

THE HORNED LIZARD.

The Museum of Natural History at Paris has now in its possession a curious reptile that came from Saint Domingo. It bears the name of horned lizard, which was given it by Lacepede. Mr. Wagler has since put it into the genus *Metopoceros*.

In brief, it is a saurian of the family Iguanidæ, distinguished from the iguanas, properly so called, by having teeth like those of the cycluras, and by two rows of hairs that are to be seen under the thighs. The only species known is the *M. cornuta*, which is remarkable for its forehead being surmounted by a large horn-like tubercle.

This lizard, in form, reminds us of those enormous fossil dinosaurs known as iguanodons, the remains of which have been found in the Wealden cretaceous formation, and very recently at Bernissart, Belgium.

The horned lizard is about twenty-eight inches in length. Its body is gross and squat, of a brown color, and the line of the back is covered with spines that point backward, from the back of the head to the beginning of the tail, where there is a small space destitute of them. The tail is not cylindrical like that of our lizards, but is compressed laterally, and is provided with strong muscles that allow the animal to switch it abruptly and powerfully in either direction in order to defend itself when any one tries to touch it.

Back of the head, which possesses remarkable peculiarities, the back is provided with a sort of hump. The head, which is surmounted in front with a dermic horn, is large and inflated on each side at the back. Under the lower jaw, we observe a fold in the skin, flanked on each side by large pockets that give the animal, in a face view, a most curious aspect.

The collection of the museum contains but few examples of this saurian, and this is the first time that a living specimen has reached the menagerie. So its habits are not known. However, since its arrival it has been observed to be slow of gait, and to make certain vertical motions of the head. When it is approached, it seems to like to give itself as wicked an air as possible. It is fed upon lettuce leaves and a little meat; but it has not much appetite. The horned lizard is a near relative of the cycluras, anolises and amblyrhynchuses. These latter were studied by the celebrated Darwin in the Galapagos Archipelago. It is probable that their habits resemble those of the *Metopoceros*. There are two species of them, one aquatic (*A. cristatus*), and the other terrestrial (*A. Demarlii*). In speaking of the last named species, Darwin tells us that the animals eat during the day and wander but a short distance from their burrows, and, when frightened, run back to the latter in the most comical manner. They cannot run very swiftly except when they are descending sloping ground. This is evidently due to the lateral position of their legs. They are not timid. When they are looking at some one attentively they lift their tail, and, rising upon their fore legs, they keep moving their head up and down and try to put on as vicious an air as possible. But, as a fact, they are not vicious; and if one stamps his foot, their tail at once comes down, and they scamper away as quickly as possible. Darwin observed that the young, which eat flies, give their head exactly this same up and down motion when they observe anything.

This same species excavates burrows just beneath the surface, and when a person is walking in a place inhabited by these animals, he keeps constantly sinking. They dig with the feet of one side of the body at a time, and when these are tired they use the feet of the other side, and so on alternately.

It may be conceded that the amblyrhynchuses, as regards habits, have resemblances with the horned lizard, which, like them, belongs to the Iguanidæ.—*La Nature*.

Progress of Our Southern Neighbors.

A bill has been introduced in the House of Representatives to authorize the President to invite the several governments of the republics of Mexico, Central and South America, and the empire of Brazil to join the United States in a conference to be held at Washington, for the purpose of discussing and recommending for adoption to their respective governments some plan of arbitration for the settlement of disagreements and disputes that may hereafter arise between them, and for considering questions relating to the improvement of business intercourse between said countries, and to encourage such reciprocal commercial relations as will be beneficial to all and secure more extensive markets for the products of each of said countries.

In the course of the discussion an able and brilliant speech in support of the bill was made by the Hon. Mr. McCreary, of Kentucky, from which we take the following:

There are south of our republic fifteen republics and the empire of Brazil, and they cover an area ten times the size of France, Spain, Prussia, and Italy. They are as large as the United States and the whole of Europe

combined. The population of those countries amounts to about 50,000,000 of people. They are connected to us by land, and most of them are nearer to New York than is the State of California, and yet to many of the people of the United States the republics of Central and South America are almost unknown.

In 1887 our exports were valued at \$752,180,902.

Of this amount we exported but \$64,719,000 to Mexico and South and Central America.

Our annual mechanical and agricultural products are valued at about eleven thousand millions of dollars, while we seldom have sold more than \$75,000,000 worth of these products to our nearest neighbors, who buy in Europe at least three times as much as they get here.

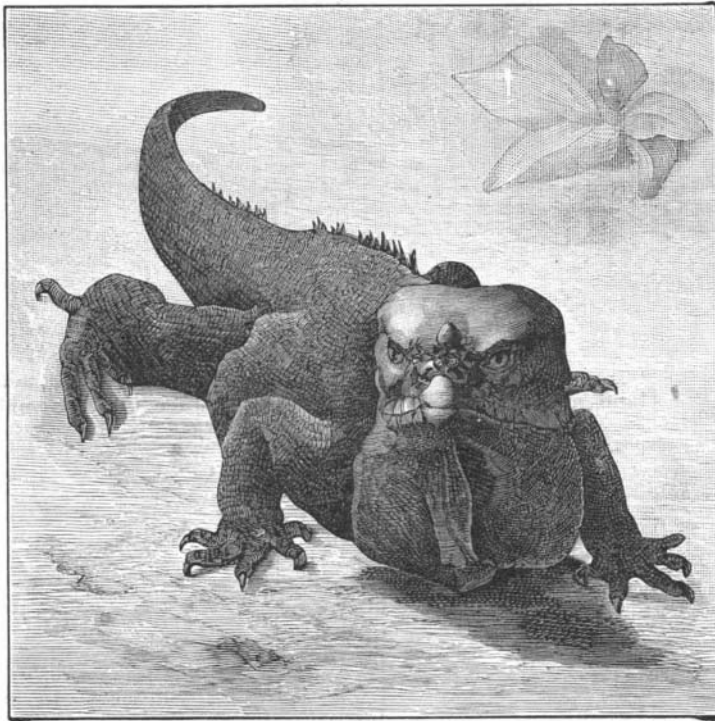
The total commerce of the countries named in 1885 was as follows:

Imports	\$331,100,599
Exports	391,294,781

Of the \$331,100,599 of merchandise sold to those countries, the share of the United States was only \$42,598,469. Yet we are their closest neighbor.

The report of the commissioners sent by our government to Central and South America shows that the development of the southern half of South America is nearly as rapid as that of the United States. Immigration is flooding in, internal improvements are opening new and fertile fields, and wealth is increasing in a ratio not exceeded by any other section of the globe.

Chili, Uruguay, and the Argentine Republic, almost a *terra incognita* to many, are booming like our Western States and Territories. In 1876 the imports of the Argentine Republic were valued at \$36,000,000. In 1884 they had reached \$80,000,000. In 1876 the merchandise brought to that country from England, France, and Germany was valued at only \$18,000,000,



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while in 1884 it was more than \$53,000,000. The entire imports from the United States for twenty years were \$6,000,000 less than those from the three commercial nations of Europe just named for the year 1884.

In the last two years the government of the Argentine Republic has made contracts for \$59,000,000 worth of railway improvements, including a line of road northward into Bolivia and two lines in the direction of Chili and Peru, so as to bring the commerce of the Pacific slope into the harbor of Buenos Ayres, instead of taking it around the Straits of Magellan.

In 1874 the foreign commerce of Chili amounted to \$42,000,000. In 1884 it reached \$132,000,000. From \$50,000,000 to \$60,000,000 in merchandise is imported into Chili every year, of which England furnishes over \$25,000,000, France over \$12,000,000, Germany over \$8,000,000, and the United States \$3,000,000.

Adding the imports of Brazil to those of Uruguay, Chili, and the Argentine Republic, it will be found that the aggregate value of manufactured products introduced into those four countries annually reaches the enormous sum of \$250,000,000, of which England furnishes about one-half, France about \$50,000,000, Germany about \$35,000,000, and the United States about \$17,000,000.

We have no adequate conception of the present magnitude of these markets, nor of their prospective value. The manufacturers of the United States can supply almost every article represented in that \$250,000,000. From the report of the commissioners to South America I have gathered some remarkable facts.

We have more trade with either Belgium, Italy, the Netherlands, Spain, Switzerland, Russia, China, Japan, and Australia than we have with all the Central American States combined. We have nearly as much trade with Greece as we have with Chili. We sell more sewing machines in Switzerland than we sell in Chili,

and Switzerland sells Chili more sewing machines than she buys of us.

Bolivia has a foreign trade of over \$16,000,000 a year, yet the name of that country does not appear in the tables of our Bureau of Statistics. The chief imports of Bolivia are cotton and woolen goods, agricultural implements, mining machinery, hardware, cutlery, clocks, watches, canned goods, and provisions, a list which could be filled in any commercial city of the United States as cheaply as in Europe, and yet the annual reports of the Treasury Department of the United States do not show a dollar's worth of commerce between the United States and that country.

The most absurd spectacle in the commercial world is our trade with Brazil. We buy nearly all her raw products, while she spends the money we pay for them in England and France. In 1884, of the exports of Brazil, \$50,266,000 went to the United States, \$29,000,000 to England, and \$24,000,000 to France. Of the imports of Brazil in the same year, \$35,000,000 came from England, \$15,000,000 from France, and only \$8,000,000 from the United States.

The climate in those countries is warm, and the people use for clothing large quantities of cotton goods. Yet, although we produced last year in this country between five and six millions of bales of cotton, it is a remarkable fact that of the \$65,000,000 expended by Central and South America for cotton goods last year, over \$50,000,000 went to the merchants and manufacturers of England.

The countries of Central and South America need the products of our furnaces, of our factories, and of our farms. They need nearly everything we produce, and we need nearly everything they produce. They need American watches, American machinery, American mowers and reapers, American sewing machines, telephones, scythes, saws, shovels, hoes, axes, indeed nearly everything of which we have a surplus in this country. The map of the world does not show a region that has greater resources or greater possibilities than have North America, Central America, and South America.

I believe in less than twenty years there will be railroad communication between the city of New York and the capital of the Argentine Republic, Buenos Ayres. A few years ago, before the Central and Union Pacific Railroads were constructed, by which New York and San Francisco were connected by rail, the obstacles in the way of that work were greater than those which now exist in the way of connecting New York by rail with the capital of the Argentine Republic. Already the grand movement has commenced. To-day there is railroad connection between New York and the capital of Mexico, and arrangements have been made between the Mexican Republic and the Republic of Guatemala for the construction of a railroad from the city of Mexico to the capital of Guatemala.

That has been done on this end of the line. If you go to the other end, you find that the Argentine Republic is now engaged in building a railroad from Buenos Ayres, its capital, to its northern boundary line; and when the railroad gets to that northern line, there will come

into operation a contract already made by Bolivia, giving \$40,000 per mile and 11 square leagues of land to an English company that has agreed to build the railroad from the line between the Argentine Republic and Bolivia to the capital of Bolivia. What is left? But little over 3,000 miles between the capital of Bolivia and the capital of Guatemala; and I assert that the probability of the construction of that railroad is stronger to-day than was the probability of the construction of the Central Pacific and Union Pacific ten years before they were built.

The Sand Freezing Process.

A recent number of the *Annales Industrielles* states that a mine shaft is being successfully sunk by M. Alexandre, of the Houssu Company, in Belgium, through a stratum of moist sand 12 m. thick, met with at 70 m. depth, by the Poetsch method, which consists in freezing the sand, then excavating it like rock. In the present case ten iron tubes, with cutting crown, are inserted in the sand at about 1 m. interval, penetrating the coal below. Into these are put other tubes, through which is passed a very cold liquid, to return by the larger tubes—generally chloride of magnesium cooled by expansion of ammonia. The sand is frozen more than 3 m. round the tubes. It has the appearance of a rock harder than the compact chalk of the English Channel tunnel. It is sparkling and speckled with particles of coal. The chloride of magnesium, injected at -14°C ., returns at -12° . A thermometer inserted 10 cm. in the stratum read -8° . M. Poetsch's method was some time ago applied to making a tunnel at a small depth under part of the city of Stockholm, as described and illustrated in our pages.

M. HIGNETTE makes a white artificial stone from sand which has been used for polishing plate glass.