

1904

✂ BOLIVIA ✂

BOLIVIA, the third largest of South American Republics, extends over an area of 709,000 square miles; bounded on the north and east by Brazil, on the south by Argentina and Paraguay, and on the west by Peru and Chile

This vast territory has only a population of 2,520,538 inhabitants (about 3.5 per square mile), being able to hold many millions on account of the mineral richness of its soil as well as the wonderful fertility of the land offering brilliant prospects to capital and labor.

The active construction of railroads going on, those already finished and the guarantee received by capital are the principal elements making for the rapid progress of the country, besides the cordial relations and friendship with the neighboring republics. The country loves peace and understands thoroughly that only under peaceful conditions a nation is able to develop its commerce and industries in its way to progress.

The main causes that hindered the development of Bolivia were the difficulty and cost of transportation; the lack of capital; the scarcity of population and the little knowledge people have, in the United States and Europe, of the South American Republics, neglecting so a great field of magnificent opportunities like this country, whose mountains contain a prodigious quantity of minerals, making Bolivia one of the richest countries of the globe; having also vast forests and enormous grazing plains, covering an area of 91,000 square miles, watered by great rivers, where Nature has lavished upon every known product of the tropics.

The country has no sea coast, but by its navigable rivers has a direct outlet to the Atlantic Ocean by way of the Amazon. Besides, it is easily reached by rail from three ports on the Pacific.—Mollendo, Peru; Arica and Antofagasta, Chile, and also through Buenos Aires from the Atlantic.

CLIMATE.—Although Bolivia lies between the tropics, it varies greatly, owing to the difference of altitude. The mean temperature of the lowlands up to an altitude of 2,000 feet above

sea level is 74° F.; up to 8,000, 63°, and in the central plateau, situated between 10,000 and 13,000 feet, it is only 50°. It is calculated a drop of one degree to every 181 meters ascent. Owing to this peculiarity, there are found in Bolivia all the products of the temperate as well as those of the tropical zone.

It may be said that in Bolivia there are only two seasons: Summer, the rainy season, lasting from December to May, and Winter, the dry season, from May to December. The dry, cold climate of the plateau is most healthful and invigorating.

CITIES.—The Spaniards who settled the country established themselves in the places where the mineral wealth is found; between the two great chains of the Andes, which traverse the country from north to south, forming the High Central Plateau, which extends over 65,000 square miles at an average altitude of 12,000 feet above sea level, where the principal cities are actually found; the most important one being La Paz, in the northern part of the country, with a population amounting to more than 90,000, the most important commercial center and the residence of the government. The situation of this city is unique, very attractive and peculiar; deep within a depression of the table-land, it is seen only when the edge of the plateau is reached, and the sudden appearance of its red-tiled roofs and green trees crowned by the towering, snow-capped peak of Illimani, presents a charming sight. It is only eighteen hours by rail from Arica on the Pacific and only three and one-half hours from Guaqui, a port on the Titicaca Lake, situated on the boundary with Peru, the highest fresh-water lake of the world, whose navigation is carried on by several steamers plying between Puno (Peru), the terminus of the railway coming from Mollendo on the Pacific, and Guaqui, which is connected by railroad with La Paz.

The next city according to population is Cochabamba, with 40,000 inhabitants, "The Garden City," located in a fine and fertile valley, adorned with a pretty public park and very attractive surroundings. It is bound to be the agricultural center and the granary of Bolivia. With the completion of the railroad from Oruro, this city will attain great progress and improvement.

The capital of the republic, SUCRE, a beautiful town, the social and educational center, is also going to be reached by a branch of the Bolivian railroad system now running from Rio Mulatos, on the Antofagasta-Oruro Railway, to Potosi.

POTOSI is famous for the richness of its silver mines, which, during the Spanish dominion, produced silver to the amount of more than three billion six hundred million dollars (\$3,600,000,000). The city of Potosi was founded in 1545, and fifty years later, on account of the abundance of silver in the famous mountains, the population reached over 160,000 inhabitants, but now it claims only 28,000.

ORURO, the center of the railway system, situated on the high plateau, eight hours by rail south of La Paz, owes its existence to the rich tin and silver mines near by that make this town the principal mining center.

Other important cities are Tarija and Tupiza, towards the south, and Santa Cruz, in the east, in rich agricultural regions, with a mild climate. They are bound to become centers of great commercial and agricultural development when the proposed railroads reach them.

The tourist has, in visiting Bolivia, the opportunity of studying, on Lake Titicaca and surroundings, the ruins left by the aboriginal race belonging to that great Inca empire that flourished before the Spanish conquest, and of a prehistoric people who builded solidly in the place called Tiahuanaco, near La Paz.

GOVERNMENT.

Bolivia has a constitution based on the unitarian form of government, composed of three distinct and co-ordinate branches,—legislative, executive and judicial.

The Legislature consists of two houses, the Senate and Chamber of Deputies, both houses being elected by popular vote, the former for six and the latter for four years.

The executive power is vested in a President and two Vice-Presidents, elected for a term of four years by direct vote of the citizens, and may not be re-elected for the term immediately following. There are six Cabinet Ministers, selected by the President, whose acts the Congress has the right to examine.

The judicial power is vested in a Supreme Court, whose members are appointed by the Senate; and lower courts and judges. The members of the Supreme Court are elected for ten years and the other judges for four years.

Foreigners enjoy the same civil rights as the natives, but not political rights unless they become naturalized.

NATURAL RESOURCES AND PRODUCTS.

There are three great branches of wealth in Bolivia, which, properly developed, will make the country one of the richest and most prosperous in South America.

The construction of railroads is making rapid progress opening new regions throughout the Republic and affording quicker access to the centers by newer and shorter routes.

What is chiefly needed is a large industrial population. Labor is very scarce, as only the half-breeds are employed, the Indian population living on their own lands. The big mines absorb all

this labor; that is why agriculture is in a backward state, notwithstanding the fertility of the plateau and the marvelous richness of the eastern region.

Among the most notable products of tropical Bolivia there are magnificent woods, such as mahogany, palm, rosewood, cedar, rubber, etc., etc.; first-quality coffee, cacao, coca, pineapples, oranges, cotton, sugar cane, rice, cinnamon, vanilla, many medicinal plants, Peruvian bark, sarsaparilla, and all sorts of tropical fruits.

In the valleys between 6,500 and 12,000 feet above sea level, all the temperate zone products are found; grapes, figs, peaches, pears, apples, etc., and wheat, corn and barley are cultivated to some extent.

RUBBER.—The production in 1913 was 5,143,214 kilograms (about five thousand tons), worth four million dollars. Next to **TIN**, this is the most important product of Bolivia. The amount exported does not represent the real importance of the industry or the quantity obtainable from the trees; as, with more abundant labor and transportation facilities, the production could be easily increased many times the actual amount.

The greatest part of the rubber goes to England, Germany, France, and some to the United States.

The exploitation of the rubber lands is regulated by law through an annual export tax.

The principal rubber zones are in the northwest, near the Peruvian boundary; in the east, in the province of Santa Cruz; and in the Beni and Acre territory, which are exceptionally rich in their yield.

The rubber is exported by the large rivers that water this region, flowing into the Amazon, the Beni, Madre de Dios, Orton, Acre, etc., and also by the Paraguay River.

There are several varieties of rubber trees. The principal ones are the **CAUCHO**, which has to be cut down in order to extract the sap, and the **HEVEA**, which is merely tapped. In some cases, the trees are tapped for a period of two years and then rested for a similar term. Other rubber trees are tapped for six years at a time and then left untouched for a like period. The trees selected for tapping are usually thirty to forty years of age, and are expected to yield for twenty years, after which they are useless.

MINERAL WEALTH.

This is the wealth branch of the country that, in spite of all the difficulties of transportation, lack of capital and scarcity of labor, owing to its stupendous richness is developing itself and developing the whole country.

TIN.—The tin-producing districts of Bolivia are situated on the Eastern Cordillera of the Andes, between latitude 15 South and latitude 21 South. They are all to the eastward of the great Bolivian plateau.

The principal districts are: Oruro in the center, La Paz in the north, Chorolque in the south, and Potosi farther to the eastward.

Potosi and Oruro are by far the most important of these districts, the amount of tin sent from them being about two-thirds of the total production of the country.

The export of tin concentrates from Bolivia has been steadily increasing from year to year. 1913 production was 44,594,749 kilograms of tin ores of about 66 per cent, worth \$27,113,750.

Now that the railway fever, the surest token of industrial progress in a new country, has laid its grip on Bolivia, the export of tin will go up as well as the export of all the other precious metals its mountains contain.

The tin ores have a very limited distribution on the earth's surface. The Malay Straits country, Bolivia, the island of Banka, and a limited area in Australia, Nigeria and Cornwall, are the few places where it is found in sufficient quantities to make the exploitation profitable. The Bolivian mines are the richest of all; the average grade of tin ores worked is about 10 per cent, and the lowest 5 per cent. Some of the mines are so wonderfully rich that a great amount of ore of about 65 per cent is shipped for smelting just as it comes out from the lode, and the average grade of the rest of the lode that is sent to the concentrating plant is 20 per cent.

The lodes are generally from three to six feet wide, carrying in the center or close to the foot wall a compact strata of pure tin oxide, varying in width from one inch to one foot or more, besides the entire width of the lode being fairly rich throughout.

SILVER.—The principal centers of silver production are the Departments of Oruro and Potosi, where the richest mines exist, such as Huanchaca, Aullagas and Colquechaca, where the ores are so fine that the so-called ROSICLER contains as high as 32,000 ounces of pure silver to the ton. The Huanchaca mine, which is still being worked, produced from 1873, the year the company was formed, to 1901 the enormous amount of 4,520 tons of pure silver. As regards amount of production, this mine stands only second to the famous Broken Hill mines.

As was said before, Potosi made itself famous since the Spanish conquest, and during the Spanish dominion produced silver to the amount of more than three billion six hundred million dollars (\$3,600,000,000.00).

The production of silver has decreased year by year, owing to the high cost of transportation, since 1873, when the white metal began to depreciate, which induced the miners to work tin instead. But the silver industry is flourishing again.

GOLD.—The distribution of the metallic belts in Bolivia has always been a matter of wonder to geologists, Raimondi having made the statement that the Bolivian plateau "is a silver table supported by gold columns."

The gold-bearing belt of the country is divided into three regions. The first extends from the western boundaries of the Republic in the Inambari basin to the eastern frontier on the upper Paraguay. This region embraces the whole mountainous section of the Provinces of Caupolicán, Munecas, Laracaja, Cercado, Yungas, Inquisivi, and Loaiza in the Department of La Paz; thence it continues through the Department of Cochabamba and ends at the Santa Cruz Paraguayan boundary.

The second region starts in Lipez, extending south through the Provinces of Chayanta, Sur Chichas (Department of Potosí), Mendez (Tarija), Cinti and Acero (Chuquisaca), as far as Santa Cruz plains. The third region, which perhaps is the richest, extends towards the northwest of the Republic as far as Carabaya, Peru, and the head of the rivers Madre de Dios, Acre and Purus.

For centuries the placers of Tipuani and Suches have drawn the attention of prospectors and at present, among the hundreds of mining concessions, are foremost.

Tipuani is situated in the Province of Laracaja, Department of La Paz, about 150 miles north of the city of La Paz. The river Tipuani flows from Mount Illampu and empties into the river Mapiri. Both rivers are famous for the presence of gravels containing immense quantities of gold. According to published reports, at a depth of 300 feet, rock bottom could not be found, the proportion of gold increasing with the depth. Though those mines have been worked for more than three centuries and contributed on a large scale to the richness of the Spanish crown, they are far from being exhausted and offer splendid chances to the prospectors. Tipuani gold is from 22 to 23.50 carats fine.

Suches is in the northwestern part of the Department of La Paz, Province of Laracaja, about 200 miles from the city of La Paz. The river Suches is as important as the Tipuani. At the headwaters of the river, gold is found in conglomerates and recent gravel. Along its bed, gold-bearing gravel exists in paying quantities, there being about 100,000,000 cubic meters of gravel yielding gold at the rate of 40 cents per cubic meter, according to the report published by the Bureau of American Republics in 1904.

Besides Tipuani and Suches, there are in Bolivia many more placers and mines of no less importance. San Juan del Oro, Los

Cajones (river), Chuquiaguillo (river), and the mines of Araca, Arque, San Jose, Sorotaco de Chiquitos, etc., are all comprised in the first region. Amayapampa, Suipacha, Esmoraca, Chuquichuqui, San Juan, and tributaries of the river Guapay are comprised in the second region.

It must be noted that not all the placers and mines referred to are under actual exploitation, many of them being idle because of the lack of capital, and thus affording a good opportunity for new applicants for mining concessions.

The amount of gold exported from Bolivia cannot be determined exactly, because most of the production is smuggled out to avoid the payment of the small tax of twenty cents on each ounce exported.

There are, besides the large mines in actual operation, hundreds of new mines, all of them very rich in tin or copper, silver, gold, wolfram, bismuth, etc., in the possession of the original prospectors, who have no money to invest in machinery and cannot pay the amount of labor necessary for the rapid development of their mines; and work is carried on only on the smallest scale and with the most primitive methods, until by and by the mine pays for its own developing. All the mines in Bolivia have started the same way.

It can be stated without fear of error that any person familiar with the mining industry and with small capital to invest, will be successful working either by himself or associated with the owners of these new mines.

The mineral exports from the country during the year 1913 were as follows:

Metals	Kilograms	Value in Bolivianos
Tin	44,596,749	67,784,377
Silver	81,289	2,784,354
Copper	4,019,635	2,773,546
Bismuth	422,484	2,092,925
Wolfram	282,597	415,417
Zinc	7,367,463	223,150
Plomo	1,765,296	353,059
Antimony	62,050	12,410
Gold.	Most of it is smuggled out of the country.	

COMMERCE.

Although it is not big yet, it has been steadily increasing year by year, and now that transportation facilities are being made, there is no doubt that it will have a great development.

The following statistics will clearly show how business has grown during the last ten years:

Years	Imports	Exports	Totals
1904	16,909,586	31,463,026	48,374,612
1905	20,298,771	41,795,937	62,940,708
1906	36,870,325	55,654,515	90,741,900
1907	37,897,610	50,331,548	88,229,158
1908	40,807,856	48,925,616	89,733,472
1909	36,939,940	63,764,466	100,701,406
1910	48,802,394	75,622,146	124,424,540
1911	58,371,409	82,631,171	141,002,580
1912	49,508,989	90,122,987	139,631,976
1913	54,762,833	93,721,513	148,484,346

The values are in Bolivian currency. It is easy to convert these figures into American money, as one boliviano is equal roughly to 40 cents.

The great prospect that this country has for United States commerce, now that the European war has upset everything, is shown by the following statistics of the imports and exports according to the different countries during the year 1913:

Exports.	Imports.		
Great Britain	75,764,326	Germany	20,091,363
Germany	7,973,739	Great Britain	11,101,268
France	4,571,838	Chile	5,559,462
Belgium	3,172,236	United States	4,044,103
Argentine Republic	913,846	Argentine Republic	3,299,318
Chile	590,517	Peru	3,025,757
United States	559,475	Belgium	2,259,392
Uruguay	98,136	France	2,058,112
Peru	32,621	Italy	1,303,199
Holland	24,728	Brazil	994,883
Brazil	13,637	Spain	615,769
Various	6,409	Portugal	137,512
		China	84,597
		Uruguay	74,144
		Switzerland	31,552
		Various	82,387

ROUTES TO THE COUNTRY.

Mollendo Route.—From Mollendo to Puno (Peru), by rail, 324 miles, 22 hours; from Puno to Guaqui, by steamer, crossing Lake Titicaca, 180 miles, 16 hours; from Guaqui to La Paz, 59 miles by rail, 3 hours; or a total distance of 563 miles, covered in three and one-half days.

Arica Route.—From Arica (Chile) to La Paz, a distance of 337 miles by rail, made in 18 hours; but shortly it will be covered in 12 hours from La Paz down to Arica, and in 14 hours on the way up. These trains have the American type of Pullman cars, while the other railways have the European type of sleeping cars.

Antofagasta Route.—The total distance from Antofagasta (Chile) to Oruro (Bolivia) is 573 miles, which is covered in two nights and one day.

Argentine Route.—From Buenos Aires by rail to the Bolivian frontier town of La Quiaca; from this city there is a railway in construction going through Tupiza to Uyuni, a town in the Antofagasta-Oruro route. This new railroad will enable one to make a trip from Buenos Aires to La Paz in about four days.

Bolivia has a network of rivers, which afford excellent means of transportation and communication, the entire length of her navigable streams being about 12,000 miles.

Amazon Route.—From Para (Brazil) to Villa Bella and Puerto Acre, a distance of 2,152 miles from the former and 2,533 from the latter point; covered in 216 and 244 hours, respectively. The entire trip is made in vessels along the navigable rivers of Brazil and Bolivia.

Paraguay River Route.—From Buenos Aires up the Paraguay River to Puerto Pacheco, Puerto Suarez, and La Gaiba in Bolivia, being 1,553, 1,741 and 1,908 miles, respectively, distant from Buenos Aires.

Another route from Buenos Aires is via the Bermejo River, on which steamers ply between the cities of Esquina Grande (Bolivia) and Rivadavia (Argentina).

SHORTEST ROUTES AND COST OF THE TRIP FROM THE UNITED STATES.

The trip is made in three stages: United States to Panama, Panama to Arica, and Arica to La Paz.

By boat, first class:

From New York to Panama, seven days, \$75.

From New Orleans to Panama, five days, \$55.

From San Francisco to Panama, twenty-five days, \$120.

Second stage by boat from Panama to Arica, \$120. The journey takes nine days in the rapid service running in connection with the New York and New Orleans boats.

The third stage is by rail from Arica to La Paz in fourteen hours, costing \$18, including Pullman accommodation.

MINING REGULATIONS.

Our purpose in writing the following lines is not to issue the full text of the Mining Law and the rules and regulations for its application, but simply to make a summary of the principal points relating to the acquisition of mineral properties and the rights and duties of the miners.

The mining laws in Bolivia are very liberal. All persons, natives or foreigners, who are in possession of their civil rights, can obtain one or more mining claims (*pertenencias*) in mineral lands already known, and no more than thirty in places where the mineral wealth has been recently discovered. The mining claims or properties which all together form a concession shall be contiguous and no vacant spaces are allowed between them, so as to show that the limits of one coincide with the limits of the others. (It ought to be understood that under the provisions of the Bolivian civil law the foreigners enjoy the same rights as the natives.)

The unit to be used to measure each claim or *pertenencia* for the mineral concessions will be a solid basis of one hundred meters each side (10,000 square meters, about 107,642 square feet), measured horizontally in the direction designated by the petitioner, and of indefinite depth.

For prospecting, it is not necessary to get special permission. Any person can do that kind of work on lands belonging to the public domain, with the obligation simply of notifying the political authority of the place in which he intends to work.

PROCEDURE FOR THE ACQUISITION OF MINERAL CONCESSIONS.

A person desiring to obtain concessions shall file his application before the political authority of the Department in which the claim is located. This authority is called *PREFECTO*. On making the application, the interested parties must state their names, occupation, residence, the name to be given to the concession, the exact point from which the surveys have to start, the mineral district to which the new mines belong, expressing if the said district is known as mineral district or if it is new, the names of the adjoining miners as well as the name of the owner of the ground, if the said ground belongs to some private person, etc. etc.

The application above mentioned ought to be presented to the

"Prefecto del Departamento" with a stamp of the value of ten pesos bolivianos (about four dollars) affixed on it.

The Prefecto shall grant the concession in favor of the applicant and shall cause his order to be known to the neighboring miners and also published in the newspapers in three successive numbers, every ten days, to give an opportunity to any interested party to make opposition to the claim.

If there is no opposition within thirty days, the authority will order the survey, giving notice to the neighboring miners and to the proprietor of the ground.

After the concession is made, the demarcation and survey of the mining property shall follow, even if no ore has been found or no labor has been performed. The demarcation may embrace every kind of grounds, buildings, roads, etc., and the mining labors must be made with strict subjection to the police and safety regulations.

The miners have the right to work their mines with entire freedom, being duly protected by the authorities, provided they comply with the laws and regulations governing the matter and pay in time the value of the patent fixed by law.

When the owner of a mining property fails to comply with the laws relating to the matter, or the amount of patent fees has been unpaid for one year, the properties shall be deemed to be abandoned and any person may denounce the abandonment, asking to be granted the concession.

Machinery and tools for mining purposes may be imported into the country free of duties.

The mining concessions are made in perpetuity and the grantee has to pay an annual patent of five pesos bolivianos (about two dollars United States currency) per hectare (10,000 square meters). This payment shall be made in advance and semi-annually, being due from the date of the concession.

It is advisable for the persons interested in mines and other business in Bolivia to go first to the city of La Paz, which is the seat of the central government and the commercial center of the country.