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Number 20

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by Ellison Orr

Volume VIII: Sundry Archaeological Papers, 1938.

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CATLINITE
(PIPESTONE)

MINNESOTA PIPESTONE.

The American Indian of the pioneer was a user of tobacco as were his ancestors back into the remote past. He was a smoker and his use of the plant was not, as is that of the white man who succeeded him, wholly for pleasure, but was largely ceremonial having some special significance or meaning, often very difficult for the white man to understand.

Some of the pipes used for this ceremonial smoking, especially the calumets with their stems elaborately and emblematically decorated, were highly prized, regarded as sacred, and carefully kept for generations.

The materials used in pipe making were usually some easily worked material, as catlinite or pipestone, or some other form of indurated shale or clay, steatite, serpentine, sandstone, limestone, etc., or occasionally of diorite or granite. Some of the peoples of the woodland culture made them of clay, tempered and fired the same as their pottery. These latter were probably just used for ordinary smoking - not ceremonially. ^{more}

Perhaps no material was used for pipe making in the vast area of country drained by the Mississippi river than catlinite or as it is commonly called, pipestone.

West, in Tobacco Pipes and Smoking Customs, in giving a list of the material of which smoking tubes (or pipes) found in the upper Mississippi valley were made, says, "The material used in making these pipes is catlinite, steatite or some other soft rock that would yield readily to the crude tools of the primitive artist."... "The most attractive examples are made of Minnesota or Wisconsin catlinite."

Again he says, "Many kinds of rock were employed by the aborigines for pipe making. Among the most common were catlinite, steatite, sandstone, limestone, slate, granite, chlorite, diorite."- and he might have added, serpentine.

So far as known the first named is found only at one place in south-western Minnesota and in a limited area in the Barron Hills in north-western Wisconsin. ^(a) Steatite, chlorite, serpentine and slate are not found in south-western Wisconsin, southern Minnesota or anywhere in Iowa. Granite and diorite are very common in the drift of the glacial area but, apparently because of hardness were only very rarely used for pipes, the Ratcliffe dragon pipe being the only one of diorite, and one of granite in the collection of Mr. Ed Wild - which may be of white man's make - are the only ones made of this very hard material, known to us. Limestone and sandstone were common in the stratified rocks but pipes made of either were not common except in northern Minnesota and Wisconsin.

Following is a condensed account of the Minnesota catlinite from Bulletin 30 of the Bureau of American Ethnology, pages 217 to 219:

"It is obtained from a quarry in the Sioux Quartzite on Sec. 2, T. 106, R. 47 west of the 5th P.M. in Pipestone County, south-western Minnesota.

(X) Clay pipes were also made by the people of the Glenwood and Mill Creek cultures.

(a) Over says, "also near Brandon, S. Dakota."

It is so named because it was first brought to the attention of mineralogists by George Catlin, the painter of Indians, who after much opposition by the Sioux, visited the place where it is obtained, in 1837. Its color varies from a pale grayish-red to deep red (pinkish to cherry-red another authority says), as does the quartzite in which it is imbedded. It is a fine-grained argillaceous sediment, claystone or indurated metamorphic shale and when first removed from the rock is so soft as to be readily carved with stone knives and drilled with primitive hand drills. (This is disputed by Geo. A. West who says that the length of time that has elapsed since its removal from the quarry makes no difference in its workability.)

It belongs to the Keweenaw and Winchell says in *Aborigines of Minnesota*, page 486, "The fossils, *Paradoxides barberi* and *Lingula calumet*, as well as grains of gold, have been found in it."

A chemical analysis by Dr. Charles F. Jackson, who gave it its name, is as follows: silica, 48.20; alumina 28.20; ferric oxide, 5.00; carbonate of lime, 2.60; manganous oxide, .60; magnesia, 6.00; water, 8.40; loss, 1.00.

It is believed that the stratum which varies in thickness from 10 to 20 inches, in which is the band of fine-grained pure material suitable for pipes, not exceeding 4 inches in thickness, was first exposed in the bed of a small normally dry brook running north into Pipestone Creek - running east and west - where it meets a similar one from the north, along both of which are the most ancient diggings.

These two brooks in the center of a wide shallow prairie valley, curiously, follow the crest of an anticline of the Sioux quartzite, so that the farther away from the two brooks the pits are dug the deeper they must be to reach the pipestone. (See profile across the valley from east to west, page 8.)

Removing the overlying very hard rock must have been a slow and laborious process for the pre-historic Indian who had only stone tools and wooden levers to work with.

The ancient pittings according to Catlin were over a mile in length north and south along the two brooks. Some of the most recent excavations, made in historic time, have advanced east along the downward dip, 20 ft. or more from the brooks, and from which it has been necessary to remove from 5 to 8 ft. of quartzite to reach the pipestone stratum.

"The selection of material for pipes was determined by its heat resisting qualities, its color, and its susceptibility of being easily worked into shape."-- "Long distances were often traveled to secure some desired variety of stone, such as Minnesota catlinite."

Pipe material of the most valued sorts often became an article of considerable commerce, reaching distant tribes over well established trade routes.

Pipes made of the Minnesota catlinite, found in graves in Ohio, Tenn., Georgia, Florida, and among the Algonkin tribes of the east, the Iriquois and to some extent in Canada, and over the entire Mississippi valley south to Kansas, indicate a very extensive and long established trade in this material. See page 495, *Aborigines of Minn.*

In Winchell's *Aborigines of Minnesota*, page 110, he says: "The fragments of red pipestone found in some of these mounds, (in Pipestone and Rock counties, Minn.) are the same as that quarried in the immediate vicinity. (The quarry at Pipestone) The celebrated product of this quarry had a wide commercial distribution, having been found in Florida according to Clarence B. Moore, in exploring mounds near Thornhill lake in Volusia county, and in "the great burial place" near the mouth of Crystal river, Citrus county. It was in the form of small beads at both places.

On page 576 of *American Aboriginal Pipes and Smoking Customs*, by J.D. McGuire, in the Annual Report of the National Museum for 1893, is the following:

"Wm. McAdams in *Mounds of the Mississippi Bottoms, Ill.*, Smithsonian Report, 1882, page 684, refers to a curved base "mound pipe" of catlinite found in a mound on the Illinois riverbottom, 15 mi. from its mouth, where at a depth of 16 ft. from the surface they found a basin of clay filled with clean white sand and a beautiful pipe of mottled catlinite associated with sea shells and objects of copper."

As curved base mound pipes are believed to be one of the oldest types of pipe, and if this pipe was not of Ohio catlinite but of Minnesota, then its finding as above described, indicates great age for the Minnesota quarry.

A study of available records shows that Minnesota catlinite was predominantly the material used by the far flung Sioux tribes for pipe making, and that its use, radiating out from their territory, faded out with distance.

In northern Minnesota and Wisconsin, in Chippewa country, it was almost entirely replaced by steatite, sandstone and serpentine, and in southern Wisconsin, according to West, quite largely by the Barron Hills pipestone which is a true catlinite, probably a continuation of the same stratum found in south-west Minnesota as at both places it is imbedded in a quartzite of the thick Keweenaw system of rocks immediately preceeding those of the Cambrian age.

The fine pipes from the Ohio mounds appear to have been made almost entirely of steatite and a "pipestone" found in the same state, which is not a true catlinite.

In 1916 we visited the reservation, one mile square, on which the Minnesota catlinite quarry is located and walked over the east part of it and examined but did not go down into any of the pits, as the Indians, that in summer camp there, object to any examination of the pipestone in situ.

To the east of, and extending north and south parallel to the line of quarry pits, is a 25 ft. high escarpment of Sioux quartzite. Where Pipestone creek flows over this near its center is the Falls of Winnewissa. Near the south end on the exposed rock at the top, are some glacial scorings having a north-west and south-east direction. *the "Three Maidens", - three great granite boulders, (See photos on page 12)*

Around these, on the exposed quartzite were once large numbers of petroglyphs but the slabs on which they were cut have been removed. One-fourth of these were very crude figures of men.

Most of these show quite noticeably that part of the human anatomy not mentioned in polite society. There are recognizable figures of the buffalo, wolf, skunk, goat, turtle and snake. Besides these there are a number of figures meaningless to the white man. While these petroglyphs may be said to generally resemble those found in the rock shelters along the Mississippi, the absence of birds and turtles is noticeable. There appear also to be no "turkey tracks" so noticeable in the rock shelters.

A little to the north of the falls on the top of the ledge over which the creek flows, is cut the name, J.E.Niccollet, and the initials of his party one of whom was John C.Fremont, (J.C.) and the date, July 1 38. (1838)

Besides the Minnesota catlinite which has been much exploited by its wide dispersion in trade, and more because every school boy and girl has read Longfellow's Hiawatha, and the Wisconsin catlinite, there are various other deposits of a similar material, not true catlinite; as the Ohio pipestone of which nearly all the curved base effigy and other fine pipes found in the Ohio mounds are made; the Black Hills pipestone, a very dark material used by the plains Indians in the vicinity of the "hills"; and the pipestone of the Rainy Lake and Lake Winnepeg region. Of which Winchell in Aborigines of Minnesota says,

"Alexander Henry, the elder, says, (Travels and Adventures) 'To the westward of Pike river (which enters lake Winnepeg from the west side) which we passed on the 1st of Sept., is a rock of great length called the Rocche Rouge and entirely composed of Pierre a Calumet, or stone used by the Indians for making tobacco-pipe bowls. It is of a light red color, interspersed with veins of brown and yields very readily to the knife.'

Alexander McKensie mentions a similar red pipestone found in a deep western prolongation of Rainy lake. (Voyages from Montreal, page 60)

See Plat of Vicinity of Pipestone Quarry, The Minnesota Pipestone Indian Reservation on page 6; Photographs of Reservation on pages 12 and 13; and Photographs of Calumet (Peace) Pipes of Minnesota Catlinite on pages 16, 17, 18 and 19, following.

Cross Section from east to west of Minnesota Pipestone Indian Reservation on page 3 .

Mr. W. H. Over, University of S. Dakota Museum, Vermillion, S. Da., says that catlinite is found at Brandon, S. Da., and micaceous sandstone is found in the Bijou Hills.

The Bijou Hills are south of Chamberlain near the Missouri river and Brandon is east of Sioux Falls and the pipestone found there is undoubtedly the same stratum that outcrops at Pipestone, Minnesota.

WISCONSIN PIPESTONE.

Beginning near the central part of Barron county in northwestern Wisconsin is a range of hills having an elevation of four hundred or more feet above the surrounding country, running north-east into Rusk county for a total length of twenty-five miles and a width of ten. This rough, now forested, area lay just within the western margin of, and was overrun by the Wisconsin glacier.

The rock, where exposed, is a folded Keweenaw quartzite, originally laid down against the western shore of "The Isle of Wisconsin", an upthrust of a much older deposit.

At a horizon in this quartzite is a stratum of "metamorphic, aluminous clay with an admixture of iron sufficient to give it a rich, dark red color." This is the Wisconsin pipestone, a true catlinite, and appears to be identical with that of Minnesota except for its darker color. Like that of Minnesota it is imbedded in a similar quartzite, - a metamorphic, fine, argillaceous sandstone of a dirty white, pinkish, brown to dark red color.

This quartzite is stratified but the strata vary greatly in thickness, being in places as much as a foot thick.

The catlinite stratum probably, at different depths, underlies the most of the "hills" but has only been discovered in a few closely associated localities on Sections 27, 33 and 34, T. 95, R. 10, and the NE of Sec. 3, T. 94, R. 10, west of the 4th P.M., in Doyle township, Barron county.

In the summer of 1937 we visited that part of the Barron Hills where the pipestone stratum has been found. The whole range, because of its roughness, and the great abundance of "nigger head" boulders brought down from the north by the Wisconsin glacier, in the top soil, is a very poor farming country. So numerous are the boulders that a prodigious amount of labor must be expended in removing them after the timber has been cleared off, before the land can be plowed.

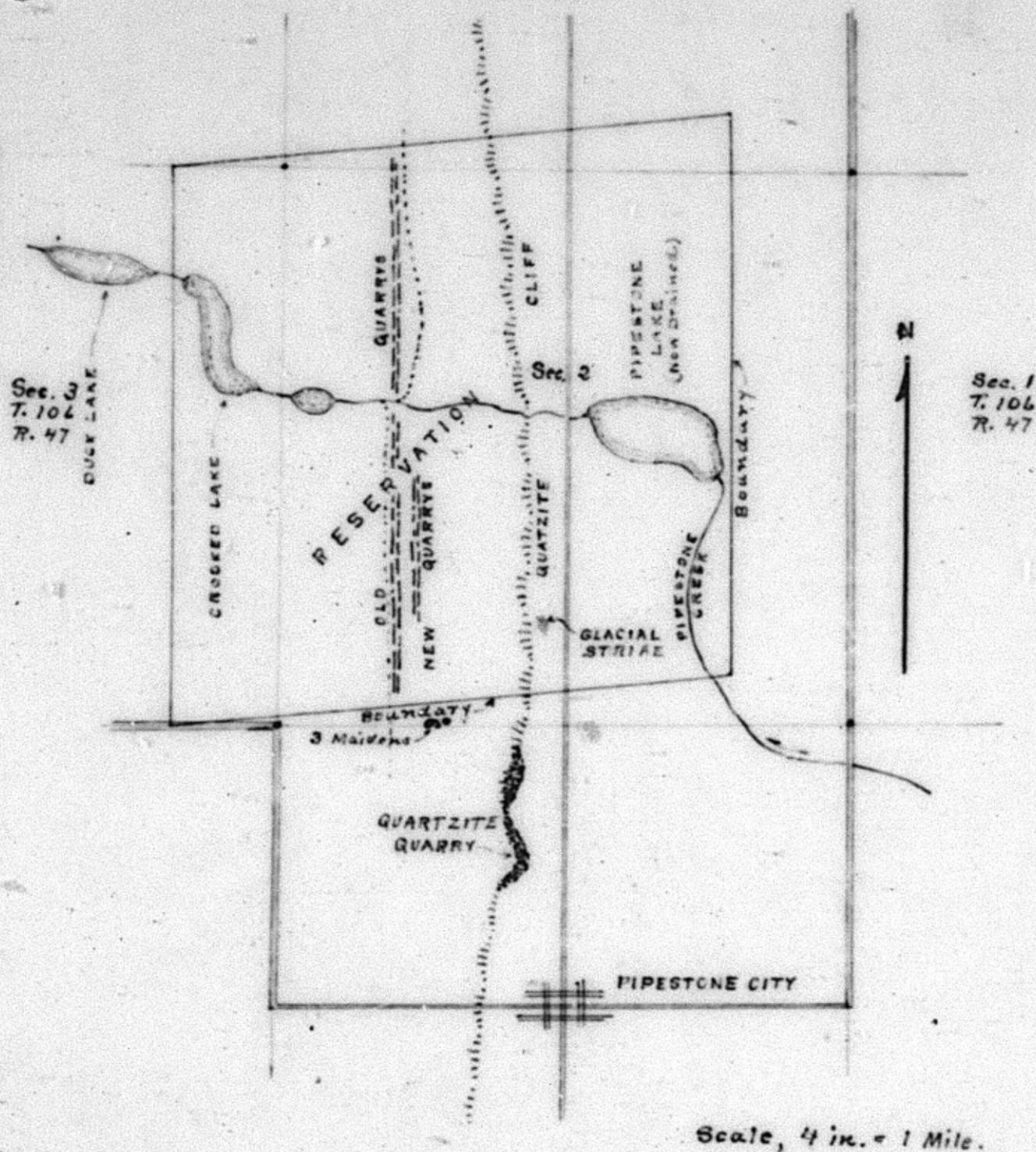
On the scattered clearings where an effort has been, or is being made, to start a farm, one sees great heaps of stone, mostly granite, that have been gathered off the field. These are all the way from hand size up to two feet in diameter. On the Anton Anderson farm on the SE of Sec. 28, T. 35, R. 10 west of the 4th P.M., in Doyle township, two great heaps, one of which is seventy-five ft. long, forty wide, and over four feet high, have been gathered from a fifteen acre field.

The whole "hill" country is practically an unofficial forest reserve of deciduous timber, mostly oak, with an occasional patch of second growth white pine.

The Anton Anderson farm residence and barn is on the south-west corner of Sec. 28. Here the section-line road from the west turns north along the quarter line. Just south of the house and close to the section line between Secs 28 and 33, is Silver creek flowing south-west, - at the time of our visit, dry.

PLAT
of
VICINITY OF PIPESTONE QUARRY,
PIPESTONE COUNTY,
MINN.

6



T. 35, R. 10 West 4th P.M.

PLAT

OF
DOYLE TOWNSHIP,
(T. 35, R. 10 West 4th P.M.)
BARRON COUNTY,
WIS.

SHOWING SITES OF PRE-
HISTORIC INDIAN PIPESTONE
DIGGINGS

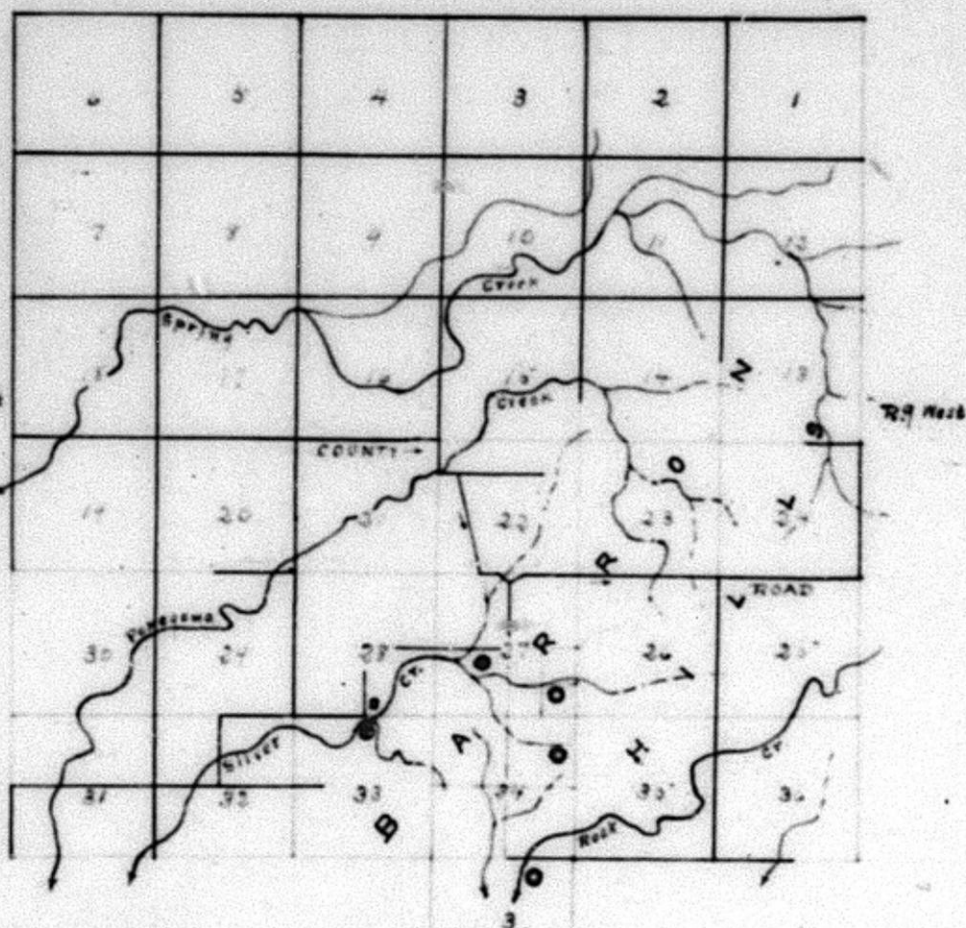
Scale, 1 in. = 1 Mile

○ - Pits examined by Geo. A. West,
1909. See Wis. Archaeologist
Vol. 9, No. 2.

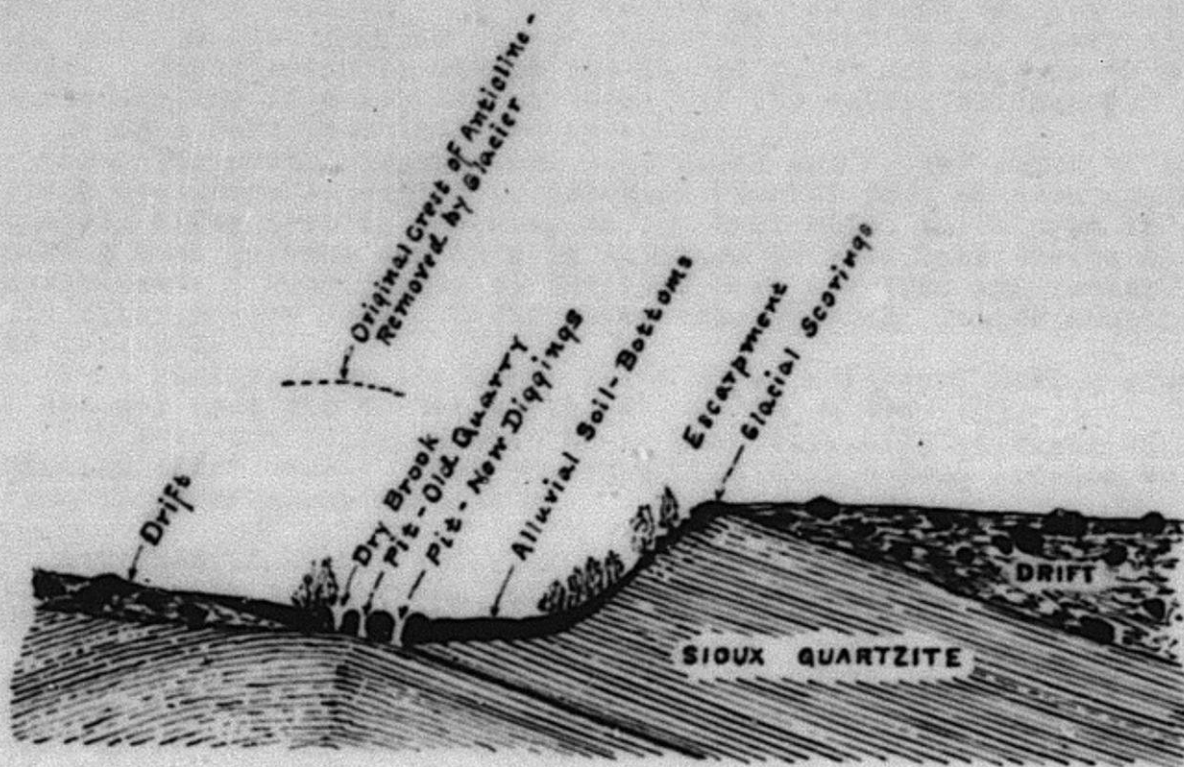
● - Pits examined by Ellison Orr
1937

■ - Residence of Anton Anderson
— - Public Roads

N



T. 34, R. 10 West 4th P.M.



Ideal Section from East to West across Pipestone Indian Reservation, Minnesota.

Chemical Analysis of the Red Pipestone (Pipestone Quarry)
brought back by George Catlin from Coteau des Prairies, 1836.

Water	8.4
Silica	48.2
Alumina	28.2
Magnesia	6.0
Carbonate of Lime	2.6
PeroXide of Iron	5.0
Oxide of Manganese	.6
Loss	1.0

100.0

9

Under the south or left bank, covered by the creek gravels, is the catlinite stratum. A year before Mr. Ed Adams of Rice Lake had sent us some samples of the pipestone which he had quarried here. The stratum is around ten inches thick and appears to be quite uniform in color and hardness for its entire thickness.

It is a dark chocolate-red in color.

From the north sloping bank just above and to the south of the creek considerable quartzite has been removed from an area approximately fifty feet in diameter on the hill side, to be used in making rock gardens and outside chimneys in Rice Lake twelve miles north-west. Many layers of the rock here are thin and shaley. The color varies from a dirty white through pink, yellow and brown to dark red.

This quarry is on the north slope of an anticline, having around a ten per cent dip to the north, on the NE of Sec. 33.

Mr. Anderson tells us that there was originally no signs of "Indian pits" here. (See photograph of this quarry looking south from the creek bank on page 14)

Accompanied by Mr. Anderson we went north one-half mile and east one mile to where we left the car where the road again turns north at the center of Sec. 27.

After following a wood road a short distance to the south-west along the top of a ridge we turned directly west through the brush, over ground thickly studded with small erratic boulders, along the same ridge for a total distance of around half a mile.

Towards the end we passed a number of old pits in the quartzite, which here comes to the surface. In none of these was the pipestone visible. The sides had caved in and were covered with grass and brush and on the earth thrown out were growing trees six to eight inches in diameter. Altogether they presented the appearance of considerable age.

At last we stopped at a recent excavation beside an older one. Mr. Anderson said that he had done the recent work a couple of years ago to get samples of the pipestone for some parties in Madison, but did not know whether or not it was for the University.

He said that there were two old pits a couple of feet apart down to the pipestone stratum at four feet below the surface, and that they were connected at the bottom by a rectangular opening from which the pipestone had been removed, which can still be seen. To secure what material he wanted he cleaned out and enlarged the most westerly on its south side.

The quartzite rock above and below the stratum of the same, and the pipestone itself, are essentially the same as that found in the exposure on Silver creek on Sec. 33

(See photo on page 14, looking south.)

The opening to the old pit to the left is from the left side of the dark spot near the center of the picture, at the horizon of the pipestone stratum.

Mr. George A. West, author of Tobacco Pipes and Smoking Customs of the American Indian, a Bulletin of the Public Museum of the City of Milwaukee, on pages 31 and 34 of No. 2 of Vol 9 of the Wisconsin Archaeologist, describes aboriginal pits examined by him, in Barron county, during 1909, of which extracts follow:

"The Indian quarry of Barron county is located in the SE quarter of Sec. 27, T. 35, R. 10 west.

"This quarry was long worked by the Indians, and an excavation formerly existed over an area about 25 ft. square and 3 ft. in depth.

"As the material was used almost exclusively for pipes, the amount of waste material being small, and there being other ancient quarries in the neighborhood, it seems safe to conclude that enough catlinite was mined in this district to supply the demand of the Wisconsin Indians for several centuries.

"Because of the swampy land surrounding it, this quarry is almost inaccessible during the summer months, but in winter when the swamps are frozen over, for several years past the farmers have drawn upon it for building stone, thus almost completely destroying all evidence of aboriginal work.

"During the past year (1909) the writer explored a portion of the country in the vicinity of this quarry in quest of other primitive workings. The task was not an easy one as the surface of the country is rough and broken, the ancient streams having formed many ravines and valleys all of which are covered by a dense growth of vegetation.

"On the NE quarter of Sec. 34, T. 35, R. 10 west, on the south bank of Silver Creek the writer found primitive workings not heretofore reported. This outcrop falls back from near the bed of the creek in a succession of terraces, up the slope of the hill, about 30 ft. above the bed of the stream. The side of this hill contains a dozen or more pits, ranging from four to ten feet across, and about 4 ft. in depth. Modern Indians annually make pilgrimages from the Lac Court d'Oreille reservation, several miles to the north, to this location for the pipestone. Large quantities of rock lay scattered about the excavations. The entire stone face of some of the pits and the undisturbed portions of others showed much weathering and upon the dumps were several large trees.

"In cleaning out one of these pits the writer found two oblong boulders weighing about 30 lbs each, which were probably used for breaking rock, as slight abrasion at their ends would seem to indicate. The portion of this rock near the surface or overcapping, is a dark red, siliceous rock, somewhat harder than pipestone and quarries into slabs often 4 ft. in length and from 1 to 6 inches in thickness. Its surface is often beautifully ripple marked. Bands of light colored quartzite often traverse it. Scales of mica are somewhat dispersed through these bands. Examples taken from below the water line, or even from the damp ground were found to be much softer and more readily cut and whittled with a knife."

"Continuing the search other primitive workings were discovered about a mile down the stream to the south, on the bank of Rock creek on the NE quarter of Sec. 3, T. 34, R. 10 west. The rock here was found to be of the same texture and color as the last described.

"There are several small pits on the sloping bank of the creek, but the principal excavation is in the bed of the stream.

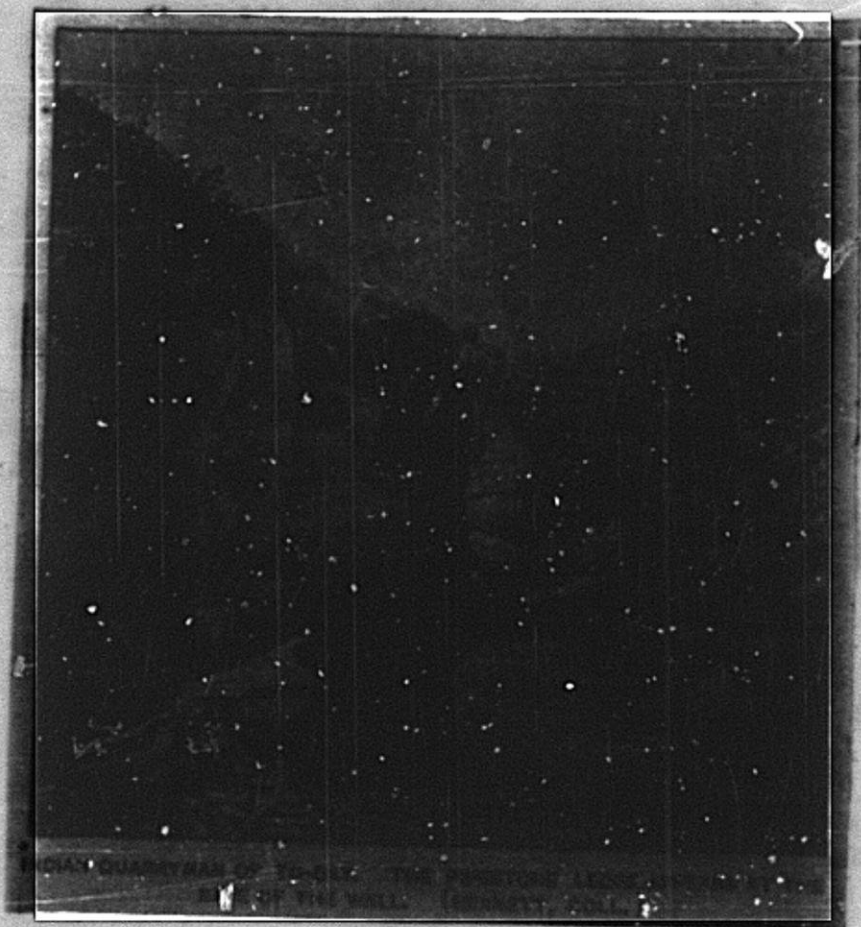
"This quarry is still occasionally worked by the Indians an old settler of the neighborhood asserts.

"A large number of pipes and ornaments in the archaeological collections of this state are made of Barron county catlinite."

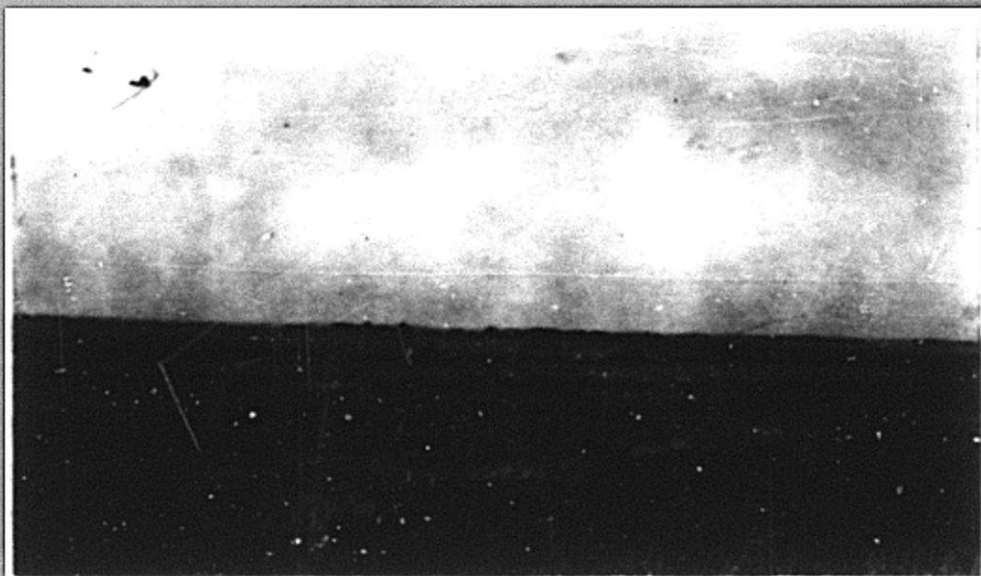
Flat of Doyle township in Barron county, showing location of Pits where Wisconsin Catlinite has been quarried, on page 7.

Photograph of Quarry in Quartzite on Sec. 33 on page 14.

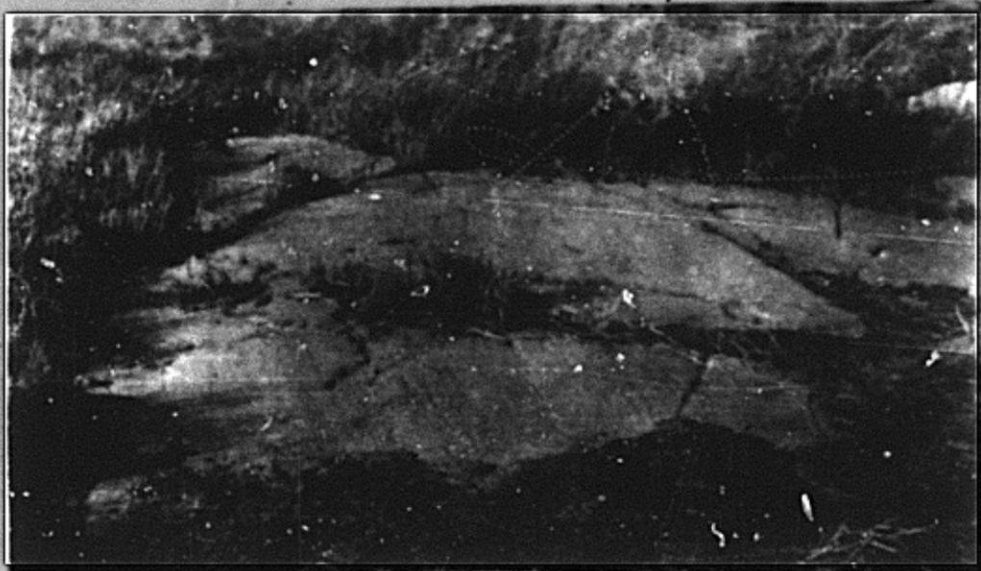
Photograph of Pit from which Wisconsin Pipestone has been quarried, an old Indian Pit enlarged recently, on the NE of Sec. 27, on page 15.



For Photograph of a larger party of Sioux at work in a large pit in a different place, see page 31.



Looking Northwest across the Pipestone Indian Reservation valley, one mile north of Pipestone, Minn. Note the Indian camp in right center and the line of pits extending west to and beyond the hay stack. Farm shelter belt to the west at the edge of the wild prairie of the reservation is outside same.



Glacial striae on Sioux quartzite - top of south end of Escarpment.



The "Three Maidens", just outside the south boundary line of the Pipestone Indian Reservation. Looking East. Note where slabs have been removed on which were Petroglyphs.

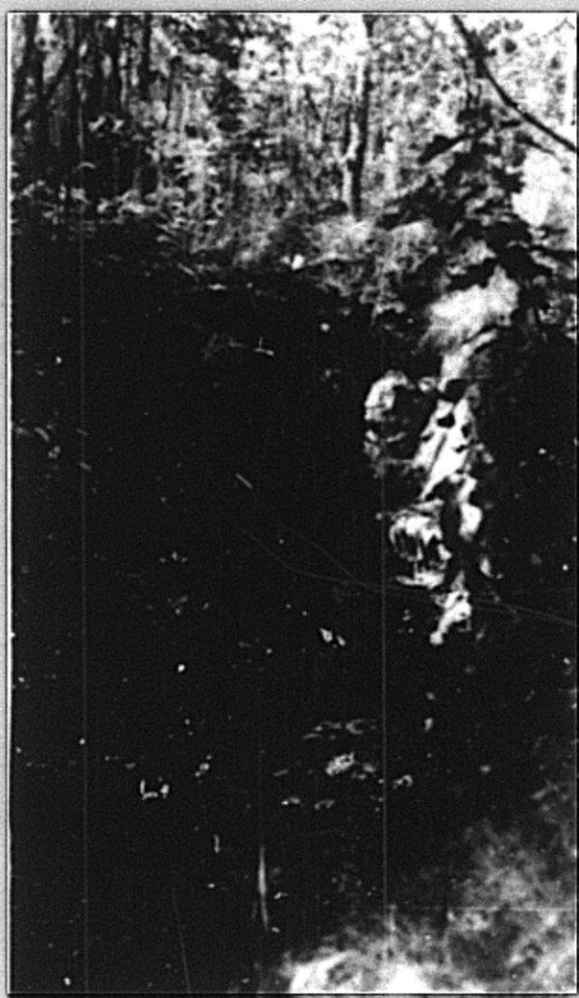


The "Three Maidens" from the south.



Quarry of Sioux quartzite on the south side of Silver Creek,
on the NE of Sec. 32, T. 35, R. 10 west of the 4th P.M.
Looking south up the slope of the hill.

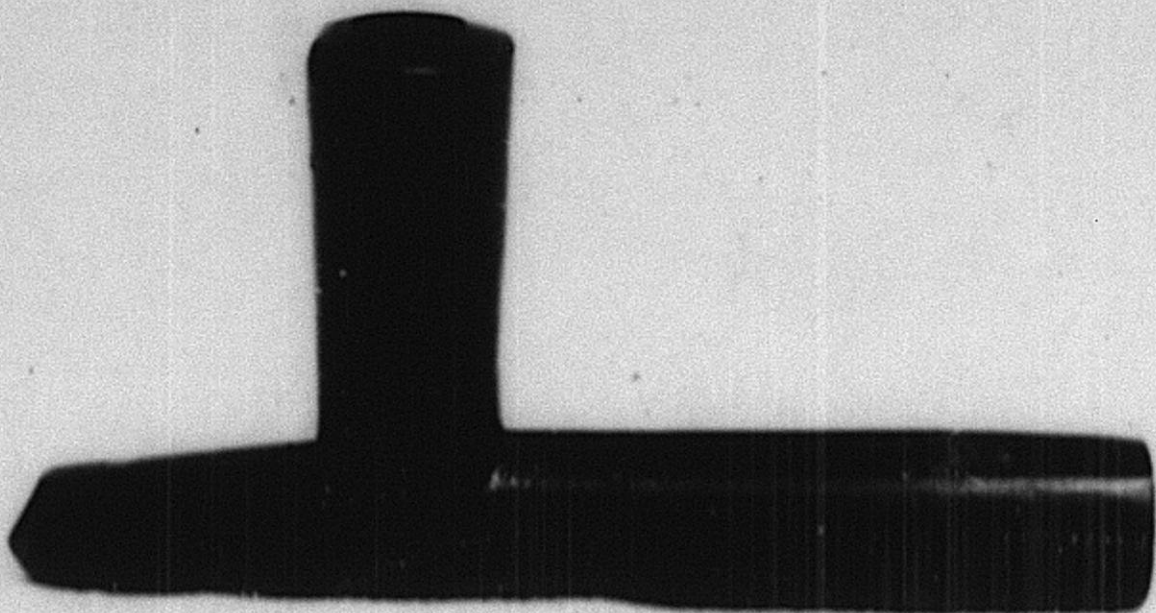
Pipestone stratum in the bed of Silver Creek from the south
bank of which the picture was taken. Considerable quartzite has
been taken out of this quarry for making rock gardens and outside
chimneys in Rice Lake, twelve miles north-west.



Pit on the crest of the hill on the NE SW Sec. 27, T. 35, R. 10 west of the 4th P.M., Looking south.

The dark spot in the center of the picture is where Anderson took out the pipestone for the Madison parties, at four feet below the surface. From this place there was a rectangular opening, at the horizon of the pipestone stratum, through to the old pit on the east from which the Indians had removed the Pipestone long ago.

On the ridge where this pit is located the quartzite is but a few inches below the surface.



A typical Sioux elbow pipe of Minnesota catlinite.

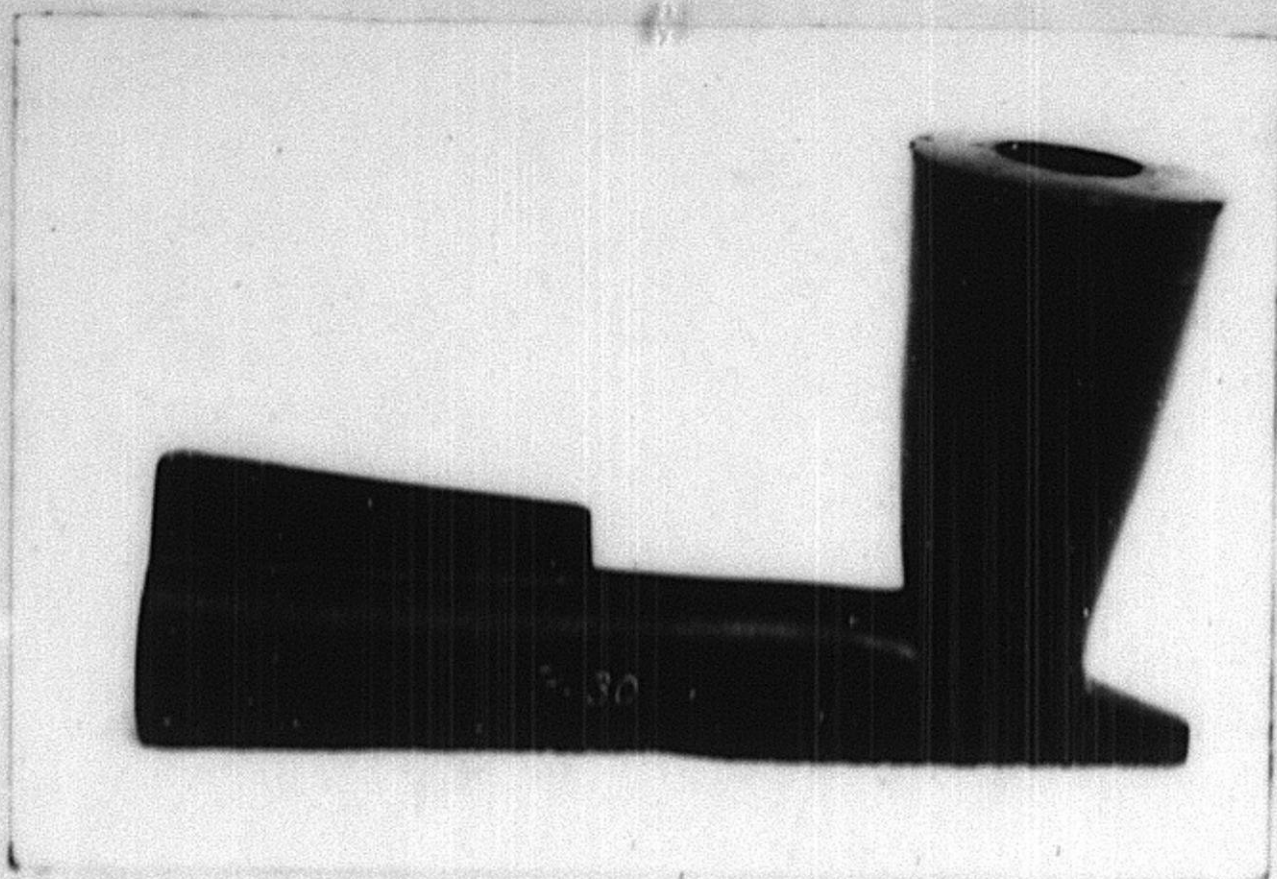
This pipe was purchased in 1885 from a trader in Chamberlain, S. Dakota. Across the Missouri river then was all Indian country and decidedly unsafe for a white man.

It still, after fifty years, retains the odor of the tobacco smoked in it.

Mr. F.L. Pease of Pipestone, Minn., who had traded with the Sioux for fifty years, told me that this type of pipe bowl with the long stem passing the bowl and projecting in front of it, was a "peace pipe". (Calumet) Notwithstanding its age it apparently was made with steel tools.

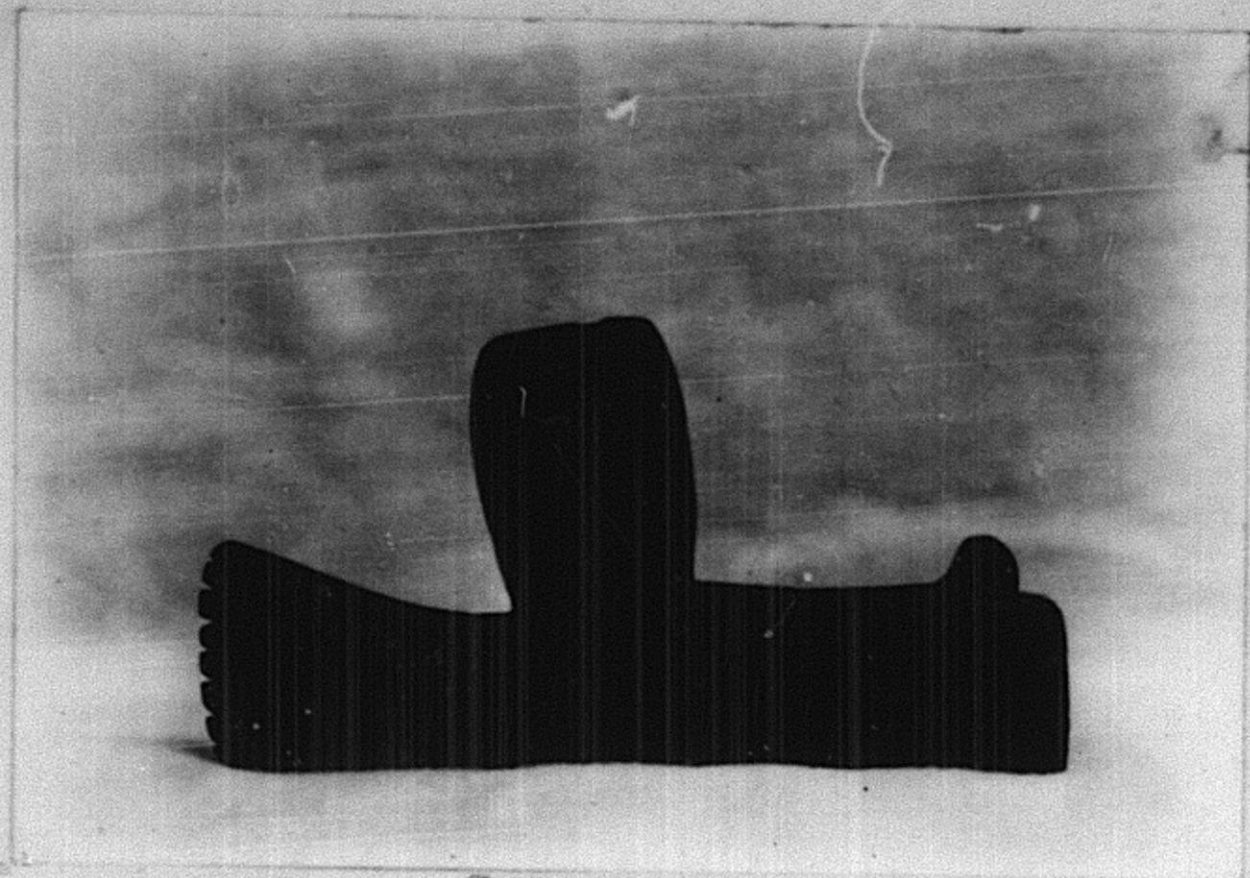
Catlin says that nearly every individual in the Siouan tribes that he visited had a pipe made of this Minnesota pipestone.

However in the vicinity of the Black Hills it was replaced to some extent by a gray or black material found in those hills, called Black Hills pipestone. Photograph actual size.

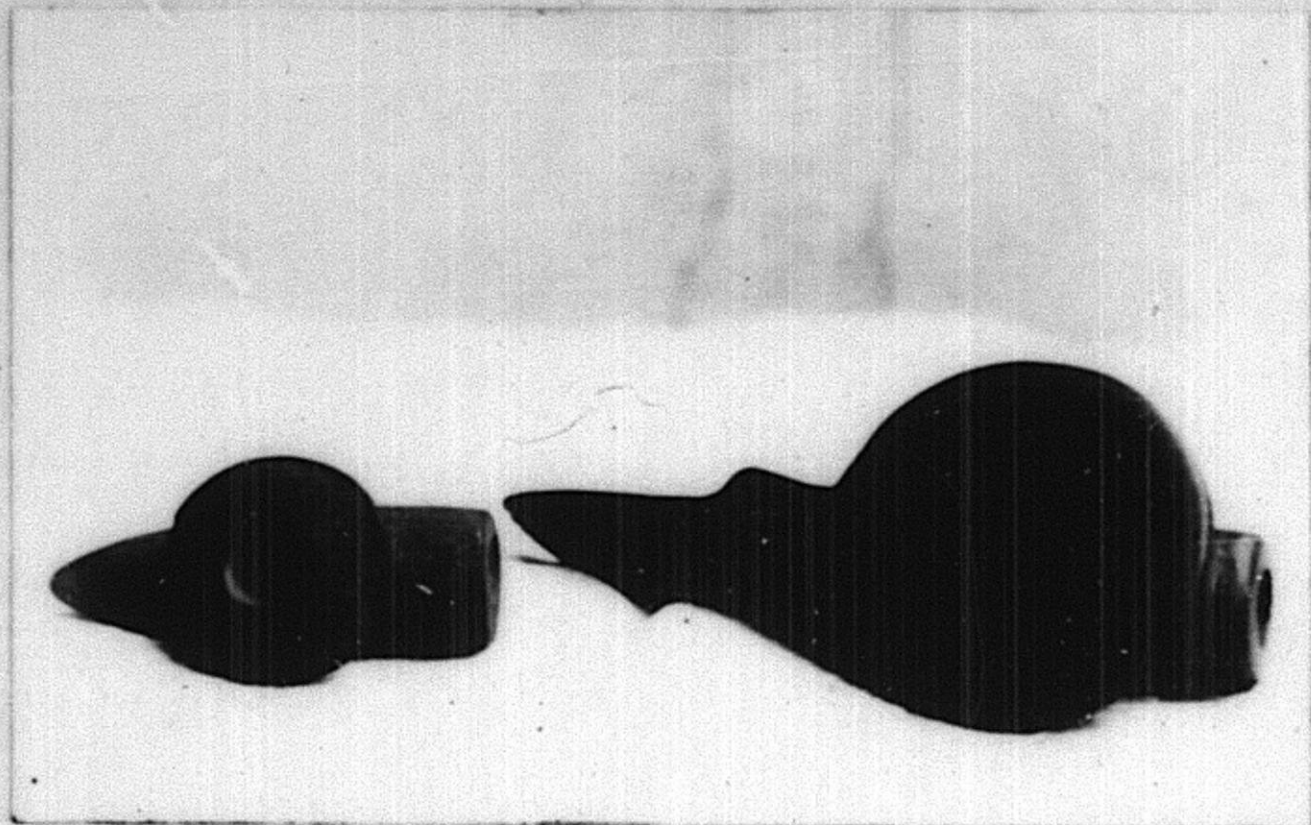


Minnesota catlinite Pipe with "locomotive smoke-stack bowl".

Purchased of Mr. Waters of Waukon, Iowa. It was given to his father just at the close of the civil war by Mr. John Williamson, who served with company F of the U.S. cavalry and was with general Sibley in his campaign in North Dakota against the Sioux who participated in the New Ulm massacre, and where he picked it up on one of the battle fields in the central part of that state.



Pipe of Minnesota catlinite found beside the knees of middle skeleton of burial # 8, uncovered in trenching a burial place of the people of the Oneota culture, along the ridge of Burke's Mound, a sixty-five feet high terrace remnant on the north side of Bear creek on the SE SW Sec. 35, T. 100, R. 6 west of the 5th P.M. in Waterloo township, Allamakee county, Iowa, 1936. Actual size.



At right. —

Disk Pipe of Minnesota catlinite. Actual size.

This pipe was found in 1893 by Mr. W.F. Dresser in a grave of the people of the Oneota culture, in a sandy spot about half way up the slope at the east end of the "Hog Back" on the NE NE Sec. 2, T. 99, R. 6 west of the 5th P.M. and near the New Galena bridge across the Upper Iowa river.

This typical Siouan pipe of Minnesota catlinite was traded east to the Atlantic ocean, but to the west of the quarry, not at all.

At left —

Disk Pipe of slate from Oneota culture grave in Union City twp, Allamakee county, Iowa.

BLACKHAWK CAVE.

Brookman's Bluff or Gabbett's Point as it is sometimes called is a high promontory at the point where the south bluff line of the Upper Iowa River joins the west bluff line of the Mississippi. At the place where the vertical precipice meets the sloping talus of rock and earth, at about two hundred and fifty feet above the flood plain of the rivers, is a cave or shelter in the heavy bedded limestone rock.

This is locally called Blackhawk's Cave because of a tradition that chief Blackhawk, after his defeat at the battle of Bad Axe, was for a time in hiding in the rough country thereabouts and especially harbored about this lookout point with its sheltering cave below. This tradition is doubtless only a myth but the cave is a reality.

It is but a small one having an opening of seventeen feet along the bluff face, a height of four feet from the earth floor to the roof, and a depth back into the rock of seven feet.

Originally it had a height of seven feet from the rock floor to the ceiling but that filled in to a depth of three feet with rock debris and soil in about equal proportions.

Traces of use by man in the shape of charcoal, bones, and crumbling clam shell were fairly common throughout the entire filled in deposit but were most abundant at a depth of from one to two feet below the soil surface.

This horizon yielded, besides many other fragmentary pieces, six complete lower mandibles and five detached cuspids or fangs of the black bear, and two almost complete maxillae with molars and portions of the skulls of this animal.

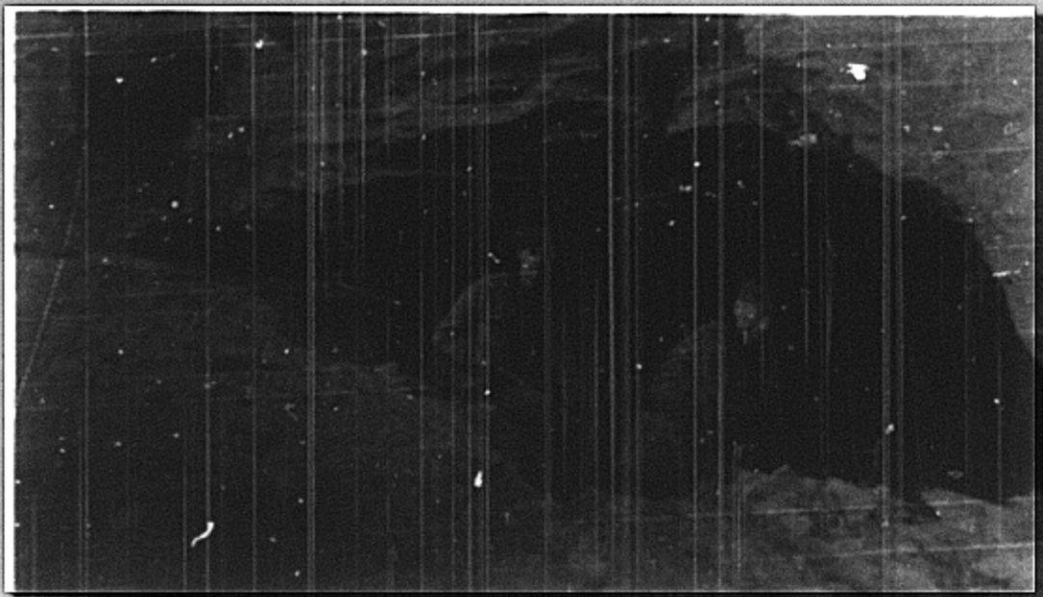
At a lower level two well preserved short and robust humeri, evidently belonging to the same animal as they were from opposite sides, were found together.

Fragments of long bones, probably the leg bones of deer, were found sparingly at all levels, with one piece having a diameter of two and one-half inches. This latter would be that of a buffalo or elk. The smaller long bones had all been cracked open lengthwise to obtain the marrow. Some were charred.

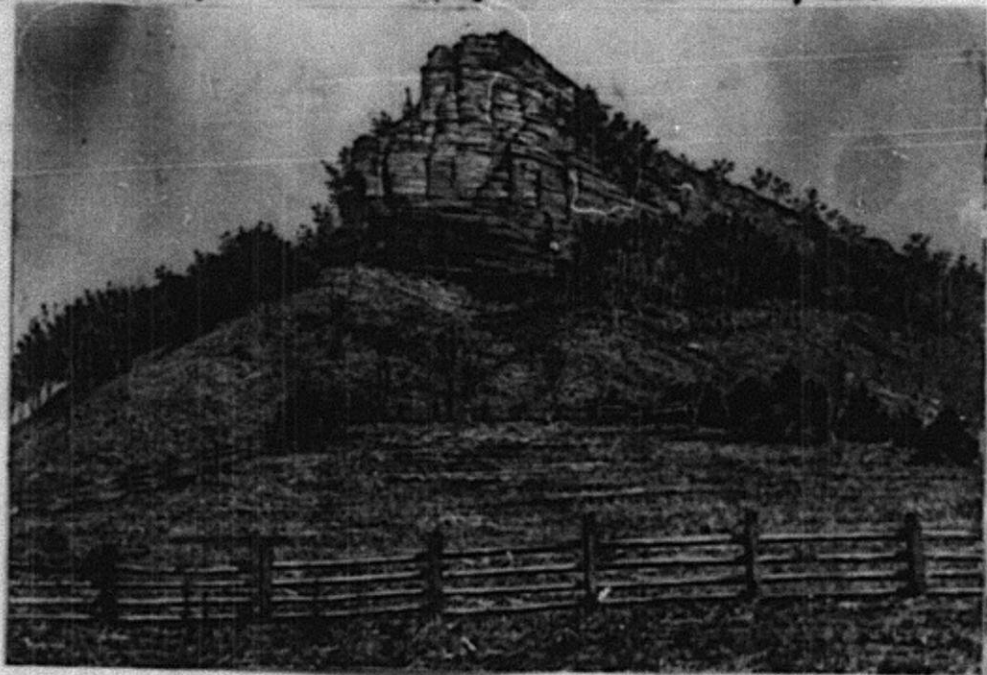
Six "wishbones", three of them of large birds like geese or turkeys, two large fish vertebrae, and some fragments of turtle shell, together with clam shells, indicated quite a variety of food for the people who frequented this shelter.

Two unwrought antler tips, one arrow-head one and one-half inches long, and a few flint flakes, two of which showed secondary chipping, were the only weapons or implements found.

Of the pottery - found at all levels - we were able to save twenty-five pieces ranging from one-half up to two and one-half inches in diameter. All were of the Oneota culture - light colored; tempered with pulverized clam shell, and decorated sparingly with shallow incised lines a strong sixteenth of an inch wide, apparently made with a piece of wood, or more likely of bone, having a chisel-shaped end of that width, or with the point of a flint.



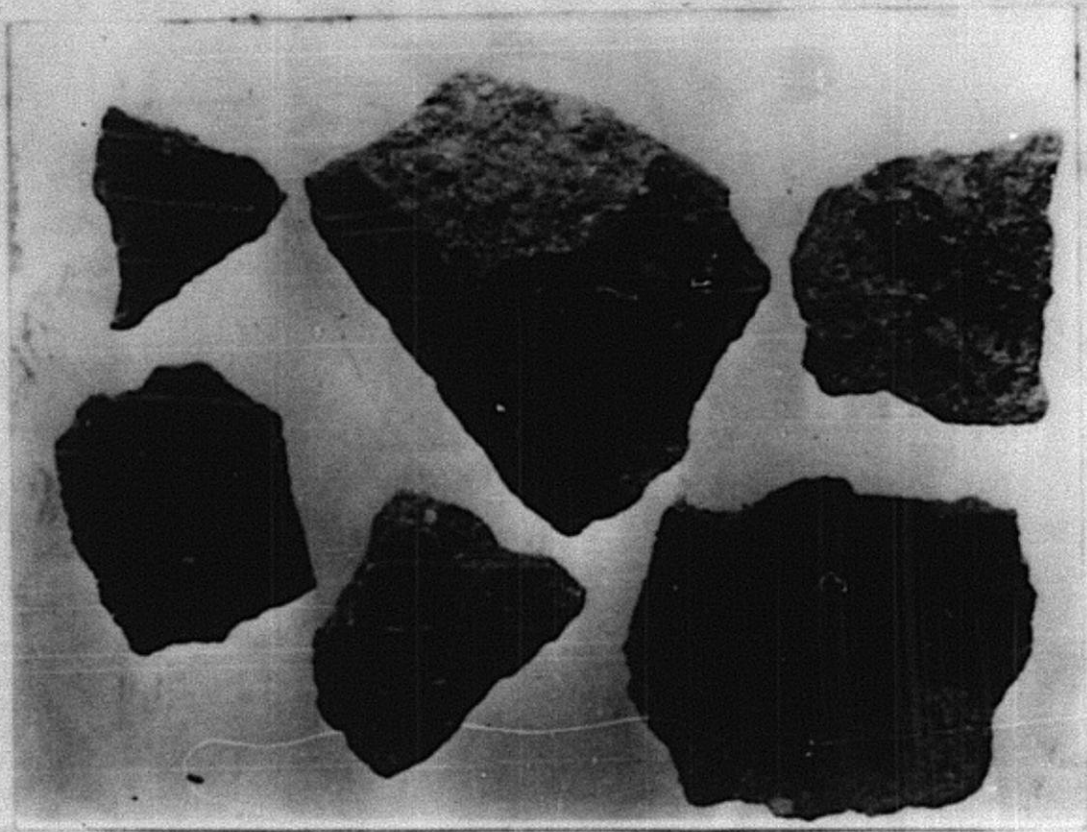
Dr. Henry Field (left) and Dr. Warren Hayes (right) excavating the Blackhawk cave, Sept. 23d, 1929. SE SE Sec. 15, T. 100, R. 3 west of the 5th P.M. at the foot of the precipice at the N. end of Brookman's Bluff, 2 mi. directly S. of New Albin, Ia.



Brookman's Bluff as it appeared in 1889. Looking south. Note the complete absence of oak and cedar which now completely covers it. The black spot at the bottom of the precipice is the Blackhawk cave.



Mandibles and Fang of Black Bear from Blackhawk Cave
two miles south of New Albin, Iowa.
One-half actual size.



Oneota Culture Pottery from the Brookman Cave 2 miles South of New Albin, Iowa. No Algonkin pottery sherds were found in this Shelter. All the inclusions were of the Oneota Culture. Actual size.

THE FISH FARM CAVE OR ROCK SHELTER.

The Fish Farm Cave is an enlarged crevice near the south end of a very irregular ledge of St. Croix sandstone, about fifteen feet high, and close to and along the water's edge of Botsford's Slough, now the new channel of the drainage ditch carrying the water of the Upper Iowa River, in the SE NE Sec. 26, T. 100, R. 4 west of the 5th P.M.

Along the top of this ledge runs the track of the C. M. St.P. & P. R. R. at about forty feet from the slough.

This cave runs directly back into the sand-rock and under the rail-road, having a height at its mouth of 6 ft. At 18 ft. in there is a drop in the roof of 1 ft., making the height at that point, 5 ft. For the next 9 ft. the floor has a slight upward slope making the height at the end of the cave proper, at 27 ft. in, 4 ft.

Beyond that is a crevice which soon pinches out.

For the first 18 ft. the floor is level and is composed of sediment deposited at times of high water in the Mississippi river, it being only 6 ft. above low water in Botsford's Slough.

The south wall of the cave runs back nearly straight for the entire depth of the cave and is quite smoothly vertical.

The north wall at first bears northwesterly, then at 13 ft. turns abruptly south for 4 ft., and from there on to the end of the cave is fairly straight. This wall is quite irregular and towards the front overhangs.

At the bottom of both walls are slabs of solid rock with tops just above the floor. At the top the sides curve inward abruptly forming a flat arch roof.

is closed About 20 ft. south is another similar cave but the entrance to it by earth and old ties thrown down over the rail-road bank.

Mr. Ed. Sadd, who has known these caves since he was a boy, says that it was fully as large as the one which we have been describing and like it had petroglyphs on its walls but not so many.

Mr. T. H. Lewis visited these caves in 1889 and made tracings or rubbings of nine figures, none of which are found on the walls of the Fish Farm Cave. His figures were probably copied from the walls of the now closed cave.

About 30 ft. to the north of the Fish Farm Cave, in the very irregular ledge front, are two small fissures, 2 ft. wide and 6 ft. deep. On the south wall of the south one, near the entrance is a group of five "turkey tracks" and in irregular row below them, and seemingly a part of the group, are four lozenge shaped figures.

We had always believed that these latter were the work of white men or boys but they with the "turkey tracks" appear to form a group and after all may be Indian, and so have included them in the sketch. Anyway they can not be kept out of a photograph and any visitor must of course see them.

This may be the Lewis group on the rubbing of which he has noted, "this group carved on rock", and in the copying of which he left out the lozenge shaped figures.

The cave which we have been describing and which we have called the Fish Farm Cave, is seven miles north of Lansing, and one-fourth mile south of the Fish Farm Group of Prehistoric Mounds, on the Lansing-New Albin Road, state highway No. 182, which is now a preserve of the Conservation Commission of the State of Iowa.

It is rich in Indian petroglyphic markings, especially so near the middle part, but none of which appear to form any recognizable figure except a few "turkey tracks" and one other.

On the north wall at from fourteen to eighteen and one-half feet from the entrance, with head towards the entrance to the cave, is the unmistakable and pretty complete outline figure of a buffalo, 4 ft. 6 in. from tip of nose to tip of tail.

The hump is very pronounced and within it is one of the very peculiar "grid" markings, of which this cave affords ten others not forming any part of any other figure, and one, a part of the buffalo's tail.

These grids, of the occurrence of which, we are unable to find any account or mention in any book, paper or report, and which we have not found in any other cave or on the walls of any shelter elsewhere, consist of a number, four to ten, of straight, parallel incised grooves, an approximate average of which, for width would be from one-eighth to one-half inch, with a depth of one-fourth inch.

Crossing the longitudinal lines diagonally, in two cases are other similar lines, all being at a surprisingly uniform distance of from one to one and one-half inches apart.

The lines forming the grids are cut deep and narrow as if done with a sharp implement, differing from the shallow half-round grooves forming the outlines of other petroglyphs.

On the plans, sketches and photographs of the cave we have indicated the grids by the capital letters M, N, O, P, R, S, T, U, V and W.

Grid M is on the sloping surface of a spur running out from the north wall, the lower end being at the floor level of the cave. It consists of four deeply incised lines running up the slope of the spur and crossed by four diagonals.

Directly above grid M, on the almost vertical wall, is Grid N. This has eight incised lines across the face of the spur, crossed near the center by two diagonals running upwards to the left on each side of which is one running to the right.

Above and to the left of N is Grid O of four vertical incised lines.

Grid P is cut on the horizontal top of a slab of rock on the north side and at about eighteen inches above the floor. Four lines running crosswise of the cave, or north and south compose it.

About 4 ft. west of this on the same slab is Grid R of four incised lines, also horizontal, but running east and west or lengthwise of the cave.

Grid U is composed of four horizontal lines running lengthwise of the cave and is located on the bottom of a pocket in the south wall.

Grid V is composed of four lines running into and on the bottom of a hole in the wall which may reach through into the cave to the south.

Grid W on the floor of a small recess near the cave floor, is composed of ten lines running lengthwise of the cave.

As back of thirteen feet from the cave entrance the walls were so close together, it was impossible to obtain good or complete photographs of Grids P, R, U, and V, or of the buffalo.

However a study of the plan of the cave, the sketches, and the photographs that we were able to obtain, should give a very good idea of the cave and the petroglyphs that it contains.

PLAT of

FISH FARM CAVE

SE NE Sec. 26, T. 100, R. 4.

— Outline of Wall at Floor

--- Outline of Wall 2 ft. from Floor

---- Outline of Wall 4 ft. from Floor

A to B, 27 ft.

Height at Entrance = 6 ft.

Height at C - drop in Roof = 5"

Height at B = 4"

Horizontal Scale, 1 in. = 4 ft.

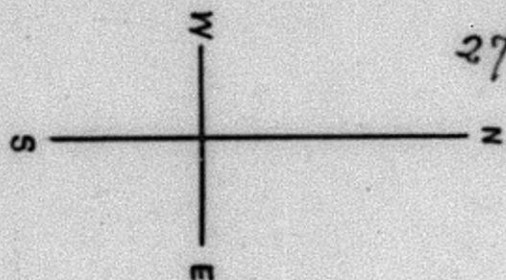
Horizontal Grid in Pocket =
2 ft. above floor - V

Horizontal Grid at Opening
to hole - 2 ft. above floor
- V

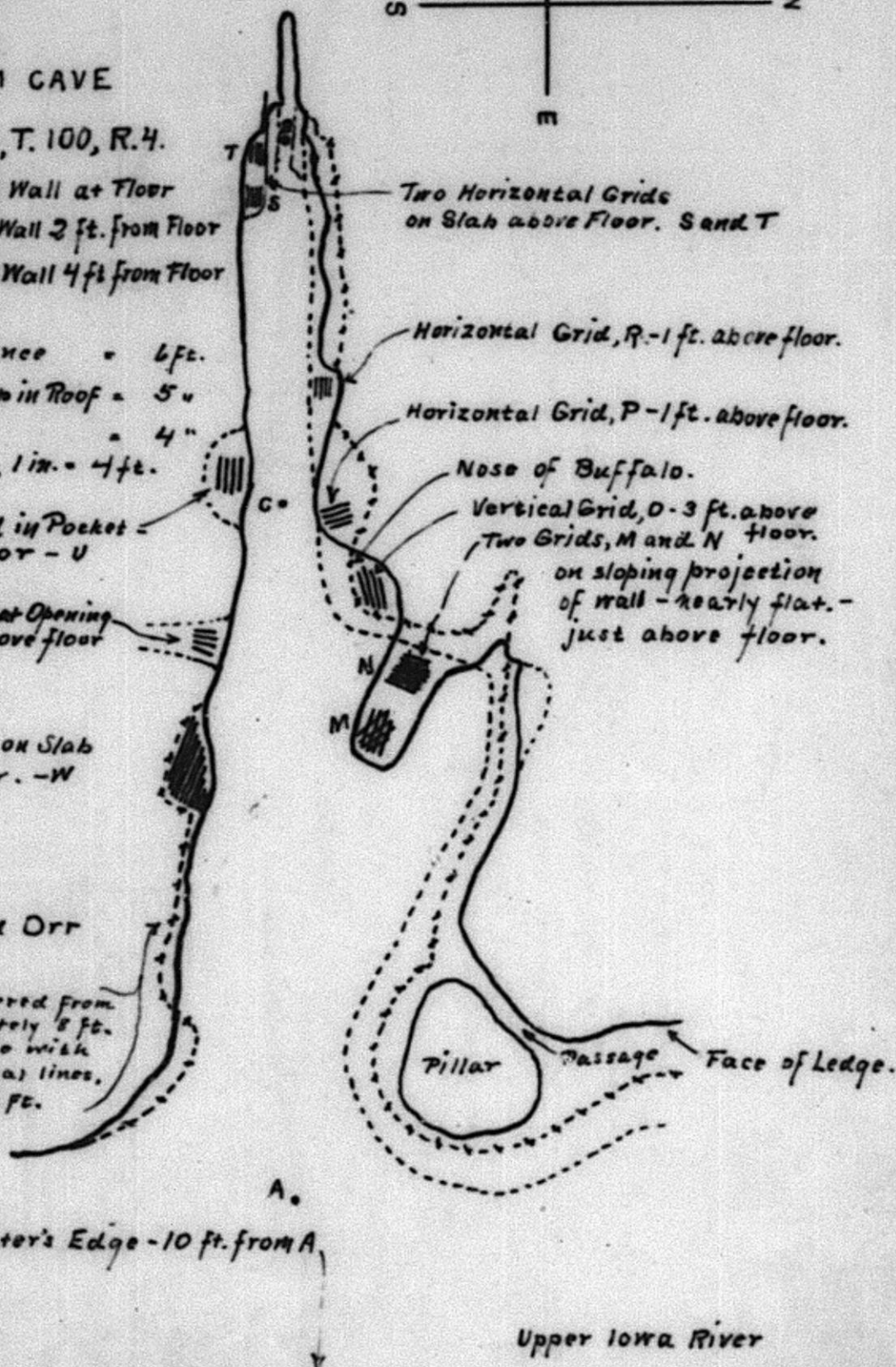
Horizontal Grid on Slab
just above floor. - W

Survey by Ellison Orr
June 12, 1931.

The S. wall is covered from
Grid V approximately 8 ft.
towards Entrance with
irregular vertical lines,
incised, up to 2 ft.
long.

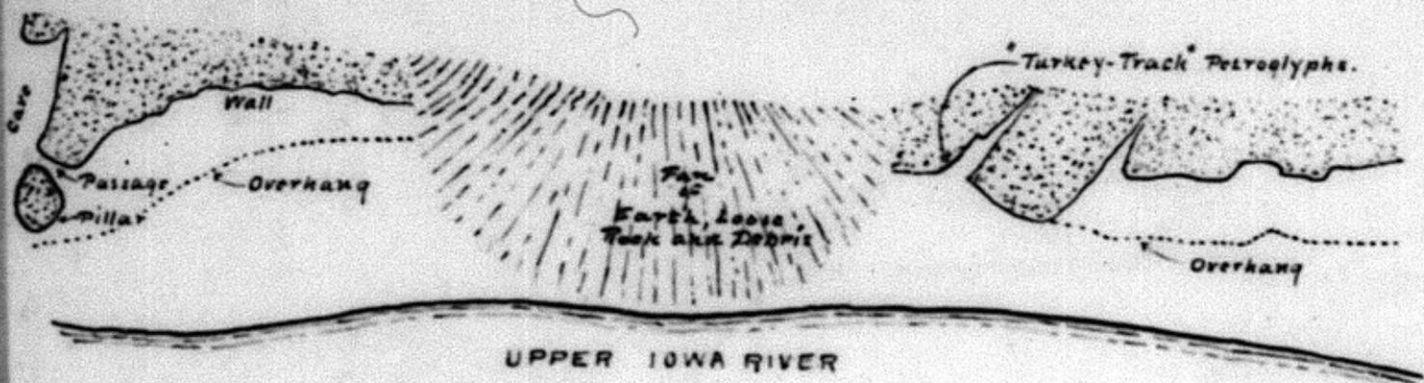


27



Upper Iowa River

NE NE Sec. 26, T. 100, N. 4.



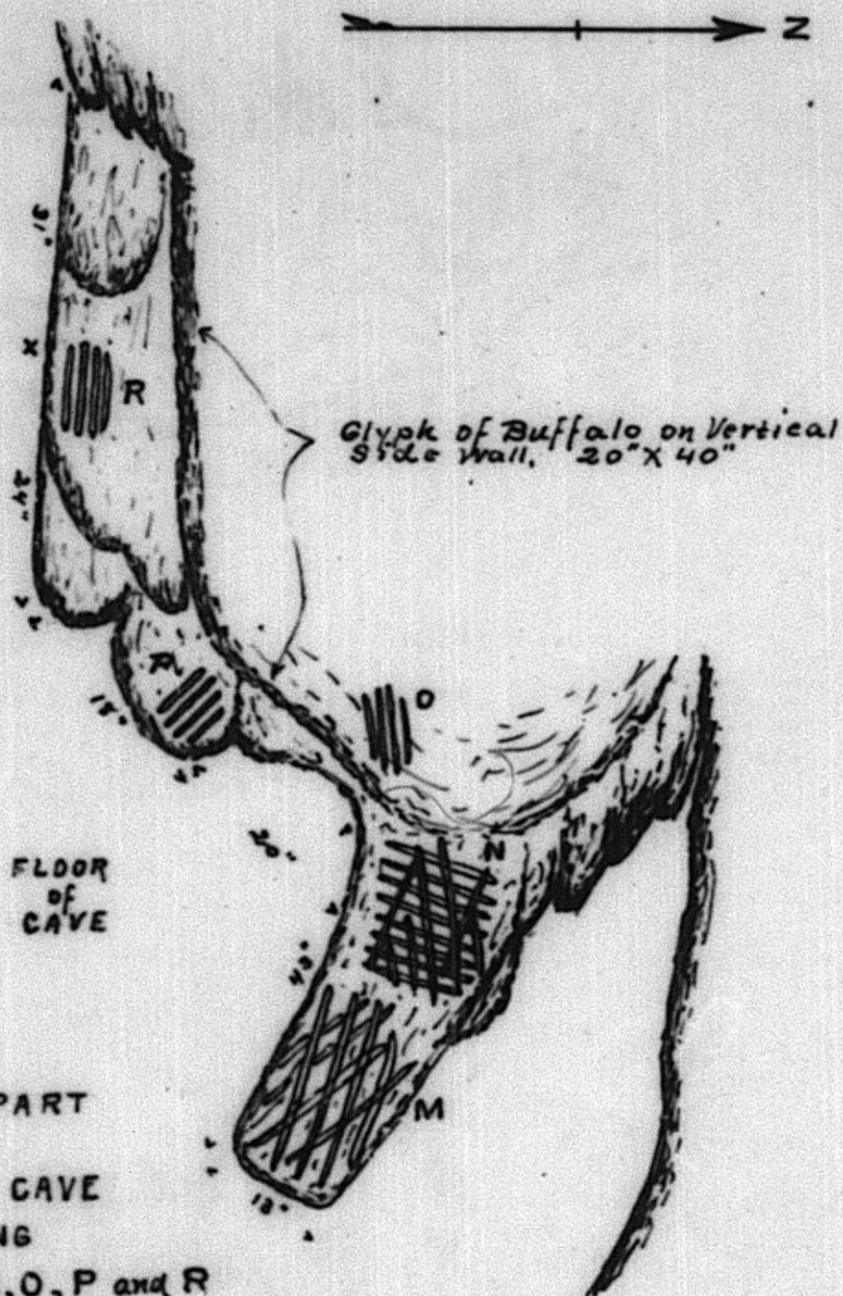
LOW SANDSTONE LEDGES

NORTH OF

FISH FARM CAVE

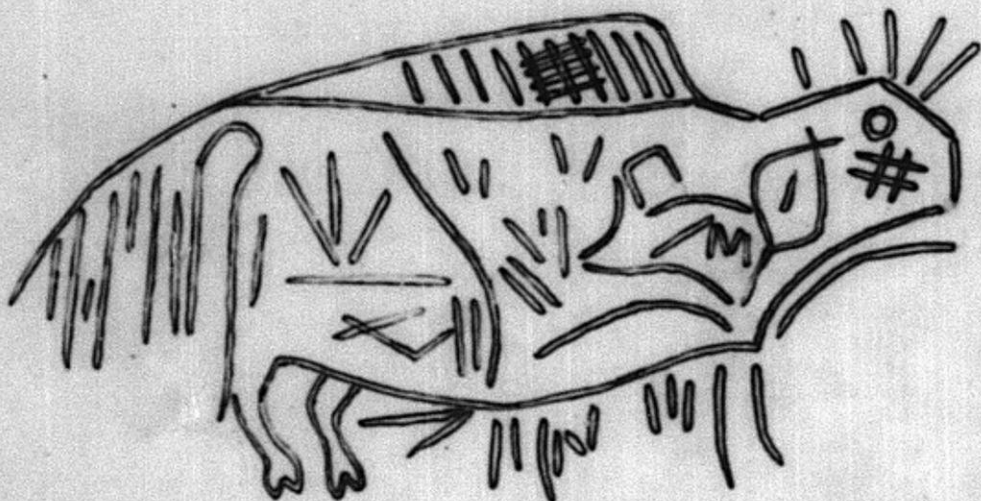
Survey by Ellison Orr,
Oct. 3, 1931.

Scale, 1 in. = 12 ft.



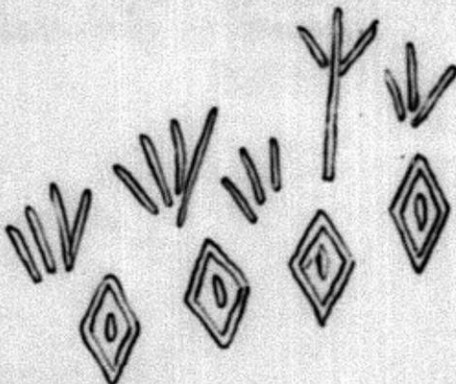
SKETCH OF PART
OF
FISH FARM CAVE
SHOWING
GRIDS M, N, O, P and R

Survey of June 12, 1931



Sketch of Petroglyph of Buffalo.

On the North Wall of the Fish Farm Cave, SE NE Sec. 26,
T. 100, R. 4 west of the 5th P.M.
Total length from tip of nose to tip of tail, 4 ft. 6 in.
Note Grids on Head and Hump.



"Turkey-Tracks" on the south wall of small crevice in
Ledge north of Fish Farm Cave. About 1/10 actual size.



Party of Sioux at work quarrying catlinite in a pit near Pipestone Creek, on Pipestone Indian Reservation in Pipestone county, south-west Minnesota.
See page I.



Entrance to the Fish Farm Cave. Faces the East.
SE NE Sec. 26, T. 100, R. 4 west
of 5th P. M.



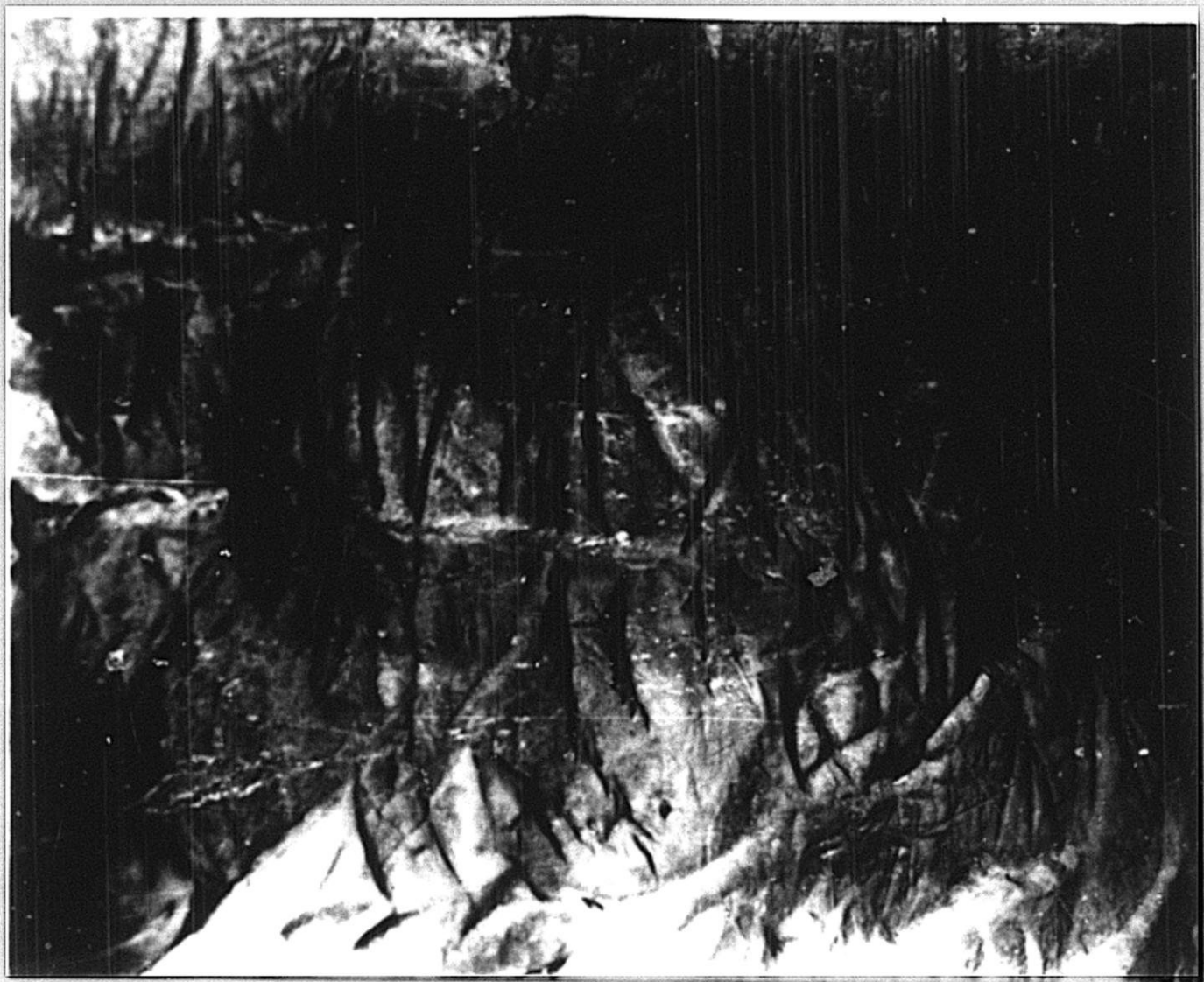
Interior of the Fish Farm Cave from just inside the Entrance, looking towards the rear end. Note the five Grids, M, N, O, P, and R on the right (north) side, and U and V on the left (south) side.



Close-up of Grids M, N, and O with P in the background.
Fish Farm Mound Group.



Grids S and T of the Fish Farm Cave, on horizontal slab near the floor, on the left (south) side at the rear of the Cave.



Part of the South Wall of the Fish Farm Cave, showing Grid V at entrance to hole in the wall. This hole may reach through to the closed cave on the south.



Part of the south wall of the Fish Farm Cave showing Grid W near the floor and also the entrance.

MOUNDS OF THE UPPER IOWA RIVER ---

Power Dam Group	Vol. VIII, Page 52
Schlinde Group	Vol. I, Page 122
Ward Long Mounds	
Simonsen Farm House Group	Vol. VIII, Page 50
Simonsen Ford Group	Vol. VIII, Page 50
Otto Voll Group	Vol. VIII, Page 46
Otto Voll Group (s. side of river) (?)	
Hog Back Mound	Vol. V, Page 47
New Galena Group	Vol. I, Page 6 Vol. V, Page 65
Jo Martin Mound	Vol. VIII, Page 38
Saddler cemetery Group	Vol. VIII, Page 48
Hartley School Group	Vol. VIII, Page 39
Lane Farm Terrace Group	Vol. I, Page 39 Vol. V, Page 1
" " " " Map	" " " 67
Collins' Pond Group	Vol. VIII, Page 45
Big Spring Group	Vol. I, Page 114
Hammel Group	Vol. I, Page 114
Weymiller Group	Vol. I, Page 120
Morgan School Group	Vol. VIII, Page 49

The Hartley School Mounds.

Running out from the foot of the south bluff, where the valley of French Creek opens into that of the Upper Iowa river, and between the two, is an irregular triangular terrace of from 20 to 25 acres in area. A road runs along the south side of this terrace at the foot of the north slope of the south bluff and on the south end of the terrace alongside the road, is the Hartley School House.

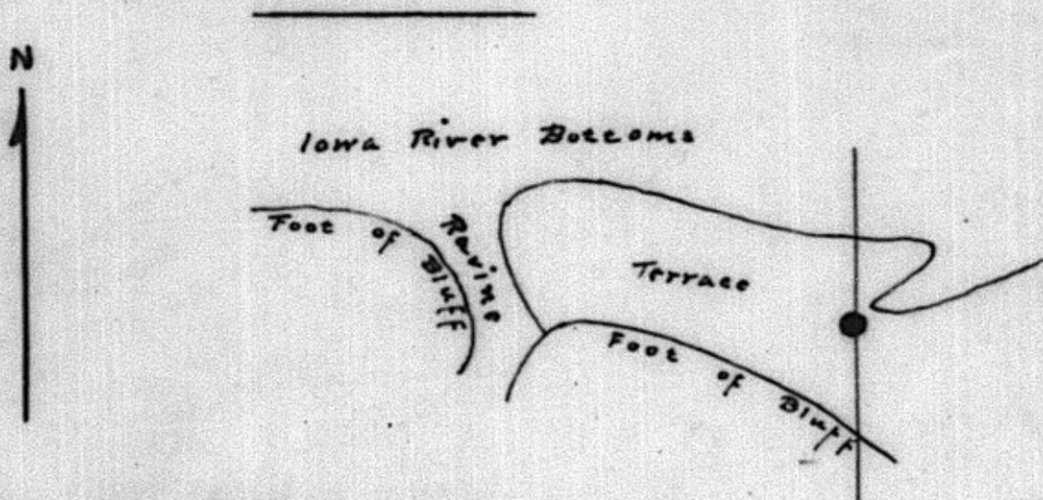
Three-fourths of a century ago this road was a main traveled road over which wheat grown by the pioneer settlers along the Minnesota-Iowa line, for many miles to the west, was hauled to Lansing then their nearest market.

Along the top of this terrace on the east or French Creek side, at the north end, is a row of five circular tumuli, to the south of which, at the point, are two on the side facing the Upper Iowa valley.

This part of the terrace is covered by second growth red oak and poplar timber, - which means that it was prairie when the white man came. Half way to the road on the south the terrace narrows to a fifty foot wide "hog back", along which runs an embankment one-hundred feet long.

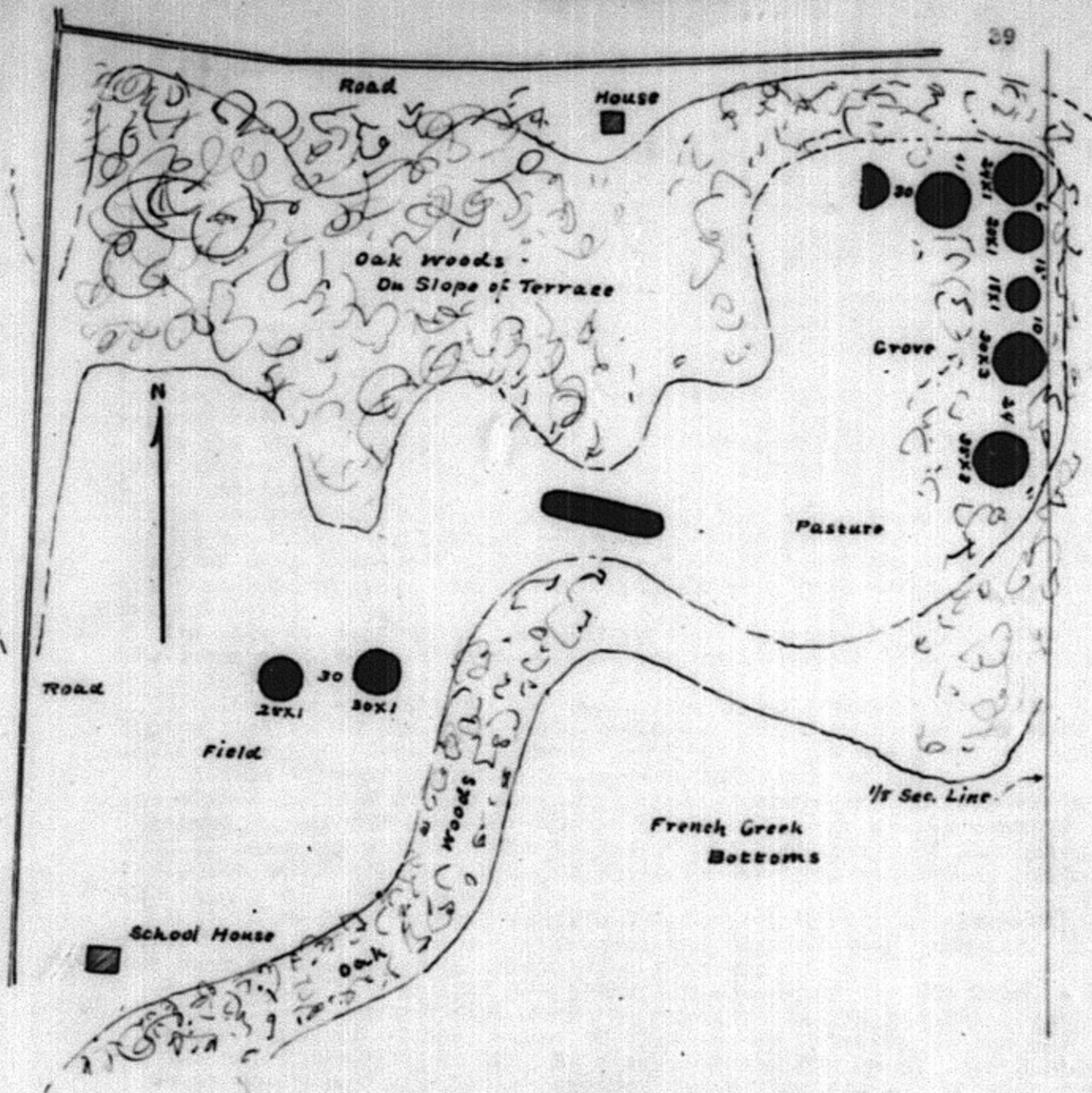
South of this is a small field where were two round mounds now obliterated by cultivation. On this field, when conditions were favorable, one could usually find worked flints and chips.

See page 39 for map.



The Jo Martin Mound.

Isolated Mound, thirty-six feet in diameter and two feet high. On terrace on the south side of the Upper Iowa river, west of the old Jo Martin home, - crossed by the 1/8 section line at 600 ft. north of the 1/8 section corner on the south side of the NE of Sec. 1, T. 99, R. 6 west of the 5th P.M.



Hartley School Mounds.
 On the SW of the SE of Sec. 2, T. 99, R. 5 west of the 5th P.M.
 Distance apart and dimensions of mounds in feet
 Survey 1914 by Ellison Orr.

SOME HERETOFORE UNSUSPECTED BURIAL PLACES.

About one mile south of New Albin in Sections 14 and 15 in Iowa township of Allamakee county, the government surveyors found, when they did their work on the Iowa River bottom, two lakes, both of which the line between the sections named, crosses.

As these little lakes appear on their maps they look very much like the pictures of the long, crooked gourds of the old-fashioned gardens.

Lying in the midst of the wide, and then grass covered, flood plain of the Upper Iowa, they, like the river itself, and a part of an old channel which they were, had a bordering fringe of elm, box elder and soft maple trees.

They had an area of perhaps fifteen acres each and must have been of considerable depth.

On the NE 1/4 of Sec. 29 of the same township was a similar lake or pond, which like the other two is a remnant of an old partly filled-in channel.

The encircling growth of timber around the lakes on sections 14 and 15 remains today but the lakes themselves are no more. The sediment of many a flood has filled them bank full and the bits of water, once beauty spots, have been replaced by a rank growth of sandbar willow.

The lake on section 29 has escaped this fate and is still much as it was when the men with compass and chain mapped it as part of Uncle Sam's domain.

In times of high floods the Upper Iowa river sweeps across the bottom land below the rail road embankment, north into the the most south-westerly of the two lakes on section 15. In the flood of this (1917) year the water here cut away the left bank of the river in two places and the strong current sweeping across the field towards the lake washed off much surface soil, scooping out a wide shallow channel entirely across north to the timber bordering the old lake, along the south and east side of which it ran into section 14 and back again into the river.

Just where this washout strikes the timber and turns northeast about three feet of the alluvial soil was carried away, exposing and partly washing out a number of skeletons.

Here on the bottom land along the south bank of the old lake, at a couple of hundred feet from the trees bordering its bank, and a little north of of the center of what we now describe as the NE of the SE of Sec. 15, T. 100, R. 4 west of the 5th P. M., had been laid at rest some time in the by-gone years, perhaps far back in the forgotten ages, the dead of an Indian village. Perhaps Sioux, perhaps Sac or Fox or Illini, or perhaps none of these.

When we visited the spot Sept. 1st there still remained exposed, six more or less complete skeletons partly imbedded in the black alluvial soil and from which the covering had in part been removed.

Wherever the bones had been washed completely out they had been carried away by the flood.

Three skulls remained one of which was several feet from its matrix in the soil. All these were well preserved and packed solidly full of sandy black alluvial bottom land.

The bodies had been buried in two east and west rows with the feet to the south and all were fully extended.

From two that were partly uncovered we removed the remaining earth but found no relics of any kind. These two were skeletons of women.

It was reported to us that the parties who first discovered the skeletons found with them a pot but this rumor could not be positively verified. These parties claimed that nineteen skeletons were uncovered but we saw nothing to indicate that there were that number.

Probably more were washed out than there were traces of at the time of our visit but we think from an examination of the ground that there were not more than ten. There may have been more buried under the undisturbed ground to the south.

The finding of this old burial place is interesting as being the first one found, so far as known, on the flood plain of the Upper Iowa River. Burials on its bordering terraces were exceedingly numerous. In fact these terraces within Allamakee county are one continuous great aboriginal cemetery.

Burials also were occasionally found on the bluff tops.

We know now that the bottom lands also were used and it may be to an even greater extent than the terraces. But owing to the fact that this stream has been filling in its valley instead of cutting it deeper, - from two to three feet of "made land" have been superimposed by floods since the coming of the white men - such burials were not suspected.

Early settlers tell of the abundance of Indian relics of all kinds found in the soil of the prairie bottoms when first broken up, but in later years nothing is found, the relic bearing rich black alluvial soil being now too deeply buried under the lighter colored soil from the uplands for the plow to reach it.

Occasionally the water of some flood will wash away again the later deposit, leaving exposed patches of the older black earth, full of snail shells and always affording arrow heads, flakes and fragments of pottery.

The main road to New Albin, from the west, lies along the north side of the Upper Iowa River, at the foot of the bluffs and terraces. Near the lakelets on Sec. 29 a branch road runs from it across the bottoms to connect with the road along the south side.

Where it crosses the outlet of the little lakes, at the corner of sections 20, 21, 28 and 29, is now the big drainage ditch which carries the water that formerly flowed in the old channel, and across this was built this summer a bridge, placed nine or ten feet above the flood plain to above the highest floods.

The considerable amount of earth to make the approaches to this bridge was gotten by the contractor from the bluff side bank of the New Albin road a few hundred feet away, at the point where the branch road leaves it.

Above the road at this place, lying along and against the side of the bluff, there is only a narrow terrace about 100 ft. wide at the top which is about 75 ft. above the flood plain, and towards which the river side slopes at an angle of 25 to 45 degrees. The road here, as it is for most of the way along the river, is a "dug-way" along the side of the terrace at about twenty-five feet above the

bottoms. This type of road always has a high bank on the bluff or terrace side and a slope or embankment on the other or river side.

The bank from which the contractor took the material to make the approaches is of pure stratified sand with many limestone rocks in it, some of them quite large, and with two or three feet of black sandy loam at the top.

In taking away this bank nineteen skeletons were unearthed, and since then two more. These burials lay in a row running parallel to the foot of the bluff with the feet to the south-east or down the slope. They had been buried to a depth of two to three and one-half feet and mostly, the workmen said, in a sitting position.

It is very probable that they were lying prone and that due to the slope of the ground, with heads up-hill, the workmen concluded that they were buried as they said.

Those farthest east were badly decayed while the more westerly were quite well preserved. The skulls were packed full of the sandy loam, which when dry could be poured out like water.

The burials were close together, the skeletons lying side by side and almost touching. All the bones that we saw were those of an adult, among them being six skulls, all but one of which showed decayed teeth.

The men said that there was one child's skeleton among the nineteen with which was a very small broken pot of about three inches in diameter.

With most a pot had been buried in each of which was a clam shell spoon. The men did not observe and could give no definite information with regard to their position relative to the bodies which they were buried with.

Three of these were taken out perfect. Two others were somewhat broken but all the pieces were saved and could be easily restored. One other was perfect except that in digging it out the rim was badly chipped. All others were broken, by the weight of the soil lying over them, into small fragments and were not saved.

All were about six inches in diameter and five deep, round bottomed, symmetrical, shell tempered, of globular type, and with very little in the way of ornamentation.

Besides the pottery there was found a fine typical Oneota culture chert knife, not notched, with ends pointed oval, about seven inches long; a block-shaped pipe bowl of some light colored stone and having a fairly well carved face on its front, opposite the hole for the stem; a copper snake - the best I have seen - an eighth of an inch in diameter and seven inches long; several small finely wrought, un-notched, triangular arrow points, and some others of indifferent make.

The pottery and the other artifacts were scattered among the different finders - the men who worked on the job. As usual they had extravagant ideas of its value and would neither sell or loan it for careful examination, measurement and description or to be photographed.

None of the articles found, so far as we were able to get information, showed contact with the whites except possibly the pipe.

Not a fragment of clothing of any kind was found and the hair had disappeared.

None of the burials could have been made less than seventy years ago, (1848) and judging from their condition and the lack of anything showing contact with the whites, the time must have been much longer, prior to the establishment of a trading post at Mackinac, early in the seventeenth century.

Waukon, Sept. 15, 1917.

In the summer of 1832 occurred what is known as the Blackhawk war.

The Sac Indians, then located in eastern Iowa, chagrined and dissatisfied with their cession to the United States of their lands in northwestern Illinois, under the leadership of chief Blackhawk, returned to these, but soon were forced by the regular soldiers and militia to retreat northward into Wisconsin.

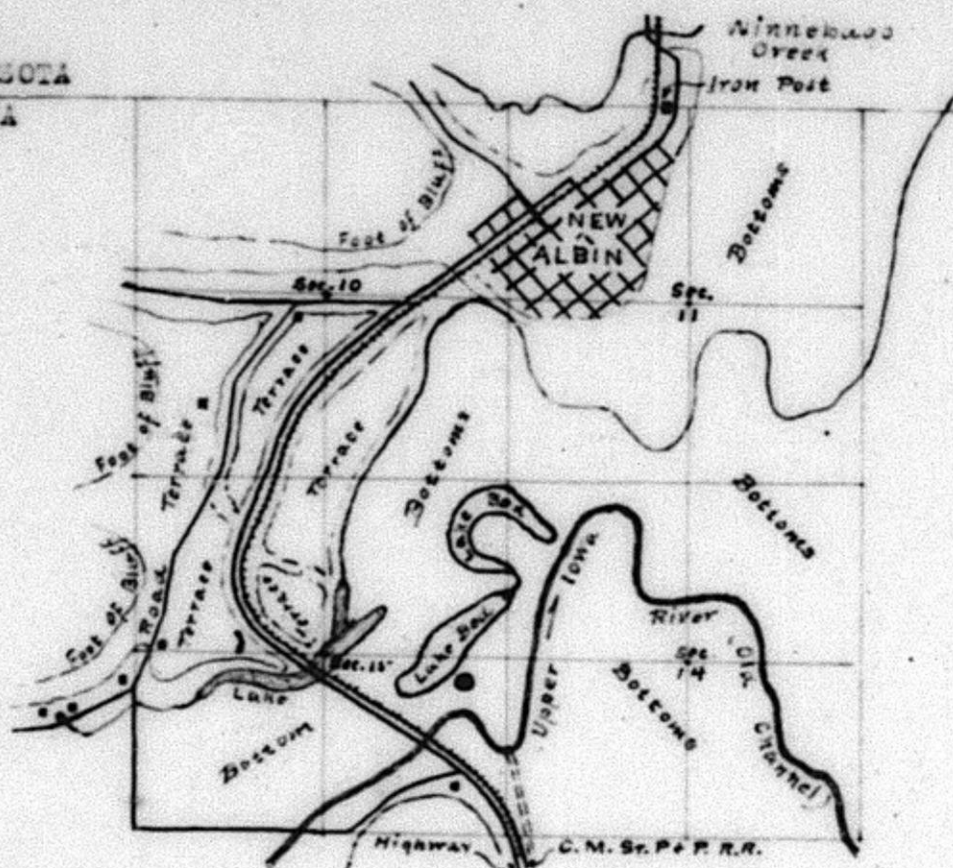
There was a vigorous pursuit by an overwhelming number of soldiers and the hard pressed Indians, after a few skirmishes, were finally brought to bay on reaching the Mississippi river and a fight occurred at Battle Island just across the river from New Albin, where the band was almost exterminated.

A part, mostly women and children with some men, escaped by swimming the river.

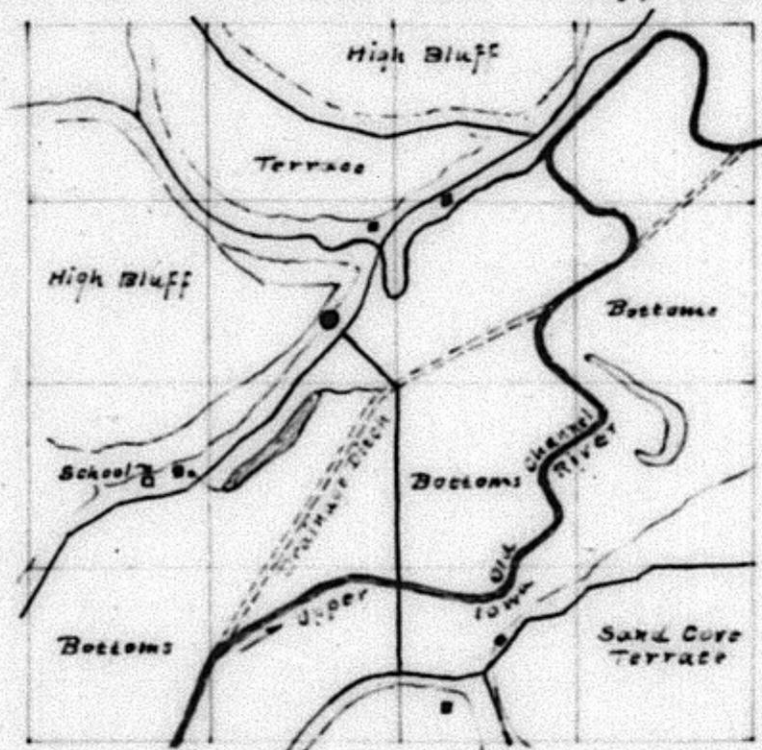
On reaching the Iowa side these were attacked by the Sioux and many of them killed.

This must have been in the immediate vicinity of the mouth of the Upper Iowa River, and it is not improbable that the skeletons uncovered by the flood, near the lake on section 15, two of which we know were women, may have been those of a part of this unfortunate people.

Waukon Dec. 10th, 1931.



Map of Sections 10, 11, 14 and 15 of Town 100 north, Range 4 west of the 5th P. M., Iowa township, Allamakee county, Iowa.



Burial places on Both maps are indicated by ●

Map of Sections 20, 21, 26 and 29 of Town 100 north, Range 4 west of the 5th P. M., Iowa township, Allamakee county, Iowa.

COLLINS' POND MOUND GROUP.

Two round mounds on the top of and near the edge of a terrace of about fifteen acres in extent lying against the east side of the bluff point between French Creek and the valley of Clark's Creek on the east. The north face of the terrace fronts on the valley of the Upper Iowa, the east face on the valley of Clark's Creek.

The terrace top was once a field but is now very much cut into by dendritic erosion ditches and has been abandoned.

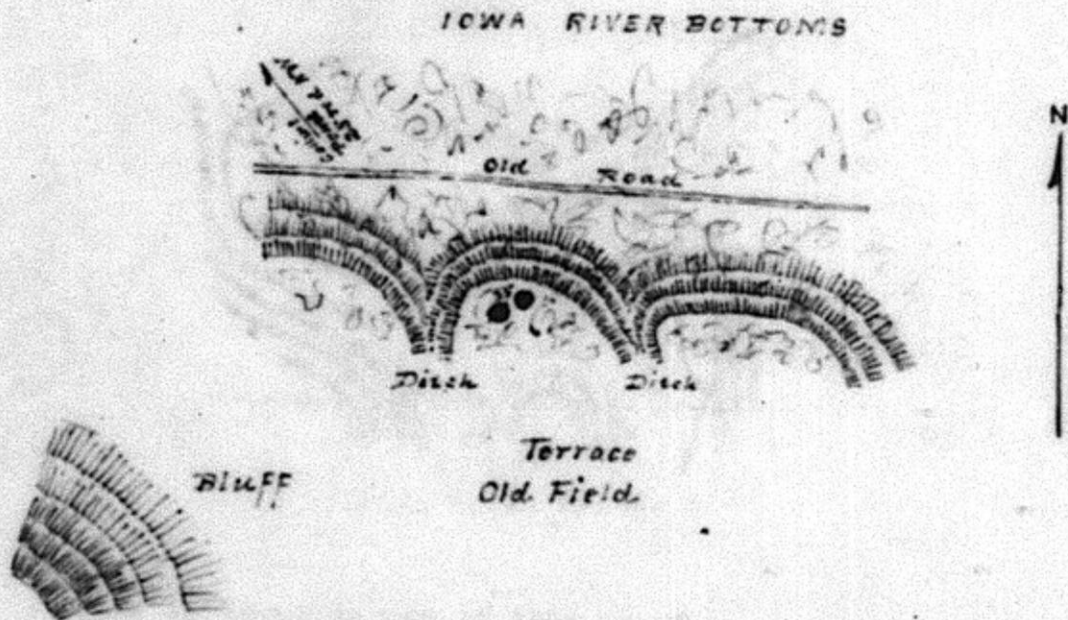
The mounds lie on a point between two of these ditches, approximately south-east of Collins' Pond on the SE SE Sec. 36, T. 100, R. 5 west of the 5th P. M.

Each is 18 ft. in diameter and a pit has been dug in the center of each by relic hunters.

In 1934 we cleaned out and enlarged one of these pits but found nothing. It was a blank.

Except for the abandoned field, the bluff and terrace sides, the creek valley and along the south edge of the river bottoms, are covered with swamp willow on the bottoms; brash red oak on the terrace sides and some of a little better quality on the bluff sides.

At the south end of the terrace is perhaps the biggest spring in Iowa, near which on a clay slide is one of the rare places in the county where the fringed gentian is found, and the whole wild unfrequented territory is the favorite home of the pileated woodpecker.



MAP OF COLLINS' POND MOUND GROUP.

THE VOLL FARM PREHISTORIC INDIAN MOUND GROUP.

This is a group of four circular, three long and one effigy mounds, scattered over an area of four or five acres of the upper terrace on the south side, and seventy feet above the flood plain of the Upper Iowa river, on the NW SE Sec. 9, T. 99, R. 6 west of the 5th P. M.

Back of it to the south is the long incline of the bluff on that side of the river, without ledges, up to the general level of the bluff tops, three hundred feet above.

Across the river, to the north, is a very steep talus against which the river washes, sloping up to a bold and almost continuous escarpment at the top.

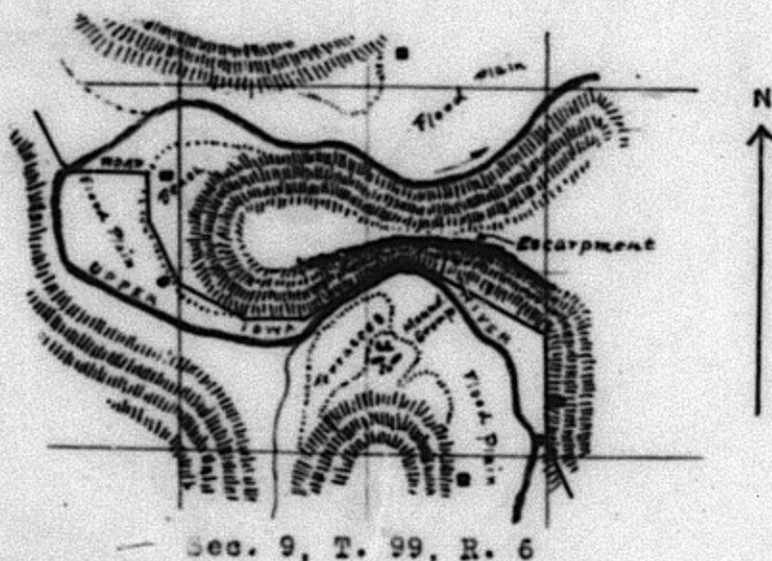
The three linear mounds are respectively, 80, 100, and 110 ft. in length, the direction of none of them corresponding to the cardinal points.

The round mounds are none of them over two feet in height, with diameters of 20 to 35 ft.

The effigy is of an animal and has a length of 82 ft. from tip to tip, a height of about 2 ft., and is noticeable for the disproportionate length of the legs.

Survey by Ellison Orr in 1909.

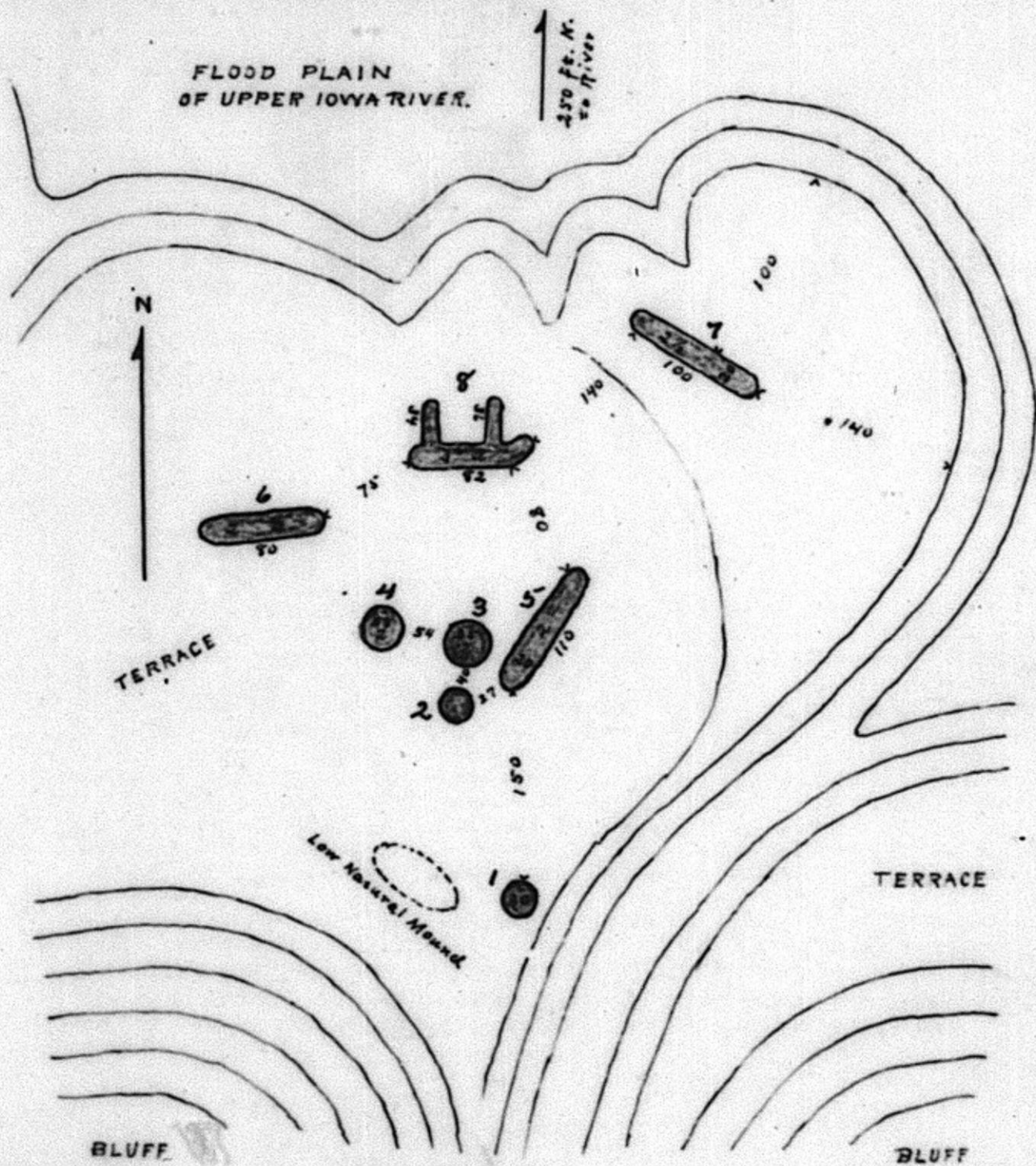
See map on following page.

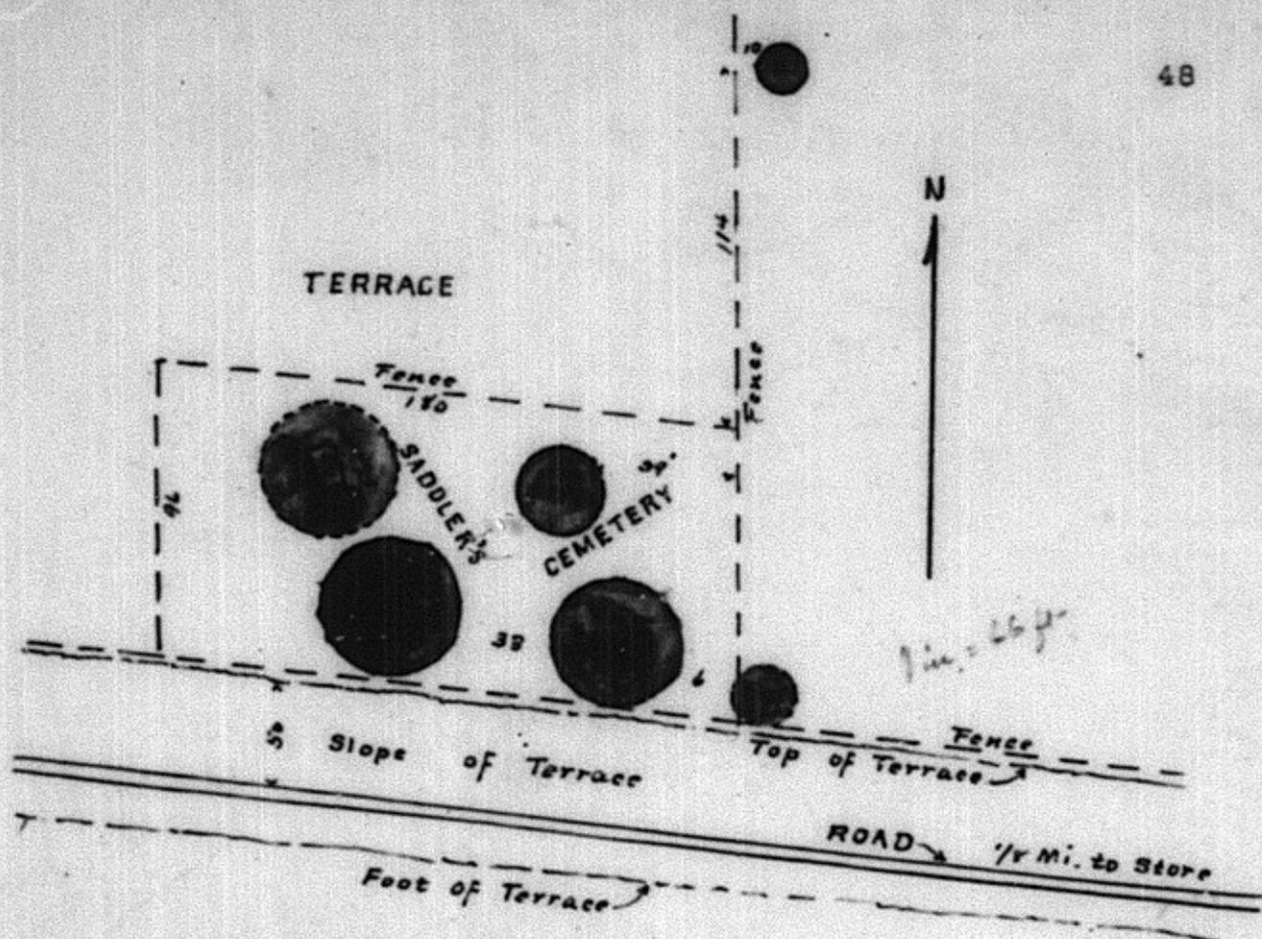


Above is location map of this Group.

See next page for Detail Map of Group.

DETAIL MAP OF VOLLE MOUND GROUP.
 NW SE Sec. 9, T. 99 R. 6 west
 Hanover Twp., Allamakee County, Ia.
 Scale, 1 in. 100 ft.
 Hachures mark 20 ft. elevations.
 Distances in Black ink. Heights in Red.





Saddler Cemetery Prehistoric Mounds.

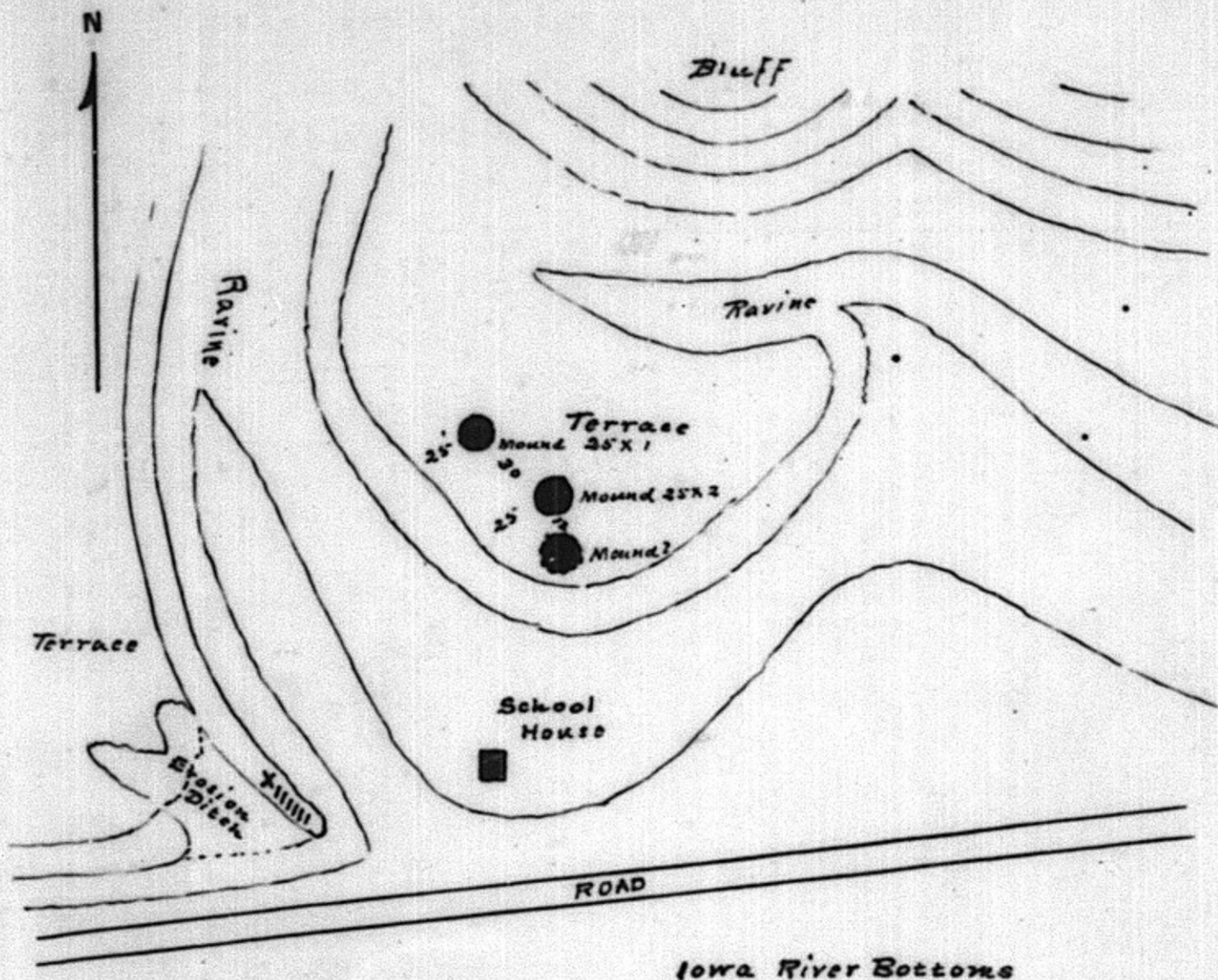
NE NE Sec. 5, T. 99, R. 5 west of 5th P.M.

Survey by Ellison Orr, 1917.

In a row along the top of the south side of the terrace on the north side of the Upper Iowa, on the above land which has been in the possession of the Saddler family since the settlement, and about forty rods west of the store where the New Albin road crosses the line between sections 4 and 5, were three round mounds, back of which were two more, and a hundred feet still farther back was one more. Three hundred and fifty feet east of the latter, across a shallow ravine, are two more less than one foot high.

The little plot of ground on which was located the first five of the above mounds was selected by the first pioneer English settlers of the valley in its neighborhood as the place in which to lay their own dead beside those of the prehistoric people who built them.

The last one of these was leveled off in 1920. The prehistoric burials evidently were at the level of the natural surface as badly decayed bones were encountered by the scraper which did not go deeper. One who helped told me that there were some copper beads, and he thought, some other things but could not remember what.



Morgan's School Mounds.

Map of two round mounds and probably a third one on the SE NW Sec. 29, T. 100, R. 4 west of the 5th P.M.. Iowa township.

On the terrace back of the school house west of the Barney Morgan residence on the New Albin road.

Just across the ravine to the west of the school house, about 1905, a wide erosion ditch cut back into the terrace just west of its SE point, exposing a number of burials in a row along the terrace edge facing the ravine to the east.

With them was crushed Oneota pottery and a few crude arrow heads.

X - Burials washed out by erosion ditch.

Simonson's Ford Mound Group.

This Group, consisting of but two earthworks, a well preserved bird mound and a small circular enclosed area, is located on the east side of the Upper Iowa river on the NW NE Sec. 20, T. 99, R. 6 west of the 5th P.M., Hanover township, at about 1/4 mile north of the old Simonson Ford.

At this place the river flows north-west, then north, then swings around to the east, and the earthworks are located on the flat top of the triangular 70 ft. high terrace around which it in its narrow flood plain flows. This terrace is here 20 rods wide, lying against the foot of the long, gently sloping bluff to the east.

Across the 400 ft. of flood plain and 100 ft of river, the opposite bluff rises very steeply from the water's edge to a height of 300 ft. and is capped by characteristic ledges of Onondaga limestone.

The bird mound is a well preserved effigy and well proportioned, representing a flying nighthawk perhaps as much as any other bird. The wings have a uniform curve and taper almost to a point, bringing to mind the rapier pinions of that bird. The head, body and tail are represented by a continuous straight embankment, approximately rectangular in outline and nearly uniform height for the entire length.

The greatest height is at the junction of the wings with the body, being at that point about 3 ft. high. The height of the head and extremity of the tail is 2 ft., the tips of the wings, 1 ft.

The enclosed area is a small and perfect circular embankment from 8 to 10 inches high and 12 ft. wide, enclosing a flat circular area 36 ft. in diameter, and level with the surface of the surrounding terrace. This may be an earth lodge site, the walls being of wattle and clay, the roof of bark.

The edges of these two earthworks, because of the location on land covered with trees, and not disturbed by cultivation, do not feather out and blend with the natural surface, making the outline obscure, but the point of contact with the terrace surface is sharp and distinct.

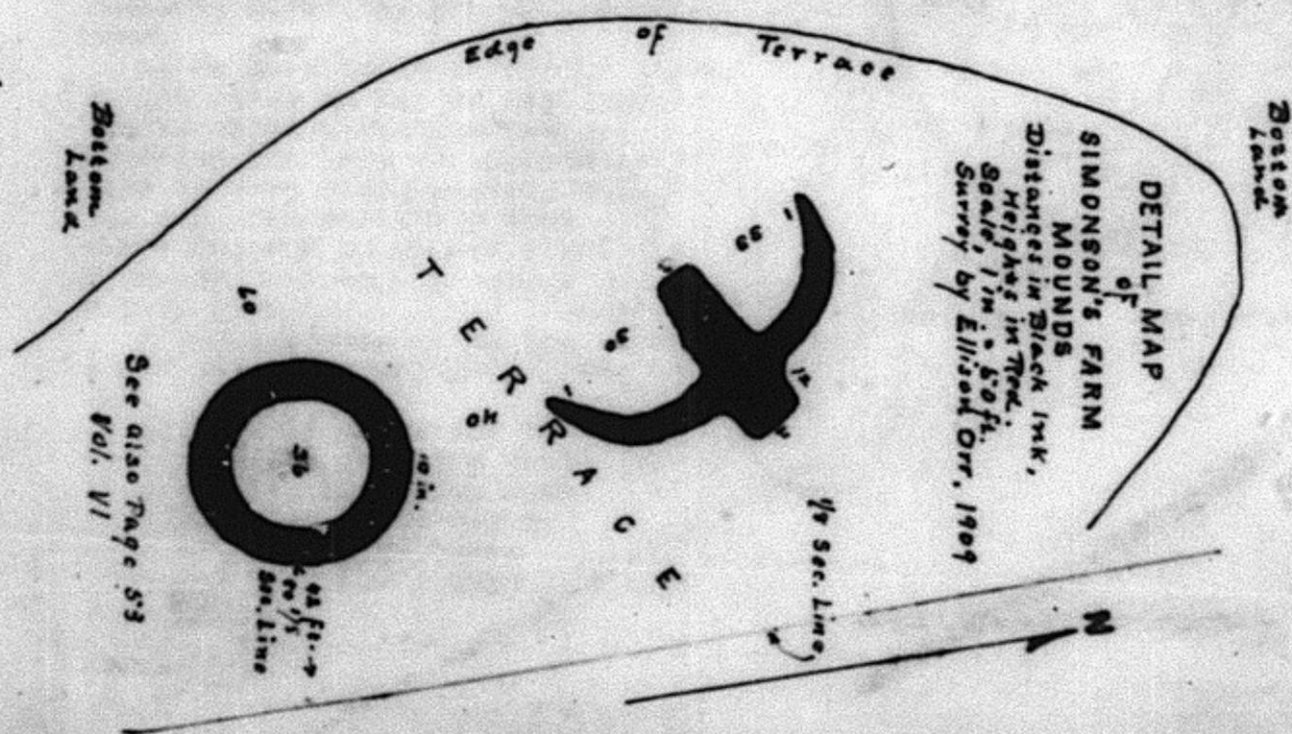
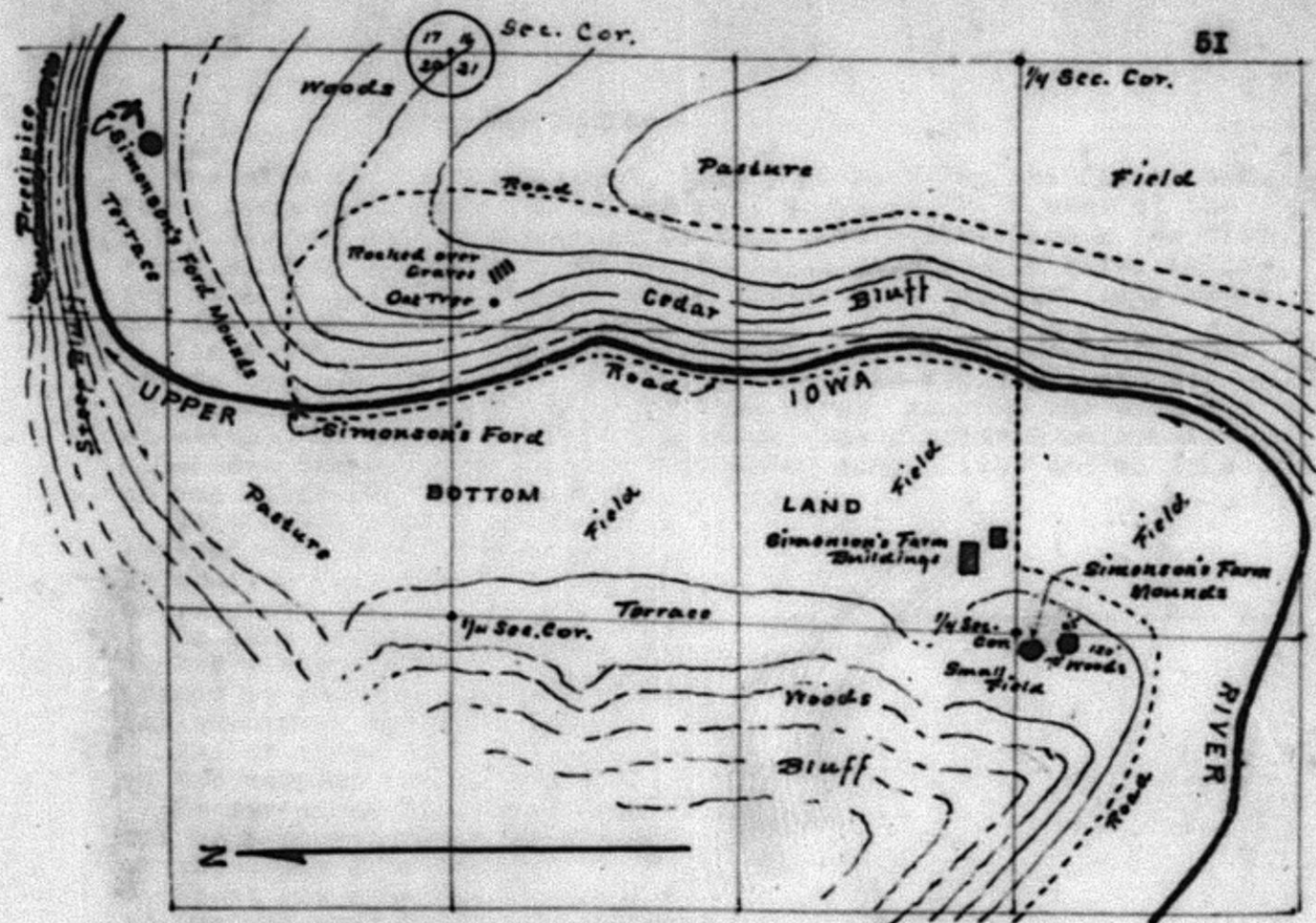
See Location Map on page 51. Also Detail Map on same Page.

The Simonson Farm House Mounds.

This Group consists of two round mounds, each 30 ft. in diameter and two feet high, on the top of and a little back of the front of the usual terrace bordering the bluffs on the north side of the Upper Iowa river, which here have a very gentle slope. Where the mounds are the terrace has a width of 300 ft. at a little south-west of the 1/4 Sec. corner in the center of Sec. 21, T. 99, R. 6 west of the 5th P.M.

The Simonson farm house is a little east of north, from four to six hundred feet away.

See Location Map on page 51.



Power Dam Mounds.

The site of the "Lower Dam", (Dam # 2) built by the Upper Iowa Power Company in 1909, on the NW Sec. 2, T. 98, R. 7 west of the 5th P.M., was selected because at that particular place a low flat rocky spur of the high bluff on the north side of the river is opposite a similar but higher one on the south side, with only about 400 ft. between the rocky ends.

The south side is a rocky ridge rising to 75 ft. above the water in the river, but the one on the north is a terrace the top of which rises about 40 ft. above the river, against the east end of which, for 200 ft. beyond the ledge, was glacial material, - a terrace remnant, now nearly all washed away. (See dotted line on map below.)

This north spur or terrace is covered with young timber much of which is a fine growth of young white pine.

On this terrace and among the timber was a group of five small mounds of which no accurate detailed survey was ever made.

Two of these were on that part of the terrace washed away.

So far as we can learn there are no mounds farther up stream on the Upper Iowa River.

About six miles above the Lower Dam and just below the old town of Freeport is quite an extensive post-glacial terrace, the only one except for obscure patches and remnants above the New Galena terrace.

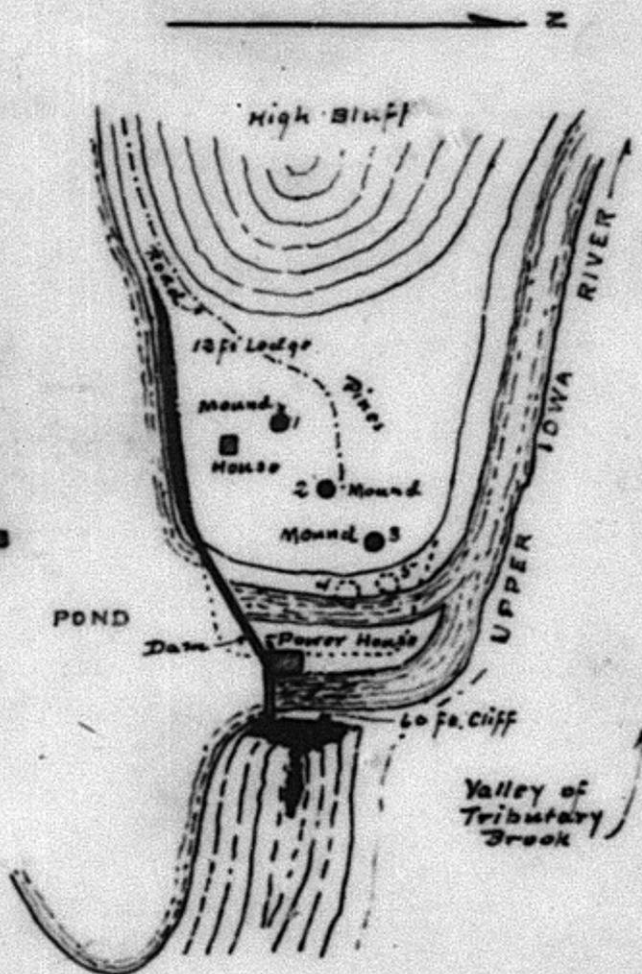
As we have built telephone lines up the river as far as Bluffton, twelve miles above Decorah, we have had the best of opportunities to make observations, and can say with certainty that above Decorah only shreds and remnants, not easily recognized, remain.

Bench terraces along the bluff sides are entirely missing.

In fact we might say that the extensive terraces that characterize the Upper Iowa in Allamakee county terminate at New Galena where Bear and Waterloo creeks

come in.

1944 - In the village of Freeport on the S. side of the street, S. the church is a group of 4 or 5 obscure mounds on SW SW Sec. 13, T. 98, R. 8 west.



THE
BLOOD RUN and MARTIN JOHNSON
MOUND GROUPS
LYON COUNTY, IOWA.

The Blood Run Mounds.

Along the south side of the Big Sioux river, beginning south of Gitchee Manitou State Park and extending down that stream for around five miles, is a continuous terrace, reaching in places an extreme width of half a mile. At the corner to Sections 24, 25, 26 and 27, T. 100, R. 49 west of the 5th P.M. it has an elevation of 65 ft. above the bottom lands of the Big Sioux.

Where not hauled away by the farmers, as on the spur running north-east from the above section corner, there are many large erratic boulders on its surface.

It is wholly or in part a gravel train of the Wisconsin glacier. On the side of the river from opposite Canton on the S. Dakota side, north to the Minnesota line there are, according to Wilder who made the geological survey of Lyon county, remnants of the Altemont moraine, and he appears to think that this high terrace may be in part a remnant of it.

Shimek in Pleistocene of Sioux Falls, South Dakota, and Vicinity, Bulletin of the Geological Society of America, Vol. 23, page 154, in his conclusions says, "The gravel terraces along the Big Sioux are not Wisconsin gravel trains, but are probably Kansan." And, "There is no Wisconsin drift in the western part of Lyon county."

However, whether the terrace is Kansan or Wisconsin, there can be no question but that it was deposited by the swift current of a deep river, - outwash from a melting glacier to the north and east.

Through this terrace, since its deposit, on the south-west quarter of Section 25, Blood Run, coming in from the east, has cut its wide valley, north to the Big Sioux. On the spur of the terrace lying between this valley and that of the Big Sioux on the west, on the SW of Sec. 25, the NW of Sec. 26 and the NE of Sec. 27, there was before the land came under cultivation, a group of large, round burial mounds, covering altogether around one hundred acres.

Because of the extensive area over which they were spread, the unusual distance apart, (an average of eight and three-fourths rods) and their uniform large size, for Iowa mounds, they may be considered a unique group. Only the 52 mounds north of the R.R. now remain.

In making a survey on the 26th and 27th of Oct., 1934, of this and the Martin Johnson groups, the latter on the terrace to the east across Blood Run, we picked up on that part of the area under cultivation, a number of small "bunt end" or "snub nose" scrapers, a few small not very good arrowheads, and a few small shell tempered, unornamented pottery sherds. On one of the Martin Johnson mounds we found a small grit tempered piece.

Some years previous to our survey Dr. Charles R. Keyes excavated one of the Martin Johnson mounds, finding several shoulder-blade digging implements and at a depth of seven feet below the mound top, a skeleton.

That part of the NE of Sec. 24 north of the rail-road and the land south of it on the same quarter-section belongs to the Martin Rudt estate.

On the south of the rail-road we were told were many more mounds and an embankment enclosing an irregularly round area of fifteen acres, all of which have entirely disappeared under cultivation.

Some time in the late 80s or early 90s T. H. Lewis made a survey of this mound group and Dr. Keyes has a copy of his plat of the same.

Mrs. Rudt has a large collection of mauls, mullers, pipestone tablets and other material, most if not all of which is believed to be Siouan, and all of which is surface finds picked up on the farm.

She says that on the terrace north of the rail-road and west of Blood Run Creek, where is located the 52 round mounds, there were a number of rock (boulder) enclosed areas and that the boulders of which the enclosures were made were hauled to the west edge of the field and piled in a winrow. We counted the rocks - mostly granite - over "hand size" in this long heap and there were over 1450 from 6 in. to 2 ft. in diameter.

Mr. Martin Johansen remembers seeing the boulder enclosures on his terrace and says that they were circular, enclosing an area from 18 to 30 ft. in diameter, and that they had an entrance with a wing on each side, and that the inside of the circle was on the same level as outside. His brother removed the boulders from this farm and used them for foundations for farm buildings.

The openings he thinks all faced the south-east.

Mr. W. D. Miller of Ida Grove, Ia., believes these to be lodge circles.

On the slope of the terrace a few rods west of the corner to Secs 23, 24, 25 and 26, T. 100, R. 49 west of the 5th P.M. near the center of that part of the group north of the rail-road, is a large granite boulder on the north-east flat face of which several hundred cup-shaped pits from the size of a quarter to that of a half dollar and one-eighth of an inch deep have been cut.

An immense amount of labor must have been expended in making these. See page 4, Vol. II, State Wide Survey of Indian Mound Groups, 1934. Orr.

According to his map opposite page 118 of Vol. X of the Iowa Geological Reports, Wilder shows as what he believed to be a part of the Altemont Moraine, around a quarter section in area.

Of this once boulder strewn area, which lies north of the Rock Island and Pacific rail road, he says, on page 140 of Vol. X of the Iowa Reports: "The surface (of the terrace) at this point (over the boulder strewn area) is dotted with gravel knolls, from five to ten feet high and varying in diameter from twenty to fifty feet. They are irregularly distributed and are hard to account for unless a morainic origin is ascribed to them. Traces of flint implements and shells are not sufficiently abundant even to suggest for the mounds an artificial origin."

Later in the 1915 State Geological Report, Carman says on page 296 of Vol. XXVI: "The hills in the north-east quarter of section 36, Sioux township, which were discussed by Wilder and were interpreted as morainic mounds, are Indian mounds. Most of them have been opened, and shells and fragments of bones lie on the slopes of many of them."

Besides the presence of bone fragments thrown out by "relic hunters" when making excavations in these round mounds, they are without exception too regularly sub-hemispherical to be natural formations. They are undoubtedly Indian burial mounds.

Even learned men can make ridiculous mistakes at times.

South of the rail road is the site of the 14.38 acre area enclosed by an embankment and ditch. It is not known whether or not this was wild prairie land at the time of the Lewis survey. The embankment and ditch are now wholly obliterated by cultivation. It, like the mounds, was pre-historic but it is not known if it was in any way connected with them or not.

Survey by T. A. Lewis
JULY 21st, 1909
Scale, 1" = 320'

Survey by T. A. Lewis
JULY 21st, 1909
Scale, 1" = 320'

CONTROL MEASUREMENT RUN CORNER
STATION 1000

THE
BLOOD RUN and MARTIN JOHNSON
MOUND GROUPS
LYON COUNTY, IOWA.

Scale, 320 ft. to Inch.

Secs 23, 24, 25 and 26, T. 100
R. 49 west of the 5th P.M.

Enclosed Area
14.88 Acres

BOTTOM

LAND

PASTURE

PASTURE

TERRACE
FIELD

TERRACE

TERRACE
70 Ft. Above Bottom Land

FIELD

PASTURE

LODGE CIRCLE
FIELD

G. R. I. & P. Ry.
ROAD

PUBLIC

Steep North Slope of 150-200 ft. High Bluff.

BOTTOM
BLOOD
RUN

RUN

MARTIN
JOHNSON
MOUND GROUP

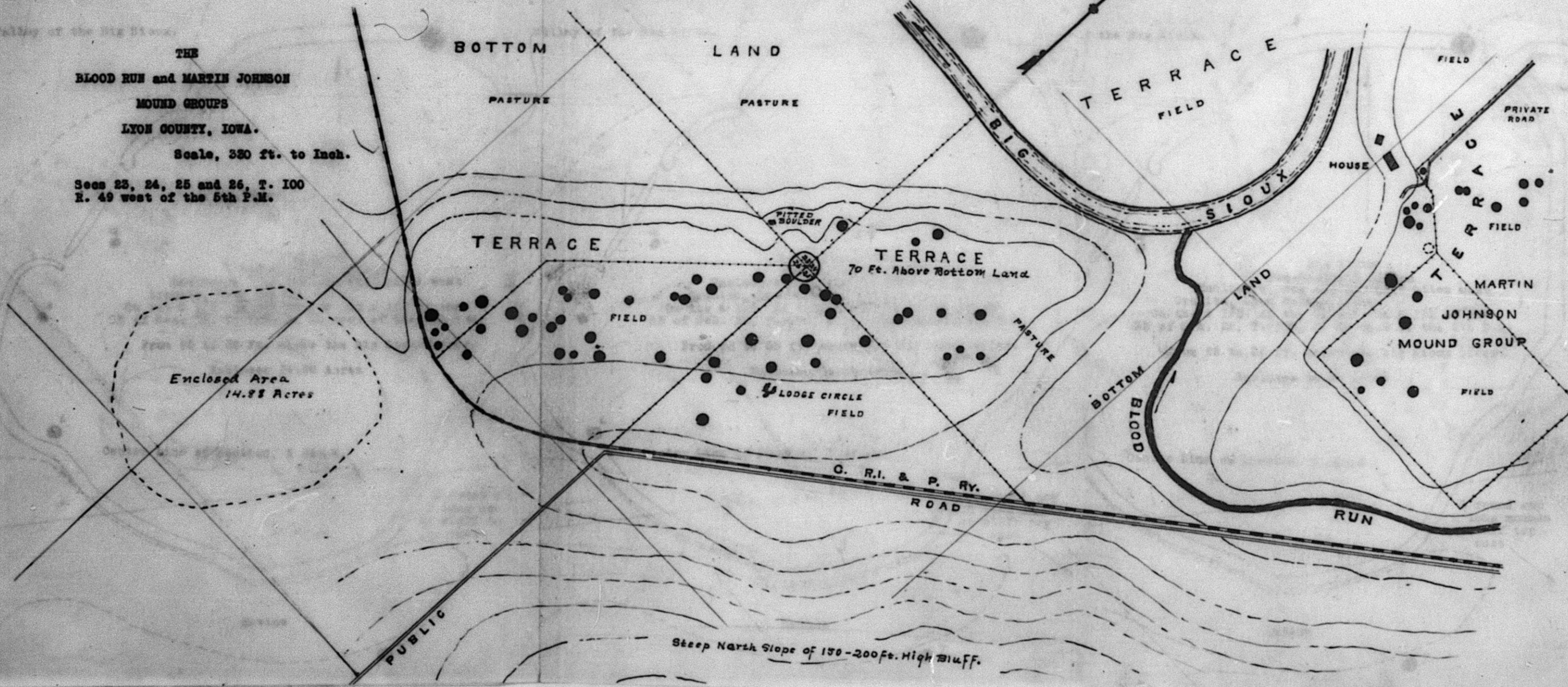
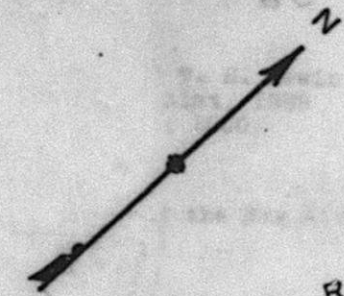
FIELD

PRIVATE
ROAD

FIELD

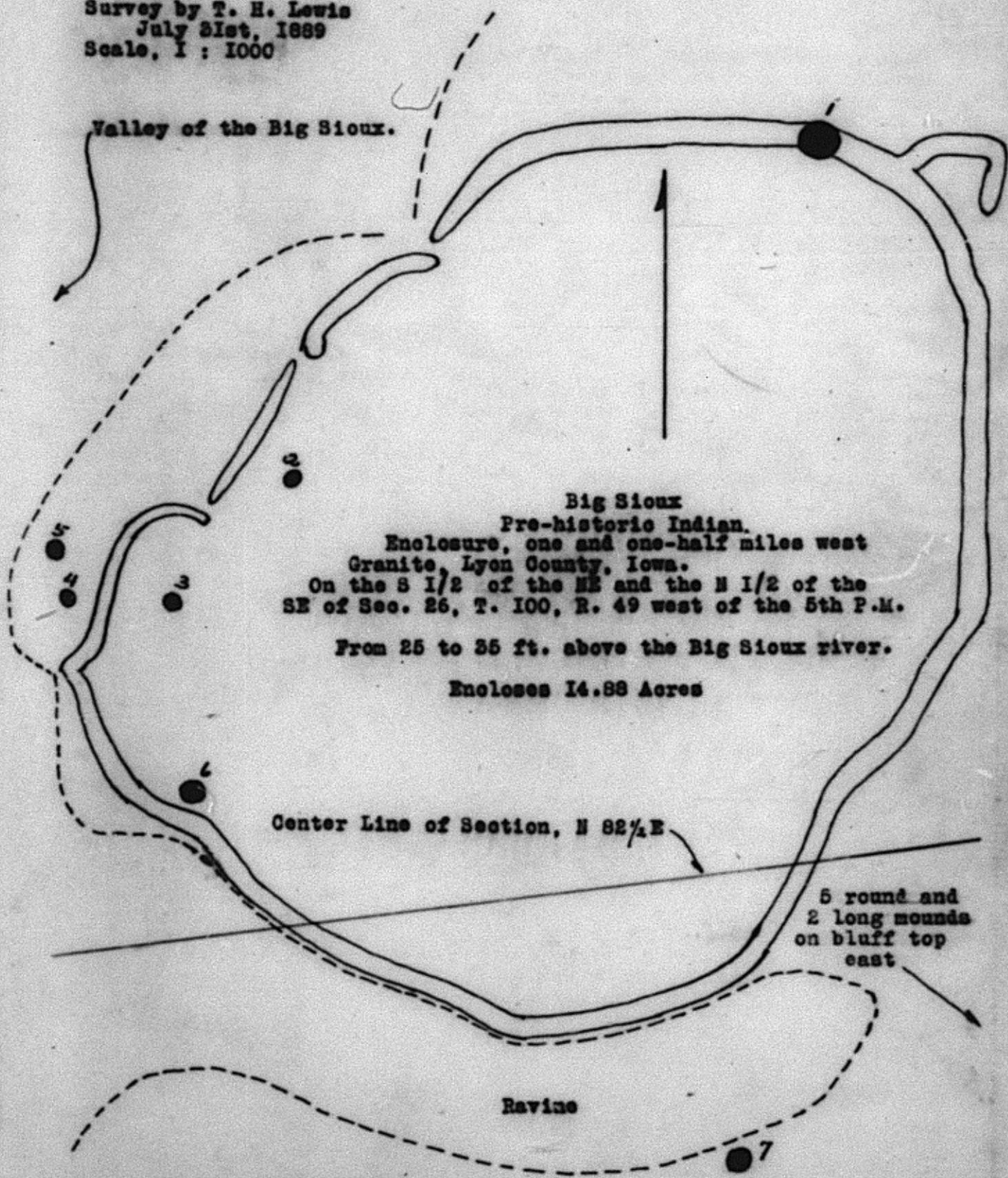
HOUSE

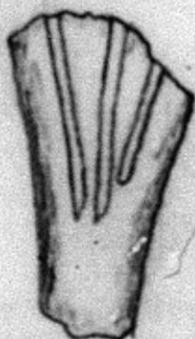
FIELD



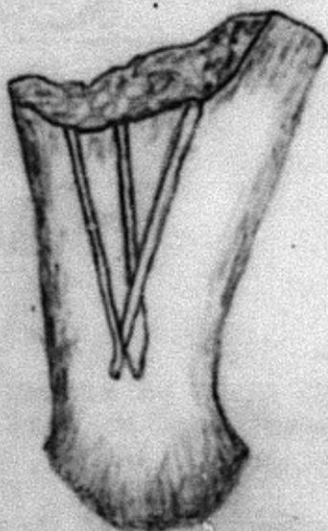
Survey by T. H. Lewis
 July 31st, 1889
 Scale, 1 : 1000

Valley of the Big Sioux.

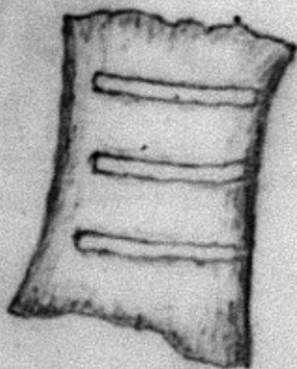




Turkey Track (?) ornamentation on handle of Oneota Culture Pot, from trench D, 18 inches below the surface, of Enclosed Area on Lane Farm Terrace, on Upper Iowa river, Allamakee county, Iowa. 1936



Turkey Track (?) ornamentation on handle of Oneota Culture Pot, from trench 3, of the Enclosed Area (Old Fort) on the Lane Farm Terrace on the Upper Iowa river, Allamakee county, Iowa. 1936

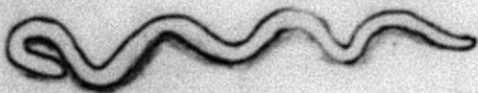


Detached Handle, ornamented by three horizontal cross incised trailed lines.

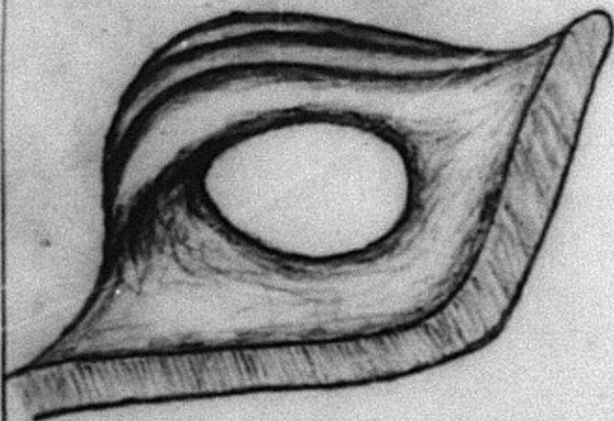
From trench in Enclosed Area on Lane Farm Terrace on Upper Iowa river in Allamakee county, Iowa.
Oneota Culture,

1936

Copper Snake from pit 10 ft. west of the south-east corner of trench G on the south side of the Enclosed Area, (Old Fort) on the Lane Farm Terrace on the Upper Iowa river, Allamakee county, Iowa. Oneota Culture. With this was a fine 6.5 inch long bone awl, and another 2.5 inches long, not so good. The latter, half of a bird's bill.



Handle of large Oneota Culture Pot, from trench in Enclosed Area on Lane Farm Terrace, on Upper Iowa river, Allamakee county, Iowa





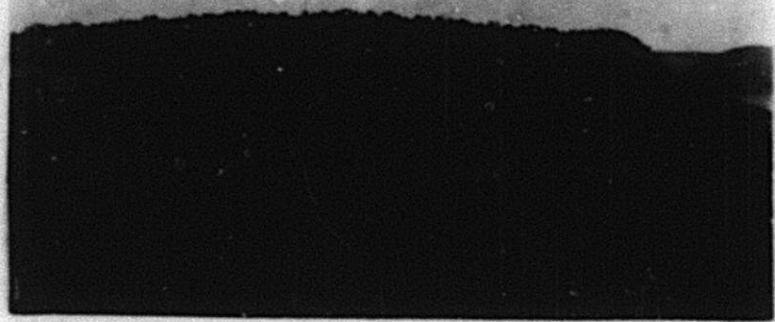
Photograph of the "Elephant" from the south, taken about 1894. The boy with the white waist is Harry Orr, then about eight years old. He is standing by the group, or rather, row of five graves, in the most northerly of which Dr. J. Ratcliffe found the "Dragon Pipe".

Note absence of trees on bluff as compared with picture taken from SE, a little farther away, in 1934; below.

Note rail fence.

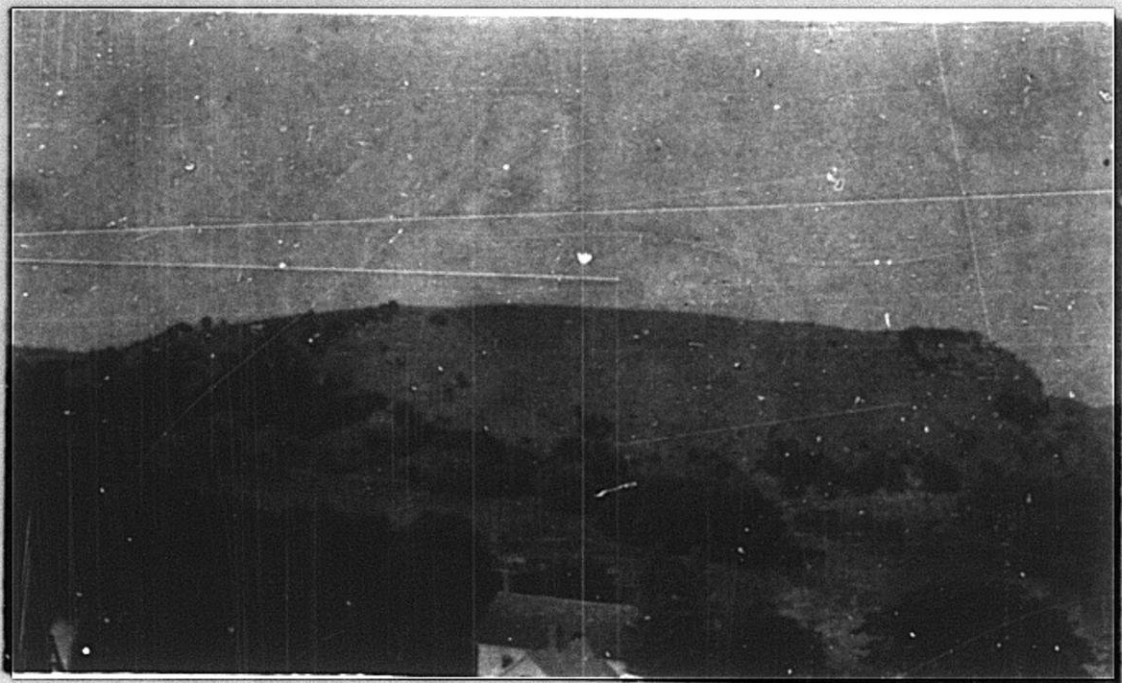


View of "Elephant" taken from a little farther east and away than above photograph. 1934



View of the "Elephant", taken in 1934, from a little to the north of the spot from which the view on the opposite page was taken by Prof. Samuel Calvin in 1893.

Note how during the intervening 59 years the treeless sides of the "Hill of Circumnudation", as it was designated by Calvin, have been covered by a forest growth of principally red cedar.



Photograph by Prof. C. C. C. 1893
Note absence of trees

The Elephant, "A hill of circumdenudation", from the west. Oneota river in the right foreground. Sec. 32, Town 100, Range 5 west.

Enclosure near the Upper Iowa River.

On SW SW of 36-100-6.

Allamakee County Iowa.

Surveyed by T. H. Lewis, July 13, 1885

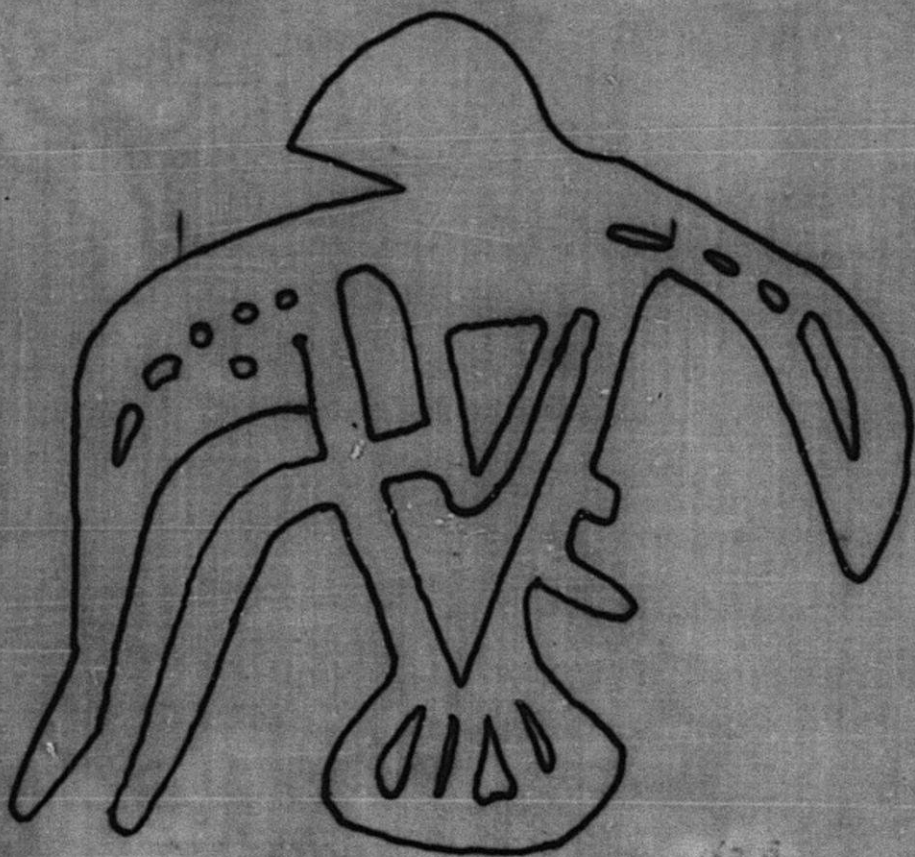


*Actually on SE 8 E
Sec 35-100-6*

New Galena Enclosed Area

Embankment on N side about 3 1/2 feet high, on the S side 3 ft. high. The space inside is covered with small ridges and depressions. Brush thick with some large trees. On a ridge 350 feet above the river. The north side is elliptical, the south side nearly a half circle. (The ditch is 3 feet deep.)

See Pages 54 and 55, Vol. VI.



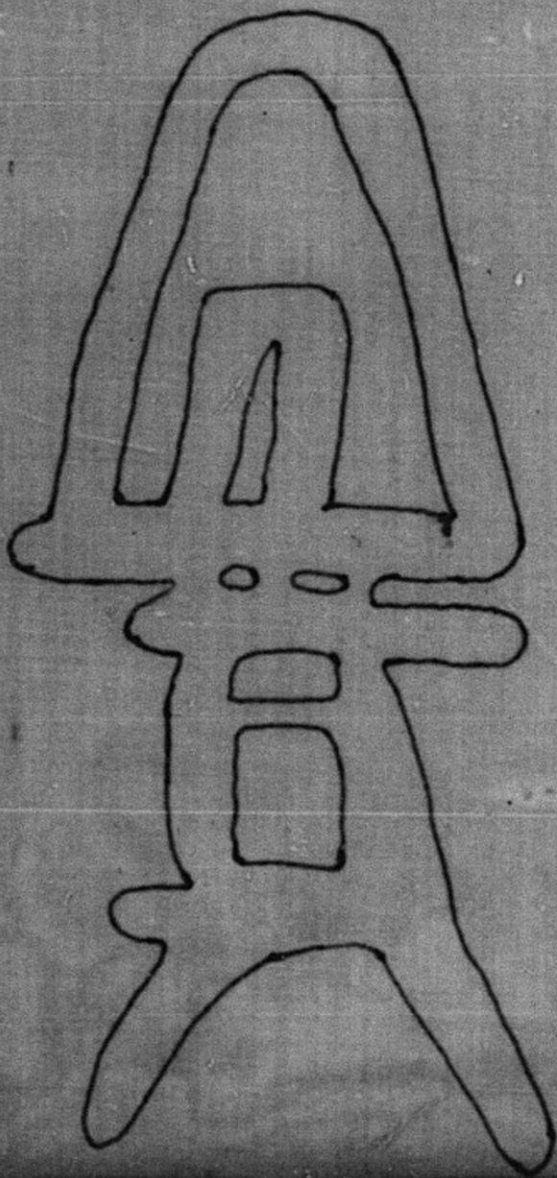
"CONWAY CAVE"

NW NW SEC. 18, T. 99, R. 3.

ALLAMAKEE CO. IOWA.

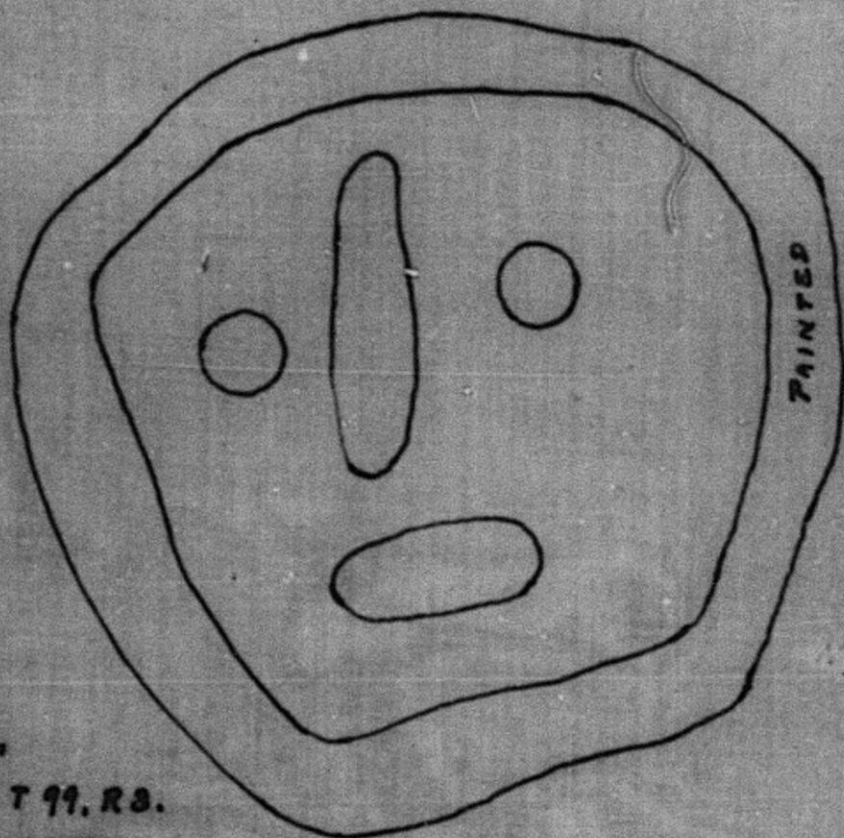
SURVEY BY T. H. LEWIS

MAY 8, 1889.



'CONWAY CAVE'
NW NW SEC. 18, T99, R3.
ALLAMAKEE CO. IOWA
SURVEY BY T.H. LEWIS
MAY 8 1889

65-



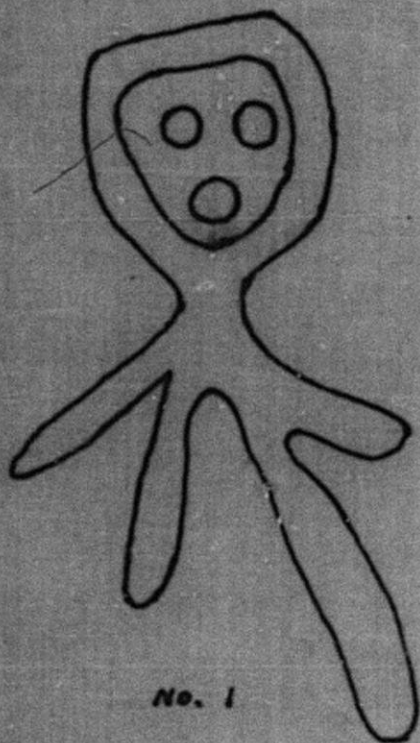
"CONWAY CAVE"
NW NW SEC. 18, T 99, R 8.
ALLAMAKEE CO. IOWA.
SURVEY BY T. H. LEWIS
MAY 8, 1989.

69



"CONWAY CAVE"
NW NW SEC. 18 T 99 R 3
ALLAMAKEE CO. IOWA
SURVEY BY T. H. LEWIS
MAY 3, 1887.

67



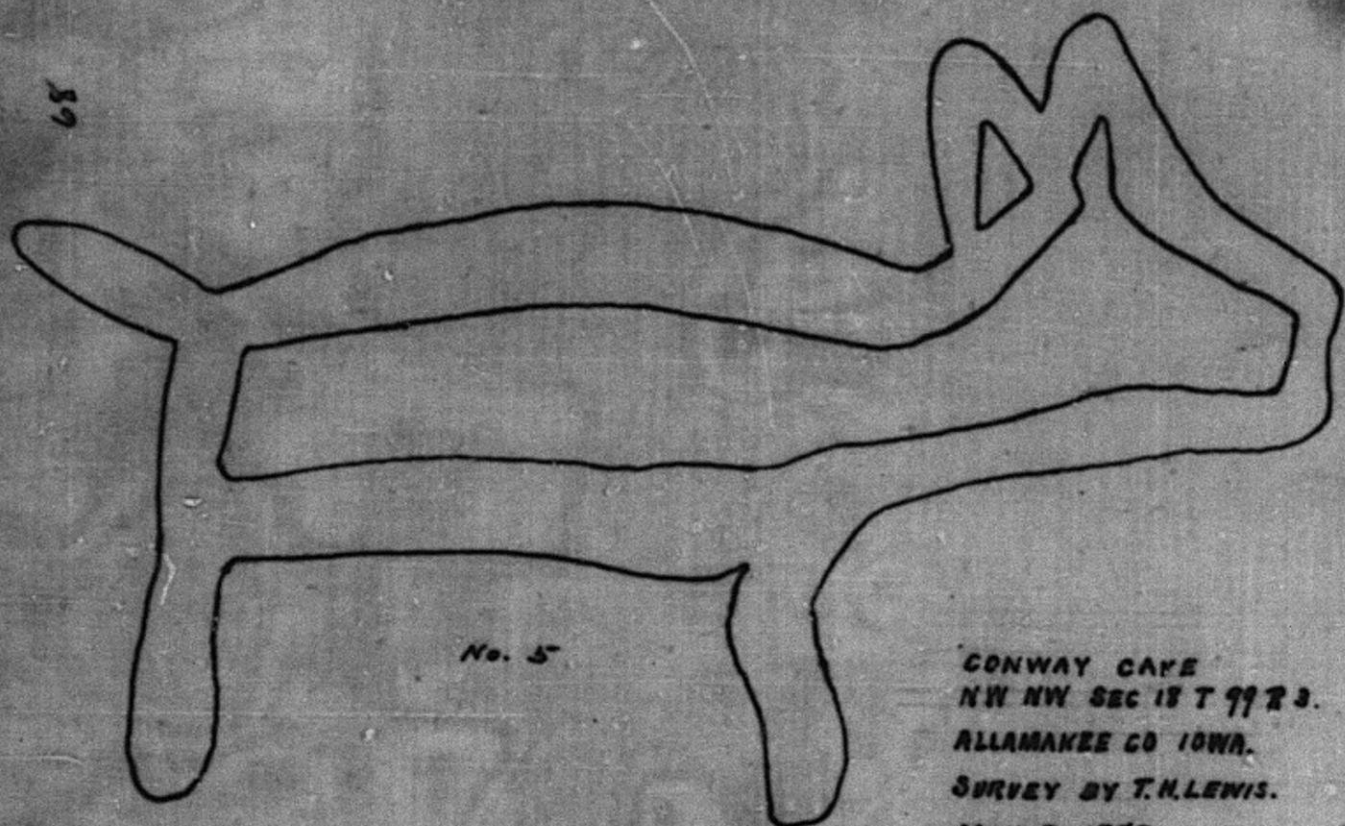
No. 1

No. 2



"CONWAY CAVE."
NW NW SEC. 17, T. 97, R. 3.
ALLAMAKEE CO. IOWA.
SURVEY BY T. H. LEWIS.
MAY 2, 1887.

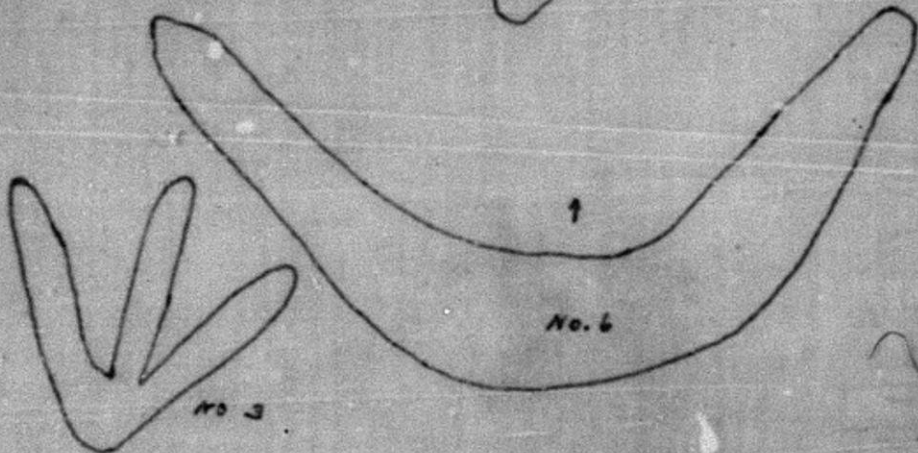
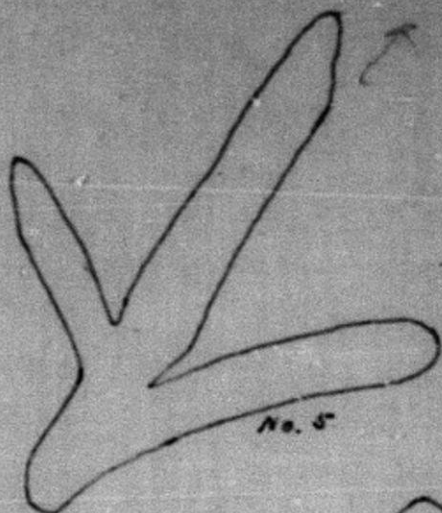
89



No. 5

CONWAY CAPE
NW NW SEC 18 T 99 R 3.
ALLAMAKEE CO IOWA.
SURVEY BY T.H. LEWIS.
MAY 8, 1889.

69

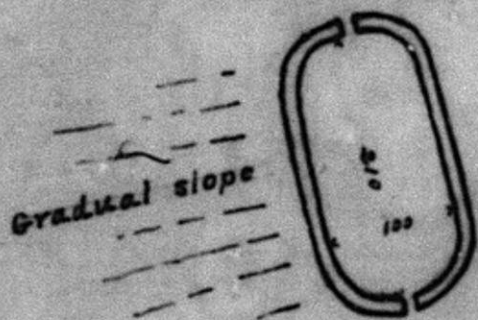


INDIAN CAVE.
UPPER PIASCAS-NORTH
RIGHT
SOUTH OF LANSING
ALLAMAKEE Co. IOWA
SURVEY BY T.H. LEWIS.
MAY 6, 1889.



"CONWAY CAVE"
LOT 7, NW NW SEC. 18, T99, R. 3,
ALLAMAKEE CO., IOWA
SURVEY BY T.H. LEWIS
MAY 8, 1889.

Enclosure near the Upper Iowa River
 On the NE SE of 31-100-5"
 Allamakee County, Iowa
 Surveyed by T. H. Lewis, July 13, 1885.



Width of ditch 10 feet.

Bulman Enclosed Area.

"This is more of an elevated mound than a true enclosure. It is on a high bluff about 300 feet above the river. The bank inside ditch is 3 ft. high, outside it is 1 ft. Field cultivated 2nd year.

72

UPPER FIGURE (NORTH)
LEFT SIDE
INDIAN CAVE
SOUTH OF LANSING

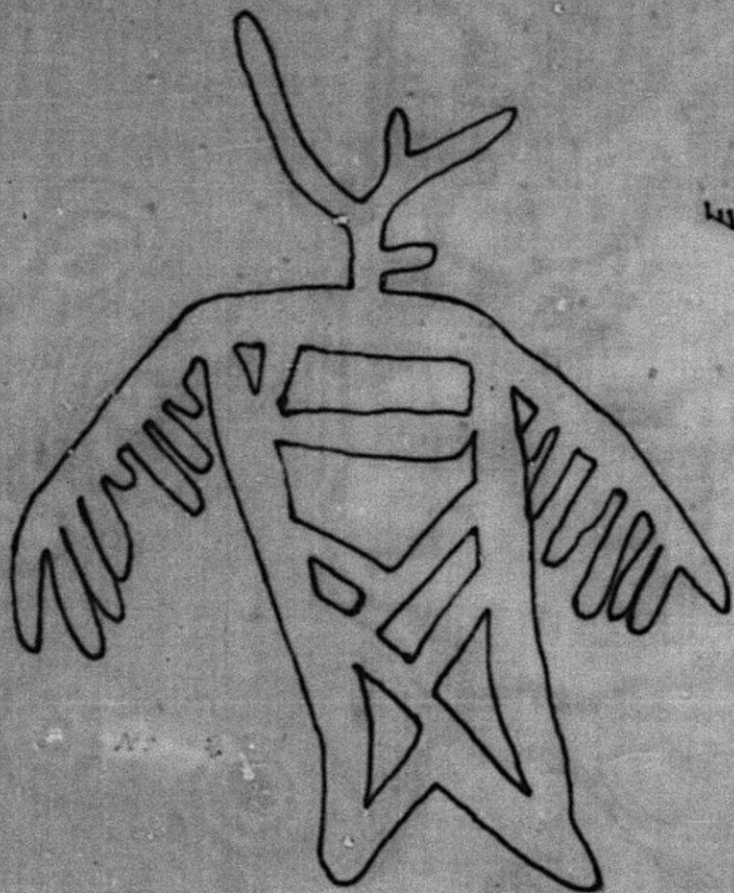
SURVEY BY T.H. LEWIS
MAY 6 1899

ALLAMAKEE CO.
IOWA



D

73

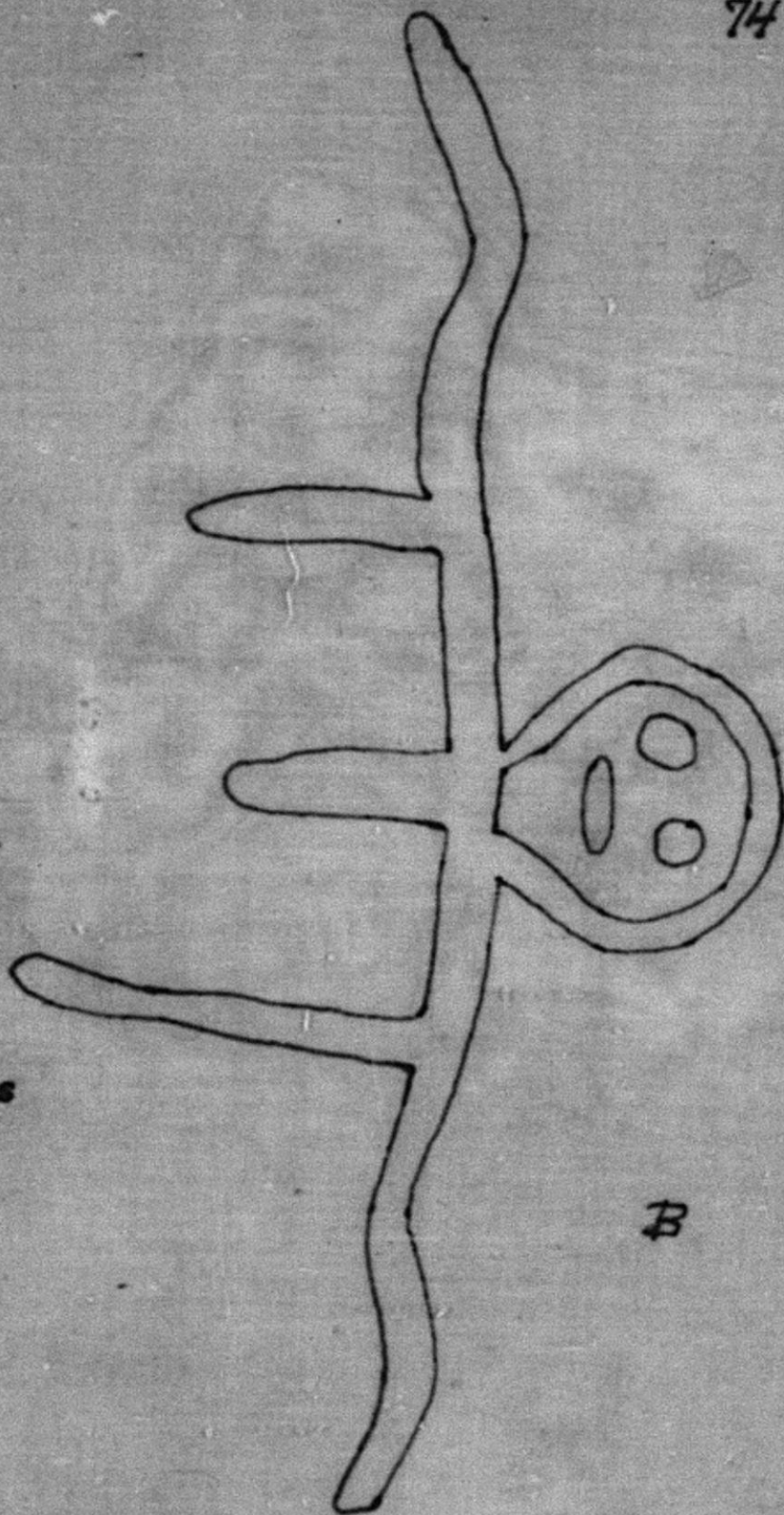


E

INDIAN CAVE
BELOW LANSING.

ALLAMAKEE CO. IOWA.
SURVEY BY T.H. LEWIS
MAY 6 1889

74

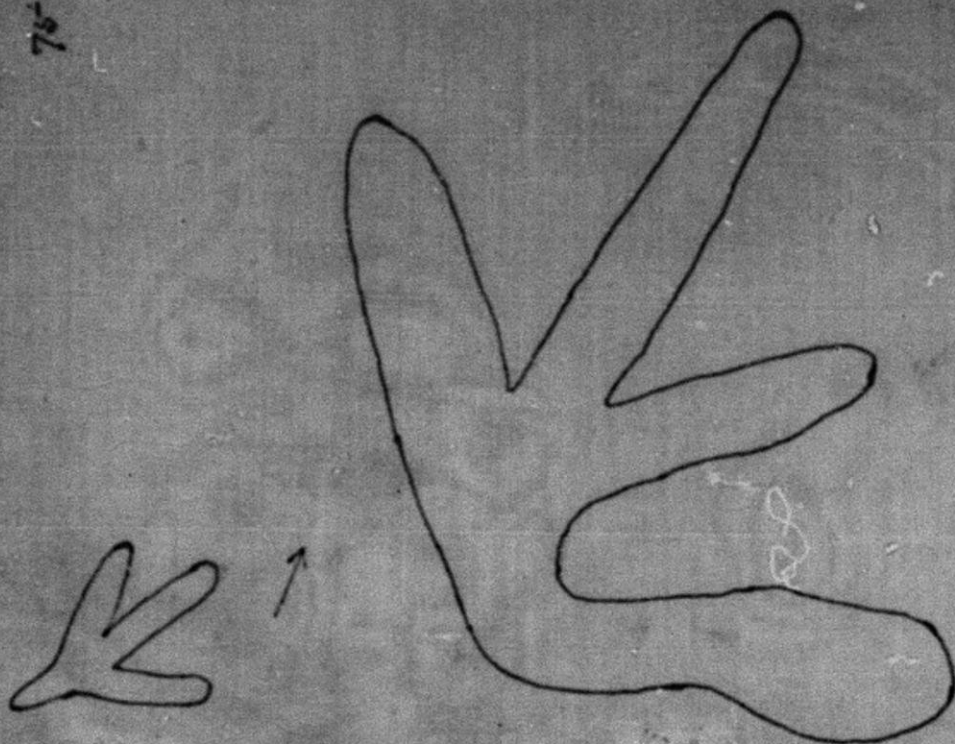


TOP

LOWER INDIAN CAVE
RIGHT SIDE
BELOW LANSING
ALLAMAKEE CO. IOWA
SURVEY BY T. H. LEWIS
MAY 6, 1889.

B

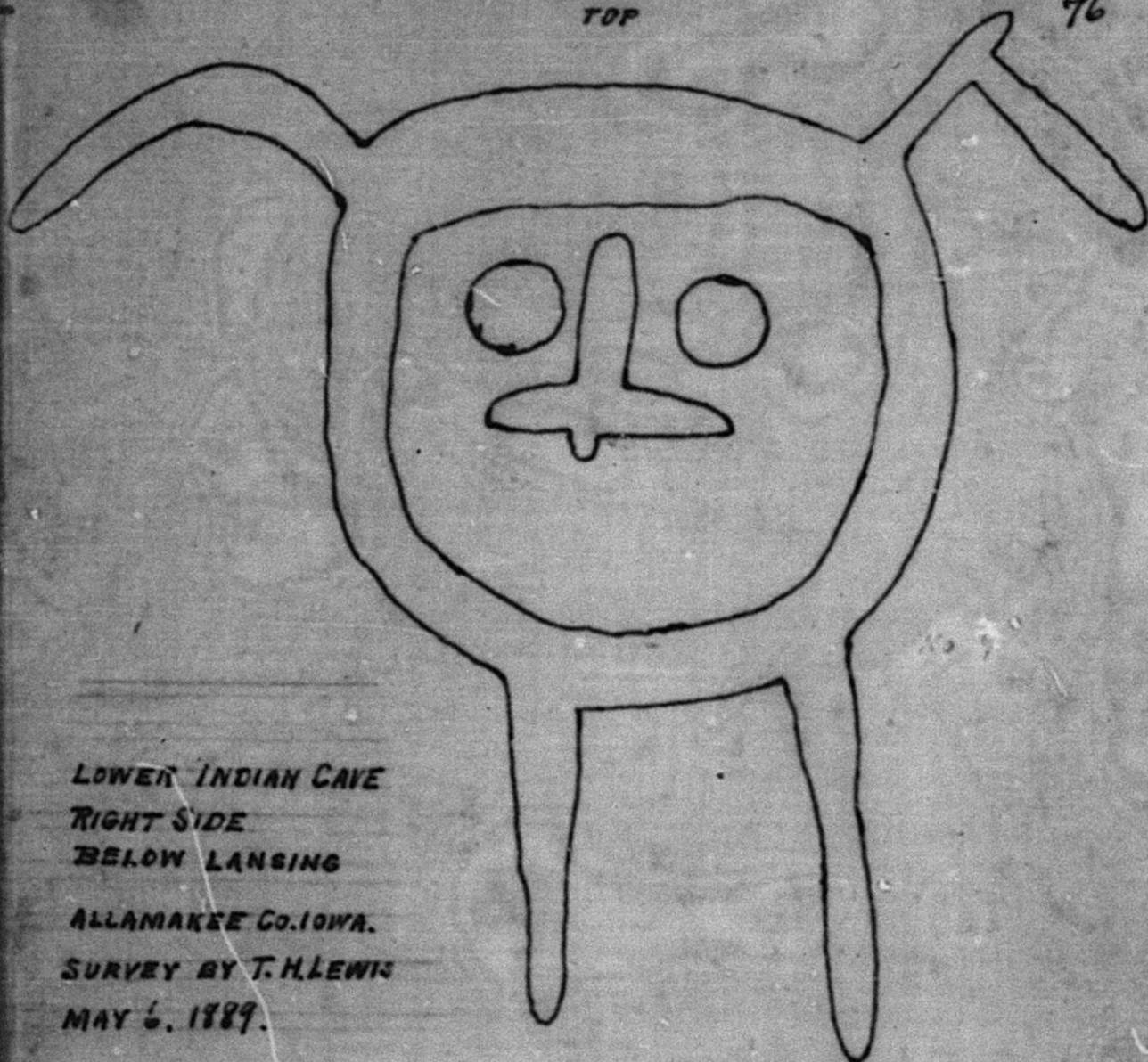
75-



INDIAN CAVE
UPPER FISSURE-NORTH
RIGHT
SOUTH OF LANSING
ALLAMAKEE Co. IOWA
SURVEY BY T.H. LEWIS
MAY 6. 1899.

TOP

76



LOWER INDIAN CAVE
RIGHT SIDE
BELOW LANSING

ALLAMAKEE Co. IOWA.
SURVEY BY T. H. LEWIS
MAY 6, 1889.

A

MAY 6, 1889.
SURVEY BY T. H. LEWIS
ALLAMAKEE Co. IOWA

Left side.

PICTOGRAPHS

from

CAVE

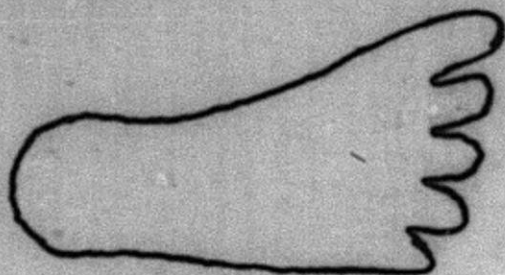
SE NE (Lot 3) Sec. 36, T 100, R 4.

Allamakee County, Iowa.

Survey by T.H. Lewis

May 10th, 1889

One-half actual size.



No. 9



No. 11



No. 10

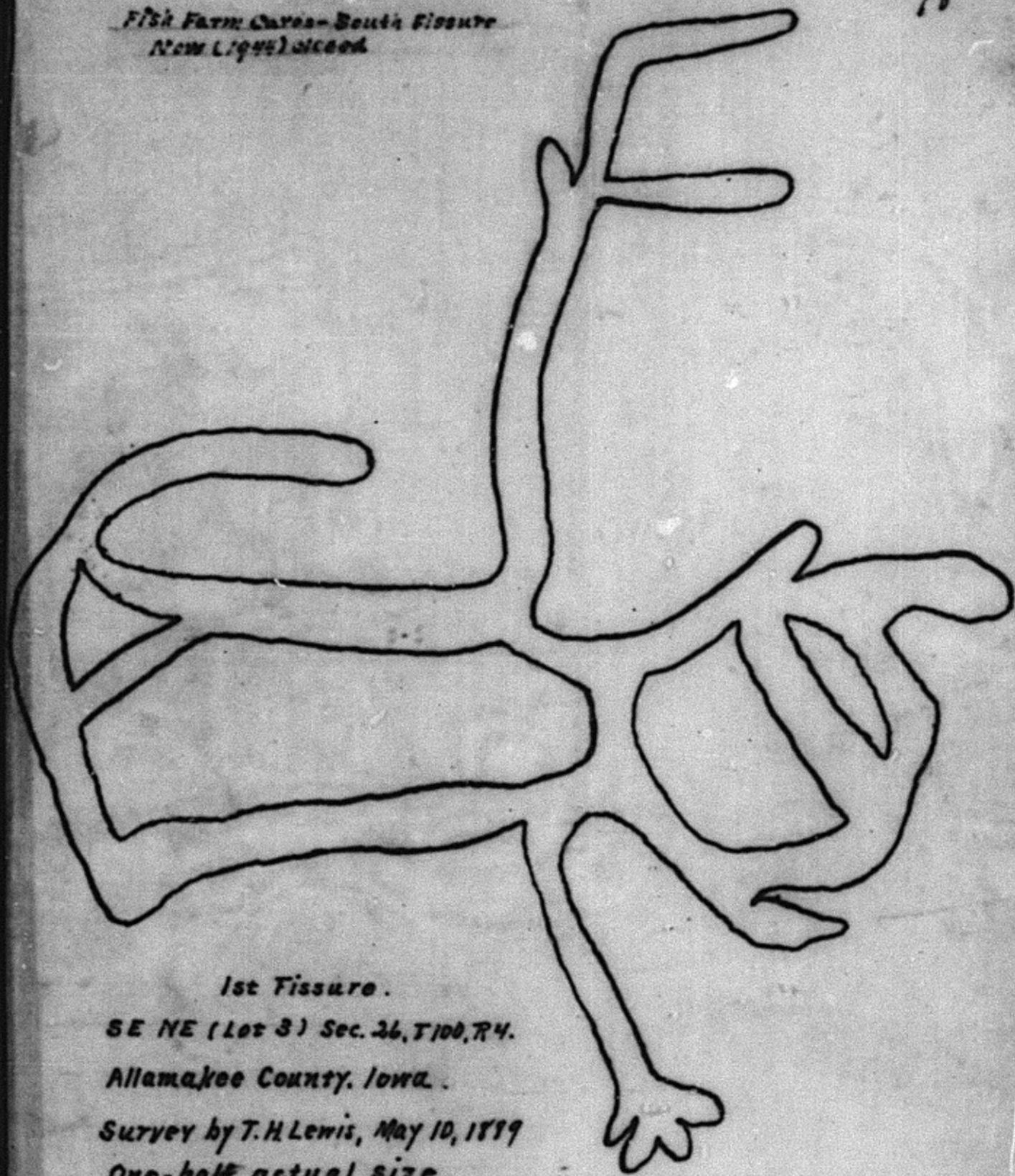


No. 12

Fish Farm Caves—South Fissure. Now (1944) closed.

*Fish Farm Caves - South Fissure
New L. 1944) alced.*

78



1st Fissure.

SE NE (Lot 3) Sec. 26, T100, R4.

Allamakee County, Iowa.

Survey by T. H. Lewis, May 10, 1889

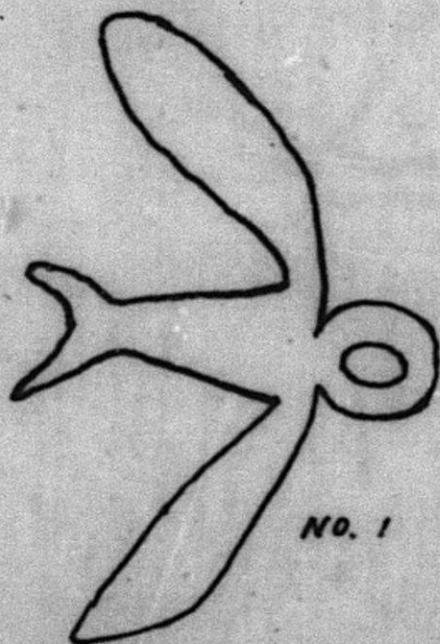
One-half actual size

LOWER FISSURE
CAVE
SE NE Sec. 26, T100, R4.
ALLAMAKEE Co., IOWA.
SURVEY BY T. H. LEWIS
MAY 10, 1899.



No 3

Fish Farm Caves - South Fissure. Now Closed.



NO. 1

1st FISSURE
SE NE (Lot 3) Sec. 36, T100, R4.
Allamakee County Iowa
Survey by T.H. Lewis, May 10, 1889.
One-half actual size

Fish Farm Gages - South Fissure. Now closed.

Right Side.



PICTOGRAPHS

from

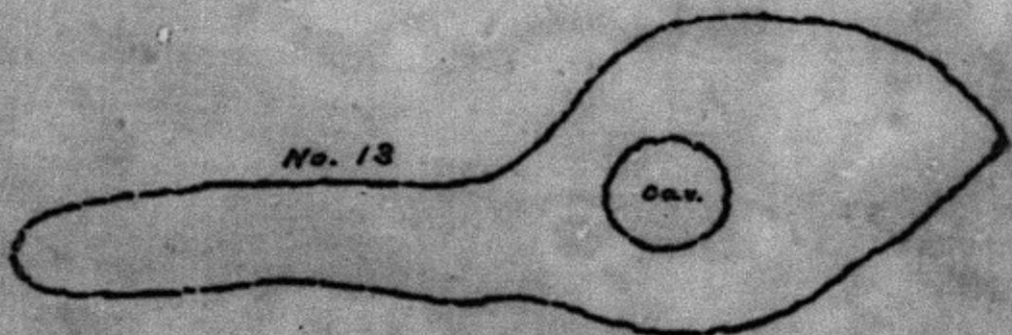
CAVE

SE NE (Lot 3) Sec. 26, T. 100, R. 4.

Allamakee County, Iowa.

Survey by T. H. Lewis, May 10th, 1889.

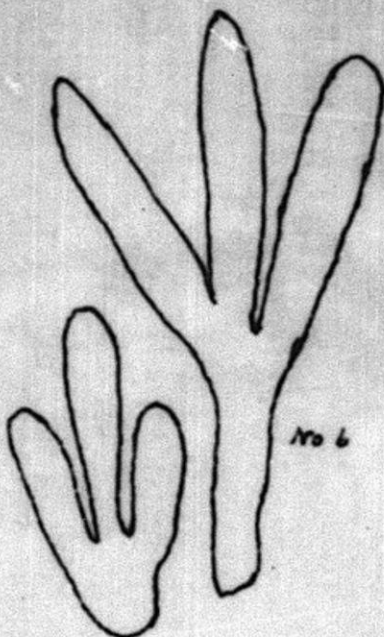
One-half actual size.



Fish Farm Caves - South Fissure. Now closed.

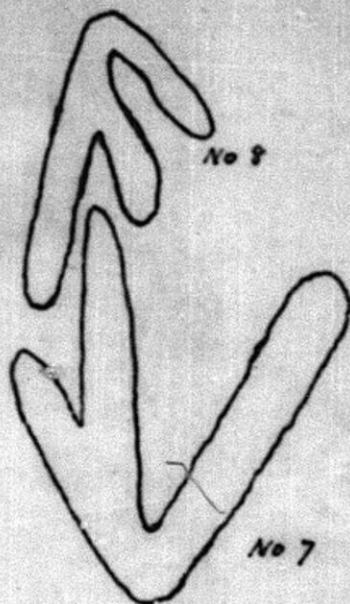


No 4



No 5

No 6



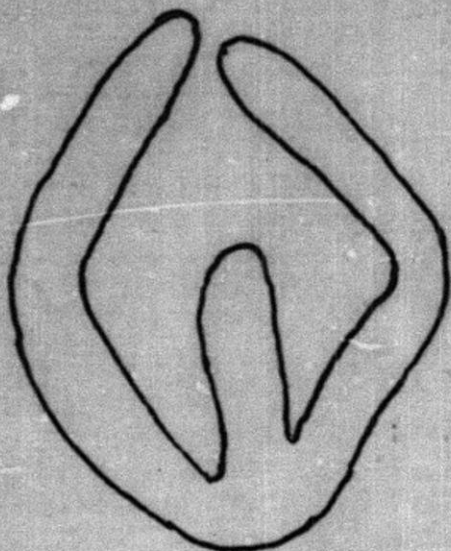
No 7

No 8

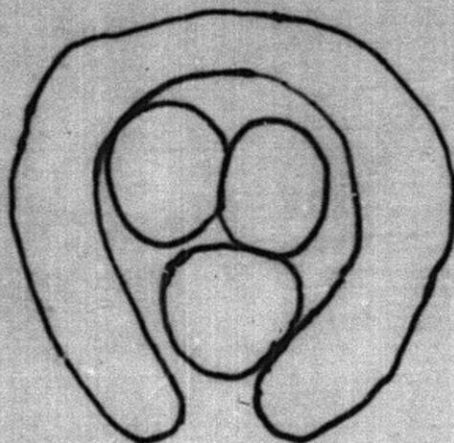
THIS GROUP CARVED ON ROCK.

SE NE SEC. 26. T 100. R 4
ALLAMAKEE CO. IOWA.
SURVEY BY T. H. LEWIS
MAY 10, 1859.

Fish Farm Shelter



No. 1



No. 2

On Sandstone Ledge S. of Creek
and W. of Highway Bridge.

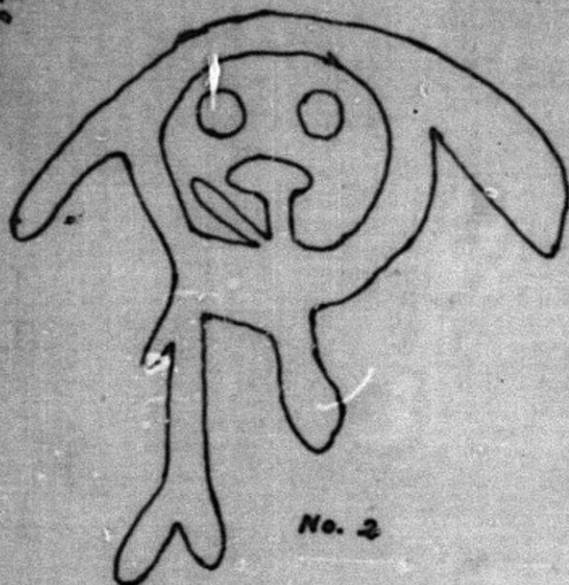
SW NE SEC. 12, T. 99. R. 4.

ALLAMAKEE CO., IOWA

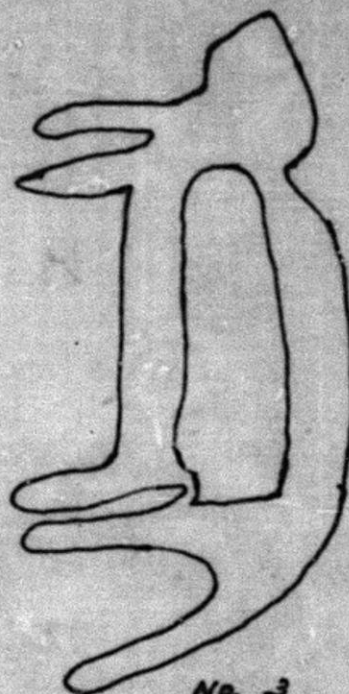
SURVEY BY T. H. LEWIS

MAY 10, 1889.

84



No. 2



No. 3

NW NW Sec. 36, T.100. R.4

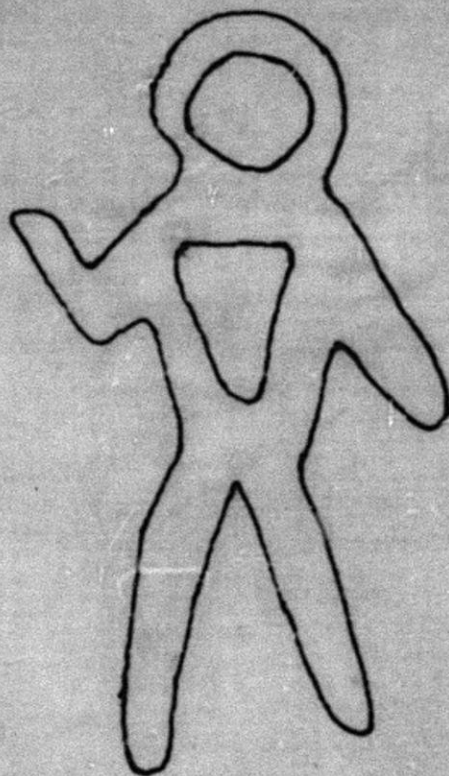
SURVEY BY T.H. LEWIS

MAY 19. 1889

Abner Love Farm

NW NW SEC. 36, T100, R4.
SURVEY BY T.H. LEWIS
MAY 10, 1889.

Abner Love Farm



No 1

No. 4

This figure is seen
in the lower right hand corner
of Plate V of our Indian Picture
Writing and Pictographs.

Top

PAINT ROCK

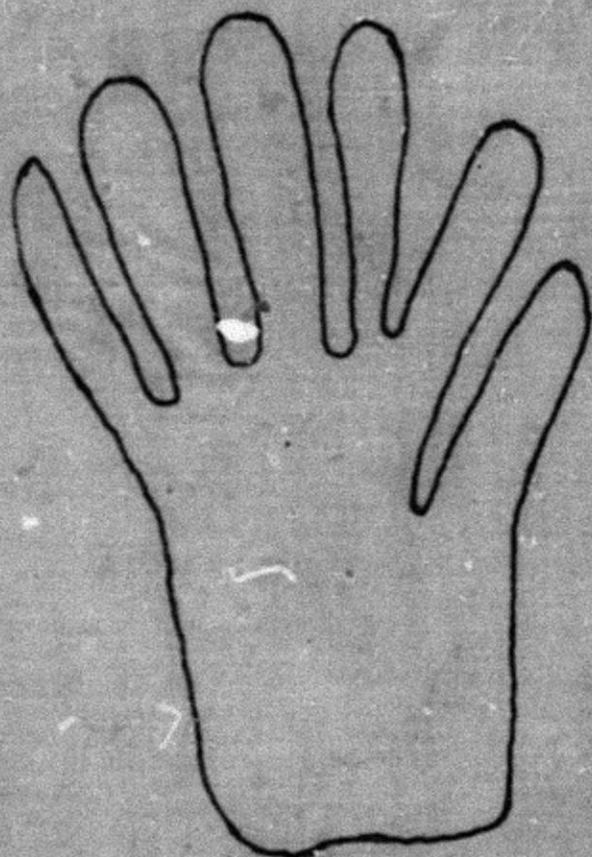
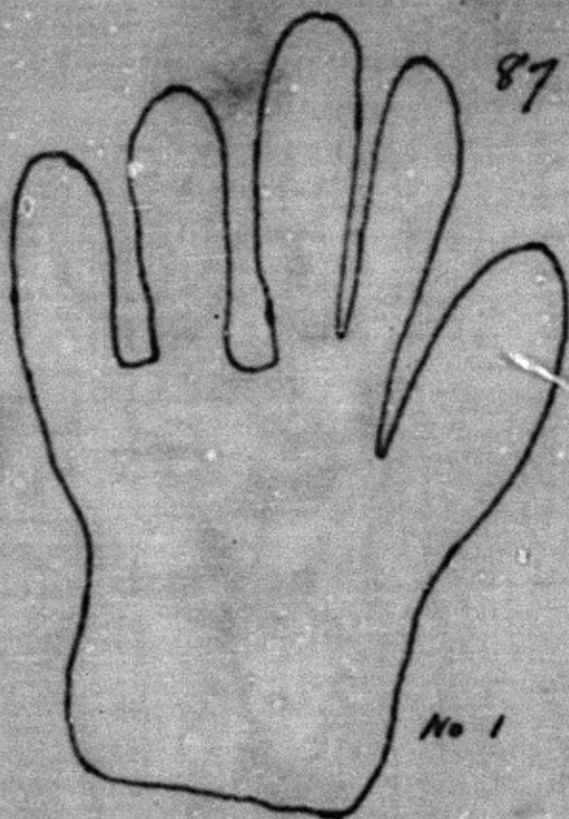
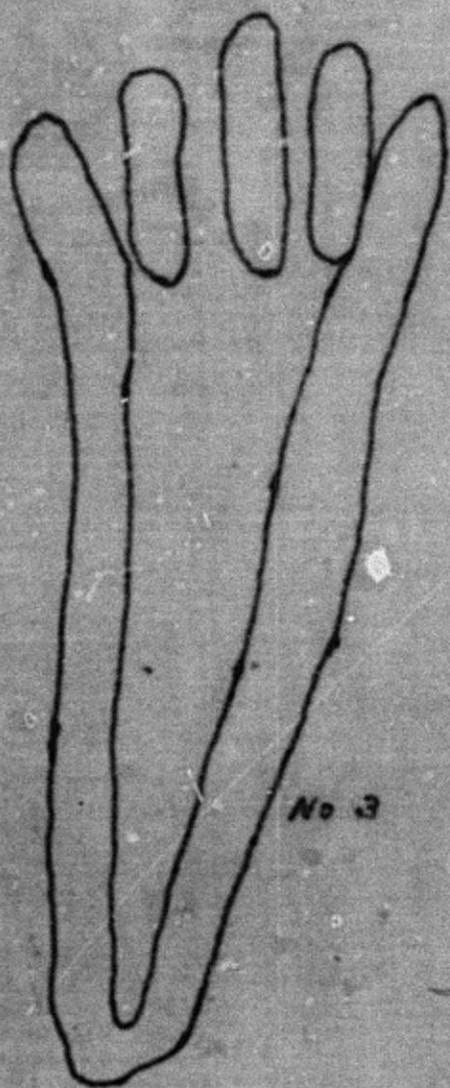
PAINT ROCK

N $\frac{1}{2}$ SW NE SEC 3, T 96, R 3.

ALLAMAKEE CO. IOWA.

SURVEY BY T.H. LEWIS

MAY 6, 1892.



PAINT ROCK

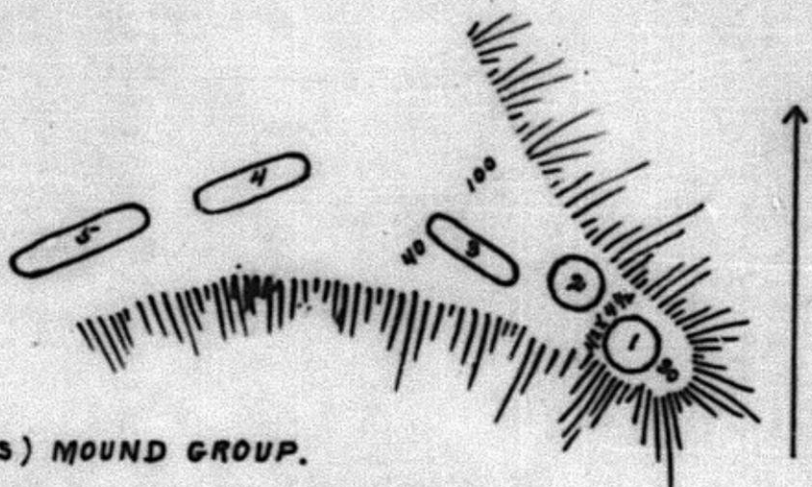
N $\frac{1}{2}$ SW NE SEC 3, T 96, R 3.

ALLAMAKEE CO. IOWA

SURVEY BY T. H. LEWIS

MAY 6, 1892.

COPIES OF PLATS
BY T.H.LEWIS OF HIS SURVEYS OF CERTAIN
MOUND GROUPS
IN CLAYTON CO. IOWA.
1885 and 1892.



(McGREGOR HEIGHTS) MOUND GROUP.

N $\frac{1}{2}$ NE SEC. 22, T 96, R 3. CLAYTON CO. IOWA.

SURVEY BY T. H. LEWIS, MAY 31, 1892.

SCALE 1 IN. = 135 FT. 340 FT. ABOVE RIVER

(McGREGOR HEIGHTS) MOUND GROUP

N $\frac{1}{2}$ NE SEC. 22, T 95, R 3.

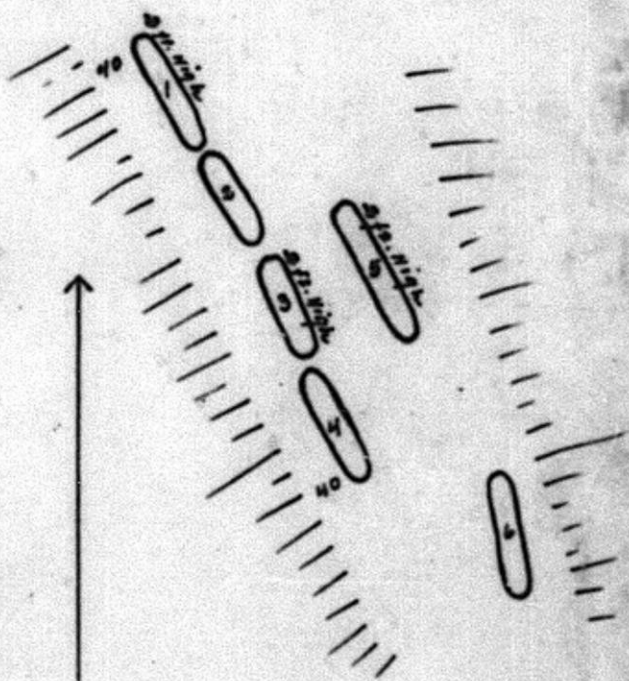
CLAYTON CO. IOWA.

SURVEY BY T. H. LEWIS

MAY 33, 1892

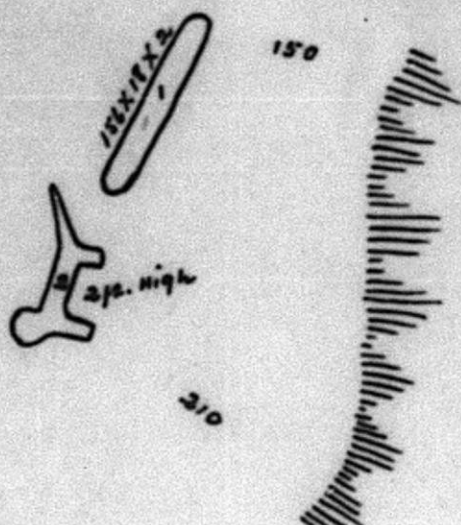
ALL 15 FT. WIDE AND 2 OR 2 1/2 HIGH

SCALE 1 IN. = 135 FT.

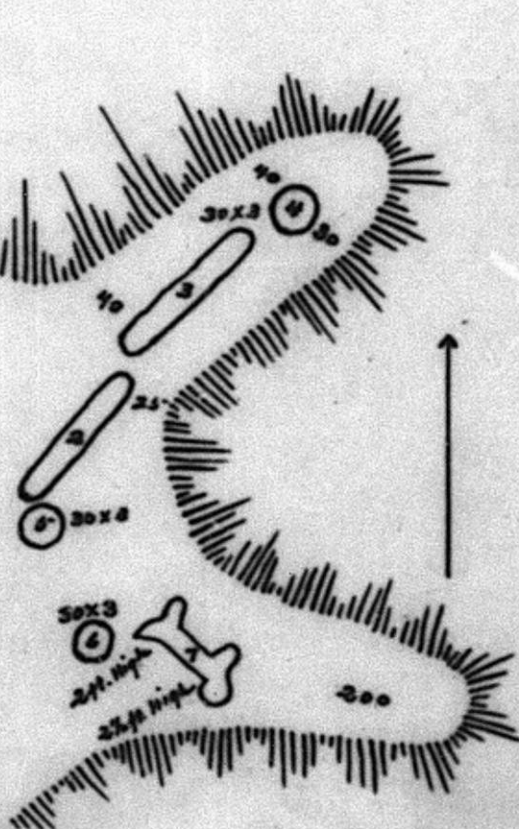


↑

MOUNDS 1 1/2 MI. S. OF
MOUTH OF TURKEY RIVER
NE NW SEC. 19, T 91, R 1.
CLAYTON CO. IOWA.
SURVEY BY T. H. LEWIS
MAY 1, 1885.
SCALE 1 IN. = 135 FT.

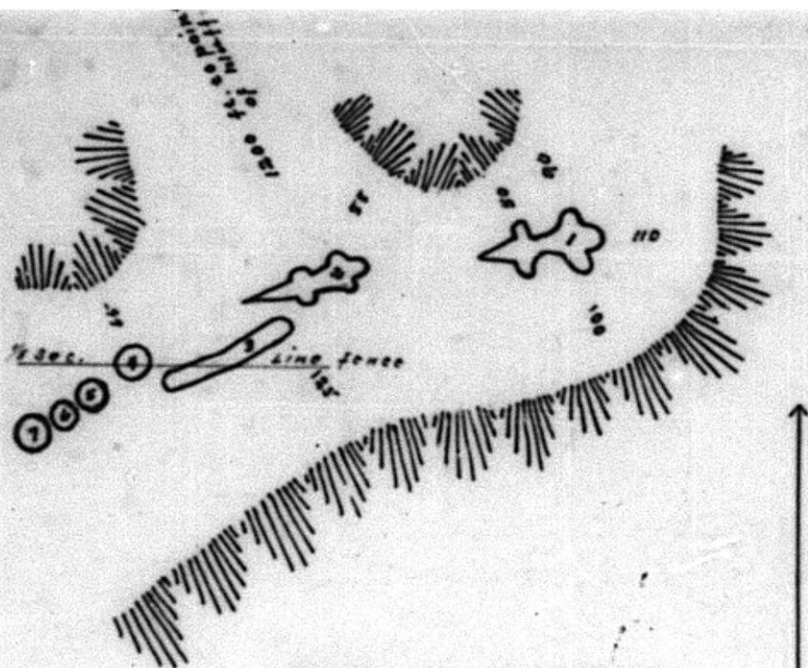


MISSISSIPPI RIVER MOUNDS
1 3/4 MI. BELOW TURKEY RIVER.
SE SEC 18, T 91, R 1
CLAYTON CO. IOWA.
SURVEY BY T. H. LEWIS, APR. 17, 1886.
SCALE 1 IN. = 135 FT.



In woods. In good condition but
only part of group - 9 additional mound
and 1 long. Nos 6, 9 and 10 excavated under Project 1047 of
Iowa Planning Board. No skeletons no relics - Ghiesbreght

*Except #4 and 3 entirely
obliterated by cultivation, May, 1935-*



**MOUNDS 1 MI. S OF MOUTH OF
TURKEY RIVER**

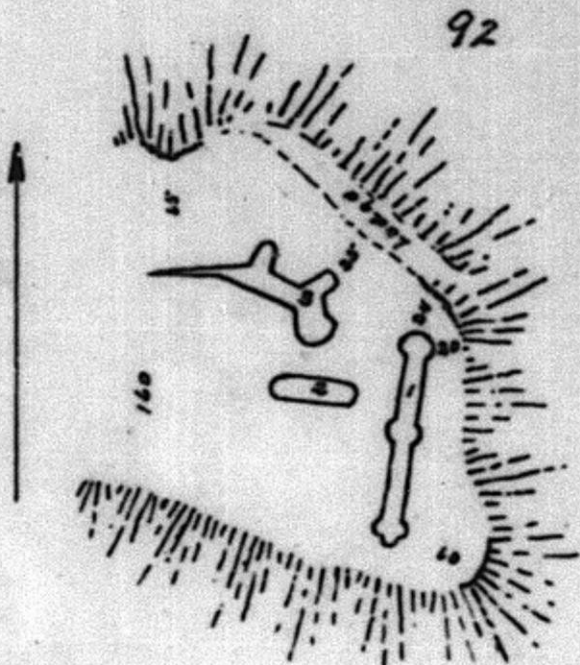
N $\frac{1}{2}$ NE SEC. 13, T 91, R 3.

SURVEY BY T. H. LEWIS

APR. 15 1935. CLAYTON CO. IOWA

SCALE 1 IN. = 135 FT.

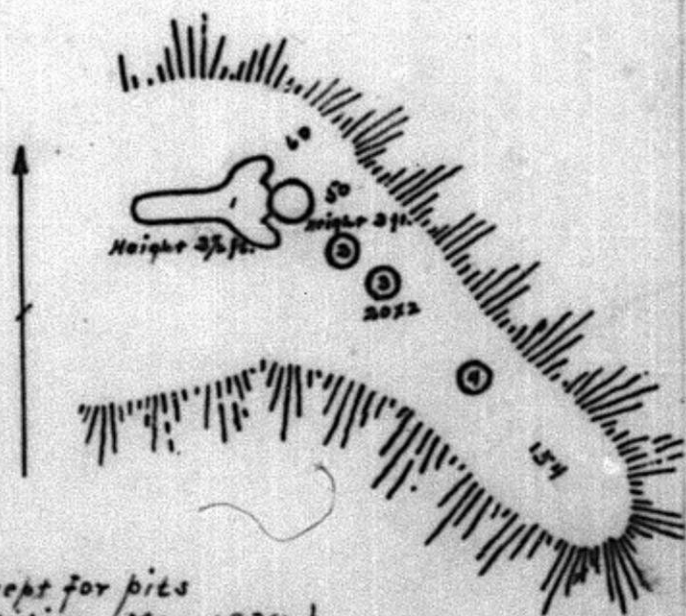
MOUNDS 1 1/4 MI. S. OF MOUTH
 OF TURKEY RIVER
 SW NW SEC. 15 T 91 R 1 NE NE Sec 13-9-1
 CLAYTON CO. IOWA
 SURVEY BY T.H. LEWIS
 APR. 15, 1934
 SCALE 1 IN. = 135 FT.



*(In cultivated field -
 much reduced. May, 1934)*

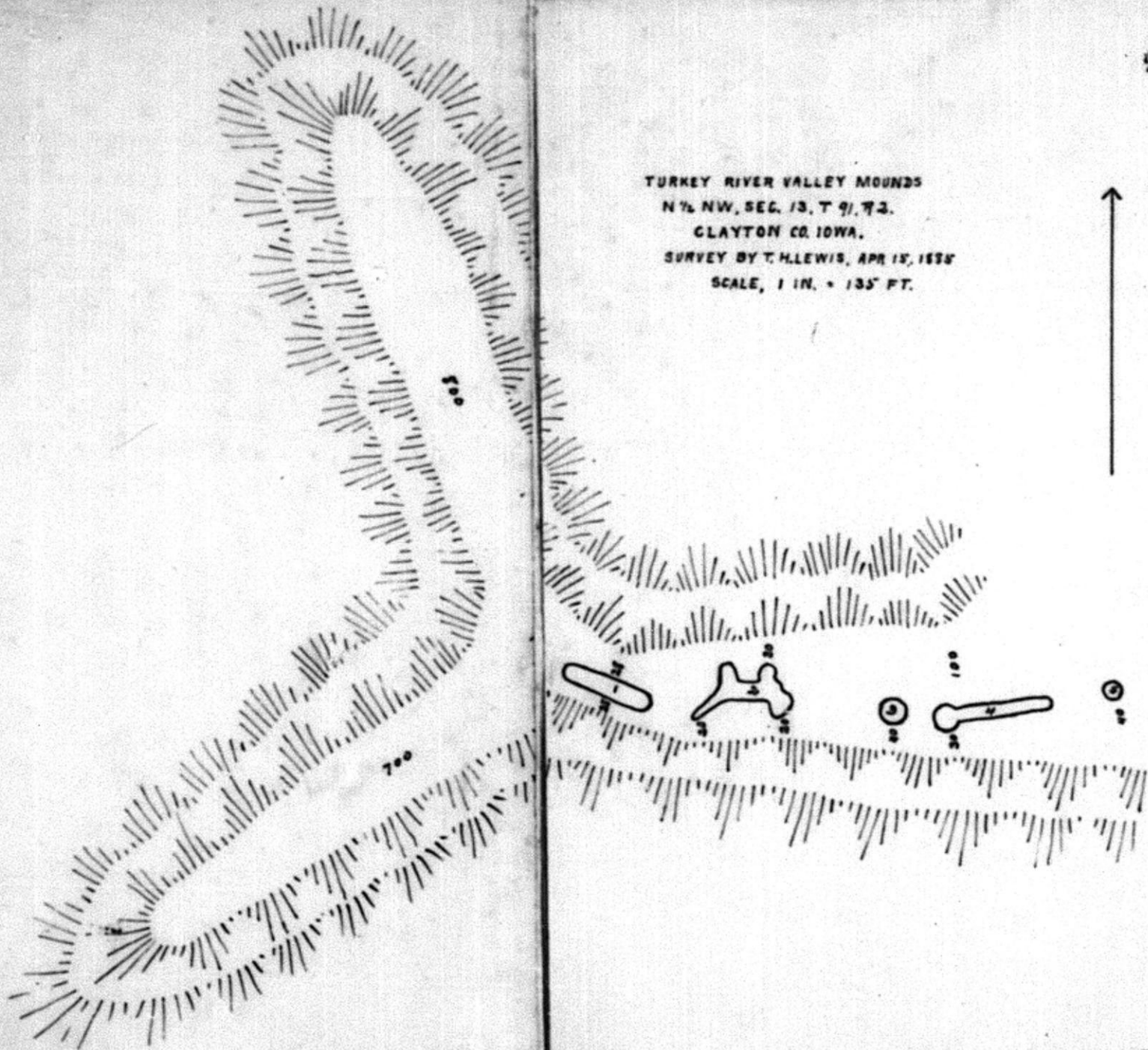
ABOUT 430 FT. ABOVE RIVER.

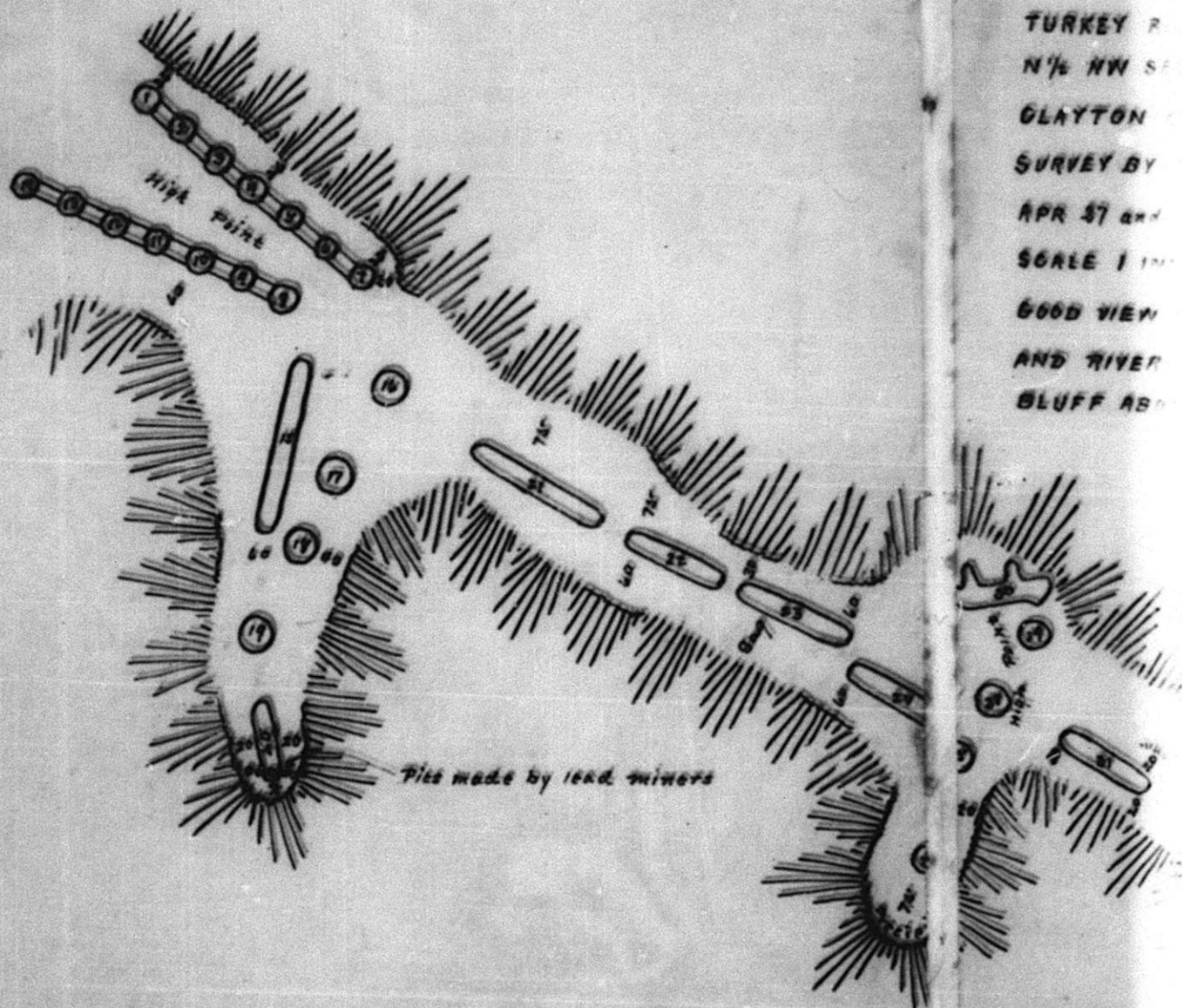
MOUNDS 1 1/4 MI. S. OF MOUTH
 OF TURKEY RIVER.
 SW NW SEC. 15 T 91 R 1
 CLAYTON CO. IOWA.
 SURVEY BY T.H. LEWIS
 APR. 15, 1934
 SCALE 1 IN. = 135 FT.



*(In woods. Except for pits
 in good condition. May, 1935)*

TURKEY RIVER VALLEY MOUNDS
N 1/4 NW, SEC. 13, T 91, R 3.
CLAYTON CO. IOWA.
SURVEY BY T. H. LEWIS, APR 15, 1898
SCALE, 1 IN. = 135 FT.





TURKEY R
 N 1/2 NW S
 CLAYTON
 SURVEY BY
 APR 37 and
 SCALE 1 IN
 GOOD VIEW
 AND RIVER
 BLUFF AS

TURKEY RIVER MOUNDS

N 1/4 NW SEC 11, T 51. R 3

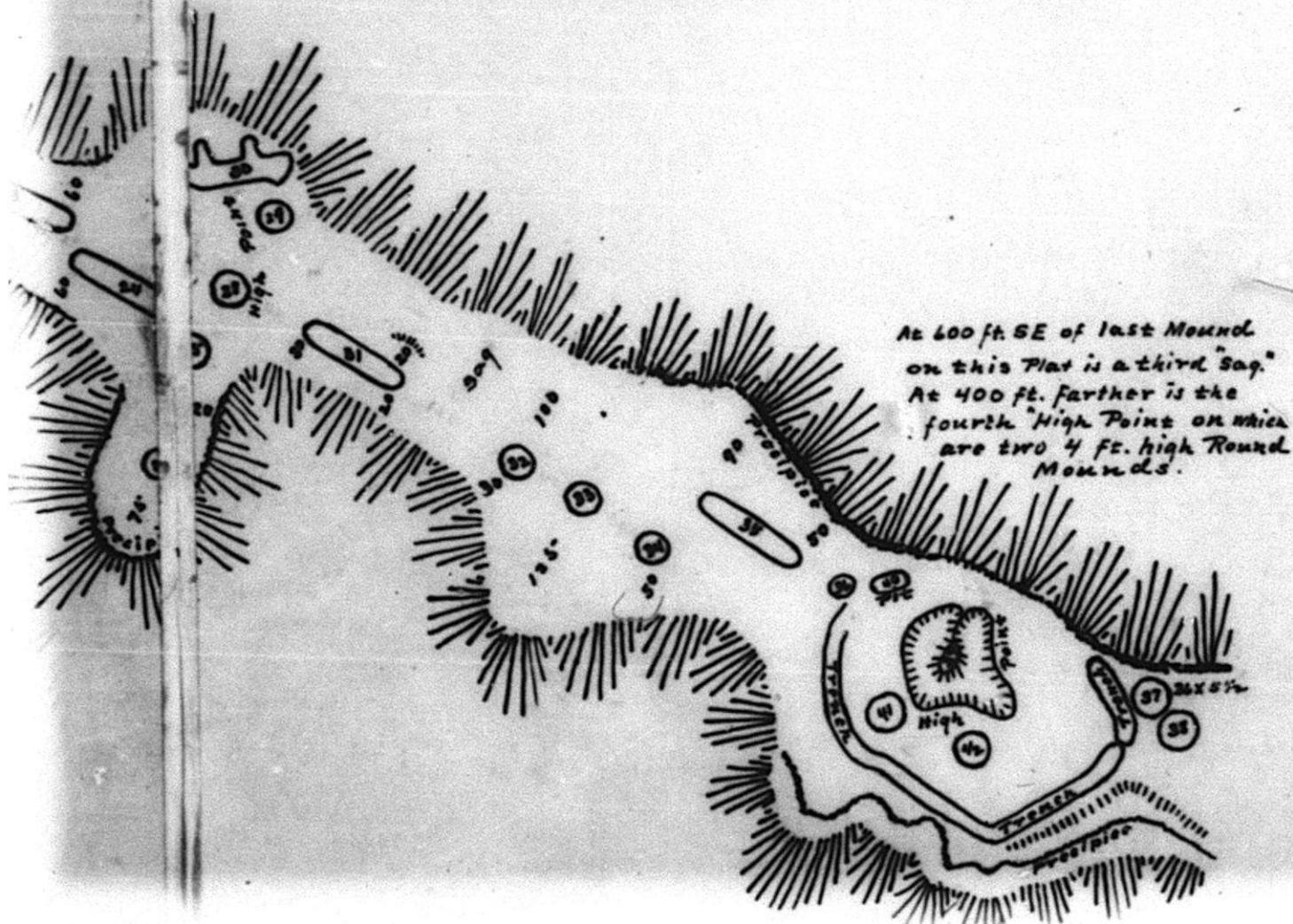
CLAYTON CO., IOWA

SURVEY BY T H LEWIS

APR 27 and 28, 1885

SCALE 1 INCH = 135 FT.

GOOD VIEW OF THE MISSISSIPPI VALLEY
AND RIVER. TURKEY RIVER IN SIGHT.
BLUFF ABOUT 300 FT. ABOVE RIVER.



95

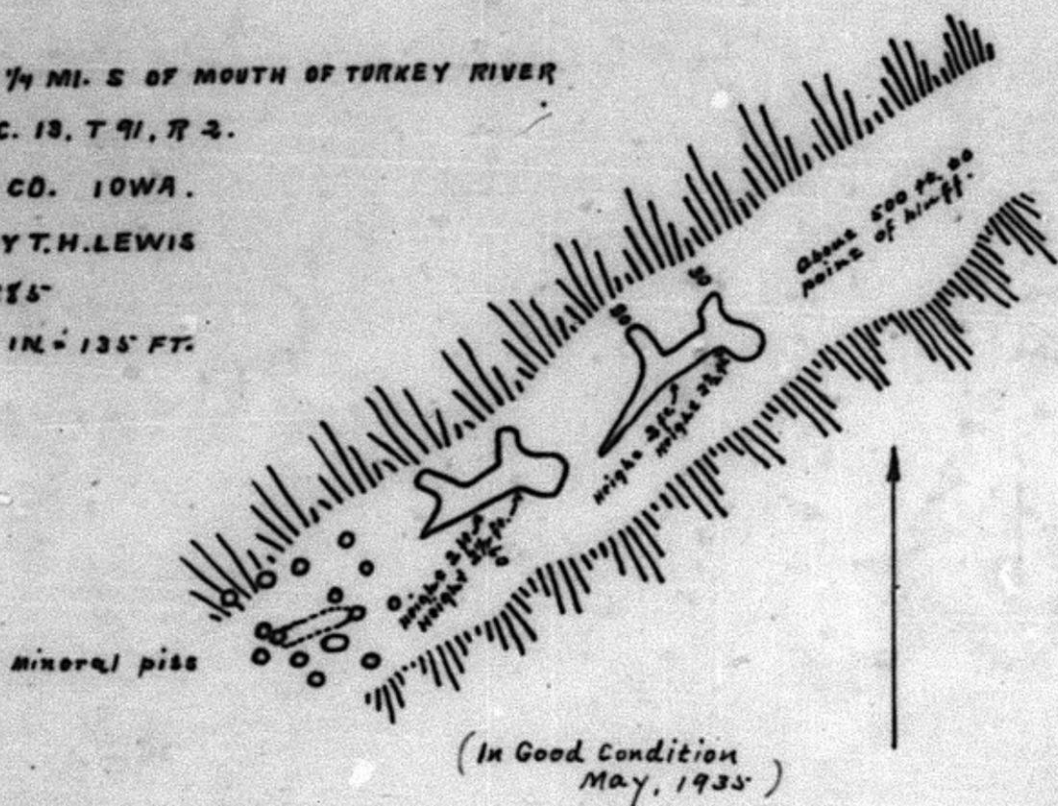
MOUNDS 1 1/4 MI. S OF MOUTH OF TURKEY RIVER
SE NE SEC. 13, T 91, R 2.

CLAYTON CO. IOWA.

SURVEY BY T.H. LEWIS

MAY 1, 1885

SCALE 1 IN. = 135 FT.



MOUNDS 2 MI. S OF MOUTH OF TURKEY RIVER.
NE NE SEC. 34, T 91, R 2
CLAYTON CO. IOWA.

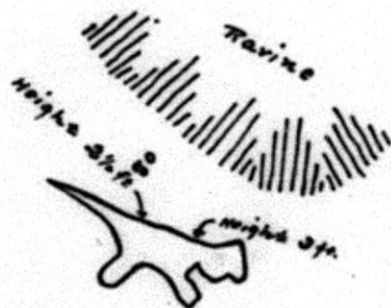
SURVEY BY T.H. LEWIS

MAY 1, 1885.

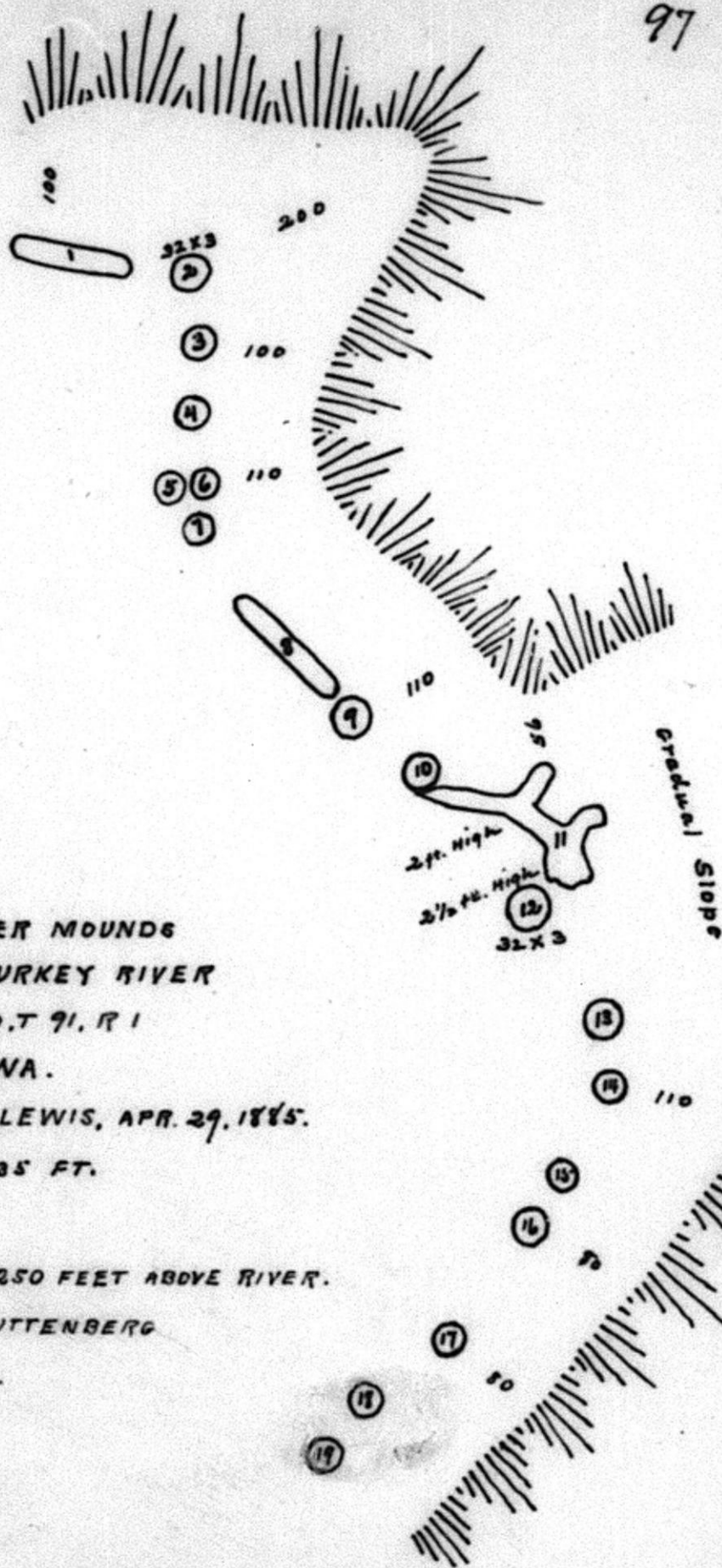
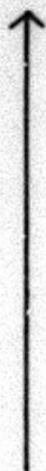
SCALE 1 IN. = 135 FT.



LONE EFFIGY
 1/2 MI. S OF TURKEY RIVER
 SW NW SEC. 15, T 91, R 2.
 CLAYTON CO. IOWA.
 SURVEY BY T.H. LEWIS
 MAY 2, 1945
 SCALE 1 IN. = 135 FT.



LONE EFFIGY
 3/4 MI. S. OF TURKEY RIVER.
 CLAYTON CO. IOWA
 NE SW SEC. 15, T 91, R 2.
 SURVEY BY T. H. LEWIS
 MAY 2, 1945
 SCALE 1 IN. = 135 FT.



MISSISSIPPI RIVER MOUNDS
 3/4 MI. BELOW TURKEY RIVER
 N 1/2 NW SEC. 20, T 91, R 1
 CLAYTON CO. IOWA.

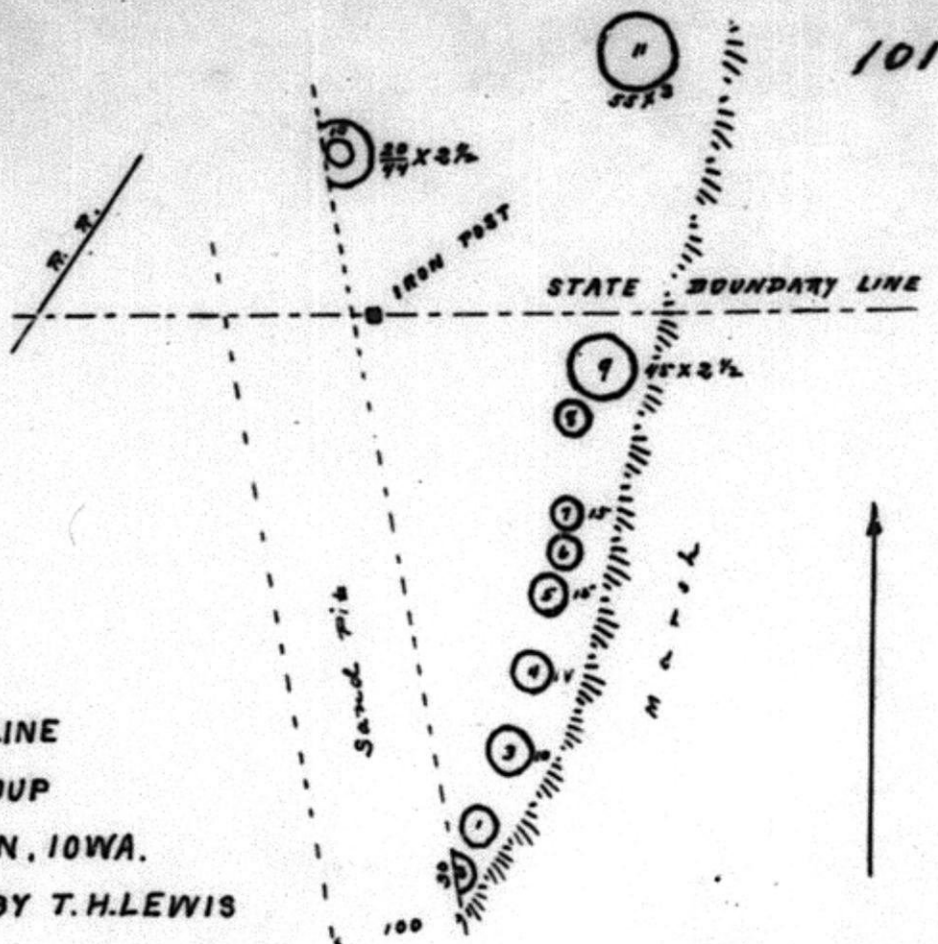
SURVEY BY T. H. LEWIS, APR. 29, 1885.

SCALE 1 IN. = 135 FT.

ON BLUFF ABOUT 250 FEET ABOVE RIVER.
 GOOD VIEW OF GUTTENBERG
 AND CASSVILLE.

COPIES OF PLATS
BY T. H. LEWIS OF HIS SURVEYS OF
MOUND GROUPS
IN ALLAMAKEE CO., IA.
1885 and 1892.

BOUNDARY LINE
 MOUND GROUP
 NEW ALBIN, IOWA.
 SURVEY BY T.H. LEWIS
 JULY, 1885
 SCALE 1 IN. = 135 FT.



MOUNDS JUST ABOVE
 LANSING, IOWA.
 IN OLD CEMETERY.
 NW NE SEC 29. R 99. R 3
 ALLAMAKEE CO. IOWA.
 SURVEY BY T.H. LEWIS, JULY 1, 1885
 SCALE 1 IN. = 135 FT.



THERE ARE 2 ANIMAL EFFIGIES TRACEABLE AND THERE WAS
 FORMERLY ONE WHERE THE HEMENWAY HOUSE STANDS.
 THERE ARE QUITE A NUMBER OF OTHER MOUNDS STILL TRACEABLE.

MOUND 3 MI. SE OF
LANSING, IOWA.

SE NE SEC. 3, T 98, R 3. ALLAMAKEE CO. IOWA.

SURVEY BY T. H. LEWIS, JULY 3, 1885. SCALE, 1 IN. = 135 FT.

NO. 2 PARTLY COMPOSED OF STONE. ON SLOPING LAND ABOUT
25 FT. ABOVE RIVER.

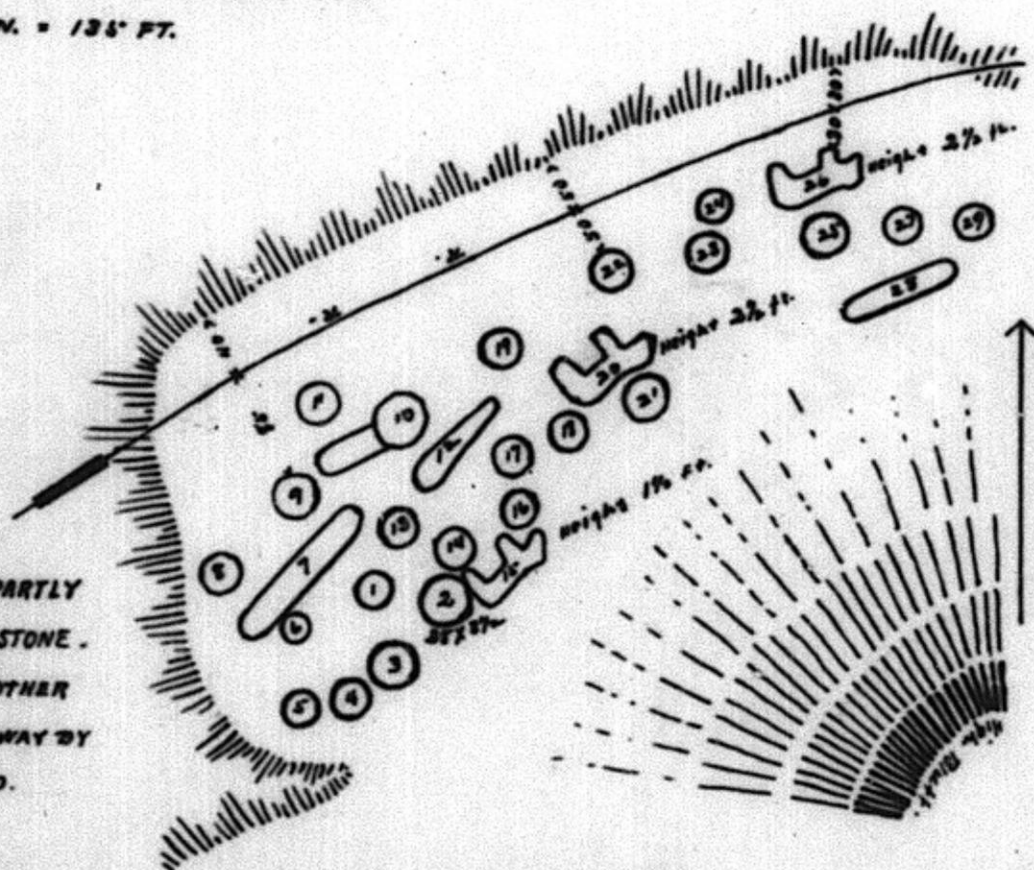
MOUNDS 3 1/2 MI. SE OF LANSING
N 1/2 OF SW SEC. 2, T 98, R 3.
ALLAMAKEE CO. IOWA.

SURVEY BY T. H. LEWIS JULY 2, 1885.

SCALE 1 IN. = 135 FT.

"KELLER FARM GROUP."

NO. 15 AND 20 PARTLY
COMPOSED OF STONE.
THERE WERE OTHER
MOUNDS CUT AWAY BY
THE RAILROAD.



MOUNDS 3 MI. NE OF HARPER'S FERRY.
ON SW NE SEC. 7. T 97 R 2.
ALLAMAKEE Co. IOWA.
SURVEY BY T.H. LEWIS, APR. 29, 1892.
SCALE 1 IN. = 135 FT.



*Actually on
SE 1/4 Sec. 7*

Raised embankments

THERE ARE 3 EMBANKMENTS BELONGING TO THIS GROUP, -
TWO EXTENDING OVER INTO A FIELD. ONE IS ABOUT 800 FT. LONG AND
ANOTHER ABOUT 400 FT. LONG AND EXTENDING IN AN E. OF S.
DIRECTION. A VERY LITTLE IF ANY ABOVE HIGH WATER.

(HEITMANS DAM)

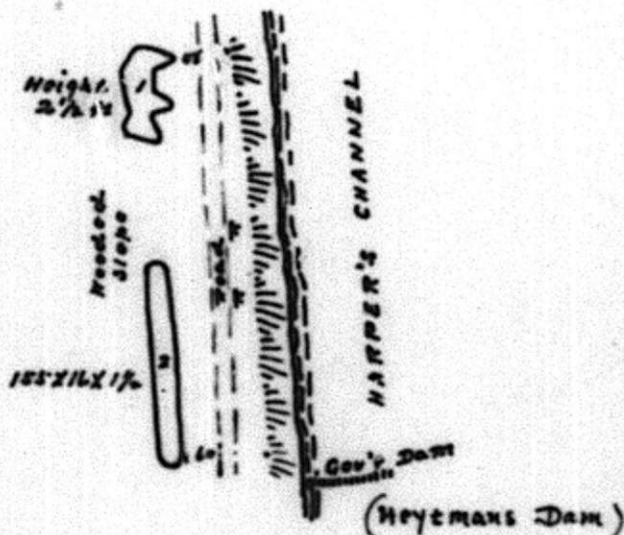
MOUNDS 7 MI. NE OF
HARPER'S FERRY.

E 1/2 SE SEC. 20. T 98. R 2.

ALLAMAKEE CO. IOWA.

SURVEY BY T.H. LEWIS

APR 29, 1892. SCALE, 1 IN. = 135 FT.



ABOUT 20 FT. ABOVE THE SLOUGH - HARPER'S CHANNEL.

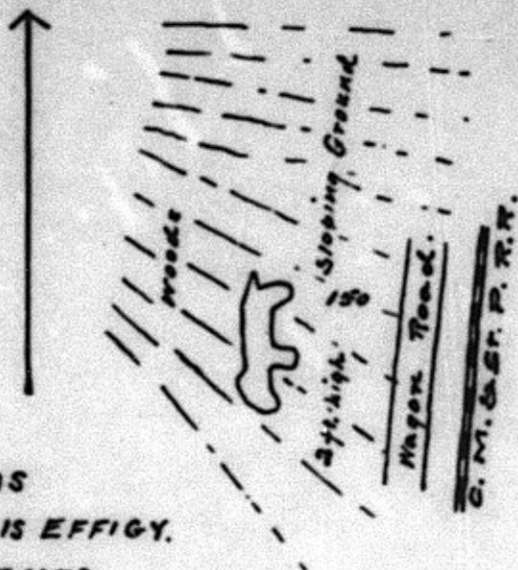
MOUNDS 6 MI. NE OF HARPER'S
FERRY.

NE SE SEC. 29. T 98. R 2.

ALLAMAKEE CO. IOWA.

SURVEY BY T.H. LEWIS, APR 29, 1892.

SCALE 1 IN. = 135 FT.



ON SLOPING HILLSIDE ABOUT 35 FT.
ABOVE THE SLOUGH. SOME ROCK WAS
USED IN THE CONSTRUCTION OF THIS EFFIGY.
THERE ARE 3 RUINED EMBANKMENTS
BELONGING TO THIS GROUP. ABOUT 300 YDS
FARTHER SOUTH, NEAR THE ROAD, THERE IS A
RUINED TAIL-LESS ANIMAL.

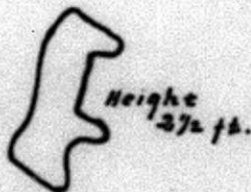
MOUNDS 2 1/2 MI NE OF
HARPER'S FERRY.

SE SW SEC. 7. T 97. R 2.

ALLAMAKEEE CO. IOWA.

SURVEY BY T.H. LEWIS

MAY 4, 1892. SCALE 1 IN. = 135 FT.



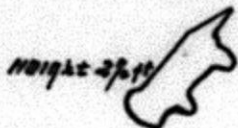
JUST ABOVE OVERFLOW

SEE FURTHER REMARKS ON BACK OF THIS SHEET

1055
↑

MOUND $\frac{3}{4}$ MI. NE OF
HARPER'S FERRY, IOWA.
NE NW SEC. 24, T 97, R 3
ALLAMAKEE CO. IOWA.
SURVEY BY T.H. LEWIS

APR 30, 1892. SCALE 1 IN = 135 FT.



NEAR CENTER OF THE WEST SIDE OF THE
"GREAT GROUP." IN SMALL TIMBER.

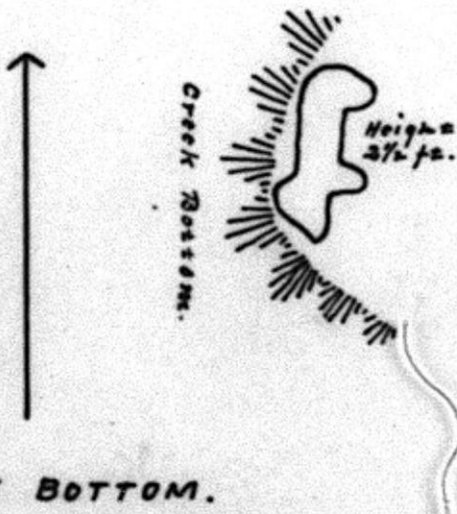
EFFIGY $\frac{1}{3}$ MI. NW OF HARPER'S
FERRY.

NE SE SEC. 23, T 97, R 3
ALLAMAKEE CO., IOWA.

SURVEY BY T.H. LEWIS

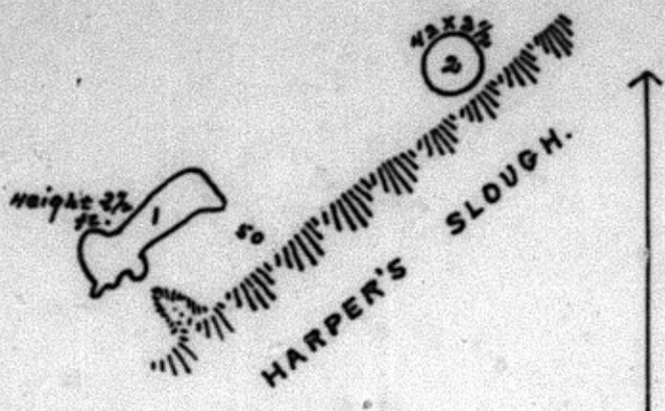
MAY 4, 1892

SCALE, 1 IN = 135 FT.



ABOUT 10 FT. ABOVE THE CREEK BOTTOM.
THIS IS ON THE WEST SIDE OF THE SOUTH END
OF THE "GREAT GROUP."

MOUNDS $\frac{1}{2}$ MI. SW
OF HARRIS FERRY.
N $\frac{1}{2}$ OF NE SEC. 36, T 97. R 3
ALLAMAKEE CO. IOWA.
SURVEY BY T. H. LEWIS
MAY 4, 1892
SCALE 1 IN. = 135 FT.



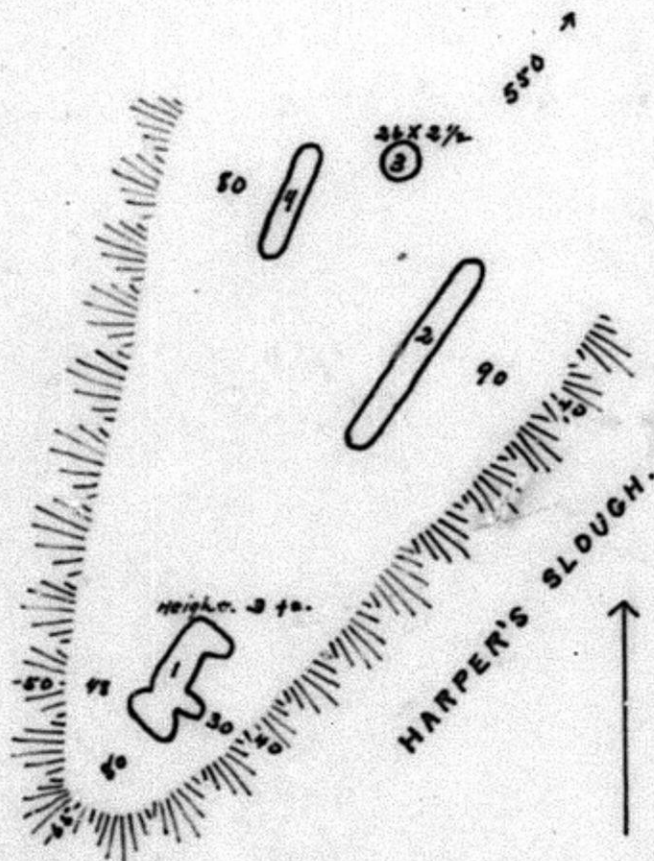
ALONG THE BANK BELOW THERE ARE 12 ROUND MOUNDS. *
SOME HAVE MODERN GRAVES ON THEM. AND ALL ARE
MORE OR LESS MUTILATED. ABOUT 35 FT. ABOVE THE
SLOUGH AND WITHIN 250 YARDS OF THE SOUTH END
OF THE "GREAT GROUP"

*"HARPER'S CEMETERY MOUND GROUP" OF ORR'S SURVEY.
ONLY 6 ROUND MOUNDS ARE NOW LEFT OF THE ORIGINAL 12.

MOUNDS $\frac{3}{4}$ MI SW OF
HARPER'S FERRY.
SE SW SEC. 36, T 97. R 3.
ALLAMAKEE CO. IOWA.
SURVEY BY T. H. LEWIS.
MAY 6, 1892.
SCALE 1 IN. = 135 FT.

("MOUND GROUP NO. 1"
OF ORR'S SURVEY.)

ON AN ISLAND
35 FT ABOVE RIVER



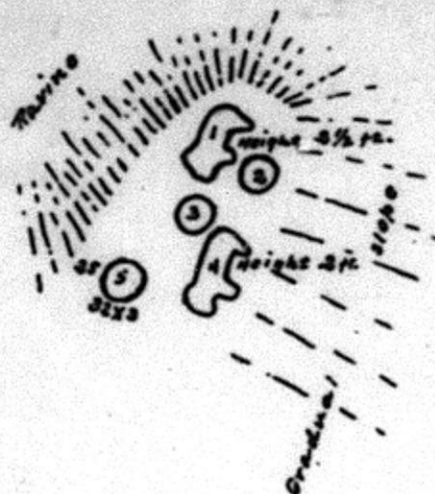
MOUNDS AT NAZEKAW.

SE NW SEC. 34, T 96, R 3.

ALLAMAKEE CO. IOWA.

SURVEY BY T. H. LEWIS, MAY 7, 1892

SCALE 1 INCH = 135 FT.



THERE ARE 12 EMBANKMENTS, 6 CLUB SHAPED EMBANKMENTS
AND 37 ROUND MOUNDS, MOSTLY EXCAVATED. ALSO ONE RUINED
TAILLESS ANIMAL

THIS GROUP WAS AT THE MOUTH OF YELLOW RIVER ON THE
TERRACE ON THE NORTH SIDE.

Summary of Characteristics of the Onseta Aspect of the Upper Mississippi as it occurs in the type locality, the Valley of the Upper Iowa River in Allamakee County, Iowa.

(Orr.)

Sites:

Evidences of straggling village sites abundant on all terraces of any size along the river from its mouth to New Galena, fifteen miles upstream.

Houses:

Type unknown. Probably a framework of saplings covered with bark or skins similar to those built by the historic Winnebago. No hut pits. No evidence of log structures.

Caches:

None for preservation of food found. For weapons, implements and material for making same, - occasional.

Mounds:

No certain evidence that the people of this culture built mounds in the Upper Iowa valley. (There is abundant evidence on the surface to show that a people of the same or closely allied aspect or phase, had villages on the great Blood Run terrace on the east side of the Big Sioux in north-west Lyon county, Iowa, and built the "Enclosed Area," of fifteen acres, and probably the great group of large mounds on this terrace.)

Enclosed Areas:

Five ~~small~~ sub-circular areas having diameters of from twenty-five to two hundred and fifty feet, surrounded by an embankment from one to four feet high, with a ditch inside, - sites of compact villages or places where ceremonial gatherings were held, were located on the terraces and flood plain in the valley and on the bordering bluff tops. These are the work of the Onseta people. There is also one rectangular in shape.

Refuse Pits:

Numerous in the Enclosed Areas, especially next to the embankment.

Burials:

Extended singly or side by side in rows in cemeteries, or intrusive in mounds built by a people of woodland culture. Occasionally reclining - not flexed. Very rarely a bundle. Many skeletons apparently incomplete when interred.

Burials - continued:

On terraces and flood plain - seldom on bordering bluff tops. Usually more or less grave goods consisting of pottery, beautifully wrought triangular unnotched arrow heads and thin oval knives, disk and elbow pipes, awls and beads of bone, arrow-shaft straighteners of elk ribs, and rolled copper beads. Glan shell spears in pots.

Pottery:

Very abundant. Both sherds and whole vessels. Not polished. Material: clay tempered with crushed clam shell. Shape: olla type. Bowl, sub-globular, ellipsoidal - some of which quite pointed. One of bowl shape known. Neck: one-half to three inches high, recurved outward, or vertical, round or oval, approximately $\frac{2}{3}$ the diameter of the bowl and without ornament. Decoration: body plain or by straight, irregular, infrequent, vertical incised lines from neck to shoulder, or by punctate triangular areas, point towards the shoulder, usually bounded on either side by the incised lines of a zig-zag horizontal belt. One sherd shows a continuous horizontal belt of three irregular horizontal incised lines. Occasionally a toy vessel, crudely made, vertically ellipsoidal and without ornament, is found.

Handles:

Two to four "jug" handles welded at opposite sides to neck and bowl. ~~XXXXXXXXXXXX~~ Plain or ornamented with straight, vertical, incised, parallel or "turkey track" lines. One found with three horizontal, incised lines across. Or there may be from three to five vertical ridges with intervals between. Occasionally irregular punctate ornamentation.

Lip:

plain or marked by finger-end or incised indentations. No ornamentation on the inside..

Healing Stones: (?)

Common, small, six to twelve inches in diameter. Of greenstone, quartzite and limestone.

Mullers:

Common. Of greenstone, granite and quartzite.

Grooved Hammers, War clubs and Mauls:

Common.

Grooved Axes:

Surface finds, believed to be Oneota, - not common, crude, grooved all round.

Gaming Stones:

If certain well made, symmetrical pieces that have usually been classed as mullers, are gaming stones, then common, No others.

Hammer Stones:

Irregular, Mostly unshaped, of greenstone and granites - common. Of chert concretions - occasional.

Polished Celts:

Common.

Abraiders, - Arrow Shaft Smoothers:

Matched pairs, singles and pieces of a coarse but decay resistant sandstone, - not rare.

(The nine preceding have never been found with burials, but because of their association, on unquestioned Oneota village sites, with the very abundant pottery of that culture and no other, they must be considered as belonging to that culture.)

Pipes:

Types of disk and elbow, - common.

Catlinite Inscribed Tablets:

Only one known and that not certainly Oneota.
(Common on Blood Run Terrace)

Arrow Heads:

Small unnotched, triangular, finely made, - Abundant.

End (Snub nosed) Scrapers:

The most abundant relic found.

Chipped Stonework:

Scrapers, arrow heads, knives and lance and spear heads. All finely wrought, - found mostly with burials. Also many scrapers, arrow heads, lance heads and knives, crudely made, with very abundant flakes, are common field finds on village sites and occur as deposits with burial burials.

Work on ~~Bone~~ Shell

Edges of clam shell spoons with tally marks found in funeral pottery.

Work on Antlers:

Ends of antler tines, common. Large punches (?) occasional.

Implements and Ornaments of Bone:

Arrow-shaft straighteners of elk or buffalo ribs. Beads, awls, needles and unworked small bones the use of which is unknown, - common. *Shoulder-blade (Elk) digging implements, occasional*

Copper:

Bracelets and beads, - rolled.

Bones of Animals, fishes, birds and turtles, - very common.

Natural textiles:

None.

Apr. 13th, 1937.

Dear Dr. Keyes:

Enclosed find short paper on Petroglyphs of Allamakee County for meeting at Iowa City.

Look it over and if not up to what it should be for a meeting of that kind, consign it to the waste basket.

To prepare a comprehensive paper from which much in the way of valuable conclusions could be reached would mean:

First - a careful search of the bluffs from Yellow river to the Minnesota line for other "shelters".

Second - mapping in detail, to a scale, of the walls of every shelter under both overhanging rocks and in fissures, on which petroglyphs are to be found.

Third - a careful study of results of above work.

To carry this out would require the work of two men in the field for at least two weeks.

You will remember that in 1934, in mound # ³ 1 ~~sum~~ of the New Gale-na mounds, in which we found the Algonkian pot, there was also a very shallow intrusive Oneota burial with which there was a very thin-walled pot, pretty badly crumbled and broken up. Well, with burial # 2 in mound # 23 of the same group we, the last summer, found a duplicate of the thin-walled found in '34, but in better shape.

Part of the neck crumbled away and the remainder is broken up some but not badly. The thinness of the walls is all that may prevent a good restoration.

I packed this vessel carefully in cotton in a carton and forgot all about it. A few days ago I was out in the shop giving the material there something of a look-over and ran onto it.

I am enclosing three sheets which insert as indicated in my report.

From the programme received you will no doubt have a profitable and enjoyable meeting at Iowa City.

Very truly yours

Petroglyphs of Allamakee County, Iowa.

(Orr)

The topography of Allamakee county, speaking generally, consists, first, of long salient ridges extending out from the general upland penoplain to the west, towards the gorges of the Mississippi River and of its tributary, the Upper Iowa. At one to three hundred feet below this is a second much less extensive one bordering the valley of the Upper Iowa, and still less so, the greater river and its tributary streams, Village Creek, Paint Creek and the Yellow River.

The top of the Onondaga limestone with its mantle of soil forms the first—the Onondaga penoplain. Into this plain the Mississippi river has, during the millenniums of the past, cut its canyon along the Allamakee county front, to a depth of approximately five hundred and fifty feet below the top of the Onondaga limestone, afterwards falling in again one hundred and fifty feet of the old gorge.

At the north boundary line of the state, below the Onondaga dolomitic limestone, is the one hundred feet of unstratified Jordan sandstone, superimposed on fifty feet of St. Lawrence limestone, below which are the Dresbach sands and shales down to the level of the water in the river.

Because of the southwesterly dip, the top of the Jordan disappears below the river at McGregor. At sixteen miles up the Upper Iowa it also disappears below that stream.

Though not a hard rock this Jordan formation, in the vertical cliffs and precipices, still has stood exposure well, weathering away but little more than the great body of dolomite above it.

In places, especially just above the top of the talus lying against the foot of the bluffs, it shows a tendency to recede slightly beneath irregular, discontinuous and more indurated strata, and wherever vertical cracks occur there is a tendency to disintegrate along the sides of such.—sometimes as much as three feet on either side at the cliff face. The fissures thus formed narrow rapidly, seldom extending back into the bluff for a distance of more than twenty feet.

Where disintegration has taken place beneath the harder strata, and the weathering has again hardened the sandstone face, and where the same hardening of the sides of fissures occurs, and occasionally on the cliff faces, petroglyphs may be found.

For lack of a better name we have been calling these places where the softer rock beneath a harder stratum recedes because of disintegration, and the wider fissures, if these have a fairly level floor, and especially if it is of earth, "rock shelters," though in fact they afford but little shelter from the weather as they seldom extend back under the "overhang", or into the fissures with a sufficient width to admit of occupation.


So far in Allamakee county a total of nine of these rock shelters, on the walls of which are petroglyphs, have been found, described, and accurate sketches or photographs made of the petroglyphs.

Five of these are shelters proper. They are the Paint Rock at the foot of the historic Paint Rock Cliff three-fourths of a mile north of Wauken Junction, with which is connected a fissure; the Conway Shelter on Sec. 13, T. 99, R. 4 west of the 5th P.M.; which unlike all but one of the others, is three hundred feet above the bluff foot; and the Abner Love Shelter in section 26 of the same township as the Conway. All three of these in the bluffs along the Mississippi. The Kumph Shelter on the SE NW Sec. 5, T. 99, R. 5 west, and the Bear Creek Shelter on the NE NW Sec. 2, T. 99, R. 6 west, both in ledges at the foot of the Upper Iowa River bluffs.

There are four enlarged fissures. They are the twin fissures three miles south of Lansing, like the Conway, well towards the top of the bluff facing the big river and on the NW NE Sec. 3, T. 98, R. 3 west; and the twin Fish Farm fissures at the water's edge of a Mississippi river slough, and running back under the rail road track, at three miles south of New Albin on the NE NE Sec. 26, T. 100, R. 4 west. The Fish Farm Indian Mound Group, now a state preserve, is about one-fourth mile north of these fissure shelters. The entrance to the south one is now closed by earth thrown over the embankment of the rail road above to strengthen it, but tracings of the petroglyphs on its walls were made half a century ago, when the entrance was still open, by T.H. Lewis, and these have been preserved.

The three localities where there are petroglyphs on the vertical exposed cliff walls, are at the base of Hanging Rock Precipice, facing the Mississippi, on the NE NW of Sec. 27, T. 96, R. 3 west; on a ledge on the south side of creek emptying into the Mississippi at a few rods above the concrete highway bridge; and on a low cliff on the north side of the Upper Iowa, on the SE NW Sec. 6, T. 99, R. 5 west. This latter lies just to the north of the public road and is peculiar in having petroglyphs differing from any found in other shelters.

A total of twelve locations. With two exceptions noted all are just above the top of the talus at the foot of the cliffs or ledges. It is doubtful if any more will be found along the Upper Iowa as the horizon of the Jordan formation in that valley is almost wholly covered with talus, and the few places where ledges are exposed have been pretty well looked over. But in the twenty-five miles of precipitous bluffs along the Mississippi between the mouth of the Upper Iowa a couple of miles south of the state line, and that of the Yellow River, there are undoubtedly shelters in the Jordan sandstone, as yet undiscovered, on the walls of which there are petroglyphs.

The petroglyphs of Allamakee county are crude, conventional outline figures of, with few exceptions, unidentifiable species of birds and animals, in addition to which there are figures of what may be intended to represent a man's face - two goggle eyes - points within small circles, surrounded by a larger one - or what is more likely the artists conception of what some spirit would look like if he could see it. Then there are a number of figures found in the north fissure of the Fish Farm Shelters, consisting of a number of parallel grooves averaging two inches apart, crossed at approximately right angles by others, forming what may be likened to a grid, the meaning or significance of which is unknown; a figure made by the intersection of four short lines having a resemblance to a turkey track -  - hence its name; and the horizontal cross - +

The "turkey track" is found in every shelter but three, the horizontal cross in but two. Both of these last we found on the top of ~~the top of~~ the great Sioux quartzite erratic on the bluff top east of the Little Sioux at two miles south of Cherokee, Iowa, which would seem to indicate their quite extended use.

Then there is a circular groove enclosing a shallow dish-shaped area of about 8-10 inches in diameter in which are short grooves of different lengths irregularly arranged. These occur in the Kumph and Conway shelters.

In addition to all these there are at all the locations, especially at Paint Rock, the Fish Farm and the Lansing shelters, many short, usually vertical grooves, sometimes occurring singly and at others in groups or irregularly connected, the meaning of use of which is conjectural. The hour-glass shaped buttress at the south end of the Paint Rock cliff is covered with these - there are hundreds of them. It has been suggested that they may have been used to "edge up" celts or axes but this is doubtful - it would seem that rubbing the edges of these implements up and down in the grooves would dull instead of sharpening them.

Except the faces are intended for those of men, there are no figures that might be interpreted as meaning one. None are found representing a fish or snake. There is however a very good one of a turtle in the Bear Creek Shelter.

Except for the petroglyphs no other evidences of use or occupancy, such as pottery sherds, worked flints, etc. are found in or about the shelters.

The grooves forming these rock shelter petroglyphs are uniformly "half round", from 1.5 to .75 inches wide and from .12 to .20 inches deep.

Inbedded in the talus alongside the highway on the NW NE Sec. 4, T. 59, R. 5 west is a dolomite rock approximately 4X4X2 ft. On the vertical 4X4 face next to the road and near the top, are two exact circles, one within the other. The grooves which form them are one and one-half inches wide and one-eighth of an inch deep. The elevated part between the grooves is one and one-half inches wide at its base and one-eighth high - a "half round." The part in the center of the smaller circle is a uniformly rounded protuberance one and one-half inches in diameter and one-eighth inch high.

The whole circular part is five inches in diameter from outside to outside.

From the lowest point in the outside circle a zig-sag groove, one and one-half inches wide and one-eighth deep extends downward for a distance of eighteen inches.

The whole figure is exceptionally well carved.

There is no associated pottery or other material with this rock to indicate what people made the petroglyph. As it is within less than half a mile of the site of the Ratcliffe Enclosed Area, which was quite certainly made by the people of the Onseta Culture, and there are no mounds near which might be Algonkian, it is probably Onseta.

The area on which occur the rock shelter petroglyphs, probably, as indicated by recent finds of typical specimens of their pottery on the Yellow River, was also occupied by people of that culture, and they may have been, but by no means certainly, their work.

Waukon, Iowa Apr. 10, 1937.

Ellison Orr

I O W A

(Keyes)

I. Woodland.

1. Sites, Small. Generally one or two acres or less, located in timbered areas on: (a) stream terraces. (b) ridges or knolls, often sandy, near streams. (c) lake margins. (d) in rock shelters.
2. Pottery. Uniformly grit-tempered; reddish or a dull brown in color; rather soft, porous, crumbly, unpolished; ornamented with twisted cord impressions, stamped, punched, rouletted, and occasionally incised designs; the vessels generally taller than wide; bases rounded or round pointed; openings wide, round or, when supplied with small lugs, squarish.
3. Chipped stone. Highly developed. Two hundred or more types of projectile points, knives, drills, and scrapers readily distinguishable. Small, unnotched triangular points generally present, but not very numerous. Scrapers rather irregular in shape and not numerous, except in north-central part of the State, where they are common.
4. Ground stone. Highly developed. Fifty or more types of grooved axes, these predominating over celts in the ratio of at least two to one. Celts of various types, usually two or two and a half times wider than thick. Discoidals, gorgets, boatstones, birdstones, bannerstones, plummetts few in number.
5. Milling stones. Few in number, large, deep, 40-70 pounds.
6. Metal work. Almost negligible.
7. Work in bone. Weakly developed. Bone awls fairly common in the rock shelters.
8. Work in shell. Very little, a few gorgets.
9. Mounds. Numerous. Effigies in N. E. Iowa on the Mississippi bluffs and terraces; linears in the N. E. quarter of Iowa and in the middle Des Moines valley; conicals in nearly all parts of the State.
10. Burials. Those in mounds nearly all secondary; a few flexed or extended. Primary burials in cemeteries, generally flexed.

II. Hopewell.

A number of curved-platform-base pipes, copper axes, copper beads and ornaments, large marine shells, mica sheets, pearl beads from mounds along the Mississippi river, mostly at Davenport and Southward.

III. Oneota.

1. Sites. In the open on high river terraces or the broad summits of river bluffs. Large, 10-100 acres or more.
2. Pottery. Shell-tempered; brown or reddish brown; rather soft, compact, flaky, unpolished; decoration of trailed or punctate designs on inner rim or shoulders, outer rim plain. The lips often notched or finger-imprinted, rims either vertical or recurved; generally two loop or strap handles, sometimes four or none. The two-handled vessels generally with elliptical bodies, with handles on the long axis; vessels wider than high, round bottomed.
3. Chipped stone. Fine workmanship but few types. Long flint knives and narrow triangular arrowheads, unnotched. End scrapers well made, symmetrical, great range in size, abundant. Fish gorges common.

Crude axes with all-round groove.

4. Ground stone. Medium-sized, thick celts. Diminutive Siouan, disc-bowl, inverted-effigy pipes. Sandstone arrowshaft smoothers.
5. Milling stones. Bun-shaped hand mullers; small, shallow mortars, 10-20 pounds.
6. Work in bone and antler. Medium development. Scapula digging tools, awls, tubular beads, drilled deer and elk ribs, whistles, a few socketed projectile points.
7. Work in metal. A few copper tubular beads, bracelets, ornaments.
8. Work in shell. Spoons, a few gorgets, and maritime-shell beads.
9. Burials. Extended primary, in cemeteries and intrusive in Woodland mounds, apparently also, in some cases, in mounds built by the Oneota themselves; this almost certainly true on the Blood Run site on the Big Sioux. Burials generally accompanied by artifacts in smaller or larger numbers, milling stones and celts being about the only artifacts not so found.
10. Petroglyphs are often carved on nearby cliffs or boulders.
11. The Blood Run site has numerous cup-stone boulders.
12. A number of the sites originally had circular, oval, rectangular, or irregular enclosures.

IV. Mill Creek (Broken Kettle).

1. Sites. Small, compact, of one or two acres each, most of them built up of village refuse and transported soil from four to eight feet above the natural level, surrounded by a broad, shallow ditch and with a low embankment inside the ditch. From 11-22 circular depressions on each site indicate large earth lodges. All the sites, except one hilltop site, are situated on the edge of a second terrace of creek or river.
2. Pottery. Very abundant and of great variety; tempering of finely-crushed grit; generally gray, gray-brown or black, sometimes brown or yellowish brown; texture rather fine and close; hardness unusual, ranging from 3-5½; the vessels are well smoothed, often polished, sometimes inside as well as out; pots with subconical bottoms, shallow bowls or pans with wide mouths and flat bottoms, bowls with narrow mouths and round bottoms are all plentiful; the lip may be flattened or rounded, plain or decorated with oblique parallel lines or cross-hatchings, or with indented or excised notches on the outer edge; the outer rims carry most of the decoration, which is generally of incised parallel lines running either horizontally or obliquely, and often forming triangles with an outer boundary line; low collars on many vessels have notches at their lower margins; the parallel horizontal lines frequently extend to the greatest diameter of the body. The shallow, wide-mouthed bowls often have lugs of various forms or small effigies, animal or human, on lip or outer rim. A small proportion of the pots have loop handles. Little pottery effigies occur independently of the vessels, and a single pottery elbow pipe is known.
3. Chipped stone. Neither abundant nor especially well made. Commonest are the small triangular arrowheads, either notched or unnotched, the small end scrapers, and irregular flakes with secondary chipping.
4. Ground stone. Celts not distinguishable from those of the Woodland, but less highly finished. A polished, double-convex discoidal or lens-shaped stone of diorite or quartz apparently the climax of the stone work.
5. Milling stones. Few in number, apparently similar to those of the Woodland.

6. Work in bone and antler. Abundant, highly developed. Scapula digging tools, awls, knives, scrapers, antler chipping and flaking tools (?), hoes made of split bison horn with a portion of the frontal bone, gorgets, beads, and a variety of artifacts whose use is problematical.
7. Work in shell. Mussel shells abundant, but little used for artifacts. A few shell beads and effigies.
8. Burials. Uncertain. A small number of mounds exist near the sites of the Little Sioux focus. Two of these opened by amateurs contained Mill Creek pottery, but the kind of burial was not determined. Extensive ossuaries occur on the hilltops near the sites of the Big Sioux focus, but nothing has been found in these as yet that definitely connects them with the Mill Creek.

V. Glenwood.

1. Sites. Lodges showing as circular depressions from 20-60 feet in diameter, surrounded by a low embankment, situated on the divides or Southerly slopes of the Missouri River hills in Southwestern Iowa. These occur singly or in small groups or irregular lines, never more than seven together, along the first major axis of the loess hills facing the Missouri flood plain. No adequate excavations have been made.
2. Pottery. Grit-tempered; light brown or grey except as fire-blackened; quite hard and close textured; surface well smoothed, but not polished. Apparently globular bowls with rounded bottoms and rather narrow openings between the vertical or slightly recurved rims. Rims moderate in height and often collared. Apparently a majority of the vessels have loop or strap handles or rounded lugs perforated vertically. Decorations of indentations on the lip, or, when collared, at the bottom of the collar. Notches are generally excised, not indented. Wide-spaced cross-hatching sometimes replaces the notches, as do trailed lines forming chevrons or triangles. The bodies of many vessels, and sometimes the outer rims, show impressions of a coarse fabric or matting, which has been partially obliterated by subsequent smoothing.
3. Chipped stone. Numerous knives, which are roughly diamond shaped; rather long end scrapers; small arrowheads, mostly notched, many with extra notches in tangs or bases, or both; numerous retouched flakes. Nehawka flint a favorite material.