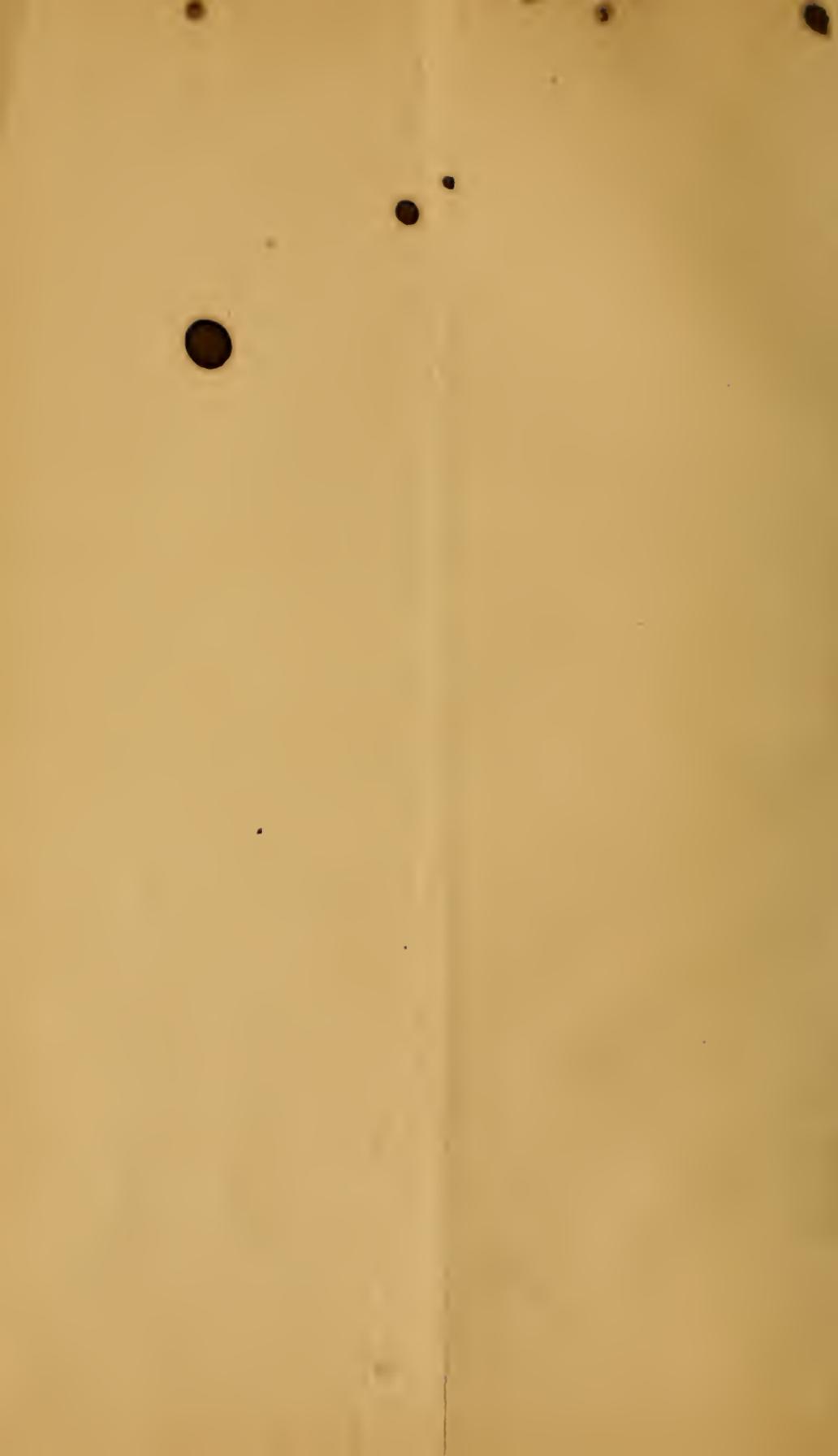


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OBSERVATIONS
ON
A COLLECTION OF
CHALCHIHUITLS
FROM
MEXICO AND CENTRAL AMERICA.



OBSERVATIONS

ON THE

CHALCHIHUITL

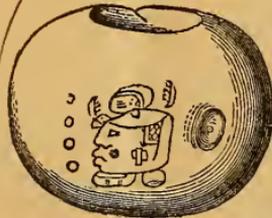
OF

MEXICO AND CENTRAL AMERICA.

BY

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EXTRACT FROM THE ANNALS OF THE LYCEUM OF NATURAL HISTORY OF
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AMONG the articles of ornament used by the aboriginal inhabitants of Mexico and Central America, those worked from some variety of green stone resembling emerald, and called by the Nahuatl or Mexican name *chalchihuitl*, *chalchihuitl*, or *chalchihuite*,* were most highly esteemed, and are oftenest mentioned by the early explorers and chroniclers. The word *chalchihuitl* is defined by Molina, in his *Vocabulario Mexicano* (1571), to signify *esmeralda baja*, or an inferior kind of emerald. The precious emerald, or emerald proper, was called *quetzalitzli*, from the *quetzal*, the bird known to science as the *trogan resplendens* (the splendid plumes of which, of brilliant metallic green, were worn by the kings of Mexico and Central America as regal insignia), and *itzli*, stone; i. e. the stone of the *quetzal*.

The value attached to the *chalchihuitl* by the ancient Mexicans will appear from the testimony of the chronicler Bernal Diaz, which is supported by that of all the historians of the Discovery and Conquest. The first messengers that Montezuma sent to Cortez, on his landing at San Juan de Ulua, brought, among other presents, "four *chalchihuitls*, a species of green stone of uncommon value, which is held in higher estimation with them than the *smaragdus*." (Lockhart's *Translation of Bernal Diaz*, vol. i. p. 93.) Subsequently, after having firmly established himself in Mexico, Cortez required of the Emperor Montezuma that he should collect tribute from

* I have followed the orthography of the word throughout, as given by the various authors quoted.

all his vassals for the Spanish crown, which he proceeded at once to do; and, at the end of twenty days, handed over to Cortez all the treasures he had got together, amounting in value to 600,000 *pesos*. Bernal Diaz reports that Montezuma apologized for the smallness of the amount, on the score that his time for collecting the tribute had been too short; but that he would make it worthy of the acceptance of the Spanish king by adding to it the treasures of his father, and also "a few *chalchihuis* of such enormous value that I would not consent to give them to any one save such a powerful emperor as yours; each of these stones is worth two loads of gold." (*Ib.*, vol. i. p. 278.)

Sahagun mentions four of the Mexican gods who were the especial patrons of the lapidaries, and honored as the inventors of the art "of working stones and *chalchiuites*, and of drilling and polishing them." He does not, however, describe the process made use of by the Indians in cutting precious stones, "because," he says, "it is so common and well understood;" an omission which his editor, Bustamente, regrets, "since the art is now entirely lost."

Quetzalcoatl, the lawgiver, high-priest, and instructor of the Mexicans in the arts, is said to have taught not only the working of metals, but "particularly the art of cutting precious stones, such as *chalchiuites*, which are green stones, much esteemed, and of great value." (*Torquemada*, lib. vi. cap. xxiv.) *Quetzalcoatl* himself, according to certain traditions, was begotten by one of these stones, which the goddess *Chimalma* had placed in her bosom. Indeed, both among the Mexicans and the nations farther to the southward, the *chalchiuitl* seems to have represented everything that was excellent in its kind. Its name was used in compounding designations of distinction and honor, and was applied both to heroes and divinities. The goddess of water bore the name of *Chalchiuitleuye*, the woman of the *chalchiuites*; and the name of *Chalchiuhapan* was often applied to the city of Tlaxcalla, from

a beautiful fountain of water near it, the color of which, according to Torquemada, "was between blue and green." Cortez, according to the same authority, was often called "*Chalchivuitl*, which is the same as captain of great valor, because *chalchivuitl* is the color of emerald, and the emeralds are held in high estimation among the nations." (*Monarchia Indiana*, vol. i. p. 435.) When a great dignitary died, his corpse was richly decorated for burial with gold and plumes of feathers, and "they put in his mouth a fine stone resembling emerald, which they call *chalchihuitl*, and which, they say, they place as a heart." (*Ib.*, vol. ii. p. 521.)

Sahagun, in one place, describes the *chalchihuitl* as "a *jasper* of very green color, or a common emerald." Elsewhere he goes into a very full description of the various kinds of green stones which the Mexicans held in esteem, and as his account may materially aid in identifying the *chalchihuitl*, it is subjoined entire :

"The emerald which the Mexicans call *quetzalitzli* is precious, of great value, and is so called, because by the word *quetzalli* they mean to say a very green plume, and by *itzli*, flint. It is smooth, without spot; and these peculiarities belong to the good emerald; namely, it is deep green with a polished surface, without stain, transparent, and at the same time lustrous. There is another kind of stone which is called *quetzalchalchivuitl*, so called because it is very green and resembles the *chalchivuitl*; the best of these are of deep green, transparent, and without spot; those which are of inferior quality have veins and spots intermingled. The Mexicans work these stones into various shapes; some are round and pierced, others long, cylindrical, and pierced; others triangular, hexagonal, or square. There are still other stones called *chalchivites*, which are green (but not transparent), mixed with white; they are much used by the chiefs, who wear them fastened to their wrists by cords, as a sign of rank. The lower orders (*maceguales*) are not allowed to wear them. . . . There

is yet another stone called *tlilaiotic*, a kind of *chalchuite*, in color black and green mixed. . . . And among the jaspers is a variety in color white mixed with green, and for this reason called *iztacchalchiuitl*.^{*} Another variety has veins of clear green or blue, with other colors interspersed with the white. . . . And there is yet another kind of green stone which resembles the *chalchiuitics*, and called *xoxouhquitecatl*.[†] It is known to the lapidaries as *tecelic*, for the reason that it is very easy to work, and has spots of clear blue. The wrought and curious stones which the natives wear attached to their wrists, whether of crystal or other precious stones, they call *chopilotl*—a designation that is given to any stone curiously worked or very beautiful.” (*Historia de Nueva España*, lib. xi. cap. viii.) The same author, describing the ornaments which the Mexican lords used in their festivals, speaks of a “head-dress called *quetzalalpitoai*, consisting of two tassels of rich plumes, set in gold, and worn suspended from the hair at the crown of the head, and hanging down on each side towards the shoulders. They also wear rings of gold around the arms and in their ears, and round their wrists a broad band of black leather, and suspended to this a large bead of *chalchiuitl* or other precious stone. They also wear a chin ornament (*barbote*) of *chalchiuitl* set in gold, fixed in the beard. Some of these *barbotes* are large crystals, with blue feathers put in them, which give them the appearance of sapphires. There are many other varieties of precious stones which they use for *barbotes*. They have their lower lips slit, and wear these ornaments in the openings, where they appear as if coming out of the flesh; and they wear in the same way semi-lunes of gold. The noses of the great lords are also pierced, and in the openings they wear fine turquoises or other precious stones, one on each side. They wear strings of precious

^{*} *Iztac* signifies white; i. o. *white-chalchiuitl*.

[†] From *xoxouhqui*, *cosa verde*, something green, and *tecatl*, stone; i. e. green-stone.

stones around their necks, sustaining a gold medal set round with pearls, and having in its centre a smooth precious stone." (*Ib.*, lib. viii. cap. ix.)

And here, as confirming the definition of *chalchihuitl* as given by Molina, I quote the exact words of Montolina, in his letter of 1555, to which Señor Icazbalceta has given the first place in his "Coleccion de Documentos para la Historia de Mexico." I quote from page 189, on which, enumerating the riches of Mexico, he says: "Hay mucho oro y plata, y todos los metales y piedras, en especial turquesos, y otras que acá se dicen chalchihuitl; las finas de estas son esmeraldas."

The chronicler Fuentes, in his unpublished history of the old kingdom of Guatemala, speaks of the Indians of Quiché as wearing "head-dresses of rich feathers and brilliant stones, *chalchiquites*, which were very large and of great weight, under which they danced without wearying." The Licenciado Palacio, in his account of the Pipil Indians of San Salvador, also makes mention of these stones, which were worn on the wrists and ankles, and also supposed, like the *bezoar* stone, to be a specific against certain diseases. (*Carta al Rey de España*, Squier's "Coleccion de Documentos Originales, etc.;" vol. 1, p. 72.)

In these descriptions, it will be seen that the *chalchihuitls* are spoken of as ornaments, round or oblong beads, which conforms with the representations in the paintings. But these or similar green stones were used for other purposes. The chronicler Villagutierre, in his account of the conquest of the Itzaes of Yucatan, speaks of idols in their temples "of precious jasper, green, red, and of other colors;" and, in describing the great temple of Tayasal, mentions particularly an idol which was found in it, "a span long, of rough emerald (*esmeralda bruta*), which the infidels called the god of Battles," and which the conquering general, Ursua, took as part of his share of the spoil.

It appears that when the Spaniards first landed in Tabasco,

they mistook some of these *chalchihuitles* for true emeralds ; at any rate the Indians were eager to obtain the glass beads of the Spaniards, not knowing them to be artificial. If, however, the Spaniards really fell into any mistake as to these stones, they were not long in finding it out, as appears from an anecdote related by Torquemada, describing how Don Pedro Alvarado often played with Montezuma at a game called *bodoque*, in which, while the latter paid his losses in gold, the former paid his in *chalchihuites*, “que son piedras entre los Indios estimada, y entre los Castellanos, no.” (*Mon. Ind.*, vol. i. p. 462.)

The Mexicans nevertheless had true emeralds, of which we have left to us the most glowing descriptions. Gomara describes particularly five large ones which Cortez took with him from Mexico to Spain at the time of his first visit, and which were regarded as among the finest in the world. They were valued at 100,000 ducats, and for one of them the Genoese merchants offered 40,000 ducats, with the view of selling it to the Grand Turk. Cortez had also the emerald vases, which the padre Mariana assures us, in the supplement of his History of Spain, were worth 300,000 ducats. They are reported to have been lost at sea. All these emeralds were cut in Mexico by Indian lapidaries under the orders of Cortez, and were most elaborately worked. One was wrought in the form of a little bell, with a fine pearl for a clapper, and had on its lip this inscription in Spanish, *Bendito quien te crió!* Blessed he who made thee! The one valued most highly was in the shape of a cup, with a foot of gold. All of them were presented by Cortez to his second wife, who thus, says Gomara, became possessed of finer jewels than any other woman in Spain. Remarkable as were these emeralds, Peter Martyr mentions one, of which Cortez was robbed by the French pirates, that must have surpassed any of them in size and value. “But what shall wee speake of Iewelles and precious stones? Omitting the rest, there was an *Emerode* like a *Pyramis*, the lowest part or bottome whereof was almost as broad as the palme of

a mans hande, such a one (as was reported to *Cæsar*, and to us in the Kinges Senate) as never any human Eye behelde. The French Admirall is said to have gotten it of the Pyrates at an incredible price." (*Decade* viii. c. 4.)

Coming down to later times, we find Prof. P. Blake, in the *American Journal of Science and Arts* for March, 1858, in an interesting article on "The Chalchihuitil of the Mexicans," informing us that the Navajo Indians in the northern and western portions of New Mexico wear small ornaments and trinkets of a hard, green stone, which they call by the Mexican name, and which they regard as of great value; "a string of fragments large enough for an ear-ring being worth as much as a mule." Mr. Blake, suspecting this stone to be turquoise, and learning that it was yet procured in small quantity by the Indians among the mountains about twenty miles from Santa Fé, visited the spot, where he found an immense pit excavated in granular porphyry, "200 feet in depth and 300 or more in width," besides some smaller excavations. He obtained many fragments of the so-called *chalchihuitil* "of apple-green and peagreen, passing into bluish-green, capable of a fine polish, and of a hardness little less than that of feldspar." The fragments found were small, not exceeding three-quarters of an inch in length and one-quarter of an inch in thickness, and the material "appeared to have formed crusts upon the surfaces of cavities or fissures in the rock, or to have extended through it in veins."

Mr. Blake's description applies to the specimens exhibited to the Lyceum not long ago by Prof. Newberry, and there is no doubt that the material was, or rather is, a variety of the turquoise. But I doubt if it be the true *chalchihuitl* of the Mexicans and Central Americans. That they used the stone described by Mr. Blake for certain purposes, I know; for there exists in the museum of the late Mr. Henry Christy, in London, a human skull completely encrusted with a mosaic of precisely this stone, and a flint knife with its handle elaborately

inlaid with it, in small fragments. Of the first of these relics I present a drawing made by Waldeck and published by the French Government. See FIG. 1.*



FIG. 1.

Human Skull, Ancient Mexican, inlaid with turquoise and obsidian.

The weight of evidence, in my opinion, goes to show that the stone properly called *chalchihuitl* is that which Molina defines to be "*baja esmeralda*," or possibly nephrite, "a jasper of very green color," as Sahagun, already quoted, avers. I should therefore object, on strictly critical and historical grounds, to the suggestion of Mr. Blake, that the variety of turquoise found by him should be "known among mineralogists as *chalchihuitl*."

* In Mr. Christy's museum is also a wooden mask encrusted in like manner, with turquoises, malachite, and white and red shells. The predominant stone in all is the turquoise. The back of the skull in the specimen engraved is cut away, so as to admit the face to be hung by leathern thongs (which still remain) over the face of an idol, as was the custom in Mexico. The transverse black bands in the cut are of obsidian in the original. The eyeballs are nodules of iron pyrites, cut hemispherically, and highly polished.

But apart from any speculations on the subject, I have to lay before the Lyceum a most interesting series of green stones, unrivalled, in their way, in the world, which were found among the ruins of Ocosingo, in the department of Quesaltenango, Guatemala, on the borders of Chiapas, and not remote from the more famous but hardly less imposing monuments of Palenque. I must not omit to say that, in common with similar stones, they were designated by the people of the region where they were found as *chalchichuites*.

FIG. 2.—The first and most interesting of these is precisely



FIG. 2.

Chalchihuitl, or engraved precious stone, from Ocosingo, Central America. Full size.

four inches long by two and three-tenths broad, and about half an inch in average thickness. The face is sculptured in low re-

lief, with the figure of a divinity seated, cross-legged, on a kind of carved seat, with his left hand resting on his thigh, and his right raised to his breast, as if in the act of giving benediction. Around his loins is an ornamental girdle, and depending from his neck and resting on his breast is an oblong rectangular plate or charm, not unlike that said to have been worn by the Jewish high-priests. The face is in profile, showing the salient nose and



FIG. 8.

Baso-Relievo of the god Cuculcan, from Palenque.

conventional receding forehead that characterize most Central American sculptures. Ornaments are inserted in the lobes of the ears, and the head is surmounted with the characteristic and elaborate plumed head-dress that we observe on the Palenque monuments and in the paintings. The whole is almost an exact

miniature copy of the large *bas-relief* found by Mr. Stephens in an inner chamber of one of the ruined structures of Palenque (FIG. 3). At about one-third of the length of the carved chalchihuitl, measuring from the top, it is drilled through from edge to edge, the hole being a little less than two-tenths of an inch in diameter; the drilling having been made from each side to the centre, where the two drillings run one into the other, with a slightly diminished bore. The purpose of this seems to have been to suspend the object from the neck or other part of the person; but the back edges of the plate are also pierced diagonally, as if to afford means of fastening it to cloth or other material, without those means showing in front.

FIG. 4.—The next relic in importance is of a similar but



FIG. 4.
Chalchihuitl from Ocosingo. Two-thirds actual size.

more opaque material, which, were it not for a strip of clear quartz on one edge, might be mistaken for enamel. It is a semi-disk in shape, four and a half inches in length by two and seven-tenths in greatest width. It shows a human face in full front, surmounted by a kind of heraldic shield, and surrounded by a profusion of feather ornaments, with huge ear-rings and other ornaments below the chin. It, too, is pierced near its upper edge, longitudinally from side to side. The back shows that it was sawn from a solid block of the same material, both from above and below, until the cuttings

reached each other within half an inch, when the intermediate core, if I may so call it, was broken off. The *swerve* of the saw is distinctly visible from the top as well as the bottom, although the *striæ* are nearly polished out. This was clearly intended to be suspended, as there are no means by which to fasten it to robes of any kind. It must have served as a gorget or breast-plate.

FIG. 5.—This is a most interesting, although a very irregular,



FIG. 5.
Chalchihuitl from Ocosingo. Two-thirds actual size.

and comparatively rude specimen, four inches and two-tenths long by two and a half inches wide at its widest part. The back shows a compact greenish stone; with the same evidences of having been sawn from a solid block, to which I have alluded in describing FIG. 4. The front appears as if of a brilliant green enamel, exhibiting a full human face with a large and elaborate feather helmet or crown, huge ear and neck ornaments impossible to describe, and only to be understood by inspection of the original. This, too, is pierced, like that last described, from edge to edge, near its upper end.

FIG. 6.—This is a comparatively small fragment of identical material with FIG. 2, an irregular triangle in shape, somewhat concave on the face, where is carved in profile a human head, surmounted also with elaborate plumes, but with eyes closed



FIG. 6.
Chalchihuitl from Ocosingo. Full size.

as if in death. This is drilled through vertically and horizontally, and there are small diagonal holes, designed to afford means of attachment by threads to some portion of the dress of the wearer. It is polished back and face, and measures two and three-tenths inches by one and nine-tenths. It has its almost exact counterpart in the Christy, formerly Mayer Museum, of London.

FIG. 7.—This specimen is peculiar and very interesting. It is a slightly irregular globe, two and six-tenths inches in diameter, pierced from top to bottom by a perfectly circular hole one and three-tenths of an inch in diameter. On three sides, if I may use the expression in respect of a sphere, are as many engraved hieroglyphics, using that term in the popular sense, but which I conceive to be syllabo-phonetic or phono-syllabic

signs, of which, of course, only engravings can give any adequate notion. (Figs. 8, 9, 10.) As I shall have something

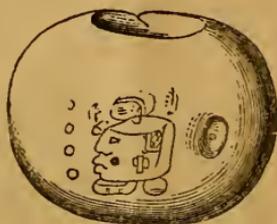


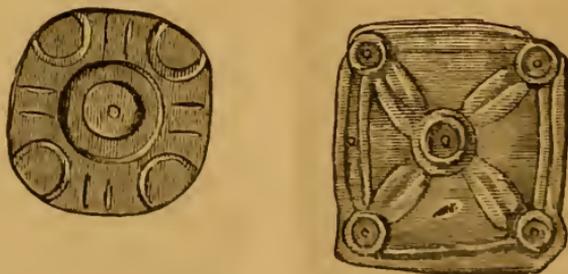
FIG. 7.
Chalchihuitl globe, pierced. One-fourth size.

to say about this specimen further on, I proceed to notice a simple polished perfect globe, of the same material with that



FIGS. 8, 9, 10.
"Hieroglyphics" on Chalchihuitl globe. Full size.

last alluded to, and which may be sufficiently described as a large bead, an inch and a tenth in diameter, pierced through its exact centre by a hole sufficiently large to admit a stout thread.



FIGS. 11, 12.
Chalchihuitl ornaments. Half size.

Figs. 11 and 12 are types of a large class of what may be called chalchihuitl ornaments, with no special significance.

FIGS. 13 and 14, however, may have a hieroglyphical significance. The latter (FIG. 14) is a fragment of a thin plate, of the



FIGS. 13, 14.
Chalchihuitl engraved plates.

same stone with the objects already described, two inches and eight-tenths in length by two inches and three-tenths broad and two-tenths of an inch thick, engraved on both surfaces and cut through with ornamental devices.

FIG. 15 is an engraving of one of a number of hat-shaped ob-

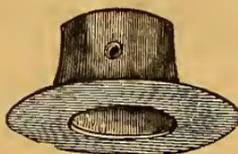


FIG. 15.

jects of the stone under notice, pierced through, so as to leave a very thin rim and walls, and obviously designed to hold those *penachos* or clusters of feathers which the Spanish conquerors so often describe, and which are so conspicuous in the head ornaments represented on the monuments and in the aboriginal paintings of Mexico, Central America, and Peru. They are each two inches and two-tenths in diameter over the rim, one inch and one-tenth high, with a bore of eight-tenths of an inch in diameter.

The relics above described are fair types of the chalchihuitls found at Ocosingo; but I possess some other worked and engraved green stones, worth mentioning, perhaps, in this connection. The first of these,

FIG. 16, has some resemblance to the engraved Assyrian seals, or, as they are sometimes called, "Chaldean" cylinders. It is a perforated cylindrical piece of heavy, opaque stone, of a dark sea-green color (nephrite?), two inches long by an inch and one-tenth in diameter. In a kind of oval, or what Egyptian scholars would call a *cartouche*, is presented the profile of some



FIG. 16.
Engraved stone cylinder from Yucatan.

divinity (the Maya god of Death?), with the eye closed and the tongue depending from the corner of the mouth. Something like claws, engraved on a projection of the cylinder, start out from the *cartouche* on the left side. The whole is boldly and sharply cut, and highly polished. This relic was obtained from the island of Flores, the ancient Tayasal, in the lake of Itza or Peten, in Yucatan. Among the things found by the conqueror of the Itzaes, Ursua, in the temples which he destroyed in the island in 1697, he mentions "an idol of emerald a span long, which," says the chronicler, "he appropriated to himself."

It may be observed of the figure engraved on this stone, that *to speak*, among American nations, was the verbal as well as symbolical expression of life or being, as is *to see* or *to breathe*, or *to eat*, among other nations in various parts of the world. The projecting tongue in the sculptured and painted American idols and figures denotes the living god or man; he who can

talk, and therefore lives. In this instance, the lax and drooping tongue heightens the idea of death which the closed eye in part conveys.

FIG. 17 is an engraving of a stone hatchet or adze of hard green stone, resembling quartz, five inches long. It is highly polished on the face, but the reverse has marks which show that it too was sawn from a block of the same material.



FIG. 17.
Hatchet of green stone from Costa Rica.

Where the notches occur in the sides there are holes drilled entirely through the stone, parallel with its face. The lower or cutting edge is slightly curved outward, implying that, if intended for practical service, it was as an adze. But it is to be presumed that it was worn symbolically, in the way of distinction or ornament. It was found in an ancient grave in Costa Rica. The ruling Inca of Peru carried an axe instead of a sceptre as one of his insignia of dominion.*

* In Greece stone weapons of jade or nephrite are sometimes found, which the common people call "thunderbolts," and hold in high estimation. A correspondent of the *London Athenæum* found a similar object, called by the same name, in Nassau, New Providence, in the Bahamas. He describes it as polished and flattened, pointed at one end, with a broad cutting edge at the other, and regarded by the natives as a preventive against lightning. Another correspondent of the

FIG. 18 (full size of original) is the easily recognizable figure of a frog, in a kind of malachite, from the island of Omotepec, Lake Nicaragua.



FIG. 18.
Sculptured frog, Nicaragua.

FIG. 19 is of still another and harder variety of green stone, from a mound near Natchez, and appears to be a strange combination of the head of the siren of our western waters, or of

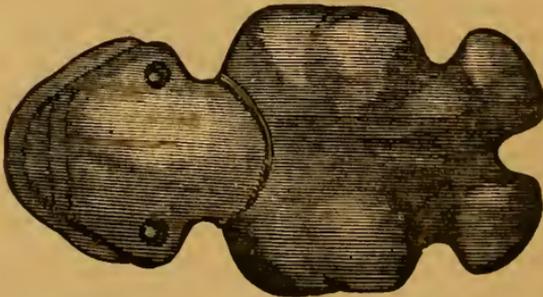


FIG. 19.
Carved green stone found near Natchez.

the frog, with the human body. It is also pierced laterally, like those already described, doubtless for suspension.

I do not present FIGS. 16, 17, 18, and 19 as specimens of the *chalchihuitl*, but as showing the regard paid to green stones generally. It is one that pervades both continents and many

same publication states that he found a similar object in Jamaica forty years ago, also called a thunderbolt. It was kept in an earthen jar filled with water, and was supposed to keep the water cool.

nations, from the advanced Chinese, to whom the green jade is sacred, to the savage dwellers on the banks of the Orinoco, among whom Humboldt found cylinders of hard green stones, the most highly prized objects of the several tribes, and some of which it must have required a lifetime to work into shape.

Of the carved chalchihuitls, like those described from FIG. 1 to FIG. 15, I have seen but three specimens outside of my own collection: one already alluded to in the Christy Museum of London, another in the late Uhde Museum near Heidelberg, and a third in the Waldeck collection in Paris.

The question how these obdurate stones were engraved, drilled, and sawn apart, or from the blocks of which they once formed a portion, is one likely to arise in most minds. It is one that has puzzled many inquirers; nor do I pretend to give an answer, except that the drilling was probably performed by a vibratory drill, composed of a thin shaft of cane or bamboo, the silica of which was re-enforced by very fine sand, or the dust of the very article under treatment. The *striae* shown in the orifices are proof of something of the kind, and the esteem attached to these stones by the aborigines proves that their value, like that of the main-spring of a watch, was due mainly to the amount of labor expended in their production.

As regards the sawing, of which the backs of FIGS. 4, 5, and 17 afford striking examples, we may find a clue in the accounts of the early chroniclers, who relate that they saw, in Santo Domingo and elsewhere, the natives use a thread of the *cabuya* (or agave), with a little sand, not only in cutting stone, but iron itself. The thread was held in both hands, and drawn right and left until worn out by attrition, and then changed for a new one, fine sand and water being constantly supplied.

Not a few inquirers entertain the hypothesis that most of the raised and sunken figures on various stones in Mexico, Central America, and the mounds of the United States, were produced by persistent rubbing or abrasion—a general hypothesis which I shall not dispute. But in objects from the mounds,

as well as from other points on the continent, we have distinct evidence of the use of graving or incisive tools of some kind—as for instance in the hieroglyphics in FIG. 7, which are cut in a stone so hard that the blade of a knife produces scarcely any impression on its polished surface.





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