CURIOUS JADE CARVINGS FROM MEXICO.

BY WALTER L. BEASLEY.

The Mexican Hall of the Museum of Natural History, through original researches and explorations of Prof. Marshall H. Saville, together with recent gifts of the Duke of Loubat, has now on exhibition the most extensive and valuable collection of jadeite objects in the world. The variety and brilliant array of the specimens in design and polish, all exquisitely carved, strikingly illustrate the style and character of the ancient ornaments worn by the kings and aboriginal inhabitants of Mexico and Central America, centuries before the coming of Cortez. One of the astonishing features disclosed by the jadeite collection is the extraordinary skill and perfection displayed in the cutting, drilling, and polishing of the hard stone, so effectively accomplished by these ancient craftsmen. The specimens vary in size from one inch upward, and were obtained mostly in the State of Oaxaca. Prof. Saville found great numbers during his recent excavations among the Zapotecan tombs and temple structures in Oaxaca, which State is now considered to have been the metropolis of the highly-gifted race who occupied this area. The capital, Monte Alban, recently excavated, contained many elaborate palaces and other monumental buildings. The donated collection of the Duke of Loubat numbers some 300 pieces in all, 100 being of pure jadeite, the remainder being of obsidian, serpentine, amazon and turquoise. The collection included several rare and beautiful specimens, among them two gems of their kind being breast ornaments, carved in the shape of a parrot and turtle out of a piece of apple-green jadeite, the most highly prized of all colors. Another interesting carving is in the shape of a highly-polished hatchet, of pure jadeite, only a few of which have yet been found. It is supposed that the hatchet was not intended for practical service, but that it was worn symbolically as a decoration. The body of the extensive collection is composed of breast, ear, and lip ornaments, necklaces of beads, and idols.

The majority of the specimens are profusely sculptured in high relief, the face sometimes in full and in profile, with huge earrings, while in most cases the head is surmounted with the characteristic plumed headdress, like those represented on the ruined structures of Central America. The hat-shaped ear ornaments are nearly two and a half inches in diameter, and are pierced through, leaving thin rims and walls designed supposedly to hold the clusters of feathers which were used in the head-ornaments of that age. The most noteworthy and remarkable piece of jadeite in the collection is a magnificent votive adz, the largest carved specimen of its kind contained in a museum. No other of like dimensions, ornamentation, and archæological interest exists in any of the European museums. All the salient features of this extraordinary relic, notwithstanding its centuries of burial, are still fresh and vivid to the eye of the onlooker. This was found in the State of Oaxaca. In deciphering the figure, Prof. Saville has found a series of markings which make a unit of the whole design; and, from the presence of sharp canine teeth, it is intended to represent a tiger's mask, which was a characteristic feature of Southern Mexican art. On the edge are what appear to be teeth, evidently intended to symbolize the biting or cutting nature of this part of the adz. From the enormous size, weight, and symbolism, it is thought that the adz was used as an idol, or for some ceremonial purpose. The color is light grayish-green, with a tinge of blue, and streaks of almost emerald green in the back. It is 11 inches long by 6 inches wide, and weighs over 19 pounds Troy weight. A portion weighing 2 pounds has been removed for some cause from the back. Dull markings under each eye, ear, and hand evidently were for the purpose of holding plates or rims of gold, which the polished surface would not. The polish on the adz is as fine as that of modern times.

Jadeite was the most highly prized and sacred stone of the ancient peoples of Mexico and Central America, and was supposed to possess great curative properties. The word jade is thought to be a corruption of the Spanish "Ijada," the Nahuatl or Mexican name being Chalchihuitl, meaning a stone of metallic green, like the plumes of the Quetzal. Spanish historians tell us that, when a great dignitary died, one of the important mortuary customs was the putting in the mouth of the dead a stone of jadeite, which they placed as a heart. The natives and poorer classes wore them fastened around their arms and throats as charms to ward off evil and certain diseases. There are two puzzling and extremely interesting problems which have not, as said, been solved by archæologists and other investigators of jadeite, viz., the locality where it was obtained or mined, and how the ancient lapidaries carved, drilled, and sawed this hard stone from blocks. It is certain that an enormous amount of skill and time was employed in their production. The blade of a modern steel knife will hardly produce an impression on the polished surface. No drills, graving or incisive tools giving a clue to the methods of manufacturing them have as yet been found. Cortez, it is claimed by early writers, took back to Spain, among his loot and spoils, some of the rarest and best specimens in the country of jadeite. Some were especially cut and elaborately carved to order. These were presented as a gift to his wife, whose casket of jewels was said to have been the finest of any woman's in

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Spain. Prof. Saville, through the generosity of the Duke of Loubat, who has done more than any other modern explorer in uncovering the monuments and culture of Mexico's ancient civilization, is confident that in his future excavations and researches in the State of Oaxaca, he will undoubtedly come across the whereabouts of the long hidden jadeite mines and throw new light upon the mysterious and lost art of working this brilliant and precious stone.

SIDE VIEW OF THE CARVED JADE VOTIVE ADZ.

FRONT VIEW OF THE CARVED JADE VOTIVE ADZ.

Fahrenheit's Thermometer.

Writing in Knowledge on the history of Fahrenheit's thermometer, Prof. Cleveland Abbe, of the United States Department of Agriculture, says: "There is every evidence that the Fahrenheit scale began with his use of plus 90 as the upper limit of the temperature of the human body, and minus 90 for the lowest temperature of the air in Europe, and also the temperature obtained by the mixture of salt and ice. Fahrenheit subsequently used a second scale in which plus 12 and minus 12 replaced the plus 90 and minus 90. In 1714, he adopted a third scale, viz., plus 24 for the temperature of the body and zero for the lowest temperature at Dantzic in 1709. His fourth scale was plus 96 for the temperature of the human body and zero for the great cold of 1709. This scale gave him 32 as the temperature of melting ice, but that natural point was not directly adopted by him. With this first satisfactory mercurial thermometer (made in 1721, and whose scale was graduated according to this last system but extended much further upward, by extrapolation) he found that the boiling point of water was constant, or nearly so, at 212 degrees. The fact that Newton's 'arithmetic scale' read 33 or 34 for boiling water, had no influence with Fahrenheit in the formation of his scale."

The Dutch Brine Vegetable Industry.

The cultivation of vegetables for pickling constitutes one of the most important industries of Holland. According to the official record, there are in all about 7,500 acres of farm land devoted to the cultivation of onions, in addition to a number of market gardens which do not enter into the official estimates. About half the entire crop is grown in the province of Zeeland, the remainder mainly in the provinces of North and South Holland. The yield per acre varies considerably with the season, but in the case of the common large onions, the average may be taken at about 300 bushels, though in some years the produce has amounted to over 370 bushels per acre. The areas upon which these onions are grown are usually small, seldom exceeding five acres in extent, and more frequently being about half that size. Small holdings are, however, a general feature of the agriculture of the Netherlands; over three-fourths of the total number of holdings consists of farms of 50 acres and under, and nearly half of this number is represented by holdings of less than 12½ acres each. The small white onions known as "silverskins" are grown mainly in the provinces of Gelderland and North Brabant, though in recent years they have also been cultivated on a small scale in South Holland and Zeeland. The total area sown with this variety does not, however, exceed 125 acres. The growers are mostly small market gardeners or peasant farmers, occupying about 2½ acres of land; a few of them rent larger plots, but their holdings seldom exceed five acres. The rent usually ranges from $17 to $25 per acre, according to the quality of the land, to which is added a rate of 50 cents to 87 cents per week for the cottage. The soil in which the onions are sown is clay, and as its surface elevation is maintained at only a little over three feet above the water level of the dikes and canals, it never gets very dry.

In cultivating silverskins the land is usually marked off into plots about 30 yards wide, separated by furrows. After having been thoroughly cleaned it is manured, then well dug over two or three times with a spade, and finally raked. No horse labor is employed. The manure is applied at the rate of 40 tons per acre. The growers usually produce their own seed by selecting from the crop in autumn the best specimens of small round silvery white onions with thin stalks and few roots. These seed onions are carefully dried aud preserved from frost through the winter (either by covering them with earth, hay, or straw, and storing in the open, or by placing them in lofts), and again planted out in the early spring in favorable situations. It is the practice to sow the seed in April, about 56 pounds per acre being used, so that the onions grow closely crowded together. This preserves the whiteness of the bulbs by saving them from too great exposure to the light. On holdings of 2½ acres little outside labor is required, as the occupier is usually able to work the land with the aid of his wife and children, large families being the rule rather than the exception among the small growers. It is the practice to put children to work on the land at 10 or 11 years of age, when they are taken away from school. Sometimes, however, and especially in cases where the area cultivated amounts to 5 acres, occasional laborers are employed to help in digging and clearing the land, and again at harvest, sufficient work being found to occupy two men for about three months in the year. But, wherever it is possible, women and children are employed, as their labor is cheaper. Children are largely employed for picking the onions. Adult male laborers earn 60 to 80 cents per day. Women are paid 50 cents, and children 25 cents a day. The average yield per acre of silverskins in Holland varies from 112 bushels, or 2½ tons, to 7 tons per acre where the seed is sown very thickly.

At a conference of German electrical engineers, Dr. Haas, of Hanover, referred to the electric power supplied for agricultural purposes in that neighborhood. The greatest demand for current is for the operation of threshing machinery, for hay presses, straw-cutters, etc. Of the total horse power installed 77 per cent represents purely agricultural operations and 8 per cent factories. On an average, the annual revenue per horse power installed amounts to 27s., at a price of 2s. 3d. per kilowatt hour, as compared with from 68s. to 146s. in towns, and the average period of use does not reach 150 hours, as against 500 hours in towns. The author concludes from the experience in the Hanover district that satisfactory results are possible in agricultural operations only where cables already exist for the transmission of power or for electric tramways.