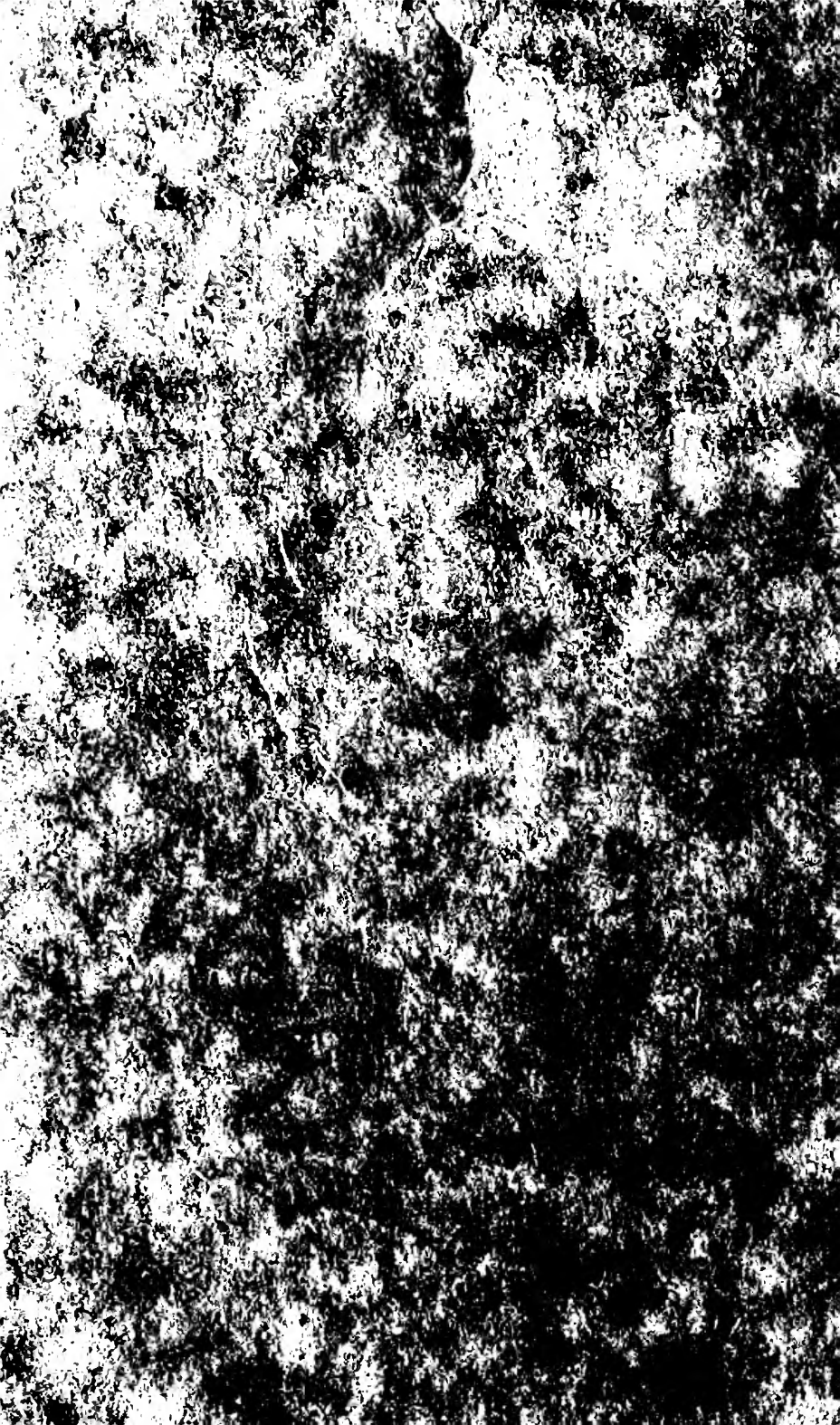
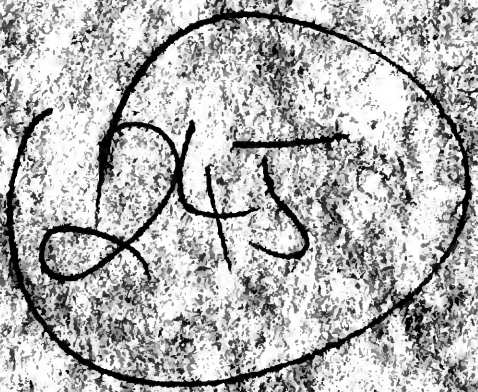
PERCH LAKE MOUNDS

ALVIN H. DEWEY





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ARCHEOLOGY 10

PERCH LAKE MOUNDS

WITH NOTES ON OTHER NEW YORK MOUNDS, AND SOME ACCOUNTS OF INDIAN TRAILS

BY

WILLIAM M. BEAUCHAMP S.T.D.

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LIST OF AUTHORITIES

Abbreviations at the left are used in the bulletin in exact reference to works in the following list.

Amidon	**Amidon, R. W.** Letter to Rev. Dr Beauchamp.
Beauchamp	**Beauchamp, W. M.** The Aborigines. Jefferson County Hist. Soc. Trans. Watertown 1887.
Benedict	**Benedict, A. L.** Mound Builder Remains on Cattaraugus Creek, Erie county, N. Y. American Antiquarian. Chicago 1901.
Boyle	**Boyle, David.** Annual Archaeological Reports, 1901 and 1903. Toronto.
Cammerhoff	**Cammerhoff, Frederick.** Diary of the Journey of Bro. Cammerhoff and David Zeisberger to the Five Nations from May 3–14 to August 6–17. Manuscript.
Cecil	**Cecil, Harry B.** Letter to Rev. Dr Beauchamp.
Clark	**Clark, John S.** Notes in various papers.
Emerson	**Emerson, Edgar E.** Our Country and its People. Boston 1898.
French	**French, J. H.** Gazetteer of New York. Syracuse 1860.
Getman	**Getman, A. A.** Letters to Rev. Dr Beauchamp.
Harris	**Harris, George H.** Aboriginal Occupation of the Lower Genesee Valley. Rochester 1884. First issued in *Semi-centennial History of Rochester*, ch. 1–15. Rochester 1884.
Hough	**Hough, F. B.** History of Jefferson County. Albany 1854.
Jennings	**Jennings, C. P.** Letter to Rev. Dr Beauchamp.
Jordan	**Jordan, J. W.** Spangenberg's Notes of Travel to Onondaga in 1745. Pa. Mag. Hist. and Biog. v. 2. Phil. 1878.
Mackay	**Mackay, John.** Letter to Rev. Dr Beauchamp.
Marvin	**Marvin, D. S.** Mounds at Perch Lake, Jefferson County. Jefferson County Hist. Soc. Trans. Watertown 1887.
Mattern	**Mattern, J. E.** Letter to Rev. Dr Beauchamp.

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Manuscript.

PERCH LAKE MOUNDS

In all histories of Jefferson county, N. Y. there are slight notices of the curious mounds about Perch lake. When Squier wrote his account of the antiquities of New York they had not attracted attention, for they were inconspicuous and remote from ordinary travel. Mr F. B. Hough seems to have been the first to mention them, a few years later, and he said there were several at the mouth of Lowell creek, Perch lake, about 30 feet across and with depressed centers. No creek is now known by this name to the oldest inhabitants, but he probably meant Hyde creek at the head of the lake, where there are yet a number. He added that there are some on Linnell's island. In these were found pottery, burnt stone and charred corn. *Hough,* p.10

Linnell's island is not in the lake, but is an extensive elevation in the great swamp west of its foot and north of the outlet, as shown in plate 1. It lies between two large streams and is now occupied by farms. Some mounds still remain on those owned by Messrs Gailey and Klock. No charred corn has been reported by any accurate investigator, and small coals may have been mistaken for this. Very little pottery has anywhere been found, but charcoal and burnt stone appear in all. In French's *Gazetteer* it is said that " in the vicinity of Perch Lake have been found several barrows, or sepulchral mounds." *French,* p. 360. It would not have been surprising if some of the larger ones had had a secondary use for burial, being well adapted for it in such a region, but no evidence of this has yet been found.

Regarding these Mr J. S. Twining wrote me in 1886 of a more extensive distribution of these mounds than has been given by others. He said:

We have extensive vestiges of a much older race than those who built the forts and made the pottery. They are scattered along Black river, some 6 miles from Copenhagen, and also on the hills back of Perch lake, some 10 miles from Watertown, on the farms of John Gailey and A. Klock. On the latter are the largest and most perfect. They are the remains of camp bottoms, with a depression in the middle, with a true circle of camp refuse and burnt stones around them from 2 to 5 feet high, and with a diameter of from 20 to 30 feet. I have never found a piece of pottery in any of them, but plenty of flint chips. *Beauchamp,* p.113

Mr D. S. Marvin made a day's exploration of the Perch lake mounds in August 1886 in company with Messrs Carter, Woodworth and Woodard. The results he embodied in a paper read before the Jefferson County Historical Society, Mar. 15, 1887, adding a few facts from the earlier explorations of Henry Woodworth and J. S. Twining. The lake is a small one, part of the shores high and rocky, but much more low and marshy. The mounds occur only on the higher part. The outlet is 6 miles long, and mounds have been reported near this. At the natural bridge, near its mouth, are extensive camp sites with abundant bone articles and fragmentary pottery. The most important part of Mr Marvin's paper is quoted here as follows:

The objects that arrest our attention and interest us the most are the so called Indian mounds, observed along both shores of the lake, and more or less down the outlet. They are situated upon the bluffs overlooking the water, and reach back from the lake sometimes a hundred rods; they number some two hundred in all. These so called mounds are all round, usually from 50 to 90 feet in circumference; some of them double, and so near that their edges coalesce. They are elevated or raised above the summits of the hills they occupy from 2 to 4 feet. Where the land has not been cleared, ordinary forest trees of all ages are seen growing around and upon the mounds, ranging from yearling growths to trees several hundred years old. The debris usually observed about old Indian villages is found buried in the soil, old bones and broken pottery; the organic remains though seem to have mainly rotted and gone to decay. The broken pottery observed was of the usual patterns, but it is only sparingly observed, for around some of the mounds none could be found. A few of the small mounds were flat topped, but the usual shape and appearance is a ring of earth, with a depressed or basin-shaped center.

In opening cross sections, or digging trenches from the outside to the center of the circles, as the centers are approached, remains of fires, charcoal, ashes, etc., were observed, sparingly though in the case of the largest mound. There was observed no disturbance of the soil below the level of the natural surface. The dirt of which the mounds had been constructed, is the common country soil, none of it seemingly brought from a distance, similar in character and composition to the soil of the adjacent land, made up of clay, sand and small fragments of the underlying limestone, belonging to the Trenton group, as near as I could determine from a cursory examination of the contained fossils, with here and there an occasional

transported or drift pebble. The only observable difference was a darker color, caused by an increase of decayed organic matter and burned earth. No graves or human bones were observed. No lines of entrenchments were to be seen. Nor have there been any metal objects or utensils found.

The explanation of the phenomena observed here, that has seemingly puzzled several generations of white men, seems to be plain and simple. There is no necessity for bringing farfetched theories to explain the observed facts. Whoever has been to California and noted the singular rings of earth, with their basin-shaped centers, that are known to be the remains of the old rancherias of the Digger Indians, can readily see here in the close resemblances the original forms of Indian houses, belonging to the lower stages of barbarism, and probably a more or less universal style of house belonging to this stage of advancement, usually occupied only during the winter months, or generally deserted for nomad life during the warmer summer months. This style of house was constructed with a framework of poles set upon end and meeting at the top, and covered with dirt, leaving an uncovered space at the top to serve for the exit of smoke.

The writer once visited one of these dirt houses in California, large enough to hold several hundred people, but perhaps not larger than the remains of one of those observed at Perch lake. Professor Thomas has described the remains of similarly constructed houses in Mississippi, Alabama and Georgia. . . I have also observed near Burrville, within a strongly fortified enclosure, circles of toadstools that had grown up from organic matters, old bones, etc., buried in the soil, showing that similar round houses once existed within fortified enclosures, but unfortunately both ditches and circles are now leveled by the plow. *Marvin,* p.58

I add some notes sent me in October 1901 by Mr Henry Woodworth, one of the party mentioned, but whose conclusions are different. Both these gentlemen are careful observers:

I visited the mounds with Mr Marvin and Clarence Woodard, and we spent one day at the lower end of the lake, on the south side. We found a very large mound on a ridge in the woods. Some large maple trees were in it. Distance from the lake was 10 or 15 rods. We did the most of our digging in that one, but we dug in others that were hollowed on top, as most of them are. We found but little to pay us for our labor. The ashes and coal that would naturally accumulate were very light. For that reason I think they were occupied only for a short time in the summer, for fishing and hunting. If they had been used to winter in, the accumulation would have been much more. I and my son dug some in the mounds on the Gailey

farm at another time, but we found nothing to satisfy our curiosity. No shells were found in any of them by any one. We found no flint in any mounds. Mr Gailey said some had been found, and stone pipes, but who has them I do not know. He says but little was ever found. I found no bone articles. We found some animal bones, but they were so decomposed that they easily crumbled to pieces. About the outlet and lower end of the lake are a number of mounds on the Gailey farm, of different sizes. Some are flat on top, but most have a depression in the center. Mr Gailey said there are over 200 up the creek and around the lake. I think there are mounds below Mr Gailey's, but I never visited the upper end of the lake.

He said there was no accumulation of burned stones in the mounds, probably meaning the small ones used in heating water. From this and the lack of pottery he concluded that no cooking, or but little, was done in them. Most of the many stones found show the action of fire, but they are usually of some size.

In a letter dated Aug. 4, 1900, Dr Getman said:

We were at Perch lake a few days ago, and examined the mounds that are found at each end of the lake. We were at the north end and along the banks of Hyde creek. They are situated near the bank of the lake, extending upwards on to a high bluff of sandstone, and gravel of the same, along the banks of Hyde creek. They are 25 to 30 feet across, 3 to 5 feet high, with a central depression of 8 to 10 feet in diameter. This depression is paved with the usual firestones. We saw one that was on a gravel bed, and had been partly removed. It was uniform in thickness, simply burned sandstone, gravel and black earth. The earth is different from the surrounding soil, being burned. We saw no pottery, bone, or anything that would give us a clue to the builders. Hough says broken pottery and bones are found there. This I think a mistake. Some have been dug to the center, and we were informed they had found flint and stone implements. There was only one that showed evidence of large timber growing from the site. We counted 15 in a piece of woods, and the trees (maple) were mostly small that were growing on the banks.

In a recent history of Jefferson county the mounds at the north end of the lake are again mentioned, but with little additional information save that of partial location. The editor says that at the lake 8 or 10 mounds are on the lands of George W. Sherman and Alonzo Van DeWalker 10 or 15 rods from the shore. They are circular, 2 or 3 feet high, 2 to 4 rods in diameter, and with the central holes 2 feet deep. The largest is said to be on the Sherman farm, near the ruins of the old La Farge mansion. *Emerson*, p.738

There are two large groups north of any of these, and but one mound was observed by me over 40 feet in diameter. The fine pair in front of the old mansion are by no means of the largest size, either in hight or width.

Before adding notes of personal observations to these, it may be well to take notice of some kindred groups on the north shore of Lake Ontario, which I had planned to examine some years since. Mr Thomas C. Wallbridge read a paper "On some Ancient Mounds upon the Shores of the Bay of Quinté," Mar. 3, 1860, which was printed in the *Canadian Journal* for September of that year. These mounds had then been locally known as artificial for 50 years, but no account had been previously published. Commencing at Rednersville they could be traced along the bay about 8 miles to Massassaga point. This space, with the islands of Big bay, included about 100 distinct mounds, but others could be seen at intervals from the eastern to the western end of the Bay of Quinté. Others were reported at one place on the River Trent. Mr Wallbridge said:

As far as has yet been ascertained, there is but one class or form of mounds in this part of the country, and the truncated cone is the shape they assume. In size they vary from a diameter at the base of 30 to 50 feet, to a diameter at the apex of 12 feet. Each mound has a shallow basin or circular depression upon its summit, which, whatever be the size of the work, has a diameter of 8 feet; and no mound under my observation possessed an altitude of more than 5 feet. It is a remarkable peculiarity of these works, that in almost every instance they occur in groups of two, and at irregular distances the one group from the other. Irregularity is likewise observable between any one mound and its fellow, these being sometimes found in juxtaposition, and again from 50 to 100 feet asunder. The two of the same group are always of one size. With respect to the surrounding country they are situate apparently without design, now at the foot of a commanding hill, then halfway down the side of a bank, and again so near the shore that in several instances they have been destroyed by the action of the water. Twice they have been found in very low or swampy ground, and in those cases they occur singly. *Wallbridge,* p.111

He opened five of these at Massassaga point in August 1859. A cut was made 33 feet long, 2 feet wide and 3 feet deep, to the original surface. Under a few inches of mold was a heap of broken gneiss,

conforming to the outer shape of the mound. The stones varied from 1 to 20 pounds each, but those forming the bottom of the basin were the smallest of all. Some showed the action of fire, but there were no traces of this in the mound. In making a cross-section some fragments of birch bark and bone were found above the stones. He said:

The other mounds examined agreed in all particulars of construction with that above described, excepting in one pair where it was evident from what remained that the inside margin of the basin of each mound had been surrounded with flat stones placed vertically and touching at their edges, as if designed to prevent the earth falling into the hollow. Similar stones, perhaps used for the same purpose, were observed lying near most of the other mounds in this vicinity.

He thought these had been displaced by diggers, and added:

In several instances the builders have been forced, from the nature of the surrounding country, to carry their material from a distance, but to obtain the usual covering of mold for the pair of mounds last mentioned they have bared the smooth underlying rock of its scanty soil, in a well defined circle about the works. The use of broken gneiss for a building material, to the almost entire exclusion of limestone, is a noticeable feature.

Limestone was most easily procured, but I think its change by fire may have made it objectionable. Large trees grew on some mounds, one oak stump being 8 feet around.

So far the likeness to the Perch lake mounds is that of external form, size and situation, with a tendency to pairs. The interior differs in the character and arrangement of the stones, and the absence of coals. Similar ones were examined later, but one was of a sepulchral nature. This was excavated from the center to the natural surface. Some of the diagrams made are here partially reproduced.

Plate 10, figure 3, shows a section of the mound in which skeletons were found, with general features of the construction of all. In this appear the interior stones, the overlying soil and the central depression. Figure 2 shows the position of some articles found, and the central chamber. Ground was broken at 10, and a little below the surface was a flat, horizontal limestone, with fragments of human

bones and birch bark, and a bone awl 8 inches long. These were probably from intrusive burial.

Another flat stone was found 2 feet from the surface, with three human skulls underneath, in a rude box of flat limestones. Many of the remaining bones were found, and five well preserved crania were secured. One skeleton at 6 was in a sitting position, with a pile of articles by it. Among these was the upper part of a bone comb, several teeth of the same, a unilateral bone harpoon, and three long shell beads. These articles do not indicate a high antiquity, and are much like those of New York. The burial was clearly intrusive.

A sketch of this interesting group has been given because it is little known, and partly because, being not far distant and in a very similar situation, it may have some relation to those of Perch lake. The latter seem to have gradually increased in hight; according to Mr Wallbridge the former would seem to have been of nearly the same size from the beginning. This hardly seems probable, nor is it likely no fire was used in them, judging from what is found elsewhere. I saw no ashes in those of Perch lake, and in some cases the coals were so blended with the soil as to be hardly distinguishable.

In the spring of 1901 I visited Perch lake, where the old La Farge mansion once stood, at a considerable distance north of a large stream which enters the lake on the east side. Quite a point extends into the lake near this, back of which is a rocky bank, and thence the land rises eastward in low and broad terraces. On the greensward of one of these, not far from the bank, two of these mounds are conspicuous, one being a little above the other, and the edges meeting. At this spot they are the only ones in sight, and both have the characteristic circular form and depressed center. A little digging has been done in each, but this has affected the appearance very little. Though a little shaded they are practically in open ground. They are not of the largest size. The upper and eastern one has an extreme breadth of 34 feet, and an inside diameter of 14 feet from the interior slope. This is about 2 feet deep, within and without. The western one is of the same outside hight, and is 32 feet across the base. The inside width is 17 feet, and the depth

3 feet. Some digging has been done in the center. The disturbed earth is black, containing burnt stones, but there are no signs of organic or artificial remains. Not far away there are many spots where the flat rocks form the natural surface, and about these the spring saxifrage was abundantly in bloom. The low, symmetric mounds themselves formed a pleasing feature of the scene, full in view from the modern ruins as the land descended toward the lake. The spot is so convenient and beautiful that one might have expected to find more there, but for the evident tendency to place them in pairs or small groups.

It was late in the morning, and no satisfactory photographs could be obtained from lack of shadows. At a subsequent visit many mounds were examined in the rain, and others in the depths of woods and undergrowth. Many sketches were made, some of which are here given, but in no place could the camera be used to any great advantage.

A second visit was made in the middle of September 1901. A map of the vicinity had been secured, on a scale of a mile to the inch, and the general grouping will appear on this, shown on plate 1. As there was no special plan in the location of these structures, no necessity is felt for more exact details. They were placed where personal or family taste or convenience required. No rule appears in this except ease of access to the lake or streams. Some were on quite elevated land; others on broad hummocks, surrounded by marshy spots but little above the lake. In a few cases they were on the high banks above rocky streams, at some distance from the shore. The unpropitious weather prevented a personal examination of those at the south end.

As far as I could ascertain there are none now remaining on the west side of Hyde creek and northwest side of Perch lake. The lake may once have been higher than now and thus larger, but this did not affect the situation of the mounds, nor their probable age. Beginning on the west side of Hyde creek a long line of cliffs runs parallel with the present shore toward the southwest, and between these and the lake is a broad expanse of swampy land, well covered with trees. No one could have lived in this swamp, nor was access

to the shore through it in the least easy. I examined the undisturbed land at the top of these cliffs for a long distance, without finding a trace of aboriginal life. Every favorable indication was carefully examined, but nothing appeared. There may have been obliterated dwellings in the cultivated land farther back, but this is not probable. The swamp was an undesirable barrier to the lake.

Farther north, on the west side of Hyde creek, the case was different. That stream came fairly near the rocky uplands, affording an easy passage to the lake. Accordingly a few mounds were reported there, though none seem to remain. Certainly they were few. I was told of two mounds leveled by my informant on the A. J. Dillenbeck farm in 1901. These were 5 rods west of the swamp and 30 rods from the lake. In plowing there he found a broken flint knife, a fragment of pottery and a pottery rim, all of which he gave me. From the character of the rim I think there is an error of location. These were all the mounds of which I could learn on that side.

Mr S. Getman said that he found a celt near two mounds he plowed up on the south part of his farm, at an early day, on the higher terrace east of the creek. I found no existing mounds as far north as this. A celt and arrowheads were reported from two mounds destroyed in 1900, on the upper terrace of the Timmerman farm. These had disappeared. The dual arrangement may be observed in all these mounds. It is probable that many mounds have long disappeared from this higher cultivated land. Those remaining are on the stony lower terraces. Commencing south of the Getman farm they extend along the shore to a stream called Ruff's creek by some. South of this swampy lands again appear by the lake. This eastern shore is mostly high and rocky, rising thence in terraces, and the mounds appear here and there all the way. Some mounds may have escaped my attention in the undergrowth on the Van de Walker farms.

A medium sized mound was opened on the farm next south of S. Getman's. Plate 4 shows this, on the second terrace east of Hyde creek and not far from it. It is 30 feet across and 2 feet high, with a broad central depression. A rectangular fireplace in the

center was 8 feet across and edged with upright flat stones. This went down 2 feet below the present surface, the earth having been removed for the fireplace, and cast back as a foundation for the ring. Plate 12, figure 2, shows the surface plan. A is the outer slope, B the top of the ridge, C the inside slope, D the fireplace edged with stones, which is not an invariable feature. There were many coals in the black earth, no ashes and no vestige of anything else. There were many large stones. A trench was carried through to the original surface, and shorter cross-sections were made. A little southeast was another of similar size, rather flat and not prominent.

Another, farther south, is near the north line of the Timmerman farm. This is about 36 feet across and 2 feet high. It is flatter than most on top, but shows the usual depression. Small trees are growing on it, and there are some large stones along the edge. They may have been dug out of it, for most mounds have a few such stones. Plate 5 shows this.

A mound on the Timmerman farm has a large hemlock stump on it, and some small trees. It is a continuation of a low ridge, so that its exact dimensions are modified by this. As measured it is 28 feet wide by 2 feet high. The hemlock stump might show how old it must be, but not how old it might be. In these descriptions the general course is from north to south. A low ring, 19 feet across and on the same farm, tends to show that growth in hight and width was slow, and by removals of matter from center to circumference; possibly by additions without. The depression is 8 feet across, but it was not noticed whether there was an inclosed fireplace. Plate 6 is of this. Another, west of the fence and this, is broad and low. Still another small one is on the lower terrace, not far away. Both these are northwest of the next.

A high mound on the edge of the upper terrace, and just west of the fence which crosses it, was not measured across, but is 3 feet high and with a deep central depression. A large stump is on the south side of this. Part of its effect is lost from its surroundings. There is an obscure one on the lower terrace a little west. Another low one with a wide and deep depression is on the same farm, and is shown in plate 7. It is about 21 feet wide, the hight being usually

in proportion to the width, and is an excellent example in its symmetry.

On the same farm is another 27 feet wide and 2 feet high, having a deep depression. A small one is just west of this, and perhaps related.

Another is 30 feet wide and 2 feet high, having a depression. There are some large stones outside of this. As the mound rose and the ring grew, it may have taken in loose boulders around, which had no relation to it. There is an obscure one north of this, and near a shanty in the woods. One on the south side of the shanty was 2 feet high.

A gravel bed, which has been opened in the woods, was cut through one of these mounds, in such a way as to give a good exposure. The bed reached above the mound on the east or upper side, the mound terminating a ridge, and nothing is seen in the exposure there. Another cut has been made in the mound below. At the base is coarse gravel, in its natural condition. Over this is a stratum of black earth, 3 feet deep and about 27 feet wide. The top and the extremities of the mound remain. Nothing was found in obtaining the gravel, nor was anything discovered in our farther digging. Not far from this, by the fence on the upper terrace, was another large one.

The finest mound on the Timmerman farm is near its southwest corner, in an open field and near the head of Perch lake. It is 33 feet wide and about 5 feet high. Plate 8 is of this. It is at the foot of a bold hillside, and itself on high ground. Digging had been done there, and the Rev. Mr Scott is said to have obtained pottery and other things in 1901. We dug but little, and found nothing. Other low mounds were near toward the lake, and there is a large flat one quite a distance north. South of this group is low land for some distance, crossed by a rapid stream.

Leaving this stream and the low land the woods on the Sayles farm are reached, where there are many evergreens and a rocky shore along the lake. In these dark woods are other mounds. One is near the north end, and has its east side more elevated than the other, apparently from the slope of the land. This has quite a deep

depression, and is of the usual size. A low and broad one is north of this, and two smaller ones south. Another large one is farther southwest. The depression is deep.

South of these woods is lower land and a brook, both north of the large point. A fine mound is on a low bluff in this bay. There are several mounds not far off. One is on the low bank near the shore; another south of this on a knoll or slightly higher land. Another, beyond the last and on the lake side of a knoll, has a very deep and large depression, 13 feet across. There is another at the south end of this ridge, and another in the low land east. Two are on the lower bank farther south, and there is a confluent group at the north base of the high terrace on which the La Farge mansion stood. The situation of these in these low lands is singular, though some of them are dry enough, and the spot is unusually sheltered.

South of the brook, as the large point is turned, there appear deep depressions and slight rings of an undecided character, and then come the two fine mounds in front of the ruined La Farge mansion, already described. Plate 9 shows the upper and larger one. South of this is low land, through which a large stream enters the lake. Beyond this creek no mounds appear for nearly half a mile, though some have probably been destroyed. Then one with a deep and broad depression appeared on a high bluff in the edge of the woods. It was about 27 feet across. High rocks here fringed the lake, with terraces above, on which was much undergrowth.

Nearly a quarter of a mile beyond was a doubtful one, not having a complete circle, and a similar one was on the edge of a knoll beyond. It is difficult to estimate distances while looking for mounds in thick woods, and it may be another quarter of a mile to a large and fine one on the second terrace. This was 27 feet wide, 2 feet high, and has a depression of 3 feet in the center. As before observed, it was usual to dig out the center in beginning these mounds. Not far away are two large ones, close together on the high bluff above the lake. Another just beyond is 36 feet wide, and the depression is 16 feet across. Another obscure one is farther south near the high bank of the lake. Between this and the cottages and boathouses beyond, is one 36 feet wide, 3 feet deep inside, and 2 feet outside. This is fine.

A stream enters the lake at the boathouses. South of this and east of the shore is a large and high mound in which digging has been done. In the freshly turned earth no vestiges of early occupation could be seen except black earth and burnt stone. This mound is about 5 feet high and 40 feet across. Common pottery was found in small camps by the shore. Beyond this is another low mound. Probably some in these woods were not observed.

After leaving the woodland the swamp is soon reached, and some mounds may have been obliterated in the open fields. North of the swamp flows a small rocky stream through these fields. On the brow of the upper terrace, on the north side of this is the largest and deepest mound I saw, measuring 45 feet across. Another is close beside this on the east, and another on higher ground still, in the rear of these and toward the road. On the south side of the stream, farther down and overlooking the water from a high bank, is another small but deep one under a tree. It is a pretty situation.

A large mound is near a shanty in the sugar camp, toward Ruff's creek. This is 40 feet across and 3 feet high. A good deal of digging has been done there, but seemingly without results. A smaller one is near the shanty. This ended the explorations on that side of the lake. The oldest inhabitant knew of nothing taken from mounds south of the La Farge mansion. In all 54 mounds were observed, and 6 obliterated ones reported, or 60 in all. Other unobserved or obliterated mounds might much increase this number, but it is not likely to reach the higher estimates made for the whole territory.

At the north end of the lake is one spot deserving of a few words, and yet probably not connected with the general subject. In the edge of the swamp at the northeast angle of the lake, is an immense mass of rock which can be reached by a boat. In some of the depressions of this rock are many small flint chips, showing that it was a favorite spot for arrow makers. What weapons the makers of these mounds used is uncertain, but it is probable that the visitors to Squaw island, as some call it, were of another people. The spot commands a view of nearly the entire lake.

Dr A. A. Getman and Oren Pomeroy, of Chaumont, kindly made a close examination of the group I could not visit and with much the

same results. Both are experienced and careful observers, and for this reason I give Dr Getman's account written Nov. 6, 1901. He wrote:

We went to Linnell island today. It is a limestone terrace, surrounded by lowland and swamp. . . Mr Gailey says the island contains about 500 acres, with three farms at present. The soil is clay and a gravelly loam, with abundant outcroppings of rock (Chazy limestone). From the map you see the mounds dot the crest of the terrace all around the island; some at least ¾ of a mile apart. Some of them appear to be built on the rock. In fact we dug the center of one down to see that it was *started* on the solid rock. We dug on this one near the barn. It had no central depression. We dug the center to the bottom; pit 4 feet square; then commenced at the edge on the south, and opened to this pit. There are less stones and more soil than at the head of the lake, but we found lots of large hard heads, 8 to 12 inches across, about halfway from the edge to the center. All were burned. The depth was 2 to 4 feet from circumference to center. There were streaks of very dark earth and charcoal. Some of the charcoal was small limbs, 2 to 4 inches long, by 1 inch through. Three of the mounds have been removed for road building. They appear to make excellent roads. (These are marked A, A on the map, plate 2.) We saw some recent plowing which exposed three more. They were near those removed.

We looked over the three that had been used for roads. They had been only partially removed. The manner of working had been to plow the soil loose and shovel on the wagons; three men to *beam* the plow. In the plowed field some were smoothly plowed; on others the plow ran out. We found in the one near the house of J. Gailey, marked S, a skull and teeth of a muskrat, badly decayed, and a piece of broken stone that looked as if used for a nut stone. That is absolutely everything, except burned stones of all descriptions, charcoal and dirt; unless a few pieces of reddish crumbly pieces of stones were paint stones. S also shows some excavated mounds.

We looked over the plowed field, pawed over debris of the *road* mounds, and looked over the road that the stones were used on—a private road to the Klock farm.

How many mounds there are I have no idea. We counted about 20, but there have been and are many more. I think, as a general thing, that they are smaller than those at the head of the lake, and of less depth. Mr Clarence Gailey claimed to have found two arrows when working the road business, but could not produce the find. It is very perplexing that no authentic relics can be found and handled. Pomeroy says the mounds are similar to the one we saw on Fox island; that is the contents, stone, soil, etc.

Mr R. D. Loveland, of Watertown, found a few small fragments of pottery in the large mound near the boathouse, but did not preserve them, as he obtained larger pieces of the usual types near the shore, where these might be expected. Had none been found elsewhere those in the mound might be thought intrusive. A clay pipe was also found near the shore.

In the *Bulletin of Natural History of New Brunswick* for 1884, p.14, Mr G. F. Mayhew gives his ideas of how such hut rings were gradually raised. I infer that these might have been well known there, but am not certain on this point. He supposed that in some circular lodges moderate cleanliness was preserved, not by removing refuse altogether, but by drawing it back and filling in the center with fresh gravel. A constant repetition of this would preserve the circular form and the central depression as the mound rose above the surface. Bone needles found near the edge he thought had been stowed at the back of a couch. Pottery was much like that found elsewhere. Arrowheads were made by the fire, few flakes being seen out of doors. Most ordinary aboriginal implements were found.

This general mode of elevation reasonably accounts for the form and growth of the Perch lake mounds. A pit was made in the center for the fire, and a large circle was thrown up at the edge of the lodge to carry off water. A slope from this to the fireplace gave an easy position to the reclining people within. It was necessary to remove or rake the embers away, and the edge gradually rose. To make it cleaner it was as easy to bring in a fresh supply of dirt as to carry accumulations away. In all this there was a natural overflow which enlarged the borders of the mound. The original fireplace was all the time retained, and so the largest mounds are the deepest.

Mr Harlan I. Smith suggests a likeness in these to some he recently examined on the Pacific coast, and I give plate 10, figure 1, to illustrate this point. In his explorations he found that up to a recent date the Thompson river Indians made huts of this kind. In this section *a* is an excavation in the ground, which increased the hight of the interior of the lodge, and supplied material for its covering. Around this excavation an arch *b* was raised, resting on the surface

c. This arch had a frame of saplings and branches underneath, covered with dirt and sods. In the center of this strong frame above an opening, *d*, was left. This was reached by a primitive ladder, *e*, made of a notched pole which gave strength to the roof. This was the only means of ingress or egress for light, smoke and Indians. He found one still standing in a dilapidated condition, but observed the remains of many. When the roof fell in, a low mound was formed, with a marked central depression. These would probably differ from the Perch lake mounds in the size of this depression, the hight of the circle, and the evidences of fire throughout. The latter were probably simple tepees, pitched from time to time on the same spot, but not continuously occupied. The accumulation was gradual, but earth might have covered the lower part of the wall.

In his report on *Mound Explorations,* Prof. Cyrus Thomas described some mounds of this class closely connected with larger mounds in the Welch group, Brown county, Illinois. The group " consists of six mounds, and a number of small saucer-shaped basins surrounded by low, earthen ridges, doubtless the sites of ancient dwellings or wigwams." *Thomas,* p.118. He adds that " the dwelling sites vary considerably in size, some being as much as 70 feet in diameter, and some of them 3 feet deep in the center after 50 years of cultivation." In describing those on the Big Mary river, Ill., he adds something on their situation and origin:

These are situated upon a flat topped ridge, about 30 feet higher than the creek bottoms. They are low, with the usual depression in the center, but the outlines are rather indistinct. Mr Gault of Sparta, who has long resided here, states that when he first moved to this section, the Indians lived in houses or wigwams which, when decayed, left such remains as these. They hollowed out a shallow circular cavity in the surface soil, then, standing poles around the margin of this basin, brought them together at the top, and having covered them with bark or other material—in other words having constructed wigwams of the usual circular form—covered them in whole or in part, specially the lower portion—with earth. He also said that after a camp was abandoned and the wood rotted away, it left these rings of earth. *Thomas,* p.141

In one inclosure near Lakeville, Stoddard county, Missouri, he says,

Nearly the whole space between the walls is occupied by the hut rings or circular depressions. They are of the usual size, 20 to 50 feet across, and 1 to 3 feet deep. *Thomas,* p.174

These contained ashes, pottery, etc., and he mentions no ridges. In another group the rings varied from 21 to 34 feet across. In another large group we get a more definite idea of the elevation, a feature in which most of these seem to differ from those of Perch lake. This is at Beckwith's fort, Mississippi county, Missouri. After describing the inclosure he says of the hut rings:

These almost cover the remainder of the area, the only open space of any considerable size being the 200 feet square just east of the large mound. They are not confined to the natural level of the inclosure, as some are found on the level tops of the mounds. They are circular in form, varying from 30 to 50 feet in diameter, measuring to the tops of their rims, which are raised slightly above the natural level. The depth of the depression at the center is from 2 to 3 feet. Near the center, somewhat covered with earth, are usually found the baked earth, charcoal, and ashes of ancient fires, and around these and beneath the rims split bones and fresh-water shells. Often mingled with this refuse material are rude stone implements and fragments of pottery. The similarity in the size, form, and general appearance of these depressions and earthen rings to those of the earth lodges of the abandoned Mandan towns along the Missouri river, leaves no doubt that they mark the dwelling sites of the people who formerly occupied this locality. *Thomas,* p.187

These mere depressions illustrate but one feature of the Perch lake mounds, and we have a closer correspondence in those described by Prof. F. W. Putnam in the 11th report of the Peabody Museum, and quoted by Mr Thomas. They were some observed by the former in Tennessee, and thus described:

Scattered irregularly within the inclosure [the earthen wall which inclosed the area] are nearly one hundred more or less defined circular ridges of earth, which are from a few inches to a little over 3 feet in hight, and of diameters varying from 10 to 50 feet. . . An examination of these numerous low mounds, or rather earth rings, as there could generally be traced a central depression, soon convinced me that I had before me the remains of the dwellings of the people who had erected the large mound, made the earthen embankment, buried their dead in the stone graves, and lived in this fortified town. *Thomas,* p.662

Professor Thomas adds that these hut rings "are seldom, if ever, met with except on the site of an ancient village, and often one that was defended by an inclosure." This again differentiates the western and southern forms from those of New York. The latter are scattered or in very small groups, have the depressed center very little below the natural surface, are usually of considerable hight, show the action of fire, but rarely contain ashes or relics of any kind, have no bones or shells, and the earth of which they are composed has been gradually gathered from year to year. With all this difference there is an unmistakable likeness, and no hesitation is felt in calling them the foundations of early lodges.

Two things naturally arrest attention. There are no bones or shells revealing the food of the inhabitants, though the conditions are favorable for their preservation. Most of them contain no articles made by man. The favorite fresh-water clam of the New York Indians was Unio complanatus. It is so widely distributed that it probably occurs in Perch lake, though I observed none along the shores. If it is not found there that part of the problem is solved. But these aborigines were there for the fish of the lake, as well as for the game in the woods. Their homes had an easy access to the water. Why are no bones of any kind found under these conditions? The Iroquois sites yield them abundantly. It may be due to an Algonquin superstition. All will agree that these were not Iroquois homes, for they rarely used the circular lodge, which the Algonquins commonly preferred. There were differing tastes and beliefs of other kinds. The Iroquois left bones of every description on the ground. The Algonquin scrupulously gathered up many kinds, and either threw them in the water, or burned them in the fire.

A single quotation from the Relation of 1634 will illustrate this. The missionary said:

The savages do not throw the bones of the beaver to the dogs, or of female porcupines, at least certain special bones; in short they very carefully take pains that the dogs shall eat no bone of birds or other animals which are taken in a snare. Otherwise they will take no more except with the greatest difficulty; besides there are within a thousand observations, for it is important only that the

vertebrae or the rump alone should be given to these dogs, the rest must be thrown into the fire; still, for a beaver taken in a snare it is better to throw his bones into a river; it is a strange thing that they gather and pick up these things, and preserve them with so much care that you would say their hunt had been lost had they gone contrary to their superstitions. As I ridiculed them and told them that the beavers did not know what was done with their bones, they replied to me: You do not know how to take beavers, and you wish to talk about them; before the beaver is entirely dead, they said to me, his soul comes around by the cabin of the one who killed him, and notices carefully what they do with his bones; that if one gave them to the dogs the other beavers would be warned of it; that is why they would render themselves hard to catch: but they are very glad if they throw their bones into the fire or into a river, the snare especially, which has taken them, is well pleased. I told them that the Iroquois, as is done among us, threw the bones of the beaver to the dogs, and yet they very often took some, and that our French, beyond comparison, were accustomed to take more game than they, and yet our dogs were accustomed to eat the bones.

The Algonquins, of that day, extended this rule to fish, and it may have had wider applications still. To leave no permanent memorial it was necessary only to care for the bones on the lodge site. Outside of the circle they would soon perish, and this superstition prevented their casting them there. These lodges had no dumping places; everything was disposed of on the spot.

In referring these mounds to the Algonquin family another fact is explained. These nations may not have been without earthenware, and perhaps most of them were not, in a limited way, but it was not so common as with the Iroquois and others. They were nomadic, and the lightest vessel possible suited them best. It was particularly necessary to have one not easily broken, and that could be readily replaced on a journey. Toward and north of the St Lawrence the canoe birch abounded, and of this material their cooking vessels were formed. Their cooking was not very thorough, and hot stones, dropped into the water, heated it enough for their needs.

Why arrowheads are not found, nor other stone implements as a rule, is a more difficult question, but capable of various answers. There were careful aborigines, those who lost little, as well as those careless and wasteful. Articles were not so readily lost, but more

readily found, in a cabin than in a village. The wooden arrow might have sufficed for most of the needs of the place. Some have suggested that the huts were those of a recent day, and that no purely Indian relics may be expected. I do not assent to this view, nor am I prepared to say with Mr Marvin, that these forest men have left us traces of the oldest habitations in the State. The fact seems to be, however, that we must make these very modern, with but little to sustain this view, or place them before the Iroquois occupancy of New York and the St Lawrence. Till the Iroquois sold their lands there has been no time within the last 300 years when it would have been safe for Algonquins to have habitations on Perch lake. For a century before that, at least, Jefferson county was occupied by the Iroquoian family, and they had no wish for intruders. How much these mounds antedate the last four centuries is a harder problem. I think they may safely be placed within the past 500 years. Traditionally the Algonquin and Iroquois family arrived here nearly together, and at no remote period. An examination of the sites of their camps and towns seems to substantiate this, and these mounds suggest a period antedating that of their inveterate hostility. They were undefended, long used, and yet were in a territory claimed and held by the Iroquois for hundreds of years.

Two maps of the vicinity are given; one from a large county map, and the other from the public topographic survey, conspicuously differing in some respects. In the latter, plate 3, the lake is much shorter than in the former, and streams which enter the river in one flow into the lake in the other. The difference may be accounted for by the fact that part of the swampy shores were once included in the lake, when the water supply was greater. On the former map the general range of the mounds is indicated by the usual sign.

OTHER NEW YORK MOUNDS

A few supplementary remarks may be made on other mounds in New York, the larger part of the State having none, and most of those found being of small size and simple character. In some cases natural formations have been mistaken for these, having been

used for burial or camps. In 27 counties some form of mound has been reported and a summary of these follows. They are most frequent west of the center of the State, and will be mentioned by counties.

Several occurred in Allegany county, and thence westward they were frequent. In the town of Conewango, Cattaraugus county, was a tumulus 13 feet high, with a diameter of 61 by 65 feet. Skeletons were found with relics. In the village of Randolph was a burial mound 10 feet high and 35 feet in diameter. In the town of Bucktooth, north side of the Allegheny, was a burial mound, 39 feet in diameter and 10 feet high. Another was in the town of Napoli, on Cold Spring creek, which was 120 feet around. At Olean were several of these, one being 40 by 60 feet in diameter and nearly 10 feet high. One in Dayton was of the same hight, and 120 feet in circumference. Another was on the west side of the Allegheny river, in the town of Cold Spring. This has been reported as 200 feet around and 20 feet high; probably an exaggeration. On Cold Spring creek, 2 miles from the Allegheny, were two burial mounds, 10 feet high and 100 feet around. Others were in the towns of Leon and Conewango, in one of which were 8 sitting skeletons.

Quite a number were in Chautauqua county. One at Cassadaga lake was 7 feet high and 30 feet in diameter. A stone mound near a fort in Ellington was 4 feet wide and 5 feet high. Two mounds near Griffith's point, Chautauqua lake, were once 12 feet high and 40 feet in diameter. A number of similar mounds have been reported on both shores, and two near Jamestown. Another, near Rutledge, was 20 feet in diameter and 6 feet high. One in the village of Fredonia was 7 feet high. Another at Fluvanna seems recent. Most mounds west of Cayuga lake were sepulchral.

Near Spring Lake, in Cayuga county, were small mounds with human remains, but these may have been incidental, as in some other places. On the high land of Howland island, near the river, are one or two suggestive of Perch lake. One is not very distinct, but the other stands out plainly. It is a circle with a diameter of 37 feet and an elevation of 30 inches, inclosing burnt earth and

stone, but yielding no relics. The earth is in its natural condition for a considerable distance around. Some pits within the circle may be the work of explorers. This I examined July 18, 1902.

The noted burial mound in Greene, Chenango county, was 40 feet in diameter and 6 feet high. Several hut rings have been reported along the Chenango river, similar to those at Perch lake, but those at Indian brook, a little south of Greene, prove to be caches.

Columbia and Schoharie counties both had the stone heaps to which Indians added stones in passing.

Erie county had its full share of mounds. One at the mouth of Cattaraugus creek was used for burial, but was probably natural. It was 50 feet across and from 10 to 15 feet high. The relics were modern.

There were several burial mounds on the east side of Cattaraugus creek, two of which were excavated by Dr A. L. Benedict of Buffalo, in 1900. As good accounts of such work by competent observers are rare in New York, his plans are given in plate 11, and his report is summarized from the *American Antiquarian* for 1901, p.99–107.

No. 1, a truncated mound in an open field when I saw it, is a mile north of the creek, and 600 feet north of the high bank of the ancient valley. It is nearly circular and about 70 feet in diameter. The central hight is 4 feet, 8 inches, but he thought it was originally 10 or 11 feet high. It was made of sand loam, and there were depressions north and south in the general level of the field. It had been disturbed. At A were animal bones, ashes and charcoal at 3 feet, 5 inches from the surface; also bones of the aboriginal dog. At B was a heap of flat pieces of Hamilton slates, some of them waterworn. A rib and sacrum under these he thought those of the musk ox. At C was a fragmentary human skull, with other human bones, at a depth of 3 feet. Near this were flint arrows and knife, flint chips occurring elsewhere in the mound. Dr Benedict's plans have the top to the south.

No. 2 resembles the last and has been reduced by plowing. It is quite near the creek, and a central shaft was sunk below the original soil in 1875 by William C. Bryant of Buffalo. Gravel was found

4 feet below the level at A by Dr Benedict, and this occurred at 4 feet, 9 inches at H. At F was an oblong fireplace of waterworn stones. Between the top stone and one on the west side of the inclosure part of a pottery rim was found. There were small sherds at H. In the ashes under the top stone were calcined bones. A human astragalus was found at B, 4 feet southwest of the central stake, at a depth of 1 foot, 9 inches, covered with several round stones, 6 inches to a foot in diameter and an inch thick. A calcined long bone was found 15 feet south of the stake, which seemed part of a human tibia. At 7 feet, 10 inches south from the stake the bottom of the mound was of burnt clay and gravel, about 6 inches thick. Below this was a hollow space, beginning 3 feet, 7 inches from the surface of the mound. This was 9 or 10 inches deep, and extended every way 2 or 3 feet. The floor of this was of coarse gravel, about the size of hickory nuts, blackened, but showing no disturbance. Charred wood was occasionally found, some of considerable size. There were also small bits of mica. These seem hardly true burial mounds, though containing human bones.

Other mounds have been reported in Erie county 15 to 16 feet high and from 45 to 54 feet in diameter. One near the Indian fort at Buffalo was 5 or 6 feet high, and from 35 to 40 feet across. It is probable that Dr Benedict's diameters may be too great, allowance not being made for increase at the base by washing down from above.

On St Regis island, Franklin county, was a mound 8 feet high, and another opposite, on the east bank of St Regis river. Burial mounds were frequent along the St Lawrence.

Small mounds have been reported on Tonawanda creek, in Genesee county, but they may not have been artificial, though used for sepulture. The mound at the Bone fort, near Caryville, was 6 feet high and 30 feet wide, almost entirely composed of bones.

Two small mounds have been reported in Jefferson county, and many hut rings on the east bank of Black river, Lewis county, opposite the Deer River station. These are like those at Perch lake.

In the summer of 1903 an early and notable ossuary was discov-

ered by Mrs R. D. Loveland of Watertown, near the long carrying place at the head of Chaumont bay. A curious depression arrested her attention, and a little digging brought to light a human skull. She then turned over the search to others, who unfortunately had not her knowledge and skill, and no clear description is available from them. Dr R. W. Amidon afterward visited the place, saw the relics, and obtained what information he could. Its importance comes from its age, the relics being mostly of early types. The pit is near and below the end of a ledge of Trenton limestone. At least 8 skeletons of vigorous adults were unearthed, from 2 to 4 feet below the surface, and mostly covered with boulders and flat stones. Two skulls were fractured, as though by a war club. A perfect clay vessel was destroyed by the diggers, but it was of a frequent form. A bird amulet, of green striped slate, was found. This was 5½ inches long, rather broad, and with the head and tail almost on a plane with the body. There was also a bar amulet of sandstone, 6 inches long, and a perfect soapstone pipe of a frequent form. A flat bone bead, bone and horn implements, flint arrowheads or knives, were among other articles. This ossuary thus gives us some idea of what other things were used by those who had these amulets.

In Livingston county there was once a mound in the road from Dansville to Groveland, which was 4 or 5 feet high and 30 feet in diameter. Another was midway between Dansville and Scottsburg. A burial mound was 2½ miles southeast of the head of Hemlock lake. One at Mt Morris was used for recent sepulture, but may not have been artificial, as it is said to have been 100 feet across and 8 to 10 feet high. Some accounts make the relics of early types, and it is probable it was used at various periods. On the Genesee river, near the Wheatland line, was a burial mound 8 feet high. Two mounds are also on the Wadsworth farm near Geneseo. One is 3 feet high, but not quite 25 feet across; the other is much smaller. Both have been reduced in size. A stone heap at Lima traditionally had a memorial character.

In Madison county, on Oneida lake, are supposed Indian mounds, which are probably natural formations.

There was a mound in Monroe county, a few miles northwest of Scottsville. Two small mounds were west of Irondequoit bay, on high land, the largest being less than 5 feet high. A large one was east of the bay, and another, east of the village of Penfield, was originally 40 feet in diameter and 8 or 9 feet high. Two burial mounds were on the east bank of Genesee river, half a mile below the lower fall. They were 4 feet high and 20 to 25 feet wide. There were other mounds in that vicinity. In Pittsford was a pile of large limestone boulders, the heap being about 12 feet square. Between Irondequoit landing and the lake was a cemetery of 200 small grave mounds, arranged in rows. The further character was not reported, but single graves are usually depressed. A mound was on the bluff south of Dunbar hollow, which contained stone implements. Mr Harris thought a small island on the west side of Irondequoit bay was mostly artificial, as proved by excavations and grading. It was 90 feet long, 32 wide and 17 feet high, but was not sepulchral, though it contained many fine articles at a depth of 15 feet.

A mound described in Cambria, Niagara county, should be called an ossuary and contained metallic articles. A stone mound has been reported a mile west of Lockport, and an ordinary one at Gasport. Two burial mounds of large size were on Tonawanda island. Another was in Wilson, and two in the town of Lewiston. In September 1903, the one marked D on Schoolcraft's map was opened. He called it "a small mound or barrow," but if it ever had much elevation cultivation had long before removed all signs of this. As it has not before been described a brief account of it will be given here. The first skull was found 6 or 8 inches below the present level of the ground, and the skeletons were estimated at over 300. Over 200 skulls were secured and none had been injured, the place representing well the ossuaries of Canada. The date may have been not far from 1620, perhaps a little later, while the Neutral nation still occupied land in New York. The pit, excavated by Mr John Mackay of Niagara Falls, was about 18 feet long and from 12 to 14 feet wide, with a depth of 3½ feet from the surface. The form was an irregular ellipse, and the bottom was of rock and clay. To

make more room the pit had been widened about 18 inches from the bottom, and the smaller bones were placed in this addition. There were no traces of any lining to the pit, nor any suggestions of Jesuit contact, while earlier articles of European trade had reached the spot, possibly from the Dutch through the Five Nations. There were 24 iron axes, several brass kettles, 3 sword blades, 24 large and curious brass rings, 5 cylindric brass or copper beads, with other ornaments of shell. Through the kindness of Mr Mackay I examined a number of these. The rings are simply short brass cylinders, bent in circles, and the beads are long brass tubes, precisely like those occurring in the Mohawk valley. One of these is 11 inches long and 5/8 inch in diameter. Mr Mackay has an interesting collection, well repaying study.

Some burial mounds have been reported in New York city, apparently natural elevations used for sepulture.

Some supposed mounds in Oneida county are also of doubtful character, nothing having been determined by examination.

In Onondaga county, near Baldwinsville, were two large stone heaps, covering human bones, and two burial mounds were on the west side of Onondaga outlet. One was circular and stood out prominently from the bank behind it. The other was oblong, being 12 feet long and 3 feet high when I sketched it, and had then been somewhat reduced.

At the modern Seneca castle near Geneva, where Johnson built a fort in 1756, is an artificial mound about 6 feet high and used as a cemetery. It is probably rather graded than built up. There was a small recent mound at Clifton Springs.

In Carlton, Orleans county, on the north bank of Oak Orchard creek, is a small oblong mound, 20 by 30 feet in diameter. Another small mound was 30 rods away.

Bone hill, at Oswego Falls, was a place of sepulture, now known to be of natural formation. It was 6 rods in diameter and 40 feet high, and has been removed.

In Unadilla was a supposed Indian monument, 20 feet in diameter, 10 feet high, and of a conical form. There was a mound at Oneonta, and a supposed burial mound at Cooperstown.

In Tioga county there was a circular burial mound at Owego. Several mounds were in the vicinity of Newark Valley. One of these was 15 feet high and 250 feet around, suggesting natural formation.

In Wayne county I examined several mounds July 18, 1902. One was northwest of Savannah and in the midst of camp sites. It is circular and but slightly separated from the ridge behind. It is 60 feet across and 3 feet high. Another burial mound north of Crusoe creek and northeast of this, is now small and low, but distinct. Another was examined 2½ miles south of Savannah. It is at the south end of a ridge containing caches, from which it has been separated by excavation. The bodies were apparently laid on the surface and the earth heaped upon them. It is 30 feet across and about 7 feet high. The first of these mounds shows little work.

In Wyoming county is a burial mound about 4 miles south of Portage.

In Yates county a small burial mound on Bluff point is 9 feet long and 4 feet high.

These are all the burial or monumental mounds thus far reported in New York, as distinguished from defensive earthworks. Very few indeed resemble those of Perch lake, and this led to the special examination of the latter. Their peculiar character is emphasized by this comparison with New York mounds elsewhere, and though scattered examples may yet be found here, it is quite probable that nowhere else in the State will they be seen in such numbers or in such fine preservation. They form a unique group, well worthy of further study, though offering little in the way of fine relics, or indeed of any at all.

By way of caution it should be remarked that the hight of mounds is commonly made too great unless accurately determined; and there is also a disposition to consider any symmetric elevation of moderate size an Indian mound. Even when human bones are found in them they are not always artificial.

A curious spot 1½ miles west-southwest of Unadilla may be described here, having never been mentioned before. For the account and chart, thanks are due to Mr Harry B. Cecil of that

place. It is on the farm of Enoch H. Copley and in a woodland of about 33 acres, the whole of which is a series of moraines and kettle-shaped hollows. In the largest of these hollows is a shallow pond, marked A in the diagram, plate 12, figure 1. The shaded part B has been partly filled in for the Delaware & Hudson Railroad. The pond is surrounded by moraines, C C C, about 100 feet high, and a road D, follows the north and east margins. At E, F, G, are rude stone walls from 2 to 4 feet high. Mr Cecil said:

At one time I supposed these had been constructed to get rid of the rocks that were in the way, but this could not be the case, as the stones could have been dumped into the pond very much more easily, and it would have materially helped to widen the road D. The oldest residents say that these piles and walls have always been there. At H, until a short time ago, were two circles made of rocks loosely thrown together. They measured 10 feet across and were contiguous, having openings at the remote parts of their circumferences. I turned these over carefully, but failed to find anything of Indian workmanship and the soil beneath was apparently undisturbed. At I was another stone wall. At J is a heap of undisturbed rocks. At K is a carefully made road, about 8 feet wide and extending about 300 feet in a westerly direction, gradually ascending to 50 feet above the pond level. No explanation can be given of this unless it was part of a trail. Below this road and above the wall at E, is a stone heap, and above the road is a large hollow filled up with stones of all descriptions. I am positive that these heaps are not natural. All these remains are included in about half an acre.

This account is free from extravagance and suggests the use of the spot as a pound for deer, terminating a driveway. These and other animals would naturally resort there to drink. With or without contracting hedges they would follow their own paths, and the roadway would turn them toward the double walls, I, F, when driven. Some would escape only to encounter other hunters at the wall G. In the press others might turn back and meet hunters at the wall E. The circles may have been the foundations of hunting lodges, and the season of wild fowl would afford a secondary use. The usual course was to make a pound of stakes and branches, but the primitive hunter was quick to avail himself of natural advantages, and was not sparing of work.

TRAILS

In the *League of the Iroquois,* Mr Morgan gave a definite and interesting account of the principal Indian trails of New York, overlooking some things which seriously affected his scheme. Sites of Indian towns were constantly changing, and trails of necessity changed and were forgotten. An abandoned forest path is soon obliterated. All his towns were not properly located if the record is to be considered two centuries old. Much of the time Indians took a general rather than a fixed course in going from place to place, for the advantage of hunting or for other reasons. Thus trails were very faint in some places, becoming plainer as they approached towns. Remembering such things, Mr Morgan's general plan will serve as a proper basis for some remarks on Indian trails. At some period it may have been essentially correct, but in the nature of things this was but for a brief time. With this reservation it deserves high praise.

His scheme makes the trail leave Albany along the old turnpike, going to a spring 6 miles west and thence to Schenectady, crossing the river at the ford, where a bridge was afterward built. This may be allowed, though it may not have been Van Curler's exact route in 1634. Yet it is doubtful whether there was any trail or much travel there before the Dutch came, for the Mahicans at Albany were at war with the Mohawks west of Schoharie creek, and made their footprints as light as possible. At Schenectady the trail probably divided, when there was one, following both banks of the Mohawk. When Van Curler followed that stream westward in 1634, all the Mohawk towns were west of Schoharie creek, and the Indians did not care to ford that for some reason. Curler crossed the river, followed the north bank till the creek was passed, and then recrossed to the south bank, where all the towns were. When all these were on the north side, a few years later, there was no use for the southern trail. When the south bank was occupied it was used again. Mr Morgan's scheme places but one small village on the north.

In 1634, and for some years later, all the Mohawk towns were between Schoharie creek and Spraker's. His scheme places

Te-hon-da-lo'-ga at the mouth of the creek, Canajoharie on the east bank of Ot-squa'-go creek at Fort Plain, and the upper Mohawk castle in Danube, Herkimer county. Thence his trail went to Utica, Whitesboro, Oriskany and Rome. This was a very recent route.

On the north he supposed that the trail turned off to Johnstown, a modern feature, returning to the river at Fonda, and going thence to Rome. This does not allow for the fact that as early as 1600 one Mohawk town was far up Cayadutta creek, another still farther on the Garoga, and a third on the Ot-squa'-go, all several miles from the Mohawk. Rome was not an objective point till western trade became vigorous, and there was probably little travel that way till the 18th century. Van Curler, in going to Oneida in 1634, certainly left the Mohawk east of present Canajoharie, crossing the hills to the upper waters of Oneida creek. Later accounts show that this was long the only great trail, and this fact Morgan overlooked. This affected his scheme beyond the portage. He said:

From Rome the main trail, taking a southwest direction, passed through Verona, Te-o-na-tale', and finally came out at Oneida Castle. This was the principal village of the Oneidas.

Knowing the latter was a recent town, Gen. John S. Clark placed Old Oneida in the southwest corner of Vernon, where Sauthier's map shows it. On his map of 1700 Colonel Romer marked his route as leaving the Mohawk at the third castle, thence southwesterly near the head of Schuyler lake, thence west to Old Oneida, whence a branch trail led to the portage. Being on horseback his party took the main road west to Onondaga.

From the modern Oneida Castle, Morgan's trail went through Canastota, Canaseraga, Chittenango and the Deep Spring, Manlius and Jamesville, to Onondaga Valley. No colonial traveler mentions Deep Spring, though one of Gansevoort's officers spoke of it as "Sunken Spring in the road," in 1779, and the Onondagas tell me that their favorite resting place was at Green lake, near Kirkville and north of this route. Johnson and the Moravians alike show that the main trail in 1756 was a mile south of Jamesville, entering Onondaga valley far south of the turnpike. The Moravian journals show that there were several trails between Oneida and Onondaga, touching the Tuscarora towns.

Mr Morgan's three Onondaga villages are not well located, as is easily proved. Ka-na-ta-go'-wa, or great village, is now where he placed it, but it was 3 miles north of this in 1779, the farthest north of all. There was no village at Gis-twe-ah'-na. In this scheme the trail passed up the hill west of the present village of Onondaga Valley, northwest through the sites of Camillus and Elbridge, thence through Sennett and Auburn, crossing Owasco creek just above the prison, following the old turnpike halfway to Cayuga lake, then going direct to the old Cayuga ferry, half a mile above Cayuga bridge. It crossed the foot of the lake about 4 miles farther north, at the old fording place near the lower bridge. This, however, was not the trail used by the Moravians and others in the middle of the 18th century. That went directly over the hills from Onondaga, at that time 4 miles south of the present canal, passed some miles south of Marcellus village, crossed the foot of Skaneateles lake and that of Owasco, reaching the village of Ganiatarage 1½ miles north of Union Springs, intersecting there the trail which connected the Cayuga villages east of the lake. This was also Colonel Gansevoort's route in going eastward from the foot of Cayuga lake to Fort Stanwix in 1779. The principal Cayuga village was at Great Gully brook, 3 miles southeast of Union Springs. From the mouth of this stream the lake was usually crossed in canoes, and the trail went on to the foot of Seneca lake, passing through the Cayuga village of Nuquiage, not far from that lake. This is an historic route from Onondaga to the first Seneca castle. That given by Mr Morgan seems much later.

In his scheme, after fording the foot of Cayuga lake, the trail followed the north bank of Seneca river to Seneca lake. He noted another trail, crossing the lake in canoes, and running west from the shore to Seneca Falls. Thence it followed the south bank of the river, intersecting the other trail at the lake, and running 1½ miles north to the first Seneca castle, near Geneva. Thence it followed nearly the line of the turnpike to Canandaigua, at the foot of that lake.

The Moravian journals make quite a difference here. From the foot of Seneca lake they went 4 miles west-southwest to a deserted

town, where the trail divided, one path going to the head and the other to the foot of Canandaigua lake. There were others to various points. At last they found the right one, but a very bad road. This took them through old Onnachee in Hopewell, and Canandaigua lake was then called by this name. The outlet was crossed on a rude Indian bridge. Ganataqueh (Canandaigua) was a few miles beyond, on a hill. Thence they went to Hachniage (Honeoye) near the foot of Honeoye lake. Still going west they crossed Noehnta creek, the outlet of Hemlock lake, and came to Ohegechrage or Conesus lake. Ten miles farther they reached Zonesschio (Geneseo) on the Genesee river, but not the later site.

This is essentially one of Morgan's two trails. One of these went southwest from Canandaigua to the foot of Honeoye lake, then in sight of Hemlock lake, passing the foot of Conesus lake, crossing the Genesee at the present Geneseo, and leading to Little Beard's town, at one time the largest Seneca village. This had no existence in 1750 on its later site, and Geneseo was then near the mouth of Canaseraga creek.

The other trail, considered the main one by Morgan, went from Canandaigua through the villages of West Bloomfield and Lima, to Avon on the Genesee, crossing the river a few rods above the bridge, and following the bank to Ganowauges a mile above. This is satisfactory for quite recent times, but it leaves out the important early villages near Honeoye Falls and in Mendon, as well as the great fort and town near the village of Victor. The great trail certainly once included these. Guy Johnson's map of 1771 has two of these trails from Canandaigua, and a third one farther south. Pouchot's map of 1758 is of more interest than value, as he probably had not been over the road, but notes on these various charts may be reserved for an appropriate place.

The remaining section of the main trail, as given by Morgan, lies west of the Genesee river, in a region where there were no Seneca villages in 1650. It led from the river to the great Caledonia spring, then through the village of Leroy, crossing Black creek near Stafford and striking Tonawanda creek a mile above Batavia. Passing through that place, it turned northwest through Caryville,

and led to the present Seneca village of Tonawanda. There it branched. One path led northwest, through the creek and swamp, past Royalton and then to the Cold spring 2 miles northeast of Lockport. Continuing northwest it reached the ridge road and terminated at the Tuscarora village near Lewiston. This latter trail of course dates from the occupation of that reservation.

The other branch went southwest from the Indian village to Akron and Clarence Hollow, thence to Williamsville and the head of Main street, Buffalo, where it ended. Mr Morgan said:

This trail was traced through the overhanging forest for almost its entire length. In the trail itself there was nothing particularly remarkable. It was usually from 12 to 18 inches wide, and deeply worn in the ground; varying in this respect from 3 to 6, and even 12 inches, depending upon the firmness of the soil. The large trees on each side were frequently marked with the hatchet. *Morgan,* p.429

It remains to notice his lake and river trails. From Oswego one followed the lake ridge to Irondequoit bay, turning up the bay to its head, crossing the Genesee at the Rochester aqueduct, striking the ridge road at the lower falls and going west to the Tuscarora village, a recent town.

A trail followed the Genesee river on each side, connecting the recent Seneca villages occupying the valley. These need not be mentioned here, and for many interesting details the reader is referred to Morgan's valuable work.

Trails naturally converged at Tioga point, where the Chemung united with the Susquehanna, and these became important thoroughfares for the Iroquois in their later wars. From this point he named two trails up the Susquehanna. One followed the north bank, crossing the Chenango at Binghamton, thence to the Unadilla, and there intersecting the Oneida trail. The trail again branched at Charlotte river, one branch going to the Cherry Valley creek and then to Canajoharie. The other followed the Charlotte to its head, crossed to the Cobleskill, intersecting the Schoharie trail at Schoharie creek, ending at the lower Mohawk castle. A branch turned up Foxes creek, crossed the Helderbergs and ended at

Albany. This was the Indian Ladder road. Another crossed the town of Middleburg to the Catskill, following that stream to the Hudson.

It is evident that these trails came from the recent occupation of Schoharie creek by the Mohawks, of the Susquehanna by the Oneidas and Tuscaroras, and of the Chemung by the Cayugas; in part by all. In 1753 there was no road at all along the north bank of the Susquehanna from Owego to the Chenango river.

It is so obvious that most trails came from the situation of towns, changing as these did, that it can be assumed that trails connected all friendly towns of any given period. Their rapid obliteration may also be inferred from the fact that no one pretends to locate, by physical features or oral tradition, any trail used 250 years ago. We know the general course of some yet older, but not because any one has seen their traces. In still more cases we know where early towns stood, but have no hint what thoroughfares led to other places. These certainly existed, but have left no visible signs. Indeed it is quite probable that the later trails had their prominent features more from the white man's shoes and the hoofs of cattle than from the Indian's moccasin. Woodland paths are common now by every lake and stream; when and by whom were they made? Ask our farmers, hunters and fishermen.

That Indian trails were well defined from Utica westward, soon after the Revolution, no one will doubt. That some of them afforded the best lines of travel for pioneers is just as clear. The Indian was a well trained woodman, and the white man profited by his skill, but in the nature of things the great results would have been much the same had the latter been left to himself. The New York Central Railroad would have gone from Albany to Buffalo had there never been an Indian trail in the State.

Some of these early routes have interest, and the location of some on early maps may be mentioned. A few local trails will be also referred to, but it is evident that no complete account could be given unless we knew the age and nationality of every town.

The earliest trail which can be traced westward from Albany is from the itinerary of Arent Van Curler in 1634. His recorded miles

are each equal to about 2 English miles, and the latter will be used here. There were then no white settlements west of Albany, and the Mohawks were all west of Scholarie creek. The first day, having traveled 16 miles, he was near the Mohawk river. The second he went 2 miles, crossed the river and walked 20 miles more. The third he recrossed the Mohawk, and a mile farther came to Onekagoncka, the first Mohawk castle. A mile farther Canowarode was passed, and Senatsycrosy at the end of another. Canagere, the second castle, was 3 miles beyond, or 44 from Albany. The third castle, Sohanidisse, was 3 miles farther. Osguage was a mile beyond, and Cawaoge still another. The fourth castle, Tenotoge, was 2 miles farther, east of the present Canajoharie, and about 51 miles from Albany. For at least 13 miles he had followed the south bank of the river. Like later travelers, he now soon left it. Leaving Spraker's he took a westerly course, crossing Canajoharie creek but passing south of the next large stream, the Otsquago. That day's tramp of 14 miles ended on high land near the west line of Montgomery county. The next day 15 miles brought him near Jordanville. Next day he crossed two branches of the Unadilla, probably near North Winfield and North Bridgewater, or a little farther south, camping a little west of the west branch, after walking 15 miles. The next day their course was near Sangerfield or Waterville, but at the end of 16 miles they had not quite reached Oriskany creek. This they saw next morning, and at the end of 9 miles they were at Oneida, east of Oneida creek and near Munnsville. They walked through the snow, and the miles seemed long.

The records of the sojourn of Father Jogues, in 1642 and later, tell us nothing of the main trail, still on the south side of the Mohawk, but show many minor trails from place to place and for many purposes, as we might expect.

The famous horseback ride of Wentworth Greenhalgh in 1677, when he went from Albany almost to the Genesee river, shows a little variation. There were four Mohawk castles and one small village, all on the north side of the river. That he followed the same trail as Van Curler when he left this, may be gathered from

his saying that Oneida was "about 30 miles distant from the Maquaes river, which lyes to the northward." Onondaga was still in Pompey, about 2 miles south of Morgan's later trail. The Seneca towns lay north of that route, and he passed Cayuga lake by some path available for horses, evidently on the north.

The trail from the last Mohawk castle to Onondaga changed but little for a great length of time, and only as the two places and Oneida changed their sites. It was always the practice to leave the river at the upper Mohawk town, and take the direct overland trail. This is the route laid down on Colonel Romer's map of 1700, and when Johannes Bleeker jr and David Schuyler went to Onondaga in 1701, they said that they got to Eghwake creek, the east branch of the Unadilla, on the evening of June 7. Oneida had been moved northeast of its former site, and they reached there next day. Part of the early trail had been abandoned, but much of it was still used.

At that time there was little land travel along the Mohawk above Little Falls, yet the portage at Rome was sometimes used. On Colonel Romer's map a trail leads from Oneida to that spot, and runs at right angles to the main road, from which it was a short day's journey. When a trading post was established at Oswego it became an important thoroughfare. This is what Romer's companions wrote in October 1700:

10th Col. Romer told us that his instruccôns were to see how much lesse the Carrying place could be made; whereupon we resolved forthwith to go thither, as we did, with an Indian which we hired who shew us the way. *11th d°* We came by a most miserable path to the Carrying Place, w^ch^ we viewed as farr as the Wood Creek, when Col. Romer resolved to go to Oneyda. *12th do.* In y^e^ evening we came to Oneyda. *O'Callaghan,* 4:807

From this and the map it will be seen how far the portage was from the main trail. On the map the trail goes from Oneida to Onondaga, then on Butternut creek, and from that town the party traversed two trails only: one to Onondaga lake and the other to the fishing place on Chittenango creek.

A few years later Onondaga was moved to the east side of Onondaga creek, but this removal had most effect on the branch trails,

the main one changing but little, still passing the old town a mile south of Jamesville, where the pickets long remained.

Guy Johnson's map of 1771 has a trail from Oneida, through "Ganaghsaraga, a Tuscarora town" to Onondaga, and thence by way of Owasco lake to the foot of Cayuga, following the north bank of Seneca river to Seneca lake and Canadasegy. Canadaragey (Canandaigua) next appears, and there are three trails thence to Genesee river. The southern goes by Anarara (Honeoye) to Chenussio; the middle one direct to the same place, and the third to Canawagus, while another runs northeast from Canawagus to the head of Irondequoit bay. From Geneseo the trail goes direct to Fort Schlosser on Niagara river, and small villages appear along the way. A trail ascends the east side of Genesee river, and elsewhere Kanestio is connected with Ganuskago (Dansville). There are no trails on the Susquehanna, the river being used instead.

Sauthier's map of 1779, made by order of Governor Tryon, shows some of the changes made as the frontier extended. Some of the earlier trails still appear south of the Mohawk, but there are new starting places on that river. The German Flats afforded two, and there was another road on the north side. Fort Schuyler (Utica) had become a starting point for Old Oneida and the towns beyond. On this trail were Old Oneyda, Canowaroghare, (now Oneida Castle), Canadasseoa and Canassaraga Castle, two Tuscarora towns. From the latter one trail went to Three Rivers, and another to Onondaga, then on Onondaga creek. From Canowaroghare one went to Fort Stanwix, and another to the Royal Blockhouse by way of New Oneyda Castle (now Oneida Valley). From the latter place one reached Wood creek, while another went to Fort Stanwix. Among others one went due north through the wilderness to Ogdensburg, then called Oswegatchie.

Lieutenant Lodge's map, made in the campaign of 1779, carries the trail south of Conesus lake. Pouchot's map has some special features, but they are of doubtful value. The Jesuit *Relations* contribute little on this subject, though some make it clear that there was a good trail from Salmon river to Onondaga by way of Brewerton, and apparently one from the same place to Oneida

passing the other end of Oneida lake. On the Jesuit map of 1665 the Black and Oswegatchie rivers both bear the title, " R. qui vient du costé d'agné " or the Mohawk country. By the latter route the Mohawks took Father Poncet back to Canada in 1652. For a considerable part of the way the routes were one. Gen. J. S. Clark has elaborated the full route very clearly, in a note to Rev. Dr Charles Hawley's translation of the *Relations* as they concerned the Mohawks. He supposed that one trail from the Mohawk followed its north bank to Rome, continuing along the line of the present Rome & Watertown Railroad till it struck Salmon river, 10 or 12 miles from the lake. From the Mohawk another followed the west bank of West Canada creek and near the line of the Black River Railroad and Black river to Great Bend. Lake Ontario might then be reached by following the stream, or by a portage of a few miles to Indian river the St Lawrence might be entered through the Oswegatchie. The usual war path of the Mohawks was through Lake Champlain and the Sorel river. The lake was reached by several trails.

The trail by which the French usually came to early Onondaga led from the mouth of Salmon river to Brewerton, and thence it varied as the village moved. The French at last came by way of Oswego. Champlain also came by way of Brewerton, but where he left Lake Ontario has been much disputed. It was far to the northeast of Oswego, and Salmon river has been thought a probable place. That he crossed the Chittenango at Bridgeport is likely, and that he followed a trail is evident from encountering a party going to the fishing place. The path probably led up the ridge east of the Chittenango valley, but has left no traces.

The trails leading to the Susquehanna valley became important nearly 200 years ago, when the Iroquois land claims in Pennsylvania assumed a new aspect. They had been matters for diplomatic action even in the 17th century. When the Iroquois realized that there was money in them they sent a resident viceroy to rule their subjects there and care for their lands. This and their southern wars led to many journeys. As early as 1737 Conrad Weiser was sent as an ambassador to Onondaga by way of Owego. In 1743

he went again with quite a party on horseback, and in the party were John Bartram and Lewis Evans. The latter made a map of the route, the former wrote the itinerary. In 1745 Bishop Spangenberg came over much the same route, and his party also rode. In 1750 Bishop Cammerhoff and Zeisberger tried a different course, coming in canoes as far as Waverly on the Chemung river, and going thence to Cayuga on horseback. While previous travelers had gone by way of Owego creek and Cortland county, they followed Wynkoop creek, passed Cayuta lake, reached the site of Ithaca, and went down the east side of Cayuga lake to the Cayuga towns. All of these journals are of interest, but while some parts of the route are easily recognized, some are hard to identify, nor was the path always quite the same, even in going and returning. Between Bartram's account of the road and that of Spangenberg there is quite a difference, though they had the same guides and made the trip but two years apart.

Each may be summarized after leaving Owego. Bartram's general course was on the east side of Owego and West creeks, crossing a steep hill to a tributary of Fall creek, and passing some ponds in the town of Cortland. From the site of Homer he followed the west branch of the Tioughnioga, seeing Mount Toppin but not the ponds near by, and crossed to a branch of the Susquehanna rising in Pompey. Part of Pompey hill was crossed and the Indian village in La Fayette visited. The Onondaga valley was entered from the southeast. The route was slightly changed on the return, and a branch trail led to Onaquaga.

In his notes on Spangenberg's journey in 1745, Mr John W. Jordan made his route up Owego and Catatonk creeks, leaving the latter above Candor, crossing Ganatowcherage or West creek in Richford township, passing over Prospect hill in Harford and a creek in Virgil which is an affluent of Fall creek, and reaching Crandall's pond in Cortland. It may be that the route was up West creek instead of Catatonk, as in Bartram's route. From Crandall's pond or Lake Ganiataragachrachat they went to Big lake or Ganneratareske in Preble, and thence to Oserigooch, the largest lake

in Tully. Beyond this the trail was bad, but they went by way of Cardiff, as later travelers did. Most of the trail to Owego was so little used that it was hardly discernible even to Indians, who depended as much on the lay of the land as the actual path.

Zeisberger and Frey attempted this route alone in 1753, starting properly from Owego, but losing the faint trail so often that they were discouraged and turned back. Afterward they were told that if they had gone on a day longer they would "have had a good road, because two roads meet there, and a road branches off, turning toward Cayuga lake. It is much frequented." Their observation on this is of interest:

> The Indians had no proper trail, but where they cannot distinguish it each one runs through the woods according to his own judgment. Consequently it frequently occurs that from two to three miles, and farther, there is no visible road. *Zeisberger,* p.1753

On this occasion they finally went up the east branch of the Tioughnioga by canoe as far as they could, leaving it northeast of Cortland and crossing the hill to Onogariske creek, now called the west branch of the Tioughnioga. When they left the river the Indian guides "ran hither and thither into the forest, until at length they found a path." They reached the west branch between Homer and Preble, and "the trail that comes up from Owego, and is quite clearly defined here." At the lake the trail divided, one branch going to Onondaga and the other to the village of Tueyahdassoo, where other trails diverged.

It is evident that hundreds of trails have left neither trace nor tradition, though some were once of great importance. Wherever there were towns or frequent camps there must have been forest paths. In a score of counties there was a network of these, old and new, almost as complex as our own roads now. No general scheme of these is possible, but it may be assumed that all early towns were connected and most lakes and valleys were accessible by them. Even distant points were reached by the most practicable routes. There were war paths, hunting paths and paths of peace. Very few of these are on record and it will suffice to mention those briefly.

In Albany county the Indian Ladder road is well known, a recent trail from Albany to the Schoharie valley, crossing the Helderbergs in Guilderland. Five trails were mentioned in Rensselaerville in 1711, and the Schenectady trail soon became important.

In Broome county the trail to Binghamton, over Oquaga mountain and another nearer Windsor, were worn deep. These were recent, there being no early settled occupation of the county.

In Cattaraugus county a trail ran through Carrollton, following Cold Spring creek and passing into Napoli on lot 41. A trail from Allegheny river followed the same creek into New Albion. Thence it went to Niagara Falls and Canada.

In Cayuga county some trails appear on maps relating to Sullivan's campaign. Gen. John S. Clark placed Thiohero "at the foot of Cayuga lake, on the east side, at the exact point where the bridge of the Middle Turnpike left the east shore. The trail across the marsh followed the north bank of an ancient channel of the Seneca river." The early trails were very many, and the Moravians described some.

There are a few trails on record in Chemung county, and some appear on the Susquehanna in Chenango county. In Columbia county the stone heaps were by Indian trails, and on the map of the Livingston patent a trail crosses it midway from east to west. Reference has been made to trails in Cortland county, followed by the Moravians.

A wide trail followed the Charlotte river in Delaware county, in 1786. In Franklin county are early and recent portages. A trail called the Catskill Path led from Castle Heights due north to the Coxsackie plains in Greene county. Some recent portages alone represent the many early trails of Jefferson county, but the recent trails of Madison county are better known. One of these was from Oneida to Chittenango, and thence to Onondaga, passing some distance south of Canaseraga. A well defined trail went from Oneida creek, through the west part of Hamilton, and down the Chenango river. The Oneidas and Tuscaroras came up that river in canoes as far as they could, and diverged to their several towns.

Mr George H. Harris has left us an excellent account of the trails in the lower Genesee valley, and his judicious remarks are quoted here:

In general appearance these roads did not differ in any particular from the ordinary woods or meadow path of the present day. They were narrow and winding, but usually connected the objective points by as direct a course as natural obstacles would permit. In the general course of a trail three points were carefully considered—first, seclusion; second, directness, and, third, a dry path. The trail beaten was seldom over 15 inches broad, passing to the right or left of trees or other obstacles, around swamps and occasionally over the apex of elevations, though it generally ran a little one side of the extreme top, especially in exposed situations. . . Fallen trees and logs were never removed, the trail was either continued over or took a turn around them. The Indians built no bridges, small streams were forded or crossed on logs, while rivers and lakes were ferried on rafts or in canoes. *Harris,* p.37

To these general rules exceptions will be found, as in the case of bridges, and sometimes swamps. Mr Harris noted a branch trail from Canandaigua lake to the head of Irondequoit bay, then to Genesee falls and along the lake ridge to the Niagara river. Trails converged above and below Rochester at two points. The trail from Canandaigua was on the Pittsford road, dividing a little east of Allen's creek, and going to Brewer's landing. Several branch trails diverged from it. The other trail reached the river near Franklin and North St Paul streets.

A trail came to South Rochester from Caledonia springs. Several others are mentioned in and about the city, two being portage trails. There were others about Irondequoit bay, but he differs from Morgan only in added details. Mr O. H. Marshall also described the trails followed by De Nonville's army in 1687.

Mr Irving W. Coates said that five trails met at Littleville, on the Canandaigua outlet in Ontario county, and traced their general course. Others were mentioned in Sullivan's campaign and in the Moravian journal.

Mr Jeptha R. Simms mentioned several trails in Schoharie county, with more details than Morgan gave. In Ulster county a great trail started from Saugerties, followed the Esopus, crossing to the

Rondout at Marbletown, leaving that stream at Napanoch, passing through Mamakating hollow, and reaching the mouth of the Neversink river at Port Jervis. In these and other cases most of the trails are modern.

With these data before us, and admitting a general truth, we can see that the Cayuga chief Wa-o-wo-wa-no'-onk, or Peter Wilson, was somewhat rhetorical when he said:

> The Empire State, as you love to call it, was once laced by our trails from Albany to Buffalo,—trails that we had trod for centuries—trails worn so deep by the feet of the Iroquois that they became your roads of travel, as your possessions gradually eat into those of my people. Your roads still traverse those same lines of communication which bound one part of the Long House to the other.

ADDENDA

The work of examining collections and sites has thus far been a personal one, the practical results of which come to the State Museum. It is a present gratification to secure figures and descriptions for record and preservation, but it is hoped that this will be of future advantage to the public. Out of these may be selected many for publication by the writer or others. Since the bulletin on metallic implements was published several fine articles of native copper have come to light and been figured, described and recorded, but they are axes, spears and celts, much like those already figured. A later history has been secured of the largest native copper implement found here, and drawings have been made of some recent metallic pipes. Bone articles are still obtained, Onondaga and Montgomery counties yielding most harpoons. One unique bone article belongs to Mr H. A. Pride of Holland Patent. It is flat, curved, and much like a small double pointed harpoon, with a single barb toward each end of the concave edge. This edge expands toward the center, allowing a perforation in the widest part. The convex edge has notches and one surface is ornamented with lines. Mr Pride has some fine pipes and one undrilled bannerstone of striped slate. A fine flat and curved bone article, which he took from a grave, he gave to the writer. It is sharp at both ends and has parallel grooves at one.

Mr Fred C. Gabriel has found many peculiarly grooved and worked elliptic pebbles on the west side of Seneca lake near Watkins N. Y., the grooves being picked or ground, and usually the long way. Some are otherwise worked. They could not have been used as hammers and seem too elaborate for sinkers. Being usually found in pairs they suggest the bolas, and this or the sling stone might have been moderately used in open woods. In dense woods they could not have been thrown, but the Indians often burned the underbrush. Such stones occur on Cayuga and Seneca lakes, but mostly at the head of the last. Some graves near the latter lake have been particularly described. A fine stone bird pipe was also found near Watkins. The claws, tail and closed wings are well defined, and

it is 3¼ inches high. An unfinished bird amulet was also found there, and also a cuneiform slate knife, a rarity in that region.

A fine red sandstone plummet, 3⅝ inches long, is from Howland island, north of Cayuga lake, the farthest west any such article has been found on Seneca river. A beautiful and slender one is from Jefferson county. A smooth pipe of red sandstone, found near Savannah N. Y., weighs 1 pound 5¼ ounces. A peculiar Onondaga clay pipe, with many grotesque human faces, has heretofore been found only on a site west of Cazenovia. A stem now in the writer's hands, came from Canoga, on the west shore of Cayuga lake. It has the character of all the rest, but had been carried there and used as a bead.

A grave was opened near Athens, Greene co., in 1899 by Dr A. H. Getty of that place, on the Saunders farm. It was in a sand bed and paved with cobblestones brought several miles. The remaining bones and relics were about 4 feet under ground. It contained 300 globular native copper beads, 16 good sized shell beads of unusual form, 4 longer ones perforated at each end, and a slate gorget with one hole. All these are now in the State Museum.

In the fall of 1903 Mr E. Hollenbeck found an olive green tube of banded slate at Hoffman's Ferry. It is somewhat flattened and has a groove across one end. Near this is a small lateral perforation, much like the vent of old guns in appearance and position. In this respect it is unique. The length is 4½ inches.

An ossuary was opened Sep. 8, 1904, in low ground, a mile east of Macedon, Wayne co., and near the creek. Dr C. P. Jennings, who superintended the excavation, writes: "We found there, in one pit, at least 60 skeletons within an area of 1 rod square and about 3 feet deep." Six large stones were found with these, but no relics.

Mr J. E. Mattern, of West Rush, Monroe co., writes: "I know of a few burial sites not mentioned in your bulletin on sites. One is about 6 feet in diameter and I took about 20 skeletons out of it. The bones were in all shapes. They were thrown in after the flesh was gone. Last fall I found another about 10 feet from the one mentioned, still larger. I took out 30 skeletons and did not dig it

all out. I found a flint knife, 3 shell beads and a bone awl." He reported 10,000 pieces in his collection.

In Watertown, Jefferson co., Mr R. D. Loveland added nearly 40 pipes in 1904 to his already fine collection, and a large number of bone articles. In both there were pieces of very great interest. A barbed bone fishhook is now in his cabinet. Messrs Amidon, Getman, Loveland, Woodworth and others could furnish a notable exhibit for the Jefferson county centennial.

The evolution of the human face on pottery has been finely illustrated by a complete series from Jefferson county. First are the three circles arranged for eyes and mouth; then three horizontal ellipses, either in lines or excavations; these are next inclosed in a diamond, followed by a pentagon and hexagon; then lines are incised for the nostrils and sides of the nose; and last comes the human face, as yet rare in that county. The absence of this class of pottery from Oneida sites has long been a matter of surprise to the writer, but now he has an example from Fish creek in Oneida county, though none from a village site. This has the slender form of a man, with the usual conventional body and limbs. A still more interesting find was that of Mr A. B. Skinner on Staten Island made last spring. On a camp site he found most of the rim of an earthen vessel, having "rude raised human faces upon it." They are small, four in number, and at some distance from the top of the vessel, which had a pointed base, like most others there. It should be added that it was from a shell heap, of which Mr Skinner said: "No horn or bone implements obtained here. Recent relics, such as a brass arrow point, bullets, gunflints, etc., have been found." The inference would be that it was either the work of an Iroquois captive or of an Algonquin who had been in the hands of that people, at a recent date.

A gouge with ridged back, from Lysander, is of interest, and long and fine gouges have been found in Chautauqua county. One collection has several fine stone mortars from Seneca river, and another has one which is long, elliptic and shallow. A small and deep one came from Chautauqua county. A curious and pretty one is from Oneida creek and may have been used for paint. It is small and

almost globular, being 2¾ inches wide by 2 deep, flattened below, and with an excavation nearly an inch in depth. From the same place came a fine elliptic grooved granite hammer, 6⅝ inches high by 3½ thick. A rougher one was found with this. Mr Skinner reports a number of grooved axes found on Staten Island, of various types. One weighed 15 pounds, which makes it one of the largest size. They are rather frequent on Long Island, and occur also along the Pennsylvania line.

In the bulletin on wampum it was noted that a wampum belt attached to an Oneida treaty of 1788 could not readily be found for illustration. It is now on exhibition in the State Library with the original record, and is well worth attention from its beauty and known history and use. The length is about 27 inches, with 6 rows and 4 diagonal double bars on the white ground. In the *Archaeological Report of the Province of Ontario,* 1901, are figures and accounts of 4 fine Ottawa belts. One has the date of 1764 on it, and another of 1786. A third has an officer's name, and may be assigned to 1815. The fourth is credited to the same year as the first. Among other belts examined is one now in the National Museum, which is 2 feet long and 8 rows wide. An open square at each end is joined to the other by a central black line.

Ap. 11, 1903, Mr Alanson B. Skinner read a paper before the Natural Science Association of Staten Island on aboriginal sites found there, enumerating 24 of these, but afterward adding two more. The following are those mentioned in his paper, but he said that there were probably others along the south and east shores not yet observed.

1 Village and cemetery at Pelton's cove, between Livingston and West New Brighton. The cemetery was large.

2 Village at West New Brighton, between Cedar and Dongan streets. Skeletons and implements were found in the spring of 1903.

3 At Mariner's Harbor was a village site between Blue-Bent field and Western avenue, near the shore. Shell heap opened in 1902 near Arlington station. Grooved axes and other early articles.

4 Village on Tuinessen's or Old Place neck. The earthen vessel mentioned came from a shell heap there. Recent relics.

5 Relics abundant in sand dunes and hills at Bloomfield.

6 Lodges about Watchogue road, near Union avenue, Chelsea.

7 Lodges along the north side of Long neck, Linoleumville.

8 Lodges on the south side of the neck. No relics in shell pits.

9 Site with graves at New Springville, on Corson's brook.

10 Camp between Journeay avenue and Annadale road, Green Ridge. Early relics.

11 Small village on Lake's Meadow island. Early relics.

12 Small village on Sandy brook, between Pleasant Plains road and Journeay avenue. Early relics.

13 Lodges from Cedar hill to Winant's brook, and along the shore to Rossville. Early relics.

14 Shell mounds and cemetery near Billopp house, Tottenville. Early and recent relics. Grooved ax of 15 pounds.

15 Site at Bunker hill, Huguenot, near Arbutus lake.

16 Shell heap on bluff near Seguine's point.

17 Site on Richmond avenue, near Arrochar station. Probably others near.

18 Camp at Harbor hill, New Brighton, a little above Castleton avenue.

19 Camps at Silver lake. Relics along the shore near St George.

20 Camp on Harbor hill near Harbor brook and Lafayette avenue.

21 Camp near Bard avenue and Clove road, above Schoenian's pond.

22 Large camp back of Richmond, near Ketchum's mill pond.

23 Shell heap on salt meadow, Oakwood, near Lake's mill.

24 Site with many triangular arrows on Ward's hill, near Cebra avenue, Tompkinsville. There were shells and scattered relics near most of these places.

EXPLANATIONS OF PLATES

Plate 1

Road map of Perch lake and vicinity, from an atlas of Jefferson county. In this the lake differs much in outline and extent from the contour map, but may have been fairly accurate at an earlier day. All remaining mounds on the east side are between the highway and the lake. In a few cases they are at some distance from the shore. Quite a space separates this long group from the one on Linnell's island. It is said that some mounds were formerly near Seven Bridges, on Perch river.

Plate 1

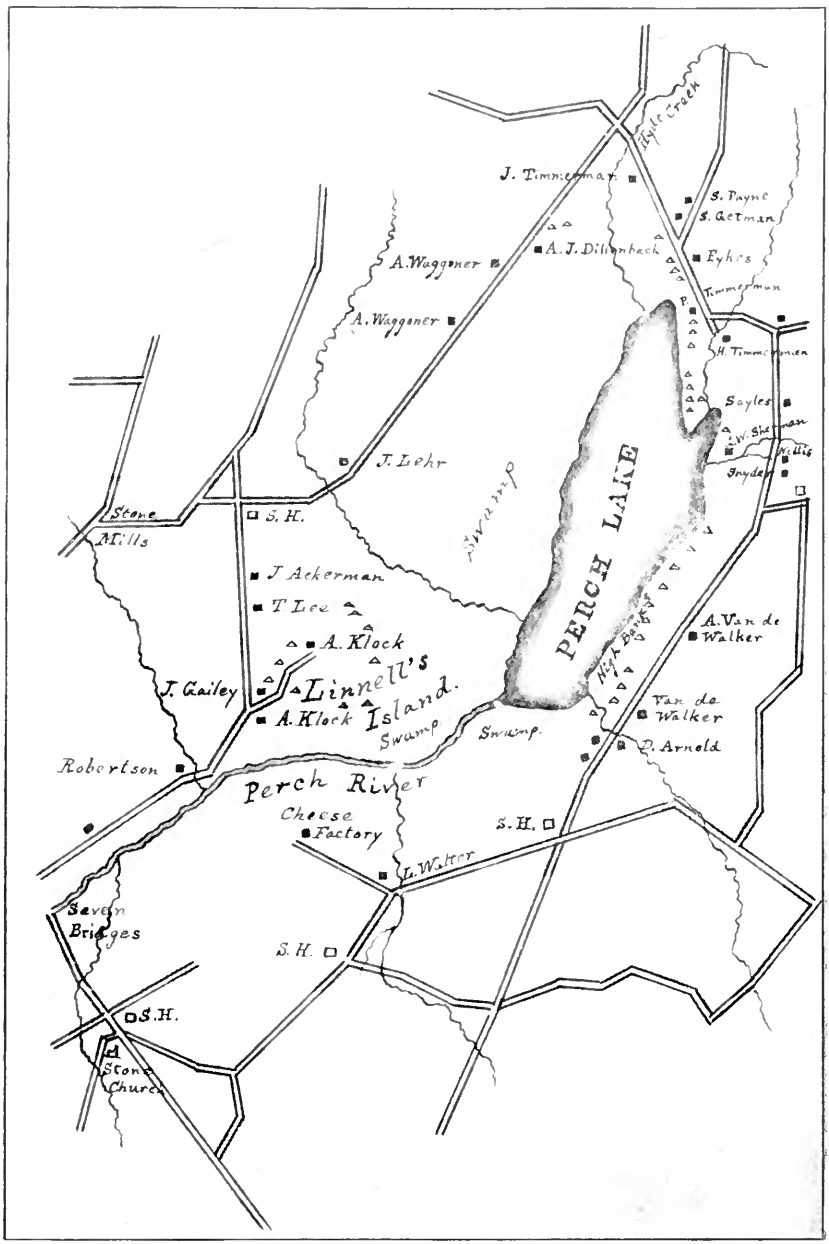

Hyle Creek
J. Timmerman
S. Payne
S. Getman
A. Waggoner
A. J. Dillenback
Eykes
Timmerman
A. Waggoner
H. Timmerman
Sayles
J. Lehr
Swamp
PERCH LAKE
Stone
Mills
S. H.
J. Ackerman
T. Lee
A. Klock
A. Van de
Walker
J. Bailey
Linnell's
Island.
A. Klock
Swamp
Swamp
Van de
Walker
Robertson
D. Arnold
Perch River
Cheese
Factory
S. H.
L. Walter
Seven
Bridges
S. H.
S. H.
Stone
Church

Plate 2

A sketch map of Linnell's island, by Dr Getman, showing the general arrangement of mounds observed on the Klock and Gailey farms in 1903. This terrace is southwest of Perch lake, and was formerly surrounded by swamps, showing a higher stage of water in the lake in earlier days. This subsidence has greatly changed the outline of the lake.

Plate 2

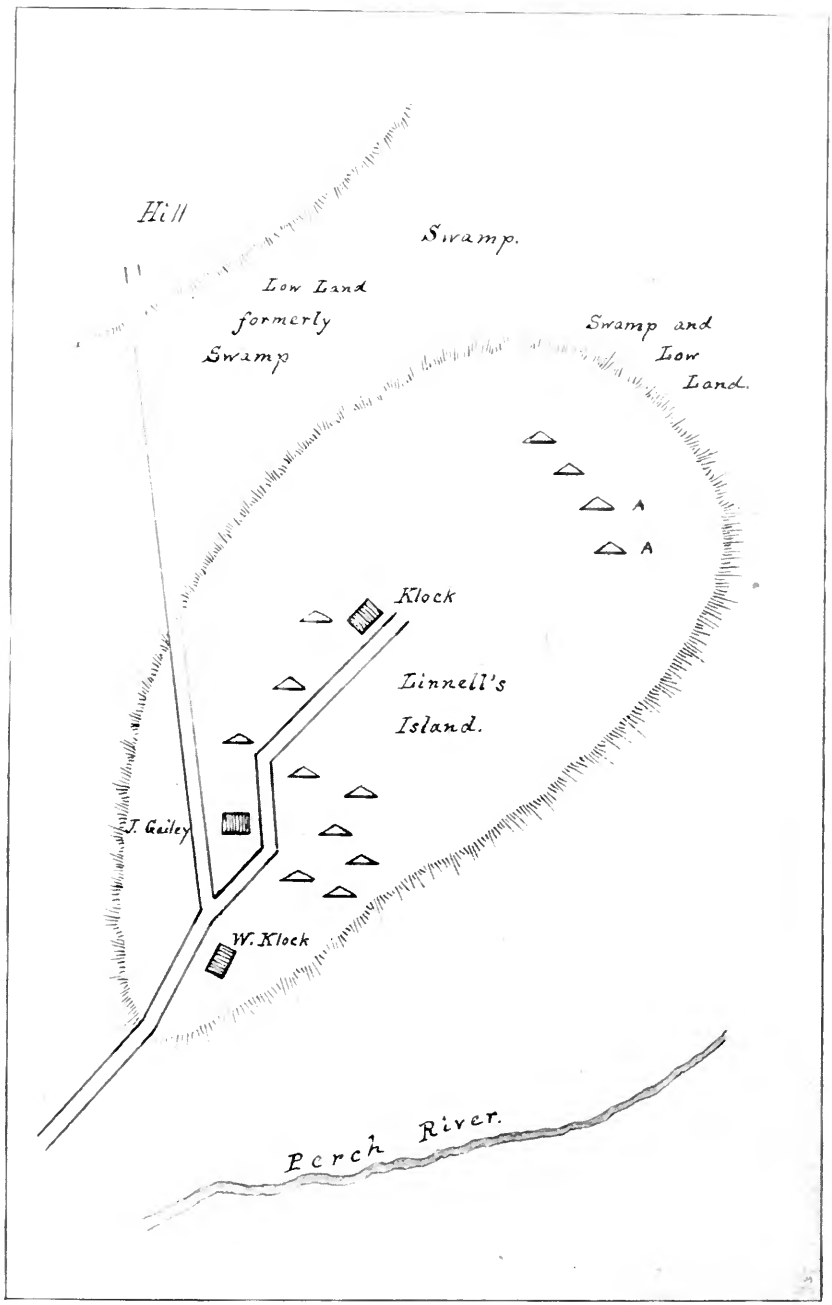

Hill
Swamp.
Low Land
formerly
Swamp
Swamp and
Low
Land.
A
A
Klock
Linnell's
Island.
J. Bailey
W. Klock
Perch River.

Plate 3

Contour map of Perch lake and vicinity, showing numerous low terraces in the thin soil. In many parts these terraced rocks are nearly or quite bare. On the southeastern shore of the lake the slope is quite abrupt. On the west shore the extensive swamps, separating the cliffs from the lake, probably always hindered much occupation, but the proximity of the river to Linnell's island made that a desirable residence.

Plate 3

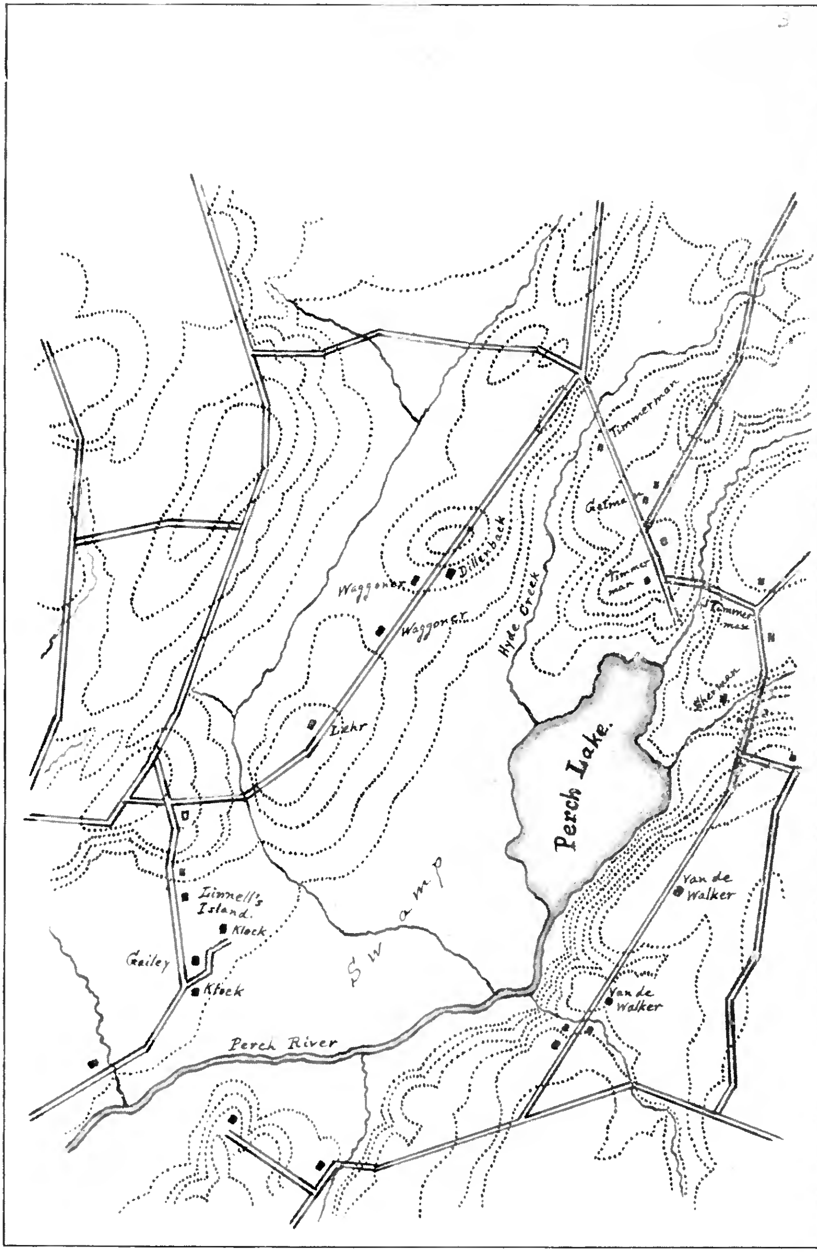

Timmerman
Getman
Timmer
man
Timmer
man
Sherman
Dillenback
Waggoner
Waggoner
Hyde Creek
Lehr
Perch Lake.
Swamp
Linnell's
Island.
Klock
Gailey
Klock
Perch River
Van de
Walker
Van de
Walker

Plate 4

Medium sized mound on the second terrace east of Hyde creek, and not far from it. The depression in the center of this is characteristic of nearly all near the creek and lake, and excavation showed the original rectangular fireplace, bordered with flat stones. Like nearly all others it is in open woodland. The extreme width is about 30 feet. A plan of this appears on plate 12.

Plate 4

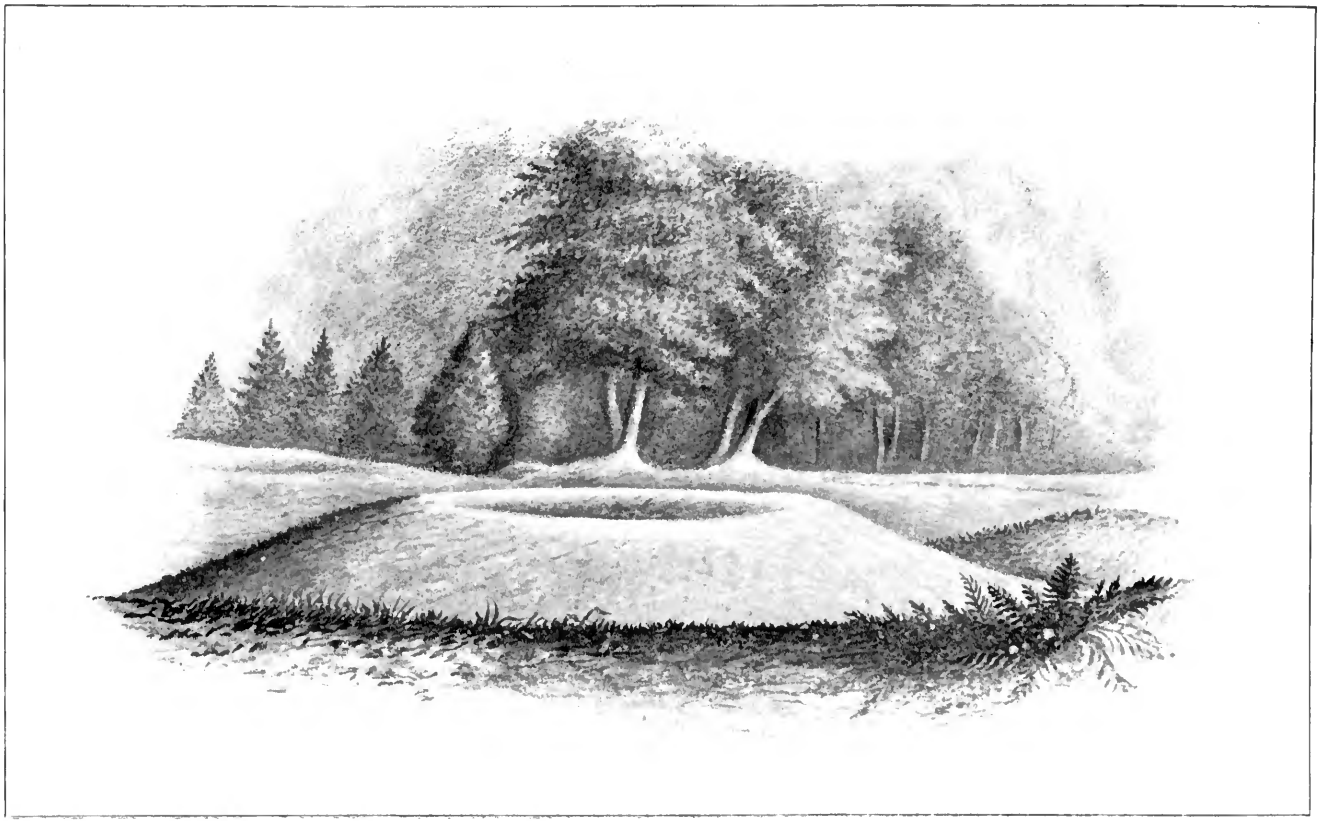


Plate 5

A larger mound near the north line of the Timmerman farm. This is about 36 feet across from the extreme points of the slope, which is always gentlest near the edge and more abrupt as it approaches the center. This mound is less depressed in the center than most of those on that side of the lake.

Plate 5

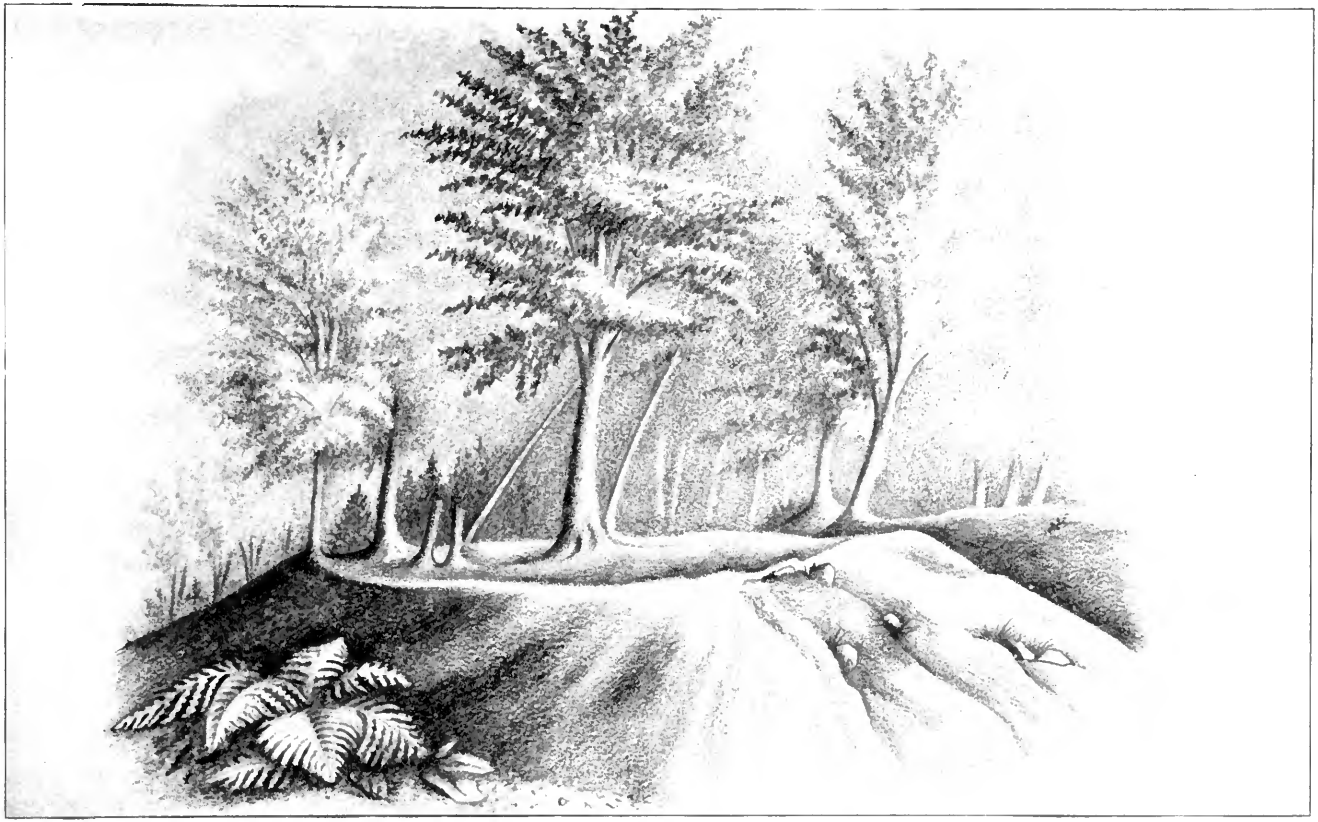


Plate 6

A low and small mound on the Timmerman farm, shows the usual formation, but at noonday might be passed unobserved. Early or late in the day its character is clear. Being in the incipient stage it is but 19 feet across.

Plate 6

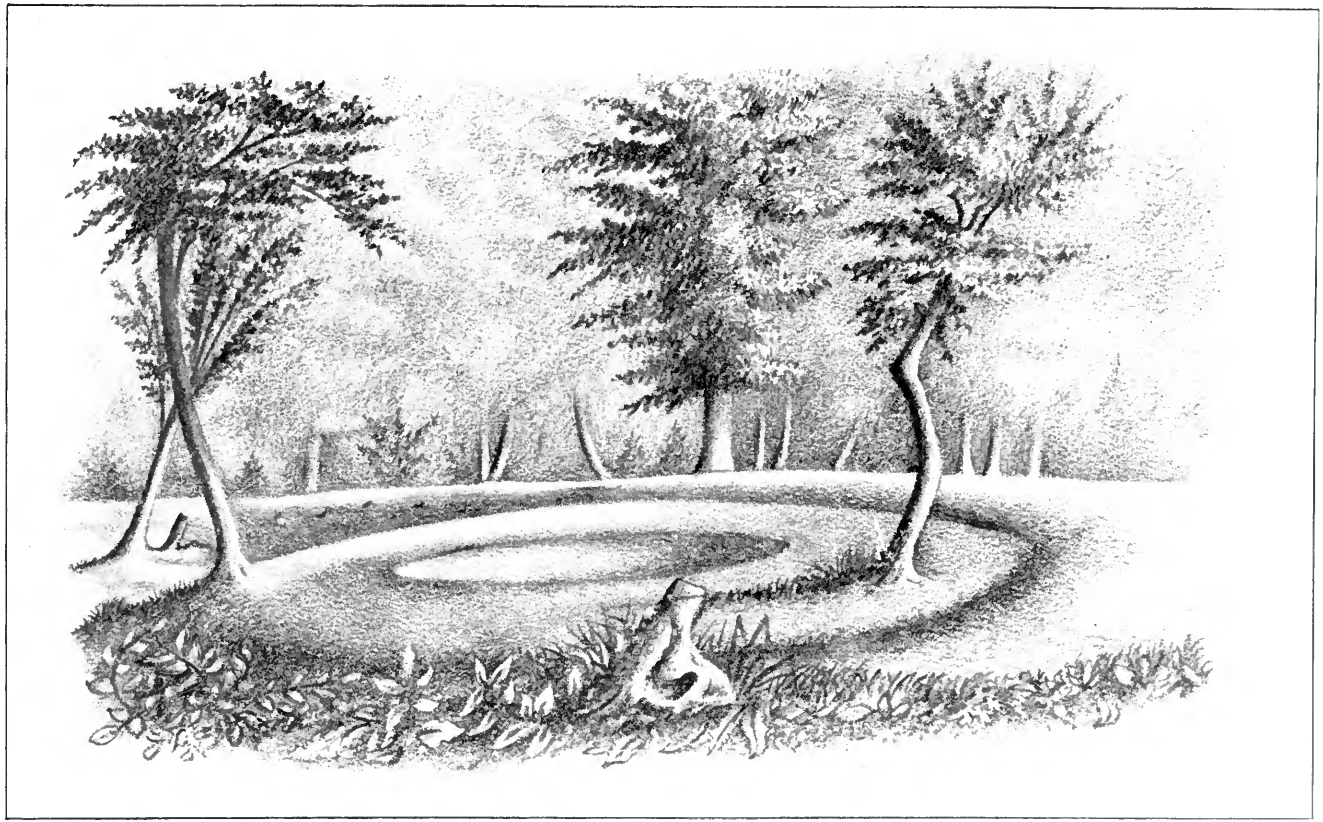


Plate 7

A low mound, on the same farm as that shown on plate 6, which is but 21 feet across. Though not large it is very symmetric. The central depression is wide and deep.

Plate 7

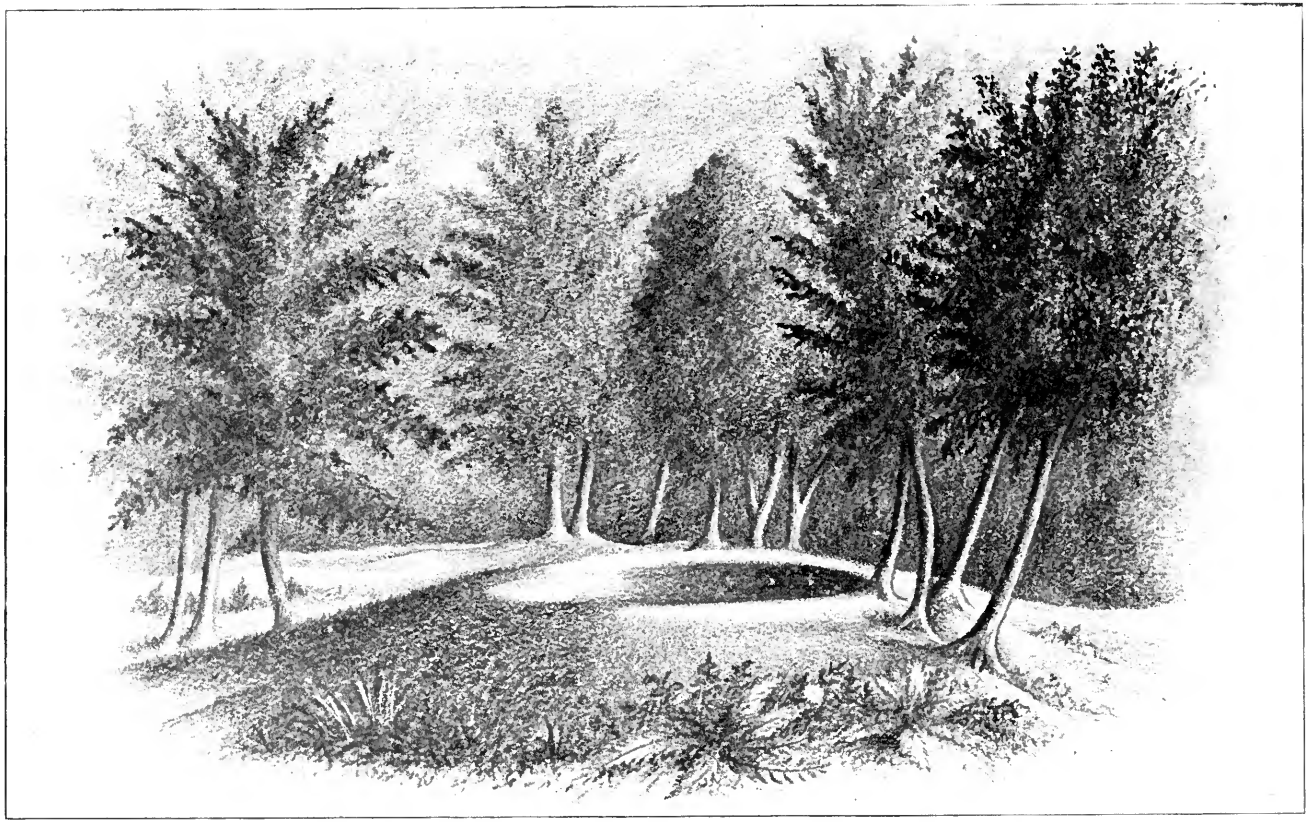


Plate 8

A fine mound on the Timmerman farm, at the base of a hill. Partly excavated in 1901. This is 33 feet wide and about 5 feet high. There are but few trees near this and it is a prominent object.

Plate 8

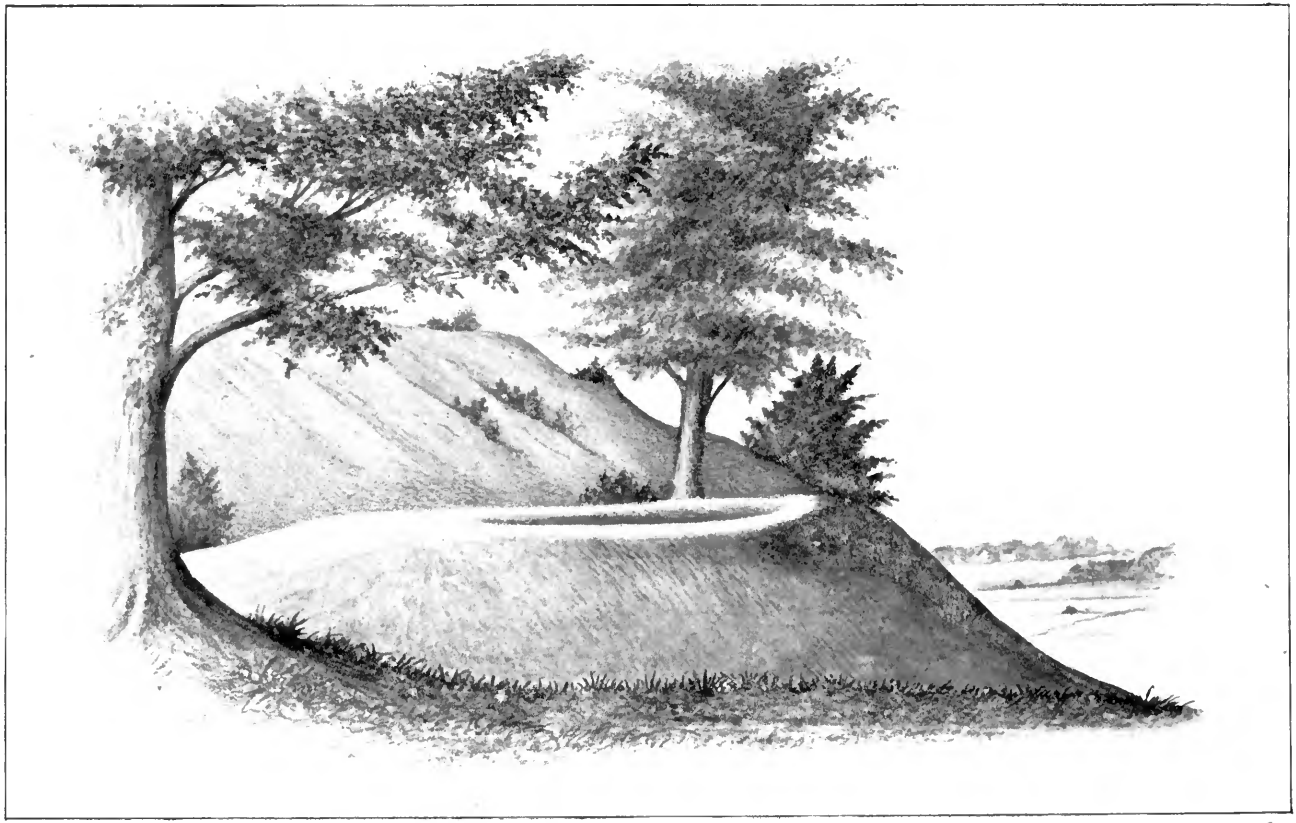


Plate 9

Mound near the ruined La Farge mansion. Another joins it at the base. It is not one of the largest size, but is in open ground on a lower terrace than the house and stands out prominently against the background of the lake. This mound has an extreme width of 34 feet.

Plate 9

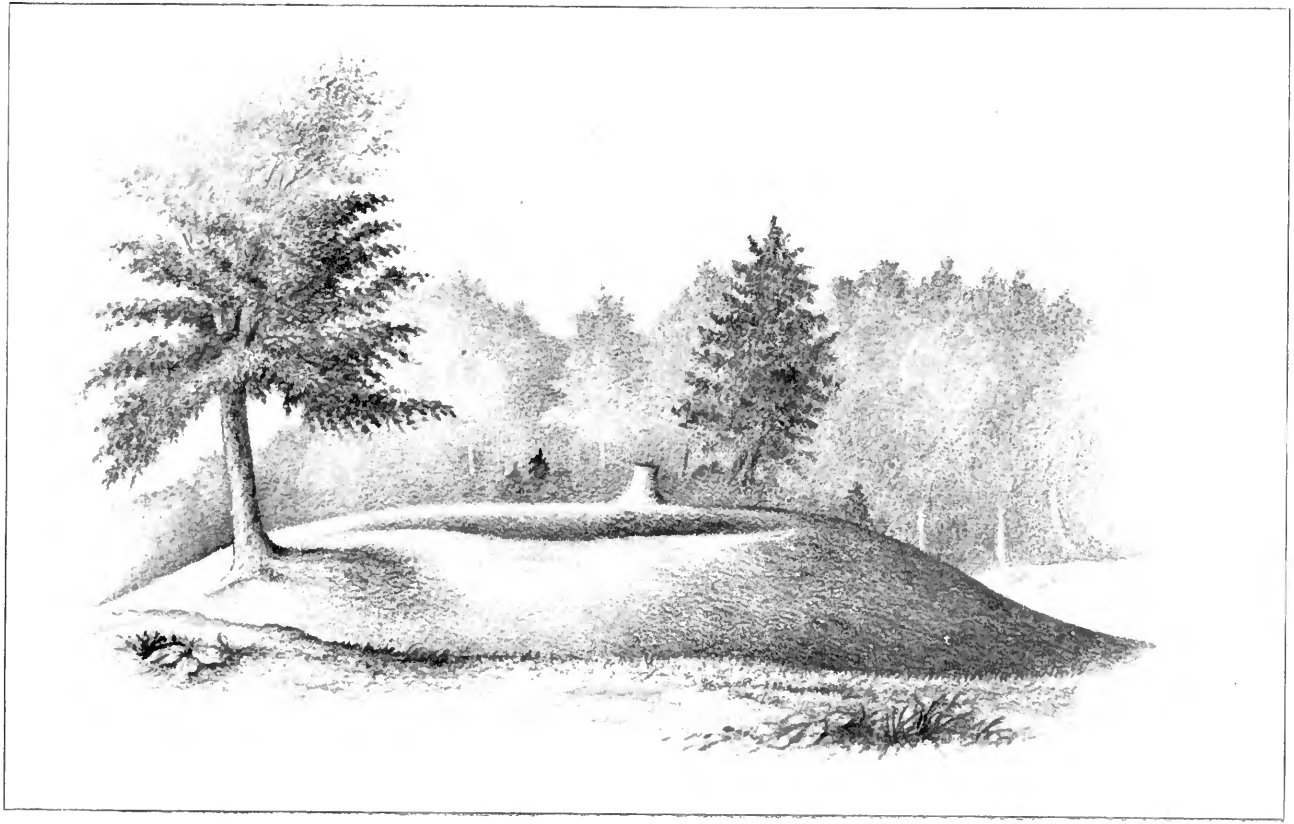


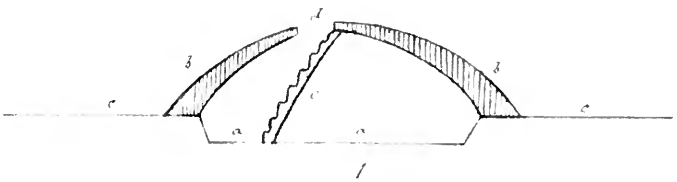
Plate 10

Figure 1 is a sketch, furnished by Harlan I. Smith, being a section of an earth hut of the Thompson River Indians, showing how mounds of this kind are sometimes formed.

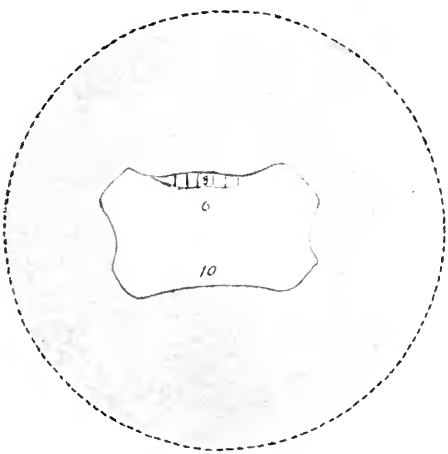
Figure 2 is a plan of a mound on the Bay of Quinté, on the north shore of Lake Ontario, and showing a central excavation.

Fig. 3 Section of a mound at the same place, showing the interior filled with stones, the covering of soil and the central depression.

Plate 10



1



2

3

Plate 11

Truncated mound excavated by Dr A. L. Benedict in 1900, on the east side of Cattaraugus creek, N. Y. The upper figure is of the recent condition and probable original form. The plan shows the position of various points of interest reached in excavating. At *A*, were animal bones; at *B*, pieces of Hamilton slate; at *C*, human bones. Mound diameter, 70 feet.

Fig. 2 A mound near the same creek and much like the last. At *A* and *H*, gravel was found; at *F*, a stone fireplace; at *B*, were human bones. There was also charred wood.

Plate 11

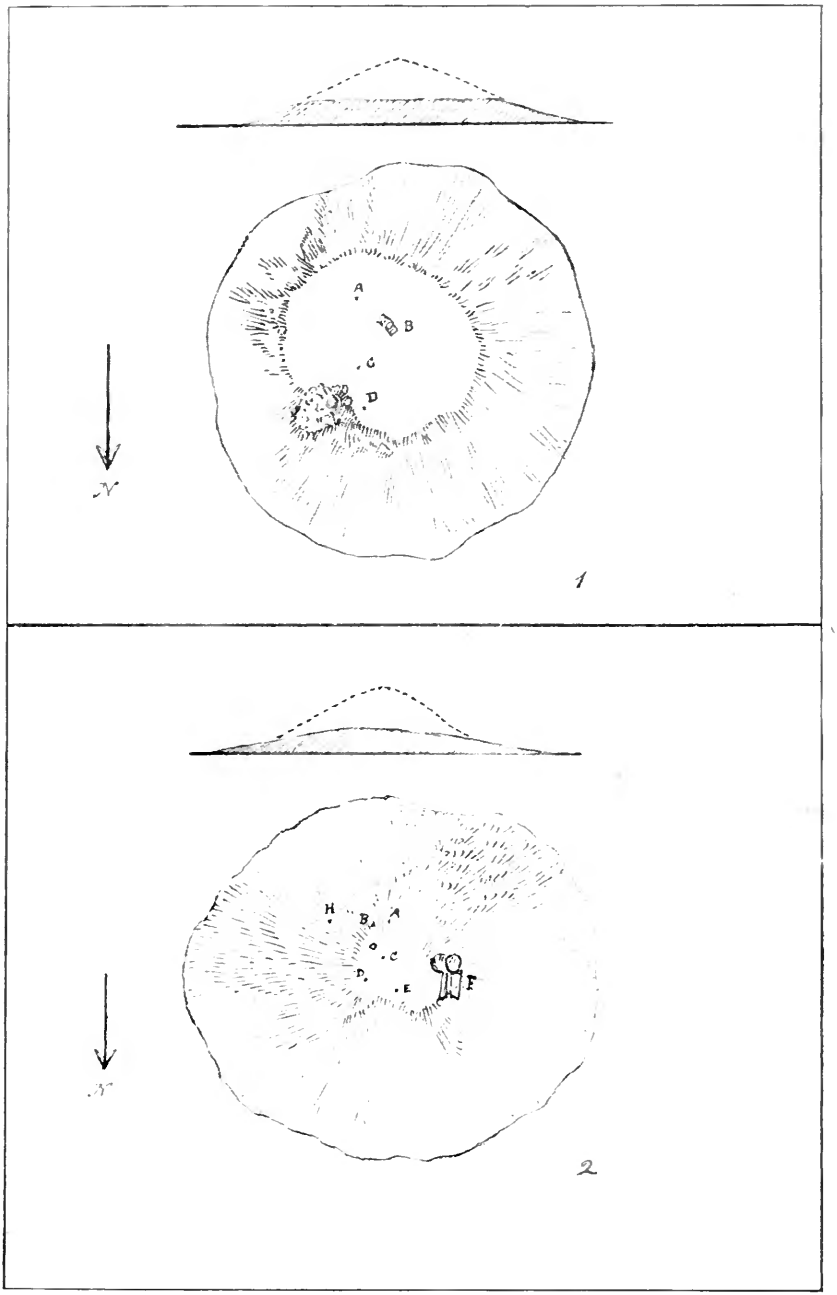
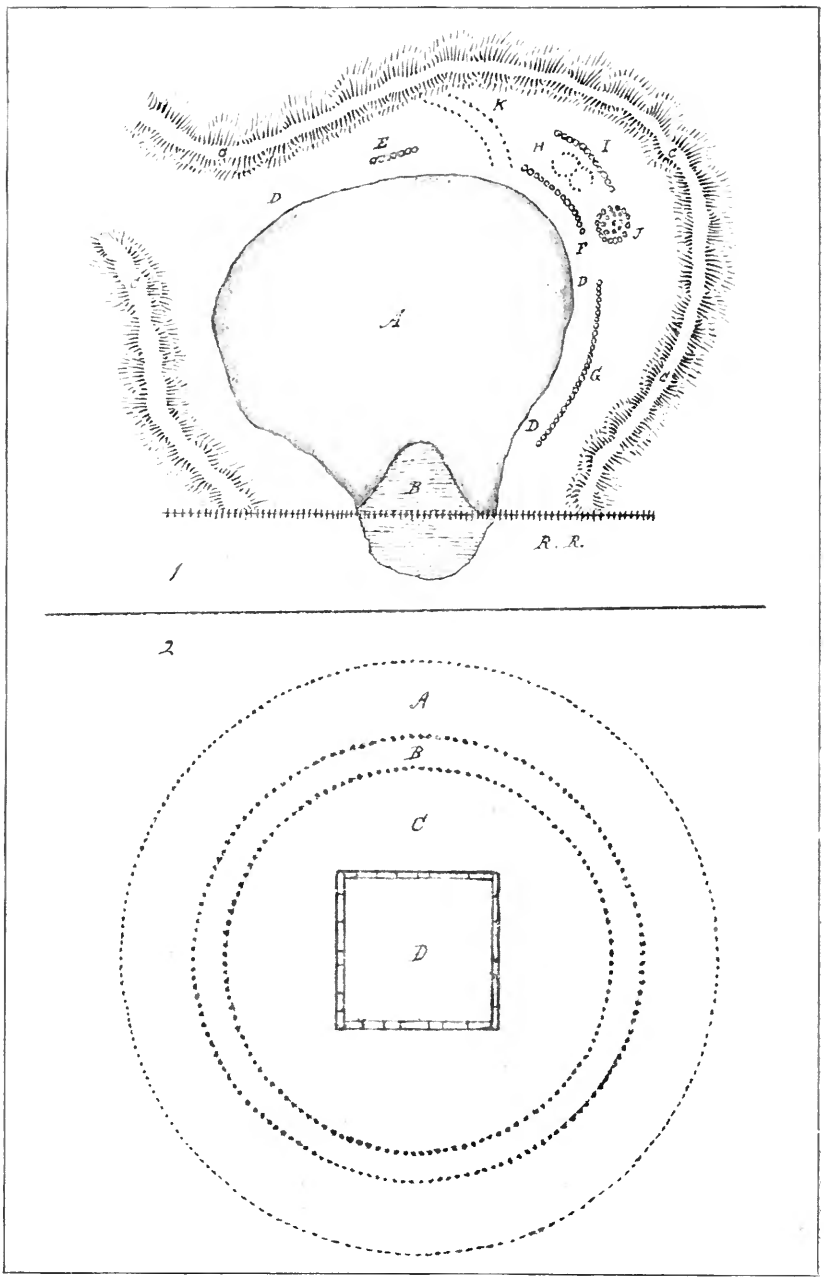


Plate 12

Supposed deer pound by a pond near Unadilla. *A*, is the pond; *C*, moraines; *D*, a road around the pond; *E*, *F*, *G*, *I*, stone walls; *H*, stone circles; *K*, a graded way.

Fig. 2 Plan of a Perch lake mound. *A*, the outer slope; *B*, the crown of the ridge; *C*, the inner slope; *D*, rectangular stone fireplace in the center. This is the ground plan of mound shown on plate 4.

Plate 12



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The superior figures tell the exact place on the page in ninths; e. g. 37^{3} means page 37 beginning in the third ninth of the page, i. e. about one third of the way down.

New York State Museum

PUBLICATIONS

Postage or express to places outside of New York State must be paid in addition to the price given. On 10 or more copies of any one publication 20% discount will be given, the buyer to pay transportation. Editions printed are only large enough to meet special claims and probable sales. When the sale copies are exhausted, the price for the few reserve copies is advanced to that charged by secondhand booksellers, in order to limit their distribution to cases of special need. Such prices are inclosed in [ ]. All publications are in paper covers, unless binding is specified.

Museum annual reports 1847–date. *All in print to 1892, 50c a volume, 75c in cloth; 1892-date, 75c, cloth.*

These reports are made up of the reports of the director, geologist, paleontologist, botanist and entomologist, and museum bulletins and memoirs, issued as advance sections of the reports.

Geologist's annual reports 1881-date. Rep'ts 1, 3-13, 17-date, O; 2, 14-16, Q.

The annual reports of the early natural history survey, 1837–41 are out of print.

Reports 1–4, 1881-84 were published only in separate form. Of the 5th report 4 pages were reprinted in the 39th museum report, and a supplement to the 6th report was included in the 40th museum report. The 7th and subsequent reports are included in the 41st and following museum reports, except that certain lithographic plates in the 11th report (1891) and 13th (1893) are omitted from the 45th and 47th museum reports.

Separate volumes of the following only are available.

Report	*Price*	*Report*	*Price*	*Report*	*Price*
12 (1892)	$.50	17	$.75	21	$.40
14	.75	18	.75	22	.40
15, 2v.	2	19	.40	23	*In press*
16	1	20	.50		

In 1898 the paleontologic work of the State was made distinct from the geologic and will hereafter be reported separately. The two departments were reunited in 1904.

Paleontologist's annual reports 1899-1903.

See fourth note under Geologist's annual reports.

Bound also with museum reports of which they form a part. Reports for 1899 and 1900 may be had for 20c each. Those for 1901–3 were issued as bulletins. In 1904 combined with geologist's report.

Entomologist's annual reports on the injurious and other insects of the State of New York 1882-date.

Reports 3–19 bound also with museum reports 40–46, 48–57 of which they form a part. Since 1898 these reports have been issued as bulletins. Reports 3–4 are out of print, other reports with prices are:

Report	*Price*	*Report*	*Price*	*Report*	*Price*
1	$.50	9	$.25	15 (En 9)	$.15
2	.30	10	.35	16 (" 10)	.25
5	.25	11	.25	17 (" 14)	.30
6	.15	12	.25	18 (" 17)	.20
7	.20	13	.10	19 (" 21)	.15
8	.25	14 (En 5)	.20	20 *In press*	

Reports 2, 8-12 may also be obtained bound separately in cloth at 25c in addition to the price given above.

Botanist's annual reports 1867-date.

Bound also with museum reports 21-date of which they form a part; the first botanist's report appeared in the 21st museum report and is numbered 21. Reports 21–24, 29, 31–41 were not published separately.

Separate reports 25–28, 30, 42–50 and 52 (Botany 3) are out of print. Report 51 may be had for 40c; 53 for 20c; 54 for 50c. Since the 55th these reports have been issued as bulletins.

Descriptions and illustrations of edible, poisonous and unwholesome fungi of New York have been published in volumes 1 and 2 of the 48th museum report and in volume 1 of the 49th, 51st, 52d, 54th and 55th reports. The descriptions and illustrations of edible and unwholesome species contained in the 49th, 51st and 52d reports have been revised and rearranged, and, combined with others more recently prepared constitute Museum memoir 4.

Museum bulletins 1887-date. O. *To advance subscribers, $2 a year or 50c a year for those of any one division:* (1) *geology, economic geology, mineralogy,* (2) *general zoology, archeology and miscellaneous,* (3) *paleontology,* (4) *botany,* (5) *entomology.*

Bulletins are also found with the annual reports of the museum as follows:

Bulletin	*Report*	*Bulletin*	*Report*	*Bulletin*	*Report*	*Bulletin*	*Report*
G 1	48, v.1	Pa 1	54, v.1	En 7–9	53, v.1	Ar 3	52, v.1
2	51, v.1	2, 3	" v.3	10	54, v.2	4	54, v.1
3	52, v.1	4	" v.4	11	" v.3	5	" v.3
4	54, v.4	5, 6	55, v.1	12, 13	" v.4	6	55, v.1
5	56, v.1	7–9	56, v.2	14	55, v.1	7	56, v.4
Eg 5, 6	48, v.1	Z 3	53, v.1	15–18	56, v.3	Ms 1, 2	" v.4
7	50, v.1	4	54, v.1	Bo 3	52, v.1		
8	53, v.1	5–7	" v.3	4	53, v.1	*Memoir*	
9	54, v.2	8	55, v.1	5	55, v.1		
10	" v.3	9	56, v.3	6	56, v.4	2	49, v.3
11	56, v.1	En 3	48, v.1	Ar 1	50, v.1	3, 4	53, v.2
M 2	" v.1	4–6	52, v.1	2	51, v.1		

The figures in parenthesis indicate the bulletin's number as a New York State Museum bulletin.

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