The City was in Ruins in
1864
THE ANTIQUARY'S MAGAZINE:

... OR,

RELIQUA

OF

PAST MEN, TRIBES, AND NATIONS:

CONTAINING

Recent Researches and Discoveries,

BY

TRAVELERS, ANTIQUARIES, AND ARCHEOLOGICAL SOCIETIES,

AT HOME AND ABROAD.

NEW YORK.

1860.
TO THE READER.

We often find, in digging in our fields or gardens, the heads of spears, arrows, hoes, and axes, curiously formed of stone; and sometimes pieces of coarse pottery, and other relics of a rude people who once inhabited our country. Every intelligent person is excited to inquire what were their origin, history, and fate; and the curiosity which we feel is both natural and commendable. In many of the United States, especially in the valley of the Mississippi and its branches, are numerous ancient Mounds, or Tumuli, of different forms and sizes, evidently constructed by human hands, and for various purposes. Curious weapons, ornaments, and utensils have been found at the bottom of some which have been opened, generally such as contained sepulchers. But nothing has yet been discovered to prove who were their makers or what the date of their construction.

Relics of somewhat similar kinds have been found in many other countries of the world; and much interesting information respecting them has been published by scientific men and societies abroad. Many of our intelligent fellow-citizens must wish to know something of the results of such discoveries, and some of them may render important services to science, by making observations on the relics of antiquity around them.

"The Antiquary's Magazine" is designed to convey notices of what has been done and is doing in this department of research, and to promote inquiry and correspondence. Authenticated communications to the Editor will receive attention; and public credit will be given to those to whom it may be due. The abundance of interesting facts constantly coming from different quarters, will require conciseness.

THE AMERICAN ETHNOLOGICAL SOCIETY.

This Society, which is actively engaged in collecting and diffusing information on the history of mankind on the Western Continent, and secondarily in other parts of the world, was founded in the city of New York in the year 1842. The late Hon. Albert Gallatin was its President until the close of his life, and was succeeded by Dr. Edward Robinson. The Society has published two large volumes of Transactions, and have a valuable collection of papers, books, and curiosities. Although conducted by a small number of resident members, they have an extensive correspondence, including many of the principal archaeologists and archaeological associations of other countries.

The following is the list of officers for the year 1860:

President, GEORGE FOLSOM; Vice-Presidents, Dr. JOHN W. FRANCIS and THOMAS EW BANK; Corresponding Secretary, E. G. SQUIER; Recording Secretary, THEODORE DWIGHT; Treasurer, ALEXANDER J. COTHEAL; Librarian, GEORGE H. MOORE.
REPORT
ON THE
HUACALS, OR ANCIENT GRAVEYARDS
OF CHIRIQUI.
A PAPER READ BEFORE THE AMERICAN ETHNOLOGICAL SOCIETY, BY
J. KING MERRITT, M.D.

[Dr. Merritt was director of a gold-mine in Veraguas, and spent several weeks, in the
summer of 1859, in examining and excavating the newly discovered graves—Huacas or
Guacas—in the adjoining province of Chiriqui, about fifty miles north of Panama.]

In the autumn of 1858 two Spanish creole farmers of Chiriqui, while
engaged in gathering a crop of corn, accidentally discovered a golden
image, which had been exposed by the uprooting of a plant. They cau-
tiously and secretly made farther search by sinking a pit at this point,
and were successful in obtaining more. With this encouragement they
determined to explore the Huacal, the existence of which had been well
known for years. They proceeded in this work, not continuously, but as circumstances would permit, until the 1st of May, 1859, when
their concealed operations became known to the inhabitants of the
vicinity. The consequence was, that by the middle of May more than a
thousand persons were engaged in ransacking the graves of this Huacal,
which is located in the district of Boqueron and parish of Bugaba, about
twenty-five miles from David, and fifteen miles only from the sea, in a
direct line. The names of the fortunate discoverers are Ignacio Guerra
and Victorio Pitti, who succeeded in collecting together, as admitted to
me by themselves, about 130 pounds weight of golden figures, a large
proportion of which, however, are more or less alloyed with copper.

Two anecdotes were related to me connected with the earlier explora-
tions of this Huacal. One was, that a lad, the son of Ignacio Guerra,
seemed to possess the "divining power." It is said he always selected
the grave to be opened, and was almost uniformly successful in the
selection of a "gold bearing" one; while perhaps the next adjoining,
although carefully explored by other parties, would yield only pottery.
This boy, it is stated, would proceed in advance of his father, "pro-
specking;” and, having chosen the grave, would say, with perfect non-
chalance, “Padre mio! aquí está una Huaca rica: ella tiene muchas
figuras del oro.” [Father, here is a rich grave; it has many golden
images.] The other anecdote related to the “confidence” operations of
the priest of the parish. He pretended to possess the “divining rod,” a
relic of some gold-seeker of olden time. With this, it is said, he would
proceed to the Huacal, followed by a throng of eager grave-diggers, and
would designate to each the golden sepulchres for the unsellish consid-
eration of one third of the yield. His rod and modus operandi were
more simple than ingenious. The rod was an antique steel bar. This
was suspended near its middle by a small cord, which was grasped in
his outstretched hand. Upon arriving at a suspected locality, he would
give the bar a rapid twirl, and begin to mutter an “Ave” or a “Beni-
dicite” in a hurried manner. When the bar ceased to gyrate, the longer
depressed by its greater weight, indicated the desired spot. This
profitable farce was practiced by the priest for a few days, until the
arrival of some intelligent and influential persons from David, who
exposed the swindle.

This Huacal of Bugaba had been quite thoroughly explored by the
first of August, and people were then directing their attention to others
in the vicinity; but the heavy rains, which daily occurred, prevented
any considerable progress in many, and in some entirely stopped the
operations. Consequently the Huacal of Bugaba had yielded nearly all
the golden images up to this date, which I have estimated could not
have been worth more than $50,000. This calculation is based upon
their metallic value merely, and not upon their fancied valuation as
curiosities.

The Huacal of Bugaba embraced an area of twelve acres, but was
divided into two sections—by a slight depression extending in an east-
and-west direction—in which not a single grave has been encountered.
This depression of the surface varied in width from eighteen to ten
yards, toward the east. The two sections were respectively five and
seven acres, and were located on slightly elevated eminences, about four
hundred yards from a small river, the course of which is northeast by
east at this point. The rise from the river banks to the Huacal is very
gradual, except at the northern boundary, which is somewhat abrupt,
and around which the river turns toward the east. The general
direction of the Huacal is north and south; and the greater portion of
the graves were found on the western and southern slopes. There did
not appear a general regularity in the position of the Huacas, or graves,
but frequently there would occur several side by side. The distance
between the grave-pits varied from nine to fifteen inches at the more
crowded portions of the Huacal. The universal direction of the quadrangular Huacas is north and south by the polar star.

There are two forms of Huacas or graves—the oval and quadrangular; and their mode of construction is an interesting matter for consideration. I, with a small party of peons, examined carefully and systematically one of the former and several of the latter description; and besides, saw a large number of both varieties opened by parties in the vicinity. The material uniformly employed in the construction of the sepulcher proper was flat and rounded river stone. The oval grave-pits were from four and a half to six feet deep, and from three to four feet in their largest diameters. A wall of the rounded river stone, two and a half to three feet high, lined the grave-pit at the bottom, after the manner of a modern well. From the top of this wall to the surface the entire area of the grave-pit was closely packed with rounded river stone. Within the limits of the wall, which seemed to be the tomb proper, were found principally the golden figures, and the vessels of pottery, etc. The greater portion of the oval or circular Huacas were located in the northern and western sections of the burial-ground; and, as a general rule, yielded the most figures of gold and the finest specimens of pottery. The relics in these were found usually at the eastern and northern sides; and the gold figures sometimes were located, it is said, in the crevices of the wall—but in no instance in the earthen jars associated with them. The circular graves, being confined to the slopes of the Huacal, were more or less covered by the wash from the elevated sections of the Huacal, so that the top stones of the package were in many cases nearly a foot beneath the surface. No vestige of the human body was discovered in the oval Huacas; but a black loam occupied the spaces between the relics and the stone package. Occasionally earthen vessels were found in the stone package near the surface. The quadrangular Huacas were constructed in two modes. In one case the grave-pit was lined by walls of rounded river stone about one third the distance to the surface; and from the top of these walls the entire area of the grave-pit was closely packed with river stone, as in the oval grave. Within the limits of these walls, and in close proximity to the bottom of the grave-pit, were found most of the relics contained in them. These Huacas were larger and yielded more gold images and finer pottery than the other variety of the quadrangular grave, and were in juxtaposition with the oval graves, occurring interspersed with them in the northern and western sections of the Huacal, but abounding principally in the southern portion of the ground. Some of these Huacas were nearly six feet deep, especially those situated in the depressed sections of the Huacal, and the area of the grave-pit measured frequently seven by four and a half feet.
In these the relics were usually found near the bottom, at the northern and southern extremities, and more or less, on the eastern side. The gold figures most frequently were located about one fourth of the distance from the head to the foot of the grave-pit, and in the medial line. In these Huacas, also, earthen vessels were encountered in the stone package near the surface, and generally at either extremity.

The other variety of the quadrangular Huaca, although poor in relics, was more artistically and carefully constructed, and in a better state of preservation; for in many of them everything was encountered "in situ." In these a vault existed, which was formed of flat river stone, and was of the requisite size to contain a human body in the supine position, so far as the length and breadth are considered, but in the height giving ample space for the introduction of the earthen relics. These Huacas were located mostly on the more elevated portion of the Huacacl, and in the southern and eastern sections. A grave-pit had been sunk about three feet deep and six and a half by four feet in area; and then a lesser pit, by eight to ten inches on all sides, was farther sunk to the additional depth of about two feet. This smaller pit was lined by flat stones placed edgewise, which were held in position by other flat stones resting flatwise upon the upper edges of these and the surface of the recess in the sides of the grave-pit. The floor of the vault was not paved, but presented a hard, pebbly clay surface, with two depressions frequently, one at either extremity, and corresponding with the probable positions of the occiput and the heels of the body. The cover to the vault was composed of flat stones, quite closely adjusted, and sufficiently overlapping the sides to be firm, and not liable to cave in from the variations of position of the sides, consequent upon subsequent settlings of the earth and stone from natural causes. From the cover of the vault to the surface, the entire area of the grave-pit was closely packed with river stone, somewhat larger than ordinary paving-stone. In these Huacas the relics were also found mostly in the vault, at the head and foot, and on the east side. So far as my experience goes, earthen-ware only was found in these, although I was told that a few had contained the smaller gold figures. Specimens of pottery were encountered also in these, at either extremity of the stone package, immediately above the cover of the vault. The location of these vaulted Huacas, being the more elevated section of the burial-ground, and the vaults also preserving their outlines, the stone package of most of them was slightly raised above the general surface. A black loamy earth occupied all the graves proper, or the original position of the body in it.

It would seem, from the facts I have stated, that the gold-bearing graves were those which were ruder in their construction, and which
occupied, to some degree, a particular section of the Huacal, although the limits of this were not well defined. The golden ornaments were not found in many successive Huacas, even at the richest points of the Huacal. Pottery, however, was encountered more or less in every Huaca. It is reported that in other Huacas, in the vicinity of Bugaba, traces of human hair have been discovered; but in those of Bugaba, which I explored carefully, no such evidence of the body was encountered. I have, however, the enamel of a molar tooth, taken from a grave in a Huacal, near that of Bugaba.

Most of the gold figures taken from the Huacas of Chiriqui were probably ornaments, worn by the person buried, and were suspended about the neck. There are, apparently, some exceptions to this. Circular thin plates of fine gold were found, one surface of which uniformly presented a worn appearance. They are all perforated by two holes, about an inch and a half from each other and the margin. These holes resemble the ragged puncture which would be produced by a modern nail, driven from the worn side; and there is no evidence of friction on the edges of these apertures. Another gold figure resembles the iron thimble used by riggers at the end of a rope, to which is attached a ring or hook. In some Huacas have been found a great number of thin, laminar pieces of fine gold, of various shapes, such as square, oblong, triangular, and rhombic, which weighed from 5 to 30 grains, Troy.

The golden ornaments are, for the most part, representations of the natural objects peculiar to that region. Many of them, however, are grotesque and fantastical imitations and combinations of such objects, and a few seem to be efforts of fancy or superstition.

Nearly all the golden figures are alloyed with copper, which was the only metal used for such a purpose in this section, apparently. Some of the better executed figures are scarcely more than eight or ten carats fine. This alloy of the figures is artificial. The figures have been "cast" generally, and some have been finished to their existing shapes by subsequent beating. The largest golden figure, of high degree of purity, found in the Huacal of Bugaba, weighed between eleven and twelve ounces. The specimens of pottery found associated with the gold figures are generally larger and of a finer quality than in the other Huacas.

To the antiquarian these possess a great interest, as they afford some idea of the domestic habits and the degree of civilization attained by that ancient people, of whose history we as yet know nothing. The specimens which I have seen, and a few that I have brought from Chiriqui, exhibit a high degree of advancement in the most difficult art of pottery—forms as symmetrical and graceful as any of classic or mod-
ern dates. The glazing and painting of some are in a wonderful state of preservation, the colors being bright and distinct; and many are entirely unaffected, in their composition, by the lapse of time.

There is a domestic utensil frequently occurring in the Huacas, worthy of particular notice. It is the so-called corn-grinder, which seems to be carved from stone. It most frequently bears a resemblance to a tiger, with its body expanded to an oval tablet form, and its tail curved so as to be connected with one of the posterior legs, which serves as a handle. Another form, quite rare, is a circular tablet, supported by figures of monkeys, arranged regularly in a circle, and standing upon a base ring, the entire piece carved from a block of stone. There was a peculiar fancy among that people to introduce pellets of the same material into cavities, where such might occur properly in the molding of the various articles of pottery, or of the gold figures.

The musical instruments made of clay are very curious, and evince considerable cultivation in the musical art. They are of varied forms, but principally the figures of birds and animals.

Arrow-heads and stone instruments, resembling hatchets, were found associated in the same Huaca.

The existence of Huacals throughout the southern portion of the Isthmus and Central America has been long known to the inhabitants; but, strange to say, I have not heard of any such burial-grounds on the northern side of the Isthmus, from the lagoons of Chiriqui to the valley of the Chagres—and where they would have been discovered by the gold-seeker, who has been ransacking this section for more than 300 years. The locale of the Huaca appears to be the plain, valley, and upland of the Pacific side of the Isthmus.

I have received intelligence that on an elevated plateau, called Boquete, have been encountered Huacals in the forest, marked by large pillars of stone, three feet above the surface, and some ten inches in diameter. The pottery in these was very large and ponderous, and was so friable that no specimens of it could be taken out or carried without crumbling to small fragments.
On Tuesday evening, the April meeting was held at the residence of the President, Hon. George Folsom, who occupied the chair.

Chiriqui Relics.—A letter was received from Mr. Totten, chief engineer of the Panama Railroad Company at Aspinwall, April 2d, accepting his appointment as a corresponding member, and promising to send more curiosities from the Chiriqui graveyards, particularly specimens of the stone posts or columns which have recently been found in some of them, porting the roofs. He writes:

"I was in error in stating that the images I sent you were the only stone images discovered in Chiriqui. I was so informed; but I have recently seen small ones from that locality, and also numerous stone articles, apparently household utensils, with figures of animals cut upon them, showing that the art of working stone was known to the aborigines of that country."

Danish Antiquities.—Lieut.-Col. W. D. Raasloff, Charge d'Affaires for Denmark, took his seat as a member, and presented a collection of ancient stone instruments, received from Professor Thompson, Director of the Royal Museums of Copenhagen. They were taken from ancient mounds, and were chiefly made of flint. The most highly finished is a spear-head, or perhaps a poniard, 9 or 10 inches long.

Mr. R. also presented a collection of archaeological publications from Denmark, and specimens of the beautiful new coins issued by his Government for circulation in their W. Indies. They are of 1 cent, 5, 10, and 20 cents, on the American decimal system.

On motion of Dr. Wynne, seconded by Mr. Loosey (Austrian Consul-General), the thanks of the Society were presented to Mr. Raasloff and Prof. Thompson.

The President spoke in terms of admiration of the extent, value, and beauty of the Danish museums, expressed regret that they should be so far before us, in even American antiquities, for which they deserve high
praise. We should be encouraged by their example, and we have a vast field for exploration.

The President presented the two publications of the "Shanghai Literary and Scientific Society," published at Shanghai.

**Arab Manuscript.**—A letter was read from Louis Tappan, Esq., accompanying an Arabic manuscript, of several pages, from Africa, purporting to contain a history of the world, extracted from the Koran. Mr. Cotheal reported that it was so, and evidently recently written by some educated negro of Africa. It is on ruled, light blue paper, apparently American.

**The Isthmus.**—Dr. Davis presented a letter from Mr. Havies, of Panama, with a map containing interesting answers to questions concerning the Chiriqui graves. A law was passed by the Spanish, in 1542, claiming all gold found in guacas (meaning graves), which abound in Central America, New Granada, and Peru. He knows of no sculptured rocks. Mounds are numerous on the Isthmus, and some large; but none have ever been opened, except one, which has recently been dug into, and some pottery found.

A report on Gen. Herran's Chiriqui earthen relics, from the Committee on Antiquities, described the twenty-five articles of which it consists: nine tripods, ten vases, two small musical instruments, etc. The vessels, like others, in the collections of Drs. Davis and Merritt, are neatly and sometimes very gracefully formed of clay, of different degrees of fineness, few of them with any appearance of having been fused, some glazed with an unknown substance, and painted, probably with metallic oxys, which it is desirable to have analyzed. Most of them are soon soaked through by water; but such as are glazed are water-tight. The uses of most of them it is difficult to conjecture. Several bear resemblance to Roman, Grecian, and Etruscan jars, figured by Monfançon and others. One is nearly like a diota, or Grecian two-eared one, among his specimens.

Dr. Davis remarked on the historical value of ancient pottery, and said that the specimens from Chiriqui appear to have been molded upon an imitation of vegetables, fruits, shells, or other common objects of the country, and ornamented with imitations of native animals. In no instance has he found any attempt to imitate anything foreign in pottery, copper, or gold. The jars are all formed by hand, with no mark of the potter's wheel. He thinks the external and internal layers of clay, when light colored, with a black stratum between them, must have been penetrated and changed by the coloring matter applied, with or without the size or varnish spread over them.

Dr. Merritt mentioned that the natives of the Isthmus now make their rude earthen utensils of a peculiar black earth, which gives them the
appearance of iron. Some of the ancient Chiriqui jars appear to consist, in part at least, of the same. The coloring matter of that clay is probably per-oxyd of iron.

Musical Instruments.—Dr. Merritt read the report of the Committee on the Chiriqui Musical Instruments then exhibited. They are (all but one) whistles or flageolets, roundish, or in the forms of birds or beasts, from 1$\frac{1}{2}$ to 4$\frac{1}{2}$ inches diameter, with an air-chamber, and from 1 to 4 finger-holes. The pitch and scales of these instruments were noted in the report, and several peculiarities mentioned, distinguishing them as of a different species from all others known in ancient and modern times. The most perfect has three finger-holes to produce the notes; A. G. F. E. downward. A fourth finger-hole gives the semitones of these. By a particular process, two three lower notes are obtained. A very diminutive instrument, with two finger-holes, has a loose ball of baked clay in its air chamber, which, when moved, varies the notes.

Different Modes of Burial by Ancient Romans.—The President requested Dr. Gajani to repeat what he had mentioned to him on this subject; and he remarked that, after much investigation, he was convinced that some high Roman families adhered to the modes of interment practiced by their ancestors; those of native or Etruscan origin interring the body, and those of Latin or Trojan descent (as they called it), burning it. The two races made their tombs and catacombs on opposite sides of the Tiber. The tomb of the Scipios was originally on the Vatican Hill, but removed across the river, where it has been discovered in modern times. Dr. G. believes that none of the Etruscan vases ever contained human remains. They are not large enough, and nothing has ever been found in any of them. They were probably mere ornaments. This view is opposed to the long received opinion that all the Romans, for a time, interred their dead, and afterward universally adopted the custom of burning them. The Julian family and that of the Scipios appear to have been of different races. Campana, who first entered the tomb of the Scipios, affirmed that he saw the form of a man’s body on a bier, which soon crumbled and disappeared under the effect of the air. The bier, being of iron, remained. Six pounds weight of gold was found.

Judge Daly remarked, that he had seen marks of fire on some of the remains in Etruscan tombs. Dr. G. replied, that these might have been the contents of later tombs in the same place.

The Society were informed that the Legislature of the State of the Isthmus have a bill before them for regulating the exploration of graves in Chiriqui, etc. An amendment was proposed by Governor Obaldia, requiring licenses from the Government for short terms, and securing proprietors of land from loss and damage.
This Society held their May meeting on the 8th, at the residence of the Treasurer, Alex. J. Cotheal, Esq., Hon. George Folsom, the President, in the chair.

Letters.—The Corresponding Secretary, E. G. Squier, Esq., read a letter from Norton Shaw, Esq. Letters were also read from Judge Charles P. Avery, of Flint, Michigan, consenting to prepare a paper on the antiquities of that State, and sending a report of the Michigan Historical Society. From Lieutenant-Colonel Raasloff (the Danish minister), accompanying an old palm-leaf book from Tranquebar, a donation from Councillor Thomsen, Director of the Danish Museums. From Alexander S. Taylor, Esq., Monterey, California, to Mr. Cotheal, mentioning that he has obtained a grammar of the Nutsun language, and a large vocabulary of that California Indian tribe; also catechisms in languages spoken at the missions of Soledad and San Antonio. The first he sent to the Smithsonian Institute in 1856. The California Farmer commenced the publication of his series of articles on "Indianology" in February last.

Donations were received from Charles F. Loosey, Esq. (Austrian Consul-General), of the seven large volumes of the Imperial Royal Geographical Society (from 1857 to '59), and three of the Imperial Royal Geological Institution (from 1858 to '59), Dr. Weitenweber's pamphlets on Arabian Coffee, on the Life and Works of Dr. Mold, and on M. Ficiniius's De Vita Studiosorum.

From Mr. Figaniere (Portuguese minister), two numbers of the Bulletins and Annals of the Portuguese Ultramarine Council. From Rev. J. L. Wilson, his pamphlet on the Slave Trade, and The Israelite Indeed (monthly), from the editors.

The Palm-Leaf Book, sent by Councillor Thomsen, contains about 200 thin strips, 1 inch wide and 16½ long, laid upon each other, and fastened by two rods passing through them and also through two pieces of
split canes. They are neatly written on both sides in very small Tamil characters. A vote of thanks was passed to the donor.

Books Presented at the April Meeting.—Mr. Raasloff presented the following:


[Notices of these works, and also of the following, have been prepared for some future meeting of the Ethnological Society.]

The Journal of the Northern Branch of the Royal Asiatic Society, printed at Shanghai in 1859, and presented to this Society in April, by Mr. Folsom, contains very interesting articles:

1. On Formosa, by Mr. Swinhoe, British Consul at Amoy.
2. On the first course of Physical Lectures ever delivered in Japan by a foreigner. By Dr. Meerdervoort.
3. On Japanese Manners, Language, etc. By S. W. Williams, LL.D., Secretary of the American Legation, and a member of the Ethnological Society.
4. Musical Notation of the Chinese. By the Rev. Mr. Syle. The Chinese express notes by nine characters, written, like their ordinary words, in perpendicular columns downward. In alto is expressed by a slight dash at the end of the character.

Formosa.—Mr. Swinhoe, British Consul at Amoy, mentions that many Chinese, who reside on the coasts of Formosa, are remarkably hospitable and kind; while a very numerous race of cruel savages, inhabiting the mountains, are jealous and bloodthirsty. These often wear only a strip of cloth, but carry swords and fine matchlocks. There are some good roads, especially those leading to mines of coal and sulphur, which are worked by Chinese. Several villages were seen of "tamed savages," who are very peaceable and friendly. These people call a man Larrat, woman Turroogan, son Wannak, daughter Ree-a'h, water Lalom, head Ooroo, etc.

"These domesticated savages," says Mr. S., "are exceedingly civil and good-natured—far more so even than the Chinese, and showed us about their tree-ensconced residences. Their houses are built off the ground, on posts, and have boarded floors. The women are far better off than the wild, savage females, being neatly dressed, with ornamented head-dresses. There is a foreign trade with the wild people, who exchange rice for salt."
Curiosities from Micronesia.—Mr. Gulick, of the Union Seminary, presented, in the name of his brother, Dr. Gulick, of the Micronesian Mission, a heavy adze, neatly made of some very large sea-shell, with a wooden handle, for digging out canoes; and specimens of woven articles of dress, and ornaments of palm-leaf fiber. He gave very interesting particulars of the modes of manufacture in different groups of islands, contrasting the varieties of work and style, and showing the difference between these and the tapa cloths of Polynesia. A specimen of coarse tapa from Micronesia was strengthened by numerous long threads sewed through it. Mr. Gulick was requested to communicate in writing the new and interesting facts which he mentioned.

Micronesian Languages.—Reference was made to the recent publications by Dr. Gulick of "Notes on the Grammar of the Ponape Dialect of Micronesia," as one of those gratifying late examples of able, laborious, discriminating, analytical investigation of unwritten languages which do so much honor to certain scholars and missionaries, and open to the world surprising peculiarities, interesting in themselves, and in comparison with the most cultivated tongues of modern and ancient times. The Honolulu Friend, in exhibiting some of the delicate peculiarities in the speech of natives of Micronesian groups, declares that they differ among themselves so much that they are unintelligible to each other, and perhaps should be regarded as speaking, not dialects, but distinct languages.

Numerous Tumuli in Cuba First Reported by Mr. Squier.—Mr. Squier, who has recently returned from Cuba, read a notice of tumuli observed by him near the railroad from Havana to Cardenas, sometimes more than one hundred being in sight at once, amounting in all to thousands. They are of moderate size, and apparently sepulchral. He has taken steps to procure particular information regarding them, as they have never been noticed by any writer.
ANCIENT MOUNDS

IN

THE UNITED STATES.

THE GRAVE CREEK MOUND, VIRGINIA.

(From the Description by Henry R. Schoolcraft, Esq.)

EXTERIOR OF THE TUMULUS—ITS DIMENSIONS, STRUCTURE, AND GEOGRAPHICAL POSITION.

[They are numerous in some parts, especially in the valley of the Mississippi and its branches. Several thousands have been observed, and three hundred or more have been dug into. “The Monuments of the Mississippi Valley, by E. H. Davis and E. G. Squiers,” published in 1847 by the Smithsonian Institution, describes and depicts many of them, with the various objects found in them. There are several kinds. Most of the mounds are composed entirely of earth, apparently scraped up from the surrounding land. Some of the defensive works include several acres on commanding ground, with ditches, gateways, and interior walls. They were often covered with forests as old as those around them.]

"This antique pile of earth has been called, by way of pre-eminence, the Mammoth Mound. It is believed to be the largest structure of this kind, of undisputed factitious origin, in America, north of Mexico. Monk Hill, on the left bank of the Mississippi, in Illinois, is 600 yards in circumference, and 90 feet high; but this eminence, notwithstanding its regularity, is believed to be, in part, of geological formation. Mount Joliet, in the same State, is 550 yards in length, 75 in width, and 80 feet high, and of a regular ovate form; but this eminence has recently been found to be composed of a series of horizontal beds of small gravel, sand, and loam. The Blue Mound, in Wisconsin, is elevated 250 feet above the plain, and contains an area of 640 acres of land. But this, like the preceding, has no claims to be of artificial construction. The same remark may be made of the two great mounds, so called, above St. Louis, on the right bank of the Mississippi, which clearly belong to the boulder, or erratic block period, and are not the work of human hands.

"The Grave Creek Mound, on the contrary, satisfies the inquirer at once that it is a work of artificial construction. There are no evidences of geological action. It is a truncated cone, measuring some 900 yards in circumference at its base, which diminishes to 50 yards at the top. It has an elevation of 69 feet above the apex of the elevated plain on which it stands. It has been estimated to contain about 2,500 cubic yards of earth. It is situated on the highest part of the upper plain. Its base is
estimated to be about 70 feet above the summer level of the Ohio River, from the margin of which it is distant about one fourth of a mile. There is a wide and varied view from its summit of the channel of the river, the subjacent plains, and the river hills around it, to the north, the south, the east, and the west.

"The mode of its construction appears to have been by carrying earth in bags or vessels, from the plain, and emptying them out by hand. The earth is entirely made-earth, without the least appearance of stratification. It consists of black and yellow ferruginous sand, loam, and vegetable mold, similar in their elementary ingredients, in all respects, with the superior strata of the plain upon which the mound is seated. The removal of this earth appears to have been made in small portions, from several points, and at convenient intervals. There is no marked excavation, at or near its base, from which the materials may have been scooped up. The gulf, or cul de sac, on Little Grave Creek, locally referred to as the spot which supplied the earth, is too remote a locality for a people who had no beasts of burden. Besides, this singular cavity is evidently geological, and not the work of hands. There are no stones or boulders, large or small, in the earth composing the mound. Its structure, where laid open by excavation, exhibits, amid the yellow loam and sand, black carbonaceous waves and spots, irregularly disposed, as if these mottled appearances were due, in part, to decayed vegetation, or to incinerated matter.

"The men employed in the excavation found, after they had penetrated about eight feet in the first horizontal drift, blue spots of earth. On closer examination, these spots were found to consist of ashes and small bits of burned bones.

"A wooden structure at the top is designed to afford visitors an eligible view of the really fine surrounding scenery. All portions of the sides of the mound are still covered with the natural growth of the forest, which adds much to its picturesque appearance, while these ancient trees constitute an important link in its chronology. The principal growth of forest trees, noticed by me, were black and white oak, beech, black walnut, rock maple, and the three-thorned acacia, or honey-locust. A black oak, standing on its northeast side, I judged to be thirty inches in diameter. There were others of but little less size, and many from twelve to sixteen inches in diameter. The most dense growth is on the southern side. The mound has evidently once been higher; its figure has also been more regular."

[TO BE CONTINUED.]