contained the recommendation that the Canadian system of banking be adopted for Colombia.

OPPORTUNITY FOR NEW BANK AT TUMACO.

All American branch banks established in Colombia reported a very satisfactory business for 1919, and the intention of opening additional branches in the near future is stated.

The port of Tumaco is badly in need of a bank. At present it is dependent upon Cali, and coastwise steamer service does not provide sufficiently rapid communication for business needs. Tumaco has a foreign trade of more than \$2,000,000 annually, and this trade is increasing as the traffic from the Pasto region is being diverted from Ecuador to the Patia River and Tumaco.

PRACTICE OF HANDLING BILLS OF EXCHANGE WITH COLOMBIA.¹

Formerly most exports from Colombia to the United States were financed by 30, 60, and 90 day drafts drawn by the exporter (by arrangement with the American consignee), generally for two-thirds of the market value of the merchandise at time of shipment, but during recent years American banks that have been established in Colombia have handled a growing proportion of the export business to the United States. The producer turns over his coffee or hides to the bank for export, the bank recognizes a credit in his favor for two-thirds of the market value, and when the goods are sold credits him with the balance, less expenses, interest, commission, and exchange. The terms on which these credits are generally arranged, both locally and in New York, are $2\frac{1}{2}$ per cent commission plus interest, the latter item being 12 per cent for local transactions.

More than 80 per cent of Colombia's exports go to the United States; consequently foreign exchange business is much greater with this country than with Europe, and most exporters' bills are drawn in American currency. Previous to the entry of the United States into the war the rates of exchange on New York were for several years close to par—i. e., \$1.03 plus, Colombian, was equal to \$1 United States currency, the Colombian dollar being exactly one-fifth of the English pound sterling. In 1917 rates varied from 103 to 108. In 1918 they fell as low as 80 on account of the impossibility of obtaining gold or merchandise from the United States to liquidate trade balances. During 1919 they gradually went from 90 up to 98. Bills on Europe generally follow New York exchange quotations, merely local factors rarely having any influence.

Bills on the United States are all against New York and are practically all negotiated through banks in Barranquilla. They are principally drawn from Barranquilla, Bogota, and Medellin. American exchange is quoted daily by all the banks, most of which are in constant cable communication with New York. Sometimes the rates are published in the daily newspapers or placed on bulletin boards in the banking office. They are generally based on supply and demand; but other factors, such as exchange gambling, important political news, shipping facilities, and gold shipments frequently intervene to raise or lower the market a few points. On account of slow transportation service, rates sometimes vary as much as $2\frac{1}{2}$ per cent between different cities of the country. New York discount rates are not quoted, local discount rates governing all transactions. These rates are generally one-half of 1 per cent plus regular interest for the usance at the rate of 1 per cent per month.

The usual commission in Barranquilla for collecting all local items, either with or without documents, is one-half of 1 per cent. It costs local banks from 1 to $1\frac{1}{2}$ per cent to collect items on interior points, and in such cases this charge is added to their commission.

¹ This section is by Consul C. E. Guyant, of Barranquilla.

The stamp tax provided by law for drafts is 4 cents per \$100, but this is generally disregarded. In the rare instances in which stamps are used the drawee is supposed to pay the tax, but when he objects—as he generally does—the bank has to pay it. It is probably for this reason that most paper bears no stamps.

Protest charges are approximately \$3 for each protest—a charge which the drawee has to assume if he later pays the draft. Protests are very seldom made, and local banks, in taking items for acceptance and collection, reserve the right to protest or not as they see fit, without responsibility on their part. Items may be protested for failure either to accept or to pay, and the protest must be made within 24 hours after the item is due and before 3 p. m. It may be made before maturity in case of failure or bankruptcy. All protests must be made before a notary public and two witnesses. The holder of a protested item is entitled to legal interest from date of protest until paid. (Colombian Commercial Code, arts. 855–893.)

Merchants most generally object to paying collection charges on items drawn on them, though they naturally pay interest on time drafts when so specified. It is customary for the drawer to stand the expense of collection, and it is suggested that, when it is desired that the importer pay these charges, there be inserted on the face of the draft the phrase “With all banking charges.”

Barranquilla banks do not guarantee the payment of drafts accepted by approved firms.

If the shipping papers contain the drawee's name as consignee there is no advantage in drawing on a firm in Colombia with documents attached to be delivered on acceptance. When merchandise arrives at the port it is delivered to the customhouse by the transportation company, and bills of lading are not required by the customs officials as a condition of delivery to consignee. The only document required to obtain the shipment is the Colombian consular invoice, and the consignee need not obtain the original invoice attached to the draft held by the bank, but may demand a copy of the invoice received direct by the customhouse from the Colombian consul, which is issued to him on the payment of a small stamp fee and which he can use for making the regular customs entry. This procedure is not usual, but it has been resorted to, and unless a firm's credit is known to be good it is better to consign the merchandise to the bank with instructions to indorse the consular invoice to the purchaser upon his accepting the draft.

INSURANCE.

European houses give close attention to the matter of insurance and to the adjustment of claims for the account of clients, and they take all the necessary steps to secure payment, usually making no charge for this valuable service. American houses have shown less interest in the matter, and European houses are reported to be much more prompt and exact in the settlement of claims. American exporters have complained in the past that rates were too high, but this is on account of the fact that ocean freights, customs duties, and inland transportation in Colombia are such that at times the first cost of the goods is doubled, as is frequently the case with hardware and machinery shipments, and all these elements have to be covered by insurance.

There are two Colombian companies, the *Compañía Colombiana de Seguros*, with a capital of 2,000,000 Colombian dollars, and the *Compañía General de Seguros*, with a capital of 300,000 dollars, both with head offices in Bogota and maintaining agencies in all the seaports and principal cities of the country. These companies do a general insurance business, including fire, marine (river-traffic), pilferage, loss-in-transit, partial-damage, etc., and they have been very successful in Colombia, their activities filling a long-felt want in the commerce of the country, more especially in covering loss in warehouse, by theft (pilferage), and during inland transportation. Forwarding agents at the seaports (ports of entry) should be instructed to insure in these companies goods for inland transportation, whenever they are not covered through to destination from point of shipment, by the exporters. This meets with the universal approval of the Colombian merchants, who are beginning to use this service more and more.

During 1919 a combination of 20 of the largest American insurance companies, formed in New York to engage in foreign fire and marine insurance and known as the American Association of Foreign Insurance, investigated insurance conditions in Colombia, with the result that agencies have been recommended for the country. It is understood that policies will cover all risks right through from point of shipment in the United States to destination in Colombia. This will mean a great help to trade in general.

Following is an outline of the procedure for securing admission into Colombia by foreign insurance companies:

File one copy of articles of incorporation in Spanish, the translation being verified by a notary whose signature is authenticated by the Colombian consul in New York (or other place of residence of company). This document is filed with the Minister of Foreign Relations at Bogota.

Make request to President of Colombia for permit to operate in the Republic and publish extracts of articles of incorporation which may be of interest to the citizens of Colombia, in the *Diario Oficial* and departmental papers.

The actual procedure is to send a Spanish translation of the articles of incorporation to a Bogota attorney and have him take the necessary action. Legal fees and cost of publication are between \$150 and \$200 for each company. The company can begin

writing business as soon as the papers are filed with the Minister of Foreign Relations and need not wait for the granting of the permit.

Each agent must have a power of attorney similar to that granted by the Commercial Union Insurance Co. This power of attorney is registered at the capital at a very small cost, and the cost of the appointment of the original agents can be included in the sum mentioned in the third paragraph.

The translation of the power of attorney must be verified and authenticated in the same way as the translation of the articles of incorporation. One copy only is necessary for filing with notary in Colombia, a duplicate copy being signed by the agent and returned to the company. Certified copies of this power of attorney are furnished the agent by the Colombian Government (notary) whenever he needs them.

COMMERCIAL PRACTICES AND REQUIREMENTS.

AGENCIES.

In all the commercial centers there are foreigners and native Colombians who maintain manufacturers' agencies. A number of these agencies have been long established, handling a few special non-competitive lines (principally European before the war), and they have rendered a very important and valuable service in acting as the direct representatives in their districts of the manufacturers or jobbers. Possibly their greatest service has consisted in their possession of commercial information, credit ratings, and data on market conditions, and in their general knowledge of and personal relations with their clientele. Prior to the war a number of American lines and specialties were handled by these agents (not a few of them Germans). Another important duty of the resident agent is that of inspecting damaged or disputed shipments of goods and acting as an arbitrator between the buyer and the seller. Colombian importers like to know that there is, in their own city, a personal representative of the firm with which they place large orders for goods.

Personality in business counts for a great deal more in Colombia than in the United States, and an agent who is well liked personally ("simpático") will usually get the most orders, even in the face of lower prices and better terms from competitors.

When war conditions gave the bulk of Colombia's trade to the United States and old relations with Europe were disrupted to a very great degree, many agents solicited representations of American lines. Many times American exporters made the mistake of appointing one agent to cover the entire country, or gave their agency to a representative who was already handling a number of lines and was not in a position to devote enough of his time individually to any one of them to secure success. Agents for American houses also complained that they were not given proper attention by the home office, that samples were not sent them, that advertising allowances were entirely lacking or were too small, and that cooperation was lacking in all respects.

One of the most important services rendered by American salesmen in Colombia is that of the careful selection of agents, one for each commercial district. The appointment of agents by correspondence is, as a rule, very unsatisfactory, unless the applicant is able to present unquestionable proof of his experience, ability, rating, and integrity. As an example of this fact, one may cite the case of an American house exporting a large line of special hardware and tools, whose agent in Bogota was a young Colombian of wealthy and politically influential family. This man was employed during the day in the Government offices, possessed no business experience whatever, and had the agency only as a pastime outside of office hours.

Foreign trading companies desiring to maintain resident representation in Colombia at one or more points are not required to incor-

porate by and under the laws of Colombia, the procedure being as follows:

It is necessary to file one copy of the articles of incorporation, *in Spanish*, with the translation verified by a notary whose signature is authenticated by the Colombian consul general in New York (or by the Colombian consul in other place of residence of the company), with the Minister of Foreign Relations in Bogota. The actual procedure is to send a Spanish translation of the articles of incorporation to an attorney of Bogota and have him take the necessary action and legal steps. Legal fees and cost of publication are between \$150 and \$200 for each company. The company can begin business as soon as the papers are filed and need not wait for the permit to be issued by the Minister of Foreign Relations.

Resident agents must have a power of attorney similar to that granted to the main office in the country. Each of these powers of attorney can be registered at the capital at a very small cost, and the cost of the appointment of the original agents can be included in the sum mentioned.

Translations of the power of attorney must be verified and authenticated in the same way as the translation of the articles of incorporation. One copy only is necessary for filing with the notary in Colombia, a duplicate copy being signed by the agent and returned to the company. Certified copies of this power of attorney are furnished to the agent by the Colombian Government (that is, by the notary), whenever he may need them for the purpose of representation in court or for the appointment of subagents, etc.

For an account of the procedure necessary in the case of insurance companies and banks, the reader may be referred to the instructions on page 339, under the heading "Insurance."

IMPORTANCE OF EXPORT COMMISSION HOUSES IN COLOMBIAN TRADE.

With the exception of textiles, which form the chief line of importation into Colombia and which are handled principally by the large jobbing houses dealing directly with the larger and long-established importers of Colombia, the great bulk of the trade with Colombia is handled by commission houses established in New York and London (and, before the war, in Hamburg). The principal reason for this lies in the "general-store" character of the business of Colombia—merchants being at the same time wholesale importers, exporters of the products of the country, wholesalers to the interior, and retail merchants, all under one roof. The bulk of business in a given class of merchandise, with the exception of hardware and drugs and medicines, was normally too small to allow of specialization in any one line or even in several lines. The importer of textiles as a main line also bought machetes, barbed wire, paper products, women's and men's wear, chemicals, cement, steel and iron products, furniture, etc. Under these conditions, and in the absence of direct knowledge of the foreign markets or direct connection with manufacturers, the easiest way was to place all orders in the hands of one or two commission houses, which also handled exports of hides, coffee, etc., and ran a current account with the Colombian merchant.

This arrangement also suited the manufacturer who did not know the country well and had no credit information. By selling to the

commission house, which financed all shipments, he eliminated all sales work and credits from his Colombian business.

Commission houses handle their trade (1) through direct correspondence (the parties being known to each other previously), (2) through resident agents, or (3) in many cases, such as those of the Colombian firms cited above, through branch offices located in the principal commercial centers—the last-mentioned method being productive of the best results.

DIRECT FACTORY REPRESENTATION.

There is one notable exception to the general employment of commission houses as intermediaries—that of a large American sewing-machine company which has established offices or agencies in all the larger cities and towns of the country, from which the entire interior is covered by salesmen. Sales of machines are made also on the installment plan. This company formerly sold machines at wholesale to the larger hardware dealers and principal importers of the commercial centers.

Recently, also, a large Colombian firm with headquarters in Cartagena (Mogollon y Cia.) has established branch stores in all the principal cities of the country and is dealing in many American specialties, such as phonographs, office furniture and fixtures, typewriters, files, and electrical goods, while the principal line is paper and paper products, stationery, and office supplies. This firm buys directly from manufacturers or jobbers controlling the lines handled, and has obtained many exclusive agencies for these specialties, selling the country at wholesale also.

A very large American firm, acting as the exporting medium for a number of allied factories making paper and paper products, printing machinery, and supplies, maintains direct agencies in the country.

Ordinary electrical goods are handled by general importers, who carry fixtures and the like, while electrical and other machinery is handled by several large firms that specialize in engineering work of all kinds, having exclusive agencies for the products of the factories represented.

GENERAL CONDITIONS AFFECTING TRADE METHODS.

It is felt that no detailed discussion of the relative merits and functions of the export commission houses, jobbers, agents, etc., is necessary here, since this has all been covered in a very thorough manner in Miscellaneous Series No. 81, "Selling in Foreign Markets," published by the Bureau of Foreign and Domestic Commerce.

It has been shown how the bulk of Colombia's trade, both export and import, is in the hands of the commission houses. Recently the country was visited by an increased number of American salesmen, a few of them representing large factories of specialties such as cork and rubber products, and others representing groups of manufacturers producing such articles as shoes, jewelry, etc.; and all reported excellent business, especially during the middle and latter half of the year 1919. Colombian merchants will nearly always place a small order with a new house, to try it out, and, if the firm is wise, it will pay the most strict attention to that order and see that every-

thing is right, regardless of the expense involved, since such orders are the best means of securing repeat business.

Plans were also under way for the establishment of branch stores and agencies of American export houses representing groups of manufacturers of allied and non-competitive lines, operating under the new Webb law.

An important factor in cementing trade relations with the United States was the increasing number of visits by Colombian merchants to the United States after the war. New business friendships were made and new trade relations initiated which will do more than anything else to promote trade in the future. New lines of American goods were discovered and investigated and new trade channels opened. In the past, while the United States has for a long time been the chief buyer of Colombian exports of coffee, hides, and other products, and also a large purveyor of goods to Colombia, trade balances in New York were used, to a very great extent, to purchase European merchandise—textiles in England, fancy goods in France, and hardware and machinery in Germany. The Colombians liked the attention given them by European exporters; they liked the carefully cultivated personal relations, the methodical system of billing, listing, etc., the liberal credit terms granted, and the proper packing methods employed, and they accuse American exporters of lack of attention to detail, unfamiliarity with Colombian conditions, and bad packing—this last matter having been the cause of more trade disputes than any other shortcoming. It must be confessed that, while forced by circumstances to trade with the United States during the war in greater volume than ever before, at the close of hostilities many large importers looked forward to renewing their old relations with Europe, and the heavy buying in the United States after May, 1919, when the Colombian market reacted on account of the coffee situation, was due more to the failure of Europe to readjust itself economically than to better methods on the part of American manufacturers and exporters.

The Colombian merchant has, for years, been accustomed to make careful comparison between European and American markets, to figure exchange very closely, and to take care of a keen competition locally; and these points will have a great deal to do with the future of trade with Colombia.

ADVANTAGES OF TRADE WITH UNITED STATES—OUTLOOK FOR FUTURE.

Setting aside abnormal conditions, the future of trade with Colombia depends upon a number of important features.

ADVANTAGE OF PROXIMITY.

The great advantage lies in the proximity of the two countries. An order placed, by mail, with a European house takes, from the date of order to the final receipt of the goods, six months on an average. A similar order placed in the United States involves only three to six weeks' time. The Colombian importer is fully aware of this advantage, and consequently there are many special lines, which were long purchased in Europe and for which there is a staple demand, that he would like to be able to obtain, on the same terms, in the United States.

NECESSITY FOR ADEQUATE SHIPPING FACILITIES AND CAREFUL HANDLING OF GOODS.

The natural advantage of closer proximity can be made effective commercially only by adequate and rapid ocean steamer service between the two countries and by better delivery service on Colombian orders from the factories. The improvement of port facilities in Colombia has begun, and adequate handling facilities will be provided.

In this connection it may be mentioned that improvement is needed in the methods of handling ocean freight. No amount of excellent packing will withstand careless handling to and from ship in loading and discharging ocean freight, and, in the past, a large proportion of complaints of bad packing against American manufacturers can be traced directly to careless handling by steamers.

As an example of the harm being done to American trade by careless handling of ocean freight, one may cite the case of a valuable shipment of textile machinery to Colombia late in 1918. The buyers of this equipment had found that the American machinery was lighter in weight and more automatic than the available European makes, but, upon its receipt in a generally smashed-up condition, involving months of costly delay and repairs, it was thought that the European machinery would have been better in the long run, since it would have been received in good condition. In this particular case the packing had been done by experts in the packing of machinery for export, and it really left nothing to be desired; the fault was that of the steamship company.

STUDY OF SPECIAL NEEDS AND CONDITIONS—ATTENTION TO DETAIL.

The universal complaint on the part of Colombians against the United States has been that the Americans did not know the country and its commercial needs and conditions. Barranquilla and Cartagena do not take woollens; Bogota does, but Bogota also takes light-weight goods for tropical wear for distribution in the Magdalena Valley, Tolima, Huila, etc. The tropical part of the country does not want metal buttons or metal fastenings on suspenders, belts, garters, etc., since these rust with the climate and stain the cloth. It is the knowledge of such peculiar conditions as these that has been lacking hitherto.

Tariff regulations are varied and sometimes peculiar; these should be studied, and instructions for the declaration of goods shipped to Colombia should be strictly followed. A case in point is that of an order for cotton hosiery, which the American manufacturer filled with a better grade of Lisle, containing a small quantity of silk thread. As a result, the import duty, instead of being 90 cents per kilo (gross weight), was assessed at \$5 per kilo (gross weight), and the shipment had to be returned.

Packing lists should agree with the invoice in serial numbering and contents of packages. Very often a wholesaling importer has had to unpack an entire shipment of goods from a certain house in order to check the shipment with the invoice. Besides, under such circumstances, it is not possible for unbroken packages to be resold and reshipped to buyers from the interior without recounting and repacking—all entailing extraordinary expense.

CREDIT INFORMATION.

Another most important factor in the maintenance of American sales to Colombia will be the securing of better credit information. Before the war European houses had their own agents in the country, or branches of commission houses, and credit information was at hand. The acquiring of such data was one of the principal services of the resident agent. Potential distributors of goods were known and were helped with proper credits, established houses were held within reasonable trade limits, etc. The establishment of American branch banks in Colombia is doing a great deal to fill this want for the exporters of the United States, as is also the general policy of these banks in making loans to the merchants themselves rather than to the planters (as was done in the old German system).

EDUCATION IN PACKING FOR EXPORT—COOPERATION BETWEEN MANUFACTURERS AND EXPORTERS.

As long as the bulk of the business of Colombia is in the hands of the commission houses, there should also be a closer cooperation between the manufacturer and the exporter. Taking the very important item of packing, it may be said that very often the commission house does not see or inspect the goods before final shipment to Colombia (an order sent out from New York may be filled in the Middle West and routed via New Orleans) and the factory does not follow packing instructions, with the result that there is a damaged shipment and a claim against the commission house. Many export commission houses have had to establish and maintain repacking departments in New York, involving high rents and two extra handlings of merchandise, as well as greater delay and expense under conditions of high labor cost. Colombian importers do not object to packing charges if the goods are properly packed and received in good condition; on the contrary, they are accustomed to, and expect, a reasonable charge for packing, and in many cases goods can be placed in special containers, such as the fiber cases (light and strong) used by the French exporters of millinery, umbrellas, shoes, laces, and the like, which can be charged for as merchandise and which are sold at a profit by the purchaser after the goods are received. Shoes could be packed (and are packed) in such cases and also in cheap trunks, etc., which form an item of sale and profit for the importer, thereby effecting a saving in the heavy import duties assessed on the gross weight of the package.

Cooperation between the manufacturers and the exporters will eliminate the difficulties complained of and will make the goods cheaper for the purchaser.

A step in the right direction has recently been taken by several American firms which have sent trained and experienced investigators to Latin America to report the commercial situation in their particular lines. These men study the markets and report on conditions in each district of the countries visited. Their work is invaluable. They furnish packing specifications for each district in accordance with the transportation demands, and they supply much other vital information upon which a successful future trade can be based. (For further discussion of packing, see Appendix, p. 378.)

MARKING OF SAMPLES.

In the important line of textiles a great deal of good can be done by proper samples, and considerable improvement is needed in the method of presentation of these samples by American firms. All samples should bear the lot number and the serial number, so that duplicate orders may be placed by cable, using these numbers. Widths and lengths should be given not only in yards and inches but also in the metric equivalents. Weights per yard and meter of length should be given and also weights of pieces and bales, net and gross, so that price comparisons can be made by the interested importer. These samples are carefully filed by Colombian merchants for reference, and well-liked lines are pushed as leading and exclusive brands of the house. English piece goods for export are made up of standard lengths and do not vary as do the American. They are also folded in such a manner as to make measuring very easy. Colombian firms complain that they can not get enough samples of textiles from American firms.

BUYING SEASONS—IMPORTANCE OF INFORMATION ON CONDITIONS.

Colombia's ability to purchase foreign goods is in direct relation to the coffee crop of the country and its market price. If there is a large crop sold at high prices, foreign buying is brisk; if the crop is small or prices low, the reverse is generally the case. Bills of goods are sold in the interior by the large wholesaling importers at six months' time, payments being made after the first coffee-picking season of November and December—the main season being, however, June, July, and August, when the largest crop is harvested. These latter months are the buying season of the country at large, when stocks of merchandise are put in for the entire season by the smaller dealers of the interior. A salesman visiting the country during the spring months would find business slow, and this would also be the case after August and during the fall months, though, under normal conditions, the bulk of the trade in textiles is usually placed six months in advance, except where certain lines become exhausted.

A study of the coffee crop of the country and an advance knowledge of the crop situation will greatly assist in gauging future market conditions in Colombia. There are many ways of securing this information. Commission houses are in touch with their branches and agents in the country. The Colombian Government has recently established a Bureau of Information in the Bush Terminal Building in New York City, which cooperates with the various Colombian consulates. There is also the Bureau of Foreign and Domestic Commerce, of the Department of Commerce of the United States, always in touch with conditions through the American consulates, consular agencies, and trade commissioners. Branches of American banks located in Colombia also know conditions in their territories and are in touch with conditions throughout the country. A study and analysis of trade statistics is also very helpful.

PROTECTION OF WHOLESALING IMPORTERS.

One source of complaint in Colombia against American exporters is the alleged failure of American houses to protect the large wholesaling importers, who are the largest buyers of standard and staple merchandise and who justly look upon the small retail trade of their respective districts as part of their legitimate trade field. American representatives of export houses are accused of selling indiscriminately to large and small merchants alike at the same price and terms, the salesman first calling on the large importers and then, in order to sell as much as possible in the territory, selling to the small retail dealers—thereby injuring the larger importer whose volume of business and capital naturally entitle him to the wholesale territory. European houses exporting to Colombia did not do this and were very careful to protect their large customers in standard and staple lines of merchandise. English textile firms, for example, held a certain pattern and quality of weave exclusively for their large customer in a particular territory; the customer's own brand was put on the goods, and the English house refused to let rival establishments in Colombia have this brand. In this manner the importer was able to work up a good and constant trade in this particular line—a staple trade from year to year, which cost little for sales expense and which could be estimated far in advance. The result was large orders yearly for these standard and exclusive brands, with no question of change of styles, credits, or market conditions, this arrangement being well suited to both the manufacturer and the importer.

Very often the small retail dealers have not sufficient capital to finance large orders of this kind, but place such orders in an endeavor to secure the trade. The result often is that a failure is registered, and the large importer, with capital, buys in the shipment at a low figure.

It is the policy of the American banks established in Latin America to protect the merchant and let him take care of the planter and small dealer, rather than to follow the old German system of making loans directly to the planter and of allowing large and long-term credits to small dealers, literally financing them for a year's business. This policy would appear to apply to the business of wholesale exporting, the benefits being unquestioned credits, large annual business from a few good firms, and stable trade—vital considerations when the distance is considered.

In connection with the subject of protecting the large importers, it should be pointed out that trade conditions are changing rapidly in Colombia. Every year sees hundreds of new firms starting to engage in general merchandising business all over the country. Politicians, doctors, and lawyers engage in trade, and, also, stores are started by many young men who have served their apprenticeship in the larger houses of the country. The character of the people is individualistic, making for individual effort on every hand. Talent in abundance is there, but capital is often lacking, and the country itself is very difficult, as has been shown, being broken up into eight or nine different commercial districts by natural barriers, with commercial competition very keen in each district. Many people are attracted to trade by the large margin of profit usual in the country,

but all do not make a success. For these reasons, also, the firm that is represented by its own resident agent or branch office has a great advantage in being able to follow closely all new developments in a particular district.

ESSENTIALS FOR RETENTION OF AMERICAN TRADE.

The essentials for the retention of American trade in Colombia upon the return of the world to normal conditions may be summarized as follows:

1. Cultivation of the personal relation. Courtesy. Mutual respect.
2. Attention to details, prompt accounting, etc. Correct billing. Agreement of quotations and prices charged. Agreement of packing lists with invoices, etc. Correct declarations of shipments.
3. Proper packing in accordance with climatic and transportation requirements, always following buyer's instructions.
4. Protection of the large importer (who knows the local dealers better).
5. Study of commercial needs of the country by districts.
6. Study of economic conditions, buying seasons, crops, etc.
7. Cooperation between manufacturer and exporter for better packing, etc.
8. Better and more adequate credit information.
9. Following of buyer's instructions on packing, billing, invoicing, routing, insurance, etc.
10. Influence on trade of loans and long credits.
11. Progressive advertising.
12. Resident representation.
13. Prompt attention to claims and settlement of disputes.

As has been said, the natural tendency of Colombian trade is to return to Europe, this tendency being fostered by the old and long-established trade relations, which were based on mutual understanding and benefit. There are many advantages to the Colombian merchant in trade with the United States, not the least of these being the closer proximity of the two countries, making possible much more rapid delivery of goods (if adequate tonnage is provided) and thereby partly eliminating the necessity for long-credit terms; but these advantages must be supported by the American exporter as indicated above, or they will be nullified to a very great extent. Colombia's trade is worth while, and will be more worth while as time goes on. The commercial development of the country shows this, imports having increased from about 12,000,000 Colombian dollars in 1906 to 29,000,000 dollars in 1916 (1 dollar = \$0.9733 United States currency), with a still greater and more phenomenal increase in 1919, the total being expected to reach nearly 50,000,000 dollars following the prosperous condition of the country brought about by the coffee situation of that year. Commerce and industry are confidently expected to be very active in Colombia for the next five or six years. New railways are being built, new factories are being erected and the old ones enlarged, the cattle industry is increasing rapidly, mining is certain to expand, and the production of coffee, sugar, and tobacco is increasing.

Sentiment plays a greater part in the business life of Colombia than in that of the United States, and the problem of retaining Colombia's trade is one that must be solved by the American manufacturer and exporter.

The Colombian importer would like to continue to buy in the United States, as well as to ship his exports there, but he also likes to feel that he belongs in our economic scheme; that he is doing

business with broad-minded people who understand his country and his own individual needs and requirements; that he is liked personally and accorded due consideration; that there is time in which to attend to his needs; and that he is getting the cooperation and assistance (in building up his business for the future) to which his past efforts and achievements entitle him.

American capital is being attracted to the oil fields of Colombia, to railway construction, harbor and dock improvement work, river canalization, sugar and tobacco planting, cattle raising and packing houses, platinum and gold mining, and manufacturing; and at least 80 cents of every dollar so invested remains as a permanent investment in the country, enriching it to that extent. More construction work will be done in Colombia during the next 10 years than in the past 50 years; more modern buildings will be erected, more municipal lighting plants installed, and more factory equipment purchased. The time is opportune for active and progressive sales work and business building in Colombia.

PARCEL-POST TRADE WITH COLOMBIA.

The postal measure increasing the weight limit of parcel-post packages from the United States to Colombia from 5 kilos (11 pounds) to 10 kilos (22 pounds), which went into effect early in 1919, had an immediate and beneficial effect on the volume of imports from the United States. Imports of merchandise, consisting chiefly of fancy drygoods, haberdashery, millinery trimmings, women's wear, etc., increased at least 900 per cent by September, 1919, especially at interior points, such as Bogota and Manizales, where freight is slow and rates high.

Another reason for this phenomenal increase in parcel-post importations was the character of the market conditions in Colombia during the year. When the Colombian market reacted in May, 1919, as a result of the coffee situation, stocks were low, as the larger importers had been waiting for lower prices after the termination of hostilities in Europe. The influx of wealth caused an immediate and insistent demand for fancy goods of all kinds—laces, ribbons, stockings, embroideries, fancy dress goods and patterns, trimmings, slippers, etc.—and men's wear of every sort. The Magdalena River, the main artery of traffic with the interior, was in bad condition, and freights were very congested with coffee and with imports previously received. Merchants found that they could receive small and ready shipments of seasonal merchandise by parcel post in less than six weeks from date of order, and so keep up a constantly moving stock of "ready-sale" goods carrying attractive profits. Competition locally was also keen, and by using the parcel-post service merchants were enabled constantly to display new and attractive goods of the latest styles in accord with the local seasons and climate.

Another reason for the use of the parcel post was the market condition in the United States. Prices were very high and fluctuated almost daily, firm quotations being impossible to secure on many lines of goods. By the use of the parcel post small stocks could be obtained quickly without waiting for the usual time required in the case of ordinary freight, and a good trade could be carried on pending

the receipt of large orders of more staple lines or the advent of better buying conditions.

Imports into Colombia by parcel post totaled 680,183 kilos, valued at 2,657,975 Colombian dollars, in 1916, and 390,739 kilos, valued at 2,133,099 dollars, in 1918—goods having almost doubled in cost in the meantime, as is shown by the difference in weight between the two years, the values remaining almost the same.

In 1919, after May, imports by parcel post increased, as has been said, as much as 900 per cent in some commercial centers of the interior, and the returns for 1919 will show an enormous increase in imports by this means.

Exports by parcel post in 1918 amounted to 9,492 kilos, valued at 98,611 Colombian dollars, and consisted chiefly of Panama hats, jewels, platinum, and gold. The United States received 26,000 dollars' worth, Great Britain 42,046 dollars, France 15,212 dollars, and other countries 14,715 dollars.

To convey an idea of the volume of business in parcel-post orders in each commercial district, the following tables are given for 1918:

[Colombian dollar=\$0.9733.]

Post offices.	Spain.	United States.	France.	Italy.	Great Britain.	Other countries.
	<i>Colombian dollars.</i>					
Barranquilla.....	10,461	199,866	24,387	16,272	11,494	5,244
Bogota.....	36,809	507,040	276,443	38,252	103,746	38,678
Buenaventura.....	788	13,375	392	973	884	71
Calí.....	1,040	75,847	26,587	10,241	5,831	4,456
Cucuta.....	1,694	19,678	4,334	2,796	3,212	816
Ibague.....	88	5,884	375	9	164	416
Manizales.....	2,953	50,614	27,715	4,775	5,801	2,487
Medellín.....	13,170	213,403	100,612	28,229	51,057	27,871
Neiva.....	51	5,333	28			
Pasto.....	2,183	7,686	2,275	2,260	5,388	755
Popayan.....	1,475	9,700	2,647	432	1,818	272
Santa Marta.....	65	1,646	7			
Sincelajo.....	276	3,917	573			
Tumaco.....	2,667	7,862	426	1,646	2,038	53
Tunja.....	1,896	5,875	698			

NOTE.—Data are not available for Bucaramanga and Cartagena.

Total parcel-post imports for 1918 were 390,739 kilos, valued at 2,133,099 Colombian dollars. Imports by parcel post from Italy consisted chiefly of felt hats (Borcellino); from Spain of knit goods, stockings, underwear, etc.; and from Great Britain of fancy leather goods and fancy dry goods. Fancy dry goods came also from France.

Exporters of fancy dry goods and notions can take advantage of the parcel-post service to develop a trade with Colombia by the use of catalogues. These, however, should be printed in Spanish; the metric equivalents of weights and measures should be given; and price lists should be so arranged as to remain firm for a considerable period. A good system of catalogues, intended to take care of price fluctuations in the United States, is one made up of loose leaves, or series of seasonal booklets prepared for ready filing together in one large binder. Attractive cuts of the goods offered can be shown in colors, with all reading matter in Spanish. Prices quoted for orders must agree with the invoices.

It should always be remembered that import duties on parcel-post matter are assessed according to the value of the most costly article contained in a mixed shipment (law No. 99) and that silk articles, or silk mixtures, should not be packed with cotton goods, since in such a case the lower-priced goods will take the same import duty rate as the silk, which is assessed at \$5 to \$6 per kilo of gross weight. Duties are specific and are assessed on the gross weight of packages—wrapping and all. The recommendations for packing in general apply to all parcel-post shipments. Packages intended for the interior must be waterproofed in some way, preferably by the use of a light tarpaulin.

Loss by pilferage is very common and should be guarded against in every possible way, even if it is necessary to make a reasonable charge for extra packing cost. When the contents are of very high value (such as manufactured silks and the like), packages should be inclosed in a fine wire-mesh inside wrapping to prevent cutting with a knife. All shipments should be insured through to destination, not merely to port of entry, since most of the loss occurs in the interior. There are two good insurance companies in Colombia, which cover the country, and the exporter should take out a policy covering goods through Colombia from port of entry to final destination; otherwise, if loss occurs in the interior, the purchaser can not collect compensation for his damage or loss.

The best packing, when the nature of the goods permits of it, is in the form of a small pressed bale, protected first by the heavy paper wrapping inside, then by the waterproofing, and then by the outside cover sewed on to fit—the entire package being pressed to the smallest possible volume. Pasteboard liners for piece goods, ribbons, laces, embroideries, etc., should be removed, as all this adds extra weight, on which duty and postage must be paid by the buyer.

Parcel-post imports are not opened and inspected at the port of entry but proceed direct to destination, where they are examined and appraised in the local post office, and the addressee notified.

During 1919 the parcel-post service between the United States and Colombia was used chiefly by export commission houses in filling orders for their clients in Colombia. Its use is becoming more and more general and will continue to increase until such time as Colombia is possessed of better transportation facilities than now exist in the country. Dealers in Colombia are also using the domestic parcel-post service for the distribution of wholesale merchandise from commercial centers to the interior, the goods thus handled being repacked by the importers to suit the transportation requirements of the region to which the goods go.¹

CREDIT TERMS.

The usual terms granted by American exporters on Colombian orders at the present time are 120 days' date, being equal to 90 days' sight, which was formerly customary. Many arguments are advanced in Colombia for and against long terms of credit. Prior to the war the bulk of the import business in staple and standard lines such as textiles was done on the old six-month basis allowed by European

¹ An article on the parcel-post service at Barranquilla, giving a detailed account of the duties and other charges assessed on packages, the parcel-post rates from the principal countries, etc., was published in Commerce Reports for Aug. 5, 1919.

houses on accounts with the older and stronger importing firms of the country, and late in 1919 there were certain indications of a return to this basis on the part of European houses—chiefly affecting the old lines of English textiles and their old and long-established trade connections in Colombia.

However, conditions resulting from the war in general and the prosperous condition of Colombia induced by the coffee situation of 1919 have brought about a great change in Colombian domestic trade as related to the import trade. A powerful factor in this change has been the influence of the several large Colombian commission firms established in New York, which are endeavoring to continue the same system of credits as those obtaining during the war—90 days' sight or 120 days' date—since their own transactions in the United States are based on these terms. Also, the larger and long-established importers who possess sufficient capital for their business needs, in buying and also in taking care of the smaller retail dealers of their district and of the interior, see in these shorter credit terms a great advantage to themselves in holding their wholesale trade, which they can then control through their own system of long credits to the interior retail trade that they finance.

Another important factor influencing the necessity, or lack of it, for longer terms of credit in Colombia, has been the establishment in the country of American branch banks, whose policy it is to protect and assist with loans the merchant importer rather than the planters. As conditions now are, a merchant who desires to increase his business can, upon the presentation of the proper proof of solvency and healthy increase in his turnover, etc., secure additional commercial credit (in many cases almost double that formerly allowed him by native banking institutions), and this further obviates the necessity for longer terms of credit on commercial bills.

Again, there must be taken into consideration the fact of the extraordinarily increased financial resources of the country in general, brought about by the influx of wealth due to the 1919 coffee situation. The circulating medium of the country has been increased in metallic currency (gold), and this increased wealth has been distributed among the small producers as never before, furnishing a good basis of working capital and still further obviating the need for long terms to the dealers of the interior, who are now able to handle stocks, if well selected, three and four times a year instead of once or twice a year, as was formerly the case. In other words, long credits are no longer a vital factor in trade with the interior, and the old order of things is rapidly passing in Colombia; the country, instead of remaining on the old basis and adhering to the system implanted by the Germans and followed by European houses, is adopting the standard of the United States, and the domestic commerce is following along these lines.

Quick deliveries of goods—in other words, rapid and adequate ocean steamship service and prompt attention to orders by the factories in the United States—also tend to eliminate the necessity for long terms of credit.

The old German system of long terms of credit and large stocks of goods, with loans to the planters, practically financed the merchants and made it possible for them to invest their surplus in exports and other forms of business for additional profit. The prevalence of this

system, in the past, gave the merchants their present capital and standing. However, this necessity may be said, as a general thing, to have passed for Colombia. Of course, there are many cases where a stock, if placed in the right hands, at long terms, and more especially in new trade districts not properly developed as yet (as, for example, the Tumaco-Barbacoas-Pasto region), will bring increased business and develop new trade.

It should be borne in mind that the new dealer with small capital needs longer terms on his bills, and, also, that the older merchant with capital has to meet competition when selling to the interior and that time is an important factor in that trade on account of the crop seasons. And, besides, long terms are attractive even to the merchant with sufficient capital, because they enable him to reinvest his surplus in exports and other enterprises of sufficient margin of profit to himself during the year to make the small interest charges on long-term bills a secondary consideration.

LOANS AS TRADE FACTORS.

Another important factor tending to increase trade will be that of loans to Departments and municipalities to be used in public works. The prosperous condition of the country as a whole has given the departmental and municipal governments their first opportunity in years for improvements; they have had financial surpluses over and above their most pressing administrative needs, and these surpluses are being invested in water systems, lighting plants, slaughterhouses, street railways, municipal theaters, and the like—all paying ventures, for which materials and equipment are needed. Several recent examples of the part played by such loans in the promotion of trade are the new docks at Buenaventura and the municipal electric street railway of Medellin, Antioquia. In both cases the necessary money was arranged for with an American foreign-banking institution by an export commission house; this house furnished all the materials, machinery, and equipment for the account of the Government interested and received installment payments periodically on the loan, taking care of both principal and interest in a manner very satisfactory to all concerned. There is a wide field for such enterprise in Colombia to-day. Relations of this nature do a great deal to promote trade between the two countries, and at the same time they have a great influence in enabling Colombia to reap the fullest possible benefit from its present prosperous condition and to prepare facilities for handling future increases in trade and economic development. Such relations are striking examples of what is meant by cooperation in foreign trade, in which all elements composing the complicated system of business are harmoniously combined for mutual benefit. Those elements include the banker, the exporter (commission house), and the representatives of the people who are the purchasers.

The sending of American railway and construction engineers to Colombia to handle and install this new equipment and to work out new projects of development will further tend to increase the sale of American machinery, equipment, and products, and there should be more American professional men in the country. At the present time a German engineer is laying out the new railway for the city of Medellin. The German engineer naturally does not favor the Amer-

ican type of truck, motor, or car, and there is no one on the ground to refute his statements or to demonstrate the American model. A Swiss watchmaker operating a local jewelry store (most of the jewelers are Swiss) never loses an opportunity to demonstrate the alleged defects of watches of American design. A great point is made of the supposed weakness of the American type of watch case with the stem "set" and hand-catch release; the Swiss side-catch design is claimed to be better. American watch repair parts are not carried in stock, of course, the dealer receiving his supply of watches and parts directly by parcel post from Switzerland. These instances illustrate the desirability of having Americans in Colombia to present effectively the case for American goods.

LETTERS TO CONSULS, TRADE COMMISSIONERS, AND COLOMBIAN FIRMS.

Letters directed to American consuls and trade commissioners by American commission firms seeking business with Colombia are much too general in character, as are also those addressed to native firms with which it is hoped to open negotiations and engage in trade.

An examination and analysis of hundreds of such letters received by consuls and Colombian firms showed only about half a dozen that were direct and specific in character and showed a real knowledge of conditions. Many letters asked, in general terms, for data that could be procured only by months of hard traveling in the interior (often by mule-back) and much personal investigation—the writers not realizing that the southern town of Pasto is farther from the Caribbean coast of Colombia, by time of travel (and also expense), than Europe is, and that it has little commercial intercourse with the rest of the country, especially the coast cities where consulates are located.

Other letters show a lack of knowledge of the means of obtaining information near at hand in the United States. For example, one manufacturer wrote to Bogota (his communication being one month in transit) asking for information that had already been published in a monograph of the Special Agents Series, which would have answered every question and which he could have secured for a few cents and in 24 hours from Washington, or by request from any district office of the Bureau of Foreign and Domestic Commerce. He did not know that an expert in his line had already investigated the field and done the work, and 60 days were lost in waiting for the reply from Bogota. Every possible source of information should be exhausted before one writes to Colombia, because the delays are very great. Knowledge of these sources of trade information and the study of them is one of the first requirements of exporting. Many banks in the larger cities of the country have established trade-information bureaus which are familiar with such data. Chambers of commerce and manufacturers' associations are also informed and can help in this regard, and there is always the local or nearest district office of the Bureau of Foreign and Domestic Commerce, where trained and experienced men are employed to assist anyone who applies.

In writing to consuls it should be remembered that they are very busy men, with many demands upon their time outside of their routine work, and that really very little accurate information can be

obtained in one part of Colombia about another part; concerning the trade and merchants of Medellin, for example, more is known in New York than in Barranquilla or Cartagena. There are no trade directories or commercial lists in Colombia.

A general offer of superior facilities to the average Colombian merchant is not sufficient and does not interest him. He is usually a general merchant, dealing in general merchandise, handling exports, and doing a general wholesale and retail business, with long-established connections with some large export commission house in New York. Such firms make inquiries of the consuls only for some special article or goods that they can not get from their connections or that they do not find described in catalogues.

American firms should, in every case, write a personal letter and submit specific offers of merchandise, with detailed specifications and, if possible, samples. Particular lines of goods should, in every case, be specified, with definite price offerings, etc.

South America has been flooded, since the war, with circular letters sent out by many new export firms of all kinds, Colombia being no exception to this. It should be remembered that personal relations count for more in Latin American business than elsewhere and that letters are not sufficient to secure trade; the markets should be visited with a line of samples and relations established in that way. Credit ratings and bank references should always be given by American firms, as Colombian merchants like to feel that they are doing business with a large and responsible house.

In trade lists it will be noted that many names of firms in South America end with an initial, as for example:

Francisco Carbonell W.
Hernando de Castro P. y Cía.

Business houses in the United States should use this initial always, as it is important for two reasons and serves a definite purpose.

The principal object of the initial is to avoid confusion of names and mail, telegrams, etc., caused by many persons having the same name, the initial serving to distinguish one family from another. This condition emanates from the fact that in the early times there were few wealthy families, and these became interrelated by marriage, which accounts for the great number of similar surnames. Given names also are often similar, because of the custom of naming children for the Saint whose fiesta day is approximate to the birthday. Also, very often family names are given children. Another factor is the pride of family connection found in all Latin American countries.

The last initial denotes the mother's surname, as for example:

Hernando de Castro P. y Cía.
Hernando de Castro (Palacios) y Cía.

Hernando de Castro's mother's family name having been "Palacios."

This matter is one of the small courtesies that go to make up a successful business relation.

CATALOGUES.

Both catalogues and samples are excellent mediums of trade promotion if properly presented. Catalogues should, of course, be printed in the Spanish language, with all weights and measures given in the metric equivalents, so that duties, prices, etc., can be estimated and comparisons made. Catalogues put out with color cuts are very well liked and do much good; they are kept for reference and comparison by the importers, who like to receive new catalogues showing new lines of merchandise and are quick to pick out articles, patterns, etc., that they believe will sell well in their districts. A very good plan, and one that is being more and more used, is that of the loose-leaf book which is added to from time to time as seasonable offerings are made. This method avoids the waste attendant upon a situation of fluctuating prices, as was the case in 1919. Prices shown in catalogues should be, so far as possible, firm for at least 30 days (60 being better), and the weights, lengths, widths, gross and net weights of packing cases or containers—that is, shipping weights—should always be specified for each article shown, so that calculations of price and cost can be made and the import duty estimated, as well as freights and other charges. With each folder, booklet, or catalogue should be sent a letter containing specific information and a definite offer.

Goods shipped on catalogue orders must be correct and must agree with the quality, pattern, and price offered. Colombian buyers, being general merchants and having strong competition, are keen judges of merchandise in many lines and are expert in figuring the commercial worth of an assortment.

SAMPLES.

There is great interest in Colombia in American goods of all kinds formerly imported from Europe, and more especially in textiles, but merchants of Colombia complained that they could not get samples of lines badly needed from American firms during 1919. Their requests were generally ignored, and this caused bad feeling. Samples do a great deal of good and are productive of noteworthy orders. They are carefully examined and compared by the Colombians, and new lines and patterns are ordered whenever it is thought that these will sell well locally and in the commercial district of the importer. New and better goods are being demanded by the public in Colombia, and importers are very glad to receive samples and make use of them.

All samples should be marked "Muestras sin valor" ("Samples without value") and should be sent by parcel post with adequate postage. Too often, in the past, postage has not been sufficient and the addressee has had to appear in person at the post office and pay the postage due, with an additional fine of 100 per cent of the shortage. It may seem incredible but it is true that literally thousands of letters, catalogues, advertising matter, and samples are thrown away every month in Colombia on account of inadequate postage or improper addressing.

All samples of textiles sent to Colombia should bear the following data:

- Serial and lot numbers.
- Weight per square yard or yard of length and per meter.
- Number of threads to the inch.
- Net weight of piece.
- Gross shipping weight of bale or package for shipment.
- Price per yard (or meter) and per piece.

All samples should be so marked and arranged so that they can be used at any time for repeat ordering by cable.

EFFECTIVE METHODS OF ADVERTISING.

The commercial advantage obtained by the United States in recent years should be followed up with more progressive advertising in Colombia, to assist in keeping the new American goods before the public and to aid in the introduction of new lines and specialties.

The purchases of the lower classes are largely determined by trademarks, which should be featured in all advertising in Colombia. Pictures are the universal language and are of special value in a country where more than 50 per cent of the population is practically illiterate. More attention is paid to pictures, especially colored lithographs, etc., than to anything else, and a great volume of reading matter is useless. Advertisements of machinery, implements, and similar articles should show them in actual use in tropical or Latin American surroundings typical of the country, in order to better visualize their application and operation. Display advertising, calendars, etc., should carry a background of some local and well-known statue, church, or other edifice. For example, the equestrian statue of Gen. Simon Bolívar at Cartagena is well known all over South America and can be used to good effect as an allegorical background for advertisements intended for not only Colombia but all of Latin America.

The usual American advertisement carries too much reading matter and not enough pictorial display for use in Colombia. Every effort should be made to humanize displays, using "local color" as much and as often as possible.

Local newspapers, especially the large dailies of Bogota and Medellin, are very good mediums, since they are all sent out into the smaller towns of the interior and are reread by many people, who are as much interested in the pictures and advertisements as in the news and other reading matter contained. Advertising rates of the important newspapers and other publications can be found on file at the Colombian consulates in the United States, or at the new bureau of information of the Colombian Government in the Bush Terminal Building in New York City.

Most export trade journals are published primarily to reach the trade, but their effect on the consumer in Colombia must not be underestimated. All importers of hardware and merchandise, as well as the larger landowners and planters, read a good many of these periodicals, and all advertising matter is carefully reviewed. These people are quick to select some machine, device, or new material suited to their needs, and they often write immediately for more information, though it is also usual to commission an import dealer

or commission house in New York to look up the matter and place the orders. The trade journals edited in Spanish are very well liked and are found in all offices, clubs, salons, and even barber shops, where they are in constant demand by the interested public of the better class.

Outdoor advertising in Colombia is rather sensational in its nature. Signs are painted on the walls of buildings, and posters are also used with good effect. The street cars of Bogota use cards, as in the United States. There are not many signboards in the country; lumber is too scarce, paint is very expensive, and traffic is not heavy. Most of the outdoor advertising is in the towns.

There are two electric signs (moving) in Barranquilla and several good ones in Bogota and Medellin, these being a very recent innovation brought from the United States by enterprising native merchants and agents; the signs advertise chiefly local makes of cigarettes.

A new firm of condition-powder makers in Medellin has secured excellent results from a series of advertisements of a vivid caricature nature, showing always a sick mule and a doctor.

Advertising matter is subject to the following rates of duty per kilo (2.2046 pounds), gross weight:

	Cents.
Advertisements on paper or cardboard, with or without illustrations and with or without cardboard frames.....	2.04
Calendars in pamphlet form or for walls.....	1.02
Calendars in sheets.....	2.04
Advertisements on tin plate.....	17.34
On enameled iron.....	20.4
On copper, bronze, brass, and similar metals.....	51
Catalogues are admitted free of import duty.	

ALIENS—NATURALIZATION—IMMIGRATION.

In accordance with the provisions of the Colombian Constitution and the established practices, aliens enjoy, in their ordinary relations, the same prerogatives and rights as the native Colombians. There is no special or specific legislation applied to aliens, with the exception of the laws dealing with the location of mining properties and oil lands.

Aliens can not, however, exercise any political rights, because such rights would imply acts of sovereignty enjoyable only by those persons who are clearly possessed of Colombian citizenship; but, as indicated below, such citizenship may be easily acquired by whoever wishes to do so.

Law No. 145 of November 26, 1888, regulates matters concerning aliens and naturalization. This law classifies aliens into two distinct groups—first, transient aliens; second, domiciled aliens. Those are considered as transient who, finding themselves in Colombia, have no established domicile—that is, no established business and fixed residence at a given place. Domiciled aliens are those who, for any reasons, reside within Colombian territory, with some established business or occupation, or have married a Colombian woman, or have performed any other act that implies the intention of settling definitely in the Republic. This latter status may be acquired by the declaration, before any political authority in the presence of two competent witnesses, of the intention to settle in Colombia.

The protection given in both cases is the same as that extended to Colombian citizens by the laws, and the obligations of the aliens consist in conforming their conduct to the general police laws and in not meddling in political affairs, under penalty of article 12 of Law No. 45 of 1888.

The domiciled aliens are not obliged to pay public taxes of a general nature, either ordinary or extraordinary. Transient aliens are obliged to pay only indirect taxes. All domiciled foreigners who earn their living in the country are required to pay income taxes according to the provisions of the income-tax law of 1918 ("Impuesto sobre la renta").

In the matter of naturalization—that is, change of citizenship—the law considers two classes of persons—those of Latin-American origin and those from other countries. The former, on account of solidarity of race and common aspirations, are only required to ask the municipal authorities, in the place where they reside, to inscribe their name in the enrollment of Colombian citizens, and they thereby acquire the rights of citizenship. Aliens of other origin are required to petition the executive department for papers of naturalization, accompanying the petition with a brief giving their civil state and present nationality and proving that they have either a profession or other means of livelihood. As soon as the naturalization papers are issued by the department and the person has sworn

his allegiance to Colombia and renounced allegiance to his native land, he becomes a Colombian citizen, as also his wife, if he is married, and his children under 21 years of age, if he has any. Naturalized citizens do not have to take up arms against their country of origin in the event of war between the two countries, but are obligated to the system of compulsory military service in all other respects.

The consuls of the Republic abroad are to-day the immigration agents of Colombia. They are required to furnish any information about the country desired by prospective settlers. The law considers as an immigrant any foreign laborer, artisan, industrial worker, agriculturist, or professor who may be under 60 years of age and over 10 years of age and who may be able to prove his good behavior and his skill or knowledge.

Every immigrant must provide himself with passports issued by a Colombian consulate in the country from which he comes. He is entitled to bring in, free of duty, the implements, tools, or instruments of his calling or profession. He has also the right to a free grant of land in Colombia.

Immigration may also be effected by contract with immigration companies. East Indians and "pernicious aliens" are barred from entry into the country.

At the present time there is very little immigration to Colombia. The principal influx of labor is from the West Indies to the banana plantations of Santa Marta, averaging about 6,000 persons each year, but this labor is floating in character and the men do not, as a rule, become permanent residents in Colombia.

Studies of the agricultural resources of the country by an English expert, Prof. Dawe, indicate the lack of sufficient labor in many districts of the country (more especially outside the area of the high table-land of Bogota, which is the only place in Colombia where there is sufficient cheap labor), and recommends the importation of Japanese coolie labor for the purpose of forming agricultural colonies such as those in Brazil, the example of which is pointed out.

MARKETS FOR SPECIFIC CLASSES OF MERCHANDISE.

TEXTILES.

Textiles, consisting principally of cheap cotton goods, constitute the chief article of import of Colombia. Although the domestic industry has made considerable progress during the last 15 years, the domestic production does not supply more than one-tenth of the demand. The native industry is protected by a high tariff on textiles, and the prices obtained for the local output are based upon textile prices in foreign markets plus the import duties and inland freights. The protective tariff has had the effect of increasing the cost of the domestic article to the consumer, and mills have made large profits in spite of the fact that all yarns and a considerable amount of raw cotton have to be imported. The domestic mills have the advantage of cheap labor, the average wage in the mills being between 30 and 40 cents per day of nine hours. Many of the larger mills are installing dyeing plants, and two or three yarn-spinning mills are being erected or planned for the near future to use the native cotton. High prices and large profits obtained in 1919 have had the effect of attracting additional native capital to the cotton industry, and new mills are either being planned or actually under way.

Every effort is being made to increase the production of native cotton in the Lower Magdalena River Valley, but these efforts are hampered by the lack of efficient labor in the districts affected. (See p. 199.)

DOMESTIC TEXTILE INDUSTRY.

There are numerous textile mills in Colombia. Four are knitting mills making cheap cotton undershirts for men's wear, the largest of these being the *Fábrica Nacional de Tejidos*, of Barranquilla, and the plant of *Espreilla Hermanos*, of Cartagena—the latter factory also making cotton socks and stockings. The largest cotton mill is the *Fábrica de Tejidos "Obregon,"* of Barranquilla, capitalized at 1,000,000 Colombian dollars (1 dollar = \$0.9733 United States currency); this concern has recently installed a spinning mill and a dyeing plant and is beginning to use native raw cotton, which is also ginned at the plant and dyed there. The next largest cotton mill is that of the *Compañía Colombiana de Tejidos*, of Medellin, originally capitalized at 200,000 dollars (since increased). The "Magdalena" mill, in Bogota, is the only one in the country making woolen cloth for suitings, etc. (For details—capitalization, production, etc.—of the textile mills of Colombia, see the discussions under "Industries" in the sections on the various commercial districts, beginning on page 185.)

Six hundred thousand Colombian dollars have been subscribed by Medellin and Manizales capitalists for a new cotton mill in the latter city; plans for this mill were perfected early in 1919, and the machinery and equipment are now under order in the United States.

As has been stated, all domestic mills are in a very prosperous condition, and all have plans for expansion and additions to their plants, including spinning departments (for the utilization of native raw cotton) and dyeing plants. There is an active demand for textile machinery, of which the American design and make is preferred on account of its lighter weight and more automatic operation as compared with the German or English designs. The purchase of this machinery is effected by representatives of the companies coming to the United States and personally visiting the textile-machinery factories. Interested American manufacturers will do well to get in touch by correspondence with all the Colombian mills, offering their special lines of machinery and equipment by means of catalogues and detailed descriptions of the features of their designs.

RELATIVE POSITION OF FOREIGN TEXTILES IN COLOMBIAN MARKET.

Since the early days of the Republic there has been a large and increasing trade in textiles with England. The Colombian market was invaded by the Germans in about 1870, but textiles still remained England's specialty in Colombia and the United Kingdom also shipped most of the country's imports of cotton yarns prior to the war. American cotton goods have gradually found an excellent market in Colombia, at the present time almost equaling shipments by Great Britain. In 1919 the American merchandise of this class surpassed Great Britain's total by a considerable margin. This condition, however, was principally due to Great Britain's inability to quote in the early part of the year, except at high prices and long deliveries; and in the latter part of 1919 agents for English textile houses again became very active, quoting firm prices with credits ranging from six to nine months on a year's stock of standard weaves and patterns. The exchange situation also had a great deal to do with increasing orders for English cotton goods, the Colombian merchants effecting a saving of about 20 per cent (in September, 1919) by buying London exchange in New York. Orders have been placed in the United States for immediate stocks to take advantage of the active domestic demand up to September, 1919, and orders for English textiles after that time were principally for large stocks of standard cotton goods for the 1920 trade—placed by the larger of the wholesaling importers, who make a specialty of cotton textiles.

One of the chief attractions of the English cotton textiles for the Colombian importers is the great variety of patterns and designs furnished in standard short-length pieces. The average length is 20 yards, which just cuts into so many dress patterns evenly, leaving no waste remnants; this can be conveniently handled in the trade of the interior, where buying is always on a small scale and in assorted lots. Another acceptable feature is the manner in which English goods are finished and wrapped for wholesale display. A bale of cotton calicoes often contains as many as 60 distinct colors and patterns, offering a great variety for selection and constituting a much wider range of colors and designs than is found in the usual assortment of American export goods of similar quality.

Moreover, each 20-yard piece is carefully folded into 1-yard lengths, for easy measuring in selling or in taking stock inventory, and is then refolded into four divisions, making a tight, compact bolt, with the

wrapper (carrying the display label, lot and serial numbers, etc.) put on lengthwise, leaving the ends exposed for easy inspection and display on counters and at the same time protecting the goods from shop wear and dirt.

American calicoes are sent down in large, heavy bolts wrapped on a wooden core which costs the importer full import duty and which has to be rolled over and over to measure the cloth. The wrapping is of common wrapping paper, forming a closed and tied package, which, while it protects the ends, is soon torn open by continuous inspection of buyers, becomes useless for its purpose of protection, and presents an unattractive appearance.

Colombian importers complain that they can not get short and standard-length pieces from American mills, bolts running between 43 and 72 yards, which wholesalers have to measure out and cut into the 20-yard pieces desired by the dealers of the interior. It is asserted also that these goods do not present the same attractive appearance as the English textiles. Pressed bales of English textiles are carefully marked with lot and serial numbers, and all shipments are accompanied by a packing list and invoice, giving all details and permitting unbroken bales to be sold at wholesale without repacking (which can not be done with the American goods).

It is also pointed out that American calicoes do not cover, in designs, colors, etc., the varied demand in the several commercial districts of the country. For example, the people of the Bogota region are of short stature and most of the purchasers prefer goods with small figures and flowers, narrow stripes, etc.; while the people of the coast and river valleys and the Indians of the southern table-lands want bright goods, plenty of sharp color, and large designs and figures. American cheap calicoes come in dull shades, with few patterns, and do not allow of the same selection. Colombian importers, anxious to obtain the same lines from the United States that have become popular in Colombia when received from Europe, have brought well-selected lines from England to New York, especially to show them to American makers with the idea of persuading the Americans to manufacture the same goods and to put them up in the same way. Not much success has been attained in the past, American manufacturers claiming that the manufacturing cost would be too high.

In this regard it would appear as if the trade in textiles with all of Latin America should be considered sufficient to justify changes necessary in order to meet the importer's ideas. An inspection of any Colombian importing wholesaler's showroom affords convincing proof of the better impression made by the European goods upon buyers entering the display room. The American goods can be picked out at a glance and suffer in comparison with the English, which are put up to attract and are preferred, for this reason, by the large importers.

EXCLUSIVE BRANDS—PROTECTION OF LARGE IMPORTERS.

Another reason for the preference for English textiles lies in the protection of certain of the large importers whose orders run into many thousands of dollars annually. Special weaves and patterns of calicoes, prints, bleached and unbleached whites and sheetings are made up year by year for one large importer of a certain commercial

center, who takes 100 bales, or 1,000 bales, or some other quantity, as the case may be. The business is staple, standard, and well suited to the mills of Europe; and orders can be estimated in advance over an enormous territory. The large importer's own brand, which he has succeeded in making popular in his district among his clientele, is put on the goods, and mills (jobbers) refuse to sell this brand to any competitor in that particular district. These special brands are the importer's specialties and the principal line carried year by year—making a stable business. The richest firms of Colombia, long established and possessing adequate capital, often handle few articles other than these special brands, and do a large wholesale business. This is especially true of firms in Bogota.

CLASS AND QUALITY OF TEXTILES.

European textiles are well suited to the policy of the Colombian merchants. Widths are narrower, as a rule, than in the American cloth, and the cloth itself is lighter in weight (less thread) and finished (that is, surfaced and glazed), thus appearing to have the body and weight that it does not really possess. This fact, combined with the great variety of patterns and colors and the attractive method of presentation, gives the importer a great advantage, since these goods cost him less and are sold at a larger margin of profit than is the case with the American textiles that lack this finish and are heavier (more threads to the inch).

However, the people of the country have discovered that American calicoes, while not as superficially attractive when new, wear better in the end. There is gradually growing an insistent demand for "Americanas," and it may be predicted that merchants will be forced to carry in stock a certain amount of American cotton goods to supply this demand in the future.

Domestic mills turn out rough, strong, unfinished cloths—calicoes, drills, unbleached white goods, etc.—very well suited to the use of the lower classes and enjoying a great demand, especially as regards the rough, heavy drills used for blouses, trousers, etc.

There is a strong demand for the better grades of khaki cotton cloth for tropical suitings, Palm Beach cloth, linen suitings, drills, etc., and for the cheaper grades of heavy shirtings and the like. There is also an increasing demand for the medium grades of percales, muslins, voiles, gingham, piqués, poplins, madras (white and fancy), brocades, denims, cashmeres, and many grades of "whites," as well as towelings, etc.

Each commercial district should be studied, with respect to climatic conditions, etc., to determine the lines best suited for that particular district. Cotton prints and rough drills are sold all over the country in all climates, however, and do not vary much, except in cotton prints in colors and designs for women's dresses, as pointed out.

STATISTICS OF IMPORTS.

In order to give an idea of the variety and relative values of the textile lines imported by Colombia, the following table is presented, from the 1916 import returns of the Colombian Government.

[Colombian dollar=\$0.9733.]

Articles.	Value.	Articles.	Value.
	<i>Colombian dollars.</i>		<i>Colombian dollars.</i>
Baize, tartan, and outing flannels.....	82, 805	Hammocks.....	202
Bedspreads, cotton.....	58, 623	Hats:	
Bedspreads, curtains, etc.....	1, 192	Men's.....	9, 410
Belts, cloth.....	22	Women's, with silk trimmings.....	817
Blankets, cotton.....	130, 663	Hat trimmings.....	21
Blouses, waists, etc., fancy.....	1, 393	Hose.....	459
"Bogotanas".....	1, 184, 155	Laces, fringes, etc.....	145, 141
Brocades.....	28, 550	Linoleum.....	4, 677
Buttons, cloth-covered.....	185	Madras.....	17, 669
Calicoes.....	1, 065	Mattress linings.....	14, 797
Cambrics, batistes, etc., cotton.....	48, 321	Muslins.....	12, 200
Canvas.....	75, 916	Neckties, cotton.....	71, 918
Canvas for oil painting and interior decoration.....	4, 166	Oilcloth for furniture.....	4, 130
Canvas and drills (white finished).....	5, 265	Ornaments for garments.....	26
Caps, cloth.....	649	Packing covering.....	30, 568
"Carolinas".....	76, 299	Pillows.....	269
Chemises, of knitted goods, whether or not they are adorned with cords and embroideries of silk.....	8, 804	Pillow covers, fancy.....	144
Cloth:		Ponchos:	
Cotton, knit.....	9, 389	Waterproof.....	606
Diagonal, striped.....	31, 283	Cotton.....	9, 682
Embroidered.....	58, 730	Prints, cotton.....	2, 730, 399
For bookbinding.....	1, 114	Ribbons, braid, etc.....	10, 608
Unbleached.....	252, 458	Ribbon or tape, narrow.....	1, 827
Clothing:		Rugs and carpets and materials for making them.....	1, 348
Knitted ("ropa exterior").....	802	Sacks, of varnished or rubberized cloth, (for packing).....	13, 609
Outer, for men.....	29, 683	Sandals, cloth ("alpargatas").....	1, 176
Outer, for women, of various materials—		Sateens.....	88, 217
Plain.....	9, 222	Shawls and wraps.....	268
Fancy.....	6, 822	Shawls, square, large.....	55, 552
Rubberized waterproof.....	1, 574	Sheets, plain and fancy.....	700
Collars, lace and fancy.....	205	Shirts, men's with or without cuffs.....	120, 543
Collars and cuffs, plain.....	28, 279	Shoes, of cotton cloth.....	6, 000
Cord and string, cotton.....	14, 405	Shoe findings, cotton.....	1, 025
Cord and trimmings.....	10, 893	Silk mixtures (25 per cent), striped.....	35, 299
Cords for nets, etc.....	47, 145	Stockings.....	224, 595
Cord of less than 1 centimeter.....	27, 138	Striped goods.....	18, 792
Corsets.....	20, 307	Suspenders and garters, men's.....	14, 382
Corset covers.....	774	Tablecloths and napkins.....	1, 697
Cotton waste.....	3, 371	Table covers and bedspreads, cface.....	170
Crinoline, white, for interlinings.....	757	Table covers, plain.....	621
Curtains:		Tape, girth, of canvas.....	769
Knitted or lace.....	7, 024	Tape, rubberized.....	1, 711
Plain.....	1, 430	Thread on spools and spindles.....	580, 960
Denims.....	8, 914	Thread for crocheting.....	286
"Domestics," unbleached.....	302, 080	Towels.....	20, 544
Dress trimmings.....	8, 026	Undergarments, etc., white:	
"Driles," for mattresses, etc.....	189, 778	With embroidery.....	6, 514
"Driles":		Other.....	982
Striped and colored.....	17, 093	Underwear:	
Various.....	603, 845	Knit, of cotton.....	101, 981
Elastic:		Not knit.....	2, 798
For garters.....	374	Uniforms:	
For shoes.....	1, 670	For the Colombian Army.....	49, 501
Fancy cotton goods, various.....	10, 797	For the Military Band.....	986
Finishing braids.....	61, 911	Umbrellas.....	22, 181
Flowers, artificial.....	1, 364	Velvet, cotton.....	13, 511
"Foulahs," blue.....	4, 164	Vichy cloth.....	6, 273
Frames for women's hats.....	625	White and colored goods not elsewhere specified.....	1, 236, 656
Fringe and braid for furniture.....	5, 277	Wicking cord.....	75, 295
Garters.....	3, 334	Wicks:	
Girdles, etc.....	109	For tinder boxes.....	34, 967
Gloves, cotton.....	267	For lamps.....	12, 582
Handkerchiefs:		Yarns:	
Embroidered.....	1, 321	Bleached.....	73, 783
Plain, with border.....	145, 168	Unbleached.....	375, 518
In piece.....	6, 398	Dyed.....	590, 002
		Zephyrs.....	73, 505

The above list is not complete, and it shows only articles of cotton.

Imports of woolen goods of various kinds amounted to 1,992,905 Colombian dollars in 1916, of which the principal items were: Woolen cloth for suitings, 686,208 Colombian dollars; ready-made clothing, 54,959 dollars; woolen cloth for women's suitings, 468,155 dollars; and felt hats, 144,041 dollars. Most of the felt hats came from Italy.

The total imports of textiles in 1916 amounted to 13,476,932 Colombian dollars, as compared with 8,025,057 in 1911, a pre-war year. Exports of textiles from the United States to Colombia during four recent years are shown below:

Textiles.	Fiscal year 1916.		Fiscal year 1917.		Calendar year 1918.		Calendar year 1919.	
	Yards.	Value.	Yards.	Value.	Yards.	Value.	Yards.	Value.
Cotton, manufactures of:								
Blankets and comforts ¹						\$56,568		\$182,919
Cloths—								
Duck—								
Unbleached ²			189,566	\$59,854	52,117	45,789	185,460	122,007
Bleached ³			58,947	16,287	22,322	9,959	32,654	23,327
Colored ⁴			14,321	4,523	7,955	4,103	15,015	7,516
All other cloths—								
Unbleached.....	5,082,510	\$297,207	4,977,213	309,818	4,390,854	513,361	10,675,193	1,331,588
Bleached.....	6,749,614	365,963	5,896,092	435,390	2,098,571	312,904	7,087,300	1,113,152
Printed.....	13,962,904	694,670	9,616,577	625,082	4,621,778	609,931	18,955,159	2,429,415
Dyed in the piece.....	514,621	40,581	988,683	104,616	2,069,251	402,473	4,755,728	1,038,071
Dyed in the yarn.....	7,251,929	478,998	10,541,331	1,073,438	1,648,722	308,616	4,294,434	1,014,810
Laces and embroideries.....		19,743		25,665		6,854		14,850
Mill waste.....		2,806		3,156		3,910		3,657
Rags (except paperstock).....								205
Thread, sewing, crochet, etc. ⁵						13,936		15,721
Wearing apparel—								
Collars and cuffs ⁶						2,698		4,394
Corsets.....		18,384		14,986		18,510		12,084
Knit goods—								
Hosiery.....						66,153		138,636
Underwear.....		111,499		173,988		13,273		46,846
All other.....						1,076		331
All other apparel—								
For men and boys.....		173,626		222,571		66,550		73,118
For women and children.....						6,991		9,882
Yarn.....		135,766		329,094		326,088		597,857
All other.....		267,949		394,938		178,505		353,373
Total manufactures of cotton.....		2,607,192		3,793,316		2,968,248		8,534,659
Silk, manufactures of:								
Dress goods.....					11,768	9,670	25,550	34,183
Wearing apparel.....		39,940		32,613		3,810		3,807
All other.....						7,802		44,310
Silk, artificial:								
Hosiery.....				689		845		2,552
All other ⁷						934		696
Total manufactures of silk and artificial silk.....		39,940		33,302		23,061		85,548
Wool, manufactures of:								
Blankets ⁸						313		221
Cloth and dress goods ⁸						143,696		211,461
Wearing apparel—								
For men and boys.....						7,832		19,097
For women and children.....		17,892		53,315		6,554		4,357
Woolen rags.....				76				16
All other.....		353,501		308,052		15,107		17,801
Total manufactures of wool.....		371,393		361,443		173,522		252,953
Grand total.....		3,009,525		4,188,061		3,164,831		8,873,160

¹ Included in "All other manufactures" prior to 1918.

² Included in "All other cloths, unbleached," prior to 1917.

³ Included in "All other cloths, bleached," prior to 1917.

⁴ Included in "All other cloths, colored," "Printed," "Dyed in the piece," etc., prior to 1917.

⁵ Included in "All other manufactures" prior to 1918.

⁶ Included in "All other wearing apparel" prior to 1918.

⁷ Included in "All other articles" prior to 1917.

⁸ Included in "All other manufactures of" prior to 1918.

According to Colombian statistics, imports of textiles of all classes into Colombia during 1918 amounted to 9,587,892 Colombian dollars, of which Great Britain furnished 2,857,956 kilos, valued at 5,033,569 dollars; the United States 2,251,664 kilos, valued at 3,557,996 dollars; France, 59,401 dollars; Spain, 144,975 kilos, valued at 354,174 dollars; and Italy, 108,958 kilos, valued at 287,287 dollars. (Kilo = 2.2046 pounds.)

PACKING OF TEXTILES FOR COLOMBIA.

The pressed bale, waterproofed, etc., must be adopted by all American exporters of textiles to Colombia, in sizes to conform to the transportation necessities of the country, smaller bales being put up for mule transport, etc., as indicated on page 388.

More care should be taken in invoicing and billing, and packing lists should be provided for all shipments so that the contents of each bale can be known without unpacking and verifying.

To increase the trade in textiles with Colombia, it is recommended that American exporters adopt more nearly the English system throughout, whenever manufacturing conditions make this possible—putting up 20-yard standard bolts, better presented for display by the importing wholesalers, as explained above.

Colombian importers admit that great progress has been made in the American white-goods lines, there being greater variety, cheaper prices, and better finish than was formerly the case. These goods now compete very favorably with the English white goods throughout Colombia and are well liked by both importers and consumers.

COMMERCIAL PRACTICES IN TEXTILE TRADE.

Colombian importers of textiles allow long credits to dealers of the interior, the system being what is known as "six and six," meaning six months and six months more if necessary, the first six months being net, with a 15 per cent reduction for cash with orders. The additional six months carries an interest charge of 10 per cent per annum, compounded monthly. These same terms are given by the domestic mills, some of which maintain their own sales department with branch stores in the various commercial centers, while others sell through agents or jobbers. Profits, net to importer, on standard textiles, such as cheap cotton prints, are figured at 25 per cent, as an average. The market is, at times, highly speculative, and merchants who took advantage of the reduction in prices of American textiles during the early months of 1919, and laid in large stocks, reaped enormous profits, disposing of their stocks during the rush of buying in May, June, and July. Most of the older and more conservative houses, however, failed to understand the real situation in Europe and the United States and were caught without stocks when the Colombian market reacted in May, 1919.

DRUGS, MEDICINES, AND OTHER CHEMICALS.

Next to textiles, foodstuffs, and the articles included under "arts and trades," the imports of drugs, medicines, and other chemicals form the most important item. The sale of patent medicines is large, and many well-known and advertised American specifics are

sold all over the country. Imports of drugs, medicines, and chemicals in 1911, a pre-war year, amounted to 762,208 Colombian dollars, of which Germany furnished 127,912 dollars, Spain 1,354 dollars, the United States 327,832 dollars, France 154,004 dollars, Great Britain 109,010 dollars, and other countries 41,976 dollars. Imports of drugs, medicines, and chemicals for industrial purposes in 1916 amounted to 1,346,516 Colombian dollars, of which well-known patent medicines were valued at 353,642 dollars. The 1918 imports amounted to 994,032 dollars, the importation being somewhat curtailed by war conditions. Not enough heavy chemicals could be obtained during the war.

Colombia imports heavy chemicals used in soap making, candle making, etc., the principal ones being caustic soda, bicarbonate of soda, bichromate of soda, oxalic acid, carbonate of ammonia, copper sulphate, nitrate of soda, bichromate of potash, and sulphur (both powdered and in sticks).

USE AND PACKING OF CHEMICALS.

Caustic soda is used principally in the manufacture of soap, and also by the three glassware factories of the country. It is shipped into Colombia packed in drums of 725 pounds net (746 gross), which measure $8\frac{1}{2}$ cubic feet. The standard is 76/78 per cent, New York and Liverpool tests. When required for mule transport into the interior towns, drums of 125 pounds net are used. Soda ash (dense), which can be used as a substitute, is not much employed in Colombia.

Bichromate of soda is used by the textile industry and is ordinarily wanted in small 5 and 10 kilo tins, instead of the usual heavy wooden barrels.

Oxalic acid is used for bleaching the Panama hats of the country and in the drug industry. For the coast and Bogota districts it can be packed in the usual barrels of 300 pounds net (350 gross), of about 9 cubic feet. In the case of orders for interior points using mule transport, the oxalic acid is desired in 5 and 10 kilo tins, or small metal drums.

Carbonate of ammonia is used by the baking industry and comes packed in barrels of 430 pounds net (500 gross), measuring 10 cubic feet. For the interior markets, small 5 and 10 kilo tins are wanted.

Copper sulphate (bluestone) is used in Colombia for spraying coffee and cacao trees and is wanted in small drums of not more than 125 pounds net weight or in 5 and 10 kilo tins.

Nitrate of soda is used by the textile industry and for garden fertilization, though the latter use is very limited in Colombia. The usual form for Colombia is the crystals packed in cloth sacks of 125 pounds net weight.

White and amorphous phosphorus is much used for match making all over the country, and should be packed in 5-kilo tins in water.

These heavy chemicals are handled by all large importers of general merchandise and also by a few of the larger drug stores doing chiefly a wholesale business. As a rule, orders in the United States are placed through the export commission houses.

STATISTICS OF IMPORTS.

The principal drug and chemical lines imported in 1916 are shown in the following list, in order that an idea may be formed of relative values:

[Colombian dollar=\$0.9733.]

Articles.	Value.	Articles.	Value.
	<i>Colombian dollars.</i>		<i>Colombian dollars.</i>
Acids:		Opium.....	17,249
Carbonic.....	11,831	Phosphorus:	
Citric and tartaric.....	12,053	Red.....	4,296
Sulphuric.....	7,252	White.....	6,645
Aspirin.....	17,071	Plasters, medicinal.....	9,385
Boxes, wood, tin, and cardboard, for drug packing.....	8,264	Potassium chlorate.....	36,001
Chemicals, industrial, etc.....	9,326	Soaps:	
Corks.....	51,558	Medicinal, not perfumed.....	4,328
Cotton, medicated.....	7,982	Perfumed, medicinal or other.....	12,544
Cream of tartar.....	6,521	Reuter soap.....	16,097
Creolin.....	23,935	Quinine.....	23,948
Cyanides.....	52,808	Soda:	
Glycerin.....	6,871	Bicarbonate.....	5,117
Gum arabic.....	15,701	Carbonate.....	15,034
Gums, resinous.....	10,598	Caustic.....	72,513
Injections, medicinal.....	8,307	Other soda salts and other salts not specified.....	6,647
Magnesia.....	8,217	Sulphur, flowers of.....	6,972
Medicines in capsules, etc.....	22,242	Wines, medicinal.....	12,869
Oils:		Other chemical products, various.....	149,307
Castor and nut.....	15,771		
Cod-liver, emulsions.....	81,226		

Exports of drugs, chemicals, and related articles from the United States to Colombia in the calendar years 1918 and 1919 were as follows:

Articles.	Value.		Articles.	Value.	
	1918	1919		1918	1919
Chemicals, drugs, dyes, and medicines:			Chemicals, drugs, dyes, and medicines—Continued.		
Acids—			Medicinal and pharmaceutical preparations ...	\$328,718	\$722,527
Carbolic.....	\$2,393	\$2,196	Petroleum jelly, etc.....	5,525	12,362
Nitric.....	3,807	6,281	Potash—		
Picric.....		62	Chlorate.....	4,911	21,837
Sulphuric.....	10,708	2,913	All other.....	4,913	19,059
All other.....	33,675	40,403	Roots, herbs, and barks ..	4,733	10,303
Alcohol, wood.....	108	4,054	Soda—		
Baking powder.....	809	2,896	Caustic.....	79,956	62,025
Calcium carbide.....	1,560	2,824	Sal soda.....	1,214	190
Coal-tar distillates, n. e. s.....	236	7,420	Silicate of soda.....	875	7,121
Copper, sulphate of (blue vitriol).....	449	1,431	All other salts of.....	21,139	43,910
Dyes and dyestuffs—			Sulphur or brimstone.....	472	491
Aniline dyes.....	16,070	35,247	Washing powder and fluid.....	452	407
Logwood extract.....	237	2,176	All other chemicals, etc.....	191,002	588,233
All other.....	16,300	23,691	Cork, and manufactures of.....	9,734	30,861
Extracts for tanning.....	1,760	2,909	Dental goods.....	19,490	21,977
Formaldehyde (formalin).....	210	2,257	Druggists' rubber sundries.....	1,941	9,154
Glycerin.....	3,115	7,975	Perfumeries, cosmetics, and all toilet preparations.....	28,446	70,137
Infants' food.....	7,555	12,236			
Lime, chloride of, or bleaching powder.....	261	156			

French hypodermic preparations are very well known and most used in Colombia, though certain Italian brands are also becoming well introduced. There is a wide market for these preparations in Colombia. It is thought that American laboratories will find the

field a valuable one, and it is recommended that the sale of American laboratory products be pushed.

Patent medicines and specifics find a large market and are often handled by exclusive agents who travel over the entire country. The specifics are mostly for malarial diseases, tropical anemia, dysentery, etc., and tonics of various kinds enjoy a large sale. Very often drug stores are owned and managed by resident physicians.

About 75 per cent of the advertising of the country is of patent medicines.

PAPER AND PAPER PRODUCTS.

Imports of paper and paper products into Colombia in 1916 amounted to 3,889,295 kilos, valued at 913,502 Colombian dollars. This amount included all paper, cardboard, school books and supplies, and office supplies and equipment, other than furniture. In 1918 Colombia's imports of paper and paper products amounted to 710,690 dollars, the imports having fallen off after the entrance of the United States into the war. In 1919 there was a shortage of paper all over the country, and buying in this line was very active after the armistice. Following are the more important items in this group for 1916, the most recent year for which detailed statistics are available:

[Colombian dollar=\$0.9733.]

Articles.	Value.	Articles.	Value.
	<i>Colombian dollars.</i>		<i>Colombian dollars.</i>
Advertisements on paper.....	9,799	Envelopes:	
Bags, paper.....	5,937	"Window" type.....	2,415
Books:		Other.....	34,418
Accounting.....	11,958	Labels, printed.....	43,760
Copy (wet copies).....	11,141	Letter and account paper.....	14,794
Other (printed matter).....	54,924	Office supplies, small.....	7,255
Cardboard:		Official paper.....	18,576
Boxes.....	30,165	Oleographs, chromolithographs, etc..	9,417
Other objects, maché, etc.....	14,277	Print paper.....	90,460
Plain.....	18,514	Sand and emery paper.....	9,469
Cash registers.....	24,243	Telegraph and check forms.....	10,782
Check-perforating machines.....	6,211	Typewriters.....	95,461
Cigarette package labels.....	11,241	Wall paper.....	38,825
Cigarette paper.....	63,971	Wrapping paper.....	87,404
Comptometers and adding machines..	2,062		

On account of the high import duty on cut and printed paper, there are many small shops that import the better grades of paper suitable for writing pads, etc., in standard sheets and then cut them up and rule them for the domestic trade. Nearly all importers of general merchandise buy certain amounts of paper, such as print paper, wall paper, writing blocks, etc., which they handle at wholesale and retail. The largest stationery stores in the country, with branches in Cartagena, Barranquilla, and Bogota, are those of J. V. Mogollon y Cia.

Exports of paper, paper products, and ink from the United States to Colombia during four recent years have been as follows:

Articles.	Fiscal year 1916.		Fiscal year 1917.		Calendar year 1918.		Calendar year 1919.	
	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.
Paper:								
Bags.....		\$3,591		\$5,600		\$5,834		\$11,592
Books, music, maps, engravings, and other printed matter		237,974		113,932		64,804		205,129
Boxes and cartons.....		6,110		11,275		6,524		8,638
Carbon paper.....		2,017		794		1,705		3,399
Cash-register and adding-machine paper ¹						139		1,842
Paper board and straw-board.....		11,723		24,013		12,557		20,666
Paper hangings.....		12,516		22,797		10,835		14,735
Playing cards.....		539		413		252		1,173
Printing paper—								
News print.....	1,437,537	36,115	3,307,996	135,360	832,986	45,416	1,279,681	75,437
All other.....	685,463	33,711	1,881,711	155,294	561,986	61,005	941,809	109,359
Tissue and toilet paper ¹						9,344		29,410
Towels and napkins ¹						460		1,375
Wax paper ¹						2,100		1,606
Wrapping paper.....	838,627	749,764	39,907	52,606	888,583	79,518	871,737	83,672
Writing paper and envelopes.....		40,340		78,544		89,744		175,932
All other.....		81,220		87,682		25,042		67,309
Total paper and manufactures of.....		1,215,620		688,310		415,279		811,274
Ink:								
Printers'.....		7,195		12,035		5,479		8,405
All other.....		8,241		11,220		7,831		24,260

¹ Included in "All other" prior to 1918.

In 1919 there was a very large shortage of paper and paper products in Colombia, and buying in the United States was heavy during that year.

The chief complaints were caused by bad packing methods. News print shipped in flats, rolled, should have the ends of the packages protected with round boards to prevent damage in handling, because, if the ends are frayed, the shipment can not be used for news print and a loss to the importer results.

Other higher-grade papers, used for cutting into pads, blocks, accounting forms, etc., should be packed in the pressed crate with flat, light boards at top and bottom extending over the edges and with straps at the sides and ends. Bracing cleats at top and bottom should be nailed on from the inside out and not from the outside in, since the former method prevents the clinched nail from working loose and cutting into the contents of the pressed crate.

Several American manufacturers of paper and paper products, controlling large factories, have recently investigated the Colombian markets for paper in all forms, and it is to be hoped that these first-hand investigations by experts in the line will result in better packing methods, suitable to the transportation requirements of the country.

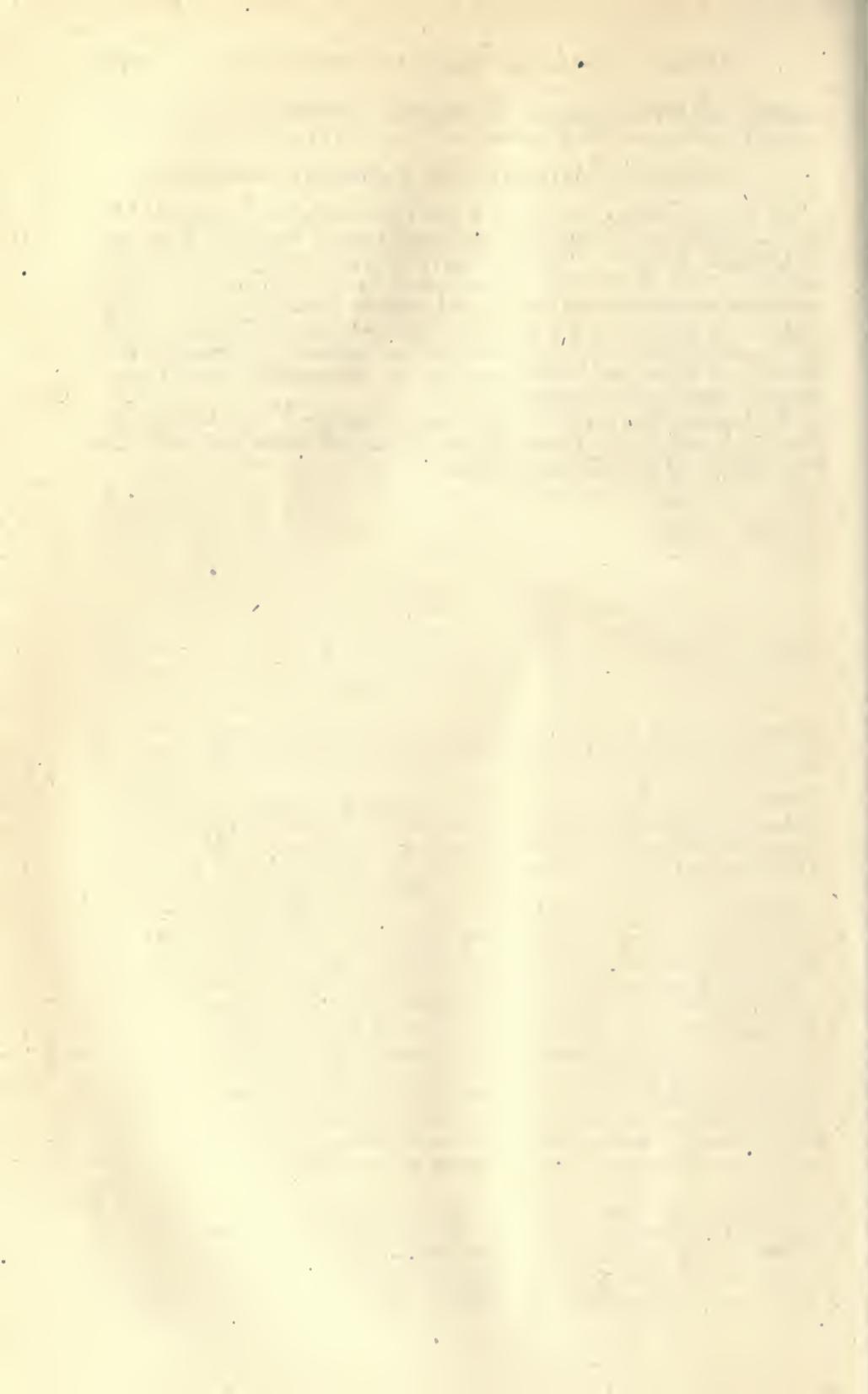
Except for cardboard-boxed envelopes and small paper articles, the usual wooden packing case should not be used for Colombia, since, no matter how well packed inside, the contents, during many handlings, have some movement which damages them more or less seriously in time. The pressed crate, as described, is the better

method, and this packing is also lighter, effecting a considerable saving in duties for the importer.

CONSTRUCTION MATERIALS AND MACHINERY—FURNITURE.

For a comprehensive account of the Colombian markets for building materials and equipment, the reader may be referred to the monograph entitled "Construction Materials and Machinery in Colombia," by W. W. Ewing, published by the Bureau of Foreign and Domestic Commerce as Special Agents Series No. 160. This contains 75 pages and 5 halftone illustrations and may be obtained for 15 cents from any of the district or cooperative offices of the Bureau or from the Superintendent of Documents, Government Printing Office, Washington, D. C.

"Colombian Markets for American Furniture," by Harold E. Everley, issued by the Bureau as Special Agents Series No. 162, sells for 5 cents. It has 34 pages of text.



APPENDIXES.

Appendix A.—REQUIREMENTS TO BE OBSERVED IN SHIPPING GOODS TO COLOMBIA.¹

BILLS OF LADING.

A set of five copies of the bill of lading is to be presented at the steamship company's office the day before the steamer sails, together with one copy of the consular invoice.

To one copy of the bill of lading for shipments going to Buenaventura and Tumaco must be attached a 20-cent Colombian revenue stamp, which is obtainable at the Colombian consulate (17 Battery Place, in New York).

Each bill of lading must contain: Name of shipper, name of consignee *at the port of entry*, name of steamer, number of each package, number of packages of different kinds, weight (gross) in kilos (1 kilo = 2.2 pounds), and total value of shipment.

The bills of lading—two or more copies—are returned by the steamship company on the day of sailing, with the amount of the freight written on them and duly signed by the steamship company's agent.

One copy of this signed bill of lading is mailed to the consignee with one copy of the consular invoice.

COLOMBIAN CONSULAR REQUIREMENTS.

Make five copies of the consular invoice; duplicator or mimeograph copies are allowed.

Take four copies to the Colombian consulate on the day before the date of sailing and one to the steamship company. The consul returns one copy duly signed and certified, and with one 20-cent stamp attached (for each page used), on payment of consular fees.

The stamped copy returned by the consulate must be mailed to the consignee, as that is the copy which he must present at the customhouse at the port of entry.

Following is the schedule of Colombian consular fees:

First class: Free.—School books and school supplies; plants; live animals; agricultural seeds; serums and medical vaccine; textbooks; gold coin and gold bars not less than 0.9000 fine.

Second class: One per cent.—Machinery; tools for industrial purposes; agricultural implements; fertilizers; sulphuric acid; sulphur; mining supplies; buildings of iron and wood; rough timber; roofing materials; barbed wire; staples; piping of iron, steel, etc.; manila, sisal, and hemp rope; metal cables; wire cloth; wire for electrical conductors; metals in sheets, bars, and pigs; pumps of all kinds; salts of soda for the treatment of metals.

Third class: Three per cent.—All other merchandise.

¹ Revised, August, 1919, from statement by the Consul General of Colombia, New York, September, 1912.

The above rates are charged on the value of the invoice, as declared by the shipper. The value declared must be accurate and figured as f. o. b. steamer. Under the law of Colombia the customhouse has the right to take for the use of the Government any shipment of merchandise *at the value declared by the shipper*. This right has often been exercised in cases of undervalued goods.

All consular invoices must be written in the Spanish language and contain, neatly stated: Name of shipper, name of vessel, names of consignee and owner of goods, mark and number of each package, number and kind of packages, contents of each, net and gross weight, partial values, and total value of shipment—*also, in a separate line, the sum total of the freight, insurance, and commission (if any) to the port of entry.*

It is important to remember that, in case the freight is not known exactly before the presentation of the consular invoice, it must be estimated (from the steamship company's freight rates) as closely as possible.

No consular invoice is signed by the consul before these requirements are complied with and the consular declaration made.

All copies of the consular invoice must be signed by the shipper or his representative, dated, and above the signature must be written the following declaration, in Spanish:

Bajo juramento declaramos que los precios anotados en este documento son los mismos que cargamos al intersado en la factura comercial y que los pesos de los bultos estan dados correctamente.

Which, translated, means:

Under oath we solemnly declare that the prices stated in this document are the same as charged to the customer on the commercial invoice, and that the weights of the packages are given correctly.

A false entry may lead to the seizure of the goods at the customhouse, as may also a fraudulent declaration of weights.

Duties in Colombia are charged on the gross weight—that is, weight of the goods, container, wrappings, etc. Shippers to points in the interior of Colombia must consign to an agent at the port of entry.

No "To order" shipments are permitted in Colombia.

MISTAKES TO BE AVOIDED.

Don't forget to have each package numbered and marked distinctly.

Don't wait until the last moment to make out your shipping papers.

Don't undervalue.

Don't make false declarations.

Don't enter false or mistaken weights.

Don't fail to follow instructions of your client regarding declaration of goods—that is, customs classification, etc.

Don't fail to use Colombian customs tariff serial numbers for classification.

Don't forget that duties are assessed on the gross weight and that too heavy packing means a loss for your customer.

Don't fail to have your packing list and invoices agree with serial and lot numbering of packages, and the packing list agree with contents of packages.

Don't fail to remember that the Colombian customs tariff is rather ambiguous in many respects with regard to classification of goods and that your client knows this tariff, is the best judge of such classification, and is in a better position to combat fines and claims than you are.

Don't fail to insure goods through to destination, not merely to port of entry. (The greater proportion of loss occurs in the interior.)

Don't forget that parcel-post shipments are assessed on the highest value of goods contained and that each class and quality of merchandise must be packed in separate packages.

Don't fail to insure parcel-post shipments through to destination, not merely to port of entry.

Don't fail to use waterproofing for shipments into the interior where mule transport is used.

Don't fail to remember that your customer will appreciate your attention to these details, which prevent trouble, expense, and delay on his part, and that export business with Latin America depends on careful attention to detail and a wide knowledge of the little things.

Appendix B.—PROPER PACKING FOR SHIPMENTS TO COLOMBIA.

Packing by American exporters is the chief source of complaint on the part of the Colombian merchant against the United States, and is the cause of 90 per cent of the commercial disputes, difficulties in collecting accounts, etc.

After an exhaustive study of the subject, which has included the inspection of the entire cargoes of American, English, French, and Spanish steamers bringing cargoes of merchandise to Puerto Colombia and Cartagena, the writer is convinced that American firms shipping goods to Colombia will have to pay more attention to packing if their trade with that country is to continue in satisfactory volume.

RELATION OF PACKING TO CUSTOMS DUTIES.

Customs duties are assessed on the gross weight of the package imported—hence the necessity for packing goods in containers as light as possible. There have been many cases in which goods, such as high-grade silk ribbons and similar articles, have been ordered packed in waterproofed bales but have been deliberately shipped in heavy wooden boxes on which the importer has been forced to pay a duty of 5 Colombian dollars per kilo (2.2 pounds), the actual weight of the goods being only a fraction of that of the heavy packing cases. No merchant can pay 5 dollars per kilo in duty on pine lumber and make any money. As proof of this, it may be stated that, when this report was written, there were several stocks of such goods lying in storage at Cartagena which could not be sold at the prevailing competitive prices for similar articles on the market, and they thus represented a dead loss to the merchant importing them.

There are cases in which a box, much too large for the goods contained, has been filled with waste cloth or paper, on all of which the merchant in Colombia pays the same duty as on the goods themselves. Many times the importer refuses to accept the shipment, which is then held by the customhouse for payment of duty, and, finally, is often sold at auction for the account of the Government. If the buyer does not take the goods, the exporter may order them returned, but is forced to pay the duty in any case before they can be moved.

EFFECT OF INCORRECT PACKING METHODS.

The general result is that the Colombian merchant frequently becomes keenly dissatisfied with American packing methods and looks for a renewal of his old European relations, while the American exporter on the other hand says that the Colombian trade is not worth while and is only prolific of trouble.

It is believed that a canvass of such cases in Colombia would show disputed values running into hundreds of thousands of dollars at this time. Hundreds of cases of this kind have been brought to the writer's attention. The effect of such a condition on American trade

with Colombia and other Latin American countries must not be underestimated. An immediate remedy is imperative.

If he can, the Colombian merchant much prefers to do business with New York, because shipments are more rapid, with good deliveries. He also likes American goods and American business methods, but his trade is likely to revert to Europe if our present packing methods are continued.

Volumes might be written on this subject. It would be well if the American exporter could come to Colombia and inspect the incoming American cargoes; could go over the numberless letters claiming (and rightly so) reductions on account of excessive duties resulting from the ignoring of packing instructions; and could listen to the complaints on every hand of breakage, loss by theft on account of broken packages, confusion of numbering, excessive expense charges, etc.

Proper packing is one of the most effective sales factors. A package of good appearance inspires confidence in the goods contained and shows care and appreciation on the part of the exporter, as well as an understanding of local conditions and an intelligent knowledge of ways and means.

NECESSITY OF IMPLICITLY FOLLOWING INSTRUCTIONS.

In the word "instructions" is embodied the keynote of all packing of goods for Colombia. It is really very simple. *Follow the buyer's instructions regarding packing.* Yet this is the very thing that is seldom done by the American exporter. He does not take into consideration that there is a very good reason for these instructions, that they are necessary, and that the buyer knows his business and knows what he wants and why.

When packing instructions are not followed the American exporter is courting trouble and the possible loss of a good customer. He causes the goods to cost more than his European competitor's, and he makes the Colombian buyer angry on account of his lack of attention to instructions, involving great loss of time, extra expense, etc. The Colombian merchants know how goods ordered by them should be packed and will gladly furnish detailed specifications if asked for them, recommending materials to be used, sizes and weights of packages, etc.

In many cases Colombian purchasers have made visits in person to New York houses, placing orders for large stocks of goods, and spending some time giving personal instructions as to packing, etc. The American house has accepted and shipped the order, but has entirely disregarded the packing instructions. The result is that the Colombian merchant, upon seeing the shipment, says that he can not continue to do business with that particular house because they will not pay attention to his own verbal instructions, after promising faithfully to do so and receiving the order on that basis.

It is universally held, and rightly so, that no exporter has a right to accept an order embodying special packing instructions and then disregard them entirely. If conditions are such that the particular goods can not be packed according to instructions, the least that can be done is to advise the buyer of the fact and ask him for further instructions, explaining the packing method to be followed.

EXPORT HOUSES AND FACTORIES.

Export houses that have been doing business with Latin America for some time undoubtedly know how goods destined for these countries should be packed and have on hand considerable information regarding special items for certain districts or countries. There seem to be two principal causes for the failure of these experienced export houses to pack goods properly for Latin American trade.

One of these is faulty organization in the office of the export house. The most usual way is for the business to be divided into departments by commodities, such as chemical buying department, textile department, etc. The heads of these various departments are, of course, specialists in their particular line, but they know very little about the country to which the goods are going and less about practical shipping and packing methods—this detail being left to the shipping department, often composed of new men without foreign-trade experience and unfamiliar with conditions in Latin America. The result is seen in improved buying methods and a saving in costs, but a packing situation that is sometimes disastrous to trade. It is believed by the writer that departments should be organized on a different plan. Heads of departments should be in charge of a certain country, or group of countries where conditions are similar, and should be intimately informed concerning requirements in those countries. Every individual order, whatever variety of merchandise is involved, should be followed throughout by such heads of departments, who should supervise the packing, billing, shipping, etc. The head of the department should be made responsible for each order passing through his hands. This system makes for a comprehensive detailed knowledge of the country to which the goods are destined, and it operates to prevent mistakes.

The other cause is the lack of cooperation between the manufacturers and the export houses in the matter of packing; for a discussion of this subject, the reader is referred to page 346.

ADVANTAGES OF PROPER PACKING.

Proper packing is often less expensive than the wrong kind. It costs less to pack a bale of cotton cloth in one wrapping of heavy paper, one of waterproof "tarpaulin," and one sewed covering of heavy jute, than it does to place it in a heavy pine box. In the former case the weight for the packing is less than 1 kilo per bale, resulting in a saving of packing costs, freight charges, duties, and extra handling.

That the American manufacturer can pack goods properly for export is witnessed by the articles shipped by several large specialty houses, such as pianos, phonographs, sewing machines, weighing scales, inks, drugs and patent medicines, etc. These concerns have made a study of their line and of the countries to which they ship their product and have evolved a packing case, or bale, that is strong, light, and well adapted to the particular article contained. There are no complaints of breakage or loss from these items, and such goods and firms are held up by the Colombian merchants as shining examples of what can be accomplished by attention to detail and knowledge of conditions. The trouble lies with the general run of

export merchandise and with the average factory and average export house, making up the largest bulk of the total exports from the United States.

PACKING SPECIFICATIONS FOR COLOMBIA.

In the following pages are given packing specifications for all important items imported into Colombia:

CANNED GOODS, BOTTLED GOODS, ETC.

For canned and bottled goods, the usual boxes or cases are good if they are properly reinforced at corners and edged with iron strapping at least $\frac{1}{2}$ inch in width. This prevents breakage of cases (in the event of a fall), splitting at the ends, etc. Good end pieces should be used to insure secure nailing.

In the case of bottles, divisions should be provided to prevent movement in cases and consequent breakage. Sawdust, etc., adds to weight.

A very good scheme for conveying the idea "Handle with care," "Glass," etc., is to provide a good stencil showing a wine glass. An ignorant stevedore who can not read the signs can thus see at a glance that the case contains glass and should be handled with care. This device is used to some extent, and the men know these picture signs, which result in increased care in handling.

Wines, etc., are shipped from Italy, Spain, and France for export to South America in the wicker baskets described below, under "Chinaware." These baskets are charged for and are liked by merchants.

CEMENT.

Cement is packed in barrels of the usual size. Barrels should have iron "rolled" hoops at both ends. There should be heavy ends, or heads, reinforced with cross-piece of wood nailed through rim and fitting into bevel of rim.

There are many complaints of breakage and loss due to careless handling by steamship companies, in loading and discharging. Some shipments of cement have recently been received in Colombia with a total loss of 40 per cent of contents. The method of packing above set forth has given the best results in the past and was considered superior to the European method—the barrels being better on account of the rolled-iron hoops and cross-braced head.

CHINAWARE, TABLEWARE, POTTERY, ETC.

These articles may be packed in specially constructed crates, oblong in shape and of light wood, reinforced with iron strapping at corners and edges. Crates should be strong enough to prevent crushing in cargo slings when they are being loaded and unloaded from steamer.

They may also be packed in "huacales," or frame crates made of natural wood, round and cut-in woods—bracing put through holes bored in main sections; facing of bark, etc.; dishes packed in wheat straw, each crate containing one size of plate, cup, or dish. This prevents loss of space and avoids undue movement, preventing breakage. This form of packing for dishes is to be recommended, since these frame crates can be easily and cheaply made by unskilled labor in outlying country districts. Their main quality is their elasticity, a rough jolt causing them to "give" just enough to avoid a jar to the contents.

Another form of packing used for high-grade china is the wicker or willow basket. This is constructed of rough willow, $\frac{1}{4}$ inch in thickness, and is provided with a hinged cover. The basket is also very elastic and absorbs the jar of a fall. These baskets are charged for on invoice, are sold in Colombia by merchants for clothes baskets, burro panniers, bottle containers, etc., and form a very useful article of commerce.

Expert care should, of course, be the rule in the actual packing of contents. This is a matter of experience and knowledge.

All American china and glass ware is now shipped into Colombia in barrels, and merchants report a breakage of at least 40 per cent. Barrels are too large to permit the selection of one size of dish or article; they do not "fill" well, and the contents work to the bottom, causing breakage. Barrels are also wasteful of ocean freight space and are easily broken in handling.

CLOTHING.

When one is shipping ready-made clothing that has laces, silk trimmings, or other adornment which takes a much higher rate than the garment itself, such trimmings should, according to instructions from buyer, be removed and packed separately, but should be properly numbered, so that they can be replaced on the right garment for display and sale.

FURNITURE.

Furniture should be packed in crates (open) and should be cross braced to prevent collapsing in cargo slings.

Wrapping should be of excelsior, paper packs containing excelsior, or other similar material. Varnish or finish should be well dried and backed before wrapping to prevent sticking.

Skids should be bolted under heavy pieces to facilitate rolling.

Bracing should be provided inside of cases or crates containing mirrors, etc., to prevent movement; and protection to glass should be provided by means of a light wooden cover over it.

Mirrors from France are preferred on account of the good packing. This style of mirror has a heavy and ornate frame of gold, enamel, and plaster work, and needs extreme care in packing. The edges should not touch the case or crate in any place, and the article should be laid in heavy elastic material such as excelsior.

Most furniture from the United States is well packed, and breakage is due to careless handling by transportation companies. This condition has become so bad that Colombians will not buy expensive furniture in the United States unless dealers guarantee safe arrival at destination, with compensation for loss by breakage or other damage. Dealers are loath to give any such guarantee because it is almost impossible for them to collect from transportation companies in case of damage. In this connection it is to be recommended that someone—that is, the dealer or the transportation companies—be made responsible for damage, and, where more than one company has handled goods to which damage occurs, all should be made to pay a pro-rata share of the compensation. More care would then be taken.

GENERAL MERCHANDISE.

Packing cases for general merchandise should be as light and as strong as possible. Cleating of edges is not to be recommended, as these catch in other cases and soon become broken. As cleats are held with nails, a cleat is only as strong as the piece of wood holding the nailing, and it therefore only adds to the weight of the case without adding to its strength. Iron strapping is to be used in every case. This holds the nailing in place and prevents splitting of cases in case of a heavy fall or blow.

Whenever waterproofing is specified, and when merchandise is destined for transport in the interior, wooden packing cases containing valuable goods should be protected against rain. This is done by means of a covering of tarpaulin outside of the box or case, which in turn is covered with an outside protection of heavy jute, sewed to size and fit.

Where tin cases are used, these should be braced with wooden supports in the inside to prevent mashing. An inside added protection of tarpaulin should be provided, as tin is often punched full of holes.

GLASS.

Following is a description of the English and German methods of packing window panes—first, second, third, and fourth selections (grades); 100 pieces in each wooden box; sizes up to 70 by 90 centimeters (27.3 by 35.1 inches):

The glass is packed in wooden boxes divided into four compartments by means of sliding partitions fitted into grooves cut in the sides of the boxes, which are made to fit the sizes of panes shipped.

Each pane of glass is laid in thin, cheap paper (between each pane), with 25 panes to each compartment, each lot of 25 panes being wrapped in heavy paper and tied.

Each package of 25 panes is again wrapped in straw, but this straw is tied onto the package with cord and nicely fitted into the compartment in the packing case.

Around the middle of each packing case, on all six sides, there is nailed a heavy cleat. This cleat serves a double purpose. It imparts great strength to the packing case and at the same time prevents the piling of many cases one on another; so there is no breaking, by pressure, of the cases underneath the pile.

Square nails are used, as these hold much better in the wood than the ordinary round wire nail. Iron strapping is used on the edges of the packing cases.

Goods packed in this way are received in perfect condition, even after eight transfers to reach Bogota.

American glass received in Bogota during the war usually arrived with as much as 60 per cent broken. Little more glass will be ordered from the United States unless exporters assure buyers that glass will be packed properly and breakage prevented.

As an exception and an example of adequate packing, it may be noted that shipments of window glass from an American company to importers in Medellin have been received in good condition with less than 2 per cent of breakage (a record for Colombia), after being handled no less than six times en route to Medellin and receiving very rough usage throughout, as the appearance of the boxes testified. These shipments were packed according to the packing specifications for window glass outlined above, except that, instead of sections running transversely (in a wider box), the sections were put in longitudinally. Where the panes shipped are small—say 12-inch—it is better to put in sections transversely. The purchasers were glad to see the use of very light wood for the main body of the packing cases containing this glass, and also the careful application of heavy edge bracing, reinforced with strap iron.

HATS (MEN'S FELT).

Italian felt hats are packed for export to Colombia in long bales, nicely wrapped in heavy, flexible paper next to the hats; then there is a wrapping of light and strong tarpaulin (for waterproofing) sewed to fit exactly, and then a heavy outer covering of bagging, or heavy jute, also sewed to fit exactly.

The hats themselves are placed one over the other, those of the same size and style being arranged together in order that each hat may fit well into the next one, thus leaving no space for rubbing or movement. The hat at the lower end—that is, the first hat used—is filled with soft paper so that the shape may be retained. Between each hat there is placed a piece of tissue paper to protect it from rubbing.

This makes a solid bale or bundle, waterproof and light in weight so far as packing material is concerned; the contents can not move about, and they keep their shape. Bales packed in this manner were inspected by the writer after their arrival in Medellin and were all found to be in first-class condition, clean and not damaged in any way. All the merchant had to do was to unpack the goods and crease the felt hats, to place them on display for sale.

These hats are of cheap and medium grades and retail in Medellin for 5 Colombian dollars, costing at wholesale about 2 dollars each.

The writer saw American hats of cheap and medium grades that had been packed in somewhat the same manner, but, on account of inexpert packing and lack of attention to detail, the hats were received in a very bad condition—wrinkled, soiled, and in need of reblocking before they could be placed on sale.

HARDWARE.

This line is too comprehensive and varied for one to specify each article or class of articles.

Valuable fittings—such as brass valves, for example—should be well crated, packed in straw, and protected against pilfering by a wire mesh inside of crate. In no case should contents be left loose, as this causes movement, damage to goods, and breaking open of cases or crates.

Bolts should be packed in good boxes, well strapped, with cross-braced heads.

Nails should be shipped in kegs made with iron turned hoops and with cross-braced heads. At present all kegs are made with heads much too light to withstand the handling received.

On all cases containing heavy iron or steel goods, iron strapping at edges should be extra heavy, 1 inch in width and nailed with "box" or "clinch" nails. All other general specifications apply.

MACHINERY.

Cast iron is brittle and will not stand a bad jar or fall. However well packed, a blow will break it. Packing is necessarily very heavy to withstand the great weights. Nevertheless, broken machinery is the chief cause of complaint in Colombia on the part of machinery importers. Investigation shows that machinery is universally well packed by American exporters, but that the trouble lies with the steamship companies, or, rather, the stevedoring companies that contract for the work of loading ships.

These latter companies are inexcusably careless in handling machinery, often very valuable. The remedy seems to be in supervision of such shipments by the steamship company, which should be made responsible for damage.

Extra charges are made for "heavy lifts," etc., so there can be no good reason for such a condition as exists to-day in the handling of machinery by ocean service. Machinery from England arrives in excellent condition and is no better packed than American goods of a like nature.

The system now in vogue of contracting the loading of all ships of one company to some stevedoring company at so much per ton is responsible for this condition, the result being the effort to get the ship loaded with as few men and in as short a time as possible, involving breakage and careless handling of valuable machines which can only be replaced or repaired at great expense and with much loss of time.

Two recommendations can be made, applying to machinery shipments. One of these is the use of heavy skids under cases containing heavy machinery (say 500 pounds and up), being two in number, placed on edge, beveled at ends, to facilitate sliding on rollers; and the skids should be bolted, not spiked to the case. Bolts should be countersunk to avoid interfering with dragging or rolling operations. These skids also lend greater longitudinal strength to the packing case and prevent breakage of cast iron in long pieces by a pull in the middle—by a winch, for instance.

Another recommendation is that of crating such machinery as gas engines (stationary), oil engines, etc., where flywheels are used, in such a manner that the flywheels, disconnected from the piston rod at the crank, can revolve and, being exposed to revolve freely, act as rollers for the machine, which can be easily lifted at one end and rolled to wherever it is wanted.

Sawdust packing is not desirable, as the parts, usually small and delicate, soon work together at the bottom of the box and become damaged or broken. The best method is to wrap carefully in an oiled paper, tied and packed in straw or excelsior, with several partitions made in the box for important parts.

Sectional bracing should always be used in packing cast-iron parts or delicate machine parts. Partitions—not merely nailed to side of case, but set to cleats—should separate all pieces contained in the same case, and cross braces and blocking, securely nailed, should be used to prevent movement and jar. No one piece should touch the other. Special charges are made for export packing, usually running as high as 10 per cent of the cost of machinery.

Delicate machine parts should be packed in tin-lined cases. These tinned cases are made to fit and are soldered inside of the packing case.

PAPER AND PAPER PRODUCTS.

With the exception of news-print paper, which comes in heavy and very hard rolls, covered with a heavy building paper, and is well protected by the very hardness of the roll itself, there is much complaint with regard to the packing of paper and paper products.

Packing of writing paper, sheets, wrapping paper, tissue paper, etc., should be in pressed "bales"—that is, the bale of paper held in place by the necessary number of wooden frame pieces crossing the top, and fastened with iron straps at the edges. The contents should be first protected by a layer of heavy cardboard or other similar material. In a good pressed bale the paper can not move, while the contents can be readily seen and inspected by customs officers and are always received in good condition. This system is very good and can be used for an endless variety of similar goods.

If sizes of sheets of paper do not allow crating to be used and a roll is made, the roll should be protected by a cylindrical crate, not solid covering, but open work, reinforced by strapping at edges, etc. There should be solid heads for proper nailing. Boxes or cases are not good; the paper moves too much and is received in a damaged condition. A blow, breaking the wood of the box inward, will do a great deal of damage to many sheets of paper. The movement inside also spoils the paper. It is impossible to pack a box tightly with paper of varying sizes and keep it without movement.

PLUMBING AND TOILET ARTICLES.

Small nickel-plated fittings should be packed in crates in straw. Nickel-plated piping should be wrapped with burlap, building paper, or some such article. Toilets should be crated with light but strong crates; this is done at present, but crates are not cross-braced as they should be to prevent collapsing by side pressure in cargo slings during loading. Where articles are small and there is danger of pilferage, wire mesh should be used inside of crates. All other general specifications apply. See "Marking" (p. 387).

SHOES, SLIPPERS, ETC.

Shoes, slippers, etc., should be packed in cheap fiber trunks, charged for on invoice. Pasteboard boxes should be removed and each pair of shoes carefully wrapped in tissue paper with an outer wrapping of heavier paper. Patent-leather shoes should be wrapped in special oiled or waxed paper to prevent sticking to leather in hot climate. In no case should tissue paper be put next to patent leather. The trunks should be filled to the limit of their capacity to prevent movement of contents and consequent "rubbing." The style and type of trunk should be according to the buyer's selections.

TEXTILES.

Cotton goods.—Cotton goods should be packed in pressed bales made up on special hydraulic press. The size varies according to the width and the number of pieces. For mule transport the weight should not exceed 65 kilos (143 pounds). Heavy paper should be used, covered with tarpaulin cut and sewed to size of bale; this is the waterproof material employed, and it also protects the goods from damage by hooks, etc., in transit. The outside covering should be a heavy jute sewed to fit the bale. The fastenings should consist of iron straps 1 inch wide placed transversely and cut to right size (length) with patent fastener, there being two buttons on one end and slots to fit at the other, making it possible for the bale to be easily opened for inspection in the customhouse. These bales are very hard and well pressed and can be immersed for some time in water without damage to goods. Markings should all be stenciled. The color used for serial numbering should be red, which is readily distinguishable by customs officials and merchants receiving goods. It may be noted that a bale of this kind containing 600 kilos of goods does not have more than 600 grams of tare.

Silks, etc.—Silks should be packed in pressed bales similar to those described above, but not so tightly pressed (in order to prevent "breaking" of silk). For smaller packages a lighter weight of "tarpaulin" is used, sometimes made of tarred paper. Where goods are very valuable, a wrapping is made of some wire mesh to prevent pilferage in transit. Where goods are destined for the interior, or are manufactured articles of great value, such as special silks, laces, etc., a tin case, made to fit, is used with interior wrappings the same as above mentioned. All light boards used for pieces of goods should be removed, as silks carry a very high duty and the weight should be reduced as much as possible. Other general specifications also apply.

Shirts, stockings, underwear, towels, handkerchiefs, table linen, etc.—These articles should be packed in pressed bales similar to the above. All other specifications given above also apply.

Laces, embroideries, edging, etc., fancy and plain.—These articles should be packed in pressed bales, waterproofed with tarpaulin, and covered with light jute. Bales should be carefully built up and sides protected with a light board to take "bite" of iron straps or "cinches." If goods are very fine and valuable, a light wire mesh, inside of the jute outside cover, should be used to prevent pilferage. All heavy wooden or cardboard centers on which laces, etc., are wrapped should be removed and only the lightest cardboard used. European laces come laid out in long lengths, between paper only, to mark divisions of different styles, etc. Heavy cardboard "centers" add to weight and hence to duty collected in customhouses.

Wrapping of muslins, percales, etc., for display in Colombia.—Dress goods should come in bolts measuring 20 or 25 yards, according to the instructions of the purchaser. This exact length contained in the bolt of cloth allows a fixed number of dress pieces to be cut from the bolt, without remnants. These lengths have been established by long usage and custom in the country and are followed by English manufacturers. Each bolt of cloth should carry an artistic card and a marking ticket on which the number of meters (and also yards) is shown, together with the lot number and the serial number, both of which must agree with invoice and packing lists. The writer inspected a lot of American cotton prints on which the yardage of each piece was not marked, merely the total yardage of the lot being given (200, in this case). This made it impossible for the wholesaler-importer to know how many yards there were in each bolt of cloth without counting each piece. This meant extra time and expense to the purchaser. In the English practice each piece (bolt) is wrapped in a hard glazed paper, either blue or pink in color, and is tied with a red tape running lengthwise. This wrapping paper is folded under edgewise into the center of the piece of goods, being held by the fold in the middle. The cloth can easily be seen and examined from the ends. In no case should ends of pieces be wrapped, as this makes the contents invisible and the paper has to be torn to examine the goods.

After the wrapping has once been torn, the goods soon become dirty, and torn paper presents a poor appearance to the customer visiting the importing wholesaler, who is always jealous of the appearance of his sample room. English muslins, percales, shirts, and even cheap cotton prints seen in showrooms of Colombian importers always look new and bright and make a very pleasing impression, even when the material is inferior in quality.

YARN.

In order to retain a hold upon the Colombian market for yarn, more attention must be paid by American shippers to the method of packing. The use of a light waterproof wrapping (tarpaulin) of good quality and of one piece is requested by Colombian importers of yarn. Too frequently a heavy grade of tarpaulin is used by the American exporter, thereby causing higher duty rates. Since the covering is used by the Colombian consumer for the repacking of goods intended for the interior, he appreciates the use of one large piece rather than three or four of smaller size.¹ Moreover, it is recommended that the bales of yarn be more carefully pressed in order to reduce the cubic volume of the bale, and thereby the freight rate as well, since ocean freights are based upon cubic measurement. European methods of packing yarns have been found very successful. Bundles of yarn of 10 pounds each are first pressed separately and then an entire bale, consisting of a number of such bundles, is pressed. In this way a decrease in volume of 12 to 18 per cent has been secured. It is readily seen that in the course of one year, during which time 25,000 to 30,000 pounds of yarn are imported monthly, the saving in freight alone would amount to a considerable sum of money.

USE OF FIBER CASES.

A cheap fiber case is much used in Europe for the shipment of various articles, such as umbrellas, shoes, bric-a-brac, hats, etc. These cases cost but little, have the advantage of lightness combined with great strength, and can be used in Colombia for repacking goods destined for the interior. They are also much used for travel baggage, storage of stock, sample cases, etc. No objection is made to their cost being charged on the invoice. Care is taken that the articles contained do not leave space unoccupied. For example, if umbrellas are packed, a case of the right length is selected—not one too long, to be filled with waste cuttings or paper, on all of which duty would have to be paid, as on gross weight. Another advantage of the fiber case is that it is flexible and elastic, absorbing the shock of a fall or blow and reducing the chance of breakage to a minimum.

Corrugated paper cases are not to be recommended, as they are too easily smashed by other cargo and soon become torn and broken, with the contents exposed to pilferage.

SPECIFIC EXAMPLES OF UNSATISFACTORY AMERICAN PACKING.

A case of American goods was received in Colombia in which flatirons were placed in one end and enameled ware in the other, a light partition being nailed in between without the use of cleats for the partition support. The result was that the heavy flatirons, in moving back and forth in transit, soon knocked the partition out and mixed with the enameled ware, completely ruining it for sale or use. Such articles as flatirons should be simply tied in a bunch, with proper shipping tag wired on, and put into a piece of sacking.

Cases containing shirts have been found with boxes double the required size, the rest of the space being filled with waste paper. The merchant was forced to pay duty on the entire gross weight and lost heavily, not being able to sell the shirts at a price to compete

¹ Samples of the tarpaulin used and preferred by the Colombian merchants may be inspected at the Bureau of Foreign and Domestic Commerce or its district offices upon reference to file No. 40258.

with his rival in the line. These shirts should have been shipped in a bale, pressed and waterproofed.

Another case that may be mentioned is that of a shipment of small round mirrors to Medellin, Colombia, from New York City. The mirrors themselves were packed nicely in strong pasteboard boxes, made to size and designed to contain a certain number of mirrors. A large case was selected to pack them for shipment. This box was of heavy wood, almost 1 inch thick, the weight being too great. Half-inch lumber, well cleated and iron strapped, would have served the purpose just as well, since the goods contained were not very heavy in relation to their bulk. The result was extra duty for the Colombian merchant to pay. Moreover, the box selected for packing was not of the right size. After the order had been packed it was discovered by the packer that the box was too large and that the order of mirrors did not entirely fill it. So waste from the factory, cuttings from the leather backs of mirrors, sweepings from the floor, waste paper, old cigarette boxes, pieces of twisted tin, etc., were collected and dumped into the box on top of the goods, and the cover was then nailed down. Naturally, in transit, some of the pasteboard boxes containing mirrors were damaged, and the dirt from the top of the case filtered down into the boxes and soiled the mirrors—the whole case presenting a very sorry appearance when it was opened at Medellin. The purchaser (a large buyer of foreign goods, with a credit rating of half a million dollars) remarked that he formerly bought all his mirrors in France, and that he never received such a dirty shipment from that country; that boxes were always to size, light in weight, and strongly put up, with reinforcements, etc. He added that he did not like to pay duty of \$1.60 per kilo on waste from the factory floor, or on a lot of extra wood from the United States.

The above examples represent only three instances out of many that came to the writer's attention.

IMPORTANCE OF MARKING.

Marking is a very important matter and American packers should be more careful about it. Colombian customhouses complain that American goods are not properly marked; that the marks on cases, etc., do not always agree with invoices or manifests, causing endless trouble in location of cases, bales, etc.; that the serial numbering of packages is not consistent; and that the whole is a bewildering series of old and new marks, unintelligible and almost impossible to decipher.

In this same connection, merchants complain that packing lists are conspicuous by their absence and that the invoices do not show the goods contained in each case, bale, etc.

The result is that an importing wholesaler is forced to unpack a number of cases, boxes, or barrels, as the case may be, to locate and check each list of similar items. This also makes it impossible for him to resell a closed case of goods, and he is put to the added expense of unpacking and repacking.

When packing lists are provided by American shippers, it is asserted that these do not agree with invoices, necessitating another check of goods.

In English practice, all articles that are alike are packed together, and a separate list is shown on the packing list, with corresponding

lot and serial numbers, from which packages and contents can be readily noted and located. Proper printed forms are used for this purpose.

English, French, and German packages are marked with *red* for serial numbering, and all markings are made with good stencils. There are no scribbled, undecipherable marks, and old, marked-up cases are never used. The average American packing case received in Colombia is a mystery to all but the man who marked it last, and it shows the use of old packing cases over and over again—all of which makes a bad impression. Such cases look bad, make an unfortunate impression, and cause endless trouble, delay, and confusion.

CARGO HANDLING BY STEAMSHIP COMPANIES AND OTHERS.

As has been shown in the case of machinery, the best packing will not withstand careless handling by stevedores. However well packed and protected it may be, if a case of goods is thrown around regardless of the consequences, it will finally give way and damage will result.

From the appearance of American cargoes, there would seem to be a great opportunity for improvement in cargo handling.

Careful and skillful handling does not involve any decrease in the rapidity of loading and unloading—often the reverse, in fact. It is a question of knowledge and intelligent supervision, as also of training and experience.

With American cargoes, breakage is the rule rather than the exception, and it is really discouraging to see the condition in which some American cargoes come out of American ships. Steamship companies should see the harm they are doing to American trade and should cooperate with the American exporter.

HANDLING OF GOODS IN COLOMBIA.

From customhouse to river steamer and from river steamer or railway to warehouse, all goods are handled in small, one-mule, two-wheeled carts. No four-wheeled wagons are used in Colombia. Usually the streets are too narrow to permit of their easy use, and, also, the native mules are too light and small to drive up well in fours with heavy loads.

Native stevedores, especially at the customhouses, are very careless in handling merchandise of all kinds and can not read such notices as "Handle with care" or "This side up." The use of pictures to insure careful handling is recommended in every case. The design of a glass holding liquid will do more than anything else toward insuring "This side up;" the men can readily understand that the box is not to be turned upside down.

MULE TRANSPORT.

Large importing wholesalers in Barranquilla and Cartagena, as well as in Medellin and Bogota, generally repack goods for interior points where mule transport is used. This repacking is done upon receipt of order from the interior and according to order of purchaser.

English cotton goods are often ordered packed at the factory for mule transport into the interior, but this necessitates a wide knowl-

edge of each district and the particular patterns wanted by each locality (these differing greatly), and the orders are for small lots. Such orders can be given by importers only when they have absolute confidence in the ability of the factory to carry out instructions to the letter. Bales are so marked and listed that the importer knows what is in each one and all about it.

There is given below a list of cities and towns for which goods ordered direct must be packed for mule transport—that is, the weight of each package should not exceed 150 pounds. A mule “carga” is 300 pounds. Two packages are used to make the “pack”—one on each side of the animal. In extreme cases, such as machinery, etc., a single piece of 300 pounds may be sent out, but in such instances there should be a prior arrangement with the purchaser, since such “cargas” involve the charging of a much higher freight rate by the mule packers.

All goods for mule transport should be protected, where necessary, from damage by rain, mud, etc.

Pilferage is not usual in the interior. Packers are fairly reliable in this respect. Most pilferage takes place on shipboard or at the port of entry and on such routes as the one up the Magdalena River to Bogota, on which goods are handled no fewer than six times before reaching their final destination.

Following is the list of towns:

Department of Magdalena.—Towns: Valle de Upar, Villa Nueva, Fonseca, Palmira. Route: Via Rio Hacha or Banco, on Magdalena River.

Department of Atlantico.—All goods for interior of Department repacked by Barranquilla importers.

Department of Bolivar.—All goods for interior of Department repacked by importers of coast cities.

Department of Antioquia.—Towns: Nechi, Yarumal, Antioquia, Nare, Jerico, Sonson. Route: Via Magdalena River and Antioquia Railway to Medellin, thence by canoe and pack mule.

Department of Caldas.—Manizales, via ropeway from Dorada Extension Railway at Mariquita to end of ropeway line (not yet completed). Neira, by pack mule from Manizales.

Department of Tolima.—Ibague, via railway from Girardot.

Department of El Valle.—Cartago, by pack mule from Manizales. Buga, by pack mule to Cartago, thence by river steamer up Cauca River: also by river steamer from Cali.

Department of Santander.—Bucaramanga, via Magdalena River to Puerto Wilches, thence 20 miles by rail, thence by pack mule. Towns of Piedecuesta, San Andres, Malaga, Socorro, and Moniquira: Route, by pack mule from Bucaramanga.

Department of Norte de Santander.—Ocana, via Cucuta by pack mule: also from Banco, on Magdalena River. Pamplona, by pack mule from Bucaramanga.

Department of Boyaca.—Towns: Tunja, Boyaca, Sogamoso, Tasco. Route: By pack mule from Magdalena River stations.

Department of Cundinamarca.—Goods are repacked in Bogota for distribution to other towns.

Department of Huila.—Towns: Neiva, Garzon, Timina. Route: By canoes from Girardot up Magdalena River.

Department of Cauca.—Popayan, by mule pack via Guapi or Cali (Pacific coast).

Department of Narino.—Pasto, by mule pack via Cali or Tumaco (Pacific coast).

Appendix C.—REGULATIONS AND PRACTICES AFFECTING COMMERCIAL TRAVELERS.¹

PASSPORTS—POWERS OF ATTORNEY.

A commercial traveler from the United States, if an American citizen—and if traveling for American houses this should be a prime requisite—should supply himself before leaving for Colombia with an American passport. This passport should then be taken to the Colombian consular representative at the port of embarkation for his visé, authorizing the traveler's entry into Colombia. If the traveler is not an American citizen, he should procure a Colombian passport from the Colombian consul. The photograph of the traveler should appear on the passport.

A special power of attorney is advisable in case the traveler should be charged with collection of accounts or have any reason to appear before the courts or any ministry of the Government for any official purpose or to enter into contracts with the Government. The power of attorney should be certified by a notary public, secretary of state of the State in which the notary resides, Secretary of State of the United States, and diplomatic or consular representative of Colombia.

LICENSES.

In Colombia a commercial traveler is free to transact his business without any further formalities on the part of the general Government after passing the customhouse.

Some cities have a municipal tax, and the traveler must secure a license before exhibiting his samples. These are Cartagena and Medellín, where the tax is from \$10 to \$20 for the calendar year, payable into the municipal treasury. The license is issued by the alcalde on the presentation of the treasurer's receipt.

No other formalities are required of a commercial traveler before he is permitted to begin business, and there is no restriction as to clientele. It may be mentioned, in passing, that the hotel registers in Colombia are inspected by the police.

CUSTOMS TREATMENT OF SAMPLES.

Commercial travelers must provide themselves with a consular invoice, in Spanish, covering their samples and fully describing them, which must be certified by the Colombian consul at the port of embarkation. On arrival at the Colombian port of entry a manifest must be made, in quadruplicate, bearing stamps to the value of \$2.80, and presented at the customhouse with the consular invoice. Upon the clearance of the samples one copy of the manifest is returned to the traveler for use in the preparation of his manifest for reexportation, which must agree with the import manifest, except for changes through sale, loss, etc., of samples. If the trav-

¹ This section is by Consul Isaac A. Manning.

eler is not familiar with the customs regulations and practice, he will usually save time and trouble and, perhaps, money by making his clearance with the aid of some reliable importing house at the port of entry, which can be readily arranged for on arrival.

Samples of no commercial value may be imported free of duty and without bond or security.

All other samples may be imported temporarily upon payment of full duty, with a refund of 75 per cent of the duty upon their reexportation.

If the traveler fails to reexport all the samples, the refund is limited to 75 per cent of the duties on the samples actually reexported.

Reexportation may take place through any port. The refund of a part of the duties may be made at the customhouse of original entry, on presentation of the manifest, and due notification by the customhouse through which the samples were exported, or the traveler, when paying duty at entry, can arrange by telegraphic advice for refund at port of reexportation. In the former case, the copy of the manifest of reexportation received by the traveler should be sent, properly indorsed, to an agent at the port of importation for the collection of the refund. In order to be entitled to the refund of duty, the samples must be reexported within one year from the date of clearance.

The customs authorities as a rule give commercial travelers' baggage preference over all other effects except personal baggage, and there is usually little delay in clearance. In order to expedite the clearance of his baggage, the commercial traveler may arrange to have it cleared through some established commercial house having a bond at the customhouse, so as to enable him to get his samples without waiting for liquidation of duties, which might consume several days.

The customs collectors interpret "muestras sin valor," or "samples without value," to mean those that have absolutely no commercial value and therefore are not salable and can be used only for the purpose of negotiating sales.

The following restrictions are placed on samples subject to free admission: Samples of cloth, felt, and colored papers must not exceed 40 centimeters (about 16 inches) in length, measured in the direction of the warp, although they may have the full width of the piece. Larger samples of such material must be mutilated by cuts 20 centimeters (about 8 inches) apart.

Samples of oilcloth must not exceed 30 centimeters (about 12 inches) in either direction.

Samples of rope, metal threads, or wooden moldings must not exceed 8 centimeters (about 3 inches) in length.

Samples of wines, liquors, and similar beverages must come in containers of a capacity not exceeding half a liter (0.52 quart).

Jewelry and plate of any metal must be mutilated.

MISCELLANEOUS.

In certain respects, the best season of the year for travel in Colombia is from December to May, the rainy season lasting from June to November. It should be noted, however, that the Magdalena River is most readily navigable from May to November.

Merchants of Barranquilla usually "stock up" on women's goods, haberdashery, etc., about the time of the Christmas holidays for these

and the Mardi Gras festivities of January and February, while the celebration of independence (Nov. 11) marks Cartagena's special social season. The end of the coffee season is the principal buying time for the interior.

Neither railways nor steamboat lines grant reduced baggage rates to commercial travelers.

Commercial travelers will probably find daily expenses amount to anywhere from \$4.50 per day upward, depending greatly on the lines represented. Actual expenses of travel in Colombia, Ecuador, Peru, Panama, and Costa Rica, covering a four-month period by a traveler for a large machinery house in the United States (carrying no samples) averaged \$15 per day.

One other commercial traveler estimates his expenses at from \$35 to \$50 per week, including laundry and entertainment. One requiring a showroom would have to add about \$10 per week. Personal amusement will also be found a necessary and important item in most South American countries. It is impossible to give expense estimates, exclusive of transportation, in Colombia, because so much of a traveler's time, if he visits the interior, is spent in travel. He can probably visit the coast towns, Bogota, Honda, and Medellin, on an average of \$10 per day, exclusive of expenses incurred on account of excess baggage, sample room, and carriage hire.

Appendix D.—TRAVEL NOTES.

For the guidance of commercial travelers or other Americans who may visit Colombia, there are presented below certain observations and directions, representing the result of actual experience in traversing the waterways, railways, and mountain trails of the Republic.

Since the problems of travel in Colombia are unusually difficult and perplexing, it is believed that such a series of notes will serve a useful purpose by indicating to the traveler the conditions to be encountered, the things to be avoided, and the measures that should be taken in order to insure the greatest practicable degree of comfort, safety, and expedition.

The trips covered by these "Travel Notes" include the principal ones ordinarily taken by business men visiting the country.

SANTA MARTA TO BARRANQUILLA.

The Santa Marta Railway Co. maintains a steamer service from Cienaga to Barranquilla, with sailings twice a week, on Tuesdays and Saturdays, the boats connecting with the train from Santa Marta. The fare by rail to Cienaga, a distance of 22 miles, is \$1.40 Colombian (\$1.36 U. S. currency); and the boat fare to Barranquilla is \$3 (\$2.92 U. S. currency) first class and \$1 (\$0.97 U. S. currency) second class. There are two staterooms, which must be reserved and for which an extra charge of \$2 (\$1.95 U. S. currency) is made. These are mere wooden inclosures on deck, equipped with nothing but a folding canvas cot without bedding. First-class passengers are provided with canvas cots on deck at night, but are expected to furnish their own pillows, mats, and sheets, as well as soap, towels, etc. Meals are served on board, but the discriminating traveler will carry a hamper of lunch and also provide bottled water for drinking purposes.

The route from Cienaga to Barranquilla is through swamps and channels formed by the delta of the Magdalena River. There is an open but very shallow body of water called "La Cienaga," which reaches as far as the ocean, and the steamers approach Cienaga through an artificial, dredged channel. About two-thirds of the distance of 50 miles to Barranquilla is through very narrow channels called "canales," the draft being not over 2 feet 6 inches and impossible of navigation by vessels any larger than those employed. Progress is slow and very difficult, with many chances of running aground. The boat stops several times during the voyage to take on more wood for fuel, and this is a tedious process, so that the speed made is not more than 5 miles per hour.

Only when privacy is necessary should the staterooms be taken, as they are too hot and unventilated to allow one to remain in them very long. The trip should not be made at night, if that is avoidable, on account of the myriads of mosquitoes encountered in going through the swamps. When the boat stops (as it frequently does), passengers are covered with these pests, dangerous on account of malaria. Travelers should provide themselves with good close-mesh folding mosquito bars as part of their baggage, although such are not in use by the natives.

The trip by daylight is not unattractive. The snow-capped peaks of the Sierra Nevada are seen to the east, and the swamp life and vegetation are interesting. Approaching Barranquilla one begins to see cattle pastures on the higher ground, where the land has been cleared, fenced, and planted to para or guinea grass. Here the cowboys' means of locomotion is a long, narrow dugout canoe. Many large alligators are seen and also flocks of the famous egret heron, or "garza."

It is said by people who have been over the ground that a fine automobile road could easily be made between Santa Marta and Barranquilla by using the natural roadway of the Island of Salamanca lying along the coast, where no road work would have to be done for the greater part of the total distance. A short stretch of elevated

road would have to be put in near Santa Marta and some piling used near the Barranquilla end, with a ferry across the Magdalena River at Barranquilla. Such a route could not at present be made commercially profitable, because motor traffic over it could not compete with the low prices charged by the natives for transporting freight in dugouts. These are poled through the swamps at a very insignificant figure.

CARIBBEAN COAST TO PUERTO BERRIO.

CONDITION OF RIVER.

The Magdalena River, in its lower reaches, below Puerto Berrio, is very wide between its main banks—in some places reaching a total width of more than a mile, but this great area is not always covered with water. During the dry season of the year, the volume of water is very small, compared with the width of the river; the navigable channels are narrow and interrupted by large and small sand bars and mud banks which constantly change position. River pilots watch the current for deep water, since there are no aids to navigation, these latter being impracticable on account of the constant change in the channels.

It is also impossible, during the dry season, to run at night; the boats are tied up to the bank at some convenient wood pile, and the hours of darkness are used to load wood for fuel for the following day.

There are also many islands, some of them inhabited and used for farming on a very small scale and as pastures for cattle. Some of these islands are very large, the river passing on either side and in places forming many channels, confusing to the river pilots. The islands are being constantly eroded by the river, with the consequent formation of new sand bars and banks, which gradually become new "islands."

In other places the river has spread out into great "lakes" of very shallow water, sometimes a mile or more in width. In many places swamps have been formed by the overflow water during the rainy, or flood, seasons. These swamps cover enormous areas on both sides of the river and are impassable for any craft except the small dug-outs of the natives, who know the narrow channels and the intricacies of the tropical water growth.

The water of the river, even in the dry season, carries considerable silt and has a muddy appearance.

During the rainy season, steamers go up the river from Barranquilla to La Dorada (the head of navigation on the Lower River), a distance of 987 kilometers (617 miles) in five days, running at night on the Lower River as far up as Gamarra. They come down in three days with the swift current. This applies to express steamers which stop only for wood fuel and for mail at such towns as Sambrano, Magangué, Banco, La Gloria, Gamarra, Bodega Central, Puerto Wilches, and Barranca Bermeja.

STEAMERS AND SERVICE.

The river steamers are all of the stern-wheel type. The hulls are built of steel, with light wooden upper works, and the models are all of the so-called "spoon-bow" type, this type having been found to be the best on account of the many encounters with sand bars, snags, and other obstructions in the river.

Service is divided into three classes—(1) express passenger and freight service, (2) intermediate passenger and freight service, and (3) ordinary freight service. Express boats stop only at the more important towns and carry the mail to and from the interior. These steamers have the right of way over all other river traffic. "Intermediate" boats make more stops, carry more heavy freight, and usually take twice as long to make the run as the express boats. These boats are not as large or as well equipped as the express steamers, which latter are furnished with ice-making machines, electric lights, shower baths, and electric fans in the staterooms. On express steamers an electric player piano is also provided for the diversion of the passengers.

During the dry season, the trip from Barranquilla may consume anywhere from one to three weeks, according to the condition of the river and the luck with sand bars and other obstructions encountered en route. In such times, an entire day is often spent in seeking out a channel through the bars and islands with enough water to float the boat through.

A common occurrence is for the boat to become so fast on a bar that plates are damaged and the boat rendered useless. Then the passengers have to wait patiently for another boat to be sent out to transfer them and continue the trip up or down the river, as the case may be.

EQUIPMENT FOR RIVER TRAVEL.

The staterooms on the express boats must be engaged in advance, a charge of 20 per cent in excess of the regular first-class fare being made for this accommodation. If a room is wanted for one person only, a charge of 40 per cent in excess of fare is made. If no stateroom is available, passengers are provided with a folding canvas cot and sleep on deck.

On the express boats, staterooms are furnished with a canvas cot, a washbowl, and a water pitcher—nothing more. Passengers must provide their own outfit, consisting of mat, two sheets, a pillow, a mosquito net, towels, soap, etc., and a small traveling-case mirror will be found convenient. The better boats on the express service have electric fans in the staterooms and the dining room. As the heat is terrific at all seasons of the year (at night as well as in the daytime), the traveler should inform himself, before engaging passage, whether the boat is equipped with fans or not. It is impossible to stay in these rooms after 9 o'clock in the morning, on account of the heat. About the only place on the boat where any degree of comfort may be obtained during the day is in the dining-room space, which is open fore and aft, the after portion of the first deck being devoted to kitchen offices and the boilers being under the forward end on the main-hull deck, under the passenger deck, making this part of the craft too hot.

The upper deck, or "texas," is exposed to the sun and can not be used except at night, when it becomes an unpleasant and possibly dangerous place on account of the mosquitoes and other insects. When the boat ties up to the bank for the night insects become so numerous that one has to take refuge in the stateroom under the mosquito net, with the fan in operation.

The food is very poor and badly prepared and served. Meat is used to excess, and the traveler will do well to provide himself with a few cans of fruits, vegetables, etc. Mineral water can be purchased on all express boats, and its use is recommended for drinking purposes.

Every precaution should be taken to avoid infection, and fever specifics should be used to prevent malaria.

It will be found impossible to do any clerical work or writing on board, except early in the morning before 9 o'clock. After that hour the rooms become too heated for one to remain in them for any length of time, and the dining space becomes too crowded for work. Reading matter should be provided; it will prove to be the traveler's best friend and will aid in overcoming the monotony of the river journey.

When one goes ashore at the various stops the water there should not be taken nor should one purchase the confections offered for sale, as the conditions under which these latter are made are not sanitary and disease is very prevalent. Travelers going ashore should not endeavor to penetrate into the tropical growth, unless there is a wide cleared path or road; this precaution is to avoid the ticks, chiggers, and other insects, which will result in discomfort.

An important item of equipment is a pair of large colored spectacles, since the glare of the sun on the water is very trying on the eyes. A good cork sun helmet of approved make is the best head covering out in the country, but this is too heavy to wear on board the steamers. A good wide-brimmed Panama hat will be found the most comfortable headgear. Blankets are not necessary on the river, though a light covering, such as a bedspread, should be carried to avoid the chill of the tropical morning after a hot night.

Palm Beach or white duck clothing is used, and a good grade of light khaki will be found very suitable for the river trip on account of the dirty condition of the boats, white cloths soiling too readily.

DEPARTMENT OF ANTIOQUIA.

HOTEL MAGDALENA.

Upon leaving the Magdalena River at Puerto Berrio, the traveler is favorably impressed with the Hotel Magdalena, situated on a hill within a few hundred yards of the river bank. This hotel was built by the government of the Department of Antioquia and is operated in connection with the railway service of the Antioquia Railway, the principal object being to provide a comfortable, modern, and hygienic stopping place for travelers bound in or out of the Department. This is the best hotel in the entire country, with the exception of those in Bogota, the capital. Among its features are the modern white-tiled baths—a great boon to the river passengers. The food served is excellent, and the time can be spent here very comfortably while one is waiting for a river steamer or for a train into the interior of the Department. The building was designed by an American architect and is constructed of reinforced

concrete, with all interior fittings of hardwood. All floors are of tile laid in cement, and all features are specially adapted to the tropical climate.

TOWN OF PUERTO BERRIO.

The town of Puerto Berrio is the river port for the Department of Antioquia. Through this place pass all of the goods shipped in to Medellin from the coast and foreign markets; Puerto Berrio also handles all the exports of coffee from the Department of Antioquia, which produces 40 per cent of the coffee crop of Colombia. There is also a continuous commerce with the interior of the country in "panela" (brown-sugar cakes), of which Antioquia produces 22,000,000 annually and sells large quantities to the interior of the country. Considerable tobacco is also imported, principally from the Department of Santander, via Puerto Wilches, Gamarra, etc. Approximately 70,000 head of cattle are imported into Antioquia annually from the Department of Bolivar, and about one-half of these are brought up the river on scows and shipped into Medellin via the Antioquia Railway. For a description of the town of Puerto Berrio itself, the reader is referred to page 231.

ANTIOQUIA RAILWAY: NUS DIVISION.

One train of mixed passenger and freight cars is run out of Puerto Berrio over the Nus Division to Cisneros each day, leaving at 6 a. m. First, second, and third class coaches are provided.

The road winds in a series of many curves in a general westerly direction until the Nus River is reached at a point between Pavas and San Rafael. The maximum grade to this point of crossing the Nus River is 4.25 per cent and the average grade 2.733 per cent. All tangents and curves are 90 meters in minimum radius. After crossing the Nus at Monos, the road strikes to the northwest, paralleling the Nus River on the south bank until the headwaters are reached at Providencia. From there the road takes a general westerly direction to Cisneros, the present terminal point of the Nus Division. New work is in progress as far as El Limon—7 kilometers from Cisneros proper—and reaching as far as the proposed tunnel site under the mountain of La Quebra.

The distance from Puerto Berrio to Cisneros is 109 kilometers (approximately 68 miles), the distance over the wagon road from Cisneros to Santiago is 14.7 kilometers (9 miles), and the distance from Santiago to Medellin by rail is 72 kilometers (45 miles).

The railway from Puerto Berrio follows the grade along the hillsides, with many short curves and heavy grades. There are many places where the road could be shortened and straight pulls made possible by large fills and steel viaducts. The entire route is a mass of hills, with high mountains rising several thousands of feet out of the narrow valley through which the railway passes. At Puerto Berrio and for some distance toward Cisneros the country is tropical, like the Magdalena River valley, but, after one passes San Rafael at the Nus River, the country changes in appearance as the mining section is approached and greater elevation is attained. From here on into Medellin one is reminded of the old gold country of California around Oroville and the Feather River region, though the vegetation is very different, there being no pine or oak here. The formation is red clay and iron-stained decomposed porphyry, interspersed with great granite boulders. The streams and creeks, of which there are many, are swift and rocky. At La Quebra there are several waterfalls on the sides of the mountains, estimated to produce sufficient electric horsepower for an electric traction railway over this mountain.

All construction work has been accomplished by means of hand labor, and the only modern appliances used are the small Decauville portable hand cars with which fills are made and ballast taken out of rock cuts, etc. An enormous amount of work has been done in this manner all along this railway. Sides of cuts have to be faced with stone in many places to prevent erosion when heavy rains come during the two rainy seasons in this region, and there are many great dirt fills containing 200,000 cubic meters of earth. In this difficult country—a mass of hills and mountains, with all sorts of natural conditions to contend with—this railway stands out as a monument to industry and ingenuity in the face of odds.

LA QUIEBRA PASS.

Arriving at Cisneros, the traveler has the choice of two means of crossing the mountain to Santiago, the end of the Porce Division leading to Medellin. A carriage may be hired or the journey may be made by saddle animal. Leaving Puerto Berrio, the train arrives at Cisneros at 11 a. m., and the trip over the mountain can be made on

horseback in about 1½ hours, but, as the train does not leave Santiago for Medellín until 4 p. m., travelers either take lunch at Cisneros before starting over the mountain or go to the top of La Quebra for lunch at a rather good inn there. The stop at La Quebra is very welcome, as it relieves the hard ride, rests the saddle or carriage animals, and gives one an opportunity to enjoy the truly beautiful scenery and the mountain air after so many days spent on the tropical river. The elevation of La Quebra at the highest point on the wagon road is 1,650 meters, or 5,080 feet, above sea level. Cisneros has an elevation of 1,055 meters, or 3,380 feet. La Quebra pass is 1,700 feet in the perpendicular above the town of Cisneros and 1,250 feet higher than Santiago.

When one is not encumbered with small hand baggage, it is advisable to make the trip on horseback over the mountains. This method is more rapid than by carriage, as the animals provided in the latter case are small and in poor condition and can not make good time pulling a heavy vehicle up the grade. If the ride is made on horseback in the rainy season, the traveler would do well to have his poncho or other waterproof garment out and tied to the cantle of the saddle to avoid a wetting. If one is encumbered with small or valuable hand baggage, the trip is made by carriage, especially if it is raining. The charge for this service (which is not included in the railway fare or arrangements) is \$1 for a saddle animal and \$8 for a carriage for two persons, or \$5 for one person, plus the charge for saddle animal, which is understood by custom to be included.

The La Quebra wagon road is a well-built mountain road; the maximum curve radius is 70 meters; the macadamized surface is 3½ meters in width, with a total width of crowned surface of 5 meters. The average gradient is 6 per cent. Over this road pass all the imports and exports of Medellín and the interior of the Department of Antioquia.

All freight is handled by means of small two-wheeled carts drawn by small native mules and loading from 6 to 8 sacks of coffee—that is, a total weight of from 850 to 1,140 pounds per cart cargo. Many pack mules are also used, the pack animals competing with the mule carts in this traffic, which is controlled and contracted for by the railway. There are also a few four-wheeled wagons which are used for heavy pieces moving over this route, and, in a heavy coffee-harvest season, these wagons are used to expedite the work of freighting coffee.

This vehicle equipment is very poor and presents a somewhat dilapidated appearance. The harness of the mules consists of a collar and trace chains—nothing more—ropes being used for reins on the wheel animal. No real driving (as this term is properly understood) is done, the mules being practically “herded” along the road. This seems to be customary in all Latin American countries where small native mules are used. It is also noted that little care is given the animals used.

Crossing over La Quebra Pass is an interesting experience to the traveler. A great contrast in the people is noted, as compared with the natives of the coast. Everywhere there are small houses, of one room and a “lean-to” kitchen arrangement. These tiny houses are built of mud, molded into shape, or of cane “wattle” plastered with the prevalent red clay, and the roofs are most commonly of thatch, but sometimes, in the better houses, of round tile, made on the ground or near by.

There is water everywhere along the road, and one rather large waterfall is passed. Bananas and sugar cane, and also yucca, a staple food article, are grown everywhere, even on the steep sides of the mountain. Hardly a square yard of cultivable space is wasted by these industrious people. No large farms are seen, all agriculture (on account of the broken nature of the region) being in the hands of small farmers. Many small native cattle are raised, and these are pastured on the short grass of the mountainsides.

BAGGAGE.

All steamers arriving at Puerto Berrio are met by agents of baggage companies from Medellín who make a business of taking care of travelers' baggage from Puerto Berrio to Medellín. Baggage is received on board the boat, taken ashore to the railway station for customs inspection, weighing, and checking, loaded on cars, and handled over La Quebra Pass in time for the train at Santiago, being delivered to the passenger the following day at his lodgings in Medellín. A receipt is given for baggage received by the agent at Puerto Berrio, and the passenger, by availing himself of this service, is relieved of a great deal of trouble, annoyance, and danger of loss of baggage. Otherwise, there would be endless difficulty at Puerto Berrio, Cisneros, Santiago, and Medellín. The railway companies in Colombia do not maintain a baggage-checking system as in the United States, and no responsibility is acknowledged for transportation of baggage.

All trunks and dunnage bags should be securely locked and valuable hand baggage personally taken care of, since there is much pilferage and loss.

ANTIOQUIA RAILWAY: PORCE DIVISION.

After one crosses La Quebra Pass, the train leaves the station of Santiago at 4 p. m. for Medellin, a distance of 72 kilometers, or approximately 45 miles. It arrives at Medellin at 7 p. m. The track follows the Rio Porce, crossing it between Botero and Porcecito stations and then taking a general southwesterly direction up the river to Medellin, which is on the headwaters of the Rio Porce.

This is an enjoyable ride. The scenery is beautiful, there being high mountains along either side of the valley through which the railway runs, and everywhere small towns, villages, and tiny farms, of sugar cane, bananas, and yucca. There is also considerable open ground on which cattle are pastured. The river is narrow and swift all along the route, and everywhere are seen evidences of old placer mining operations. The Rio Porce is the richest gold river in the country, but the upper reaches have been worked out long ago by the native gold washers.

The roadbed on the Porce division is even better than that of the Nus division, and one is greatly impressed by the attractive railway stations all along this route. The buildings are all of concrete, with round tile roofs of attractive design, and all stations are surrounded with flower gardens and whitewashed stone borders, etc. Ample platforms of cement are also provided, and the entire system speaks very well for the Department of Antioquia. The passenger is again impressed by the truly beautiful railway station in Medellin. This building is of concrete throughout and is very modern, having an intercommunicating office telephone system, etc., among its features.

Coal is used for fuel by the railway on the Porce Division. This coal comes from the Amaga fields and is brought in to Medellin by the Amaga Railway. This coal is highly volatile but can be delivered at Santiago for less than \$4 per ton.

Steam brakes are used on all of the locomotives, hand brakes being used on the cars.

A fairly good wagon road parallels the Porce Division out of Medellin and down the river as far as Barbosa, passing through the towns of Copacabana, Girardota, and Concepcion. While this road is not so good as the road at La Quebra, it is passable for automobiles and wagon traffic and is well maintained. It is very little used, however, by wheeled vehicles except near Medellin and suburbs.

AMAGA RAILWAY.

The Amaga Railway runs south from Medellin to the town of Amaga. This is also a narrow-gauge line, 36 inches in width, and of the same character and type as the Antioquia Railway, except that all equipment is much lighter and smaller, only 15-ton locomotives being used. The rails from Medellin as far as the watershed, also called La Quebra, where the line leaves the headwaters of the Porce River, are of 40-pound steel, and from there on down the grade to the valley of Amaga the rails weigh 60 pounds per yard. At the time of the preparation of this report, 42 kilometers were in operation—with 5 kilometers of new work, reaching as far as the town of Amaga, which were about ready for track laying and which it was expected to put into service during 1919. Construction work is being rushed, and plans are under way for a continuation of this line.

The object of this road is to provide an outlet to the Cauca River from Medellin. With such connection, the Department of Antioquia will have an outlet on the Pacific coast through Cali to Buenaventura. The line is constructed with a maximum curve radius of 80 meters and a 40-degree allowance.

There are no tunnels or heavy bridges, the line following the grade along the hill-sides; an average of 166,000 cubic meters of dirt were moved for every kilometer of line after reaching the heavy work at La Quebra, just south of the town of Caldas, where the road passes over the watershed after leaving the headwaters of the Porce River. There are 50 small steel bridges, the largest being over the Porce River. (here called Medellin River), with a total length between abutments of 24 meters (78.7 feet).

The gradients are as follows: Medellin to Sabaneta, kilometer 13, $1\frac{1}{10}$ per cent; Sabaneta to Caldas, kilometer 24, 2 per cent; Caldas to Primavera, kilometer 28, $2\frac{1}{2}$ per cent; Primavera to Angelopolis, 3 per cent; Angelopolis to Amaga (that is, down into the small valley), $2\frac{1}{2}$ per cent.

Medellin has an elevation of 1,480 meters (4,854 feet) above sea level. The highest point on the Amaga Railway, at La Quebra, about 30 kilometers (19 miles) from Medellin, has an elevation of 1,900 meters (6,232 feet).

The entire valley of the Porce as far as Caldas is under intensive cultivation, sugar cane being the principal crop. There are a number of towns and villages, the most

important being Envigado, where there is a large cotton factory, and Caldas, where there is a porcelain factory where glass is also manufactured.

As the train comes down into the valley from the station of La Primavera, the formation changes, a diorite and a so-called green "serpentine" being seen, and it is here that indications of coal deposits are observed.

The principal freight handled on this line is coffee from the interior brought down to the railway on pack mules and pack oxen. The local passenger traffic is very heavy, and the road has been able to pay for new work out of proceeds.

As is the case with the Antioquia Railway from Puerto Berrío to Medellín, the country is very mountainous and broken. The average cost per kilometer (0.62 mile) has been around \$25,000, and some kilometers of heavy work have cost the country as high as \$90,000. Maintenance cost is also high, as slides are frequent and entire hillsides have to be protected with riprap and retaining walls to prevent movement of dirt during the rainy season. The actual construction may be considered first-class work throughout for a narrow-gauge line.

The significant fact noted in passing over this line is the heavy curves and constant twisting of the road. As a trunk line for heavy traffic (as when connection is made with the Pacific coast), this line would have to be rebuilt and straightened out. Curves are so short and the grade is so heavy that, at the present time, only two cars of 10 tons each can be handled up the grade by one locomotive hauling coal from the Amaga fields. Even under these conditions, the road is to-day a paying undertaking for the owners, who are putting all revenue into the new construction work, as previously noted.

KINDS OF CLOTHING NEEDED.

While one is on the Magdalena River light clothing is worn, such as Palm Beach and light khaki, and this may be continued as far as Medellín, though it is a wise provision to have out and ready, upon reaching La Quiebra (between Cisneros and Santiago) a light woolen coat as a protection against a chill while one is passing over the mountain and coming in to Medellín in the evening. In Medellín either Palm Beach or light woolen suits may be worn, the climate being perpetual spring, with no sudden variations, even in the rainy season.

INTERIOR TRAVEL.

The engineer or other traveler bound farther into the interior of Antioquia outfits at Medellín, making all arrangements for saddle and pack animals, etc. Good mules may be hired, with competent packers and guides. Mules are to be preferred always, as the horses are small and not good and can not stand the long, hard mountain trails. Horses are also not so sure-footed as the mules.

Pack mules for baggage can be hired for \$1 per day with equipment, and saddle mules bring \$1.50 to \$2.50 per day, according to size, gait, etc. Guides are hired for the trip and receive \$0.50 per day and their food. When an outfit is hired from one town to another—say from Medellín to Manizales, with the mules to be returned to Medellín—the time consumed on the return journey is calculated and paid for, the traveler also paying for the railway transportation from Caldas into Medellín for animals and guide, with an allowance in money to the guide for expenses of food, fodder, etc., for the return trip.

The saddle used should be light in weight, with short girths to fit the small mules of the country. Although much used in the country by natives, the small English-style saddle can not be recommended for heavy mountain riding. Something along the lines of the American McClellan saddle tree, or Whitman tree, is to be recommended in preference, with higher cantle and horn or pommel. The small iron or metal English stirrup is also dangerous and uncomfortable. There is no protection for the foot from heat or wet or from brush hurting the foot, and there is always present the chance of getting the foot caught in a fall. The better stirrup is a wide wooden one, covered with a large "tapadera" of heavy leather into which the entire foot fits, with the exception of the heel. It is practically impossible to "hang" the foot in this sort of stirrup, and the feet are protected from wet, mud, heat of the sun, scraping against banks and rocks along the trail, trees, brush, etc.; and the feet can be moved about and rested while one is in the saddle on a long ride.

It was noted by the writer that the custom of the country is to use a piece of soft leather inside of saddle pads under the saddles. This is very poor practice and should not be followed by the discriminating traveler in this hot country, since the leather does not act as an absorbent of the sweat from the mule's back and the result is a bad blister and a sore-backed animal in a day or two. A good woolen blanket

is much better, folded lengthwise and in three; this should be washed at least once a week during trail travel.

Pack saddles are called "enjalmes," are made of henequen fiber stuffed with grass. They are too small and are poorly made. No care is taken of saddle blankets. Pack mules suffer and soon become a mass of sores. The crupper and breast straps are too often only a piece of rope, which soon cuts the skin of the mule. The traveler should select good mules and see to it that larger pack saddles ("enjalmes") are used and that good pads are provided. By watching details and taking a little care in these matters, much delay will be avoided while one is out on the trail.

All trunks in which articles of clothing or samples, etc., are to be carried should be of the regulation army size and pattern; that is, of light but strong fiber board, well reinforced with the usual metal fittings and carrying good locks, which should be kept well oiled. The size is approximately 30 by 16 by 14 inches, and two trunks of this dimension make a "carga" for one pack mule. Baggage mules can not be loaded with a full "carga," which is calculated at 280 pounds, if double stations are to be made each day on the trail; that is, a good day's ride of, say, 40 miles. Not more than 200 pounds should be put on each baggage mule if a saddle gait is to be maintained all day over these trails. During the rainy season waterproof material should be used to wrap all baggage, to prevent its being soaked with rain while one is out on the trail.

The outfit should include a folding cot with attachable mosquito bar, saddle bags, and a waterproof poncho. The best poncho is a rubber-covered, strong fabric of large size which will cover the entire body as far down as the stirrups, as well as the back of the saddle, etc., when one is riding. The usual brand of pommel slicker, so common in the western part of the United States, can not be used, as it will stick together on account of the heat.

A full supply of towels, soap, etc., as well as sheets, one light blanket, a small pillow, and a mat should also be carried, and the bed outfit should be put up in a waterproof canvas sack which can be purchased for this purpose.

On account of the necessity of obtaining food and fodder, it is necessary to stop over night at the numerous ranches and small villages along the trails. This is a rather unpleasant feature, as the food is badly prepared and the tiny houses are usually insanitary.

During the rainy seasons of the year, trails are often practically impassable in many places on account of mud holes; everything becomes wet and covered with mud, and animals soon become worn out on the rough trails. A mountain journey (and everywhere there are mountains) during the wet season takes nearly twice as long as during the dry season when trails are in better shape.

TRAILS.

The main pack trails of the Antioquia region are mentioned below.

The Zaragoza trail leads from Medellin to Porcecito, thence through "La Clara" north to Segovia and then to Zaragoza in the mining country on the Nechi River. Another main trail, also to the north, passes through the important towns of Gomezplata and Amalfi, following the right bank of the Porce River to Zaragoza. The country becomes tropical farther north of Medellin, and the region of heavy jungle, swamps, and heat is soon reached.

The old Caceres trail leaves Medellin for San Pedro, leading thence to Santa Rosa and north to Yarumal toward the Cauca River, passing through Valdivia. Caceres is on the Cauca River and is a placer-mining center of ancient fame.

At San Pedro another important mule trail branches off to the west for Sopetran, crossing the Cauca River at Sucre and leading to the town of Antioquia on the west side of the Cauca River. From Antioquia (town) there is another important trail to the northwest, leading down to the headwaters of the Sucio River, the largest tributary of the Atrato River. This trail follows the river down to Canasgordas, thence to Dabeiba, and on down the river as far as the head of navigation on the Sucio River at the town of Pavarandocito. This route is much used by traders and miners going into the placer-mining country along the Atrato. This entire region is very tropical.

To the south there are a number of trails touching large towns. The most important are (1) the road to Manizales, which leaves the Amaga Railway at Caldas and goes south through the towns of Santa Barbara, Aguadas, and Salamina to Manizales—a good four-day ride in bad weather—and (2) another old trail, formerly much used for trading with the interior and Bogota, which runs south from Medellin through La Caja to Sonson and then strikes to the southeast through the most sparsely populated section of the Department of Antioquia, coming out at the Magdalena River at Honda on the Dorada Extension Railway, between La Dorada and Beltran.

HEALTH CONDITIONS.

In the northern part of the Department of Antioquia the entire country is very tropical, the region of Zaragoza being noted for its malignant malarial fevers. The people of Medellin will not go there even for higher wages or the returns from gold mining. The same is true of the region west of the Cauca Valley and to the north along the Sucio River route.

There is also considerable malaria along the entire Cauca Valley and in the lower lands between Medellin and Manizales. On account of the lack of sanitation measures and the unhygienic life of the people of the country places, every precaution should be taken against infection; the water should not be taken unless one has seen it boiled, and precautions should be taken against typhoid and dysentery, two diseases always rife in this region. There is much sickness among the foreigners, even in Medellin, and out of hundreds of Europeans and Americans met by the writer, only two had been in the country for any length of time without having had malaria or other sickness, more or less severe.

MEDELLIN TO BOGOTA.

DISTANCES TO BE TRAVERSED.

The traveler who has visited Medellin in Antioquia and decides to go to Bogota must return over the Antioquia Railway to the Magdalena River at Puerto Berrio and take a river steamer there for La Dorada, at the head of navigation on the Lower River.

The rail distance from Medellin to Puerto Berrio is 181 kilometers, or 113 miles, plus 14.7 kilometers, or 9 miles, of wagon road over La Quebra Mountain, which separates the Porce Division of the railway from the Nus Division.

The distance by river from Puerto Berrio (which is 811½ kilometers by river from Barranquilla) to La Dorada is 176 kilometers, or 109 miles.

From La Dorada the rail distance to Beltran, the Upper River port, is 111 kilometers, or 69 miles, over the Dorada Extension Railway.

From Beltran to Girardot, the head of navigation on the Upper River and the rail point for Bogota, the distance by river is 152.5 kilometers, or 95 miles.

From Girardot the distance by rail to the terminal of the Girardot Railway at Facatativa is 132 kilometers, or 82 miles, and from Facatativa to Bogota over the Sabana Railway the distance is 40 kilometers, or 25 miles.

The total distance covered in the trip from Medellin to Bogota is, therefore, 502 miles.

TIME NECESSARY FOR JOURNEY.

As in the case of all other journeys in Colombia, time is the main factor, and the trip from Medellin to Bogota is subject to many conditions and circumstances, all making for delay en route. Chief among the factors of delay is the condition of the Magdalena River and the amount of water in the river. If the rainy season has been on for at least one month prior to the trip, the Upper River will have plenty of water for the small steamers and the Lower River will be in good condition for navigation by the larger boats plying there. All these conditions affect the time necessary for the trip from Medellin to Bogota. In the following statement there is given the time consumed in each part of the trip under the best conditions of high water in the river.

1. By railway from Medellin to Puerto Berrio. Train leaves Medellin at 6.30 a. m. and arrives at Santiago at about 10 a. m. Time, 3½ hours.

2. By carriage or horseback from Santiago to Cisneros over La Quebra wagon road. Time, 1½ hours.

3. By railway from Cisneros to Puerto Berrio, Nus Division. Train leaves Cisneros at 1.15 p. m. and arrives at Puerto Berrio at about 6 p. m. Time, 4½ hours.

4. By steamer from Puerto Berrio to La Dorada (high water in river). Steamer leaves Puerto Berrio about 9 p. m. and arrives at La Dorada at daylight of the next day. Time, 34 hours. During high water, Lower River steamers make an average speed, while actually under way upstream, of 8 to 10 kilometers (5 to 6 miles) per hour, and downstream they run about 16 to 20 kilometers (10 to 12 miles) per hour.

5. By Dorada Extension Railway from La Dorada to Beltran. Delay in discharging freight and baggage and in loading baggage on train, 4 hours. Train leaves La Dorada at about 11 and arrives at Beltran at about 6 p. m. Time, 7 hours.

6. By steamer from Beltran to Girardot (high water in river). Steamer leaves Beltran at about 9 p. m., tying up to bank over night and running all the next day to reach Girardot. Time, 26 hours.

7. Delay in Girardot during the night, because trains can not run on the Girardot Railway during the hours of darkness, 12 hours.

8. By Girardot Railway from Girardot to Facatativa. Train leaves Girardot at 8 a. m. and arrives at Facatativa at 5 p. m. Time, 9 hours.

9. By Sabana Railway from Facatativa to Bogota. Train leaves Facatativa at 5.15 p. m. and arrives at Bogota at 6.30 p. m. Time, 1½ hours.

It thus appears that the total time for the trip from Medellin to Bogota is 103 hours, or four and one-half days (say five days in all), and this is under the very best conditions of high water in the river.

On the river there is the ever-present danger of the boat hitting a rock or mud or sand bank and being stuck there indefinitely, or perhaps damaged beyond repair, when passengers would have to be transferred to another boat sent out for them.

Landslides on the Girardot Railway are very frequent during the rainy season, when the river is good, and they are a frequent source of delay between Girardot and Bogota. This delay, if it occurs high up on the mountains and near some of the small towns along the railway which serve as summer places for the wealthier class of people from Bogota, would not be so bad an accident, as the traveler could secure fair accommodations and much better food than anywhere along the river route, except at Puerto Berrio.

SERVICES OF BAGGAGE AGENCIES.

There is no adequate system of checking baggage on any of the Colombian railways. No receipts are given unless there is excess of weight, when a weight receipt is given if insisted upon and there is time at the station. As a usual thing travelers are encumbered with a saddle and riding outfit, a bed outfit, and the usual outfit of tropical and temperate zone clothing, etc., and the best plan is to avail oneself of the services of one of the two baggage agencies with offices in Medellin, such as the Agencia Rendon. This agency takes charge of all heavy baggage, buys the tickets over the railway, transfers baggage from hotel to station the day before leaving, ships the baggage to Santiago where another agent of the company receives it, rechecks it and transfers it over La Queibra wagon road in a mule cart, and ships it from Cisneros to Puerto Berrio where it is loaded on the river steamer. This agency also provides a conveyance for the traveler over the mountain at La Queibra—either a carriage or a saddle animal—charging a fixed rate for this service and being reliable. The experienced traveler will utilize this service, as there are crowds at every transfer point, with a great deal of confusion; he will thus avoid much loss of time, as well as unnecessary trouble, and will insure a reasonable degree of safety for the baggage, which could not be guaranteed in any other way. Otherwise, the passenger would have to look out for every piece of baggage himself and, in the confusion, a loss of one or more pieces would probably result. In this connection it should be stated that there is a great deal of pilferage all along the river route, and the loss or plundering of baggage is a common occurrence. Bags and trunks should be stoutly constructed and have the very best sort of locks on them, together with marks of identification easily discernible at a distance from all sides.

When one arrives at the river and the baggage has been placed on board the boat by the Medellin agency, which has a resident agent to meet all trains and steamers at Puerto Berrio, one usually finds on board an express steamer another sort of free-lance baggage agent, or runner—men who follow that trade on the river and who approach the traveler soliciting the handling of his baggage. These men generally carry cards of recommendation from other people and can be relied upon to a certain extent. They go right through with the boat to La Dorada, on the train to Beltran, and up the Upper River to Girardot, delivering the baggage on board the train for Bogota at Girardot. Their duty also includes watching the heavy baggage, such as trunks, etc., which are not put in the stateroom but are placed on the lower cargo deck.

On arrival of the boat at La Dorada, these men engage, for their own account, porters at the river who carry the baggage up the bank to the railway station, see that it is weighed and checked, pay all excess charges, etc. They engage porters to load the baggage on the steamer at Beltran and, again, to take it ashore and through the departmental customhouse at Girardot and from there up to the railway station for the night, checking it out to Bogota in the morning when the train leaves.

As a change of clothing is necessary for the trip up into the cold mountains of Bogota, any piece of baggage required may be ordered brought to the hotel in Girardot that

night, so that certain clothing can be removed to be ready for the colder altitudes the next day.

INTERDEPARTMENTAL CUSTOMS INSPECTION.

Each Department (State) of Colombia has a State monopoly of the liquor, tobacco, and slaughter taxes, and baggage coming into one Department from another is searched for contraband liquor and tobacco, as these sources supply the chief revenue of the Departments. It is rather unpleasant to stand for an hour or so waiting for this baggage inspection, in a small, hot room, when one is in a hurry to get to a hotel; but, obviously, this can not be avoided, though much trouble and confusion result.

PRECAUTIONS AGAINST PILFERAGE.

Every precaution should be taken to prevent loss of contents of baggage in transit. The ordinary trunk lock of cheap standard make will not suffice, as it is sure to be tampered with en route, and, if not opened, the lock will be so damaged as to need repairs. In crowds at terminal points, hand baggage should not be intrusted to boys and porters asking to carry them. The best method is to contract with the baggage runner who presents recommendations. He knows men and conditions and is an expert at watching the baggage in his charge.

Canvas bags containing saddle, bedding outfit, etc., should be provided with a long hasp lock running through eyelets at the opening, and a good practice is to have these bags lined with a flexible wire mesh so that the contents can not be got at by cutting the bag open with a knife.

DETAILS OF THE TRIP: MEDELLIN TO PUERTO BERRIO.

As the train leaves Medellin early in the morning, it is well to engage a reliable coachman the night before to call at the hotel for the traveler and his hand baggage; otherwise a carriage could not be obtained at that hour to convey one to the station, which is located at some distance from the business center of the city. As there is no fixed tariff for carriage hire in Medellin a contract should be made with the driver, in advance, for a stipulated price for this service—usually about 1.50 Colombian dollars for one or two passengers and hand baggage.

The day one leaves Medellin, lunch can be had either at an inn on the top of La Quiebra Mountain, where the food is very fair and the rest breaks the long ride, or at Cisneros before the train leaves. It is better to take lunch on the mountain and so avoid the crowds always present at Cisneros. As mentioned on page 395, the Department of Antioquia, which owns the railway, has built and operates at Puerto Berrio the finest modern hotel in Colombia—the Hotel Magdalena. Usually the train is taken in Medellin to connect with express steamer at Puerto Berrio the same day, but there is an even chance that the boat will be a day or two late, even in the season of high water in the river, and the hotel at Puerto Berrio will be found a very comfortable place to stop during the wait for the steamer.

MAGDALENA RIVER, PUERTO BERRIO TO LA DORADA.

The Magdalena River being the main highway of traffic in Colombia between the coast and the interior, everything depends upon the condition of the river, varying with the season of the year.

The dry season starts in November, and the river has less and less water from that time until navigation is almost entirely suspended during part of February, all of March and April, and part of May, in which month the rains again start in the high mountains of the interior and the river begins to receive additional water in its upper reaches.

During this dry season travel between Medellin and Bogota becomes a thing of conjecture and is liable to great delays. The steamer companies make every effort to keep the boats running during the dry season, but when one is once on board a steamer at Puerto Berrio he must depend on a good pilot, a light cargo, and luck to get to La Dorada in less than a week or 10 days. In March, 1919, for instance, boats that had come up as far as Puerto Berrio from Barranquilla, taking 15 days to make the trip that far, tried for days, without success, to navigate the river above Puerto Berrio, and finally had to return downstream to that point, tie up there, and wait for high water.

The river naturally becomes narrower and more uneven the farther up one goes, and the stretch between Puerto Berrio and La Dorada is bad, being filled with many rocky benches, sand and mud bars, snags, rocks, and other obstructions to navigation. After one passes Barranca Bermeja below Puerto Berrio the foothills of the Eastern

Range of the Andes are seen more and more, while at La Dorada, on a clear day, the first glimpse of the snow-capped peaks of Ruiz and Tolima may be obtained from the river. As has been said, the river trip during the dry season is a matter of pilotage and good luck, and the traveler faces a possible prospect of spending a few days, or even a week, stuck on a sand bar or mud bank and finally being forced to return downstream to Puerto Berrio, where there are good hotel accommodations, in a dugout canoe hired for the purpose.

This account will deal with the trip under conditions of high water in the river.

There is an agency of the Pineda-Lopez Co., managing agents of the Colombian Railway & Navigation Co., in Medellin, in the office of H. B. Maynham, where tickets are purchased and room reservations made for the Lower and Upper River journey on steamers. The other large river steamer company, the Compañia de Transportes Antioqueña, and a number of smaller companies, each owning one or two boats, are all in a combination or pool for the river traffic, and one agency handles all the passenger traffic, including ticket selling, reservations, etc.—transportation being good on all boats belonging to the "pool."

After the prolonged dry season and the bad condition of the river, travel becomes very heavy up and down the river, as this is also the buying season of the year at the end of the coffee harvests. The best plan is not to trust to luck but to go to the ticket agency at least one week in advance, if that is possible, and insist that the agency telegraph (at the traveler's expense) for a room reservation on the boat coming up the Lower River and also for room reservation on the Upper River, with a definite designation of each steamer to be taken. Private staterooms on these river boats are few in number and are necessary for comfort, being especially desirable if a good deal of valuable baggage is carried along.

The cost is 20 per cent of the fare for a room shared with another person and 40 per cent of the fare for a room occupied alone. As the rooms are very small it is well to pay the extra rate and have a room alone.

After reservations have been telegraphed for, the traveler should insist upon his tickets being given to him with a receipt showing the number of the room assigned to him on each steamer. Otherwise someone else with more influence may get the room and there is no redress. Very often rooms thus reserved have to be given up to ladies traveling, or to members of some prominent Colombian family for whom the captain must provide accommodations, or to members of the clergy.

When a dispute occurs over reserved accommodations for rooms on steamers, not much can be expected from argument over the matter. Very often when passengers can not secure rooms the engineers or pilots who have their quarters on the upper deck sell their rooms by private arrangement and thereby add considerably to their incomes.

There are two classes of steamers available for the traveler—(1) the express boats which carry the mail and are the larger and more modern, having electric-lighting equipment and ice-making machine, as well as electric fans in the rooms and the dining-room space on the cabin deck, and (2) the ordinary boats which carry heavy or ordinary freight and also passengers. The express boats have the right of way when loading and discharging in port, are supposed to be faster, and are most used by the traveling public. As there is only one express boat (or, at most, two) each week from Barranquilla to La Dorada, there is always a crowd on board; this condition results in crowding in the train at La Dorada and makes the trip to Beltran very uncomfortable, while the same may be said of the night's stay at Girardot and the rail journey to Bogotá. At Puerto Berrio it might be the better plan to take the ordinary steamer during the middle of the week and be less crowded and more comfortable, on the whole, since the river part of the journey to Bogotá is not so long as that up to Puerto Berrio from the coast. The electric lights, ice machine, and fans on the express boats are, more often than not, entirely out of service anyway (broken down and out of repair from inexperienced and unskilled handling), so these are not much of an added attraction to the experienced river traveler in Colombia.

RAIL JOURNEY FROM LA DORADA TO BELTRAN.

Between La Dorada and Beltran there are a series of rapids up which steamers can not pass, even in times of high water, without great danger of being smashed up by the swift current and the many rocky obstructions. In former times this trip was made many times by steamers carrying cargo down the river, but several bad wrecks and the changes in the river for the worse have made this trip impossible in more modern times even for small launches.

The rail journey from La Dorada to Beltran is one of many discomforts and real hardship. The boat usually reaches the river bank at the town early in the morning,

and its arrival means confusion. The company provides only one passenger train, with one first-class day coach, no matter how many steamers may be in from down river and no matter how many passengers they may have brought. This train is switched out on the main line and stands there in the sun until it is ready to start for Beltran, the cars becoming like ovens. It takes the porters about four hours to discharge, carry to the station, weigh, and load on the train the baggage from the steamers. In the meantime the passenger has the choice of remaining on the hot boat or of standing around the railway buildings or of going into the struggle that is taking place in the baggage room of the station, where it is just as well to take a look at one's things.

The average traveler in Colombia does not seem to use a trunk when on a long journey (possibly because smaller pieces are more easily packed on mules over the mountains) and always carries a great deal of hand baggage and many bundles, packages, etc., all of which are packed into the day coach and deposited in the aisles. In these crowds, to leave one's seat even for a moment is to lose it, and that means standing all the rest of the way. This is true also of the rail trip from Girardot to Bogota.

From La Dorada, where there are no good stopping accommodations (the town being very small, with a few small buildings and the freight sheds of the railway company), rooms should be reserved by telegraph in the only good hotel in Girardot, where the food is satisfactory and there are few rooms, always crowded to capacity on every express-boat day.

The main town along the line of the Dorada Railway is Honda, where the stop is made for lunch en route to Beltran. In case of delay or accident, one can usually manage to get to Honda and stay there, as there is no other place along the line. Beltran has no hotel and is only a loading place for freight. The principal town in that region is Ambalema, a few miles farther up the river, where travelers could manage to stay if delayed in that vicinity for a few days. However, Ambalema has little importance commercially, except for its small cigar-making industry, and commercial travelers do not stop there. When the Upper River is low and there are no steamers running, passengers for Bogota stay at Honda and from there make arrangements for saddle and pack animals to take them up over the old Gamboa Road to Facatativa, a trail trip of about four days, the time varying according to the class of animals secured, the amount of baggage carried, and the personal inclination or ability of the traveler to ride hard all day. There are said to be some good inns along this road (having the reputation, in fact, of being the best in the country); and, as this road rapidly leaves the low, hot country and climbs into the hills and plateaus where the climate is cool and refreshing, this trip is not so bad if one is used to riding and likes scenery.

MAGDALENA RIVER, BELTRAN TO GIRARDOT.

Between Beltran and Girardot the river runs between high banks and hills. The river itself is very narrow and the current swift and of uniform volume; in appearance it is very unlike the Lower River, where the stream spreads itself out into shallows and sand bars for miles, with low lands along either bank covered with a dense tropical jungle. The hills of the Upper River have little heavy timber, but during the rainy season are covered with light growth. The river has eroded and cut down these rocky hills in making its channel into a series of rock "benches," like gigantic steps, and one sees many "cathedral" rocks and similar formations.

The scenery of the Upper River almost compensates for the general discomfort of the trip—the heat, the crowds, the lack of good food, and the general insanitary condition of the steamer. The Upper River is not so hot as the Lower River; the current seems to make a draft of air downstream, and there is some relief from the dead, stifling atmosphere of the Lower River and the monotony of flat country and everlasting jungle.

The Upper River can not be navigated at night on account of the many sharp turns and dangers to navigation, pilots not being able to watch the current (which they steer by always); and, as the train from La Dorada always reaches Beltran just at sundown and passengers are at once loaded on the steamer (there being no other place for them to stop), the boat usually runs upstream for a few miles to some convenient woodpile and ties up there for the night at the bank. As a result, the lights of the boat attract myriads of insects, including the dreaded mosquitoes, and the only refuge is in one's room (if one has been fortunate enough to secure one) and under the mosquito netting until morning.

On the Upper River the steamers are all of the same type as on the Lower River (see p. 394), only very much smaller, being of 60 to 120 tons burden, whereas the larger of the Lower River steamers carry as high as 400 tons of freight when the river has

sufficient water to allow the loading of full cargoes. On account of the much swifter current of the Upper River, steamers' engines are "geared" higher—that is, the wheels revolve faster in order to "take" the current.

If no room is secured by the traveler and he has to sleep out on deck, the cot should never be placed on the after end of the upper deck, or, as a matter of fact, anywhere on the upper deck or "texas," for the very good reason that great live sparks pour out of the two stacks while the boat is in motion and these sparks burn great holes in clothing and bedding and very often injure the traveler. Baggage should also be protected from this source of damage.

Girardot is a large town of about 20,000 people, built on the high banks of the river. There are cement steps from the water up to the street of the town, but these are out of repair and rather dangerous at night for one not knowing the way. Steamers usually tie up at some distance below the main part of town, and the traveler, after the baggage inspection at the customhouse, can either ask the way and walk up to the hotel or take a "jitney" autobus which makes this trip. The town is not modern and is very dusty and hot. However, the only good hotel has excellent food (at least it seems very good after that of the river boats), and there is a shower bath—always a great relief after the trip on the Magdalena.

RAIL JOURNEY FROM GIRARDOT TO BOGOTA.

The night is spent at Girardot, as trains can not be run at night on the railway to Bogota on account of the steep grades and sharp curves of the line and the danger of landslides, etc. Clothing should be arranged so that a woolen coat or sweater, or a light overcoat, can be put on after the train has reached La Primavera—a little over halfway up the mountains to Facatativa—at an elevation of about 7,000 feet above sea level, where the chill of the mountains is felt after the heat of the river country. All outfits should include the regular woolen suits and clothing used in the temperate zones for the fall months, or even winter, since it is cold and damp all the time in Bogota and a good supply of woolen underclothing will be appreciated there.

The Girardot Railway has the most modern and best equipment of any line in the country. Day coaches are large for a narrow-gauge line and are quite comfortable. There is also provided a buffet car, where lunch is served en route. The country for a considerable distance out from Girardot is composed of low, dry, and sterile hills and is uninteresting, hot, and dusty. However, as the line begins to climb into the mountains the country changes and becomes very beautiful. These mountains are not heavily wooded as are those of the coast, but are covered with short green grass, many outcroppings of multi-colored rocks, and high, broken cliffs. The railway winds and twists around curves with ever-changing scenery, and the entire trip is one to be remembered. There are many small villages in these mountains and along the railway, and coffee plantations are seen along the right of way. Vendors of all sorts of tropical and temperate-zone fruits meet the trains, and one sees apples and peaches for the first time since leaving the north. At San Javier and La Primavera there are summer colonies of people from Bogota who come down there to escape the cold of the high plateau during all times of the year. Palms and bananas grow at surprising elevation and are seen everywhere along the railway. Some cacao is also seen.

A surprise awaits the traveler at Facatativa, where the change is made to the meter gauge of the Sabana Railway. Within 5 kilometers of Facatativa the train goes through a narrow pass in the hills and runs out on the great plain of the table-land of Bogota. Here is an expanse of level land, the atmosphere is cool and refreshing, and one can see for miles over fields of wheat and excellent cattle pastures, bordered with tall eucalyptus trees and dotted with a very fine breed of stock—a striking contrast to the dense, hot jungle and general monotony of the river and the jumble of mountains on the way up from Girardot and in Antioquia. Here may be truly said to be a world of its own, unlike anything else in Colombia, 700 miles from the coast of the Caribbean but a rich country and a beautiful one, which facts explain the habitation of this region by the ancient Indians and its later colonization by the Spaniards.

BOGOTA.

The capital of Colombia has a modern railway station of imposing proportions, which would be creditable to any city of its size. The building is very attractive and is equipped with a modern intercommunicating telephone system, etc. The city itself is rather a disappointment. The streets are narrow and badly paved, when paved at all, and the entire effect is like that of all old Spanish American cities—a combination of the old and the new. The larger buildings are of two and even three

stories, built of red brick but plastered on the outside with stucco and tinted in various colors, making them look in general like old adobe buildings. There are a number of fairly modern edifices constructed of concrete (the style of architecture being more French than American), some of them even of four stories but having no elevators. There is one long avenue, the Calle Real, paved with asphalt and having an electric street-car line.

Bogota is situated on the edge of the table-land and at the beginning of the slope of the Eastern Cordillera, a low range of which runs just to the east of the city and forms two high mountains which overlook the capital.

Bogota has several very good hotels, small but clean and well appointed, where the best of food is served. The unfortunate feature of the hotels in Bogota is the inadequate bath arrangements. It is cold in Bogota and a hot bath is a great luxury and hard to procure, the bath usually being located in some out-of-the-way, dark, and drafty passageway in the back of the building. After staying in Santa Marta, Barranquilla, Cartagena, and Medellin, the traveler appreciates Bogota. The people are better trained to service, more cleanly, and more accustomed to the better class of traveling public and its needs.

In Bogota one can get good bread, cakes and pastry, excellent ham, bacon, and cheese, these local industries having been started by Europeans who have settled there.

Rates vary, but, in general, first-class accommodations in Bogota in three or four of the best hotels cost 4.50 Colombian dollars per day for room with sitting room, with meals included. It may be noted that in Medellin hotel rates are about 3 dollars per day for a single room with meals, and the accommodations are much better than those of the coast (at either Cartagena or Barranquilla) for which 4 and 4.50 dollars per day are charged.

TRAVEL OUTFITS.

Medellin is at an elevation of 5,000 feet above sea level, with an equable perpetual-spring climate. Light underclothing is worn with light woolen suits, etc. On leaving Medellin it is a good plan to wear Palm Beach or ducks, carrying a light woolen coat for the trip over the mountain, to avoid a chill. A waterproof of some kind should also be carried, ready to slip on, as it rains very often on La Quebra Pass. After one passes Cisneros the climate becomes more tropical as the river is approached, and on the entire river trip nothing but Palm Beach or white duck or khaki is worn. Khaki or olive-drab Palm Beach seems to be the best cloth on such a journey. A good Panama hat purchased in the country adds much to one's comfort.

Besides the tropical and heavier clothing, the usual river bed outfit is carried—that is, a mat, two sheets, a pillow, a mosquito net, towels for both face and bath, soap, and the usual assortment of toilet articles, etc. The steamer staterooms contain nothing more than a folding canvas cot and washbasin. Individual towels, soap, etc., should always be used, and care should be taken as to the laundering.

MAGDALENA RIVER TO MANIZALES.

START FROM MARIQUITA.

The traveler desiring to reach Manizales, either from Barranquilla or Bogota, leaves the Dorada Extension Railway at the station of Mariquita—51 kilometers from La Dorada, where the river steamer is left if one is coming up the river, and 60 kilometers from Beltran, the point of debarkation if one is coming down from Bogota.

At Mariquita is the beginning of the mountain trail for Manizales, and here mules must be secured for the journey over the famous "páramo" of Ruiz, "Ruiz" being the name of the high, snow-capped mountain seen on clear days from La Dorada. Mariquita is a small town built around the railway shops of the Dorada Extension Railway, which are located at this point, as is also the end of the Cableway Branch of this railway, which is being constructed toward Manizales by the English company (see p. 263).

At Mariquita there is no hotel worthy of the name, and the wise traveler will do well to carry a folding camp cot, bedding, and all other necessities of travel. It is also well to telegraph in advance for mules, from either Barranquilla or Bogota, since the animals are usually kept in pastures at some distance and it takes a day or more to have them brought down to Mariquita. It is also a very good plan to obtain the services of some friend in Colombia who can secure better saddle animals than the ones usually provided for general hire.

It is best to start very early in the morning on account of the terrific heat encountered in the foothills as one is leaving Mariquita. The going is rather rough, though the trail is wide and has been worked to some extent to keep it in good condition.

Mules should be carefully inspected and all worn shoes replaced before one starts out, even though another day may be lost in this work. This is very necessary, because much rough ground and broken rock is found in many places and a lame mule may mean a night spent in the open with no food.

EQUIPMENT.

The equipment should consist of small trunks for mule transport, as the usual large trunk can not be carried on a mule pack, for which two packages must be made, one for each side. Also, more than 150 pounds of baggage can not be packed on one animal if saddle time is to be made over the trail. All contents of baggage must be securely packed to prevent movement.

The saddle should be a good light one (such as the McClellan, Whitman, or English Army styles), carry very short girths, and be fitted with crupper. The best type of stirrup is the full-hooded, broad wooden stirrup. This keeps the sun from burning the foot while one is mounted and also keeps the boot dry in the mountain rains. This type of stirrup is also the safest, as the foot can not be caught in a fall.

An item of equipment which is indispensable is a good waterproof "poncho" large enough to cover the body and the saddle when one is mounted, as cold rains will be encountered up on the "páramo." The lightest possible clothing is worn until Frutillo is reached, about halfway to Manizales; here the clothing must be changed for good woollens. The bed equipment should include at least two heavy woolen blankets.

Some articles of food should also be carried in case of an emergency stop on the mountain.

A great deal of trouble will be avoided if a man is obtained as "peon" (guide, mule driver) who knows the road well and where to stop and how to divide the day's travel so that advantage can be taken of the best stopping places.

THE TRAIL.

The trail is wide, well worked, and much traveled, especially beyond the cable station at Frutillo. The entire ride is up from an elevation of less than 3,000 feet at Mariquita to more than 14,000 feet on the "páramo," whence the descent is made toward Manizales, dropping down to about 7,000 feet above sea level. Between Fresno and Frutillo the Guali River is crossed, an hour and a half being required to make the climb on the western side toward Frutillo. The Guali River is a narrow, swift mountain stream here and passes down an enormous canyon over which the cableway passes at a height of more than 3,000 feet above the river. The scenery here is most wonderful and quite worth the discomforts of the trip to see. The river plunges into a great pocket, almost a cave, just below the bridge across which one rides, and the mountains are wooded and green, with many great palms and with tiny ranchos here and there. All through this district some coffee is grown, but in a rather desultory manner.

It is best to stop for the night at Fresno. The ride can not be made through to Frutillo unless the very best animals can be had, as well as very light packs for the baggage; such a day's ride would be very hard and not much vigor would be left in the mules for the hard pull over the "páramo" after leaving Frutillo. From Fresno it is a short ride, of about five hours only, into Frutillo, where one can stop at the cable station. The next day is the hard one over the pass. This ride takes at least 10 hours with pack mules loaded with baggage, and by riding hard all day one can reach Manizales by night if the mules are good and the descent is accomplished before dark. After reaching Sancudo, down off the "páramo," the road is very good into Manizales. A stop for the night can be made at Sancudo, where there is a good house—in fact, the best on the trail. From there it takes only two hours of smart riding to reach Manizales.

The people of the country are unfamiliar with modern sanitary measures, and every precaution should be taken. The discriminating traveler will carry his own bedding, knives, forks, etc.

Care should be taken, after leaving Frutillo, not to try to push ahead of slowly moving ox pack trains when one is on a bad piece of the trail. Traffic is very heavy between Manizales and Frutillo (goods going out to Manizales and coffee coming in to the cableway from Manizales and way points), and these lumbering oxen are dangerous to the rider and to mules loaded with baggage when met on high points of the trail where there is steep ground on one or both sides.

Many stretches of this trail have been corduroyed with rough timber in order to provide a firm footing for mules and oxen during the two rainy seasons when the trail becomes a series of mud holes into which the animals plunge up to the belly.

This entire region is all volcanic in formation, and the top soil is a loose clay mixed with ash and pumice which soon becomes a sticky liquid mud when it is raining.

The distance in an air line to Manizales from Mariquita is only 75 kilometers (the distance to Frutillo being, by the cableway, only 37 kilometers), but by the trail the distance is calculated at 25½ leagues, or approximately 102 miles. A saddle mule in the mountains is supposed to make an average of 1 league, or 4 miles, per hour.

COST OF TRIP.

A good saddle mule can be hired at 15 Colombian dollars for the round trip, and pack mules equipped with pack-saddles (*sobre-enjalmes*) at 12 dollars each. The "peon" earns 1 dollar per day, being paid for the return trip at the rate of three days if the traveler does not return via Mariquita. When more than three mules are used, it is customary to take along a boy to help the "peon"; this boy receives 3 to 4 dollars for the round trip. All mule feed and the men's food and lodging are paid for by the traveler. With four mules and two people, not including the traveler, this expense amounts to approximately 5 dollars each way, and the expense for men and animals on the return journey back to Mariquita is paid for.

A good man in Mariquita is Sr. Elias Rosas, who can be reached by telegraph. This man owns six good animals and goes out in person with travelers for Manizales, having worked on this road for 10 years and being well known to the better class of people making this journey—principally foreigners, English and American.

Good animals can be secured also by telegraphing to Manizales and having mules sent down from there. Agents of business houses on the coast take care of this sort of work for their people.

MANIZALES TO CALI.

DISTANCES COVERED AND TIME CONSUMED.

Following is a table of distances and time consumed in actual travel on the trip from Manizales, the capital of the Department of Caldas, to Cali, the capital of El Valle:

Section of trip.	Distance.		Means of travel.	Actual time.
	Leagues.	Miles.		
Manizales to Pereira.....	9	36	Saddle.....	<i>Hours.</i> 7
Pereira to Cartago.....	6	24	.....do.....	4½
Cartago to Zarzal.....	9	36	.....do.....	7½
Zarzal to Buga la Grande.....	4.5	18	.....do.....	3½
Buga to Palmira.....	19	76	Automobile...	5
Palmira to Cali.....	.....	16	Railway.....	1

MANIZALES TO PEREIRA.

Manizales is located in the mountains on the western side of the Central Range of the Andes, at an elevation of 7,000 feet above sea level. The climate is cool and delightful all of the year.

The well-traveled trail from Manizales to Pereira, a distance of 36 miles, is a well-worked and repaired mountain trail, having no very steep hills or grades and descending gradually to the valley at Pereira. Very good saddle time can be made over this trail when too heavy baggage is not carried on pack mules.

About halfway down the mountains the type of country changes very considerably. The entire formation is very evidently volcanic, and here and there tiny valleys are seen containing a few acres of good land on which sugar cane is grown. The climate is semitropical and becomes steadily warmer as the descent continues.

Small groves of bananas are seen in increasing numbers, and there are great groves of the gigantic bamboo, the material most used for construction of houses and fences in this region by the natives; even the roofs of the houses are of this wood, while large buildings are erected in frame of bamboo and then plastered with mud and white-washed on the outside.

This same description will apply to the entire route as far as Buga la Grande.

Pereira is a small town located on a low mesa between two small rivers. In the surrounding country there are many large Para-grass cattle pastures, well cared for; there is also considerable good agricultural land, though the principal industry is the

raising of cattle. The town itself presents a rather unattractive appearance, as all bamboo and frame houses are daubed with mud stucco and look like the usual type of mud adobe house seen all over the country. There are no good stores; commerce is with Manizales as the wholesaling center, and transportation of goods is by means of pack mules and pack oxen.

In the hills between Manizales and Pereira lies the principal coffee-growing region of the Department of Caldas, and small groves of coffee trees, with their larger shade trees, are seen everywhere, though there do not appear to be many large plantations, property being held in small lots in this hilly country and there seldom being more than a few thousand trees to each individual owner.

The country around Pereira may be generally described as rolling land, with here and there a steep and broken range of hills—offshoots of the Central Range of the Andes. There are two small rivers, the larger of which is La Vieja, up which the new railway from Puerto Caldas on the Cauca River is now being built toward Manizales by the departmental government.

When about halfway down the range from Manizales, one is struck by the great change in the type of native people seen along the road. Negroes are seen in increasing numbers, while the others are very dark-skinned and show every evidence of the semitropical climate, including symptoms of acute malaria. The coffee regions under 6,000 feet are noted among the natives for being very unhealthy places, and the people living there show the effects very markedly.

As in Guatemala, the heavy impregnation of volcanic ash in the soil of this region makes it very good for coffee production.

Between Manizales and Pereira one crosses two mountain streams called Campo Alegre and Chinchina, both very swift and furnishing abundant water power for generating electricity.

PEREIRA TO CARTAGO.

After one leaves Pereira the character of the country changes. The land becomes more level in surface character, but the soil is very thin and there are many outcroppings of a white, chalky substance which shows in many layers and is undoubtedly volcanic in origin. There are also banks of broken shale and many gravel banks, indicating an old alluvial erosion. Just before one reaches Cartago a range of dry and stony hills is crossed along the north bank of the River La Vieja, which passes by Cartago and flows into the Cauca River a few miles from the city.

Fewer people are seen in this region, and there is little or no cultivation except along the small rivers—and that in very small patches.

The town of Cartago is situated in the midst of this sort of country. There is little agriculture in its vicinity, and it can not be called a thriving place. The only thing that gives it life, economically, is the Cauca River traffic, the town being formerly a sort of river port for the distribution into the interior of goods imported through Buenaventura. However, Cartago is not situated on the river, but is about 2 miles from it, and the river port will be Puerto Caldas, where the Caldas Railway leaves the Cauca River for Pereira and Manizales. As this new railway does not touch Cartago but passes some miles to the northwest of the town, Cartago will be left without means of support in the near future. Of course, the trail travel between Manizales and Buga la Grande will remain during the seasons of the year when the river is too dry for steamer navigation, but this traffic will be small because the low-water stages of the river occur at times after the coffee harvest when traffic is very light.

Cartago is an old Spanish town. It has few good buildings, and commercial life there is at a low ebb. There is not even an agency for any national or foreign bank. Commercially Cartago is tributary to Manizales and, to some extent, to Cali, from which latter town goods are shipped down the Cauca River.

CARTAGO TO BUGA LA GRANDE.

From Cartago to Buga la Grande (which is the present end of the new wagon road from Palmira), a distance of about 14 leagues, or 56 miles, the country is very poor. There is a series of low hills to the east which continue in a broken line on the east side of the road all the way to Buga. The formation is chalk, with a very light top soil—a heavy “adobe” clay, which, during the two rainy seasons, becomes a sticky mass of mud, making mule traffic almost impossible. Several small streams are crossed, but these, during July, August, and September and also from December to March, are dry, and stock has to be held along the Cauca River on account of the lack of water. Little effort has been made to bore wells for water. There are few ranches,

and they are poor, uninviting places at the best. The cattle, mules, and other animals seen are small and of poor breed.

In the early part of September the ride has to be made from Cartago through to Buga la Grande, a distance of 9 leagues, or at least 7½ hours in the saddle, as there is no water between these places for man or beast.

RIDE BY AUTOMOBILE TO PALMIRA.

Throughout the region from Cartago to Buga, the Cauca Valley has the appearance of being narrow, as the high hills on the western side of the river are very plainly seen, and the good level, fertile lands of the river must be limited in extent if one may judge from the character of the land on the eastern side, over which the trail passes. However, after one leaves Buga and is passing over the automobile road toward Palmira, the valley opens out and large areas of level and apparently very good soil are seen. The best lands are undoubtedly those around Palmira and the sugar lands of Manuelita.

After one leaves the small town of Zarzal, the River La Paila is crossed. This is a stream of fairly good size and was not dry in September (when the writer passed it), carrying plenty of water, though good lands are not seen along its banks except in very small patches. The distance from Zarzal to the River La Paila is 3 leagues, or 12 miles. All small cattle pastures of Para and natural grasses were very dry on account of the intense heat and lack of rain, and all cattle had been driven down to the pastures along the Cauca Valley proper.

The new wagon road begins at Palmira and is planned to run through to Cartago. New construction work is now going on as far as the River La Paila beyond Buga la Grande. Automobiles run out of Buga as far as a ranch called "Ovedo" to pick up passengers coming in from Cartago by trail and horseback. As the country is quite level, this road consists of a dirt fill, put in by means of wheelbarrows, then rolled with a steam roller, and then given a light surface of gravel, which is also rolled in.

Small culverts for drainage are being made of brick laid in cement, with cement (concrete) foundations, and the numerous small bridges are being built with concrete buttresses and arched with a very good quality of red brick, which is made right along the road out of the native clay. The crowned surface is only 20 feet in width. This road would not stand heavy rains or washouts nor heavy motor-truck traffic for very long, and it will need constant attention and repairs to keep it in condition even for the light traffic of the region. The distance from Buga to Palmira is about 76 miles, and the run is made by automobile in 5 hours.

In addition to the service of the Empresa de Automoviles de Palmira, there are several independent drivers serving this road for casual traffic, and it is estimated that there are 35 to 40 cars engaged in this service between Palmira and Buga la Grande.

Between Buga la Grande, which is a very small place, and Palmira there are several large towns, chief among these being Buga, Tulua, and Concordia, all tributary to Cali (and to some extent to Manizales).

In Buga there are at the present time two American tractors in actual service and giving very good results in plowing lands for rice cultivation. Gasoline costs about \$11 per case of 10 gallons delivered at Buga in wholesale lots.

PACIFIC RAILWAY, PALMIRA TO CALI.

On the Pacific railway there are two trains out of Palmira for Cali daily, one at 7 a. m. and the other at 4 p. m., the run taking only one hour, or at most an hour and a quarter.

EQUIPMENT FOR TRIP.

The equipment for the trip from Manizales to Cali should consist of the usual trail outfit of saddle, poncho (waterproof), folding camp cot, air mattress, mosquito bar, toilet articles, towels, and bedding—these last including sheets and one pillow, etc., as sheets and towels of the local hotels should not be used under any circumstance. All baggage, such as trunks, etc., should be wrapped in a good waterproof tarpaulin, as this protects it from damage en route and from the rain (in case any falls while one is on the road). A good way to carry the bed outfit is in a large canvas sack, which can easily be locked. All baggage should be kept locked, and nothing should be allowed to remain laying around. The water should be used only in one's own drinking cups, and then lime juice should be added. Soda water can be purchased at almost every small town along the way. Chickens and eggs are plentiful, and one does not suffer from lack of food.

Soon after the departure from Manizales and as one is dropping down the range, long before Pereira is reached the sun becomes very hot and only the lightest kind of cloth-

ing should be worn by the traveler. Khaki riding breeches with a white tunic coat would be the best outfit, with a cork sun helmet or large Panama hat for the head covering and a large white linen neckerchief around the neck to prevent sunburn. The heat along the road is very great, and in the case of one not used to the sun, the riding should be done in the morning (beginning as early as possible) and in the evening.

Horses, if good ones can be secured, are better than mules as saddle animals after one leaves Pereira, as they are nearly all "gaited" and make better time on the level ground than the mules. A good plan is to take along two animals—a good mule for the mountains, and a horse for the trip to Cartago and Cali from Pereira. Changing saddle animals rests one and keeps the animals fresh and in good shape for hard work later on. This plan is customarily followed by the better-class people of the country.

In order to obtain good animals at the present time, it is very necessary to start to make arrangements in advance when hired mules are to be used. Mules and horses are scarce and command high prices, and the charges for hire are in proportion. Also, there are very few good saddle animals in the country, and these are mostly the property of the wealthy people, who will not part with them—much less rent them out to strangers for hard trail work. A very good plan is to hire a good, reliable "peon" (trail man, guide, packer) several days in advance and let him look up the best stock. These "peons" are professional trail men and know where the best animals are to be found. A very good man in Manizales is Aparicio Vasquez (telegraphic address, "Rivasquez," Manizales). This man has been on the trails for 19 years, is an experienced guide and packer, and has taken care of many foreigners—making trips from Bogota to Caracas on mules, etc., and going as far to the south as Pasto and even Quito. Such men earn \$1.50 per day for the round trip, with all expenses paid.

STEAMER SERVICE ON CAUCA RIVER.

During the seasons of high water in the Cauca River, the trip is made from Manizales to Cartago on mule back, thence down to the Cauca River (a 20-minute ride, and then up the Cauca by small 80-ton river steamer of the usual stern-wheel type such as is used also on the Upper Magdalena River between Beltran and Girardot. The trip takes from four to six days, according to the stage of water in the river and the luck with rocks, sand bars, mud banks, etc.

The principal company is the *Compañía Fluvial de Trasportes de Manizales*, with headquarters and management by Alejandro Angel y Cía. in Manizales. Agencies are maintained in Cali and at the various river ports by the *Unión Comercial del Pacífico*, as well as by Alejandro Angel y Cía.

River steamers land at the head of navigation, within about 7 kilometers (5 miles) of Cali, and from that point there is an old steam tramway service to Cali proper.

CONDITIONS AT CALI.

Cali is situated at the head of the Cauca Valley, between two ranges of high hills. The heat is intense during the day, but the nights are fairly cool at all times and a light blanket is used with comfort at night. There are few mosquitoes, and light clothing is worn.

The worst feature is the wholly unsatisfactory accommodations, and the traveler intending to stay in Cali for any length of time will do well to cultivate the acquaintance of some foreigner who has a house of his own, where the conditions existing at the hotels can be escaped and some degree of sanitation and comfort obtained.

Appendix E.—MONOGRAPHS AND TRADE LISTS RELATING TO COLOMBIA.

DEPARTMENT OF COMMERCE MONOGRAPHS.

In addition to the information contained in this handbook, it should be noted that a number of monographs previously published by the Bureau of Foreign and Domestic Commerce include reports with regard to specific phases of trade, finance, or industry in Colombia. These are mentioned below. The publications are for sale, at the indicated prices, by the Superintendent of Documents, Government Printing Office, Washington, D. C., and by the district and cooperative offices of the Bureau of Foreign and Domestic Commerce.

Banking Opportunities in South America, by William H. Lough. Special agents series No. 106; 1915; 156 pages. Price, 20 cents.

Colombian Markets for American Furniture, by Harold E. Everley. Special agents series No. 162; 1918; 34 pages. Price, 5 cents.

Construction Materials and Machinery in Colombia, by W. W. Ewing. Special agents series No. 160; 1918; 74 pages. Price, 15 cents.

Investments in Latin America and the British West Indies, by Frederic M. Halsey. Special agents series No. 169; 1918; 544 pages. Price, 50 cents.

Lumber Markets of the West and North Coasts of South America, by R. E. Simmons. Special agents series No. 117; 1916; 149 pages. Price, 25 cents.

Trade of the United States with the World, 1914 and 1915 (fiscal years). Miscellaneous series No. 38; 1916; 247 pages. Price, 20 cents.

Trade of the United States with the World, 1916 and 1917 (fiscal years). Miscellaneous series No. 63. Part 1, Imports; 1918; 112 pages; price, 10 cents. Part 2, Exports; 1918; 317 pages; price, 20 cents.

Trade of the United States with the World, 1917 and 1918 (fiscal years). Miscellaneous series No. 78. Part 1, Imports; 1919; 112 pages; price, 10 cents. Part 2, Exports; 1919; 346 pages; price, 25 cents.

Trade of the United States with the World, 1918 and 1919 (calendar years). Miscellaneous series No. 106. Part 1, Imports; 1920; 103 pages; price, 10 cents. Part 2, Exports; 1921; 456 pages; price, 50 cents.

One should mention also "Commerce and Navigation of the United States," an annual publication giving the trade of the United States with all the countries of the world, as well as the Supplements to the daily "Commerce Reports," which contain the annual reports of the American consuls. (Beginning with 1921, the annual reports of the consuls will be published, not in Supplements but in "Commerce Reports" itself.)

TRADE LISTS AVAILABLE.

A great many names of importers, exporters, dealers, agents, and other persons and firms connected with the commercial activity of Colombia were prepared by the writer during his investigation in the Republic. These names, together with others submitted by American consular officers, are now on file in the Commercial Intelligence Section of the Bureau of Foreign and Domestic Commerce. Numerous trade lists have been prepared for distribution, arranged on the basis of the commodities handled. These lists show the character of business conducted by each firm—that is, whether wholesale,

retail, commission merchant, or agent—and they are starred, to indicate the relative size of each firm in its community, by one, two, or three stars. Information is also available concerning the capital, organization, and commercial activity of each of these Colombian houses. The lists are furnished to American business men upon application to the Bureau of Foreign and Domestic Commerce or any of its district or cooperative offices. The inquirer should state definitely the kind of list that he desires; if he is concerned with the market for a particular commodity or class of articles, he should be careful to make a specific statement to that effect.

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