

CHAPTER XIII

INDUSTRY

MUCH is being done by the governments of the advanced states in Latin America to encourage the staple industries of mining, agriculture and stock-raising, and to foster manufacturing as well. Public lands are sold, often at a nominal price, with a long time allowed for payment. In some cases the purchaser is obligated to stock the land and put up needful buildings. Care likewise is being taken to avoid increasing the number of large estates, by restricting within a reasonable maximum the amount of land that may be granted.

For the promotion of agriculture and stock-raising, loans, bounties and prizes are among the means utilized, particularly for the introduction of new articles of produce. To these spurs to activity may be added the benefits of high protective duties, exemption from taxation and the free admission of necessary machinery. Many efforts have been made, especially in Mexico, to reclaim arid lands by an extensive system of irrigation. Agricultural and mortgage banks, also, under government control, loan money to farmers.

As a stimulus to home manufactures, sev-

eral of the governments are trying to change the character of the imports from foreign countries, to develop natural resources and to improve the facilities of transportation. They have increased import duties, granted bounties, aided in the discovery and application of various kinds of fuel, hitherto brought from abroad, promoted the use of water power from rivers and falls, and encouraged the exportation of local manufactured products. To these ends, as in the case of Uruguay, they have even entered into contracts with firms and individuals, and have supplied part of the capital required.

Several of the countries, notably the Argentine Republic and Uruguay, have established bureaus of inspection and experimental stations for the benefit of industries connected with agriculture and stock-raising. Uruguay, also, has created a bureau of general information for the exhibition of samples of all materials of national production, and the diffusion of knowledge about the resources of the country in general. National and international expositions have been held in such states as the Argentine Republic, Brazil and Chile, at which the industrial products have been displayed to great advantage. Many private organizations, similarly, have carried on a vigorous work of propaganda.

Foreign capital, of course, has been employed in enormous quantities. Mines, agricultural properties, light, power and traction enterprises have all received a mighty impulse toward their development from this source. In the supply of capital, Great Britain still occupies easily the foremost place, followed by the United States, France and Germany, more or less in the order named. British and American capital predominates in practically all of the countries in and around the Gulf of Mexico and the Caribbean Sea. South of this area British funds largely control the situation.

Throughout the republics in which mining is one of the great industries, the regulations governing the concession and working of mining properties are generally very liberal. The number of claims that may be denounced is unlimited, the annual tax on each claim light, and the tax on the exportation of the ore reasonable. Free entry, moreover, for all necessary equipment is conceded, at least so far as the first introduction of the material is concerned.

Among the mining processes of interest is that connected with the extraction of nitrate of soda in Chile. The crude material, called "caliche," is found at depths ranging from one foot to ten feet below the surface. For the purpose of mining it, a shaft is

sunk and a charge of dynamite placed at the bottom. After the explosion, the chunks are broken up, loaded into mule-carts and taken to the "oficina," or nitrate-plant proper. Here they are pulverized by powerful machinery, and the powder is run into huge tanks where it is boiled in water for ten or twelve hours. The saturated liquid, known as "calso," freed from gravelly refuse, is then run into vats to cool and crystallize. When dry, the nitrate thus procured is put into bags and sent by rail to the sea-ports.

In the nitrate region, incidentally, it may be said that trees and plants are unknown, and the employees of the British, American and German firms engaged in the extraction of the material have to live on what is brought them from without. The fact seems all the more remarkable when one remembers that nitrate of soda is the chief ingredient of the finest fertilizers. Nitric acid, salt-peter and iodine are also extracted from it.

On account of the equable climate in many of the cooler areas of Latin America, agricultural operations are carried on all the year round. Outside of the highly advanced states, the methods of tilling the soil are often very primitive, scarcely improved in fact beyond what they were in colonial times. Food plants are raised mainly for local

consumption. They consist for the most part of maize, black beans, rice, "quinoa," which is a species of millet, manioc, potatoes and yams. In Mexico, maize and beans are the great food staples of the poorer classes, and constitute the dishes known as "frijoles," and "tortillas."

Until comparatively a few years ago, the Argentine Republic and its little neighbor, Uruguay, were almost entirely pastoral countries; but many of the cattle-raisers are now inclined to believe that the future of both lands lies rather in agriculture. The result is that the Argentine Republic, in particular, has become one of the greatest producers of cereals, flax and linseed in the world.

Several of the methods pursued in connection with the raising and elaboration of agricultural products call for a few words of description. In Costa Rica, for example, the banana plant begins to yield fruit a few months after the shoot has been put into the ground. At the close of each season the laborer cuts the shoot with a "machete," a species of long pruning knife, sticks the "machete" into the earth, gives it a twist, puts in the shoot, stamps it, and the process is done. In some of the tropical countries, like Paraguay, the cultivation of oranges and other citrus fruits offers great promise,

not only for the "golden apples" themselves, but for the orange-wine, citric acid, citrates of lime, candied peel and orange-flower water, which may be made from them.

The coffee-tree, as seen for instance on the plantations (fazendas) in southern Brazil, may grow to a height of twenty feet, but for the sake of convenience in picking it is rarely allowed to reach more than eight or nine. It begins to bear, ordinarily, when from three to five years old. During the harvest season the pickers are busy at work with huge baskets strapped to their backs. They labor for reputation as well as for money, and usually receive more of the former than they do of the latter, thus having something in common with a great many other classes of people in the world. At all events, the fame of being the fastest picker is one very much to be envied.

After the outer pulp and skin have been removed, the coffee beans are subjected to a thorough cleansing, spread out on drying terraces, made of cement, and exposed to the heat of the sun. To hasten the course of drying, which sometimes runs over several weeks, workmen are engaged in constantly turning over the beans with rakes. The inner skin adhering closely to the beans is then taken off by a hulling machine, and the chaff blown away by a process of win-

nowing. When this is done, women and girls are assigned the task of sorting the beans into "Mocha," "Java" and other grades of coffee.

Some years ago, furthermore, the Brazilian State of São Paulo, in which the bulk of the coffee is produced, warded off the dangers arising from an enormous surplus crop by buying up the floating supply at a minimum price and selling it as the market might demand. This is known as the "valorization" scheme.

A word or two might now be said about the production of cacao. After the pods containing the cacao beans are cut or broken away from the trunk of the tree to which they are attached, the beans are freed from their enveloping pulp, spread on bamboo matting and exposed to the rays of the sun. So as to assure evenness in drying, workmen rake them over every once in a while, sometimes, as in Ecuador, by scuffling through them with their bare feet. After the beans have been ground and otherwise treated in the foreign countries to which they are exported, the powder is flavored with sugar and vanilla, and the resultant product is called chocolate.

The "yerba," a species of tea, raised in Paraguay and the adjoining districts of the Argentine Republic and Brazil, is made

from the leaves of a tree that grows partly wild and partly under cultivation. The leaves are gathered on huge branches at a time by Indian laborers and shipped to the cities, where they are dried, cleansed and pulverized by machinery, and packed in bags for shipment. As the leaves contain resin, essential oil and a small quantity of caffeine and tannin, they have the characteristic properties of tea and coffee, but in such proportions that the product is not injurious. In the southern part of South America the use of "yerba" as a beverage is very popular. Less harmful than either tea or coffee, it is more stimulating. It is commonly drunk through a spoon-shaped tube, called a "bombilla," or "little pump," out of a small pear-shaped gourd, called a "mate" or "cuya."

Coca is a shrub found only in Peru and Bolivia. It is long-lived, and begins to bear a few months after planting, as many as four crops being raised in a year. Though cultivated at a high altitude, the shrub grows only in the temperate areas. After the leaves have been dried for a few hours, they are pressed into bales and exported in this form.

All through the vast stretches of the Amazon valley, and other areas in Latin America, will be found the camps of the wandering

rubber gatherers. The rubber trees vary in height from fifty to seventy feet, and in diameter from two to three feet. From the many varieties of trees there are two or three principal rubber products taken, one of which, called in Spanish "jebe," is more elastic than the others, and consequently worth more in the market. The less valuable sort of rubber is often obtained by felling the tree, in order to extract its milky sap or juice. The "jebe," on the other hand, is drawn out by making incisions in a spiral form around the trunk, and hanging under them a number of little tin cups. So sensitive is the bark of the tree that little more than a scratch will cause the fluid to ooze out.

The work of tapping the trees is begun at daybreak. In the course of the afternoon the rubber-gatherer collects the contents of the cup into a bucket. Then the rubber milk is coagulated over a fire built of sticks of wood containing certain chemical properties. When duly "curdled," the milk is made into large balls of a brownish-black color. A recent Brazilian invention, however, promises to furnish a means of "curing" rubber without the use of smoke, through adding a certain preservative that enables the milk to be kept in liquid form until ready for coagulation and pressure into sheets.

In many cases the exploitation of the rubber forests is wasteful beyond measure, and the treatment of the rubber-gatherers, who are commonly Indians and halfbreeds, by their taskmasters, none too gentle. This treatment, added to their lonely life in wild forests and in an unhealthy climate, makes their lot a deplorable one; though it must be admitted that the rubber traders have indirectly helped, more than any other class, to open the interior of the several countries, survey the navigable waters and promote exploration in general. Small wonder is it, therefore, that a modest, useful and valuable product like rubber should have been given the epithet "black gold," suggestive of the evil actions too frequently associated with the search for that precious metal. It should be said, however, that the governments of Brazil and Peru have made efforts to lessen some of the worst phases of the situation.

Though stock-breeding is an important industry in many of the Latin-American countries, it holds chief place in the activities of the Argentine Republic. The finest breeds of European and Arabian horses, and of European cattle and sheep have been brought thither, and they have thriven wonderfully. In the number of horses on its ranches, the Argentine Repub-

lic ranks third in the world, coming after Russia and the United States, in the number of cattle third, after India and the United States, and in the number of sheep second only to Australia. A specialty is made of breeding draft and race horses. Enormous herds of cattle, also, roam over the "pampas." Here the fine soil and excellent pasturage, so conducive to the size and productiveness of the cattle, give them a superior "bloom," as the stock-raisers would say. Though not always greater in weight or in amount of beef than the cattle of the United States, some of the finest bulls weigh a ton, and yield 500 or 600 pounds of beef. In the Argentine Republic, furthermore, are raised countless millions of sheep, the progenitors of which, like those of the cattle, came directly or indirectly from England. Much of the wool produced is of the fine quality and glossy appearance so much sought after.

Not only stock-breeding, but the industries associated with the preparation of animal products flourish in both the Argentine Republic and Uruguay. "Charqui," chilled meat, tinned tongues, beef extracts, hides, skins, tallow and wool are numbered in the list. "Charqui" consists of beef cut into long, thin strips and dried in the sun. When fresh, properly cured and suitably cooked,

it is quite palatable. Liebig's Extract of Meat Company, one of the largest establishments of its kind in the world, is located in Uruguay. Here, and in the Argentine Republic, the great stockyards and refrigerating plants, and the numerous dairy industries, especially in Buenos Ayres, are centers of busy life. The various activities visible on the huge "estancias," or cattle-ranches, in particular, are objects of absorbing interest.

Compared with the great and widespread industries of mining, agriculture and stock-raising, those connected with manufacturing and the mechanical arts in general have reached little more than the preliminary stage in most of the Latin-American countries. Aside from primitive handicrafts, the manufacturing enterprises are associated, mainly in direct fashion, with the three staple industries themselves. The circumstance is explained in large measure by the relative backwardness in economic development as a whole, and by the lack of sufficient capital and skilled labor. Under present conditions, perhaps, it might be desirable that this situation continue, since the countries concerned, for many years to come, will find it more profitable to export food products and raw material, in exchange for European and American goods, than

to attempt manufacturing on their own account.

So far as the distinctly tropical areas enter into the question, the existence of an essentially factory or industrial life seems altogether improbable, except in the very remote future. In the temperate countries, however, the encouraging development of local industries may soon put them in a position to meet a large number of the requirements of the home market, and thereby lessen their dependence upon foreign manufactures for the supplies demanded by an advancing civilization. Aside from the industries already mentioned, flour-mills, distilleries, breweries, sugar-mills and weaving-mills may be included in the list. Yet, even in the largest industrial centers the manufacturing enterprises belonging to citizens of the republic are scarcely a tenth of those owned and conducted by foreigners.

In regard to the primitive handicrafts pursued, especially among the peoples of Indian stock, it may be said that a stout, serviceable cloth is woven from the llama, vicuña and alpaca wool, one of the chief articles made being the "poncho," a sort of blanket, commonly worn in the country districts. Cotton goods of coarse texture are woven in Peru and southern Brazil. In Mexico, the "pita," a plant resembling the pine-

apple, yields a strong fiber for spinning and weaving. Here, also, the "rebozo," the "sarape" and other articles of dress are made, chiefly out of cotton. The so-called "Panama hats" of the best grade are woven by hand in Ecuador, from a kind of straw growing in the coast region of that country. In Nicaragua, similarly, are produced "Panama chains." These are made of solid or hollow gold wire, strung like hair-chains; and some of the specimens turned out are good examples of the goldsmith's art. The women of Paraguay, also, are expert in the knitting of "ñandutí," a kind of filmy lace, not unlike a spider web.

One of the most remarkable native industries is that which has to do with manufacturing the many derivatives from the "maguey," and other varieties of cacti, grown in Mexico. The list of such derivatives includes ropes, twine, thread, thatch, mats, hammocks, paper and, above all, three kinds of liquor, the best known of which is called "pulque," the national beverage of Mexico. "Pulque" is obtained through fermentation of the sap of the "maguey" by a process that dates back to the time of the Aztecs. If taken in moderation, the liquor is a tonic and is nutritive as well. The word itself, curiously enough, is of Araucanian, and not of Aztec, origin.

From the produce of the "vegas" or tobacco plantations of Cuba, including those of the world-famed "Vuelta Abajo" district, more than a hundred cigar factories in Havana alone turn out hundreds of millions of cigars a year, and many million pounds of leaf tobacco. Some of these factories employ upwards of 600 workmen. In the larger ones a professional reader is engaged, who reads from books or newspapers, chosen by the workmen themselves, as a means of holding their attention to their duties, and of preventing possible conversation or argument. In Cuba, also, and in other countries where sugar-cane is raised in large quantities, the refining of sugar, the production of molasses and the distillation of rum are extensively carried on. Shoemaking is an industry prosecuted with considerable success in such countries as Chile and Colombia, mainly through the use of American machinery.

CHAPTER XIV

COMMERCE

ALL of the larger cities of Latin America are well provided with banking institutions. In the northern group of republics American banking interests are strong,