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COAL AND PETROLEUM IN COLOMBIA.

COMMERCIAL INFORMATION.

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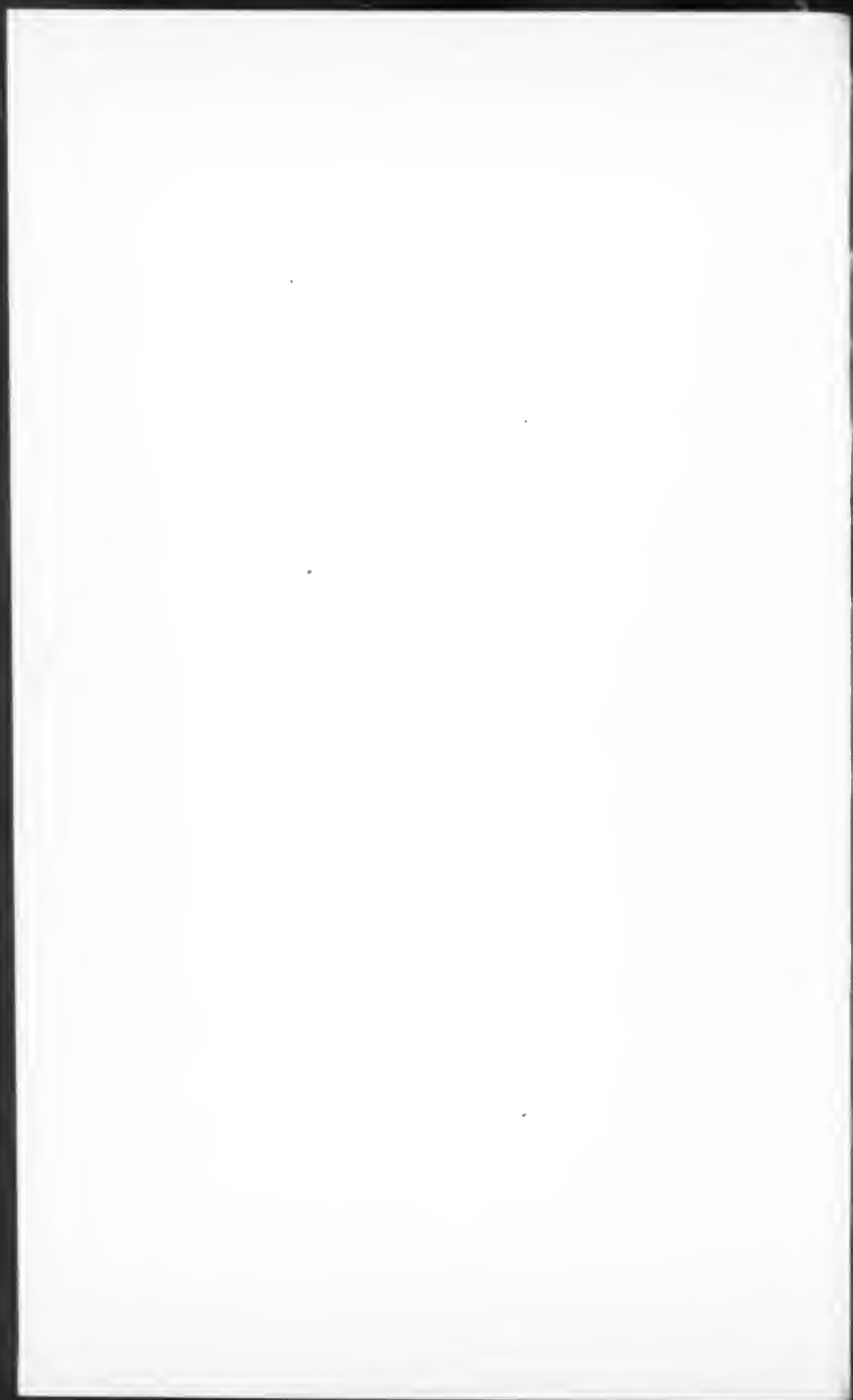
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CONTENTS.

	PAGE.
Coal and Petroleum in Colombia.....	5
Commercial Information :	
Coffee Tree Disease in Costa Rica.....	14
Tariff Decisions in Venezuela.....	15
Tobacco Tax in Colombia.....	16
Gold Mining in British Guiana.....	16
Trade of Demerara, 1893.....	17
Argentine Products, 1893.....	17
Trade of Uruguay, 1893.....	18
Fruit Shipments from British Honduras.....	18
Mining Exhibition in Chile.....	19
Postal Express and Parcels Post in Mexico.....	20
Miscellaneous.....	20



I.

COAL AND PETROLEUM IN COLOMBIA.

REPORT TO THE BUREAU OF THE AMERICAN REPUBLICS.

BY C. F. Z. CARACRISTI, C. E.

Mr. C. F. Z. Caracristi, C. E., has prepared for the Bureau of the American Republics, the following report on the coal beds and petroleum deposits of Colombia, South America:

I have the honor to respectfully transmit my report on the coal beds and petroleum deposits of the Republic of Colombia, South America. In doing so, I associate myself with a pleasant labor and duty; and while serving Colombia, I hope to also serve the interests of the United States.

The extensive surveys which I have just completed form the basis of this report. These surveys cover the territory embraced in the departments of Panama, Cauca, Bolivar and Magdalena. I shall give only passing notice, however, to the coal measures of the interior and speak with special reference to those that have an international bearing as the source of full supply for the merchant marines and navies of the three Americas.

LAWS GOVERNING THE COAL DEPOSITS OF COLOMBIA.

The coal deposits of Colombia are subject to and governed by articles 1116 and 1118 of the Colombian Fiscal Code, embracing the laws of 1868 and their amendments and constructions by the Supreme Court.

Under these laws, it is held that all coal deposits that border on the Atlantic or Pacific oceans, or any tributaries thereof or within fifty kilometers of any navigable rivers belong to and are the property of the National Government of Colombia. These laws vest the "Executive Power" of the nation with the right to dispose of the coal

deposits to any individual or corporation ; provided not less than 10 per cent of the total net profit of the mine or mines conceded shall be delivered by the lessee to the National Treasury of Colombia and the lease or concession shall be ratified by Congress.

The same laws, it is claimed, apply to the petroleum oil springs or "seeps ;" but a thorough research of the laws does not divulge anything to sustain this position, except the use of the word "carbon" in the law of 1868, which high legal authorities in Colombia claim to embrace petroleum as well as coal.

It is also held by the Supreme Court of Colombia that lands conceded to freeholders by the Spanish crown or by the government, previous to the passage of the act of 1868, are not amenable to the above laws and are the free estate of the holder, exempt from any restriction as to the ownership of the "mineral right."

COAL AND LIGNITE OF THE DEPARTMENT OF PANAMA.

In the early days of the Panama railroad, and later, during the canal construction period, numerous efforts were made to explore the coal regions of the Atlantic in near proximity to the ports of Colon and Panama. These researches led up to the discovery of bituminous shales and lignite near the port of Boca del Toro on the Caribbean Sea. Some hopes had been entertained that these deposits would give valuable coal, but an examination and analysis have convinced me that the veins are too small and the percentage of carbon too low to justify any expectation from this source. The largest vein I saw was about three feet thick and the analysis gave :

Carbon	40.131
Water	12.962
Ash	30.216

It will be seen at a glance that the coal has no commercial value, especially as some of the carbon was infusible and noncombustible "graphite." Considerable work was done at these mines some years ago, but little signs of the excavations now remain, the opening being filled with debris washed in by the waters of the rainy season.

These deposits do not cover an area of over ten miles, and are not worthy of more than passing mention.

On the Pacific, coal measures expose themselves near Punta

Burica, in Colombia, and the peninsula projection that forms the northern inclosure of Golfo Dulce, in Costa Rica. The numerous small streams that flow into the gulf from the Cordillera, on the boundary of Colombia and Costa Rica, bring down fragments of lignite and coal, showing that they pass through large carboniferous deposits.

Some work was attempted in these regions (judging from openings that are now nearly filled in with debris) many years ago, but evidently with meagre results, owing to the fact that the exploring party did not enter sufficiently far into the interior to reach a healthy carboniferous formation. I consider it feasible to mine good coal in these regions at a distance of from fifteen to twenty miles from the coast, as the croppings I examined at several points show veins of from three to six feet thick of bituminous coal embedded in lignite and shale.

The carboniferous measures of this locality cover an area of about 100 square miles, and are about equal to the coal beds of Chesterfield county, Virginia.

This disposes, so far as I have investigated, of the coal beds of Panama, with the exception of those of Rio Chucunaque, about twelve miles northwest of Point Mosquito. It was quite impossible for me to examine these reported deposits, owing mainly to the difficulty of crossing the mountain, over which no pass could be found, to say nothing of the hostility I encountered from the Indians of San Blas, which made my stay on the coast rather risky at night.

COAL AND PETROLEUM OF THE DEPARTMENTS OF CAUCA AND BOLIVAR.

Looking at the map of Colombia, we see a great indenture on the Atlantic Coast of the Department of Cauca, formed by the Golfo de Uraba, or Darian del Nord. Into this gulf flow the Atrato, Arboletes, Punta de Pietra, and many other small streams. I consider the territory embraced within latitude $7^{\circ} 30'$ and 9° north, and longitude 2° and $3^{\circ} 15'$, meridian of Bogota, as containing the most promising coal deposits of the Atlantic Coast of South America. The coal measures expose themselves from Cabo Tiburon, on the borders of the Department of Panama, and follow around the gulf and shore, traversing the various rivers, and entering into the Department of

Bolivar after coursing the Arboletes. From here, the coal extends to the Rio Magdalena, following the geological base of the hills from the valley of the Atrato. On its way through the Department of Bolivar, the coal is exposed when it crosses the Rio Sinu and Cannaleta.

The coal which I explored on the Uraba Coast was, first, a large deposit which exposes itself about three miles from the mouth of the Rio Punta de Piedra. Here, the inundations have washed a small cañon through which the river flows, and on the banks of which may be found carboniferous outcroppings. Second, a large and well-defined extension of the deposit of Rio Punta de Piedra on the right bank of the Rio Volcan at its confluence with Rio Arboletes, four miles from its point of emptying into the Gulf. At this point, the veins of coal are from three to twenty feet thick, and extend southward a distance of not less than sixty miles. Third, I examined the coal of the Atrato, but owing to the rise of that river was unable to learn, with any degree of precision, the nature or geological condition of the deposit. Fourth, I discovered large veins of coal on the Rio Sinu, and excellent coal on Rio Cannaleta.

In Cauca, there are over twenty veins of coal, anthracite, bituminous and lignite, all of which has more or less commercial value. In their whole distance along the Darian in Cauca and the shores of Bolivar to a point opposite Puerto de Colombia, the coal measures have a length of 260 miles with an average width of thirty miles. This gives a square mileagé of 7,800, or a coal area equal to that of Alabama.

At a distance of about six miles from the Rio Caiman in a northwardly direction, the carboniferous strata show a "pinched" condition, and are somewhat distorted and irregular, doubtless from the effect of recent volcanic dislocations. The same may be said of the coal measures where they cross the Rio Varacuarando, above Turbo, to the south.

On the Rio Arboletes and Volcan, the "croppings" are even more wonderful than those of Pennsylvania, or, in fact, any I have had occasion to examine during my professional career of over thirteen years.

Following are the analyses of the coal of Uraba:

Sample from Arboletes.	Per cent.	Sample from Punta de Piedra.	Per cent.
Gravity 1.62		Gravity 1.81	
Fixed carbon.....	41.50	Fixed Carbon	77.52
Ash.....	6.11	Ash	7.31
Volatile matter	50.33	Volatile matter	12.41
Water.....	2.06	Sulphur26
		Water.....	2.50
Total	100.00	Total.....	100.00
Color of ash, white alkaline; quality of coal, black lignite.		Color of ash, yellow; quality of coal, anthracite; heating power.	
Coke	49.30		69.92

The coal follows the coast line at a distance of from three to forty miles. I would estimate the visible supply at not less than 18,459,200,000 tons in the Departments of Cauca and Bolivar alone.

The cost of mining the coal I place at about \$2.10 as against \$1.616 in Pennsylvania.

PETROLEUM OF THE DEPARTMENT OF CAUCA.

During my visit and explorations on the Gulf of Uraba and along its tributaries, I discovered at a very short distance from the coal, extensive strata of "oil rock," which led me to investigate the petroleum "oozes" or springs that persons reported as existing near the Rio Arboletes. This investigation led to the discovery of not less than forty petroleum "seeps" or springs, one of these having a crater about twelve inches in diameter, which gushes forth sufficient oil to fill a six inch pipe. A petroleum pond sixty feet in diameter and from three to ten feet deep is also found near this spring. The flow of these oil springs is something very wonderful, and deserves the attention of geologists, to say nothing of investors.

These wells, or rather springs, lie at a distance of from one to three miles from the shores of the gulf, to which point it would be very easy to construct a pipe line at a cost of about \$14,000.

The oil is remarkably pure, passing as it does through an extensive bed of coral which seems to act as a filter and refiner. A proper survey of the oil region of the Uraba would be interesting, both from

a scientific and an industrial standpoint. The proper development of the possibilities of the oil industry at this point would probably result in the control of the petroleum market of South America.

The most interesting feature of these petroleum deposits is the fact that one of the "seeps" seems to prove conclusively the error of both the chemist and geologist as to the origin of petroleum.

At a point about 10 miles from the Rio Iquana, in the mountain range of Gigantones, I found what at first appeared to be a geyser, but which subsequently proved to be an oil spring. The oil and water rose out of this crater at alternate intervals, and brought with it small lumps of burnt carbonate of lime and sulphur and fragments of ozocerite (mineral wax). The lime had been burnt to such an extent that all the carbonic acid gas had been driven off and both the sulphur and ozocerite exhibited a charred condition. The oil and water that rose out of the spring were heated when they arrived at the surface to 130 degrees. This petroleum, therefore, was doubtless produced by the combination of carbonic acid gases with sulphuric acid gases working on the ozocerite and mellitic basis of the surrounding earth and then combining with hydrogen. In this condition it came to the surface with the heated water of the spring, or perhaps the hot fumes were plunged into the water and became condensed, heating the water. The oil then formed on the surface of the water, being lighter, and was held in suspension until sufficient steam was accumulated in the water to eject it, which explains the reason why the oil rose to the surface alternately with and before the water.

These examinations being concluded, I turned my attention to the
COAL DEPOSITS OF THE SIERRA NEVADA DE SANTA MARTA, IN THE
DEPARTMENT OF MAGDALENA.

I proceeded to Santa Marta and busied myself with the collection of such data and general information on the supposed coal deposits of the Sierra Nevada de Santa Marta as I could gather. Both General Francisco Duran and the Hon. J. Manuel de Mier, United States Vice Consul, rendered me valuable service, without which my labors would have been futile.

At a distance of two miles south of Santa Marta, at the base of the mountains, I found the first coal cropping in the form of a vein of

lignite, bearing with it cannel coal, which, upon development, I believe will be found to be a valuable deposit.

I then followed the geological line to the Rio Gaira where other showings exposed themselves; thence I proceeded to Cienaga, where the coal measures seemed to exhaust themselves and are interrupted by an extensive mountain, 800 feet high, of white, gray, blue, black and white, and red marble. The marble at this point is highly metamorphic, having a compact grain, is beautifully crystalline and is free of "sand blows" and susceptible of an excellent polish. It is equal, if not superior, to the marble of Italy and Africa, upon which I have had occasion to make various reports.

Crossing this marble projection, which shows off the carboniferous measures, I again found coal at a point north of Rio Frio, and these measures I carried to Rio Lavilla, Rio Tucarina, Rio Aracataca, the Petrale Cañon and to Rio Fundacion and the Val du Par.

At Rio Fundacion, about one and one-half miles above the abandoned village of that name, the coal measures assume a proper and healthy form and exhibit large veins of coal for a distance of six or eight miles up the river. The total distance from Santa Marta to Rio Fundacion is seventy miles, about sixty of which are on the coal measures. In the Val du Par, too, I discovered extensive beds of the best quality of cannel coal.

On the Petrale Cañon and on Rio Fundacion I entered into extensive excavations which proved the coal to exist in well defined veins, and the "hanging" and "foot" walls to be of a healthy sandstone, which necessitated but little "timbering" in the working of the coal. These mines are extremely valuable, owing to the fact that they exist at a healthy elevation above the sea, are supplied with cold water from the glacier of Santa Marta and are on navigable rivers and on the line of a railroad now under construction from the port of Santa Marta.

The analysis of the coal of this region speaks for itself.

Fixed carbon.....	34.85 per cent
Ash.....	7.35 " "
Volatile matter.....	57.80 " "
Total	100 00

Will not coke; gives white ash, and is peculiar in the fact that it ignites under a heat of 270°.

The carboniferous measures of this region extend along the coast to Venezuela to the Lago de Maracaibo, where an English company, headed by Sir Edward Barrington, of London, is now opening up the mines. I am perfectly convinced that the beds of the Santa Marta region are identical with those of Venezuela.

COAL OF THE DEPARTMENT OF CUNDINAMARCA.

Extensive coal beds extend from near La Mesa along the Altiplaine, past Bogotá to Choconta. This coal is mostly of a bituminous nature, but some anthracite is known to exist. The area covered by the coal measures is about 3,000 square miles.

PETROLEUM OF BOYACA.

In Boyacá, near Tunya and Moreno, are found some deposits of coal and petroleum. The petroleum, samples of which I have in my possession, seems to be very fine, but owing to the want of railroad facilities, is unavailable.

COAL CONSUMPTION OF COLOMBIA.

It would be very difficult to estimate the total possible coal consumption of Colombia. I offer the following as the only available basis of calculation.

Consumption of coal by foreign ships on their way from Colombia to their respective ports of entry:

Pacific Mail	3	steamers	monthly.
Atlas Line.....	2	"	"
Harrison Line.....	1	"	"
Hamburg-American Line.....	2	"	"
Royal Mail.....	2	"	"
Campagne Generale Transatlantique	2	"	"
Transatlantica Espanola	2	"	"
West Indies and Pacific.....	2	"	"
Italian Line.....	1	"	"
	—		
Total steamers per month	17		

or 204 steamers per year, burning on their return trips 40,800 tons of coal. The heat unit represented by the eleven steamers plying between Barranquilla and Honda, Pueblo Viejo and Cartagena is about 1000 tons of coal per month. They now burn wood, and are

often delayed on the river by not having a supply ready or the wood having been washed away by high water. This represents 12,000 tons per year :

The Panama Railroad consumes.....	7200 tons per year
The Savanilla Railroad consumes.....	1500 tons per year
Cartagena Railroad	Not complete
Santa Marta Railroad.....	Not complete

The steamers touching on the Pacific side are six per month, representing a coal consumption of 18,000 tons per year.

This gives a ready market for 79,500 tons of coal per year, not taking into account the "tramp" steamers that visit Colombia or the naval squadrons that constantly pass along the Atlantic coast of Colombia.

If either of the interoceanic canals is built, the development of the coal beds of Colombia, occupying, as they do, the most central location on the American Continent, would be a great economic factor to the nations of South and Central America, and to the merchant marines and navies of the world.

I look upon the development of these coal beds as involving a reduction of 10 per cent in the cost of transportation between the United States and South American ports.

The harbors of Cartagena and Santa Marta are among the best on the South American continent, and afford ample capacity for naval coaling stations for the navies of the world, and also safe harbors for merchant vessels. Should the harbor of Santa Marta prove too small, it would be easy to utilize the Bay of Gaira, six miles south of Santa Marta. This bay is three miles wide by two miles long, having a depth of from ten to eighteen fathoms, is well protected from the north and has an abundance of fresh water supplied by the river Gaira.

II.

COMMERCIAL INFORMATION.

COFFEE TREE DISEASE IN COSTA RICA.*

A peculiar disease, which made its appearance last year in the coffee trees of Costa Rica, and which was thought to threaten in a serious manner the coffee crop of that country, and affect thereby disastrously what is for the Costa Rican people the principal source of their wealth, caused the Government of the Republic to make inquiries into the nature and origin of the evil, and the ways, if any, of remedying it. Mr. Ad. Tonduz, Chief of the Botanical Department of the National Physical and Geographical Institute of San José, was ordered to study the subject, and his report, which, on the whole, is reassuring, as it shows that the disease is circumscribed to certain localities, and that its spread can be checked, has been published officially. It bears the date of September 27, 1893, and can be read in full in Nos. 231, 232 and 235 of the *Gaceta*, corresponding respectively to the 5th, 6th and 10th of October of the same year.

According to Mr. Tonduz, the seat of the disease is in those portions of the coffee tree which are in immediate contact with the atmospheric air, but more especially the leaves. Mr. Tonduz thinks that the disorder is due to a fungous parasite, whose germ or seed being carried either by the wind, the rain, or any other vehicle, adheres to the surface of the leaves, or other exposed parts of the coffee tree, and finds there, at the expense of the health and life of the latter, a rich and ample field for its own development. But neither Mr. Tonduz, nor Professor Saenz, who wrote a pamphlet on the diseases of the coffee tree, published officially at San Salvador, in March, 1893, and from whom Mr. Tonduz quotes abundantly, can exactly determine whether the parasite is the *Hemileya vastatrix*, which did so

*For description of coffee culture in Central and South American countries and in the Hawaiian Islands, see monthly bulletin "Coffee in America," published by the Bureau of the American Republics, October, 1893.

much harm in Brazil, or any other less obnoxious organism. Mr. Tonduz thinks, however, that even in case it is the dreaded parasite above named, its propagation can be effectively checked, either by destroying, preferably by burning, the most affected trees and thus exhausting radically the sources of infection, or by resorting to such remedies as sulphur, lime, and other disinfectants, when circumstances permit their use.

The most efficient of these applications consists of a mixture of one part of sulphur, the best kind of flowers of sulphur, and two parts of caustic lime, the whole well powered and mixed, so as to permit it to be blown or scattered, either by bellows, or by hand, over the diseased parts of the tree.

Dr. Emilio Goldi made, in 1887, a very interesting report to the Brazilian Government, which the latter published officially, under the title of "*Relatorio sobre a molestia de cafeeiro na provincia do Rio de Janeiro.*" and in this, the subject is treated exhaustively.

TARIFF DECISIONS IN VENEZUELA.

A summary of recent tariff decisions in Venezuela has been received. These decisions are :

1. By virtue of a decree, dated May 22, 1893, as long as no port has been established on the western coast of the Republic, better adapted than that of Puerto Cabello for the transshipment of goods, on the territory of Venezuela, proceeding from Europe or the United States of America on vessels which can not reach the ports of destination, such goods may, as heretofore, be transhipped at Curacao conformably to the regulations established by the executive decree of January 26, 1883. This decree shall therefore remain in full force, and, consequently, the decree of December 30, last, relative to such transshipments, has been repealed.

2. Ice imported from abroad, which, according to No. 16 of Article 23, of the law of the Code of Finance, is classed in Class 1 of the tariff, shall, when imported into the cities of Caracas, Puerto Cabello, Coro, Maracaibo and Ciudad Bolivar, and into all those where ice factories are established, be subject to the duty of Class 2 (duty 10 centimes of a *Bolivar*).

3. On and after July 27, 1893, new articles imported in regulated quantities through the custom houses of the Republic in travelers' baggage arriving from abroad, shall pay a *surtax of 20 per cent on the duties stipulated for such articles in the tariff*, in compensation for the duties which would have been levied thereon for the packages if they had been imported by merchants.

TOBACCO TAX IN COLOMBIA.

Under a law enacted on the 10th of December, 1892, and recently re-enacted and promulgated as law No. 85 of the year 1893, the Government of Colombia has assumed the exclusive right of selling tobacco, whether manufactured or unmanufactured, when the article is to be used, or consumed in the country.

It has announced at the same time, that it may, if deemed advisable, monopolize the importation and the manufacture of cigarettes. The cultivation of the plant remains free. The exportation of tobacco in any form is also free, and shall not be burdened with duties of any kind.

Duties will be levied on imported tobacco as follows :

A duty of \$8 per kilogram (about 2 1.5 pounds) on cigars and cigarettes.

A duty of \$6 per kilogram on tobacco prepared in any other form or for any use whatever.

A duty of \$5 per kilogram on *picadura* (fine cut.)

A duty of \$4 per kilogram on tobacco not manufactured.

The right of importing tobacco does not imply or involve the right of selling it for home consumption. The funds obtained through the operation of this law are to be applied exclusively to the redemption of the paper currency and the reorganization of the National Bank of Colombia.

GOLD MINING IN BRITISH GUIANA.

Increased attention is being given to the gold fields of British Guiana, which are claimed to be developing into one of the richest auriferous regions in the world. In 1884, but 250 ounces of gold were exported; in 1885, the export was 939 ounces; in 1892 it was 199,615 ounces; and the end of the current year, it is predicted, will show a great increase upon these figures. Within the past few months, operations on an extensive scale have been projected. Proposals for the construction of a railway to the mining region have been advertised for by the Colonial Government. In addition to its gold fields, British Guiana is said to possess diamonds in abundance, and prospecting parties from South Africa are reported to be on their way to investigate this branch of mining industry.

The first annual report of the present Commissioner of Mines, regarding the gold industry of British Guiana, says: "Taking the mining industry as a whole, I think there is a very hopeful outlook for the colony, and that before very long it will take its place as a gold and diamond producing country second only to South Africa."

TRADE OF DEMERARA--1893.

From the list of exports from Demerara for the first six months of 1893, it appears that in the export of sugar there is a slight falling off as compared with the output at the corresponding date last year. The exports reached 35,564 hogsheads, while on July 10, 1892, it stood at 36,616 hogsheads. The export of rum reached 8,920 puncheons, a decrease of 2,546 puncheons, as compared with the export at the same date last year. There is a falling off in the export of molasses, but timber shows an increase. There is a marked decrease in the export of charcoal, cocoanuts, balata, pilot-bread and crackers, but isinglass, gums, cacao and coffee are ahead of the exports of those articles in 1892. The output of gold has reached 62,171 ounces, to the value of \$1,106,938 as against 54,599 ounces, to the value of \$973,449 at the same period in 1892.

ARGENTINE PRODUCTS--1893.

An estimate of the value of Argentine products in 1893, and the surplus for exportation, is as follows:

	Product.	Exportation.
	<i>Gold.</i>	<i>Gold.</i>
Grain.....	\$54,800,000	\$24,400,000
Sundries.....	32,200,000	2,400,000
Total agricultural.....	87,000,000	26,800,000
Wool.....	35,000,000	34,000,000
Meat.....	21,600,000	9,000,000
Hides and skins.....	24,000,000	21,000,000
Tallow.....	4,800,000	4,000,000
Sundries.....	19,600,000	7,200,000
Total pastoral.....	105,000,000	75,200,000
Grand total.....	192,000,000	102,000,000

A Buenos Aires newspaper says :

Comparing our products with what they were ten years ago, we find that the agricultural crops have more than trebled, whereas the wool-clip is almost stationary. This shows that the great development of the country has been in tillage, which is scarcely a motive for congratulation, seeing that the crops are constantly exposed to drought and locusts. The change, however, is a decided gain to the railways, in the way of freight, our grain crops weighing 2,500,000 tons, whereas the total weight of wool is under 140,000 tons.

TRADE OF URUGUAY--1893.

The following figures relating to the trade of Uruguay for the half year ended June 30, 1893, have been received :

The imports for 1893 were \$9,970,000 against \$9,120,000 for the same period of 1892. The exports for 1893 were \$16,190,000 against \$15,830,000 for the same period of 1892. The surplus of exports over imports in 1893 was \$6,220,000 against \$6,710,000 in 1892. It will be seen that there is a shrinkage in the surplus of \$490,000, although an increase has taken place in the value of both exports and imports. The revenue shows the small decline of \$38,000.

FRUIT SHIPMENTS FROM BRITISH HONDURAS.

Certain fruit growers and merchants of British Honduras have decided to establish a mutual company for the purpose of purchasing or chartering a steamer or steamers to trade between the United States and Belize and other ports within the colony and neighboring republics and islands. This step, it is stated, is deemed necessary because of complaints of the steamship service between British Honduras and New Orleans. In the prospectus of the company it is stated that "there has been a large increase in the production of fruit in the colony during the last two years and more, and capitalists as well as small growers undoubtedly will extend their area under cultivation if satisfied that they will receive a fair return for their produce. "During the year 1892," it is added, "423,763 bunches of bananas, 1,176,450 plantains, and 1,146,150 cocoanuts were exported to New Orleans," besides other fruits and rubber, sugar, hides, etc. The capital of the company is \$150,000 in 3,000 shares of \$50 each.

MINING EXHIBITION IN CHILE.

The Chilean Congress has voted the sum of \$150,000 to defray the expenses of the Mining and Metallurgical Exhibition to be held in Santiago, in April, 1894. It is proposed that the exhibition shall cover a wide field and shall be as complete as possible. The different sections comprise motive power, electricity, mining and crushing machinery, metallurgical installations, chemical industries, statistics and plans, and mining and metallurgical products. The government offers to pay the cost of conveyance by sea and land of the exhibits to the exposition building, and in the case of exhibits which may not be sold in Chile, the government offers to pay the return freight and carriage. It also binds itself to pay the passage money both ways of operatives and workmen whom it may be necessary to take out to Chile to erect and run the machinery exhibited. The government will also provide the motive power, tables and show cases, etc. In the case of exhibits liable to the payment of import duties, twelve months' time may be allowed for the payment of these duties in the event of the exhibits remaining in the country, but if they should be sent out of the country before the expiration of that period, no duties will be levied. Application for space must be made to the Chilean legations at Washington, Paris, Berlin, Lima, Rio de Janeiro, Buenos Aires and La Paz. As mining methods and machinery in Chile are very primitive, it is thought that a promising field of commercial enterprise will be offered to foreign manufacturers by this exhibition.

A report recently presented to the Chilean Congress by the Minister of Industry and Public Works, says:

"It is a well known fact that coal abounds in our territory, nevertheless the production is barely sufficient for one-half of the consumption, the other half being imported from abroad at exorbitant prices. This condition of affairs, which is so prejudicial to the country, might be easily remedied by repealing the law which gives to the proprietor of the soil the ownership of the coal beneath it, and by throwing these deposits open to all the world. Not only ought Chile to produce all the coal necessary for her own use, but she ought to supply all the coast." The minister also says that notwithstanding the efforts of the Society for Promoting Manufacturers, it has not yet been possible to establish the iron industry in Chile. The studies ordered by the society to be made have been sent to Europe, and have been submitted to experienced metallurgists who differ in

opinion with respect to the possibility of manufacturing iron in Chile. "In the meanwhile," says the Chilean Times, "a practical Englishman has solved the problem of producing iron in Chile, and a company is to be organized which will have for its basis a concession granted by the government to Mr. Charles E. Lister."

POSTAL EXPRESS AND PARCELS POST IN MEXICO.

A concession has been granted by the government of Mexico to the Mexican National Express Company for the carrying of mail to or from any part of the Republic in envelopes specially stamped for the purpose by the General Postoffice. In the case of letters destined for some point not reached by the express company, it has the right to deliver them to the nearest postoffice to be forwarded without additional charge. Such mail matter as is not delivered shall be kept in the office of the express company three months, after which it will be sent to the head express office in the City of Mexico and be turned over by it to the General Postoffice. In return for the concession, the express company must, at any time when the General Postoffice so desires, transport its funds to or from any part of the Republic at 40 per cent discount on the rates charged to the public. The arrangement may be terminated by either party at any time by giving six months' notice.

President Diaz, in his recent message to the Mexican Congress, states that the Parcels Post Service, "which may be regarded as a new departure here," is working satisfactorily. He also says that 1,815 kilometers of telegraph wire (a kilometer equaling about three-fifths of a mile) have been put up in Mexico since April and fourteen new telegraph offices have been opened. The federal telegraph system now aggregates about 40,000 kilometers.

MISCELLANEOUS.

A manufactory of homespuns, near Horcasitas, in the State of Sonora, Mexico, is said to be developing an important industry. It is equipped with good machinery, electric light, etc., and is about to enter upon the manufacture of white goods and prints.

A new porcelain factory is about to be established at Toluca,

Mexico, by Messrs. Juan Aubert and Antonio Ramos Cadena, who have obtained a state concession for the purpose.

During the month of September, 1893, it is stated, the Mexican International Express Company shipped 50,000 oranges to the United States.

The Secretary of the Treasury of Mexico recommends the passage of a bill imposing a federal tax on all yarn and cotton goods of Mexican manufacture. The amount of the tax is to be fixed yearly by the budget law.

It is expected that the first jute factory erected in Mexico, located at Orizaba, will be completed before the end of the year.

The German consul at Puebla has founded a German colony in the Department of Palenque, Mexico. The colonists are said to be putting large tracts of land into coffee, and a number of families are expected from Germany.

W. J. Lyons, of Arizona, has secured a concession and control of the San Marcial coal mines in Sonora, Mexico. These mines are situated seventy miles from Guaymas, and are said to have seams of anthracite from three to sixteen feet in thickness.

An important discovery of coal fields in the district of Huasteca, in the city of Vera Cruz, Mexico, is announced. If the results of the examination now in progress are satisfactory, a company with \$2,000,000 capital will be organized to work the coal fields and build a railroad. The coal is said to be of excellent quality.

A movement is on foot to extend the Panama telegraph lines to San José, the capital of Costa Rica. The government of the latter country has signified its willingness to co-operate in the matter with the Panama Chamber of Commerce, which started the movement. It is thought that at no distant day communication will be opened between the cities of Panama and San José.

The government of Costa Rica has decreed an export duty upon coffee, the staple product of that country. The amount of the duty is 6s. for each 46 kilograms (101.39 pounds). The money raised by the collection of this duty is to be appropriated exclusively for the payment of the interest on the foreign consolidated debt. The duty may be paid with bills of exchange at ninety days, if satisfactory to the Secretary of the Treasury.

In accordance with a recent decree, from and after October 1, part

of the import duties of Guatemala are to be paid in national gold, and after September 15, 1894, only national money will be accepted at the public offices. The effect of this decree, it is stated, is to declare that the Peruvian and Chilean soles are not legal tender, the government refusing to accept them.

The people of the Isthmus of Panama are much interested in the announcement of Messrs. Grace Bros. & Co., of Lima and Callao, Peru, of the inauguration of an extension of the "Merchants' Line" of steamers plying between New York and the west coast of South America. The fleet consists of four vessels which sail from New York alternately every forty days and carry freight as far as Guayaquil, taking cargo at rates "to compete with sailing vessels." This action, it is thought, will result in a rate-cutting competition between the West Coast Line and the transportation companies (steamship and railroad) of the Isthmus route.

Rich gold fields are reported to have been discovered in Rioja, Argentine Republic, and as the Argentine Congress has ordered the completion of the Dean Funes and Chilecito railway, which will terminate close to the mines, there are expectations of a great revival of mining industry in Rioja.

A new telegraph line between Buenos Aires, Argentine Republic, and Valparaiso, Chile, will, in all probability, be concluded and opened to the public service by the end of the current year. The new line will compete with the existing line owned by the Central and South American Cable Company.

The visit of Mr. C. E. Howard Vincent, member of the British Parliament, to the South American countries, has for its object a detailed examination and report to the British Government as to what steps should be taken to facilitate and augment commercial relations with those countries.

Sir C. Alfred Moloney, Governor of British Honduras, has sent to the London Chamber of Commerce a collection of samples of wood cutting tools, in the hope that the attention of manufacturers might be directed to the competition in such goods which is now springing up between the United States and Great Britain for the supply of these implements. Sir Alfred suggests that it might be possible for English manufacturers to turn out as serviceable an article as that produced in the United States, and at the same cost.

The South American mails have been accelerated some twelve hours in delivery in London by the resumption by the Portuguese Postoffice Department of the use of the Sud-Express service for the mails landed at Lisbon, which service was discontinued about the end of 1891.

A systematic attempt to introduce the cultivation of the henequen fibre plant in the Bahama Islands is to be made, a company with \$50,000 capital having recently been formed in London for that purpose.

An important liquor industry is being developed in the Argentine Republic. The output of liquor from maize alone is now valued at \$15,000,000 per annum. A large quantity of spirit is also distilled from the sugar cane, and the wine business is growing.

A law has been promulgated by the Government of Paraguay allowing Indian corn to be imported free of duty between the present time and March 31, 1894.

The Uruguayan Government has entered into a contract with the Argentine mint for the coinage of \$1,000,000 of silver money.



