

CERTAIN CHARACTERISTICS PERTAINING TO ANCIENT MAN IN MICHIGAN.

BY HENRY GILLMAN.

In a former paper, entitled "The Moundbuilders and Platycnemism in Michigan," and which was printed in the Smithsonian Report for 1873, reference was made to the discovery by the writer of perforated humeri in the mounds on the Detroit and Rouge Rivers, Michigan. In a subsequent paper* occasion has been taken to give some further statements in regard to this peculiarity; its being a characteristic of platycnemie man, as thus absolutely established, being dwelt on as of importance.

The humeri from these mounds presenting the curious feature referred to I have calculated as being, at the least, 50 per cent. of the entire; which is of much interest taken in connection with the fact of the extraordinary development of platycnemism afforded from the same source. The perforation is considered to belong to only 31 per cent. of the humeri from the mounds in other parts of the country, and, as has been stated, is a Simian characteristic, which, significantly enough, is found to pertain in the largest degree to the lower races of man, while it is very rare or almost absent in the Caucasian.

The term "perforation" of the humerus, as applied to this form of arm-bone, in which the fossæ at the lower end are found to communicate, is certainly an unfortunate one, a misnomer, and, as suggestive of artificial origin, calculated to mislead, though it is not easy to propose a substitute.

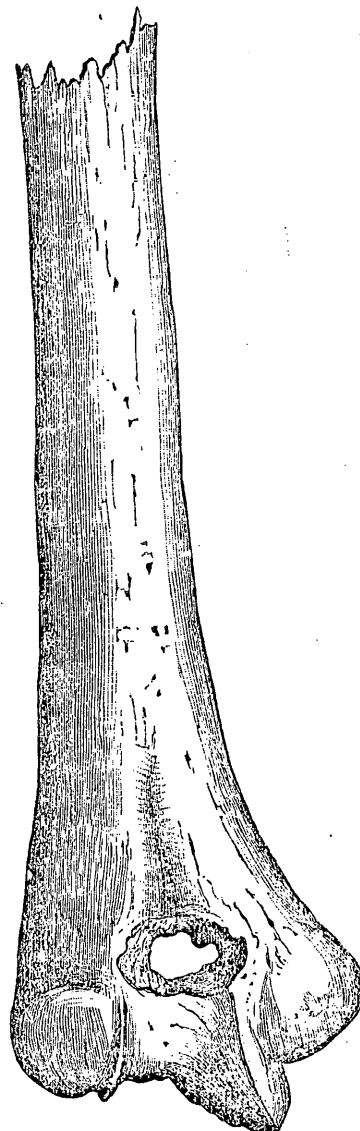
In this connection I have thought it may prove of interest to figure some of these specimens found by me at the Rouge River; and in the accompanying cut (Fig. 1) I give a representation of the lower extremity of a perforated left humerus from the Great Mound there, to which I have so often had occasion to refer. It is of full size, and the posterior surface is shown.

This is a good example of the peculiarity, the opening being large and strongly defined; and though the bone is apparently of great antiquity and much decayed, the proximal end having totally disappeared, the articular surface is well preserved all along the outline of the aper-

ture, clearly defining its nature, and establishing the genuineness of the specimen as an instance of the characteristic.

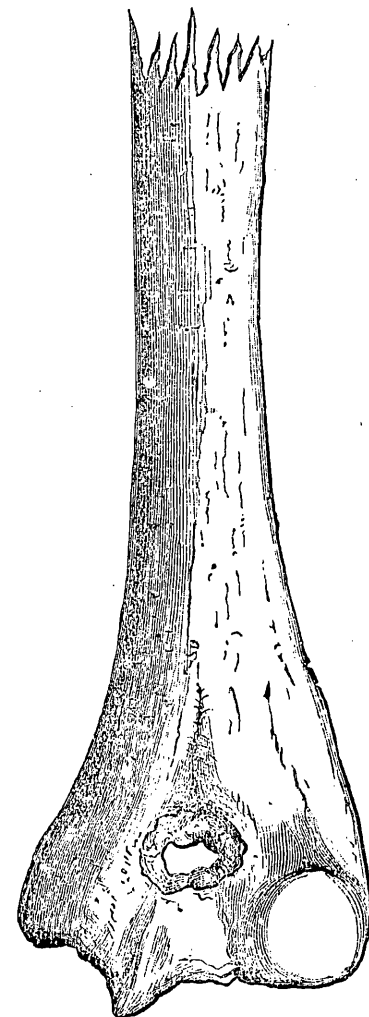
In Fig. 2 is illustrated the inferior extremity of a right humerus from the same mound. In this, the opening, though smaller, is as well developed as in the first example, and the bone, though of about the same

FIG. 1.



Inferior extremity of perforated left humerus, from Great Mound, Rouge River, Michigan. Posterior surface; full size.

FIG. 2.



Inferior extremity of perforated right humerus from Great Mound, Rouge River, Michigan. Posterior surface; full size.

* "The Ancient Men of the Great Lakes," by Henry Gillman. Read before the Detroit meeting of the American Association for the Advancement of Science, August 16, 1875. See note, "Perforation of the Humerus conjoined with Platycnemism," American Naturalist, vol. ix, p. 427.

age and greatly decayed, (being equally defective as to the loss of the upper end,) from the various evidences presented by it apparently belonged to a different individual.

It is remarkable that so many of the humeri from this mound are fractured at or toward the middle of the shaft, the proximal end being wanting. An entire humerus is extremely rare, and the upper end is seldom found. This cannot in every instance be due to decay. Such cumulative testimony can hardly be relegated to the category of mere coincidence or accident. But as to whether it may point to cannibal propensities, or some superstitious rite or custom, perhaps connected with the sepulture of the deceased, I am unable at present to determine.

As I have elsewhere stated, "I also find in the Rouge Mound transitional states, if I may so call them; that is, instances in which the communication between the fossæ is not quite completed, the dividing wall being reduced in some cases to a very thin partition, almost transparent. Even where the perforation is accomplished, there is a great variation in the size and shape of the aperture." I think I may safely say that the more marked cases of the peculiarity are afforded by the more ancient of the humeri; while the instances in which the opening is greatly reduced in size, or the partition separating the fossæ is more or less strongly defined, are witnessed chiefly in the more modern of the bones; thus indicating the gradual elimination of a characteristic of, I believe, unquestionably degraded affinities.

It might be of importance could this singular characteristic be traced to its origin. The predominance of the perforation (associated with other degraded traits) in the chimpanzee and gorilla, as well as in the lower races of mankind, would suggest, if not a common ancestry in the remote past, at least some predisposing cause common to both the ape and the savage, and this connected with the use of the arm.

For example, man, in a barbarous state, has, as is well known, under certain circumstances largely the habit of "going on all fours." In the adult of the higher races, this is never seen. (It is needless to refer to the suggestiveness of the creeping propensity as displayed in the infant offspring of even civilized man.) The invention of various mechanical appliances forbid, and cause to be abandoned forever, the grosser uses to which this noble member of the body had been formerly applied; so that at length, with the ameliorating influences of civilization, a more highly and finely educated hand and arm are produced, with corresponding development.

But, perhaps, it may be considered that (without implying such were wanting) it is unnecessary in this case to insist on any special cause or causes; that the gradual disappearance of the peculiarity under consideration is only part and parcel of the general grand evolution, that moving onward and upward, in which, as the great poet of our day has expressed it, we

"Let the ape and tiger die."

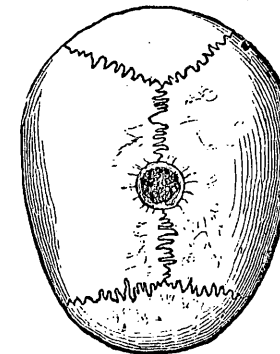
In here presenting some illustrations of the artificially-perforated skulls, of which I gave an account in my paper on "The Ancient Men of the Great Lakes," and from which a notice was printed in the "American Naturalist" for August, 1875, I shall not scruple to avail myself of a part of the material there used, adding such further information as has since come to my knowledge.

This artificial perforation of the top of the cranium, made after death, seems to me to betoken a singular practice connected with the burial-ceremonies of the aboriginal inhabitants of this country, and of which I can find nothing on record in the books, notwithstanding the remarkable nature of the custom and the indubitable marks which would remain to testify in instances where it had been adhered to.

The circular aperture, evidently made by boring with a rude (probably stone) implement, varies in size, in some skulls having a diameter of one-third, in others one-half or three-quarters of an inch or more, and beveled or flaring at the surface. It is invariably placed in a central position at the vertex of the skull.

The first instance of its being brought to my knowledge was in the year 1869, when I took from the Great Mound on the Rouge River two fragments of crania, each of which exhibited this perforation. A skull recently presented to the museum of our scientific association by Mr. A. C. Davis, and which was exhumed from a mound on Sable River,

FIG. 3.



Perforated skull from mound at Sable River, Michigan, (Lake Huron,) one-fourth size.

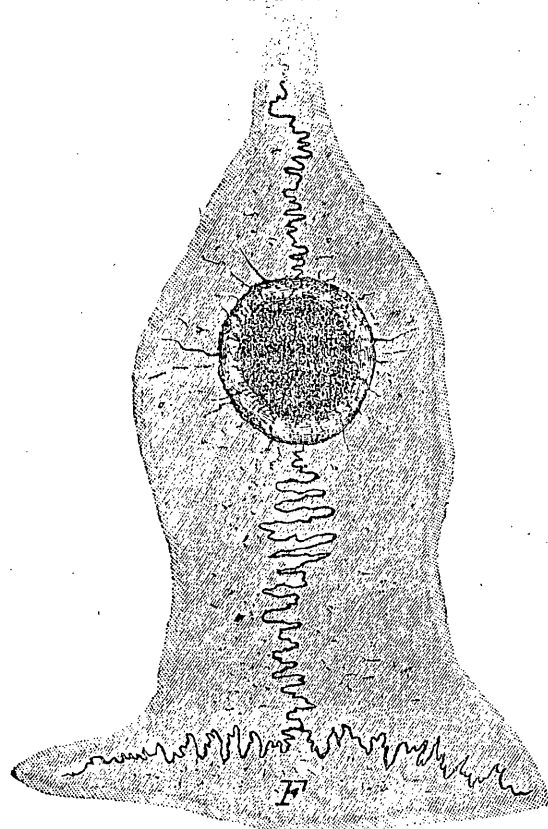
Lake Huron, Michigan, also has this mark. From ten to fifteen skulls were taken from this same mound, all being similarly perforated, and there being, as I am informed, no other remains interred with them.

During last summer (1874) in some further excavations made in the Great Mound at the Rouge River, Michigan, among other relics exhumed were eight crania, two of which had this aperture. Of the remaining bones pertaining to the two skulls in question, I specially noticed that many were wanting, and that those present were heaped *en masse* and not in the usual manner of burial, seeming to imply that they were

inferred subsequently to being denuded of the flesh and the other soft parts of the body.

Besides the foregoing instances of this curious custom which have been brought immediately to my knowledge, I have since been informed of a skull having been found at Saginaw, Mich., which presented the peculiarity; but in this case there were three perforations, arranged triangularly—coconut fashion.

FIG. 4.



Perforation, Sable River skull, full size. F, frontal.

All inquiry which I had made of learned societies or individuals in regard to this observance elicited an utter disclaiming of all knowledge on the subject. The two largest collections in ethnology in this country, the Smithsonian Institution and the Peabody Museum, contain no evidence of it. Prof. Joseph Henry, in replying to my queries, stated that the only information he had procured in relation to perforated skulls was the following note from Professor Mason, of Columbian College, Washington: "It is an interesting coincidence that the head-hunting Dyaks of Borneo have a house in the center of their village, in an upper story of which they keep the heads which they capture suspended by a

string which passes through a perforation in the top of the skull." [This custom of the Dyaks is, I believe, no longer adhered to, having been abandoned shortly after their becoming semi-civilized.]

The late Professor Wyman, in a letter written me the day before his death, emphatically states that the fact of this perforation was new to him, adding: "There is nothing of the kind in any of our skulls in the museum, nor have I seen it mentioned as existing elsewhere."

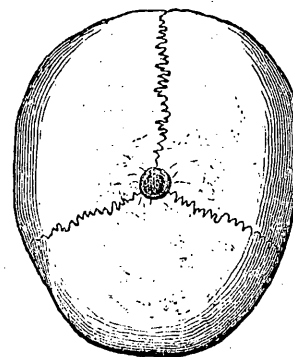
A friend has learned for me that an educated Indian makes the statement, in reply to our inquiry, that he remembers hearing his father say that formerly the heads of distinguished men and chiefs were honored by this mode after death. I mention this for what it may be worth.

The skull from the Sable River mound (Fig. 3) is of a dark color, and its latitudinal or cephalic index, 0.770, would place it within the orthocephalic or medium range, the altitudinal index being inferior, or exactly 0.745. The foramen magnum approaches a central position, its index being 0.445. Fig. 4 shows the perforation of the skull, full size.

The two perfect specimens from the Rouge River are decidedly brachycephalic crania, the cephalic indices being respectively 0.822 and 0.853, the altitudinal indices being inferior, or respectively 0.733 and 0.828, while the indices of the foramen magnum are, in the one case, 0.465, and, in the other, 0.397.

In Fig. 5 is given the first mentioned of these crania; Fig. 6 ex-

FIG. 5.



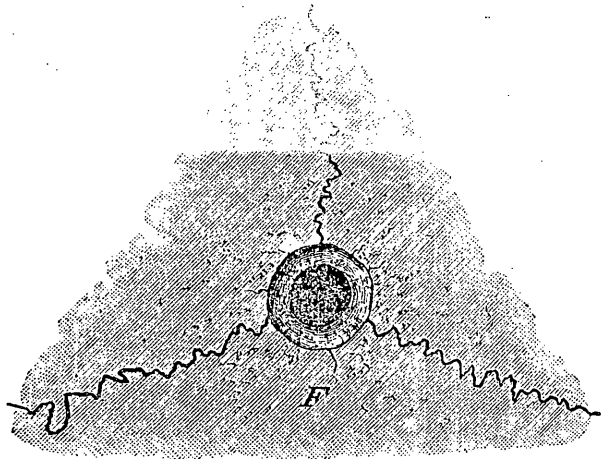
Artificially-perforated skull from Great Mound, Rouge River, Michigan, (No. 1,) one-fourth size.

hibiting its perforation of the actual size, from which it will be seen that the incision has been made at the exact junction of the sutures, which, singularly enough in this case, occupies a central vertical position, as do the perforations in every instance which has come to my knowledge.

That the position of the junction did not influence, much less control, the location of the perforation, is evident, however; for in the other Rouge River skull, (Fig. 7,) the incision is, as usual, exactly centered, though the junction of the sutures occurs but 0.2 of an inch in advance of the

selected position. This constantly recurring central location of the hole would apparently imply that the suspension of the skull was, at least,

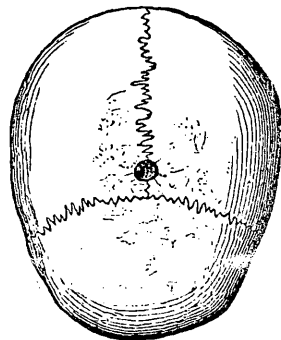
FIG. 6.



Perforation, Rouge River skull, (No. 1,) full size. F, frontal.

one of the objects sought by this observance, the even balance of the head when thus treated being, of course, most desirable. This latter skull presents the smallest of the perforations which I have as yet seen; this as exhibited in Fig. 8 is but little more than one-third of an inch in diameter.

FIG. 7.



Artificially-perforated skull from Great Mound, Rouge River, Michigan, (No. 6,) one-fourth size.

The numbers (No. 1, No. 6) appended to these figures refer to the numerical order of these skulls in the "Table giving the dimensions of crania from the Great Mound at the Rouge River," and which forms a part of the paper to which I have already referred. They are used in this connection for the convenience of those who shall have access to the Report of the American Association for 1875.

And here I wish to remark that but two rejoinders were elicited by my notice on "The Artificial Perforation of the Cranium" in the American Naturalist. One of these was from Dr. Ford, who subsequently kindly forwarded for inspection a perforated skull, (Fig. 9,) the only one

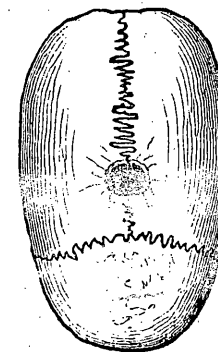
FIG. 8.



Perforation, Rouge River skull, (No. 6,) full size. F, frontal.

in the medical museum at Ann Arbor. The specimen was taken from a mound at Devil River, Michigan, by Rev. Dr. Pilcher. This peculiar keeled cranium, of which only the upper portions of the frontal and parietals remain, presents, I find, the extraordinarily low cephalic index of 0.557. In obtaining this, I have allowed only 0.25 of an inch for the additional

FIG. 9.

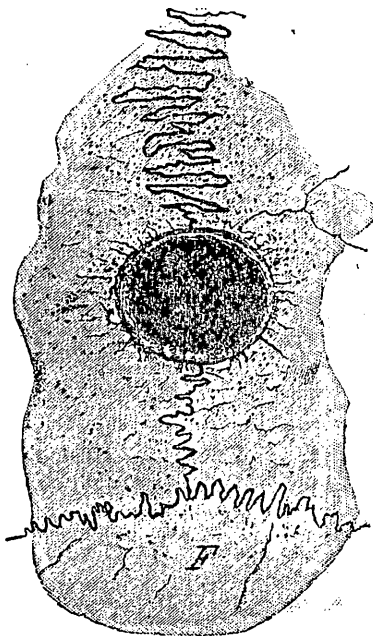


Perforated skull from mound at Devil River, Michigan, (Lake Huron,) one-fourth size.

length which the occipital (that bone being totally wanting) would have given. This probably gives the quantity rather under than over the true length. The breadth is barely 4.07 inches. The perforation, shown at full size in Fig. 10, is elliptical in form, (the diameters 0.8 x 0.7;) the major diameter running right and left, or latitudinally, as if to heighten the narrow aspect of the skull.

So far, all that I had learned directly or indirectly in regard to this singular custom confined it within the limits of the State of Michigan; But lately I have received the second rejoinder, called forth by my note in the *Naturalist*. This is a letter from the Rev. Stephen Bowers, dated Santa Barbara, Cal, September 6, 1875. The writer proceeds to say

FIG. 10.



Perforation, Devil River skull, full size. F, frontal.

that he had read my article on perforated skulls with interest; that during the past four months he had exhumed from 500 to 1,000 skeletons, and found but one such as I describe. It was that of an old man, and the hole, about one-third of an inch in diameter, was in the top of the skull. It was the only skeleton found in that place. In fact, from the description, it was clearly an additional example of the custom, and one of much importance, as so widely extending the area in which the practice was observed, if we may consider a single instance sufficient proof of this. The skull was, however, unfortunately broken by accident, and destroyed.

Since sending my notice to the *Naturalist* in April last, (printed August, 1875,) my attention has been called to a note in *Harper's Magazine* for May, 1875, and issued since my remarks were written, which states that "a communication made by Dr. Prunières (de Marvejols) before the meeting of the French Association for the Advancement of Science, at Lille, treated of the curious artificial perforations common among the Neolithic skulls of the Lozère. These perforations vary in

the pieces exhibited from an inch to an inch and a quarter in diameter. Near the perforated skulls were found rings of cranial bone, which seemed to be designed as amulets. These were evidently worked with flint tools. The men of the polished stone age practiced trepanning; for if some of the skulls appear to have been perforated after death, others were treated during life, and the patients had lived for years afterward. One skull presented three perforations, made near each other on a line fore and aft. There is no distinction of age, the excisions occurring upon infants as well as upon adults. The motive of this strange custom was either medical or superstitious. They probably attributed disease to supernatural agencies; the evil spirit escaping through the opening made by the sorcerer, who wrapped the operation in a shroud of mystery by preserving the detached piece as a precious relic. From the appearance of these facts reported by the learned archæologist of Lozère, he said that a new light had been shed upon the intellectual state of man in the polished stone age. It explained his religious conceptions, and confirmed the discovery of the figure of a goddess in the caverns of Baye, (Marne.) M. Broca remarked that perforated skulls were also found at the last-named station. Among the skulls dug up by General Faidherbe were found two in the same condition. Dr. Chil, from the Canary Islands, said that perforated skulls had been found in the ancient burial-places of his country. Notice was also called to an example from the Grotto of Lorde, upon which M. Hamy and M. Chaplain-Duparc gave some interesting details. A similarly perforated or trepanned skull was found by Mr. E. G. Squier among some ancient Peruvian crania collected by him."

I have not seen the original report; but the concluding remark on the Peruvian skull removes some doubt as to the kind of perforation described. In the well-known instance discovered by Mr. Squier, the character and the meaning of the operation (trepanning, the excision having been made during the lifetime of the individual) are so evident, and the shape (rectangular) and the position (on the left side of the frontal bone) so different from that of the perforations which I have described in the crania from Michigan, that I never for a moment associated them, and therefore made no reference to the Peruvian skull. The same view, we may presume, was taken by the learned persons to whom I referred my discoveries, who could scarcely be supposed ignorant of the case in question.

I find no positive statement as to the position of the perforations mentioned at the meeting of the French association, but judge from certain remarks that (again unlike our instances from Michigan) there was no constant position observed. In certain cases of trepanning, the position, of course, must have varied with the location of the injury to be operated on.

In short, the perforation which I find in Michigan crania is exceptional, rarely present; it is simply a circular hole about half an inch, more or

... in diameter, ... invariably in the ... of adults, ... death; while those cases ... through only ... brought to notice, are quite numerous, and appear to be what may be more correctly termed trepanning; that the part of the skull operated on was removed entire, and all ages are represented.

It is suggested itself ... the superstition of the modern North American Indian ... being two souls, one of which visits the body after death, may have ... tendency in this direction. We know that the necklike coverings of ... graves, made of wood or bark, always have a perforation at one extremity for the supposed entrance and egress of the soul. But the question arises, Why, then, is not the perforation of the skull constant, or at least more frequent, in our mounds?

The accompanying table gives the dimensions of the perforated skulls which have come before me, and to which special reference has been made in this paper:

Table giving dimensions, &c., of perforated crania from mounds in Michigan.

Locality.	Capacity.*	Length.	Breadth.	Height.	Breadth of frontal.	Latitudinal index.	Altitudinal index.	Index of foramen magnum.
Rouge River, Michigan, (No. 1) ...	18.65	7.30	6.00	5.35	4.02	0.822	0.733	0.465
Rouge River, Michigan, (No. 6) ...	18.33	6.80	5.80	5.63	4.63	0.853	0.828	0.397
Sable River, Michigan ...	18.06	7.18	5.53	5.35	4.31	0.778	0.745	0.445
Devil River, Michigan ...	7.30	4.07	...	...	4.52	0.557	...	...

Locality.	Frontal arch.	Parietal arch.	Occipital arch.	Longitudinal arch.	Length of frontal.	Length of parietal.	Length of occipital.	Zygomatic diameter.	Circumference.
Rouge River, Michigan, (No. 1) ...	12.15	12.00	11.65	14.60	5.50	4.40	4.10	5.60	19.00
Rouge River, Michigan, (No. 6) ...	11.10	13.15	11.00	14.85	5.40	4.60	4.85	5.60	24.40
Sable River, Michigan ...	11.50	13.10	10.60	14.75	5.25	4.30	5.20	5.00	20.30
Devil River, Michigan ...	...	...	...	...	5.10	5.00	...	...	...

* Only comparative. Time did not permit to obtain the exact (absolute) capacity.

In this connection, and in concluding, I have considered worthy of being mentioned the fragment of carved bone represented in Fig. 11, a side-view of which is seen in Fig. 12. This was lately taken by me from the Great Mound at the Rouge River, and it is the only relic of the kind which I have seen exhumed from the mounds in Michigan. Though but a small fragment remains, it is sufficient to prove the workmanship to have been of no mean order and of remarkably neat finish, surpris-

ingly so when we consider the rude implements which, in all probability, were available for its manufacture. The illustration scarcely

Fig. 11.



Carved bone (fragment) from Great Mound, Rouge River, Michigan. Full size.

Fig. 12.



Fig. 13.



does it justice. The front or carved surface is convex, as shown in Fig. 13, while the back is flat and perfectly plain and smooth. In its perfect state, it was probably intended to be worn as an ornament, the remains of a finely-drilled hole at one side appearing to have been one of the means for its attachment to the person.