

## IV.

NOTICE OF A PREHISTORIC KITCHEN MIDDEN AND SUPERIMPOSED  
MEDIÆVAL STONE FLOOR FOUND AT TUSCULUM, NORTH BER-  
WICK. By JAMES E. CREE, F.S.A.Scot.

Early in the spring of last year, when walking in my vegetable garden, I noticed a few whelk and limpet shells on the top of the ground. On directing my gardener's attention to this and inquiring if any soil had been brought into the garden, he assured me that, to his knowledge, no fresh soil had been added to the original soil for at least twenty odd years. On further examining the ground, I soon found two or three potsherds of mediæval pottery, of fine texture, and having on the outer surface a rich dark-green glaze. Inquiring again from my gardener as to whether he could throw any light on the matter, I was informed that there was a strip of ground where he never could get vegetables to grow well, except in an unusually wet season. That there must be some good reason for this I felt assured, and with a view to testing the ground mentioned, I dug a small hole with a spade, and at once, at a depth of 14 inches, came upon several fairly large stones laid so as to present a level surface.

I at once determined to investigate the matter as thoroughly as possible, and started two men to work. At the point where I dug the hole, it happened, as we afterwards found out, that the stones were nearer the surface than at any other part afterwards excavated. After uncovering a considerable area, there was little doubt, from the numerous pieces of pottery and other articles found, that I had laid bare the floor of some mediæval structure (Plates I. to IV.). As we proceeded towards the south, the ground rose, and finally covered the floor with sand and soil to a depth of about 4 feet. Unfortunately, from its ruinous condition, it was impossible to determine the shape or character of the structure. Nearly the entire excavated area was covered with rough stones of varying sizes, laid without lime in the red, sandy soil, with

usually the smoothest side uppermost. Probably the greater number of these stones would not exceed 10 lbs. in weight, but there were a few that might possibly weigh as much as 150 lbs. These latter, however, were sunk deeper in the ground, and consequently did not appear above the general level. Generally speaking, the stones were laid in one single layer, but in places two or perhaps three stones had been placed one on top of another. This may possibly have been done in order to fill up inequalities in the ground.

The entire floor was not unearthened, as I considered that, as it was impossible to make out any definite detail, no useful purpose would be served by doing this. The soil, to the depth of about a foot overlying the stones, was put carefully through a half-inch riddle, and resulted in bringing to light, as shown on fig. 1, the following objects of interest:—

A thick-backed iron knife with tang (No. 2), the blade measuring  $3\frac{1}{4}$  inches, and the tang  $1\frac{1}{4}$  inch in length.

An iron staple (No. 3), squared at the close end, measuring  $5\frac{1}{2}$  inches in length,  $3\frac{1}{4}$  inches in width,  $\frac{3}{8}$  of an inch in thickness, and the width of opening  $1\frac{3}{4}$  inch. Possibly this staple may have been driven into a post in a position to receive a bar or rail.

An iron object (No. 6), possibly a candle socket with tang which could be driven into a wall. The socket measures 1 inch in width, and  $\frac{1}{2}$  an inch in depth, and the tang is  $1\frac{3}{4}$  inch in length.

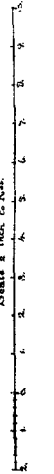
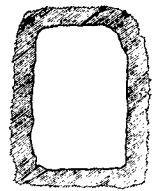
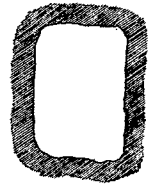
Several iron nails (Nos. 5, 8, 9, and 10).

A leaden whorl or sinker (No. 4). This measures 1 inch in diameter,  $\frac{5}{16}$  of an inch in thickness, and the diameter of the hole is  $\frac{3}{8}$  of an inch. It is flat on one side, and convex on the other.

A small strip of lead (No. 7), about  $2\frac{5}{8}$  inches in length,  $\frac{7}{16}$  of an inch in width, and  $\frac{1}{16}$  of an inch in thickness. Two small rivets have been put through one end of this.

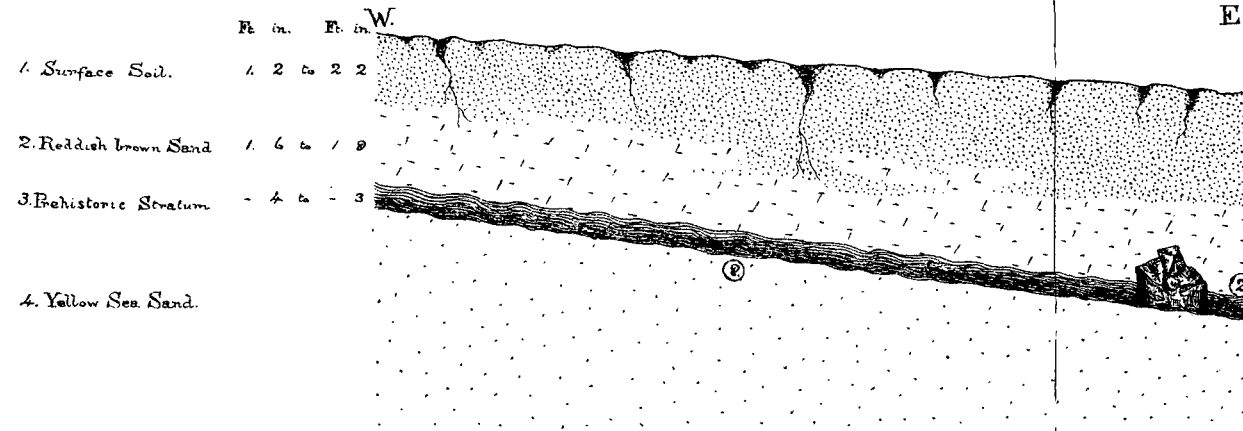
A small brass whistle (No. 1) having six ventages. This most interesting musical instrument is made out of a small piece of brass pipe. It is  $5\frac{1}{2}$  inches long, and in outside diameter, which is the same at both ends, it measures  $\frac{1}{4}$  of an inch. The mouthpiece is cut back  $\frac{3}{8}$  of an inch so as to admit of the wooden plug being inserted, and the ventages are about  $\frac{1}{2}$  an inch apart, the first one being  $2\frac{3}{16}$  inches from the mouth. Presumably this whistle has been made for a youth, as, the finger-holes being placed so closely together, it would be difficult for the fingers of an average adult to cover them with any degree of certainty.

A considerable number of potsherds were found, some of which are represented on fig. 2.

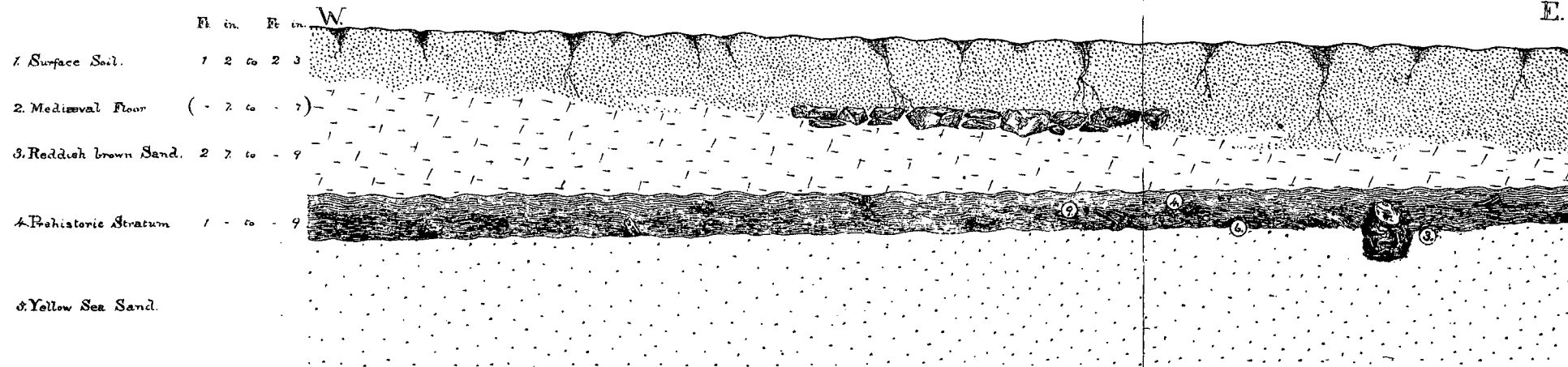


To Peg 13, 75 feet

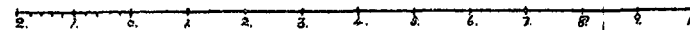
Section I.



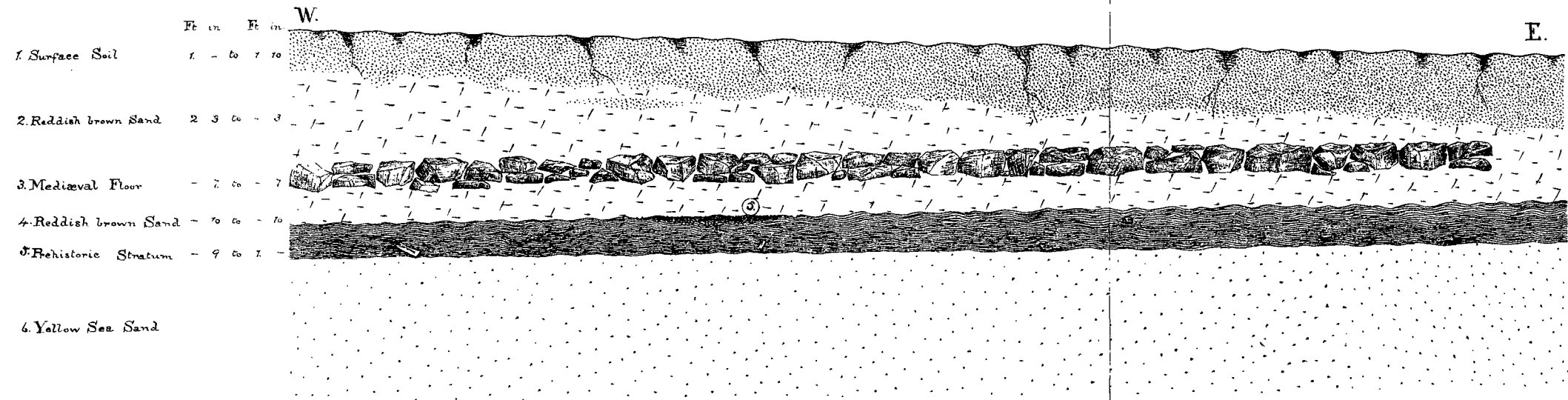
Section II.



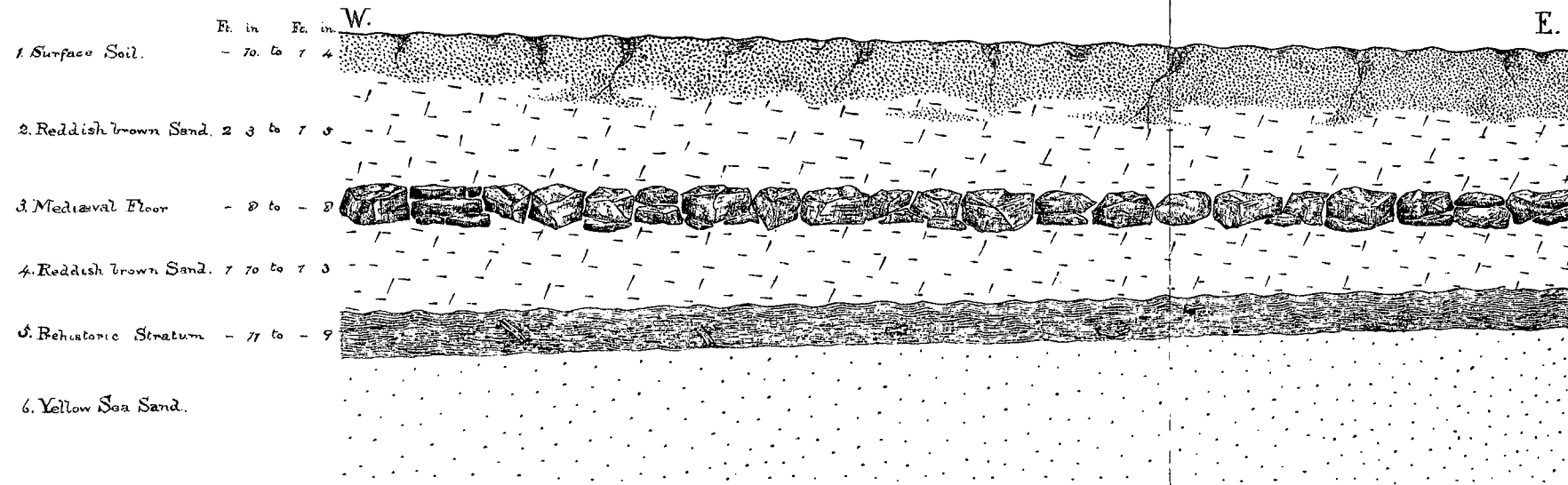
Scale 1/2 inch to Foot



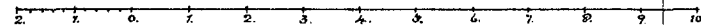
Section III.



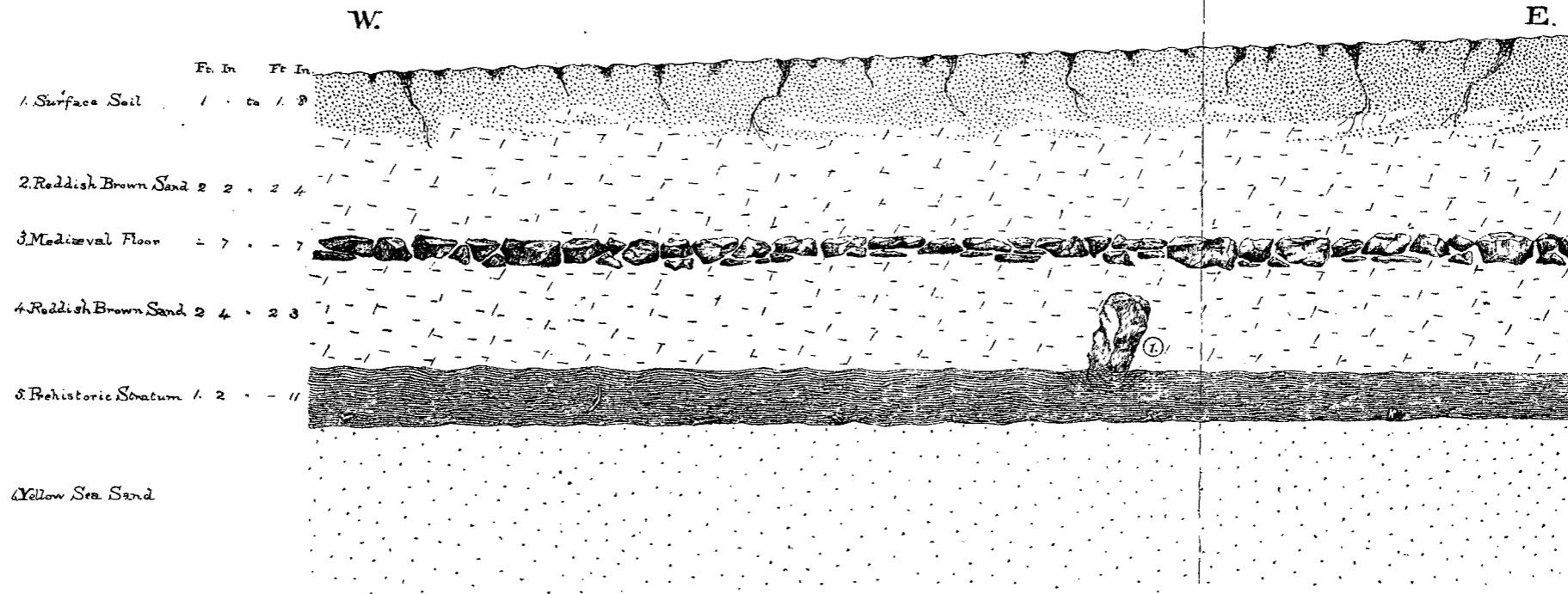
Section IV.



Scale 1/4 inch to Foot



Section V.



Scale 1/2 inch to Foot  
2. 7. 0. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10.

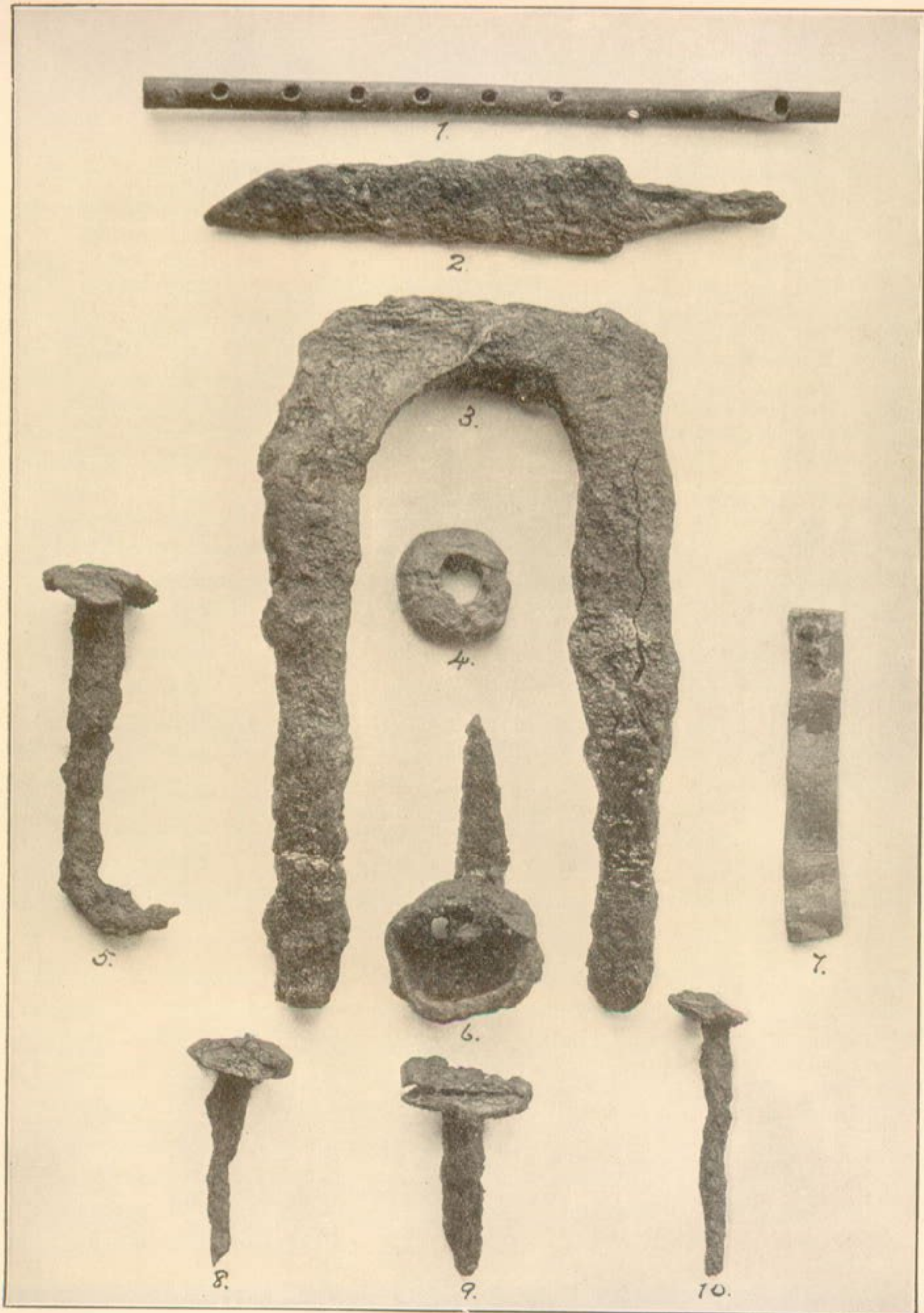


Fig. 1. Iron Implements, etc., from the Mediaeval Floor. (3.)

No. 1 is a portion of the wall of a vessel of fine texture, and is covered with a bright green glaze. It is of about  $\frac{3}{16}$  of an inch in thickness, shows white in fracture, and has two applied fillets running vertically down a portion of it. These latter are indented, giving a slightly wavy appearance.

No. 2 is also a portion of the wall of a vessel. It is slightly coarser in texture, and is unglazed. The decoration in this case consists of a vertical band, formed by repeating three indentations made by some pointed instrument, and running diagonally. The majority of the fragments were glazed on one side only, but a few were glazed on both.

No. 3 is a highly glazed fragment and is also of fine texture, and is decorated with a raised ornament. Nos. 4, 5, 6, and 7 are portions of rims of vessels, No. 5 being highly glazed, No. 6 slightly, while Nos. 4 and 7 are unglazed.

Nos. 8, 9, 10, 11, and 12 are portions of various handles which must have belonged to vessels of considerable dimensions. No. 8 is of fine texture, shows considerable decoration, and is very highly glazed. No. 12 is also of fine texture, Nos. 10 and 11 coarser, all three pieces being glazed; while No. 9 is of yet coarser texture, and is unglazed.

The only other fictilia noticed were some fragments of coarse tiles. Some of these were also glazed, but most of them were unglazed, and of a coarse texture.

A large number of animal bones, including those of the ox, sheep, and pig, were brought to light, and it was noticed that many of them had been split in order to extract the marrow.

Some bird and fish bones, and a large number of whelk and limpet shells, together with a few oyster shells, were also found. These had all, no doubt, formed part of the food-supplies of the people inhabiting this site, and were scattered over the entire surface of the floor; some even were recovered from underneath it, having evidently worked down between the stones.

Before passing on to what was undoubtedly by far the most interesting part of my excavations—the prehistoric kitchen midden—I must allude to the finding of a single stone, set up on end (marked I in Plates I. and IV.), which had been sunk down into the prehistoric stratum, and was entirely below the mediæval floor-level. The dimensions of this stone were as follows: height above prehistoric deposit, 1 foot 6 inches; thickness at top, 6 inches from north to south, by 11 inches from east to west. That this stone did not belong to the prehistoric occupation, was evident from the fact that the underlying prehistoric deposit had





Fig. 2. Pottery Fragments from the Mediæval Floor. (3.)

been disturbed by the stone having been sunk into it. But whether it can be attributed to the mediæval occupation, or was referable to a period between the prehistoric occupation and the mediæval, it is impossible to determine. For what purpose this single stone can have been placed in the position described, I am unable to say, as nothing was revealed by the most careful excavations, first on all sides, and finally below it to a depth of several feet.

#### PREHISTORIC KITCHEN MIDDEN.

Having already removed a considerable quantity of surface soil and sand, in the process of laying bare the mediæval floor just described, I determined, in view of an addition I purposed making to my house, to ascertain whether suitable building sand could be procured within a reasonable depth. Accordingly I gave instructions that a small hole should be dug at a point on the north-east side of the mediæval floor, and in a very short time my men had penetrated the prehistoric deposit, finding almost immediately at the point marked 6 on Plates I. and II. the beautiful black flint flake knife (fig. 4, No. 1) afterwards described, together with one or two tines of deer horn. The importance of this find was at once apparent, and I resolved to commence further excavations without delay. As at a later date I discovered another similar and entirely distinct deposit to the north of that originally found, and at a distance of about 30 yards from it—the latter extending below my house from one side to the other—I have, for distinctive purposes, numbered these deposits respectively Nos. 1 and 2, and I shall now proceed to give a description of No. 1.

The method I adopted in measuring the site was as follows:—Taking a compass, I ran a line due north and south for some distance over the ground I proposed to excavate. I then ran parallel and transverse lines 10 feet apart, thus forming squares of 10 feet; and numbered pegs were then inserted at the corners. These lines were afterwards extended in either direction as more ground was opened up. In this way, it was easy to keep accurate details of all objects found. A considerable

portion of the deposit was marked off in sections 3 feet square, and the "find" from each section was kept separate; but this was ultimately discontinued, as it appeared to serve no useful purpose. The whole of the deposit was put through a half-inch riddle, and the position of the principal objects found was carefully noted.

Roughly speaking, this midden covered an area of about 50 yards in length by 12 or 15 yards in width: this I ascertained by having holes dug at various points. At the south end of the excavation, where I stopped work, the deposit lay about 8 feet under the surface, and I could proceed no further, as it would have necessitated the removal of a brick wall. The deposit, except where it tapered off to nothing at the edges, was principally from about 10 to 12 inches in thickness, and from this it may be judged that the occupants of the site must have been fairly numerous, and the place occupied for a considerable period.

One of the most important, and at the same time interesting, discoveries made during the whole course of the excavations, was the finding of two small pillars, marked 2 and 3 on Plates I. and II., at a point not far from the edge of the deposit at the north-east end. Both of these pillars were built of small, irregular stones laid in yellowish clay. The base of pillar 2 was on a level with the bottom of the prehistoric deposit, and was placed on the yellow sand. It was about 14 inches in height, 15 inches in width at the top, from west to east, and 9 inches in width from north to south, and it extended about 4 inches above the top of the deposit. At a distance of 7 feet to the south-east the pillar marked 3 was found. This pillar was perhaps more regularly formed than the one already described, and was more cylindrical in shape. Its base had been sunk 8 inches below the bottom of the deposit, and the pillar was entirely covered by it to a depth of about 4 inches. This pillar was 1 foot in height, 1 foot in width at the top from east to west, and 9 inches in width from north to south, and the top of it was formed of half a water-worn stone, having the flat side uppermost. Embedded in the clay, of which this pillar was partially composed, were several fragments of pottery, which I shall describe

later. That these pillars were at least coeval with the deposit is, I think, certain. There was no indication of the deposit having been disturbed, and this would inevitably have been the case had they belonged to a later period, and been sunk down through it. For what purpose these pillars can have been built it is impossible to say, but that they may have had some relation to a dwelling is not improbable.

It is worthy of note, that within a few feet to the westward of these two pillars by far the largest number of bones, and nearly all the pieces of deer horn, were found, at the spot marked 4 in Plates I. and II. A stone axe-like implement, at the spot marked 8 in Plates I. and II., and illustrated in fig. 5, No. 1, and the flint knife already mentioned, were obtained from the same side, the former at a distance of 7 feet 10 inches from pillar 2, and the latter at a distance of 3 feet 3 inches from pillar 3. Only one well-defined hearth was noticed, at the spot marked 5 in Plates I. and III.; but as this was situated on the top of the deposit, it would seem to have been in use only towards the latter part of the occupation. Throughout the deposit, however, fragments of charcoal occurred in more or less abundance.

Of the vegetable kingdom, but few examples had withstood the ravages of time. Two small pieces of the bark of the Scotch fir (*Pinus sylvestris*, L.) were, however, found (fig. 3, No. 3), and two portions of the outside shell of the horse-chestnut (*Æsculus Hippocastanum*, L.) (fig. 3, Nos. 1 and 2). The latter were found west and south-west of pillar 3 (Plates I. and II.) and about 10 feet apart, and they are probably of exceptional interest. That they came out of the prehistoric deposit there can be no doubt; but whether they had, at some more or less remote period, been carried down by some rodent, it is of course impossible to say. I no doubt came across one or two old rabbit-holes which had penetrated the prehistoric deposit, but there was no evidence of any hole having existed at or near the point where the pieces of chestnut shell were discovered; and unless one were to attribute the portions of bark to the same agency, there is no good ground for supposing that the presence of one was due to rodents, while the other had lain in the

deposit since the Prehistoric Age. It is true that the chestnut has never been considered a native of this country, but it is worthy of note that General Pitt Rivers mentions the finding of fragments of the wood of the edible chestnut (*Castanea vulgaris*, Lam.) in his excavations at Woodcuts.<sup>1</sup>

At Rotherley (vol. ii. p. 229) he also came across fragments of the

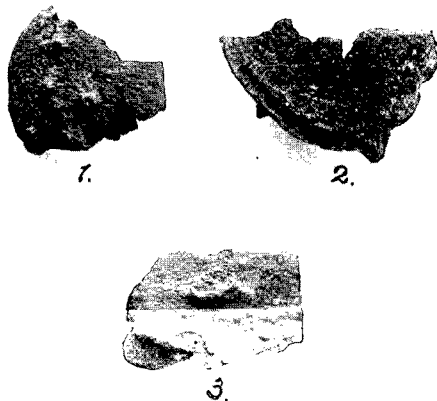


Fig. 3. Remains of Horse-Chestnut and Scotch Fir from the Prehistoric Midden No. 1. (†.)

same wood in three pits, and he remarks with regard to the latter find, that "the fact of its being pretty evenly distributed in Rotherley shows

<sup>1</sup> Vol. i. p. 177. The presence of the chestnut is noteworthy. This tree has not generally been thought to be indigenous to the soil of England. Professor Carruthers, however, informs me that he has of late been led to doubt this, and its presence amongst the ancient woods identified in Woodcuts appears to confirm the doubt. On the other hand, all the specimens of this wood submitted to him were found to come from the north-west quarter, which, as already seen, was prolific in relics of Roman workmanship, no specimens of it having been found in any other part of the village; and it is just possible that the chestnut may have been introduced in objects of furniture, boxes, or other articles of Roman origin, used by the inhabitants of this rich quarter of the village.

that it was in all probability indigenous at the time, thereby throwing light on a disputed question."

I am much indebted to Professor Bayley Balfour, and Mr H. F. Tagg, Royal Botanic Garden, Edinburgh, for the annexed Report kindly given me on the subject.

REPORT upon Material found in an Early Bronze Age Deposit  
at North Berwick.

REGIUS KEEPER,—I have to report that I have examined the material submitted by Mr James E. Cree from the Early Bronze Age deposits investigated by him at Tusculum, North Berwick. I have identified the following:—

1. Portion of the fruit-capsule of the horse-chestnut, *Æsculus Hippocastanum*, L.
2. Piece of bark-scale of Scots pine, *Pinus sylvestris*, L.
3. Roots of ivy, *Hedera Helix*, L.
4. Piece of lignite.

*Remarks.*—I have no hesitation in referring the piece of fruit-capsule to the horse-chestnut. This tree is not considered indigenous, and the discovery of a portion of the fruit of the tree in such a situation is certainly remarkable. Greece is generally regarded as the native country of the horse-chestnut, and the earliest records of its introduction into Western Europe do not go further back than the seventeenth century, when it is said to have been introduced into France. Its introduction into Britain is considered to have taken place about the same time.

The Scots pine has always been considered indigenous, and the finding of the piece of bark-scale of this tree is not therefore so remarkable.

The nature of the lignite unfortunately cannot be given. A portion of the specimen was submitted to Mr Gordon, of the Geological Department of the University of Edinburgh, who was good enough to prepare sections of the materials for me. It was then found that the lignite possessed no structure that would enable one to identify the nature of the wood.

The roots of ivy run through pieces of sand-encrusted lime, which in most cases are roughly cylindrical in shape. The roots form a core to the balls of lime, and several pieces of lime are thus strung together on the longer roots. Surrounding the roots, and not easily distinguished from the lime with which it is mixed, is a dark-coloured earth. This core of darker-coloured earth penetrated by the roots of ivy and running through the nodules of lime, Mr Cree suggested might be an old and somewhat disintegrated tree-root, possibly the root of an *Æsculus*. I find that, by carefully dissolving the lime with weak acid and allowing the sand to settle, the roots of ivy may be separated from their inorganic surroundings. After this is done there still exists, surrounding the ivy roots, which are copiously but shortly branched, a dark-coloured flocculent matrix, which is made up of disintegrated tissues of a vegetable nature, portions of tracheids and other vegetable cells being distinctly recognisable when the substance is examined under the microscope.

The ivy roots, as the presence of mycorrhiza with characteristic fungus mycelium clearly shows, have been feeding upon this vegetable substance. This vegetable matrix is the darker-coloured earth above referred to as surrounding the ivy roots, but it is so completely disorganised, largely as a result, no doubt, of the activity of the ivy mycorrhiza, that it is quite impossible to hazard an opinion as to the original nature of the structure, whether root or stem, or what description of plant the structure formed part of.

All one can say is that it was some vegetable structure, and that the ivy roots have followed the lines of its distribution through the lime nodules.

HARRY F. TAGG.

21st February 1908.

Turning now to the stone (including flint) articles found, I shall divide these into three classes: (1) flints fashioned; (2) stones fashioned, and (3) stones unfashioned, but having been used as pounders, etc.

(1) The flints form an interesting group, and are all illustrated in fig. 4. I have already mentioned the finding, at an early stage, of a flint knife, No. 1. This is made of a flake of black flint, and is  $2\frac{3}{16}$  inches in length, by  $\frac{1}{8}$  of an inch in breadth, curved longitudinally, and worked round both sides of the upper surface.

No. 2 is a flake leaf-shaped scraper of black flint,  $1\frac{1}{4}$  inch in length, by  $\frac{1}{8}$  of an inch in breadth. It is also trimmed on both sides of upper surface.

No. 3 may also be called leaf-shaped, but it is only trimmed on one side of the upper surface. It is of greyish flint, and measures  $1\frac{5}{8}$  inch in length, by  $\frac{2}{3}$  of an inch in breadth.

No. 4 appears to have been a knife, and is also of grey flint. It has been fractured longitudinally, and is trimmed from the point of fracture round the entire side of the upper surface. It measures  $1\frac{5}{8}$  inch in length.

Nos. 2, 3, and 4 all show the original crust of the flint of which they were made.

No. 5 is a small discoidal scraper of grey flint, which measures about 1 inch in diameter.

No. 8 is a reddish flint flake, measuring  $1\frac{1}{16}$  of an inch in length, by  $\frac{1}{2}$  an inch in breadth, and it is trimmed also, on one side only of the upper surface.

No. 10 is a small scraper of whitish flint, which appears to have been much weathered. It measures  $\frac{1}{16}$  of an inch in length, by  $\frac{9}{16}$  of an inch in breadth, and has been only trimmed at the broad end.

Nos. 6, 7, 9, and 11 are all fragmentary, and show trimming on one side only.

No. 12 is of grey flint, and is of extremely rude workmanship. It measures  $1\frac{7}{16}$  inch in length, by  $1\frac{1}{16}$  inch in breadth, and was found at the spot marked 7 in Plate I.

One small burnt flint, No. 13, was obtained.

Before proceeding to the second class mentioned, I must not omit to record the finding of a core of red flint, No. 14. This, however, was found in the red sand, about 15 inches above the prehistoric deposit, and may therefore be referable to a later period.

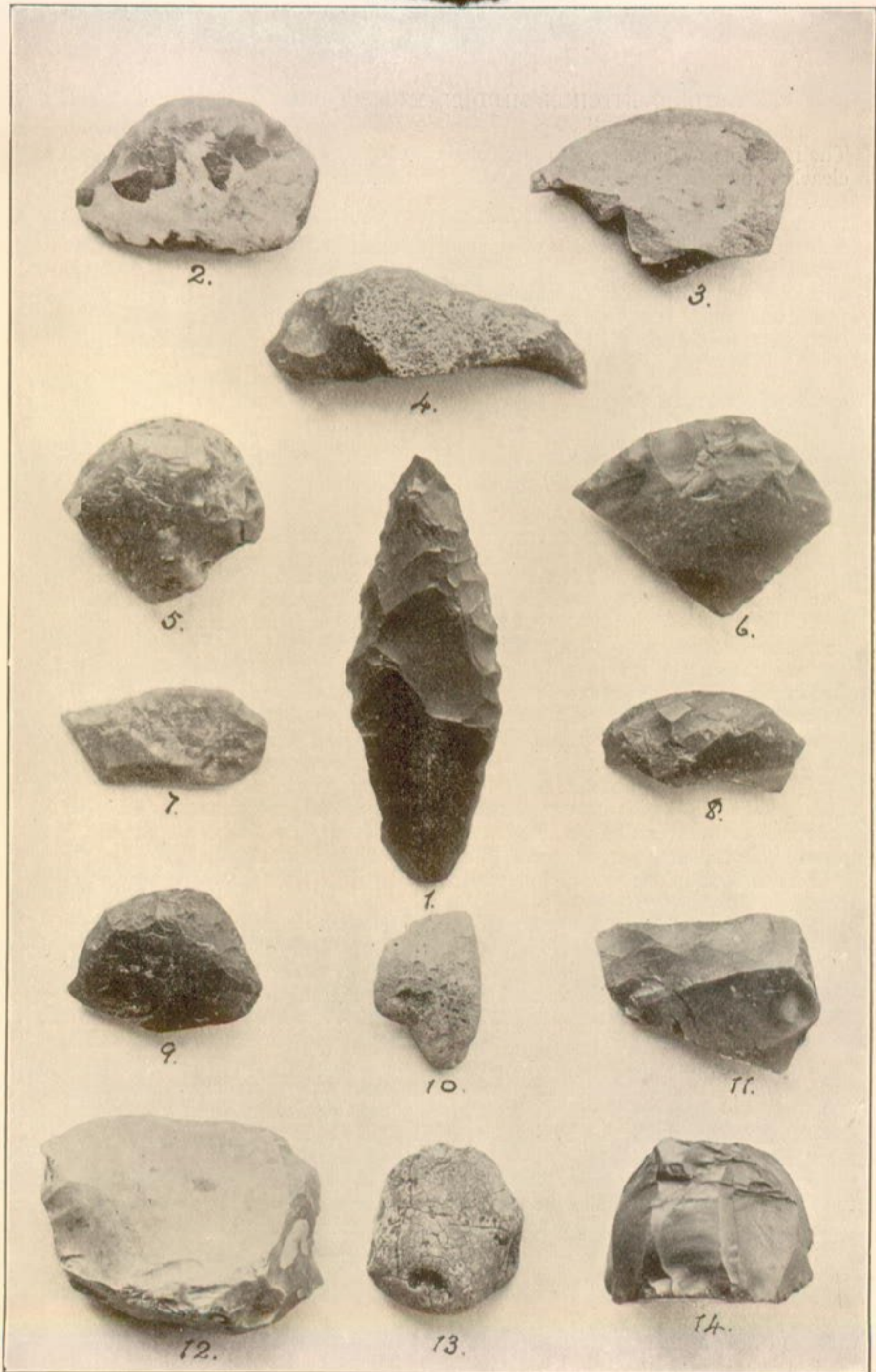


Fig. 4. Flint Implements from the Prehistoric Midden No. 1. (†.)



(2) Implements of stone found were comparatively few, and consist of the following:—

A stone axe-like implement of greywacke (see fig. 5, No. 1), which was found at the spot marked 8 in Plates I. and II., measures  $3\frac{1}{8}$  inches in length, by  $2\frac{3}{8}$  inches in breadth at the broad end, and is worked from both sides into a cutting edge.

A fragment of a water-worn stone (fig. 5, No. 2) is flat on one side and rounded on the other. It measures  $2\frac{1}{8}$  inches in length, by  $2\frac{1}{16}$  inches in breadth, and shows battering at the end.

No. 4, fig. 5, is the half of a water-worn stone, and measures  $2\frac{1}{4}$  inches in length, by  $2\frac{3}{8}$  inches in breadth. This stone has on one side a slight irregularly shaped depression, formed by a series of indentations made by some pointed instrument. It also shows battering at the end.

(3) Five stones which have served the purpose of pounders were brought to light. These are merely small, naturally shaped, water-worn, irregular stones, and are of convenient size to hold in the hand, and are shown in fig. 6.

No. 1 is of greenish granite, and measures  $3\frac{3}{8}$  inches in length, by  $3\frac{1}{16}$  inches in breadth. It is flat on one side and rounded on the other, and has been considerably used, as it shows much battering on its periphery.

Nos. 3 and 4 are fragments, both showing a series of small indentations on one surface.

No. 5 is a nearly circular piece of sandstone, about  $5\frac{1}{2}$  inches in circumference, which has been so much used on all faces that nearly all the original natural smooth surface has been battered away.

No. 6 is a longish, irregularly shaped stone, measuring  $3\frac{5}{8}$  inches in length, by  $1\frac{3}{4}$  inch in breadth. It has been much used on all sides as a pounder.

Only four fashioned bones were obtained.

No. 1, fig. 7, is an implement  $2\frac{1}{2}$  inches in length,  $1\frac{1}{8}$  inch in breadth at the broad end, and about  $\frac{1}{2}$  an inch in breadth at the narrow end. It has been made from a bone split longitudinally, and is smoothed at the small end, from the outside towards the inside. A portion of one of the sides also shows signs of having been smoothed.

No. 2 is an implement measuring  $1\frac{3}{4}$  inch in length, and  $\frac{7}{8}$  of an inch in breadth. It has been cut or rubbed down from the inside towards the outside to a rounded, sharp edge.

Nos. 3 and 4 are the pointed ends of bone pins. The former measures  $1\frac{1}{4}$  inch in length, and about  $\frac{3}{8}$  of an inch in breadth at the broad end; and the latter measures  $\frac{1}{8}$  of an inch in length, by  $\frac{1}{8}$  of an inch in breadth at the broad end.

I now come to the unfashioned animal and bird bones found. Numbers of these were in a somewhat fragile condition, requiring very careful handling and immersion in a weak solution of glue, in order to preserve them. The presence of numbers of the smaller bones in the deposit was merely indicated by a whitish powder, and it is more than

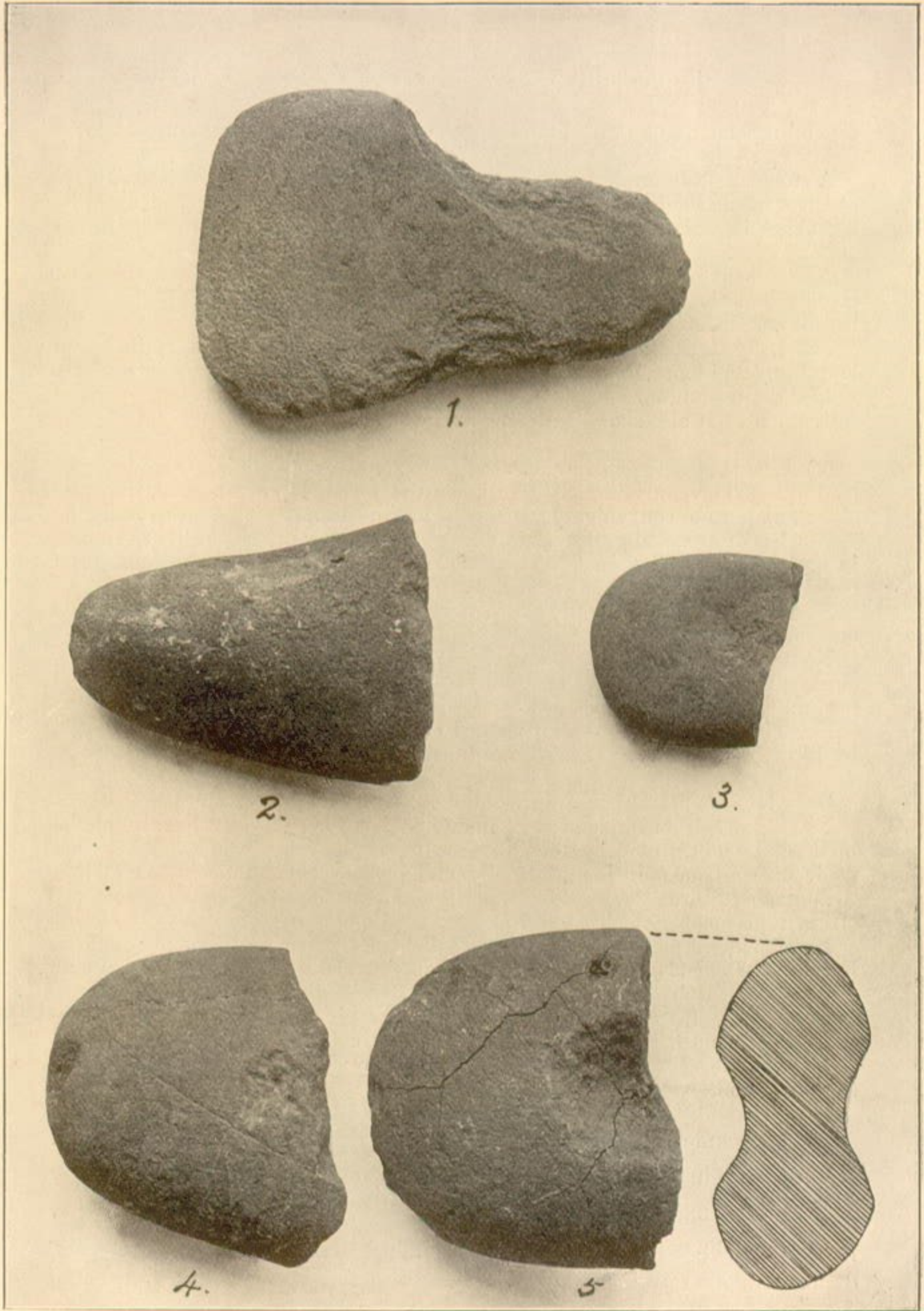


Fig. 5. Implements of Stone from the Prehistoric Middens Nos. 1 and 2. (3.)

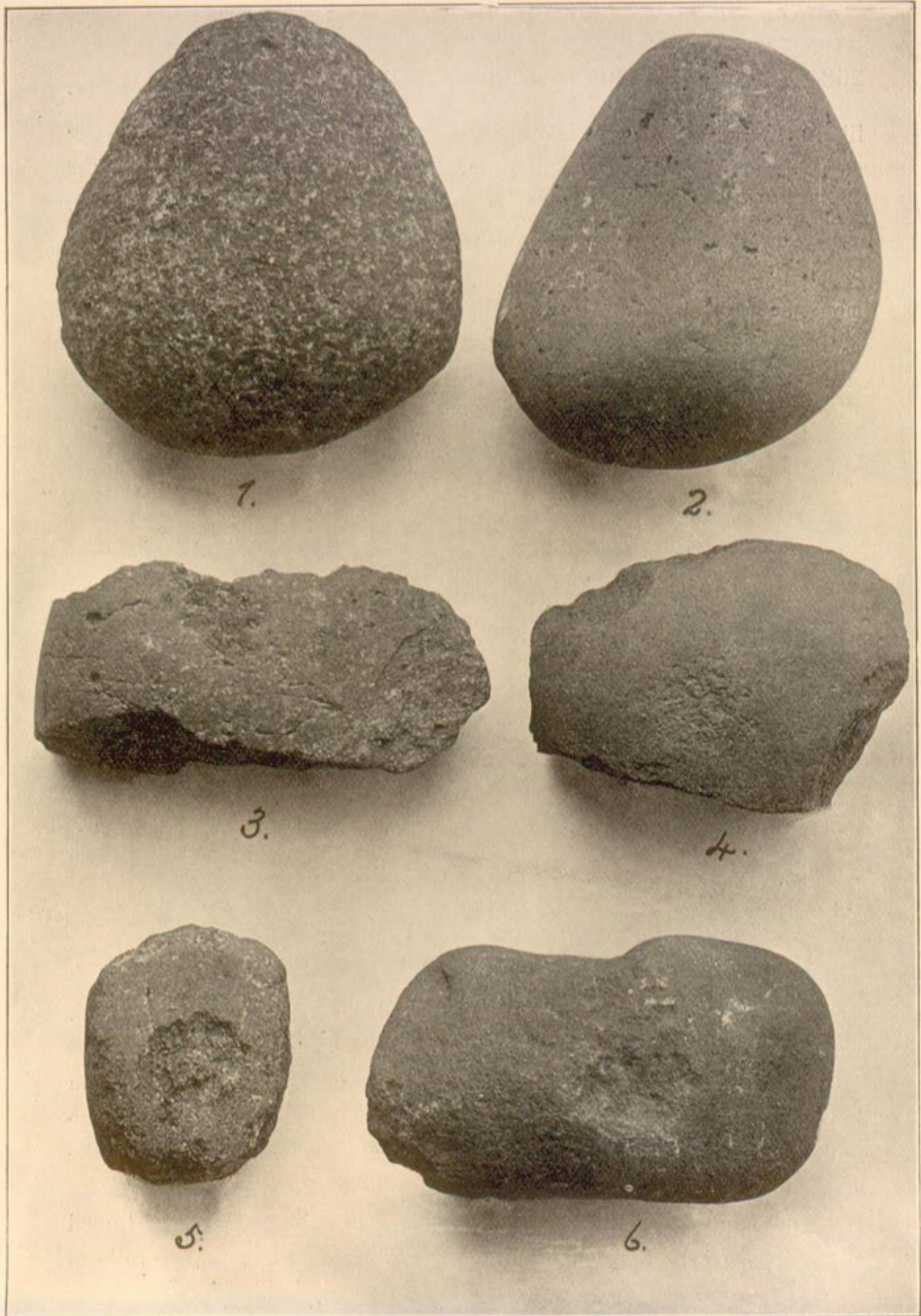


Fig. 6. Stone Pounders from the Prehistoric Middens Nos. 1 and 2. (3.)

likely that large quantities had disappeared entirely. Most of the larger bones had been split in order to extract the marrow, and some showed unmistakable signs of burning. The bones of domestic animals, together with those of the red deer and roe-deer, were represented. Of the horns of the roe-deer I have only been able to identify two small portions, but several tines and other portions of the red deer were found. Still adhering to pieces of the skulls are the bases of two antlers, which

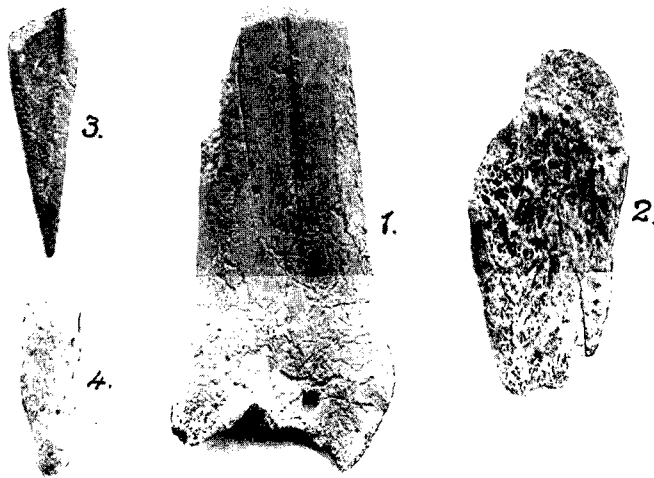


Fig. 7. Bone Implements from the Prehistoric Midden No. 1. (†.)

evidently, from their dimensions, have not belonged to the same animal. These antlers appear to have been cut or sawn across, about 2 inches above the skull, and the branches would no doubt be utilised to form tools or implements. Presumably these animals had been killed in the chase, and the carcasses brought home to form a welcome addition to the food-supplies.

Shell-fish appear, however, to have been the principal food consumed by the people who inhabited this site. This is only as might have been

expected, as, owing to the close proximity of the sea—about 250 yards—unlimited quantities of whelks and other shell-fish could be easily and constantly procured.

Large numbers of whelks, limpets, and other marine shells, including a few oyster shells, were found everywhere throughout the deposit; and portions of crabs' claws and a few fish bones were likewise brought to light. Shells of the whelks largely predominated, and the limpet was evidently by no means despised. It was noticeable that none of the shells found were too small for the molluscs to be worthless from the standpoint of providing food, and a few of the whelk shells were of a very large size, only now, I believe, to be equalled in the Orkney and Shetland Islands. I previously mentioned that a portion of the deposit was marked off into sections 3 feet square. Forty-six sections were so measured off, covering an area of about 24 feet by 18 feet. This was at the south-east end of the excavation, and although it proved far less prolific in prehistoric remains of all kinds than the southern portion, yet some idea may be gathered of the numbers of whelk, limpet, and land-snail shells scattered throughout the deposit, from the figures which I have summarised as follows:—The total numbers of whelk, limpet, and land-snail shells counted in the area given were respectively 6269, 1630, and 1208, or, roughly, in the proportion of four whelks to every limpet, and five whelks to every land snail. Bearing in mind the difficulty with which land snails would be collected, their number, which is not far short of the limpet, is remarkable. Is it possible that they also were accepted as an article of food?

I am indebted to Mr Eagle Clarke, of the Royal Scottish Museum, Edinburgh, for the following complete list of the shells found in excavating this midden:—

<i>Helix nemoralis.</i>	<i>Buccinum undatum.</i>
<i>Patella vulgata.</i>	<i>Littorina litorea.</i>
<i>Littorina obtusata.</i>	<i>Purpura lapillus.</i>
<i>Ostrea edulis.</i>	<i>Turritella terebra.</i>
<i>Cardium edule.</i>	<i>Tapes palustra.</i>
<i>Pecten puso.</i>	<i>Modiola modiolus.</i>
<i>Cyprina islandica.</i>	

I shall now describe the fictile remains, of which a large number were found. Altogether there are 734 pieces. None of these, however, are of large dimensions, but I have fortunately been able to put together fragments of one side of a vessel from rim to near the base (fig. 8), which

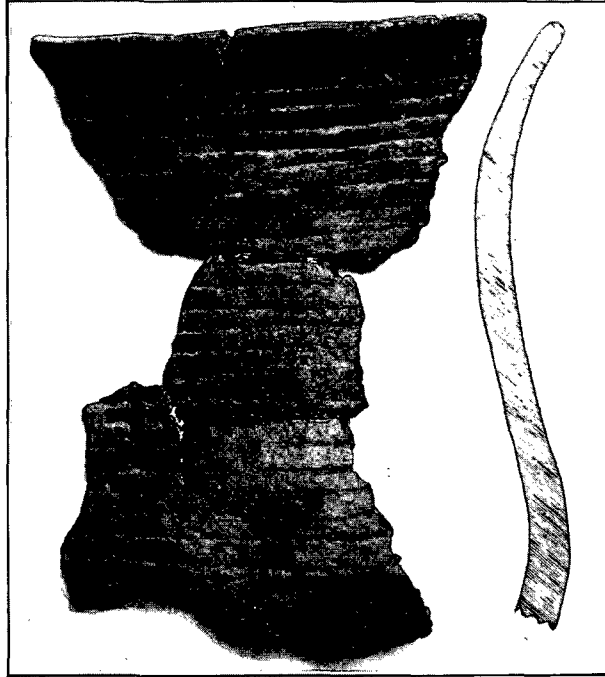


Fig. 8. Portion of the side of a beaker-shaped Vessel reconstructed. ( $\frac{3}{8}$ .)

is sufficient to convey an idea of its shape and size. These fragments were found, as I have already indicated, embedded in the clay which had been used in the building of the pillar marked 3 in Plates I. and II. Whether these fragments were fortuitous, or had been purposely placed in the clay with a view, perhaps, of binding it more closely together, it is impossible to determine.

The vessel appears to have been of graceful form, bulging slightly at

the middle, contracted towards the neck, and having a slightly everted rim. The inside diameter at the rim appears to be about  $6\frac{3}{8}$  inches, and the thickness at that point is only  $\frac{5}{32}$  of an inch. The vessel is of a dark-brown colour, is of fine texture, and appears to have been well and evenly fired. A black, sooty incrustation still adheres to portions of the inside. The pattern is a simple impressed cord device, which extends in horizontal lines from close to the rim to  $3\frac{1}{4}$  inches down, leaving apparently a plain band beneath, before the base is reached. Unfortunately, none of the bottom of this vessel was found. By far the largest number of fragments of pottery were decorated with horizontal impressions of a twisted cord, and these fragments were all of fine texture and of no great thickness. I shall not attempt to estimate the number of vessels which the numerous fragments discovered would imply, but I will detail portions of some of the rims found, showing various decorations, thicknesses, and shapes, which necessarily must have belonged to distinct vessels. I have taken the thickness of all rims at a point about half an inch from the top.

Commencing with the rims that appear to be straight in section, all the fragments shown on fig. 9 are decorated with the impressed cord device. No. 2, however, has in addition short diagonal lines made by either the fingernail or by a pointed stick. These extend from near the top to where the twisted-cord pattern commences, about  $\frac{1}{4}$  of an inch down. The decorations of the various pieces commence from  $\frac{3}{32}$  of an inch from the top, in the case of No. 3, to  $\frac{5}{8}$  of an inch in the case of No. 10, and the pieces vary in thickness from  $\frac{3}{16}$  of an inch in Nos. 4 and 6, to  $\frac{5}{16}$  of an inch in No. 2.

On fig. 10 a number of portions of rims are shown, all somewhat thicker than those last described.

No. 1 is brown in colour, of fine texture, and measures about  $\frac{3}{8}$  of an inch in thickness. The design commences at about  $\frac{1}{2}$  of an inch from the top, and consists of two horizontal lines close together, below which is a reticulated band about  $\frac{2}{3}$  of an inch in depth. Underneath this is another horizontal line, followed by another,  $\frac{1}{4}$  of an inch further down. These horizontal lines seem to have been made by a notched instrument, the marks of which have been almost obliterated, possibly by a pointed instrument having subsequently been run over them.

No. 2 is a small fragment with the impressed cord design.

No. 3 measures  $\frac{5}{16}$  of an inch in thickness, is of a more friable paste, and is of yellowish colour. The design consists of shallow horizontal impressions made by a notched instrument.

The lips of Nos. 3, 6, and 8, it will be noticed, are bevelled away from the inside towards the outside.

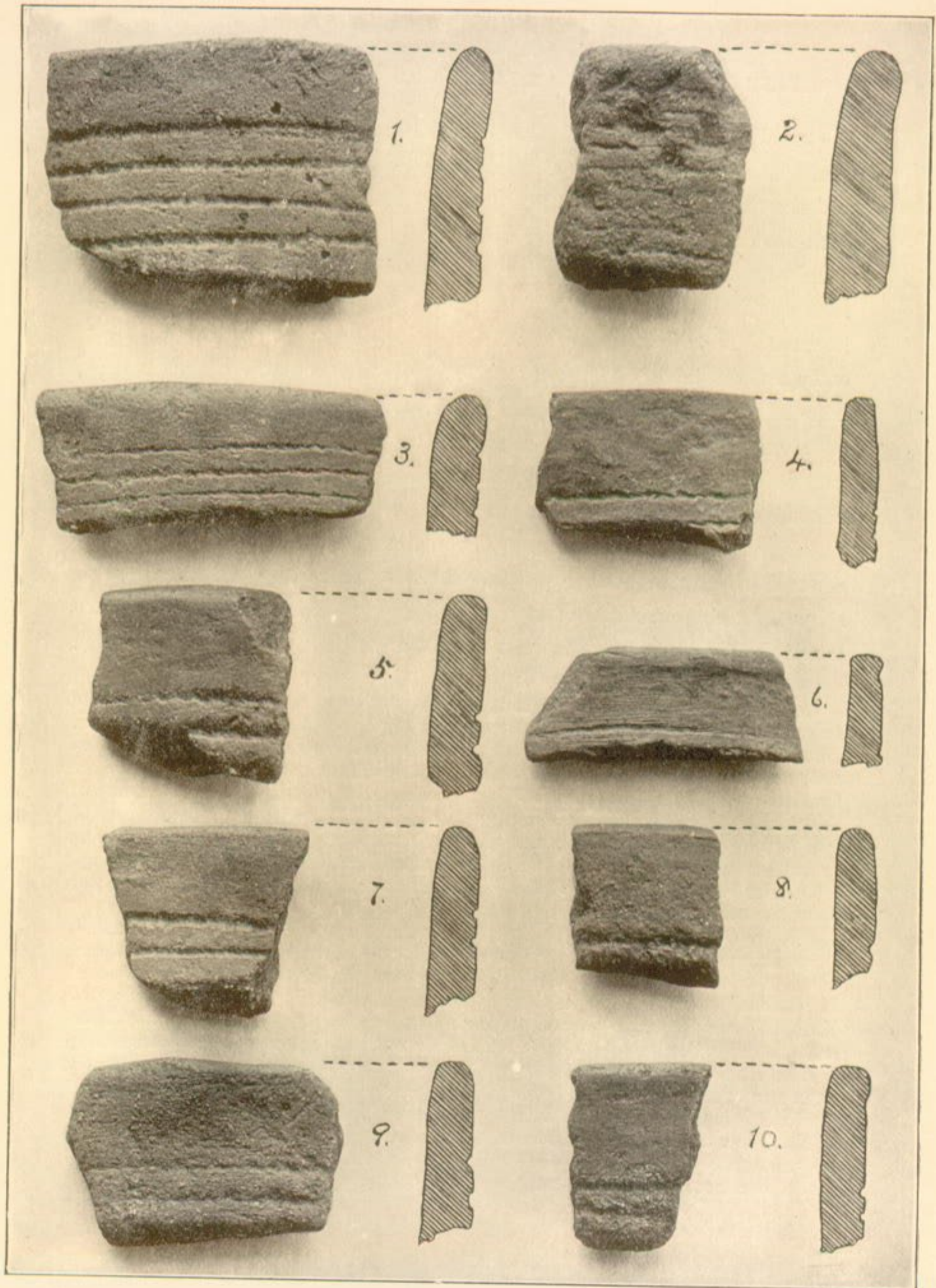


Fig. 9. Pottery Fragments from the Prehistoric Midden No. 1. Vessels with rims — that are straight in the vertical section. (†.)



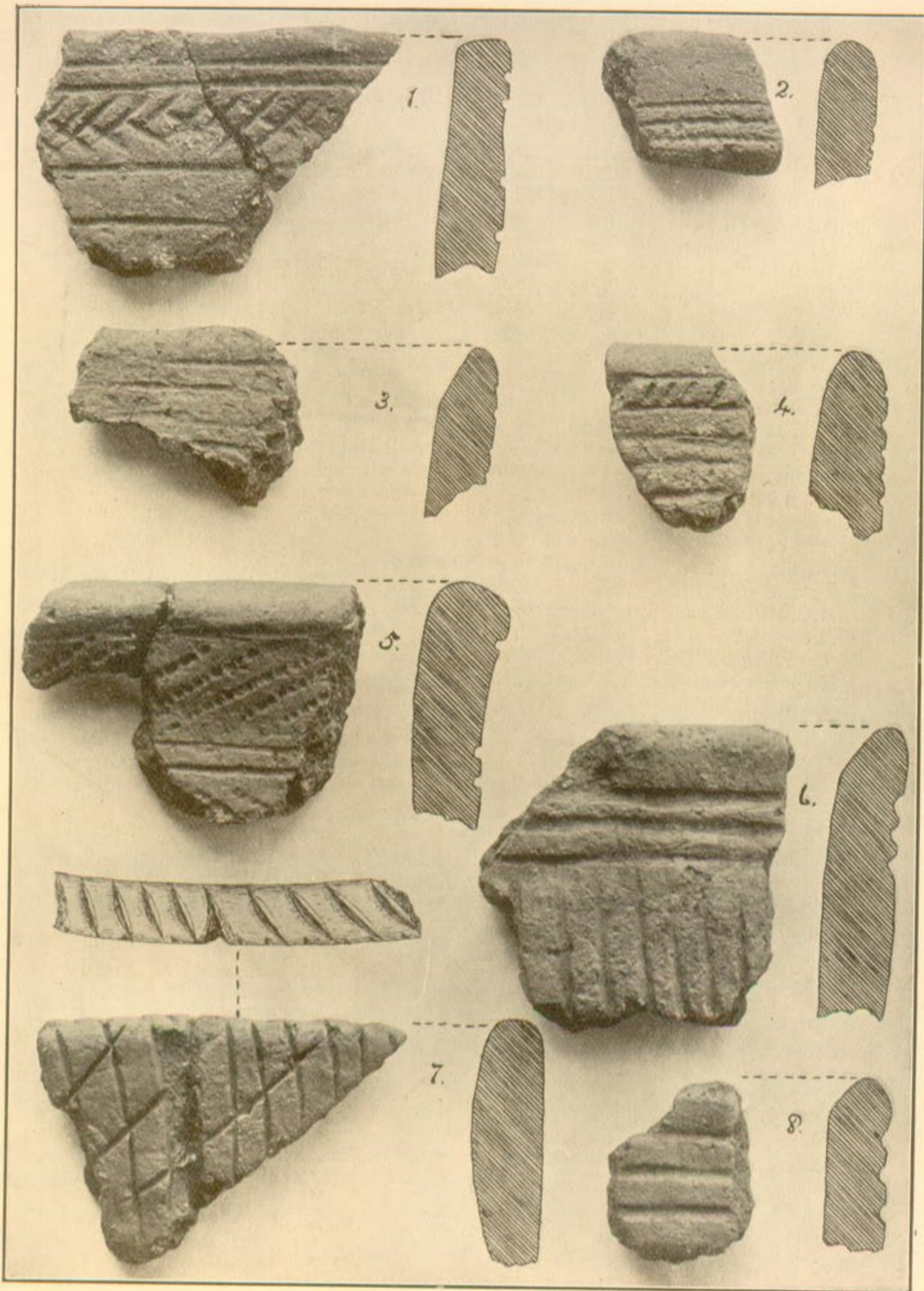


Fig. 10. Pottery Fragments from the Prehistoric Midden No. 1. Mostly vessels with rims that are straight in the vertical section. (†.)

No. 4 is of finer texture than the preceding fragment, No. 3, and measures  $\frac{3}{8}$  of an inch in thickness, and it also is of a yellowish colour. The design commences close to the top, and consists of a number of short diagonal lines between two horizontal lines. About  $\frac{1}{8}$  of an inch below is a single horizontal line, followed by another series of diagonal lines between two horizontal ones.

No. 6 is of coarser paste, and contains numerous small fragments of stone. It measures  $\frac{3}{8}$  of an inch in thickness, and is of a reddish-yellow colour. Its decoration is simple, and commences  $\frac{3}{16}$  of an inch from the top, and consists of three lines running horizontally, below which are a number of lines running vertically.

No. 7 is of fine texture, and is of a reddish colour. It is well and evenly fired, and measures  $\frac{3}{8}$  of an inch in thickness. The decoration, which is in the form of lozenges, has been made by a sharp-pointed instrument, forming deep indentations, which cover the whole fragment. The top of the rim, as shown, is decorated as well, deep gashes running diagonally across it.

No. 8 is a small fragment of a reddish-brown colour, and has been made of fine paste. It measures  $\frac{5}{16}$  of an inch in thickness, and is decorated with three horizontal lines commencing close to the top.

On fig. 11, Nos. 1 and 2 show fragments of rims having no decoration. They are both of fine texture, reddish in colour, and the former measures  $\frac{5}{8}$  of an inch, while the latter measures  $\frac{3}{8}$  of an inch, in thickness. In No. 1 the wall of the vessel at  $\frac{3}{16}$  of an inch from the top has been reduced to  $\frac{1}{4}$  of an inch, giving a slightly bulging appearance below that point.

No. 2 has been similarly treated, although this shows more distinctly in the photograph than on the fragment itself.

I now come to the rims that appear to be everted.

No. 5 on fig. 10 is of fine texture and of a reddish colour. It measures  $\frac{3}{8}$  of an inch in thickness, and the decoration commences close to the top. It appears to consist of a large chevron pattern, formed by the impressions of a comb-like instrument, divided at the angle by two horizontal lines.

Nos. 3, 4, 5, and 6 (fig. 11) are all of fine texture, of reddish colour, and undecorated. Nos. 4, 5, and 6 vary in thickness from  $\frac{3}{16}$  of an inch to  $\frac{1}{4}$  of an inch. No. 3, however, has been fractured vertically, so that it is impossible to give its exact width.

No. 7 is also reddish in colour, and has been made of a very fine paste, and seems to have been well and evenly fired. It is  $\frac{3}{8}$  of an inch in thickness, and is decorated with a horizontal impressed cord device, commencing at 1 inch from the top.

No. 8 is  $\frac{7}{16}$  of an inch in thickness, is of fine texture, and is reddish-brown in colour. No decoration appears on the outside, but on the inside of the lip a pattern consisting of diagonal lines extends from the top to  $\frac{3}{16}$  of an inch down.

On fig. 12 portions of nine rims are shown, all being of fine texture, of a good red colour, and well and evenly fired.

Nos. 1 to 8 have all the impressed cord decoration, commencing at from  $\frac{3}{16}$  of an inch from the top in the case of No. 5, to  $\frac{3}{4}$  of an inch from the top in the case of No. 7.

The rims vary in thickness from  $\frac{3}{16}$  of an inch in No. 8 to  $\frac{5}{16}$  of an inch in No. 3.

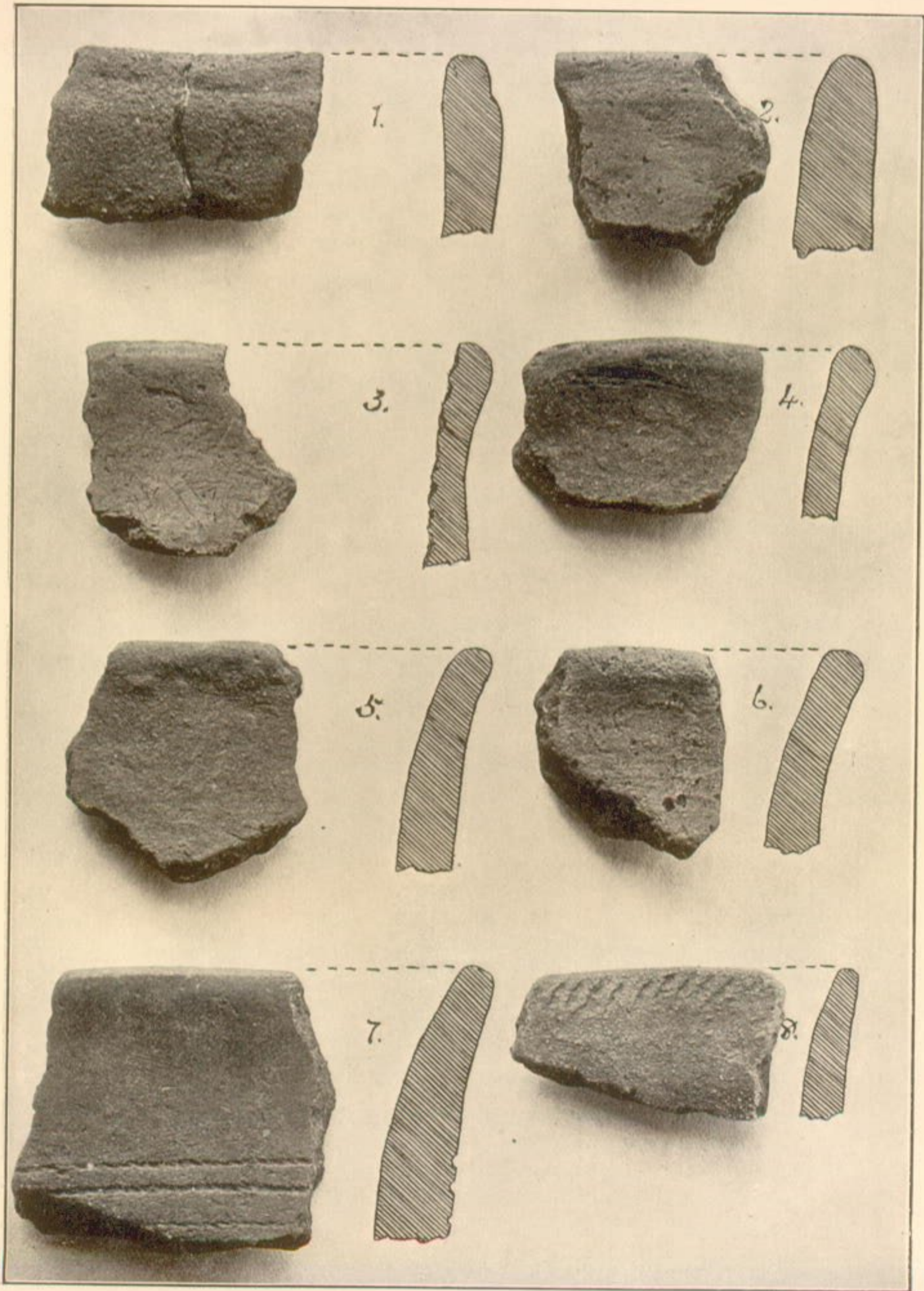


Fig. 11. Pottery Fragments from the Prehistoric Midden No. 1. Vessels with rims more or less curved in the vertical section. (†.)

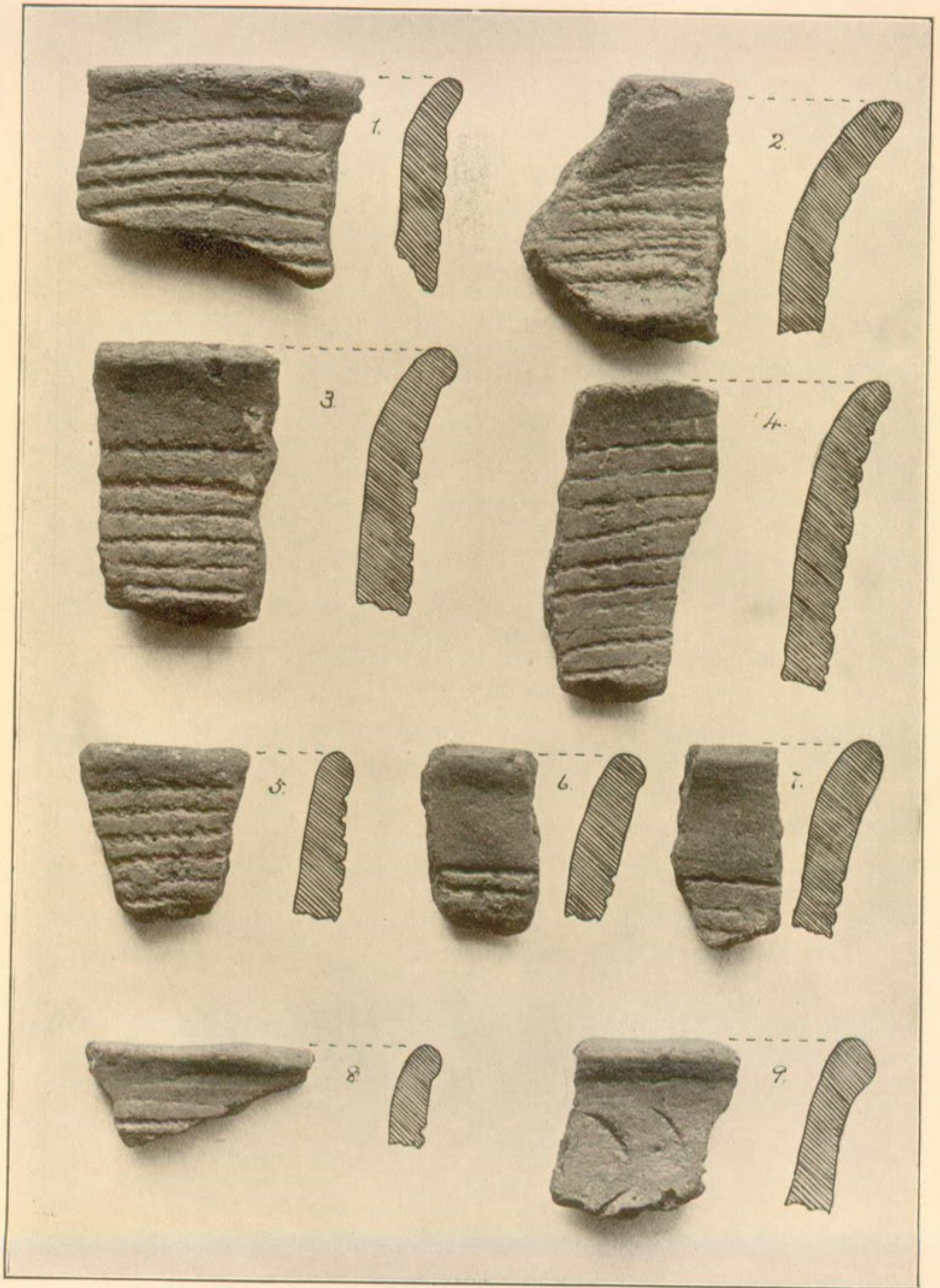


Fig. 12. Pottery Fragments from the Prehistoric Midden No. 1. Vessels with more or less everted rims. (†.)

No. 9 has a slightly overhanging rim, and is  $\frac{7}{32}$  of an inch in thickness. The decoration is formed of thumb-nail impressions, placed diagonally, and running round the vessel; the upper line being from left to right, while the lower appears to be from right to left.

Only one small fragment of pottery of coarser texture was found in this midden, measuring  $1\frac{1}{4}$  inch in length, by  $\frac{3}{4}$  of an inch in breadth. This fragment is  $\frac{9}{16}$  of an inch in thickness, and is slightly more friable in character than the rims above described, and it may possibly have belonged to the bottom or side of some coarse vessel. As a considerable quantity of coarser pottery, however, was found in Midden No. 2, the presence of this fragment in Midden No. 1 may have been fortuitous.

The excavation of Midden No. 2 was confined to an area of 9 feet from north to south, by 25 feet from east to west. The remainder of the midden (which extends under my house) was proved a further distance of 55 feet towards the north.

The deposit lay at a depth of 5 feet under the present surface, and it was about 1 foot in thickness.

The following flint implements shown on fig. 13 were found:—

A fine black flint scraper (No. 1), measuring 2 inches in length, by  $1\frac{3}{8}$  inch in breadth. This is curved longitudinally, and trimmed up the entire left side and round the end to a point about half way down the right side.

No. 2 is a small discoidal scraper, measuring  $1\frac{3}{8}$  of an inch across at its greatest breadth, and is trimmed round two-thirds of its circumference. This is also of black flint.

No. 3 is a scraper of grey flint, and measures about 1 inch in length, by  $1\frac{1}{8}$  of an inch in breadth. This has a ridge down the back and is bevelled to the edge, trimmed round the end and down the left side.

No. 4 is a scraper of a claw-like shape. It is of brownish-black flint, and is very finely trimmed for a distance from what might be termed the point of the claw, to  $\frac{3}{4}$  of an inch back on the right side.

Nos. 5 and 6 are two cores, respectively of whitish and grey flint. It may be remarked that No. 3 is apparently of the same flint as core No. 6, and may have been struck off it.

As will be observed, on Nos. 1 and 2, a white, chalky incrustation still adheres to portions of the surface. At a subsequent date, while workmen were engaged in digging a trench along the east side of the deposit and within a few feet of it, they came upon (at approximately the same level as the deposit) four large nodules of flint. Two are of reddish-brown flint, and two are of black flint. The two latter have still adhering to them some of the chalk in which they had been

originally embedded. It thus seems beyond doubt that the flint was obtained in the rough state, and that the implements and tools were manufactured locally. One small piece of chalk, about 1 inch in length

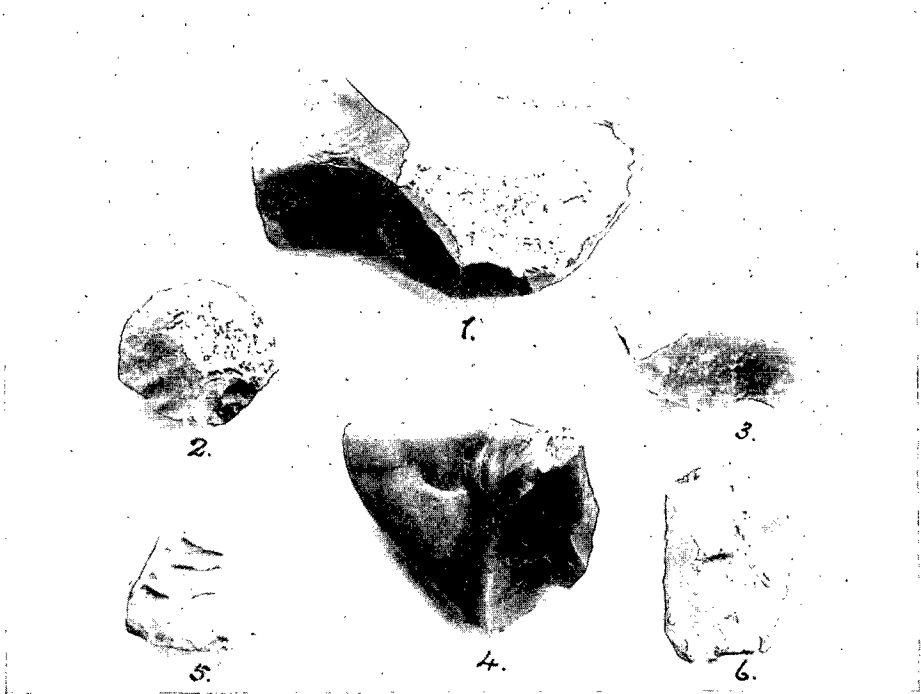


Fig. 13. Flint Implements and cores found in Midden No. 2. ( $\frac{1}{4}$ .)

and  $\frac{5}{8}$  of an inch in breadth, was also obtained in close proximity to the flints above mentioned.

Of the fashioned and unfashioned stones found in this midden, there are only three examples.

No. 3 on fig. 5 is a thin piece of water-worn stone. It has abrasions on both sides, and measures about  $1\frac{1}{2}$  inch in length,  $1\frac{1}{2}$  inch in breadth, and about  $\frac{5}{16}$  of an inch in thickness.

No. 5, fig. 5, is one half of a hammer-stone measuring  $2\frac{3}{16}$  inches in length and  $2\frac{9}{16}$  inches in breadth. This stone has roughened circular depressions on both faces, and shows some battering at the end. These depressions have apparently been made to the actual depth by a pointed instrument, producing a series of small punch-marks or indentations.

No. 2, fig. 6, is similar to No. 1 on same figure, and has been also used as a pounder. It measures  $3\frac{3}{8}$  inches in length, by  $2\frac{1}{16}$  inches in breadth, and shows a considerable amount of battering at both ends.

No fashioned bones were found in this midden, and the unfashioned bones were similar to those found in Midden No. 1; the bones of the roe-deer, however, were absent.

The deposit in Midden No. 2 contained even larger numbers of whelk, limpet, and land-snail shells than that in Midden No. 1. In a section 4 feet 8 inches in length by 2 feet 5 inches in breadth, no less than 2950 whelk shells, 359 limpet shells, and a few land-snail shells were counted, the proportion of whelks to limpets in this section being about 8 to 1.

I will now describe some of the fictile remains found in this midden, and, as in Midden No. 1, will commence with those portions of rims apparently straight in section.

On fig. 14, all the portions of rims illustrated, except Nos. 4 and 7, appear to be straight, and they vary in thickness from about  $\frac{5}{16}$  of an inch to  $\frac{3}{8}$  of an inch. All are well fired and are of fine texture, with the exception of No. 8, which is slightly coarser; and they vary in colour from a dark brown, as in No. 8, to a reddish yellow, as in No. 3. The decoration on No. 1 commences  $\frac{5}{16}$  of an inch from the top, and consists of two horizontal lines followed by a moulding, below which appear to be other two horizontal lines.

No. 2 has a slight swelling about  $\frac{3}{8}$  of an inch from the top, below which are three horizontal impressions of the twisted cord. A moulding occurs 1 inch from the top, again followed by the three horizontal cord impressions.

No. 3 has a slight horizontal depression immediately below the top, and a moulding  $\frac{4}{8}$  of an inch below the top, between which is a single row of punch-marks.

No. 5 has a simple decoration consisting of five horizontal lines of the twisted cord impression, commencing at about  $\frac{1}{4}$  of an inch from the top.

No. 6 has a deep indented line running horizontally, commencing about  $\frac{1}{8}$  of an inch from the top. Other two horizontal indented lines are placed  $\frac{1}{4}$  of an inch further down and  $\frac{1}{8}$  of an inch apart. A heavy moulding,  $\frac{1}{4}$  of an inch in thickness, commences  $\frac{3}{4}$  of an inch from the top, and is followed immediately below by another indented line.

No. 8 shows no decoration.

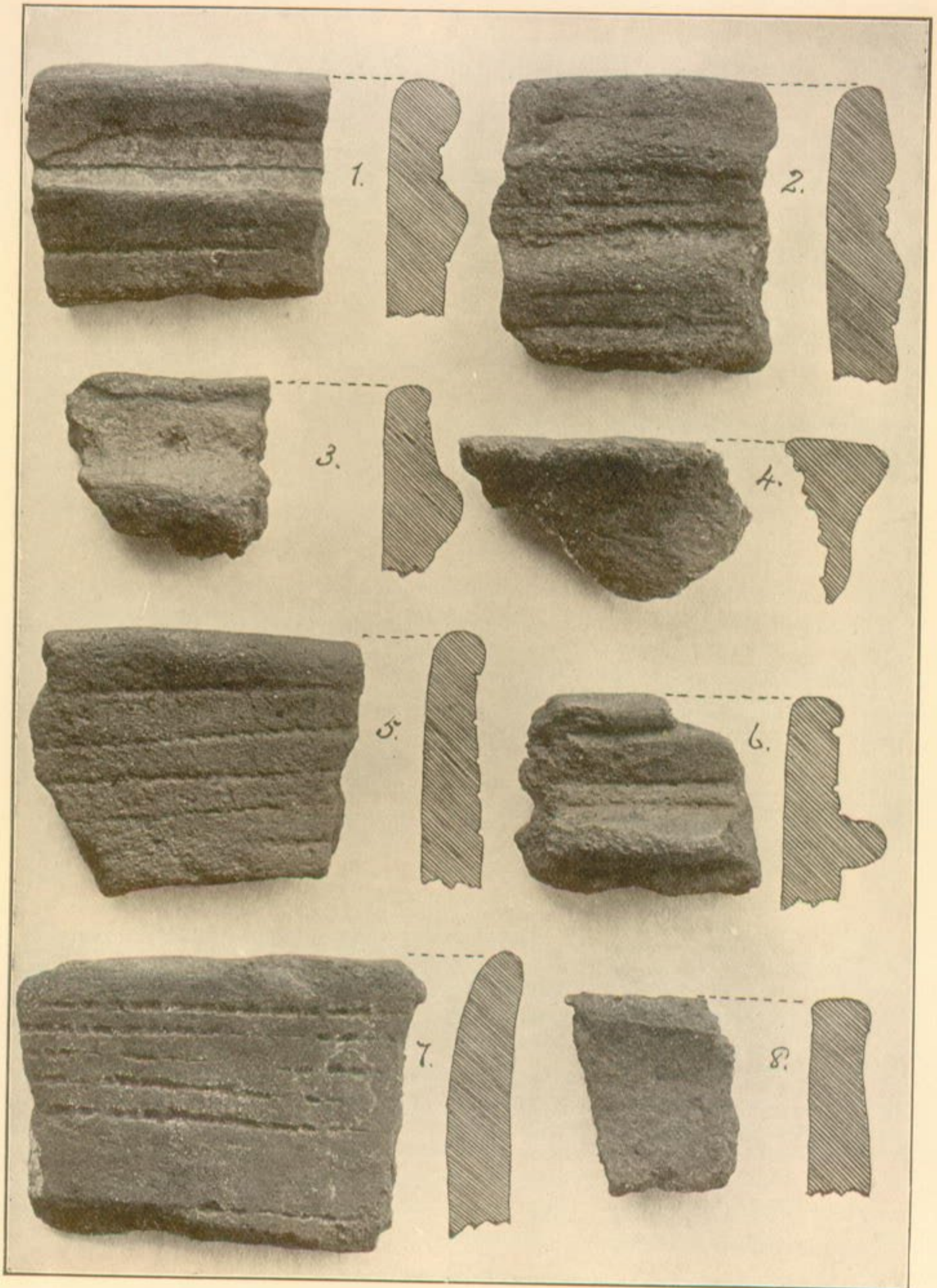


Fig. 14. Pottery Fragments found in Midden No. 2. Mostly vessels having rims of straight vertical section. (†.)



On fig. 15, at No. 5, one small portion of a straight rim is shown, reddish in colour, of fine texture, and having no decoration.

On fig. 17 there is a portion of a straight rim, shown at No. 3, which appears to be without decoration except for a moulding running round at  $\frac{1}{8}$  of an inch from the top. This fragment measures  $\frac{3}{8}$  of an inch in thickness, is brown in colour, and is slightly coarser than the rims heretofore described.

I now come to the portions of rims which appear to be everted. Two (Nos. 4 and 7) are illustrated on fig. 14.

No. 4 is split vertically, which precludes the possibility of giving its thickness. As will be seen, however, the top is quite flat, and the only ornamentation visible (which unfortunately, however, does not appear in the illustration) is a repeated thumb impression close to the lip.

No. 7 is  $\frac{5}{8}$  of an inch in thickness, and the decoration commences at  $\frac{1}{4}$  of an inch from the top. It consists of a band of five horizontal lines, made by a notched or comb-like instrument. Below is a plain band  $\frac{7}{16}$  of an inch in breadth, and another similar decorated zone appears to be below this.

Both the above fragments seem to have been made of a fine paste. No. 7, however, is finer in texture and redder in colour than No. 4, which is more of a reddish brown.

On fig. 15 a number of fragments are represented, varying in thickness from  $\frac{3}{8}$  of an inch, as in No. 1, to  $\frac{2}{3}$  of an inch, as in No. 6.

Nos. 1, 2, 3, 4, and 7 are all of fine texture, red in colour, well fired, and show reddish brown in fracture.

Nos. 6 and 9 are slightly coarser in texture, No. 6 being red in colour, while No. 9 is brown.

Nos. 1 to 4 are decorated with the impressed cord device, running horizontally, and commencing at from  $\frac{3}{16}$  of an inch from the top, as in No. 2, to  $\frac{2}{3}$  of an inch from the top, as in No. 4.

No. 3, it will be noticed, has a slight groove running round the inside of the lip.

No. 6 is bevelled on the inside,  $\frac{1}{16}$  of an inch downwards from the top, and its decoration consists of a single impression of a large cord placed horizontally,  $\frac{1}{8}$  of an inch from the top.

Nos. 7 and 9 show no decoration.

On fig. 16, eight fragments of everted rims are shown. These are all decorated with the impressed cord pattern placed horizontally, and commencing at a distance of from  $\frac{3}{16}$  of an inch to  $\frac{1}{2}$  an inch from the top, as shown in Nos. 8 and 3 respectively. In thickness these shards vary from  $\frac{3}{16}$  of an inch, as in No. 6, to  $\frac{1}{8}$  of an inch, as in No. 1. All are made of a good paste, are reddish in colour, well fired, and, with the exception of No. 8, show reddish brown in fracture. The latter is of a paler red colour, and shows a blue-grey in fracture. As will be seen from the illustration, this fragment is decorated on the inside with four rows of the twisted-cord pattern.

No. 7 has an overhanging lip.

Three undecorated everted rims, Nos. 1, 2, and 4, are shown on fig. 17. These are all of fine texture, well fired, and of a good red colour. No. 2,

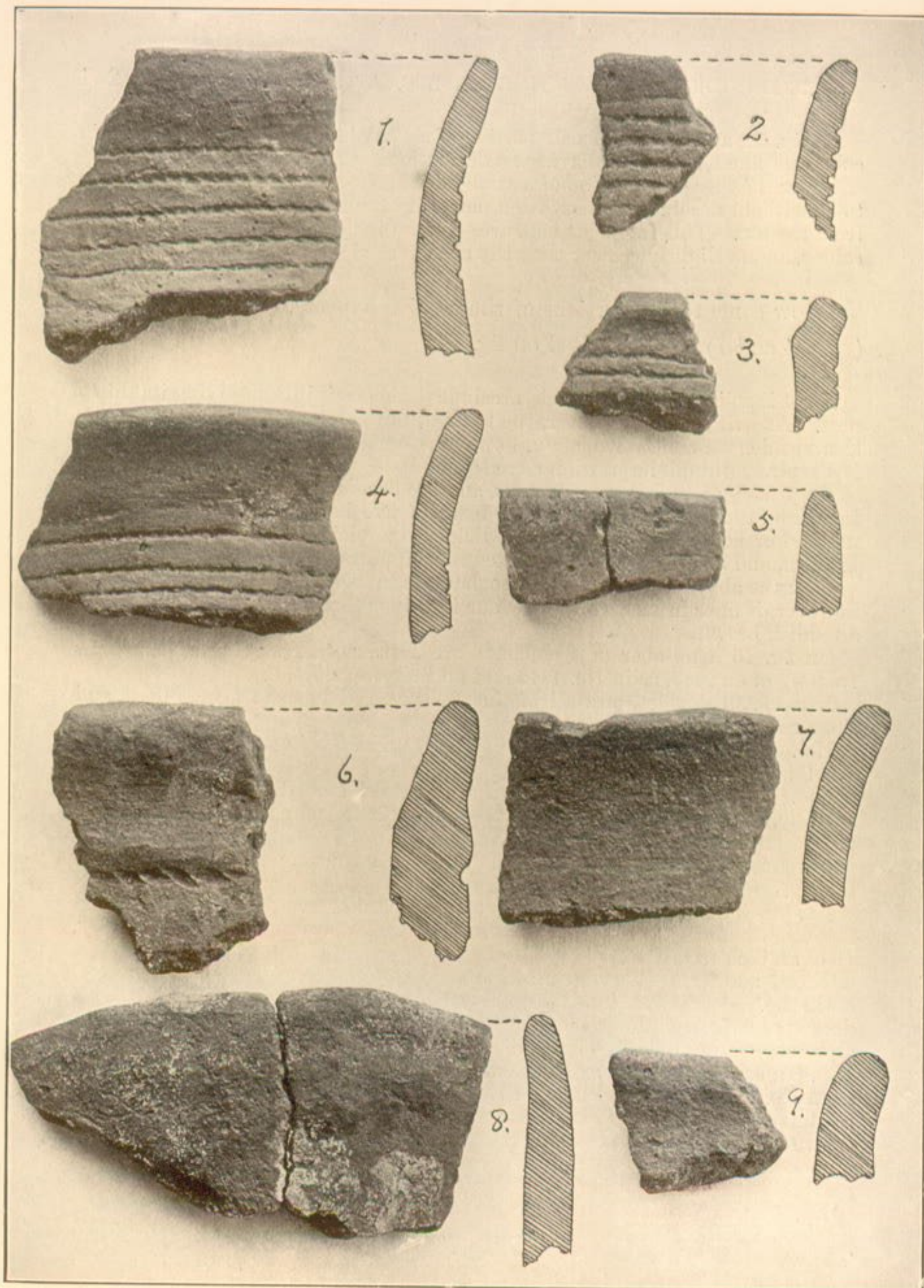


Fig. 15. Pottery Fragments found in Midden No. 2. Mostly vessels with everted rims. (†.)

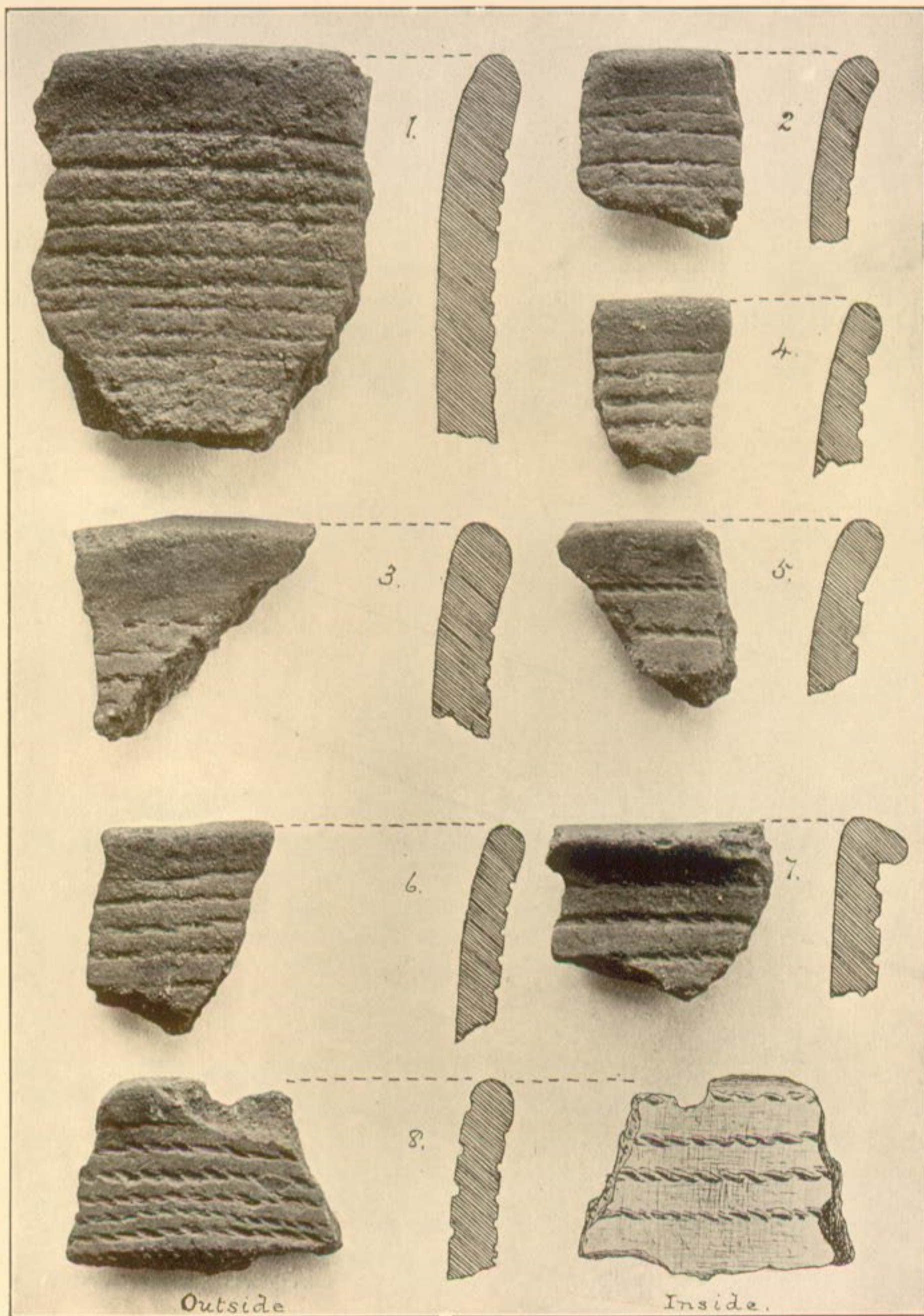


Fig. 16. Pottery Fragments found in Midden No. 2. Mostly vessels with slightly everted rims. (1.)

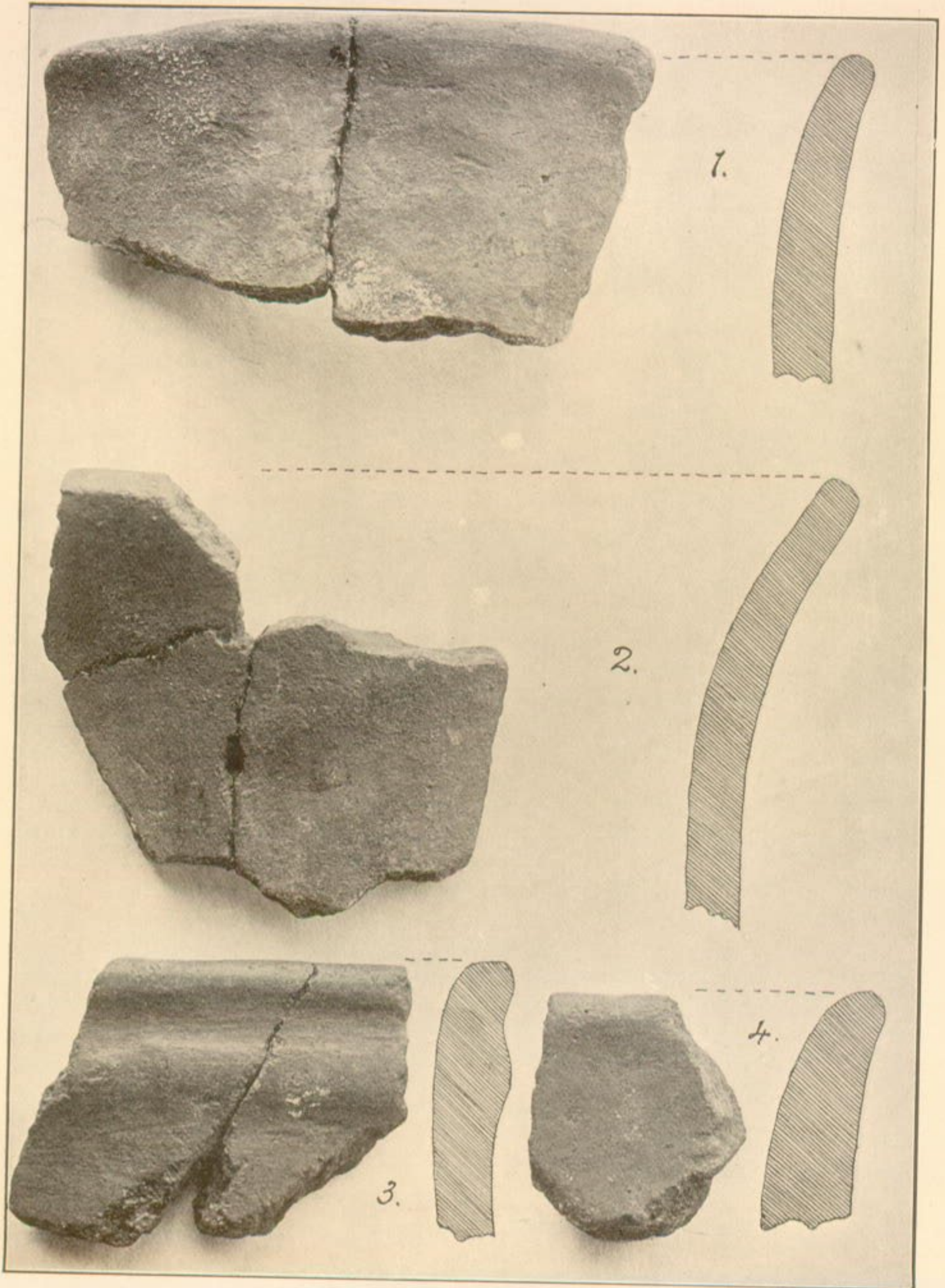


Fig. 17. Pottery Fragments found in Midden No. 2. Vessels with everted rims. (†.)

which is much everted, is  $\frac{1}{4}$  of an inch in thickness, No. 1 is slightly thicker, and No. 4 is  $\frac{7}{16}$  of an inch in thickness.

I must now refer to the unusual example of a rim turned inwards. Fragments of only one vessel of this kind were found, and a portion of the rim is shown on fig. 15, at No. 8. It measures  $\frac{1}{2}$  of an inch in thickness, is red in colour, shows a bluish grey in fracture, and is undecorated.

On fig. 18 various fragments of vessels are illustrated. Nos. 1 and 3 show portions of the bottoms and walls of vessels. These are decorated with the impressed cord pattern, the former to within  $\frac{1}{2}$  an inch from the bottom, and the latter to about  $\frac{1}{2}$  of an inch from the bottom. They are both reddish brown in colour, and are well and evenly fired, No. 3 being slightly more friable than No. 1.

No. 2 is a fragment of the wall of a vessel, brownish in colour, and slightly red in fracture. The decoration consists of horizontal indented lines, about  $\frac{2}{3}$  of an inch apart.

No. 4 is a small fragment, which shows decoration in the form of four rows of minute punch or comb-like indentations, running horizontally, and about  $\frac{3}{16}$  of an inch apart.

No. 5 is merely decorated with horizontal lines, drawn with a sharp-pointed instrument.

The decoration on Nos. 6 and 8 consists of the impression of the flat side of a pointed stick, or like instrument.

No. 7 is a portion of the wall of a vessel, probably near the shoulder. It is of a dull brown colour, about  $\frac{3}{16}$  of an inch in thickness, and is made of a very fine paste. The decoration is of the impressed cord pattern, a single line of which is noticeable above a plain band, which is about  $\frac{5}{16}$  of an inch in breadth. Beneath this the impressed cord pattern again appears.

No. 9 is another portion of the wall of a vessel. This also appears to be about the shoulder, showing a plain band at that point, and both above and below it the impressed cord decoration appears. This fragment measures  $\frac{2}{3}$  of an inch in thickness, is of a dull brown colour, and shows reddish brown in fracture.

On fig. 19 six fragments of pottery are shown, which are all of coarser texture and different in decoration from any previously described. All are of reddish-brown colour, and the paste of which they are made contains numerous small stones.

Nos. 1 and 2 are portions of rims, both of which are  $\frac{1}{2}$  an inch in thickness at the point of measurement. No. 1 has a groove running round the inside of the lip, and a similar depression on the outside, below which is a slight moulding. The decoration consists of a horizontal line of a large impressed cord placed immediately below the moulding. The space above the moulding has a zigzag impressed cord device, and, as will be seen, the impression of a twisted cord also runs round the top. No. 2 is bevelled towards the inside. It is decorated with two rows of indented lines, which appear to have been drawn with a blunt-pointed stick or instrument; beneath this, diagonal lines extend.

Nos. 3, 4, 5, and 6 are portions of the walls of vessels, Nos. 3 and 5 being about  $\frac{7}{16}$  of an inch in thickness, and Nos. 4 and 6  $\frac{2}{3}$  of an inch in thickness. No. 3 has a moulding running round it, above which is a horizontal twisted-

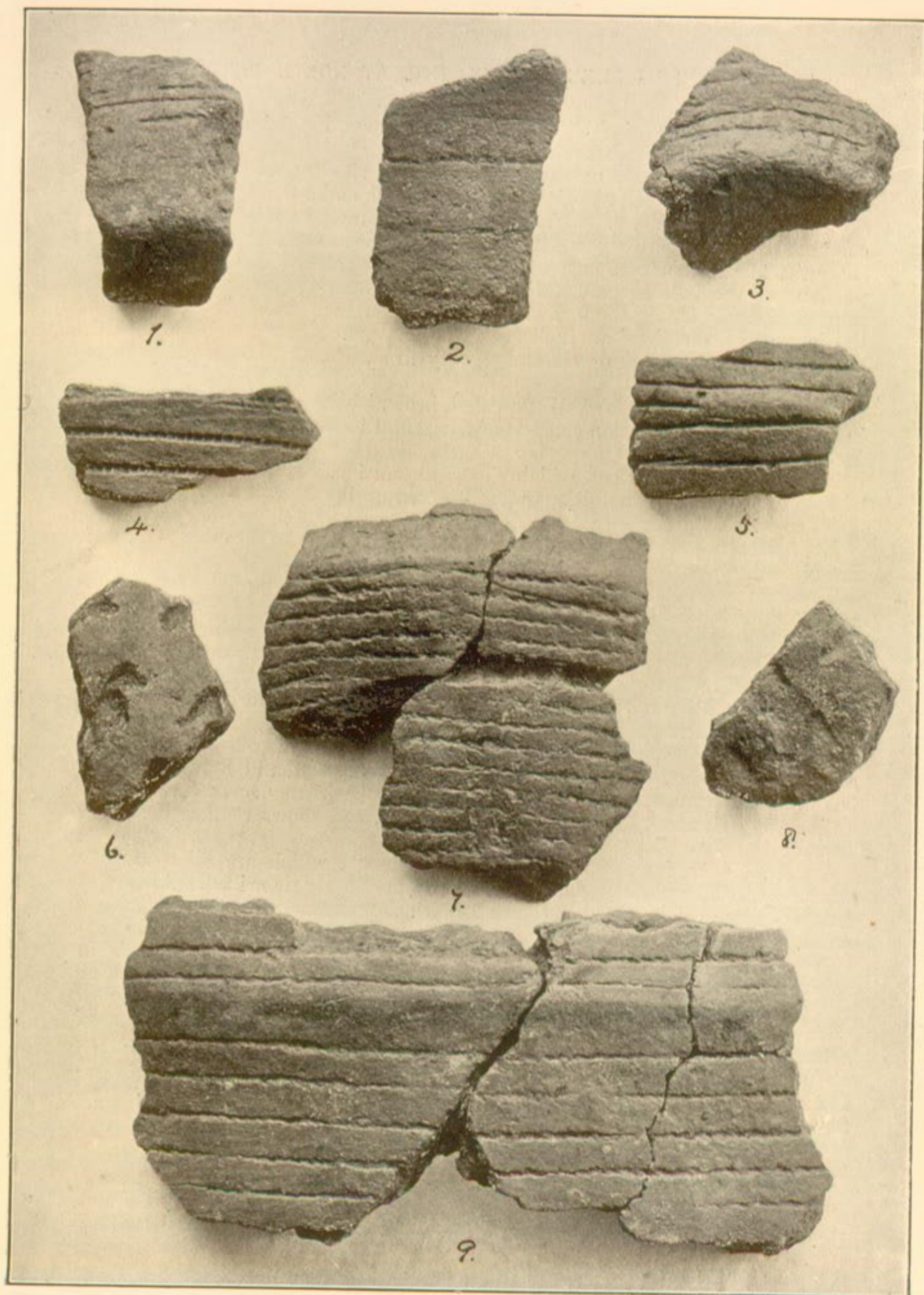


Fig. 18. Pottery Fragments found in Midden No. 2. (†.)

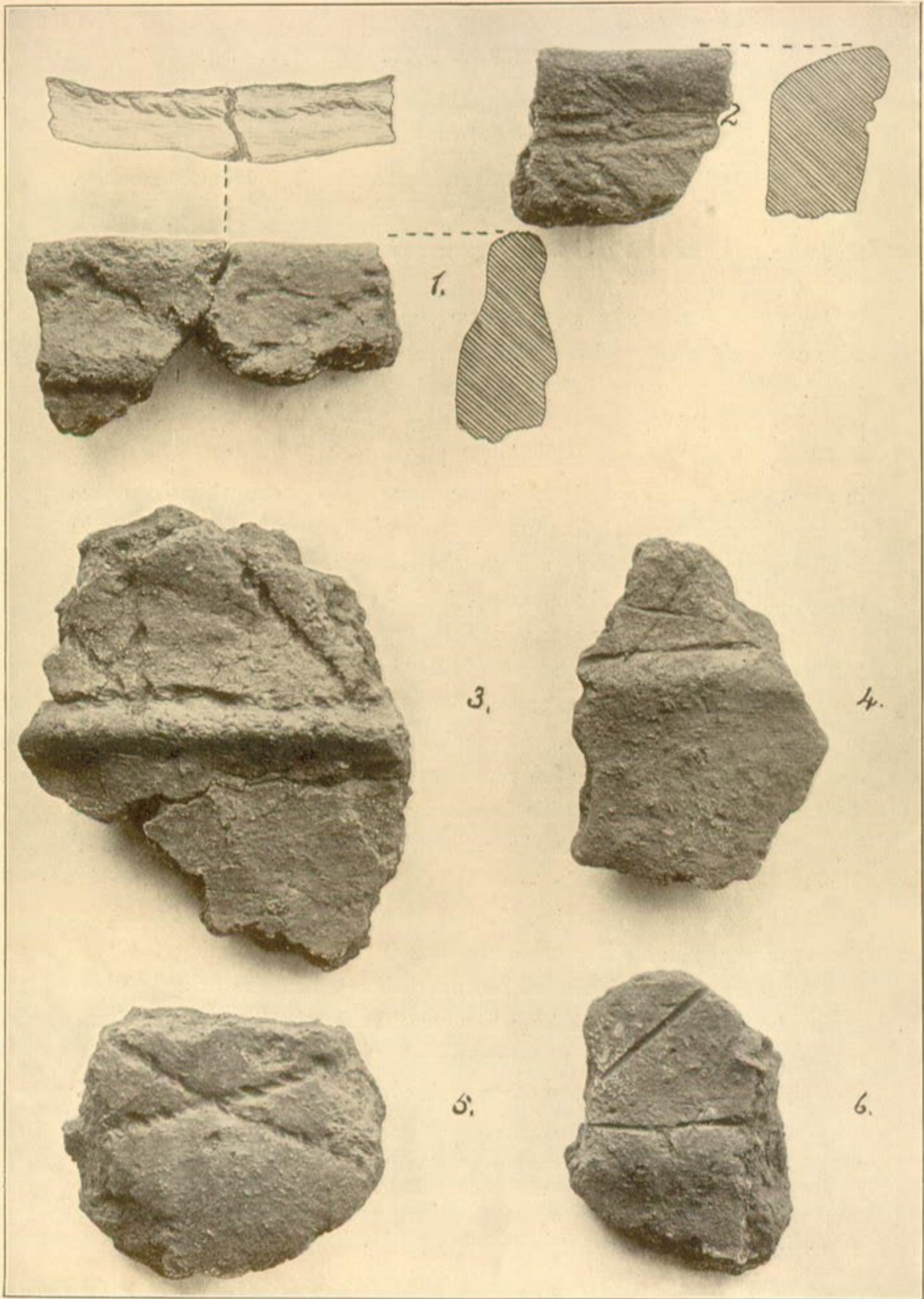


Fig. 19. Pottery Fragments found in Midden No. 2. (†.)

cord impression, and from this extend zigzag impressions, also of the twisted cord. No. 5 appears to have been decorated with a lozenge-shaped design of a twisted cord.

Nos. 4 and 6 have both slight swellings, at what may have been the shoulder. Above this point in both are horizontal indented lines, from which, in the former, a chequer pattern of crossed oblique lines appears to extend; while in the latter, two indented lines appear to run more or less diagonally from the horizontal indented one.

One vessel, reddish brown in colour (the lower part of which, together with a considerable portion of one side, I have been able to put together), was found in close proximity to several nodules of clay, and it seems probable that this vessel may have been the receptacle of the clay in question. The bottom, which is  $5\frac{7}{8}$  inches in diameter, is  $\frac{5}{8}$  of an inch in thickness. The vessel is made of a very coarse paste, which contains numerous small stones. It must have been of considerable size, as in inside diameter, at 2 inches from the bottom, it measures 7 inches, and a portion of the wall measures 6 inches vertically.

On the bottom of a vessel which I have been able to put partially together (fig. 20), and which seems to have been of no great dimensions, are the impressions of three grains of wheat, together with what appears to be a portion of a rachis. It is evident that these must have become embedded in the clay after the vessel was made but still unbaked. The finding of these grain moulds is of considerable interest, as it shows beyond doubt the cultivation of cereals in Scotland at a very early period.<sup>1</sup> Mr J. R. Mortimer was able to establish the cultivation of cereals<sup>2</sup> by the finding, in East Yorkshire, of a portion of a head of wheat containing three grains which had become embedded in the clay forming the wall of a food-vessel, and which had become carbonised in the firing. These grains, he says, "seem to belong to a small variety." The mould of one of the grains found by me measures nearly  $\frac{9}{32}$  of an inch in length, by  $\frac{5}{32}$  of an inch in breadth, the other grains being slightly smaller. With

<sup>1</sup> Curved flint knives which "may not impossibly have supplied the place of sickles," have been found in various parts of England, and these have suggested the growing of grain south of the Tweed in prehistoric times.—Evans' *Ancient Stone Implements*, p. 358.

<sup>2</sup> J. R. Mortimer's *Forty Years' Researches*, p. 111.



a view to comparing the dimensions of the mould given with wheat grains of the present day, I have examined a small quantity of wheat grown in Scotland, with the following results:—Out of 200 grains measured, I find  $12\frac{1}{2}$  per cent. measure  $\frac{9}{32}$  of an inch in length,  $48\frac{1}{2}$  per cent. measure  $\frac{8}{32}$  of an inch in length, and 39 per cent. measure  $\frac{7}{32}$  of an inch in length. It is of course impossible to determine whether the

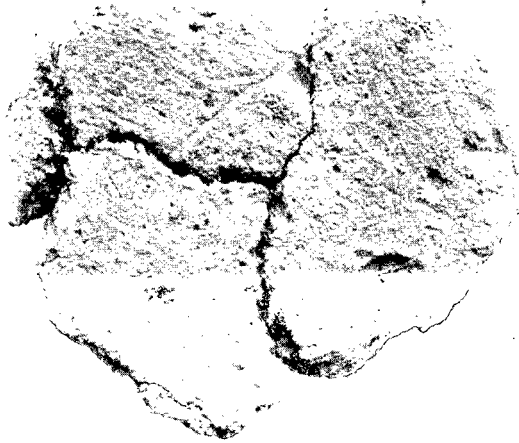


Fig. 20. Piece of Pottery with Impressions of Grains of Wheat, from Midden No. 2. (†.)

impressions of the grains on the bottom of the vessel mentioned are those of average grains of the period or not; but it is noteworthy that by far the largest percentage of the grains measured are of a similar length, and therefore are not far inferior to those of the present day.

Finally, I must not omit to mention the finding in both middens of several pieces of lignite. Perhaps more was obtained from Midden No. 2 than from Midden No. 1, and the pieces from the former were also

somewhat larger than those from the latter. All the pieces presented a smooth, rounded surface, and the largest was not more than 3 inches in length. Whether these pieces of lignite served any useful purpose in the domestic economy of these prehistoric people, or were purely fortuitous, it is impossible to say.

In summarising the results of my investigations, I must at once make it clear that no signs of burial, either by inhumation or incineration, were at any time noticeable, and there can be little doubt that the sites of these two kitchen middens had been occupied purely and simply as dwelling-sites by the people of prehistoric times.

As to the fictilia found, it will have been noticed that all the potsherds from Midden No. 1 were of fine texture, and, as seen from the measurements, none were of great thickness. This can also be said of a considerable portion of the shards found in Midden No. 2. Generally speaking, only a few of the rims found in both middens were plain, the large majority being decorated.

No fewer than 454 potsherds of various sizes and thicknesses were found in the excavation of Midden No. 2. A number of these were of the impressed cord pattern, and were of similar thickness to those in Midden No. 1. Numerous fragments, however, were of much coarser texture, some plain, others decorated, and it would thus seem that the two middens may not have been contemporaneous.

As the potsherds were so fragmentary, I do not feel absolutely justified in asserting that they were portions of beakers and food-vessels of the late Neolithic or early Bronze Age; but if many at least of these fragments have not belonged to beakers and food-vessels, to what class of vessel can they properly be assigned? The late Mr Albert Way, in speaking of burial urns of the Prehistoric Age,<sup>1</sup> says that "the food-vessel and the drinking-cup appear unquestionably designed for the ordinary purposes of life"; and Mr J. R. Mortimer, in his *Forty Years' Researches*, page 55, coincides with the opinion expressed by Dr Thurnam, who says that "the true type of the drinking-cup is not

<sup>1</sup> *Hydriotaphia Cambrensis*, p. 70.

recurved at the top"; and Mr J. R. Mortimer goes on to say, "I believe the real drinking-cup had generally a straight vertical lip, a form which would be found far the best adapted for its everyday use; and that any vessel having another form of lip had not been specially made for this purpose. Probably the finer class of vase with recurved lip and the drinking-cup were two special kinds of domestic pottery." Canon Greenwell, however, on the other hand, takes a different view in his well-known work on British Barrows. In discussing the question as to the suitability of food-vessels and drinking-cups for ordinary domestic purposes, he says that "even the strongest of these are but ill adapted for household work, and would certainly not bear the knocking about to which such vessels must necessarily be submitted. Nor do any of them seem, from their shape, to be well suited for such purposes as domestic utensils are intended for." Again, he objects that "the thickness of the walls" and the "width of the lip of the rim" of food-vessels would make them very inconvenient and "unsuitable vessels in the economy of daily life." He further avers that "they could not have been used in cooking, for, apart from the fact that none of them show signs of having been placed upon a fire, they could not bear its action."

Whether these opinions are well founded or not, makes little difference, for, as already seen, some of the rims brought to light in these kitchen middens are straight, others everted, while one rim at least is curved inwards. None of the rims from Midden No. 1, and few of those from Midden No. 2, are thicker than the average beaker or food-vessel, and in point of texture and decoration they correspond with many vessels found in the graves of the Bronze Age.

If Canon Greenwell's view were accepted, then the people who inhabited the sites of these two kitchen middens cooked none of their food in vessels, as the fragments of these vessels (which he says could not have withstood the heat of the fire) were all the fictile remains found, and, excepting the coarser pieces from Midden No. 2, were all of the same average thickness as beakers and food-vessels. I think it is reasonably certain, however, that the people occupying these sites did

cook their food in these vessels. None of the whelk shells had been broken in order to extract the body of the mollusc ; and as it would be extremely difficult, if not impossible, to get them out of the shells when alive, it may be presumed that, as in the present day, boiling was resorted to. The body could then be readily picked out, possibly with a bone pin. None of the shells showed any traces of fire, which would have been the case had they been roasted.



Fig. 21. Cooking Vessel of Pottery from New Mexico. ( $\frac{1}{2}$ .)



Fig. 22. Cooking Vessel of Pottery from New Mexico. ( $\frac{1}{2}$ .)

It is, of course, impossible to say that any of the fragments of pottery found in these kitchen middens had been subjected to the heat of the fire, but I cannot think that their thinness would have precluded them from being so used.

Some years ago, I brought back from New Mexico two vessels (figs. 21 and 22), one now the property of the Royal Scottish Museum, Edinburgh. The walls of these both measure  $\frac{3}{16}$  of an inch in thickness, and are no thicker than the average type of beaker. The larger vessel I found at a recently vacated camp of Apache Indians, and as it

was cracked, and had necessarily become useless, it had been thrown aside. That this vessel had stood the heat of the fire is certain, as the outside still has numerous traces of soot incrustated upon it. The smaller vessel (fig. 22) I bought at the Pueblo Indian village of Tesuque, near Santa Fé, New Mexico, and I picked it out from the ashes of the fire, where it had evidently been used for cooking a part of the midday meal.

As no other fictile remains were found in the prehistoric deposits, it would seem beyond doubt that the vessels, as represented by the fragments found, had been used for the ordinary domestic purposes of the people inhabiting these sites. But if it is conceded that all the vessels found served a domestic use—and this can hardly be doubted—it must be admitted that many of the fragments might well have belonged to beakers and food-vessels, and that therefore these vessels at least cannot longer be regarded as purely sepulchral. It certainly seems more probable that a vessel of the ordinary domestic type (not necessarily one that had been in use) would be placed in the grave, containing either food or water for the departed spirit, as considered necessary by the living.

With reference to some of the coarser pottery found in Midden No. 2, which in some respects bears a considerable resemblance in texture, thickness, and decoration to cinerary urns, it may not be improbable that, if these fragments ever belonged to cinerary urns, they may have been manufactured at the dwelling-site, for the purpose of being placed in a grave with incinerated remains, or they may have been used for domestic purposes, in common with the vessels of thinner quality, resembling the beaker and food-vessel types, already described. Should I be correct in ascribing some of the fragments of coarser pottery to vessels of the cinerary urn type, and if these were introduced later than beakers and food-vessels,<sup>1</sup> it would then follow that Midden No. 2 was occupied as a dwelling-site subsequent to Midden No. 1, in which, as has been seen, fragments of this type of vessel were entirely absent.

<sup>1</sup> Rice Holmes, *Ancient Britain and the Invasion of Julius Cæsar*, p. 193; British Museum *Guide to the Antiquities of the Bronze Age*, p. 45.

It will have been noted that no metal of any description was found in either of the deposits, and judging from the character of the various types of pottery found, one might very readily ascribe both of these Middens to the Age of Bronze. On the other hand, from the fashioned flints, stones, and bones brought to light, there is nothing incompatible in attributing either deposit to the late Neolithic period.

I am indebted to Dr Joseph Anderson and to Mr A. O. Curle, F.S.A. Scot., for valuable assistance and advice, kindly given during my excavation of these middens.

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