

Vol. 8.

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"In determining altitudes by the barometer, it is best to make the observations at the upper and lower stations at one and the same time as nearly as possible; but great care must be taken that the two barometers and also the thermometers are alike; that is, they should precisely agree when together in all states of the air. It is also necessary that the specific gravity of the mercury be well ascertained, because it is not equally pure in all barometers, which is the principal reason why different results are frequently obtained from observations made with different barometers at the same stations. Other circumstances however, not generally known, may contribute to such disagreement."

Thus Mr. Ramsden proved by experiment, that the quicksilver in barometer tubes made of different sorts of glass, will be sustained at different heights.*

Pam 56-1467

ART. III.—*Description of Ancient Remains, Animal Mounds, and Embankments, principally in the counties of Grant, Iowa, and Richland, in Wisconsin Territory*; by S. TAYLOR—with four plates.

FEW subjects have of late years more engaged the minds of scientific antiquaries, than the mounds in the valley of the Mississippi. It is in reality one fraught with much interest, and from which the veil of obscurity has never yet been drawn; and unless future investigations may illustrate facts which will aid the curious in tracing these antiquities to their origin, it is feared that the mystery will ever remain unsolved.

In the Holy Scriptures we find but a single passage wherein works in the form of mounds are spoken of, which passage instructed the wandering Israelites to establish mounds, in order to guide them on their return to the land of their nativity. The words referred to may be found in the twenty first verse of the thirty first chapter of Jeremiah, which are as follows: "Set thee up way-marks, make thee high heaps: set thy heart toward the high-way, *even* the way *which* thou wentest: turn again, O virgin of Israel, turn again to these thy cities." This passage, it would seem, strengthens the conjecture that the aborigines of

* It is usual at present, in accurate meteorological records, to note the difference of height between barometers of flint and hard glass. See the tables of the Royal Society.

America are descendants from the Israelites, and probably from the lost ten tribes. Historians also inform us that tumuli, similar to those found in this region, were constructed by some nations of antiquity, among whom were the Scythians and Tartars. Could we be led to believe that North America was originally peopled by these wandering hordes, we might safely conjecture the origin of the myriads of various formed monuments of antiquity throughout the "great west." One matter, however, at the threshold of investigation, casts an almost insuperable difficulty in our way; and this is, the fact of the non-existence of tradition among the present generation of the Indian race, by which we can have the least hope of unraveling the mystery. This matter I have made a subject of inquiry whenever meeting with an intelligent, communicative Indian, and I have found that the various tribes which inhabit this section of country, express total ignorance on the subject of the origin of the mounds; some however are impressed with a belief, founded upon their superstitious notions, that those in the form of animals were constructed by the "great Manitou"—that they are indicative of plentiful supplies of game in the world of spirits; they are, therefore, looked upon with reverence, and are seldom molested by them. Tribes and even bands differ in their conjectures with regard to them. In conversing with an intelligent French gentleman, who, as a trader, resided near the Pembina (Selkirk) settlements on the Red River of the north, upon the subject of the antiquities of that region, he related a circumstance, which, it would seem, throws a glimmering light upon the origin of one class of these ancient works. After the termination of a battle between the Chippeways and Sioux Indians, (in which in self-defence it became necessary for him to participate,) the women and children of the former, who were the victorious party, in celebrating the achievement, created a mound, from the adjacent surface, about five feet in height, and in diameter eight or ten feet, upon the summit of which a pole ten or twelve feet in length was planted, and to this pole tufts of grass, indicating the number of scalps and other trophies achieved, were tied; around this mound, the warriors, with their usual ceremonies, indulged in mirth and exultations over the scalps of their ill-fated foes.

In this territory we find these works of antiquity in the dense forest, giving nurture to the largest trees, which measure in some instances three feet in diameter, and are frequently based upon the

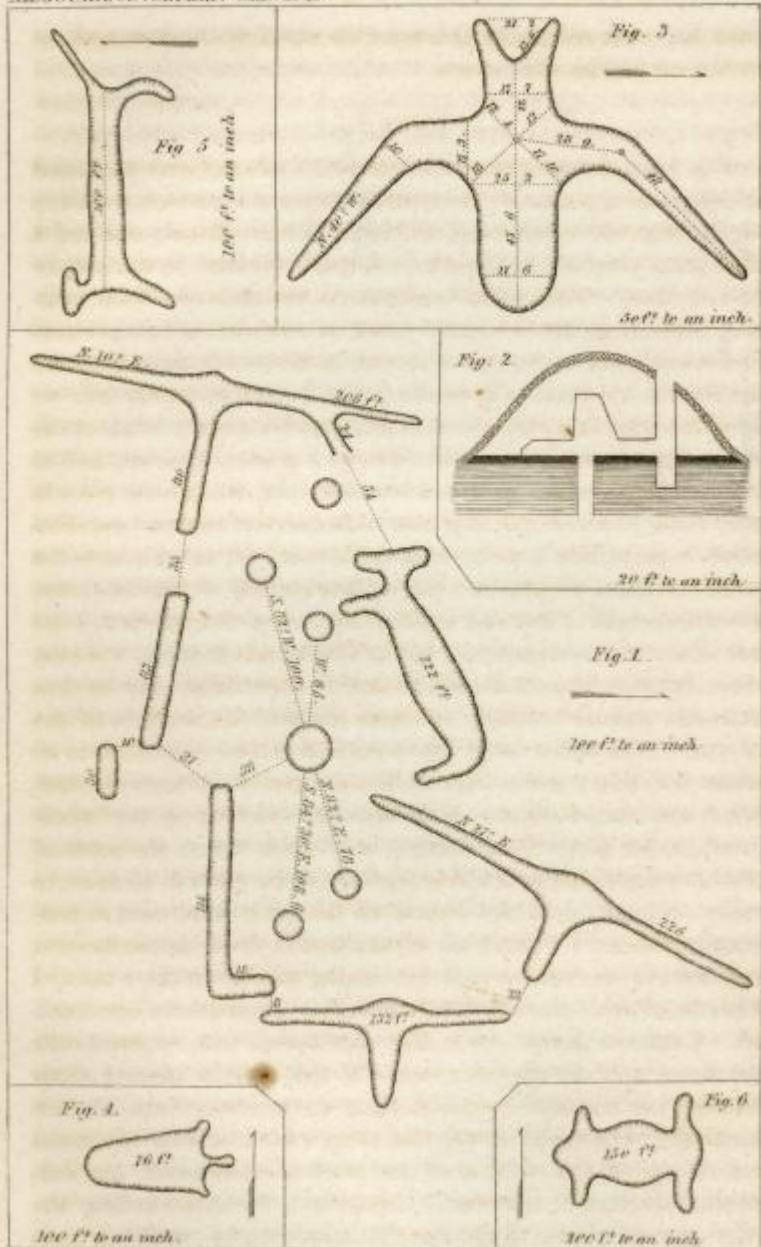
summit of some of these mounds, while upon others their branchless trunks lie prostrate and decaying, impressing upon the mind of the observer the vanity of the shadows which the people of an age long gone by had pursued. We also find them in the sparsely timbered regions, as well as upon the undulating prairie plains, principally in the vicinity of large water-courses, above the influence of high freshets or inundations. It is a remarkable fact, that they are seldom found upon hilly or upon sterile lands. They are also, so far as has come under my observation, confined to certain limits, seemingly in the form of the letter T, beginning at Prairie du Chien, on the Mississippi River, and extending eastwardly, embracing the remains along the Wisconsin River, Blue Mounds, and the Four Lakes, and continuing as far as Rock River, to where the top line of the T, extending from Green Bay, by the way of Fox and Rock Rivers, to the Grand de Tour, in Illinois, touches the upright part of the letter; these strips of country are in width in proportion to their length, covering the ancient works at Butte des Morts, Aztalan, Grand de Tour, and all intervening points. There are, however, many isolated groups in other parts of this region; for instance, those northwest of and in the vicinity of Galena, Illinois. Although their general position seems to be as curiously planned as the structures themselves individually are, it can be readily accounted for from the fact, as before stated, that they generally exist in the vicinity of large water-courses and lakes; and the main streams of the Fox River, of Green Bay, of Rock and Wisconsin Rivers, have their courses in the shape of the letter above mentioned.

May not those works which are found in the forests, have been constructed when the lands upon which they exist were yet prairie? That this region was once wholly submerged, as the sedimentary formations amply demonstrate, admits not of a doubt; subsequent to the subsidence of the waters then, and anterior to the occupancy of these lands by the primitive wanderers who constructed these works, some period must have elapsed; could the era when the waters subsided be traced by the fossils existing in the rock, the era of these ancient remains might be, possibly, conjectured.* We are all agreed, however, upon their re-

* It cannot be supposed that our correspondent would unite two periods so remote as the geological eras of the fossiliferous rocks of Wisconsin and the sedimentary deposits which cover them, both of which must be considered as very long anterior to the appearance of man on our planet.—Eds.

mote antiquity, although they seem to us, at this time, not more ancient than they appeared to others in this region a century and a half ago.

Many who have written upon this subject, view these antiquities collectively as cemeteries; they suppose that when a location for sepulchral purposes was selected, the grounds in the vicinity were held sacred; that in constructing these tumuli, the material was brought from a distance, or collected in such a manner as to exhibit no indications of the adjacent soil having been removed; and as from the nature of the structure a constant disintegration took place, posterity were enjoined, as they wandered to and fro, to add earth to the heap;—and they believe that by such means these monuments gradually rose into existence. It is very evident that these works *were* heaped up, and by a race that has long since passed away; as to the material of which they are constructed having been brought from a distance, we have no other testimony than conjecture. From the excavations around and in the vicinity of many of them, more especially those in the form of the cross, I am persuaded that the material of which they are composed was obtained from the ground adjacent to them; while in the vicinity of those of other forms, the surface does not appear as though the earth of which they were constructed had been taken therefrom; so that the conjecture appears plausible, that some of these works were heaped up with accumulated material brought from a distance: it is upon dark and mysterious conjecture alone, however, that we ground our opinions. It is true that many of these works are now used by the Indians as burial places; that when they are selected for this purpose, the corpse, after the manner of some tribes, is inhumed in a sitting posture, enveloped in a blanket, accompanied with all its paraphernalia, and as a protection from the ravages of wolves or other rapacious animals, the grave is enclosed with pickets meeting over the centre; (for sketch of Indian tumulus, see Plate II, fig. 2.) Within the enclosure may be seen at times a supply of tobacco and some weapon of defence, and in some instances an ear of corn or other provisions are placed upon the grave! At the death of a distinguished chief or brave, as a token of the esteem in which he was held, at one end of the grave a post is planted, to which a white flag is appended; upon this post, stripped of its bark, the survivors



inscribe, with red paint, the valor or worth of the deceased, in rude hieroglyphic characters.

PLATE V.

Fig. 1 represents a group of earth-works, which I have presumed to designate as a *citadel*; it is situated upon section two, township eight, near the north bank of the Wisconsin River, one and a half miles west of the fourth principal meridian, in the county of Richland. The citadel is singularly planned; the walls comprise embankments of various forms, so arranged as to leave several openings or sally ports, guarded, however, by mounds in the interior; it occupies a prominent level space of about half an acre, the ground to the north, south, and westward, without the embankments for some yards, having a gradual descent, and to the eastward spreading into a beautiful plateau, which gives to the whole structure the imposing appearance of having been constructed as a place of refuge; upon the plateau, as well as to the southward, are numerous other embankments of various forms, the dimensions of some of which, they being disconnected, I did not take; to the westward, within four hundred yards, viewing them from the large or central mound in the citadel, may be seen at least a hundred similar to those forming the outlines of the citadel. The elevation of these embankments, generally, is no more than thirty inches, and of the lesser mounds twenty inches, while the altitude of the large mound, overlooking the whole group, is ten feet. The original sod, upon which the *walls* of the citadel rest, as well as the surface of the ground adjacent to many of them, does not appear as though it was used in constructing them. I made no excavations in these embankments, but from an examination of the central mound in the citadel, I have been led to the conclusion that they are similarly constructed. I am not borne out in this conclusion with regard to the construction of all the outer walls of the citadel; around those forming the east and northeast sides, excavations, from whence earth had been removed, are plainly indicated, so that the material, of which this portion of the work is constructed, was evidently obtained immediately adjacent. Notwithstanding the rank growth of vegetation upon all these works, and their having, in all probability, mouldered down from the original height

to their present level, the angles and terminations are quite visible; near the northwest angle of the citadel, however, part of the embankment seems to have been destroyed, although it can be traced some distance toward the head of the animal, represented as enclosing the northern side of the citadel.

Fig. 2 is a section of the mound above referred to, showing the manner in which it was examined, as well as the connection of the superincumbent stratum of sod, with that of the original upon which the mound is based. In the examination of this mound, as well as in the measurement of some of the embankments bounding the north side of the citadel, I am indebted to the kindly assistance of James T. Hodge, Esq. of Plymouth, Mass., a gentleman favorably known as having been a member of the geological corps of the states of Maine and Pennsylvania. Mr. H. also visited with me many of the figures noticed in this article. In order effectually to examine the construction of this mound, a shaft, about midway between top and bottom, of sufficient dimensions to remove the earth conveniently, was sunk; in sinking to the depth of eight feet, we reached the original sod, which here assumes a different character from that coating the mound and the adjacent surface, being a hard and compact substance, denominated "hard-pan," caused, no doubt, from the pressure of the immense weight of earth upon it for centuries. The superincumbent mass, being a bed of ferruginous sand, having no appearance of stratification, and being free from admixture, the presumption is, that this mound was *not* constructed, as suggested, by small contributions, but was heaped up in the progress of construction to its completion without intermission. Continuing the shaft through the original sod, (which measures here six inches in thickness,) three feet farther, we found the substratum to be composed of alternating layers of ferruginous earth and sand. Having now sunk the shaft eleven feet from the surface, to remove the earth without a windlass became too laborious; we then, commencing above the hard-pan, penetrated the mound westwardly fourteen feet, being some distance beyond the centre, conveying the excavated earth through the shaft to the surface. Directly under the centre of the mound, in the drift, we sunk another shaft five feet in depth; the substratum here compares with that in the first shaft. Having now found much difficulty in removing the excavated earth, our drift being partially filled, we con-

cluded, before we abandoned the examination, to oust a badger, which we had reason to believe had burrowed into the top of the mound, such places being favorable resorts for these animals. We found but little difficulty here in excavating the earth; it came down in masses, completely filling the last shaft, as well as the drift, leaving for us but a small aperture to make our egress. Having now thoroughly and satisfactorily examined the structure of the mound, which required the labor of two days, finding nothing of a curious nature in it, and feeling our position under this mass of arenaceous earth, completely hollowed out as it was, rather perilous, we made our way to the surface, which we reached in safety.

Fig. 3 I have designated the *horned bird* in my field-book, in order to distinguish it from others; its location is upon the east bank of Blue River, upon section sixteen, in township eight, of range one, west, in the county of Grant, where an extensive group of many hundreds of various forms may be seen. The numerical figures upon the drawing indicate its dimensions; the elevation of the figure at the breast is three feet, gradually diminishing toward the extremities of the wings, horns, and trunk, until they all, in a measure, become blended with the general surface. Bearings, east and west, with the head to the westward.

Fig. 4 approaches nearer to the form of the "turtle," so frequently spoken of by writers on the antiquities of the west, than any of the earth-works which have come under my notice in this region. Having searched in vain for a figure which, with a little stretch of the imagination, might be construed into the form of a tortoise, I have concluded that figures such as the one here represented, may have been by others styled the *turtle*. Figures of this description are by no means scarce in this region; the location of this one is within two hundred yards north-westwardly of the citadel represented in fig. 1; its length from the tip of the nose to its posterior extremity is seventy six feet, where in width it is eighteen feet, and over the projections representing claws, it is thirty seven feet; the greatest elevation near the junction of the neck is thirty inches, and at the narrow end fifteen inches; while the head, neck, and claws, are only nine inches. The whole figure, having a permanent coat of sward upon it, has retained its original shape in great perfection. Bearings, east and west, the head to the eastward.

Fig. 5 seems to have been intended as a representation of some fleet animal, perhaps the deer or the elk; the antlers, however, seem shortened; the head, neck, and tail, are erect, as though in the act of running. This figure is situated within a few feet of the river, and to the southward of the *citadel*; its elevation is about eighteen inches, the length of the body is one hundred feet, and averages in width twelve feet. Bearings, east and west; the head to the westward, and the legs projecting southward.

Fig. 6 is an embankment, situated upon the north bank of the Wisconsin River, and *east* of the fourth principal meridian; it resembles very closely the form of the frog, for which animal it was probably constructed; there are others adjacent to it, of a similar shape, as well as several in the form of a cross, mammillary mounds, and parallelograms. The dimensions of this huge figure, being in length one hundred and fifty feet, may be ascertained by reference to the scale upon which it is drawn; its elevation above the general surface is three feet. Bearings, east and west, the head to the westward.

PLATE VI.

Fig. 1. Among the various animal-shaped works of antiquity, in this region, those in the form of the human species are numerous. This figure forms one of an extensive group of these works, of various shapes, situated upon section thirty five, in township nine of range one, west of the fourth meridian, and in the margin of the forest, extending into it, and having large trees growing upon it.* It is truly a giant, and measures, from the extremity of one arm over the breast to that of the other, as will be seen by the measurements noted upon the figure, two hundred and seventy nine feet and eight inches, and from the top of the head to the end of the trunk, one hundred and eleven feet and three inches; over the hips twenty eight feet; its legs in length are fifty four feet and ten inches; the shoulders, head, and breast, are elevated four feet above the adjacent surface; from thence to the extremities of the limbs the

* The arrow accompanying this, as well as all other figures in the drawings, indicates the cardinal points. In copying many of these figures upon the crowded plates, in order to place them in a more favorable position, I have deviated from the usual mode of drawing; this will account for what might perhaps be otherwise looked upon as an error.

Fig. 7.



50 ft to an inch.

Fig. 6.

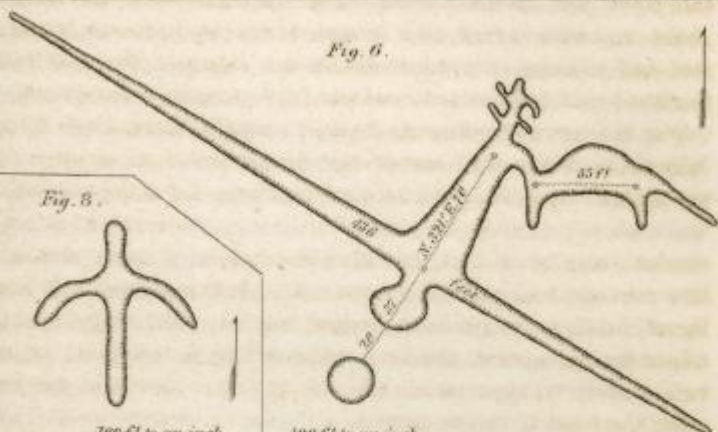


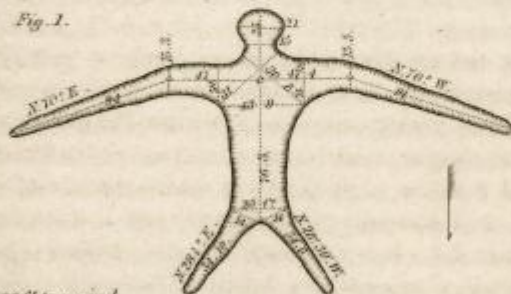
Fig. 8.



100 ft to an inch.

100 ft to an inch.

Fig. 1.



100 ft to an inch.

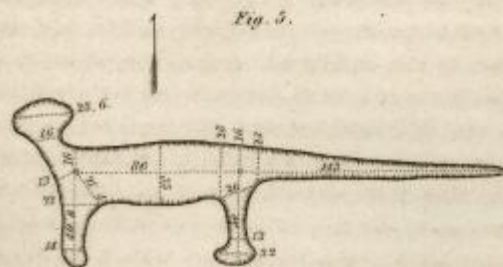
Fig. 2.



Fig. 3.



Fig. 5.



100 ft to an inch.

Fig. 4.



100 ft to an inch.

elevation gradually diminishes to one foot. Bearings, north and south, the head to the southward. In the centre of the breast of this figure, there is quite a depression. Indians frequently, after gathering their crops, dig pits in the earth for the purpose of securing their provisions and merchandise from the frosts of winter and depredations of the enemy; these pits, in the language of the French *voyageurs*, are technically called *caches*. The depression in this figure may have been occasioned by an excavation for this purpose. In a group of earth-works about a mile to the northwest of this one, another figure in the human shape, of like magnitude, may be seen; and of the same group, a very large mound forms a part. This mound, in circumference at its base, measures two hundred feet, and in height sixteen feet. The human figures, generally, do not seem to be as well proportioned as those in the form of quadrupeds; it is however strange that they should have been constructed upon such a gigantic scale.

Fig. 3 represents a complete circle, situated two or three hundred yards to the northeast of fig. 1. In wandering through the forest in quest of strange figures, I accidentally discovered this circle; I have since searched for it for the purpose of ascertaining by excavation, whether it may not have resulted from the accumulation of ashes proceeding from circular fires, which Indians on some occasions make, but I was unable again to find it. The embankment of this figure, which I measured on the spot, is only ten inches in height, and in width six feet; the diameter of the circle is one hundred and seven feet.

Fig. 4 was originally an embankment, approaching the form of a bear, but at this time it is partially destroyed by a road passing over it. I fortunately took its dimensions when it was yet perfect; its whole length from forehead to rump was fifty six feet, which was, in comparison to others, of small dimensions; the elevation was only about twenty inches; it may be seen within a hundred yards of my cabin, one mile and a half north of the river in Richland county. Bearings, north and south; head to the southward, and the legs projecting eastward.

Fig. 5 is one of a group of three, closely resembling each other, in the western part of the village of Muscoda, in the county of Grant; its length from the front part of the head to the end of the tail, is two hundred and sixty four feet; the numerical

figures upon this one, as well as upon *all* others, indicate the dimensions of the structure, from actual survey and measurement. Its elevation is about thirty inches around the body, while the limbs at their extremities are diminished to a few inches. It lies within a few feet of the Wisconsin River, in an east and west direction, the head to the westward; and the legs of this one, as well as those of its companions, are projecting southward.

Fig. 6. The site of this singular shaped mound is upon an eminence, on section twenty seven, within a mile to the north-westward of the Eagle Mills, in the county of Richland. The northeastern part of the figure, especially from the neck eastward, approaches nearer the form of a buffalo, than any of these works which I have examined, having quite a protuberance, resembling the "hump" upon the back of that animal; the head, if I may so term it, is blended with what I conceive to be the trunk of the human figure, to which, projecting northward, are appended what were perhaps intended to represent horns. I must admit, that however much we may feel inclined, in viewing these antiquities, to let our imaginations lead us into erroneous ideas respecting them, I could not, at first sight, persuade myself that these appendages were really intended to represent horns; although after a second and third examination, I feel justified, from their intimate connection with the remainder of the structure, in designating them as such, notwithstanding they may, possibly, have been caused by the uprooting of trees. The elevation of the body of the part resembling the *buffalo*, near the hump at the widest point, is three feet; the legs, tail, neck, and horns, diminish as they recede to their extremities, to one foot. The southwestern part of the structure represents the trunk, head, and outstretched arms, of what may be termed the human figure, the arm extending northwestwardly being much the longest; the head, breast, and shoulders, are elevated three feet, while the end of the arms are only a few inches. This structure, differing so widely from all others in this region, is peculiarly strange, unless we can arrive at the conclusion that the animal-shaped mound has been blended in its structure with the one designated as resembling the human figure; and even this one may only represent the same object as is intended by those mounds described as the "citadel," Plate V. Immediately southwest, and within twenty feet of the head of this figure, commences a series

of mounds, similar, with one exception, to those which are represented in the plates; for this reason I omit them. The altitude of this one is about eight feet, and its circumference is eighty feet.

Fig. 7 represents an embankment resembling in form the otter or the lizard; its location is upon section nine, near Blue River, and upon the level plain of the English Prairie. The outlines of this figure are very distinct; its elevation along the body is only fifteen inches; bearings, southwest and northwest; head to the southward, and the legs are projecting westward. The length of this figure, from one extremity to the other, is one hundred and thirty six feet and six inches. Figures of this class are frequently found in this region.

Fig. 8, (which may have been intended to represent a bow and arrow, or perhaps the rude sketch of a human figure, or bird with expanded wings,) lies north, and within a few rods of the Wisconsin River, about four miles west of the village of Muscoda. The elevation of this mound is only about one foot, while other figures in its vicinity are very prominent. In the adjacent forest, we find abundant evidence of industry, in the existence of a multiplicity of extensive groups of these monuments of antiquity; and, being in a beautiful and luxuriant district of country, they tend greatly to prove, that a dense population and a powerful people formerly dwelt upon this lovely site.

PLATE VII.

Fig. 1 represents an interesting group of earth-works, in the village of Muscoda, (English Prairie,) in the county of Grant, the general direction of which is N. N. E. and S. S. W., beginning upon the bank of a bayou, near the river, and passing through several enclosures. The late cultivation of these grounds has in a measure obliterated and leveled these works, from what may be supposed was their original height; many of them are in the streets and upon the commons; the village in its future increase may cause a complete destruction of these works, so as to obliterate every trace of their shape. In this group are three figures in the form of the cross; in the centre of the largest of these, represented upon the figure by a circle, is quite a depression, occasioned, perhaps, in the same manner and for the same

purpose as described in Plate VI, fig. 1; the outlines of these works are easily traced, although for the reasons above assigned, their elevation at this time does not exceed thirty inches. From the excavations around many of them, it is apparent that they must have been constructed with materials obtained adjacent to them. Some of these mounds, however, seem to have resisted the destructive action of time; those toward the southwest end of the group, are in height six feet; the distance from one extreme of the series to the other, is about four hundred and sixty yards; consequently, in order to include the whole-cluster in one plate, it became necessary to reduce the scale, by doing which they appear diminutive, although they are constructed upon a scale equally grand as that of others. The site here is a beautiful level plain of arenaceous loam, being free from trees or shrubbery, (substratum, a fine white saccharoidal sand-rock,) so that a person from the eminence of the most prominent ones, may at a glance view the whole group. Human bones have been found in many of these.

Fig. 2 represents a species of ancient works, which, under various modifications, are very numerous, and comprise about one fifth of the embossed works in this region. This figure agreeing with the location, it being about "one mile from the English Prairie," is probably one of the groups referred to in an article on the subject of antiquities, published in Vol. xxxiv, of this Journal, by R. C. Taylor, Esq., a copy of which, from an esteemed friend, I was fortunate in obtaining, which document, in the absence of other works upon antiquities, has rendered me essential service in my observations upon this intricate subject. In regard to the "group of six," spoken of by Mr. T., I have frequently traversed the forest where they are said to exist, in search of figures having projecting beaks, as represented in Plate II of his article, but I have discovered none approaching that form nearer than that one under consideration.* Those figures near the Blue Mounds and the Four Lakes, which were personally examined by Mr. T., I am happy in saying, are faithfully represented, and many of them I have had the gratification of visiting.

* It must not from these remarks be inferred, that I have the remotest intention of accusing either Mr. T. or his informant of deceiving the public, by fictitious statements.

The elevation of this figure, as well as those of the group of which it forms a part, about the head, shoulders and breast, is four feet, diminishing toward the extremities, as in other cases, to one foot. Bearings of the trunk, N. 85° E., the head to the eastward. Between the base of the trunk and the southern wing, a mound measuring twenty one feet in diameter and five feet in height is erected. Notwithstanding the grand scale upon which this figure is constructed, there are no indications around or in its vicinity, which would in the least convey an impression that the adjacent earth had been removed, or that the material of which this work was constructed had been taken therefrom. The numerical figures along the dotted lines in the drawing, diverging from a common centre upon the breast, indicate the dimensions of the structure.

Fig. 3 is the centre one of a series of mounds, fifteen in number, extending the distance of about three hundred yards, and placed at intervals of twenty-five feet apart. It seems apparent that this figure must have been originally constructed as represented in the drawing by the dotted lines, having at these points an elevation of three feet, and that subsequently additional earth was heaped upon the head, breast and end of the trunk, elevating these parts three feet above the other points of the structure, now measuring six feet. Bearings, N. N. W. and S. S. E.; the head to the northward. The site of this figure, upon the northeast part of section thirty-five, north, and within a mile of the Wisconsin River, west of fourth meridian, is a commanding swell in the forest, and were it not for the lofty timber, would be an eligible position for an observatory, having an interesting view of the Wisconsin River for some distance above and below, and of the beautiful English Prairie to the southward, which is barricaded as it were by magnificent bluffs, extending along the river many miles.

Fig. 4 represents the terminating figure of the same series as that of fig. 3, above referred to. This figure, with the exception of the *brush*, resembles the reynard, with drooping tail; that it was really intended to represent that animal, I am not prepared to say. Earth-works of this form are frequently met with in this region, more especially in the forest in Richland County. For its dimensions, the reader is referred to the scale accompanying the

drawing. Bearings, N. 45° W.; the head to the northwest, and the legs projecting southwestwardly; general elevation, eighteen inches.

Fig. 5 is a sketch of the outlines of a curious animal-formed embankment, which lies adjacent to the road, in the vicinity of fig. 8 of Plate VI. The form of this structure is very perfect and well proportioned; its elevation is about three feet, being highest about the middle and toward the back; its length from one extreme to the other is seventy-nine feet, and in width, over the middle, twenty-four feet. Bearings, east and west; the head to the westward, and legs projecting southward. Throughout this region embankments of this form are very numerous, some of which have two parallel projections from the back of the head, while in the present one they seem to be so blended as to represent but one. There is, I believe, in zoological history, no analogy to this figure.

Fig. 6, situated upon and near the east line of section thirty-five, to the eastward and within a mile of fig. 1, Plate VI, represents a human figure having *two heads*! which gracefully recline over the shoulders. This singular figure, so unlike the other works of similar form which have come under my notice, is the most perfect that I have seen; the arms, however, are disproportioned, being much too long; their full length in the drawing, for want of room, I have not delineated; all the whole parts are gracefully rounded; the stomach and breast are corpulent; and the entire structure seems to have retained, as I conceive, its original form through all the dilapidations of time. The perfection of this truly singular and interesting specimen of ancient earthworks, is convincing evidence that the ancient inhabitants of this region were *not* as ignorant of the arts as we have reason to believe the present race of Indians are; their works, however, prove that they possessed industrious habits, even if their labors had been bestowed upon objects of no apparent utility. The dimensions of this figure are as follows: widths, from one arm-pit, over the breast, to the other, twenty-five feet; over the arms, at shoulders, twelve, and tapering to four feet; over the hips, twenty feet; over the thighs, near the trunk, eight, and tapering to five feet; over the figure, above the shoulders, fifteen feet; over each neck eight, and over the heads ten feet: lengths of body, fifty

+ more

Fig. 3.



100 ft to an inch

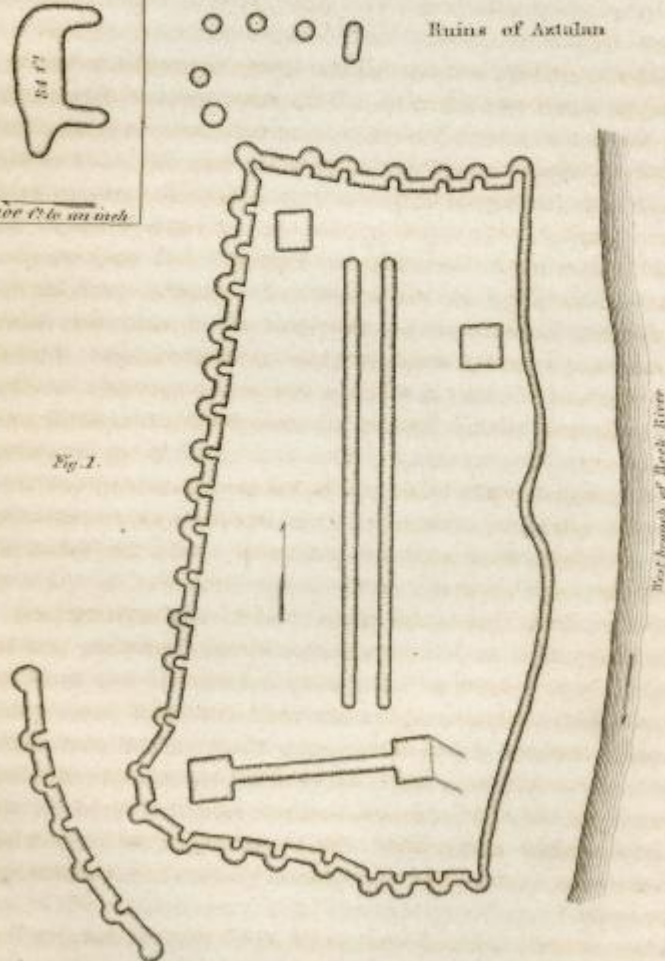
Fig. 2.



100 ft to an inch

Ruins of Axtulan

Fig. 1.



feet; of legs, forty feet; of arms, one hundred and thirty feet; of necks and heads, from termination of dotted line, fifteen feet; elevations at breast, shoulders and abdomen, thirty-six inches; arms, at junction with shoulders, same height, diminishing toward their extremities, where they are but ten inches; the thighs, near the trunk, are twenty, while at the feet or extremities they are but ten inches. Bearings, north and south; the heads to the southward.

PLATE VIII.

Fig. 1 represents the most singular group of ancient works yet discovered in western America. This monument of an ancient people is in the form of *mounds, embankments, buttresses and outworks*, which, connectedly, very much resembles a *fortification*, and was in all probability constructed for this purpose, by a warlike people! These antiquities, by common consent, are known as the "ruins" or "city of Aztalan," and they are situated in a flourishing region of country, destined, probably, to have in a few years as dense and powerful a population as we have reason to believe flourished there in former times. This is the same "ancient city," which a few years ago had its day, and in a measure shared the fate of the notorious "moon hoax," in the *press* of our country. The Cincinnati Whig, however, more lenient than many other papers, viewing it as a subject well worthy of scientific investigation, concluded a very interesting article, entitled "the ruins in Wisconsin," with the following paragraph:

"The whole subject is full of interest to all, and eminently recommends itself to the antiquary and the historian, and we hope that it will soon be adequately illustrated; but until we shall have more complete and authentic accounts of these ruins, their position to the points of compass, their extent, plan, material of construction, &c., it will be vain to enter into speculations concerning them. An accurate detail of facts is wanted for the basis of reasonable conjecture. All we can do in the mean while is to correct or expose the unauthorized guesses of ignorance and presumption."

I have never personally examined the "city of Aztalan," although I have been a resident of the mining region since the time it was still under the jurisdiction of Michigan. Having

undertaken an interesting subject, and being desirous of embracing in it, with the antiquities of the western part of the territory, those of the ruins of Aztalan, I could conceive of no better mode of acquiring facts concerning them, than soliciting the aid of a friend, in whose probity and competency every reliance may be placed, to furnish me with a description of those ruins, as well as the character of the adjacent country. He has given me the following interesting account, which, depriving it in a measure of its epistolary form, I will here introduce.

"In answer to your enquiries respecting the ancient remains some years since discovered in the eastern portion of this territory, known as the 'ruins of Aztalan,' I regret that the limited opportunity afforded me of a minute examination of the same, will preclude the possibility of affording you such a description at this time as I could wish; although I have no doubt that a thorough examination would throw much light upon this mysterious subject. One thing I am convinced of, and that is, that I with many others who have looked upon the different accounts which have from time to time appeared, respecting the ancient works in this widely extended valley, as a deception and the ephemeral efforts of a penny-a-liner, have been mistaken, for it is no deception, but is well worthy of attention and investigation.

"Ancient embankments and tumuli of different form and construction are, as you are aware, abundant in many portions of our territory; I have examined many of these remains, but in my different researches have not as yet discovered the objects of the constructions which appeared to me at first view so distinct, or which forced upon my mind so strongly the conviction of the existence hereabouts of a former race of beings more skilled in the arts, than any of the present tribes of savages now known to us, as the appearance of the ancient mounds at and near to the town of Aztalan. The 'ruins' you particularly refer to, are to be found in the midst of a beautiful rolling country, conveniently interspersed with timber, and watered by Rock River and its tributaries; the principal remains, or what has been termed the 'walled city,' is situated in township seven, of range fourteen, east, in the Milwaukie land district. I know not that a better idea of the present appearance of these ruins can be conveyed than by the accompanying sketch, prepared some time

since by Judge N. F. Hyer, a gentleman who has taken much interest in reference to this subject, and to whom I am indebted for much interesting matter respecting the same during a hasty ramble over the embankments and mounds, and through the immediately adjacent country. The drawing is faithfully executed; the 'citadel,' as there represented, consists of a brick wall, which at the base is from twenty to twenty five feet wide, at the present time, and, I should judge, about five feet in height; the projections of the wall indicated upon the plat, have certainly the appearance of buttresses, as constructed upon military works at this day; they are constructed also of brick, regularly built at intervals of from two to five rods, and extending beyond the wall about seventeen feet, of the same height as the main wall. The eastern wall, parallel with and immediately upon the bank of the river, is, at this time, but slightly visible, nor are there any appearances of buttresses, as upon the other portions of the wall. In proceeding upon the supposition that these are the ruins of an ancient fortification, we may conclude, that inasmuch as the eastern side was defended from egress by a deep and rapid stream, a wall and buttress similar to the one I have attempted to describe as bounding the western side, would have been unnecessary. The whole area, within the wall, comprises about twenty acres; within the enclosure are a number of square mounds or elevated plains, of the height of fifteen or twenty feet, as I should judge, and perhaps forty or fifty feet square upon the top, while others are of a more conical shape, and from their situation appear as what might now be termed block-houses, or places of *look-out*; that such were the objects of their construction, I am not prepared to say. There is also a distinct ridge running east and west, connecting two of these towers or mounds, as well as two parallel ridges running north and south, and extending nearly the whole length of the enclosure. There is also a cellar and stairway, I am informed, yet visible, descending within the mound of the northwest angle of the ruins; this, in my hurried examination, escaped my notice. I can therefore say nothing respecting it. The same remarks must also apply to the termination of a sewer, which is said yet to be perceived at a bend or angle, about midway in the eastern wall designated on the plat above referred to; this sewer is said to be about three feet below the surface, and arched with stone. Whether through

this sewer water was supplied from the river or not, others can judge. Without the enclosure, and at those points where this work is not protected by the river, are numerous mounds varying from three to twenty-five feet in height, and from twenty to a hundred feet in circumference; and particularly at the southwest angle, there is an embankment forming the arc of a circle, with projections resembling the buttresses represented in the main wall, which requires but little stretch of the imagination to suppose was intended as an outwork for the defence of that particular point.

"In examining one of these mounds, I found the remains of a human skeleton, which had been previously exhumed, although by the action of fire the bones were so completely charred that they readily crumbled to pieces in the hand. I preserved a small piece of the skull, but have somewhere mislaid it or would now send it you.

"One word as to the 'brick wall;' let me not be understood to say that there is in the brick here found any regular appearance of *brick-laying*, as at present practiced. The walls which I examined, and from which at many different points, with a mattock, I broke off specimens, present now the appearance of a mass of *burned clay*.* In what manner at first constructed, there is nothing to indicate, but that the walls and parapets consist of brick rudely burned and prepared with straw, after the ancient mode, the different specimens I gathered bear sufficient witness."

Fig. 2, approaching the form of a bear, is included in that extensive group of antiquities, before referred to, near Blue River, upon the English Prairie. This embankment, being much more elevated than many which I have examined, is about midway six feet in height; and in length, along the dotted line from east to west, eighty four feet; and its greatest width over the body is twenty feet. Bearings, due east and west; the head to the westward, and the legs projecting southward. The whole figure, and the grounds adjacent, are covered with *Corylus Americana* and *Lathyrus albidus*, which shrubs, in this region, are indicative of deep and rich soil.

* A box, containing specimens of the "burned clay," as well as fragments of rudely platted matting and human remains, in a charred state, dug from these ruins, was some time ago forwarded through the curator, Dr. King, to the National Institution for the Promotion of Science, at Washington, D. C.

Fig. 3 is a group of three animal-formed mounds, which are also upon the English Prairie, about eleven miles to the eastward from fig. 2, and within the limits of Iowa County. The destination of these figures, if I may use the expression, seems to have been toward the northwest, their heads being in that direction; their legs, contrary to the direction of all others which I have examined, are projecting northeastwardly. For a more explicit description of these figures, the reader is referred to the scale upon which they are drawn. In the vicinity of these are many other figures, of various forms and dimensions. To the eastward, at a short distance, commences a series of mammillary mounds, varying from one to two and a half feet in height; these mounds are beautifully and with much regularity ranged at convenient intervals, and extend over a distance of about five hundred yards, terminating abruptly with a huge mound eighteen feet in height, and in circumference at base two hundred and twenty-five feet. To the northward and southward of the figures, and parallel with them, are numerous embankments with intervening spaces, representing gateways, a further description of which would only lead to unnecessary repetition.

I am well aware that the actual existence of earth-works as singularly shaped as those represented in the accompanying plates, may be, and even is by many who reside in the midst of them, looked upon with incredulity, which induces me to illustrate one of the many facts which proves that the minds of *all* are not directed alike to the same subject. *Quot homines tot sententiae*—so, as various as are the opinions, so are the subjects, upon which the tide of their reflections flows. Col. William S. Hamilton, a gentleman who for many years has been a resident of the west, and has for a few years past been engaged in the business of smelting lead in the village of Muscoda, surrounded as it were by these monuments of antiquity, has almost daily passed over many of them without observing their structure, although the outlines of the numerous figures are very distinct; but after having their interesting features pointed out, Mr. H. now acknowledges that what he has heretofore viewed, in the various accounts which have appeared respecting them, as the result of strong imagination or of wild fancy, he had become thoroughly convinced of their singular beauty of construction and of their remote antiquity.

Having now briefly illustrated at least one figure of each species of artificial earth-works, embraced in a scope of country upon both sides of the Wisconsin River five miles in width, and in length fourteen miles, the river passing midway from one extreme to the other; and each figure having been the subject of careful observation, being part of the result of more than twelve months of incessant labor, in rambling in quest and taking admeasurement of about a hundred figures; an anxiety to embrace in this article a variety, has extended the subject and prolonged its completion much beyond what I at first had intended, but should the matter contained in these pages in the least degree aid antiquarians in their researches in Indian archeology, I will be amply rewarded.

In conclusion, fearing that I should have gone too far in hazarding conjectures why or how these antiquities *are as they are*, I ventured to give no conclusive opinion, inasmuch as there have already been too many wild speculations respecting many of them throughout this vast region. I have endeavored only to represent them as they really exist; in doing this it became necessary to take their dimensions in the field with a degree of accuracy, in order that the description may in future serve when all traces of the mounds are obliterated, (which in this fertile region will soon be the case,) as a record of what once existed. The subject is a dark one, and the word *mystery* seems stamped upon every foot-track of those who primitively flourished here. We know not whence they came—we know not where nor how they have departed. A people has passed—a nation has gone away—their history we know not, nor the history of their works.

Forest of Richland, Wisconsin, July 31, 1842.

ART. IV.—*Remarks and Observations on the Formation of Fogs*; by Prof. W. M. CARPENTER, M. D.

METEOROLOGISTS, in examining into the causes which give rise to the formation of visible vapor, seem generally to have confined themselves almost exclusively to the theory of Hutton, considering it as incident upon the mixture of masses of air of different temperatures, and to have neglected in a very great measure the consideration of other causes. The intention of the follow-