

A GIANT CACTUS.

Cactus is a genus of plants, the type of the natural order cactaceæ and comprises numerous species, all of which are native to America. The name was originally given by Theophrastus to a spiny plant found in Sicily. The stems of the cactus are usually leafless and fleshy, globular or columnar, and are armed with spines and bristles. The structure of many of the species is singular and grotesque in the extreme, and the roughness of the stalks and the beauty of the flowers make them one of the most interesting botanical curiosities of our continent. They are found chiefly in the hot stony places of tropical America, and their tough and almost impenetrable skin encloses abundant juice which enables them to support a sluggish, vital action without inconvenience even in a parched soil. Some of the varieties of cactus are only a few inches high, while others attain a height of forty feet. It is a curious fact that the cactus flourishes even at the foot of Mt. Etna in Sicily. The most splendid example of the cactus family is the giant cactus of which we show a fine example. Our photograph, was taken by Mr. A. F. Messinger, the well-known view photographer of Phoenix, Arizona. The cactus is still standing although it is slowly rotting and will soon fall. Mr. Messinger found it at a point about 8 miles south of Phoenix, near the Pima Reservation. It is about 40 feet high and is of the form shown in the engraving. What the date palm is to the African deserts, the giant cactus is to our own arid lands. From it the Mexicans extract the drink called "mescal," and the Indians also obtain a beverage from it. On its fruit the Papago Indians live for weeks at a time. Woodpeckers dig their nests in the trunks and branches, and even doves feed on the fruit. When the cactus of this kind dies its usefulness is not destroyed for the tough ribs beneath the outer skin are used by the Papago Indians for the foundation for their mud roofs, and also use it in building chicken coops, and even as a covering for their graves. This is not the species of cactus from which travelers are supposed to obtain a supply of water, but it is the small cactus which contains a plentiful supply of sap.

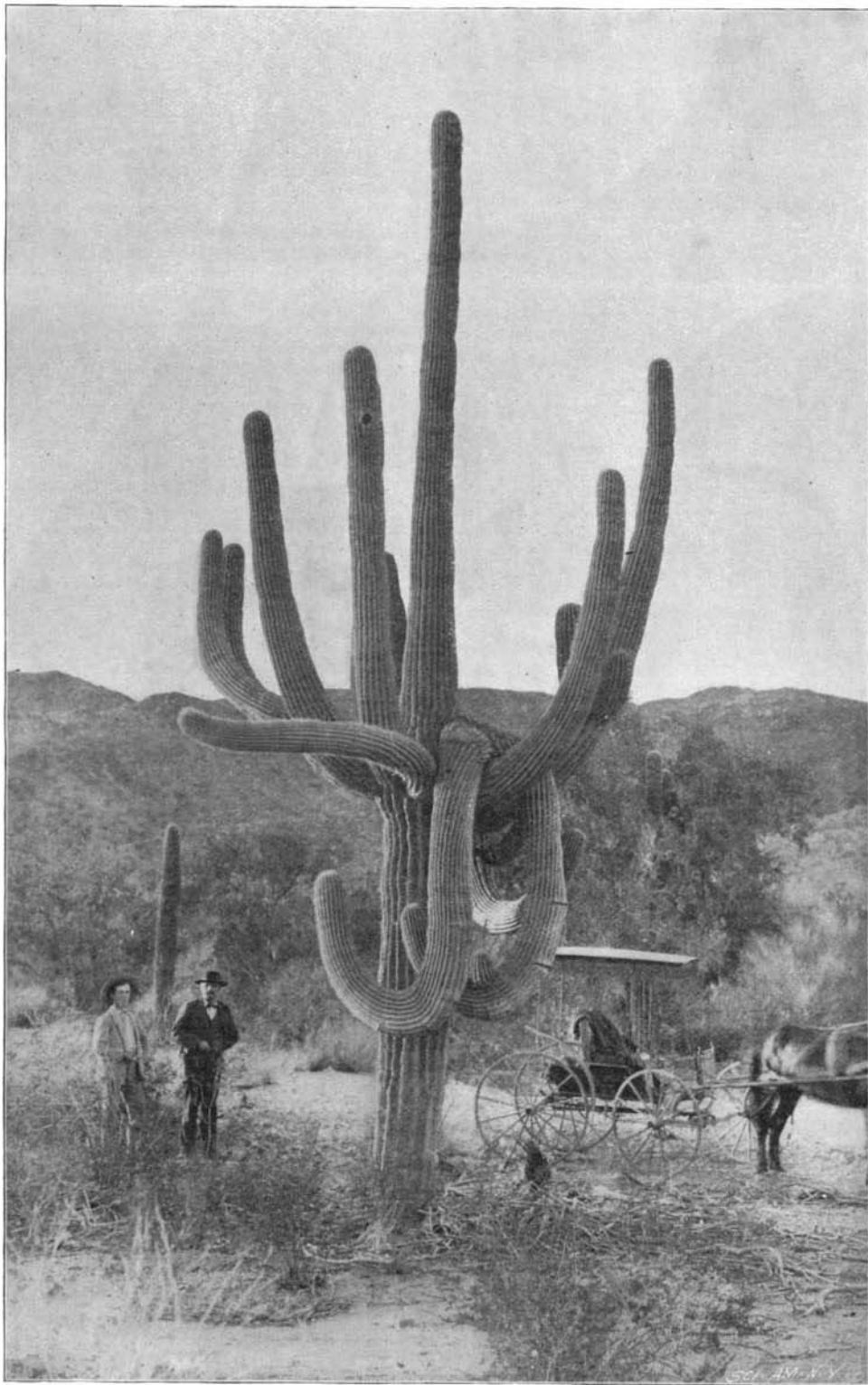
Tapestry Weaving in America.

There is a transplanted industry in the village of Williamsbridge on the Bronx, now a part of New York, for here a little colony of French tapestry weavers have been working on hand looms for the last seven years. It is believed that it is the only colony of its kind in America. There are now twenty-two looms and sixty workmen and workwomen who are engaged in making beautiful tapestries for curtains, portières, borders, chair coverings, etc. Williamsbridge was selected in order that the workmen would feel at home. The ateliers are on the Bronx River, and in the waters of this stream was discovered the same properties that made the waters of La Bièvre so invaluable to the Gobelins dyers. This was owing to the dissolved vegetable substances which the waters then contained, as does the Bronx River now. For a long time, however, the Gobelins works have ceased to employ the Bièvre water which gradually became too impure and they have tried to supply by chemicals the qualities which this water once possessed.

The looms before which the workmen set are of different size according to the piece being wrought. On some are made portières which measure 24 feet in length, and other wall panels 30 or 40 feet long; others are built for small pieces like the back and seats of chairs. According to The Evening Post, from which we glean our particulars, the skeleton threads over which the design is worked are either of linen or of wool. The fabric is worked on a chain of threads which are drawn either vertically or horizontally and around which are woven the colored threads of silk or wool, making one body. The colored cartoon is laid beneath the fretwork of the threads. The laying in of the colored threads is done entirely by hand and the weaver follows line by line the painting beneath. The right side of the fabric is placed toward the painting underneath, the reverse side being always uppermost.

The vertical threads of the warp are divided by the fingers which keep one-half of them in advance of the rest, but those behind can be brought forward whenever required by means of small cords, one of which is attached to each warp thread. The left hand is introduced between the two sets of threads, taking up as many as need be, and through these the "flute" containing the thread is passed from left to right. The thread when stretched is plied with a round flute and is then pressed back in the contrary direction through the space opened. By ingeniously combining the woofs the colors are made to blend perfectly and the effects produced are like those of paintings.

Where the color breaks off suddenly and a new one is introduced right at its side, a slit is left in the warp one side of which is the edge of the finished section and the other the prospective edge in course of construction. A large piece is as full of these slits as there are colors introduced in the design. After the piece



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A GIANT CACTUS NEAR PHOENIX, ARIZONA.

has been taken off the loom it is sent to the sewing room below. The pieces are stretched on frames made to fit them, and each slit is stitched up and down as carpets are sewn with colors and shades matching each particular section, and afterward a stitch similar to the one taken by the weaver is made along the line until all trace of joining is concealed. This naturally requires great skill. The same needlewomen repair the priceless antiques which have been made at the Gobelins in Paris.

Birds Nesting on the Sea-Shore.

Many persons are under the impression that shore-nesting birds make no nest, but lay their eggs indiscriminately among the shingle. This Mr. Patten, in the September number of The Irish Naturalist, shows to be a complete misconception so far as the Little Tern is concerned. As a matter of fact, the bird excavates a conical pit in the sand about two inches deep. Immediately round the "crater" a narrow zone of

sand is cleared from shingle; and when completed and containing its full clutch of two or three eggs, the deepest part of the nest is filled with broken shells into which the eggs are wedged with their points downward. As the eggs are disproportionately large in relation to the bird, it is manifest that the position in which they are placed renders them most easily covered by the brooding hen. It has been assumed that the "crater" is excavated by the hen-bird "breasting" the sand in the manner that sparrows dust themselves by the roadside, but the author is of opinion that the work is done with the beak.

The International Commercial Congress.

The International Commercial Congress opened at the Philadelphia National Export Exposition on October 13. Representatives of trade and commerce from all quarters of the world to the number of nearly four hundred assembled in the great Exposition building. Countries like Great Britain and Germany sent their best qualified men and Japan was represented by a score of duly qualified envoys. Many of the delegates were appointed directly by their home governments, and some of the countries showed their sympathy with the objects of the Congress by the presence of their diplomatic representatives. The ceremonies incident to the formal inauguration were simple, but impressive. They consisted of a welcome from the National government by the first Secretary of State, Dr. David Hill, one on behalf of the city by Mayor Ashbridge and other addresses were made by the Hon. George F. Edmunds, the Director-General of the Exposition, and Dr. W. P. Wilson. The addresses were interspersed by music by the band of the United States Marine Corps detailed for this duty by the Government. A reception by the Mayor to the delegates and visitors to the City Hall concluded the ceremonies of the day. On the succeeding day the business sessions began in the Convention Hall on the second floor of the northern pavilion of the Exposition building. The Ex-Speaker of the House of Representatives, Hon. Thomas B. Reed, was made Chairman. Many addresses were made which proved to be most interesting. The value of the Congress to our commerce will undoubtedly be very great.

The Current Supplement.

The current SUPPLEMENT, No. 1243, has a number of valuable lectures and papers. "The War in the Transvaal" gives a map of the territory and some interesting views of President Kruger and his country. "The History of Hybridization" is by Dr. Maxwell Masters. Dr. R. H. Thurston's "Evolution of Technical Education on Economics, Politics and Statecraft" is continued in this number. "The Comstock Lode" is an article by L. P. Gratacap. "Displacement of Fluids by Moving Bodies," by M. F. Mithoff, is an interesting and important study and the second installment is published in this issue. Dr. Horace T. Brown's "Fixation of Carbon by Plants" is continued, as is also Sir Michael Foster's "The Progress of Science and Its Results."

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