

INTERNATIONAL UNION OF AMERICAN REPUBLICS

BULLETIN  
OF THE INTERNATIONAL BUREAU OF THE  
AMERICAN  
REPUBLICS

VOL. XXVIII

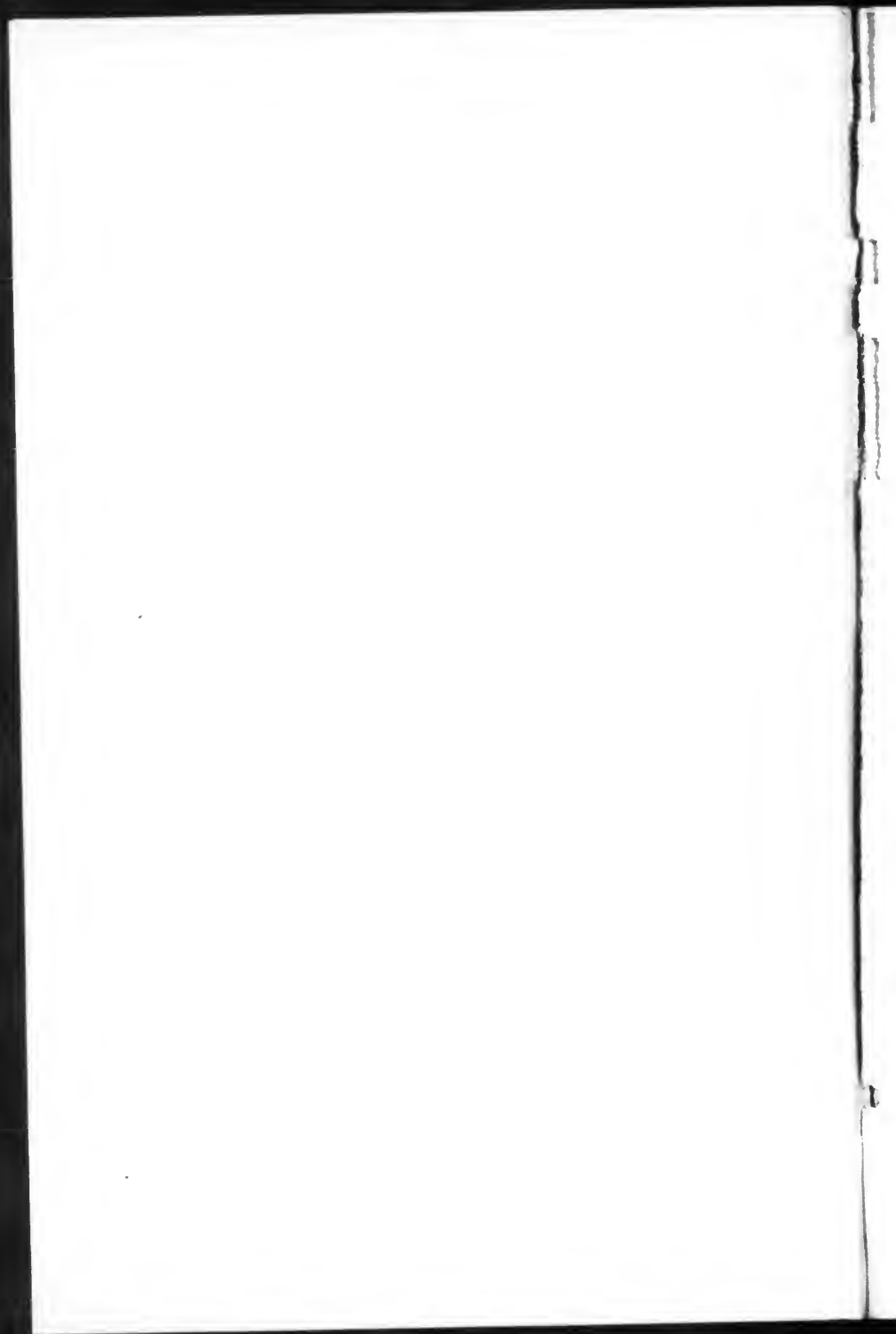
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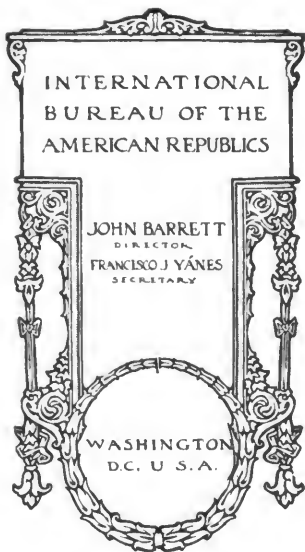
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OF THE INTERNATIONAL BUREAU OF THE  
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JANUARY

1909



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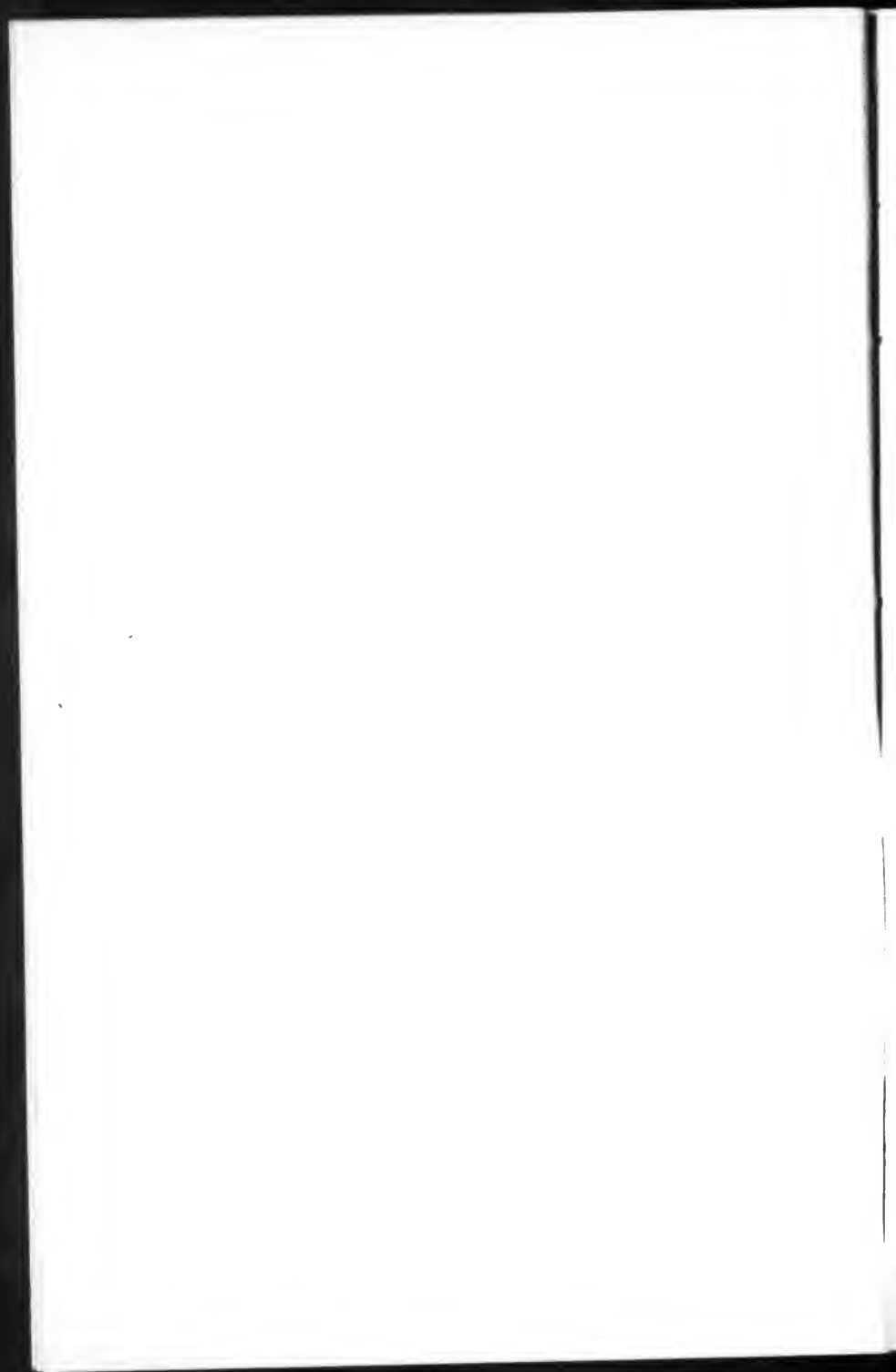
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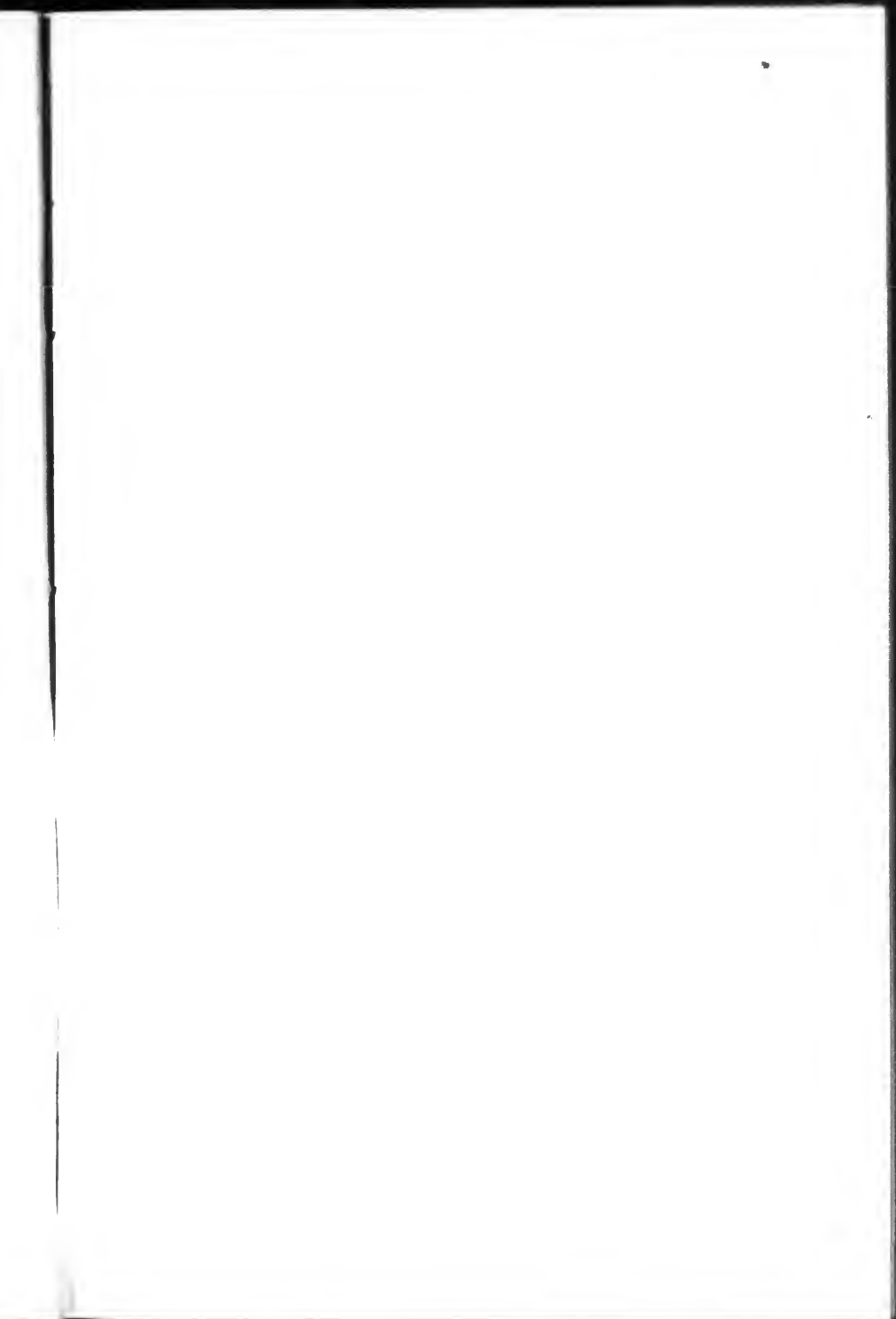
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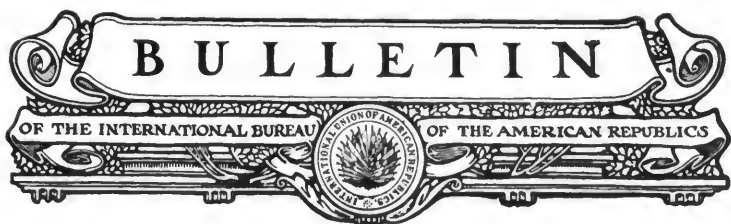






DR. AFFONSO AUGUSTO MOREIRA PENNA,  
PRESIDENT OF THE UNITED STATES OF BRAZIL.





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VOL. XXVIII.

JANUARY, 1909.

No. 1.

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THE PRESIDENT of the United States in his message submitted in December, 1908, to the Congress makes particular reference to the relations of the United States with the Latin-American Republics and to the work being done by the International Bureau. His language is so direct and specific that it is reproduced herewith. The Director earnestly recommends its careful perusal to all those who do not appreciate the importance of developing closer ties of commerce and comity among the American nations and the results being accomplished by this institution. The quotation is as follows:

The commercial and material progress of the 20 Latin-American Republics is worthy of the careful attention of the Congress. No other section of the world has shown a greater proportionate development of its foreign trade during the last ten years, and none other has more special claims on the interest of the United States. It offers to-day probably larger opportunities for the legitimate expansion of our commerce than any other group of countries. These countries will want our products in greatly increased quantities, and we shall correspondingly need theirs. The International Bureau of the American Republics is doing a useful work in making these nations and their resources better known to us, and in acquainting them not only with us as a people and with our purposes toward them, but with what we have to exchange for their goods. It is an international institution supported by all the governments of the two Americas.

---

VIEWES OF PRESIDENT-ELECT TAFT ON LATIN AMERICA.

It will be gratifying to the people of all of the American Republics to read the statement which President-elect WILLIAM H. TAFT of the United States has made regarding the attitude which his Administration will assume toward the sister Republics of the United States. It is contained in a reply which he kindly made to a letter addressed to him by the Director of the International Bureau, and is given below:

WASHINGTON, D C.,  
*December 7, 1908.*

MY DEAR SIR: I have your letter of December 4. I have always regarded the visit of Mr. ROOT to the Latin-American Republics and the other measures taken



HONORABLE PHILANDER C. KNOX,

United States Senator from Pennsylvania, who has accepted an invitation to be  
Secretary of State in President-elect Taft's Cabinet.

(Photo by Harris & Ewing.)

at his instance to cultivate their good will and to increase as much as possible the extent of their commercial relations with this country as one of the most important branches of the policy of the Administration of Mr. ROOSEVELT.

The wonderful material growth of the Republics of South and Central America and the progress they are making to a higher civilization fully justifies, if any justification were needed, the special attention given by our State Department to the establishment of a firm bond of union with our southern neighbors. I rejoice greatly at the cordial manner in which they receive and reciprocate our advances.

I expect to continue the same policy toward Latin America thus so happily entered on by Mr. ROOR and Mr. ROOSEVELT and shall count my Administration fortunate if further steps can be taken and new measures adopted to secure a closer and mutually more beneficial commercial association and to awaken a greater international sympathy than even now obtain.

Very sincerely yours,

WM. H. TAFT.

Hon. JOHN BARRETT,

*Director International Bureau of American Republics,  
Washington, D. C.*

---

UNITED STATES SENATOR KNOX AS SECRETARY OF STATE.

The announcement that Hon. PHILANDER CHASE KNOX, United States Senator for the State of Pennsylvania, United States of America, and a resident of Pittsburg, one of the great manufacturing centers of the country, had accepted the invitation of President-elect TAFT to be Secretary of State in the new administration, has been well received by all those interested in the maintenance of the prestige, influence, commerce, and friendship of the United States with foreign lands. The career of Senator KNOX is ample evidence of his qualifications for this high post. He has held many positions of broad responsibility and is recognized everywhere as an eminent and learned lawyer. He has the temperament and ability required for the premier position of the Cabinet and the physical vigor which will enable him to stand its unceasing labors. While the prospective Secretary of State has never had occasion to announce any particular interest in Latin America, it is well known that he considers the sister republics of the United States as worthy of the closest attention of the United States Government and people and as offering unequaled opportunities for the legitimate extension of United States commerce. The following quotation from the Congressional Directory gives a brief résumé of his life:

"PHILANDER CHASE KNOX, Republican, of Pittsburg, was born in Brownsville, Pennsylvania; graduated at Mount Union College, Alliance, Ohio. His father was a banker in Brownsville. In 1872 he entered the law office of H. B. SWOPE, Pittsburg, Pennsylvania, and was admitted to the bar in 1875; was assistant United States district attorney for the western district of Pennsylvania in 1876; was elected president of the Pennsylvania Bar Association in 1897; was made Attorney-General in the Cabinet of President MCKINLEY in 1901 as successor to JOHN WILLIAM

GRIGGS, of New Jersey, resigned, and was sworn into office April 9, 1901; was the choice of President ROOSEVELT for Attorney-General in his Cabinet, and was confirmed by the Senate December 16, 1901; resigned that office June 30, 1904, to accept nomination as United States Senator tendered by Governor PENNYPACKER June 10, to fill the vacancy caused by the death of Hon. M. S. QUAY, and took his seat December 6; was elected by the legislature in January, 1905. His term of service will expire March 3, 1911."

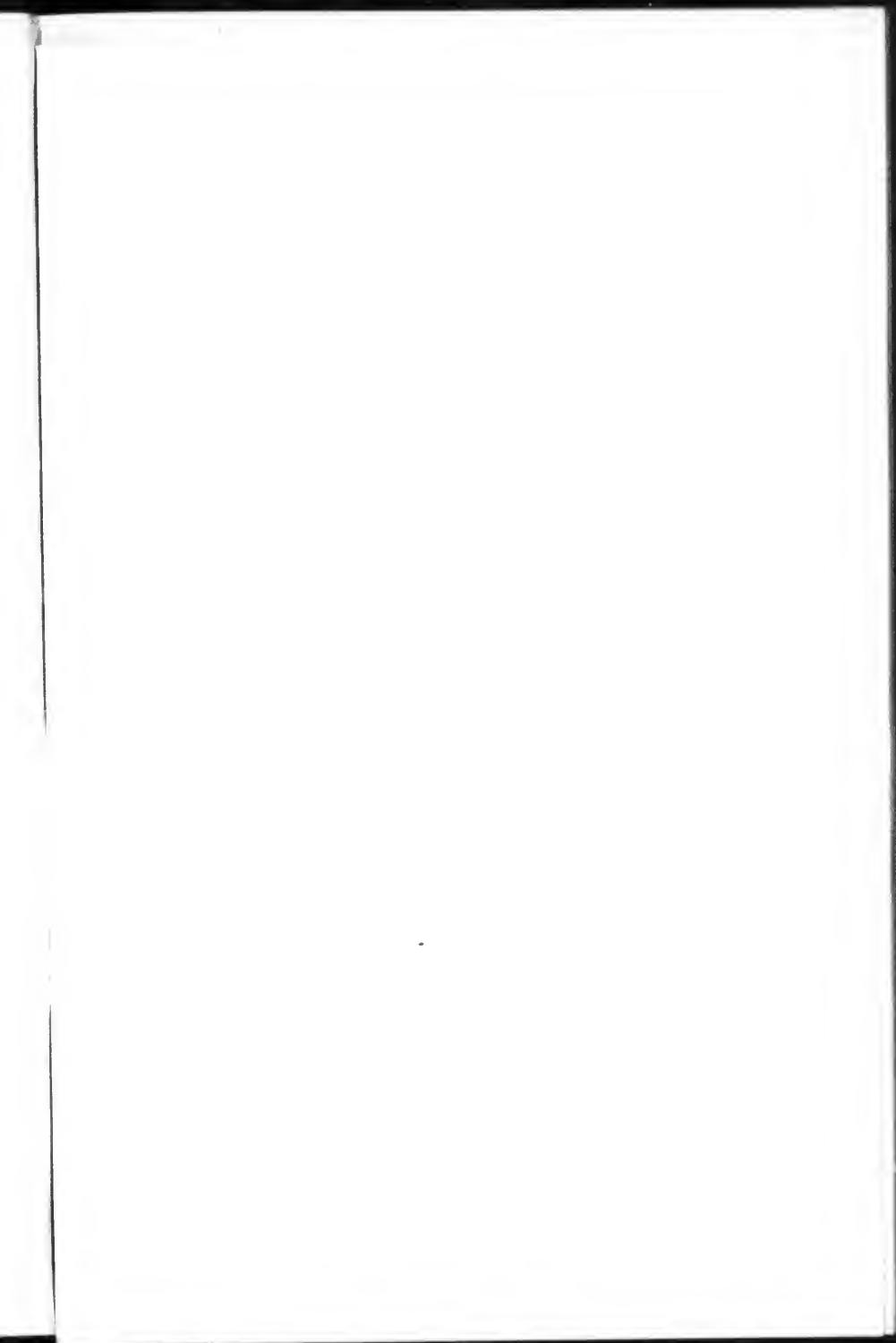
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THE BULLETIN'S ATTENTION TO DIFFERENT COUNTRIES.

Because some individual issues of the MONTHLY BULLETIN devote more space to one than to another of the 21 American Republics, a little criticism is sometimes expressed by persons interested in the countries which have the lesser amount of attention. Such comment is evidently made without careful consideration of the conditions that surround the publication of a monthly of this character. If the BULLETIN were to contain in each number an equal amount of interesting matter regarding all of the American nations, it would be so bulky and cumbersome that it would be practically useless, and could not be continued because of its cost; on the other hand, if only a brief mention of each country were made, so as to keep the BULLETIN down to the limits of space and cost, it would contain so little of value concerning each country that it soon would be considered as only a dry index or catalogue. To make the BULLETIN thoroughly interesting and instructive it is necessary oftentimes to devote a large portion of space to one country; but if the 12 issues of the year will be carefully reviewed it will be found that in the course of that time each nation has received its share of attention. Another point must be borne in mind by those who do not have upon them the responsibilities of preparing the material for the BULLETIN. It is not an infrequent occurrence that there will be an abundance of material when the time comes for sending the manuscript to the printer about one country, with practically nothing concerning another. Under these circumstances it is absolutely necessary to proceed with what is at hand.

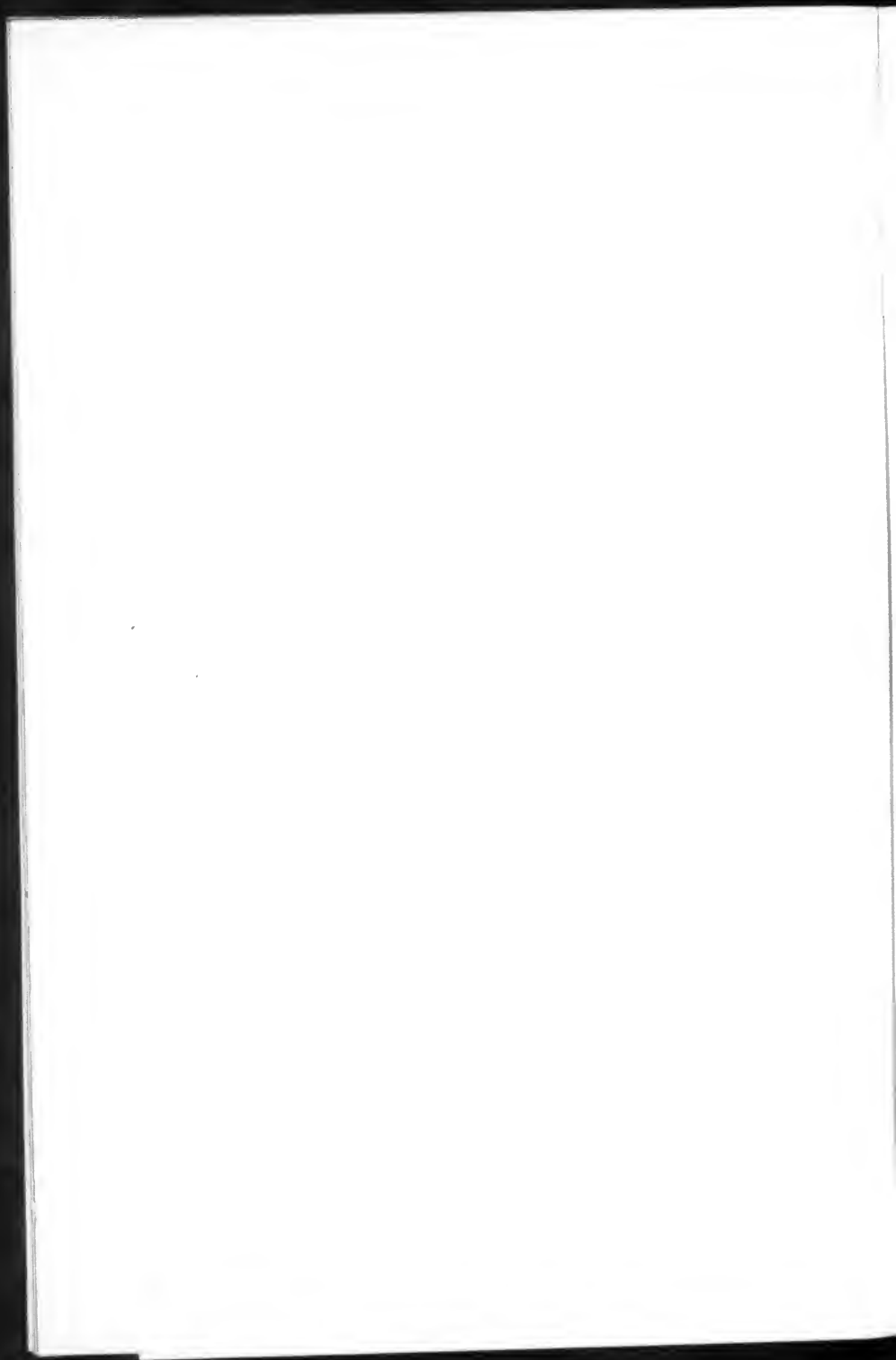
Recently the BULLETIN was criticised for publishing a large number of photographs from several countries and few from some others, but the persons making the criticism forgot that the first countries mentioned had provided the Bureau with an abundance of photographs, while theirs had sent practically none.

Again, it is natural and logical that there will be a period in one country when a large number of interesting events are occurring, when in another country nothing of special concern takes place; and yet in the succeeding month conditions may be exactly reversed. The casual reader will pick up a copy of the BULLETIN and wonder why countries in which he is specially interested do not receive more space. He overlooks the fact that very likely the previous issue, or the one following, may treat at



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length the subjects on which he seeks knowledge. The best evidence that the present editorial direction of the BULLETIN is successful is the fact that the demand for it now, from all over the world, exceeds the number of copies that can be printed within the present revenues of the institution. A year or two ago it was impossible to dispose of, to actually interested persons, the major portion of each edition.

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#### INCREASE OF TRAVEL TO LATIN AMERICA.

If the letters of prospective visitors to Central and South America which the Director is receiving from all parts of the United States are to be taken as evidence of the growing interest in that part of the world, the increase in travel in that direction over former years must be very large. It is particularly pleasing that the major portion of the persons making these inquiries state that they have been prompted to change their itineraries from Europe and the Orient to South America because of the propaganda of the International Bureau. Now that there has been a marked improvement in the passenger and steamship facilities between New York, in the United States, and Rio de Janeiro, Montevideo, and Buenos Aires, in South America, there are a greater number of travelers going direct than formerly went by the way of Europe. This in itself proves the advantage that would come to both North and South America if there were a special line of fast mail, express, and passenger steamers running between the principal ports of the Atlantic and Pacific coasts of North and South America.

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#### THE DIRECTOR HONORED BY ST. LOUIS.

One of the most delightful occasions in which the Director of the International Bureau has been invited to participate was the annual banquet, Saturday, December 12, at St. Louis, Mo., of the Latin-American and Foreign Trade Association of that city. Over 100 representative business men of St. Louis attended. Aside from delivering the address of the evening, the Director was the recipient of a certificate of honorary membership presented to him in a happy speech by Hon. David R. Francis, former governor of Missouri and president of the Louisiana Purchase Exposition. The certificate was inclosed in a beautiful silver case, upon which was this wording:

#### HONORARY MEMBERSHIP

Presented by the

LATIN-AMERICAN & FOREIGN TRADE ASSOCIATION OF ST. LOUIS

To the Honorable JOHN BARRETT

for his distinguished services to the country  
in promoting and cementing the entente cordiale  
with the countries of Latin America.

Dec. 12, 1908.



HONORABLE ROBERT BACON,  
Assistant Secretary of State of the United States.  
(Photo by Harris & Ewing.)

The president of this association for the ensuing year, elected at this meeting, was Mr. E. B. FILSINGER, who has recently made an extended trip through the Republics bordering on the Caribbean and Gulf of Mexico, and who is a recognized authority on Latin-American trade matters. The manager is Mr. JAMES ARBUCKLE, who is known all through the Central West as one who has devoted much attention to developing trade with our sister Republics. The association itself is doing an excellent work, and seems to have before it a prosperous future.

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#### LATIN-AMERICAN STUDENTS IN THE UNITED STATES.

It is interesting to note the increasing number of young men who are coming from the different countries of Latin America to attend the universities and technical schools of the United States. After study and experience in this country of North America they go back to their respective homes having a better understanding of the United States, and in their lives they will always exert influence in favor of a fair attitude toward North America. But if the right kind of sentiment is to develop throughout Pan-America, each year a certain number of young men from the United States should proceed to the principal universities and cities of the nations to the South in order to familiarize themselves with the peoples, government, history, and resources of that part of the world. On returning to the United States they will be in every case a nucleus of a body of men who will appreciate the progress and development of Latin America and awaken interest throughout the United States in the attainment of closer relations of commerce and friendship.

---

#### THE ASSISTANT SECRETARY OF STATE OF THE UNITED STATES.

Latin America has distinctly benefited by the presence and influence in the State Department of the United States of Honorable Robert Bacon, the Assistant Secretary of State. He has given particular attention and has devoted special study to the different American Republics, and, therefore, has been able to cooperate with Secretary Root in carrying out the latter's policy of developing closer relations of comity and commerce between the United States and her sister nations. Mr. Bacon brought to the State Department a well trained business mind and grasp of detail which have added much to the efficiency of that important division of the Government.

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#### FLAGS, COATS OF ARMS, AND HOLIDAYS.

The publication in the BULLETIN of articles, not only on the flags and coats of arms, but on the national holidays of the American Republics

is proving a popular feature. Large numbers of requests are being received, not alone from the United States, but from Latin America and Europe, for extra copies of the BULLETIN or of the color plate giving the coats of arms. The information in regard to the national holidays is attracting the attention of the teachers in the public schools, who state that their pupils are eager for instruction along this line, especially as they have never appreciated before the significance of the holidays of other countries than their own.

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#### ARGENTINE TRADE AND INDUSTRIES.

The paramount importance of agriculture among industries of Argentine is demonstrated by the trade returns for the first nine months of 1908, in which exports of agricultural products figure for \$213,465,029 in a total of \$297,546,227. As compared with the corresponding period of the previous year, the remarkable gain of \$67,058,968 is shown. The principal items are over 3,000,000 tons of wheat; more than 1,000,000 tons of corn; nearly 1,000,000 tons of linseed, and nearly a half million tons of oats. Areas under cultivation in the leading crops for 1908-9 show a gain of 5 per cent for wheat, 17 per cent for linseed, and 122 per cent for corn. The industrial census of the Republic recently taken reports 10,349 establishments in Buenos Aires, whose total capitalization is \$266,399,363 national currency, with annual sales amounting to \$534,644,925 and employing 118,315 workmen.

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#### BOLIVIAN COMMUNICATION FACILITIES.

Important government economic measures recently enacted in Bolivia are designed to further the delivery of native products at Pacific coast ports. It is also expected that the unification of the railway systems of the Republic may grow out of existing conditions. The present extent of road is about 400 miles of main line.

#### RIO DE JANEIRO AND OTHER LATIN-AMERICAN MUNICIPALITIES.

When so much attention is being paid all over the world to municipal organization and government, it is instructive to the student of this subject to note the administration of Rio de Janeiro, the great capital of Brazil. This city, which not long ago was regarded as too tropical and too much frequented with disease to be a popular point of travel and visit, is now fast becoming one of the so-called show cities of the Western Hemisphere. With a population rapidly approaching the million mark, it is doing many things in municipal progress which put to shame representative cities of the United States. The Government of Brazil has

displayed an enterprise in improving Rio de Janeiro and a pride in its national capital which could well be followed by the United States Government. Americans who have traveled much in Europe and who have recently toured South America are returning with remarkable stories of the favorable impressions they have received not only from Rio de Janeiro but from Montevideo, Buenos Aires, Santiago, Lima, Mexico, San Jose, and Havana, and there is little doubt but that commissioners appointed in the United States to study municipal administration would learn much to their advantage by making a tour of the capitals of Latin America.

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HONORABLE WILLIAM I. BUCHANAN.

Honorable William I. Buchanan, who was sent to Venezuela in December as the Special Commissioner of the United States, has had an interesting career as a diplomat and business man. There are few, if any, men in the United States better informed than he in regard to Latin America. Mr. Buchanan first came into public notice as the official in charge of the agricultural exhibit at the Chicago World's Fair. Following this he was appointed United States Minister to Argentina, where he signalized his administration by acting as arbitrator in a difficulty between Argentina and Chile. Upon his return to the United States he was made Director-General of the Pan-American Exposition at Buffalo. Other positions he has held have been: Delegate of the United States to the Second Pan-American Conference in Mexico, in 1901-2; first Minister of the United States to Panama, in 1903; Chairman of the United States Delegation to the Third Pan-American Conference in Rio de Janeiro, in 1906, and Representative of the United States in the Central American Peace Conference held in Washington in November and December, 1907. Aside from these official positions he has been connected with great business interests like the New York Life Insurance Company, and the Westinghouse Electric Company. Recently he has been instrumental in preparing the way for new treaties between Colombia and Panama, and the United States and Colombia.

SATISFACTORY STATUS OF CHILEAN REVENUES.

Recent reports from Chile indicate the rapid readjustment of the financial status of the Republic, the receipts from national revenues during the first nine months of 1908 showing a satisfactory balance over expenditures. As the main source of customs receipts is the exports of nitrate, the favorable outcome of the mission of Mr. ALEJANDRO BERTRAND in behalf of a nitrate propaganda throughout Europe is particularly gratifying.



HONORABLE WILLIAM I. BUCHANAN.

The eminent authority in Latin-American affairs, now special commissioner of the United States in Venezuela.

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## IMPROVEMENTS OF WATERWAYS IN SOUTH AMERICA.

At the recent rivers and harbors congress which was held in Washington for the purpose of awakening interest throughout the United States in the improvement of its waterways, both those of the coast and the interior, one of the principal addresses was delivered by the ambassador of Brazil, Mr. JOAQUIM NABUCO, who described the progress that is being made for the betterment of harbors and rivers in his country. The large number of delegates present from all parts of the United States were deeply impressed with the statements of Mr. NABUCO, and felt that the example of the sister Republic of Brazil was a particular incentive for the United States to do more for the development of its means of water navigation.

Only those people who have studied the map carefully appreciate the vast extent of coast line possessed by this South American country. On the Atlantic Ocean it has nearly as many miles of coast as has the United States on both the Atlantic and the Pacific, while the great volume of water in the Amazon River and its depth make it almost equivalent to an inland sea. Not only Brazil, but Uruguay, Argentina, Chile, and Peru are devoting much attention to the deepening and improvement of their rivers and harbors in order that they may be able to take care of the largest ships plying between their ports and those of Europe, the United States, and Japan.

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DEVELOPMENT OF BRAZILIAN INDUSTRIES.

The Republic of Brazil having long been preeminent as a rubber producer, has now decided to inaugurate local industrial application of the raw material. To aid this purpose a bill was recently introduced into the National Congress which exempts from import dues for three years all material and machinery required for the establishment of rubber factories. It is also proposed to introduce the latest modern methods in agricultural development, and with this end in view, through the agency of a syndicate charged with the work, a permanent exhibition of farm implements and machinery is to be installed in Para in June, 1909. That greater attention is being given to pastoral pursuits is indicated in a lengthy report submitted by the United States consulate at Rio de Janeiro, from which excerpts are published elsewhere in this issue.

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DOMINICAN DEVELOPMENT.

The Dominican Government not only is formulating extensive irrigation plans for the adequate cultivation of its land areas but has under consideration the construction of such railways as will place the

products of the country within easy reach of the coast. Special funds from government revenues are being set aside for this purpose. The recent establishment of an Academy of Fine Arts in the capital of the Republic is an earnest of the intellectual stimulus given by the Government to higher education.

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#### WORK OF HENRY MEIGGS IN SOUTH AMERICA.

Continuing the story of North American captains of industry in Latin America, there appears in this issue of the BULLETIN a sketch of HENRY MEIGGS. Had he done in the United States as much as he accomplished in South America his name would be familiar to every man who acquaints himself with the material development of the country. A leading characteristic of MEIGGS was his indomitable perseverance and courage. This was supported by a profound confidence in the future of South America and a knowledge of its splendid resources.

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#### PETROLEUM IN PERU.

The industrial application of petroleum as fuel for railroads renders of peculiar interest the report of the Society of Mining Engineers of Peru concerning the petroleum belt of that country. While not exploited to the extent commensurate with their possibilities, the wells are yielding in commercial quantities a steady flow of crude oil.

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#### ECUADOR AND THE PANAMA CANAL.

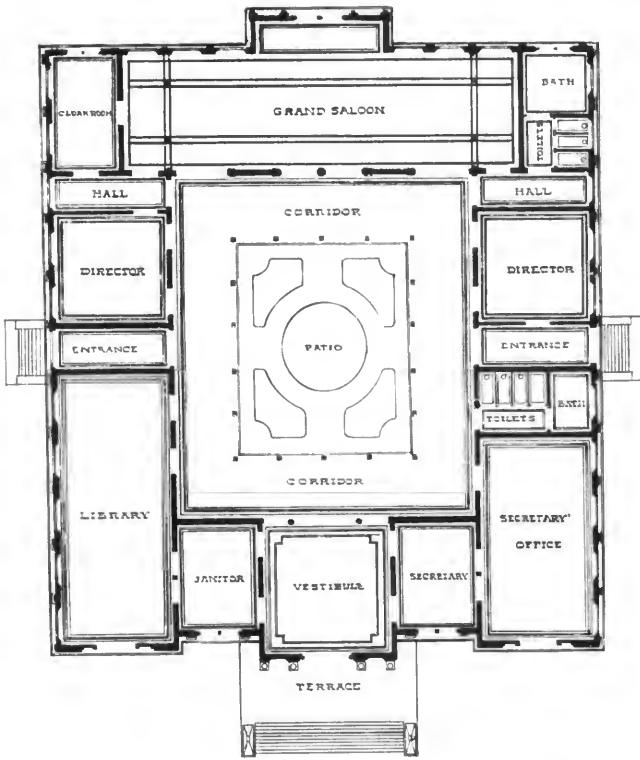
Ecuador's Government is keenly aware of the effect upon the economic future of the Republic to be brought about by the completion of the Panama Canal, and in a recent message of the President to the National Congress, a copy of which was forwarded to the International Bureau of the American Republics by United States Minister WILLIAMS C. FOX, it is urged that prompt measures be taken for the proper sanitation of Ecuadoran ports to meet future trade requirements. The chairman of the sanitation commission is Dr. B. J. LLOYD, of the Marine-Hospital Service of the United States, who has presented a comprehensive statement of the requirements to be met. Rail and tramway contracts in various cities of the Republic augur well for municipal development.

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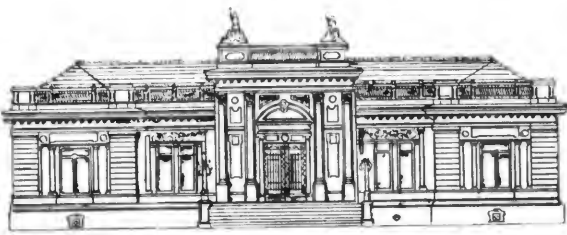
#### A NEW INTERNATIONAL STRUCTURE.

The ground plan and front elevation of the new home for the Central-American Court of Justice in Cartago, Costa Rica, are reproduced in





PLAN



PALACE FOR THE CENTRAL AMERICAN  
— COURT OF JUSTICE —

LIBAR

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this issue of the BULLETIN. It will be remembered that Mr. ANDREW CARNEGIE, who gave \$750,000 for the new building of the International Union, provided a fund of \$100,000 for the construction of this Central-American palace of justice. It will serve as the home for one of the most important institutions that has been organized by international action during the past century. All the world is watching the work of the Central-American Court of Justice, and if it accomplishes what is hoped by the countries which were represented at the Central-American Peace Conference in Washington in November and December, 1907, it will mark the most forward step toward international arbitration that has been taken in modern times.

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#### THE INTERESTING STORY OF TOBACCO.

The series of articles which are being published in the BULLETIN on the great natural products of Latin America are being widely read and copied, and hence it can be said that they are doing much good in educating the people of other countries concerning the possibilities of Latin America. The stories of cacao and coffee opened the eyes of the majority of people who have never understood exactly how these products were grown and distributed. In this issue is taken up the topic of tobacco, which perhaps appeals to a larger percentage of people than any other because of the general use of this plant. It is entirely impossible within the limits of a brief article to do justice to this subject, but some facts and data not generally known are presented in a way to make the article worth reading.

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#### MEXICAN COMMERCE AND DEVELOPMENT.

Figures of Mexican commerce for the first quarter of 1908-9, while showing a decline as compared with the same period of the preceding year, still leave the trade balance in favor of the Republic. In the total of \$43,000,000 gold, exports figured for nearly \$26,000,000, as against \$17,000,000 for imports, whereas for the corresponding period of last year the trade balance was about \$2,000,000. The reduction of the duty on wheat, necessitated by the shortage of that cereal, will greatly augment imports of that staple in the immediate future, while on the other hand the manufacture of steel rails within the country will cause a decline in receipts from abroad. The operations of the railroad merger have been favorably reported upon by Minister LIMANTOUR, and the opening of the line from Manzanillo to the interior, scheduled for December 12, will open up new opportunities for Pacific coast trade, for which several steamship companies have made preparations, with services as far north as Puget Sound. The satisfactory settlement of the mining question

Dr. Benjamin F. Zeledon, Nicaragua.

Dr. Carlos Guillen, Salvador, Treasurer.

Dr. Manuel F. Barahona, Honduras.



Ricardo J. Echeverria, C. E., Costa Rica, President.

Dr. José Pinto, Guatemala.

INTERNATIONAL CENTRAL AMERICAN BUREAU.

will give an impetus to this branch of development, in connection with which publicity is given in this issue to the report on zinc production in Chihuahua by United States Consul MARTIN.

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AN EXPRESSION OF BRAZILIAN APPRECIATION.

The ambassador from Brazil in the United States, Mr. JOAQUIM NABUCO, has transmitted to the Director of the International Bureau of the American Republics an appreciative letter addressed to him by the Brazilian delegate to the Sixteenth National Irrigation Congress, LAURENCE BAETA-NEVES, in regard to the reception he received while in the United States. The trip through the Pecos Valley, in New Mexico, and the study of irrigation in that section are stated to have been productive of much valuable information, which may be profitable in developing the semiarid lands of northern Brazil. Apart from the professional courtesies extended him, Mr. BAETA-NEVES specifically acknowledges the many personal attentions shown him and pays the following tribute to Ambassador NABUCO:

For the interest which our Republic is arousing in the minds of the people of North America, we Brazilians are greatly indebted to yourself, who have ever been the indefatigable apostle of the closer union of the two great Republics of the north and south.

A TALK ON BRAZIL, BEFORE A BOYS' SCHOOL.

As illustrating the interest which schools and other institutions of learning in the United States are now showing in the republics of Latin America, the Bulletin records that an invitation was extended by Peddie Institution, located near Princeton, New Jersey, to Major Kerbey, of the staff of the Bureau, to deliver an address on Brazil. Major Kerbey spoke to the boys attending this school last December, and it is hoped that his talk awakened a new interest among the students in the Southern nations. This institution, like many others in the United States, is endeavoring to attract Latin American students to the United States, and at present has several boys from that part of the world on its rolls.

## WHAT IS IN THE MAGAZINES

A comprehensive survey of the banking system of Mexico is made by CHARLES A. CONANT for the December, 1908, number of "The Bankers' Magazine," the statement being made that "the Mexican Government has not hesitated to adopt, both in banking and in coinage, constructive policies differing in some respects from those of most other nations, but based upon careful study of general economic principles as adapted to the special conditions prevailing in the Republic." Under President DIAZ, the Minister of Finance, Señor J. Y. LIMANTOUR, brought uniformity into the banking organism of Mexico by the law of March 19, 1897, the aim of which policy was to make of Mexico a modern commercial state. The banks were required to maintain actual cash to the amount of 50 per cent, and the minimum capital of a bank of issue was fixed at \$250,000 gold. The work of the International Exchange Commission resulted in the adoption of the gold standard in December, 1904, and by June 30, 1907, gold had become the predominant element in Mexican bank reserves, while silver had fallen to a purely subordinate position. The total resources of Mexican banks of issue on that date were \$613,311,843, the increase in capital as compared with the same date ten years previous being fourfold; of notes, nearly twofold; of metallic reserve, nearly twofold, and of current accounts, sixfold.

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A trip over the southern campos of Brazil is charmingly described by ROBERT DEC. WARD, Harvard University, for the November "Bulletin of the American Geographical Society." This journey, which occupied a week in passing from Rio de Janeiro to Ponta Grossa, with stops of thirty-six hours in São Paulo and in Faxina, was made in part over the Central Railway, a road owned by the Brazilian Government and forming a portion of one of the largest systems in the Republic. From São Paulo the Sorocabana road carried the traveler to Itararé, from which point connection was made with Rio Grande Railways by means of one of the typical trolleys of the country. The wide stretches of campos, qualified for both agricultural and pastoral production, are made the subject of comment and prophecy in the light of the spirit of South American growth and development, induced by the width of horizon offered in journeying across them. The efforts being made to establish adequate rail connection between the points visited are an earnest of

the wonderful future of these regions, which only need an influx of population to be transformed into pastures and farms of incalculable value. The same "Bulletin" notes the Manabi antiquities of Ecuador as of archaeological value.

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Under the title *La Naranja y su Industria*, in the Spanish edition of "The Scientific American" for December, 1908, an interesting account is given of the development of the culture in California of the "navel" orange, or *Naranja de Bahia*, as it is called in its Brazilian home. The introduction of the variety of orange in the early seventies is regarded as one of the most important epochs in the history of the industry in the State, and the two trees originally planted are objects of interest—one in the city of Riverside, at the entrance of Magnolia avenue, and the other in the patio of Mission Inn, having been transplanted with the assistance of President ROOSEVELT in May, 1903. The citrus industry of California has shown steady development from 1880, when it first assumed importance, until the present time. In 1886 the yearly dispatch of fruit required 1,000 railroad cars, each of which contained 300 boxes. Between 1890 and 1895 from 4,000 to 7,000 carloads were shipped, and from 1900 to 1907 the movement of the crop required from 25,000 to 32,000 cars annually, the number of boxes being from 6,000,000 to 11,000,000, with a monetary value of \$25,000,000 to \$32,000,000. The paper in reference is a translation of Bulletin 123 of the United States Department of Agriculture, by G. H. POWELL.

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The first of a series of articles on opportunities in Latin America to be contributed to "The Independent" by JOHN BARRETT, Director of the International Bureau of the American Republics, appears in the issue of that magazine for December 3, 1908. Brazil, and its wonderful possibilities as a source of the world's food supply, is considered. Apart from the exports of coffee, valued at \$142,000,000; of rubber, \$70,000,000; and cacao, worth \$10,000,000, the vast reaches of the Republic grow cotton, sugar, and tobacco greatly in excess of native requirements, while market vegetables and fruits of unsurpassed flavor in great abundance may be classed among the exportable products of the future. Cabinet and dyewoods abound in the Amazon forests, while the water power of the country is well termed enormous. It is with the purpose of stimulating the development of national and international interest in these marvelous resources that the paper referred to is written, and to initiate an active propaganda on the part of the United States to adequately enter the commercial field described.

In its issue for October, 1908, No. 10, Year XXV, the "*Boletín de la Sociedad de Fomento Fabril*" (Santiago, Chile), publishes an account of the achievements of the *Sociedad de Fomento Fabril* (Manufacturers' Association) during twenty-five years. This organization came into being in October, 1883, as the result of a communication from the then Minister of the Treasury, DON PEDRO LUCIO CUADRA, proffering his cooperation in the establishing of a corporate body charged with the promotion of manufacturing interests in the Republic. From its first years, the association has given attention to industrial teaching, and many schools of importance in arts and crafts have been established throughout the country. It has aided in encouraging efficient immigration and has been foremost in organizing and carrying to a successful termination numerous expositions of both national and international products. It has been instrumental in effecting tariff modifications for the general welfare, and is in every way an invaluable agent in the promotion of Chilean enterprises.

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"The Mining Journal" of recent issues, July to November, 1908, publishes under the caption "Twenty-five Years of Mining" a retrospective review, 1880-1904, of mining companies registered in Great Britain, with notes and comments and the names and capital of the principal registrations. The number for November 28 covers the field of Mexico and Central America, the capital invested in the former being given as £30,060,478, and in the latter £5,264,550, while the number of companies is stated as 184 and 41, respectively. The next paper will cover the South American division of British mining investments.

In the same journal the petroleum-bearing zone of Northern Peru is described, special abstracts being made by F. V. MASTERS from the "*Boletín del Cuerpo de Ingenieros de Minas del Perú*," of which the MONTHLY BULLETIN has availed itself in preparing a paper on the same subject.

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"The American Fertilizer" for November, 1908, reproduces the report of United States Consul REA HANNA, Iquique, Chile, on the nitrate fields of the Republic, which gives the total available and workable quantity of nitrate in the various producing provinces as 4,843,000 Spanish quintals (101.61 pounds). Extraction processes are stated to have been severely criticised, and serious study is being made of better methods.

In the same number is the conclusion of the paper by ROBERTO E. CÓKER, of Lima, Peru, on the conservation of guano, a system of rotation being proposed whereby the islands on which the product is

found will be divided into two groups and exploited alternately. The establishment of a closed season for five months each year has proven a wise measure, but is not regarded as conducive to the best results.

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"The New Dominican Republic" is the title of a valuable contribution to "Dun's Review" for December, 1908, by CHARLES T. MASON. Tribute is paid to the progressive spirit animating President CACERES in all his efforts to promote the welfare of his country and the industrial and historic value of the Republic is demonstrated. Irrigation is described as an important feature in general development, whereby a large district adapted for agricultural and pastoral industries is being reclaimed. Sugar, bananas, and tobacco are among the products grown in exportable quantities, while the growing of cacao is receiving added attention. The large timber lands of the Republic are awaiting intelligent exploitation, and abundant water power offers opportunities for manufacturing enterprises.

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No. 3345 of the Daily Consular Reports issued by the Department of Commerce and Labor of the United States contains the report made by Consul GEORGE E. ANDERSON, of Rio de Janeiro, in regard to the exposition of national products held in that city during the summer of 1908. Mr. ANDERSON states that the displays of industrial enterprises formed probably the greatest point of interest, the chief element being contributed by the cotton factories. These factories constitute more than one-third of the value and output of all native industries, and many attractive exhibits of cottons, silks, and woolens were made. Another section of interest was that devoted to the exhibit of United States machinery, both manufacturing and agricultural, and it is anticipated that a trade development to the mutual benefit of both countries will result from the exposition.

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"The Outing Magazine" for December contains an account of what the writer, W. T. BURNES, declares to be the most interesting and exciting trip of his life over the river courses of Peru. The rendezvous for the adventuring party was the Inambari River, reached after a railway trip from the Pacific port of Mollendo to Tirapata, a distance of 350 miles, thence 150 miles by mule back over the last great ranges of the Andes and the Aricoma Pass, followed by a rapid descent of 15,000 feet to the Inambari Basin. Subsequent journeyings down the Huacamayo, the Tavora, the Tambopata, and the Madre di Dios rivers are described, the article being illustrated by photographs of localities and inhabitants of the region traversed.



"The Bankers' Magazine" for November comprises, in its section devoted to Latin America, articles covering the following subjects: Commercial paper in Mexican banks; what South America offers us (the United States); Mexico and the United States, an appreciation of the latter country by Minister LIMANTOUR; our trade with Mexico; Agricultural bank in Brazil; six Mexican credit institutions; Harri-man plans in Mexico; Mexico's irrigation plan; foreign capital in Mexico; Mexican credits; Brazilian monetary circulation; National Railroad of Mexico; promoting trade with Latin America, and notes of general importance and interest.

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The Pacific islands form the subject of the eighth paper on "Coffee Culture and Preparation," now in course of publication by the "Tea and Coffee Trade Journal," and in the December number L. LODIAN gives first place to Hawaii in considering their relative productive capacity. The yearly production ranges from 25,000 to 33,000 bags, and it is calculated that there are over 250,000 acres of fair coffee land available. Of less desirable sections there are about 200,000 acres, so that the possible output of the Hawaiian group is estimated at about 170,000 tons, valued at approximately \$35,000,000. The possibilities of Guam, the Philippine Islands, the French Pacific Islands, the Samoa group, and the Fiji Islands are also reported on.

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Editorial comment in the numbers of "Collier's" (New York), for November 21 and 28, deals with possibilities for American capital in Latin America and the festivals of Minerva in Guatemala, respectively. The latter subject is also extensively reported on in the December issue of "Industria" (London). The inauguration of these fêtes at the close of the Guatemalan school year in October is one of the means adopted by the Government to create a popular interest throughout the Republic in the cause of education.

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Publication is made in "The Publishers' Weekly" (New York), for November 21, 1908, of the Pan-American copyright convention as signed at the city of Mexico in 1902, and ratified by the Senate of the United States on January 31, 1908, and by the President on March 16, 1908. Although the convention signed at Rio de Janeiro in August, 1906, provides by its tenth article that "the provisions contained in the treaties of Mexico of January 27, 1902, shall be considered as replaced by the provisions of the present convention," the third, or Rio convention, has not been ratified by the United States, and therefore is still inoperative, so far as concerns the United States.

Published in El Paso, Texas, the "*Revista Ilustrada*," under the direction of Señor DON CAMILO PADILLA, is a monthly periodical devoted to industry, commerce, literature, and art. It has circulation in various countries of Latin America, and in the statement made by its editor to the Department of State of the United States, is designed to aid in establishing better commercial and social relations between the countries covered. Typographically it is excellently gotten up, and as an enterprise it is worthy of cooperation on the part of business men generally.

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In continuing its report on "The Coffee Industry of Spanish America," the "Spice Mill" for December, 1908, covers the production and possibilities of Salvador. The present output of the Republic is given as about 500,000 bags, and, as the land available for coffee planting is limited, this quantity is probably the maximum yield for many years. The Santa Ana region is most favorable for the culture, and cultivation and dressing processes have made notable progress in recent years.

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The "Pan-American Magazine," with its issue for November, 1908, begins its seventh volume and is replete with its usual collection of information of value to Mexican trade and industries. The initial article is devoted to Guanajuato, the great mining State of Mexico, while other papers describe the charms of Cuernavaca, the future of the Tehuantepec Railroad, the forests of Guerrero, and other centers of interest, while a specially illustrated section is devoted to the musicians of the capital.

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To the Christmas number of "Harper's Magazine" THOMAS A. JANVIER contributes another paper on Mexican folk-lore. Some of the legends of the city of Mexico as current universally among the common people are narrated with the well-known skill of the writer. The stories of the living specter of the Plaza Mayor and of the burned woman commemorated in the naming of the Calle de la Quemada are told. Similar legends have been published in previous numbers of this magazine.

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In "*La Enseñanza Normal*" (Mexico) for September, 1908, is a series of papers treating of instruction in other lands, the republics of Chile, the Argentine, Paraguay, Salvador, Haiti, and Uruguay being covered by notes showing the number of pupils, the various educational institutions, and the efforts being made by the respective governments to facilitate progress in scientific and professional lines.

"The Outlook" for December 12, 1908, contains a critical analysis of PORFIRO DIAZ and Mexico in 1908, based upon the book by RAFAEL DE ZAYAS ENRIQUEZ and translated by T. QUINCY BROWNE, jr., D. Appleton & Co., New York. Tribute is paid to the high character of the services rendered his country by President DIAZ, and the statement is made that the year 1909 will be of epoch-making importance across the Rio Grande.

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With its issue for July, 1908, the "*Revista Universitaria*," organ of the University of San Marcos, at Lima, enters upon its third year. The publication, of which numbers from July to October, inclusive, have been received by the Columbus Memorial Library, covers a wide range of subjects, scientific and literary. As an exposition of the best culture of Latin America, this University Review is of great value.

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No. 3270 of the Daily Consular Reports of the Department of Commerce and Labor of the United States publishes reports from various South American countries concerning the trade in books. The Argentine Republic, Brazil, Chile, Colombia, Ecuador, and Peru are covered by the consular officers stationed in the republics.

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"The National Druggist" for November, 1908, announces the approaching publication of a Spanish revision of the United States Pharmacopœia for the benefit of Spanish-speaking pharmacists in the colonies and those of Mexico, Cuba, and Spanish America in general. The index is being prepared by Prof. J. G. DIAZ, of the University of Havana, Cuba.

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"Modern Miller" for December 12, 1908, comments on that section of the report of the Director of the International Bureau of the American Republics in which it is stated that the paramount necessity in the increase of trade between the Americas is the establishment of adequate steamship service.

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With the purpose of meeting the demand for literature in Spanish, the "South American Journal," of London, is publishing a supplement to its editions in that language. The subjects covered include trade, industries, and economic questions adequately discussed.

From Guatemala the Columbus Memorial Library has received an attractive pamphlet, "*La Sinceridad*," setting forth the values attached to education in the Republic and dedicated to the youth of the country participating in the October festival of Minerva.

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Under the title "America for the Americans," THOMAS HANLY contributes to the "Van Norden Magazine" for December, 1908, an appreciation of the work done by the International Bureau of the American Republics.

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In its consideration of agricultural products the November, 1908, issue of "Tropical Life" reports on the future of guayule and the Brazilian cacao output, in general terms.



## LATIN-AMERICAN NOTES

The Argentine Republic has 262 merchant vessels with an aggregate of 150,000 tons.

Chile's merchant fleet consists of 153 vessels with an aggregate of 158,000 tons.

The estimated output of sugar in the Argentine Republic for the season of 1908 is about 161,000 tons.

Brazil's merchant fleet comprises 386 vessels, of over 100 tons burthen, with an aggregate carrying capacity of 236,340 tons.

There are 5,107 kilometers of telegraph lines in Bolivia, and 152 telegraph offices, or an office for every 33 kilometers of line.

A German company has been authorized to lay and operate a submarine telegraph cable between the Brazilian coast and the island of Teneriffe.

The Government of Uruguay has authorized the Mortgage Bank of Montevideo to issue a new series of mortgage bonds to the amount of \$3,000,000.

The Brazilian Congress has ratified the agreements signed at Rome authorizing the establishment at Paris of a public health department and an international agricultural institute.

The sugar crop of the State of Pernambuco for the season ending August 31, 1908, amounted to 1,170,869 bags, against 1,478,462 bags in 1907, or a decrease of 307,593 bags. The state government has suspended temporarily the surtax imposed on sugar exports.

The coffee planters of the States of São Paulo, Minas Geraes, and Rio de Janeiro, are considering holding a congress in January, 1909, for the purpose of discussing the measures to be adopted by the respective States in order to solve the coffee crisis.

Work has been begun on the mercury mine recently discovered in the State of Minas Geraes. The mine is located near Tripuhy station of the Ouro Preto branch of the Brazilian Central Railroad. Brazil is one of the few countries of the world possessing mines of this useful mineral.

The messages forwarded in Bolivia in 1900 by telegraph aggregated 1,281,610 words, and those received 1,302,634 words, while in 1907 the number of words transmitted was 4,638,552, and the number received 4,827,949. During the first quarter of 1908 the figures were 1,313,551 and 1,361,369 words, respectively.

The steamship *Goyaz*, which sailed from New York, December 6, 1908, for Belem (Pará) and points on the Amazon River, Brazil, carried about 60 Americans who go there in the expectation of finding employment in the construction of the Mamoré-Madeira Railway.

The girasol or sunflower opal is found in abundance in Mexico, the best stones being obtained from the State of Queretaro, about 100 miles northwest of the capital city. These opals are noted for their variety and brilliancy of hue and the delicacy of their coloring, embracing a wide range and combination of green, blue, violet, and reddish tints.

A statement issued by the United Fruit Company shows a total of about \$18,320,000, American gold, invested in the Republics of Santo Domingo, Cuba, Honduras, Guatemala, Colombia, and Panama on September 30, 1907. Of this amount nearly \$3,000,000 was in railroads. About four-ninths of the total is in Costa Rica, one-third in Cuba, one-sixth in Panama, and the balance in Honduras, Guatemala, and the Dominican Republic.

The railways in the Argentine Republic, although owned and operated by private companies, are effectively controlled by the railway department of the Government, so much so that they can not alter their rates of transportation or time tables, or make any other change or alteration, without the approval of that department. They are, likewise, obliged to submit their balance sheets and such statistical data as may be required, for inspection.

A novel experiment for the control and regulation of the price of meat and other foodstuffs has been tried by the municipality of Buenos Aires, and has proved entirely successful. A number of open markets was established in different public squares, where meat and groceries were sold at a little above cost prices. This brought the butchers and grocers to terms and they agreed to submit their selling prices to the municipality from time to time, and allow it to exercise control over them.

A gold medal has been awarded Miss Annie S. Peck by the Peruvian Government as a testimonial of the value attached by Peru to her remarkable ascent of Mount Huascaran in the summer of 1908. The legend on the medal, as prescribed by presidential decree, embraces, on the obverse, the words "Mount Huascaran—24,000 feet;" and on the reverse, "The Government of Peru to Ana S. Peck—First on the summit of Huascaran." Tribute is paid to such explorations of national territory and to the important geographical and industrial data obtained thereby.

## THIS MONTH IN PAN-AMERICAN HISTORY

- January 1, 1532.—MARTIN AFFONSO DE SOUZA entered the bay on which is situated the present capital of Brazil, and, believing it to be a river, named it Rio de Janeiro (River of January).
- 1804.—Haiti renounced allegiance to France.
- 1808.—The United States abolished the importation of slaves.
- 1817.—Gen. SIMON BOLIVAR returned to Venezuela from abroad to spend the remainder of his life in America.
- 1818.—Chile declared her independence from Spain.
- 1825.—First Constitutional Congress of Mexico convened in the City of Mexico.  
Great Britain recognized the independence of the new Republics of South America.
- 1863.—ABRAHAM LINCOLN'S Emancipation Proclamation issued.
- 1874.—First locomotive arrived at Lake Titicaca, Peru, over the new line crossing the Andes at an elevation of 14,660 feet.
- 1896.—Appointment of United States Commission of Inquiry into the Venezuelan-British Guiana boundary dispute.
- 1899.—The last Spanish troops in Cuba sailed for Spain.
- January 2, 1850.—Treaty of amity, navigation, and commerce between Salvador and the United States signed.
- 1890.—First Pan-American Conference, convened in Washington, indorses a Pan-American railway project.
- January 3, 1530.—Spanish Explorer SALCEDO died at Trujillo, Honduras.
- 1777.—General WASHINGTON defeated the British at Princeton, New Jersey.
- 1847.—The independence of Argentina recognized by Sweden and Norway.
- January 4, 1493.—COLUMBUS sailed from Hispaniola (Dominican Republic) and Haiti for Spain, returning from his first voyage.
- January 6, 1503.—COLUMBUS, on his last voyage, anchored at the mouth of the Santa Maria de Belen River, Panama.
- 1789.—Birth of Col. MANUEL MEDINA, famous Argentine patriot, in Buenos Aires.
- 1866.—Battle of Tlaxlaco, Mexico, with the patriot army under the command of Gen. PORFIRIO DIAZ.
- January 7, 1530.—FRANCISCO PIZARRO sailed from Spain on his third and last expedition for the conquest of Peru.
- January 8, 1766.—The Falkland Islands transferred to the sovereignty of Great Britain, by right of conquest, from Spain.
- 1815.—The British Army repulsed by Gen. ANDREW JACKSON'S army at New Orleans, United States.
- 1847.—The treaty of claims promulgated between Peru and the United States.
- January 9, 1788.—JULIÁN BALTASAR ALVAREZ, jurist and patriot, born in Buenos Aires.
- 1793.—First balloon ascension in America, by FRANCOIS BLANCHARD, at Philadelphia, Pa., was witnessed by President WASHINGTON.
- 1823.—FRANCISCO BILBAO, philosopher and writer, was born in Santiago de Chile.

- January 10, 1863.—French squadron bombarded Acapulco, Mexico.
- January 11, 1861.—BENITO JUAREZ entered the City of Mexico at the head of the patriot army.
- January 12, 1520.—FERNANDO DE MAGALLANES, sailing under the flag of Spain, entered the Rio de la Plata in search of a passage to the East Indies.
- 1822.—Gen. SAN MARTIN, in Lima, Peru, founded the Order of the Sun, to be bestowed on heroes of the cause for American liberty.
- 1863.—Treaty of claims concluded between Peru and the United States.
- January 13, 1807.—Sir HOME POPEHAM sailed for England after an unsuccessful attempt to conquer Buenos Aires.
- 1815.—Gen. SIMON BOLIVAR'S army, in the war for the independence of New Granada, arrived at Santa Fé, Colombia.
- 1854.—Death of Brig. Gen. FRUCTUOSO RIVERA, of Uruguay, a well-known patriot, and first President of the Republic (1830).
- January 14, 1864.—Peru declared war against Spain.
- January 15, 1903.—First Customs Congress of the American Republics assembled in New York, with representatives from thirteen countries.
- January 16, 1876.—Opening of the International Exposition in Santiago de Chile.
- January 17, 1706.—BENJAMIN FRANKLIN, philanthropist, philosopher, and statesman, born in Boston, Mass.
- 1891.—GEORGE BANCROFT, historian and diplomatist, died at Washington, D. C., at the age of 90 years.
- January 18, 1535.—PIZARRO founded Lima ("the city of the kings"), Peru, named in honor of the Spanish monarchs.
- 1807.—British troops landed in Uruguay for an attack on Montevideo.
- 1814.—Gen. SAN MARTIN appointed commander in chief of the armies of Argentina and Peru.
- 1878.—Boundary treaty between Argentina and Chile signed at Buenos Aires.
- January 19, 1850.—Treaty of claims promulgated between Brazil and the United States.
- 1861.—BENITO JUAREZ reelected President of Mexico.
- January 20, 1726.—The city of Montevideo, Uruguay, founded by Governor ZARVALA.
- 1818.—Proclamation of the independence of Chile, at Talca, Chile.
- 1830.—The Congress of Colombia inaugurated in Bogota, by SIMON BOLIVAR.
- 1902.—The "Convention of Peace and Obligatory Arbitration," concluded by Costa Rica, Guatemala, Honduras, Nicaragua, and Salvador, at Corinto, Nicaragua.
- January 22, 1532.—The port of Santos, Brazil, founded by MARTIN AFFONSO, commander of a Portuguese squadron, who named it Sao Vicente.
- 1808.—KING JOHN, of Portugal, arrived at Bahia, Brazil, having transferred his court from Lisbon to that country on account of the unsettled condition of affairs in the mother country.
- 1891.—Inauguration of Marshal MANOEL DEODORO DA FONSECA, first President of the Republic of Brazil.



- January 23, 1873.—The railroad from Mexico City to Veracruz, Mexico, was opened to the public.
- January 24, 1866.—Decree of amnesty promulgated by General MELGAREJO after the battle of Viacha, Bolivia.
- January 25, 1819.—The Argentine ships of war *La Argentina* and *Chacabuco* captured a Spanish brigantine off the coast of Mexico.
- January 26, 1500.—VICENTE YÁNEZ PINZÓN, a Spanish navigator, discovered Cape San Agustín, Brazil, and the mouth of the Amazon River.
- 1654.—The city of Pernambuco, Brazil, was surrendered to the Portuguese by the Dutch.
- January 27, 1804.—HERMAN ALLEN appointed first minister to Chile from the United States.
- 1825.—Death of Col. MANUEL JOSÉ SOLER, an Argentine patriot in the War of Independence.
- 1893.—JAMES G. BLAINE, who convened the First Pan-American Conference, died at the age of 63 years.
- January 28, 1860.—Nicaragua assumed the protectorate over the Mosquito coast, ceded by Great Britain.
- 1875.—Promulgation of the treaty of claims between Mexico and the United States.
- 1893.—Promulgation of the treaty of claims between Chile and the United States.
- January 29, 1810.—Execution of Gen. DOMINGO MURILLO, father of Bolivian independence, who uttered the memorable words: "The torch which I have lighted shall never be extinguished."
- 1825.—The Spaniards evacuated La Paz, Bolivia, delivering the city to Gen. JOSÉ MIGUEL LANZA, commander of the patriot army.
- 1890.—Republic of Brazil recognized by the United States of America.
- January 30, 1807.—An Argentine expedition left Buenos Aires to aid Montevideo, Uruguay, which was besieged by British troops.
- 1843.—A treaty of claims was signed by Mexico and the United States.
- January 31, 1830.—Birth of JAMES G. BLAINE, American statesman and promoter of the Pan-American idea.
- 1902.—The Second International Conference of American States, sitting in the City of Mexico, adjourned.



# MUNICIPAL ORGANIZATION IN THE LATIN - AMERICAN CAPITALS    ::    ::    ::    ::

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## RIO DE JANEIRO.

**I**N natural beauty few cities of the world can compare favorably with Rio. It is Naples and Stamboul, as seen from the sea, with hundreds of the choicest bits of the Morea and the islands of the Aegean and the grandeur of the Norwegian fjords rolled into one.

Fifteen years ago it might have been said with truth that in this nature's chef d'œuvre the handiwork of man appeared to no great advantage. Rio, in area one of the largest cities of the world, was a more or less disjointed group of small villages thrust in here and there between the mountains on the west of the great bay. It appeared broken and disconnected, a congeries of settlements, stretching around the sweep of the more or less inaccessible shore, with incursions here and there between the hills or up their slopes. On a nearer view the impression was more favorable. There were even then many beautiful buildings and parks. There were even places where one might say: "Here man has wrought worthy of his surroundings." But as a whole the city was disappointing. Perhaps most of all because it lacked unity and because nature pressed too heavily upon the observer and demanded too much.

All of this is changing, and most of it is already changed. Fifteen years has worked a marvel in the city, as great as a tale from the "Thousand and One Nights." Rio de Janeiro has been made over. It has been joined together. It is unrecognizable, but it is becoming beautiful. No such work in a city has ever been done before, except perhaps when Haussmann cleft Paris through and through into a half dozen great avenues, or when Peter built his capital on the Neva.

Many projects for the rebuilding or improvement of Brazil's capital were conceived prior to 1893, but the plan which finally took shape followed the installation of President RODRIGUES ALVES in 1892. He appointed as secretary of public works Senator LAURO MÜLLER, an engineer, and earnest advocate of the rebuilding plan. It was decided to begin the work, and for this purpose two loans were contracted, one a foreign loan of \$40,000,000, the other a domestic loan by the municipality of \$20,000,000. With these funds the work was begun in virtue of the decree of September 18, 1903.



**AVENIDA CENTRAL, RIO DE JANEIRO, BRAZIL.**

The construction of this avenue was commenced November 15, 1905, and completed in twenty-two months, at a cost of about \$11,500,000. The roadway is 250 feet wide and the roadway 62 feet. In the center of the street is a row of 55 electric clusters, each with three lamps, placed alternately with 30 Pau Brazil trees, planted in beds 15 feet long by 6 feet wide.

In brief the plan was:

First, the construction of a quay following in general the shore line 3,500 meters long ( $2\frac{1}{2}$  miles):

Second, the construction of a large avenue parallel with the quay and of the same length:

Third, the rectification and prolongation to the sea of the canal known as Mangue, with an avenue on either side nearly 2 miles (3,000 meters) in length and 131 feet in breadth, lit by electricity:

Fourth, elevation of the railroad bed and construction of an avenue following the line of Francisco Engenio street up to the Quinta do Boa Vista, the residence of the late Emperor DOM PEDRO;

Fifth, enlargement of the city water supply taking in all the nearby sources:



THE WATER FRONT, RIO DE JANEIRO.

Showing a portion of the Avenida Beira-Mar, a 6-mile boulevard skirting the bay. It is not an exaggeration to say that this avenue is unsurpassed in picturesque beauty and variety by any driveway of equal length in the world. On the occasion of the visit of ex-President General Julio Roca, of Argentina, in 1907, it was gorgeously illuminated throughout its entire length, as a feature in the scheme of entertainment in honor of that distinguished guest.

Sixth, revision of sewerage system:

Seventh, construction of an avenue,  $1\frac{1}{2}$  miles (1,996 meters) in length and 108 feet (33 meters) broad. This is the Avenida Central:

Eighth, cutting down certain hills in the city;

Ninth, widening the streets crossing the Avenida Central.

These plans were almost immediately enlarged through the suggestion of the incoming mayor of the city, Dr. FRANCISCO PASSOS, who was selected by President RODRIGUES ALVES as an aid to Doctor MÜLLER. The new improvements contemplated the widening of many other streets, the construction of a bay-side drive,  $4\frac{1}{2}$  miles long and 115 feet wide (7,000 meters and 35 meters), repaving the streets with asphalt, and other works for embellishing the city.

The improvement of the shore line was a work of the greatest magnitude. It involved the building of a stone quay over 2 miles in length along the east front of the city. The quay is built in many places at a considerable distance out from the old shore and incloses several islands and small bays. In front the harbor is dredged to a depth of 10 meters (32.8 feet) to a distance out, and following the line of the quay for 250 meters (820 feet). This forms a broad ship channel along the face of the quay. Back from the quay the land has been filled in to a depth of from 12 to 40 feet and an avenue 100 meters in width (328 feet) has been constructed following the line of the new shore.

This avenue is apportioned in three strips—a paved thoroughfare of 40 meters (131 feet) lined with rows of trees, then a strip of 35 meters for business houses and offices, then 25 meters for railway tracks. The whole quay is finished with the most modern hoisting, loading and unloading machinery and devices, and there are two electric plants for furnishing power and light.

Under the contract of September, 1903, the quay work which was begun in March, 1904, must be completed by July 1, 1910.

More striking perhaps than even the quay works has been the construction of the great Avenida Central, running in a straight line from sea to sea and serving as the principal outlet from the congested business section. The avenue is 1,996 meters long (6,500 feet) and 33 meters wide (108 feet). Over 600 buildings were demolished in preparing the way, 3,000 laborers working night and day. Trees are planted along each side and in the center. There are also flower beds in the center.

Some of the most beautiful and imposing buildings in Rio have been erected on the Avenida Central.

Another great avenue opened is the Avenida Beira Mar, the bay-side avenue. This is nearly  $4\frac{1}{2}$  miles in length (7,000 meters). It begins where the western end of the Avenida Central meets the bay and, following the curves of the city front, stretches away to Botafogo Bay, a beautiful cove inclosed in a green frame of high hills. The work on the Mangue Canal and the building of the two bordering avenues, each 131 feet wide, is progressing rapidly. When completed the canal will be nearly 2 miles in length, stone faced, and crossed by numerous artistic bridges.

A marked feature in the building of the new streets in Rio de Janeiro has been the use of the rounded corner, the building line being marked on a curve of considerable radius. This adds a beauty and dignity to the architecture of the buildings and a grace to the appearance of the streets, in particular as seen on the Avenida Central, that is lacking in the cities of the United States.

In addition to the new avenues a number of streets in Rio de Janeiro have been improved so as to be almost unrecognizable to one



AVENIDA CENTRAL—BUILDING OF THE JORNAL DO COMMERCIO, RIO DE JANEIRO.

Many large and handsome office buildings are eloquent in attesting the general business prosperity, notably that of the Jornal do Commercio, which appears under construction in the illustration. The building has since been completed. This daily was established in 1824, under the name of the "Spectator," but in 1827 the name was changed to its present title. The Jornal do Commercio is the leading newspaper of Brazil. The greatest statesmen and politicians of the Empire and Republic have been, at different times, among its contributors.

who may have known the city a dozen or more years ago. Among these is the Uruguaryana, 17 meters wide; the Assembleia, the same

width, giving a fine view of the bay; Carioca street, Visconde do Rio Branco, Floriano, 24 meters wide; Trezede Maio, Passos Avenida and Inhauma, 30 meters wide. These are all fine streets, with many handsome buildings and paved with asphalt.

Among the new buildings are the Monroe Palace, covering 12,000 square meters, one of the finest buildings on the continent; the new Municipal Theater, marble front, bronze decorated, with a fine dome; the (São Paulo and Rio Grande) Railway Building, gothic, appearing like a great middle-age castle; the Botanical Garden Railway Company Building; the Naval Club, new classic style; the Treasury Building, with its beautiful white and rose marble columns;



NEW BUILDINGS ON AVENIDA CENTRAL, RIO DE JANEIRO.

These structures are distinguished by their various styles of architecture. They are all new and thoroughly modern, averaging about 60 feet in height, although many of them are 125, 160, and 190 feet high.

the *Jornal do Comercio* Building, the Exhibition Palace, National Library, marble and steel, and numbers of others.

Many cities of the world have beautiful streets and beautiful buildings, but Rio alone has the *Jardim Botânico*. It is the central point of interest for tourists. What Vesuvius is to Naples, the Grand Canal to Venice, or the Golden Horn to Constantinople, is the Botanical Garden to Rio de Janeiro. Here is displayed all the luxurient wealth of tropical flora in its most attractive aspect. Its magnificent avenue, a half mile in length, of royal palms, is worth a trip to Rio to see. Admission to the garden is free, and a line of trolley cars pass the main entrance.

The city of Rio de Janeiro and its environs constitute the Federal District of the United States of Brazil. The municipal organization of the district is controlled by the National Government, but the right of the 900,000 inhabitants to a voice in the management of local affairs is safeguarded in two ways:

(1) The district is represented in the Congress of Brazil by 3 senators elected for nine years and by 10 deputies elected for three years.

(2) A city council of 10 intendentes or members, elected by direct suffrage for a term of two years. The council meets in ordinary session twice a year.



A BAMBOO GROVE, BOTANICAL GARDEN, RIO DE JANEIRO.

The spacious grounds cover an area of nearly 2,000 acres situated on the border of the large suburban lake, Rodrigo Freitas, which is near the seacoast and separated therefrom by only a narrow strip of sand. Trolley cars from Rio pass the main entrance. This world-famed institution is supported by the general government for the purpose of botanical research and climatical experiments. Its natural beauty is further enhanced by the tropical luxuriance of Brazilian forests, the choicest specimens of native flora preserved in all their artistic settings, and many trees and rare plants from foreign lands.

The chief executive of Rio de Janeiro City is the prefect, who holds office for four years and is appointed by the President of the Republic and confirmed by the senate. Under him there are seven boards or directorias, as follows: Public estates board, public works and transit, board of health and public assistance, the council of education, the board of forests, gardens, game and fishing, the board of finance, and the board of police, archives and statistics. There are 3,080 municipal employees, with salaries amounting to annually



\$3,203,200 United States gold, an average of \$1,040 each. The revenue of the federal capital was in 1906 48,437,185 milreis, or \$16,177,260, while the expenditures were 48,132,715 milreis, or \$16,075,575, leaving a surplus of \$101,685. The funded debt, inclusive



PALACE OF THE MINISTRY OF PUBLIC WORKS, RIO DE JANEIRO.

The department of public works is closely identified with the recently undertaken improvements to the city and harbor. Rio de Janeiro, being the federal capital, is under the jurisdiction of the government authorities, and public improvements are carried on under the direct supervision of this department.

of the floating debt on June 30, 1907, amounted to £7,000,677 sterling, or \$35,003,385 United States gold. The floating debt is £1,742,076, or \$8,710,380.

The sources of revenue, in 1906, were:

From state property, rents, leases and dividends.....	\$161, 405
Public services.....	1, 523, 020
From taxation:	
Merchandise exported.....	121, 505
Trades, professions, and companies.....	1, 891, 150
Real estate (house tax).....	3, 742, 975
Total from taxation.....	5, 755, 630
Heterogeneous and eventual.....	995, 785
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Total ordinary.....	8, 445, 840
Extraordinary, loans.....	7, 681, 175
	<hr/>
Grand total.....	16, 127, 015

The expenditures for the same year were :

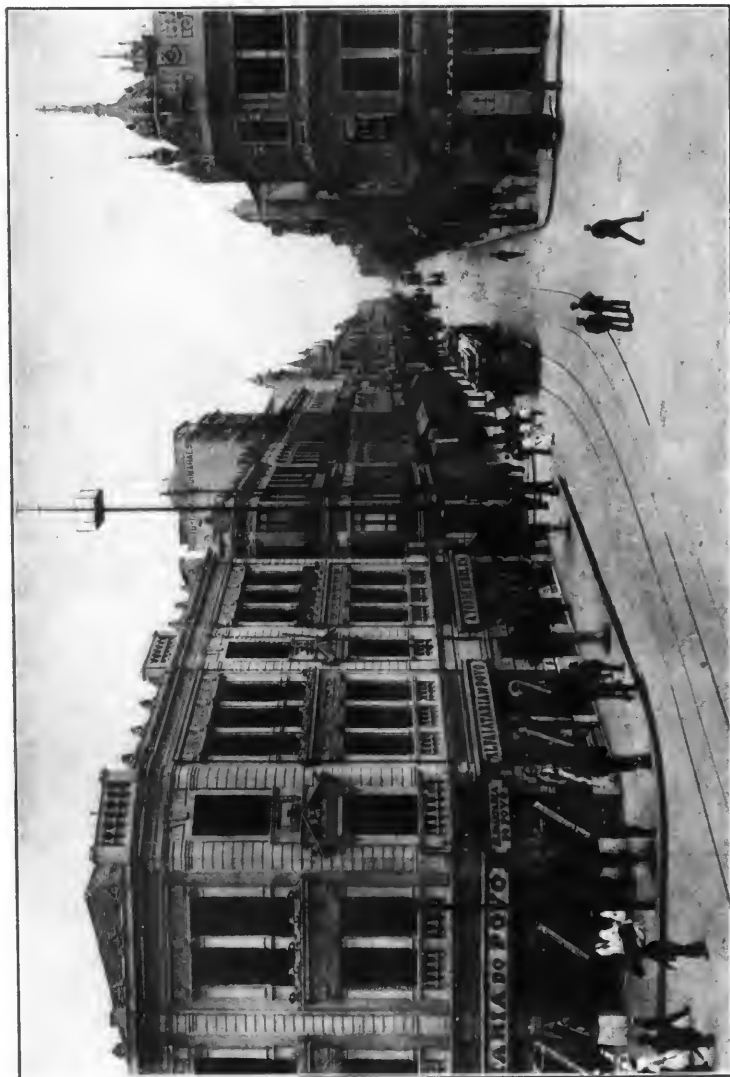
Executive, prefect, etc.....	\$20, 830
Legislature, deputies.....	143, 995
Hygiene and public assistance.....	309, 545
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Education, schools, colleges, and universities.....	1, 427, 745
Libraries, museums; etc.....	16, 705
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Total for education.....	1, 444, 450
Collection and distribution of revenue.....	626, 985
Administration and other public services.....	2, 329, 180
Public works.....	6, 418, 440
Pensions.....	266, 975
Eventual and heterogeneous.....	195, 425
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Service of the debt :	
Foreign funded, amortization and interest.....	59, 620
Internal funded, amortization and interest.....	3, 968, 015
Floating debt, amortization and interest.....	251, 965
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Total service of the debt.....	4, 279, 600
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Grand total.....	16, 044, 435

The public debt of the federal capital, in 1902, amounted to \$878,395 United States gold; in 1903, to \$793,200; in 1904, to \$1,170,885; in 1905, to \$1,730,300; in 1906, to \$2,699,245; and in 1907, to \$2,790,610, showing an increase in six years of 31.5 per cent.

Protection to life and property is adequately assured in the Federal District through a highly organized and efficient police force of more than 4,000 men and a civil guard of 600, which latter force is divided into two classes, the first having 400 men and the second 200. One hundred of the civil guards are held as a reserve. Besides the ordinary police, there is stationed in the federal capital a military establishment of one brigade each of the artillery and cavalry and seven brigades of the infantry of the Brazilian national army. Rio de Janeiro is divided, for police and civil administration purposes, into 20 urban and 8 suburban wards, each of which has its local prefect and other administrative agents.

The entire police department is under the supreme supervision of a general staff, consisting of a commandant-general, an assistant of the ministry of justice, an assistant of material, an assistant of the personnel, a secretary, and an adjutant of orders. The department is divided into the following sections :

1. Passports, licenses, and correspondence.
2. Criminal section.
3. Statistics.
4. Accountantship and exchequer.



**ASSEMBLEA STREET, RIO DE JANEIRO, BRAZIL.**

One of the principal streets of the business section. This street is 56 feet wide, paved with asphalt, and lined with fine buildings and has a charming perspective upon the bay. Cariaca and Vizconde do Rio Branco streets extend almost in a straight line from the end of Assembléa street, the three highways forming a continuous thoroughfare over a mile long.

5. Medical service, with 1 director and 12 physicians.
6. Sanitary service, having 1 inspector, 1 fiscal, 10 physicians, 4 chemists, 1 assistant chemist, 1 surgical dentist, 1 oculist, and 7 temporary practitioners.
7. Archives.
8. Detention of prisoners.
9. Cabinet of identification and statistics, which has the subdivisions of identification, statistics, information, and photography.
10. Treasury.
11. Harbor police.



INSPECTION OF FIREMEN, RIO DE JANEIRO.

The fire-fighting force consists of 600 officers and men, organized on a military basis. The corps and equipment are so efficient and modern, and the service so well arranged, that only twenty seconds are required to get the engines out of the fire halls. All repair work is done by the firemen in the shops which adjoin the central station.

12. Inspectorship of the corps of investigation and public safety.
13. Inspectorship of vehicles (composed of 1 inspector, 2 accountants, and 60 assistants).

Each administrative district of the Federal Capital has a "delegate," representing the commandant-general of police, besides an official of justice, an accountant, generally, and several "commissioners," varying in number according to the importance of the district. The entire police force of Rio de Janeiro City is organized on a strictly military basis, and has one regiment of cavalry and two regiments of infantry.

The house of detention of the federal capital is under one administrator, assisted by a physician.

The house of correction is administered by one director, aided by one assistant director.

Rio de Janeiro in latitude  $22^{\circ}, 54'$  S., and longitude W. from Greenwich  $43^{\circ}, 10'$ , is about as far south of the equator as Havana, Cuba, is north. Its climate must generally be regarded as warmer than that of Havana, except on the summits of the surrounding mountains. There is a dry season from May to November, and a wet season from November to May. The mean annual temperature is  $75^{\circ}$ , the maximum  $80^{\circ}$ , in February, and the minimum  $70^{\circ}$ , in July.



TREASURY BUILDING, RIO DE JANEIRO, BRAZIL.

The Caixa de Amortização, or Treasury Building, of the federal capital, fronts on the new Avenida Central, and commands especial attention because of its imposing proportions and attractive style of architecture. It is solidly and artistically constructed of stone.

Climatic conditions are modified by the southwest and southeast trade winds from the Atlantic. Sudden changes of twenty degrees, in the course of a day, are not infrequent. Health conditions are excellent. A comparison of the annual death rate of Rio de Janeiro, in 1905, with that of the leading cities of the world shows that the Brazilian federal capital, with a mortality per thousand of 21.7, is about on a par with Havana, 21.2; Genoa, 21.5; Dublin, 21.2; Milan, 21.1; and Marseilles, 21.4. The record for 1907, according to figures furnished by the board of health of Rio de Janeiro, proves that there was a marked decrease in the mortality of that city, notwithstanding

a considerable growth in population. The mortality for 1906 and 1907 was 13,960 and 12,106, respectively. This diminution is largely



CENTRAL STATION OF THE FIRE DEPARTMENT, RIO DE JANEIRO.

This most important institution for the protection of public and private property embraces a central station and six substations, one of which is located on the shore of the bay, and in addition to the usual equipment, is provided with two large fireboats for the protection of the harbor shipping. The central station is a handsome modern building, in which are maintained manufacturing and repair shops for the use of the department.

due to the admirable system of having in each urban and suburban district a branch of the central health department, where free medi-

cal assistance and advice are given to the poor, and whenever necessary skilled physicians and nurses visit them in their homes. The capital is, moreover, now exempt from yellow fever, a result which has been achieved by the distinguished Brazilian physician, Doctor Cruz, whose energetic efforts have exterminated that former scourge of Rio de Janeiro.

The local census, taken September 20, 1906, showed that the federal district had on that date 811,443 inhabitants, 463,453 males and 347,990 females, living. The population has increased since 1890 by 288,792 souls—that is, by 55.26 per cent. The annual increase was 3.515 per cent. Rio de Janeiro thus compares very favorably with



RUA DA CARIOCA, RIO DE JANEIRO, BRAZIL.

This typical business street of the metropolis of the Republic is important in retail trade.

Chicago, Pittsburg, Buffalo, and Cleveland. The annual birth rate in 1906 was 209.5 per 1,000. The area of the federal district is 538 square miles, and had, in 1906, a density of 1,338 inhabitants per square mile. Its area is nearly one and one-half times larger than that of New York, approximately twice as large as that of Chicago, virtually three and one-half times as much as that of Philadelphia, almost four times as large as that of London, and nearly eight times larger than that of the District of Columbia.

Although education has not as yet been made compulsory in Brazil, both the National Government as well as the municipality are promoting in every possible way universal instruction and self-improve-

ment among the inhabitants of the federal capital. Public as well as private instruction is conducted under the supervision of a "General directory of public instruction," and a "Superior counsel of instruction." The former organization is under a director-general.

Public instruction is divided into primary, corresponding to the primary and grammar grades of the United States, superior (high school and academic), and university. Under the first-named department it is interesting to note that there were 186 "primary public schools" in Rio de Janeiro City in 1907, of which 134 were for girls, 49 for boys, and 3 mixed. Seventy-two teachers, and 200 assistant teachers were employed in the primary department. The instruction



GONÇALVES DIAS SCHOOL, RIO DE JANEIRO.

This handsome school edifice in Rio is surrounded by a beautiful garden filled with tropical plants and trees. It faces Christovão Park, and is one of the most solidly constructed school buildings of the capital.

given was purely secular and comprised reading, writing, arithmetic, Portuguese grammar, geography, history, and general moral, scientific, and civic principles, drawing, calisthenics, and sewing, divided into three courses, elementary, intermediate, and higher. The primary schools are supplemented by what are known as "elementary schools," which are private institutions. They receive a subvention from the municipality on condition that they shall adopt the official programme and admit a certain number of children free. There are at present 79 schools of this sort, with 5,136 pupils and an average attendance of 2,370. The teachers are either normal-school graduates or have passed a special government examination.



Among the public institutions for superior instruction, should be mentioned the Instituto Professional for Males, which is limited to 300 pupils. Students enter at the age of 12 and leave at 20. The subjects taught are: Primary courses, music and drawing, carpentry, cabinetmaking, sculpture, typesetting, bookbinding, tailoring, iron and tinsmith's work, and bootmaking. In the Female Instituto the number of pupils is limited to 120 and applicants are admitted up to 15 years of age. Instruction is given in the primary courses, elements of hygiene, shorthand, typewriting, domestic economy, drawing, music, sewing, embroidery, and artificial-flower making.

The federal capital maintains five "model schools" in which certificated teachers, intending to become professors, are trained as assistants. The normal school, or "pedagogium," has a curriculum of four series: (1) Portuguese, French, arithmetic, geography, music, manual training, needlework, handwriting, and calisthenics; (2) Portuguese, French, algebra, geometry, geography, history, linear drawing, music, and needlework; (3) Portuguese, French, American history, physics, pedagogy, manual training, and ornamental designing; (4) Brazilian literature, chemistry, history of Brazil, and civic instruction, pedagogy, hygiene, and drawing from the model. The school is under the direct superintendence of the council of education. From 1900 to 1904, 320 students received certificates as normal teachers. All such certificated teachers must practice under certificated professors for one year and obtain certificates of competence as professors. The pedagogium is also intended to serve as a school for higher education of primary professors. Classes are held at night and comprise "permanent courses" of physical and natural sciences, "contracted courses" on letters, biology, and pedagogy, and "free courses" on mathematics, philology, sociology, technical industries, arts, etc. In 1902 seven courses were given; the number of students was 153. In 1903 ten courses, with 143 students, were given, and in 1904, 17 courses with 194 students.

There is in Rio de Janeiro city no university, properly so called, but there are in Brazil six faculties which confer degrees, of which two—the Faculty of Medicine and the Polytechnic School—are located in the capital. The cost of university education is provided—by an annual grant that for the last ten years has ranged from 2,600,000 milreis to 3,400,000 milreis (\$866,667 to \$1,133,334 United States gold).

The Polytechnic School was founded December 4, 1810. It grants certificates of civil, mining, industrial, and mechanical engineer, and the title of agronomist and geographical engineer. This school ranks in every respect among the best of technical institutions in the world and offers six distinct courses, namely, a "funda-

mental course" (three years), a course of civil engineering (two years), a course of mining engineering (two years), a course of industrial engineering (two years), a course of mechanical engineering



COMMERCIAL AND OFFICE BUILDINGS, AVENIDA CENTRAL, RIO DE JANEIRO.

This famous avenue was laid out and many of the old buildings demolished and reconstructed within a remarkably short period of time, presenting an example of activity and progress in city building unequalled in the world. Some of the edifices cover an entire square and represent an expenditure of sums from half a million to five millions of dollars.

(two years), and a course of agricultural engineering (two years). There are 52 professors among the faculty of the school.

The total number of professors at the different municipal schools of the federal district is 875, as follows: There are 6 directors of model schools, 193 head masters, 300 permanent professors, 7 of the elementary first class, and 72 of the elementary second class: total, 778. The normal school (Pedagogium) has 45 professors and assistants. Technical education has 52 professors.

Private initiative and philanthropy (both on the part of the native Brazilians, as well as of the foreign residents) have ably cooperated with the public authorities in increasing the opportunities for universal education by establishing and maintaining throughout the federal capital a great variety of primary schools, academies, colleges, and other institutions of instruction, which are of the highest excellence.

The National Government of Brazil maintains in the federal capital the following educational institutions: Deaf and dumb and blind asylums, the National School of Music, the National School of Art, the Military Academy, the Preparatory School of Tactics, and the Naval School.

The National School of Art was founded in 1816. A fine new building is now in course of erection in the Central avenue. The National School of Music was founded in 1847. The staff consists of 19 professors and 13 assistants. The Military College was founded in 1889. Children and grandchildren of army officers and of privates killed in action are educated at public expense; civilians are admitted on payment. From this college students pass to the higher military or naval school, but it is not obligatory.

The School for the Blind, called the "Instituto Benjamin Constant," was founded in 1857. The land on which the building stands covers 9,516 square meters, or 102,373 square feet, on the shores of the beautiful bay of Botafogo, and was a gift from the Emperor DOM PEDRO II. The Deaf and Dumb School was founded in 1856. There are about 600 children who receive oral instruction in this institution.

The city of Rio de Janeiro is well provided with libraries, of which there are 12. Two of these, the National and the Municipal, and the rest belong to associations or to the Brazilian army and navy. The National Library Building, now in course of construction, will be the most magnificent in South America. The origin of this library was due to the flight of King João VI, of Portugal, to Brazil, in 1807. It contained, in 1907, 130,000 volumes, a valuable collection of 25,150 medals, many of them very rare, and 100,000 engravings. The average monthly attendance of readers is 3,300.

The "*Gabinete Portuguez de Leitura*" is the most beautiful building in Rio de Janeiro. The library comprises 7,000 volumes, ad-



THE HOSPITAL DA MISERICORDIA, RIO DE JANEIRO, FOUNDED IN THE SIXTEENTH CENTURY.

mirably arranged. The collection of camoëna (Camões) is believed to be the most perfect in existence.

The hospitals and asylums of the Federal District are undertaken chiefly by private associations assisted by the Government. Among the most important of these institutions are the following: Maternidade, or lying-in hospital, which is a private association assisted by the National Government. The Institute for the Protection and Assistance of Children. The society, besides giving medical advice and aid to poor children, is of inestimable benefit to women who are about to become mothers.

The Hospital da Misericórdia, of Spanish origin, was founded by the Jesuit priest Father ANCIETA in the sixteenth century. Its modern reorganization was in 1840. Thirty years were required to complete the edifice. It can take care of 1,200 patients, and is designed especially for the accommodation of sick sailors of all nations. The hospital is divided into four departments: The Asylum of Misericórdia for Abandoned Girls; the Asylum of Santa Maria for Old Women; the Hospital of Nossa Senhora dos Dolores at Casadura, for Consumption, and the Pasteur Institute for the Treatment of Hyphobia.

The Casa de São José for male orphan or neglected children of 6 to 12 years of age is accomplishing excellent work. There is a similar asylum for female children. Both institutions are maintained by the municipality. The Fifteenth of November Reformatory for Vagrant Children is an institution of the National Government, and is under the supervision of the police. The Gonçalves Araujo Asylum is conducted and supported by the Candelaria Brotherhood.

Among the most interesting of other philanthropical associations are the 181 registered "friendly societies," whose accumulated funds in 1902 amounted to \$3,550,235, and they had an aggregate income of \$391,515. They distributed, in 1902, \$30,915 among associates, and since the founding of the earliest of these associations, a Swiss society, in 1821, have distributed \$3,398,635. The 181 societies, in 1902, had a total of 93,851 associates.

The government of the Federal District maintains a strict supervision over factories and stores. Under the present law the majority of shops close at 8 o'clock on ordinary nights and at 4 on holidays. Only cafes, bars, and restaurants are open all day on Sundays, and grocers and tobacconists up to 12 (noon). Other places of business are required to be closed.

Lighting, rapid transit, and motive power are exclusively furnished in the Federal District by the Rio de Janeiro Tramway, Light and Power Company, operating under a concession from the municipality, and registered in Toronto, Canada. The company possesses a tre-

mendous natural source of power on the River Das Lages, 51 miles distant from the city of Rio de Janeiro. It has installed at this point one of the most extensive and modern hydraulic-electric generating systems in the world. The company is the owner of the share capital of the *Companhias São Christovão, Carris Urbanos and Villa Isabel*, which provides about three-fourths of the tramway service of Rio de Janeiro. The various concessions granted by the federal capital were consolidated and extended until 1970, by virtue of a contract made with the municipality, in November, 1907, the Rio de Janeiro Tramway, Light and Power Company to install electric lighting and power



THE PALACE OF THE PRESIDENT, RIO DE JANEIRO, BRAZIL.

throughout the capital within a period of about three years, and to construct about 200 miles of new lines. The lines of the *Villa Isabel* are already electrified, and the work of transforming the traction of the other companies is commenced.

The *Societe Anonyme de Gaz de Rio de Janeiro*, a Belgian enterprise, was acquired by the company, which now controls the whole of the illumination of the capital by gas and electricity, through a concession granted by the Government in 1905 with a monopoly until 1915. All parts of the city are now illuminated by gas, the electric lighting being confined for the present to the new avenues recently opened and the central commercial section. Electric light-

ing is to be greatly extended during the present year. The Rio de Janeiro Tramway, Light and Power Company (by a concession from the municipality) enjoys a monopoly for the distribution of electric power, produced in a hydraulic installation until 1915, and thereafter the right continues without monopoly until 1990. There is now furnished 3,000 horsepower, but this will soon be greatly increased. Concessions recently acquired by the company give it full control of the telephones throughout the Federal District. The entire system has been largely reconstructed with a new building, having a new central telephone board of the most modern design. Improved instruments have been given to the 2,500 subscribers, whose number will soon be increased to 5,000. Street circuits have been rebuilt and a large amount of aerial cables has been installed to take the place of the network of overhead wires in the streets, thus greatly improving the service. A large part of the system is in underground cables, and it is expected that this will be extended from year to year until all overhead wires in the populous districts have been removed.



# TOBACCO :: THE AMERICAN INDIAN'S GIFT TO CIVILIZATION :: ::

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THE tobacco crop in 1907 amounted almost to three billion pounds. Allowing as a moderate average 25 cigars and 100 cigarettes to the pound, this gives an annual product of 25,000,000,000 cigars, 100,000,000,000 cigarettes for the world's consumption during the year, with plenty to spare for all the snuff, chewing, and pipe tobacco demanded by such users of the weed. Assuming that the total population of the world is 1,600,000,000, the per capita employment of tobacco can be reasonably calculated.

The discovery by Europeans of the native disposition of this indigenous plant was cotemporary with the discovery of America. COLUMBUS, it is asserted, noticed the Indians drawing in smoke from a kind of pipe and exhaling it through their nostrils. All reports from explorers and adventurers, whether in the southern or northern regions of the new continents, contain references to the habits the Indians had of consuming this unknown herb in one way or another. Smoking seems to have been most general, but among some tribes it was chewed, by others it was considered a sacred drug with which to produce purging and emesis, by others again it served as a stimulant or narcotic. All Indians, however, agreed that tobacco added greatly to their physical and spiritual well being. The Spanish, the Portuguese, and the English were not slow to adopt the habit in vogue wherever they found it, and it was soon introduced into Europe. Sir WALTER RALEIGH popularized pipe smoking in England by the method principally employed in the regions visited by his countrymen. The Portuguese had already begun the cultivation of the plant in southern Europe, and from them it was brought in 1560 to France by NICOT, who studied its properties in a scientific way. From NICOT is derived the word nicotine, the essential alkaloid which characterizes tobacco wherever grown. Claims have been made that the Chinese, ages before the discovery of America, had the habit of smoking, but that they used tobacco can not be proved, although it is not improbable that some similar leaf was known to them. STANLEY, in his expedition across the center of darkest Africa, found the natives following with a like custom, but they used the banana or a



similar leaf in their pipes, and tobacco was not found where the connection with the white man could not be traced.

Romance and poetry were associated with tobacco perhaps even more in its earlier years than to-day. Some of RALEIGH's best interviews with Queen ELIZABETH were on this subject; BEN JONSON wrote verses, as did all the other poets of his time, except SHAKESPEARE, clubs were founded solely to enjoy it, and a man's rating in society was established by tobacco. When King JAMES's famous



THE TOBACCO PLANT CROWNED BY ITS FLOWER AND BLOSSOMS.

On the right the flower has been removed, but the suckers are developing. Both flower and suckers must be removed to prevent the plant from going to seed, as well as to stimulate the growth of the leaf, which is the important consideration in tobacco culture.

"Counterblast Against Tobacco" was issued. "drinking" tobacco, as smoking was then often called, was almost universal not only in England but in Europe. One of the most famous epigrams of the time ran thus:

Sir Walter Raleigh! name of worth,  
 How sweet for thee to know  
 King James, who never smoked on earth,  
 Is smoking down below.

In the New World the romantic side of it was coupled with a very practical influence in populating the Virginia colonies. The whole region of the James had given itself over to the cultivation of tobacco, so that even the streets of the towns were devoted to it, and many young men went out as settlers and led rather lonely lives. These young men had plenty of tobacco, but no money or sweethearts with which to grace a home. The London Company, then most busily engaged in the trade between England and Virginia, devised a plan by which a cargo of young women of good social position was sent out to comfort the young men; there was to be, of course, no coercion of any kind, but each young man on his selection of and acceptance by one of the



ARRANGEMENT AND CONSTRUCTION OF TOBACCO FLOWERS.

The structure gives evidence that tobacco flowers are naturally self-fertile.

young women was to pay to the company "120 lb. waight of best leafe tobacco," for reimbursement. The first cargo was such a success that others followed, and no complaint was heard that the bargain was regretted in any direction.

A plant that could fasten such a habit upon mankind, whether civilized or uncivilized, within the short space of four hundred years, and become known as well as cultivated in every portion of the earth, must meet an essential but mysterious want of the human body and mind. The origin of the word is, however, lost in obscurity. Undoubtedly it was derived from the islands or mainland of the Tropics,



#### TOPPING AND CUTTING.

Topping and cutting are the methods adopted in all tobacco fields to encourage the growth of larger leaves, to prevent the development of seed and to keep the plant in the best possible condition. Men and boys pass between the rows of plants removing the "suckers" at the top or cutting away the imperfect leaves from any other place on the stalk.



**CULTIVATING TOBACCO UNDER CANVAS.**

In growing the best qualities tobacco, it is found that more uniform results are obtained by protecting the young plants under canvas, as thereby all conditions are practically under complete control.

and is purely an Indian name. In all languages except the English the first vowel is *a*, but the *o* is popular and will always be retained by those using the English language. The difference would seem insignificant, but one who is not aware of it may at times be confused by searching through various classifications under the wrong letter.

With the increasing use of tobacco in all its preparations, the culture of the plant has been established over wider and wider areas, until now there is practically no country—civilized or uncivilized—where it is not to some extent grown. Indigenous as it is to a tropical climate, the tobacco plant has, by the ingenuity of man, been compelled to adapt itself to all ranges of temperature, so that it is found at such wide extremes as the region of the equator and the snow-covered valleys of Canada and Sweden. In this respect it resembles the vine, which will thrive so long as it has sunshine for a few months in summer, and sufficient moisture to nourish the rapidly growing leaves.

Tobacco belongs to the nightshade—*Solanaceæ*—family, which embraces many of the best known domesticated plants and vegetables, such as the Irish potato, the tomato, eggplant, red pepper, jimson weed, and henbane. The genus *Nicotiana* has about 50 species, but the great varieties, the *Nicotiana tabacum* and the *Nicotiana rustica*, supply nearly all the tobacco of commerce. There is a variety called *persica*, but the Persian tobacco as we know it is but a modification of the *rustica*. The species *Nicotiana tabacum* is more generally used than the others in every part of the world. It grows from 2 to 8 feet in height, and has ovate, oblong or lanceolate leaves, alternately attached to the stalk spirally; these leaves measure from 12 to 42 inches in length and 8 to 24 inches in width. The flowers are rose-colored or white. In the first days of the use of tobacco each brand was known more by the place of growth or origin than by any other name, but to-day, although such well-established and even historical, distributive titles as Virginia, Maryland, Carolina tobacco, etc., are retained, many older terms like Trinidad, or Brazil, have been quite forgotten. A better-understood designation is that of the character or appearance of the article ready for consumption or preparation by the trade. All varieties are distinguished from one another by the form, color, size, and texture of their leaves; by their fragrance, adaptability to soils and uses, and by varying aptitudes to secrete gums and oily matter while ripening.

Tobacco is grown from the seeds and its cultivation does not differ materially from that of the cabbage. The preparation of seed for distribution to planters is an important part of the industry, because much depends upon the quality of seed used, and the appropriateness of such seed for the particular soil and climate in which it is proposed

to grow it. Tobacco seeds are small, and plenty of them are needed to insure a good growth. Moreover, they react noticeably to influences of soil, producing a leaf that preserves a color traceable to



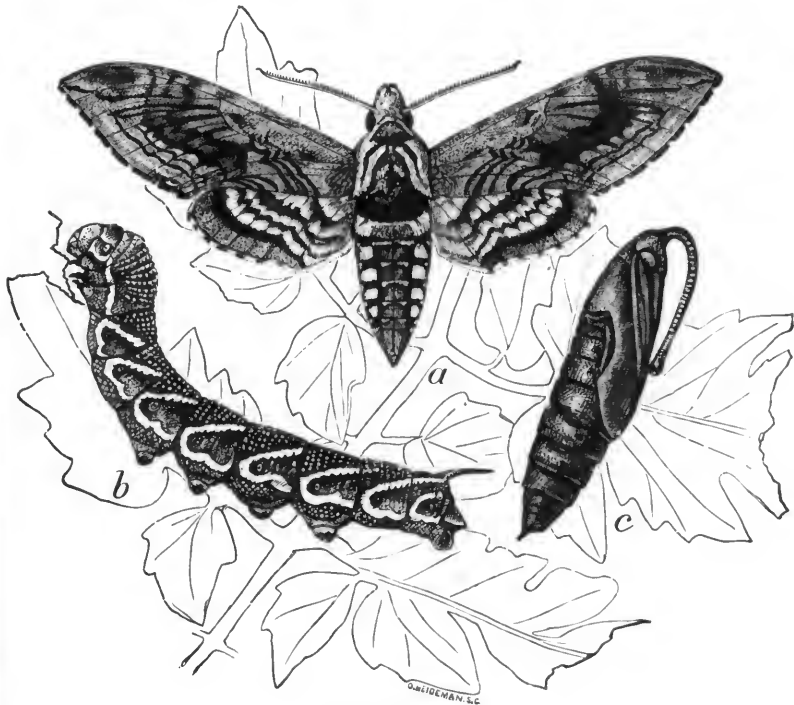
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#### A TOBACCO FIELD

The tobacco field must be constantly watched from the day of sowing the seed or setting out the young plants to the moment the leaf is carried into the curing house. The flowers and suckers must be removed and the animal enemies of all kinds must be killed in some way. Sometimes the cost of this eternal vigilance is a heavy item and the profits to the planter may be seriously reduced by his efforts to bring to the manufacturer a high grade, uninjured leaf.

the coloring matter of the soil in which it grows. The plant is one also that crosses readily, so that it may be easily modified to suit local conditions, but at the same time it must be carefully guarded to pre-

vent accidental crossing. The cultivation of tobacco for its various uses has received as careful attention as that of any agricultural industry, and the Agricultural Departments of all governments have given elaborate study to the question, as a scientific and practical problem vitally concerning all farmers and producers of staple crops. Each year the plant must be reared from the beginning, thus resembling wheat and potatoes, and differing therefore from trees or the



THE TOBACCO WORM.

This is called horn worm or horn blower in different parts of the country and is the caterpillar of a large sphinx moth. It eats the leaf of tobacco, tomato, and allied plants, including occasionally the Irish potato. The worm is green. One, two, or even more crops of worms may develop in a season. The long beak is really a tongue sheath through which the worm sucks the nectar of flowers. Several methods of destroying this enemy are known and practiced.

vine. Cultivation in every detail has become a nicely technical procedure, every step being carefully controlled; after seeding, and, if this is adopted, after transplanting, tobacco must be fertilized, and there is no plant so susceptible to fertilization as tobacco. The demand of any particular variety of plant for its natural nourishment must be most exactly met, or poor results are apt to follow. Consequently the chemistry of plant, soil, and fertilizer has become almost

an exact science. More than half the States of the United States are engaged in the production of the leaf, and throughout the Union new areas are brought into bearing, because analysis has shown that soil, seed, and food can be so combined as to produce a commercially profitable article. Agriculture experiment stations the world over are showing how to go to work to get a good crop, and the old fear, ending in real disaster in Virginia many years ago, that the soil would become exhausted and barren, is no longer impending over the modern farmer who studies his occupation intelligently. Perique tobacco, produced in a small area of Louisiana, settled originally by



TOBACCO BED SHOWING AWNING FRAME.

A seed bed in which the tobacco plant is cultivated before it is transplanted. This method is adopted for delicate leaf grown from the seed and develops the resistant quality in the mature plant.

the Acadians, is an exception, in that it will not grow elsewhere. It demands the black soil of these bottoms for its peculiar flavor. Scarcely more than 50,000 pounds a year of Perique measure the world's crop.

Various expressions are used to denote the processes employed in the different stages of cultivation. Topping is the term implying the removal of the seed head; this is done to divert the vitality of the plant from its essentially physiologic function—the perpetuation of the species—to the development of the leaf. Suckers are thrown out at the place of topping, and these, too, must be removed



promptly. This applies as well to the method by which the strength of the leaves is maintained by restricting their number. If seeds are to be gathered certain plants must be set apart from others and these cultivated with special reference to this purpose. When the leaf is ripe it is harvested. The length of time between topping and harvesting varies greatly, and experience is needed to decide on the proper color and firmness at which to begin. Cutting or priming is the term by which is understood the process of gathering the leaves for curing. This is one of the most important steps in the cultivation of tobacco. It must be done on a dry day, so that the leaf will be clean, unspotted, and free from fungus. According to the habit of the country or district the leaves are now placed in a basket or hung on a board or wire, and allowed to wilt. Then it is cured. Curing is, of course, the step which changes the product from a mere agricultural to a purely commercial commodity. Tobacco must not be permitted to sweat, which really means the growth of fungus, for if fungus once starts in a warehouse, it is liable to spread throughout all the stock; neither must it ferment too soon, for the result will be the same, or lead to evils equally as disastrous. Proper fermentation is an art and must be controlled by an expert whose personal judgment has been tested by long handling of tobacco in all stages. The technical process is called pressing, but does not necessarily imply that the leaves themselves are subjected to great pressure; they are weighted down by themselves in a receptacle constructed for that purpose, the change taking place now, due to action of enzymes rather than to bacteria (as was once thought), being one of ripening, as it were, through heat and moisture.

This fermentation process develops in the tobacco leaves the characteristic qualities of the commercial article. Fermentation follows immediately after curing when both are done by the grower, but where the cured tobacco is bought up by manufacturers several months may pass before it is subjected to the latter process. When tobacco is ready for manufacture into its finished condition for consumption, the amount of nicotin is relatively unimportant, and it is certain that the excellence of the leaf and its adaptability are not dependent upon it. If the prime object of tobacco culture were the production of nicotin, as the prime object of raising sugar beets is the production of sugar, then the amount of nicotin might be forced by the use of nitrogenous fertilizers, but nicotin alone no more makes a good tobacco than does alcohol alone make a good wine. The flavor and aroma are much more important.

Classification of the leaves now takes place, although some selection has taken place in the earlier stages. A division popularized by long use separates them according to their color into: Claro, light

brown; Colorado claro, brownish yellow; Colorado, brown; Colorado maduro, dark brown; Maduro, dark. This has applied largely to the wrappers, but Sumatra and other leaves are to-day more freely employed for wrappers, and as fashion now admits that a good cigar is something besides a wrapper, and that a good wrapper may possess other qualities than color, adherence is not always given to the above

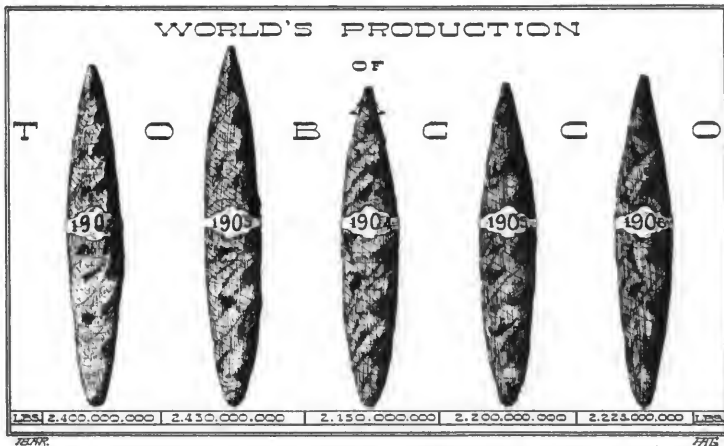


A BUNDLE OF ASSORTED TOBACCO LEAVES.  
Tobacco leaves of uniform size and grade are carefully assorted by themselves and then tied in a bundle for ease of handling.

classification. This whole question is one decided ultimately by the manufacturer and the consumer, the latter exercising his taste, the former his judgment. Taste takes the direction of strength, aroma, moisture or dryness, and appearance of the finished article, whether cigar or cigarette; judgment is necessary on the part of the manufacturer in deciding not only these points, but also the questions of

quality, and serviceability for filler, binder, and wrapper; both taste and judgment unite in demanding that a tobacco when used for smoking purposes must have a good burn. Burning quality is the most important requirement for a first-class smoking tobacco.

Variation in burning qualities must be sought in differences in chemical composition, which, as has been said, is greatly influenced by the character of the soil, the climate, the season, and the kind of fertilizer used. Moreover, there is reason to believe that certain strains of tobacco possess the power of appropriating from the soil those constituents conducive to a good burn, while other closely related types under the same conditions are lacking this power. In addition to the growing of tobacco, the curing and fermentation of the leaf are important factors in developing a good burn. This is a comprehensive term, including such elements as fire-holding capacity,



evenness of burn, and character of the ash. The fire-holding capacity refers to the length of time the tobacco will keep alight; but it should burn evenly, and have no great tendency to coal in advance of the burning area. In some cases defects are due to injudicious combinations of filler, binder, and wrapper. In the best smoking tobacco the ash should be a uniform gray or white, and show a decided cohesiveness. Good tobacco will not burn with a flame, but will continue to glow almost indefinitely when once it is lighted. The "burn," the deciding factor in tobaccos, has had an immense amount of chemical study devoted to it for more than fifty years, but as yet no one has been able to offer a satisfactory explanation of the conduct of different kinds of tobacco as regards their burning qualities. One fact is noticeable, however, in comparing the composition of the tobacco plant with

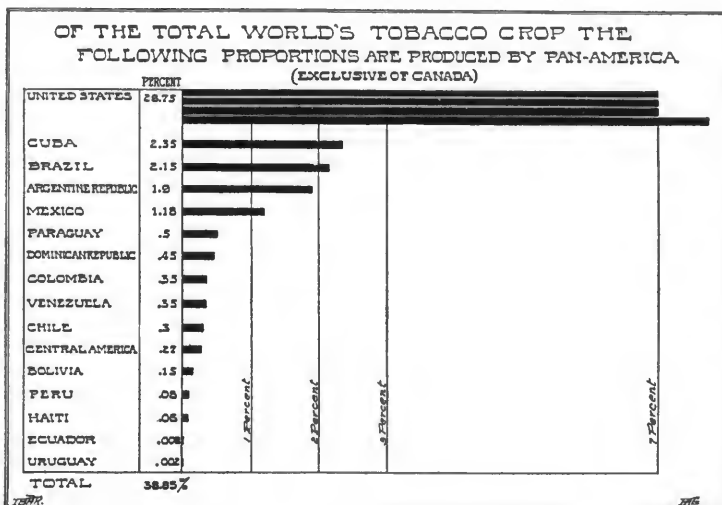


**DRYING TOBACCO.**

When the tobacco leaf is ripe it is picked and sorted into bundles of the same length and then hung up on a pole or wire to wilt and dry. This may take place in the open air, especially where the sun, as in the Tropics, is hot enough for the purpose.

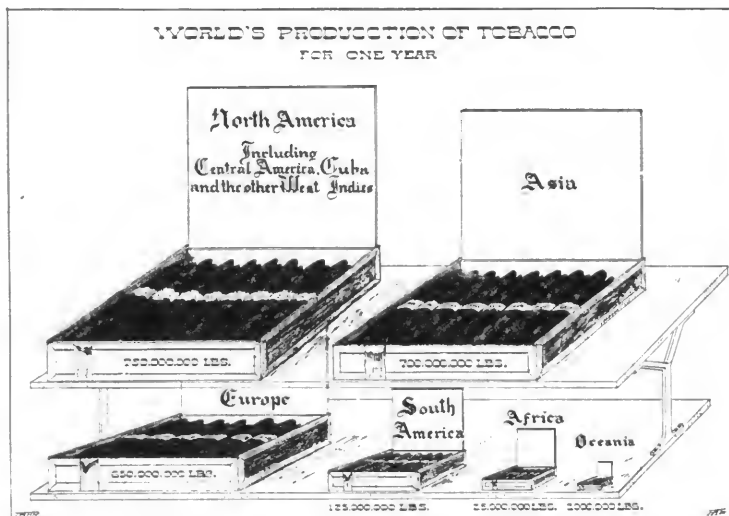
(Copyright by Underwood & Underwood.)

that of other agricultural crops; it has a remarkably high content of mineral matter, commonly called the ash. On the average this ash is well above 15 per cent of the total weight of the dry leaf, and a distinct relation is demonstrable between the mineral constituents of the ash and its good or poor burning qualities. Two undisputed facts have resulted from innumerable studies made in this regard, and these are that chlorin injures the fire-holding capacity of the leaf, while potash favors this property; these facts, however, are insufficient in themselves to explain fully the burning qualities of different samples of tobacco. Yet the ultimate analysis indicates that potash salts, in due combination with calcium and magnesium, produce the best ash and give that desired burn which characterizes the highest priced leaf in the tobacco trade.



When the leaf has been delivered to the manufacturer it is converted into cigars, cigarettes, pipe, chewing and smoking tobacco. Smoking and chewing were the aboriginal methods by which native Americans consoled and stimulated, or at times physicked themselves with the plant. A crude pipe from which smoke was drawn up into the nostrils was the implement first seen by the Spaniards. On the mainland, especially in what is now the United States, a pipe on present day lines was used, and had great symbolic significance at councils of peace or war. Within the Tropics—in Mexico and Central America—the dried leaf was rolled upon itself to form the prototype of the modern cigar, and in other places corn husks were the containers, somewhat larger than the shuck cigarette smoked

so commonly by Mexicans, Central Americans, and Brazilians. The pipe was the vehicle adopted by the English, and all the old prints illustrating smoking in early days show only the pipe in the mouths or hands of the devotees of tobacco. Chewing is undoubtedly a habit inherited from the time when the medicinal effect was considered of immense value in the use of tobacco, for its stimulant qualities were held by the Indians to follow a small dose, or to be a desired result of the immediate prostration produced by a larger quantity. As Europeans found that effects were thus obtained, tobacco in some preparation for mastication was popularized for use by those who could not get a pipe or cigar whenever it was desired. Snuff taking was discovered among the Brazilian Indians, and they were



its best fabricators. Their taste in this matter was as pure as that of the fashionable world of the East, and the snuff they made has never been surpassed nor their apparatus for making it. This habit was introduced into Europe by the Portuguese, and popularized in France and the north by CATHERINE DE MEDICI. Ladies took snuff, and probably ladies occasionally smoked, but practically no mention is made of women smoking, and as a general habit women seem to have resorted to it very sparingly. The ungallant rumor current among many that the ladies of Latin America quite as commonly as the men are seen with cigar or cigarette between their lips is unfounded and unwarranted. Women of the peon class are met with pipe or cigarette as a companion; in the public places of the



A CURING HOUSE.

After the tobacco leaves are picked they are transported into the barn or curing house. This building is today constructed on modern principles, and is intended to offer the most advantageous arrangement for pressing and fermenting the leaf ready for the manufacturer.

haut ton, as in similar resorts of the Anglo-Saxon, it may be the fashion for ladies to join in the trick of smoking, but the more acquainted one becomes with the intimate social life of Latin America, the more is one astonished that credence could ever have been given to the fiction that women here habitually indulged in tobacco.

The physiologic effects of tobacco have been discussed ever since it was first used by civilized man. The Indians knew the symptoms it caused, but were satisfied to ascribe them to the mysterious power influencing all life about them and questioned no further. But the attacks upon the habitual consumption of the prepared leaf have



TOBACCO CURING HOUSE.

Within the curing house several processes are carried on before the tobacco is ready for the manufacturer. The leaves are resorted now to grade them as to quality, and they must be delicately handled to prevent any injury that might reduce the grade to which any leaf originally belonged. Only hand labor can be used for this purpose and decided skill is required.

had practically no restraining force, and there is no gauge of civilization so generally applicable throughout the world as that of the consumption of tobacco. A substantial agreement has to-day been reached among scientists that tobacco—this does not mean the alkaloid nicotin—is not the poison it was once supposed to be. In fact, tobacco leaf can be grown and cured with an almost imperceptible proportion of nicotin, and this meets the requirements of the consumers' taste even better than a tobacco strong in nicotin. It is therefore the aroma in the smoke, and the essential oils in the leaf, which perpetuate the habit and stimulate the intellectual desire





INTERIOR OF A CURING HOUSE.

The removal from the barn takes place only when the tobacco has passed through the various processes of curing. It is now ready for the manufacturer, who may treat it as he pleases, but as a rule is satisfied to turn it into a product for consumption directly from the classification prepared by the grower or leaf tobacco dealer.

to enjoy the narcotic effects resulting from the properly prepared article. Raw tobaccos are strong, but they are not liked; on the other hand, delicately cured tobaccos bring the highest price and enjoy the longest reputation. This indicates that the effect sought is altogether on the mind and imagination and not at all upon the body. The use of tobacco is therefore differentiated at once from the habitual use of any other drug. It has no demonstrable—that is, no organic effect upon the body. It does irritate the heart and upset the digestive organs if taken too often or without judgment, but this effect is altogether functional and disappears as soon as the habit is discontinued. That form of blindness called tobacco



A READER IN A CIGAR FACTORY IN CUBA.

Every large cigar factory employs a professional reader, who reads from books or newspapers selected by the workers, to hold their attention on the work and prevent conversation or argument between the operatives. He sits on a raised platform above the heads of his hearers, centrally located in the room, where all may hear him.

amblyopia comes from the almost constant use of the cigar or from the roughest kinds of tobacco smoked in a pipe. The consequences here may be permanent and disastrous, but immediate attention to the early symptoms will restore the eyesight unimpaired. Tobacco seems not to weaken the moral fiber of the one who uses it, and there is need only of a firm effort of will to relinquish the habit, if the individual so desires; in these respects it is essentially superior to all other drugs. Another argument in its favor is that the narcotic or stimulant effect of tobacco seems to be satisfied within itself; other drugs arouse a craving from a still more violent excitement, but the probability is that if mankind were deprived of tobacco his

physique would suffer by indulgence in other drugs infinitely more powerful and pernicious.



(Photo by Underwood & Underwood.)

A CIGARETTE FACTORY.

Cigarettes are to-day made largely by machinery, which has to a great extent displaced the hand labor, once the universal rule in factories. Machines are even made to place the cigarettes in the box ready for the consumer, but the employment of women for this purpose is still customary in the older centers of the trade. This is altogether piecework, and women become marvelously expert in their occupation.

The tobacco plant, like all living things, has its parasites, but it has no enemies peculiar to itself; it suffers, therefore, only from

attacks by insects that could thrive on other plants equally well. From the time the seed is sown until the leaf reaches the consumer there is danger from some enemy. The flea bug or flea beetle, the tobacco worm or hornblower, the bud worm, and a host more, feed on the growing leaf. Other insects like the cigarette beetle are injurious to cured tobacco, and feed on all preparations made from it; they hatch in factories and warehouses. For all these there are fortunately successful remedies, destructive to the insects but not harmful to the tobacco.

Every Republic represented in the International Union of American Republics is a grower of tobacco. Every country has a large commerce in the leaf and the manufactured article; every Government draws an important part of its revenue from the tobacco trade going on within or across its borders. Tobacco is used by a greater number of people and among more nations than any other cultivated product of the earth, and it is, with the exception of tea, the most highly taxed substance in the world. In 1907 the United States derived \$78,000,000 from the internal-revenue and customs receipts on this article, and other Governments profit likewise. The inhabitants of every country have their own fashion of smoking and of preparing the leaf for consumption. Machine labor is displacing hand labor, and therefore the varying shapes of cigars or cigarettes once characteristic of any country are gradually yielding to a more uniform product, but the tobacco itself is growing superior year by year and the smoker may rest content that wherever he goes he will find an excellent tobacco from the local fields.



# LATIN AMERICAN GOVERNMENTS' STUDENTS IN THE UNITED STATES

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THE high character of instruction in Latin American institutions for higher education has always been recognized by the world at large, although in the United States this recognition has not been as full as elsewhere. Heretofore there have been no marked characteristics which would distinguish these institutions from those of Europe or the United States. University instruction in Peru or Brazil, for instance, meant much the same thing that it meant in Spain, France, Germany, England, or the United States. The humanities, pure science, law, medicine, and a modicum of applied science were the principal subjects of study. The modern tendency to make university education more practical, more a fitting preparation for the needs of every day industrial as well as professional life, has had its effect all over the world. The fact, however, is generally lost sight of that this tendency to substitute for, or at least to graft upon the older subjects of university instruction, a broader and more thorough study of the applied sciences, arts, and industries is manifesting itself to a greater extent in the Latin-American countries than elsewhere. Furthermore, and this is a most significant fact, the young men of wealth and social standing who have heretofore been content with the liberal and classical instruction of the universities, followed perhaps by a year or two finish at one of the European institutions, are now devoting their time and energies to the study of technical and industrial subjects. This is all the result of a firm conviction which has taken possession of the Latin-American mind from the Rio Grande to the Strait of Magellan that technical education is the corner stone of the future development, prosperity, and security of these 20 Republics.

This idea of course is not primarily Latin American; people from other parts of the world think much the same thing in regard to their own countries, but the intensity of this belief, and the manner in which it has taken possession of both Governments and people, and the efforts put forward to make it effective, are peculiar to the people of America speaking the Spanish and Portuguese tongues. The belief is paramount that the building up of these Republics into rich, powerful and secure nations will only be accomplished through native

energy properly trained in industrial and economic science. Foreign capital and skill are welcomed and will always be welcomed, but the fact is clearly appreciated that these two factors are auxiliary and not fundamental as a basis upon which to rear the national edifice. There is no part of the world to-day where foreign capital and skill are offered so great an opportunity as in the southern countries of this continent. From the standpoint of the capitalist and the trained specialist the field is almost unlimited and the rewards are great and cumulative, but from the standpoint of the country itself, the benefits which it derives from these two agencies of progress are definite but not unlimited. The auxiliary can accomplish so much and no more; the real structure must be built upon other foundations. This is the Latin-American idea which it is the Latin-American purpose to make effective.

The idea has no kinship with that expressed in the phrase "China for the Chinese," except in so far as the phrase may have a political as distinguished from an economic meaning. There is nothing exclusive about it; quite the contrary. The present attitude of mind in all the southern Republics is not merely to welcome but to seek foreign capital and immigration, even though the latter be temporary, and if there is one thing more than another which may be confidently predicted of the future it is that this attitude will not change.

There has been a most pronounced awakening of idea and a quickening of national life. Whatever may have been the fact in the past the Latin American of to-day is not content to sit idly by and be satisfied with the incidental benefits which may come to him or to his country through the exploitation of its natural resources by foreign capital and energy. He does not believe that a great national future can be assured by such means. He intends to play the game himself, and in order to do so successfully he is now learning its rules and strategy. Both peoples and Governments are eagerly seeking to create a body of men trained in the applied sciences, industries, and arts whose work will be the foundation for the great future which of a right belongs to the Latin-American Republics. So we see the broadening of the university curriculum, the establishment of technical schools, creation of government bureaus and institutes for studying and fostering national industries, scientific societies, and international associations devoted almost exclusively to industrial development.

Governments and peoples are reaching out to absorb the accumulated knowledge of other countries with an eagerness and enthusiasm which it would be difficult to find paralleled. Young men by thousands are leaving their homes for technical study in foreign countries. The greater number of these are now seeking the United

States. No statistics have been compiled of Latin-American students in the universities, colleges, technical schools, and industrial establishments of the United States, but it is known that there are several thousands of them. The great majority pay their own expenses, although some are assisted by private institutions and societies. In addition there are a considerable number sent out directly by the Governments and whose expenses are a government charge. The Bureau of American Republics has recently made an inquiry as to the number of these latter, and the results of this inquiry are both interesting and instructive.

The Argentine Republic supports 30 students in the United States, divided between the Massachusetts Institute of Technology, Worcester Polytechnic Institute, Cornell University, University of Pennsylvania, New York State University, Ohio State University, Drexel Institute, and the Chicago Veterinary College. The Argentine vice-consul at Washington, Señor JUAN S. ATTWELL has charge and supervision of these young men.

Bolivia, which supports a large number of students in foreign countries at present, has but one government student in the United States, who is studying engineering in Philadelphia.

None of the Brazilian students, of whom there are many in the United States, receive government aid.

There were 30 government-aided students from Chile last year. There are more this year.

The small Republic of Costa Rica, which claims to have more school-teachers than soldiers, supports 21 students in the United States. These are studying: Electrical engineering at the Pratt Institute, Brooklyn; Tufts College; Louisiana State University; at South Bethlehem, Pennsylvania; and at Harvard; medicine at the University of Pennsylvania and at Jefferson Medical College; civil engineering at the University of Pennsylvania and at Lehigh; commerce at New York University; mechanics at the Baldwin Locomotive Works and at the University of Pennsylvania; agriculture and agricultural chemistry at Harvard and at Cornell; kindergarten methods at Pratt Institute; obstetrics at Galveston Hospital.

These students are under the charge and direction of Señor Don JOAQUIN B. CALVO, the Costa Rican Minister to the United States.

A number of students from Cuba are supported in the United States by the governors of provinces, but none by the General Government of Cuba. The governor of the Province of Havana pensions five students at Cornell. There are others at Hampton, at West Virginia University, and elsewhere.

Sixty-eight young Ecuadorans are studying in the United States. Of these 28 are supported by the Government. These are divided

between the South Bethlehem Works. Large Institute, Trenton, Massachusetts Institute of Technology, Lehigh, Bucknell, Columbia, and Pennsylvania University, St. Martin's School, California; Pratt Institute, Bliss Electrical School, Peekskill Military Academy, Connecticut Agricultural College, Normal School, Bloomsburg, Pennsylvania, Trenton Normal School, and preparatory schools in Washington, New York, and Maryland.

There are 3 government-aided students from Honduras—1 in the University of Pennsylvania, studying veterinary science, and 2 at the Massachusetts Institute of Technology.

There are 14 Mexican students who receive government aid in the United States. Eight of these are supported in New York and in Boston by the Department of Public Instruction and 6 are young army officers supported at Forts Riley and Leavenworth, Kansas, by the Department of War and Navy.

Nicaragua sends 4 young men—3 in New York and 1 in Philadelphia—who are under the charge of Señor Don LUIS F. COREA, Nicaraguan Minister to the United States.

The Republic of Panama has 15 students in the United States, at the Rhode Island College, Brooklyn Polytechnic Institute, Rensselaer Polytechnic Institute, Stanislaus College, Madison College of Agriculture, University of Pennsylvania, and at private and preparatory schools.

Nine young men from Paraguay, whose expenses are paid by the Government, are studying textile manufacture, finance, mechanical engineering, and agricultural science in the University of Pennsylvania, Cornell, Ohio State University, and Iowa State College.

Government students from Peru number 11, 6 of whom are graduates of the Lima Normal School, and are now in the United States continuing their studies in preparation for teaching. They are at the University of Chicago, Boston University, and the normal schools at Albany; Charleston, South Carolina; Bridgewater, Massachusetts; and Oneonta, New York. Three are graduates of the Peruvian Agricultural and Veterinary School, at Lima, and are studying cotton and sugar cultivation and cattle raising in the United States.

One is studying architecture, and another, a graduate of the Lima Mining School, is studying mining engineering. In addition the Government is about to send a number of mechanics to perfect themselves in that trade.



# RIVERS AND PORTS OF BRAZIL . . . . .

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Speech delivered by the Brazilian ambassador, Mr. JOAQUIM NABUCCO, at the National Rivers and Harbors Congress, held in Washington, D. C., December, 1908:

**G**ENTLEMEN: I only come here to acknowledge your interest in the progress of your sister American Republics. Our continent is destined to be so interdependent that the interest of a powerful body like yours, representing such an accumulation of science, of mechanical and creative power, exercising such influence on the employment of capital and on the increase of wealth, would have considerable effect on the rest of the continent, were it to spread beyond the limits of your own country. The least sign in that direction is of the greatest concern to us all. Nothing would do so much for the strengthening of the relations of our two continents. I say our two continents without thinking of the Panama Canal. The current of sympathy that runs between them will not be stopped; on the contrary, shall be materially increased, by the passage you may cut across the Isthmus. However wide the cutting, the sympathy would easily leap over it.

Indeed, under the present Administration, we have entered in quite a new American era, of which Mr. Root's visit to Latin America will count as the *hegira*.

I am supposed to speak about the navigable rivers and harbors of Brazil. When answering your so very kind invitation, I confessed my inability to do justice to the great works undertaken in other parts of the South American Continent. But even with regard to what has been done in Brazil, I prefer to submit by writing to your examination a few data taken from competent authorities, and to make only a few remarks on the whole.

As to our navigable rivers, we may be excused for not having done much for their navigation. Nature has taken the matter upon itself. We have here and there built, or are planning to build, a railway, or a traffic road, to avoid the falls and the rapids of some great rivers, as the Madeira, the Rio Branco, or the São Francisco, but we hardly could improve our great fluvial arteries. The Amazon, for instance, is navigable by steamers, in Brazilian territory alone, for 2,500 miles; if you take together some of its tributaries, you will have, in that territory, a course open to steamers of more than 10,000 miles. I speak only of steamers. You would have to treble the number of miles, if you were thinking of any kind of boats. The present century, I hope, will see that immense canalization all ploughed by steam and electricity. When the connection of the Amazon with the sources of the River Plate, to which we supply nearly the whole of its waters, will be established, the earth will see an inland water system of a magnitude never dreamed before. In fact, the deep, fresh-water line crossing Brazil east to west and north to south will be longer than her Atlantic coast.

I think we ought to be proud of those immense prospects of river and forest combined, by the side of powerful falls, destined to supply all the electricity we may need. With that vision of the future I do not like to speak of our rivers as they appear to-day. Take the São Francisco. The men of science

who have been on its banks agree that the São Francisco is a great river of the future and that the central region it drains will show one day immense wealth. I think it is a good thing for a nation to have a part of its asset under lock, kept for a time of greater progress all round, both in agricultural sciences, in metallurgy, in electricity, and in medicine, as then the conquest of the Tropics will be achieved without the destruction of nature's treasures and without irreparable damage to the country's future.

We are devoting the best of our attention to the building of great commercial ports along our coast, more than 3,500 miles long. In two years more we will have terminated the building, at Rio de Janeiro, of the three kilometers of stone quay for steamers of any draft. As a shelter for the fleets of the world, should they ever decide to meet there, the bay takes care of itself. The docks of Santos have not only transformed that city, both as to its buildings and to its sanitation, but have also given to the São Paulo gigantic coffee trade an adequate opening. Besides those works, achieved or near completion, we have in hand the ports of Manaus, and those of Para, Pernambuco, Bahia, Victoria, and Rio Grande. It is an immense outlay, no doubt. The Santos docks were built by a private enterprise; all the rest are public works. Pernambuco, the most eastern city of Brazil, claims that, with a port open to the largest transatlantic steamers, instead of its present natural reef only, it will become in Brazil the natural landing of the Old World on the shores of the New; while Rio Grande sees in the work to make its sea-entrance safe and its harbor commodious a possible rivalry of southern Brazil with the growing Plate.

Great expectations are raised, as you see, north and south. I, for myself, have no doubt that the millions we may apply to the building of ports are the most remunerative expenditure our country could commit herself to. We have managed to build in the past more than 50 ports; we hope to improve them all. When a country within twelve years increases her exports more than 30 per cent, and doubles her imports, while her development has been continuous from decade to decade for more than a century, that country may well trust the future. Such is the case of Brazil. A yearly commerce of \$500,000,000 may not seem much by the side of your statistics, all written in astronomical figures, but, at the progressive rate stated before, half a billion dollars is already a good promise.

Gentlemen, I hope you all will excuse me for having come here only to thank you for your interest in the development of Latin America. I took your invitation as an act of continental good will and in the same manner I have answered it.



# NORTH AMERICAN CAP- TAINS OF INDUSTRY IN LATIN AMERICA ∴ ∴

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**H**ENRY MEIGGS, the great railway contractor of South America, was born at Catskill, New York, July 7, 1811. He settled in New York City about the year 1835, where he became prosperous in lumber transactions, but the panic of 1837 rendered him a bankrupt. Two years later he was again wealthy, and, in 1840, had a large lumber yard in the village of Williamsburg (Brooklyn), New York. In 1842 he failed once more in business. His future was uncertain for the next few years,



Henry Meiggs.

(Reproduced from the New England Magazine.)

but in the local annals of New York City he has left his name as the president of one of the leading musical societies of that period. He sailed in 1848 for San Francisco with a cargo of lumber, which, it is said, he sold for twenty times its cost, on account of the growing importance of that city, due to the recent discovery of gold in California. He now established wood yards on a large scale and became prominent in the politics of San Francisco. He was thrice elected an alderman of the city council, and won many friends on account of his genial manners, generosity, and tact. Unfortunately, he engaged in extensive speculations, and finally expanded his credit to such a degree that he was rendered bankrupt. In this extremity he took the step of conveying all his portable effects on board a vessel of his own, lying in San Francisco Harbor, and one night in 1854 embarked with his family and sailed for parts unknown. Next morning the city was astounded to find his fine mansion silent and deserted and to learn what had happened.

The mystery enveloping his sudden disappearance remained long unsolved. When news of his whereabouts at length reached the United States, his movements were traced to Australia, whence he had repaired to South America. It was also learned that he was recognized as a great railway contractor and had become a millionaire.

His first achievement in his new field of activity was the construction of the railway between Valparaiso and Santiago, the capital of Chile, lying 90 miles inland from the Pacific and within sight of the Cordillera of the Andes. He took charge of this enterprise in 1861, and the road was formally inaugurated and opened on Septem-



RAILROAD BRIDGE BETWEEN VALPARAISO AND SANTIAGO, CHILE.

This railroad was surveyed in 1846 and completed in 1863 by Henry Meiggs. It is now owned and operated by the government. The distance from Valparaiso to Santiago is 42 miles, with a maximum grade of 1,800 feet between the termini.

ber 14, 1863. After twelve years' residence in Chile, where he earned the reputation of being a philanthropist, he went to Peru. He signalized his arrival in the latter Republic by beautifying Lima and improving its sanitary condition. He had great projects in view, as he perceived that one of the needs of Peru was the construction and operation of adequate railroads through her vast territory. It was a fortunate coincidence that these very ideas had already been advocated by the illustrious Señor DON MANUEL PARDO, one of the greatest of all Peruvian statesmen, who was to become President of the

Republic in 1872. One of his distinguished sons is Señor Jose PARDO, who was President of Peru from 1904 to 1908, and another is His Excellency Señor FELIPE PARDO, the present Peruvian Minister to the United States.

Railway construction in Peru had been undertaken as far back as 1851, but it had been spasmodic rather than systematic. While due credit should be paid to other British and American contractors, who between that year and 1867 were instrumental in forwarding the building of railways in the Republic, and particularly to the North American capitalist, Mr. BENJAMIN F. BATES,<sup>a</sup> who, at his own cost, had his engineers survey 15 or 16 routes across the Andes, the honor belongs to HENRY MEIGGS that, through his wonderful resourcefulness and indomitable will, almost insurmountable obstacles were overcome, six important railways were built in Peru, and some of the most inaccessible mountains and peaks of the Andean Cordillera were pierced by 32 tunnels. As closely as a careful comparison of the best authorities on the subject will permit, and brought down to 1892, the railway system of Peru as it was projected in the MEIGGS epoch, and undertaken either by him or other contractors, may be outlined as follows:

	Miles.
Mollendo to Arequipa.....	107
Arequipa to Puno.....	220
Juliacca to Santa Rosa.....	66
Callao to Oroya.....	136
Pisco to Ica.....	48
Lima to Ancon.....	22
Chimbote to Suchuman.....	30
Piscamayo to Yonan and Guadalupe.....	66
Salavery to Truxillo and Ascope.....	53
Payta to Piura.....	42
Total (In operation).....	790

The precise cost of these enterprises is difficult to ascertain, but a conservative estimate places them at approximately \$125,000,000 (this includes 373 additional miles required to be finished, according to the original contracts), or more than \$108,000 per mile.

The most important of these works, and the one which more than any other has established the reputation of Mr. HENRY MEIGGS as one of the greatest railway contractors and constructors of modern times is the famous Pacific and Transandean Callao, Lima and Oroya Railway, 87 miles of which, or approximately two-thirds of the entire distance (136½ miles), had been completed by September, 1877, at the time of the great contractor's death. The entire road was com-

<sup>a</sup> This talented American died of yellow fever at Lima in 1868, and his decease was deeply deplored. The leading Peruvian papers published eulogistic obituary accounts.

pleted under the so-called "Grace contract," in 1892, by the Bondholders' Syndicate, of London. In order that our readers may understand more clearly the well-nigh insurmountable obstacles encountered by Mr. MEIGGS and his American engineers in constructing this remarkable railway, we quote the following concise description of the topography of Peru by the eminent North American archæologist, Mr. E. G. SQUIER:

No portion of the globe has bolder or more marked geographical or topographical features than Peru. In no part of the world does nature assume grander, more imposing, or more varied forms. Along the Pacific coast is a belt of desert, intersected here and there by narrow valleys of wonderful fertility or relieved near the mountains by oases not less fertile. Succeeding this belt inland is the declivity of the Cordillera, notched by gorges, through which flow streams of varying size, fed by melting snows or the rains that fall for part of the year in the interior. On the coast, except as a remarkable meteorological phenomenon, rain never falls—a fact bearing in a marked manner on the aboriginal architecture of that region. Ascending the escarpment of mountains we find a grand, elevated ridge or mountain billow, bristling with snowy or volcanic peaks, and often spreading out on broken, cold, and arid plains, or punas (deserts), with little of life to relieve their forbidding monotony. This broad and frozen belt, called "El Despoplado" ("the unpeopled"), varying from 14,000 to 18,000 feet in height, is succeeded in the south of Peru and Bolivia by the great terrestrial basin of Lakes Titicaca and Aullagas, which is shut in completely by the Andes and the Cordillera. Above, or to the northward of this, the two ranges separate again, forming the vast Andean plateau, the Thibet of America, deeply grooved by streams, which all find their way eastward into the Amazon.<sup>a</sup>

It was characteristic of the dashing daring of HENRY MEIGGS that he resolved to penetrate into the very heart of the loftiest Peruvian Andes and to connect by rail the port of Callao, on the Pacific, with the headwaters of a navigable tributary of the Amazon, east of the foothills of the Cordillera of the Andes. Such a railway once completed and in successful operation would be of inestimable benefit both to Peru and her eastern neighbor, Brazil. As a step toward the consummation of this project, he desired to reach the famous Cerro de Pasco region, which was really a mountain, or rather, a mountainous hill, of silver ore and copper which, in a more or less crude and primitive way, had been exploited ever since the days of the Spanish Conquest. The route that Mr. MEIGGS decided to follow was to cross and recross the Rimac (the river on the bank of which the city of Lima is situated) from southwest to northeast, up to its source in the gorges of the Andes, thence across the western chain of the Cordillera eastward on to the eastern chain, and then, in a zigzag or some-

<sup>a</sup> "Observations on the Geography and Archæology of Peru," by E. G. SQUIER, M. A., F. S. A., late commissioner of the United States in Peru. (A paper read before the American Geographical Society, February, 1870; p. 4.) London: Trübner & Co., 1870.



**A SECTION OF THE OROYA RAILWAY, PERU.**  
The view shows the windings of a section of the Oroya Railway in traversing the precipitous Andean Range through the valley of the Rimac River. Some of the grandest scenery in the world is displayed.

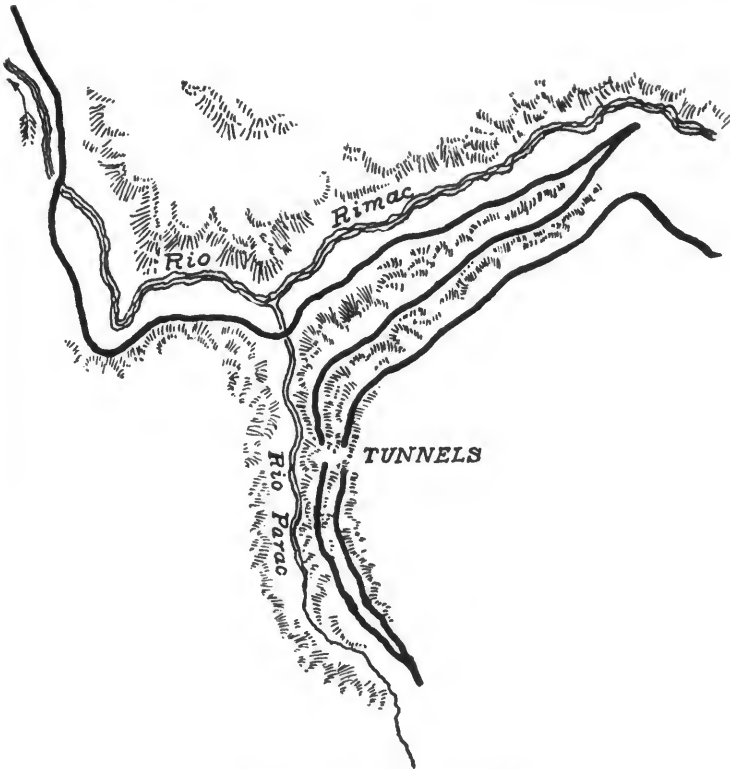
what semicircular fashion, have the railway thread its course along the Andean slope northward on to Cerro de Pasco. The entire distance to be covered was approximately 220½ miles. The span of Mr. MEIGGS's life was too short for the execution of this stupendous project in its entirety, even if his progress had not been impeded by the disturbed condition of Peruvian finances. His first objective point was, however, to reach a point called Oroya, 136½ miles from Callao and 12,178 feet above the level of the Pacific. As already stated, the railway was completed and in operation for 87 miles of this distance at the time of Mr. MEIGGS's death in 1877, while much of the track and the grading for the remainder of the route was in such an advanced state that it required but little additional labor to put it in condition for travel.

Mr. MEIGGS signed a mutually advantageous contract in December, 1868, with the Government of Peru, for the construction of the Callao, Lima and Oroya Railroad, which was to be completed within six years. Shortly after the signing he proceeded with the work of surveying and construction.

The Oroya Railroad has been called "a railroad among the clouds." In order to construct it, the chief engineer, Mr. ERNEST MALLINOSKI, and his assistants resorted to the most extraordinary devices and methods. The height ascended by this railway is within 136 feet of that of the summit of Mont Blanc, Switzerland. The road bends upon itself with sharp angles as it ascends the mountain sides, like a staircase with many turns. It pierces the obstructing peaks with 32 tunnels, which often come together so closely that they seem continuous to the traveler. Great gorges had to be traversed and torrent streams spanned by bridges that seem to hang in mid-air. The mountain sides were in several instances so precipitous that the workmen could only reach the point at which a tunnel started by being let down with ropes from the edge of the cliff and held there till they had cut for themselves a foothold in the rock. The diamond drill was used in many of the borings. Engineers were often compelled to triangulate from the opposite side to mark out the course of the road, while in one case they and their men were conveyed across a chasm over the Rimac on wire ropes suspended several hundred feet in the air between the two opposite cliffs. The upper portion of this narrow and tortuous river rages down through the bottom of gorges and chasms walled in with mountainous, overhanging bluffs, sometimes over 2,000 feet high. A considerable portion of the railway follows the Rimac in its windings, or crosses and recrosses it at the sharpest angles. The grade from Lima (448 feet above sea level) to San Bartolome, 39 miles inland, is constantly up, and at the latter station the elevation is 4,910 feet above the Pacific Ocean—an astonishing ascent



for that distance. Here occurs the first of many retrograde developments, rendered necessary by the increasing rise up the gorges, ravines, and slopes of the Andes, where the line takes the form of a V, and, receding upon an ascending grade, reaches the elevated plateau on which the village of San Bartolome stands. Thence, crossing and re-crossing the Seco, a tributary of the Rimac, it makes two complete detours and ascends on the opposite side past a point overlooking San Bartolome Station. The road clings to the rugged sides of the

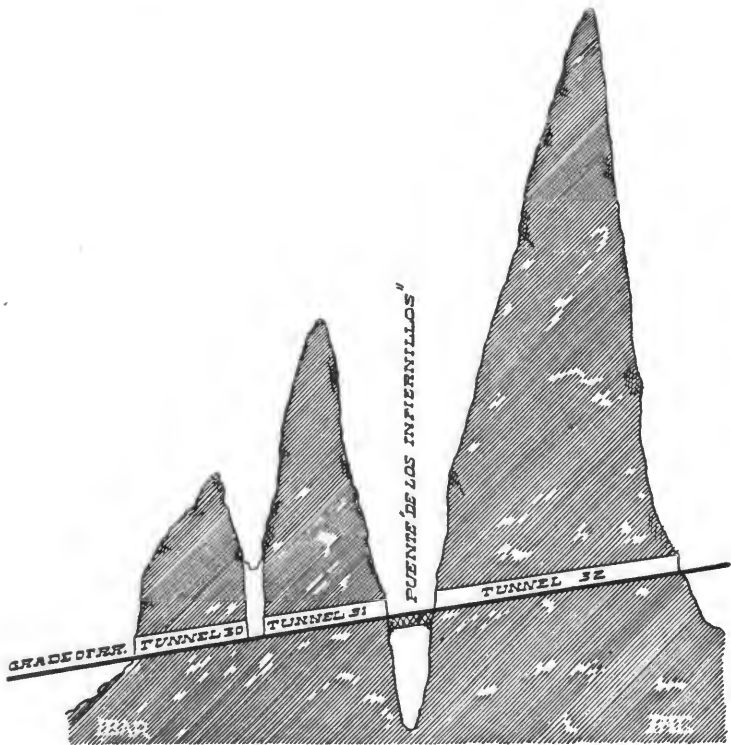


SECTION OF THE OROYA RAILROAD.

ever-towering ridges, passes through 2 tunnels, and crosses a deep mountain gorge on the famous Verrugas viaduct. This was regarded in the MEIGGS epoch as the highest bridge in the world.

A notable feature in the section of the railway from Verrugas on to Surco is a tunnel through a precipitous side of the mountain, about 575 feet above the bed of the river. In some of this there is a curve of 395 feet radius. The Oroya Railroad now continues onward and

upward through a wilderness of mountain heights in the Cordillera, with the familiar Rimac River still near for a very considerable portion of the journey, while snowy peaks that are 16,000 feet high overlook its tempestuous and roaring course. Continuing amid Andean scenery, already above the lowest limit of perpetual snow, the road gains from Tambo de Viso to the station of Infiernillo, a distance of  $10\frac{1}{2}$  miles, an ascent of 1,153 feet. The name



RAILROAD CONSTRUCTION ON A PORTION OF THE OROYA LINE.

"Infiernillo" (Little Hell) has been bestowed on this region because the Rimac thunders and foams down a narrow gorge, the cliffs of which reach hundreds of feet toward the sky and shut out the light of day. The line, after leaving a tunnel, crosses the river on a bridge of 160 feet span and at a height of 165 above the water, and then enters another tunnel. At the time of Mr. MEIGGS's death (September, 1877), the Pacific-Transandine Callao, Lima and Oroya

Railway terminated at Chicta, 86 $\frac{3}{4}$  miles from Callao, but the principal tunneling and much of the grade work and track for the remainder of the line, 49 $\frac{3}{4}$  miles to Oroya, had been accomplished, and little additional labor was required to put the rest of the railway into running order.



"INFERNILLO" BRIDGE, OROYA RAILROAD, PERU.

This bridge is at an altitude of 10,924 feet above the sea level, and received its name from the gorge which it crosses at a height of 165 feet above the foaming waters of the Rimac River. The span is 160 feet in length.

From any point of the valley no less than five almost parallel lines are visible—three on one side and two on the other of opposite mountains—while the greatest distance between any two of them is scarcely 500 feet. A few miles above Casapalca, and nearly opposite Anterangra, the narrow valley of the Chin Chan opens suddenly from the north, and divides two towering ridges crested with perpetual snow.



SCENE ON THE OROYA RAILROAD, CASAPALCA SMELTER IN THE DISTANCE.

This copper smelter overlooks the valley of the Rimac River, and is 95 miles from the coast, at an altitude of about 24 miles above the sea. It was built for American capitalists by Capt. H. Geyer, an American mining engineer. The ore supply is obtained from the celebrated Casapalca and Cerro de Pasco mines, both of which are served by the Oroya Railroad.

(Copyright by Underwood & Underwood.)

Here the route crosses the Rimac and advances up the Chin Chan for  $2\frac{1}{2}$  miles, where, making a sharp detour, it returns above the first line and reappears on the right bank of the Rimac 1,000 feet above the bed of the valley. From this natural fortress to the dividing crest of the Andes the line of the road is often lost to sight amid desolate masses of snow and ice. One can perceive that extremely heavy work had to be done and great obstacles overcome, but the line advances on higher and higher, winding the sources of the Rimac, which it has followed from the Pacific Ocean, until at last it reaches the desolate summit of the Andes and enters the Galera, or "tunnel de la Cima," as the Peruvians style it. This tunnel is 1,173 meters, or 3,848 feet long, and enters the mountain about 680 feet beneath the apex of an undulation lying between Mount Meiggs (17,500 feet above sea level), and two gigantic peaks on the left. It is  $10\frac{1}{2}$  miles from Callao and 15,645 feet above sea level, or only 136 feet less than the altitude of Mont Blanc.<sup>a</sup> The rest of the route to the village of Oroya, 22 miles beyond, is on a gradually descending grade, the construction of which was relatively easy compared to the herculean labors already accomplished. Oroya, the terminus, as completed under the "Grace contract," is  $136\frac{1}{2}$  miles from Callao and at an elevation of 12,178 feet above the Pacific. The hamlet is situated about 30 miles south of the little Lake Chanchoyco, from which the Janja River flows out, and running 150 miles southeast breaks through a deep canyon of the Central Cordillera, where it joins the Apurimac and with it flows into the upper Amazon. The place has received its name on account of its peculiar location, as an "oroya" is a cable and boatswain's chair used in Peru for crossing streams that can not be forded. The valley of the Janja River is particularly salubrious, and it was here that in the early sixties the distinguished elder Señor Don MANUEL PARDO went to reside for the benefit of his health, discovering that the region is splendid for checking the progress and effecting the cure of consumption; and it was also here that he wrote his celebrated brochure, "Estudios sobre la provincia de Jauja" ("Studies on the Province of Jauja"), in which he advocates the building of a Pacific-Transandine railway in Peru. This pamphlet attracted wide attention among the Peruvians, and undoubtedly aided Mr. MEIGGS in securing the concession and right to build his stupendous railway.

The total length of tunnels pierced through the Andes during MEIGGS's period was approximately 21,000 feet. In the most difficult section for construction, from Tambo de Viso to Rio Blanco, only 14 miles distant, the ascent is 2,673 feet, and this Andean region was penetrated by the boring of 22 tunnels. The toll in lives lost in the

<sup>a</sup> According to Coraboeuf, Mount Blanc is 15,781 feet above the sea.

building of the Oroya Railway was appalling, some authorities placing it as high as 15,000. This was due to no fault of Mr. MEIGGS, who was particularly solicitous in providing for the welfare of the Chilean, Chinese, Indian, and other laborers under him. The sudden transition from the normal atmospheric pressure of 32 inches at the level of the Pacific to one of 17 inches, as recorded in the great North



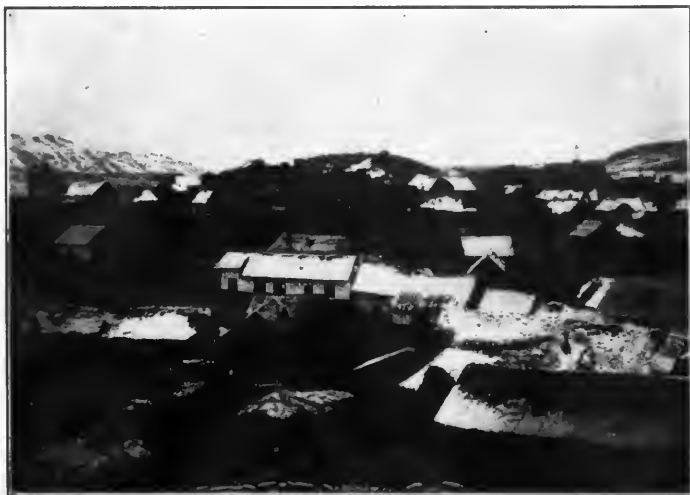
AN ANDEAN STATION ON THE OROYA RAILROAD, PERU.

The highest point on the Oroya Railroad is in the Galera tunnel, which pierces the watershed of the Andes at an elevation of over 15,600 feet, which is also the highest altitude of any railroad in the world. This line connects with the celebrated copper and silver mining district of Cerro de Pasco, Peru.

American contractor's own observatory on Mount Meiggs, and from a hot climate on the coast to frigid climatic conditions in the Peruvian Cordillera of the Andes, could not fail to produce a high mortality among the railway construction gangs. At the Verrugas Viaduct a peculiar and horrible blood-poisoning disease broke out. It is held by physicians to be caused by a germ that can be absorbed

into the system with food or water and then communicated through the saliva. The decomposition of the soil in the Verrugas Valley and one or two other points in Peru would seem to account for its origin. This disease attacks every unacclimated person, usually with fatal results. In other of the lofty Andean heights through which lay the route of the Oroya Railroad, and where this disease was unknown, the mountain "sirroche" sickness not infrequently proved fatal.

One of Mr. MEIGGS's most striking merits was that he could take up enterprises which others either had not the ability or the means to



CERRO DE PASCO, PERU.

Cerro de Pasco, Peru, situated at an elevation of 14,100 feet above the level of the sea, is the capital of the Department of Junin, 130 miles northeast of Lima. It is connected with Oroya and the capital of the Republic by railroad, 83 miles of which were built by Americans to foster the development of the copper deposits of the Cerro de Pasco region, said to contain the greatest single deposits of copper in the world, the estimated output of this metal in the district being 60,000 tons annually. The Cerro de Pasco silver mines, which were worked by the Jesuits from 1630 to 1824, produced 27,200 tons of pure silver. Gold is also found in small quantities in the district, but the great industry of this region is copper mining.

carry out, and he invariably successfully executed these undertakings ahead of the time set. A notable instance of this was the railway from the port of Mollendo, in southern Peru, up to Arequipa, 107 miles long, an enterprise of extremely difficult engineering construction, in the high Andes; the loftiest portion of the railway being about 14,660 feet above sea level. He completed the road in two years and nine months after signing the contract, instead of three years.

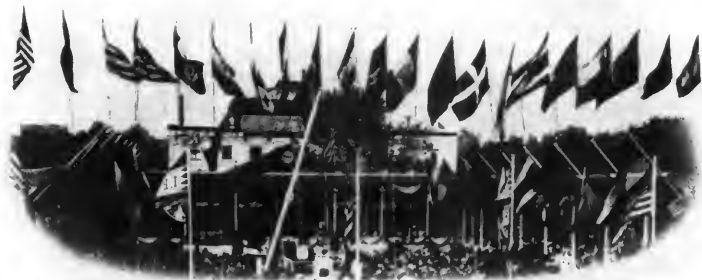
Fabulous stories have been told of the wealth of this extraordinary character, and it has been asserted that his South American accumu-

lations made him abundantly able to meet the claims against him, which arose from the indebtedness in which he became involved in San Francisco in 1854. He took pains to pay the bulk of these claims in full, with interest. There are many delightful stories told about these restitutions, such as that of an old washerwoman who contrived to have her forgotten account sent to Mr. MEIGGS in South America, and received in return an unexpected gift of bar silver, which made her comfortable for life. He had a kindly disposition, and was always ready to help any of his fellow-countrymen in South America whom he found to be in trouble.

His death in Lima, on September 30, 1877, at the age of slightly over 66, was the occasion of deep mourning throughout Peru, and the funeral services held in his memory were impressive. His mortal remains lie under a mound and a simple cross at Villegas, 2 miles from Callao, by the side of the track of the Oroya Railway, the greatest monument of his genius. He made, in his last testament, ample provision for the continuation of the work which the limited span of his life rendered him unable to execute in its entirety, and his executors transferred his rights to Mr. MICHAEL P. GRACE, who, in his turn, after having it confirmed to him by the Government of Iglesias, transferred it to the "Peruvian Corporation."







## THE FLAGS AND COATS OF ARMS OF THE AMERICAN REPUBLICS . . . . .

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### CHILE.

**A**FTER having been subject to the rule of Spain for two hundred and sixty-nine years, Chile began to throw off the yoke of the mother country when, on September 18, 1810, the patriots of Santiago, now the capital of the Republic, deposed the last Spanish captain-general and established a provisional government. Two years later, under the new supreme director, Gen. Don JOSÉ CARRERA, a tricolor rosette was adopted as the emblem of a nation then struggling for liberty against overwhelming Spanish armies, this rosette being blue, white, and yellow, the last-named color having been taken from the flag of Spain. These were the three colors that formed the Chilean banner, which was unfurled in Santiago, Chile, by the side of the flag of the United States, during the celebration of the anniversary of the Republic of Washington, on July 4, 1812.

The banner and its colors, already mentioned, were accepted as the national standard of Chile until 1817, when after the victory of Chacabuco over the Spaniards, February 12, a new tricolor flag, composed of the present red, white, and blue, but of a different design, waved for the first time over Chilean territory.

The permanent national Chilean banner dates from October 18, 1817, when, through a decree of the supreme director of Chile, Gen. BERNARDO O'HIGGINS, it was officially adopted. A pleasing tradition concerning the red, white, and blue colors of the Chilean flag is that

emblems composed of these colors waved over the armies of the Spanish conquerors in their fiercely contested battles against the warlike Araucanian Indian tribes in the southern portion of Chile, but learned Chilean historians maintain that the tricolor design of the banner of Chile was taken from that of the United States; an explanation which accords well with the aspirations of the Chilean people for liberty and progress.

The national shield or coat of arms of Chile embraces the same colors as those of her banner, and its adoption dates from June 26, 1834, agreeably to the law sanctioned on that day by the National Congress and promulgated by His Excellency Gen. JOAQUIN PREITO, and countersigned by his minister, Don JOAQUIN TOCORNAL.

This emblem, like the flag, has undergone an evolution which modified its form and colors in the midst of the events which finally produced the fundamental and definite constitution of the Republic. On a streamer of white ribbon, which is directly underneath the two animals supporting the shield, is inscribed the motto: "BY RIGHT OR MIGHT." These words appeared on the silver coins circulating in Chile in 1833.

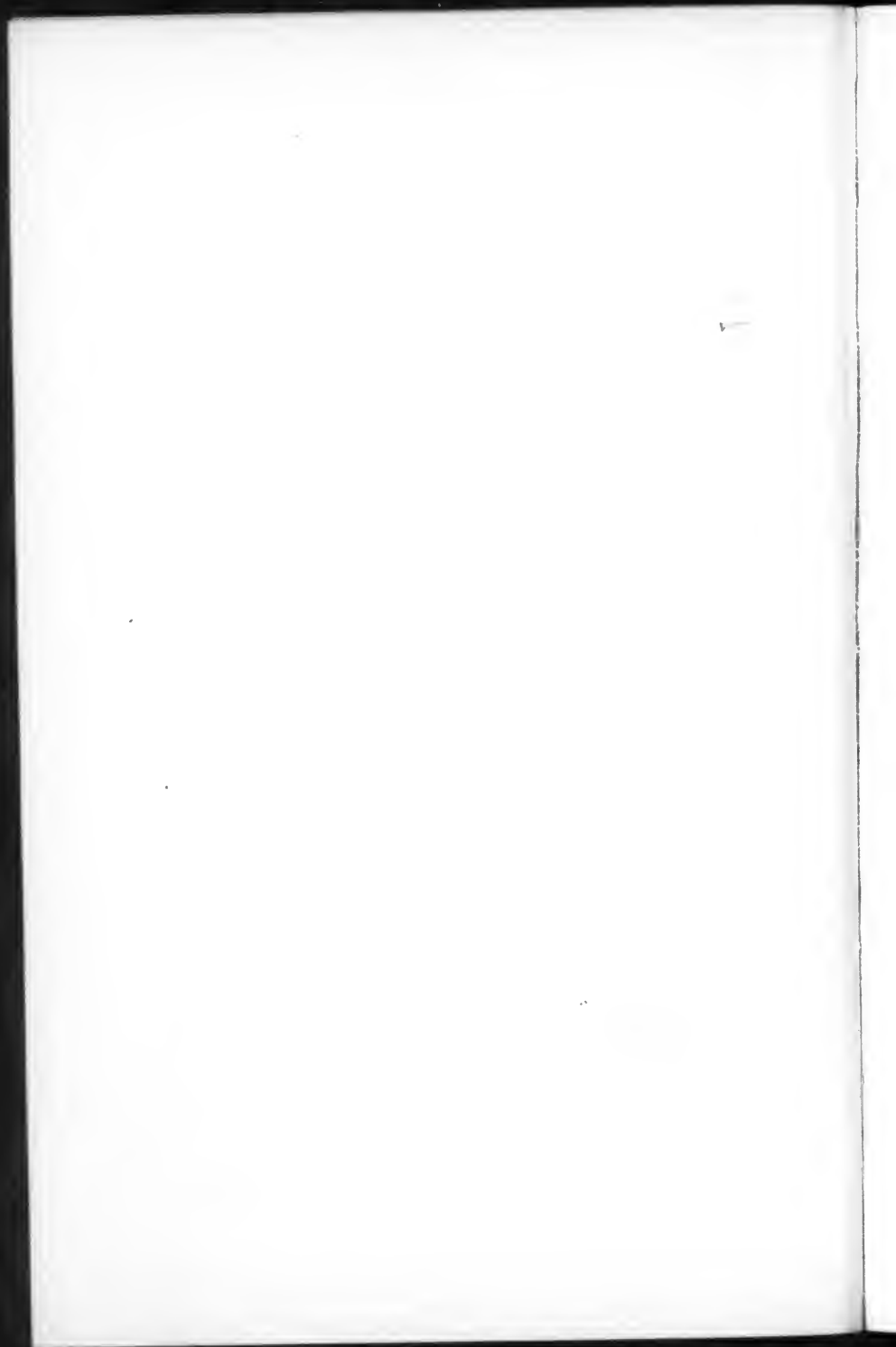
The laws which were enacted for the design and colors of the banner and coat of arms of Chile indicate the evolutions of its history and definite form. The silver star which shines in the center of the shield and in the blue field of the banner is the celestial symbol which the Chilean aboriginal Indians always displayed on their pennants, and also recalls the geographical position of Chile, the most southerly country of the American continent. The condor and huemul supporting the shield were selected, the former because he is the strongest and most majestic bird of the lofty Chilean Andean summits and the latter as representing a quadruped, of the deer family, peculiar to the southern regions of Chile. The tuft of three feathers which crowns the shield was formerly used as a special mark of distinction on the hat of the president of the Republic, because it represented the supreme executive dignity of the nation. The naval crown of gold, which the condor as well as the huemul displays, recalls the glorious triumphs of the Chilean navy during the stirring maritime actions on the Pacific in vindicating the right of Chile to be free.<sup>a</sup> The attributes which characterize the Chilean coat of arms correspond to the nature of the country and to the character of its inhabitants, preserving the characteristics of their race and indicating the geographical position of Chile.

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<sup>a</sup> Until the advent of ironclads, opposing fleets in naval actions frequently came to close quarters, when boarding vessels was a common occurrence. The sailor who first succeeded in boarding a warship of the enemy and came out of the action alive was rewarded by being crowned with what was known as "a naval crown" of gold. Hence the significance of the naval crowns of gold on the heads of the condor and huemul supporting the shield of Chile.



CHILE.



# NATIONAL HOLIDAYS OF THE AMERICAN REPUBLICS

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## CHILE.

**T**HE "Diez y Ocho," or 18th of September, is annually celebrated in Chile as the principal national holiday of the Republic, because it was on that date in 1810 that the last Spanish captain-general was deposed by the patriotic inhabitants of the city of Santiago de Chile and a new provisional government installed, nominally ruling in the name of FERDINAND VII, of Spain, at that time a captive in the power of NAPOLEON I, the Emperor of France. This arrangement could not long endure, owing to the disturbed condition of politics in the Spanish Peninsula, and it soon became evident that the Chileans must establish themselves as a free, independent, and republican nation. Such a change from the old colonial régime, which had existed for two hundred and sixty-nine years, was not to be effected without a protracted and sanguinary war, involving fifteen years of heroic sacrifices. Spain on her part was determined at all costs to reestablish her old despotic sway in her now insurgent South American dependency, and accordingly overwhelming veteran Spanish armies poured southward into Chilean territory from the neighboring viceroyalty of Peru. The gallant Gen. BERNARDO O'HIGGINS, was closely besieged by a royalist army, which invested the town of Rancagua. He was finally reduced to such an extremity that on the memorable October 1 and 2, 1814 (which is the beginning of summer in the South Temperate Zone), he led a desperate sortie against the Spaniards, fought his way through the burning town, and effected his escape eastward across the lower passes of the Andes into Argentina, where he and some 1,400 Chilean refugees were hospitably received and cared for by the great Argentine commander, Gen. SAN MARTÍN, then stationed in the city of Mendoza, at the foot of the eastern slope of the towering, snow-covered Chilo-Argentine Cordillera of the Andes.

It is an interesting and significant fact that the meeting of these two extraordinary men resulted in so close a friendship between them that both are to-day ranked among the great characters of Chile. The genius of SAN MARTÍN perceived that the apparently inaccessible Andean Cordillera must be conquered. Accordingly, ably seconded by General O'HIGGINS, he secretly organized an army of 4,000 to 5,000 Argentines and Chileans, and after more than two years of unceasing preparations, both generals conducted, during the latter half of

January, 1817, the Argentine-Chilean liberating expedition over the Andes through two lofty snow-covered passes—the higher, or Uspalata Pass, is 3,842 meters (12,605 feet) above sea level. They descended at the beginning of February westward into Chile, and on the 12th of that month surprised and routed a large Spanish army at the crest of Chacabuco, this brilliant victory being due in a great measure to the impetuosity of the charge led by General O'HIGGINS. The grateful Chileans desired to make General SAN MARTÍN their supreme director, but he modestly declined in favor of O'HIGGINS. The battle of Chacabuco was followed by a reverse, in the nature of an unexpected night attack, on March 19, 1818, by the Spanish General OSORIO, upon the Chilo-Argentine army lying in camp at Talca, about 200 kilometers (124 miles) south of Santiago. The patriot cause in Chile was temporarily endangered, but General SAN MARTÍN effected a skillful retreat northward 100 kilometers (62 miles), to San Fernando, and with characteristic energy and ability recruited and equipped within two weeks after the disaster which had befallen him, a fresh army, again encountering, on April 5, the royalists at Maipu, then a hamlet near Santiago, and, after a fiercely contested battle that raged from sunrise to sunset, won a sweeping victory over the Spaniards. This triumph was the Waterloo of Spain, so far as Chile was concerned. From that moment the two sister republics of Chile and Argentina cooperated, both upon the Pacific as well as overland, for the liberation of Peru from three centuries of Spanish oppression. Later the thinned and decimated ranks of these heroic veterans united themselves with the army of Colombia, operating under the great liberator, General BOLÍVAR, and contributed toward winning the crowning victory of Ayacucho, in the loftiest Andes of Peru, December 9, 1824, and thus forever assured the independence of the whole of Latin America.

As a reminder of the achievements of the Chilean nation, the anniversary of September 18, 1810, the initiation of the movement for the independence of Chile, is annually celebrated as the leading holiday of that Latin-American Republic.

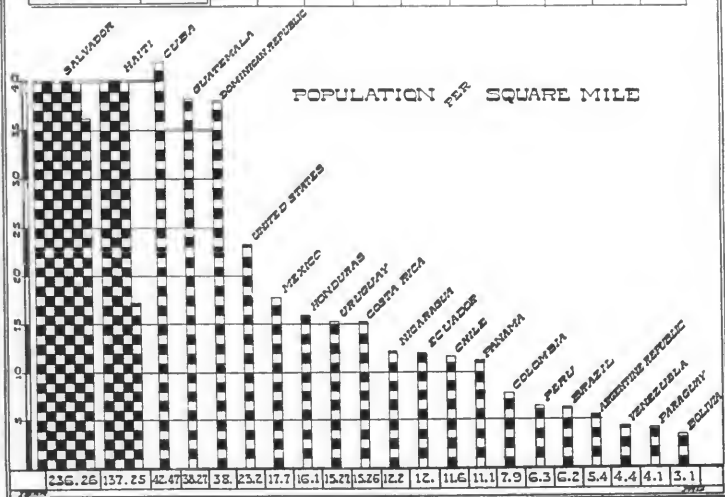
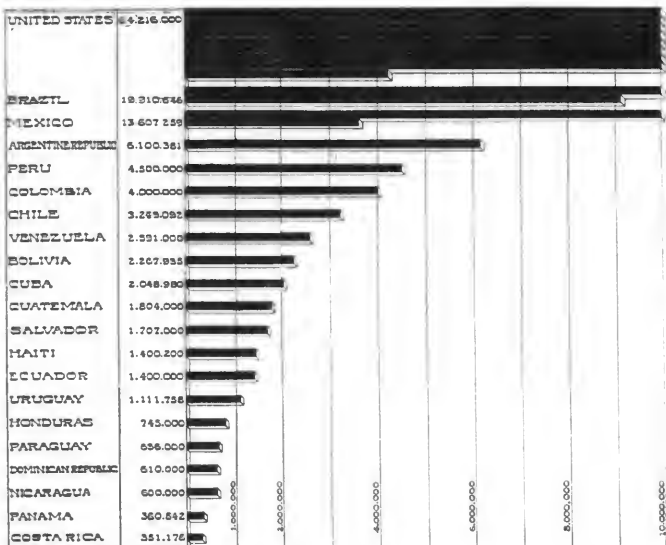


# SUBJECT MATTER OF CONSULAR REPORTS

## REPORTS RECEIVED TO DECEMBER 21.

Title.	Date of report.	Author.
ARGENTINE REPUBLIC.		
List of banks in the Argentine Republic .....	Oct. 18	Alban G. Snyder, consul-general, Buenos Aires.
Wool shipments from the Rio de la Plata .....	Oct. 22	Do.
BRAZIL.		
Exports of hides from Rio Grande do Sul .....	Oct. 15	George E. Anderson, consul-general, Rio de Janeiro.
Lumber in Brazil .....	Oct. 19	Do.
Cement in Brazil .....	Oct. 22	Do.
Railway and other contracts in Brazil .....	Oct. 23	Do.
Sale of corsets in Santos .....	Oct. 30	John W. O'Hara, consul, Santos.
CHILE.		
Hot springs in Chile .....	Oct. 8	Alfred A. Winslow, consul, Valparaiso.
Cost of operating Chilean railways .....	Oct. 13	Do.
Notes.—Number of farms in Chile, gold mine discovered near Vallenar, immigration from Europe to Chile, exports of nitrate during first six months of 1908, and life insurance in Chile.	Oct. 14	Do.
Trade conditions .....	Oct. 24	Do.
Quicker steamship service between Valparaiso and Panama.	.....do	Do.
COLOMBIA.		
Necessity for the use of metric weights and measures in invoices for South America.	Aug. 29	Eugene Betts, vice and deputy consul-general, Bogota.
New fiber plant .....	Oct. 21	Isaac A. Manning, consul, Cartagena.
Electric lighting concession for Pamplona, Colombia	Nov. 23	
CURA.		
Market for soap in Cuba .....	.....do	James L. Rogers, consul-general, Havana.
DOMINICAN REPUBLIC.		
Stoves and kitchen ware in the Dominican Republic.	Nov. 17	Ralph J. Totten, consul, Puerta Plata
Conserved bananas .....	.....do	Do.
Notes.—Projected railroad between the capital and La Vega; governor of Puerto Plata orders thorough examination of various brands of cotton-seed oil; large cacao crop expected; banana crop; turpentine put on local market by the Dominican Lumber Co. sold to compare favorably with the imported article; increase in exports of cigarettes; Norwegian steamer chartered to make regular trips between New York and Dominican ports; wireless station established at Santiago.	Nov. 28	Do.
ECUADOR.		
Why manufacturers of the United States do not share a greater portion of Latin America's trade.	Oct. 29	Herman R. Dietrich, consul-general, Guayaquil.
MEXICO.		
Wire-nail industry at Veracruz .....	Nov. 6	William W. Canada, consul, Veracruz.
Imports into the consular district of Ciudad Porfirio Diaz during the first six months of 1908.	Nov. 10	Luther T. Ellsworth, consul, Ciudad Porfirio Diaz.
Construction, repair, and administration of roads in the consular district of Ciudad Porfirio Diaz.	Nov. 15	Do.
Cattle business in the State of Veracruz .....	Nov. 26	William W. Canada, consul, Veracruz.
NICARAGUA.		
Contract for the establishment of a "General office of chemical analysis" in the capital of the Republic.	Oct. 24	José de Olivares, consul, Managua.
Examination of drugs and foods in Nicaragua .....	.....do	Do.
Revised edition of "Commercial Index" of Importers and exporters of western Nicaragua.	Nov. 14	Do.

## POPULATION OF THE AMERICAN REPUBLICS





*Reports received to December 21—Continued.*

Title.	Date of report.	Author.
SALVADOR.		
Exports for the first six months of 1908.....	Nov. 9	Arthur Hugh Frazier, consul-general, San Salvador.
URUGUAY.		
Exports of wool from Oct. 1, 1907, to Sept. 30, 1908..	Oct. 19	Frederic W. Goding, consul, Montevideo.
Horse, cattle, and sheep industry in Uruguay.....	Oct. 26	Do.

## TEXTILE INDUSTRIES IN LATIN AMERICA.

Considerable capital is invested in textile industries in Mexico and Central and South America, and at the present time the manufacture of fabrics and allied products ranks among the most promising of the new industries that have been established in the Latin-American Republics in recent years. Four of these countries import textile machinery in greater or less quantities for cotton-mill work, and two of them—Brazil and Mexico—in large quantities.

During the last five years England has exported textile machinery to Pan-America to the value of £1,637,000, or at the rate of £327,000 annually. It is of interest to note the steady increase of both these countries in their imports of English textile machinery from 1905 to 1907, inclusive. In 1905 Brazil and Mexico imported this class of machinery to the value of £132,000 and £90,000, respectively; in 1906, £167,000 and £117,000, respectively; and in 1907, £351,000 and £149,000, respectively. The Argentine Republic and Peru import textile machinery in smaller quantities, the annual average in the latter country being less than £6,000, while the average of the former country in 1904, 1905, and 1906 was £24,000 per annum.

One million spindles and 30,000 looms are in operation in Brazil and 730,000 spindles and 22,000 looms in Mexico, while the spindles now being installed in the former country number 25,000 and in the latter 10,000. In Brazil there is 1 spindle to every 15 inhabitants and in Mexico 1 to every 19. The Argentine Republic has 3,500 looms, using principally imported yarns, and 2 spinning mills, while Peru has, approximately, 1,200 looms. The United States exports some textile machinery to the Latin-American countries, but the bulk of it is imported from England.

In Mexico and Brazil most of the spindles are in ring frames, but the latter country has about 90,000 spindles on mules. The raw cotton required in Brazilian mills aggregates about 143,000 bales per annum, which is equal to 7 spindles per bale, as compared with 14½ spindles per bale in England and 5½ in the United States, the differences in numbers being due to the fineness of the yarns spun. The estimated

number of spindles in operation in the world is 122,000,000—England having 52,000,000 and North America 27,000,000.

Brazil and Mexico grow cotton for their own use, and in addition import American, East Indian, and Egyptian cottons. The estimated consumption of cotton in Mexico and Brazil is 170,000 and 285,000 bales, respectively. Peru and the Argentine Republic are now growing cotton in greater quantities than ever before, the latter having 10,000 acres under cultivation and a climate and soil well suited for cotton growing, while the cotton of Peru has long been famed for its excellent quality.

Cotton factories in Brazil generally have all the machinery on the ground floor, combining spinning, weaving, and dyeing in one building, the spindles keeping the looms busy, and the latter the dyehouse. The raw cotton is stored at one end of the building and the finished product delivered and warehoused at the other. In Europe and other densely populated countries weaving and dyeing is more specialized.

The Latin-American countries import considerable quantities of yarn and cotton goods. Unbleached yarn is sent to Brazil, the Argentine Republic, and Guatemala, and dyed yarn to the Argentine Republic, Guatemala, Mexico, and Salvador. The Argentine Republic is the largest importer of unbleached yarn and twist, the annual average value of these imports in that country being about £102,000, as compared with £41,000 imported by Brazil and £15,000 by Guatemala. During the last five years England has exported to the Argentine Republic, Brazil, and Guatemala yarn and twist to the value of £800,000. For a number of years a considerable decrease has been noted in the imports of these yarns in all of the countries mentioned except Guatemala.

Cotton piece goods or fabrics imported by Latin America consist of materials made of unbleached or gray, bleached or white, printed, and dyed yarns. The largest importers are Chile and the Argentine Republic, whose imports of these fabrics in 1907 were valued at £195,000 and £138,000, respectively, the consumption having increased in Chile during the last five years and fallen off in the Argentine Republic. The annual value of these materials received in Colombia is about £31,000. Guatemala, Nicaragua, and Salvador imported these fabrics in 1907 to the amount of £62,000.

Bleached and white cotton piece goods are, however, imported by the Latin-American countries on a much larger scale, the total value of these goods in 1907 aggregating £2,543,000, as compared with £1,849,000 in 1902, or an increase of about 40 per cent. In 1907 goods of this class to the value of £2,246,000 were taken by South America and £297,000 by Central America and Mexico. Printed cotton goods are imported only in small quantities.

In 1907 England exported dyed cotton goods, or cotton goods manufactured of dyed yarn, to Latin America to the value of £3,151,000, of which £351,000 went to Central America. The Latin-American countries also import considerable quantities of miscellaneous cotton goods.

One of the principal causes of the development of the textile manufacturing industry in the Republic of Colombia is the recent energetic propaganda made by the Government concerning the planting and cultivation of cotton. The companies engaged in the manufacture of cotton goods have also aided the work in an efficient and practical manner, and seeds have been furnished gratis to agriculturists, the latter having been urged to engage to a greater or less extent in the raising of cotton for consumption in the home market. The planters who have followed this advice have been amply rewarded by the high prices obtained for their raw material. This fact, together with the increasing demand for the native product, has encouraged others to engage in the industry until now the raising of cotton is more largely and widely extended than ever before.

The mills are using native raw cotton, which is of excellent quality, and an impetus has been given to the industry in all its branches, enabling the mills to employ a considerable number of persons in the manufacture of cotton fabrics.

One of the newest and most thoroughly equipped cotton factories is located at Bello, Department of Antioquia. Water and electric power is being used to drive the mills, and the industry is at present in a most flourishing and promising condition.

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## COMMERCIAL TRAVELERS IN LATIN AMERICA.

(Continued.)

### GUATEMALA.

There are no laws or regulations in Guatemala concerning the treatment of commercial travelers.

Samples are subject to payment of regular duty unless they can be made valueless by being cut or perforated. If the traveler declares his intention to reexport the samples, he may furnish a deposit or bond for the amount of duty, which is canceled upon exportation within two months. Failure to export the samples within that period leads to forfeiture of the bond or deposit.



SCENE ON A COUNTRY ROAD IN GUATEMALA.

#### HAITI.

[Statement of Secretary of State for Foreign Relations, transmitted by Minister H. W. FURNISS.]

There are no laws relative to the treatment of commercial travelers. However, according to the tariff for professions or industries annexed to the law of August 3, 1900, relative to the administration of direct taxes, enforcement of which is renewed each year, a commercial traveler pays a "patent" of \$100 (100 gourdes) per annum. By virtue of article 63 of the law of August 11, 1903, on the withdrawal of the paper money he pays \$50 for a license tax (to wit, one-half of the fee for a patent). The application for the license should be made on stamped paper of the value of 4 gourdes.

There are no regulations relative to the admission of samples. Generally they are admitted free of duty, according to the judgment of the custom-house authorities. Thus any quantity of shoes may be admitted if they are all for the same foot, or not more than 2 pairs; dry goods when they are in quantities not over 1 aune (45 inches); liquids in 1 dozen one-eighth or 1 dozen twelve-sixteenths bottles, etc.

#### HONDURAS.

[Report of Consul WILLIAM E. ALGER.]

Honduras has no laws or regulations regarding treatment of commercial travelers or as to entrance of their samples. The customs tariff states that samples of no commercial value in small pieces are

free of duty. This is interpreted as meaning pieces of a few inches in length of cotton or other fabrics.

It has been the custom on arrival of a commercial traveler to examine and appraise his samples, assessing duties, he then giving bond (usually guaranty of some local merchant) for payment in case that on his leaving the country reexamination proves that he has sold any of said samples; otherwise bond (or guaranty is canceled and samples taken from the country.

#### MEXICO.

[Report of Consul-General A. L. M. GOTTSCHALK.]

The treatment of commercial travelers is subject to the legislation of the respective States; hence there is no uniformity in this regard throughout the Republic. The latter is also true of some of the States where the taxes imposed upon commercial travelers differ from municipality to municipality. In some of the States the laws, having become obsolete, are but rarely enforced. It is stated that in some States foreign commercial travelers evade the payment of taxes by registering at hotels as having arrived from some town within the State.

An additional charge of 20-25 per cent of the state tax is levied in some of the States for the federal revenue.

#### ADMISSION OF SAMPLES.

[Ordenanza general de aduanas, articulos 213-218.]

The following samples of merchandise are admitted free of duty: (1) Those having no commercial value; (2) pieces of textiles not exceeding 20 centimeters (7.9 inches) in length, although having the full width of the cloth, and all parts of articles which can not be sold; (3) samples consisting of entire articles, such as manufactures of any material, dry goods, hardware, handkerchiefs, mufflers, socks, shirts, etc., provided they are cut or perforated to destroy their commercial value; (4) samples of wines, brandies, or liquors contained in receptacles having a capacity of not more than 40 centiliters (0.84 of a pint), the weight of the liquid not exceeding 400 grams (0.88 pound), and provided the total net weight or the total volume of the samples sent by one party to one consignee does not exceed 5 kilograms (11 pounds) or 5 liters (5¼ quarts), respectively. In all other cases samples of dutiable goods must pay the regular duty.

The duty on samples need not be paid in cash if the commercial traveler declares his intention to the customs officers to reexport the samples upon his departure from the country. In the latter case he is required to furnish a deposit or a bond for the amount of the duty, and is furnished with a certificate describing in detail the articles imported and the duty on each article, as well as the period within which the samples must be reexported. The reexportation may take

place through any custom-house in the country upon the presentation of the above certificate, when the deposit will be returned or the bond canceled upon the identification of the samples. Commercial travelers are usually allowed six months for reexporting their samples, but the period may be prolonged up to two years upon application to the director of customs. The certificate issued by the custom-house through which the samples are imported should always be carried by the traveler and presented upon demand of the various officials, and takes the place of consular invoices when traveling on foreign ships between ports of the Republic.

#### NICARAGUA.

[Report of Consul J. DE OLIVARES.]

Commercial travelers of all nationalities visiting Nicaragua are accorded uniform treatment, as to the nature of which no complaints have up to the present time reached this consulate.

The admission of samples is governed by article 170 of the customs ordinances, as amended by article 44 of the amendments of 1904, viz: "Merchandise that is introduced as samples is subject to payment of duty, excepting only dress goods in small pieces and other objects which in the judgment of the administrator of customs have no commercial value.

"The introduction of samples in general, however, will be permitted without duty upon the traveler furnishing a bond satisfactory to the administrator of customs to guarantee the payment of the import duty in case that he does not reship them within a reasonable time, which will be stipulated by the same administrator. The bond authorized will specify the origin, kind, gross weight, and all other particulars which the custom-house employees believe necessary."

Commercial travelers who are unknown, and hence unable to furnish the required bond guaranteeing the payment of the import duty on samples provided they do not reship them, may deposit with the customs officials the amount of the duty, accepting a receipt therefor.

Upon presentation of documents showing that the samples have been reshipped the deposit is returned.

#### SALVADOR.

[Report of Consul-General S. E. MAGILL.]

Traveling salesmen from all foreign countries are allowed to seek business in Salvador without paying any taxes or imposts whatever.

Those having samples must pay duty on same or give bond to do so in case samples are not taken from the country within a certain time. On taking samples from this country the bond is released or the money paid for duty is refunded.

Traveling salesmen from the United States receive the same treatment as those from other foreign countries.

# ARGENTINE REPUBLIC

## ARGENTINA'S GIFT FOR THE NEW BUILDING.

The Argentine Government is preparing to place a bust of SAN MARTÍN in the new building of the International Bureau. His Excellency EPIFANIO PORTELA, the Argentine minister in Washington, has kindly sent the Bureau a certified copy of a decree issued by President ALCORTA, which outlines a competition of sculptors for the submission of such a bust. The decree mentions first a communication received by the Argentine Department of Foreign Relations from the minister in Washington describing a meeting of the Governing Board at which Secretary Root suggested that the different governments should cooperate in the ornamentation of the new building by placing in it some statue or some product of their art or industry, and citing, as an illustration, a bust of SAN MARTÍN which might be presented by the Government of Argentina.

The following is the exact wording of that portion of the decree which covers the competition:

The President of the Republic, with the advice of the ministers, hereby decrees:

ARTICLE 1. The invitation tendered to the Argentine Republic in the above-mentioned communication is hereby accepted, and the form in which Argentina is to cooperate in the decoration of the board room with the product of its industry or art shall be determined hereafter.

ART. 2. A call shall be issued for the term of two months from date for a competition among the artists and sculptors resident in the country, for a *maquette bust*, life-size, of General JOSÉ DE SAN MARTÍN, to be cast in bronze, for the board room of the International Bureau of American Republics building in Washington.

ART. 3. A prize is hereby offered, of two thousand dollars, national currency, to be awarded to the author of the bust selected as the best in competition.

ART. 4. The work shall be submitted at the National Museum of History in the customary manner, under a pseudonym, the author's name and nationality to be enclosed in a separate sealed envelope.

ART. 5. The following are appointed members of the jury of award, of which the minister of justice and public education shall be the chairman: Dr. ADOLFO P. CARRANZA, director of the National Museum of History, and Dr. JOSÉ R. SEMPRÚN, chairman of the National Committee on Fine Arts.

ART. 6. All expenses incurred in the competition shall be borne proportionately by each executive department of the Government.

ART. 7. Let it be known, etc., etc.

(Sgd)

FIGUEROA ALCORTA.  
R. S. NAON.  
V. DE LA PLAZA.  
R. M. AGUIRRE.  
ONOFRE BERTREDER.  
EZEQUIEL RAMOS.  
RAMOS MÉXIA.

## FOREIGN COMMERCE, NINE MONTHS OF 1908.

The general results of Argentine foreign commerce during the first nine months of 1908, as published by the Statistical Office of the Republic (*Dirección General de Estadística*), show export valuations of \$297,546,227 and imports to the value of \$200,285,420. A balance of trade in favor of the Republic to the amount of \$97,260,807 is thus recorded.

Comparing these figures with those of the corresponding period of 1907, it is seen that imports declined by \$2,549,798, but that exports advanced by \$56,667,616.



HIDE AND WOOL SECTION OF CENTRAL PRODUCE MARKET, BUENOS AIRES.

The Central Produce Market of Buenos Aires is the largest wool and hide market in the world. The building is an iron structure four stories high, covering an area of 182,000 square feet, and was erected at a cost of about \$4,100,000. There is a complete installation of cranes, elevators, and apparatus for loading and unloading the principal export products of Argentine Republic. Immense quantities of wool, hides, and cereals are annually shipped from this market to the large commercial ports of the world.

The falling off in import values is largely due to diminished receipts of railroad material. In the nine months in reference imports of steel railroad ties declined by 64,989 tons, fish plates by 5,621 tons, steel rails by 47,278 tons; the number of locomotives received was less by 244, and of railway carriages and wagons a decrease of 2,272 is reported. The total decline recorded under the head of "locomotion" is \$18,707,576.

In the classification of exports, agricultural products represent \$213,465,029, indicating the enormous increase of \$67,058,968. Under



this head are included 3,390,379 tons of wheat, 1,352,040 tons of corn, 950,597 tons of linseed, and 414,071 tons of oats.

The next ranking item on the export list is the classification of live-stock products, valued at \$77,402,506, showing a decrease in value of \$10,844,060. Forest products figure for \$4,561,672; quebracho extract, amounting to 32,644 tons, and logs, 197,364 tons, being the principal items.

Shipments of frozen beef aggregated 128,504 tons, and 45,470 tons of hides were sent abroad. Wool figures for 112,740 tons, and tallow, etc., for 32,689 tons.

The values supplied by the various countries furnishing imports, as compared with the corresponding period of 1907, and their respective gains or losses in the Argentine market, are thus reported:

Country of origin.	Nine months, 1908.	Difference.
Africa.....	\$27,201	+ \$11,204
Germany.....	28,813,894	-3,317,655
Austria-Hungary.....	2,561,478	+ 829,757
Belgium.....	9,512,687	-1,959,194
Bolivia.....	116,542	+ 11,085
Brazil.....	5,071,055	- 300,002
Chile.....	533,307	+ 239,352
Spain.....	6,461,184	+1,269,934
United States.....	25,877,215	- 599,208
France.....	29,110,728	+1,692,801
Italy.....	18,292,093	+ 714,718
The Netherlands.....	1,690,796	+ 438,373
Paraguay.....	1,120,338	+ 137,195
Great Britain.....	68,737,769	-3,226,476
Uruguay.....	1,717,682	- 156,659
Other countries.....	9,711,600	+1,695,877

Argentine commodities were received in the following proportions by the participating countries, their respective gains or losses for the nine months as compared with the same period of 1907 being also given:

Destinations.	Nine months, 1908.	Difference.
Africa.....	\$846,782	- \$479,668
Germany.....	25,894,549	- 2,889,978
Austria-Hungary.....	827,903	+ 306,401
Belgium.....	29,502,937	+ 4,865,075
Bolivia.....	551,125	+ 7,272
Brazil.....	10,929,025	+ 540,339
Chile.....	1,158,549	- 428,137
Spain.....	1,529,616	+ 232,462
United States.....	8,265,395	- 362,546
France.....	18,774,139	- 9,577,464
Italy.....	5,573,537	+ 2,289,832
The Netherlands.....	4,729,969	+ 1,202,969
Paraguay.....	195,863	+ 78,729
Great Britain.....	59,205,642	+18,644,264
Uruguay.....	625,402	- 2,214,431
Other countries.....	3,496,314	+ 1,452,575
"Orders".....	125,432,473	+42,960,062

On the import list under the classification "Other countries," Canada appears for \$1,202,491; Cuba, \$523,595; Japan, \$208,778; Portu-

gal. \$289,665; Russia, \$900,635; Sweden, \$535,695; and Switzerland, \$1,444,256.

Export destinations included under "Other countries." with the values sent thither, embrace Cuba, \$238,080; Portugal, \$801,393; and Sweden, \$534,449.

#### CEREAL SEASON OF 1908-9.

According to the report of the Minister of Agriculture, the area of cereal cultivation, in hectares, in the Argentine Republic for the season of 1908-9 is as follows: Wheat, 6,066,100; linseed, 1,534,300; corn, 633,300, as compared with 5,759,987 hectares of wheat, 1,391,467 hectares of linseed, and 284,098 hectares of corn in 1907-8, or an increase of 799,700 hectares. Wheat increased 5 per cent; linseed, 17 per cent; and corn, 122 per cent. The production of the cereal crop of the present year is estimated at 5,760,000 tons of wheat, 1,228,000 tons of linseed, and 823,000 tons of corn, or a total of 7,811,000 tons of the cereals mentioned for the season of 1908-9.

#### RAILWAY CONCESSIONS.

In accordance with a decree published on October 15, 1908, in the "*Diario Oficial*," of the Argentine Republic, the Buenos Aires and Pacific Railway has been authorized to construct and operate the following lines:

From Lopez Lecuba-Villa Iris branch to the Macachin branch between the stations of Macachin and Doblas; an extension of the Remeco branch to the Bahía Blanca-Toay line at Peru or Epupel. Plans must be presented for approval within eighteen months from the date of the signing of the contract, and the work must be commenced within six months from the date of said approval, and completed within a period of four years.

The aforesaid railway has been authorized to build the following branch lines: From the main line between Las Catitas and Alto Verde to La Palmira; from Pedregal station to Godoy Cruz; from Barcala or Fray Luis Betran to the Lujon de Cuvo branch; from Tres Acequias across the Tunuyan River in a southerly direction toward Las Catitas; from San Rafael across the Dramante River to Monte Coman. Plans for three of these branches must be presented to the Government within thirty months from the date of signing the contract, and the remainder within eighteen months thereafter. The construction of each branch must be completed within thirty months from the date of the approval of the plans.

A concession has been granted to JUAN PASSICOR to build a railway from Mercedes, in the Province of Buenos Aires, to La Plata. Plans must be presented within twelve months from October 12, 1908, and work commenced within eighteen months from the date of the approval of the plans, and completed within four years thereafter.

**PROPOSED BUDGET FOR 1909.**

The amount of the budget presented to the Congress of the Argentine Republic for 1909 is \$25,463,321 gold, and \$173,949,224 national money, plus \$5,000,000 national money, in bonds for public works authorized by laws of Congress. The gold estimate is made up of the following items: \$23,045,692 for the public debt; \$878,541 for the Department of Foreign Affairs to cover the cost of legations and consulates; \$13,488 for the Department of Marine, and \$1,525,600 for public works. The expenditures in national money include sundry items for Congress amounting to \$4,122,720, of which \$2,225,000 is required for the salaries of the 150 legislators; \$1,461,820 for the Foreign Office; \$16,665,488 for the Internal Debt; \$37,920,500 for the Departments of War and Marine; \$31,515,745 for Justice and Education; and \$8,673,615 for pensions. The remaining \$73,600,000 is for other administration expenses, including \$26,370,340 for cash payments of public works.

**BEEF-SALTING INDUSTRY, 1907-8.**

The beef-salting season, ended July 31, 1908, shows the number of cattle slaughtered by the beef-salting factories of the River Plate region in 1907-8 to have been as follows: Argentine Republic, 247,500; Uruguay, 754,300, and Rio Grande, 425,000, or a total of 1,426,800, as compared with 1,721,600 in 1906-7. Of these cattle, in 1907-8, 267,300 were used for meat extract and 1,159,500 for beef salting, as compared with 326,100 for meat extract and 1,395,500 for beef salting in 1906-7. The cows slaughtered in 1907-8 numbered 26,707 in the Argentine Republic and 199,820 in Uruguay, as compared with 72,400 in the Argentine Republic and 329,800 in Uruguay in 1906-7.

**PUBLIC WORKS AUTHORIZED.**

The Congress of the Argentine Republic has authorized the Government to expend 250,000 *pesos* (£21,900) for the erection of a building at San Juan for the use of the postal authorities, inland revenue, customs, etc.

The Government will also construct works for the utilization, for irrigation purposes, of the waters of the Tercero River, and will contract for the construction of a port for transoceanic vessels in the mouth of the Quequen Grande River. For the latter work a loan of 3,000,000 *pesos* (£262,500) has been authorized.

The Congress has also authorized the raising of a loan of 970,000 *pesos* (£84,900) for hydraulic and dredging works in the Gualeguaychu River, and to expend 400,000 *pesos* (£35,000) in the construction of a road bridge over the Tunuyan River.

The Government has been authorized to expend 50,000 *pesos* (£4,375) in the construction of telegraph lines in the Province of San Juan to connect the capital of that province with Calingasta via Desamparados, Marquesado, and Barral, and the departments of Jachil and La Iglesia via Rodeo.

#### GERMAN COLONIZATION.

The Argentine Government has arranged with a German syndicate to colonize a large area of public land in the Territory of Santa



AVENUE OF PALMS, BUENOS AIRES, ARGENTINE REPUBLIC.

This beautiful drive and promenade is an attractive and unique feature of the "Third of February" Park. It is several miles long, and is much frequented by the elite of the capital, especially on Tuesdays and Saturdays, at which times there is a great display of fashionable equipages, automobiles, and finely caparisoned horses. The trees are the royal palms, indigenous to Cuba, but which have been transplanted into many parts of South America.

Cruz. Five pastoral colonies are to be laid out and divided into lots, of which a proportion is reserved for the immigrant families to be introduced directly from Germany by the company. Not less than fifty families are to be provided for during the first eighteen months, eighty families in the following year, and one hundred families each in the two succeeding years. Motor-car communication will be established between the settlements by the company.

**FROZEN-MEAT INDUSTRY, NINE MONTHS, 1908.**

The total number of frozen mutton carcasses shipped from the Argentine Republic to foreign countries during the first nine months of 1908 was 2,255,960, frozen beef quarters, 1,095,699, and quarters of chilled beef, 531,157. During the year 1907 the exports of frozen mutton carcasses from the Argentine Republic numbered 2,785,739, frozen beef quarters 1,327,360, and quarters of chilled beef 439,613. These figures show a marked increase in the exports of chilled beef in 1908 as compared with those of 1907.

**HARBOR IMPROVEMENTS AT BUENOS AIRES.**

The National Congress has authorized the President of the Argentine Republic to contract for the enlargement of the port of Buenos Aires and for the formation of a deep-water canal from the north end of the port to the Parana de las Palmas River. The estimated cost of these works is \$47,000,000 gold.

**TRANSIT TRADE WITH BOLIVIA.**

The Government of the Argentine Republic has issued new rules and regulations governing commerce in transit with Bolivia. The new procedure greatly simplifies the requisites and formalities necessary to be complied with in the custom-houses of the Argentine Republic, through which foreign merchandise consigned to Bolivia has to pass before reaching its destination. The ease with which foreign merchandise consigned to points in Bolivia via Argentine ports can now be entered and forwarded through the Argentine Republic will doubtless greatly stimulate Bolivian trade via this route.

**INDUSTRIAL CENSUS OF THE CAPITAL.**

The first of a series of bulletins of the industrial census of the Argentine Republic, issued by the Bureau of Commerce and Industry of the Department of Agriculture, refers to the metropolis of the nation, and shows that of the 10,349 industries of the city of Buenos Aires, only 1,342 belong to citizens of the Republic. The aggregate capital employed in these industries is given as \$266,399,363 national currency and the yearly sales at \$534,644,925 national currency. The annual amount of the raw material used in these enterprises is valued at \$286,632,741, of which \$117,858,528 represented imported products. The total power employed annually in conducting these industries is given at 105,575 horsepower, of which 12,505 was electric, 90,655 steam, 1,939 gas, and 476 naphtha. The total number of persons employed in the industries mentioned was 118,315. The gas works, which have invested \$40,000,000, represent the industry having the largest amount of capital, the electric works having \$33,500,000, print-

ing establishments \$9,000,000, and the mills \$8,500,000 national currency. There are in the capital 1,007 tailoring establishments, 882 carpenter shops, 712 blacksmiths, 606 furniture manufacturers, 510 bakers, 489 bootmakers, and 388 dressmakers. Tailoring establishments have the largest number of employees, there being 8,234 persons employed in that industry. There are 6,791 shoemakers and 4,449 bakers in the city.

#### REAL ESTATE TRANSFERS AND MORTGAGES IN BUENOS AIRES.

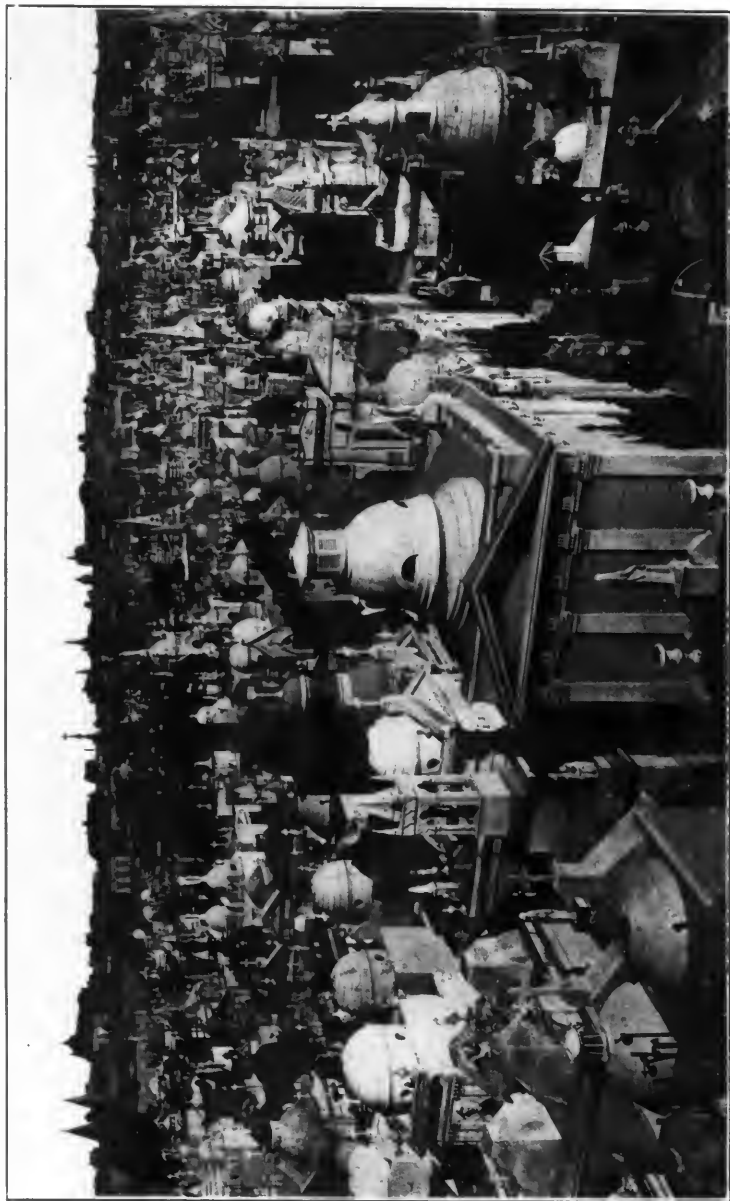
The value of the real estate transfers in the city of Buenos Aires during the first nine months of 1908 was \$126,947,402 national currency, as compared with \$118,596,335 for the same period of 1907 and \$142,810,750 national currency for the same period of 1906. The value of the mortgages placed on real estate during the period referred to was \$53,416,567 national currency, as compared with \$51,101,276 national currency for the same period of 1907 and \$33,422,548 national currency for the first nine months of 1906.

#### CULTIVATION OF TEXTILE PLANTS.

Large areas of easily accessible and fertile lands in the Argentine Republic are particularly adapted to the cultivation of various kinds of textile plants, and this industry could easily be developed to such an extent that the products of the textile plants of the Republic could supply the raw material with which to manufacture at home the textile goods now imported into the country to the value of nearly \$7,000,000 gold annually. Large quantities of imported twine and sacks are used in the harvesting, transporting, and sale of the wheat crop of the nation, the estimate for these items alone being calculated to amount to from 15 to 20 per cent of the gross receipts of the crop. Nearly all of the textile products imported into the Republic could easily be manufactured in the country from domestic raw material, and this promising field of industry, with a large and growing market at hand, ought to strongly appeal to capitalists and induce them to enter, on a large scale, into enterprises for the manufacture of these products, out of home-grown fibers, in the Argentine Republic. The establishment of textile factories in the industrial centers of the Republic would stimulate to a great degree the cultivation of textile plants and would give a notable impetus to one of the coming industries of the country.

#### COMMERCE WITH ENGLAND FIRST NINE MONTHS 1908.

The Consul-General of the Argentine Republic in London has sent an interesting report to his Government covering the commerce between Great Britain and the Argentine Republic during the last nine



**RECOLETA CEMETERY, BUENOS AIRES.**

This cemetery occupies an area of nearly 13 acres. The entrance is embellished with a gigantic marble cross, by the celebrated sculptor Monteverde, and the interior abounds in notable statues.



OPENING OF CONGRESS, LA PAZ, BOLIVIA.

The National Congress holds an annual session of sixty days, usually commencing August 6. The legislative branch of the government consists of a Senate, composed of two members from each of the eight Departments of the Republic and elected for a term of six years, one-third of whom are renewed every two years; and a House of Representatives with seventy-two members, elected for four years, one-half of whom are renewed every second year. The members of both Houses are elected by popular vote.



months of the fiscal year 1908; that is to say, from January to September, inclusive, 1908. The exports of the Argentine Republic to Great Britain during the period referred to amounted to a value of \$130,738,185 gold, or 34 per cent of the total imports of the United Kingdom during the first nine months of 1908, compared with \$97,694,300 gold for the same period of the previous year. The exports of Great Britain to the Argentine Republic during the first nine months of 1908 were valued at \$30,992,910, gold, as compared with \$30,541,935 gold for the same period of 1907.

The increase, expressed in kilos, of some of the most important Argentine products imported by the United Kingdom during the first nine months of 1908, as compared with the first nine months of the previous year, is as follows: Wheat, 394,045,000; flour, 1,585,500; corn, 76,130,000; beef, 28,194,750; mutton, 3,910,650; flax, 42,636,383; tallow, 4,331,400; ox-hides, 1,368,750; and sheep-skins, 449,136. The total number of kilos of Argentine products imported by the United Kingdom during the same period was as follows: Wheat 1,432,395,000; flour, 4,720,500; corn, 616,190,000; beef, 129,024,500; mutton, 55,837,800; wool, 14,722,459; flax, 212,168,250; tallow, 17,478,950; and ox-hides, 4,564,150.

#### CONGRESS OF AMERICANISTS IN 1910.

The Congress of Americanists, which met in Vienna in September, 1908, chose Buenos Aires as the place for holding its next meeting in 1910. The preliminary work of the Congress has been intrusted to FRANCISCO P. MORENO, JUAN B. AMBROSETTI, and ROBERT LEHEMAN NITSCH.

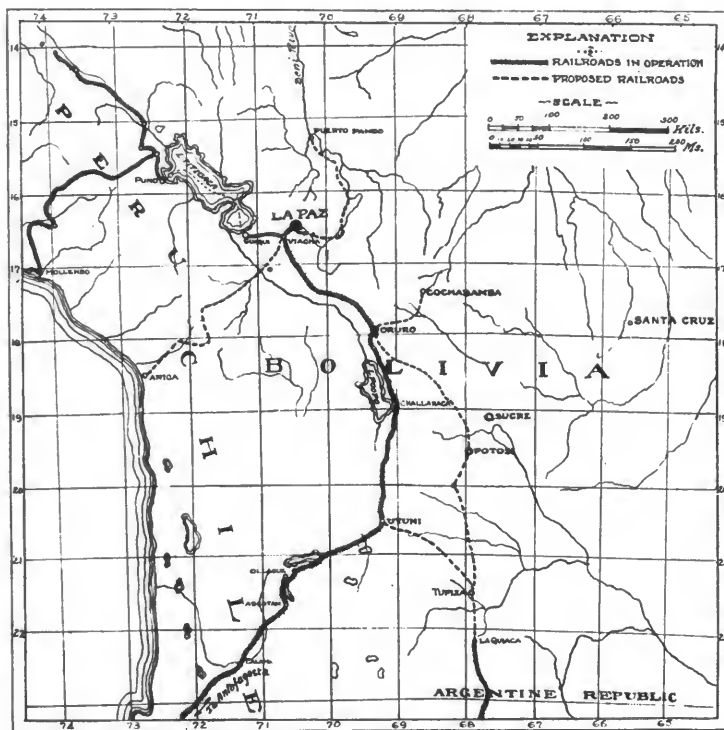


#### THE RAILWAY SYSTEM OF THE REPUBLIC.

On December 1, 1908, President Montes signed the law recently passed by the Bolivian Congress, embodying the changes in the Bolivian Railway Company's concession, as requested by the American syndicate headed by Speyer & Co. and the National City Bank, of New York, which opens the way to the carrying out of an arrangement agreed upon between this syndicate and the Antofagasta Railway, of Chile and Bolivia.

This important step toward combining the Antofagasta Company's interests with those of the American company will result, it is expected, in the unification of the railway system of Bolivia.

The Antofagasta and Bolivia Railway Company (Limited), which is a British company, under an arrangement with James Speyer, made in London in 1907, has agreed to guarantee the interest on the new line just constructed by the American syndicate, extending from Oruro to Viacha, and in addition to make a payment to the syndicate for a large majority of the new line's stock. This agreement, however, was subject to modifications of the concession held by the Bolivian Railway, with a view to the construction of other lines than those originally planned. The general purpose of these changes was



to make the new lines serve as feeders to the Antofagasta Railway instead of playing the part of competing lines, as would have been the case had the original programme of construction been carried out. These modifications of the concession have now been granted by the Government and signed by the President.

The railway system of Bolivia comprises about 400 miles of main line now in operation, and at the present time one may travel direct from Lake Titicaca, in the northern part of the Republic, to Antofa-

gasta, via Oruro, on the coast of Chile. Branch lines are being constructed from Oruro to Cochabamba and Potosi, and part of the grading has been done on both of these lines. The surveys have been completed and the respective routes selected from Potosi to Tupiza and from La Paz to Puerto Pando.

The railway which starts from the Peruvian port of Mollendo terminates at Puno, on Lake Titicaca, a distance of about 330 miles from the coast. From Puno a journey of sixteen hours is made by steamer across Lake Titicaca to Guaqui, Bolivia. The distance from Guaqui to La Paz, via Viachi, is 60 miles; from Viachi to Oruro, 128 miles; from Oruro to Uyuni, 195 miles; from Uyuni to the Chilean frontier, 109 miles; and from the latter point to Antofagasta, 275 miles, or a total distance of about 700 miles from La Paz to Antofagasta.

The Central Northern Railway of the Argentine Republic is completed and in operation from Jujuy to Quiaca, on the Bolivian frontier, a distance of 175 miles. The extension of this line was commenced in 1903, and merchandise may now be sent from Buenos Aires to the Bolivian frontier by rail, a distance of about 1,200 miles. Under an arrangement with Bolivia, the Argentine Government may continue the railway to Tupiza, a distance of 52 miles. A line is projected from the latter point to Uyuni, a distance of 125 miles, where it will connect with the Antofagasta Railway. The line from Jujuy to Salta, or Gran Chaco, runs as far as Yacuiba.

Work on a few kilometers of the proposed line from the Paraguay River to Santa Cruz has been commenced. During the last two years surveyors have been occupied in surveying and selecting this route.

Preliminary work on the railway from Brazil to the Beni region of Bolivia, in the northern part of the Republic, has been started. This railway will be about 308 miles in length, and will penetrate a rich and virgin region abounding in rubber, cabinet woods, and many other forms of natural wealth.

The Arica, Chile, to La Paz, Bolivia, railway is now being constructed, and it is said that work will be commenced at both ends of the line and extended in Chile and Bolivia until the entire road is completed. The work is to be done in five sections, and the length of the Chilean part of the line is 335 kilometers.

#### NATIVE RICE AND COTTON.

The British Vice-Consul at Sucre, Bolivia, has forwarded to the London Board of Trade samples of rice grown in the tropical regions of the provinces of Azero and Cordillera at an altitude of about 2,000 feet above sea level, in swamps and marshy ground, 1 hundredweight of rice yielding from 50 to 60 hundredweight of the grain. Another sample, which can be grown on high ground in the same dis-

trict, without artificial irrigation, yields, per hundredweight of the rice 40 to 50 hundredweight of the grain. Samples of white and yellow cotton, which grows wild in eastern Bolivia, were also forwarded with the samples of rice. This cotton is sometimes gathered and woven into coarse calico, tablecloths, towels, and ponchos.



#### RUBBER MANUFACTURING.

A bill has been introduced in the Brazilian Congress exempting from the payment of import duty all material and machinery for rubber factories imported into the Republic within the next three years. This bill authorizes the Government to grant a premium of 50 *contos* of *reis* to any person inventing an economical process for extracting, coagulating, and curing rubber.

In 1907 the imports of india-rubber goods from the United States into Brazil increased about 43 per cent, while the imports of the same class of goods from other countries decreased. At the present time a Brazilian company is negotiating abroad for the purchase of machinery with which to open a factory for the manufacture of rubber goods in Rio.

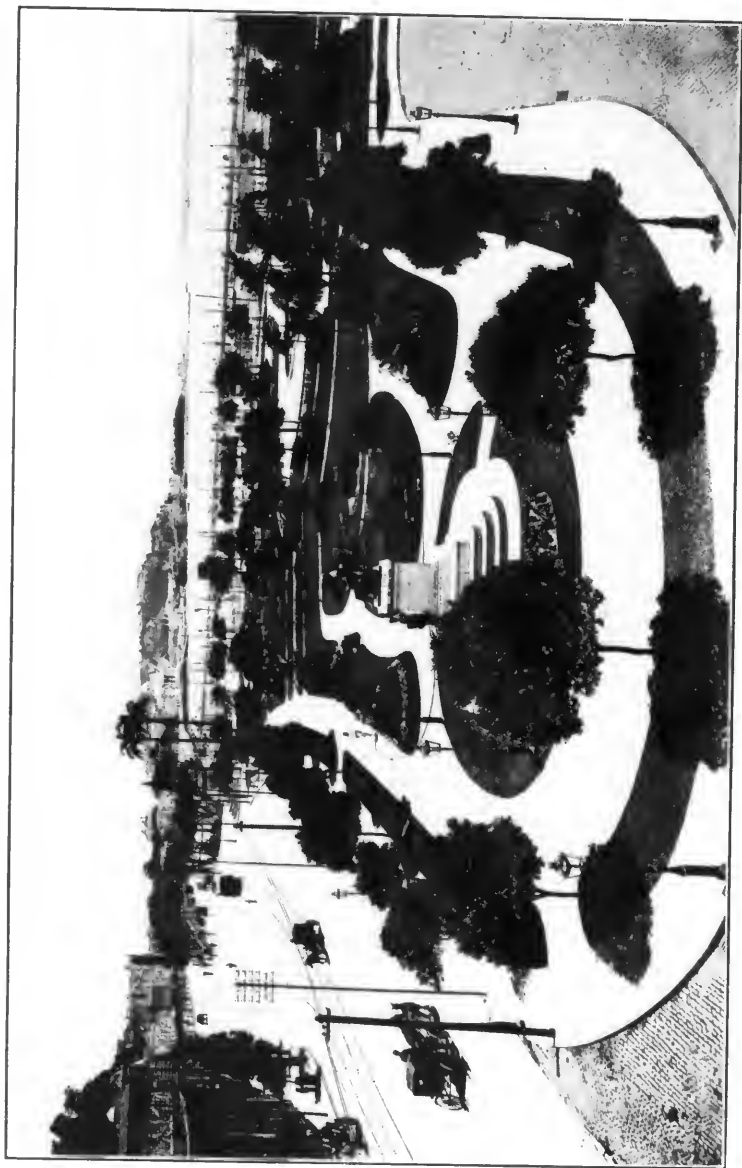
The exports of the 1907-8 crop of rubber from the Amazon Valley, shipped from the ports of Iquitos, Manaus, and Para, aggregated 36,650 tons, of which, approximately, 14,658,000 kilograms went to New York, 16,852,000 kilograms to Liverpool, 1,519,000 kilograms to Hamburg, 8,000 kilograms to Bremen, 8,500 kilograms to Antwerp, and 3,376,000 kilograms to Havre.

#### INTERNATIONAL TRADE-MARKS.

The Court of Appeals of Rio de Janeiro, Brazil, has declared that the arrangement of April 14, 1891, concerning the international registration of trade or commercial marks takes precedence of the provisions of article 33, section 4, of the national law on marks, according to the terms of which every mark ought to be published in the "*Diario Official*," in order that it may be entitled to protection in Brazil. The Government has requested the National Congress to decree that the aforesaid article and section of the law are not applicable to international marks.

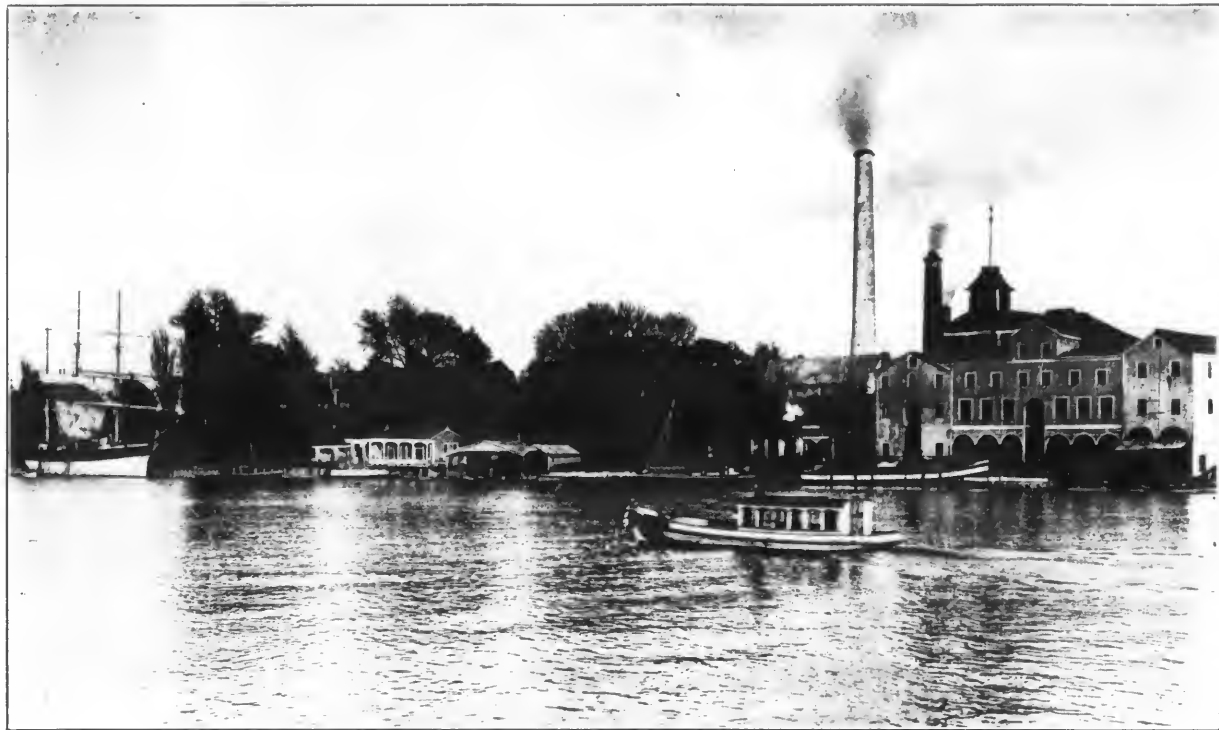
#### FOREIGN TRADE OF SANTOS, FIRST NINE MONTHS OF 1908.

The total foreign trade of Santos, Brazil, during the first nine months of 1908 amounted to £15,547,279, as compared with £22,745,760



GLORIA GARDEN, RIO DE JANEIRO, BRAZIL.

Gloria Garden is one of the new parks on the water front of the Bay of Rio de Janeiro, laid out in accordance with the recent plan for the beautification of the capital. The five-lane driveway of Beira Mar, or Bayside Drive, extends through this garden and along the beach a distance of 4 1/2 miles.



A BREWERY IN VALDIVIA, CHILE.

Valdivia was founded by Pedro de Valdivia in 1552, and is at present the site of the most important German colony in Chile. It is situated in southern Chile on the banks of the Valdivia River about 12 miles from its seaport town of Corral and 407 miles by sea from Valparaiso. The city has a population of 12,000 inhabitants and is connected by railroad with Santiago and with the more southerly cities of Osorno and Puerto Montt.

during the same period of 1907. The imports from January to September, inclusive, 1908, aggregated £5,423,563, as compared with £6,339,329 in 1907, while the exports during the same period of 1908 amounted to £10,123,716, as compared with £16,406,431 in 1907. The principal exports were coffee, hides, rubber, and bran. The principal imports were cotton goods, iron and steel manufactures, machinery, drugs and chemicals, leather, jute yarn, coal, kerosene, rice, codfish, flour, wine, and foodstuffs.

#### EXHIBITION OF SANITARY APPLIANCES AT RIO DE JANEIRO.

In connection with the Fourth Latin-American Medical Congress to be held in Rio de Janeiro in the summer of 1909, it has been arranged to hold an international exposition of sanitary appliances, medical foods and drugs, models of sanitary establishments, and of all articles connected with medicine and hygiene.

The date for this exposition has been fixed to cover the period from August 1 to September 30, 1909.

The Government of Brazil has offered the use of the buildings, machinery, and installations prepared for the National Exposition held in 1908, so that adequate and even sumptuous housing for the exhibit is assured.

The Congress which is to serve as the occasion for the exposition follows in series those held in Montevideo, in March, 1907, and previously in Santiago, Chile, and Buenos Aires, Argentine Republic. The organization of the Congress at present includes representatives in the Argentine Republic, Uruguay, Chile, Peru, Mexico, Cuba, and Brazil.

#### EXHIBIT OF AGRICULTURAL MACHINERY AT PARA.

The Industrial, Agricultural Syndicate of Para, with headquarters in that city, is reported by the "Commercial Intelligence" for November 18, 1908, to be organizing a permanent exhibition of agricultural machinery to be opened in June, 1909.

In organizing this exhibition the Syndicate has in view (1) to acquaint the local agriculturists with machinery, utensils, and implements employed in preparing the soil and improving the products thereof; (2) to give lucid information regarding prices and the manner in which to acquire any of the said implements; (3) to give full and detailed explanations regarding the economical benefits to be gained by the adoption of agricultural machinery; (4) to give practical lessons as to the manner in which to handle the machinery; (5) to advise and insist upon all agriculturists adopting mechanical labor instead of manual.

The Syndicate will only undertake to exhibit machinery and utensils that can be used practically, no miniature models being

received. Detailed instructions as to the installation and manipulation of the implement must accompany each exhibit, and, prominently stated either on the machine or its accompanying catalogue.



BRAZILIAN PALMS.

The greatest variety of palm trees are native to Brazil, especially in the Amazon River region. A general catalogue of ornamental plants, ferns, and palms, published in 1876-77, in three volumes of 300 pages each, contains the names of more than 22,000 specimens.

should be the following details, either in French, Spanish, or Portuguese: Name of exhibitor or manufacturer, selling agent, shipping port, f. o. b. price, selling terms, and discounts.



All expenses, including freight, dispatch, custom fees, etc., are to be borne by the exhibitors or owners, and, in order to reduce the custom fees, all machinery and utensils should be declared as samples and directed as follows:

“MARK  $\frac{S I}{A P}$ . Sindicato Industrial Agricola Paraense, No. 13, Rua de Maio, Para, Brazil.”

No responsibility is assumed by the Syndicate for any losses, damages, delays, or accidents occurring during the transport of any of the articles sent for exhibition.

The exhibitors are expected to supply photos or colored designs of a fair size (50 by 50 centimeters, or 1 by 1 meter) of the articles displayed. They should also furnish the respective electrotype for the purpose of inserting advertisements in their periodical termed “*Lavoura Paraense*.”

All machinery, implements, utensils, photographs, designs, cliches, etc., received by the Syndicate for exhibition shall become its entire property, and the Syndicate will undertake a gratuitous propaganda of these articles among the principal agricultural centers of the State.

In such instance where the manufacturer wishes to place on exhibition any new article or improvement on that previously sent, he shall be granted the same terms as herein described. The Syndicate undertakes not to sell or dispose of, in any form whatsoever, the articles intrusted for exhibition purposes. All expenses in organizing this exhibition are to be borne by the Syndicate, also the costs incident to the proposed propaganda.

The men behind this movement are said to represent the largest and most important landed interests in the State of Para.

#### FLOATING DOCKS FOR PARA.

The launching of two steel floating docks built for the port works now under way at Para has been reported from the British yard having the construction in charge. They are to form part of an extensive ship-repairing depot, including machine fitters, platers, carpenters, and smiths' shops and foundry, etc., furnished with the latest type of machinery with which the works are to be equipped.

Each dock is capable of lifting vessels up to 1,700 tons displacement, and has a length of 230 feet, an extreme width of 64 feet, and a docking width of about 45 feet, with a draught over the keel blocks of 12 feet. The pumping machinery is electrically driven, current being supplied from a generating station situated on shore. An air-compressing plant is also fitted on the docks, which will be driven by electricity.

## CACAO EXPORTS FROM THE STATES OF AMAZONAS AND PARA.

The cacao exports from the two States of Amazonas and Para, Republic of Brazil, in 1906 and 1907 amounted to 2,152 and 3,501 metric tons, respectively. Para in 1907 exported 2,625 metric tons of cacao, valued at £131,273, while Amazonas exported during the same year 876 metric tons, valued at £43,810, or a total value of £175,083. Shipments to Europe aggregated 2,639 metric tons, nearly all of which went to France, the exports to the United States amounting to 862 tons.

## MONETARY CIRCULATION.

Consul GEORGE E. ANDERSON, of Rio de Janeiro, reports that under the new currency law of Brazil the monetary circulating medium is slowly shifting from the basis of inconvertible paper to the gold basis. He says:

Practically the only gold and silver money in circulation in Brazil since the proclamation of the Republic was coined in 1907. In 1906 there was coined a total of about a third of a million dollars. Previous to that time the only money in circulation in Brazil was the inconvertible paper money and a few copper coins used chiefly by banks for making change, and with the addition of necessary nickel coins for amounts less than 1 *milreis*, the latter worth at present exchange 30 cents. The amount of money coined under the new order of things, according to a statement of the work of the Brazilian mint just issued by the Minister of Finance, is as follows:

Year.	Gold currency.	Silver currency.
	<i>Milreis.</i>	<i>Milreis.</i>
1903.....	17,410	138
1904.....	14,230	
1905.....		
1906.....	7,920	1,108,000
1907.....	74,980	7,946,000

The total amount of silver coined since the new coinage was inaugurated, therefore, is 9,054,000 *milreis*, or, at present exchange, \$2,716,200. The amount of gold coin is, at par exchange, the equivalent of \$62,572, and the total of gold and silver coined amounts to \$2,778,772. This is practically the total of the coin in circulation, and, with a population of 16,000,000, amounts to 17.36 cents per capita. The Caixa de Conversao, or exchange bureau, since its organization under the new régime, has issued a total of 98,350,120 *milreis*, or \$29,491,536, now outstanding. This money is issued against gold of the equivalent value in the Brazilian treasury. The total of all gold and silver money and of paper money secured by gold in the treasury amounts to \$32,270,308, a per capita circulation of \$2.0136 in American money.

The amount of inconvertible paper money in circulation in Brazil has been reduced in recent years in accordance with the announced policy of the Government, the amount in circulation on August 31, 1898, being 788,351,614 *milreis*, as compared with 642,963,951 *milreis* in circulation on February 29, 1908, according to a statement in the official gazette. At present exchange this circulation has a gold value of \$192,889,185, which, at a population of 16,000,000,

amounts to \$12 per capita, inconvertible paper. The total per capita circulation of Brazil at present therefore is substantially \$14.0136, of which one-seventh is in coin or based upon gold.

#### PASTORAL INDUSTRY OF THE REPUBLIC.

Vice-Consul-General JOSEPH J. SLECHTA, of Rio de Janeiro, furnishes the following report on the vast fields for dairying and cattle raising in Brazil and the opening therein for American manufacturers of dairy machinery:

Until recent years Brazil, with its vast plains, suitable for grazing millions of head of cattle, where they may flourish the year round with but little attention



PIPE LINE FOR WATER SUPPLY OF SÃO PAULO, BRAZIL.

The water is pumped to the city from the mountain streams, a distance of 25 miles. São Paulo surpasses most cities of its size in the modern construction and efficient operation of its public utilities. The water-supply, railway, and public and residence lighting franchises are controlled by an American corporation, which is one of the largest of its kind in South America.

from their owners, has been a large importer of dairy products, and particularly of butter and cheese. This is still true of the northern ports of the Republic and in those northern districts where either the climate is not such as to permit of stock raising or the attention of the inhabitants is entirely taken up with other industries.

The State of Matto Grosso is supposed to have within its borders not less than 3,000,000 cattle, and Goyaz slightly less. In those States, and particularly in the former, cattle grazing is carried on upon a very extended scale by a limited number of "fazendeiros." There are several of these in the southern part of Matto Grosso with ranches hundreds of miles in extent, with herds of from 120,000 to 200,000 head.

That cattle raising is destined to be one of the chief industries of Brazil will be seen when one remembers that none of the industries at present of most im-

portance, with the possible exception of cotton growing, can have anything like so extended and general attention as is possible in the case of the grazing industry. With the exception of corn, grain can not be grown satisfactorily in any part of Brazil, and even corn can be cultivated only by the use of new seed from temperate zone climates every second or third year, by reason of the rapid deterioration which the grain is subject to in this climate.

The Federal Government as well as the State Governments of the Republic are agitating the diversification of crops and agricultural industries, and the most significant feature of this movement is the aid extended by the Government in the importation of blooded stock for breeding purposes, in order to encourage the combination of pastoral with agricultural industries in the several States.

In practically all suitable sections of that part of Brazil south of the swampy forest lands immediately bordering the Amazon more or less cattle raising is successfully undertaken. The coast States north of the mouth of the Amazon also furnish very good opportunities for this industry. The States of Rio Grande do Sul, Santa Catharina, São Paulo, Matto Grosso, Goyaz, Minas Geraes, and Bahia have the advantage in natural resources for the proper development of the pastoral industries.

Stock raising, and particularly dairying, has been given a decided impetus within recent years, not only by the imminent necessity of diversity in farming, but by the increased demand in the large cities for dairy products.

Though the use of dairy products has increased tremendously in the past decade, there has been a decrease in the amount of butter imported, amounting to nearly \$200,000 in the two years 1905 and 1907. In the States of Minas Geraes, São Paulo, and Rio de Janeiro well-established dairies have been successfully operating for some years, and the product of these is constantly increasing. The first-mentioned State is at present the largest producer of dairy products. The following figures show the exports of milk, cheese, and butter from that State in 1901, 1903, 1905, and 1907:

Articles.	1901.	1903.	1905.	1907.
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>
Milk.....	5,050,500	4,865,900	9,335,200	11,221,400
Cheese.....	8,340,500	8,711,300	8,077,900	10,195,900
Butter.....	627,600	1,193,900	2,139,600	3,136,900

The greater part of these products were for consumption in the cities of the States of Rio de Janeiro and São Paulo. The State of Rio de Janeiro is now furnishing these cities an almost equal amount of milk and butter, but very much less cheese. The latter has been a very important product of the State of Minas Geraes for many decades.

Sheep raising has proven profitable in the States of Rio Grande do Sul, Parana, Santa Catharina, São Paulo, and others in the southern half of the Republic. The plains of Goyaz and Matto Grosso offer splendid advantages for the development of the wool-growing industry, and with the protection afforded by the Brazilian tariff to woolen goods manufacture there should be great inducement in the development of this industry.

The meat-packing industry is gradually being placed upon a modern and practical basis in the States of Rio Grande do Sul and São Paulo, and this is giving rise to the growing of more hogs than has previously been the case. The State of Minas Geraes also affords unusually good advantages in this particular, and there is on foot at the present time a movement for the establishment of a large packing plant in the capital of that State.



A STREET PROCESSION IN BOGOTÁ, COLOMBIA.



SECTION OF THE DRY DOCKS, TALCAHUANO, CHILE.

The large dry docks at the flourishing maritime port of Talcahuano were constructed under the direction of the Federal Government at a cost of about \$6,200,000 gold. They are located a short distance from the great coal-mining district of Concepción. Talcahuano is the naval station of the Republic.

# CHILE

## RECEIPTS AND EXPENDITURES, FIRST NINE MONTHS OF 1908.

A recent statement issued by the treasury department of the Government of Chile shows that the total receipts from all sources during the first nine months of 1908 aggregated \$210,478,375.26 Chilean currency and \$45,927,450.97 Chilean gold, while the total expenditures during the same period amounted to \$187,470,720.35 Chilean currency and \$37,465,161.04 Chilean gold, or an excess of revenues over expenditures of \$23,007,654.91 Chilean currency and \$8,462,289.93 Chilean gold. The balance on hand in the national treasury on January 1, 1907, was \$25,317,125.87 Chilean currency and \$33,654,643.44 Chilean gold, while the balance on hand on October 1, 1908, was \$48,324,780.78 Chilean currency and \$42,116,933.37 Chilean gold.

### NITRATE PROPAGANDA.

Mr. ALEJANDRO BERTRAND, Commissioner of the Chilean Government, appointed for the purpose of making a propaganda to further the use of Chilean nitrate in foreign countries, has visited Portugal, Spain, France, Italy, Germany, Belgium, and England, and reports to his Government that in those countries the prospects are good for a continued and increased use of this celebrated fertilizer. The results of the employment of Chilean nitrate in various experimental stations of Europe and by private persons have been most satisfactory and augur a large and growing demand for this most useful and important Chilean product.

### FINANCES OF CHILEAN RAILWAYS FROM 1900 TO 1907.

The following table gives, in Chilean *pesos*, the receipts and expenditures of Chilean railways from 1900 to 1907, inclusive:

Year.	Receipts.	Expenditures.
	<i>Pesos.</i>	<i>Pesos.</i>
1900.....	14,944,872	15,117,433
1901.....	16,224,812	18,716,709
1902.....	16,840,873	17,925,152
1903.....	18,706,094	17,343,675
1904.....	19,673,825	18,667,171
1905.....	21,442,047	20,818,916
1906.....	24,805,946	23,259,210
1907.....	32,349,851	52,856,238

NEW STEAMSHIP COMPANY.

A decree published in the "*Diario Oficial*" of September 25, 1908, authorizes the Chilean Steamship Company to operate in the Republic. The capital of this company, which has its headquarters at Valparaiso, is \$2,000,000 *pesos* (£125,000). The object of the com-



CHILEAN PALM (*JUBEA SPECTABILIS*).

This palm is mostly found in the provinces of Cocolan and Ocoa, Chile, and grows to a height of from 40 to 50 feet. It thrives in groves and produces an edible fruit, which contains a valuable oil. The sap or liquid extracted from incisions made in the upper part of the plant has a sweetish taste, and when evaporated produces the celebrated "palm honey" of Chile.

pany is to take over the Chilean Steam Navigation Company and to establish and maintain steamship communication in general, and especially on the Pacific coast.



**OPENING OF THE PAN-AMERICAN SCIENTIFIC CONGRESS.**

The opening session of the Pan-American Scientific Congress, attended by the delegates and the principal persons of Chile, was held in Santiago de Chile, on December 25, 1908. In view of this notable event, the Director of the International Bureau of the American Republics cabled to Dr. L. S. Rowe, president of the United States delegation to the aforesaid Congress, the following message:

Please present to the conference the International Bureau's compliments and state that it desires to cooperate in promoting Pan-American comity through Pan-American educational effort.

**MINERAL RESOURCES AND FUTURE GOLD OUTPUT OF THE  
REPUBLIC.**

An interesting paper recently read by HENRY G. GRANGER before the American Institute of Mining Engineers treats in considerable detail of the varied mineral resources of the Republic of Colombia. According to this authority coal is found nearly everywhere in the cordilleras of the North Andean Republic, lignite on the coasts, and coking and steam coal in the interior. Iron ores are abundant, and are utilized commercially at Amaga in Antioquia and on the plains of Bogota.

The provinces of Antioquia, Cauca, Tolima, Boyaca, and Cundinamarca contain veins of copper ore. Much of this ore is of high grade, but owing to lack of transportation facilities the deposits, except in rare instances, remain unworked. The crying need of Colombia at the present time is more railways, better highways, and increased maritime and fluvial transportation facilities.

The celebrated Muzo emerald mine, which has made Colombia famous, is situated in the mountains of Boyaca. It belongs to the Government and is the leading producer in the emerald supply of the world. The mine is being worked systematically and its output has increased during the last few years.

The petroleum deposits of the Republic resemble those of the Beaumont (Tex.) oil fields. The oil has an asphalt base, and petroleum springs are of frequent occurrence.

At Zipaquira, near Bogota, and in the hills bordering the Ubia River, vast masses of rock salt are found. Nitrate beds are also encountered in the district east of the capital of the Republic, and shipments of high-grade asphalt are being made from Santander.

In the Provinces of Antioquia, Tolima, and Cauca valuable deposits of silver and lead ores are found. The Zanendo silver mine at Titiribi, Antioquia, is one of the most celebrated mines of the Republic.

Russia is the only country whose platinum output exceeds that of Colombia. Platinum, which is always mixed with gold, comes from the gravels of the Choco, its main source being the Platina and Condoto rivers, which are tributary to the San Juan River. This metal is also obtained from some of the streams that flow into the Atrato River.

Colombia at the present time is not an attractive field for the poor miner and prospector who expects to make an ounce a day with a rocker and pan. Propositions of this kind have long since been thoroughly worked over by the Spaniard, except in the remote fastnesses of the country inhabited by hostile Indians, where it is dangerous for the prospector to go. The great gold-bearing region is found in the lofty cordilleras of the Choco and Antioquia provinces and in the mountain ranges that separate the Cauca and Magdalena rivers. In this large area of many thousands of square miles, wherever there is gravel there is gold, and back in the mountains where the rock has been laid bare veins are found everywhere. These veins contain vast treasures of gold that can be extracted by the systematic use of modern machinery and methods. Many hundreds of miles of this rich territory have never been explored except by the Indian hunter.

Recent gold discoveries near Neiva, on the upper Magdalena River, have opened up a new section of the gold belt of Colombia. It is known that the State of Mariño, bordering on the Ecuador line, is rich in gold, and gold nuggets are found in the gravel of the streams of the rivers of this section which flow into the Pacific Ocean.

Much of the gravel of the river beds of the gold-bearing rivers of Colombia can not be worked, because it is impossible to divert the streams, and the huge boulders and hard bed rock, together with torrential currents, often render dredging impossible by any methods known to the mining industry of the present day. Parts of the upper Magdalena and its tributaries from the west present dredging propositions, as do sections of the upper Cauca and its tributaries, and railroad construction into these regions will greatly facilitate and develop dredging claims. At the present time the most desirable territory for gold dredging in the Republic, due to the richness of the gravels and the accessibility of the region, is the Choco district, which is watered by the Atrato and San Juan rivers.

In the Choco a safe average of value is said to be 30 cents per yard, and many miles will contain 60 cents or more. In some sections the

gravel spreads into flats along the banks, and these may at some future time be worked. The Choco placer region has twice as much territory as both the California and New Zealand regions together, and the possibilities for development are infinite. The construction of the Colombia Central Railroad will greatly stimulate mining in this part of the Republic, its northern terminal being opposite the mouth of the Atrato River.

The development of the quartz-mining industry depends almost entirely upon transportation. The extension of the Dorado Railroad and the little Tolima Railroad will facilitate transportation to some of the mines of the eastern slope of the gold belt of the Republic, and the Colombia Central Railroad, when completed, will



STREET SCENE, BARRANQUILLA, COLOMBIA.

Barranquilla, the most important commercial city of Colombia and capital of the province of the same name, is situated on the Magdalena River 15 miles from its mouth. A railroad 18 miles long connects the city with Puerto Colombia on the seacoast, where there is an excellent pier. An extensive commerce is carried on from the Barranquilla docks with the interior by river steamers, and a large part of the foreign trade of the Republic passes through this port. The principal exports are coffee, hides, tobacco, cacao, rubber, ores, etc.

pass through the very heart of the gold region, and, in addition, will provide direct transportation from the coast. New transportation facilities will enable the wooden mills to be changed into steel ones. Most of the mills operated at the present time in Colombia are overshot water wheels, and many lodes can not be exploited because, at the present time, no water supply can be obtained. The proper machinery would enable many of these veins to be worked by electricity generated in the neighboring mountain streams.

Aside from the mining wealth of Colombia, the agricultural resources of the Republic are as varied as can be conceived of in a country that is favored with all soils, all climates, and all conditions of heat and moisture. The coasts and hot regions produce corn, sugar

cane, sea-island cotton, rubber, cacao, bananas, fibers, and tropical fruits and vegetables, while the mountains and uplands yield coffee, apples, peaches, potatoes, wheat, barley, and all the products of the temperate zone. The entire country is suitable for stock raising, the pastures in large sections remaining green the year round. Few countries contain the latent wealth and favorable conditions for developing and exploiting it to such a degree as does the Republic of Colombia.

#### QUARTZ DISCOVERIES IN THE CHOCO MINING DISTRICT.

From Cartagena Consul ISAAC A. MANNING reports that through an American just returned from Quibdo he learns that various discoveries have been made of rich gold-bearing quartz on the headwaters of the Andagneda and Chirvigo rivers of Colombia, at a distance of about 125 miles above Quibdo, the particulars following:

One ledge is reported 18 feet wide, running about \$50 gold per ton, and other veins, one carrying about 8 to 10 per cent copper, range from 6 to 8 feet in width.

#### THE MATCH INDUSTRY.

About a year ago a concession for the founding of a match factory in Bogota, Colombia, was granted to Señor Teofilo Moncada, who interested a Danish chemist in the enterprise. For the purpose of encouraging this new industry the Government permitted part of the machinery and raw materials used in the manufacture of matches to enter the Republic free of duty.

At the present time the factory employs about 40 operators, many of whom are women, and is manufacturing as good a quality of matches as those obtained from abroad, being able to sell them at a lower price than is charged for the foreign article. The output of the plant is constantly increasing, the factory now having almost the entire trade of the capital and vicinity, while it is extending its business into other sections of Colombia.

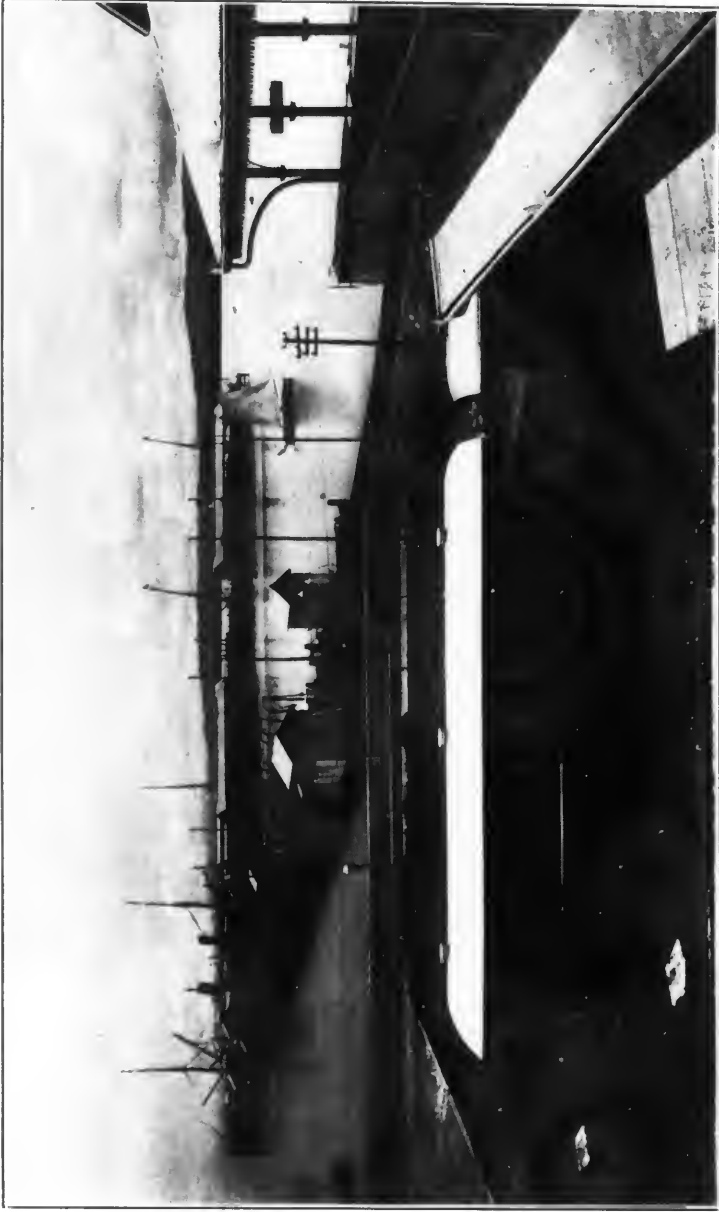
#### DUTY ON SALT.

A decree of September 21, 1908, provides that salt imported through the custom-houses of the Pacific coast of Colombia shall be subject to a duty of 20 cents gold for each 12½ kilos.

#### PORT CHARGES AT CARTAGENA.

Consul ISAAC A. MANNING reports from Cartagena that the Government of Colombia collects from commercial shipping entering at the port of Cartagena the following port fees:

Tonnage dues of \$1.50 per ton for every 1,000 kilos (2,204.6 pounds) or fraction thereof on cargo actually landed. Pilotage, including entry and departure, \$10 in gold. Sanitary visit, \$10 gold.



THE WHARF AT PORT LIMON, COSTA RICA.

This wharf is 1,400 feet long, built out into the bay to a point where the water is 35 feet deep, thus permitting the largest vessels to discharge and take on cargoes without difficulty. Port Limon is the eastern terminus of the Trans-Costa Rican Railway, having a population of 6,000 inhabitants, well-paved streets, an abundant supply of fresh water, and good drainage.



A WATERFALL IN COSTA RICA.

Light-house dues at rate of \$5 gold for first 100 tons and \$0.025 (2½ cents) for each additional ton of net register for every light-house passed by ship within "seeing distance," payable only once per voyage at any port of the country. The light-houses which may affect these dues at this port are Galera Zamba light, La Merced (Cartagena light), Isla Grande, and Bocas de Ceniza.

The charges of the Cartagena Terminal Company are as follows: Stevedoring, cargo embarked or disembarked, 12 cents per ton, with a minimum charge of \$10 for ships touching the pier; dockage, 30 cents per ton register up to 60 tons, and 3 cents per ton for each ton exceeding 60. Consignees pay 40 cents per ton for general cargo from ship's side to warehouse at La Machina, including weighing and loading, and \$1 per ton for transportation to Cartagena, including unloading cars.

For each car of cattle or live animals to or from Cartagena to or from ship's side at La Machina consignees or consignors pay \$10 per carload. Consignors pay 50 cents per ton for general freight taken from Cartagena bodega to ship's side at La Machina, loading and unloading included. Extra charges are made for work on Sundays and public festival days.



#### CUSTOMS RECEIPTS, SIX MONTHS OF 1908.

The customs receipts of the Republic of Costa Rica for the six months, April to September, 1908, amounted to 2,005,273 *colones* (\$932,325), as compared with 2,467,409 *colones* (\$1,147,000) during the same period of 1907.

#### APPROVAL OF CONVENTIONS.

On October 26, 1908, the Republic of Costa Rica approved the "Treaty of Arbitration for Pecuniary Claims," signed in the City of Mexico by the delegates of the Second International Conference of American States on January 30, 1902, and the following Conventions of the Third International Conference of the American States, held in Rio de Janeiro in 1906: Patents of invention, drawings and industrial models, trade-marks, and literary and artistic property; the treaty establishing the status of naturalized citizens who again take up their residence in the country of their origin; and the treaty on international law.

#### PARCELS-POST SERVICE AT LIMON.

A department of parcels post, in charge of the wardens of the custom house at Limon, Costa Rica, has been established for the purpose of receiving and despatching direct postal parcels addressed to Limon, after the payment of the respective duties. This arrangement will facilitate the parcels-post business of the port of Limon.



#### NEW WHARF AT HAVANA.

The Government of Cuba has authorized the Krajewski-Pesant Company to build a wharf 21.8 meters long by 10 meters wide in the port of Havana for the private use of the aforesaid company. The work must conform to the general plan of wharves approved for the construction of wharves in the port of Havana, and must not cause detriment to any public service or private interest. No time limit is specified in the concession for the completion of the work of construction.

As a guarantee for the faithful compliance of the conditions under which the concession was granted, the company agrees to deposit in the treasury of the Zona Fiscal of the Province of Havana a sum equal to 1 per cent of the amount of the estimated cost of the works, which deposit is to be returned to the company when one-third of the work is completed. The plans for the construction must be approved by the chief engineer of the Havana Harbor Works, and the wharf when completed must be inspected by him, and if built in accordance with the law a written statement will be issued to that effect.

#### CUSTOMS MODIFICATIONS.

The customs tariff of the Republic of Cuba relating to the surtax leviable on tissues (cotton, hemp, flax, agave, jute, and other vegetable fibers), broché or woven like brocades, has been amended to read as follows:

##### RULE 10.—*Broché or woven like brocades.*

Tissue, broché or woven like brocades with threads of any of the textile materials comprised in Classes IV, V, VI, and VII of the tariff, shall be liable to the duties leviable thereon plus the surtaxes established in every case. (Classes IV and V, Group 2, Note II, Clause A.)

By broché or brocaded tissues are meant all tissues ornamented or having designs applied by means of the small shuttle called "espolin," or any similar process, in such manner that the threads do not occupy the entire width of the stuff, but only the space comprising the flower or pattern.

The threads serving to form the broché or brocaded design or ornaments shall not be considered by the appraisers in determining the number of threads in the tissue, nor shall such threads, whenever bleached or dyed, be subjected to the surtaxes established for bleaching or dyeing.

##### Class IV, Group 2, Note II, Clause A.

Tissues, broché or woven like brocades, referred to in Rule 10, Disposition 1st, shall be liable to the duties leviable thereon plus the surtax of 35 per cent upon the corresponding duties.



## Class V, Group 2, Note II, Clause A.

Tissues, broché or woven like brocades, referred to in Rule 10, Disposition 1st, shall be liable to the duties leviable thereon plus the surtax of 30 per cent upon the corresponding duties.

The Government of Cuba has decreed the following modifications in Class II, group 3, paragraph 53, of the customs tariff, effective November 27, 1908:

*Cutlery.*

	Kilo.
(a) With common wooden handles, such as used by butchers, shoemakers, saddlers, and cooks, including table knives and forks with common wooden handles, and curved pruning knives, T. (Disp. III, Rule 5) -----	\$0.20
(b) All other cutlery (except pocket cutlery), including scissors, fishing hooks, T. (Disp. III, Rule 5)-----	.40
(c) Surgical and dental instruments, pocket cutlery, side arms (not fire) and pieces for same; razors, T. (Disp. III, Rule 5)-----	.60

## THE TRADE OF THE REPUBLIC OF CUBA.

The following statistics of the commerce of the Republic of Cuba have been transmitted to the Bureau by Señor GONZALO DE QUESADA, Cuban minister in the United States:

The Department of the Treasury published in the Official Gazette of December 15 a comparative statement showing the imports and exports of the Republic during the years stated below:

Year.	Imports.	Exports.	Year.	Imports.	Exports.
1903 .....	\$67,077,676	\$78,486,409	1906 .....	\$99,539,661	\$108,909,667
1904 .....	82,835,651	89,978,141	1907 .....	105,218,208	116,592,648
1905 .....	103,220,985	112,280,026			

The following table shows the imports and exports of Cuba, by countries, during the year 1907:

	Imports.	Exports.
United States .....	\$51,447,053	\$100,653,335
Other American countries.....	9,277,605	2,504,335
Germany .....	7,592,326	3,211,959
Spain .....	9,499,002	639,374
France .....	6,643,826	3,846,217
United Kingdom .....	15,322,981	4,506,438
Other European countries.....	3,604,052	744,189
Other countries.....	1,831,036	486,817

# DOMINICAN REPUBLIC

## ACADEMY OF FINE ARTS.

The President of the Dominican Republic, in accordance with the provisions of the budget now in force, decreed, on November 19, 1908, the establishment in Santo Domingo on December 1 of the same year, of an Academy of Drawing, Painting, and Sculpture. This institution, for which \$3,000 has already been appropriated and made available, is to be under the supervision and direct control of the Departments of State, Justice, and Public Instruction. The academy is open to both sexes, and makes no charge for tuition. A graded course of instruction has been adopted covering a period of four years, and provisions are made for both day and night classes.

## RAILWAY LINES.

Consul RALPH J. TOTTEN, writing from Puerto Plata, sends the following account of the development of the railway system in the Dominican Republic:

There are at present three railroads in operation in this consular district, which includes the Cibao, or northern part of the island. One is from Puerto Plata to the city of Santiago de los Caballeros. It is 42 miles in length, with seven stations, and is the property of the Government. The second is from Santiago to within a few miles of Mocha, which is also the property of the Government, and although still in course of construction, is in operation as far as completed. In a short while it will be entirely to Mocha. The third is from Sanchez, on Samana Bay, to La Vega, about 82 miles, with a 9-mile branch from Baird station to San Francisco de Macoris. This road is owned by a Scotch capitalist.

As soon as it becomes possible, the Dominican Government intends the construction of a line from the seaport Monte Cristi to Santiago, and another from Mocha to La Vega. The former will follow the valley of the Yaque del Norte, opening a section extremely rich both in agricultural and timber products. The latter will connect the government railway with the Sanchez-La Vega road, thus giving railroad connection between Monte Cristi, the extreme northwestern seaport, Puerto Plata, the northern port, and Sanchez, on the far eastern coast, taking in all the important towns of the northern half of the Republic.

The Dominican Government has enacted a law, which went into effect January 1, 1906, which provides that 30 per cent of the internal revenues be applied to the construction of railroads, or rather to the payment of interest on capital invested in the building of railroads, whether by private corporations or borrowed by the Government. It provides that interest may be paid up to 6 per cent; that a bonus of \$2,000 be allowed for each kilometer (0.62137 mile) constructed; and that this portion of the revenues shall not be used for any other purpose.

The Government took over the Central Dominican Railway from the old Dominican Improvement Company in February of this year, so, as yet, no

opinion can be formed in regard to the success or failure of government ownership in this Republic. The railway is under the control of the Minister of Finance and is managed locally by a capable Scotch engineer. The road is being regraded, up-to-date engines and rolling stock are being installed, and it is to be put in a good condition generally.

The old engines, cars, and rails were imported from Belgium, but all the new equipment came from the United States. This includes everything used except ties, which are made from a native wood of about the hardness of mahogany. It is said to have great lasting qualities and costs only 15 cents per tie.

#### EXPLOITATION OF FORESTS.

Consul RALPH J. TOTTEX, of Puerto Plata, furnishes the following information concerning the supply and consumption of timber in the Dominican Republic and the need of sawmills:

During the last ten years the Dominican Republic has exported cabinet, trim, and construction woods (mahogany, lignum-vitæ, satinwood, etc.) to the value of considerably over a half million of dollars. On the other hand, it has imported during the same period practically all lumber used for building purposes, costing in round numbers about \$2,000,000. This condition exists in spite of the fact that there are on the island great forests of excellent building woods. These include many varieties of great economic value, but the one which is best known to the lumberman and which probably exists in the largest quantity is the yellow pine. It has been variously estimated that there are from 1,000,000 to 1,500,000 acres of pine woods in the Republic. They run from 12 to 36 inches in diameter at the base, and will cut close to 10,000 feet per acre.

The pine belt runs east and west through the central part of the island, in the Provinces of La Vega, Azua, Santiago, and Monte Cristi. In many places the facilities for logging are especially good, there being much fine timber contiguous to the Yaque del Norte, the Camu, and the Yaque del Sur rivers and their tributaries.

In 1907 4,000,000 feet of lumber were imported into the Dominican Republic, about 1,000,000 feet were turned out by the local mills, and it is estimated that fully 3,000,000 feet were sawed by the country people in the interior with hand-saws.

It would seem that there is an excellent field for a combined turpentine plant and sawmill. The pine seems to be very rich in resin and will work up much better after the trees have been tapped for at least a year. Turpentine sells for \$1 per gallon.

The disposition of this Government is friendly to foreigners coming for legitimate investment. They are given absolutely the same rights as the Dominicans, but should not expect special concessions or privileges.



# ECUADOR

## CONSOLIDATION OF THE PUBLIC DEBT.

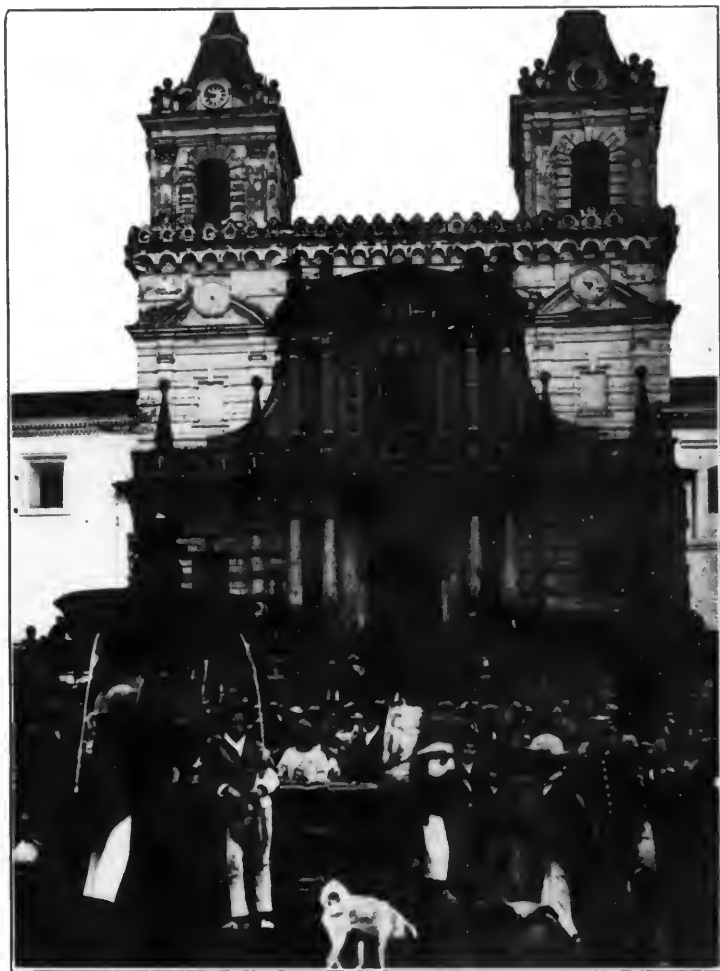
The Congress of the Republic of Ecuador, under date of November 1, 1908, authorized the President of the Republic to negotiate a loan of 10,000,000 *sucres* (\$4,870,000) for the payment of that part of the public debt guaranteed by the federal revenues. This will be accomplished by the issue of 5 per cent interest-bearing bonds, and the establishment of a 1 per cent amortization fund, the bond issue to be guaranteed by some of the federal revenues. The proceeds of the loan will be used exclusively in the payment of the internal debt, thus releasing the federal revenues pledged to the payment of said debt and placing them at the disposal of the Government.

## APPROVAL OF CONTRACT WITH GUAYAQUIL AND QUITO RAILWAY.

On November 6, 1908, the President of the Republic of Ecuador promulgated a legislative decree of November 1, approving the contract made ad referendum between the Government of Ecuador and the Guayaquil and Quito Railway Company on September 30, 1908, with certain modifications and additions, the principal ones of which are as follows: Article 9 is changed to read 1,464,000 *pesos*, and article 21 is eliminated. The company, in addition, agrees to deliver the work in accordance with the stipulations of the contracts of June 14, 1897, and November 26, 1908, with the exception of the gradient, within a period of two years. Any questions between the Government and the company are to be settled in accordance with article 27 of the contract of June 14, 1908.

## SANITATION OF GUAYAQUIL.

DR. BOLIVAR J. LLOYD, of the United States Marine-Hospital Service, Chairman of the Commission for the Prevention and Spread of Contagious Diseases in Guayaquil, Ecuador, has submitted to the Governor of the State in which that port is situated an extensive plan for the sanitation of the city. Salutory recommendations are made concerning the treatment of cases of yellow fever and bubonic plague, and the entire subject of sanitation is discussed and commented upon in an able, thorough, and detailed manner. The principal difficulty in the way of carrying out the recommendations of the Commission is the lack of sufficient funds to put into immediate effect the plans recommended, but it is hoped that this obstacle will



SAN FRANCISCO CHURCH, QUITO, ECUADOR.

This stately edifice dates from the early colonial period, and is one of the oldest buildings and most prominent churches of the capital of the Republic.

(Copyright photo—Underwood & Underwood.)



A BANANA PLANTATION IN THE DOMINICAN REPUBLIC.

The cultivation of bananas in the Dominican Republic greatly increased during the period from 1895 to 1907, the value of the exports to the United States, the largest consumer, having risen from \$16,170 to \$362,000 in the twelve years. The raising of bananas is one of the chief agricultural industries of the island, the soil, climate, and atmospheric conditions being particularly adapted to its culture.

be overcome and that a way will soon be found to put into operation these practical and scientific recommendations.

#### PROPOSED ELECTRIC TRAMWAY IN QUITO.

The Quito Electric Light and Power Company has submitted to the municipality of Quito the bases of a contract for the building of an electric tramway in the city and suburbs of the capital. If the proposition is accepted the company will have the right to charge for each passenger carried within the limits of the city of Quito a tenth of a *sucre* (about 5 cents), and on the suburban lines 0.04 of a *sucre* (about 2 cents) per kilometer, or fraction thereof, per passenger carried. The proposed term of the concession is seventy-five years.

Under the plan submitted, after 7 per cent has been paid on the capital invested the municipality will participate in the remaining net profits of the company during the first ten years to the extent of 5 per cent, 10 per cent during the second ten years, 15 per cent during the third ten years, and 20 per cent during the remaining forty-five years. Work on the tramway is to be commenced within twelve months from the date of the signing of the contract.

#### TRADE-MARK LAW.

The Congress of Ecuador has passed a new trade-mark law, which is of especial interest to manufacturers of proprietary goods and others interested in the international protection of property rights in proprietary articles. The United States Trade-Mark Association believes the passage of this law will stimulate the trade in American proprietary articles in Ecuador, and believes a like result would follow should other Latin-American countries enact similar laws.

#### PERU AT THE NATIONAL EXPOSITION OF QUITO.

The Government of Peru has accepted the invitation of the Government of Ecuador to participate in the National Exposition of Quito to be held in the capital of Ecuador in 1909.

#### TAX ON AGUARDIENTE.

A recent law governing the production and sale of liquors in the Republic of Ecuador provides that a sole tax of 25 *centavos* (\$0.12) per liter shall be levied on the manufacture of alcohol or aguardiente.

# GUATEMALA

## ESTIMATED COFFEE PRODUCTION, 1908-9.

The estimated coffee production of Guatemala for the season 1908-9, from October, 1908, to September, 1909, inclusive, is 810,000 quintals of clean coffee, as compared with 888,155 quintals during the same period of 1906-7 and 679,049 quintals during the season 1905-6. The exports of Guatemalan coffee for the season 1907-8 aggregated 373,106 bags, as compared with 654,495 bags for the season 1906-7. The shipments to San Francisco during the first nine months of 1908 were 51,717 bags. Coffee is exported from the ports of Ocos, Champerico, and San José de Guatemala, the quantities shipped from these ports in the season 1907-8 being, respectively, 68,805, 160,970, and 143,331 bags, as compared with 106,393, 309,611, and 238,491 bags, respectively, in 1906-7 and 78,494, 209,756, and 217,652 bags, respectively, in 1905-6. The bulk of the 1907-8 crop was shipped to Hamburg.

# HAITI



NATIONAL BANK OF HAITI, PORT-AU-PRINCE.

This is a strong financial institution of the Republic, with a capital of nearly \$4,000,000. The Government's financial transactions are carried on through this bank.





A SCENE IN GUATEMALA.



A PICTURESQUE SCENE IN THE INTERIOR OF HONDURAS.

# HONDURAS

## MONETARY COMMISSION.

In accordance with Article I of the convention concerning future Central American conferences, signed by the delegates of the Central American Peace Conference in the City of Washington, December 20, 1907, the Government of Honduras has appointed a Monetary Commission to study the monetary system of that Republic, and especially in relation to the systems of other States, as well as matters relating to the custom-house systems, the systems of weights and measures, and other matters of an economic and fiscal nature which it may be deemed expedient to make uniform in Central America. The official title of the Commission is: "*Comisión Auxiliar de la Primera Conferencia Centroamericana,*" and its personnel is General JOSÉ MARÍA REINA, Chairman, Señor FEDERICO TRAVIESO, and Señor OCTAVIO R. UGARTE, Secretary.

## RAILWAY FROM THE NORTH COAST TO JUTICALPA.

On September 28, 1908, the Government of Honduras granted to JAMES P. HENDERSON, through his representative in Tegucigalpa, a concession for the construction of a broad-gauge railroad from the north coast of the Republic to Juticalpa. American material is to be used in building the line, and the concessionaire agrees to complete annually at least 20 kilometers of branch lines. Work must commence within six months from the date of the approval of the contract by the National Congress. The concessionaire is to receive alternate lots of 500 hectares of government lands for each kilometer of the principal or branch lines constructed. In places where the railway passes through private lands the Government will give the concessionaire public lands in other parts of Honduras. Construction material is exempt from the payment of duties. The life of the concession is for a term of twenty-five years. A deposit of \$5,000 is required of the concessionaire as a guaranty of the faithful performance of his part of the contract.

## CONCESSION FOR THE EXPLOITATION OF BALSAM.

The Government of Honduras has granted a concession to Dr. JULIO LANG for the exploitation of balsam of liquidambar on the national public lands of the departments of Intibuca, Gracias, Comayagua, and Santa Barbara for a period of ten years. The machinery and supplies necessary for the exploitation and shipment of the balsam may be brought into the Republic by the concessionaire free of

customs duties, and no export tax shall be levied on the balsam shipped abroad during the life of the concession. The concessionaire agrees to pay to the Government 6 *centavos* (0.02358 cent) per kilogram of balsam extracted. The concessionaire is prohibited from de-



BUILDING A NEW WAGON ROAD NEAR SABANA GRANDE, HONDURAS.

stroying the trees exploited, and renders himself liable to damages if he contravenes this provision of the contract. The exploitation is to be commenced in each of the departments mentioned within a year from August 27, 1908.



FOREIGN COMMERCE, FIRST QUARTER 1908-9.

The total foreign commerce of the Republic of Mexico during the first three months of the fiscal year 1908-9 (July, August, and September, 1908) was \$86,110,334.80 silver, consisting of imports to the value of \$35,125,850.01 and exports amounting to \$50,984,484.79, as compared with \$125,732,786.12 during the same period of 1907-8, made up of imports valued at \$60,936,734.52 and exports aggregating \$64,796,051.60, or a decrease in the first quarter of 1908-9 as compared with the same period of 1907-8 in the imports and exports of 42.36 per cent and 21.32 per cent, respectively.

The imports and exports, by grand divisions, for the first three months of the fiscal year 1908-9 are shown in the following table:

Grand divisions.	Imports.	Exports.
	<i>Pesos.</i>	<i>Pesos.</i>
Europe.....	15,765,289.04	12,753,789.84
Asia.....	571,739.98	
Africa.....	19,231.41	
North America.....	18,490,870.70	37,482,607.73
Central America.....	7,885.87	230,151.22
South America.....	141,988.76	6,602.00
West Indies.....	31,410.81	521,334.00
Oceania.....	97,483.44	
Total.....	35,125,850.01	50,984,484.79

The exports for the first quarter of 1908-9 consisted of products, valued in Mexican money, as follows: Minerals, \$32,696,927.47; vege-

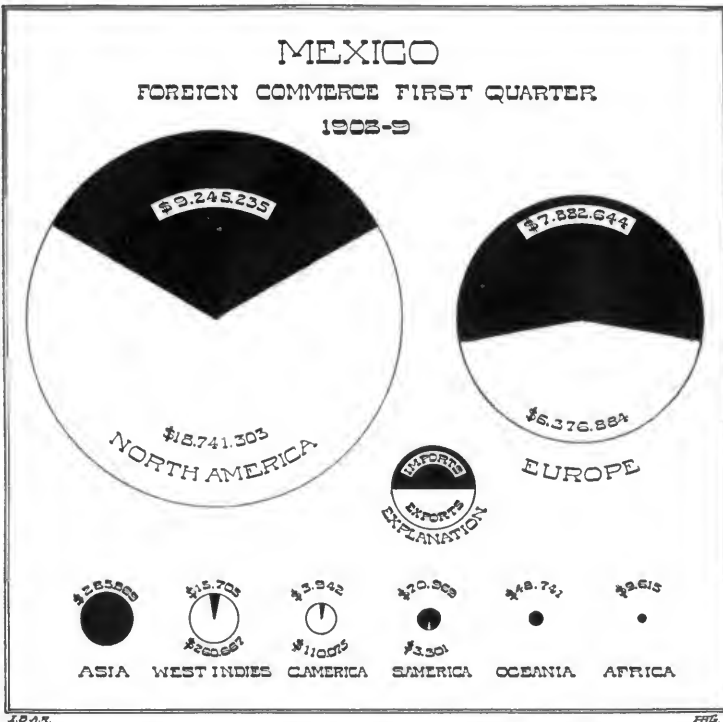


table products, \$14,033,136.50; animal products, \$2,474,175.09; manufactured products, \$480,415.33; and sundry products, \$1,299,830.40.

**CUSTOMS DUES, FIRST FOUR MONTHS FISCAL YEAR 1908-9.**

The total import, export, and port dues collected at the custom-houses of the Republic of Mexico during the months of July, August, September, and October, 1908, amounted to \$12,196,247.76 Mexican. The total for October, 1908, was \$3,433,111.42 Mexican silver, made up of imports, \$3,273,066.31; exports, \$49,401.23; and port dues, \$110,643.88.

**REDUCTION OF DUTY ON WHEAT.**

An executive decree of November 26, 1908, provides that wheat imported into the Republic of Mexico from December 15, 1908, to April 30, 1909, inclusive, shall pay duty at the rate of 1 *peso* per 100 kilograms, gross weight.

**OPERATION OF THE RAILWAY MERGER.**

An interesting report of Finance Minister JOSÉ IVES LIMANTOUR, recently submitted to the Mexican Congress, shows that the corporation known as the National Railways of Mexico, which is a consolidation of the Mexican Central and Mexican National railways, is capitalized at \$460,000,000 Mexican currency, made up of \$60,000,000 first preferred shares, \$250,000,000 second preferred shares, and \$150,000,000 ordinary shares. The Mexican Government holds \$20,000,000 of the first preferred shares, \$20,556,580 of the second preferred shares received in exchange for second preferred stock of the National Railroad, \$40,000,000 of second preferred shares received in exchange for Mexican Central Railway stock, \$21,988,000 of ordinary shares received in exchange for preferred stock of the National Railroad, and \$127,460,000 ordinary shares received as part compensation of the Government's guaranty; or a total interest of \$230,004,580. This is a majority of the capital stock, and makes the Government the deciding factor in the corporation.

With reference to the general mortgage bonds earning the 4 per cent interest guaranteed by the Government, Mr. LIMANTOUR shows that the proposed issue is \$186,000,000 gold, but that the amount at present on which interest will have to be paid is only \$60,000,000, which at 4 per cent will require \$2,400,000. He states that—

If it be added that, in accordance with article 13 of the decree of July 6, 1907, the approval of the Department of Finance is necessary for any new emission of bonds, it will appear that it will be in the Government's power to regulate the issue of certificates that directly or indirectly affect its liability, so that new issues will only be made on a scale commensurate with the increased earning capacity of the company and when it is highly probable that those earnings will be sufficient to amply cover both the former charges and the new ones to be assumed.



THE CATHEDRAL, MEXICO CITY, MEXICO.

This gothic structure is the most conspicuous feature of the architecture of the metropolis, occupying the site of the old Aztec war god and covering one entire side of the Plaza Mayor, in the heart of the capital. Nearly one hundred years were spent in its erection, and it was not completed until 1697, at a cost of \$2,600,000.



PARADE OF CARRIAGES IN THE CITY OF MEXICO.

This is one of the unique and attractive features of life in the metropolis of the Republic. The driveway, which commences at the Plaza Mayor, or great square in front of the National Palace, runs through the heart of the business section, leads past the Alameda into the celebrated Paseo de la Reforma—a splendid boulevard 2 miles long, lined with statues and trees—and terminates in the grounds of the large park and military fortress of Chapultepec.



As to the immediate results of the merger, Mr. LIMANTOUR says:

In the present state of advancement of the pending financial operations, of certain legal details, and the administrative organization of the national railways, the great project for concentrating in the hands of a single Mexican corporation the ownership and management of the two most extensive railway systems of the country may be regarded as accomplished in all its essential features.

#### REGISTRATION OF FOREIGN MINING COMPANIES.

The proposed new mining law of Mexico, while it prohibits foreign companies from acquiring mines in the Republic in their own right, does not affect the requirements as to registration, such companies still remaining subject to the provisions of article 24 of the Commercial Code, which provides that—

Foreign corporations which desire to become established or to create branches in the Republic shall present and cause to be recorded in the Commercial Registry, in addition to a protocolized copy of their statutes, contracts, and other documents relating to their incorporation, an inventory, or their latest balance sheet, if they have any, as well as a certificate proving that they have been organized and authorized to do business under the laws of their respective countries, said certificate being issued by the Minister of the Republic accredited to each country, or, if there be no Minister, by the Mexican Consul.

According to this article the documents required are a certified copy of the charter, of the by-laws, and the certificate of legal incorporation issued by the Mexican Minister or Consul. These documents should be sent to a notary public in the capital for presentation to one of the civil judges, accompanied by an application for the judge's authorization to protocolize them. If the papers are in order and the translations properly done, the judge returns them to the notary to be protocolized. The notary makes a full summary of the contents of the documents and enters it in his protocol, paying to the stamp office the tax imposed by law on the operation. A transcript is then made of the documents or their translation, and the notary certifies to its exact conformity with the originals. This transcript, or *testimonio*, properly made out and duly attested, is then presented at the Commercial Registry for inscription and annotation. The transcript is then delivered to the representative of the company in Mexico, to be held as evidence of the legal existence of the company in the Republic.

One of the expenses connected with the registration of the transcript, or *testimonio*, is a tax on the capital of 1 per mil for the first \$500,000; 0.50 per mil for the second \$500,000, and 0.10 per mil for the capital in excess of \$1,000,000. These charges are in Mexican currency.

Joint stock companies are required to publish a yearly balance sheet, together with the personnel of their management, in compli-

ance with the provisions of article 24 of the same Code. Should these conditions not be complied with, the person contracting in the name of a foreign company becomes personally liable for the obligations assumed, and is subject to the penalizations prescribed for the non-registration of documents. All companies properly registered are subject in all their operations in Mexico to the jurisdiction of the tribunals of the Republic.

#### PROPOSED TARIFF MODIFICATIONS.

A bill has been introduced into the Mexican Congress modifying many of the schedules of the customs tariff. Among the items affected are sacks, various fabrics, envelopes, machinery, Greek raisins, straw goods, bleached and unbleached cotton fabrics, hosiery, ready-made cotton goods, yarn, etc.

#### INTERNATIONAL OIL AND GAS COMPANY.

The International Oil and Gas Company, with headquarters at Indianapolis, Indiana, organized on August 23, 1908, under the laws of Arizona, with a capital of \$20,000,000, proposes to take over oil rights and concessions in the districts of Iturbide and Camargo, in the eastern part of the State of Chihuahua, Mexico, covering a territory estimated at from 8,000,000 to 10,000,000 acres, and to exploit the same on a large scale. Experts are now examining the oil fields of the company, and when their reports are received and acted upon the proper machinery will be selected and several wells will be bored.

Among the principal oil rights acquired by this company is an exclusive concession granted on June 2, 1908, to ALBERTO TERRAZAS, to prospect for petroleum over the public lands of the two districts of the State mentioned and to exploit the same, together with its products, for a period of ten years. It is generally believed that the petroleum and natural gas belt of western Texas extends across the border into eastern Chihuahua and that that region is exceedingly rich in these products. Other companies have prospected for oil in the State of Chihuahua, and the reports received from their operations are most encouraging and flattering. The exploitation of the petroleum and gas deposits in northwestern Mexico will give a great impetus to the development of that part of the Republic, and will enable manufacturing and mining operations to be carried on on a larger scale than ever before.

#### SHIPPING FACILITIES ON THE PACIFIC COAST.

The "Pacific Marine Review" announces that JEBSEN & OSTRANDER, of Seattle, have concluded a traffic agreement with the Mexican Central Railway, effective in January, 1909, for a monthly passenger and

cargo steamship service between Puget Sound, San Francisco, and Manzanillo. This service is to receive an annual subsidy of \$60,000 gold, provided the arrangement is extended to all ports of Central America as far south as the Republic of Costa Rica. Between San Francisco and Manzanillo the vessels will not touch at any intermediate ports, and trips are scheduled to be made between these two ports in five days and one night. From Manzanillo to the City of Mexico by rail the time of transit is thirty hours, and it is thought that a considerable passenger traffic will be developed over this route. Efforts are being made to include San Diego, California, the port nearest Los Angeles, in the schedule. Vessels from Manzanillo to the north will touch at San Diego, San Francisco, and Puget Sound ports. The vessels assigned to this service are the German steamers *Erna* and *Ella*, steel, single-screw ships, 2,178 tons, net. The dead-weight capacity is 4,000 tons. These vessels can accommodate 64 first-class, 24 second-class, and 1,300 steerage passengers. Quite a trade in flour is developing between the Puget Sound country and Central America.

#### COFFEE CROP.

According to an estimate furnished by the Consul-General of Great Britain in Mexico, the coffee crop for the season of November, 1908, to April, 1909, will aggregate 81,000,000 pounds, as compared with 33,000,000 pounds for the season of the previous year.

#### EXPLOITATION OF THE FORESTS OF QUINTANA ROO.

The "*Diario Oficial*," of November 7, 1908, contains the full text of the contract made by the Department of Public Works, Colonization and Industry with RODOLFO REYES for the exploitation of 88,000 hectares of timbered lands belonging to the Government in the Territory of Quintana Roo. The concessionaire has the right to exploit the mahogany, cedar, cabinet and dyewoods found on the lands referred to; also to extract gums and resins.

#### HACIENDA DE SAN ANTONIO Y HUIPULCO RAILWAY.

According to a contract made with the Federal Government by the Tramway Company of Mexico, the former has agreed to construct a railway line in the Federal District between the Hacienda of San Antonio and Huipulco. The road is to be completed within three years from October 23, 1908.

#### MODIFICATION OF POSTAL CODE.

On November 19, 1908, a decree was promulgated by the President of the Republic of Mexico modifying certain sections of the postal code, the changes to become effective February 1, 1909. These modifi-



GATHERING STRAWBERRIES IN MEXICO.

Strawberries of a delicious flavor are grown in various districts of the Mexican plateau, especially at Irapuato, in the State of Queretaro, where they ripen in December and are exported in large quantities to the United States. The cultivation of strawberries has received considerable attention in recent years in the States of Aguascalientes, Queretaro, and Morelos.

cations refer chiefly to the issuance and payment of domestic postal money orders and relate to the sending of advices, the procedure necessary to be followed when money orders are lost, the revenue stamps required, and the penalties incurred by the postal authorities for omission or delay in the sending of money-order advices.

#### ZINC MINING IN THE REPUBLIC.

In compliance with instructions, Consul **LOUIS A. MARTIN**, with the cooperation of **H. B. PULSIFER**, mining expert, has prepared the following report covering the zinc-mine industry of Chihuahua:

Zinc ore bodies are found in the following camps in the State of Chihuahua: (1) Picachos, on the Kansas City, Mexico and Orient Railroad, less than 100 miles from Presidio del Norte, opposite the Texas border, where carbonate ores are mainly produced; sulphides occurring, but not on a commercial scale; (2) Santa Enlalia, near the city of Chihuahua, produces carbonate ore exclusively; (3) near San Ysidro, on the Chihuahua and Pacific Railroad, where sulphides only are produced; (4) Almoloya, where carbonate and silicate are produced, and Parral and Santa Barbara, producing sulphides only.

The zinc ore bodies are found associated with silver lead mines, and in this way partake of the development of the latter, although certain mines might properly be called "zinc mines." In every case, however, silver-lead ores are those sought for and mined. A conservative estimate places the crude zinc-bearing ores, more or less well exposed, in the State at 1,000,000 tons, viz, Picacho, 50,000 tons; Santa Enlalia, 100,000 tons; San Ysidro, 200,000 tons; Almoloya, 50,000 tons; Parral and Santa Barbara, 600,000 tons. The probable available amount is many times this, most of the present mining being at very moderate depths.

The carbonate and silicate ores are running from 32 to 45 per cent metallic zinc, as broken off, after the merest hand sorting. Crude sulphide ores will run from 10 to 35 per cent metallic zinc. The carbonate ores always carry a trifling amount of silicate, sometimes a little lead carbonate, calcium carbonate, and iron minerals.

The sulphide ores are always complex and must, as at present disposed of, be milled. A silver-lead concentrate, possibly carrying some iron and gold, is the marketable product always procurable at the same time as the zinc concentrate.

The mines are in all possible conditions of development, from the simplest tunnel adit, where the ore is found at or above the tunnel level and is simply broken down, run through chutes into the mine car, and pushed to the open, to where the ore is found at moderate depths, 100 to 400 feet, and reached by shafts and drifts or by tunnels and internal hoists. Ore is seldom found at considerable depths, as at 1,600 feet, but in such case it is reached by high-speed first-motion hoists. This special case is in a very large and rich silver-lead mine, where the zinc ore may be said to be a valuable by-product.

A considerable part of the ore is mined by hand drilling, but power drills, worked by compressed air from steam or gas engines, supplied with producer gas, are used in the larger mines and will supplant hand drilling as the mines become developed.

Sulphide ores present hard and complex milling difficulties. Formerly zinc ores were a detriment to sulphide ores. The ores, being valued for the silver-lead content and disposed of to the smelters without removing the zinc, were not only losing their zinc value, but were penalized for its presence; but from a detriment it is now changed to a valuable product, consequent on the art of



HOME OF THE AMERICAN AMBASSADOR IN THE CITY OF MEXICO.

This house is situated in the Colonia Roma district, one of the highest and most delightful sections of the Mexican capital. The gardens are filled with flowering plants which bloom the year round.

separating and utilizing the zinc portion. Mines equally rich as those worked are found idle and unequipped in developing plants, owing to local conditions and management.

Even during these times of unusual depression in the metal market experiments on a large scale are in progress at several of the mines, and the future industrial development will surely be of great magnitude.

The question of the cost of production of zinc ore presents certain complications from the fact that the ore occurs with other valuable ores, as at Santa Eulalia, or that other valuable products are obtained at the same time, as at the mine near San Ysidro, or from the fact that nearly all the mines are at present working much under normal capacity.

At Picachos the case is simple; zinc ore alone is produced, and practically all the cost is that of labor. The total cost, mining and hauling to points in Kansas, should not exceed \$12.32 (American currency, which is the unit used throughout this report) per ton.

From the mine near San Ysidro, where mining cost is very low, where 45 per cent zinc is produced from zinc concentrate, with silver-lead concentrate, the total cost, mining, handling, freightage, etc., to points in Kansas should not be much more than \$13.57 per ton.

In Santa Eulalia the cost of production is also very low, and the total cost, laid down at points in Kansas, should not exceed \$9.75 per ton.

The foregoing mines are producing almost the whole amount now being shipped from the State of Chihuahua, which for September and October was about 125 tons per day.

From Picachos comes carbonate, lead-free, 45 per cent zinc; from San Ysidro, sulphide concentrate, 45 per cent of zinc; from Santa Eulalia, carbonate, lead-free, 35 per cent of zinc.

As far as known, there are no facilities for smelting zinc ores in Mexico. Coal and wood, the chief fuels in Chihuahua, are too expensive, the wholesale prices being as follows per ton: Coal, \$6 to \$8; wood, \$3 to \$5. The production of zinc ore and concentrates is a new industrial development, and, so far as known, the product is shipped to the United States exclusively.

#### EXPLOITATION OF TREE COTTON.

The "Mexican Herald" states that there have recently been formed three large agricultural companies for exploitation in Mexico. All were organized in the United States and two are to exploit caranivona, or tree cotton, and tobacco plantations. The "Herald" says:

The properties of the tree cotton, which are now attracting the greatest of attention by virtue of the fact that it can be grown most successfully in this country and sold at higher prices than the best grades of other cotton, have been exploited by Doctor OLSEN-SEFFER, and he has interested considerable capital in the enterprises of cultivating the tree. The two companies are capitalized at \$1,000,000 gold each, and each plantation will be of 8,000 acres. The plantations adjoin each other, both being in the State of Chiapas. It is planned to begin each with original plantings of 1,500 acres to the tree cotton and 1,000 acres to tobacco. Another of the big companies recently formed is the Tezonapa Valley Plantation Company, incorporated under the laws of Arizona with a capitalization of \$1,200,000 gold. This company has been formed to acquire and develop tropical plantations in Mexico. This activity in the tropical plantation business is another factor in the growing prosperity of this Republic.



# NICARAGUA

## COFFEE CROP 1907-8.

The British Consul at Greytown, Nicaragua, reports the yield of the Nicaraguan coffee crop for 1907-8 at about 14,000,000 pounds. The crop for 1908-9 is estimated at 16,800,000 pounds.

## MINING OUTLOOK.

The outlook for an increased development of the mining industry in Nicaragua in the near future is very flattering. Some of the mining concessions, which have withdrawn from the public considerable areas of valuable mining lands and prevented the general prospector from examining and exploiting them, may soon be declared forfeited for failure to comply with the terms of the grants. Another thing that will greatly stimulate the mining industry in the Republic is the construction of the proposed railway from Bocas del Toro to the neighboring mining districts. American capitalists are interested in this enterprise, and as the railway will run through a rich agricultural section considerable traffic will be assured it from the time that it is opened to the public. Bananas can be cultivated in large quantities along the proposed route, and other products, such as tobacco, sugar cane, etc., grow to perfection in this part of Nicaragua. On the whole, the prospects for the development of the mining industry on a large scale in the Republic are at the present time most promising.



# PANAMA

## MINING INDUSTRY.

According to British reports, the Republic of Panama was extensively prospected by miners in 1907, and 40 mines were claimed, as compared with 31 in 1906. Nearly all the mountain streams, whether emptying directly into the sea or into larger rivers of the Republic, show abundant evidence of having traversed gold-bearing placers, and at some points of the seashore, particularly near the mouths of the rivers, sands containing small quantities of gold are found. These rivers and sands present a fine field for gold dredging and placer mining. Notwithstanding these manifest advantages and the richness



and accessibility of the mining regions of the country, there has been but little development or exploitation of new properties for some time, and no development in the extraction of minerals and no new mines have been brought to the attention of the public. Many of the regions are virgin and offer excellent inducements to prospectors and capitalists.

The Darien, or Cana, gold mines, belonging to an English company, partially suspended operations recently for a considerable time for lack of funds, but a reconstruction was effected by French capitalists and work has been resumed. The gold bullion shipped from this mine in 1907 was valued at \$172,280. This mining district is 48 miles from the port "El Real," and the narrow-gauge railway, which is now in course of construction, will make the Cana mines and the mining region of the neighborhood easily accessible.

#### PROPOSED RAILROAD FROM PANAMA TO DAVID.

A proposition has been made to the Government of Panama to build a railroad from the city of Panama to David, and to develop the port of Panama as a suitable terminal for the proposed railroad when completed. The project, which has been submitted, comprises the building of a standard-gauge railroad, and is based upon obtaining a government guaranty of interest at the rate of  $4\frac{1}{2}$  per cent on \$5,500,000 first-mortgage bonds to be issued for the purpose of financing the enterprise. The maximum of this guaranty, according to the estimate furnished, would not cost the Government in excess of \$247,500 per annum. It is calculated that the guaranty would cost the Government the first year \$45,000; the second, \$117,500; the third, \$202,500, and the fourth, fifth, and sixth years, \$247,500 per annum. After the sixth year it is estimated that the income of the railroad will rapidly reduce the amounts of the guaranteed-interest payments, until within a limited period they will disappear altogether. In support of this argument the case of the Cuba Railroad, which passes through a country similar in soil, climate, and topography to that of the section of Panama which lies west of the Canal Zone, is cited. Said railroad paid operating expenses after the year following its completion and is now not only paying interest on its bonded indebtedness, but is able to still further increase its earnings by the construction of branch lines, developing the country through which it runs, and to giving employment to thousands of persons.

As to terminal facilities in the city of Panama, the offer is made to reclaim the lands to the south and west of the city and which are left bare at low tide. The railroad station, yards, shops, deep-water docks for shipping of any draft, dry dock, and ship railway for

repairing vessels of any size or class, and an adequate coaling station to meet the exigencies of the railroad and maritime requirements of the port, would be established on this reclaimed land. At least 50 per cent of the employees of the railroad are to be natives, and commissary supplies are to be purchased in the local market.

The Government is to receive 49 per cent of the common stock of the railroad company, which it is proposed to organize for the purpose of carrying on the enterprise, with the right to acquire the remaining 51 per cent after ten years, and to designate three of the members who compose the board of directors.

It is believed that the construction of this railroad will greatly stimulate the growth and prosperity of the city of Panama, and the development of the port will encourage local coastwise navigation and trade on the Pacific slope of the Republic. The future of the enterprise depends upon the action of the National Congress.

#### FISCAL CONDITIONS.

GEORGE T. WEITZEL, American Chargé d'Affaires at Panama, in sending the following salient features from the report of the Secretary of Treasury of Panama to the National Assembly of that Republic, says that 1 *balboa* of Panama currency is equal to \$1 American currency:

During 1907 the imports from the United States amounted to \$5,196,964, and from elsewhere, \$4,367,486, making a total of \$9,564,450. To this should be added goods imported by the Isthmian Canal Commission and not paying duty, \$13,468,359. The exports aggregated \$1,960,665, 70 per cent of the total being bananas.

The revenues of the Republic, principally customs duties and excise taxes, during 1907 amounted to \$2,439,302. Concerning the expenditures, the Secretary states: "My estimate of expenditures of \$2,433,806 per annum reaches those figures; and as the Republic of Panama has no war budget, happily, nor foreign nor internal debt, it will soon have a surplus if we keep within the present estimate." The assets of the Government are as follows:

Interest-bearing securities, etc., deposited in New York.....	\$6, 300, 000
Current account in New York.....	1, 505, 307
Funds in Government Treasury.....	55, 390
Deposited in Government bank.....	250, 000
Total .....	8, 110, 697

# PARAGUAY

## CENTRAL RAILWAY REPORT.

The gross receipts of the Paraguay Central Railway Company, Limited, for the year ended June 30, 1908, were £86,208, the working expenses during the same period amounted to £50,627, leaving the net receipts of the railway for the year mentioned £35,580.

A contract has been entered into for extending the line to Encarnacion, about 117 kilometers from its present terminal. The surveys for this extension have been completed, and the plans were presented to the Government in July, and as soon as approved the construction will begin, the necessary rails and materials being already on the spot.

The 5 per cent debenture stock of this railway will receive a dividend of  $4\frac{1}{2}$  per cent.

It is expected that the new line will be completed before July, 1912, by which time it is probable that the Argentine North-Eastern Railway will have been extended to meet it.

## TRANSFER OF CONTRACT.

The Government of Paraguay has granted permission to the concessionaire of the water, sewer, lighting, and electric-tramway contract in the city of Asuncion to transfer the same to a North American company that has been organized to carry out these improvements. The increase in the population of the capital of Paraguay renders the completion of such public works imperative at the earliest possible moment. Mr. CHARLES BRIGHT is in charge of the affairs of the new company in Asuncion, and it is hoped that work will soon be commenced on a part or all of these improvements.

# PERU

## THE PETROLEUM BELT OF NORTHERN PERU.

Bulletin No. 50 of the Society of Mining Engineers of Peru, published at Lima in 1907, and illustrated with a handsome map and geological sections and views, contains a detailed and interesting description of the petroleum-bearing district of northern Peru. It has long been known that there are immense deposits of petroleum in some of the coast districts of the Republic, but as yet there has been no extensive and systematic exploitation of these great reservoirs of natural wealth.

From a historical standpoint the discovery of petroleum in Peru is very interesting and dates to 1591, when Father ACOSTA recorded that the captain of the vessel on which he sailed to Peru had seen naphtha floating on the sea near Cabo Blanco or Pariñas, in the precise zone now under consideration. Later the Spanish Crown conceded the entire petroliferous territory of Peru to Capt. MARTIN ALONSO GRANDINO. Previous to 1826 the Peruvian Government regained possession of the property, and on that date it was sold to Señor QUINTANA, who in 1827 transferred it to Señor DIEGO DE LAMA. Señor LAMA distributed the territory among his thirteen sons, the portion known as "Pariñas and La Brea" becoming the property of Mrs. JOSEFA LAMA, who in 1878 bequeathed it to Señor GENARO HELGUERO. The latter gentleman sold it to Dr. HERBERT TWEDDLE in 1888, and its last owner has leased it to the London and Pacific Petroleum Company (Limited), which now exploits it.

Señor DIEGO DE LAMA probably discovered petroleum in the neighborhood of Zorritos, and with the help of Señor ALEJANDRO RUDENS formed a company in New York for its exploitation. In 1870 HENRY SMITH, an American, became interested in the petroleum deposits at Zorritos, and in 1875 formed a partnership with Señor FAUSTINO PLAGGIO, who, on the death of Mr. SMITH in 1883, became the sole proprietor. The latter gentleman now exploits about 100 claims, on which there are 266 wells with a maximum depth of 2,000 feet and an average depth of about 1,500 feet. The output of this property is about 1,000 tons of crude petroleum per month.

The Peruvian Corporation commenced to exploit for petroleum at Lobitos in 1901, and encountered oil at a depth of 400 feet. The total production of Lobitos from January to September, 1906, was 15,000 tons of crude oil.

The refinery at Zorritos is not equipped with the most modern machinery, but is in the hands of practical and experienced men, and good results are obtained. The oil from La Brea, which is heavy and of a dark-greenish color, is concentrated by evaporation and is converted into pitch. The refinery at Talara is similar to that at Zorritos. It contains two large and two small stills, the gases from which pass to a condenser, and from thence, in liquid form, to a reservoir in which the benzine is separated from the kerosene, the product being stored in separate tanks and the kerosene pumped to the agitator, where it is purified.

The Province of Tumbes, Department of Piura, in northern Peru, contains two geographical and geological divisions, that is to say, the coastal plain and the mountainous regions. The coastal plain consists of the territory occupied by tertiary and post-tertiary sediments to the west of the spurs and foothills of the Cordillera. In northern Piura and in the interior of Tumbes the sediments of the

coastal plain have been subjected to folds and faults of small displacement. The tertiary of the central and southern parts of Piura gives way to post-tertiary accumulations, represented by the deposits of the coastal plateau of Paita and Piura. At Paita these deposits are, approximately, 60 meters above the level of the sea, but sink gradually in the valley of Piura to almost sea level. The coast and interior of these districts are covered by sand dunes formed by the action of the wind. The *Silla de Paita* and the *Cerro de Etén* are the partially buried remains of the mountain region in the coastal plain.

The mountainous region includes the western slope or foreland of the cordillera, and consists of deep modern valleys perpendicular to the general trend of the chain. The bottoms of the principal valleys have strong gradients above the level of the sediments of the coastal plain, but the lower portions of the valleys are covered to great depths by these sediments. One or two fragments of tertiary age have been found in the formations of the mountainous region of Ecuador, but in Peru the formations consist largely of crystalline and metamorphic rock more ancient than the tertiary formation, with the exception of certain granites in the region of La Capitana, which have been injected in sandstone that appears to lie stratigraphically not far from the base of the whole tertiary series.

Two lithographically distinct formations are found in the area between the Tumbes and Zarumilla rivers, the upper portion of the section being formed by a series of relatively soft clays and sands, and the lower of harder and more compact rock composed principally of sandstones. Some uncertainty exists as to whether the latter formation belongs to the petroleum-bearing clays and sands of Zorritos. The Zorritos coast consists of sandstones of various degrees of hardness, with here and there an argillaceous layer in the upper section, while the lower is comprised of red and dark-brown clays, with lenses of sands and occasional conglomerates. Faults exist in this region.

Investigations of the various wells show that the most productive groups are situated in front of Zorritos along the margin of the seashore, in the Tusiyal and Peroles canyons, and on the beach near the mouth of the Tijeritas River. Petroleum is found in these wells at depths varying from 260 to 1,640 feet, and in some of the districts—at Tijeritas, for example—three petroliferous strata are known, the deepest of which is less than 400 feet from the surface. The Zorritos petroleum-bearing sands are of local extension, the most productive localities being situated in the strongly folded formations where the sands are covered and succeeded by impermeable clays.

At La Breita, near Mancora, an exploratory bore hole has been sunk to a depth of 455 feet, petroleum being encountered at 90, 140, 196, and 442 feet, respectively, the first three being in conglomerate

and sandstone and the fourth 45 feet above the clay. A study of the entire zone shows that phyllades form the base of the section, which is the principal formation of the Amotape chain and its prolongation northeast toward the western cordillera. A series of sandstone reclines on these phyllades, but owing to the irregularity of the dips and the local faults the thickness of the different formations can not be easily calculated. The pre-tertiary beds are probably not more than 200 feet thick, while the overlying unconformable sandstones are approximately 300 feet thick. The sandstone series are covered with clays with accidental interstratifications of sand 400 to 600 feet thick, followed by sandstones containing disseminated bands of clay, conglomerates, fragments of phyllades and granite, and occasional nodular masses 600 feet thick. This formation merges gradually into red clays with numerous silicious bands near the top. The Zorritos wells are in the highest part of this series, the total thickness being approximately 4,000 feet. The Breita well is situated in the central sandstone, which overlies the lower clays. It can therefore be deduced that the coastal plain of this Province contains two petroleum-bearing strata, the upper one at Zorritos and the lower one at Breita.

The surface geology at Lobitos discloses numerous interstratified beds of sandstones and clays, some of which are highly fossiliferous and belong to the middle tertiary. This zone is on the eastern flank of a fold whose axis lies northwest of the seashore and extends 50 kilometers farther north to Mancora. Local folds occur, however, which must be taken into consideration in exploring this district for petroleum. A fault is visible in the cliff near Lobitos, consisting not of a clean fracture, but of a crushed zone 75 to 100 feet wide, in which blocks of sand and interstratified clays have been squeezed and mixed together. This fault may continue for some distance inland and may have altered the normal position of the petroleum-bearing horizon. Only one petroleum level has been encountered near the surface at Lobitos, but others may exist deeper down.

The formation at Negritos, which is 10 kilometers south of Talara and 25 kilometers from Lobitos, is similar to that of the latter place. The London Pacific Petroleum Company is established on the small bay to the north of Negritos. The country to the east and southeast is furrowed by deep and narrow valleys extending some distance into the interior, where they finally disappear in the plain. The remains of the town of La Brea, one of the first places in Peru to produce pitch or thick petroleum, are in this district. The petroleum-bearing rocks are not continuous over large areas, but are found in local sands included between large masses of clay. This signifies that the petroleum zone of Negritos is modified by local folds and faults.

Considering the petroleum belt geologically, it should be borne in mind that the mountainous region contains limestones which, accord-

ing to the fossils, belong to the most recent tertiary formation, from which it is deduced that the clays and sands lying unconformably upon the limestone must be post-tertiary, and there is reason to believe that the sandstones are older than the limestones. The essential structures for the storage of petroleum exist in the petroleum belt of northern Peru.

#### CONCESSION FOR THE EXTRACTION OF PEARLS.

A concession has been granted to the company entitled "Perlífera del Perú," organized by PAUL E. LLOSA, to exploit the pearl fisheries of Sechura Bay, Peru. The results of the experimental explorations made by a practical diver have been most satisfactory. The concession was granted October 31, 1908.

#### FUSION OF MINING COMPANIES.

According to a recent arrangement, the "Andara" and "Oro de Pasco Camaná" mining companies, with a combined capital of £115,000, have consolidated into a single company. New crushing machinery, with a capacity of 100 tons of ore daily, will be installed, and 14 kilometers of Decauville railway constructed to Quilca. A large force of men is at work in digging a canal to be used as a water course to supply the electric power to drive the triturating mill and other machinery of the company.



#### IMPORTS FOR FIRST QUARTER OF 1908.

During the first quarter of 1908 the imports of the Republic of Salvador consisted of 5,085,168 kilos of merchandise, valued at \$1,154,648.53 silver (\$461,000). The values of the principal articles imported, expressed in silver, were as follows: Cotton manufactures, \$421,444.56; hardware, \$71,023.32; flour, \$52,538.80; drugs and medicines, \$44,557.95; boots and shoes, \$41,498.07; coffee sacks, \$37,806.23; wines, \$27,736.68; materials for the manufacture of soap and candles, \$27,081.61; silk fabrics, \$22,236.75; and woolen goods, \$19,748.59.

The countries sending the greatest value of products to Salvador during the period referred to were as follows: Great Britain, \$420,869.80; Germany, \$124,540.16; United States, \$324,889.04; Belgium, \$34,505.52; France, \$81,104.86; Italy, \$34,705.60; Cuba, \$30,368.15; and Spain, \$28,644.88.

CONSULAR INVOICES FOR POSTAL PARCELS.

The Government of Salvador has decreed that on and after January 1, 1909, no postal parcel will be passed through the custom-house unless it is accompanied by a consular invoice. Only invoices covering goods



"WHITE HOUSE," SAN SALVADOR, SALVADOR.

The residence of the President occupies a commanding position in the capital of the Republic. It is surrounded by a garden and is one of the most attractive and prominent edifices of the city. A splendid view is obtained from the tower of the neighboring mountains, the city, and the wooded heights of the fertile valley surrounding it.

of a value of less than 5 gold *pesos* (\$1.825) will be exempt from the payment of the fee for the consular certification of the invoice.



# UNITED STATES

## TRADE WITH LATIN AMERICA, FIRST TEN MONTHS OF 1908.

The trade reports of the Bureau of Statistics of the Department of Commerce and Labor of the United States for the ten months ending October, 1908, show that the total foreign commerce of the United States for the period mentioned was \$2,303,323,101, as compared with \$2,731,826,912 for the same period of 1907. The imports and exports of the United States for the first ten months of 1908 were \$900,552,791 and \$1,402,770,310, respectively, as compared with \$1,219,984,920 and \$1,511,841,992, respectively, for the same period of 1907.

The total foreign trade of the United States in October, 1908, was \$274,040,258, as compared with \$292,165,917 in October, 1907. The imports and exports in October, 1908, were \$102,037,297 and \$172,002,961, respectively, as compared with \$111,912,621 and \$180,253,296, respectively, during the same month of 1907.

The commerce between the United States and Mexico, Cuba, Haiti, Dominican Republic, Central and South America during the first ten months of 1908 amounted to \$387,121,417, as compared with \$484,362,576 for the same period of 1907. The imports of the United States from and the exports to the Latin-American countries during the first ten months of 1908 amounted to \$224,636,941 and \$162,484,476, respectively, as compared with \$282,682,761 and \$201,679,815, respectively, for the same period of 1907.

The following table shows the imports of the United States from and the exports to the Latin-American countries during the two periods under comparison:

Countries.	Imports for first ten months of—		Exports for first ten months of—	
	1907.	1908.	1907.	1908.
<b>Central American States:</b>				
Costa Rica.....	\$1,866,306	\$3,612,307	\$2,241,724	\$1,880,479
Guatemala.....	4,104,356	1,719,639	1,994,051	1,426,243
Honduras.....	2,005,329	1,611,866	1,700,876	1,200,828
Nicaragua.....	1,021,169	864,270	1,443,819	1,049,869
Panama.....	1,430,952	1,160,683	15,482,107	18,965,969
Salvador.....	1,171,557	991,870	1,364,011	1,168,224
Mexico.....	50,672,861	34,590,777	57,703,565	38,332,647
<b>West Indies:</b>				
Cuba.....	87,173,802	73,711,965	44,411,810	34,968,413
Haiti.....	1,061,222	359,220	2,382,870	2,714,478
Dominican Republic.....	3,111,117	5,139,377	2,192,049	2,230,733
<b>South America:</b>				
Argentine Republic.....	14,526,098	10,366,719	24,795,807	27,612,736
Bolivia.....		385	1,341,265	600,771
Brazil.....	72,072,864	58,523,010	17,788,642	13,815,627
Chile.....	15,473,873	10,569,902	9,598,077	4,578,217
Colombia.....	5,272,730	5,765,640	2,569,805	3,018,339
Ecuador.....	2,371,358	1,779,544	1,503,446	1,502,606
Paraguay.....	5,427	15,141	140,759	53,545
Peru.....	6,006,192	4,040,454	5,631,257	5,147,946
Uruguay.....	2,791,274	1,757,631	3,214,625	2,708,867
Venezuela.....	6,457,572	6,011,808	2,218,975	1,985,149

## MINERAL PRODUCTION IN 1907.

According to a bulletin issued by the Geological Survey, the value of pig iron, silver, gold, copper, lead, zinc, quicksilver, aluminium, antimony, tin, and platinum produced in 1907 was \$903,024,005, as compared with \$886,110,856 in 1906. The value of nonmetallic products, consisting of coal, gas, petroleum, etc., in 1907, was \$1,166,165,191, as compared with \$1,017,696,178 in 1906. The value of unspecified mineral products in 1907 was \$100,000, as compared with \$200,000 in 1906. The total value of metallic and nonmetallic mineral products in 1907 was \$2,069,289,196, as compared with \$1,904,007,034 in 1906.



## WOOL SHIPMENTS IN 1908.

The wool-exporting season of Uruguay for 1908, closing on September 30, records total shipments during the preceding twelve months of 94,418 bales. For the season of 1907 the quantity shipped comprised 81,534 bales, against 74,636 bales in the previous season.

The leading destinations for wool exported from the country were as follows:

Marseilles and Bordeaux, 94,418 bales; Hamburg and Bremen, 28,003; Dunkirk, 21,901; Antwerp, 17,926; Havre, 12,953; Liverpool, 7,005. In this record advanced shipments are noted for all ports, whereas the quantity destined for New York declined in 1908 to 1,599 bales from 5,359 bales in the preceding year.

## EXPORTS OF HIDES AND SKINS IN 1908.

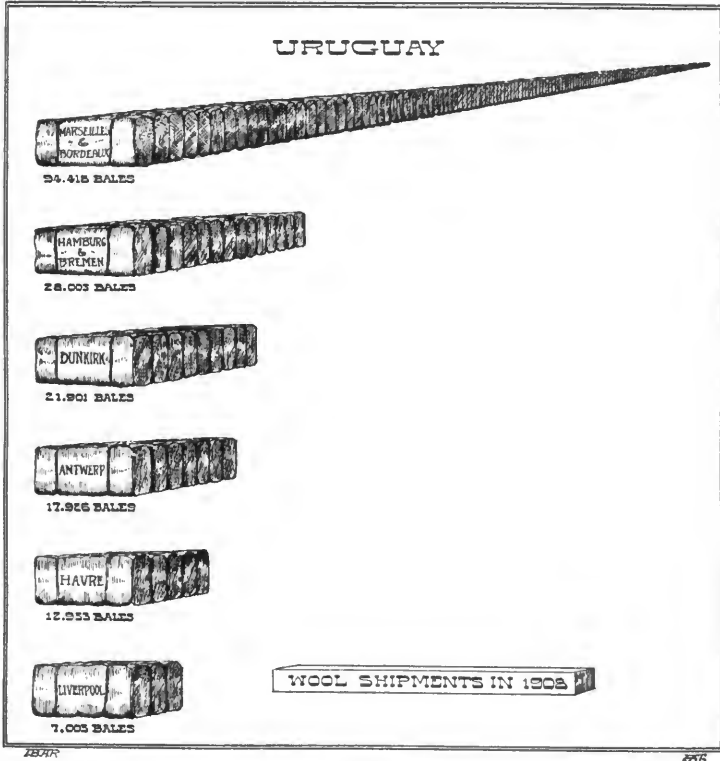
In the season for 1908, extending from October 1, 1907, to September 30, 1908, Uruguay's reported exports of hides and skins aggregated 1,752,975, comprising 1,717,536 ox-hides, 21,724 horse-hides, and 13,715 sheep-skins, the figures being practically the same as those recorded for the season of 1906-7.

As a receiver of oxhides the United States stands first, with 452,142, followed by Belgium, 344,386; Germany, 323,261; France, 198,234; and other Europe, exclusive of Great Britain, 362,914.

Tallow shipments show noteworthy gains, figuring for 14,044 pipes and 9,086 hogsheds, as compared with 13,341 pipes and 1,973 hogsheds in the previous season, while hair remains practically stationary at something over 1,000 bales.

## CUSTOMS RECEIPTS, NINE MONTHS OF 1908.

The total customs revenue of the Republic of Uruguay for the nine months from January to September, 1908, was \$10,419,858, as compared with \$10,248,053 in the same period of 1907, and \$9,879,049 during the same months of 1906. The increase in the revenues during the nine months of this year, as compared with those of the same period of last year, is \$171,805.



## SURPLUS FOR FISCAL YEAR 1907-8.

Data from the Accountant-General of the Republic of Uruguay shows that there was a superavit of \$2,027,166 for the fiscal year ended June 30, 1908, or an increase of \$227,116 over the estimate of the budget for the year.

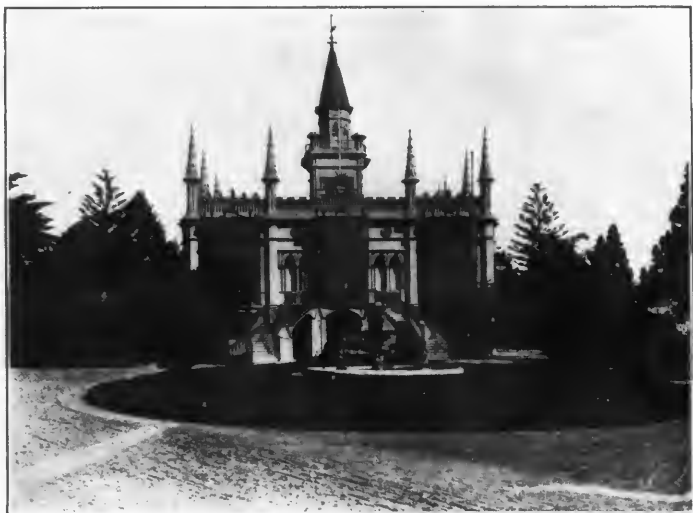
## REORGANIZATION OF THE NATIONAL COLLEGE.

On the occasion of the celebration of the fifty-ninth anniversary of the National College of Uruguay, at Montevideo, a project was

discussed looking to the reorganization and enlargement of that institution of learning. The plan proposed includes the purchase of 27 hectares of land adjoining the present grounds, to be used in the erection of new buildings and as a campus for field sports.

**CUSTOMS RECEIPTS, OCTOBER, 1908.**

The customs receipts of the Republic of Uruguay in October, 1908, amounted to \$1,036,955.17, as compared with \$1,021,450 during the same month of the previous year.



**ARGENTINE LEGATION, MONTEVIDEO, URUGUAY.**

This structure is commodious and artistic, and the grounds well kept and attractive. During the flowering season the large bed in the foreground displays in varied colored flowers the name of the legation.

**CENTRAL URUGUAY RAILWAY COMPANY IN 1908.**

The gross receipts of the Central Uruguay Railway Company for the year ended June 30, 1908, were £508,044, against £493,682 for the same period of 1907, an increase of 2.91 per cent as compared with the receipts of the previous year. The working expenses increased 11.1 per cent in 1907-8 as compared with those of 1906-7. The net profit for 1907-8 was £235,940, as compared with £248,760 in 1906-7, or a decrease of 5.15 per cent. The company proposes to pay a dividend of 2.5 per cent on the common stock.



STATUE OF COLUMBUS, MARACAIBO VENEZUELA.

This unique statue of Christopher Columbus, showing an outline of the hemisphere discovered by that great navigator, occupies the center of one of the principal squares of the city of Maracaibo.

(Photo—Underwood & Underwood.)



BOLIVAR SQUARE, VALENCIA, VENEZUELA.

Valencia, the capital of the State of Carabobo, Venezuela, is 24 miles from Puerto Cabello on the Caribbean Sea and 2 miles from Lake Valencia. The memorable battle of Carabobo, in which General Simon Bolivar was the central figure, and which ended monarchical power on the northern coast of South America, was fought near the lake on June 24, 1821.

# VENEZUELA

## EXPLOITATION OF FIBERS.

For the purpose of developing the extraction of fibers and the establishment and encouragement of the industry in general, the Government of Venezuela, under date of November 11, 1908, granted a concession to ABRAMAM TIRADO for the installation of a fiber-extracting plant to exploit the native products of the Republic, known by the name of *cocuiza*, *cocuy*, etc. The concessionaire has the right to import at one time the machinery and supplies necessary for the installation of the factory, which must be in operation within one year from the date of the concession. The life of the concession is six years, and the industry and its products are free from federal taxation during that period.

## OIL-FACTORY CONCESSION.

With the object of encouraging a new industry in Venezuela, a concession has been granted by the Government to CARLOS A. PEREZ to establish a linseed-oil factory, in such part of the Republic as he may elect, within one year from November 9, 1908. The concessionaire is given the exclusive privilege of exploiting this industry for a period of four years, which term may be extended at the option of the Government for an additional period of two years. The machinery and supplies needed for the installation of the factory may be imported in one installment free of customs duties.

## CHANGES IN CUSTOMS TARIFF.

The President of Venezuela has decreed that hemp or flax fiber used in the manufacture of cords shall pay duty according to class 2 of the tariff, or at the rate of 10 centimes (1.93 cents) per kilo. The surtax of 25 per cent, levied heretofore on sheet glass, not silvered, white or colored, is, according to an executive decree of October 1, 1908, abolished. Such glass, therefore, will pay 25 centimes (4.825 cents) per kilogram.

## WAGON ROAD BETWEEN PUERTO CABELLO AND SAN FELIPE.

President CASTRO has appropriated 40,000 *bolivars* (\$8,000) for the construction of a wagon road between Puerto Cabello and San Felipe. The road will be built under the direction of a committee appointed by the Department of Public Works.

