

A Re-Interpretation of the Late Bronze Age
Metalwork Hoards of Essex and Kent

Volume II of III: Essex

C. E. Louise Turner

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Note: All illustrations are the work of the author, and were undertaken with reference to the original objects. An accurate representation of the object has been sought at all times, but certain features associated with manufacture, use, and reduction such as grinding marks, hammer marks, etc. may have been exaggerated for the purposes of ensuring a clear demonstration of observations referred to in the accompanying text.

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Aveley (Ref. No. 01)

Grid Reference: TQ 56 60.

Current Location: Grays Museum, Essex. No accession numbers have been allocated to these objects.

Context: Unknown. No documentation regarding this material was available at Grays Museum, and it is conceivable that this hoard comprises the surviving remnants of a much larger deposit. This possibility is strengthened by references in the National Bronze Index to a hoard from Aveley, Thurrock which contained socketed axes, three sword blade fragments and one spearhead. It seems likely that these axes may represent part of this group, which was originally stored in Tilbury Museum.

Facilities for weighing these objects were not available at Grays Museum, and so this information is not included. In addition, one of the nine axes could not be studied, as illness amongst museum staff prevented access to the hoard during the final day allocated to this museum.

Bibliography: National Bronze Index (N. B. I.)

Contents:-

01/01

Description: Socketed axe, of wing-decorated 'south-eastern' type.

Dimensions: Length: 106mm. Cutting edge: 45mm.

Patina: Some of the surface is bronze-coloured, while the rest is a rough grey. The corrosion products have been subject to chemical removal.

Manufacture: A dip in the collar over the loop constitutes a minor casting defect, and the wall seems thin in the vicinity of the break, indicating core misalignment. The mouth, where it remains intact, is well-finished. The upper casting seam remains visible as a furrow in places over the body, while the lower seam survives as a thin sharp line almost to the cutting edge. On the underside of the piece, it is impossible to gauge the condition of the seam in the area around the collar and the loop on account of the corrosion stripping.

Use: The cutting edge is jagged and battered, but the removal of the corrosion products will have contributed greatly to its poor condition. It does, however, show indications of uneven wear.

Reduction: There is a piece missing from the mouth on one face (not illustrated), this comprising part of the mouth and the adjoining face. This fragment is likely to have broken away as a result of hammering during the reduction phase, perhaps during the separation of axehead and haft, though no hammer indents can be identified.

01/02

Description: Socketed axe of 'south-eastern' type. There is a single pellet decoration on either face, with one face (illustrated) having in addition a number of fine, faint parallel grooves running down the body, a decorative form which has no parallels elsewhere amongst the material studied.

Dimensions: Length: 122mm. Cutting edge: 34mm.

Patina: There is a faint aquamarine/blue tint to metal, resulting from chemical removal of the corrosion products. Details poor.

Manufacture: One feeder has been roughly removed, leaving an uneven hollow in its place. The mouth is otherwise well-finished. The uppermost casting seam remains sharp and well-defined over the body, while the condition of the lower seam is uncertain on account of the corrosion removal, though it appears to have been flattened over loop.

Use: The blade seems narrow, but the condition of the cutting edge cannot be determined following the corrosion stripping.

Reduction: No evidence can be linked with this process on account of the object's poor condition, though much of one face is now absent.

01/03

Description: Socketed axe, of undecorated 'south-eastern' type. A single rib is visible within the interior of the socket.

Dimensions: Length: 99mm. Cutting edge: 39mm.

Patina: Dark green, and of rough appearance. The top layer of patination appears to have been stripped.

Manufacture: Stumps of the feeders remain visible and pronounced at the mouth, although the intervening seam is well-finished. The upper casting seam appears to remain sharp and prominent over the body, but it is difficult to be certain of this, as the surface is in such poor condition. The lower seam is visible over the collar, but cannot be identified elsewhere following the corrosion removal. The loop is very rough in appearance, and probably bore a buildup of encrustation prior to corrosion removal.

Use: The blade is narrow, but it has been expanded, and possible hollows can be identified over the corners of the cutting edge, which suggests that the object was subject to resharpening. Uneven wear is apparent, but the cutting edge seems to be intact, with no marked notches apparent, though the corrosion buildup and its subsequent removal has left it in a poor condition.

Reduction: The object is complete and there is no evidence relating to this process.

01/04

Description: Socketed axe, of plain 'south-eastern' type.

Dimensions: Length: 82mm. Cutting edge: 37mm.

Manufacture: The mouth is uneven, with stumps of the feeders remaining visible, though the intervening seam appears to have been removed. The upper casting seam seems to have been flattened, remaining only as a blunt though prominent vestigial trace along the length of the body, and it has been obliterated over the last 20mm towards the cutting edge. On the underside, the seam is prominent over the collar, though only a very faint trace remains below this point. Its condition is impossible to ascertain over the loop following corrosion removal, though the loop remains largely infilled with flash, with only a small hole apparent. This might suggest that the piece was never completed for use, though the condition of the blade, which is well-expanded, argues against this possibility.

Use: The blade shows indications of slight uneven wear, and the cutting edge is absent over virtually half of its length. This damage seems more likely to be use-related than linked with corrosion removal.

Reduction: The object is complete, and there is no evidence relating to this process.

01/05

Description: Socketed axe, of plain 'south-eastern' type. Internal ribs are present within the socket.

Dimensions: Length: 92mm. Cutting edge: 36mm.

Patina: Rough dark green, details poor.

Manufacture: A dip in the mouth over the loop represents a minor casting flaw. The mouth seems only roughly finished, with traces of the feeders surviving, and it appears uneven in places, indicating a slight shortage of metal during casting. The upper seam is thick and blunt over much of the body. It has been flattened over the collar and has been largely obliterated over the last 20mm, although a furrow still marks its line. The lower seam is very thick in nature, and has been only roughly flattened. It is visible to a point roughly 10mm below the loop, but from this point to the cutting edge details are unavailable as a result of corrosion buildup. The cutting edge has been expanded, though it remains narrow in shape.

Use: The blade appears unevenly worn, but the condition of the cutting edge must remain indeterminate following corrosion buildup.

Reduction: The axehead has been hammered in the centre of either face, just above the cutting edge, and slight depressions have appeared here as a result. Possible individual punch marks occur in association with this indentation on one face (not illustrated), and above these on the same face is a cluster of tiny punch marks, lying in line with the lower end of the loop. A piece of rough copper lies within the base of the socket, adhering to the interior. There are some more possible chisel marks on the collar (not illustrated), which may have been produced during the separation of haft and axehead.

01/06

Description: Socketed axe, of plain 'south-eastern' type.

Dimensions: Length: 88mm. Cutting edge: 40mm.

Patina: Rough grey green, with much encrustation. A pitted appearance on one face (not illustrated) may indicate some kind of chemical treatment. Details poor.

Manufacture: The stump of a feeder remains visible on one side of the mouth. Elsewhere the mouth appears well-finished, with no traces of the casting seam remaining. The line of the upper seam is now unclear, and the condition of the lower seam is little better, though it appears to have been obliterated over the loop, and a faint blunt trace remains over the collar. The cutting edge has been expanded.

Use: Following corrosion buildup, the condition of the cutting edge cannot be ascertained.

Reduction: The interior has a greyish appearance towards the blade. This may indicate that lead was poured into the base of the socket (c.f. Borstal, 16/14), though analysis would have to be undertaken to prove or disprove this. There is no other evidence relating to this stage of the object's life-cycle.

01/07

Description: Socketed axe of plain 'south-eastern' type.

Dimensions: Length: 116mm. Cutting edge: 36mm.

Patina: Corrosion stripped, details poor.

Manufacture: The mouth seems uneven, indicating a shortage of molten metal during casting, and the wall appears thin at the break. Vestigial traces of the casting seams remain visible over the body, although these are difficult to identify due to the poor condition of the object.

Use: The condition of the cutting edge cannot be established following the removal of the corrosion product.

Reduction: The piece has been crushed along its length, and the profile of the object is now distorted, this damage being at its most marked just below the loop. The section is severely distorted at the mouth on both sides. and cracking and breakage of the metal has resulted here on one side.

01/08

Description: Socketed axe of unknown type. Two internal ribs are visible.

Dimensions: Length: 86mm. Cutting edge: 49mm.

Patina: Corrosion stripped, object in very poor condition.

Manufacture: There is a substantial dip in the collar over the loop, and much of the uppermost collar moulding is now absent in this area, indicating a shortage of metal during casting. In addition, there is a small hole in the upper surface, which represents another minor casting defect. Stumps of the feeders remain visible at the mouth, although the intervening seam has been trimmed and flattened, and traces of hammering around the mouth can be linked with this process. The uppermost casting seam has been hammered down and virtually obliterated over the body, though a marked step marks the junction between both valves of the mould here. The lower seam is prominent though flattened above the loop, and its line remains clearly visible below the loop, although the seam has been flattened so that it is now virtually flush with the rest of the body. All traces of the seam have been obliterated over the loop, and the cutting edge has a crescentic appearance.

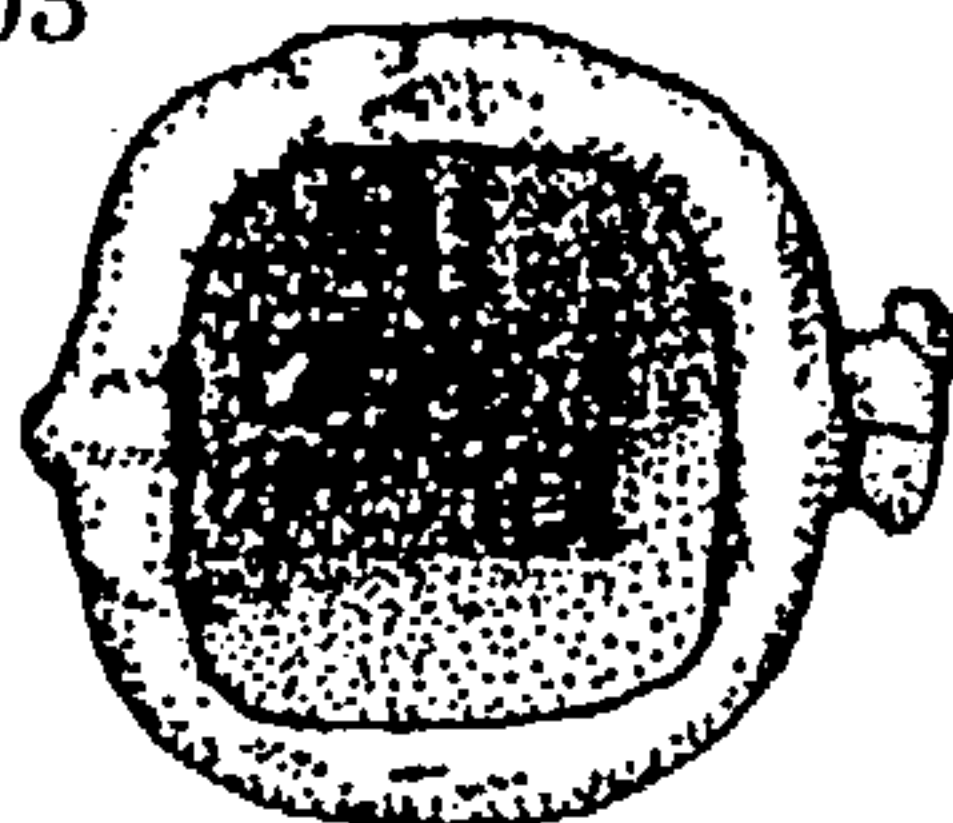
Use: The blade is unevenly worn, and is in very poor condition as a result of corrosion removal.

Reduction: A possible chisel mark is present on the mouth, and this was probably inflicted during the separation of axehead and haft.

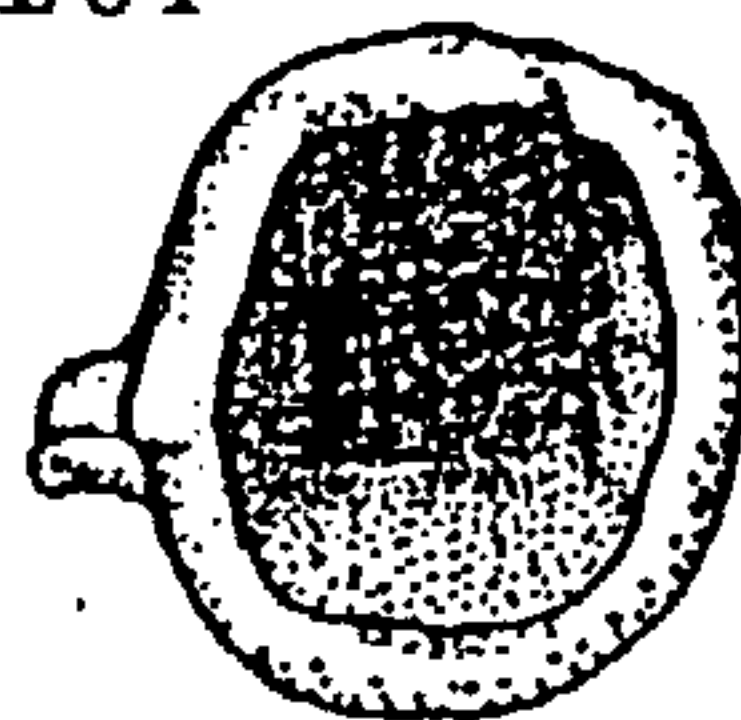
01/01



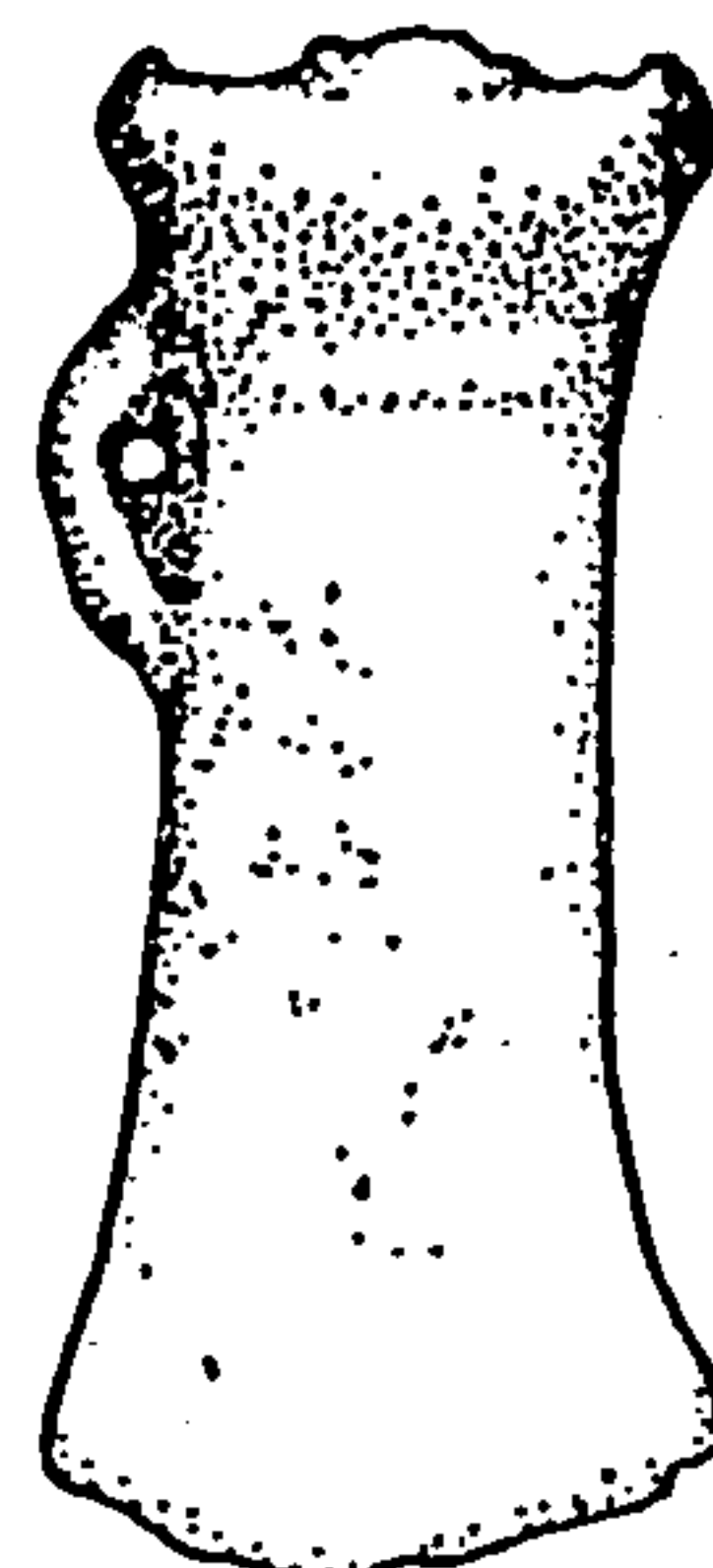
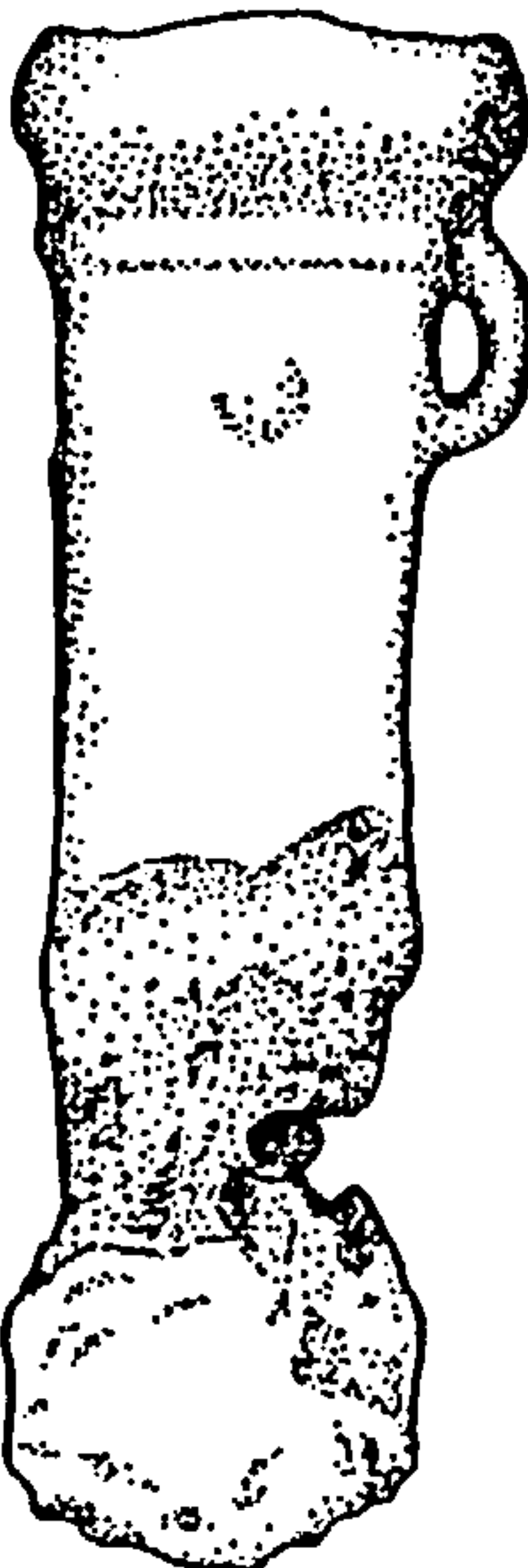
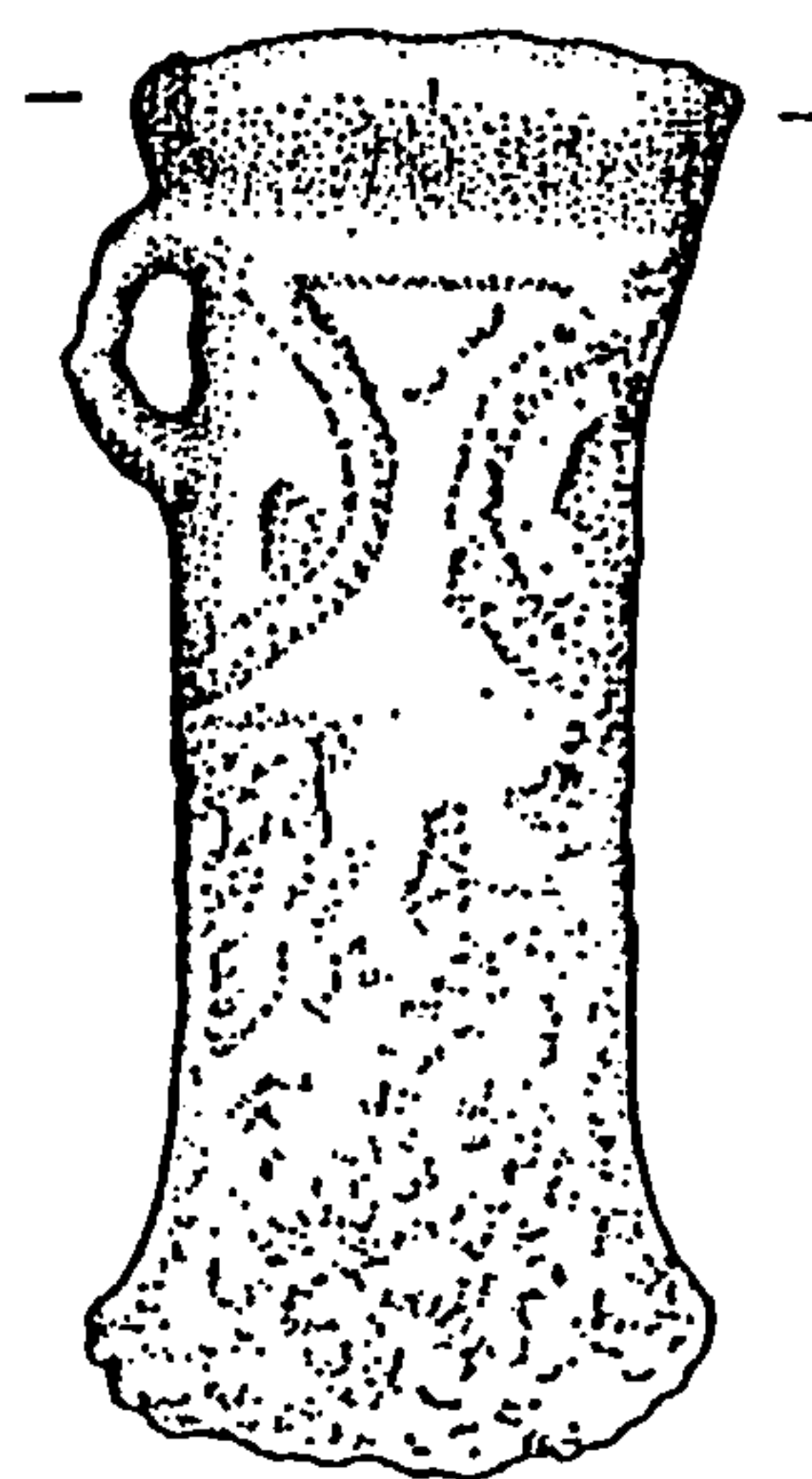
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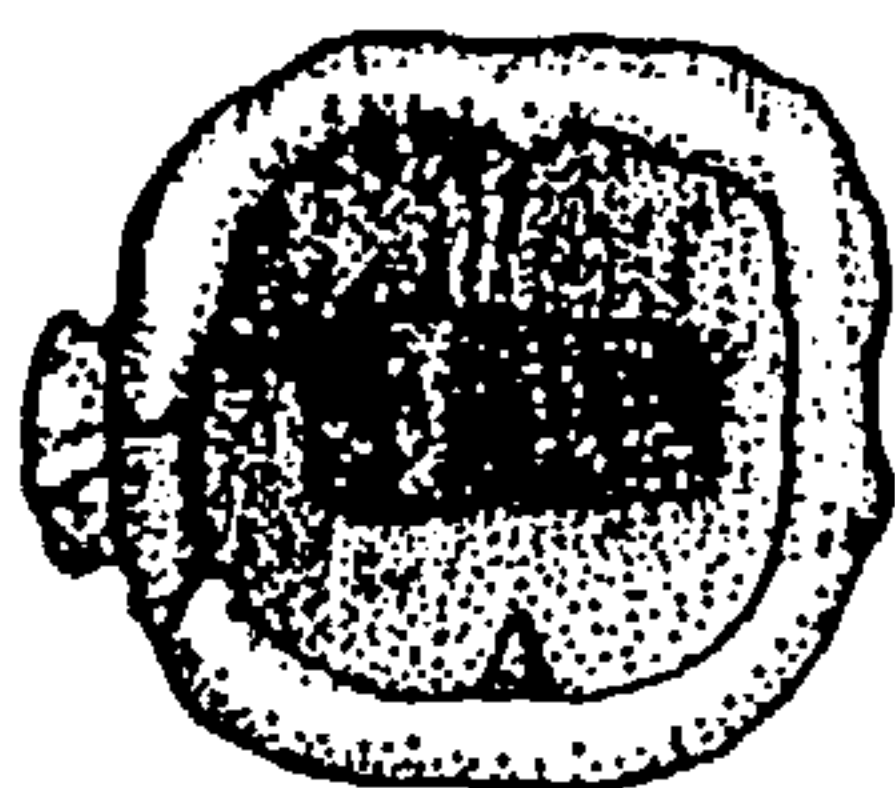


01/02

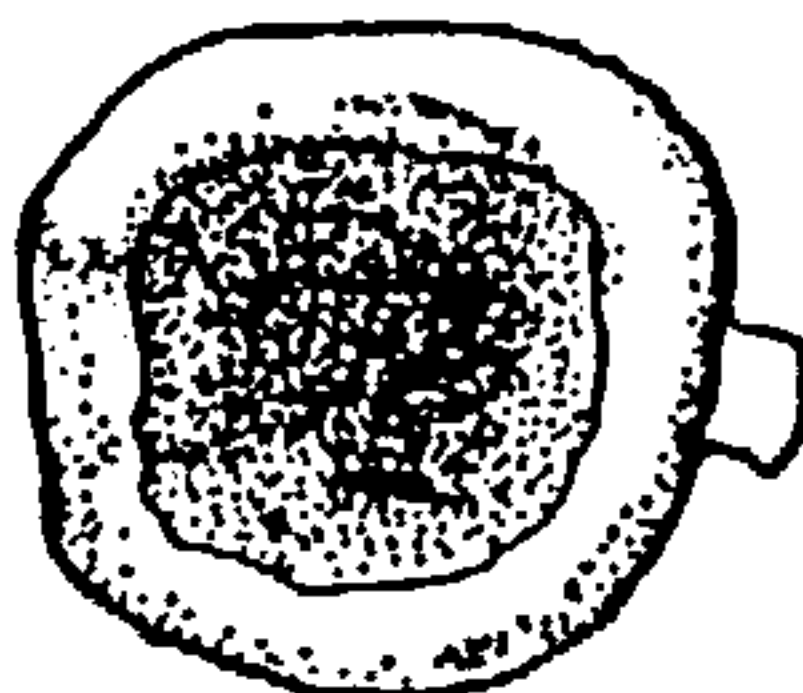


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01/05



01/06



01/07



01/08

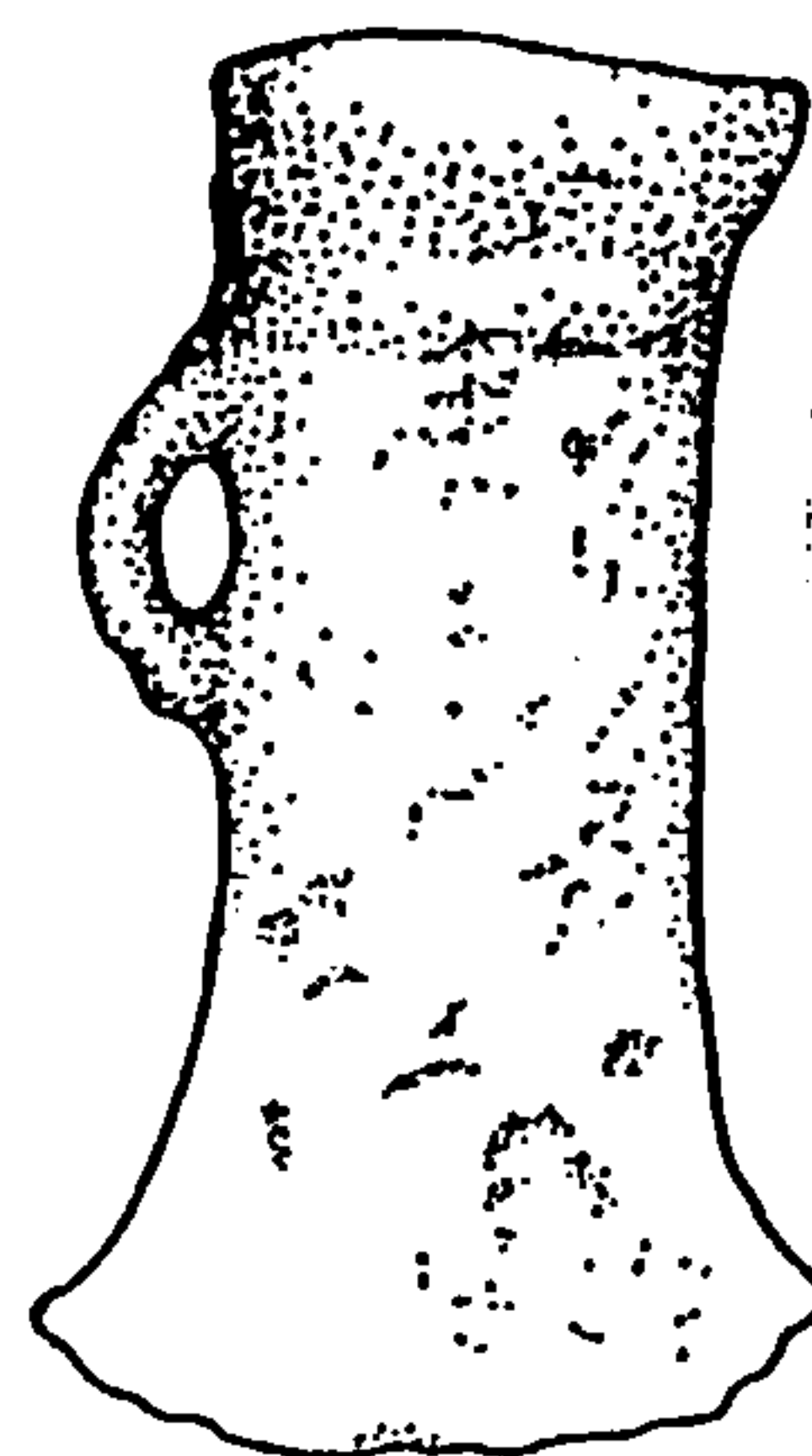
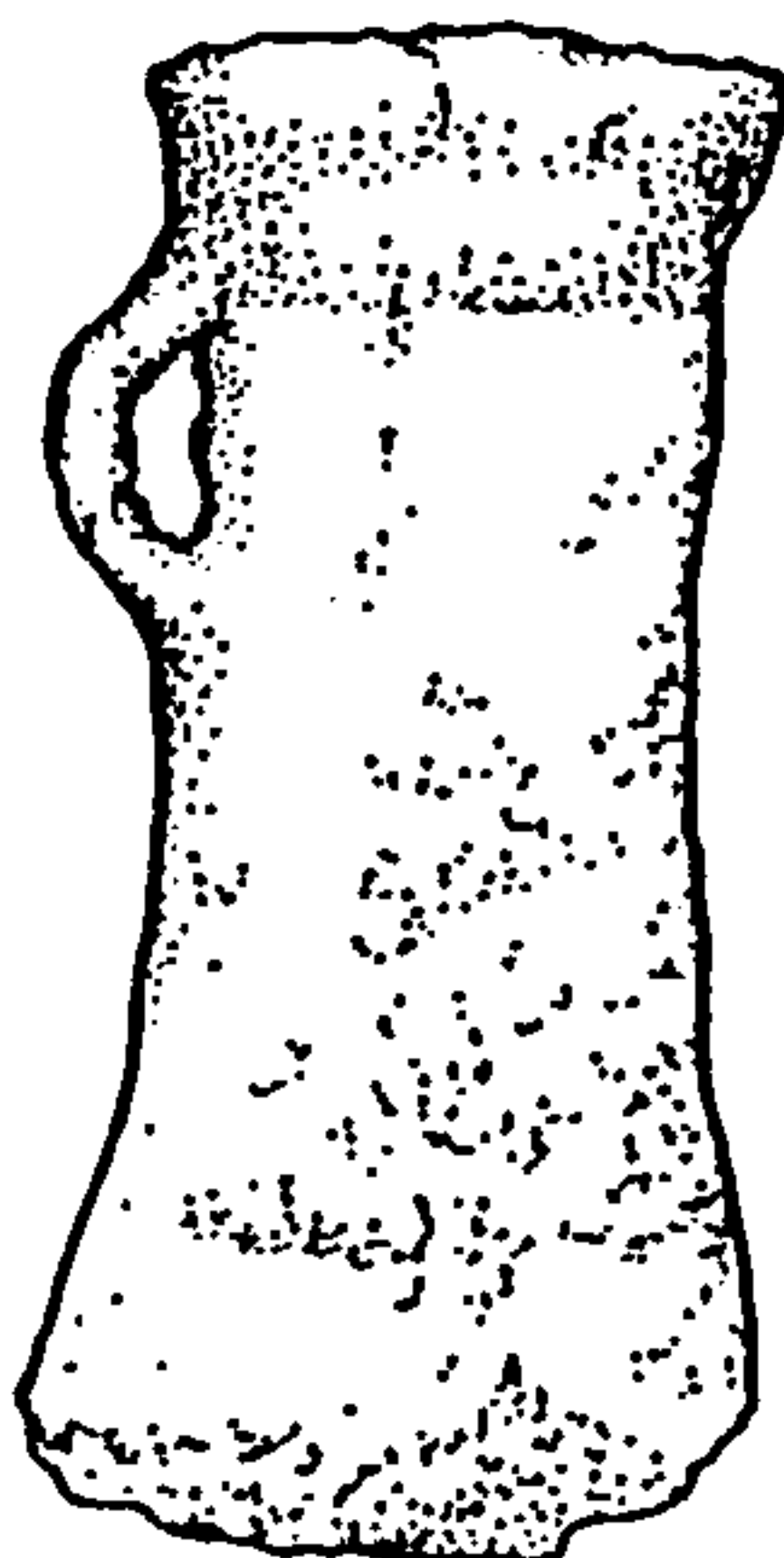
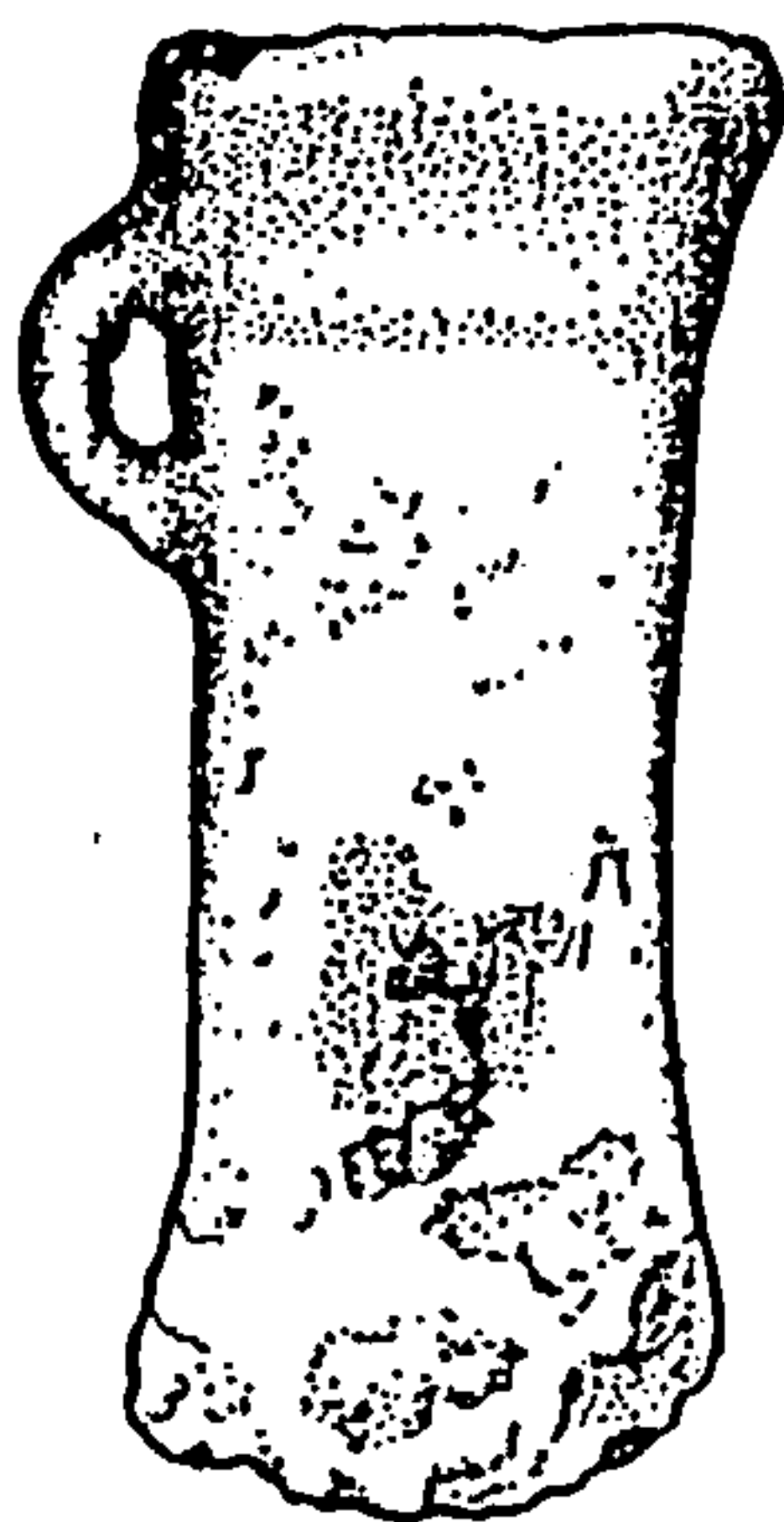
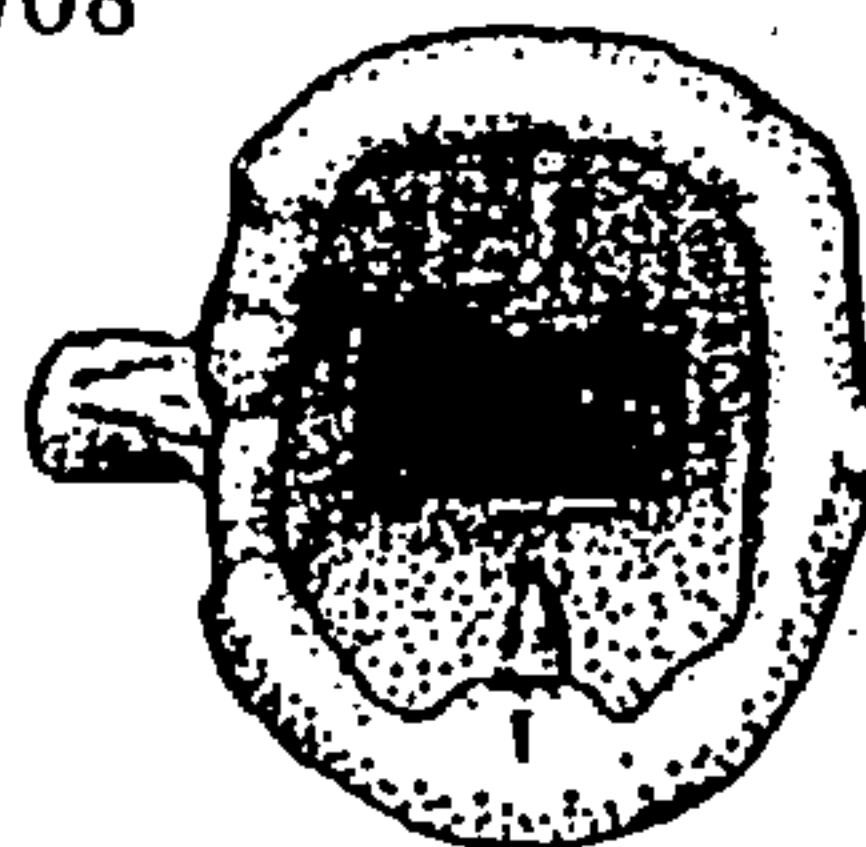


Fig. 1: The Aveley Hoard (Ref. No. 01)

Grays Thurrock I(Ref. No. 02)

Grid Reference: c. TQ 61 78.

Current Location: Stored mainly at Colchester and Essex Museum (accession no. 2362.18), though several items are located at Grays Museum.

Context: This hoard - by far the largest of the Essex hoards and, on a national scale, second in size only to the Isleham hoard, Cambs. - must unfortunately remain ambiguous in terms of its validity as a single closed deposit. Butcher describes this hoard as having been found within 'a cavity in the chalk at Grays Thurrock, Essex' (Butcher, 1923), but this claim must remain problematic. According to museum staff at Colchester and Essex Museum (Sealey, pers. comm.), the hoard was in fact purchased from a dealer. This individual claimed that these metal objects were sourced from two different provenances, 'Vaughn's Close' and 'Hangman's Wood'. However, the description of the findspot in Hangman's Wood appeared to be inaccurate, if not spurious; so it has been assumed that the hoard represents instead one single deposit which was dispersed after its discovery.

Bibliography: Butcher, C. H., 1923.
N. B. I.

Contents:-

02/01

Description: Socketed axe of faceted type.

Dimensions: Length: 99mm. Cutting edge: 50mm. Weight: 188.8g.

Patina: Thick dark green, some bronze showing. Details locally good.

Manufacture: A small hole in one face just below the collar (not illustrated), and a slightly waisted appearance to the loop (illustrated) represent minor casting defects. Around the mouth, the casting seam has been obliterated, evidence of this process surviving in the form of some rough hammer indents around the socket. Over the body, the upper casting seam is thick and bluntly obtrusive over the upper third of the piece. Below this point it has been removed, though its original line is still shown by a furrow which marks the junction between the two mould valves. The lower seam remains thick and obtrusive down to the loop. It still survives over this latter feature, and may have been deliberately retained as a decorative feature here. Below the loop it has been ground away, and now only a faint trace remains visible. There is evidence of hammering over the blade, and some faint grinding marks can be identified above the cutting edge. Some small tool marks, inflicted by a chisel or a punch, are also visible in places.

Use: The cutting edge is chipped in places, but there is no significant damage, and the piece still appears to be in fine condition.

Reduction: The small tool marks may have been inflicted during the separation of axehead and haft.

02/02

Description: Socketed axe of faceted type, though the facets are less clearly defined here than they were in 02/01 above.

Dimensions: Length: 96mm. Cutting edge: 49mm. Weight: 170.1g.

Patina: Thick dark green, rather rough. Details poor.

Manufacture: The mouth appears uneven, which suggests that an inadequate supply of metal was poured into the mould during casting, and some pitting on one face (illustrated) may be the result of casting into a damp mould. The mouth is rough, with the stump of a feeder surviving. The uppermost seam is trimmed and flattened over the body, remaining visible over the upper half of the piece. Below this point it has been obliterated, though the object is not well-finished here, with its surface remaining rough. The lower seam is prominent over the collar and the loop, where it appears to have been retained as a decorative feature. Below this point it has been flattened, though vestigial traces are present over the entire length of the piece. The blade has been widely expanded.

Use: The cutting edge is unevenly worn. Where it remains intact, it is very blunt, but the blade is badly chipped over much of its extent. Some of this damage (illustrated) reveals

fresh metal, indicating that it took place in recent times, but the condition of the piece in antiquity was nonetheless likely to have been poor.

Reduction: A chisel mark is visible on the upper body (not illustrated). This may have been inflicted during the cutting of the material which bound axehead and haft together.

02/03 (Stored at Grays Museum and attributed to the 'Vaughn's Close' hoard.)

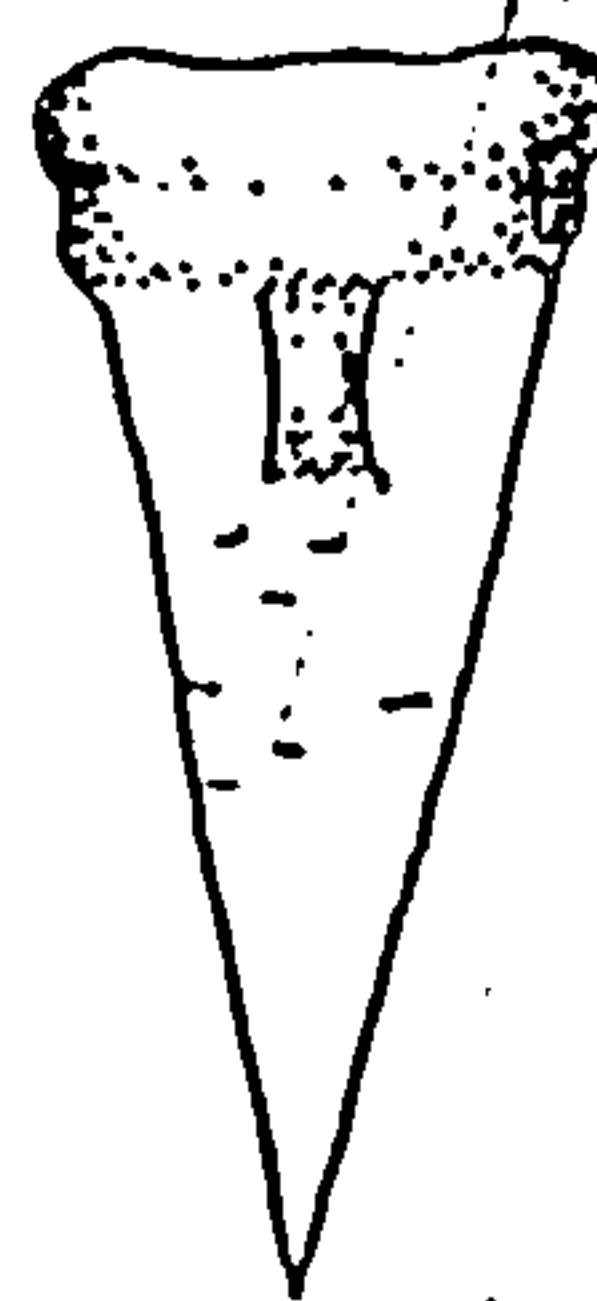
Description: Socketed axe of 'Llantwit-Stogursey' type, decorated on both sides with three parallel ribs.

Dimensions: Length: 106mm. Cutting edge: 54mm. Weight: Unknown.

Patina: Corrosion stripped, details questionable.

Manufacture: Traces of a feeder remain visible at the mouth, but the intervening seam is largely well-finished here. It has been hammered flat, surviving only as a lip which can be traced around the interior of the socket. Over the body, the upper casting seam has been flattened, a blunt trace remaining clearly visible over two-thirds of the extent of the piece. All traces have been obliterated in the vicinity of the cutting edge, however. The lower seam is similar, and, on both sides, the seams are no longer visible over the collar mouldings. There is evidence of fine hammering above the cutting edge, which is well-expanded. A cluster of chisel marks can be seen on the lower surface, and isolated chisel marks are also present on the upper surface (fig. 1).

Fig. 1



Use: The cutting edge appears blunt and uneven along its length, with some shallow notches missing in places.

Reduction: One isolated chisel mark on the collar may have been inflicted during the separation of axehead and haft.

02/04

Description: Socketed axe of 'Yorkshire type', with three slightly diverging ribs hanging from the collar. Faint ribs also define the interfaces between the faces and their adjoining upper and lower surfaces.

Dimensions: Length: 95mm. Cutting edge: 62mm. Weight: 301.8g.

Patina: Thick dark green. Details locally good.

Manufacture: A hole in the casting and a crack in its vicinity may represent a casting defect. The mouth is slightly uneven, but is well-finished, with no traces of the casting seam surviving. Over the body, the uppermost seam remains as a vestigial trace over two-thirds of the body, though it has been completely removed near the cutting edge. The lower seam has been obliterated over the loop, and no traces survive below this point, though between the loop and the mouth it remains prominent, but smooth. The blade is crescentic in appearance.

Use: The cutting edge is in good condition over much of its length. However, a large notch located roughly halfway along the blade probably rendered the object unusable.

Reduction: Small tool marks are apparent on both faces, and these were probably inflicted when the material which bound the axehead in place upon the haft was cut prior to the removal of the haft.

02/05

Description: Socketed axe of 'southern English' type, with six ribs on either face.

Dimensions: Length: 106mm. Cutting edge: 56mm. Wt. 286.6g.

Patina: Thick dark green, with some rough patches, and some bronze showing.

Manufacture: The mouth appears uneven, indicating that an inadequate supply of metal was used during casting, and a hole beneath the loop on the underside is evidence of another casting defect. A series of dimples and depressions in one face (illustrated) are further evidence of an inferior casting, and they are likely to have resulted from casting in a damp mould. Around the mouth, the seams have been left ragged and sharp in places, with vestigial traces of the feeders surviving. Over the body, the uppermost seam has been

flattened, and it remains thick and prominent almost to the cutting edge. The situation on the underside is similar, though only a vestigial trace of the seam remains visible over the loop. Horizontal and vertical grinding marks are apparent over the cutting edge. In addition, a series of tiny punch marks - apparently decorative in nature - run parallel to the cutting edge, which is crescentic in appearance.

Use: The cutting edge is blunt, but it remains in good condition over most of its length. Two notches are present, however - one massive central example, and an additional smaller one - and these would surely have rendered the object unusable.

Reduction: The object is complete and there is no evidence relating to this process.

02/06

Description: Socketed axe of 'southern English' type, with six ribs on either face.

Dimensions: Length: 114mm. Cutting edge: 56mm. Wt. 268.6g.

Patina: Thick dark green. Details reasonable.

Manufacture: Some dips in the mouth indicate that an inadequate supply of metal was used during casting, and the waisted appearance of the loop is an additional minor casting flaw. The mouth is very rough in appearance, with a large stump of one feeder surviving, and some traces of the intervening seam remain visible. The upper seam has been flattened over the body, but it is still prominent and quite sharp. The lower seam is very thick, and it still remains sharp in places, though it has been completely removed over the loop. The seams have been obliterated just above the cutting edge on both sides. The blade is crescentic, with horizontal and visible grinding marks visible over the cutting edge.

Use: The blade appears to have been resharpened rather over-enthusiastically, as the cutting edge is unusually thin, and slightly distorted (fig. 2). The edge appears blunt and chipped along its length, with one marked notch apparent. A large crack which runs down one face (illustrated) probably resulted during use.

Reduction: There is a slight depression in the face near the base of the crack. Its close association with the cracking might suggest that the latter resulted from hammering, though use-related breakage does seem more likely. Some chisel marks can be seen on the uppermost collar moulding around the mouth, and these may have been inflicted during the removal of the haft.

02/07

Description: Socketed axe, of 'south-eastern' type, decorated with a variant on the wing-decorated form. In this example, the wings are conjoined over the lowermost third of their extent. Internal ribs are present in the interior of the socket.

Dimensions: Length: 108mm. Cutting edge: 49mm. Weight: 267.4g.

Patina: Rough mid-green, with much bronze showing. Details locally excellent.

Manufacture: Stumps of the feeders survive at the mouth, though the intervening seam has been largely removed here. The uppermost casting seam remains thin but sharp over the body, though it has been obliterated over the last c. 15mm towards the edge. The lower seam is flattened in places, particularly over the loop, but it remains rough in appearance. Again, it is no longer visible over the last c. 15mm towards the edge. There is evidence of fine hammering over the blade, which has been widely expanded, and vertical and horizontal grinding marks are apparent over the cutting edge.

Use: The cutting edge is in poor condition, with one large notch visible, and other smaller examples occurring in its vicinity. This damage took place in antiquity.

Reduction: There is no evidence relating to this process. A slash across upper body (illustrated) was inflicted in recent times.

Fig. 2



02/08

Description: Socketed axe of 'south-eastern type', with very faint wing decoration on either face. Internal ribs present.

Dimensions: Length: 104mm. Cutting edge: 50mm. Weight: 273.0g

Patina: Mainly rough dark green, with bronze showing on one face. Details poor.

Manufacture: The mouth is very uneven. A stump of one feeder survives, but this may have been left in place because a shortage of metal during casting resulted in a deformed collar moulding in the vicinity of the loop. As a consequence, the degree of finishing here was minimal. The uppermost casting seam has been trimmed and flattened over the body: it remains visible over the upper portion of the axehead, though it has been obliterated over the lowermost half of the piece. It is also absent over the collar. The lower seam is similar, though it seems a little sharper here and has been removed entirely over the loop. The blade is crescentic in shape, showing evidence of fine hammering over its extent.

Use: The cutting edge is in poor condition. It is very badly battered, with a large shallow notch missing from its extent. Burring is evident around the edge of this notch.

Reduction: There are some small tool marks on the lower body (illustrated), and these may have been inflicted when the material that bound the axehead to the haft was cut.

02/09

Description: Socketed axe of 'south-eastern type', bearing a variant of the wing-decorated form. The wings in this example comprise two parallel crescentic ribs divided by a furrow.

Dimensions: Length: 77mm. Cutting edge: 42mm. Weight: 132.4g.

Patina: Some bronze is showing, but one face is covered on the upper body and much of the blade by dense olive/rough green patina. The other face has a rough green covering. Despite this corrosion buildup, details remain locally excellent.

Manufacture: The mouth is rough, with stumps of the feeders surviving. The upper seam remains sharp and prominent over the body, almost to the cutting edge. The lower seam is similar, though it has been obliterated over the loop. The blade is crescentic, and a fine bevel remains visible along its length. Horizontal grinding marks run across the cutting edge, and some vertical grinding marks run down the body in places.

Use: Where the cutting edge survives, it is in excellent condition, but the axehead may have been considered unusable at the time of deposition, as a large notch is missing from its extent, and some additional smaller notches are present, too. This damage took place in antiquity.

Reduction: The axehead is complete and there is no evidence relating to this process.

02/10

Description: Socketed axe of 'south-eastern' type, decorated with a variant on the wing-decorated form. In this example, furrows flank the upper portion of the convex edges of the wings. These furrows converge to form a triangular protrusion beneath the collar mouldings.

Dimensions: Length: 80mm. Cutting edge: 46mm. Weight: 193.4g.

Patina: Thick, rather rough, mid-green. Details locally excellent.

Manufacture: The mouth is uneven in places, indicating an inadequate supply of metal during casting. The remains of one feeder survive at the mouth, along with an adjoining stretch of casting seam, but the piece is generally well-finished here. Over the body, the upper seam remains prominent and thick, suggesting that trimming has been minimal prior to flattening. In the vicinity of the cutting edge, however, the seam has been obliterated. The lower seam is similar, though it has been entirely removed over the loop. The blade is crescentic, with a faint bevel running along the length of the cutting edge. There is evidence of fine hammering along the edge, and horizontal grinding marks are also visible here.

Use: The cutting edge is blunt and chipped, but it remains in reasonable condition.

Reduction: The object is complete and there is no evidence relating to this process.

02/11

Description: Socketed axe of 'south-eastern' type. On one face, two pellets are apparent (illustrated), while on the other the decoration is fainter, with either rib or pellet decoration present.

Dimensions: Length: 109mm. Cutting edge: 52mm. Weight: 264.3g.

Patina: Rough dark green, with some bronze showing.

Manufacture: A tiny hole in the upper surface appears to be a minor casting defect. The mouth is well-finished, with an even appearance, and no traces of feeders or casting seam remain here. The uppermost seam has been trimmed and flattened over the body, surviving only in vestigial form, and all traces have been removed from the collar mouldings and from the last 20mm towards the cutting edge. The lower seam can be identified over much of its length, though it has been obliterated over the loop. The blade is crescentic, with horizontal grinding marks and evidence of fine hammering apparent on the blade.

Use: The blade appears to have been resharpened, and the cutting edge remains fine and sharp along its length. It seems rough in places, but this may be recent damage, i.e. due to recent flaking of the corrosion products. A crack runs down one face, from the mouth to the casting defect noted in Manufacture above, and the section shows outwards distortion here. This damage is likely to have been use-related, and it strongly indicates that there was an inherent weakness in the casting.

Reduction: No evidence of deliberate destruction can be identified.

02/12

Description: Socketed axe of 'south-eastern' type. Both faces are decorated with a row of three pellets, which run in line with the lower end of the loop.

Dimensions: Length: 100mm. Cutting edge: 47mm. Wt. 226.8g.

Patina: Thick dark green, rough on one side. Details reasonable.

Manufacture: The wall section seems rather thin at the break, indicating core misalignment. The mouth, where it survives, is nicely finished, though some traces of the casting seam do remain prominent here. The upper seam has been virtually obliterated over the body, with only a faint trace remaining. The lower seam is similar, though it is slightly more pronounced. On both sides, however, the seams have been obliterated over the last c. 15mm from the cutting edge. Horizontal and vertical grinding marks are apparent on one face (illustrated), details on the other having been obscured through corrosion buildup. The blade is well-expanded.

Use: The cutting edge remains in reasonable condition.

Reduction: Much of one face and its adjoining upper surface are now missing, and a crack is apparent, running diagonally to beyond the loop. This breakage could be use-related, as the casting is thin - and therefore weak - here. Slight convex distortion of the upper surface also supports this possibility. A scatter of small tool marks on the surface may have been inflicted during the cutting of the material which bound the axehead to the haft.

02/13

Description: Socketed axe of 'south-eastern' type, with a single pellet decoration on either face. The two collar mouldings are clearly defined, with a pronounced channel running between them. Rather faint internal ribs are present.

Dimensions: Length: 113mm. Cutting edge: 43mm. Weight: 230.5g.

Patina: Thick dark green/olive, with a faint greyish-purple tinge. Some bronze shows through on one side (not illustrated), and the details are largely good.

Manufacture: The casting is rather pitted over the interior of the socket, but seems otherwise fine. The casting seams remain prominent over both sides of the body, though they have been flattened, and they have been obliterated on both sides over the lowermost third of the piece. No traces of the seam survive over the loop. The blade has been well-expanded.

Use: The cutting edge is in poor condition, with none of the original edge surviving. There are some traces of burring apparent.

Reduction: Small tool marks can be seen on the collar and lower body (illustrated), and some trunnion chisel marks can be identified, lying just below the loop. All of these may have been inflicted during the separation of axehead and haft.

02/14

Description: Socketed axe of 'south-eastern' type, with a single pellet decoration on one face. The other face may possess ribbed decoration, though this has been obscured following corrosion buildup. Internal ribs are present.

Dimensions: Length: 86mm. Cutting edge: 46mm. Weight: 181.1g.

Patina: Dull olive-bronze, with some rough patches present, particularly on one face (not illustrated). Details locally reasonable.

Manufacture: The mouth is uneven in appearance. Several dips in the upper collar moulding indicate that an inadequate supply of metal was used during casting, and the stump of a feeder survives on one side. The casting seams have only been roughly trimmed over the body. On the uppermost surface, they have been flattened over the lower half of the piece, towards the edge, though they remain pronounced immediately behind the cutting edge. The lower seam remains thick over its entire length, which suggests that it was flattened after little if any trimming took place.

Use: The blade is markedly crescentic in shape, which indicates that it was subject to resharpening. The cutting edge is blunt and chipped over its length, but it remains even and is still in reasonable condition.

Reduction: Small tool marks on the body may have been inflicted during the cutting of the material that bound the axehead to the haft.

02/15

Description: Socketed axe of 'south-eastern' type, with a single pellet decoration on one face. The other face may be plain, though it is possible that a very faint ribbed decoration is present, its existence indicated by faint depressions on the lower body (fig. 3).

Dimensions: Length: 82mm. Cutting edge: 34mm. Weight: 154.2g.

Patina: Rough dark green, details poor.

Manufacture: The mouth appears rough, with stumps of the feeders remaining. Over the body, the upper casting seam remains sharp, with the exception only of the upper collar moulding and the area immediately adjacent to the cutting edge. The lower seam has been flattened towards the cutting edge, and over the loop. The blade is very narrow, and the shallow notch which runs over half of the cutting edge seems rounded in appearance, which may indicate a casting flaw.

Use: Despite this possibly significant casting flaw, the edge appears to have been sharpened, i.e. the object was subject to use, so it is conceivable that the notch indicates use-related damage.

Reduction: Small tool marks on both faces may have been sustained during the separation of axehead and haft.

02/16

Description: Socketed axe of plain 'south-eastern' type.

Dimensions: Length: 101mm. Cutting edge: 36mm. Weight: 213.4g

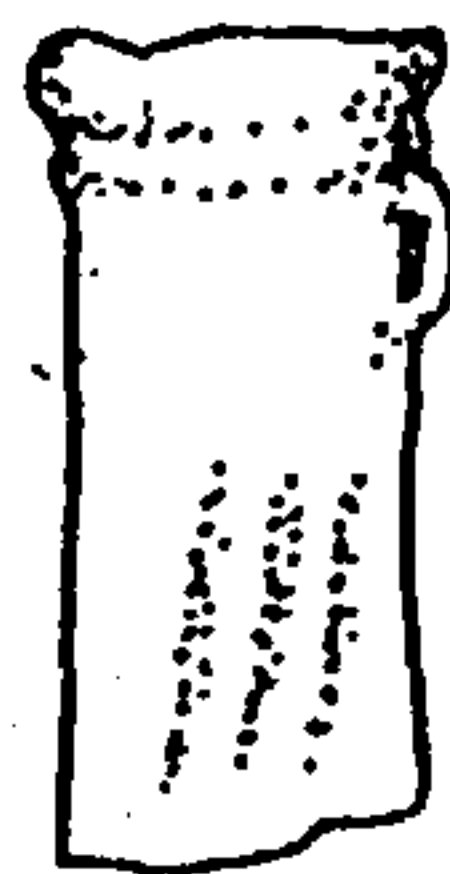
Patina: Rough grey-green, details poor.

Manufacture: An isolated pit and a hole in one face represent minor casting flaws. The mouth is rather uneven, with vestigial traces of the feeders remaining. Over the body, the upper seam has been trimmed and flattened, but it remains prominent over two-thirds of the object's length. The lower seam is similar, only here it has been virtually obliterated over the loop. Horizontal grinding marks are visible above the cutting edge (not illustrated), which is very narrow in shape.

Use: Though the blade is narrow, it has been sharpened, and the cutting edge has been damaged at both corners, probably through use-related damage sustained in antiquity.

Reduction: Small tool marks on the body were probably inflicted during the separation of axehead and haft.

Fig. 3



02/17

Description: Socketed axe, of plain 'south-eastern' type.

Dimensions: Length: 99mm. Cutting edge: 48mm. Weight: 227.8g.

Patina: Rough grey-green, very thick. Details poor.

Manufacture: The feeders remain prominent at the mouth, which is rough in appearance. The uppermost casting seam is thick and blunt over the body, but it has been obliterated over the lowermost third of the piece. The lower seam has been largely removed, remaining visible only at the junction between the loop and the collar. The blade has been widely expanded, and a fine bevel runs along the length of the cutting edge.

Use: The cutting edge appears blunt, perhaps as a result of corrosion buildup, but is generally in good condition.

Reduction: Some shallow notches on the blade date to antiquity, but an explanation for their presence cannot be established.

02/18

Description: Socketed axe of plain 'south-eastern' type.

Dimensions: Length: 106mm. Cutting edge: 47mm. Weight: 318.0g.

Patina: One side is a thick dark green, while the other is rough olive. Details obscured.

Manufacture: There is a substantial notch in the mouth, though it is unclear whether this is evidence of a casting defect, or later damage. A casting defect seems more likely, for while the edges of the notch seem rather rough, this could result from corrosion buildup. The mouth is well-finished, with no traces of the feeders or the intervening seam surviving. Over the body, the casting seams remain very thick, but they have been flattened down over their length, and they can be identified right to the cutting edge. The blade has been expanded, and a fine bevel runs along the length of the cutting edge.

Use: The cutting edge is blunt, but it remains in good condition, with no notches present.

Reduction: Small tool marks on the body may have been inflicted during the separation of axehead and haft.

02/19

Description: Socketed axe of plain 'south-eastern' type.

Dimensions: Length: 108mm. Cutting edge: 47mm. Weight: 322.1g.

Patina: Thick dark-green, rough in places.

Manufacture: The mouth is uneven, indicating that an inadequate supply of metal was used during casting, and a hole in the upper surface is evidence of a minor casting defect. The uppermost casting seam has been flattened over the body, but it remains visible to c. 10mm from the cutting edge. The lower seam can be traced right down to the blade edge, though some of its extent on the lower body has been obliterated as a result of hammering. A stump of a chaplet also survives on the loop. The blade has been expanded.

Use: The cutting edge is in poor condition. It is blunt and burred over much of its length, and is notched in several places.

Reduction: The axehead is complete, and there is no evidence relating to this process.

02/20

Description: Socketed axe of plain 'south-eastern' type.

Dimensions: Length: 102mm. Cutting edge: 50mm. Weight: 278.0g.

Patina: Thick, rather rough mid-green. Details poor.

Manufacture: The stump of a feeder remains prominent at the mouth, though it has been hammered down to some extent. The intervening seam has been removed, however, though the mouth remains rough in appearance. Over the body, the upper seam is sharp and it remains clearly visible over much of its extent, though it has been obliterated over the lowermost third of the piece. The lower seam is thin and prominent over the collar, and it has been flattened and virtually obliterated over the loop and in its vicinity. Below this point it remains clearly visible and prominent, not having been hammered flat here. Some possible horizontal grinding marks can be identified over the cutting edge.

Use: The blade is crescentic in shape, which indicates that it has been resharpened. The cutting edge is blunt, with a large notch now missing from its extent. This damage occurred in antiquity, and slight burring is apparent in association with the notch.

Reduction: Some chisel marks visible over the lower body on both faces may have been inflicted during the separation of axehead and haft.

02/21

Description: Socketed axe of plain 'south-eastern' type.

Dimensions: Length: 100mm. Cutting edge: 50mm. Weight: 276.9g.

Patina: Thick dark green, with some rough patches. Details locally excellent.

Manufacture: The feeders and the intervening seam have been virtually obliterated around the mouth. Over the body, the upper seam has been trimmed, though it remains prominent and sharp over much of its extent. It has been obliterated over the lowermost third of the piece, though. The lower seam is similar, though only a vestigial trace remains visible over the loop. Fine hammering is apparent on the blade, and on one face (illustrated), a dense group of horizontal grinding marks can be identified. Additional vertical grinding marks run down one face (not illustrated). The blade is narrow, and yet hollows are visible over the corners of the cutting edge, which may indicate resharpening.

Use: The blade is generally in good condition. It is chipped in places, but this appears to be recent damage, resulting from flaking of the corrosion product in recent times.

Reduction: Small tool marks are apparent on both faces in the vicinity of the upper body, and similar marks can be identified around the mouth. Such damage may have been inflicted during the separation of axehead and haft.

02/22

Description: Socketed axe of plain 'south-eastern' type.

Dimensions: Length: 110mm. Cutting edge: 56mm. Weight: 253.6g.

Patina: Shiny bronze colour, possibly indicating recent stripping of the corrosion products. Details good.

Manufacture: The mouth is poorly finished, with a ragged appearance, and some of the casting seam survives here. Over the body, both casting seams have been obliterated, though a faint step in section can be identified, suggesting that slight misalignment of the mould valves occurred. Vertical grinding marks are visible on both faces and both sides, and horizontal grinding marks run across the blade, which is markedly crescentic in shape. A faint bevel can be identified where the cutting edge remains intact.

Use: The cutting edge is in poor condition. It is very battered over its extent, with most of the original edge now missing.

Reduction: Some small tool marks on the lower body may have been inflicted during the process of cutting the material which bound the axehead to the haft.

02/23

Description: Socketed axe of plain 'south-eastern' type, with internal ribs present.

Dimensions: Length: 98mm. Cutting edge: 52mm. Weight: 250.1g.

Patina: Some bronze showing, though much now sports a layer of green encrustation.

Manufacture: Some pitting of the bronze indicates a poor quality casting. The mouth is very uneven, with traces of the casting seam remaining around the edge in places. Over the body, the upper casting seam has been trimmed and flattened to some extent, but it remains prominent to c. 10mm from the cutting edge. The lower seam has been flattened, surviving as thick and obtrusive line to c. 10mm from the cutting edge, below which point it has been obliterated. Fine hammering can be seen above the blade, and horizontal grinding marks run across the cutting edge.

Use: The blade is crescentic, indicating that it has been resharpened. The cutting edge is very battered and is in poor condition, but some of this damage may be modern, as fresh metal is visible. One substantial chunk does, however, date to antiquity.

Reduction: Small tool marks are present on the upper body, and these may have been inflicted during the separation of axehead and haft.

02/24

Description: Socketed axe of plain 'south-eastern' type, with internal ribs present.

Dimensions: Length: 100mm. Cutting edge: 53mm. Weight: 232.6g

Patina: Thick dark green, with some rough patches. Details good.

Manufacture: The mouth seems uneven, indicating that an inadequate supply of metal was poured into the mould during casting. Stumps of the feeders remain prominent at the mouth, though the intervening seam has been removed here. Over the body, the upper seam has been trimmed, but it remains sharp right down to the cutting edge, and the lower seam is similar, though all traces have been obliterated over the loop. Vertical grinding marks run down the length of the body, and there are horizontal and vertical grinding marks on the cutting edge.

Use: The blade is crescentic in appearance, which suggests that it has been resharpened. The cutting edge is very battered over its extent, with large portions missing from its length and some evidence of burring.

Reduction: Small tool marks on the body and collar may be associated with the separation of axehead and haft.

02/25

Description: Socketed axe of plain 'south-eastern' type, with two internal ribs present.

Dimensions: Length: 85mm. Cutting edge: 52mm. Weight: 158.7g.

Manufacture: Numerous casting defects suggest that this is probably a poor quality casting. There are two holes lying adjacent to one another in the collar on one side (not illustrated). One is large in size, the other less significant. There are also holes in the other face (illustrated). Their edges appear unusually rough, but they are nonetheless likely to represent casting flaws. The mouth is poorly finished. One feeder has been roughly removed, while the other remains in vestigial form, and the intervening seam survives in places. Over the body, the upper seam is prominent and thin, but it appears to have been trimmed, and flattened to some extent. The lower seam remains prominent over much of its extent, though it has been flattened over the loop and the collar mouldings, and it has been obliterated over the last 20mm from the cutting edge. Vertical grinding marks run down the length of the body. There is evidence of fine hammering over the blade, and horizontal and vertical grinding marks can be identified on the cutting edge.

Use: The blade is crescentic in shape, which indicates that resharpening has occurred, and the cutting edge is in poor condition, appearing burred and notched over its extent.

Reduction: Where the dense concentration of flaws is apparent on one face (illustrated), a cluster of chisel marks and hammer indents can be seen in association, indicating that blows were concentrated here. A crack runs across the object between the body and blade on one face (illustrated), and this suggests that efforts to begin fragmentation were made, though the object was abandoned prior to reaching the conclusion of this process.

02/26

Description: Socketed axe of plain 'south-eastern' type, with two internal ribs present.

Dimensions: Length: 86mm. Cutting edge: 50mm. Weight: 192.0g.

Patina: Rough dark-green/rust brown, with some bronze showing. Details poor.

Manufacture: The mouth is poorly finished, with stumps of the feeders remaining visible and prominent. The upper seam is thick and blunt over the body, and though it has been flattened it remains prominent right to the cutting edge. The lower seam is similar, though it has been obliterated near the cutting edge. The blade is well-expanded.

Use: The cutting edge is intact but blunt over much of its length, with one notch missing. This is rounded in appearance, and may indicate a casting flaw.

Reduction: The object is complete, and there is no evidence relating to this process.

02/27

Description: Socketed axe, of plain 'south-eastern' type.

Dimensions: Length: 81mm. Cutting edge: 46mm. Weight: 159.5g.

Patina: Some bronze is visible, but there are rougher dark-green patches evident.

Manufacture: The mouth is uneven, and poorly finished, with the stumps of the feeders and the intervening seam remaining prominent. Over the body, the upper seam has been flattened over the collar, but it is sharp and prominent elsewhere. The lower seam is similar, though it has been flattened over the loop. A prominent knob, lying within the furrow that divides the collar mouldings, appears to be a chaplet which has been left *in situ*.

Fine hammering is apparent over the blade and lower body, and the cutting edge, which is widely expanded, has horizontal grinding marks running across its extent.

Use: The cutting edge is badly chipped and burred over its entire length, with virtually none of the original edge remaining. This damage appears to date to antiquity.

Reduction: Small tool marks on the body may have been inflicted during the separation of axehead and haft.

02/28

Description: Socketed axe of 'south-eastern' type, with a possible faint pellet decoration on one face (not illustrated) and two internal ribs present.

Dimensions: Length: 83mm. Cutting edge: 37mm. Weight: 133.7g.

Patina: Much bronze showing, with some thicker green patches present. Details largely excellent.

Manufacture: There is a pronounced dip at one side of the mouth, which is otherwise beautifully finished, with little trace of either the feeders or the intervening seam surviving. The uppermost casting seam has been trimmed and flattened over the body, surviving only as a vestigial trace. The lower seam remains fairly sharp over its extent. It has been flattened over the collar and obliterated over the loop, but remains prominent below this point, though no traces survive in the vicinity of the cutting edge. A number of fine grinding marks run down the length of the body on both faces. The blade, which has been expanded, has been subject to fine hammering, and vertical and diagonal grinding marks are visible on the cutting edge.

Use: The cutting edge is chipped in places, but still seems fine and reasonable.

Reduction: There is a very faint depression apparent on one face (illustrated), associated with a possible chisel mark, and this may have been inflicted during the separation of axehead and haft.

02/29

Description: Socketed axe of plain 'south-eastern' type.

Dimensions: Length: 81mm. Cutting edge: 41mm. Weight: 140.5g.

Patina: Rough dark-green, details poor.

Manufacture: The mouth is somewhat uneven, and one feeder remains prominent. Trimming appears to have been minimal here. The upper seam is thick and prominent over the body, though it has been flattened, and traces of a chaplet are apparent halfway down its length. It has been virtually obliterated above the cutting edge, however. The lower seam remains thick and obtrusive over its extent, although it appears to have been flattened. Again, it has been virtually obliterated in the vicinity of the cutting edge. The blade has been well-expanded, with a fine bevel running along its length, and vertical grinding marks run back from the cutting edge.

Use: The blade is unevenly worn, and it appears blunt, though it remains in reasonable condition. There is a notch missing towards one corner, which is likely to have resulted in its having been discarded.

Reduction: There are small tool marks over the upper body on both faces which may have been inflicted during the separation of axehead and haft, and there is a chisel mark on the cutting edge.

02/30

Description: Socketed axe of plain 'south-eastern' type.

Dimensions: Length: 82mm. Cutting edge: 38mm. Weight: 140.5g.

Patina: Thick dark-green, details good.

Manufacture: Slight pitting in the upper moulding represents a minor casting defect. The mouth is well-finished, with no traces of the feeders or the seam surviving. The upper seam has been trimmed over the body, but it remains thin and prominent over the upper half of the piece, though it has been flattened below this point. The lower seam is similar, though the seam remains visible over the loop in this example. The blade has been expanded, and horizontal grinding marks run over the cutting edge.

Use: A large notch has broken from the cutting edge, and there is an additional smaller notch towards one corner. The edge is otherwise good.

Reduction: The object is complete and there is no evidence relating to this process.

02/31

Description: Socketed axe of plain 'south-eastern' type, with two internal ribs present.

Dimensions: Length: 75mm. Cutting edge: 40mm. Weight: 111.1g.

Patina: Much bronze remains visible, though there are some rough green patches around the mouth and on the lower surface. Details are good.

Manufacture: The notches on the cutting edge are rather rounded in appearance, which might suggest that they result at least in part from casting defects. The mouth is poorly finished, with the feeders and the intervening seam surviving. The upper seam has been trimmed, and though it remains prominent over much of the body, it has been obliterated over the lowermost third of the piece towards the cutting edge. The lower seam is similar, though it has been hammered flat over the loop. Vertical grinding marks run down the length of the body, and there are horizontal grinding marks above the cutting edge.

Use: The cutting edge remains sharp, though it is chipped in places, but the large notches noted in **Manufacture** above may indicate more serious damage.

Reduction: Slight indentations can be seen on both faces - these could have been inflicted during the separation of axehead and haft, though it is possible that they could have resulted from over-zealous hammering during manufacture.

02/32

Description: Socketed axe of plain 'south-eastern' type.

Dimensions: Length: 72mm. Cutting edge: 42mm. Weight: 126.1g.

Patina: Rough dark-green. Details locally good.

Manufacture: Pitting of the bronze suggests that this is a poor-quality casting, and the mouth seems uneven, which indicates that an inadequate supply of metal was used during casting. The seam has been only roughly trimmed around the mouth, and has been hammered flat where it survives. Over the body, the upper seam has been removed, leaving only a vestigial trace, though it remains prominent over the collar. The lower seam has been obliterated below the loop, though it is blunt and very prominent above this point. Diagonal grinding marks run back from the cutting edge.

Use: The cutting edge is blunt and uneven.

Reduction: One face (illustrated) has been hammered in the vicinity of the mouth. A small fragment has broken from the mouth as a result, and the collar mouldings have been virtually obliterated in the vicinity of the hammering. Distortion of the section is also apparent here. On the same face there is an additional depression closer to the cutting edge, again associated with hammering.

02/33

Description: Massive socketed axe of unknown type.

Dimensions: Length: 122mm. Cutting edge: 76mm. Weight: 551.9g.

Patina: Thick dark green, with some bronze showing.

Manufacture: The casting seams have been poorly trimmed and roughly flattened, leaving a thick uneven line on all surfaces, including the mouth. All traces of the seam have been obliterated over the loop, however. The blade is widely expanded, and there is a slight bevel apparent on the cutting edge.

Use: The cutting edge has one or two tiny chips and notches along its length. The largest of these notches is unusually smooth, and it may represent a casting flaw. The blade is largely unblemished, and the axehead probably saw little if any use.

Reduction: Some hammer indents on one face (illustrated), and some small tool marks may have been inflicted during the separation of axehead and haft.

02/34

Description: Socketed axe of 'southern English' type, with nine ribs on each face.

Dimensions: Length: 98mm. Cutting edge: 53mm. Weight: 253.4g.

Patina: Rough mid-green, some bronze showing. Details poor.

Manufacture: The collar mouldings are largely absent as a result of a severe casting defect. The upper casting seam is thick and prominent and may be untrimmed near the break, though it has been roughly removed from further down the piece. The lower seam

remains sharp but is less clearly defined, which suggests that it has been trimmed, and it has been flattened over the loop. The blade is well-expanded.

Use: The cutting edge is chipped in places along its length, but remains reasonably fine.

Reduction: Both faces have been hammered, causing breakage around the mouth, and crushing of the section. The ribs have been largely obliterated in places on account of this.

02/35

Description: Incomplete socketed axe of 'south-eastern' type.

Dimensions: Length: 83mm. Cutting edge: 46mm. Weight: 130.1g.

Patina: Rough grey-green, with some bronze showing.

Manufacture: A slight rounded notch in the cutting edge may represent a casting flaw. The mouth is well-finished, with no traces of feeders or seam surviving. On either side of the body, the casting seams have been flattened, though they remain untrimmed, and they survive as prominent traces right down to the cutting edge.

Use: The blade is crescentic, which indicates that it has been resharpened, and the cutting edge is in poor condition. It is unevenly worn, and badly burred and blunt over its extent.

Reduction: The object has been hammered on both faces, and some of the upper surface and its adjoining face has broken away as a result. A number of individual hammer indents can be identified. Some of these are large, and may have been inflicted by a heavier form of hammer, while others were probably made by a trunion chisel or lightweight hammer.

02/36

Description: Incomplete socketed axe, probably of 'south-eastern' type.

Dimensions: Length (maximum): 72mm. Cutting edge: 37mm. Weight: 99.2g.

Patina: Rough grey-green, details poor.

Manufacture: The walls are of uneven thickness, indicating core misalignment. The casting seam remains thick and blunt on both sides, and though it has been flattened, trimming may have been minimal prior to this. The blade has been expanded, but it remains narrow.

Use: The cutting edge is blunt but unblemished, which may suggest that the object saw little use, but one corner has broken off, and this damage seems likely to be use-related.

Reduction: Much of the lower surface and an adjoining face is now absent over the upper body. There is evidence of hammering in association with the break on one face (not illustrated), which suggests that the damage was inflicted deliberately.

02/37

Description: Mouth and upper body fragment of plain 'south-eastern' type socketed axe.

Dimensions: Length (maximum): 55mm. Weight: 132.4g.

Patina: Rough grey-green, details poor.

Manufacture: Vestigial traces of a casting seam survive around the mouth, although these have been flattened and the piece is reasonably well-finished here. The upper seam is prominent between the collars, but it is represented by nothing more than a thin sharp line over the surviving portion of the body. The lower seam is similar, though it has been flattened over the collar mouldings and the loop.

Use: Impossible to determine.

Reduction: A mouth fragment of a socketed axe was placed inside the mouth of this socketed axehead, which was then hammered and crushed, trapping the foreign fragment inside. Two major concentrations of hammer indents can be identified, one immediately above the break, the other in the vicinity of the collar mouldings.

02/38

Description: Mouth and upper body fragment of wing-decorated 'south-eastern' type socketed axe.

Dimensions: Length (maximum): 56mm. Weight: 114.1g.

Patina: Rough grey-green, with some bronze showing.

Manufacture: The walls seem to be of uneven thickness at the break, indicating core misalignment, but this does not appear to have been serious. The mouth is uneven, but it has been well-finished, with only vestigial traces of the feeders and the intervening seam surviving. The upper casting seam is thin and sharp over the body, which suggests that it

was trimmed, but not flattened. It remains blunt over the collar. The lower seam has been flattened over the loop, though a step in the section marks its original line. It is prominent over the collar mouldings, but remains visible as only a vestigial trace below the loop.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process. The section shows no signs of distortion, and no hammering is apparent in association with the break.

02/39

Description: Mouth and upper body fragment of plain 'south-eastern' type socketed axe.

Dimensions: Length (maximum): 65mm. Weight: 169.0g.

Patina: Rough mid-green, details poor.

Manufacture: The mouth is uneven, which indicates that an inadequate supply of metal was used during casting. The finish is good here nonetheless, with no traces of the feeders or the intervening seam surviving. Over the body, the upper seam has been flattened, though it remains obvious over the surviving length of the fragment. The lower seam is similar, though it appears to have been trimmed prior to flattening over the extent of the loop.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

02/40

Description: Mouth and upper body fragment of plain 'south-eastern' type socketed axe, with three collar mouldings present.

Dimensions: Length (maximum): 66mm. Weight: 160.4g.

Patina: Thick grey-green, details poor.

Manufacture: Vestigial traces of the feeders still survive at the mouth, though the intervening casting seam is well-finished here. Over the body, the upper casting seam is thin and sharp over the collar mouldings. Elsewhere it has been flattened, though it still remains visible along its length. The remains of a chaplet survive on the lower surface, at a point which would once have been roughly halfway along the extent of the object. This feature has been roughly flattened, but it remains obtrusive. Below the chaplet, the seam has been virtually obliterated, while above it, the seam has been only roughly finished, though it has been flattened over much of its extent.

Use: Impossible to determine.

Reduction: Faint depressions are present beneath the collar mouldings and above the break on one face (illustrated). The other face (not illustrated) has a pronounced hammer indent apparent on the uppermost collar moulding, located at the junction between the lower surface and its adjoining face. Additional hammer indents can also be identified at the break here.

02/41

Description: Mouth and upper body fragment of plain 'south-eastern' type socketed axe.

Dimensions: Length (maximum): 64mm. Weight: 141.7g.

Patina: Dull grey-green, details poor.

Manufacture: One wall is markedly thinner at the break, indicating core misalignment, and a slight dip in the collar represents another less significant casting defect. The casting seam has been removed around the mouth, but the stump of one feeder remains, giving a rather rough appearance to the piece. Over the body, the upper seam has been trimmed, and though it remains sharp and prominent over much of its extent, it has apparently been flattened over the collar. The lower seam is similar, but it remains untrimmed between the collar and the loop and it has been obliterated over the loop itself.

Use: Impossible to determine.

Reduction: Some hammer indents can be identified on one face (illustrated). There are also some chisel marks visible over the collar mouldings and the upper body on both faces. These marks may also have been caused by hammering.

02/42

Description: Mouth and upper body fragment of plain 'south-eastern' type socketed axe, with internal ribs present.

Dimensions: Length (maximum): 51mm. Weight: 80.0g.

Patina: Rough grey-green, details poor.

Manufacture: A dip in the mouth represents a casting defect. The finish is reasonable around the mouth, with the stump of a feeder surviving on one side and no traces of the intervening seam remaining. The upper seam remains thick and prominent right down to the break, and while the lower seam appears similar over the collar mouldings, elsewhere it has been better finished. It has been obliterated over the loop, and only vestigial traces now survive below the loop.

Use: Impossible to determine.

Reduction: Punch marks can be seen on one face (illustrated). In addition, some chisel marks run in a vertical line down the other face (not illustrated). No evidence of hammering can be seen in association with the break.

02/43

Description: Mouth and upper body fragment of plain 'south-eastern' type socketed axe.

Dimensions: Length (maximum): 39mm. Weight: 75.3g.

Patina: Rough grey-green, details poor.

Manufacture: The mouth is uneven in appearance, which suggests that an inadequate supply of metal was used during casting. Traces of one feeder and the intervening seam survive at the mouth, though these have been flattened to some extent. The upper seam has been trimmed and flattened over the surviving extent of the body, remaining only as a vestigial trace. The underside is similar, though no traces remain over the loop.

Use: Impossible to determine.

Reduction: Both faces have been hammered and crushed in the vicinity of the break. Individual hammer indents can be seen here. These are small and rounded in appearance and were probably made by a trunnion chisel or lightweight socketed hammer. Similar marks can also be seen on the other face (not illustrated). The upper surface also appears to have been hammered at the break.

02/44

Description: Incomplete mouth and upper body fragment of plain 'south-eastern' type socketed axe, comprising one face and part of the adjoining sides only.

Dimensions: Length (maximum): 64mm. Weight: 74.6g.

Patina: Rough grey-green, some bronze showing. Details poor.

Manufacture: A small hole on the upper surface appears to be a casting defect. The uppermost break runs through this defect, which suggests that the casting was weak here. The wall also seems thin, indicating core misalignment. The mouth is rough, though no traces of the feeders survive. The casting seam is now absent on the upper surface, so its condition cannot be assessed, but on the underside it remains prominent, even in the interior of the loop. This might suggest that the object was never properly completed in readiness for use.

Use: Impossible to determine.

Reduction: The section is distorted at the lower break, probably as a result of hammering, though no individual hammer indents can be identified. A crack runs upwards from this lower break, and another slight depression under the collar mouldings may also have been caused by hammering.

02/45

Description: Body fragment of 'south-eastern' type socketed axe. It is of a wing-decorated variant, the decoration in this instance comprising double wings divided by a furrow. Traces of internal ribs are visible.

Dimensions: Length (maximum): 46mm. Weight: 72.7g.

Patina: Rough mid-green, with some bronze showing.

Manufacture: The casting seam has been trimmed but not flattened on one side, remaining obvious over much of the fragment, though it has been obliterated near the break. On the other side, the seam is barely discernible.

Use: Impossible to determine.

Reduction: The object has been hammered along the length of both faces. This has caused distortion of the section, and a crack now runs across one face, c. 10mm from the lower break (not illustrated). Another tiny crack runs vertically from the lower break on the other face (illustrated). No individual hammer indents can be seen on either face.

02/46

Description: Lower body and cutting edge of socketed axe.

Dimensions: Length (maximum): 72mm. Cutting edge: 45mm. Weight: 151.1g.

Patina: Rough grey-green, details poor.

Manufacture: One wall is markedly thinner, indicating core misalignment. The seam has been obliterated over one side, with a vestigial trace surviving on the other. The blade is well-expanded.

Use: The cutting edge is chipped and notched along its length, and is in poor condition.

Reduction: Hammering on both faces has caused cracking in the metal and fragmentation of the object. The section is distorted, the piece having been crushed over most of its surviving extent. Individual hammer indents can be identified, inflicted by a lightweight hammer or perhaps a trunnion chisel. In addition, a series of sharp notches run down the interface between one face and its adjacent surface (illustrated). These appear to be chisel marks.

02/47

Description: Lower body and cutting edge of socketed axe.

Dimensions: Length (maximum): 67mm. Weight: 152.1g.

Patina: Rough mid-green, details poor.

Manufacture: Vestigial traces of the casting seams survive on either side of the fragment, though they have been obliterated towards the cutting edge. The blade has been expanded, but it remains fairly narrow, and horizontal grinding marks are visible over the the cutting edge.

Use: The cutting edge is in poor condition. It appears to have been badly battered in antiquity, and most of the original edge is now missing.

Reduction: No hammer indents can be seen in association with the break, and the section shows no traces of distortion. Some small tool marks on both faces may have been inflicted during the separation of axehead and haft. The socket has now been blocked following the insertion of a socketed axe body fragment.

02/48

Description: Lower body and cutting edge of socketed axe.

Dimensions: Length (maximum): 66mm. Cutting edge: 49mm. Weight: 121.0g.

Patina: Rough grey-green.

Manufacture: Vestigial traces of the casting seams remain on both sides, though they have been entirely removed over the last c. 20mm towards the cutting edge. The blade has been well-expanded, and vertical grinding marks run back from the cutting edge.

Use: The cutting edge remains good over much of its extent, though one large notch is apparent, the presence of which may have curtailed the axehead's useful life.

Reduction: Both faces have been crushed as a result of hammering. The section is much distorted, and cracking of the metal is apparent on both faces, with most of one face now missing (side not illustrated). A number of individual hammer indents can be identified in association with this damage.

02/49

Description: Lower body and cutting edge of socketed axe.

Dimensions: Length (maximum): 61mm. Cutting edge: 41mm. Weight: 150.6g.

Patina: Rough grey-green, some bronze showing. Details poor.

Manufacture: The casting seams remain as prominent lines on either side of the piece, though in both cases they have been obliterated over the final c. 35mm towards the cutting edge. The blade has been expanded, though it remains narrow in appearance.

Use: The cutting edge is burred in places, with one significant notch apparent.

Reduction: There are large shallow indentations on both faces near the break, and the section is distorted here. These were probably inflicted by a hammer.

02/50

Description: Lower body and cutting edge of socketed axe.

Dimensions: Length (maximum): 54mm. Cutting edge: 44mm. Weight: 116.6g.

Patina: Rough light green, details poor.

Manufacture: The casting seams remain visible as vestigial traces on both sides, almost down to the cutting edge. The blade is well-expanded.

Use: The cutting edge is badly burred over almost its entire length.

Reduction: Both faces have been crushed and the section appears much distorted at the break. The depressions on either face appear rough, and they appear to comprise a number of impressions. These appear to have been inflicted by a variety of implements, including a punch and a trunnion chisel.

02/51

Description: Blade fragment of socketed axe.

Dimensions: Length (maximum): 46mm. Cutting edge: 54mm. Weight: 133.8g.

Patina: Rough light-green, details poor.

Manufacture: The casting seams remain thick and prominent to the cutting edge on both sides. They appear to have been flattened, but it is likely that any prior trimming was minimal. The blade is widely expanded.

Use: The blade may have been resharpened. The cutting edge is now in poor condition, appearing blunt and burred over much of its length.

Reduction: Hammering on either face has resulted in crushing of the section. Numerous small tool marks - apparently inflicted by a chisel - can be seen in association with this.

02/52

Description: Blade fragment of socketed axe.

Dimensions: Length (maximum): 50mm. Cutting edge: 44mm. Weight: 101.4g.

Patina: Rough grey-green, with some bronze showing. Details locally good.

Manufacture: The walls are of uneven thickness, indicating core misalignment, which in this case appears to have been severe. The piece has nonetheless been prepared for use. The casting seams have been virtually obliterated on both sides, and the blade has been expanded, with horizontal grinding marks running across the cutting edge in places.

Use: The cutting edge appears battered and burred near either corner, but the middle portion remains reasonable.

Reduction: Where the wall is thin, a depression can be seen near the break (illustrated), but no distortion is apparent on the other face.

02/53

Description: Blade fragment of socketed axe.

Dimensions: Length (maximum): 44mm. Weight: 87.3g.

Patina: Rough mid-green, with some bronze showing.

Manufacture: One wall is markedly thinner, indicating core misalignment. The casting seams have been virtually obliterated over their extent, but their original course can be traced as a small step in the section. The bronze has a whitish appearance might suggest a high lead content, though analysis would be required to prove this. The blade is unusually narrow, although the presence of a bevel along the cutting edge suggests that it was completed in preparation for use.

Use: The blade appears blunt but smooth over its extent. This might imply that the object was never used, though damage to one corner of the cutting edge suggests otherwise.

Reduction: Both faces have been hammered inwards at the break, and as a result the section is distorted. A series of shallow horizontal indents are present on one face (not illustrated), and while similar marks are also apparent on the other face (illustrated), these are not so well-defined. These seem too sharp to have been inflicted by a trunnion chisel, and instead seem likely to have been caused by a tanged or socketed chisel.

02/54

Description: Blade fragment of socketed axe.

Dimensions: Length (maximum): 34mm. Cutting edge: 37mm. Weight: 75.0g.

Patina: Rough grey-green, details poor.

Manufacture: The walls are slightly uneven in thickness, indicating minor core misalignment. No traces of any casting seams survive on either side, and the blade appears to have been expanded.

Use: The corners of the cutting edge are absent. This breakage may have been use-related, though deliberate damage cannot be discounted (see below). Only a small portion of the original edge survives, and this is blunt.

Reduction: Faint indentations can be seen on either face at the break, and some individual hammer indents can be identified here. Deliberate removal of the corners of the cutting edge is a possibility, and it is likely that this was caused by striking either corner from a different direction. The surviving central portion of the blade shows deformation, and the metal is cracked here (fig. 4).

Fig. 4



02/55

Description: Blade fragment of socketed axe. Most of one face is now missing (not illustrated).

Dimensions: Length (maximum): 38mm. Cutting edge: 48mm. Weight: 63.5g.

Patina: Mainly rough light green, with some bronze showing. Details reasonable.

Manufacture: The casting seams have been virtually obliterated over both sides, their original course being marked only by a slight step in the section. On one face (not illustrated), horizontal and vertical grinding marks can be identified on the cutting edge.

Use: The blade is crescentic in appearance, which suggests that it has been resharpened. The cutting edge is in good condition, retaining a sharp edge over much of its length.

Reduction: The object has been crushed above the cutting edge on both faces. Horizontal cracks can be seen on one face (not illustrated), running parallel to the cutting edge. On the other face (illustrated), one massive hammer indent is visible, with some additional small tool marks in the vicinity.

02/56

Description: Lower body and blade fragment of socketed axe.

Dimensions: Length (maximum): 43mm. Cutting edge: 34mm. Weight: 83.2g.

Patina: Thick grey-green, details poor.

Manufacture: The casting seam has been obliterated over one side of the piece, surviving on the other as a vestigial trace. The blade is narrow, but it appears to have been sharpened in readiness for use.

Use: The cutting edge appears battered and blunt over its extent, but remains in reasonable condition.

Reduction: Two large, shallow indentations are apparent on one face (illustrated). These appear to have been inflicted by a heavy form of socketed hammer, as opposed to a lightweight hammer or trunnion chisel.

02/57

Description: Lower body and blade fragment of socketed axe.

Dimensions: Length (maximum): 45mm. Cutting edge: 46mm. Weight: 92.4g.

Patina: Dull grey-green, some bronze showing. Details poor.

Manufacture: On one side the line of the casting seam remains clear, while on the other the seam has been virtually obliterated. On one face (not illustrated), some horizontal grinding marks can be seen upon the cutting edge, which has been expanded.

Use: The cutting edge appears chipped and rather battered over its extent.

Reduction: Faint indentations are visible in association with the break on either face. These are large and shallow in appearance, and are likely to have been inflicted by a heavier form of socketed hammer.

02/58

Description: Lower body and blade fragment of socketed axe.

Dimensions: Length (maximum): 60mm. Cutting edge: 46mm. Weight: 115.8g.

Patina: Dull bronze colour, with some thick green patches. Details locally good.

Manufacture: The walls are of uneven thickness, indicating core misalignment. The casting seams have been obliterated over both sides of the piece. Horizontal grinding marks can be seen running across the cutting edge on one face (not illustrated), and the blade is well-expanded.

Use: Slight bevels over either corner of the blade indicate that the piece has probably been resharpened. The cutting edge is quite blunt, but remains in reasonable condition.

Reduction: A cluster of hammer indents can be seen on one face (illustrated).

02/59

Description: Lower body and cutting edge of socketed axe.

Dimensions: Length (maximum): 48mm. Cutting edge: 42mm. Weight: 114.4g.

Patina: Mainly bronze, with some rough grey-green patches.

Manufacture: There is evidence of core misalignment. In this case, it seems to have been sufficiently severe to have seriously affected the appearance of the axehead, and perhaps its successful function, too. The object has been prepared for use, however, the casting seams having been removed on either side, and the blade expanded.

Use: The cutting edge is broken and notched, and badly burred where it survives intact.

Reduction: The object has been hammered on either face at the break, and this has resulted in distortion of the section, as well as fragmentation. Some tool marks can be seen in association with this damage. They seem unusually elongated and shallow, and they may be the result of a series of superimposed trunnion chisel marks, though it is possible that they were inflicted by a wide, blunt chisel, of a type currently unknown in the material record.

02/60

Description: Cutting edge from socketed axe.

Dimensions: Length (maximum): 33mm. Cutting edge: 48mm. Weight: 52.6g.

Patina: Rough grey-green, with some bronze showing.

Manufacture: There is evidence of core misalignment - though in this instance it is the sides and not the faces which display uneven wall thickness. The casting seam survives as a thick blunt trace on either side, and the cutting edge appears well-expanded.

Use: Bevels over either corner of the blade indicate that the piece was probably resharpened. The cutting edge is fairly blunt over its extent, and is clipped in places, but is in otherwise good condition.

Reduction: Hammer indents are apparent in association with the break on either face.

02/61

Description: Cutting edge from socketed axe.

Dimensions: Length (maximum): 41mm. Cutting edge: 49mm. Weight: 89.8g.

Patina: Rough grey-green with some bronze showing. Details poor.

Manufacture: Very faint traces of the casting seams survive on either side. The blade appears well-expanded.

Use: The cutting edge has one significant notch along its length, with another two smaller examples present. It is otherwise in very good condition.

Reduction: On one face (illustrated) a single hammer indent can be identified near the break, and there are more possible hammer indents on the other face (not illustrated).

02/62

Description: Cutting edge from socketed axe.

Dimensions: Length (maximum): 39mm. Cutting edge: 45mm. Weight: 90.6g.

Patina: Rough mid-green, with some bronze-coloured patches surviving.

Manufacture: Though only a small portion of the hollow-sectioned body survives, it is clear that the core was misaligned. The casting seams have been removed, with only vestigial traces remaining on either side. The blade is narrow in shape, but it has been expanded, and horizontal grinding marks are visible over the cutting edge.

Use: The cutting edge is in excellent condition, suggesting that the object saw little, if any, use.

Reduction: There is no evidence relating to this process.

02/63

Description: Cutting edge from socketed axe.

Dimensions: Length (maximum): 28mm. Cutting edge: 43mm. Weight: 53.0g.

Patina: Rough grey-green with some bronze showing. Details poor.

Manufacture: Though only a small portion of the hollow-sectioned body remain, it is clear that core misalignment occurred. The casting seams have been obliterated over both sides. The blade has been expanded, but it remains narrow in shape. A fine bevel runs along the cutting edge.

Use: The cutting edge is blunt but fine, and the axehead may have seen little if any use.

Reduction: There is no evidence relating to this process.

02/64

Description: Cutting edge from socketed axe.

Dimensions: Length (maximum): 33mm. Cutting edge: 50mm. Weight: 65.4g.

Patina: Rough grey-green.

Manufacture: The walls are of uneven thickness, indicating that the core was misaligned. No traces of the casting seams survive, and the blade has been expanded.

Use: Slight bevels over either corner of the cutting edge probably indicate resharpening. The blade is unevenly worn, but the cutting edge remains in reasonable condition.

Reduction: There is no evidence relating to this process.

02/65

Description: Cutting edge from socketed axe.

Dimensions: Length (maximum): 28mm. Cutting edge: 53mm. Weight: 49.3g.

Patina: Rough grey-green, details poor.

Manufacture: The walls are of uneven thickness, indicating that the core was misaligned. Faint traces of the casting seam survive on one side, while on the other the seam has been obliterated. The blade has been widely expanded.

Use: The cutting edge appears blunt, but undamaged.

Reduction: On one face (illustrated), the section appears to have been pushed outwards at the break (fig. 5).

Fig. 5



02/66

Description: Cutting edge from socketed axe.

Dimensions: Length (maximum): 32mm. Cutting edge: 36mm. Weight: 54.0g.

Patina: Thick grey-green, some bronze showing.

Manufacture: Little of the hollow-sectioned body survives, but what there is suggests that the core was misaligned, and a rounded notch on the cutting edge may represent an additional flaw. No traces of any casting seams can be seen on either side of the body. The blade has been expanded, and horizontal grinding marks are evident over its extent.

Use: A large piece has broken from one corner of the cutting edge, which appears blunt and chipped where it remains intact.

Reduction: Hammer indents and slight distortion to the section can be seen on both faces in association with the break.

02/67

Description: Fragmentary cutting edge from ?socketed axe, solid in section.

Dimensions: Length (maximum): 24mm. Weight: 29.8g.

Patina: Bronze in colour over much of its extent, with some dark-green patches.

Manufacture: The casting survives shows in vestigial form on one side, while on the other it has been entirely removed. The blade may not have been expanded.

Use: The cutting edge appears battered over its extent. Only a small portion remains intact, and this is in poor condition.

Reduction: The cutting edge may have been deliberately damaged, a possibility which is further strengthened by the slight distortion apparent in the fragment's profile.

02/68

Description: Fragmentary cutting edge from socketed axe or winged axe.

Dimensions: Length (maximum): 28mm. Weight: 29.4g.

Manufacture: The casting seam remains visible over the surviving side of the piece, and along the edge of the cutting edge, too. The object therefore appears to be unfinished.

Use: The object can never have been subject to use as an axehead.

Reduction: There are hammer indents apparent on both faces. One larger example can be identified on one face (illustrated), along with a series of smaller marks made by a lighter hammer or trunnion chisel. This damage appears to be related to the separation of body and blade, rather than to the subdivision of the blade fragment.

02/69

Description: Body fragment of socketed axe.

Dimensions: Length (maximum): 39mm. Weight: 16.7g.

Patina: Rough mid-green, details obscured.

Manufacture: The wall seems slightly thin in section, indicating core misalignment.

Use: Impossible to determine.

Reduction: The section appears distorted at the upper and lower breaks. No associated hammer indents can be identified, but corrosion buildup may hide much detail here.

02/70

Description: Body fragment of socketed axe.

Dimensions: Length (maximum): 26mm. Weight: 23.6g.

Patina: Rough mid-green.

Manufacture: The wall section is thin, indicating core misalignment.

Use: Impossible to determine.

Reduction: A depression runs down the centre of the fragment. This is associated with a dense cluster of hammer indents.

02/71

Description: Body fragment of socketed axe.

Dimensions: Length (maximum): 27mm. Weight: 16.8g.

Patina: Rough mid-green, details poor.

Manufacture: The wall seems slightly thin in section, indicating core misalignment..

Use: Impossible to determine.

Reduction: The section is much distorted as a result of extensive hammering, though it is difficult to identify any individual hammer marks.

02/72

Description: Probable body fragment of socketed axe.

Dimensions: Length (maximum): 23mm. Weight: 9.4g.

Patina: Rough grey-green.

Manufacture: There is no evidence relating to this process.

Use: Impossible to determine.

Reduction: Hammering over the face has resulted in cracking of the metal near the lower break and distortion of the section.

02/73

Description: Body fragment of socketed axe.

Dimensions: Length (maximum): 32mm. Weight: 13.4g.

Patina: Some bronze remains visible, with patches of grey-green apparent.

Manufacture: The wall seems slightly thin in section, indicating core misalignment, and the thin trace of the seam can be identified over the length of the fragment. The latter has probably been trimmed, but it has not been subject to further hammering or grinding.

Use: Impossible to determine.

Reduction: The upper surface has been hammered towards one corner and cracking and distortion of the section has ensued. There is a slight depression in the face, too, but no individual hammer indents are visible.

02/74

Description: Body fragment of socketed axe, probably of 'south-eastern' type. One lower collar moulding remains, along with the vestigial trace of an internal rib.

Dimensions: Length (maximum): 31mm. Weight: 17.5g.

Patina: Thick, rather rough mid-green.

Manufacture: The wall of the upper surface seems rather thin, and the edge of the break has a rounded appearance, which suggests that a significant casting flaw was present.

Use: Impossible to determine.

Reduction: The centre of the face has been hammered along its length, resulting in fragmentation and distortion of the section. Some large, blunt hammer indents are apparent around the collar moulding.

02/75

Description: Body fragment of wing-decorated 'south-eastern' socketed axe.

Dimensions: Length (maximum): 24mm. Weight: 16.2g.

Patina: Dense mid-green.

Manufacture: A faint trace of the seam remains over the upper portion of the fragment, but it has been obliterated over the remainder of its extent.

Use: Impossible to determine.

Reduction: No obvious distortion of the section can be identified. There is a possible hammer indent beneath the wing-decoration, but this is barely discernible.

02/76

Description: Body fragment of socketed axe.

Dimensions: Length (maximum): 24mm. Weight: 14.3g.

Patina: Mainly bronze, with reddish brown patches.

Manufacture: The seam remains thick and blunt over its extent, having been roughly trimmed then hammered flat.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

02/77

Description: Small mouth fragment of socketed axe, probably of 'south-eastern' type, with possible pellet decoration on the face, and vestigial traces of an internal rib. Adjoins 02/78.

Dimensions: Length (maximum): 26mm. Weight: 27.0g.

Patina: Rough light green, with some bronze showing.

Manufacture: The casting seam is well-finished around the mouth.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

02/78

Description: Body fragment of socketed axe, probably of 'south-eastern' type, with vestigial traces of pellet-type decoration surviving. The break appears to be recent.

Dimensions: Length (maximum): 28mm. Weight: 10.2g.

Patina: Some bronze remains visible, the rest being a dull grey-green.

Manufacture: The wall seems thin, indicating core misalignment.

Use: Impossible to determine.

Reduction: The profile and the section of the fragment are distorted, as a result of hammering down the centre of the face. The reason behind the recent breakage is more ambiguous: the metal may have been weakened in antiquity, and thus later handling resulted in further fragmentation.

02/79

Description: Mouth fragment of ribbed socketed axe, 5 ribs remaining on the face.

Dimensions: Length (maximum): 49mm. Weight: 38.6g.

Patina: Rough grey-green, details poor.

Manufacture: A dip at one side of the mouth represents a minor casting flaw, and the wall seems unusually thin in section over its extent. No trace of the casting seam survives around the mouth, but the upper seam remains prominent over the body, though it has been trimmed and flattened.

Use: Impossible to determine.

Reduction: A hammer indent can be identified in association with the lower break on one face (not illustrated).

02/80

Description: Mouth fragment of socketed axe, probably of 'south-eastern' type, comprising a mouth and upper body fragment which has been subdivided down the longitudinal axis.

Dimensions: Length (maximum): 51mm. Weight: 48.9g.

Patina: Rough grey-green, with some bronze showing, details locally good.

Manufacture: One face is slightly thinner, indicating core misalignment. The casting seam remains visible around the mouth, with the stump of one feeder surviving, though the piece is generally well-finished here. On the lower surface, the casting seam survives only as a vestigial trace over the upper collar, and it has been obliterated over the loop. It is slightly more prominent below the loop.

Use: Impossible to determine.

Reduction: Both faces have been crushed along their length, and the piece is much distorted, with the mouth having been virtually flattened. Cracking is apparent on the lower surface, too. It seems likely that this was once a complete mouth and upper body fragment, which was longitudinally subdivided following its initial separation from the blade.

02/81

Description: Mouth fragment of socketed axe, probably of 'south-eastern' type. It comprises the lower surface, in association with vestigial traces of the adjoining faces.

Dimensions: Length (maximum): 44mm. Weight: 40.5g.

Patina: Mainly thick grey-green, with some bronze showing.

Manufacture: The mouth appears very misshapen, indicating that an inadequate supply of molten metal was used during casting. No traces of any casting seams survive around the mouth, though it is possible that they were never present in the first place, as the molten bronze failed to reach the top of the mould. On the underside, the seams are thick and prominent. They have been flattened over the upper collar and the loop, which suggests that this axe was prepared for use.

Use: Impossible to determine.

Reduction: One face shows distortion as a result of hammering (illustrated). A series of deep chisel marks run adjacent to the break and parallel to the collar on the other face.

02/82

Description: Long mouth fragment of socketed axe, probably of 'south-eastern' type, with a possible internal rib present.

Dimensions: Length (maximum): 60mm. Weight: 19.1g.

Patina: Thick mid-green, details poor.

Manufacture: The wall seems thin in section, indicating core misalignment. Traces of a seam survive around the mouth, along with the vestigial remains of a feeder.

Use: Impossible to determine.

Reduction: The upper surface appears distorted, and the face has been hammered and crushed over its surviving extent.

02/83

Description: Long mouth fragment of socketed axe, probably of 'south-eastern' type.

Dimensions: Length (maximum): 50mm. Weight: 26.2g.

Patina: Rough grey-green, details poor.

Manufacture: A dip in the mouth is a minor casting defect in a mouth which appears otherwise well-finished. The line of the casting seam is marked by a step in section on the

lower surface, which indicates slight misalignment of the mould valves. The seam has been flattened over the loop.

Use: A striation running down the surviving face may be due to use-related damage.

Reduction: The object has been hammered down the centre of the face, resulting in breakage and distortion of the section. The lower collar moulding has been largely obliterated as a result of the hammering.

02/84

Description: Mouth fragment of wing-decorated 'south-eastern' type socketed axe, with three collar mouldings. Probably part of the same object as 02/85, though the fragments are not adjoining.

Dimensions: Length (maximum): 54mm. Weight: 35.5g.

Patina: Rough grey-green, some bronze showing.

Manufacture: The wall is thin in section, indicating core misalignment. The seam remains apparent around the mouth, and it survives as a prominent but smooth line over the side of the piece too.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

02/85

Description: Mouth fragment of wing-decorated 'south-eastern' type socketed axe, with three collar mouldings. Probably part of the same object as 02/84, though the fragments are not adjoining.

Dimensions: Length (maximum): 51mm. Weight: 26.7g.

Patina: Rough grey-green, details poor.

Manufacture: The wall appears thin in section near the break, indicating core misalignment. The mouth is smooth and well-finished.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

02/86

Description: Mouth fragment of socketed axe, probably of 'south-eastern' type.

Dimensions: Length (maximum): 38mm. Weight: 18.6g.

Patina: Rough grey-green, details poor.

Manufacture: The wall seems slightly thin in section, indicating core misalignment. There is a dip at one side of the mouth, which is probably a casting defect, and the casting seam remains prominent around the mouth.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

02/87

Description: Mouth fragment of socketed axe, probably of 'south-eastern' type.

Dimensions: Length (maximum): 40mm. Weight: 35.1g.

Patina: Rough grey-green, details poor.

Manufacture: The walls appear rather thin, indicating core misalignment. The mouth is well-finished, but over the surviving extent of the body, the casting seam remains thin and sharp, though it has been obliterated over much of the loop.

Use: Impossible to determine.

Reduction: The fragment is very much distorted. A depression runs down the length of the fragment, which suggests that this was originally an upper body fragment which was hammered and broken along the longitudinal plane. Hammering has virtually obliterated the collar mouldings, though no individual hammer indents can be identified.

02/88

Description: Mouth fragment of socketed axe, possibly of 'south-eastern' type.

Dimensions: Length (maximum): 37mm. Weight: 15.8g.

Patina: Rough mid-green, details poor.

Manufacture: A dip in the mouth seems to represent a minor casting defect, and the wall is thin, indicating core misalignment. The casting seam has been well-finished around the mouth.

Use: Impossible to determine.

Reduction: The face has been hammered, and this has resulted in distortion of the section and some cracking of the metal in the vicinity of the break.

02/89

Description: Mouth fragment of socketed axe, probably of 'south-eastern' type.

Dimensions: Length (maximum): 36mm. Weight: 22.1g.

Patina: Some bronze showing, with patches of rough light green present. Details largely obscured.

Manufacture: The mouth is rough, probably due to careless trimming of the casting seam, and the vestigial trace of a feeder survives. Over the body, a thin trace of the seam remains visible at the interface between the collar mouldings, and vestigial traces of the seam can be seen over the upper collar moulding, though it has been flattened here.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

02/90

Description: Mouth fragment of socketed axe, possibly of 'south-eastern' type.

Dimensions: Length (maximum): 31mm. Weight: 32.0g.

Patina: Mainly bronze, with some rough grey-green patches.

Manufacture: Some traces of the casting seam can be identified around the mouth, and the seam remains prominent along the surviving portion of the body.

Use: Impossible to determine.

Reduction: The surviving face has been hammered and crushed along its length, and as a result the collar moulding has been deformed and the section crushed. Similar treatment appears to have resulted in the breakage and subsequent loss of the other face.

02/91

Description: Mouth fragment of socketed axe, possibly of 'southern English' type. There are four ribs apparent on one face, one outlining the interface between the face and the upper surface.

Dimensions: Length (maximum): 32mm. Weight: 14.6g.

Patina: Some bronze remains visible, with a reddish patina apparent in places.

Manufacture: The walls seem thin in section, indicating core misalignment. The mouth is well-finished, though it remains rough where the casting seam has been removed.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

02/92

Description: Mouth fragment of socketed axe, probably of 'south-eastern' type.

Dimensions: Length (maximum): 36mm. Weight: 26.2g.

Patina: Rough grey-green, details poor.

Manufacture: The mouth seems rather uneven, but corrosion products obscure much detail here.

Use: Impossible to determine.

Reduction: Numerous hammer indents can be seen in association with the lower break.

02/93

Description: Mouth fragment of socketed axe, probably of 'south-eastern' type.

Dimensions: Length (maximum): 33mm. Weight: 10.1g.

Patina: Some bronze showing, with rough green patches in places.

Manufacture: The wall appears slightly on the thin side, indicating core misalignment. The mouth, where it survives, is well-finished.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

02/94

Description: Mouth fragment of socketed axe, probably of 'south-eastern' type, with a vestigial trace of the loop surviving.

Dimensions: Length (maximum): 29mm. Weight: 23.2g.

Patina: Dull bronze-olive.

Manufacture: The wall appears slightly thin, indicating core misalignment. The casting seam remains prominent and sharp around the mouth, and the situation is similar over the surviving extent of the body.

Use: Impossible to determine.

Reduction: The surface appears rough, and this may be the result of extensive hammering. There are some possible hammer indents present, but these are unclear. There are no definite indications of distortion to the section.

02/95

Description: Mouth fragment of socketed axe, probably of 'south-eastern' type.

Dimensions: Length (maximum): 34mm. Weight: 22.9g.

Patina: Rough grey-green.

Manufacture: The wall seems thin in section, indicating core misalignment. The stump of a feeder remains prominent at the mouth, as does the casting seam. The finish is better over the body, with the seam surviving as nothing more than a vestigial trace. A possible chisel mark superimposed upon the line of the seam may have been inflicted during its removal.

Use: Impossible to determine.

Reduction: A depression runs down the length of the face and the collar mouldings have been virtually obliterated as a result of hammering.

02/96

Description: Mouth fragment of socketed axe, probably of 'south-eastern' type.

Dimensions: Length (maximum): 31mm. Weight: 18.9g.

Patina: Thick grey-green, some bronze showing.

Manufacture: A sizable dip in the collar moulding is evidence of a casting defect, and the wall seems thin, indicating core misalignment. The mouth is well-finished, but over the body the casting seam is represented by a thin vestigial trace.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

02/97

Description: Mouth fragment of socketed axe, of 'south-eastern' type, with vestigial wing decoration apparent. An internal rib is present.

Dimensions: Length (maximum): 29mm. Weight: 13.2g.

Patina: Some bronze showing, with some rough green patches evident.

Manufacture: The wall seems rather thin in section at the lower break, indicating core misalignment. The mouth is well-finished, with no traces of the casting seam surviving, though vestigial traces of the feeder remain.

Use: Impossible to determine.

Reduction: The lower break is jagged, which might suggest use-related breakage, but the section is distorted, which argues in favour of deliberate destruction.

02/98

Description: Mouth fragment of socketed axe, probably of 'south-eastern' type.

Dimensions: Length (maximum): 33mm. Weight: 19.7g.

Patina: Rough mid-green, details poor.

Manufacture: The wall is thin in section, indicating core misalignment.

The mouth appears well-finished, with no trace of the casting seam surviving. The seam remains visible as a thin, sharp line down the surviving extent of the body.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

02/99

Description: Mouth fragment of socketed axe, probably of 'south-eastern' type, with three collar mouldings and an internal rib present.

Dimensions: Length (maximum): 28mm. Weight: 18.0g.

Patina: Mainly bronze-coloured, with some rough grey-green patches apparent.

Manufacture: No traces of the casting seam survive around the mouth.

Use: Impossible to determine.

Reduction: Some hammer indents can be identified in the vicinity of the break.

02/100

Description: Mouth fragment of socketed axe, with a piece of rough metal adhering. The latter fragment is similar in its shape and dimensions to the loop of a socketed axe, but is now in very poor condition. It may have been subjected to intense heat in antiquity.

Dimensions: Length (maximum): 30mm. Weight: 28.9g.

Patina: Rough grey-green, details poor.

Manufacture: No traces of the casting seam survive around the mouth.

Use: Impossible to determine.

Reduction: The face has been hammered. As a result the collar mouldings are now poorly defined, and one or two hammer indents can be identified here.

02/101

Description: Mouth fragment of wing-decorated 'south-eastern' type socketed axe.

Dimensions: Length (maximum): 36mm. Weight: 16.3g.

Patina: Mainly dull bronze with a light covering of rough grey-green. Details poor.

Manufacture: The wall seems thin, indicating core misalignment. The mouth is smooth and well-finished where it survives, but elsewhere, the casting seam remains thin but prominent along its length. It may have been trimmed to some extent, but it was not flattened, though it appears smoother over the loop.

Use: Impossible to determine.

Reduction: A crack runs alongside one end of the loop, and the hammering which led to fragmentation may have caused this.

02/102

Description: Mouth fragment of socketed axe, probably of 'south-eastern' type.

Dimensions: Length (maximum): 42mm. Weight: 20.5g.

Patina: Thick mid-green.

Manufacture: The wall seems thin in section, indicating core misalignment. The mouth seems smooth and well-finished, with no traces of the seam surviving. On the body, the seam is thin and sharp over the collar, though it has been flattened over the loop.

Use: Impossible to determine.

Reduction: The section is distorted at the lower break. Here, the lowermost point of the fragment appears to have been pushed outwards.

02/103

Description: Mouth fragment of socketed axe, probably of 'south-eastern' type.

Dimensions: Length (maximum): 32mm. Weight: 17.2g.

Patina: Rough light-green, details poor.

Manufacture: The mouth is rough in appearance, with the casting seam remaining prominent over its surviving extent. Over the body, the seam has been flattened over the loop and the upper collar, but elsewhere it remains intact.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

02/104

Description: Mouth fragment of socketed axe, probably of 'south-eastern' type, with an internal rib present.

Dimensions: Length (maximum): 34mm. Weight: 13.8g.

Patina: Rough grey-green, details poor.

Manufacture: The casting seam still survives around the mouth. It has been trimmed and flattened, with its vestigial remains forming a smooth rim above the collar.

Use: Impossible to determine.

Reduction: The fragment has been hammered flat. During this process, the lower collar moulding was almost obliterated. It is possible that the rough area pictured to the left (as illustrated) represents the remains of the loop. A series of ridges which run down its length may be chisel marks inflicted during the removal of the loop.

02/105

Description: Mouth fragment of socketed axe.

Dimensions: Length (maximum): 24mm. Weight: 12.7g.

Patina: Thick grey-green, with some bronze showing.

Manufacture: The casting seam remains prominent around the mouth.

Use: Impossible to determine.

Reduction: There is a possible hammer indent at one side of the fragment.

02/106

Description: Mouth fragment of socketed axe.

Dimensions: Length (maximum): 19mm. Weight: 14.4g.

Patina: Rough mid-green, details poor.

Manufacture: Vestigial traces of the casting seams survive around the mouth and over the collar mouldings towards the remains of the loop.

Use: Impossible to determine.

Reduction: A hairline crack runs across one collar moulding, and the piece appears slightly distorted, which suggests that it was deliberately fragmented.

02/107

Description: Tiny mouth fragment of decorated socketed axe. It may be part of a wing-decorated 'south-eastern' type axe.

Dimensions: Length (maximum): 24mm. Weight: 10.1g.

Patina: Thick mid-green.

Manufacture: The mouth is well-finished, with all traces of the casting seam obliterated.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

02/108

Description: Body fragment of socketed axe, or perhaps socketed 'axe-like chisel' (c.f. Minnis Bay hoard, 19/17).

Dimensions: Length (maximum): 37mm. Weight: 19.1g.

Patina: The original bronze colour remains visible over much of the surface, though some green patches are evident. The corrosion may have been stripped, but if this was the case, then the surface remains in remarkably fine condition.

Manufacture: There is no evidence relating to this process.

Use: Impossible to determine.

Reduction: The face is covered with a cluster of small tool marks, possibly inflicted by chisels and/or punches. Evidence of hammering can be identified in association with the lower break, and slight distortion of the section is apparent here.

02/109

Description: Mouth fragment from unknown object. The fragment may come from a socketed axe, though its thin wall section and single collar moulding might argue against this possibility.

Dimensions: Length (maximum): 32mm. Weight: 10.4g.

Patina: Dusty grey-green.

Manufacture: If this fragment was part of a socketed axe, then the thin section and the malformed collar would indicate severe core misalignment. No traces of any casting seams can be identified on the piece.

Use: Impossible to determine.

Reduction: Small tool marks are evident on the collar moulding, and these may have been inflicted during the removal of the haft. Both the section and the profile of the piece show distortion, which suggests that fragmentation was achieved through hammering.

02/110

Description: Possible body fragment of socketed axe, though it is difficult to be confident of its identity, as the piece comprises only a flat piece of bronze.

Dimensions: Length (maximum): 27mm. Weight: 7.7g.

Patina: Rough grey-green, details poor.

Manufacture: There is no evidence relating to this process.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

02/111 (Grays Museum, labelled 'Vaughn's Close')

Description: Winged axe.

Dimension: Length: 125mm. Cutting edge: 43mm.

Patina: Olive green, with a shiny appearance to the surface that suggests recent lacquering.

Manufacture: Fine hammering is apparent over the butt, and a row of small hammer impressions line the junctions between the wings and the body. The butt end appears rather rough, but no casting seam survives here. Only a faint vestigial trace of the casting seam survives over the lower surface, though all evidence has been obliterated over the loop. The cutting edge has been well-expanded.

Use: Hollows over either corner of the blade indicate that the object was probably resharpened. The blade is unevenly worn, and the cutting edge is battered and burred over its extent. However, it is impossible to ascertain the likely condition of the blade in antiquity, as recent flaking of the corrosion product has exaggerated any earlier damage.

Reduction: One of the upper wings has been broken off in antiquity. Small tool marks can be identified on one of the lower wings.

02/112

Description: Winged axe, with a raised 'X' decoration visible on the upper portion of the body on one face only (c.f. Minster, 20/ 71).

Dimensions: Length: 118mm. Cutting edge: 43mm. Weight: 254.7g.

Patina: Much bronze showing, with some rough patches present. Details good.

Manufacture: The casting seams have been largely obliterated, with a faint trace remaining only on the butt. Stumps of the feeders also survive here in vestigial form. Vertical grinding marks run down the upper portion of the blade, and some horizontal grinding marks run across the lower blade. The cutting edge has been expanded.

Use: Resharpening is suggested by the presence of bevels over either corner of the cutting edge. The cutting edge is unevenly worn, and is burred and chipped along its length.

Reduction: Some small tools are visible on the upper surface in the vicinity of the wings.

02/113

Description: Fragment of winged axe, comprising much of the butt and a small portion of the blade.

Dimensions: Length (maximum): 75mm. Weight: 296.1g.

Patina: Some bronze showing, with patches of rough dark green obscuring the detail in places.

Manufacture: No traces of any casting seams survive. Pitting of the bronze at the upper break might indicate a poor quality casting, and this would have been a weakness that might result in use-related breakage.

Use: Impossible to determine.

Reduction: The wings appear to have been hammered inwards and have subsequently broken. Numerous hammer indents are evident between the wings: these are deep, and they appear too rough and crude to have been part of the manufacturing process. Some small tool marks are visible in the vicinity of the loop.

02/114

Description: Blade fragment of winged axe.

Dimensions: Length (maximum): 75mm. Cutting edge: 38mm. Weight: 185.1g.

Patina: Much bronze showing, with some rough dark-green patches.

Manufacture: No traces of any casting seams survive, but the patina is extremely rough in this area and most details are obscured here. Some evidence of fine hammering can be seen upon the body.

Use: The blade is unevenly worn, and the cutting edge is blunt over its extent. It remains reasonable, however, with no chips or notches evident, and the object would surely have been capable of further use had it been resharpened.

Reduction: Vestigial traces of the wings survive in the vicinity of the break. They appear to have been hammered inwards and deliberately broken.

02/115

Description: Blade fragment of winged axe.

Dimensions: Length (maximum): 65mm. Weight: 132.1g.

Patina: Some bronze showing, with patches of rough grey-green in places.

Manufacture: The casting seams have been obliterated on either side of the blade. The blade appears narrow, but has been expanded. A bevel runs along the cutting edge, above which some horizontal grinding marks are apparent.

Use: Slight hollows over either corner of the blade indicate that the piece was resharpened. The blade is unevenly worn, but it remains good, with just one small notch along the cutting edge.

Reduction: There is no evidence relating to this process.

02/116

Description: Tang from tanged-and-collared chisel.

Dimensions: Length (maximum): 28mm. Weight: 12.5g.

Manufacture: The piece is nicely finished, with no traces of the casting seams surviving.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

02/117

Description: Possible blade fragment from narrow-bladed chisel of unknown type.

Dimensions: Length (maximum): 19mm. Weight: 15.6g.

Patina: Mainly bronze-coloured, with some rough mid-green patches.

Manufacture: The casting seams still survive in vestigial form. They appear to have been flattened, and prior trimming has been minimal.

Use: The blade is very blunt where it remains intact, and this damage seems likely to have been sustained through use. Much of the edge no longer survives.

Reduction: Hammer indents are evident on either face at the break, and the profile of the fragment is very distorted. There are some indications of hammering along the edge, too, which suggests that the object was subject to deliberate destruction.

02/118

Description: Possible fragment of chisel blade, though the blade seems unusually thin in section.

Dimensions: Length (maximum): 19mm. Weight: 11.9g.

Patina: Rough mid-green, with some dull bronze showing.

Manufacture: The casting seam around the edge is untrimmed, indicating that the object was never finished.

Use: The object was unused at the time of deposition.

Reduction: There is no evidence relating to this process.

02/119

Description: Tang from tanged chisel, or perhaps a miscast trunnion chisel.

Dimensions: Length (maximum): 39mm. Weight: 8.1g.

Patina: Rough mid-green, details poor.

Manufacture: Traces of the seam survive around the piece, which may never have been completed for use.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

02/120

Description: Socket and upper blade fragment from an object of unknown purpose. The fragment seems most likely to have come from a mortising chisel, however, as the socket was originally of circular section and the blade rectangular in section.

Dimensions: Length (maximum): 34mm. Weight: 23.5g.

Patina: Thick dark-green, details poor.

Manufacture: There is evidence of core misalignment at the lower break. No traces of any casting seams can be identified, which suggests that they have been obliterated.

Use: Impossible to determine.

Reduction: Hammering has resulted in a marked depression in the socket, and a possible hammer indent can be identified here. Some chisel marks are evident on one face, too (illustrated).

02/121

Description: Socketed gouge, faint collar moulding visible at mouth.

Dimensions: Length: 90mm. Weight: 75.2g.

Patina: Mainly bronze, with some brownish-green and green patches. Details good.

Manufacture: Indications of core misalignment are apparent, with one side of the socket being thicker in section than the other. Vertical grinding marks run down the concave portion of the blade, and fine hammering is apparent above the cutting edge. This may have been inflicted during initial manufacture, or it may be associated with resharpening.

Use: There is a notch missing from the cutting edge, and this appears to be use-related damage.

Reduction: The object is complete and there is no evidence relating to this process.

02/122

Description: Mouth and upper body of socketed gouge, with a single broad collar moulding present.

Dimensions: Length (maximum): 47mm. Weight: 39.2g.

Manufacture: The wall is of uneven thickness at the lower break, indicating core misalignment. The casting seam has been removed around the mouth, but it still remains sharp and prominent down either side.

Use: Impossible to determine.

Reduction: No hammer indents can be seen in association with the break.

02/123

Description: Blade fragment of socketed gouge.

Dimensions: Length (maximum): 43mm. Weight: 26.9g.

Manufacture: The walls are of uneven thickness at the lower break, indicating core misalignment. The casting seams have been neatly removed, with only vestigial traces remaining, and some vertical grinding marks run down the interior of the blade.

Use: The blade is in reasonable condition, remaining fine and sharp over its length, though it is chipped in places.

Reduction: There is no evidence relating to this process.

02/124

Description: Blade fragment of socketed gouge.

Dimensions: Length (maximum): 45mm. Weight: 36.2g.

Patina: Thick dark green, details obscured.

Manufacture: No traces of any casting seams survive. There are faint traces of core misalignment, but this does not appear to have been serious. The bronze appears slightly porous, though, and this may have affected the strength of the casting.

Use: The blade is unevenly worn. A slight depression above the cutting edge appears to be a hammer indent, and this may have been inflicted during the initial preparation of the blade, or perhaps during resharpening. The cutting edge remains in good condition.

Reduction: Some small tool marks are evident on the reverse of the piece near the break. The section is crushed and distorted, but no individual hammer indents can be seen in association with this damage.

02/125

Description: Blade fragment of socketed gouge.

Dimensions: Length (maximum): 47mm. Weight: 40.9g.

Patina: Thick dark green, with some rough patches.

Manufacture: The walls are of uneven thickness, indicating core misalignment, which in this instance appears to have been significant. The piece is well-finished, with the line of the

casting seam being indicated on one side by a shallow furrow, while no traces remain on the other. Vertical grinding marks run down the interior of the blade.

Use: The cutting edge remains in good condition.

Reduction: There is no evidence relating to this process.

02/126

Description: Hilt and upper blade fragment of 'Thorndon' type socketed knife, with a ribbed appearance to the blade. Two rivet holes are present on either side of the socket.

Dimensions: Length (maximum): 48mm. Weight: 37.6g.

Patina: Rough dark green, much detail obscured.

Manufacture: There is evidence of core misalignment in the socket. The junction between the blade and the socket has been hammered, and no traces of the casting seams survive.

Use: Where they remain intact, both blade edges seem good, with only one small notch apparent.

Reduction: The socket has been crushed, and several hammer indents are visible on one face. No traces of any hammering can be seen in association with the lower break. The base of the socket has been filled with rough metal. This is likely to be a later insertion which has corroded into place, but it is difficult to evaluate on account of its location.

02/127

Description: Hilt and upper blade fragment of 'Thorndon' type socketed knife. Two rivet holes are present on either side of the socket, and the blade has a ribbed appearance.

Dimensions: Length (maximum): 56mm. Weight: 38.6g.

Patina: Rough dark-green, some bronze showing. Details reasonable.

Manufacture: The casting seams have been obliterated, and the surface has a polished appearance, suggesting that the object has been finely hammered over its extent.

Use: Where they survive, the cutting edges are good, though there is a notch missing on one side. The upper rivet holes are distorted, and this is likely to indicate strain brought about through use. Some isolated striations appear to be of recent date.

Reduction: Hammer indents can be identified on one side. However these do not appear to be associated with the break, and they may have been inflicted during manufacture as opposed to fragmentation.

02/128

Description: Hilt and upper blade from 'Thorndon' type socketed knife. There are two rivet holes on either side of the socket, and the blade has a ribbed appearance.

Dimensions: Length (maximum): 66mm. Weight: 40.8g.

Patina: Rough dark green, details poor.

Manufacture: The walls of the socket are of uneven thickness, indicating core misalignment. The casting seams have been virtually obliterated, though vestigial traces remain visible on one side of the socket. Evidence of hammering is just discernible on the blade, in particular along the junction between the blade and the socket.

Use: The rivet holes are elongated, indicating strain sustained through use.

Reduction: There is no evidence relating to this process.

02/129

Description: Hilt fragment of socketed knife, possibly of 'Thorndon' type, with part of the blade adjoining.

Dimensions: Length (maximum): 39mm. Weight: 15.6g.

Patina: Rough mid-green, details poor.

Manufacture: No traces of any casting seams survive.

Use: Impossible to determine, as so little of the blade survives.

Reduction: The socket has been crushed completely. Large hammer indents are visible on one face (not illustrated), and these have been sufficiently heavy to distort the other face (illustrated), giving it a ribbed appearance.

02/130

Description: Knife blade, with ribbed appearance, probably of 'Thorndon' type.

Dimensions: Length (maximum): 100mm. Weight: 56.6g.

Manufacture: There are traces of hammering along the bevels which run down the length either blade edge.

Use: The cutting edges appear badly chipped and notched along their length.

Reduction: There is a faint bend to the profile, and a cluster of chisel marks can be identified just below this point. There is a possible hammer indent evident in the vicinity of the lower break.

02/131

Description: Fragment of ribbed knife blade, probably of 'Thorndon' type.

Dimensions: Length (maximum): 89mm. Weight: 50.2g.

Patina: Rough mid-green, details poor.

Manufacture: There is no evidence relating to this process.

Use: The cutting edges are in poor condition, being battered over their extent.

Reduction: There is a marked bend to the profile, but no hammer indents can be seen in association with either break. One of the broken edges has, however, been ruined as a result of polishing carried out in recent times for research purposes.

02/132

Description: Fragment of ribbed knife blade, probably of 'Thorndon' type.

Dimensions: Length (maximum): 34mm. Weight: 14.0g.

Patina: Rough grey-green, details poor.

Manufacture: There is no evidence relating to this process.

Use: The cutting edges remain in reasonable condition. One appears more blunt, while the other has a small notch along its length.

Reduction: Possible hammer indents can be identified on either side of the piece at the lower break. There are similar indents on the upper break, but these are much fainter. The profile of the fragment shows distortion.

02/133

Description: Tanged knife, with a lenticular-sectioned blade and slight flanges evident along either edge of the tang. Slight furrows run down either side of a broad midrib.

Dimensions: Length (maximum): 132mm. Weight: 62.1g.

Patina: Bronze remains visible in places, with some green patches present. Details locally excellent.

Manufacture: The blunt tip may be a casting defect. Despite this imperfection in the casting, fine hammering is evident along the tang and vertical striations run the length of the object, which indicates that the surface of the piece was subject to finishing. Final preparation of the cutting edges has not occurred, however, with the blade remaining blunt and unblemished over its extent.

Use: This piece has never been used as a knife. Its tip, however, shows indications of wear and deformation, which suggests that it may have been utilised as a chisel or perhaps as some form of spatulate tool. The latter possibility seems more likely, as the deformation of the tip does not seem marked enough to indicate use as a chisel.

Reduction: The object remains in fine condition, with no traces of later damage.

02/134

Description: Hilt and upper blade fragment of tanged knife, with a raised rib running down the centre of the tang.

Dimensions: Length (maximum): 77mm. Weight: 28.7g.

Patina: Thick dark green, with some bronze showing.

Manufacture: There is no evidence relating to this process.

Use: The blade remains sharp and fine, though one edge is notched in places.

Reduction: The profile of the fragment is bowed near the break. No traces of any hammer indents can be seen, which suggests that the object was snapped by hand.

02/135

Description: Tang and upper blade fragment of tanged knife. One rivet hole remains intact, with another possible example surviving at the upper break. The blade is extremely narrow.

Dimensions: Length (maximum): 65mm. Weight: 13.6g.

Patina: Thick dark green, details poor.

Manufacture: Vertical grinding marks run down either bevel. Despite this, the cutting edges seem blunt and unblemished, which suggests that final sharpening of the blade never took place. The rivet hole nonetheless appears strained, which argues in favour of the possibility that the object was subject to final preparation and use.

Use: The upper break may be use-related.

Reduction: There is no evidence relating to this process.

02/136

Description: Blade fragment from knife. The blade is extremely narrow in shape.

Dimensions: Length (maximum): 62mm. Weight: 24.5g.

Patina: Thick dark-green, details poor.

Manufacture: There is no evidence relating to this process.

Use: The cutting edges seem very blunt, but they are otherwise unblemished. Their poor condition may result from corrosion buildup along their length.

Reduction: There are possible small tool marks on the midrib and near the upper break on one side (illustrated). The piece shows a very marked bend in the profile towards the lower break. It seems likely that the lower break was the result of snapping by hand, while the upper break was brought about through hammering.

02/137

Description: Probable blade fragment from narrow-bladed knife, the section of which appears unusually thin. A broad midrib runs down the centre of the fragment.

Dimensions: Length (maximum): 29mm. Weight: 5.3g.

Manufacture: No evidence of any casting seams can be identified.

Use: One of the blade edges has been damaged, though this appears to have occurred in recent times.

Reduction: The profile of the piece shows distortion, with no associated hammer indents present, suggesting that the object was bent and snapped by hand.

02/138

Description: Knife blade fragment. The blade is narrow in shape, with a broad midrib running along its length.

Dimensions: Length (maximum): 59mm. Weight: 11.9g.

Patina: Rough mid-green, details poor.

Manufacture: No traces of the casting seams survive.

Use: The cutting edges seem blunt, and a substantial notch is apparent in one. Their poor condition may be due in part to the buildup and flaking of corrosion products, though.

Reduction: There are possible traces of hammering near the upper break, but no distortion of the profile has occurred.

02/139

Description: Blade fragment of knife, with a single cutting edge apparent. This fragment represents - according to Butcher (1923) - part of an 'Urnfield' type tanged knife. Two additional fragments in this hoard (02/140 and 02/141) may be part of the same object, though they are not directly adjoining.

Dimensions: Length (maximum): 68mm. Weight: 36.6g.

Patina: Bronze remains visible in places, with some patches of mid-green present.

Manufacture: The casting seam survives over the uppermost edge, though it has been trimmed and flattened. A hammer indent on the bevel appears to be associated with the preparation of the cutting edge.

Use: The splayed appearance of the end of the blade implies that the object was resharpened and perhaps subject to secondary use, e.g. as a spatulate instrument. The cutting edge is extremely thin, which may indicate that resharpening took place on a number of occasions.

Reduction: There is no evidence relating to this process.

02/140

Description: Upper blade and fragmentary tang from a tanged knife, with only one cutting edge apparent. According to Butcher (1923), this piece is part of a single object, an

'Urnfield' tanged knife which also incorporated fragments 02/140 and 02/141, though the intervening portions are now absent. A bevel runs along the length of the cutting edge.

Dimensions: Length (maximum): 45mm. Weight: 29.6g.

Patina: Some rough patches of mid-green, with much bronze remaining visible.

Manufacture: The piece appears to have been well-finished, with no traces of any casting seams surviving. Horizontal grinding marks run the length of the cutting edge.

Use: The cutting edge is absent, perhaps as a result of use-related damage.

Reduction: The profile of the piece is distorted. It is likely that the fragmentation process was assisted by hammering, though no individual hammer indents can be seen.

02/141

Description: Tang from unknown object. Butcher (1923) suggests that formed part of an 'Urnfield' tanged knife, along with 02/139 and 02/140, though none of these fragments are adjoining.

Dimensions: Length (maximum): 55mm. Weight: 18.8g.

Patina: Thick dark green, details poor.

Manufacture: The piece appears to have been well-finished, with some indications of fine hammer working present. No traces of any casting seams survive. The bronze is pitted at either break, and this may indicate a poor quality casting.

Use: Impossible to determine.

Reduction: The fragment appears twisted and distorted. Some more obtrusive hammer indents may have been inflicted during this stage of the object's life-cycle.

02/142

Description: Fragment of knobbed sickle, comprising the butt and the upper portion of the blade.

Dimensions: Length (maximum): 78mm. Weight: 70.1g.

Patina: Rough dark-green, details poor.

Manufacture: There is a marked bevel along the cutting edge, which has been hammered out along its length. A depression above the knob may be a casting defect, though it could conceivably be an unfinished rivet hole. No traces of any casting seams survive.

Use: The cutting edge has an undulating appearance, but it appears sharp with little damage evident along its length.

Reduction: There is no evidence relating to this process.

02/143

Description: Socketed hammer, with double collar moulding present, and one rivet hole apparent.

Dimensions: Length: 65mm. Weight: 177.0g.

Patina: Thick mid-green, details poor.

Manufacture: The casting seams remain thick and prominent, and though they have been flattened, no efforts appear to have been made to trim them. The mouth is uneven, with no traces of the feeders or the intervening casting seams surviving, which may imply that an inadequate supply of metal was used during casting. The bronze appears pitted and rough, which suggests a poor quality casting.

Use: The uneven nature of the striking platform may indicate extensive use.

Reduction: The object is complete and there is no evidence relating to this process.

02/144

Description: Fragment from base of socketed hammer.

Dimensions: Length (maximum): 42mm. Weight: 121.3g.

Patina: Bronze remains visible in most places, though there are some patches of rough mid-green present.

Manufacture: The casting seams remain prominent, though they have been flattened over their extent. The two apparent 'rivet holes' are uneven, and they may be the result of later damage or even fortuitous casting flaws.

Use: The striking platform appears to have spread, which suggests that the piece saw extensive use. The wall section appears unusual, with a double thickness apparent. This may be an inner lining inserted late in the object's use-cycle in order to prolong its life.

Reduction: The inner lining noted above could conceivably be another object - perhaps a smaller hammer or even a socketed gouge - which was wedged inside the hammer and which subsequently corroded into place there.

02/145

Description: Fragment from base of socketed hammer.

Dimensions: Length (maximum): 37mm. Weight: 37.1g.

Manufacture: The casting seam remains thick and prominent over the extent of the fragment, though it appears to have been flattened along its length.

Use: The striking platform is splayed and burred in appearance, with cracking of the metal evident in places. The object appears to have seen extensive use, and may have suffered use-related breakage.

Reduction: There is no evidence relating to this process.

02/146

Description: Hilt and shoulders of 'Carp's Tongue' sword. The midrib is defined by grooves, and the ricasso notches are accentuated by thickening of the metal around their extent. Three rivet holes survive intact, with another fragmentary example remaining at the upper break.

Dimensions: Length (maximum): 65mm. Weight: 78.2g.

Patina: Mainly bronze in colour, with some patches of rough green evident.

Manufacture: Vertical grinding marks run down the length of the hilt, and there are grinding marks running down the midrib in places.

Use: Though the cutting edges no longer survive, it is possible to suggest that the object had been subject to considerable use on account of the straining evident in the lowermost rivet holes.

Reduction: Two marked hammer indents are evident near the lower break, and the profile of the piece is distorted. One rivet remains *in situ*.

02/147

Description: Sword tang of unknown type, with a hollow section evident in the bronze at the lower break. Three small rivet holes survive.

Dimensions: Length (maximum): 79mm. Weight: 57.4g.

Patina: Rough mid-green, some bronze showing.

Manufacture: All traces of the casting seams have been obliterated. The rivet holes, though rather small, have been punched through, and horizontal grinding marks run across the terminal of the tang.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

02/148

Description: Fragment of sword tang, with two complete rivet holes present, and with a third incomplete example apparent at the lower break.

Dimensions: Length (maximum): 62mm. Weight: 32.6g.

Patina: Rough dark-green, details obscured.

Manufacture: The casting seams are well-finished, with no traces surviving. A slight dip along the edge of the terminal probably represents a minor casting defect.

Use: Impossible to determine.

Reduction: There are possible punch and chisel marks on both faces. These may, however, have been inflicted during the manufacture of this piece, as opposed to being linked with its destruction. The profile appears straight and undistorted.

02/149

Description: Fragment of sword tang, comprising only the terminal and the upper portion of the tang. One incomplete rivet hole survives.

Dimensions: Length (maximum): 28mm. Weight: 15.3g.

Patina: Dense grey-green, some bronze showing.

Manufacture: The casting seams are well-finished, although the edge of the terminal still appears rather rough.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

02/150

Description: Fragmentary sword tang, comprising only the middle portion. One rivet hole survives intact, with incomplete examples surviving at the upper and lower breaks.

Dimensions: Length (maximum): 32mm. Weight: 26.5g.

Patina: Rough grey-green.

Manufacture: No traces of any casting seams can be identified.

Use: Impossible to determine.

Reduction: Hammer indents are evident in places on both sides of the piece, concentrated along the edges of the tang. These may have been inflicted during manufacture, but they are rough in appearance, which makes it more likely that they are associated with fragmentation.

02/151

Description: Possible fragment of sword tang. It is unusually thick in section, which allows an alternative interpretation to be proposed, i.e. that it represents instead a fragmentary chisel blade. However, there appears to be an incomplete rivet hole at the upper break, which strengthens the possibility that this was once part of a sword.

Dimensions: Length (maximum): 24mm. Weight: 16.9g.

Patina: Rough mid-green, some patches of bronze surviving.

Manufacture: There is evidence of fine hammering over both faces.

Use: Impossible to determine.

Reduction: The piece is very badly distorted. Some obtrusive hammer indents at the upper break are likely to be linked with the fragmentation process.

02/152

Description: Blade fragment of leaf-shaped sword, probably of 'Ewart Park' type.

Dimensions: Length (maximum): 98mm. Weight: 118.0g.

Patina: Thick mid-green, details obscured.

Manufacture: Fine bevels run down the length of either cutting edge, though no evidence of either hammering or grinding can be identified in association with these.

Use: Both blade edges remain in reasonable condition, though a few notches are present in places.

Reduction: There is a marked bend to the profile. No hammer indents are visible, probably as a result of corrosion buildup, but there are possible chisel marks apparent near the upper break on one side (not illustrated).

02/153

Description: Blade fragment of leaf-shaped sword, probably of 'Ewart Park' type.

Dimensions: Length (maximum): 94mm. Weight: 104.8g.

Patina: Some bronze showing, though patches of rough mid-green are also present.

Manufacture: The quality of the casting appears poor: the casting seems pitted and porous at either break, and there is pitting of the metal in one place on the blade (illustrated). The piece has received all the preparations required for use, however. The cutting edges are finely bevelled, with vertical grinding marks running down these bevels in places.

Use: The blade edges are blunt, and are badly notched over their extent. It is possible that the object broke during use, as the quality of the metal appears poor at the points where breakage has occurred, which suggests that the casting may have been weaker here.

Reduction: The profile shows only faint distortion. Some possible hammer indents are apparent on one face (illustrated).

02/154

Description: Blade fragment of leaf-shaped sword, probably of 'Ewart Park' type.

Dimensions: Length (maximum): 78mm. Weight: 97.5g.

Patina: Thick, rather rough mid-green, with occasional patches of bronze showing. Details poor.

Manufacture: The blade edges are bevelled, but no other details can be seen as a result of corrosion buildup.

Use: The cutting edges remain fine, though they appear blunt and notched in places. It is possible that any damage sustained in antiquity may have been exaggerated through corrosion buildup.

Reduction: The profile is distorted, but any hammer indents associated with either break have been obscured by corrosion products.

02/155

Description: Blade fragment of leaf-shaped sword, probably of 'Ewart Park' type.

Dimensions: Length (maximum): 68mm. Weight: 78.4g.

Patina: Rough mid-green, with some bronze visible.

Manufacture: There is no evidence relating to this process.

Use: The blade is rather battered and blunt in appearance, with some notches evident.

Reduction: The profile is distorted, and hammer indents can be identified on one face at the upper break (illustrated).

02/156

Description: Two adjoining fragments of leaf-shaped sword, probably of 'Ewart Park' type.

Dimensions: Combined length (maximum): 67mm. Combined weight: 68.4g.

Patina: Some rough mid-green patches are apparent, but much bronze remains visible.

Manufacture: The cutting edges are finely bevelled, and vertical grinding marks run down the bevels in places.

Use: The blade edges are in poor condition, with pronounced notches evident. These are associated with a significant amount of burring, which suggests that they were caused by striking the blade edge-on with a blunt object.

Reduction: There are indications of hammering in association with the lower breaks on both fragments (as illustrated). The damage to the edges noted in Use above is so severe as to suggest deliberate damage, inflicted by a heavy, blunt object such as a hammer.

02/157

Description: Blade fragment of leaf-shaped sword, probably of 'Ewart Park' type.

Dimensions: Length (maximum): 59mm. Weight: 92.0g.

Patina: Thick, rather rough, mid-green, with some patches of bronze surviving. Details poor.

Manufacture: There is no evidence relating to this process.

Use: The cutting edges are in poor condition, appearing battered and badly notched over their extent.

Reduction: Clusters of tool marks can be identified at either break (illustrated). The lower group may have been inflicted by a narrow-bladed chisel, while the upper group appear to be hammer indents. The damage associated with the upper break has resulted in flattening of the midrib on both sides, though the profile of the fragment remains straight and undistorted. Some undulations in the cutting edges may result from deliberate damage inflicted during this process.

02/158

Description: Blade fragment of leaf-shaped sword, probably of 'Ewart Park' type.

Dimensions: Length (maximum): 42mm. Weight: 42.7g.

Patina: Rough mid-green, details poor.

Manufacture: The cutting edges are finely bevelled over their extent.

Use: The edge remains fine on one side, but is more blunt and chipped over its extent on the other.

Reduction: Evidence of extensive hammering can be identified around the upper break (illustrated). This appears to have been carried out by a socketed hammer, and large, shallow facets can be identified over the midrib. Distortion of the profile is minimal.

02/159

Description: Blade fragment of leaf-shaped sword, probably of 'Ewart Park' type.

Dimensions: Length (maximum): 42mm. Weight: 31.0g.

Patina: Some bronze remains visible, though much of the piece is now covered with thick grey-green patina. Details obscured.

Manufacture: Fine bevels run down either cutting edge, and these are associated in places with vertical grinding marks.

Use: Both edges remain fine, though one seems marginally more blunt, and bears an isolated notch along its length.

Reduction: There are possible hammer indents in association with both breaks on one face (illustrated).

02/160

Description: Small blade fragment of leaf-shaped sword, probably of 'Ewart Park' type.

Dimensions: Length (maximum): 28mm. Weight: 29.6g.

Patina: Rough mid-green, details poor.

Manufacture: Fine bevels run down the length of either cutting edge.

Use: The edges appear blunt, but remain undamaged. Their poor condition may be due at least in part to corrosion buildup.

Reduction: A number of small hammer indents are present on both faces, and there is a faint bend to the profile. In this example, it is the edges which show most distortion, probably as a result of extensive hammering.

02/161

Description: Small blade fragment of leaf-shaped sword, probably of 'Ewart Park' type.

Dimensions: Length (maximum): 32mm. Weight: 27.7g.

Patina: Thick, rather rough mid-green. Some bronze is visible, but details are poor.

Manufacture: Fine bevels run down the length of either cutting edge.

Use: The edges appear fine and sharp over much of their extent. Some damage is apparent, but this may have taken place during the reduction process.

Reduction: Some chisel marks can be identified in places. The profile of the fragment is slightly distorted, and there are possible hammer indents at the lower break. There is a marked indentation on one blade edge, and this seems likely to have resulted from a misplaced hammer blow.

02/162

Description: Blade fragment of leaf-shaped sword, probably of 'Ewart Park' type.

Dimensions: Length (maximum): 37mm.

Patina: Rough mid-green, details poor.

Manufacture: A possible casting flaw can be identified in the vicinity of the top break, where there is a rounded depression in the bronze. If this represents a defect, then it would suggest that there was a serious weakness in the casting. Fine bevels run down either cutting edge, indicating that the final preparations of the blade were completed.

Use: Both edges appear fine and undamaged over their extent.

Reduction: One tiny chisel mark is evident near the lower break, but no other evidence can be linked with this process. The profile of the fragment is straight and undistorted.

02/163

Description: Small blade fragment of leaf-shaped sword, probably of 'Ewart Park' type.

Dimensions: Length (maximum): 32mm. Weight: 18.4g.

Patina: Thick mid-green, details poor.

Manufacture: A bevel runs down the length of the cutting edge on one side only. No other evidence can be identified as a result of corrosion buildup.

Use: The edges are in poor condition, appearing blunt and badly notched over their extent.

Reduction: Hammering can be identified in association with either break, though this damage is particularly pronounced near the upper break (as illustrated). On one face, the casting is cracked in the vicinity of the lower break, which indicates straining of the metal (side not illustrated). The profile is straight with no evidence of distortion.

02/164

Description: Small blade fragment of leaf-shaped sword, probably of 'Ewart Park' type.

Dimensions: Length (maximum): 36mm. Weight: 39.8g.

Patina: Some bronze remains visible, the piece being covered elsewhere with rough, mid-green patina. Details somewhat obscured.

Manufacture: The metal at the lower break appears porous through the section, indicating a poor quality casting. Fine bevels run down the length of either blade edge.

Use: One edge remains fine and sharp, though it is a little chipped. The other is burred and notched over its extent, though some of this damage may have been inflicted during the reduction process.

Reduction: Hammer indents and chisel marks can clearly be identified over the midrib on both faces. The profile is slightly distorted, and the piece is very battered in appearance.

02/165

Description: Small blade fragment of leaf-shaped sword, probably of 'Ewart Park' type.

Dimensions: Length (maximum): 36mm. Weight: 25.9g.

Patina: Rough mid-green, details poor.

Manufacture: All evidence relating to this process has been obscured as a result of corrosion buildup.

Use: The cutting edges remain fine and sharp over their extent.

Reduction: The fragment shows evidence of extensive hammering across its surface. The hammer indents are concentrated around the break, but no bend is visible in the profile. This sword fragment is unusually thin in section, which may be the result of hammering over its surface.

02/166

Description: Small blade fragment of leaf-shaped sword, probably of 'Ewart Park' type.

Dimensions: Length (maximum): 31mm. Weight: 40.4g.

Patina: Dense mid-green, with some rough patches obscuring one face.

Manufacture: Marked bevels can be identified on either cutting edge, and vertical grinding marks run down the blade in places.

Use: One edge appears fine, though it is somewhat blunt. The other is more badly chipped, though much of this damage appears to have been acquired in recent times, perhaps through flaking of the corrosion product.

Reduction: There is a marked bend to the profile. A cluster of small tool marks is evident near the upper break on one face (illustrated), and there are possible hammer indents on the other face at a similar location.

02/167

Description: Blade fragment of leaf-shaped sword, probably of 'Ewart Park' type.

Dimensions: Length: 46mm. Weight: 37.2g.

Patina: Rough mid-green, details poor.

Manufacture: There is a rounded notch on one side of the upper break (right-hand side; as illustrated). This seems likely to represent a casting defect, and it is possible that an additional notch on the other side of the upper break was of a similar origin. The cutting edges are finely bevelled over their extent, and hammering can be seen in association with these bevels.

Use: The edges seem fine but blunt. This damage appears to have been sustained in antiquity, which suggests that it is use-related in origin.

Reduction: A cluster of hammer indents can be seen at the lower break on both faces, and there is another isolated hammer indent at the upper break on one face (illustrated). Slight distortion of the profile is apparent.

02/168

Description: Small blade fragment of leaf-shaped sword, probably of 'Ewart Park' type.

Dimensions: Length (maximum): 32mm. Weight: 27.2g.

Patina: Rough mid-green, with some bronze showing. Details obscured.

Manufacture: Pronounced bevels run down the length of either cutting edge.

Use: The cutting edges seem fine, though they are rather blunt over their extent.

Reduction: There is a pronounced bend to the profile, but no hammer indents can be seen in association with any of the breaks.

02/169

Description: Small blade fragment of leaf-shaped sword, probably of 'Ewart Park' type.

Dimensions: Length (maximum): 29mm. Weight: 17.3g.

Patina: Rough grey-green, details poor.

Manufacture: There is no evidence relating to this process.

Use: The cutting edges are in reasonable condition, though they seem slightly abraded. One edge is more badly chipped over its extent, and this damage appears to have taken place in antiquity.

Reduction: There is a marked bend to the profile, and hammer indents are apparent at both breaks on either sides. The section is unusually thin, and it appears distorted, perhaps as a result of the hammering.

02/170

Description: Tiny fragment of leaf-shaped sword, probably of 'Ewart Park' type.

Dimensions: Length (maximum): 19mm. Weight: 16.1g.

Patina: Thick mid-green, details poor.

Manufacture: There is no evidence relating to this process.

Use: The cutting edges remain in reasonable condition, though they are somewhat blunt over their extent.

Reduction: The profile is faintly distorted, and hammer indents are visible on either face.

02/171

Description: Blade tip from leaf-shaped sword, probably of 'Ewart Park' type.

Dimensions: Length (maximum): 63mm. Weight: 19.1g.

Patina: Bronze shows in places, but elsewhere the piece is covered by thick mid-green corrosion products. Details remain good nonetheless.

Manufacture: Fine vertical grinding marks run down the length of the piece. A notch at the tip is probably a minor casting defect, and the casting appears slightly porous at the break. This would indicate a weakness in the metal, which would conceivably have resulted in the piece fracturing during use.

Use: The cutting edges remain fine and sharp, though one or two notches are present.

Reduction: No evidence of any hammering can be seen, and the profile of the fragment remains straight and undistorted.

02/172

Description: Blade fragment of leaf-shaped sword, probably of 'Ewart Park' type.

Dimensions: Length (maximum): 58mm. Weight: 80.1g.

Patina: Rough mid-green, with some bronze showing.

Manufacture: No details can be seen as a result of the corrosion buildup. It is possible, though, that the narrowing of the object apparent towards the top of the illustration indicates a casting defect, as opposed to a deliberately narrowed ricasso.

Use: One edge shows an isolated area of burring, but is otherwise in fine condition. The other still appears reasonable, though it is blunt and chipped in places.

Reduction: There is a marked bend to the profile, but no indications of hammering can be seen in association with either break.

02/173

Description: Fragment of leaf-shaped sword blade, with incised lines defining the midrib.

Dimensions: Length (maximum): 41mm. Weight: 37.0g.

Patina: Rough grey-green, details poor.

Manufacture: The cutting edge are finely bevelled, and some faint grinding marks can be seen running down their length in places.

Use: One of the edges appears sharp and is in fine condition, while the other, though a little blunter, remains reasonable.

Reduction: There is no evidence relating to this process.

02/174

Description: Blade fragment of sword, with grooves defining midrib and bevels. It could be part of a 'Carp's Tongue' sword, though its shape seems more reminiscent of a leaf-shaped sword. It may therefore conceivably be of a type similar to 02/173 above.

Dimensions: Length (maximum): 75mm. Weight: 85.4g.

Patina: Rough mid-green, with some bronze showing. Details locally good.

Manufacture: Some vertical grinding marks are apparent in places on the blade. The cutting edges are bevelled, and their slightly rippled appearance suggests that fine hammer-working was undertaken here.

Use: The edges seem fine, though blunt, with some notches apparent in places.

Reduction: There are some possible hammer indents and small tool marks apparent on the midrib in places (illustrated).

02/175

Description: Blade fragment of 'Carp's Tongue' sword, with grooves defining the midrib.

Dimensions: Length (maximum): 62mm. Weight: 76.2g.

Patina: Rough mid-green, details poor.

Manufacture: There is no evidence relating to this process.

Use: The cutting edges are blunt, but they remain in reasonable condition, though they are slightly notched in places.

Reduction: There is one marked indent evident near the upper break on one side, and this have resulted from the object having been struck edge-on by a blunt implement, as it is associated with burring. This damage may have been inflicted deliberately.

02/176

Description: Blade fragment of 'Carp's Tongue' sword, the midrib defined by grooves.

Dimensions: Length (maximum): 47mm. Weight: 62.7g.

Patina: Rough mid-green, with some pale patches, and some bronze remaining visible in places. Details largely obscured.

Manufacture: The cutting edges are bevelled along their length, with some fine hammer-working evident in the vicinity of the bevels.

Use: The cutting edges remain in fine condition, though they seem rather blunt, with notches and burring evident in places.

Reduction: Some hammering can be identified in association with the lower break (not illustrated), and there is a faint bend to the profile.

02/177

Description: Blade fragment of 'Carp's Tongue' sword, with midrib and bevels defined by grooves.

Dimensions: Length (maximum): 36mm. Weight: 40.4g.

Patina: Pale grey-green, details poor.

Manufacture: There is no evidence relating to this process.

Use: The cutting edge is blunt but remains in reasonable condition, though it is chipped in places on one side.

Reduction: A faint crack can be seen, running across the midrib at the upper break (illustrated), and this is likely to be evidence of the strain sustained by the metal during fragmentation. There are some possible hammer indents on the midrib, but they must remain tenuous on account of the corrosion buildup.

02/178

Description: Blade fragment of 'Carp's Tongue' sword, midrib defined by grooves.

Dimensions: Length (maximum): 35mm. Weight: 35.3g.

Patina: Rough dark-green, details largely obscured.

Manufacture: There is no evidence relating to this process.

Use: The cutting edges remain fine, but they are blunt in appearance, and one burred notch can be identified. Some pitting of the bronze near the break may indicate a poor quality casting, and so the possibility of breakage during use cannot be discounted.

Reduction: Some possible hammer indents are apparent near either break, but they must remain tenuous on account of the corrosion buildup. The cutting edge is distorted, which suggests that it was damaged during fragmentation, and there is a slight bend to the profile.

02/179

Description: Blade fragment of 'Carp's Tongue' sword, midrib and bevels defined by grooves.

Dimensions: Length (maximum): 33mm. Weight: 46.7g.

Patina: Some bronze remains visible, with patches of rough pale-green covering much of the piece. Details are largely poor, though in places they remain locally excellent.

Manufacture: The cutting edges are finely bevelled over their length, with some vertical grinding marks running down the length of the bevels in places. The bronze appears porous at one break, and this could indicate a poor quality casting.

Use: The cutting edges seem good, but they are chipped in places down both sides. Since the quality of the casting appears questionable, the possibility of breakage during use cannot be discounted.

Reduction: Hammer indents are apparent in association with the uppermost breaks (as illustrated) on both faces. There are possible chisel marks here, too.

02/180

Description: Small blade fragment of 'Carp's Tongue' sword, midrib defined by grooves.

Dimensions: Length (maximum): 28mm. Weight: 36.2g.

Patina: Rough grey-green, details poor.

Manufacture: Bevels run down the length of either cutting edge.

Use: The cutting edges are blunt over their extent, but appear to remain in good condition.

Reduction: One faint hammer indent can be seen at the upper break (illustrated).

02/181

Description: Blade fragment of 'Carp's Tongue' sword, with grooves defining the midrib.

Dimensions: Length (maximum): 41mm. Weight: 38.2g.

Patina: Rough grey-green, details poor.

Manufacture: There is no evidence relating to this process.

Use: One edge appears very battered along its length, with a large notch present. This notch is associated with burring of the metal. The other edge is chipped in places, but is not as badly damaged as its counterpart.

Reduction: The profile is distorted, but no hammering can be identified in association with either break.

02/182

Description: Fragment of sword blade, probably of 'Carp's Tongue' type, with its midrib defined by grooves. However, the midrib and the blade appear to taper somewhat, which may indicate that the complete blade was leaf-shaped, i.e. the sword was of a type similar to that seen in 02/173.

Dimensions: Length (maximum): 26mm. Weight: 22.5g.

Patina: Rough mid-green, details poor.

Manufacture: There is no evidence relating to this process.

Use: The cutting edges are good, though a single notch can be identified on one.

Reduction: The profile is faintly bowed, and the cutting edges slightly undulating in appearance. Rough hammering, inflicted during fragmentation, is a likely cause of this distortion, though it is difficult to make out any individual hammer indents following corrosion buildup.

02/183

Description: Blade fragment of 'Carp's Tongue' sword, with grooves defining the midrib.

Dimensions: Length (maximum): 29mm. Weight: 29.1g.

Patina: Rough grey-green, with some bronze showing. Details poor.

Manufacture: There is no evidence relating to this process.

Use: The cutting edges, though blunt, remain in good condition. They are chipped in places, though much of this damage may have occurred in recent times.

Reduction: There is faint distortion of the cutting edge at the lower break, and this may have been caused during fragmentation, though no bend in the profile is evident. There are hammer indents visible at the lower break on one side (illustrated).

02/184

Description: Tiny blade fragment of 'Carp's Tongue' sword, with grooves defining the midrib.

Dimensions: Length (maximum): 15mm. Weight: 17.6g.

Patina: Rough light-green, details poor.

Manufacture: The metal appears porous at either break, which suggests a poor quality casting. The rounded notch near one edge (on the upper right hand side as illustrated) may be a casting flaw.

Use: The blunt nature of the cutting edges may indicate that final finishing never took place because the casting was of an inferior quality, but this is difficult to determine with any confidence.

Reduction: The section bulges at either break, this deformation having resulted from the bending of the metal which occurred during the fragmentation process. Evidence of hammering can be identified along the length of one cutting edge. This appears to have been inflicted late in the object's life-cycle, as the blade edge has been distorted as a result, having been folded upwards along its extent.

02/185

Description: This piece resembles a blade fragment of 'Ewart Park' sword. However, it has a faintly ribbed appearance to the section, which seems more reminiscent of a knife blade, though its section seems too thick and heavy for this to be the case.

Dimensions: Length (maximum): 39mm. Weight: 21.4g.

Patina: Bronze remains visible in places, with rough dark green patches elsewhere.

Manufacture: There is no evidence relating to this process.

Use: The cutting edges are battered and burred over much of their extent.

Reduction: The cutting edge appears to have been folded over on itself at one point (lower right hand corner, as illustrated). There is a faint bend to the profile and some possible hammer indents can be seen at the upper break on both faces.

02/186

Description: Though this object may represent a defective leaf-shaped sword, in which the hilt has failed to form following an acute metal shortage, it seems more likely to be a butt fragment from a 'Ballintober' type sword. Though Middle Bronze Age types are not unknown in 'Carp's Tongue' hoards, this example must remain problematic, on account of its patina, and it should be treated as a stray inclusion.

Patina: The piece is dull bronze in colour, though no indications of any chemical treatment of the surface can be found. This patina does not resemble that seen on any of the other pieces included in the Grays Thurrock I hoard.

Dimensions: Length (maximum): 27mm.

Manufacture: The surface of the metal is smooth, the result of fine hammering and polishing, though no evidence of this work survives. Burring is evident around the butt, and this seems likely to represent the remains of the casting seam, something which further supports the possibility of this being part of a 'Ballintober' sword.

Use: Impossible to determine, as only vestigial traces of the cutting edges survive.

Reduction: There is no evidence relating to this process.

02/187

Description: Purse chape, with a thin collar moulding around the rim. Two rivet holes are present towards the lower break.

Dimensions: Length (maximum): 36mm. Weight: 7.4g.

Patina: Thick dark green, some bronze showing.

Manufacture: No traces of any casting seams survive, and the piece appears well-finished.

Use: It has been suggested (Butcher, 1923) that the absence of the base of the chape is the result of excessive wear in antiquity. This possibility does seem feasible, as the damage is uneven, appearing more severe towards one end and one side of the chape. As a result of this, the rivet holes barely remain functional, as only a thin strip of metal serves to define their lower edge. The potential cause of this wear must be questioned, though. The piece seems more likely to have suffered exterior wear, as if, for example, it had been dragged along the ground during use, a possibility which seems unlikely given the length of the sword which would once have been held within the scabbard.

Reduction: There is no evidence relating to this process.

02/188

Description: Plain leaf-shaped socketed spearhead, with two rivet holes in the socket.

Dimensions: Length (maximum): 105mm. Weight: 55.9g.

Patina: Much bronze remains visible, with some patches of brown or green corrosion product present. Details good.

Manufacture: One side of the tip appears blunt and rounded, giving the piece a faintly asymmetrical appearance, and this seems likely to be a casting defect. The seams have been totally obliterated, and vertical or diagonal grinding marks are apparent on the blade and at the junction between the midrib and the blade. Bevels run down the length of either cutting edge.

Use: The cutting edge is in reasonable condition, though it is chipped and notched in places over its extent.

Reduction: Some hammer indents are visible on one side of the socket (illustrated). These do not appear to have contributed to the object's fragmentation, but they seem too pronounced to be associated with the manufacturing process. They therefore seem likely to have been inflicted during the process which separated spearhead and shaft.

02/189

Description: Leaf-shaped socketed spearhead, small in size, with a decorated socket. The decoration comprises a group of four roughly executed parallel grooves, repeated in three concentric bands. The uppermost band is separated from the lower two by a groove that runs around the circumference of the socket.

Dimensions: Length: 87mm. Weight: 39.1g.

Patina: Thick dark green, details locally good.

Manufacture: The tip seems very blunt, and this may indicate a casting defect. In addition, a furrow which runs down the lower portion of the piece may be an additional flaw. The piece is well-finished, with no traces of any casting seams remaining. Possible coarse grinding marks run over the midrib on one face (not illustrated).

Use: The cutting edges are blunt, but they remain in fine condition. No clear evidence of use-related damage can be identified, and the object may be unused.

Reduction: One face has small tool marks clustered on the upper socket (illustrated).

02/190

Description: Incomplete leaf-shaped socketed spearhead, missing socket and blade tip. Two grooves run parallel to the blade edge on either side of the midrib. The section appears unusual - like socketed hammer 02/144, there appears to be an inner lining of bronze within the socket.

Dimensions: Length (maximum): 75mm. Weight: 50.7g.

Patina: Thick dark green, details obscured.

Manufacture: The peculiar double-layered section may have resulted following an in-pouring of molten metal around another core, either to strengthen a casting which had suffered severe core misalignment, or to repair an old, worn casting, though this object appears to be in reasonable condition.

Use: The cutting edges are notched and a little distorted in places.

Reduction: Two groups of hammer indents can be identified on either face, each occupying a similar location. The first group, situated at the base of the blade, has caused severe deformation of the socket, distorting the section and causing cracking of the metal on one face (not illustrated). This damage probably contributed to the separation of blade and socket. The second group, located further up the blade, is associated with less significant destruction. One hammer indent is visible on one face (not illustrated), while a cluster of hammer indents are apparent on the other (illustrated). Minor deformation of the section has resulted from this hammering. The inner layer visible at the upper break has also been hammered. It is possible that this feature is a later insertion which has corroded into place, so it now appears to be an integral part of the object.

02/191

Description: Fragment of socketed spearhead, comprising socket only. Decoration is apparent around the base of the socket, comprising four concentric bands of pecked impressions. Two rivet holes are present in the socket.

Dimensions: Length (maximum): 51mm. Weight: 40.0g.

Patina: Rough dark-green, details poor.

Manufacture: The wall section shows uneven thickness, indicating core misalignment. The casting seams have been completely obliterated.

Use: Impossible to determine.

Reduction: The piece has been crushed along its length. Hammering has been concentrated upon one side, with deformation of the section and cracking of the metal appearing markedly more extreme here. The hammer blows also seem to have focussed upon the junction between the blade and the socket. One of the bands of decoration is extremely faint on one side (illustrated), and this may be due to the hammering.

02/192

Description: Fragment of decorated spearhead socket. The decoration consists of a motif which comprises four parallel impressions, repeated in three concentric bands around the circumference of the socket. Beneath each band is a roughly executed series of four narrowly-spaced concentric grooves. Two rivet holes survive in fragmentary form.

Dimensions: Length (maximum): 32mm. Weight: 15.1g.

Patina: Thick, rather rough, dark green.

Manufacture: The wall seems slightly thinner in section at the upper break, indicating minor core misalignment. The casting seams have been entirely removed.

Use: Impossible to determine.

Reduction: The fragment has been crushed along its length, resulting in distortion of the section and cracking of the metal. Hammering may have been concentrated upon one side (not illustrated), as the degree of deformation seems greater here.

02/193

Description: Fragment of decorated spearhead socket. The decoration is composed of three groups of four closely spaced concentric grooves.

Dimensions: Length (maximum): 27mm. Weight: 4.2g.

Patina: Rough mid-green.

Manufacture: The wall seems thin in section, indicating core misalignment. All traces of the casting seams appear to have been removed.

Use: Impossible to determine.

Reduction: The section seems slightly distorted, though the degree of deformation seems minor in comparison to other examples occurring in the same hoard (c.f. 02/191, 02/192). No hammer indents can be seen, and the decoration remains clear and distinct, so it is likely that the hammering which contributed to the breakage of the socket was inflicted beyond the extent represented by the surviving fragment.

02/194

Description: Blade tip from socketed spearhead.

Dimensions: Length (maximum): 46mm. Weight: 20.2g.

Patina: Some bronze showing, with rough green patches in places. Details reasonable.

Manufacture: Indications of severe core misalignment are apparent at the break. Some vertical grinding marks run down the length of the blade in places.

Use: The cutting edges remain in good condition.

Reduction: One small tool mark is visible just above the break. No additional evidence can be identified, i.e. there are no hammer indents to be seen in association with the break, and the profile of the fragment remains straight.

02/195

Description: Blade tip from socketed spearhead.

Dimensions: Length (maximum): 46mm.

Patina: Thick dark green, details reasonable.

Manufacture: There is evidence of severe core misalignment at the break.

Use: The cutting edges remain fine and unblemished over their extent.

Reduction: The midrib has been crushed at the break. Where the midrib is thinner in section, deformation is particularly severe (illustrated). The other face shows little evidence of distortion, though an isolated hammer indent is present. The profile shows slightly distortion near the break.

02/196

Description: Fragment of socketed spearhead, comprising part of the socket and its adjoining blade.

Dimensions: Length (maximum): 50mm. Weight: 17.9g.

Patina: Rough grey-green, details poor.

Manufacture: No traces of any casting seams remain over the surviving extent of the fragment.

Use: The cutting edge is blunt, but it remains intact and undamaged.

Reduction: A substantial depression is evident in the midrib near the break, and additional hammer indents can be identified on the side of the socket.

02/197

Description: Fragmentary spearhead, comprising lower blade and part of adjoining socket.

Dimensions: Length (maximum): 38mm.

Patina: Thick dark-green, with some bronze showing. Details occasionally good.

Manufacture: Some vertical grinding marks can be seen running down the length of the blade in places. No traces of any casting seams survive.

Use: The cutting edges, where they survive, seem reasonable.

Reduction: One face (illustrated) shows deformation of the section at the lower break, associated with cracking of the metal, while the upper break is associated with slight crushing of the section and one solitary hammer indent. On the other face, the lower portion of the midrib has broken away, and crushing and cracking of the metal is apparent in the vicinity of this break. Where it remains intact, the midrib has a flattened appearance. Once again, both upper and the lower breaks are associated with hammer indents.

02/198

Description: Blade fragment of socketed spearhead, comprising only the middle portion of the blade. This example has been illustrated upside down, as the midrib appears to narrow towards the base in this illustration.

Dimensions: Length (maximum): 31mm.

Patina: Thick dark-green, details poor.

Manufacture: The walls are of uneven thickness, indicating core misalignment.

Use: The cutting edges seem chipped in places, but remain sharp nonetheless.

Reduction: On one face, the midrib has been pushed inwards along its surviving extent, resulting in cracking and breakage of the metal (illustrated). This damage appears to have been caused by hammering along the junction between the blade and the midrib. The other face (not illustrated) shows crushing of the section at the lower break.

02/199

Description: Small fragment of socketed spearhead, comprising a portion of the blade and its adjoining midrib.

Dimensions: Length (maximum): 24mm. Weight: 12.8g.

Patina: Dense grey-green, with some bronze showing. Details poor.

Manufacture: There is no evidence relating to this process.

Use: The surviving extent of the cutting edge seems fine and undamaged.

Reduction: The profile is distorted, and the midrib, where it survives, has been pushed inwards slightly. No clear indications of hammering can be identified on the fragment.

02/200

Description: Small fragment of socketed spearhead, comprising a portion of blade and its adjoining midrib.

Dimensions: Length (maximum): 24mm. Weight: 7.8g.

Patina: Rough mid-green, details poor.

Manufacture: There is no evidence relating to this process.

Use: The cutting edges appear blunt, but they remain intact over their extent. At one point there is a slight undulation apparent in the blade, but this seems likely to have been inflicted during the fragmentation of the object.

Reduction: Some hammering is apparent on the midrib. No distortion of the section is apparent, though the distortion of the blade is likely to have resulted during this process.

02/201

Description: Small fragment of socketed spearhead, comprising a tiny portion of the blade and its adjoining midrib.

Dimensions: Length (maximum): 20mm. Weight: 10.4g.

Patina: Rough mid-green.

Manufacture: The wall seems thick in section, indicating core misalignment. One vertical striation can be seen running down the surviving extent of the blade, but no other details can be seen as a result of the corrosion buildup.

Use: The cutting edge is battered and blunted over its extent.

Reduction: There is a slight indentation apparent on the midrib, and an undulation in the cutting edge may have been inflicted by a hammer during this phase of the object's life-cycle.

02/202

Description: Small fragment of socketed spearhead. The tip and much of the lower blade and socket are now missing.

Dimensions: Length (maximum): 19mm. Weight: 7.9g.

Patina: Thick mid-green, rather rough.

Manufacture: The walls of the midrib are uneven in section, indicating core misalignment. All traces of the casting seams have been obliterated.

Use: The cutting edges appear unblemished, though they seem rather blunt.

Reduction: Hammer indents, which can be seen upon the midrib on both faces, are evidence of hammering which has caused slight distortion of the section.

02/203

Description: Possible bracelet fragment. The looped terminal is unusual and may suggest that this object instead represents some form of fitting, though the general dimensions and the curvature of the piece are very similar to those seen in bracelet fragments.

Dimensions: Length (maximum): 49mm. Weight: 10.8g.

Patina: Mainly bronze, with some patches of rough dark green in places.

Manufacture: Coarse grinding marks are visible on the interior of the fragment, but the exterior surface appears very smooth and well-finished.

Use: The slightly uneven shape of the terminal might suggest uneven wear.

Reduction: No hammering is apparent over the extent of the fragment, and the profile of the piece shows little distortion. The object was probably snapped into pieces.

02/204

Description: Fragment of bracelet, with one knobbed terminal surviving. The terminal is decorated with a series of grooves.

Dimensions: Length (maximum): 38mm. Weight: 3.3g.

Patina: Mainly bronze, with some rough green patches in places.

Manufacture: The surface appears fine and smooth, which suggests that the piece was subject to extensive hammering and polishing.

Use: Coarse striations across the surface may be the result of damage sustained through use.

Reduction: No hammer indents can be identified over the extent of the fragment, and the profile appears straight. The object appears to have been snapped into several pieces.

02/205

Description: Fragment of bracelet, with neither terminal surviving. The section is similar to that of 02/204, and it is conceivable that the two fragments were once part of the same object, though they are not adjoining.

Dimensions: Length (maximum): 37mm. Weight: 2.5g.

Patina: Much bronze showing, with some darker patches in places.

Manufacture: The surface appears to have been hammered and polished. Grinding marks can be seen running down the extent of the piece in places.

Use: There is no evidence relating to this stage of the object's life-cycle.

Reduction: There is a marked bend to the profile, but no hammer indents can be identified over the extent of the fragment. The object was probably snapped into pieces.

02/206

Description: Probable fragment of bracelet or armlet.

Dimensions: Length (maximum): 27mm. Weight: 5.3g.

Patina: Some bronze remains visible, though much of the object is now covered with a layer of mid-green corrosion product.

Manufacture: A furrow which runs the length of the piece may mark the original line of the casting seam, though it is possible that it was a deliberate feature intended for decoration.

Use: There is no evidence relating to this stage of the object's life-cycle.

Reduction: The section appears distorted, but no hammering can be identified in association with either break.

02/207

Description: Small circular fragment of thin bronze, with one fragmentary rivet hole surviving. The object seems likely to represent part of a small razor.

Dimensions: Length (maximum): 38mm. Weight: 5.6g.

Patina: Rough dark-green.

Manufacture: No traces of any casting seams survive.

Use: Only one small length of the original edge remains, so it is difficult to establish the condition of the piece. The absence of the edges may be the result of extensive use or repeated resharpening, though the possibility of deliberate destruction during the reduction process cannot be entirely discounted.

Reduction: There is slight distortion of the profile in the upper portion of the piece (as illustrated), which might indicate bending and snapping of the object.

02/208

Description: Fragmentary razor, comprising the upper portion of the blade and a vestigial trace of the tang. Two grooves run the length of the piece.

Dimensions: Length (maximum): 30mm. Weight: 6.1g.

Patina: Rough dark-green, details poor.

Manufacture: Traces of the casting seams remain visible around most of the edges. Both the upper and the lower breaks are rough in appearance, but the central portion of the lower break seems unusually smooth, which suggests that this may be a defective casting. The piece may have been discarded prior to completion.

Use: The object may never have been used.

Reduction: There is a slight bend in the profile, but no other evidence can be linked with this process.

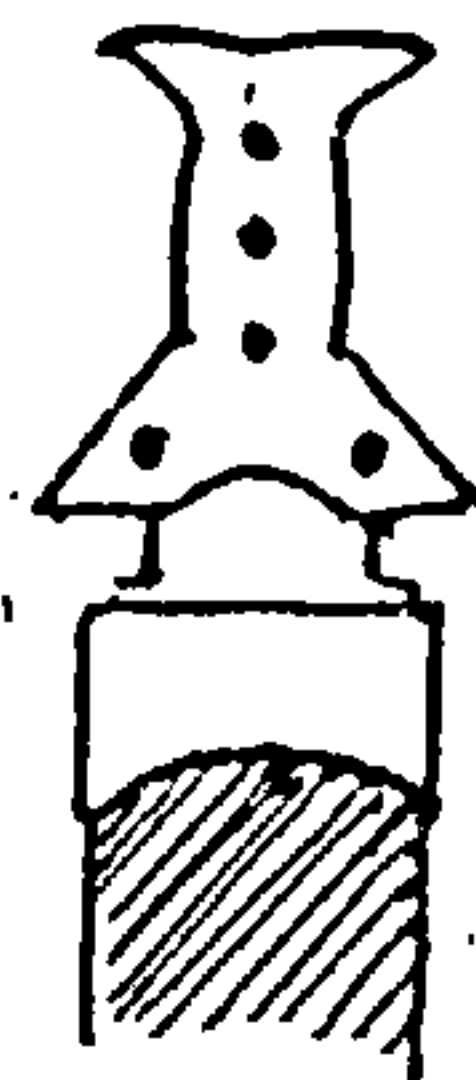
02/209

Description: Fragmentary 'Watford Plaque'. This is a decorative fitting which - if one assumes the piece to have been symmetrical in its complete form - would have been of the right dimensions to function as a scabbard mount, perhaps used in association with a 'Carp's Tongue' sword (fig. 6). This example has either been cast from a bronze with a high tin content, or has been tinned across its surface.

Dimensions: Length: 33mm. Weight: 8.1g.

Patina: Pale silver-grey in colour, with green patches across its surface.

Fig. 6



Manufacture: The piece appears to have been well-finished, with no traces of any seams remaining visible.

Use: There is no evidence relating to this stage of the object's life-cycle.

Reduction: Slight deformation is apparent near the base of the object (as illustrated), but no hammering can be seen in association with this.

02/210

Description: Fragment of fitting. It has a rectangular section, and one side is decorated with three parallel grooves. It is difficult to establish the original appearance of the object, due to the limited extent that now survives, but, judging from its dimensions it is possible to suggest that this object may once have decorated a scabbard.

Dimensions: Length: 33mm. Weight: 8.4g.

Patina: Mainly thick dark-green, with some bronze showing.

Manufacture: One of the straight edges has a rounded appearance, which may represent a casting defect, and there are possible traces of a casting seam running along the length of this piece. The object may never have been finished.

Use: No evidence can be linked with this stage of the object's life-cycle.

Reduction: One face is now absent. This is likely to be the front face of the object, as it is where the decoration occurs. Vestigial traces of this face survive, and the bronze here has been crushed, with cracking and breakage occurring as a result. The other face, which survives in better condition, appears distorted.

02/211

Description: Solid-sectioned bronze ring.

Dimensions: Diameter: 37mm. Weight: 5.7g.

Patina: Some bronze showing, with rough mid-green patches in places.

Manufacture: No traces of any casting seams survive. One tiny chisel mark is apparent on the piece, and this may have been inflicted during the removal of the seam.

Use: The ring is of uneven thickness, and this may represent use-related wear.

Reduction: The object appears quite distorted, but no evidence of deliberate destruction, i.e. hammer indents, can be securely linked with this process.

02/212

Description: Fragmentary horned terminal, with one rivet hole surviving in a rectangular sectioned socket. If it is assumed that this object was once symmetrical in form, then a possible role as a sword pommel can be envisaged, judging from its dimensions. The object is, however, decorated on one side only, with a slight rib running along the length of the 'horn'.

Dimensions: Length: 21mm. Width (maximum): 33mm. Weight: 12.8g.

Patina: Rough mid-green, with some bronze showing.

Manufacture: The piece is well-finished, with no traces of any casting seams surviving. The slight dip evident in the section of the socket may be associated with hammer working, as it seems too subtle to be linked with the reduction process.

Use: The rear of the piece has a highly polished appearance which may result from wear.

Reduction: The depression in the socket may have been inflicted at this point in the object's life-cycle, though, as noted in Manufacture above, it may be too subtle and too finely executed to be associated with this process.

02/213

Description: Flat bronze button or plaque with a looped attachment on its reverse. The upper edge is curved, while the lower has a jagged, toothed appearance.

Dimensions: Length: 31mm. Width (maximum): 31mm. Weight: 8.6g.

Patina: Rough mid-green, details poor.

Manufacture: One of the lower 'teeth' survives as a smooth, rounded stump, which suggests that this object was a failed casting. Casting seams are apparent around the intact tooth and the loop, their survival indicating that the object was never finished.

Use: The object may never have been used.

Reduction: There is no evidence of any hammering over the surface or in association with the break. The piece appears to have been snapped into at least two fragments.

02/214

Description: Bronze tube, possibly a decorative terminal or socket. Nine vertical ribs run down its length, and the mouth and base are defined by additional bands of horizontal mouldings. Three can be seen around the foot, four around the mouth.

Dimensions: Length: 58mm. Weight: 14.1g.

Patina: Thick mid-green.

Manufacture: The thin line of a casting seam can be traced over the length of the piece on one side. The piece seems otherwise well-finished.

Use: There is no evidence relating to this stage of the object's life-cycle.

Reduction: The object has been crushed along its length, though deformation appears worse where the section is narrower at the base of the piece.

02/215

Description: Fragment of decorative fitting, its exact function indeterminate. It is of curved section, with one rivet hole surviving at the upper left-hand corner (as illustrated). Four horizontal ribs decorate its face.

Dimensions: Length: 13mm. Width (maximum): 30mm. Weight: 4.6g.

Patina: Rough dark-green, some bronze showing.

Manufacture: Faint traces of the casting seam can be identified in places, but the piece appears otherwise well-finished.

Use: There is no evidence relating to this stage of the object's use-cycle.

Reduction: There is no evidence relating to this process.

02/216

Description: Fragment of bronze strip. Each edge bears a thin decorated border, which consists of a series of diagonal milled ribs. There is a rivet hole in the surviving terminal.

Dimensions: Length (maximum): 39mm. Width: 19mm. Weight: 5.4g.

Patina: Some bronze remains visible in places, though the reverse is mainly a rough dark green, and the face has some patches of reddish-brown patination in places.

Manufacture: Vertical grinding marks run across the reverse of the object, and these are particularly numerous in the vicinity of the rivet hole. Horizontal grinding marks run along the outer face in places.

Use: The terminal appears battered, but the rivet hole shows no indications of any strain.

Reduction: The piece has been bent, and its profile now appears distorted. The surviving portion has broken in two places, but it is impossible to determine whether or not these breaks date to antiquity, as one has been recently glued, while the other is backed with glass-fibre.

02/217

Description: Fragment of sheet bronze fitting. One rivet hole remains intact, and the surviving edge is decorated with three parallel grooved lines. A slight lip runs along this same edge on the reverse of the piece.

Dimensions: Length (maximum): 40mm. Width (maximum): 36mm. Weight: 12.7g.

Patina: Some bronze remains visible, with dark green patches apparent in places. Details poor.

Manufacture: The rivet hole does not appear to be properly punched through, being small and irregular in shape.

Use: There is no evidence relating to this stage of the object's life-cycle.

Reduction: The section is slightly distorted, and this deformation seems likely to have been inflicted at this stage in the object's life-cycle.

02/218

Description: Small fragment of sheet bronze, possibly of decorative function. A flattened moulding, defined by a groove, runs along the upper edge (as illustrated). The lower edge, despite its ragged appearance, may be the original edge of the piece.

Patina: Largely bronze, with some patches of rough mid-green present.

Manufacture: There are traces of a possible casting seam along the lower edge. The surface of the metal appears pitted and rough, with no indications of any hammering, which suggests that the piece may be unfinished.

Use: It seems likely that the piece was never used.

Reduction: The bend to the profile might suggest that the object was snapped into pieces, a possibility which is supported by the absence of hammer indents at either break.

02/219

Description: Fragment of sheet bronze, possibly of decorative function. A rib defines the sole surviving edge. There is a faint bevel along the lower edge, though the piece appears too flimsy to have been used as any kind of cutting implement.

Dimensions: Length (maximum): 22mm. Width (maximum): 18mm. Weight: 4.1g.

Patina: Some rough mid-green patches are evident, but much remains a shiny bronze-colour.

Manufacture: Horizontal grinding marks run across the surface, which has a polished appearance.

Use: There is no evidence relating to this stage of the object's life-cycle.

Reduction: There is no evidence relating to this process.

02/220

Description: Small fragment of sheet bronze. A single rivet remains *in situ*. It is feasible to suggest that this fragment formed part of the body of a bucket or cauldron (see Manufacture below).

Dimensions: Length (maximum): 23mm. Width (maximum): 31mm. Weight: 3.4g.

Patina: Thick dark green, details poor.

Manufacture: The bronze has been subject to extensive hammering, and individual marks are clear on one side (left-hand illustration). Hammering has spread the rivet on both sides, and an additional flat sheet of bronze adheres to the inner surface of the fragment (right-hand illustration). This was probably a patch placed over the rivet hole in order to seal it, a possibility supported by the fact that the outline of the rivet can clearly be seen through it. Such a modification might be expected in an object used to transport or hold liquid contents effectively, i.e. a cauldron or bucket. Grinding marks can be seen running over both the patch and the main body of the object.

Use: It seems likely that the 'rivet' is in fact a repair, inserted to prolong the life of an object which may have suffered damage through excessive use.

Reduction: Some distortion of the profile at the upper break may be linked with this process.

02/221

Description: Fragment of ribbed staple, which would once have formed part of a cauldron handle.

Dimensions: Length (maximum): 38mm. Weight: 40.8g.

Patina: Thick olive green on the exterior, while the interior retains a shiny bronze colour.

Manufacture: Coarse striations run down both of the longer edges. These seem likely to have been inflicted during the removal of the casting seam.

Use: The interior is very smooth and shiny in appearance, and this may have come about through wear.

Reduction: There is no evidence relating to this process.

02/222

Description: Fragment of bronze object. It could conceivably be a body fragment from a socketed axe, though there is no firm evidence to support this possibility.

Dimensions: Length (maximum): 27mm. Width (maximum): 20mm. Weight: 7.7g.

Patina: Rough grey-green, details poor.

Manufacture: There is no evidence relating to this process.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

02/223

Description: Fragment of sheet bronze, with a slight curve evident in the section. Its original form cannot be identified.

Dimensions: Length (maximum): 38mm. Width (maximum): 21mm. Weight: 4.5g.

Patina: Rough grey-green, some bronze showing.

Manufacture: There is no evidence relating to this process.

Use: Impossible to determine.

Reduction: The profile and the section both appear slightly distorted, and this may be the result of hammering inflicted during the reduction process.

02/224

Description: Fragmentary valve from a mould for a plain 'south-eastern' type socketed axe. Three vertical ribs adorn the exterior surface.

Dimensions: Length (maximum): 90mm. Width (maximum): 54mm. Weight: 170.2g.

Patina: Thick mid-green, details poor.

Manufacture: The metal is very rough in appearance, and appears to have been poorly finished in terms of surface hammering, etc. However, no traces of any casting seams survive anywhere on the piece.

Use: It cannot be determined whether this piece was used or not. There are some chisel marks on the exterior, and these could have resulted from the cutting of the material used to bind both halves of the mould together during casting.

Reduction: There is a possible hammer indent on the lower break, but this must remain ambiguous as the surface of the metal is so rough.

02/225

Description: Casting jet from an unknown object. The reservoir is unusually large, and appears to have supplied four feeders.

Dimensions: Length: 28mm. Weight: 18.2g.

02/226

Description: Casting jet from an unknown object. Two narrow feeders emerge from a round reservoir.

Dimensions (of reservoir): 30 x 24mm. Weight: 25.3g.

02/227

Description: Casting jet from an unknown object. A single feeder emerges from a circular reservoir.

Dimensions (of reservoir): 25 x 23mm. Weight: 29.9g.

02/228

Description: Fragment of spill or waste debris.

Dimensions: Length: 41mm. Width: 41mm. Weight: 81.0g.

Observations: Some small tool marks can be seen upon the surface.

02/229

Description: Fragment of spill or waste debris.

Dimensions: Length: 31mm. Width: 17mm. Weight: 11.4g.

Observations: The undulations in the surface may be the result of hammering.

02/230

Description: Fragment of spill or waste debris.

Dimensions: Length: 35mm. Width: 17mm. Weight: 13.8g.

02/231

Description: Fragment of spill or waste debris.

Dimensions: Length: 18mm. Width: 14mm. Weight: 5.9g.

02/232

Description: Cruciform-sectioned metal ingot. This was once believed to be a unique example of a tin ingot, but recent analysis has shown the object to be composed instead of tin-bronze, with an extremely high percentage of tin present (Sealey, pers. comm.)

Dimensions: Length: 22mm. Width: 18mm. Thickness: 13mm. Weight: 20.2g.

02/233

Description: Large piece of copper ingot, with voids apparent in the interior.

Dimensions: Length: 122mm. Width: 94mm. Thickness: 26mm. Weight: 1490.7g.

Observations: One face (illustrated) has been hammered in places, while the underside bears a number of chisel marks across its extent.

02/234

Description: Large piece from edge of copper ingot.

Dimensions: Length: 119mm. Width: 50mm. Thickness: 26mm. Weight: 538.0g.

Observations: There are some possible chisel marks on one side (illustrated).

02/235

Description: Large piece from edge of copper ingot, with voids apparent in the interior.

Dimensions: Length: 94mm. Width: 89mm. Thickness: 26mm. Weight: 597.6g.

02/236

Description: Large piece from edge of copper ingot, with voids apparent in the interior.

Dimensions: Length: 90mm. Width: 74mm. Thickness: 29mm. Weight: 910.5g.

Observations: Some chisel marks are apparent in places on both sides.

02/237

Description: Large piece from edge of copper ingot.

Dimensions: Length: 78mm. Width: 75mm. Thickness: 30mm. Weight: 931.7g.

Observations: There are some possible chisel marks on one surface (illustrated).

02/238

Description: Large piece from interior of copper ingot, with voids apparent in the interior.

Dimensions: Length: 76mm. Width: 56mm. Thickness: 39mm. Weight: 603.9g.

Observations: A marked depression in one corner of the object (bottom right, as illustrated) appears to be associated with a mass of hammer or perhaps chisel marks.

02/239

Description: Piece from edge of copper ingot, with voids apparent in the interior.

Dimensions: Length: 68mm. Width: 48mm. Thickness: 30mm. Weight: 347.7g.

Observations: Some possible small tool marks are visible in places.

02/240

Description: Piece from edge of copper ingot, with voids apparent in the interior.

Dimensions: Length: 54mm. Width: 45mm. Thickness: 26mm. Weight: 260.1g.

Observations: No tool marks can be seen on either surface, but one of the breaks (located towards the top of the illustration) shows traces of hammering along its length. The intention behind this cannot be determined.

02/241

Description: Piece from interior of copper ingot, with voids apparent in the interior.

Dimensions: Length: 73mm. Width: 48mm. Thickness: 30mm. Weight: 533.5g.

02/242

Description: Piece from edge of copper ingot.

Dimensions: Length: 61mm. Width: 48mm. Thickness: 21mm. Weight: 214.5g.

02/243

Description: Piece from edge of copper ingot, with voids present in the interior. The exterior appears unusually smooth.

Dimensions: Length: 50mm. Width: 56mm. Thickness: 24mm. Weight: 351.2g.

02/244

Description: Piece from edge of copper ingot, the underside of which is pitted in appearance.

Dimensions: Length: 64mm. Width: 43mm. Thickness: 19mm. Weight: 208.9g.

Observations: There are possible small tool marks on one surface (not illustrated).

02/245

Description: Piece from interior of copper ingot.

Dimensions: Length: 54mm. Width: 42mm. Thickness: 27mm. Weight: 278.5g.

Observations: One portion of the underside is flattened and burred. The fragment may have been hammered here, or it may even have been re-utilised as a hammer. Grinding marks and small tool impressions are present on the other surface (illustrated).

02/246

Description: Small piece from interior of copper ingot.

Dimensions: Length: 46mm. Width: 30mm. Thickness: 24mm. Weight: 198.4g.

Observations: There are chisel marks associated with the break in one location (illustrated). A rough protrusion towards the top right hand corner of the illustration has the appearance of having been hammered flat, but fresh metal is visible here, and so the true nature of this damage cannot really be assessed.

02/247

Description: Small piece from edge of copper ingot.

Dimensions: Length: 61mm. Width: 33mm. Thickness: 19mm. Weight: 179.3g.

02/248

Description: Small piece from edge of copper ingot.

Dimensions: Length: 49mm. Width: 43mm. Thickness: 24mm. Weight: 191.1g.

Observations: One surface (not illustrated) appears very smooth, and grinding marks are apparent in the central area.

02/249

Description: Piece from edge of copper ingot, with voids apparent in the interior.

Dimensions: Length: 75mm. Width: 51mm. Thickness: 26mm. Weight: 343.4g.

02/250

Description: Piece from edge of copper ingot.

Dimensions: Length: 59mm. Width: 59mm. Thickness: 36mm. Weight: 452.9g.

Observations: In one area (illustrated), the surface bears a series of dense small tool marks or striations across it.

02/251

Description: Piece from edge of copper ingot.

Dimensions: Length: 64mm. Width: 42mm. Thickness: 19mm. Weight: 205.7g.

Observations: One of the broken edges bears notches along its length which clearly date to antiquity and these were probably inflicted during the fragmentation of the ingot.

02/252

Description: Small piece from edge of copper ingot, with voids apparent in the interior.

Dimensions: Length: 46mm. Width: 40mm. Thickness: 19mm. Weight: 116.3g.

02/253

Description: Small piece from edge of copper ingot, with voids apparent in the interior.

Dimensions: Length: 53mm. Width: 35mm. Thickness: 15mm. Weight: 96.6g.

02/254

Description: Small piece from edge of copper ingot.

Dimensions: Length: 55mm. Width: 31mm. Thickness: 21mm. Weight: 109.8g.

Observations: One surface (illustrated) has a crack running across it. This deformation may indicate hammering, though no individual marks are apparent. A depression on this same surface along one edge may also result from hammering.

02/255

Description: Small piece from edge of copper ingot.

Dimensions: Length: 48mm. Width: 46mm. Thickness: 18mm. Weight: 170.1g.

02/256

Description: Small piece from edge of copper ingot.

Dimensions: Length: 44mm. Width: 41mm. Thickness: 20mm. Weight: 155.2g.

Observations: The outer edge has a flattened appearance, and some small tool marks are apparent here.

02/257

Description: Piece from edge of copper ingot, with voids apparent in the interior.

Dimensions: Length: 78mm. Width: 64mm. Thickness: 29mm. Weight: 459.8g.

Observations: There are some small tool marks - possibly chisel marks - on one surface.

02/258

Description: Piece from edge of copper ingot.

Dimensions: Length: 63mm. Width: 66mm. Thickness: 26mm. Weight: 294.2g.

02/259

Description: Piece from edge of copper ingot, with voids apparent in the interior.

Dimensions: Length: 57mm. Width: 54mm. Thickness: 28mm. Weight: 274.1g.

02/260

Description: Piece from interior of copper ingot, with voids apparent in the interior.

Dimensions: Length: 51mm. Width: 28mm. Thickness: 30mm. Weight: 231.8g.

02/261

Description: Piece from edge of copper ingot, with voids apparent in the interior.

Dimensions: Length: 55mm. Width: 48mm. Thickness: 22mm. Weight: 151.6g.

Observations: Hammering appears to have pushed the metal downwards over one of the voids.

02/262

Description: Fragment from interior of copper ingot.

Dimensions: Length: 35mm. Width: 29mm. Thickness: 17mm. Weight: 77.3g.

02/263

Description: Fragment from interior of copper ingot.

Dimensions: Length: 30mm. Width: 29mm. Thickness: 19mm. Weight: 82.7g.

02/264

Description: Fragment from edge of copper cake.

Dimensions: Length: 33mm. Width: 28mm. Thickness: 12mm. Weight: 54.4g.

02/265

Description: Piece from edge of copper ingot, with voids apparent in the interior.

Dimensions: Length: 70mm. Width: 59mm. Thickness: 18mm. Weight: 211.4g.

02/266

Description: Small piece from edge of copper ingot, section unusually thick.

Dimensions: Length: 47mm. Width: 37mm. Thickness: 47mm. Weight: 301.7g.

Observations: One surface (not illustrated) has some possible small tool marks upon it. The other (illustrated) is very smooth and appears rounded around the edges. Though no marked burring is apparent, the piece may have been reutilised as a hammer.

02/267

Description: Fragment from edge of copper ingot, with voids apparent in the interior.

Dimensions: Length: 51mm. Width: 29mm. Thickness: 21mm. Weight: 110.5g.

02/268

Description: Small piece from edge of copper ingot.

Dimensions: Length: 44mm. Width: 36mm. Thickness: 18mm. Weight: 86.5g.

02/269

Description: Fragment from interior of copper ingot.

Dimensions: Length: 41mm. Width: 33mm. Thickness: 14mm. Weight: 77.4g.

02/270

Description: Small piece from edge of copper ingot.

Dimensions: Length: 51mm. Width: 38mm. Thickness: 29mm. Weight: 117.9g.

02/271

Description: Fragment from edge of copper ingot.

Dimensions: Length: 41mm. Width: 39mm. Thickness: 24mm. Weight: 128.8g.

02/272

Description: Fragment from edge of copper ingot.

Dimensions: Length: 45mm. Width: 34mm. Thickness: 23mm. Weight: 149.2g.

02/273

Description: Fragment from edge of copper ingot.

Dimensions: Length: 39mm. Width: 37mm. Thickness: 23mm. Weight: 134.1g.
Observations: Indentations on one surface (illustrated) may be evidence of hammering.

02/274
Description: Small piece from the edge of copper ingot.
Dimensions: Length: 49mm. Width: 49mm. Thickness: 23mm. Weight: 209.9g.
Observations: One surface (illustrated) bears a possible cluster of small tool marks.

02/275
Description: Piece from edge of copper ingot, with one massive void apparent in the centre of the interior.
Dimensions: Length: 52mm. Width: 62mm. Thickness: 20mm. Weight: 170.7g.
Observations: There appear to be hammer marks above the void on one surface (illustrated), and these have caused distortion of the section here.

02/276
Description: Small piece from edge of copper ingot, with voids apparent in the interior.
Dimensions: Length: 55mm. Width: 54mm. Thickness: 17mm. Weight: 172.2g.

02/277
Description: Small piece from edge of copper ingot, with voids apparent in the interior.
Dimensions: Length: 52mm. Width: 52mm. Thickness: 17mm. Weight: 140.9g.

02/278
Description: Small piece from edge of copper ingot.
Dimensions: Length: 52mm. Width: 37mm. Thickness: 22mm. Weight: 122.1g

02/279
Description: Fragment from edge of copper ingot, with voids apparent in the interior.
Dimensions: Length: 46mm. Width: 25mm. Thickness: 20mm. Weight: 89.9g.

02/280
Description: Small fragment from edge of copper ingot.
Dimensions: Length: 36mm. Width: 31mm. Thickness: 20mm. Weight: 70.9g.

02/281
Description: Small fragment from interior of copper ingot.
Dimensions: Length: 33mm. Width: 26mm. Thickness: 13mm. Weight: 63.6g.

02/282
Description: Fragment from edge of copper ingot, thin in section.
Dimensions: Length: 36mm. Width: 29mm. Thickness: 9mm. Weight: 23.2g.
Observations: There are some possible small tool marks present on one surface (illustrated).

02/283
Description: Fragment from edge of copper ingot, with a large void in the interior.
Dimensions: Length: 27mm. Width: 27mm. Thickness: 14mm. Weight: 31.5g.
Observations: Distortion of the section is apparent over the void on one side (illustrated), but no hammering can be seen in association with this.

02/284
Description: Small piece from edge of copper ingot.
Dimensions: Length: 45mm. Width: 38mm. Thickness: 25mm. Weight: 174.6g.
Observations: There is a possible chisel mark on one surface (illustrated).

02/285
Description: Edge fragment of copper ingot, with a void in the centre of the piece.
Dimensions: Length: 43mm. Width: 30mm. Thickness: 14mm. Weight: 52.7g.
Observations: There are possible traces of hammering associated with the ridge that runs down the length of the piece.

02/286
Description: Fragment from interior of copper ingot.
Dimensions: Length: 37mm. Width: 29mm. Thickness: 20mm. Weight: 67.8g.

02/287

Description: Small fragment from interior of copper ingot.

Dimensions: Length: 30mm. Width: 25mm. Thickness: 20mm. Weight: 42.8g.

Observations: There are possible hammer indents associated with one of the broken edges.

02/288

Description: Fragment from edge of copper ingot.

Dimensions: Length: 37mm. Width: 34mm. Thickness: 19mm. Weight: 85.4g.

Observations: There are possible small tool marks on one surface (illustrated).

02/289

Description: Fragment from interior of copper ingot.

Dimensions: Length: 40mm. Width: 34mm. Thickness: 18mm. Weight: 90.9g.

Observations: There are numerous small tool marks on either surface.

02/290

Description: Small fragment of copper ingot.

Dimensions: Length: 27mm. Width: 20mm. Thickness: 16mm. Weight: 20.6g.

02/291

Description: This is either a fragment of copper ingot, or a piece of rough metal. A regular channel appears to run down the length of the piece, though it could possibly be a fortuitously regular void in the section.

Dimensions: Length: 27mm. Width: 16mm. Thickness: 12mm. Weight: 16.5g.

02/292

Description: Fragment from edge of copper ingot.

Dimensions: Length: 43mm. Width: 30mm. Thickness: 20mm. Weight: 62.7g.

Observations: There are some probable small tool marks on one surface (illustrated).

02/293

Description: Fragment from edge of copper ingot.

Dimensions: Length: 32mm. Width: 24mm. Thickness: 14mm. Weight: 38.1g.

Observations: Modern damage is apparent, which appears to be the result of preparing the piece for metallographic analysis.

02/294

Description: Fragment from edge of copper ingot.

Dimensions: Length: 40mm. Width: 32mm. Thickness: 18mm. Weight: 60.8g.

02/295

Description: Fragment from interior of copper ingot.

Dimensions: Length: 34mm. Width: 26mm. Thickness: 25mm. Weight: 109.7g.

02/296

Description: Small fragment from interior of copper ingot.

Dimensions: Length: 25mm. Width: 20mm. Thickness: 18mm. Weight: 34.0g.

02/297

Description: Fragment from edge of copper ingot, with voids apparent in the interior.

Dimensions: Length: 23mm. Width: 32mm. Thickness: 19mm. Weight: 52.7g.

02/298

Description: Tiny fragment from interior of copper ingot.

Dimensions: Length: 26mm. Width: 11mm. Thickness: 16mm. Weight: 16.7g.

02/299

Description: Tiny fragment from edge of copper ingot.

Dimensions: Length: 19mm. Width: 19mm. Thickness: 13mm. Weight: 22.8g.

02/300

Description: Fragment from edge of thin-sectioned copper ingot, or fragment of spill/waste metal.

Dimensions: Length: 18mm. Width: 18mm. Thickness: 8mm. Weight: 42.8g.

Note: The following objects also belong to the Grays Thurrock I hoard, but they are not illustrated in this catalogue. They are:-

02/301

Description: Piece from interior of copper ingot.

Dimensions: Length: 63mm. Width: 62mm. Thickness: 30mm. Weight: 504.4g.

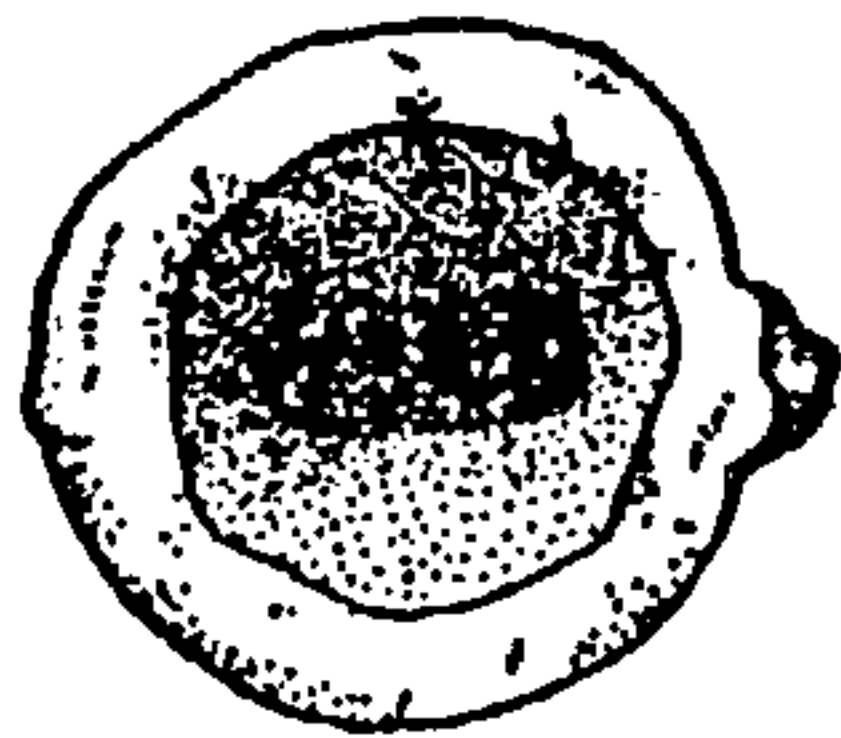
Observations: There is some evidence of later re-utilisation, with large gashes in one surface suggesting possible re-use as a cutting or striking platform, though additional marks -including notches along one edge - appear to be of more recent date.

02/302

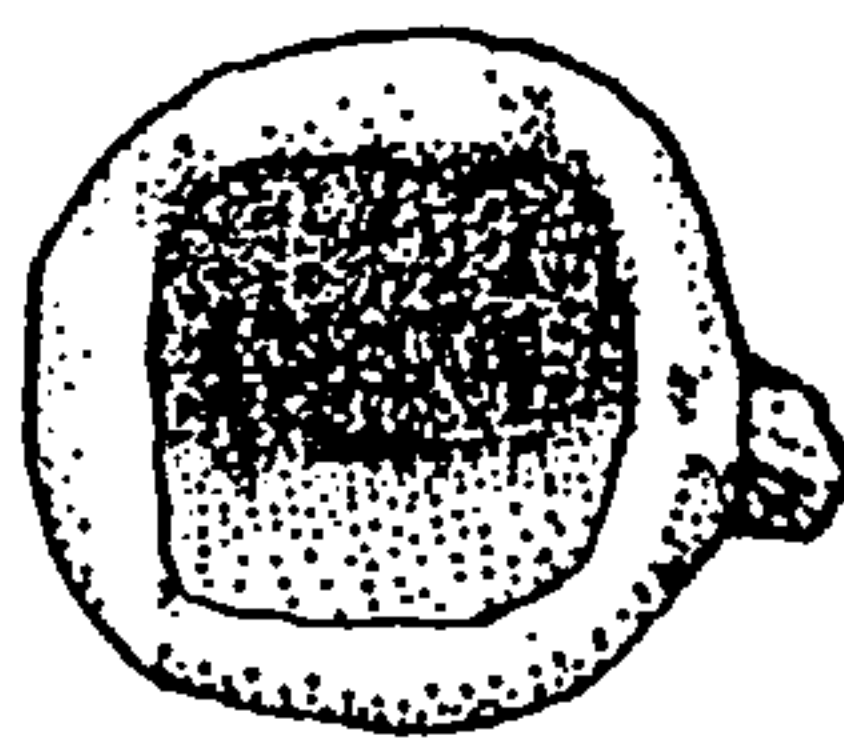
Description: Piece from interior of copper ingot.

Dimensions: Length: 75mm. Width: 72mm. Thickness: 30mm. Weight: 597.3g.

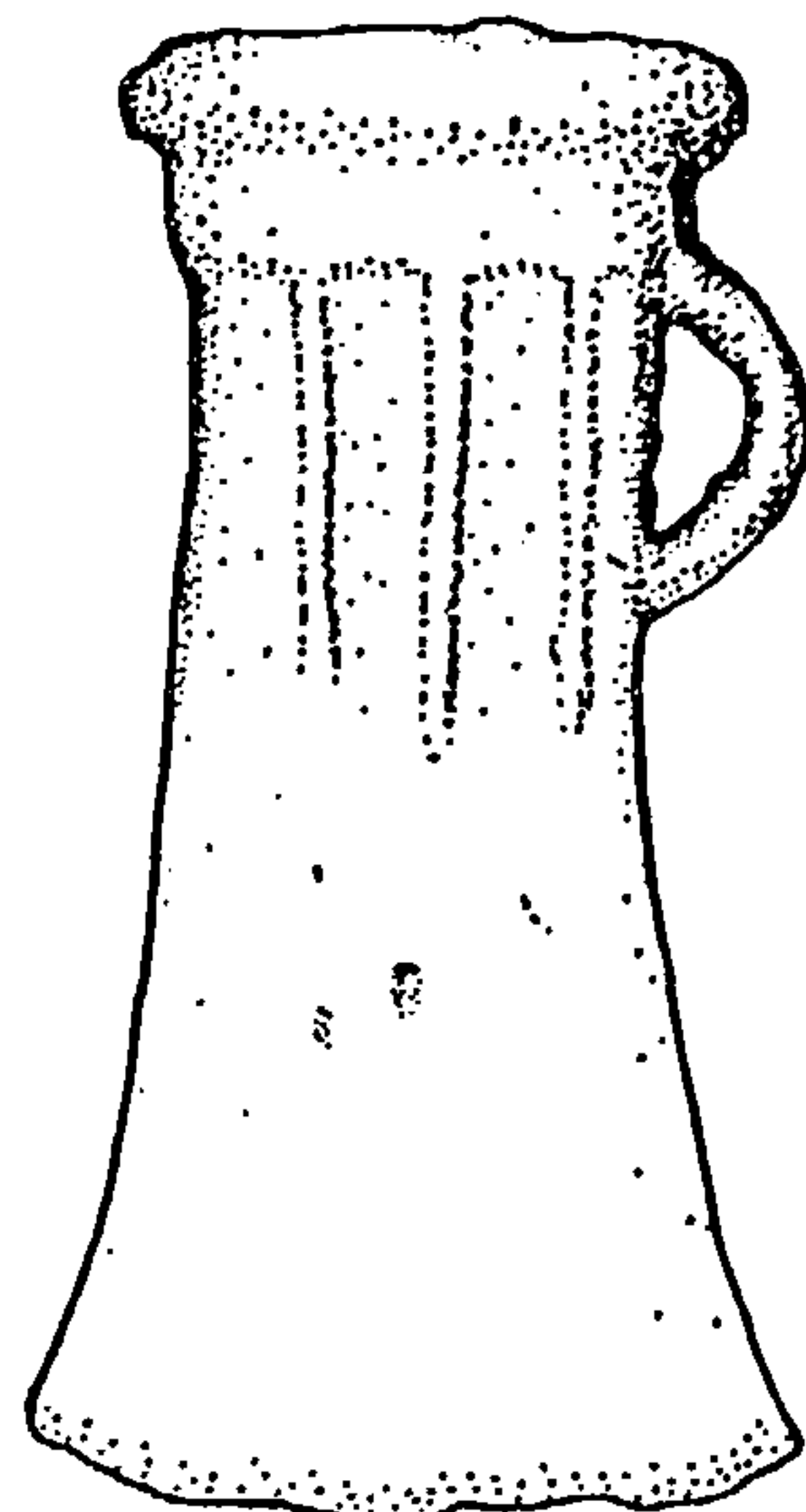
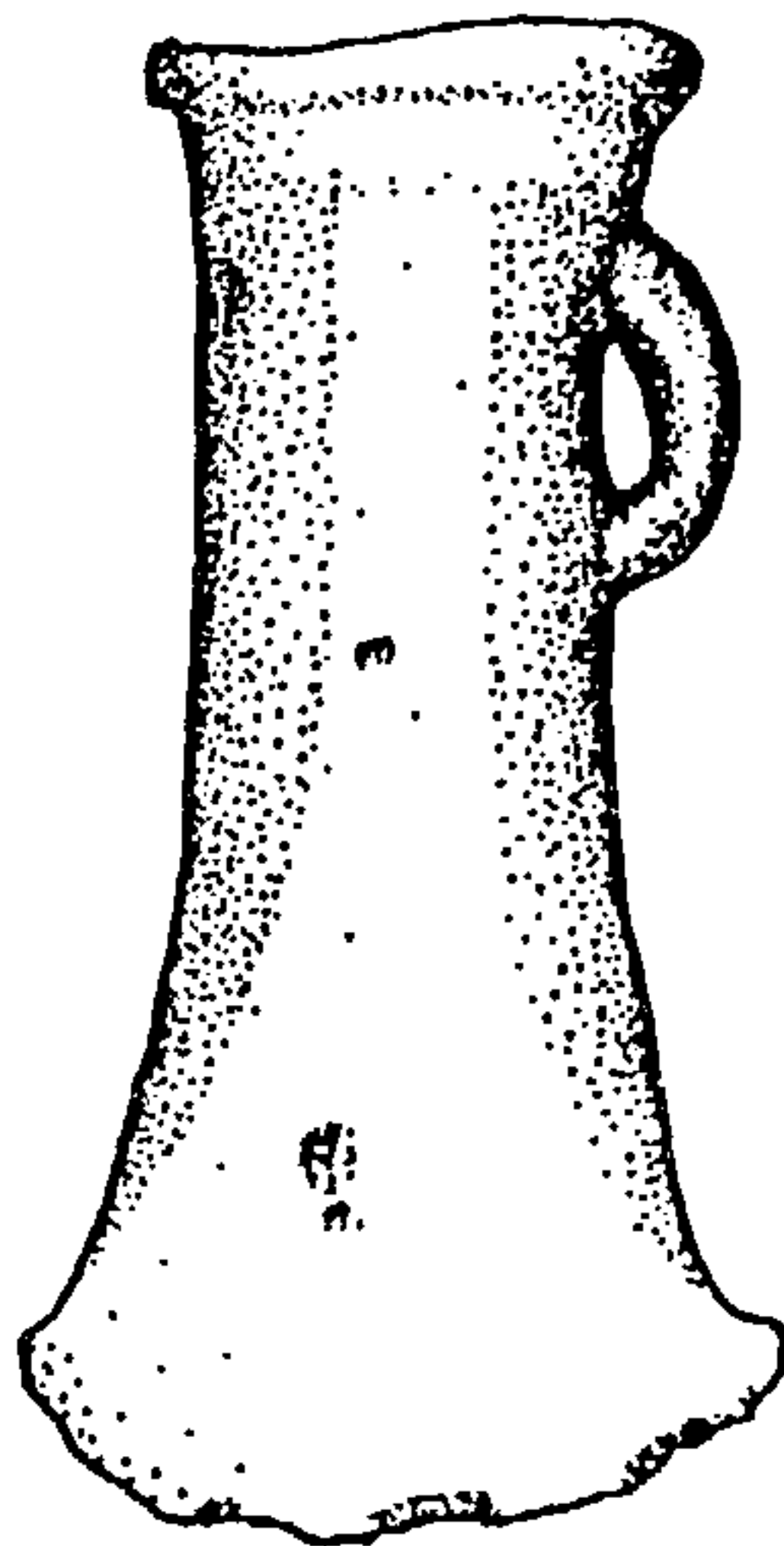
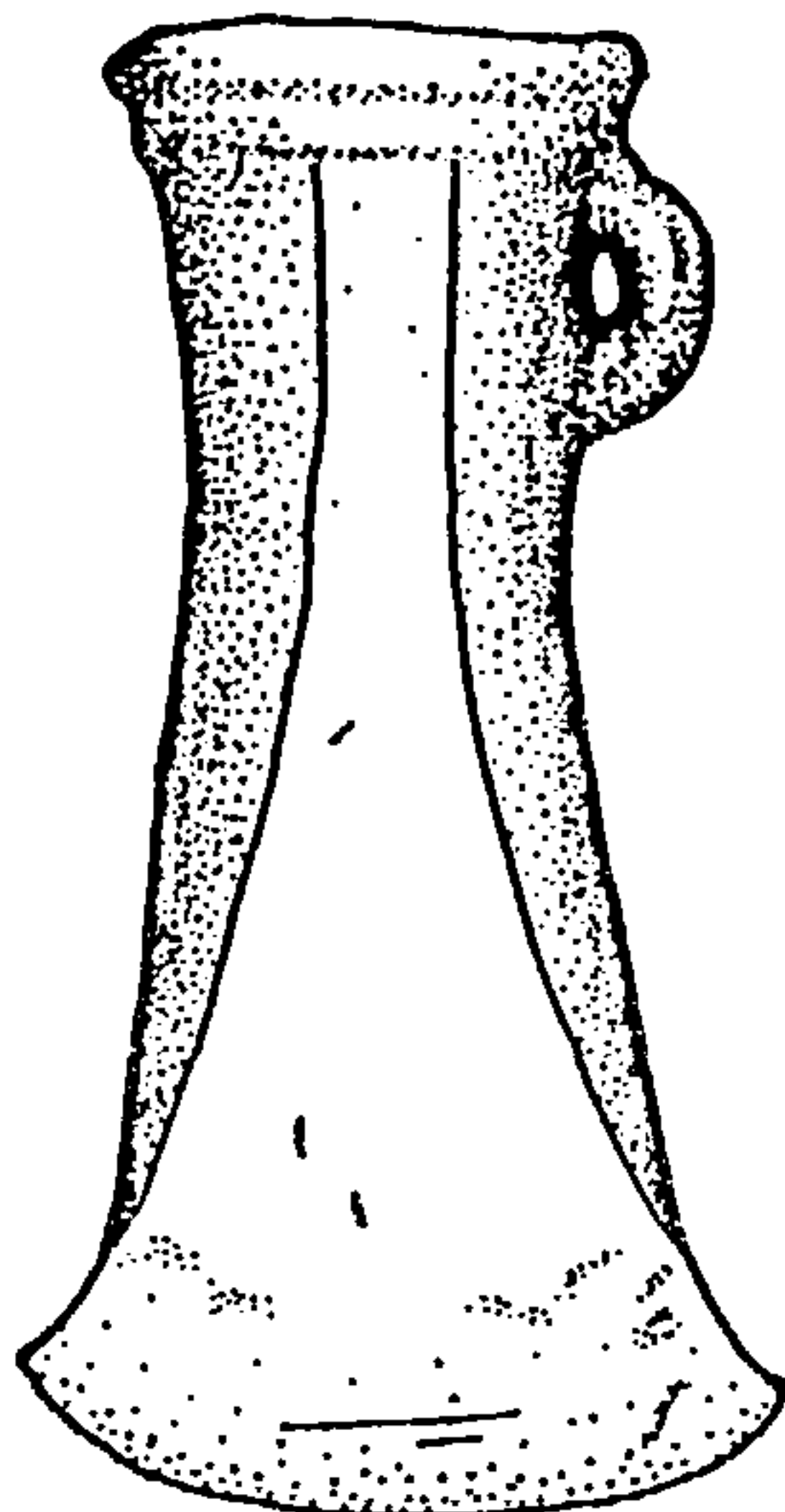
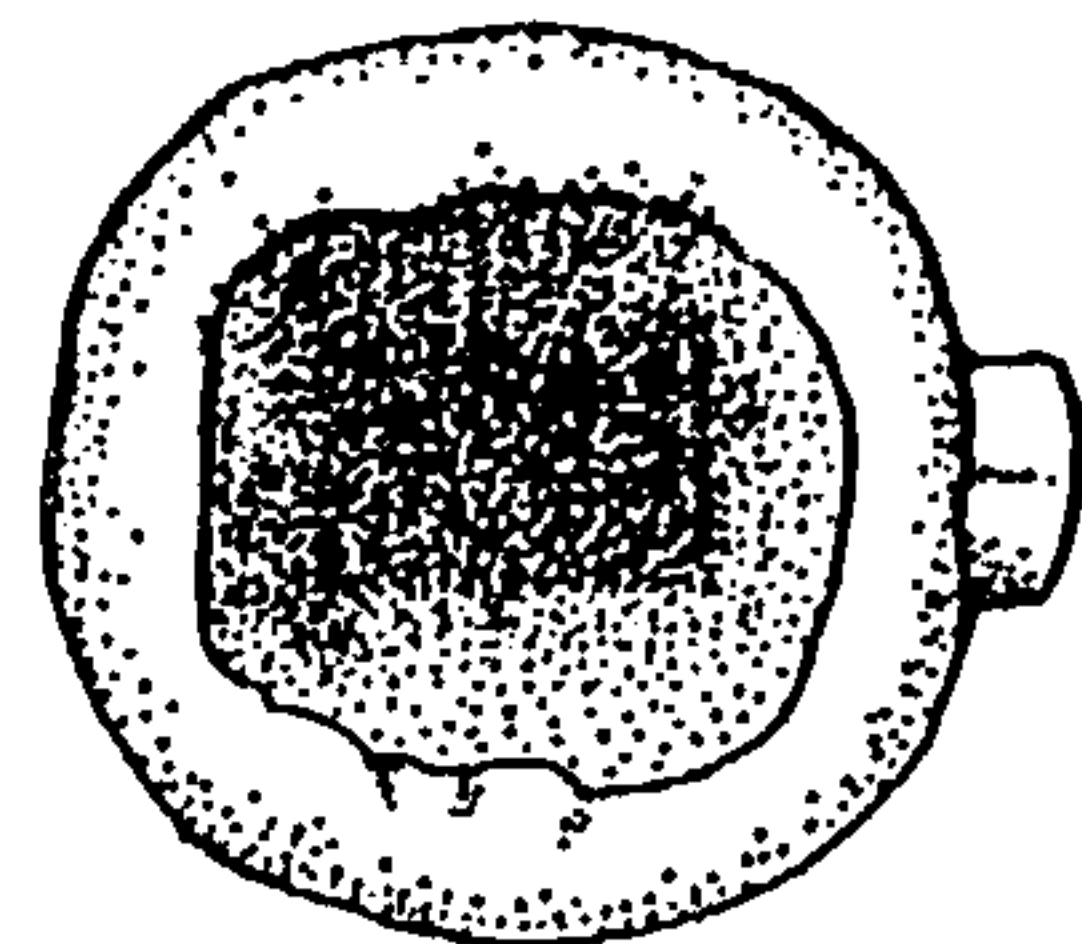
02/01



02/02

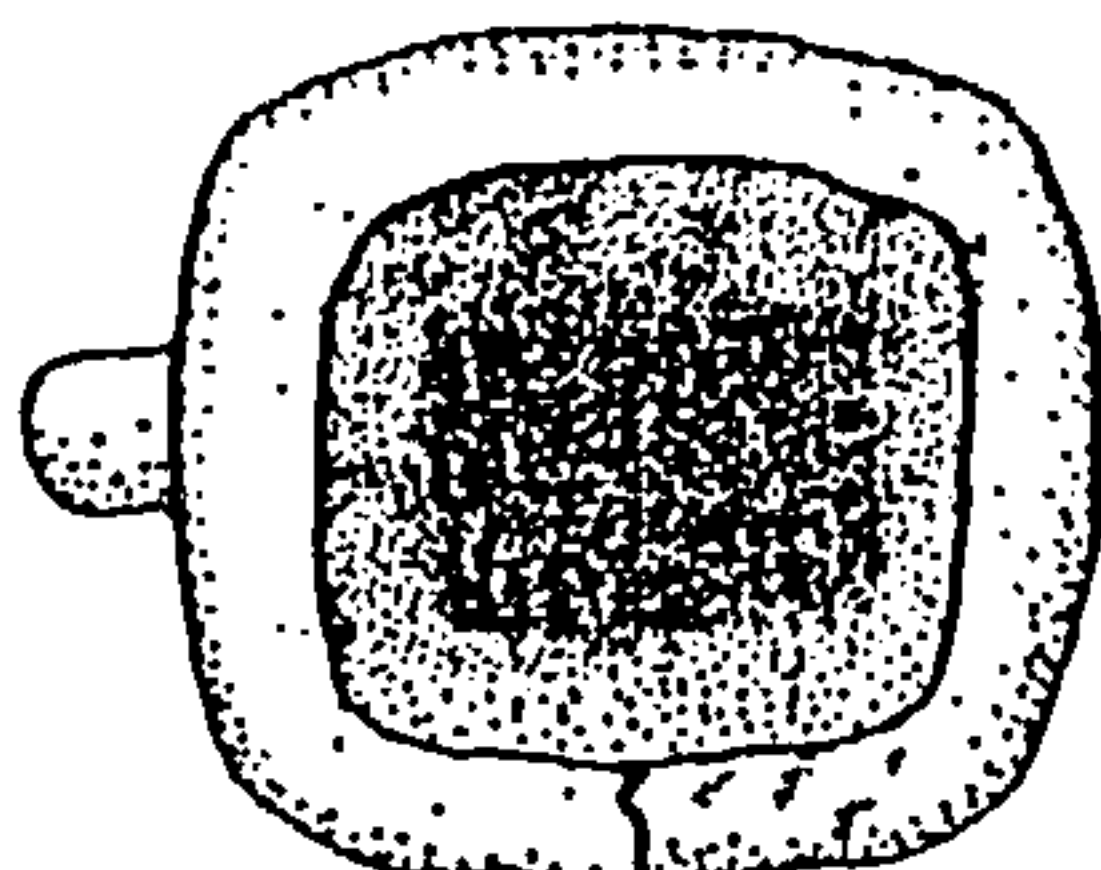


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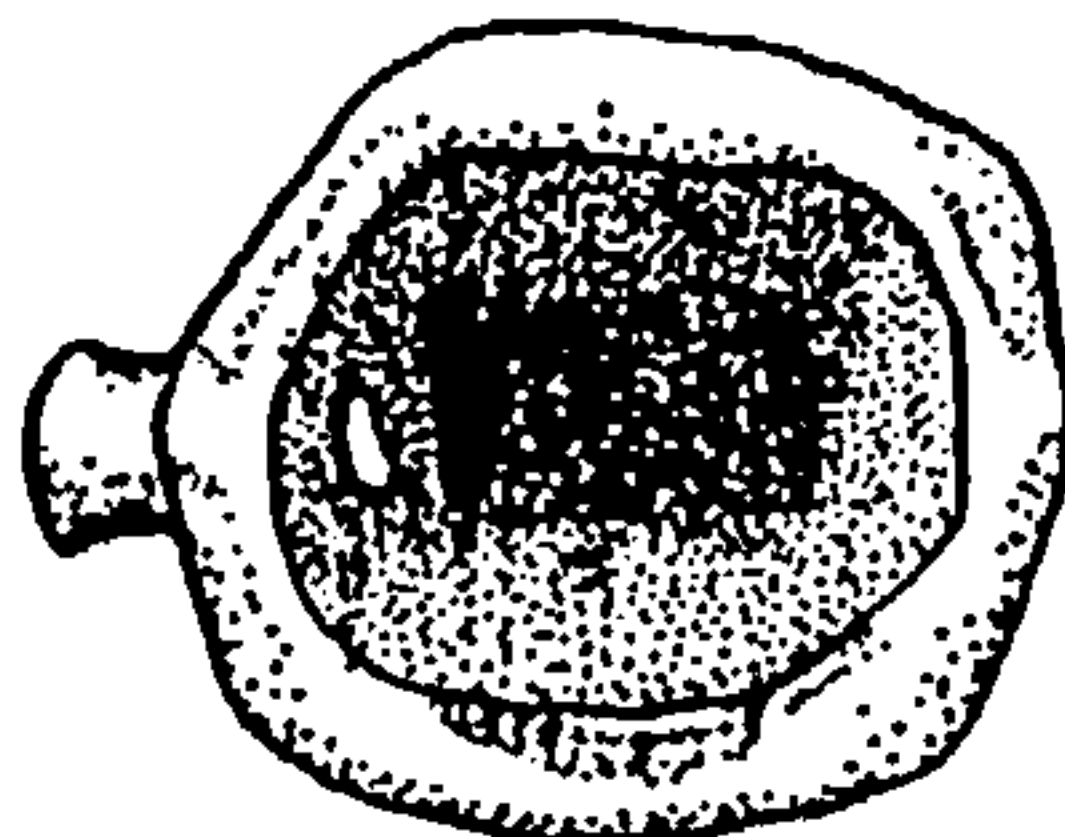


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02/04



02/05



02/06

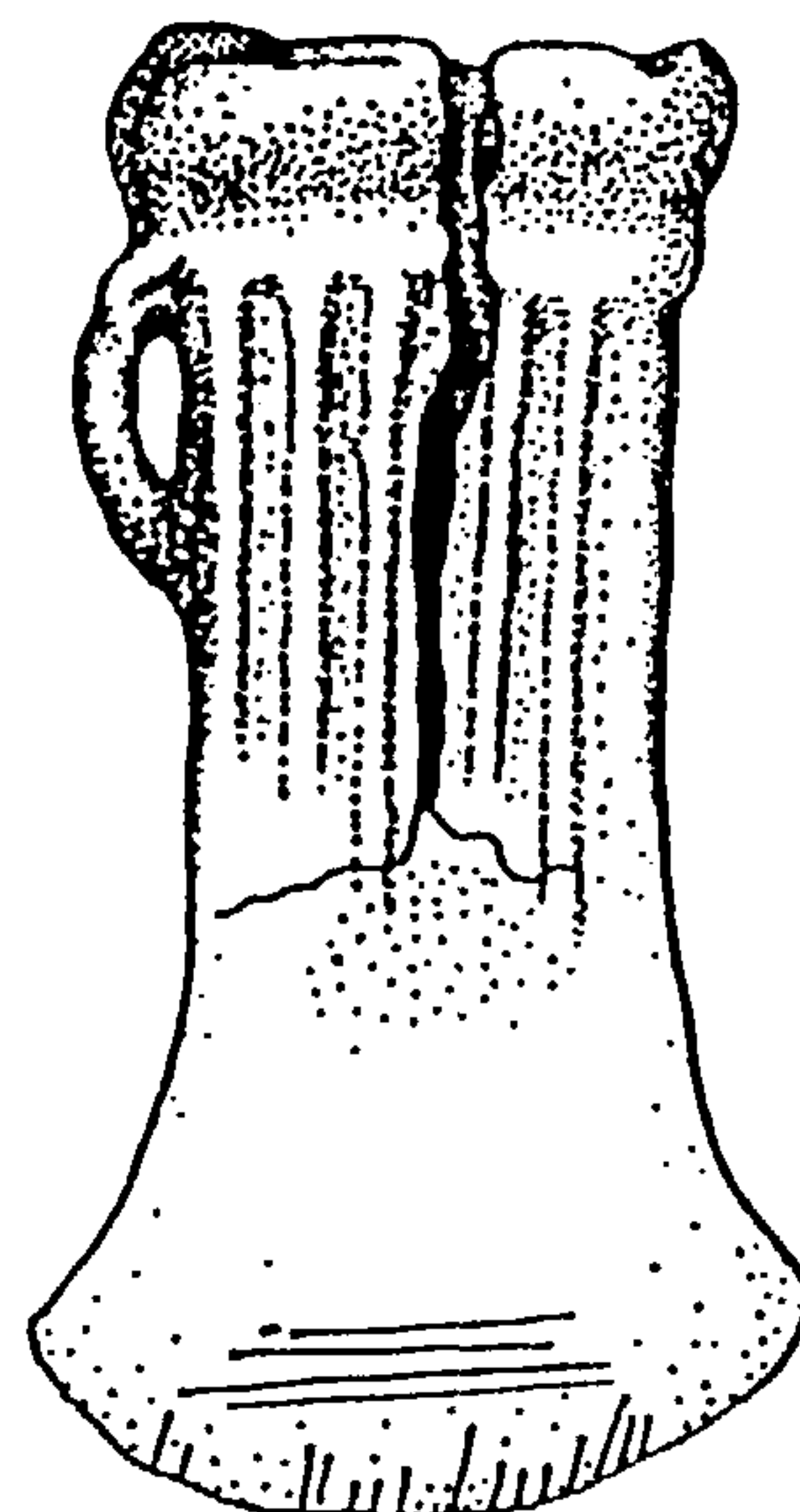
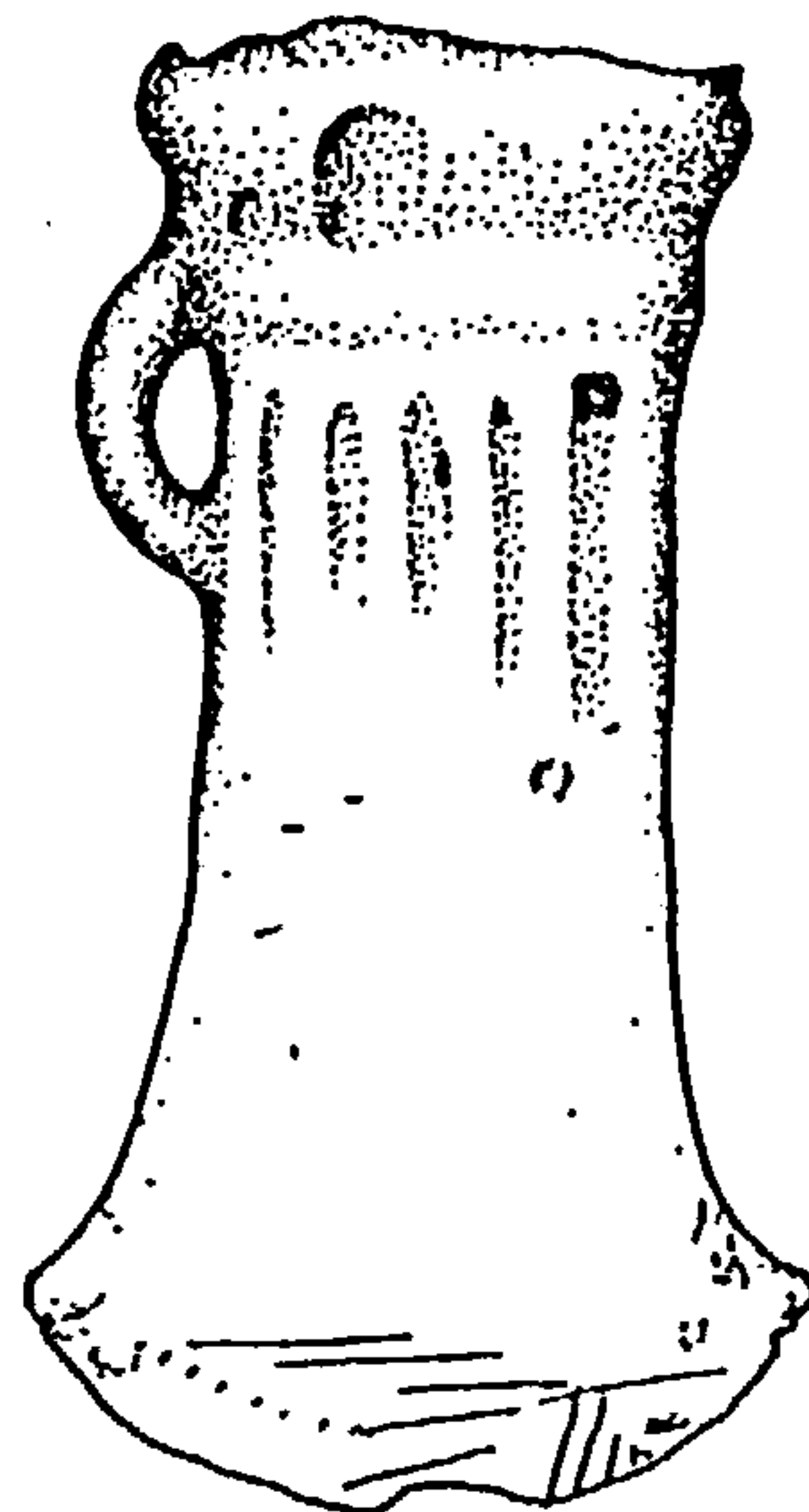
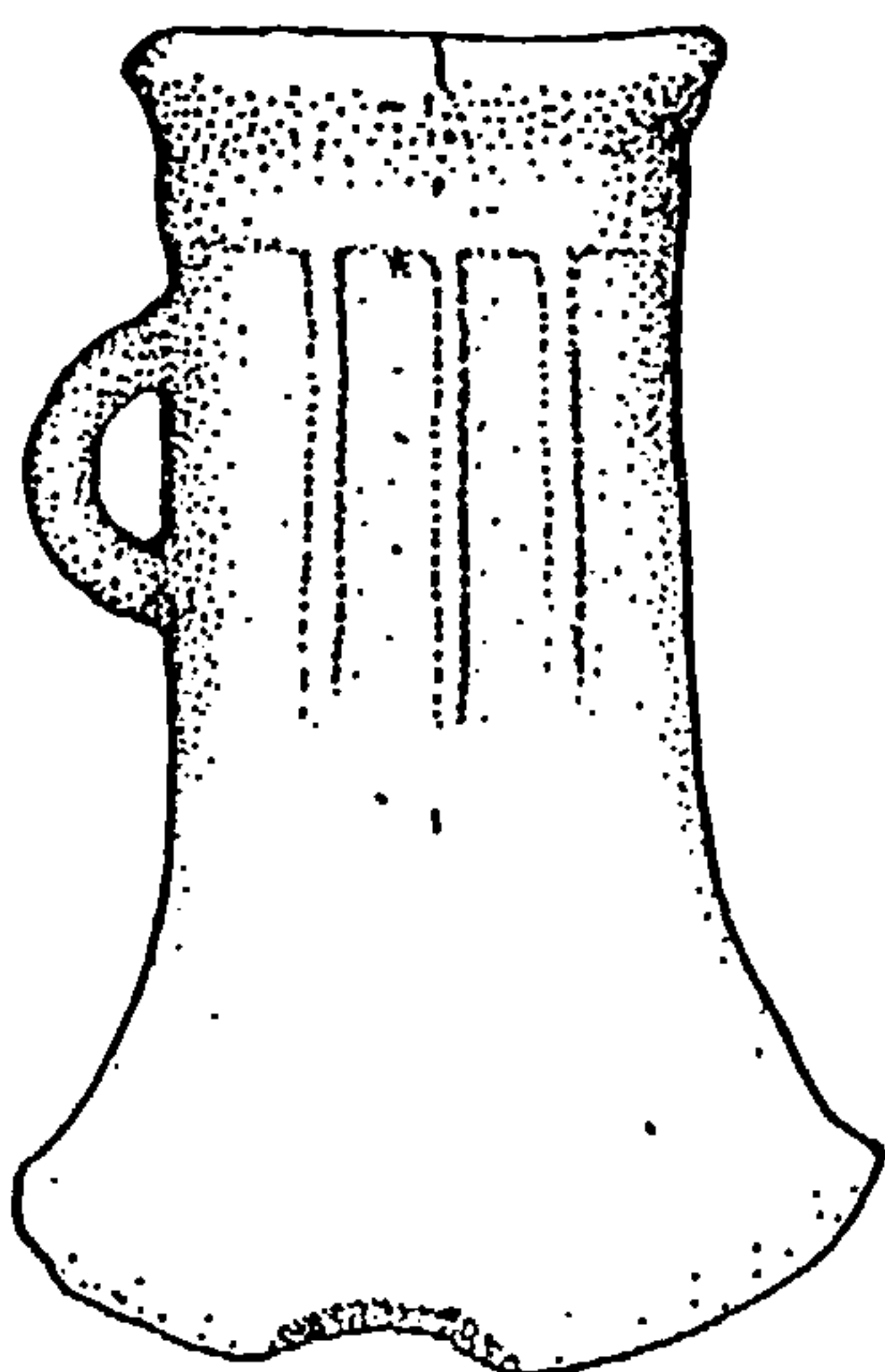
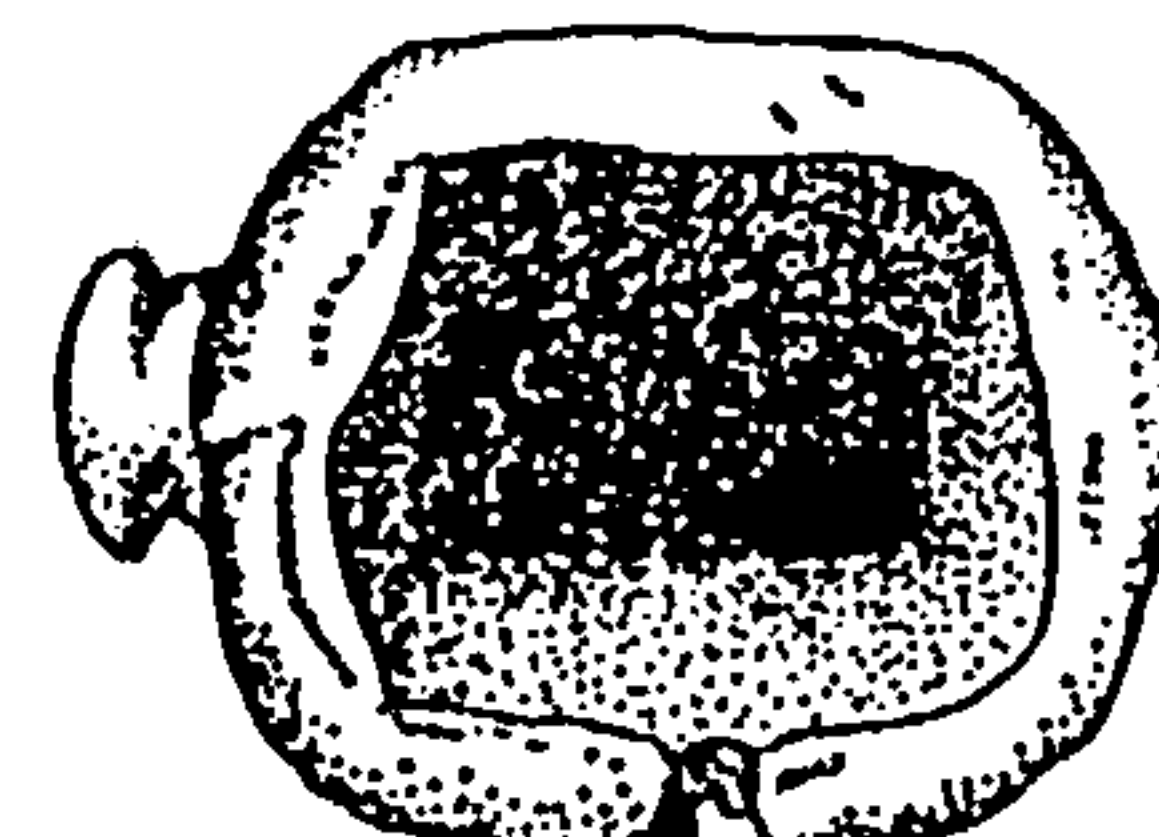
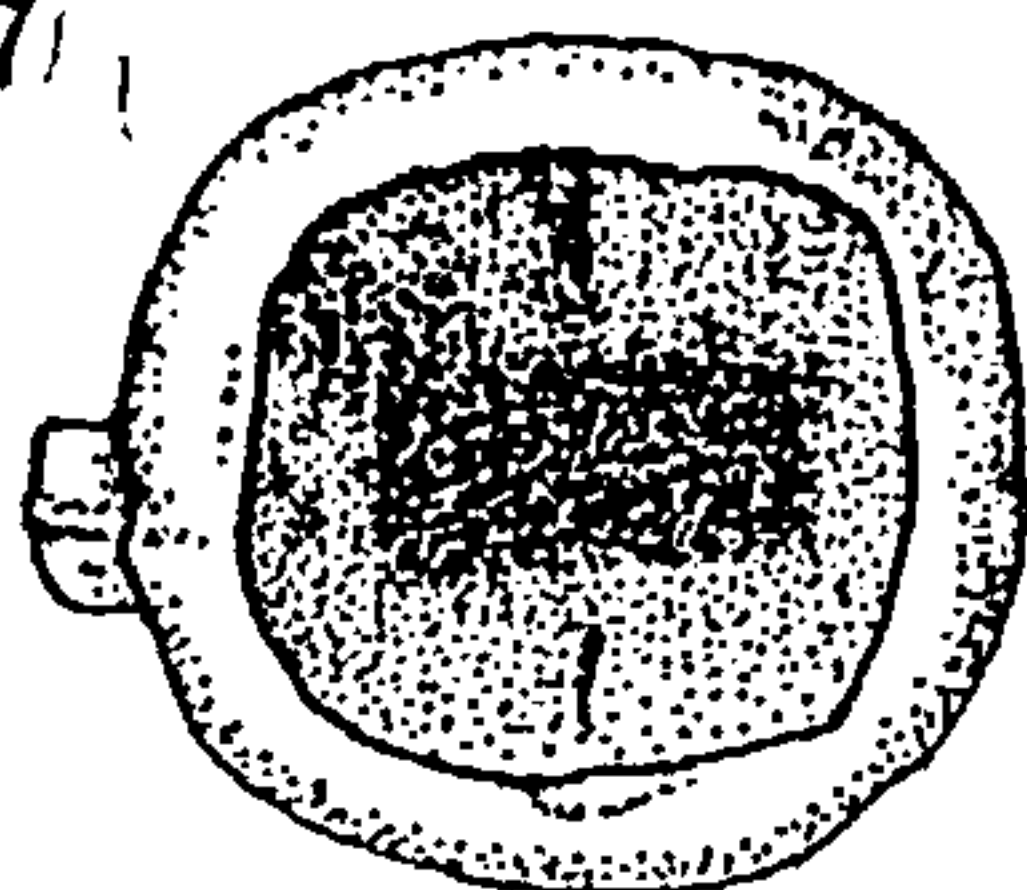
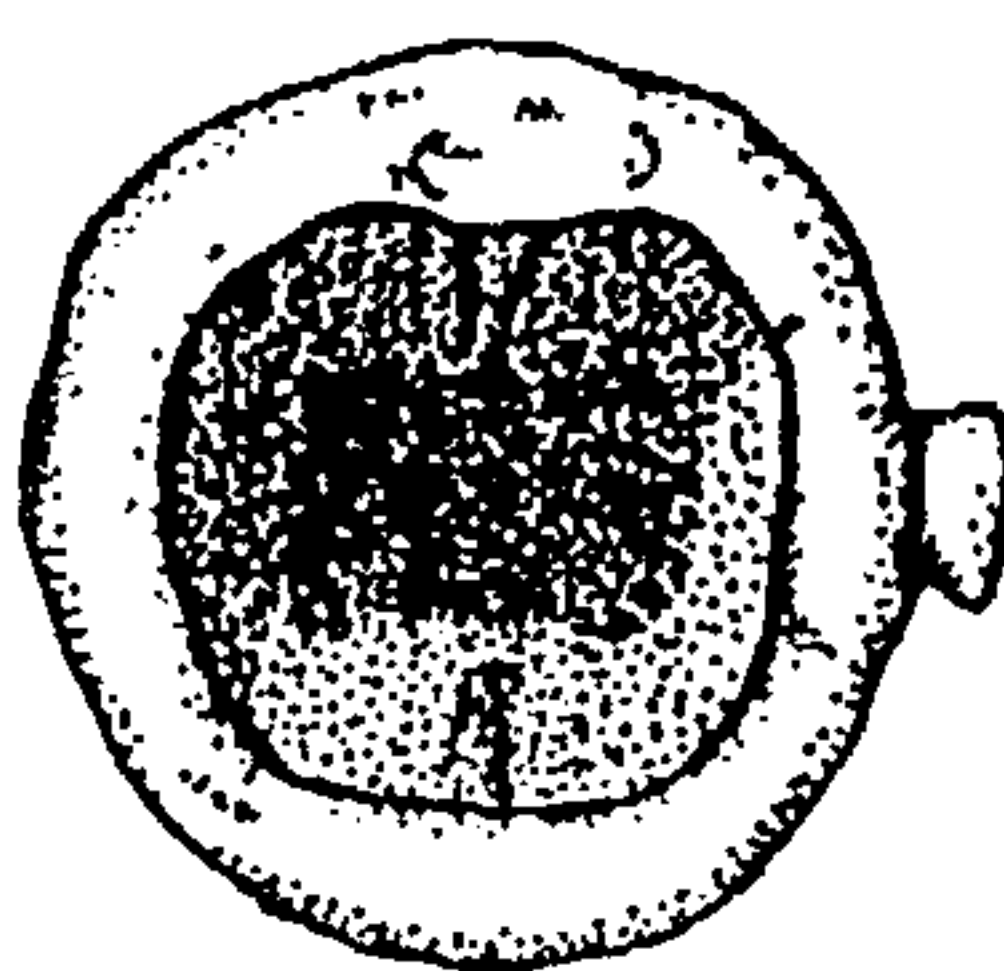


Fig. 2: The Grays Thurrock I Hoard (Ref. No. 02): Complete Socketed Axes (i)

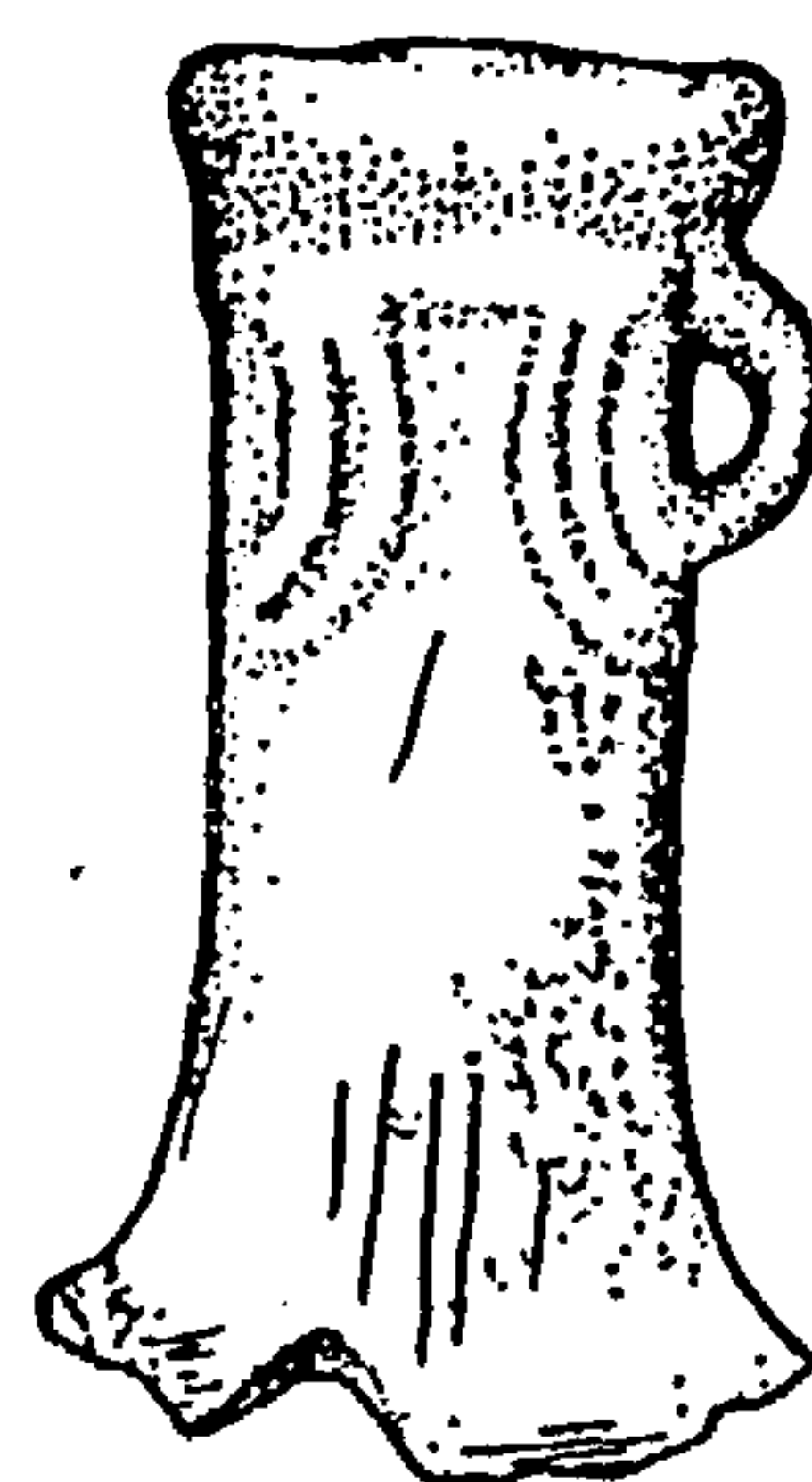
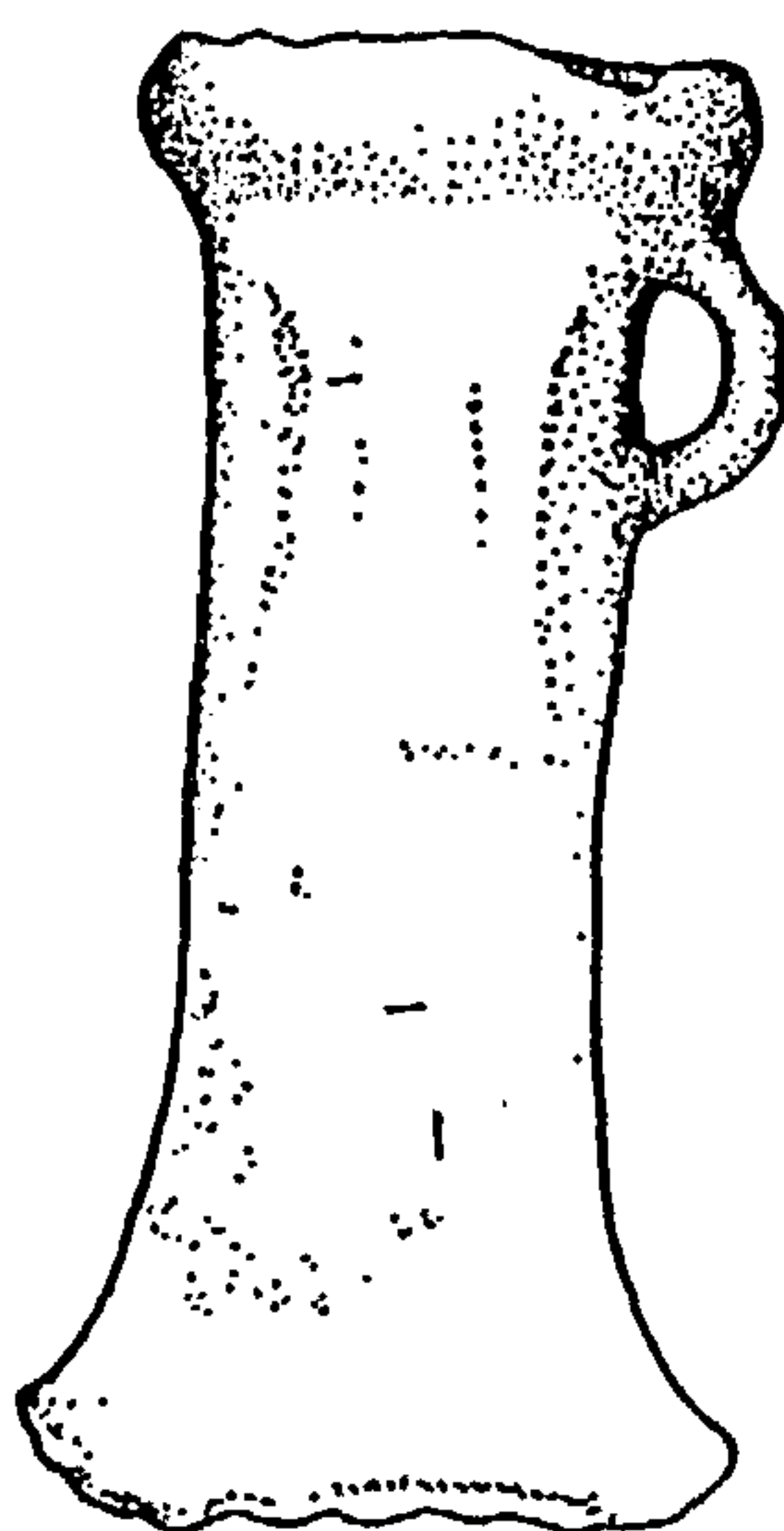
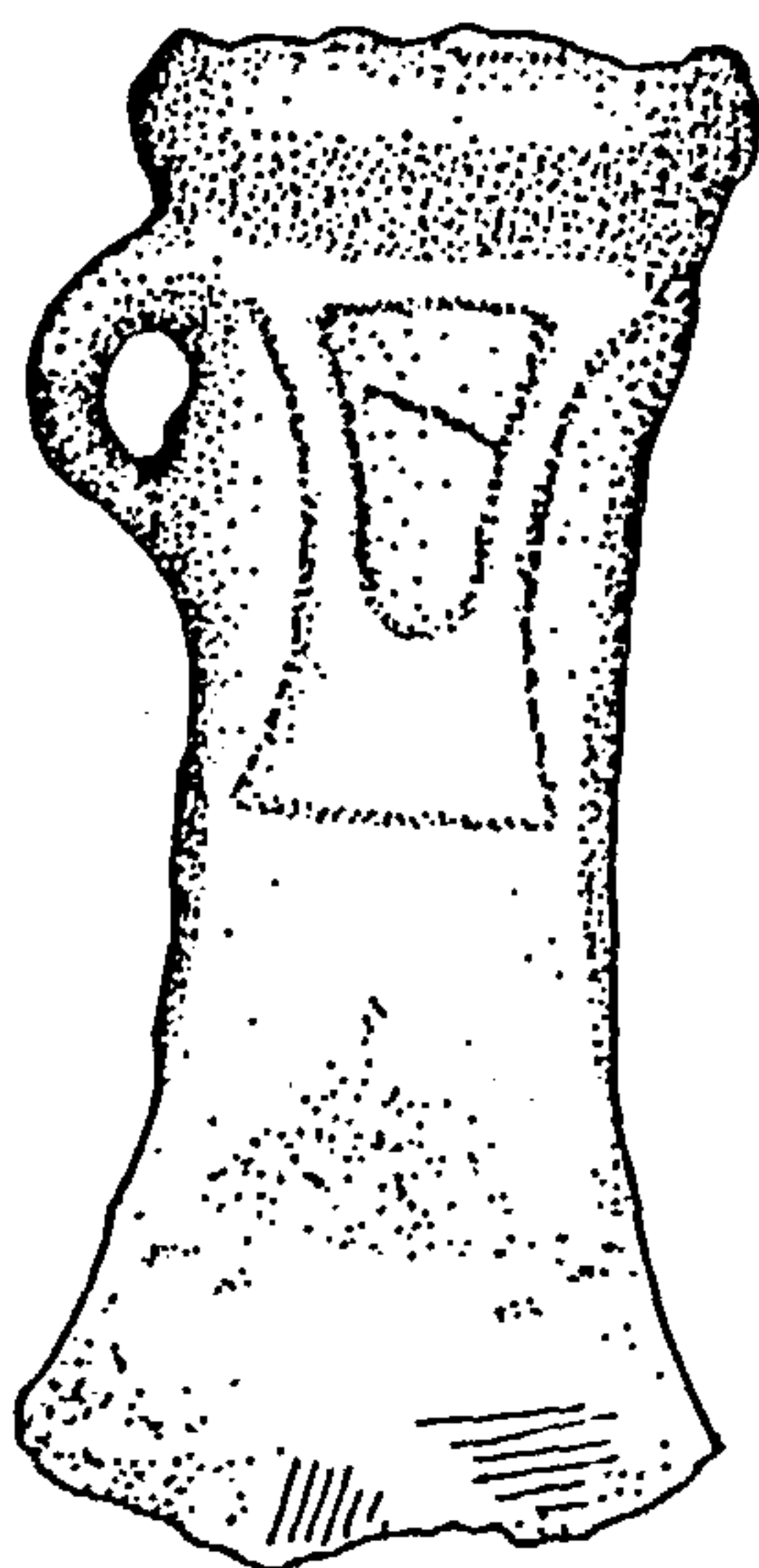
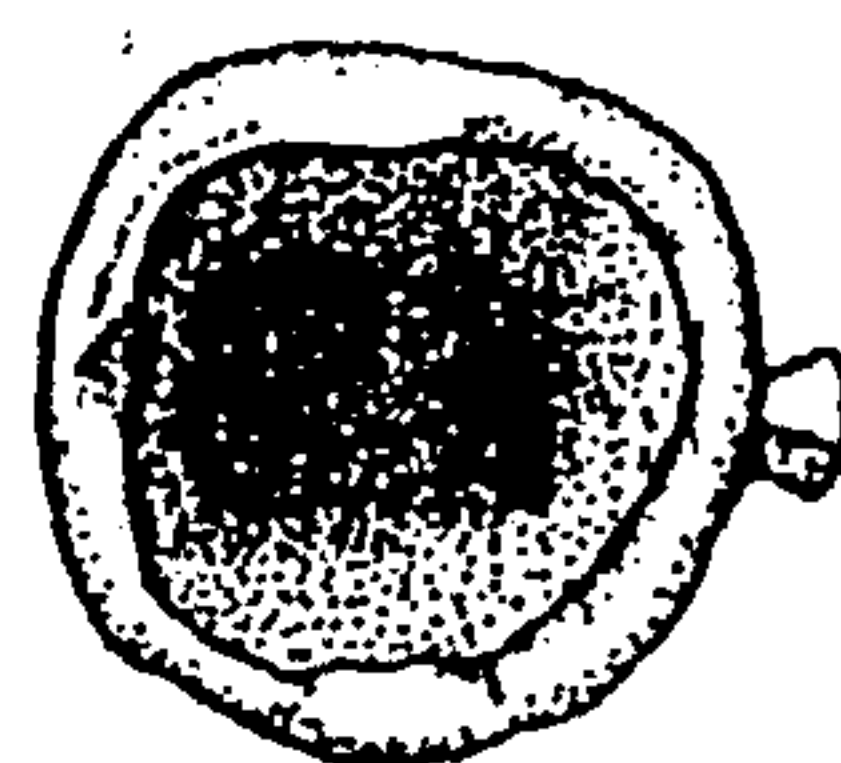
02/07



02/08

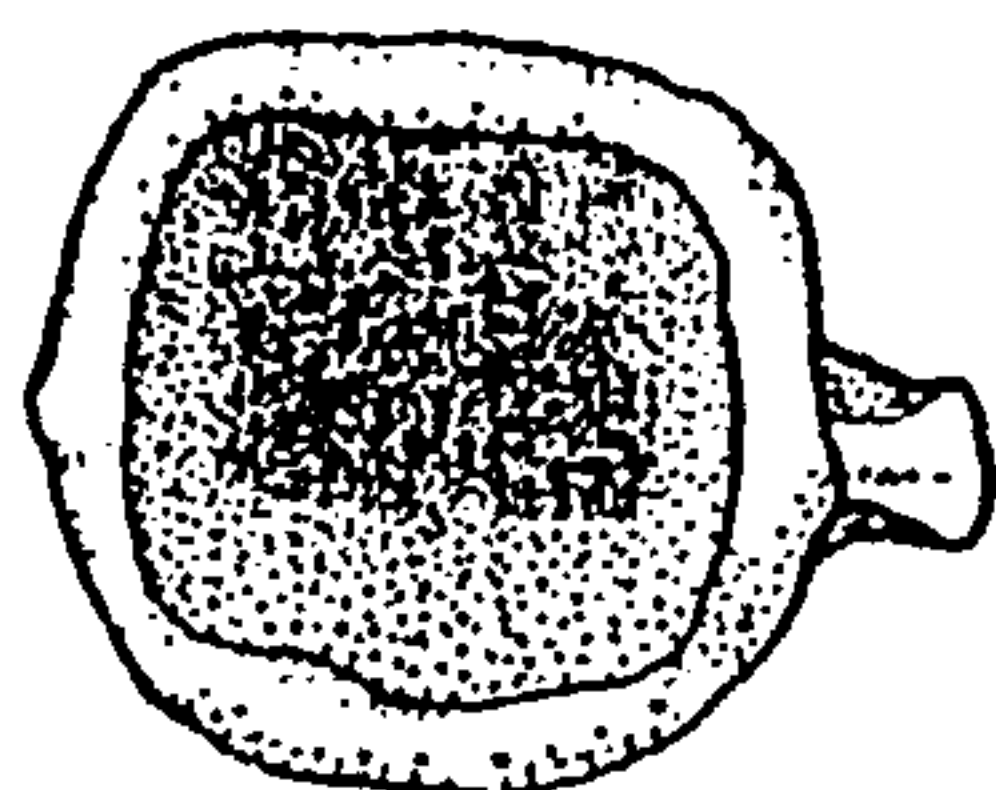


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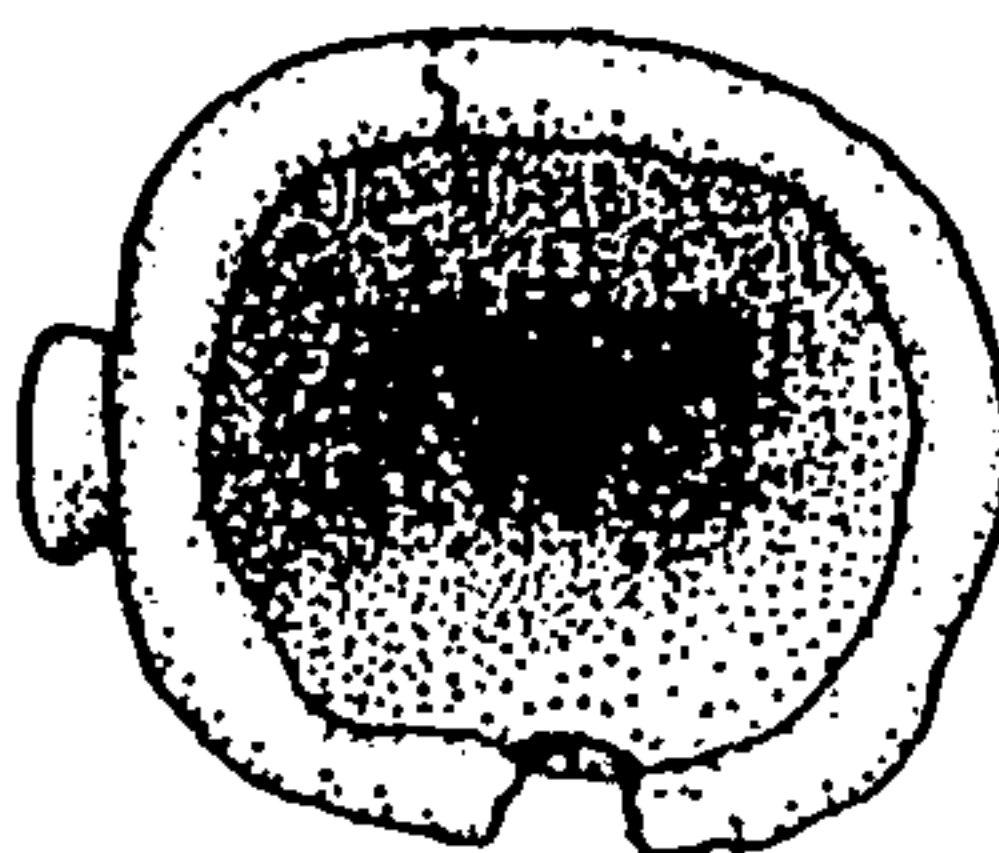


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02/10



02/11



02/12

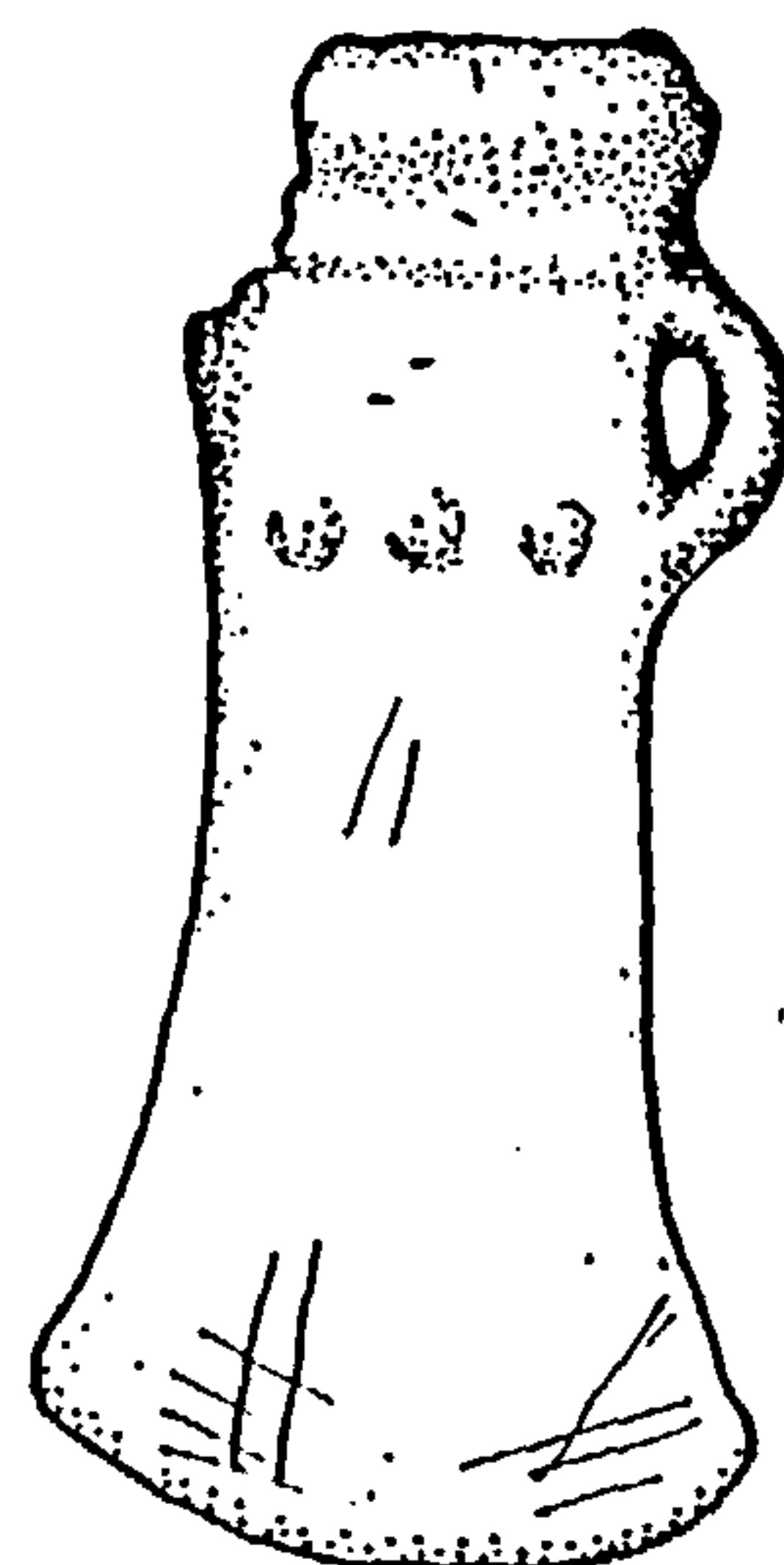
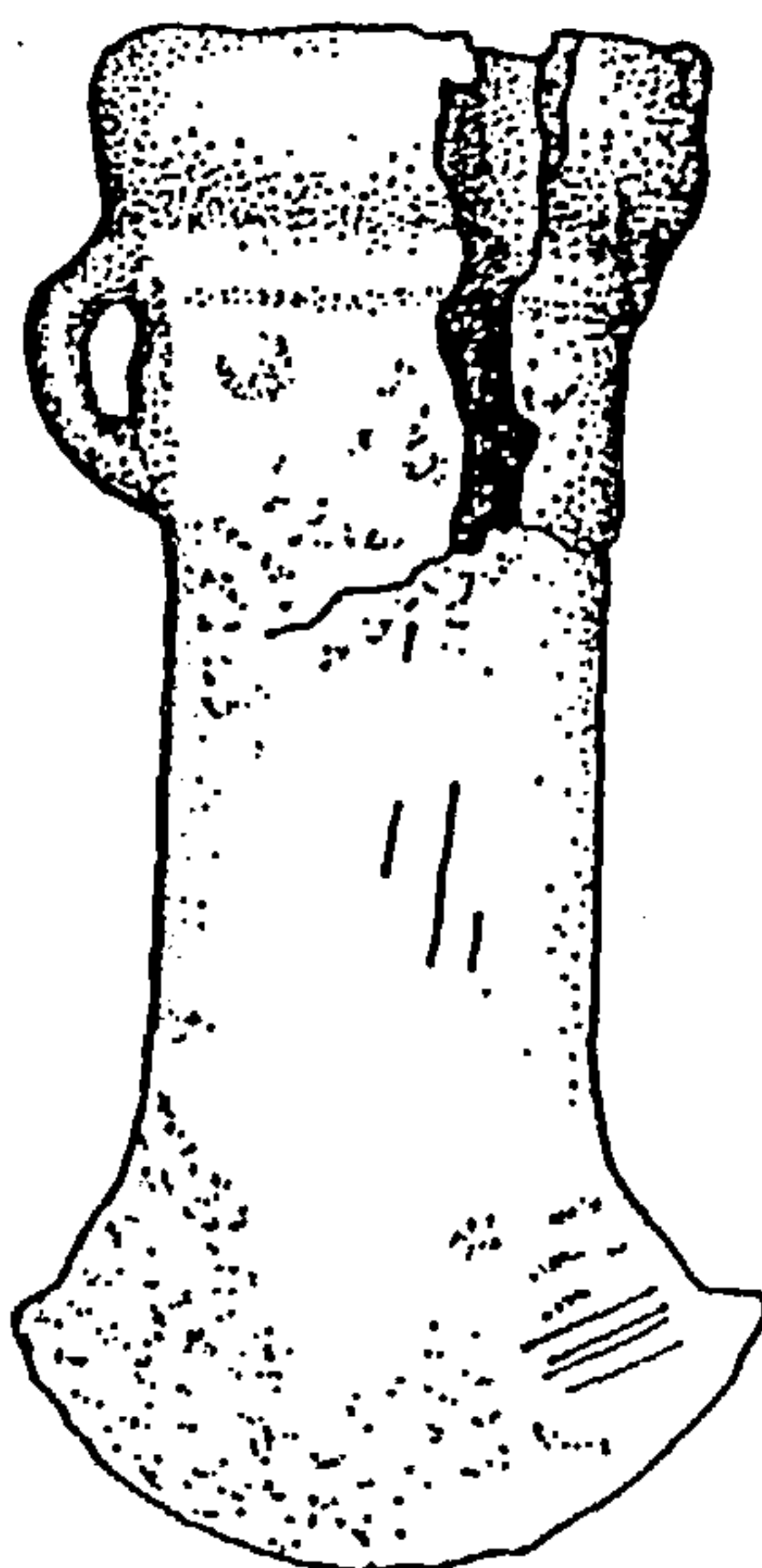
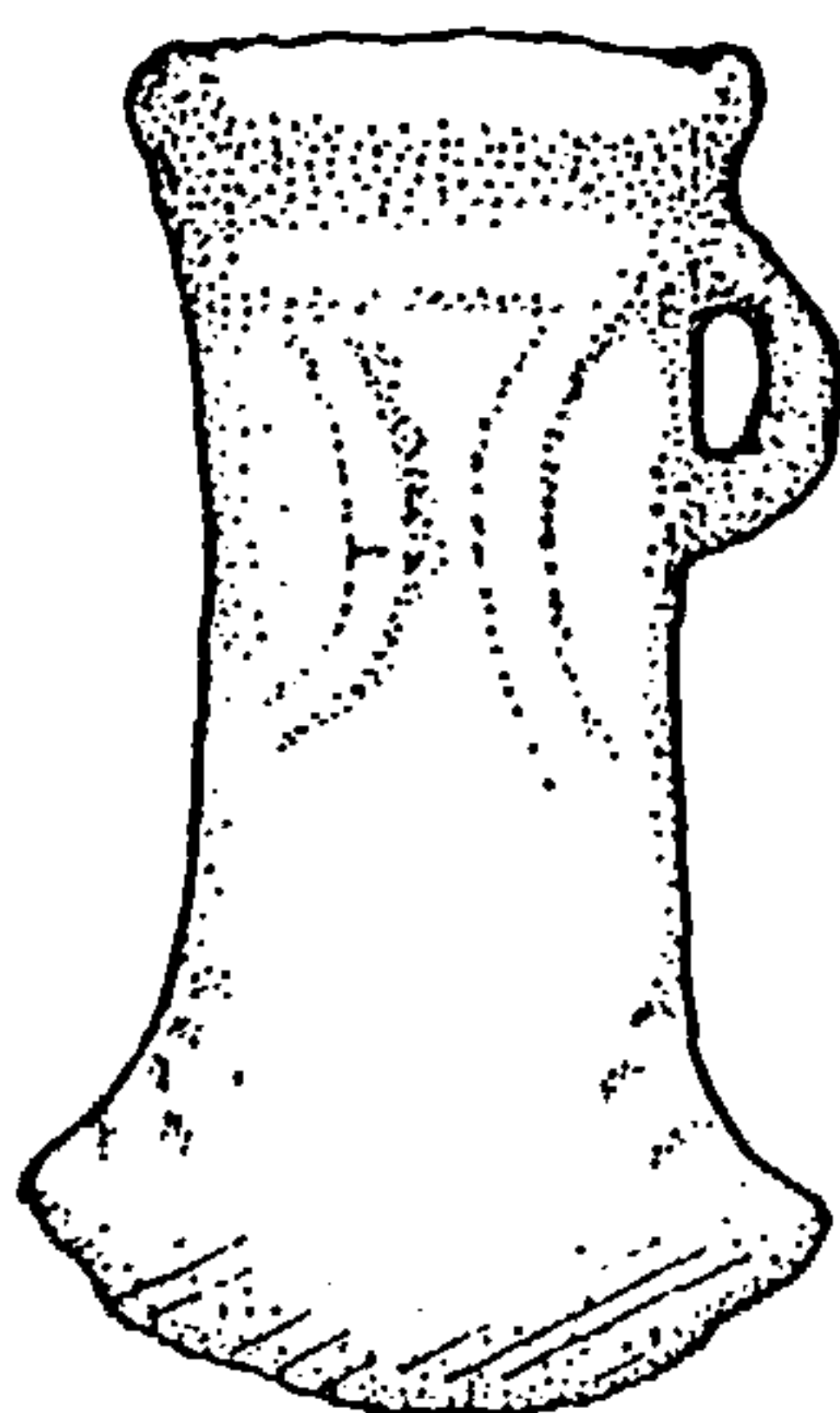
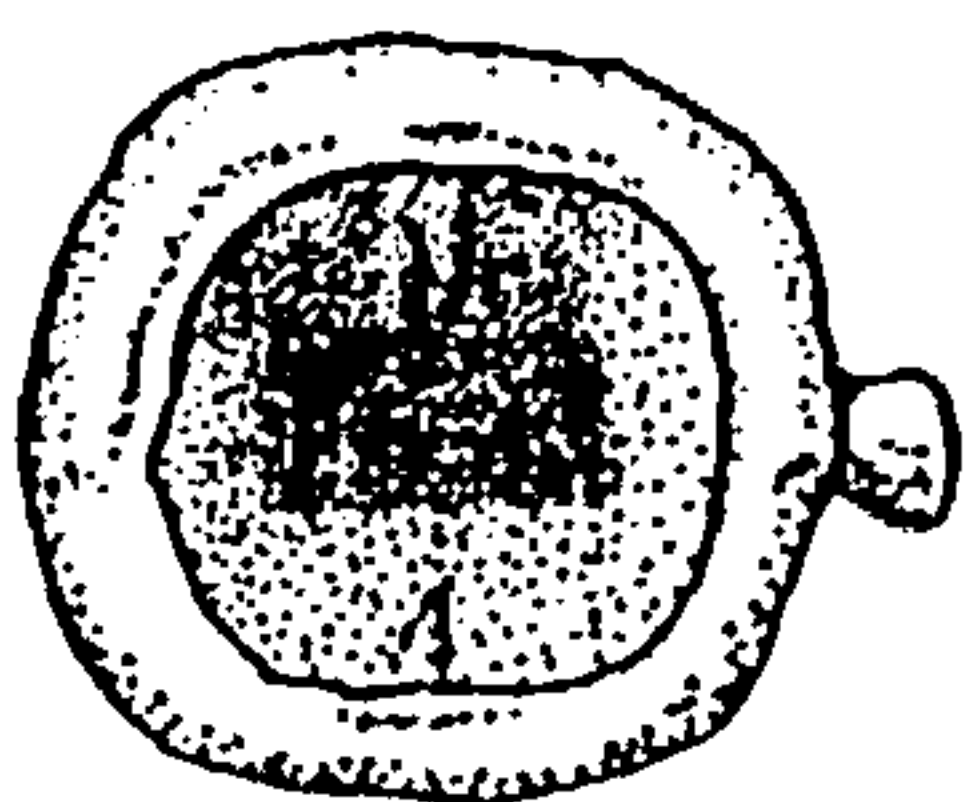
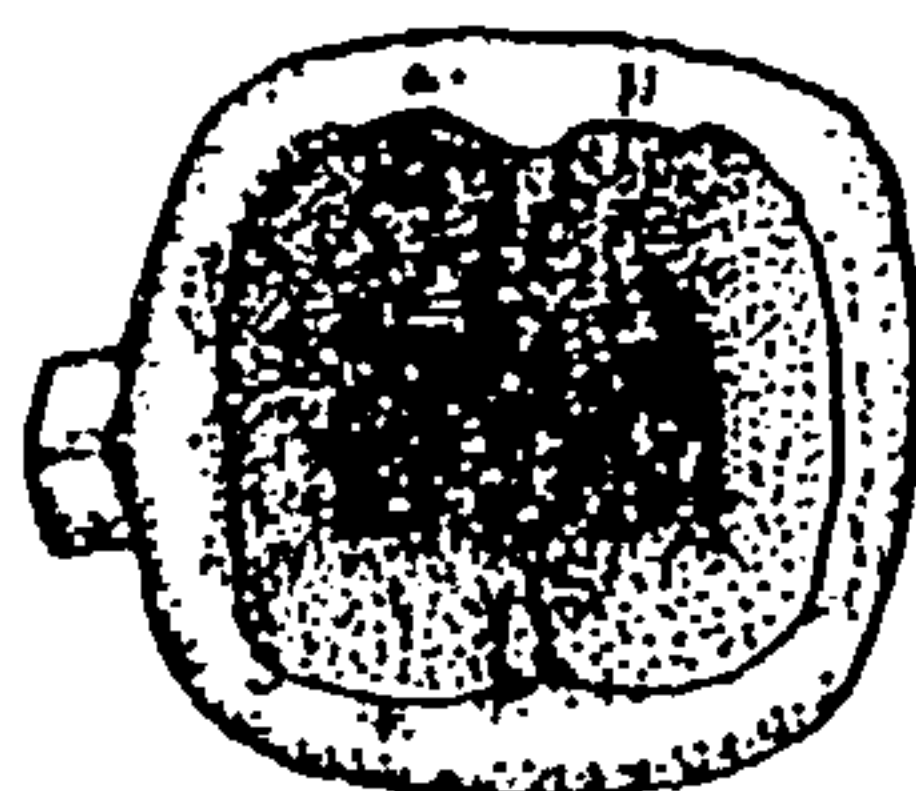


Fig. 3: The Grays Thurrock I Hoard (Ref. No. 02): Complete Socketed Axes (ii)

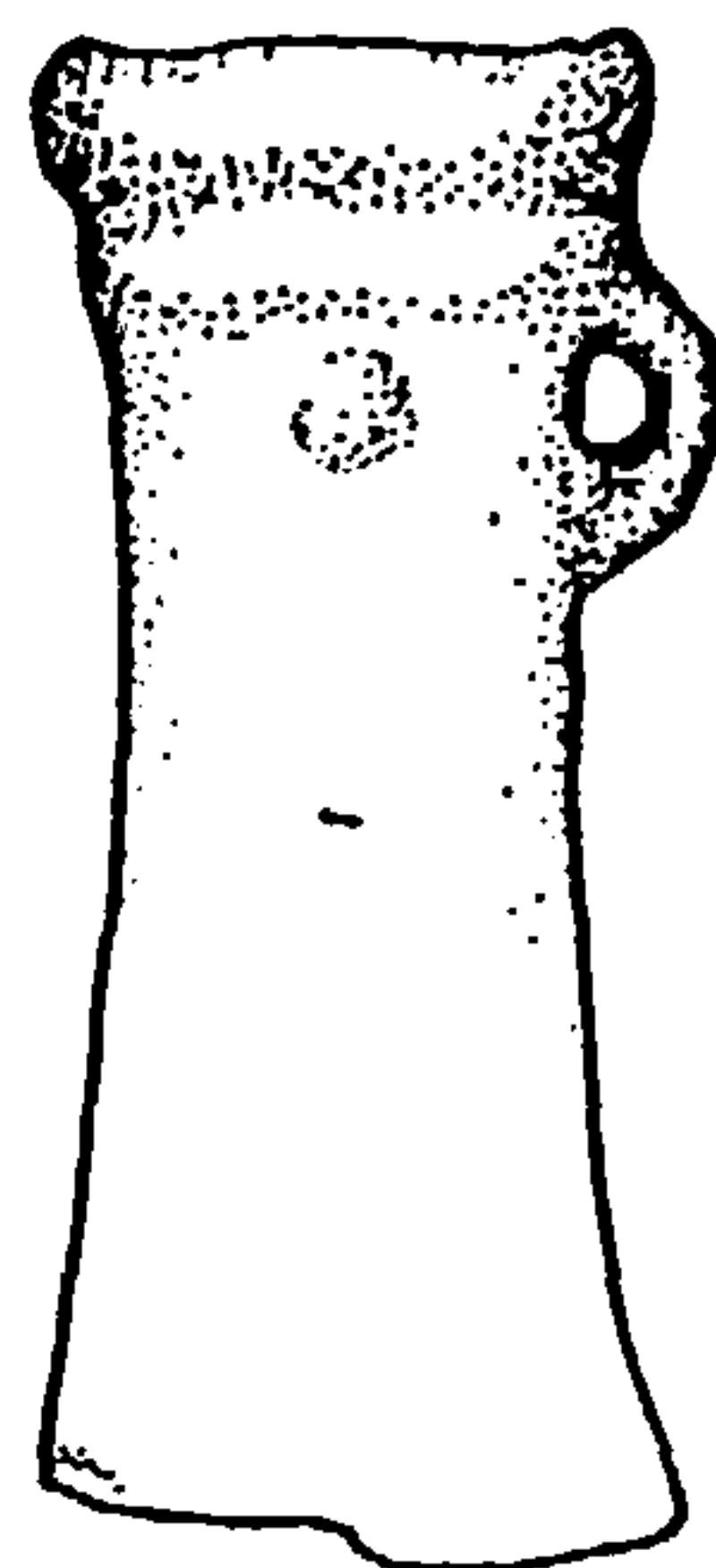
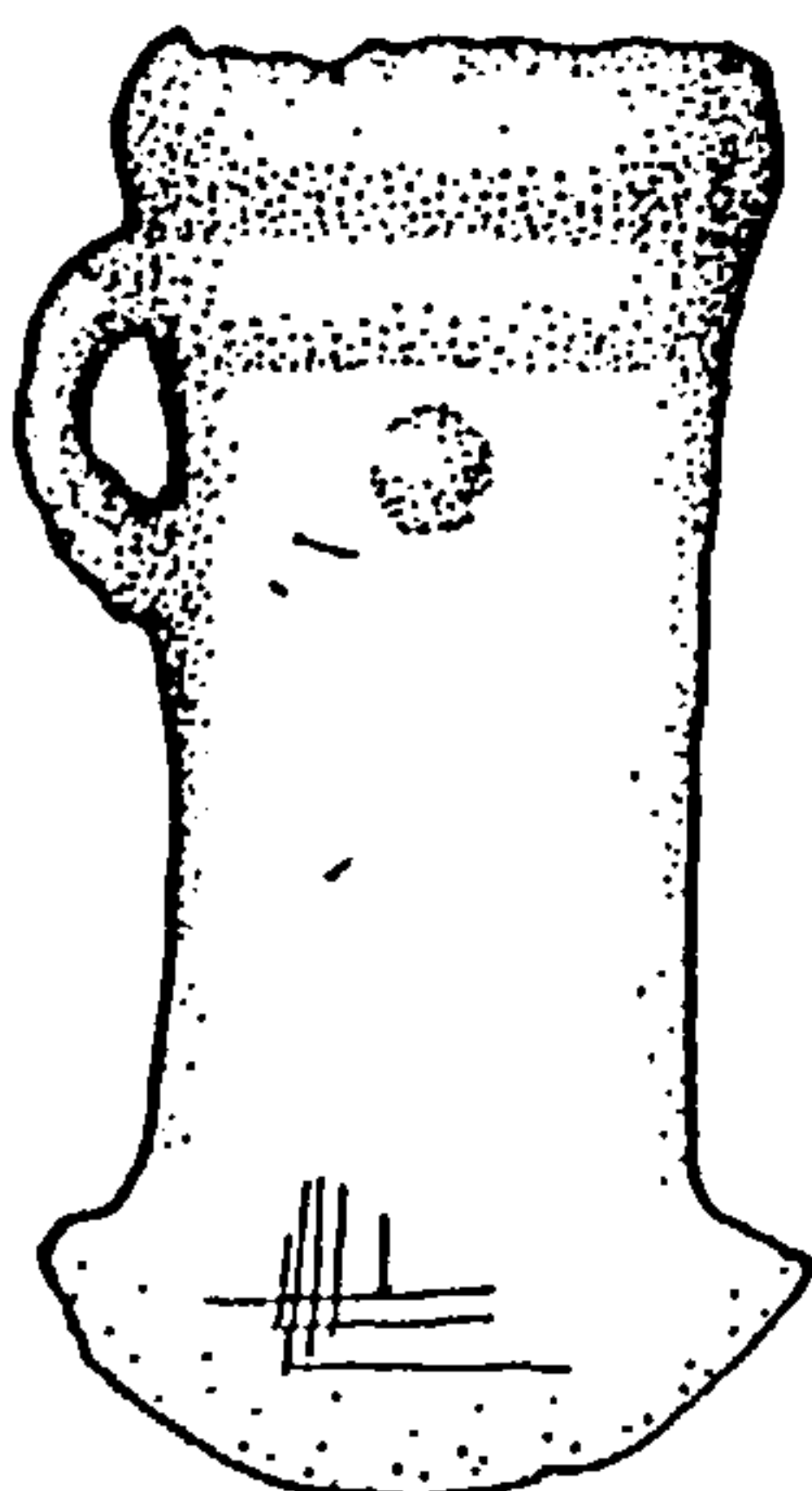
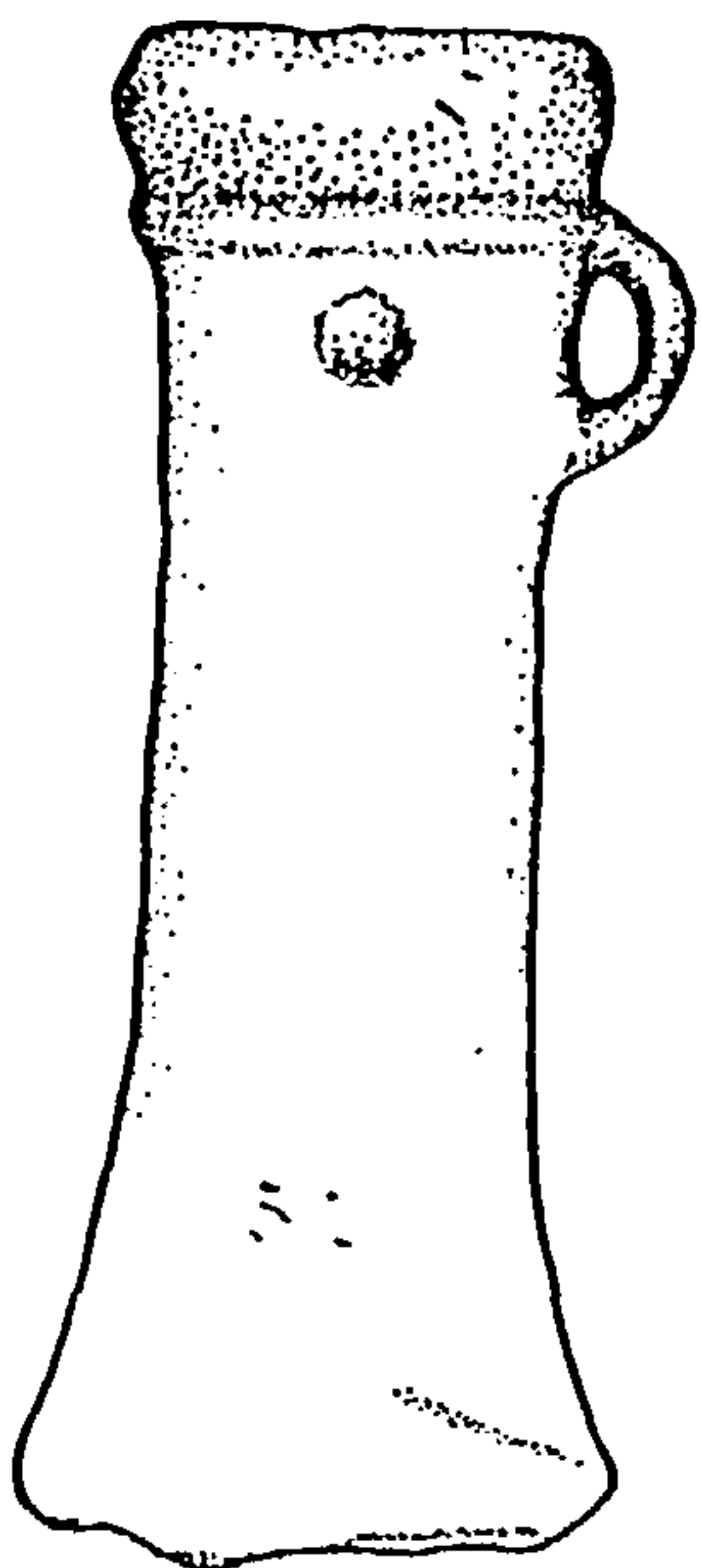
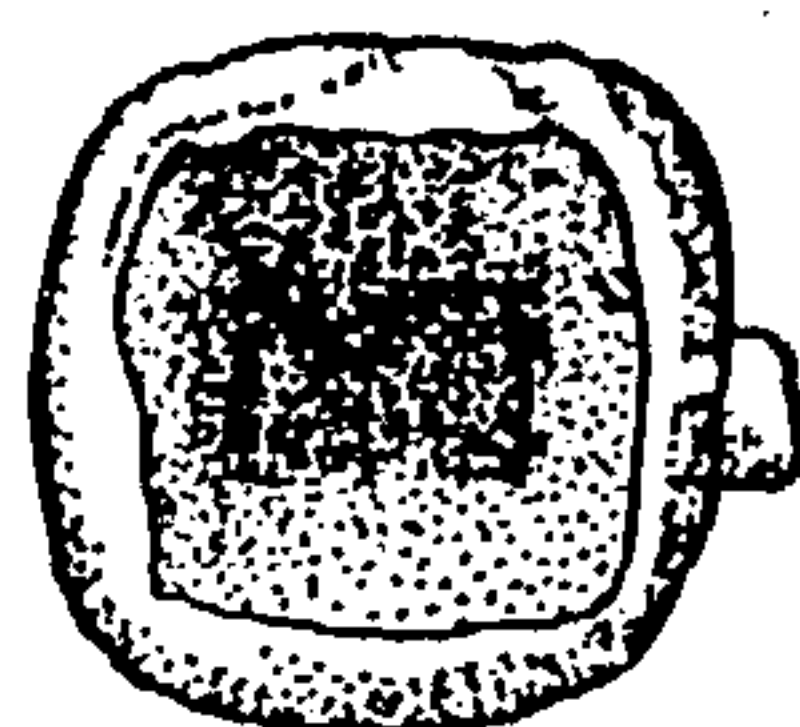
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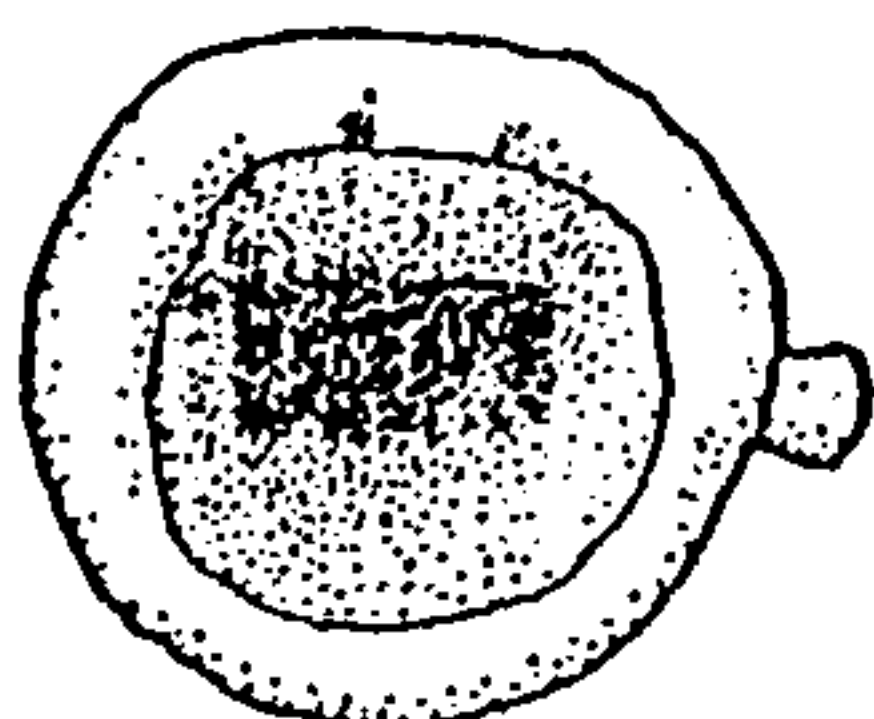


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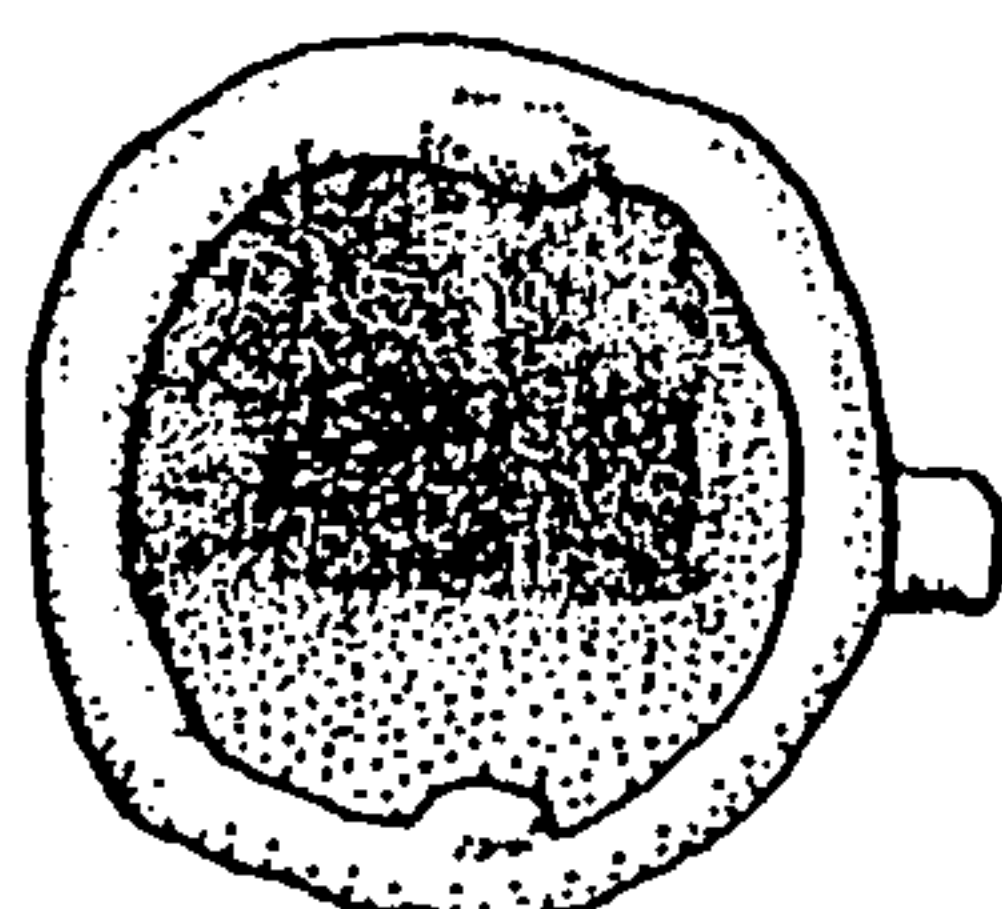


0 2cm

02/16



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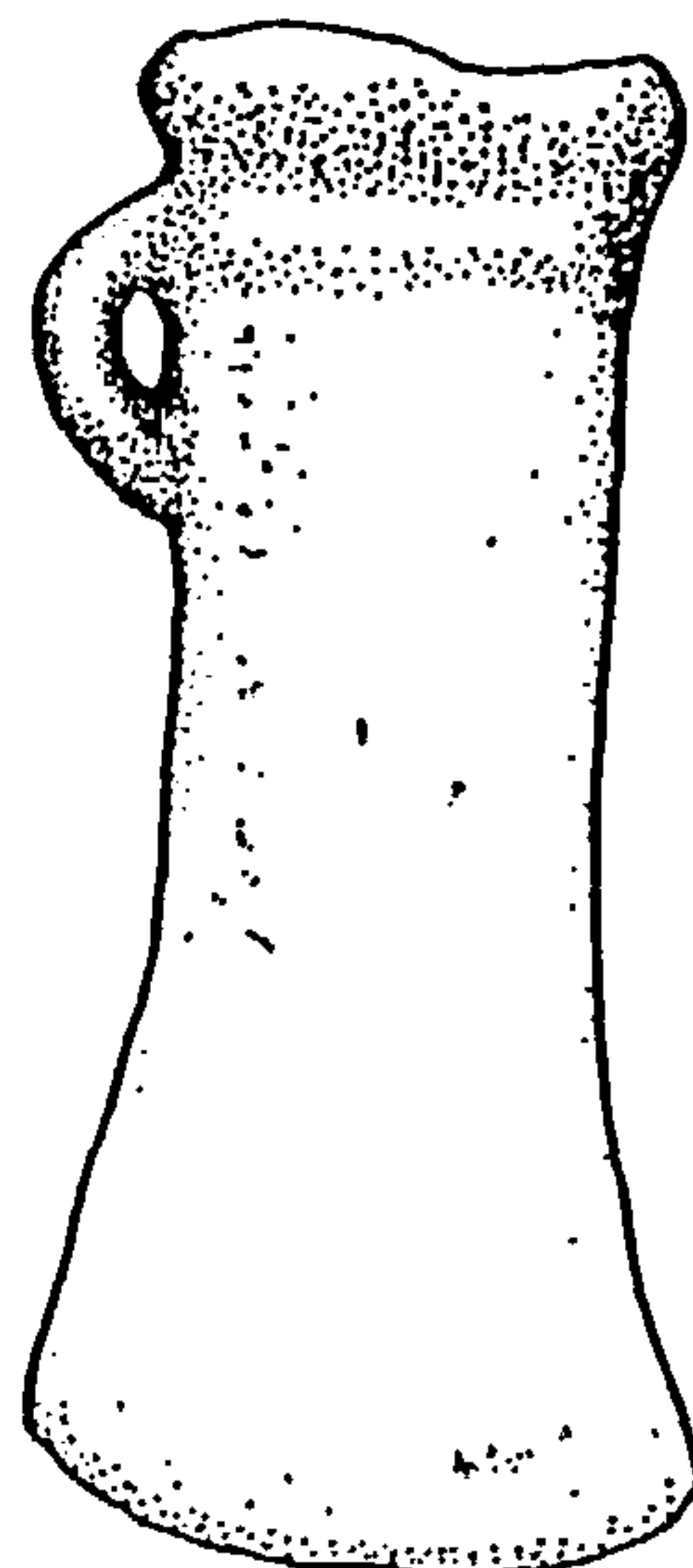
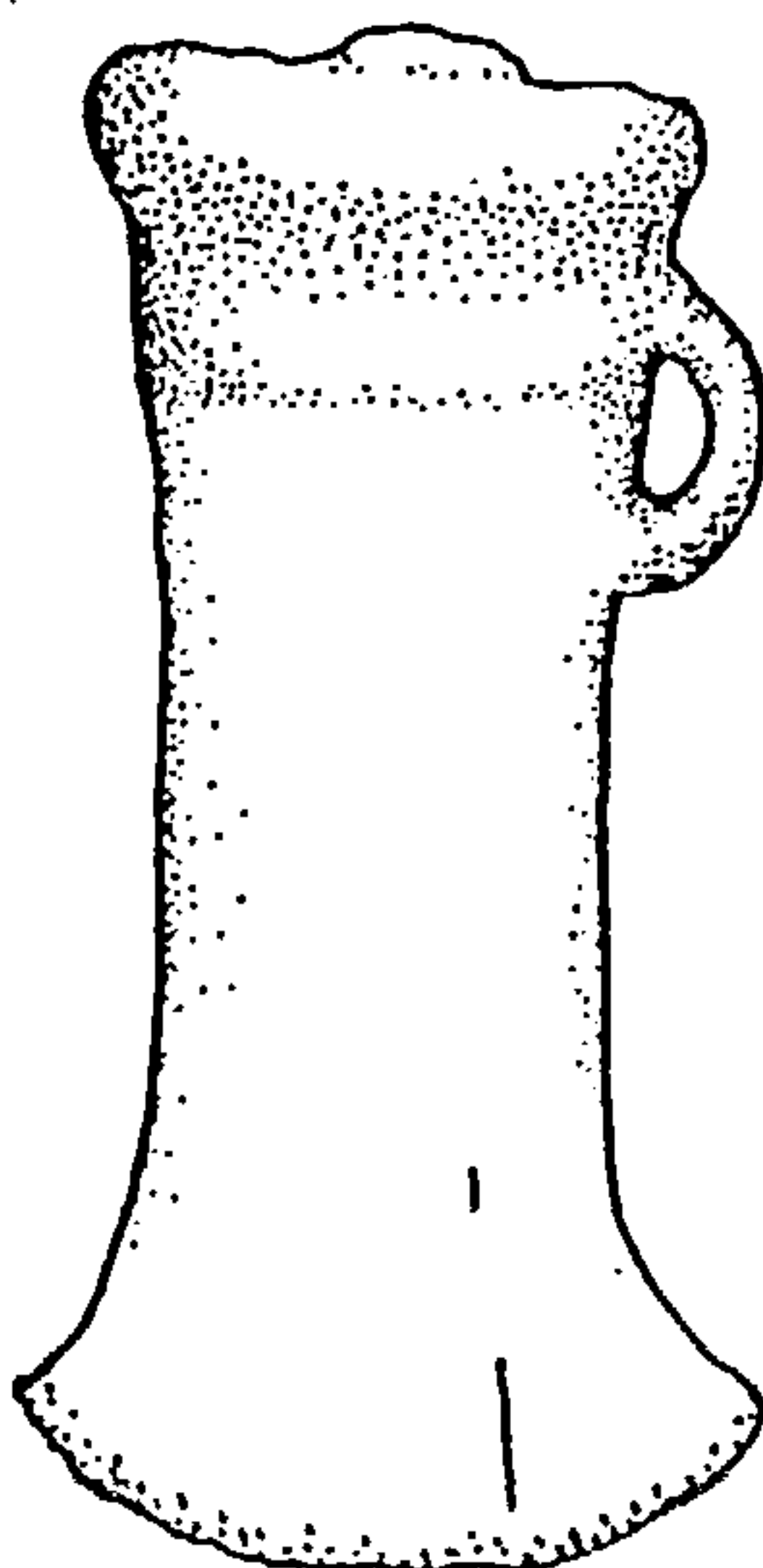
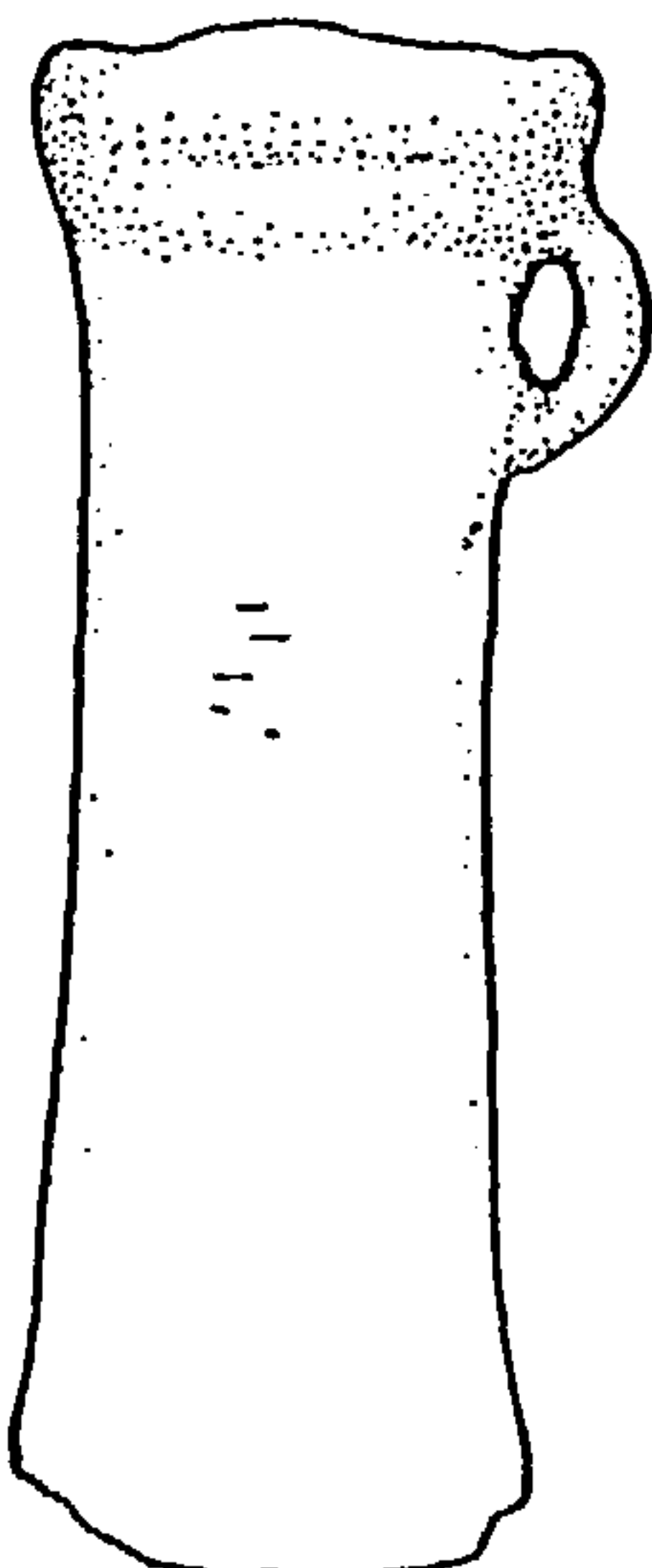
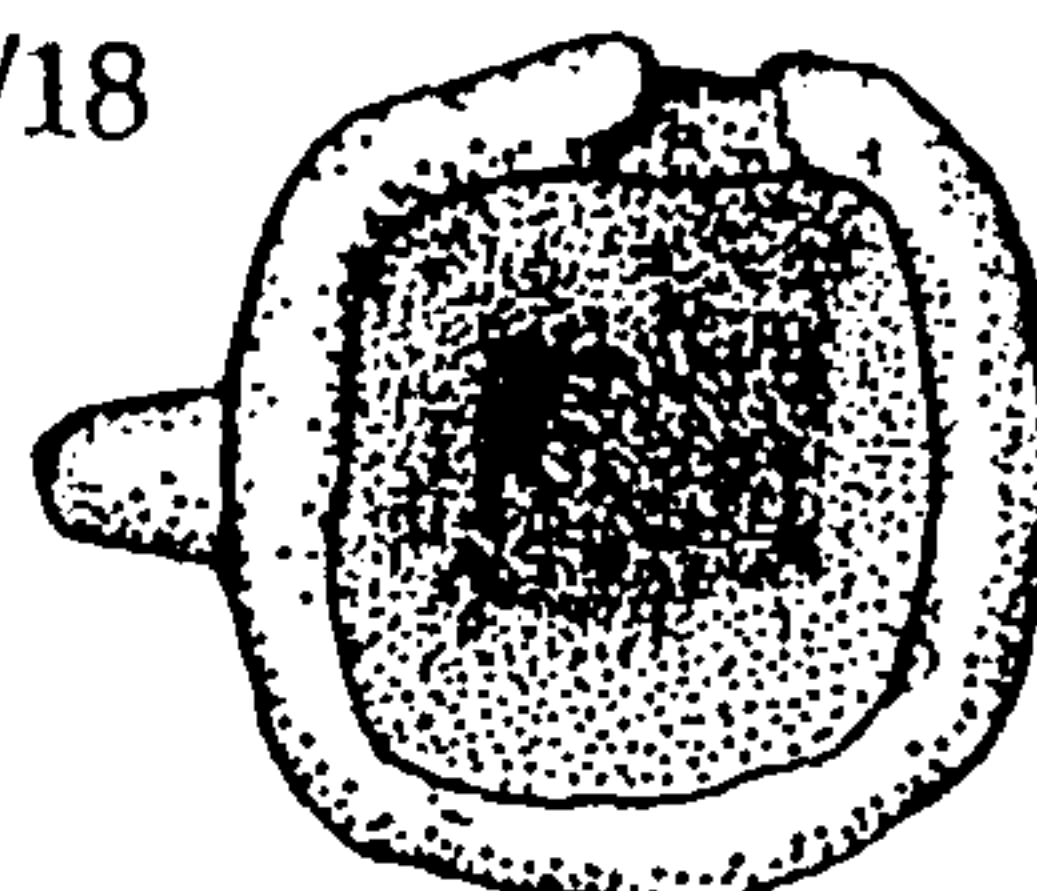
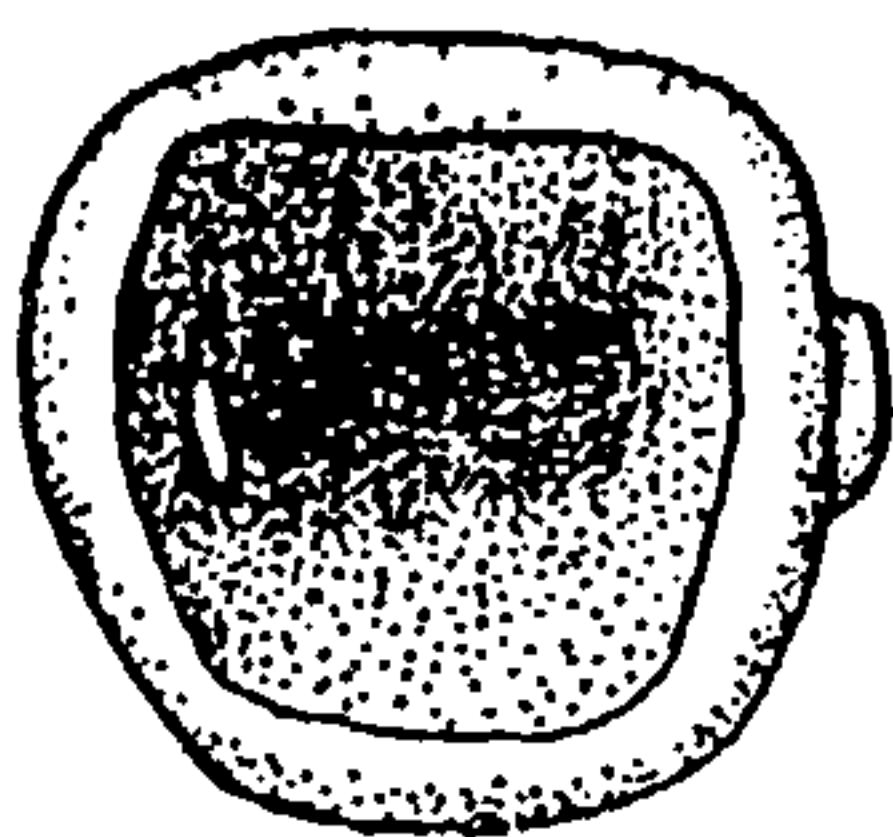
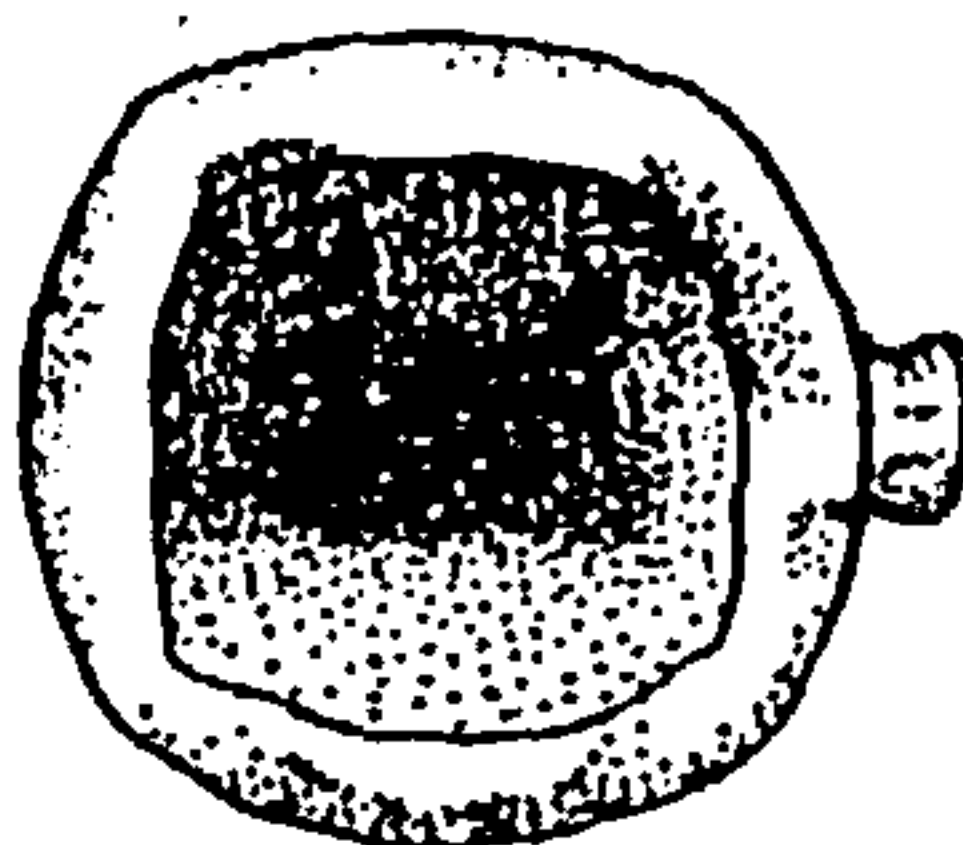


Fig. 4: The Grays Thurrock I Hoard (Ref. No. 02): Complete Socketed Axes (iii)

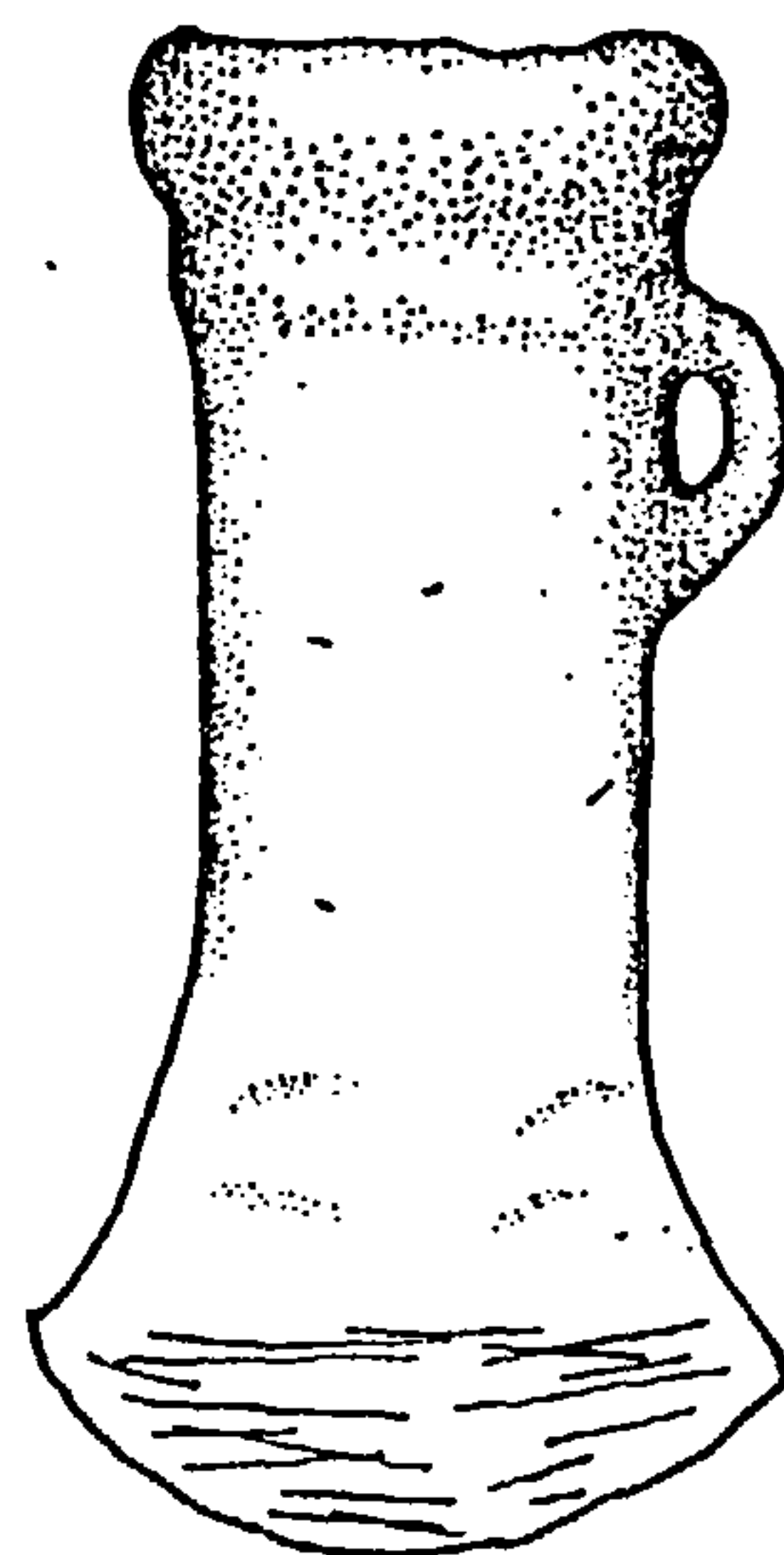
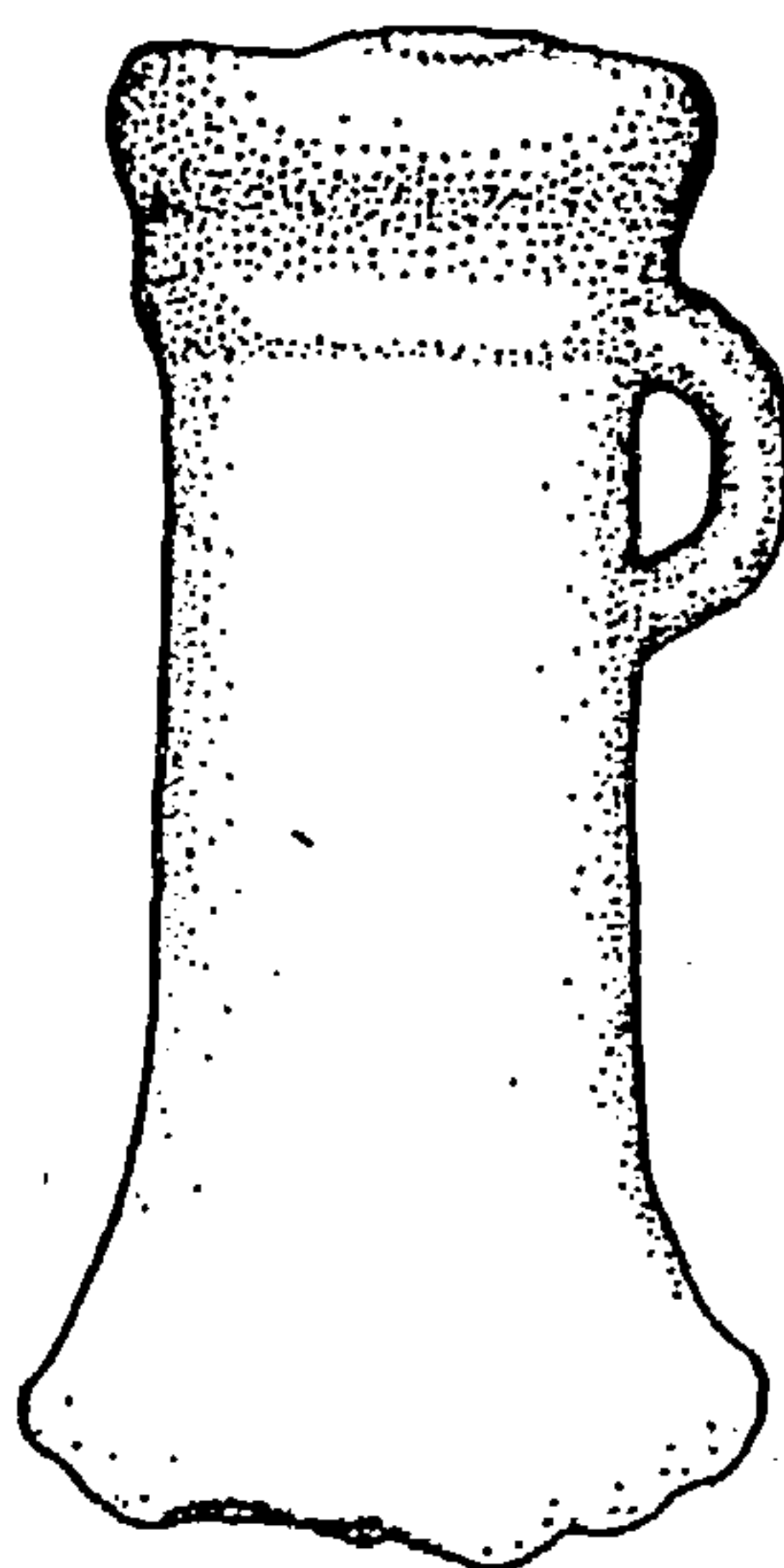
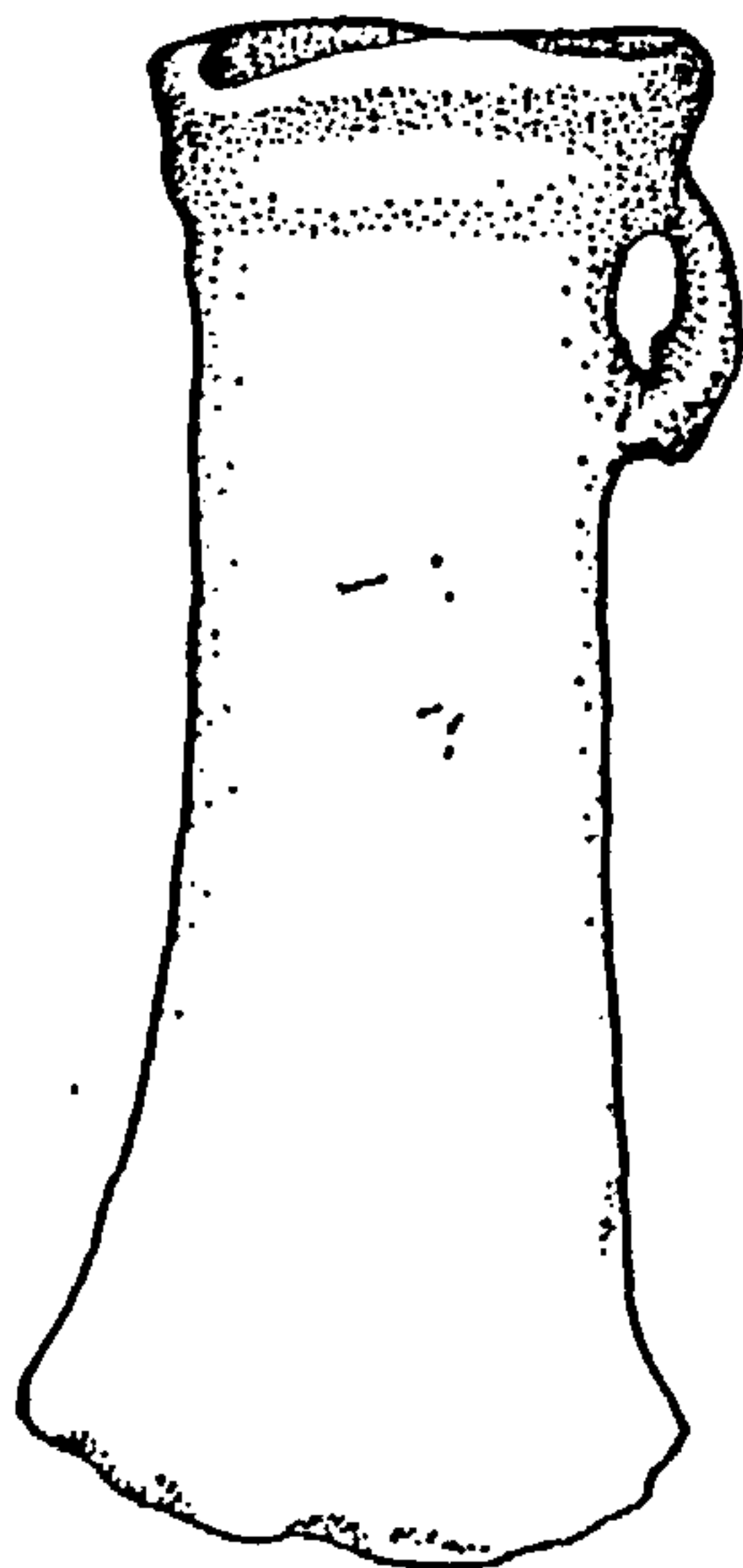
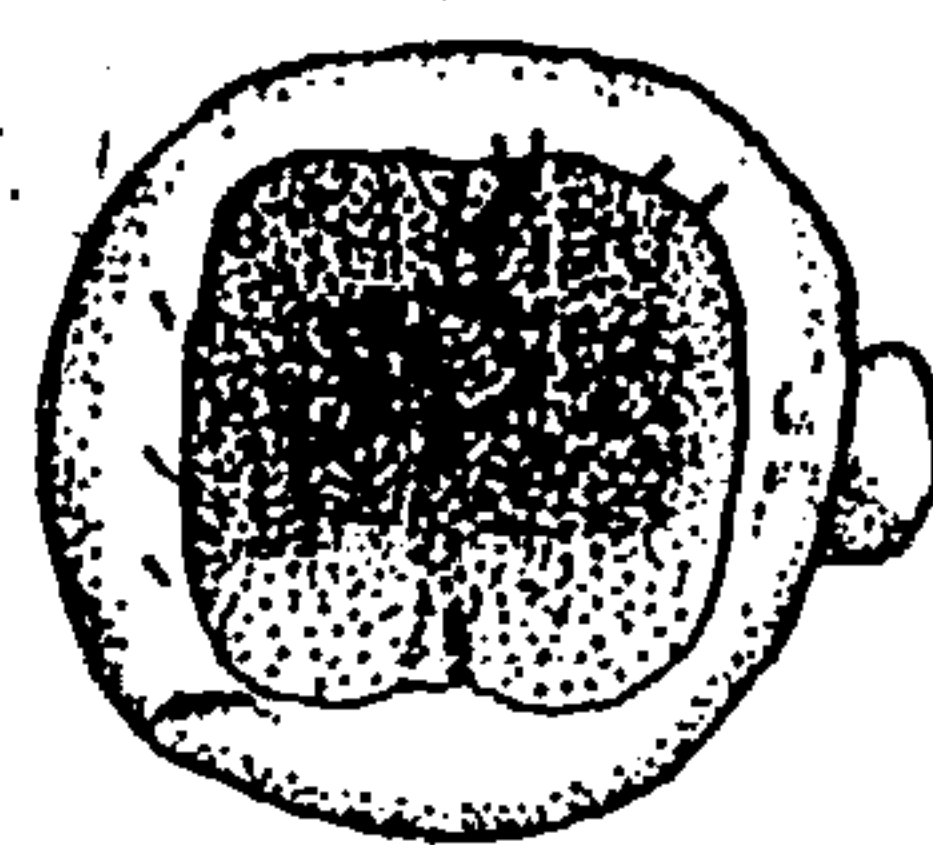
02/19



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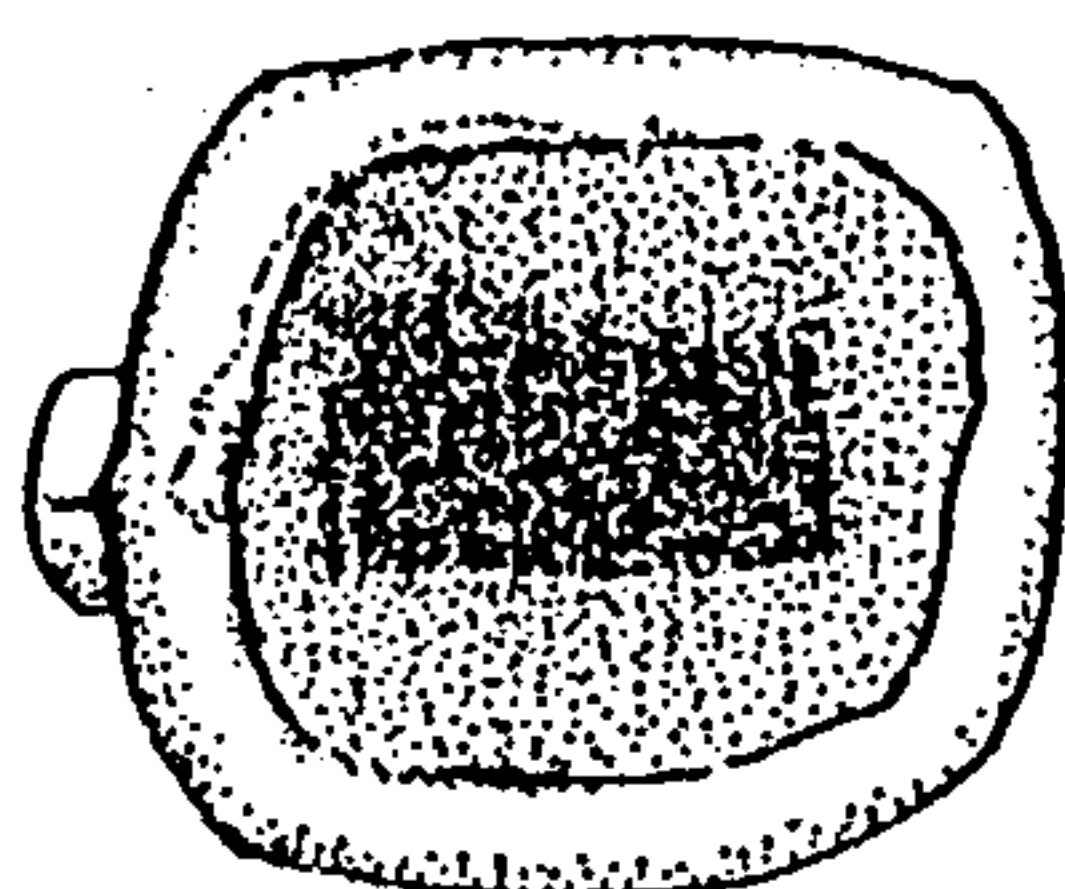


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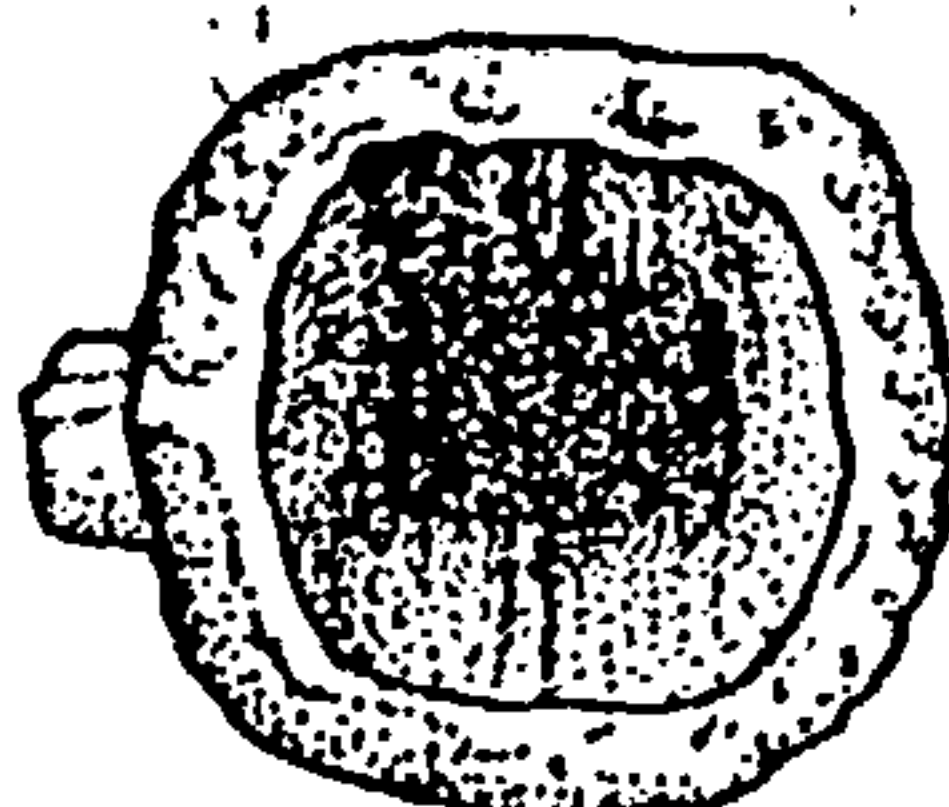


0 2cm

02/22



02/23



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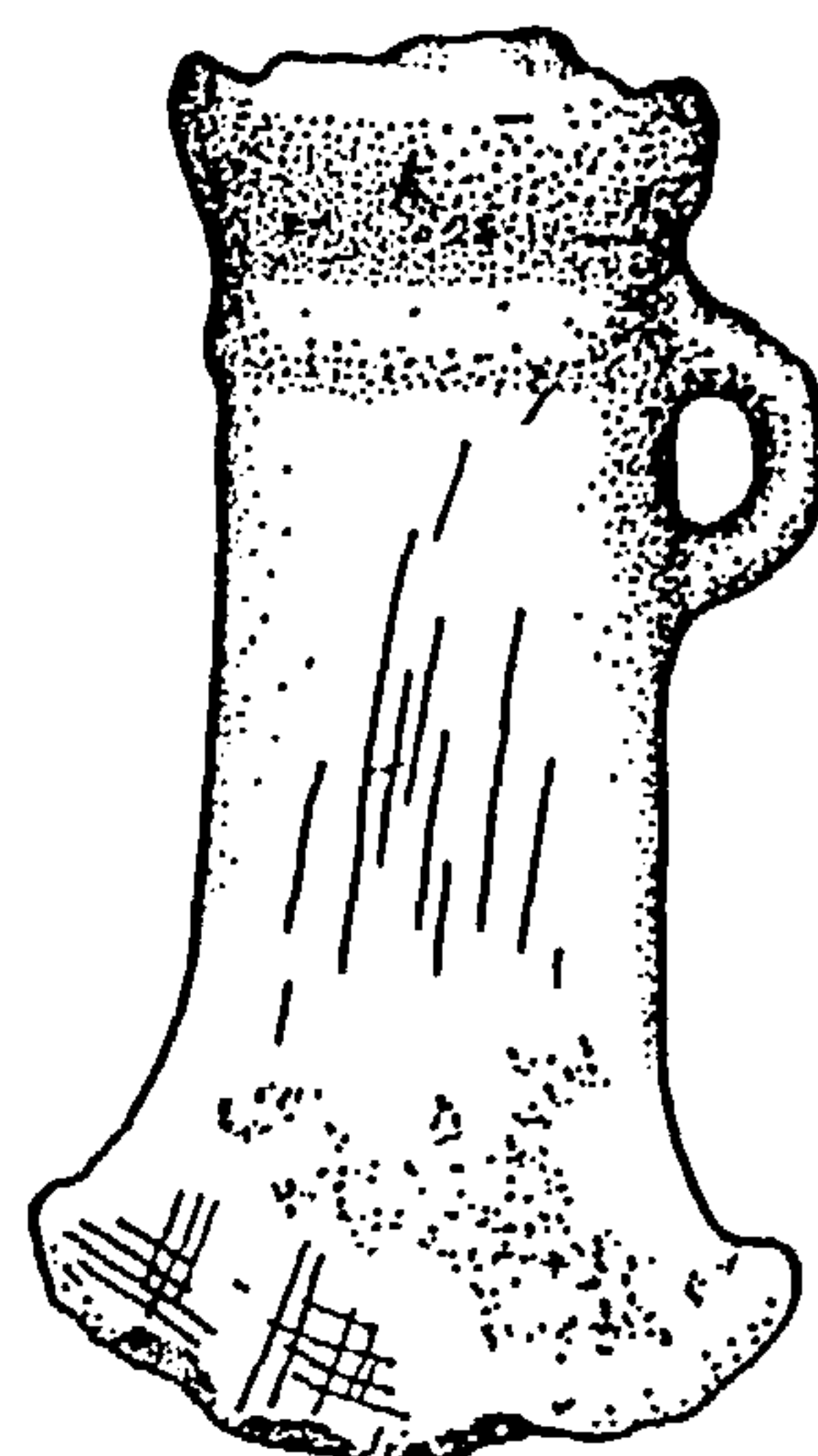
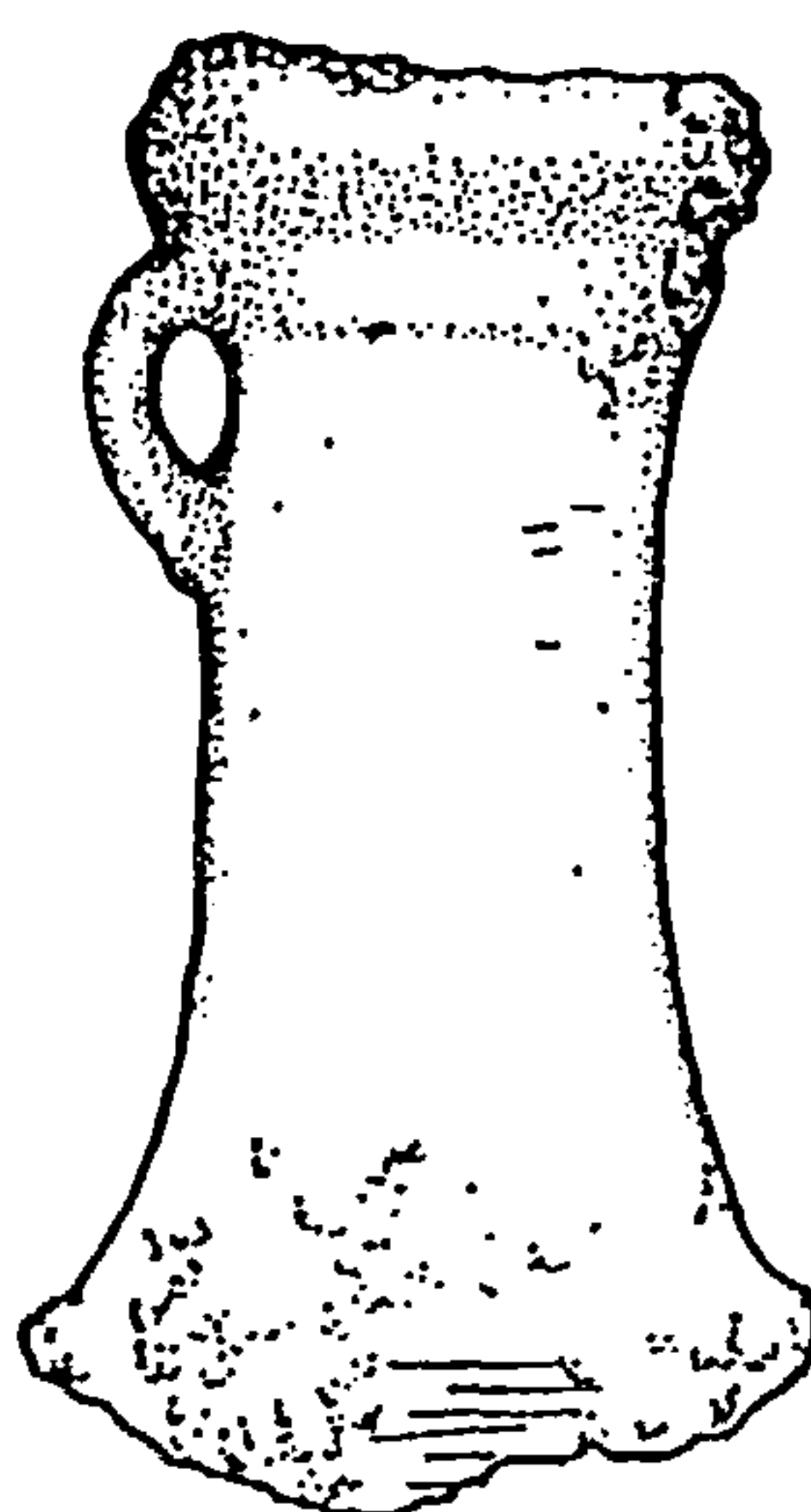
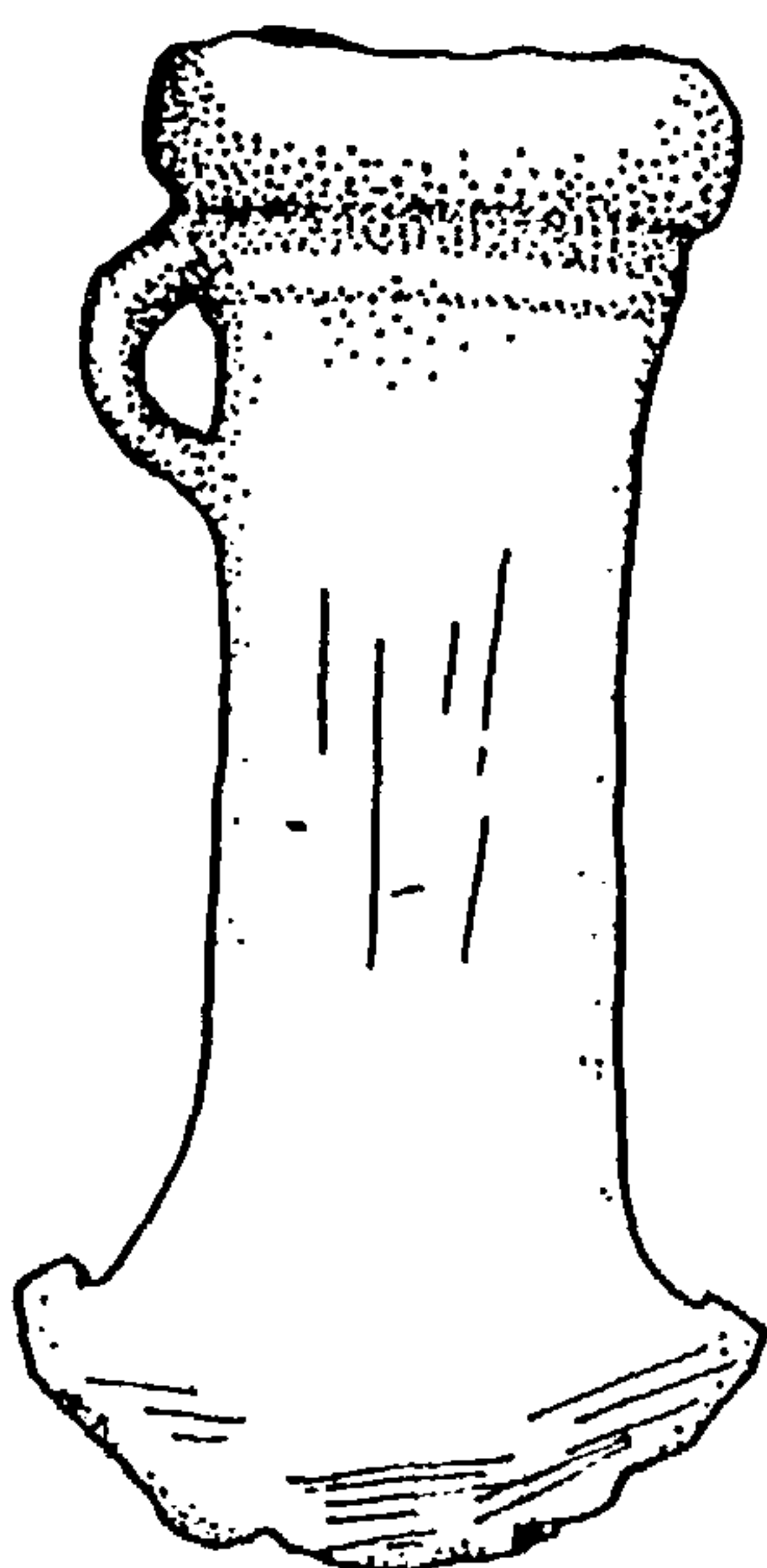
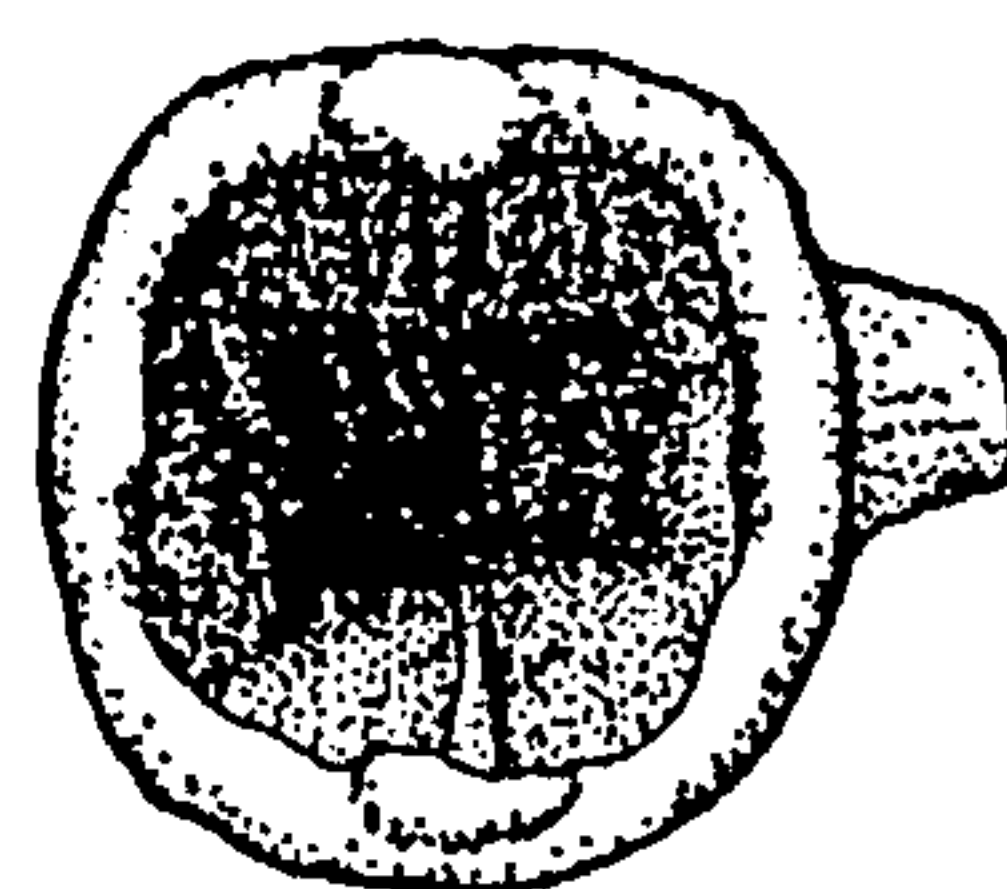
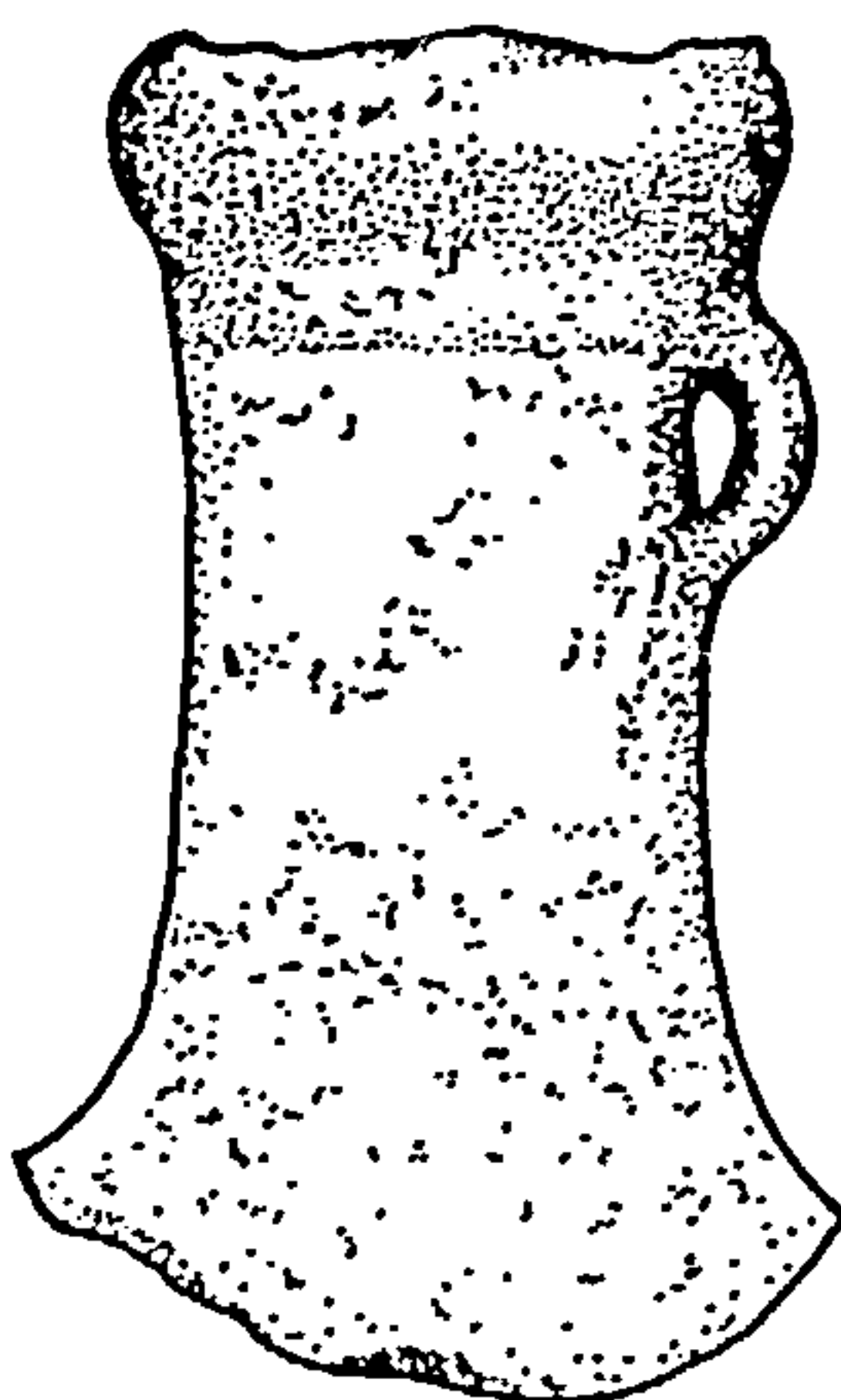
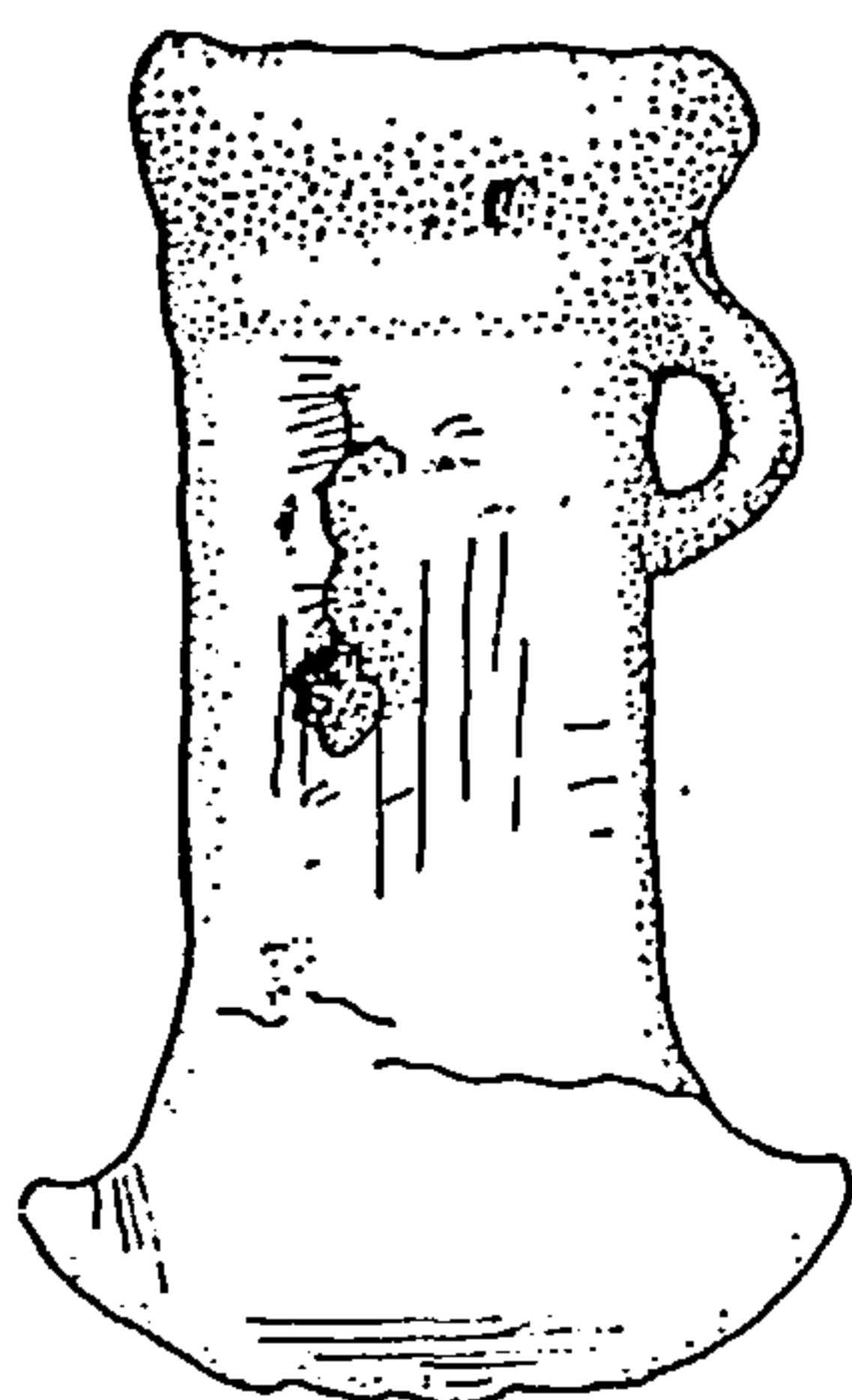
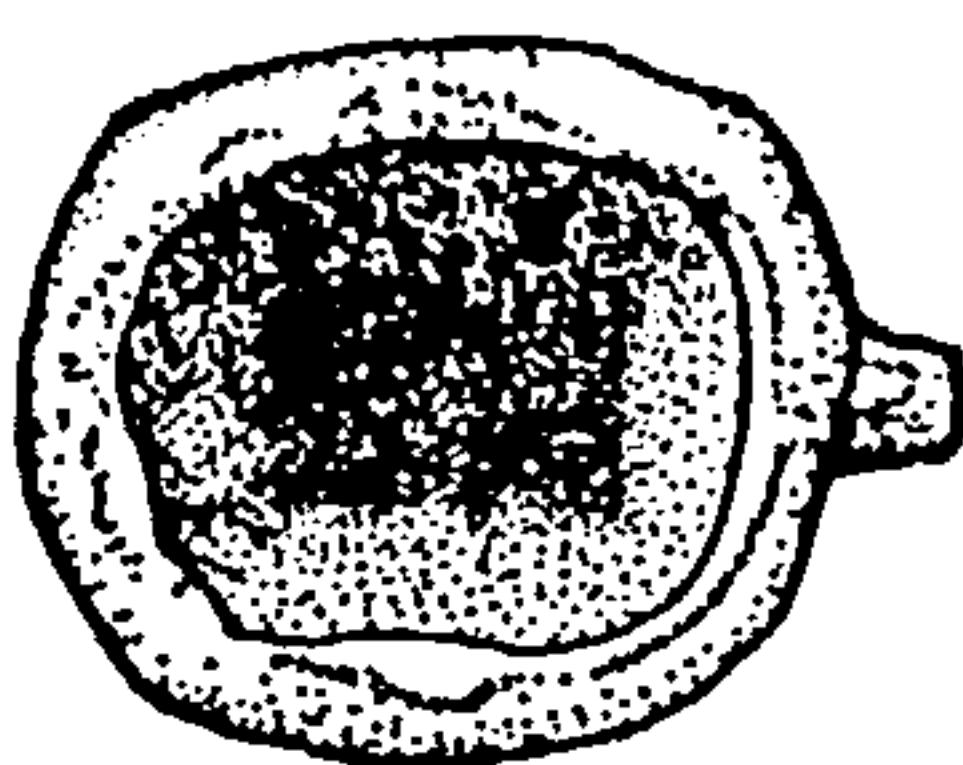
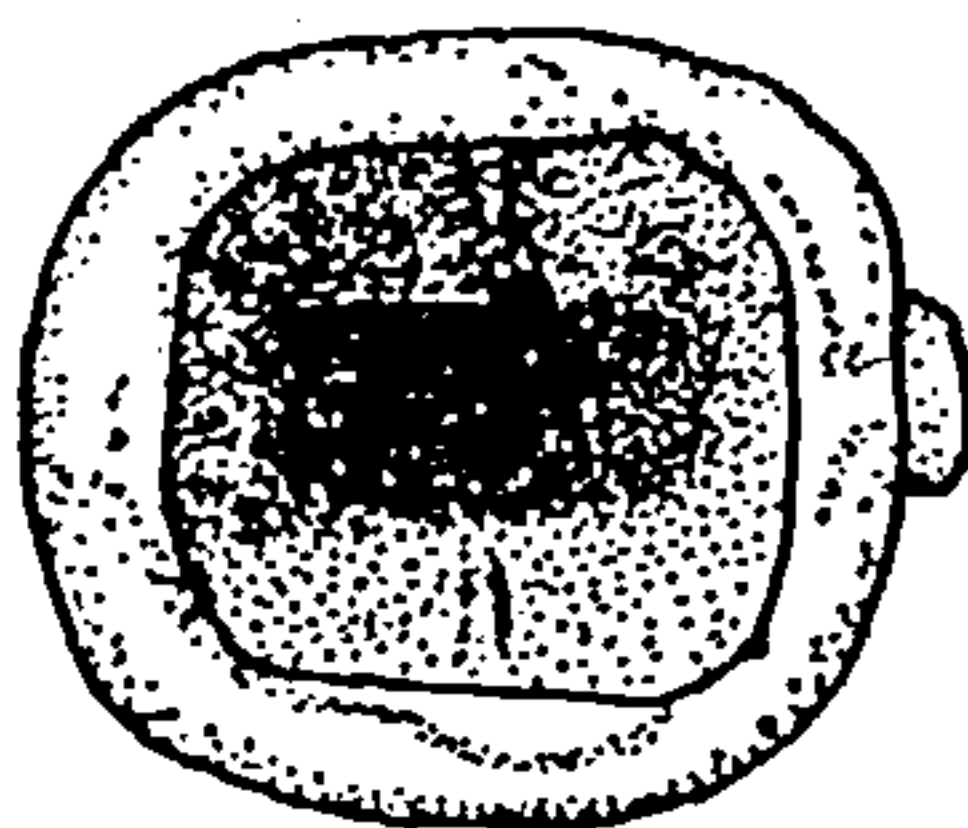
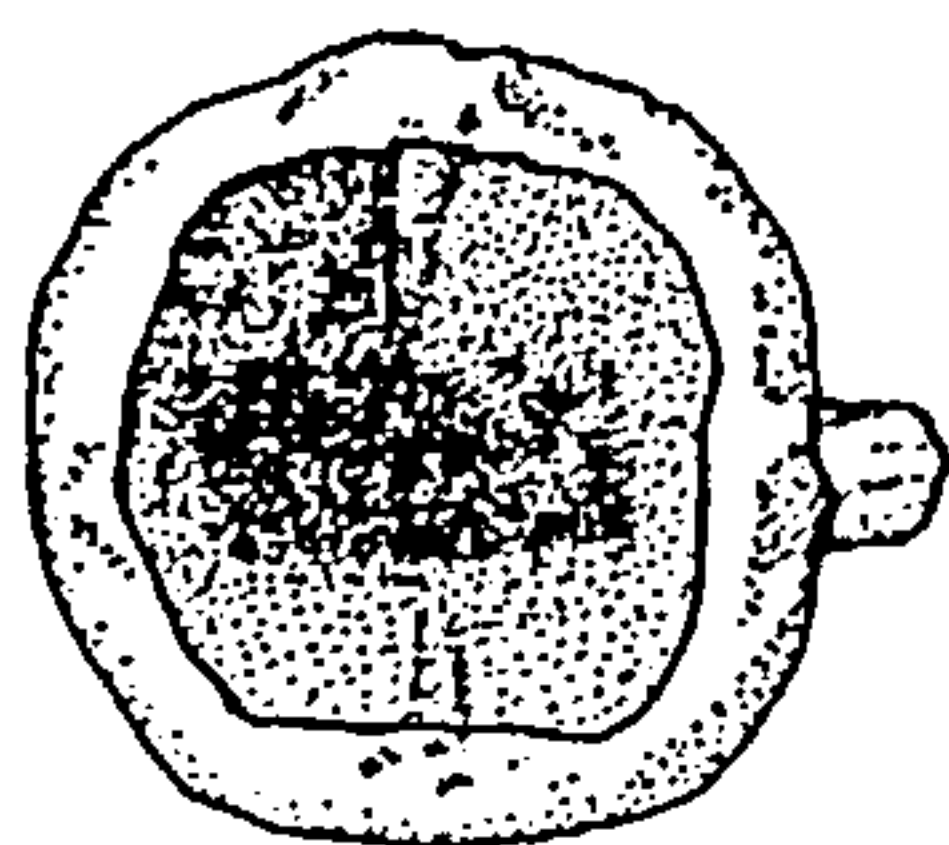


Fig. 5: The Grays Thurrock I Hoard (Ref. No. 02): Complete Socketed Axes (iv)

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02/27



0 2cm

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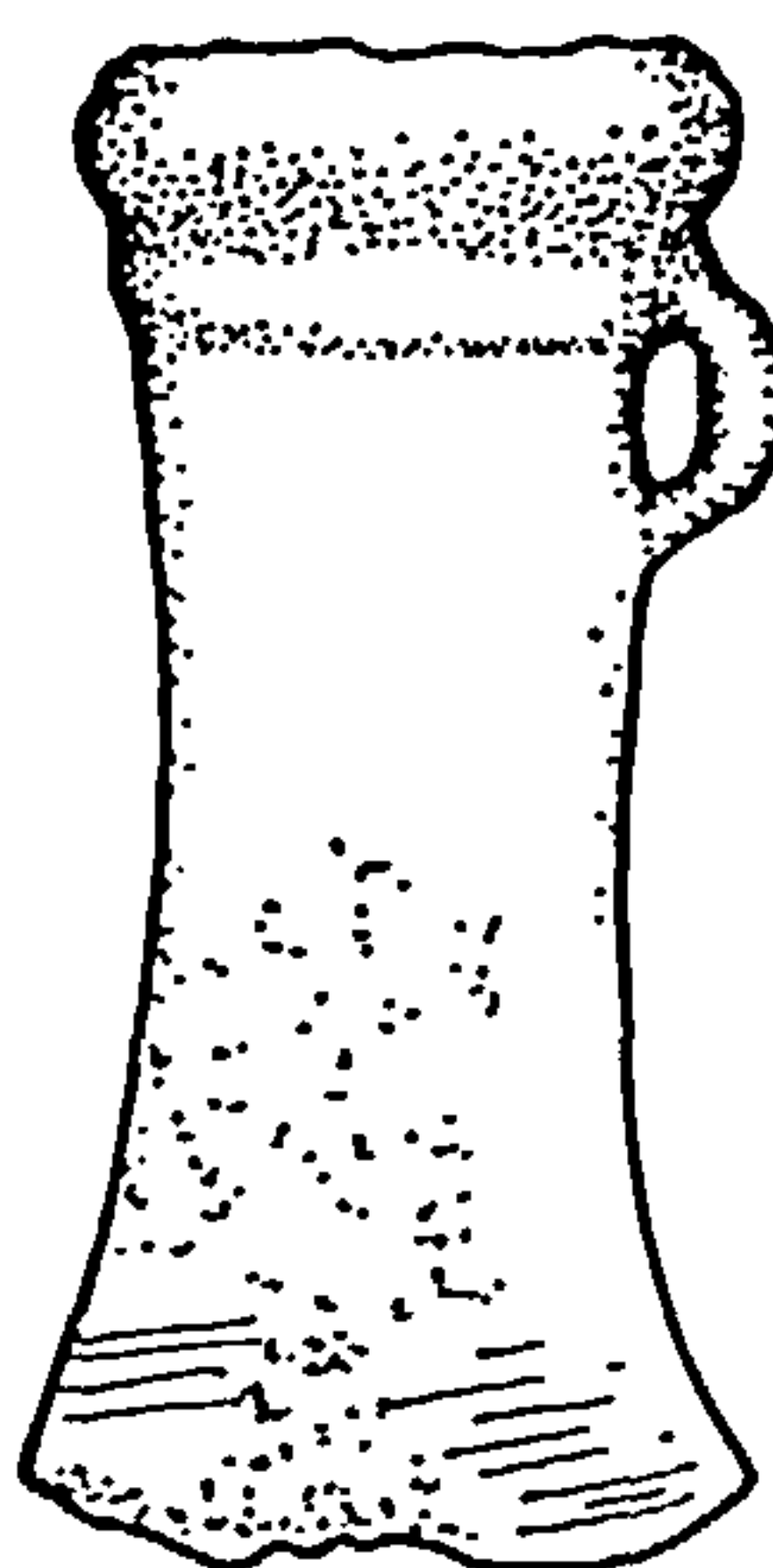
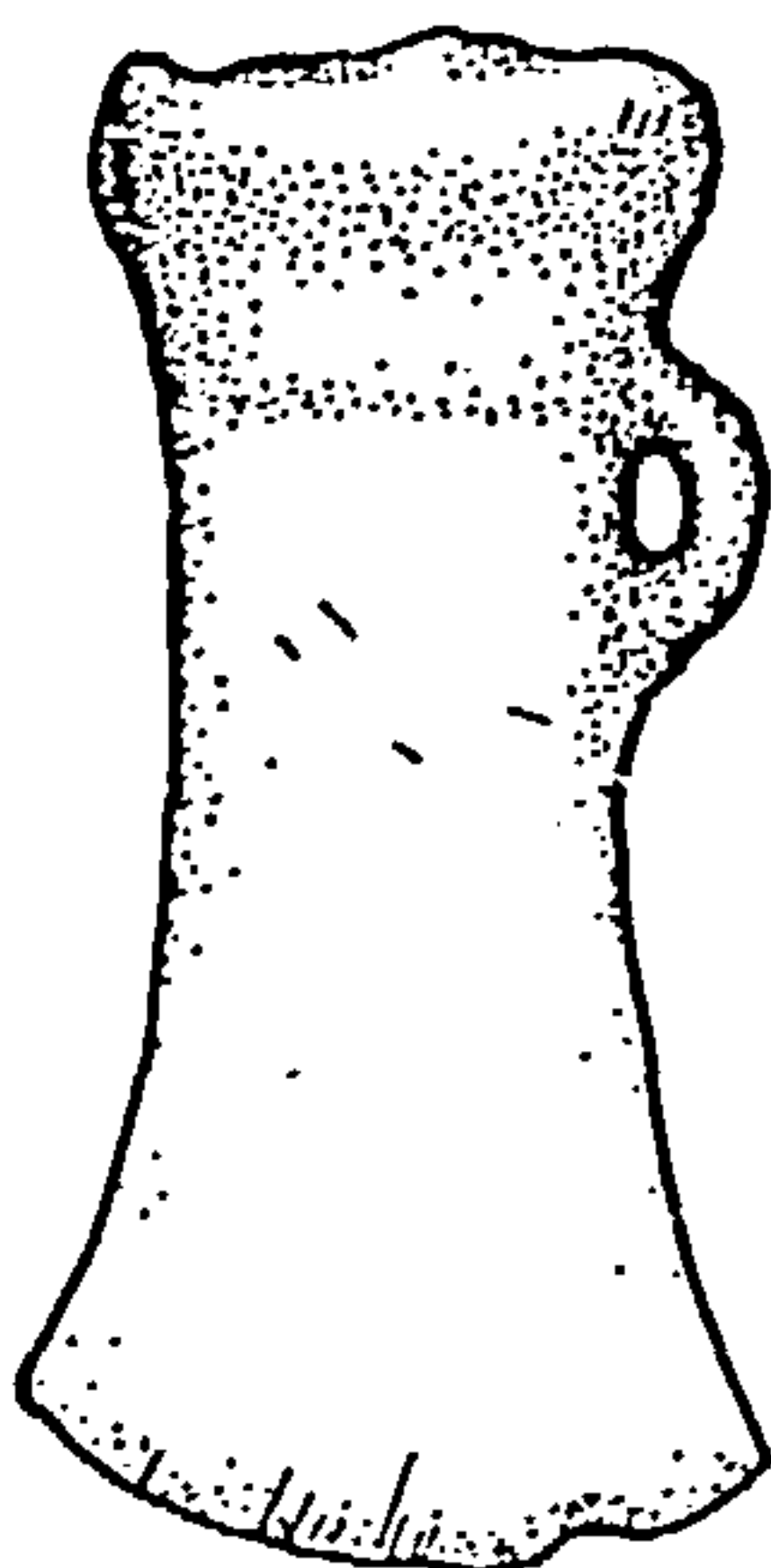
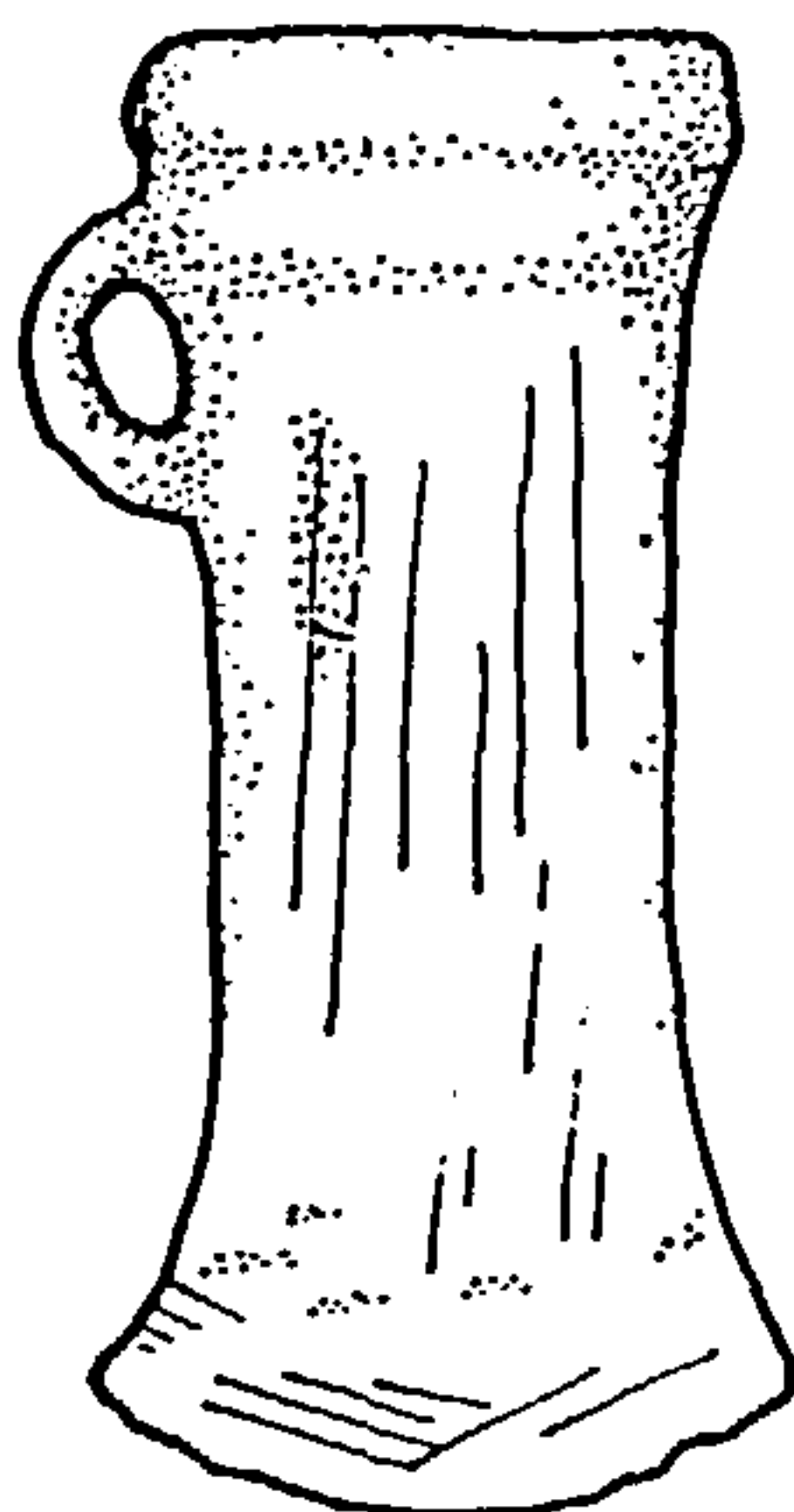
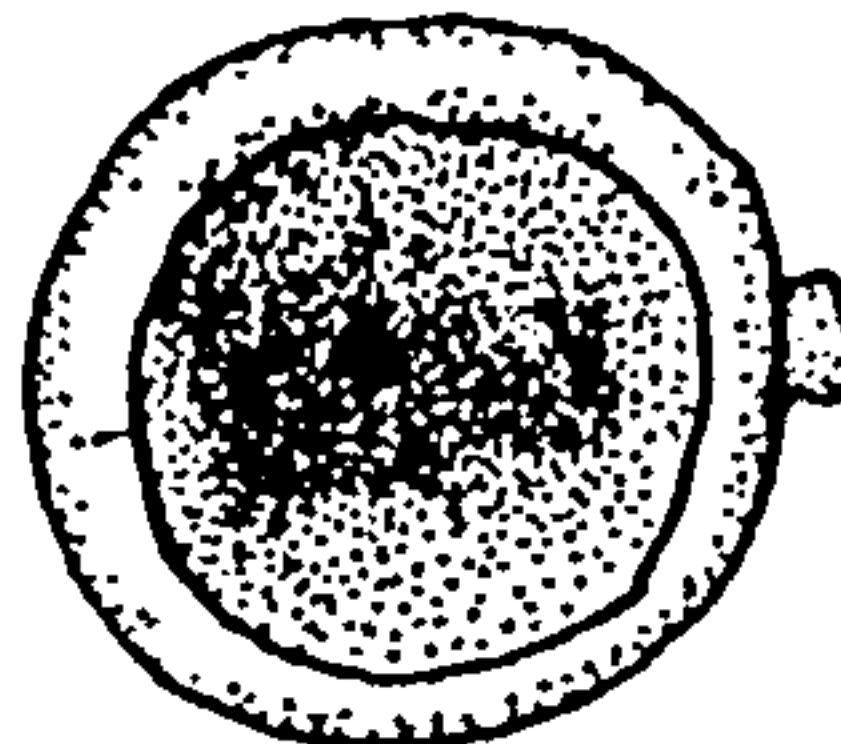
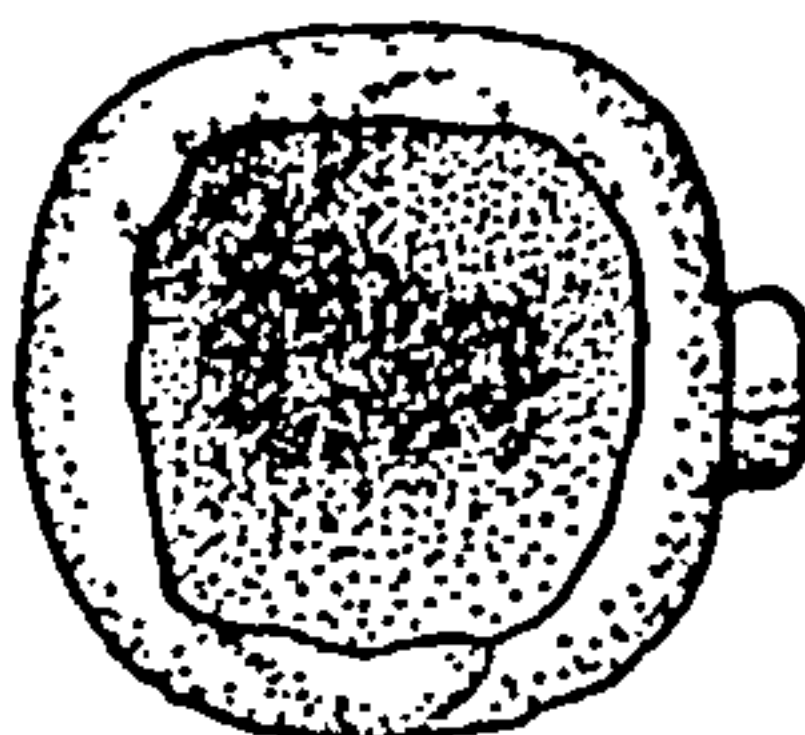
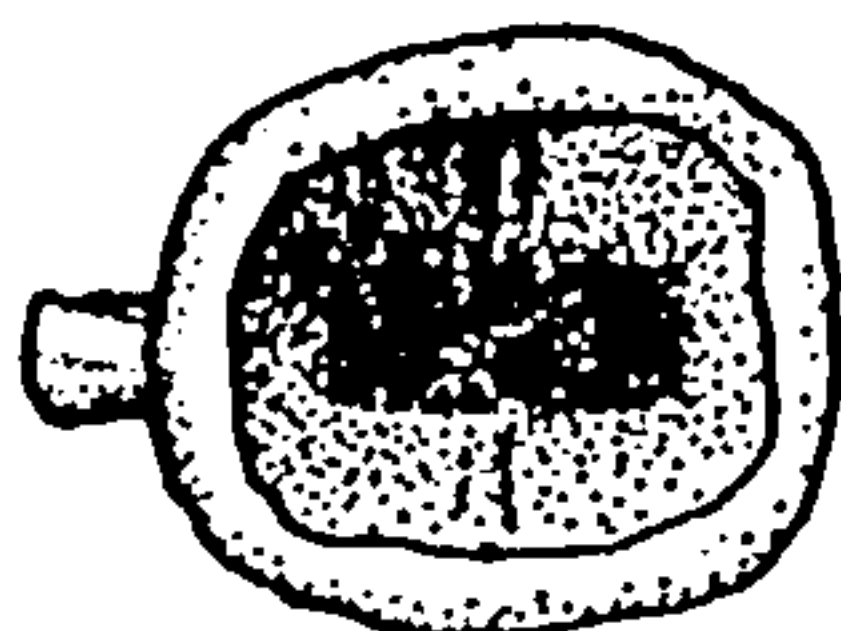
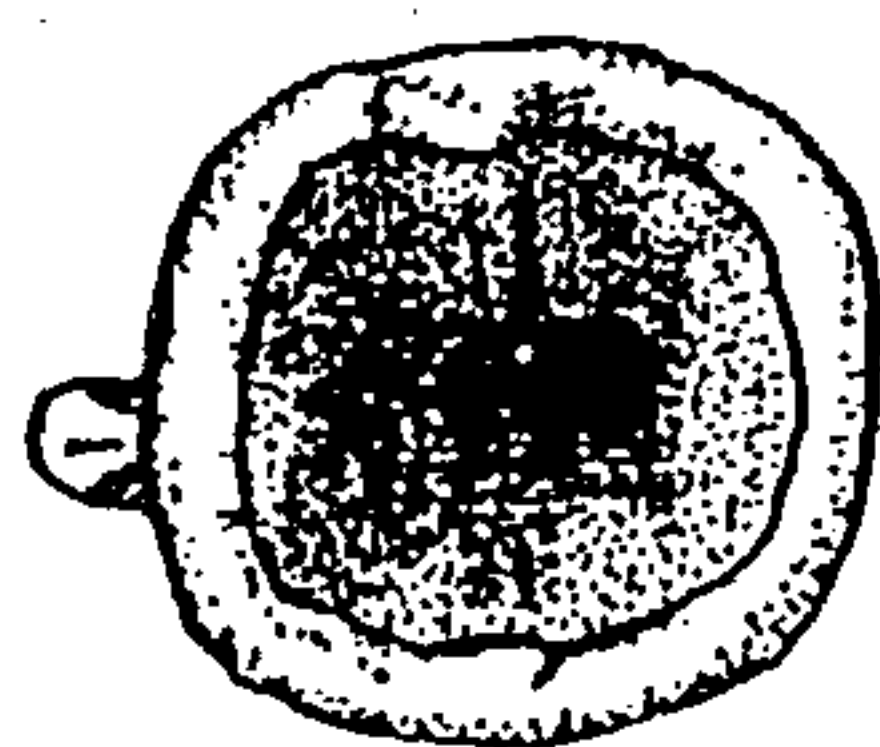
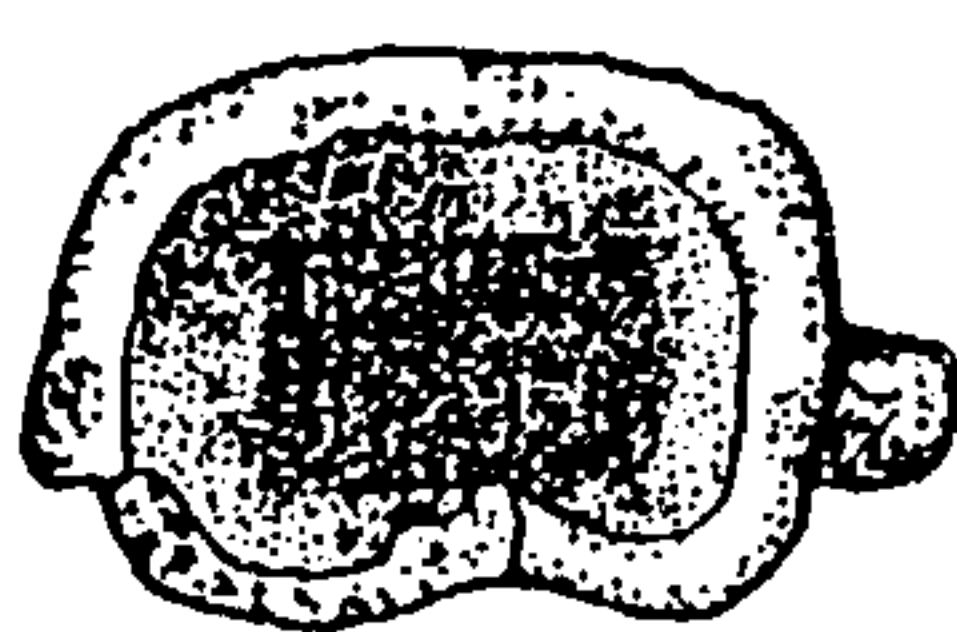


Fig. 6: The Grays Thurrock I Hoard (Ref. No. 02): Complete Socketed Axes (v)

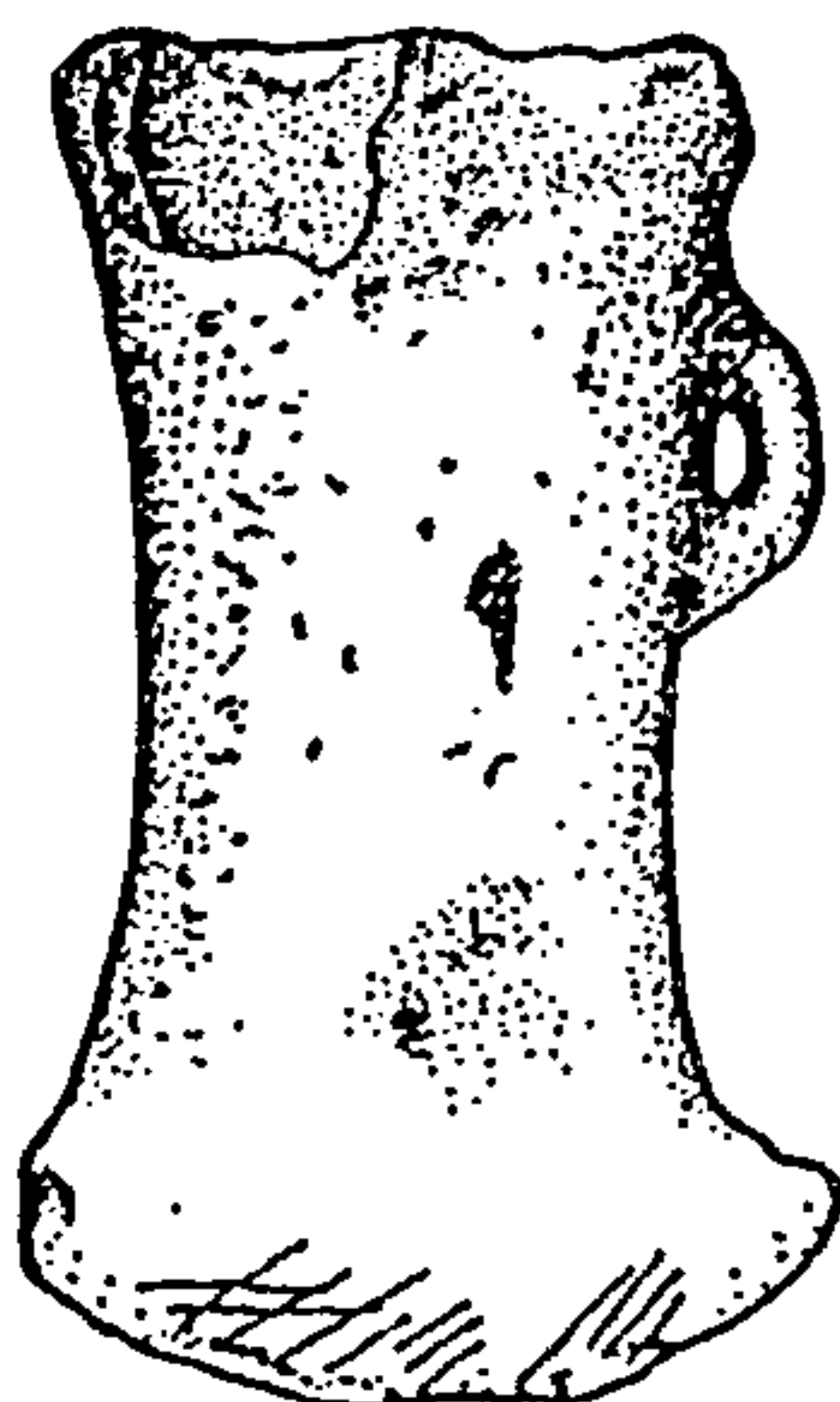
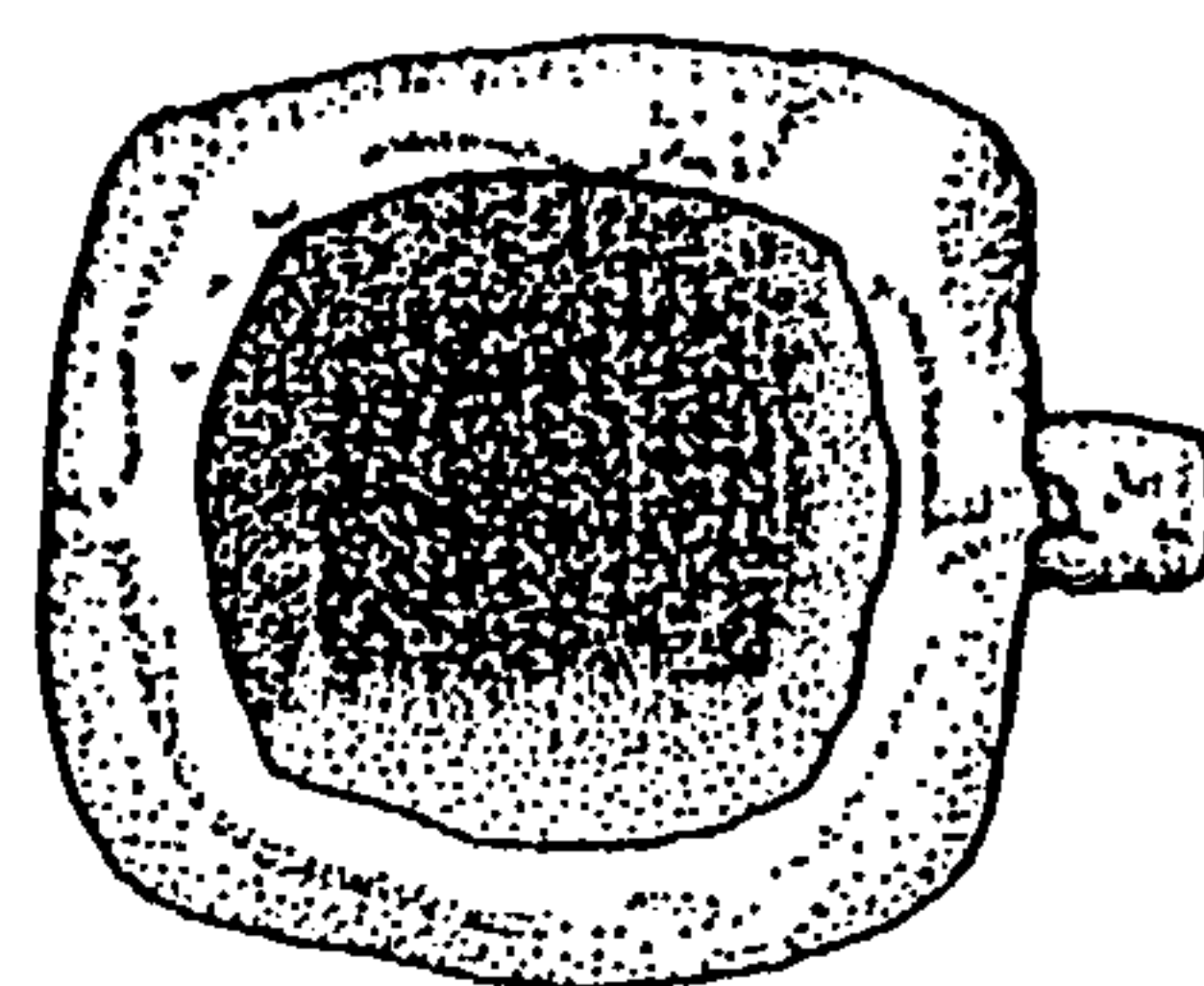
02/31



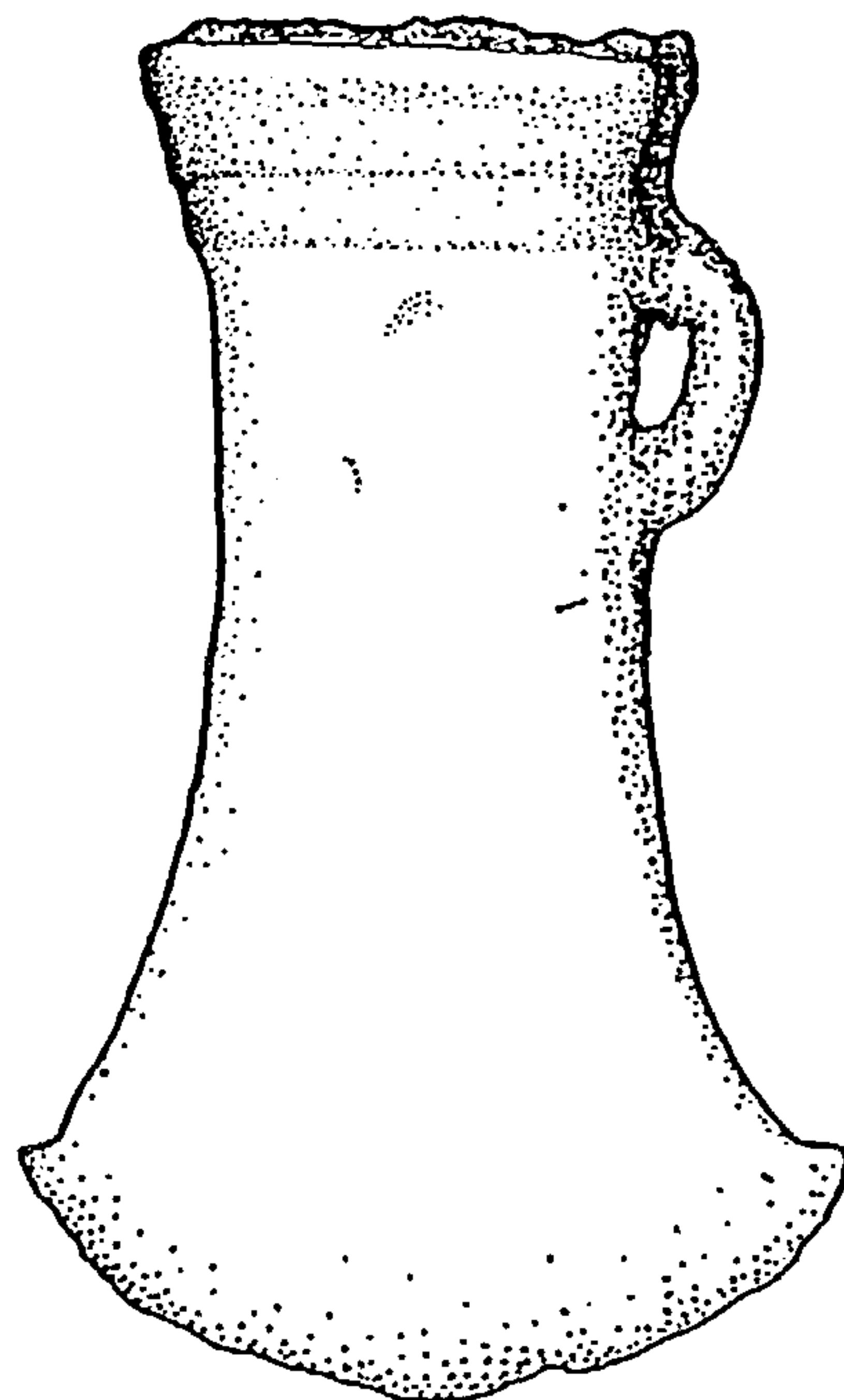
02/32



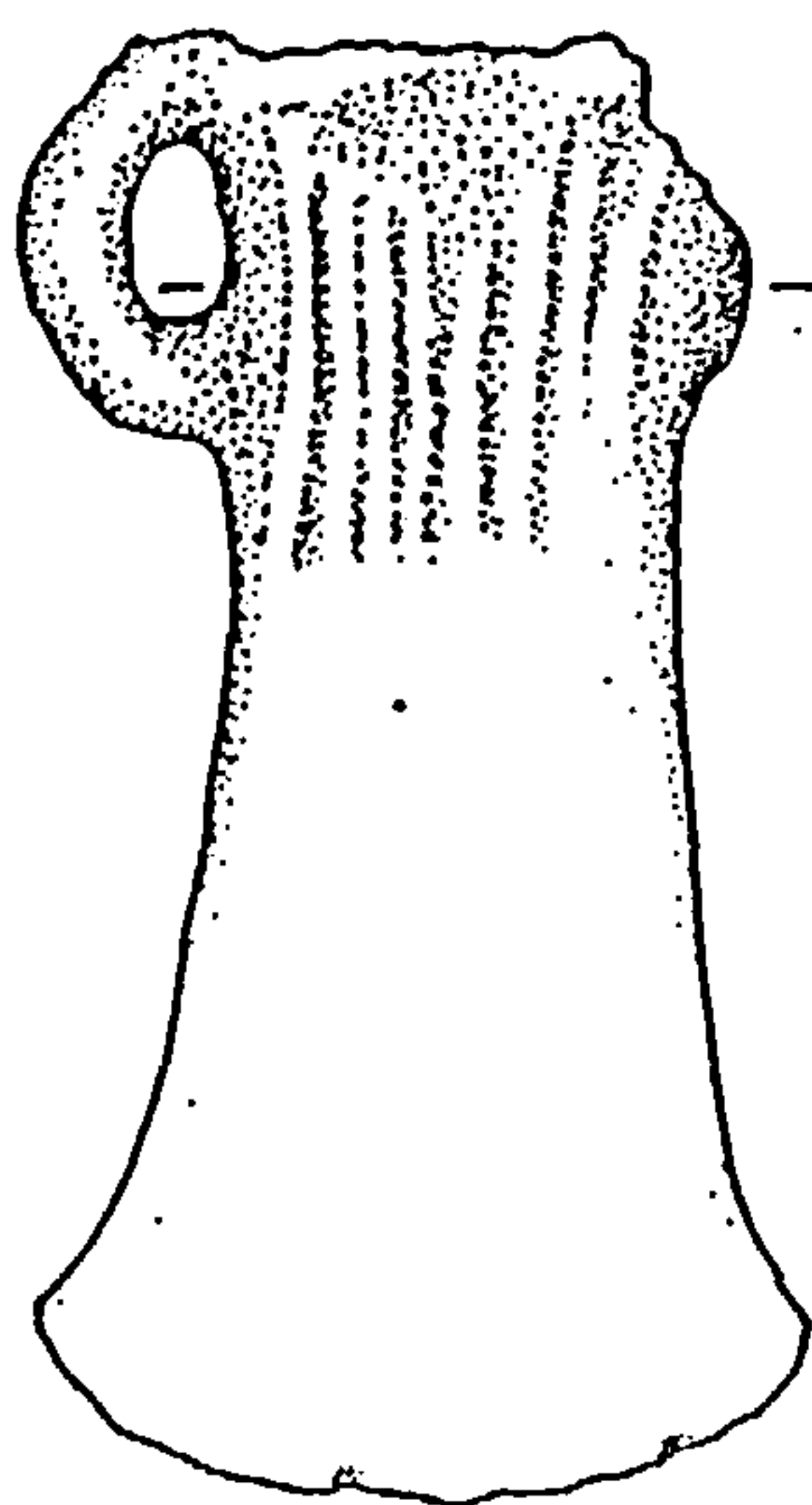
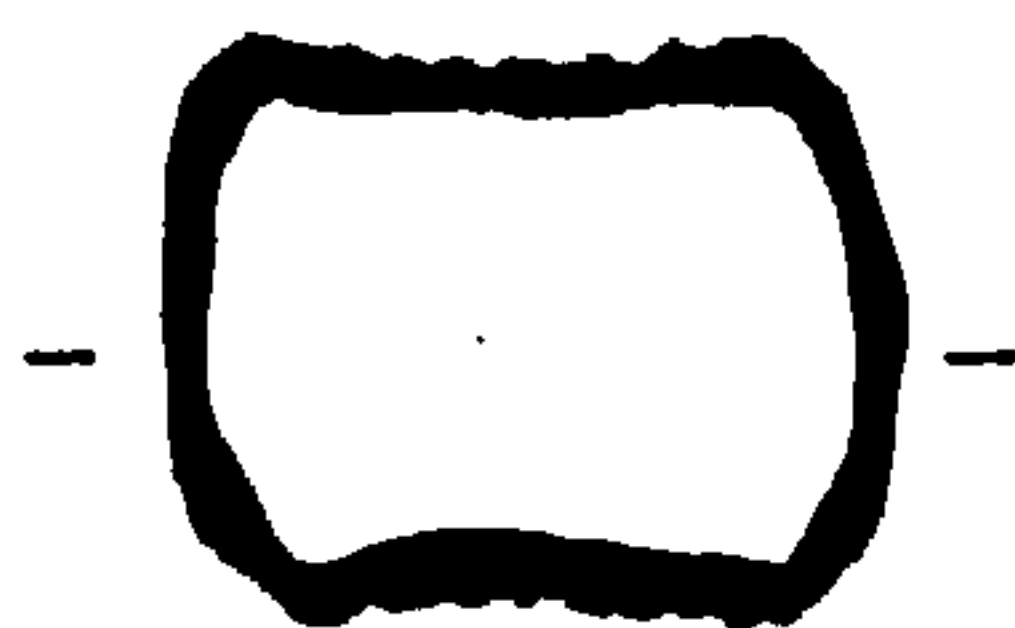
02/33



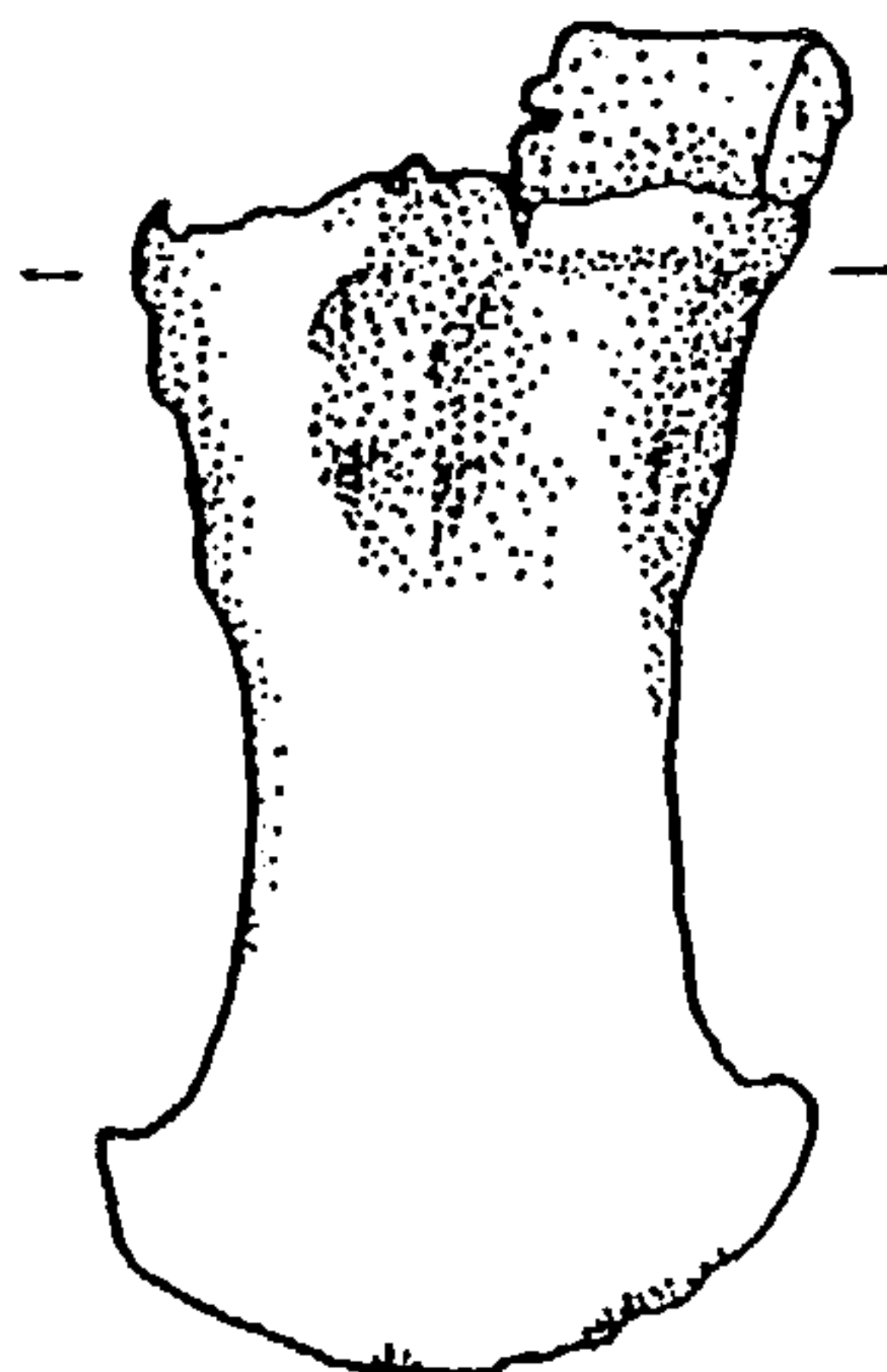
0 2cm



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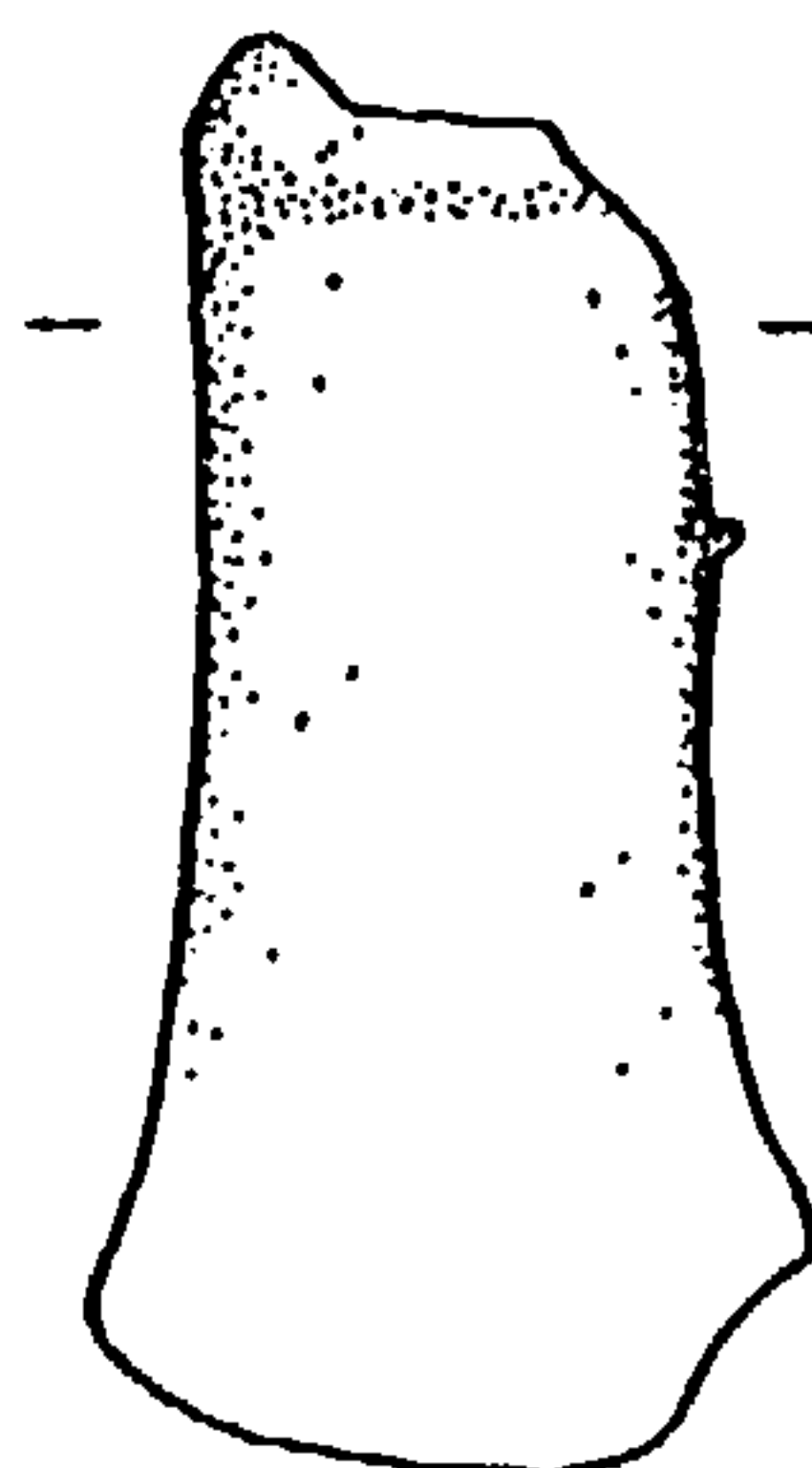
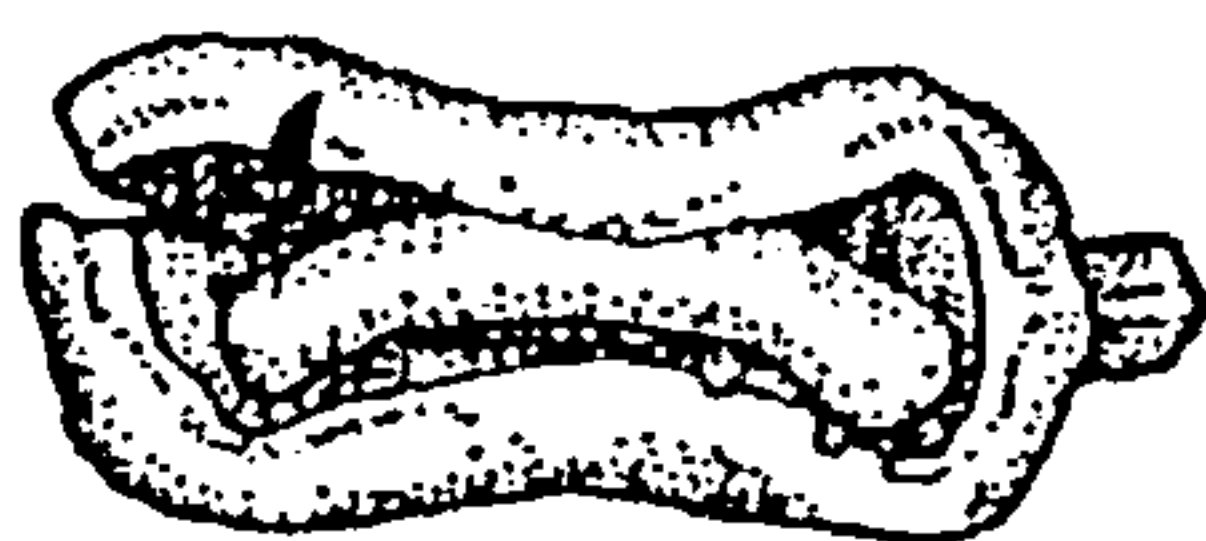
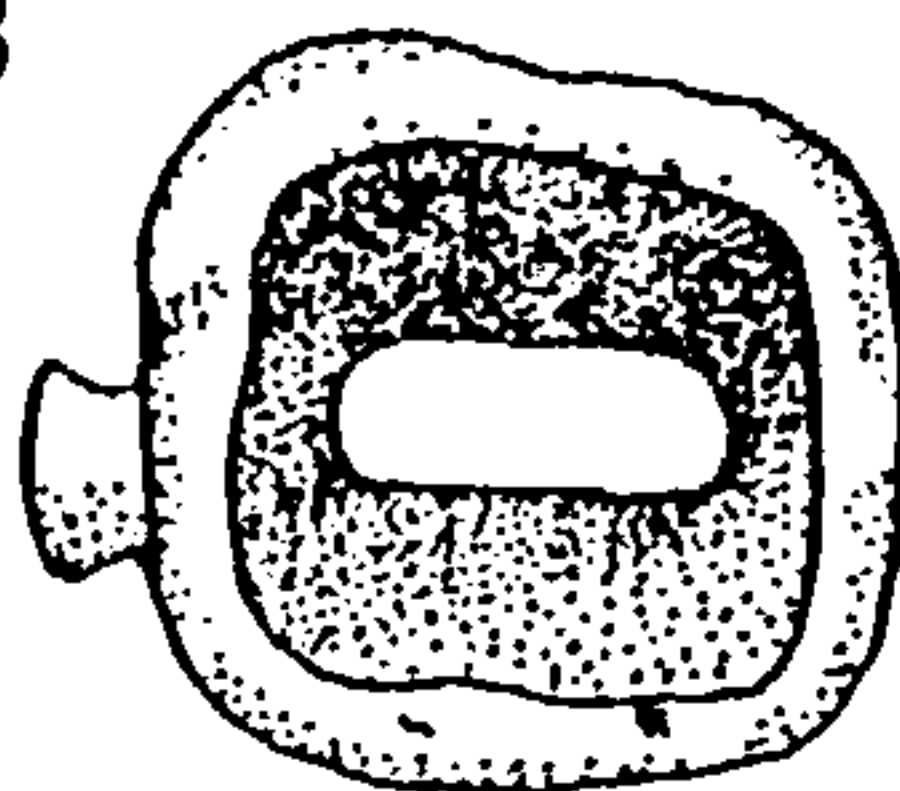


Fig. 7: The Grays Thurrock I Hoard (Ref. No. 02): Complete Socketed Axes (vi)

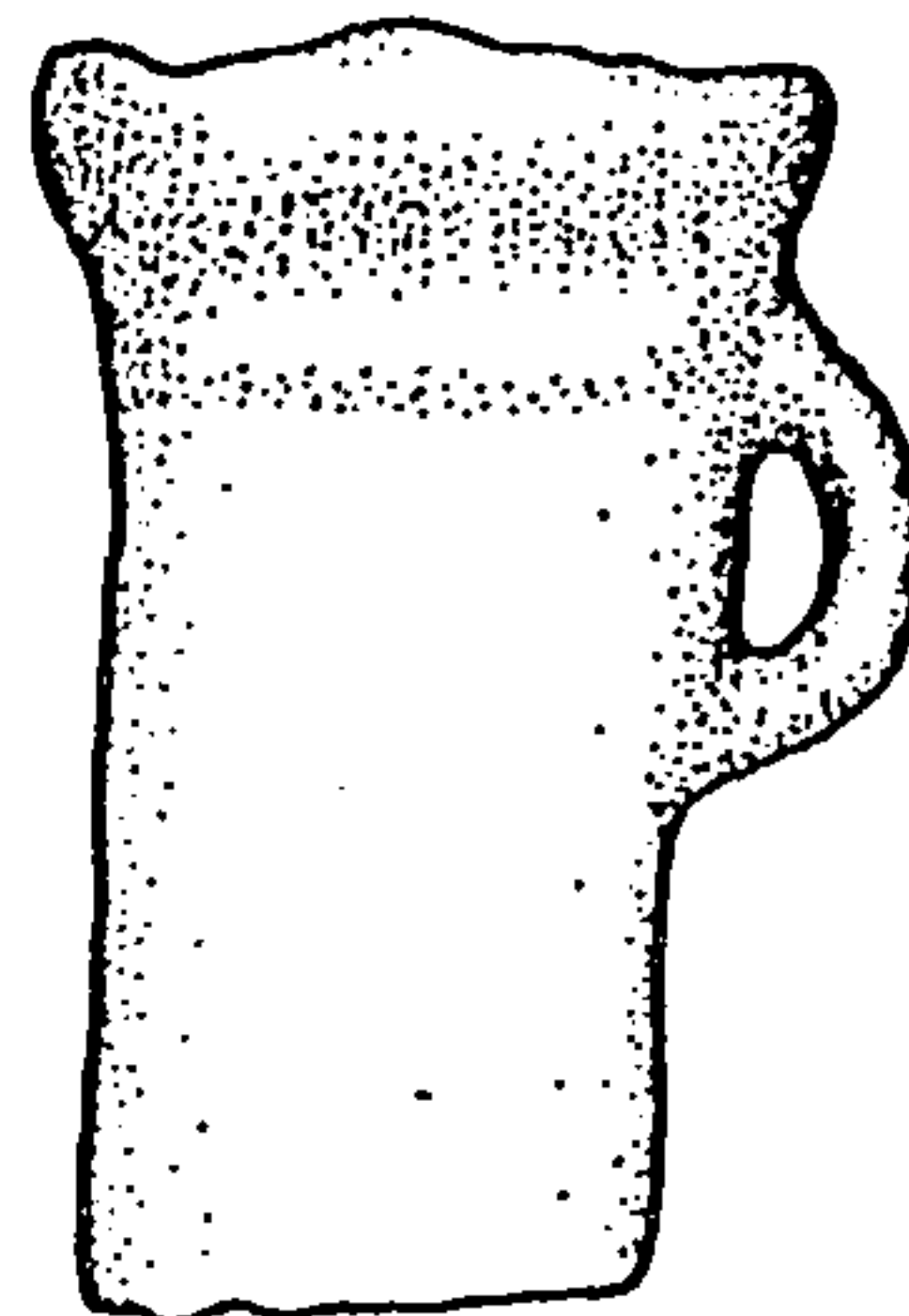
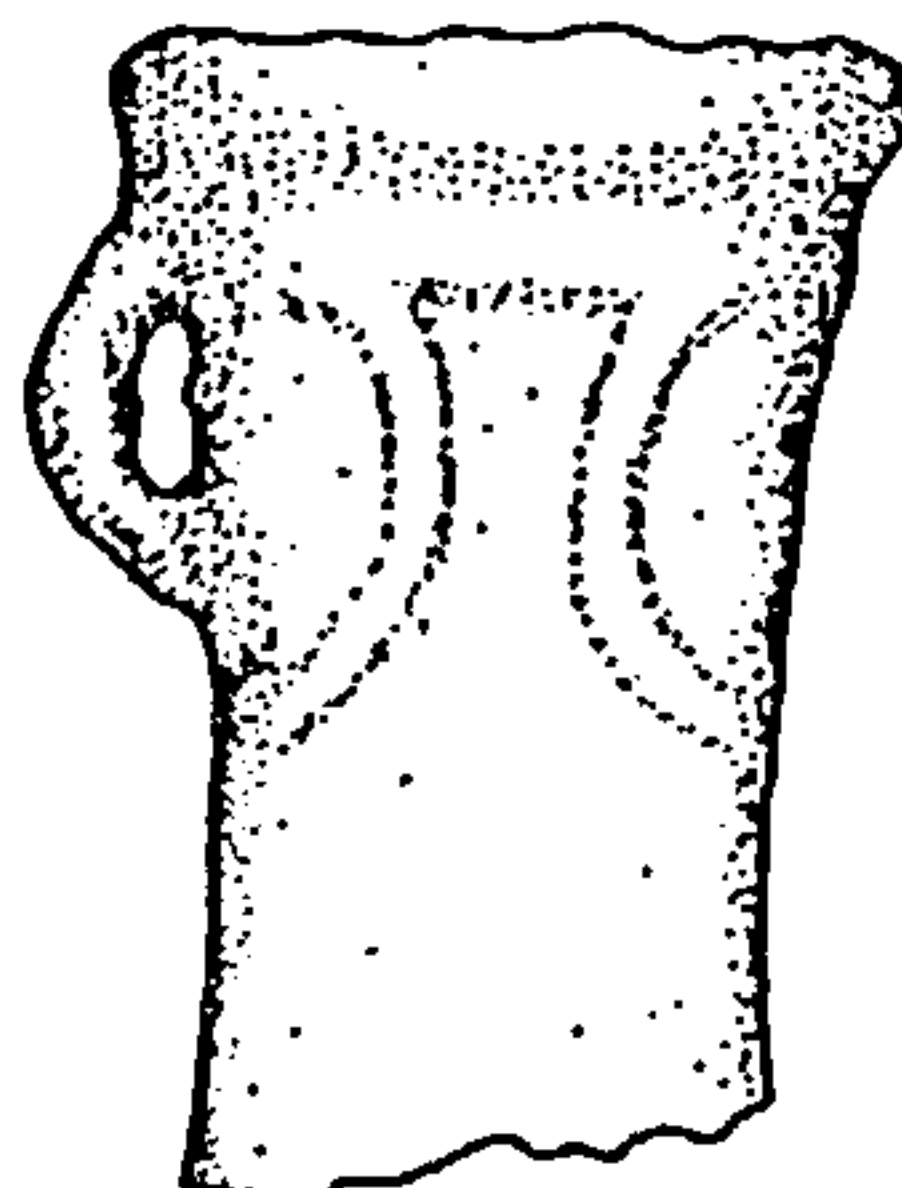
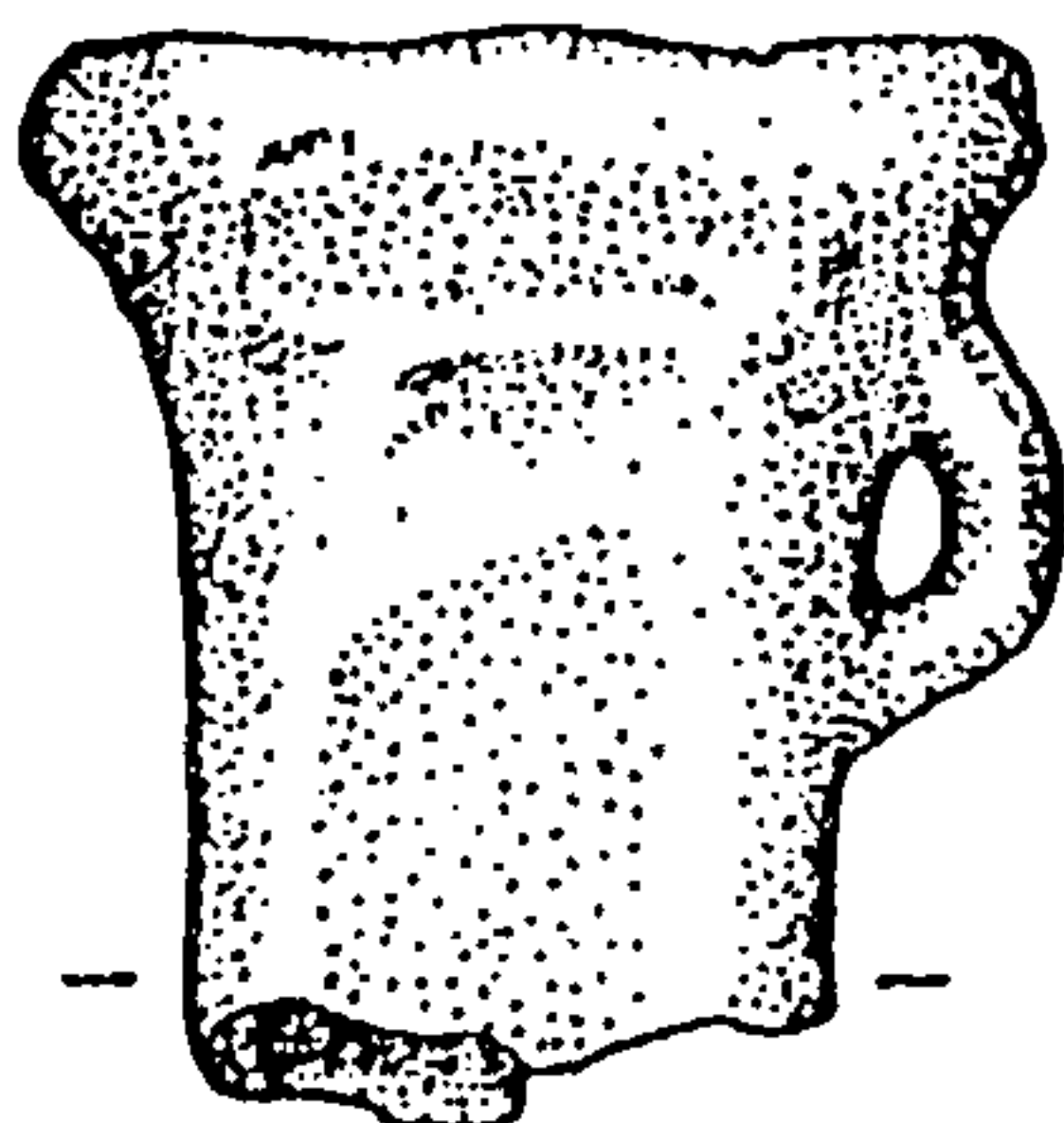
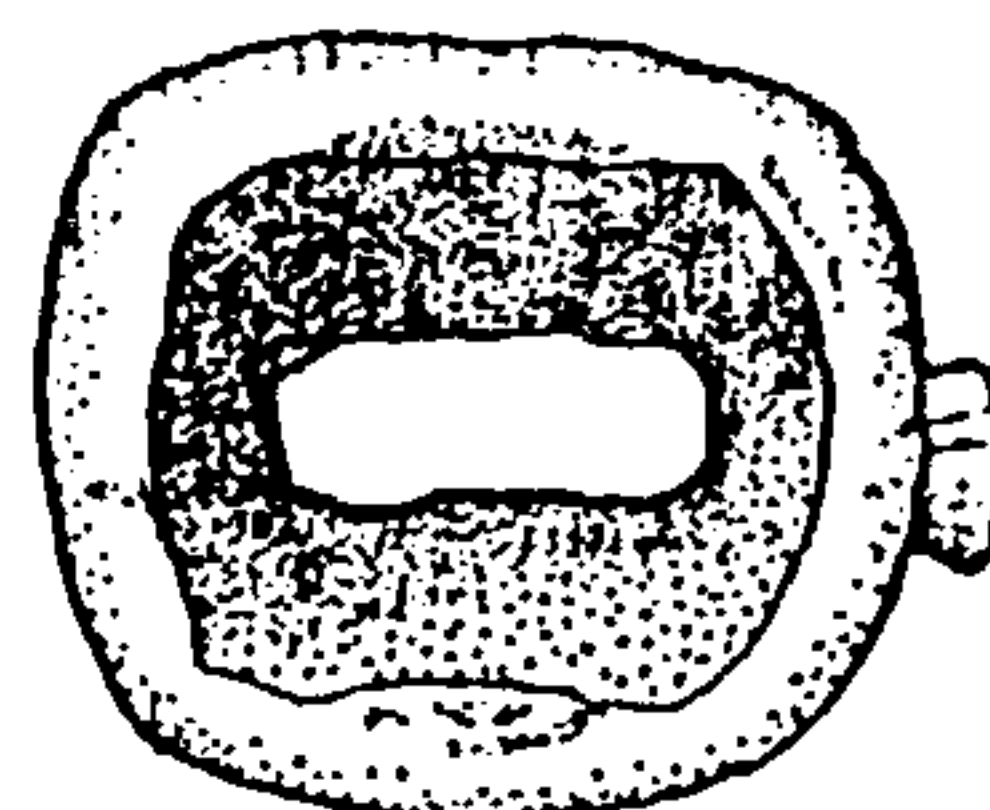
02/37



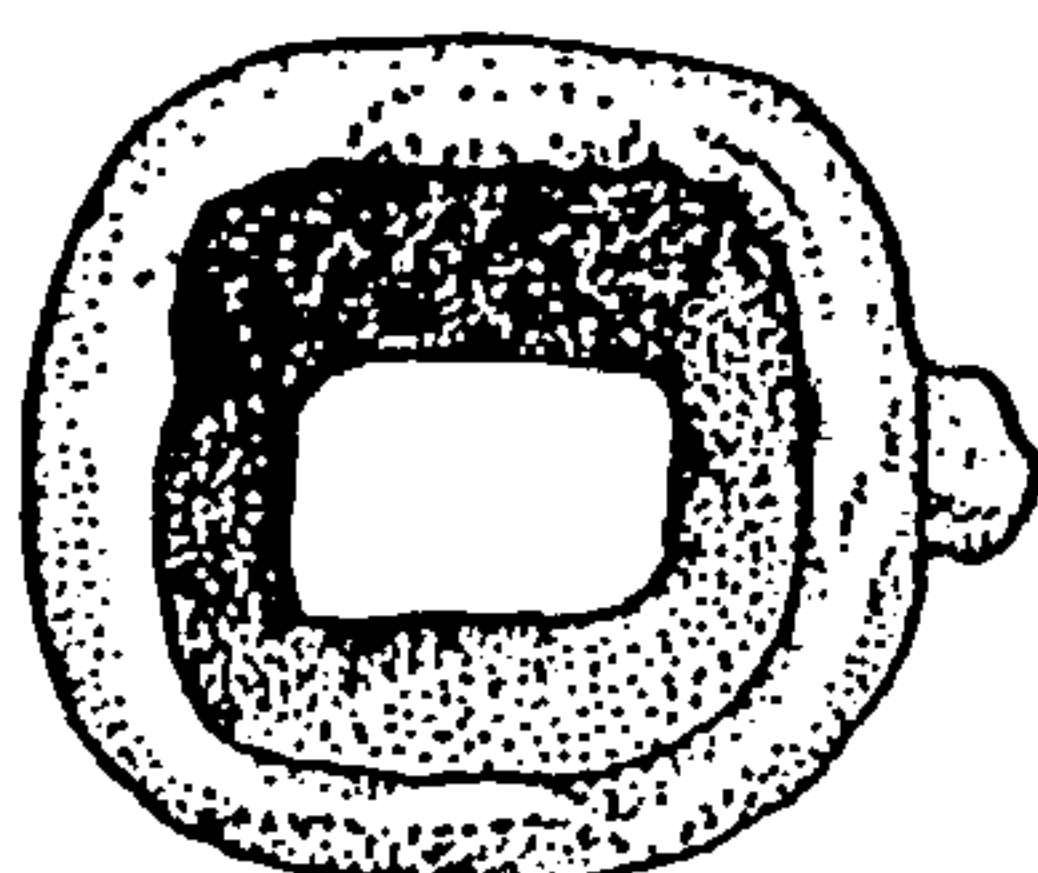
02/38



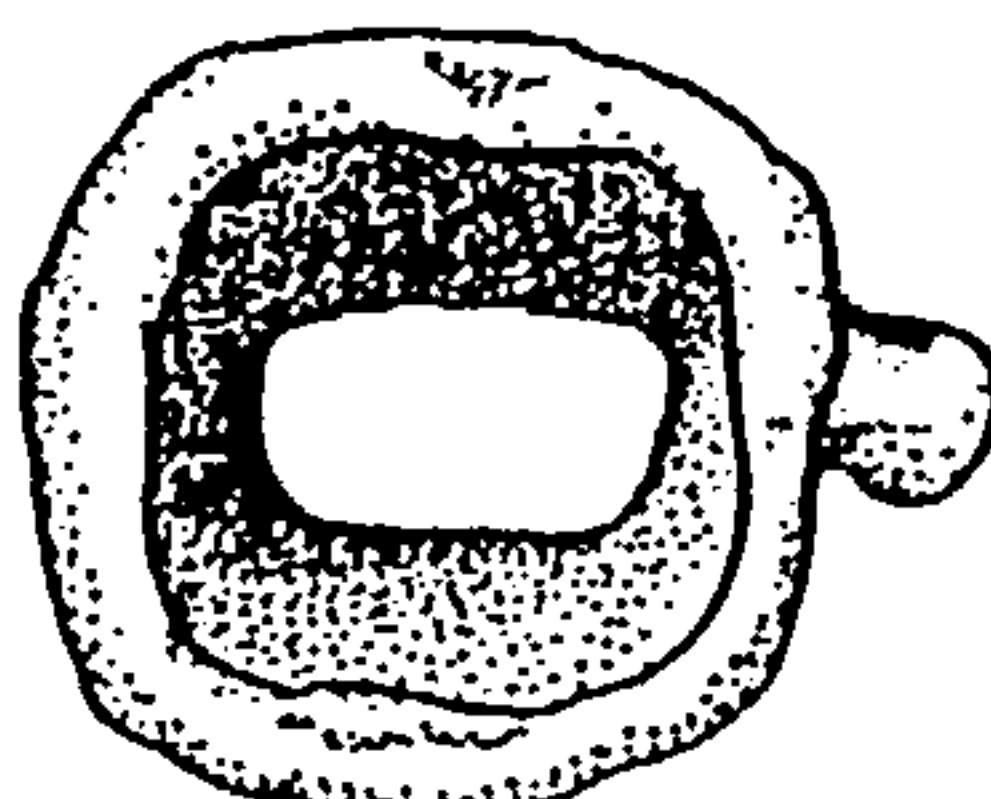
02/39



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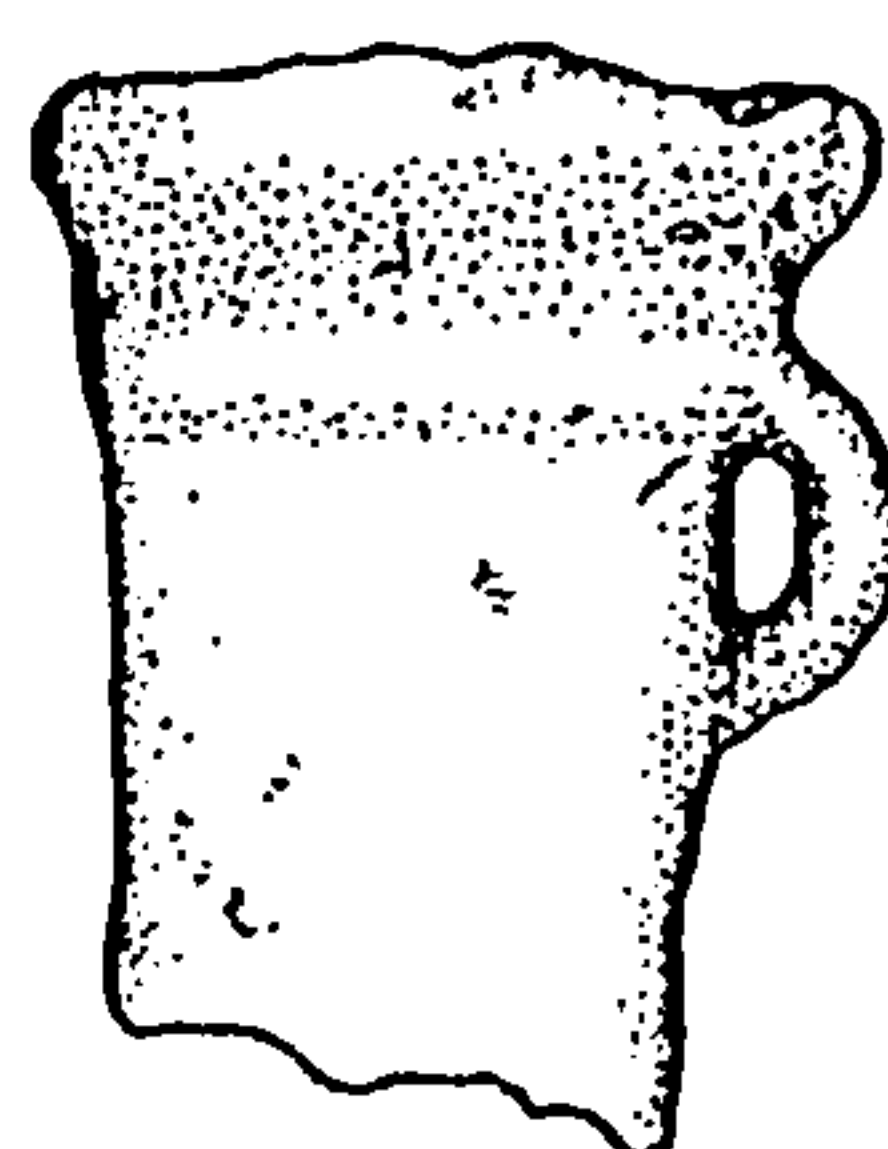
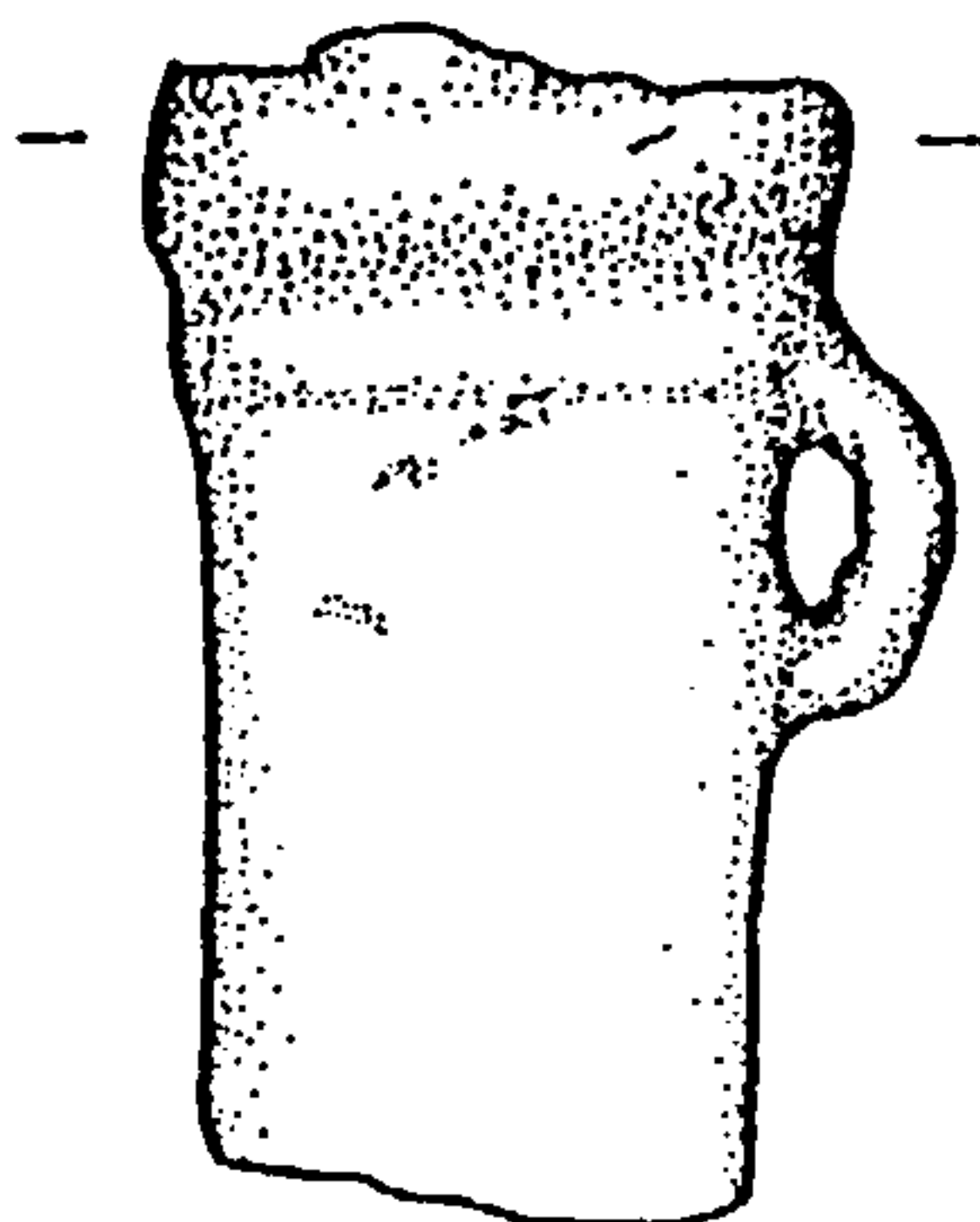
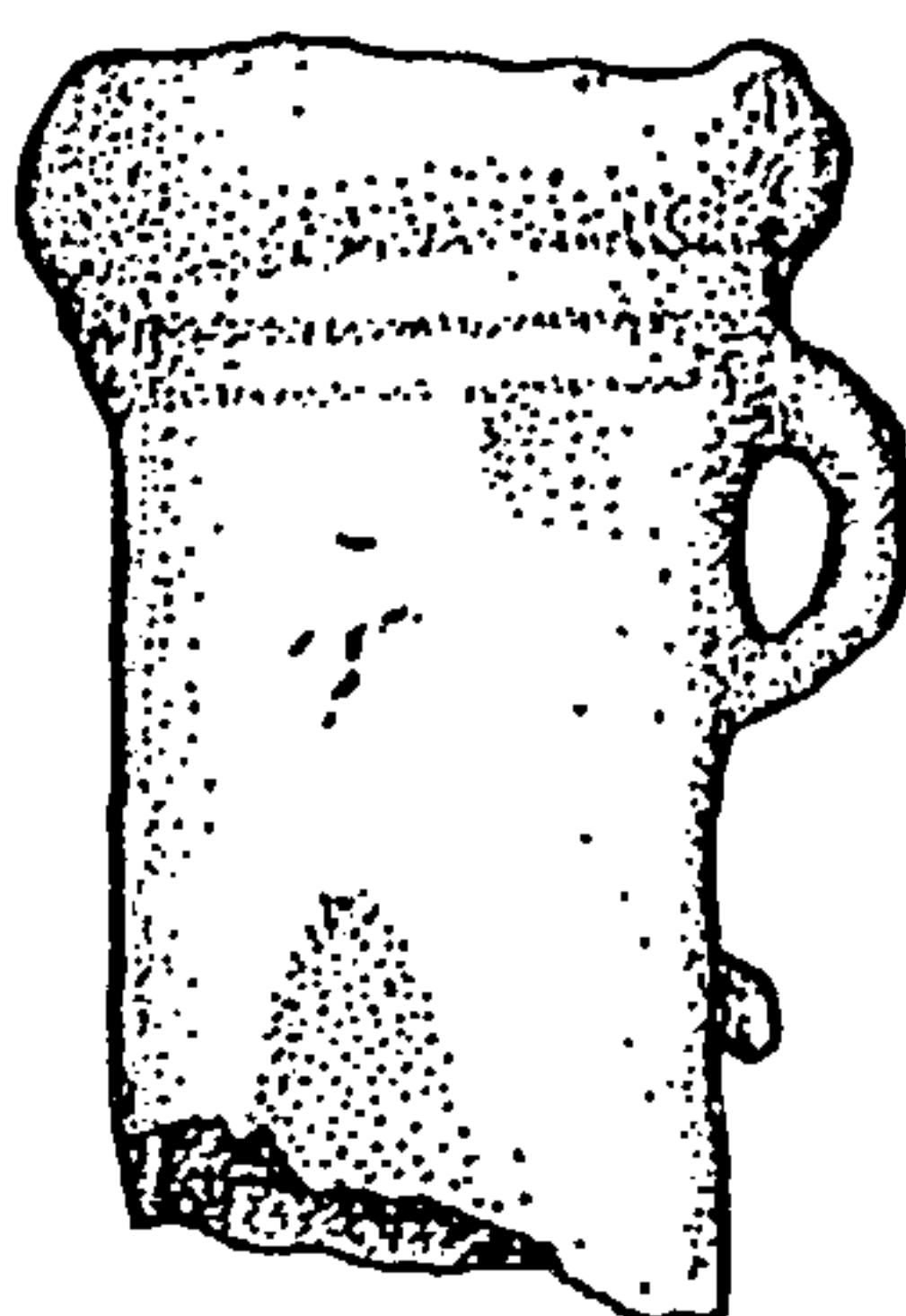
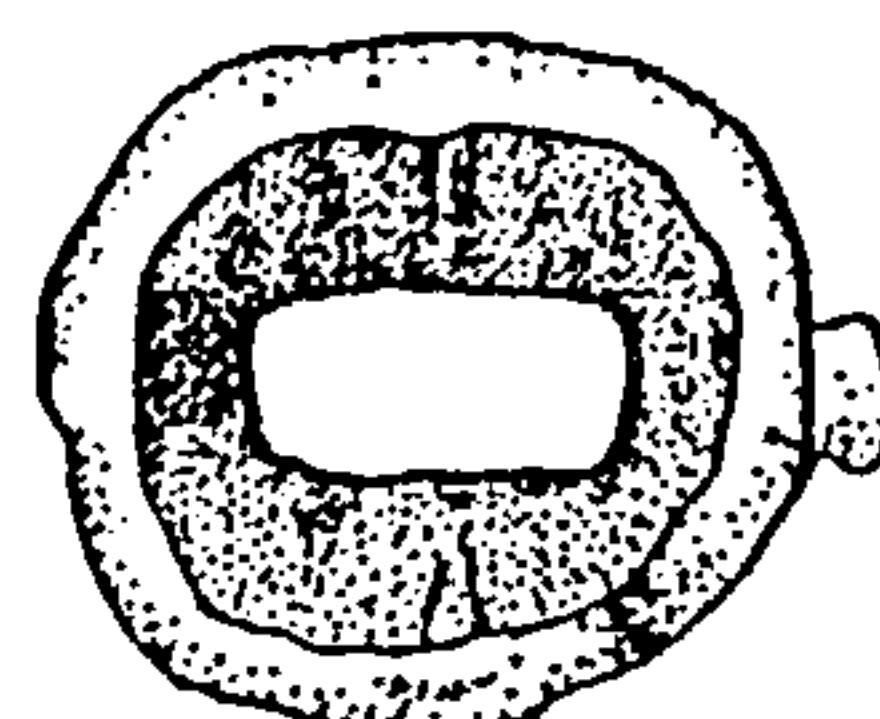


Fig. 8: The Grays Thurrock I Hoard (Ref. No. 02): Socketed Axe Fragments (i)

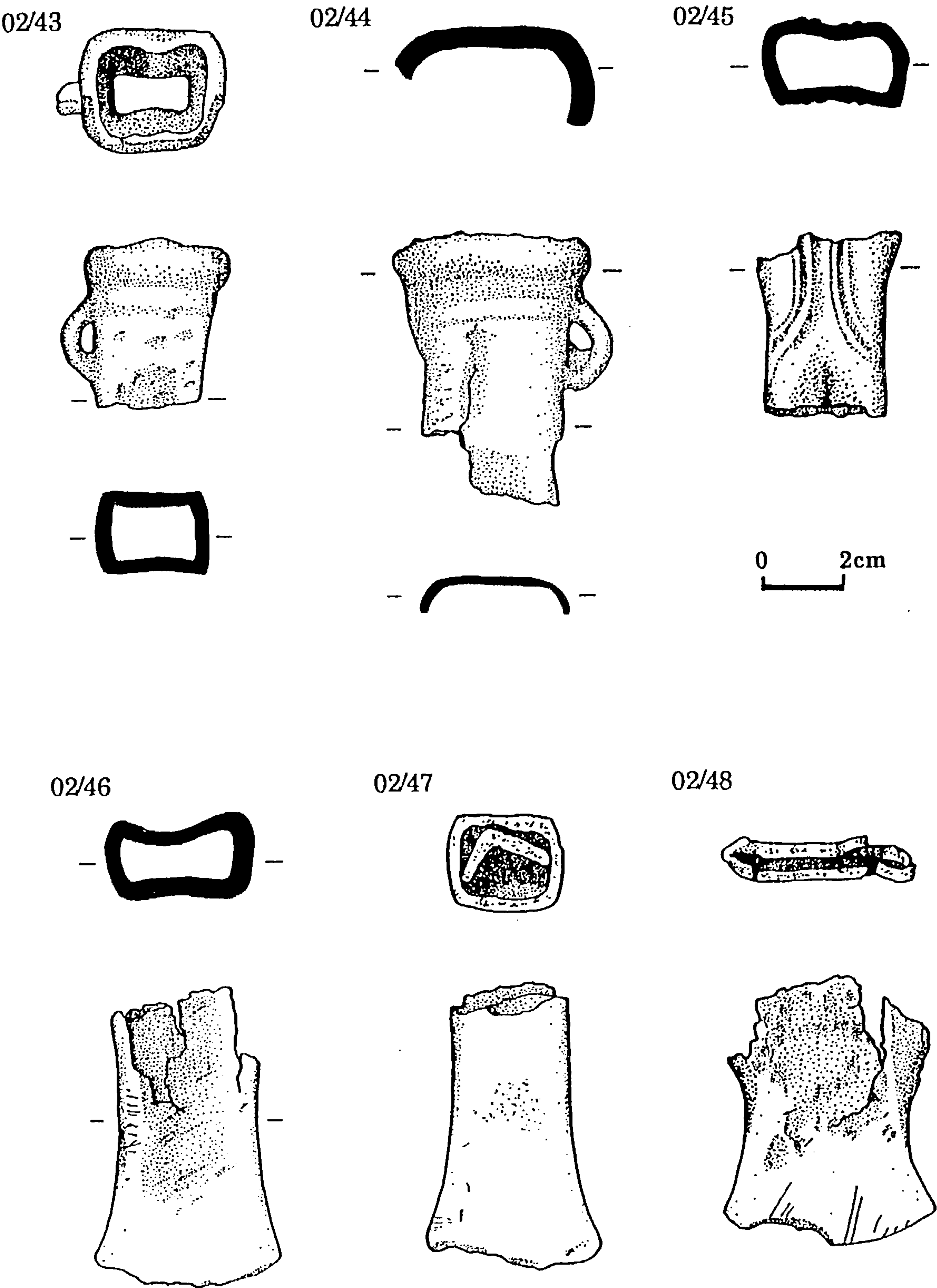


Fig. 9: The Grays Thurrock I Hoard (Ref. No. 02): Socketed Axe Fragments (ii)

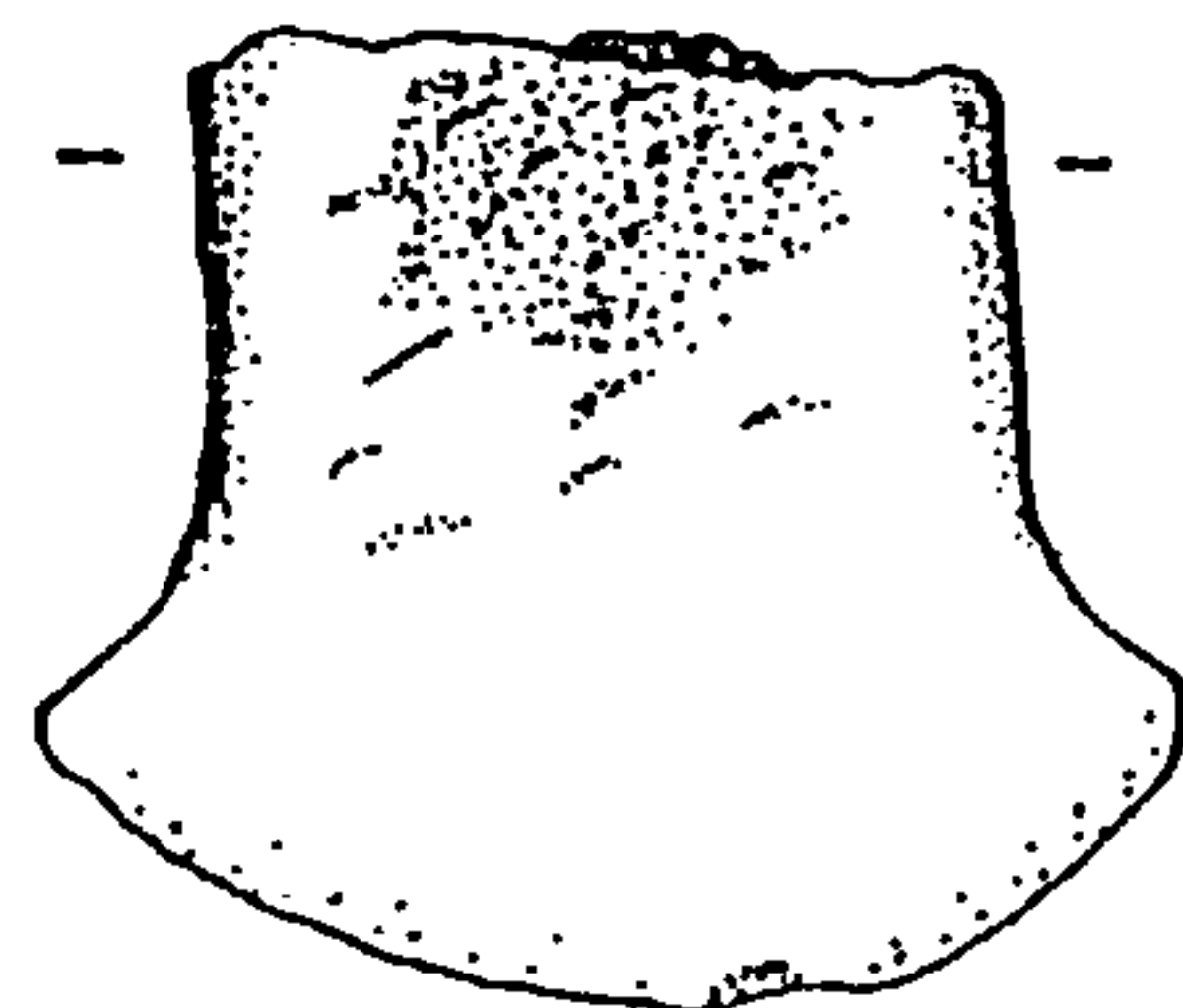
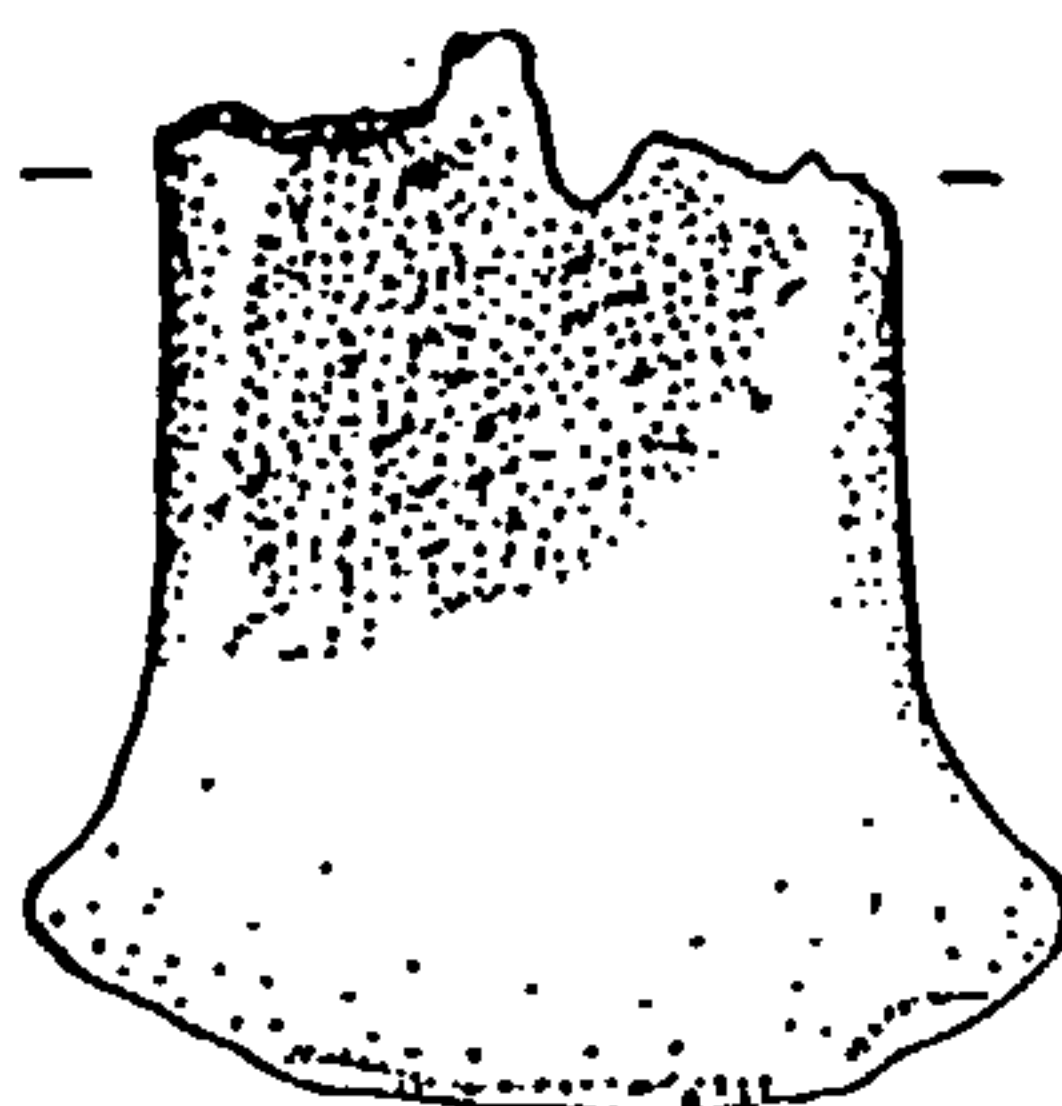
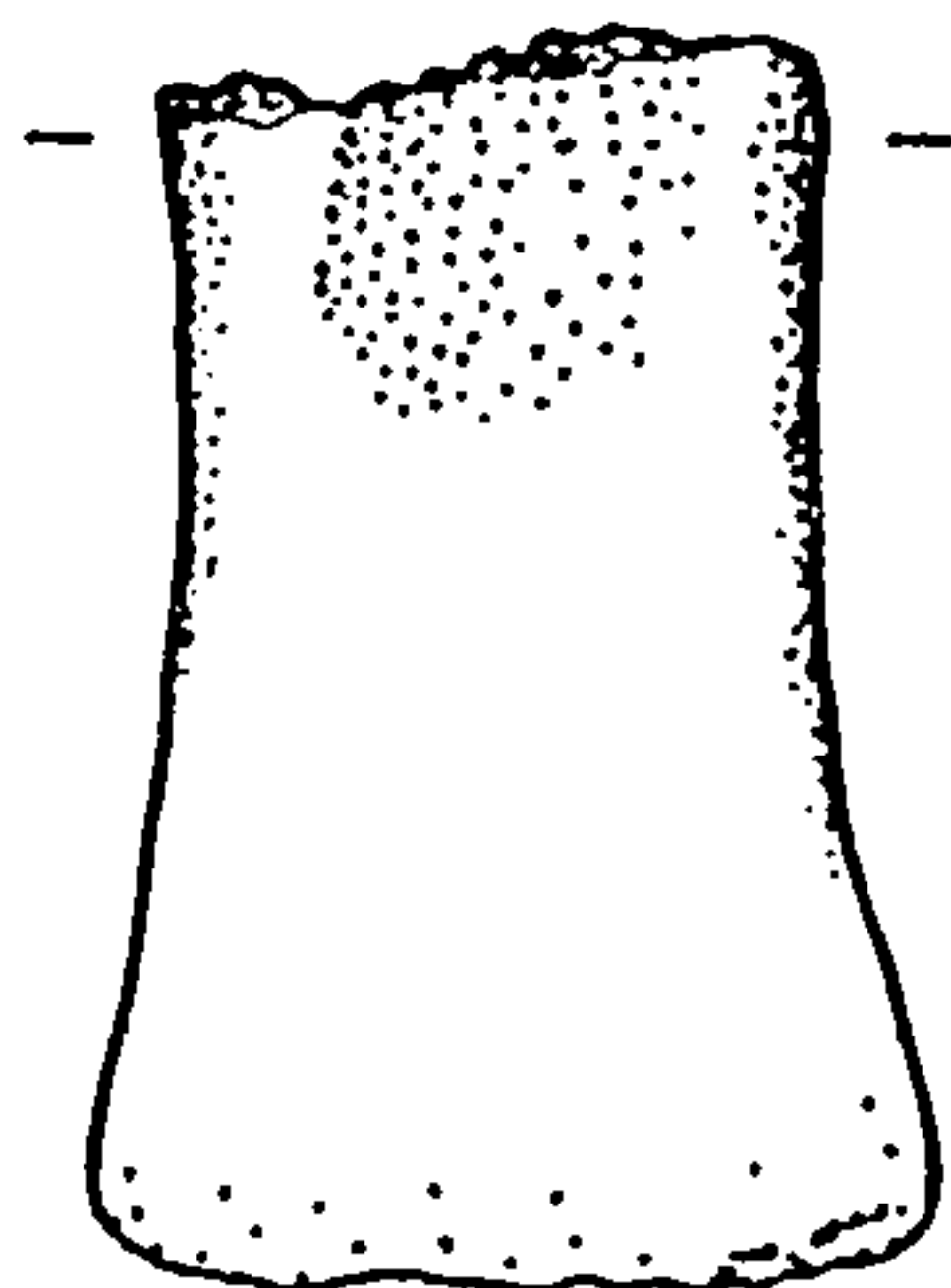
02/49



02/50



02/51



0 2cm

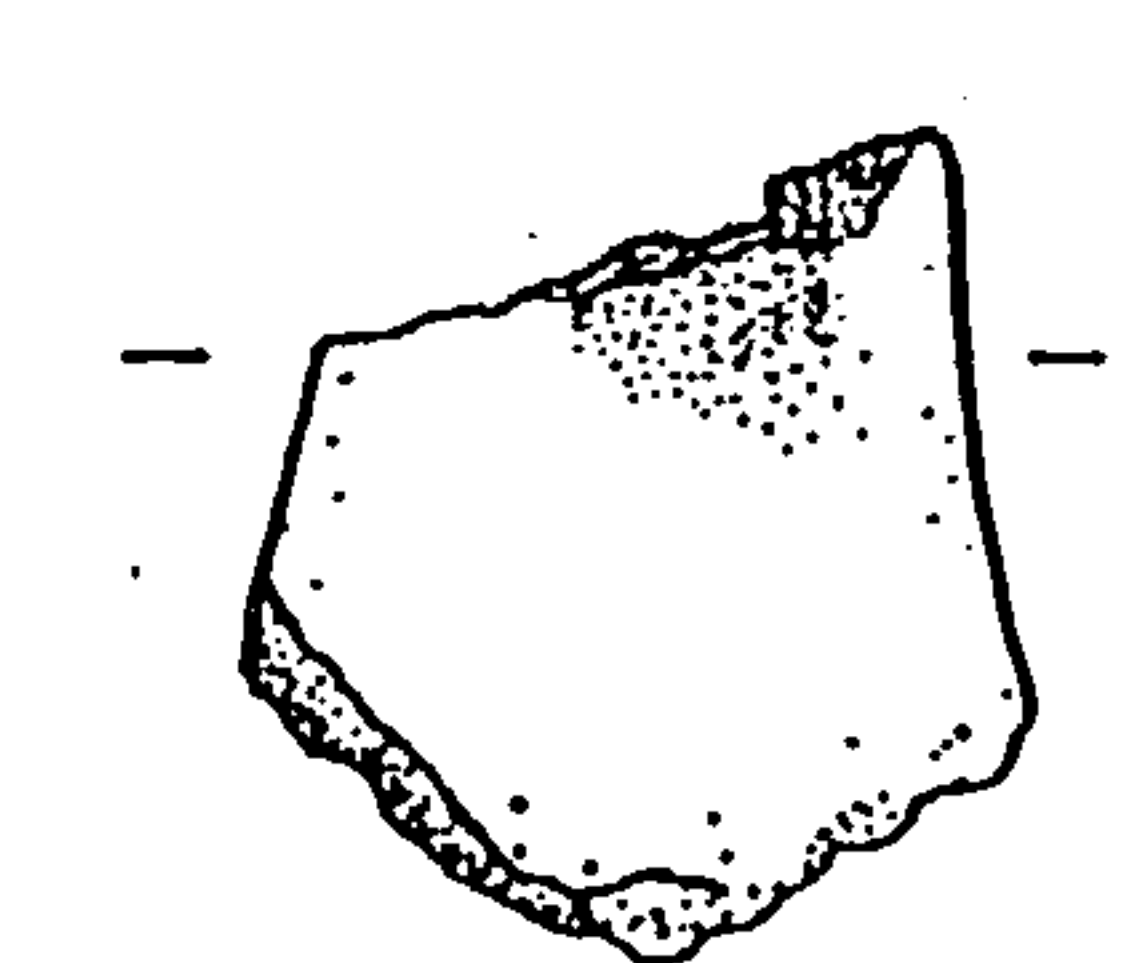
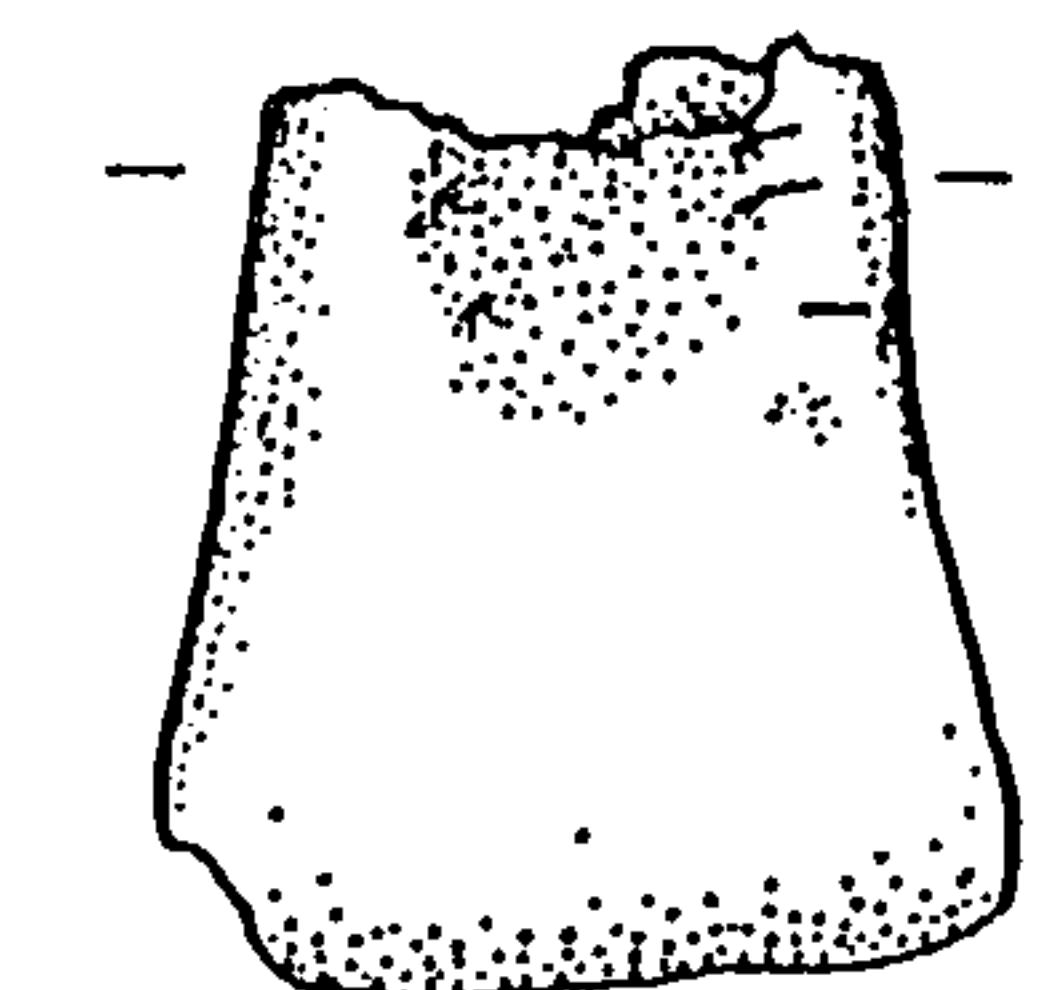
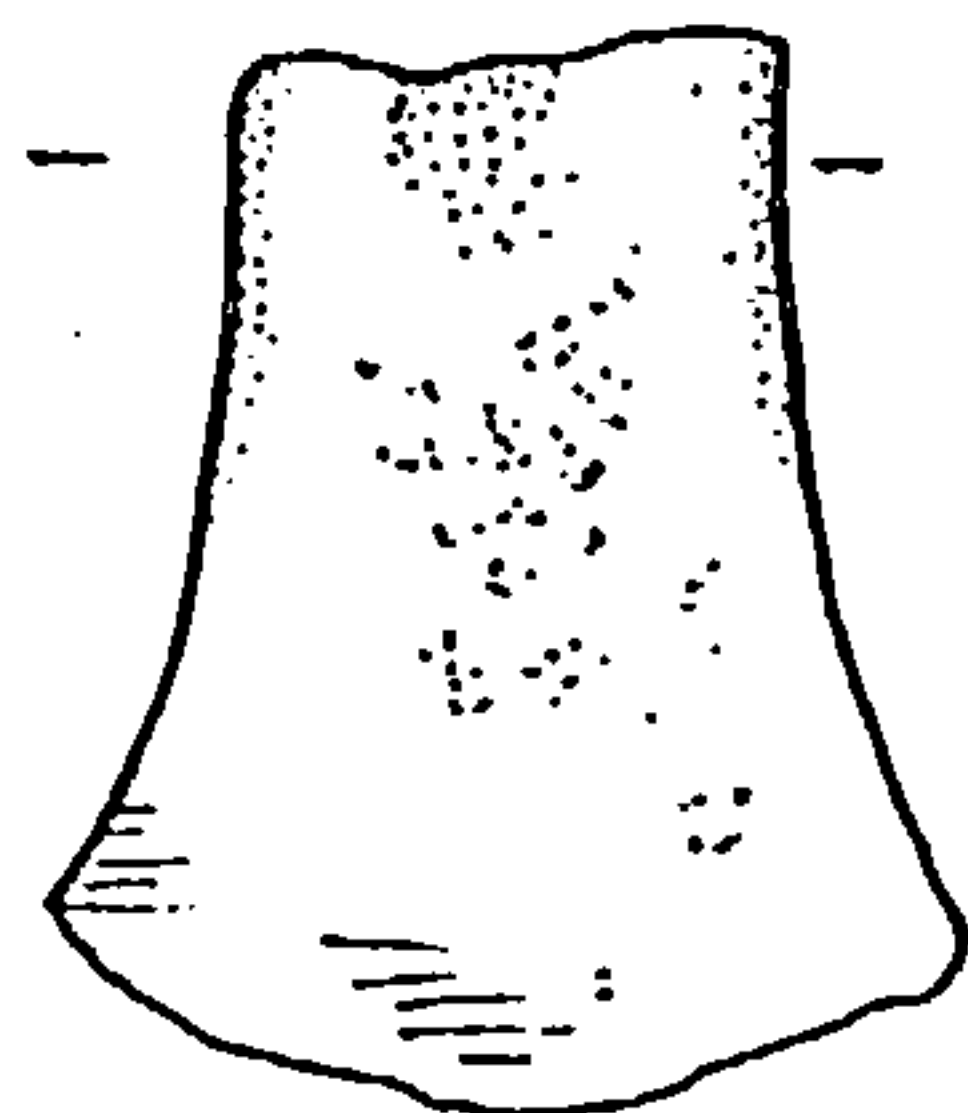
02/52



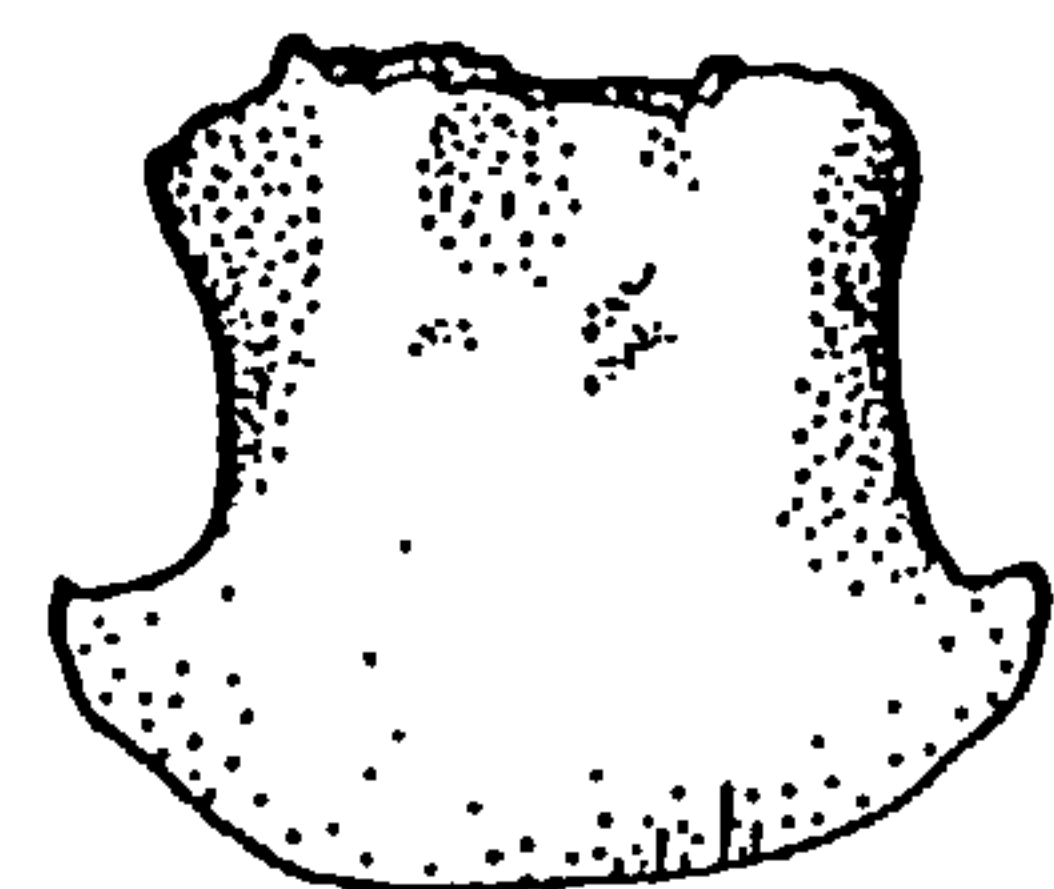
02/53



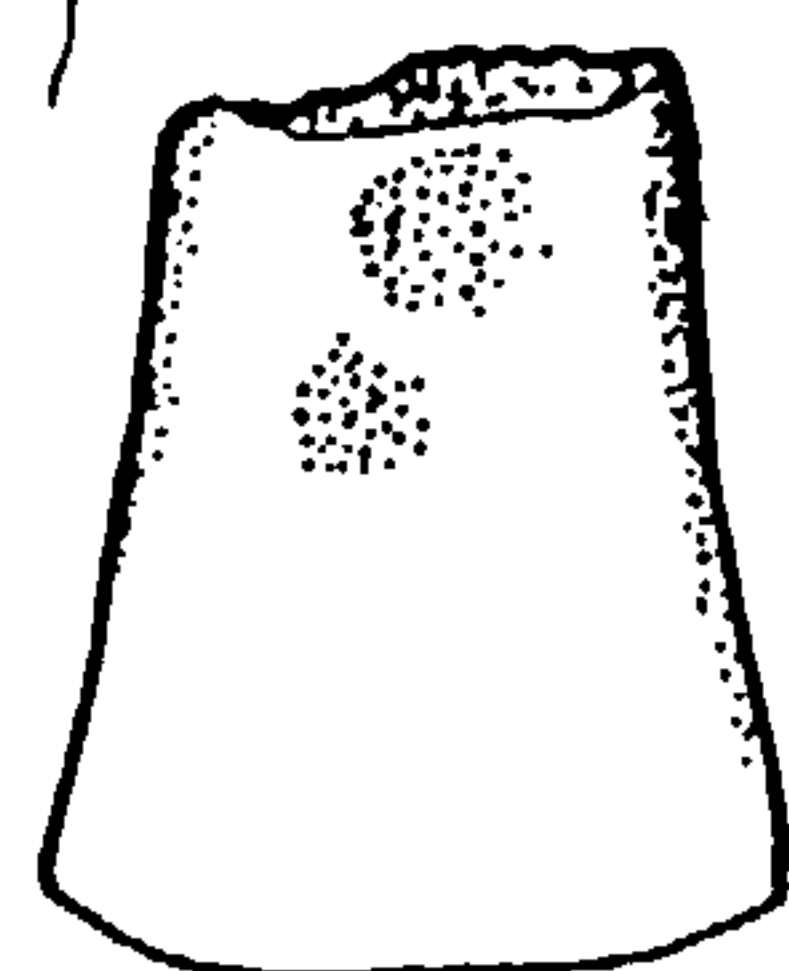
02/54



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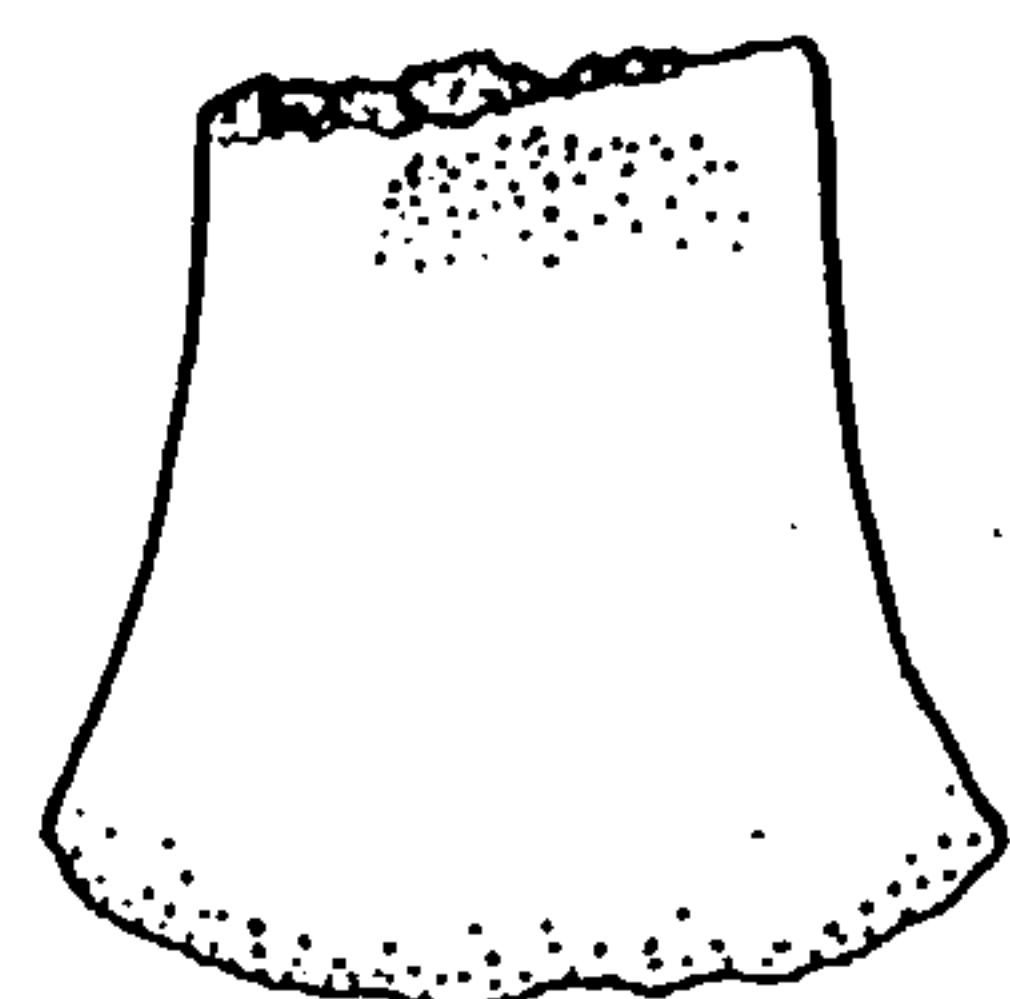
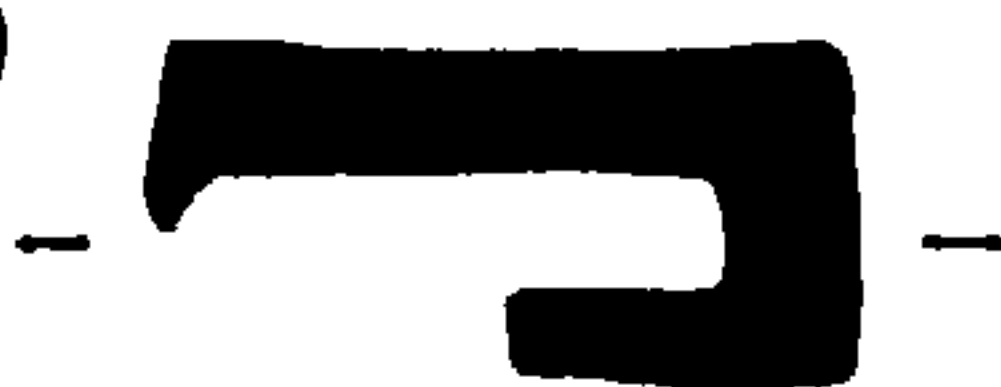


Fig. 10: The Grays Thurrock I Hoard (Ref. No. 02): Socketed Axe Fragments (iii)

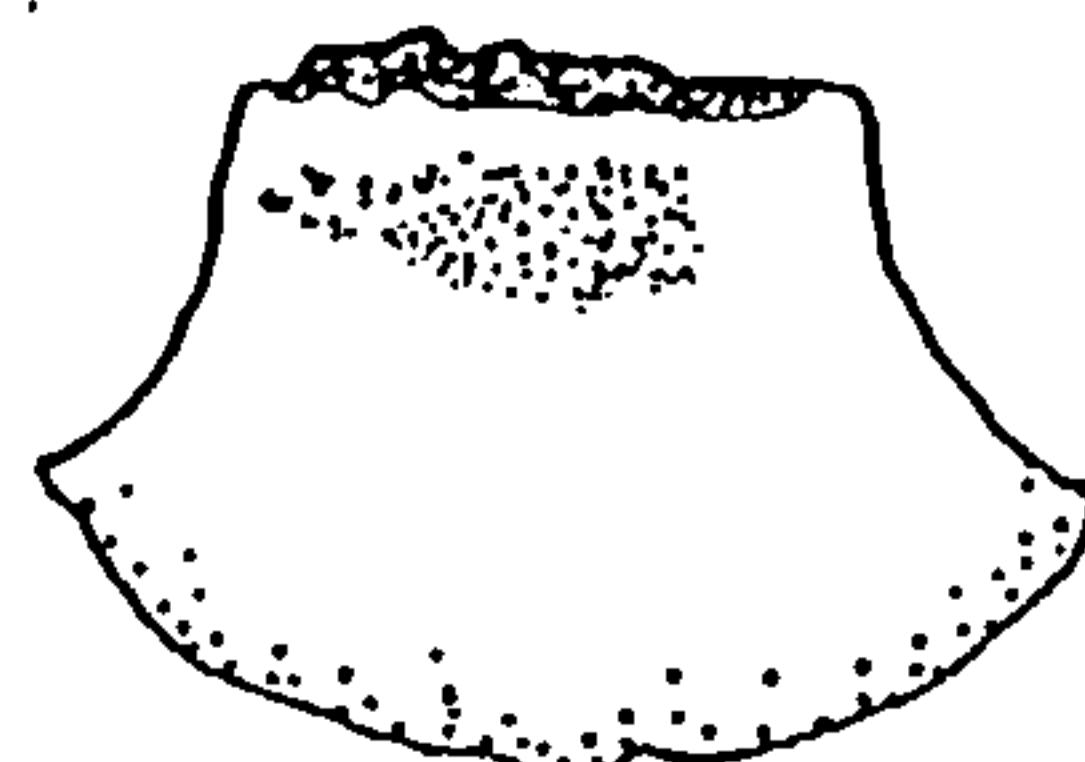
02/58



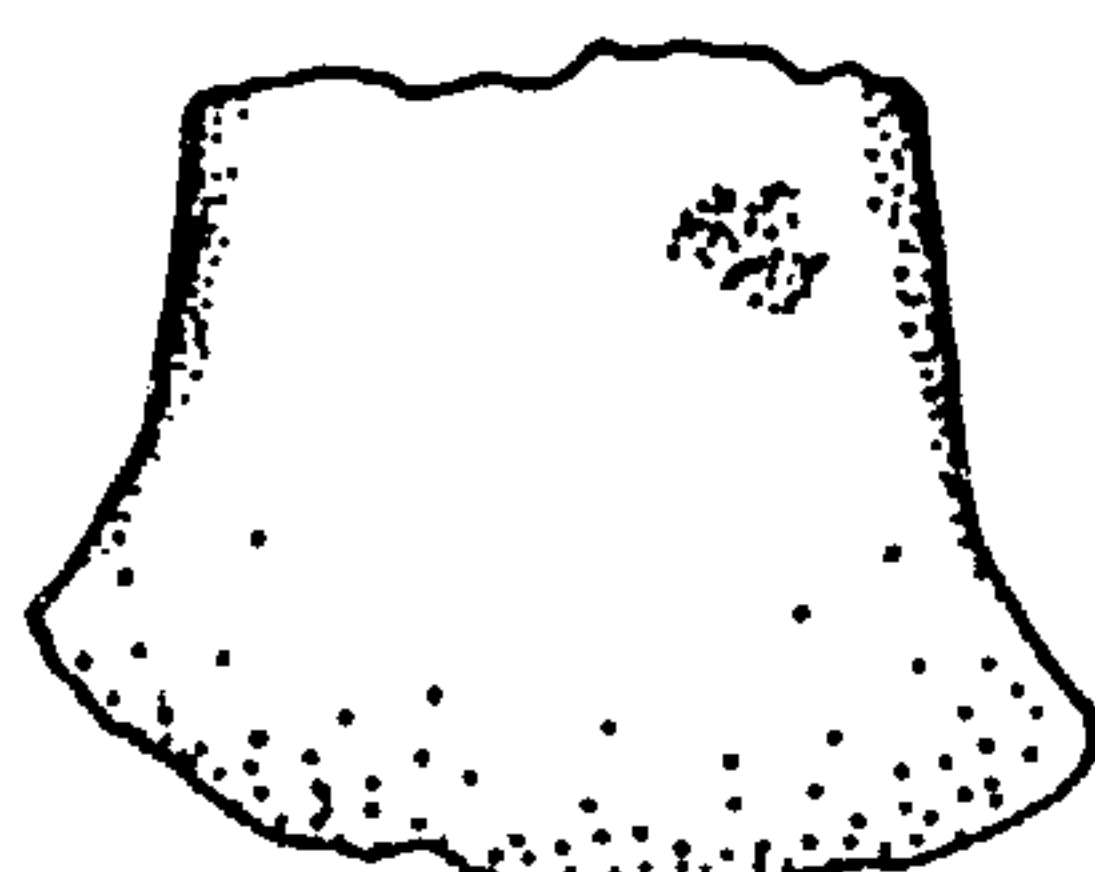
02/59



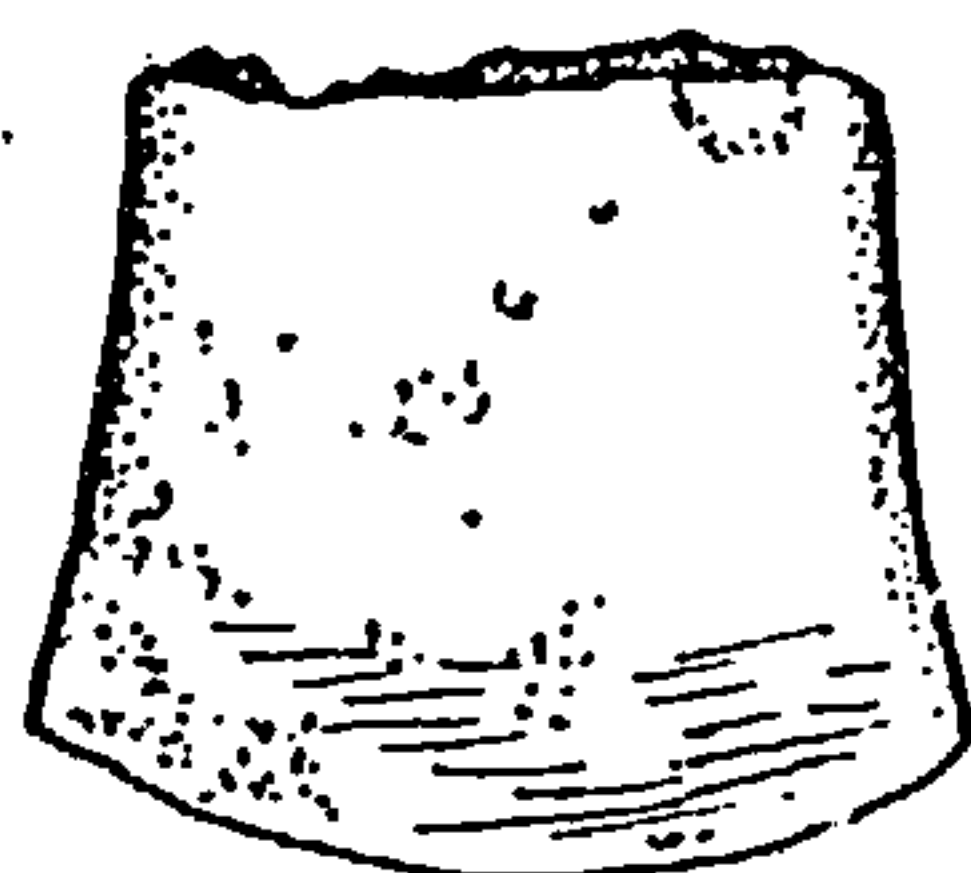
02/60



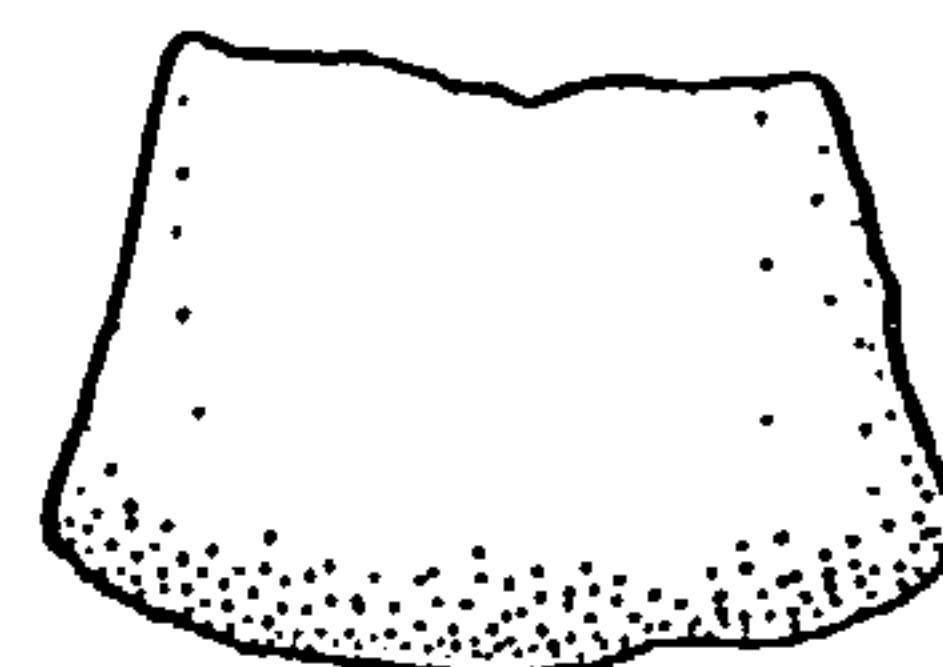
02/61



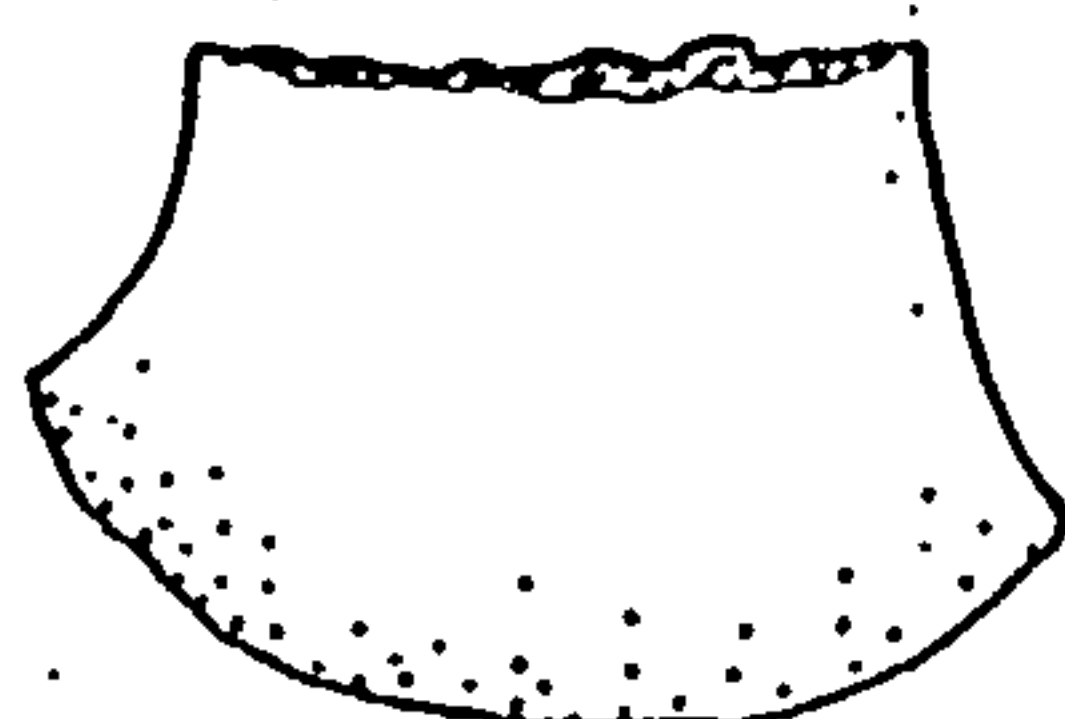
02/62



02/63



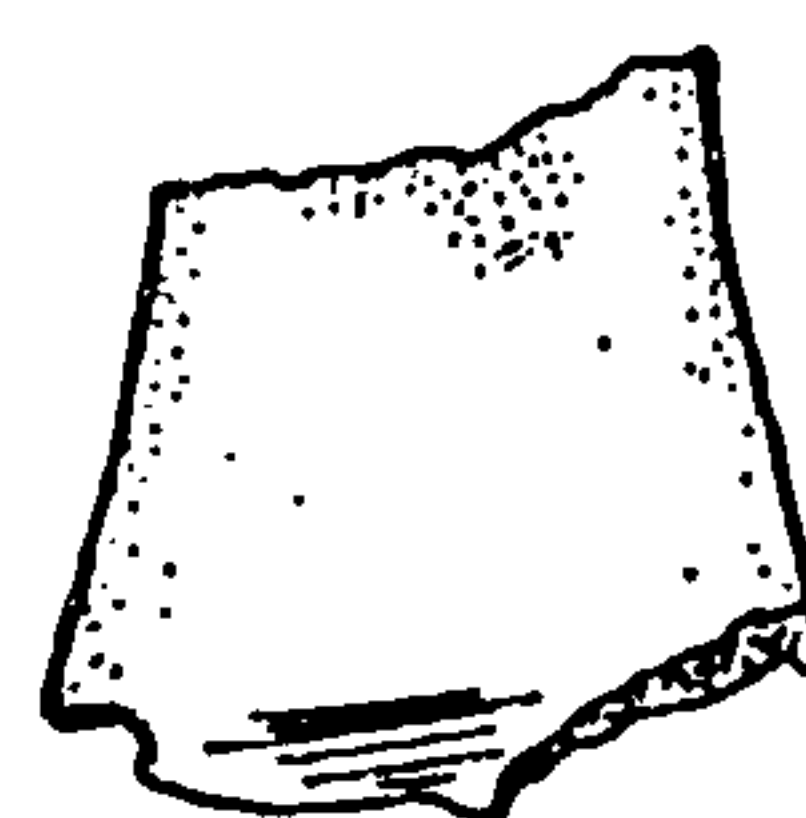
02/64



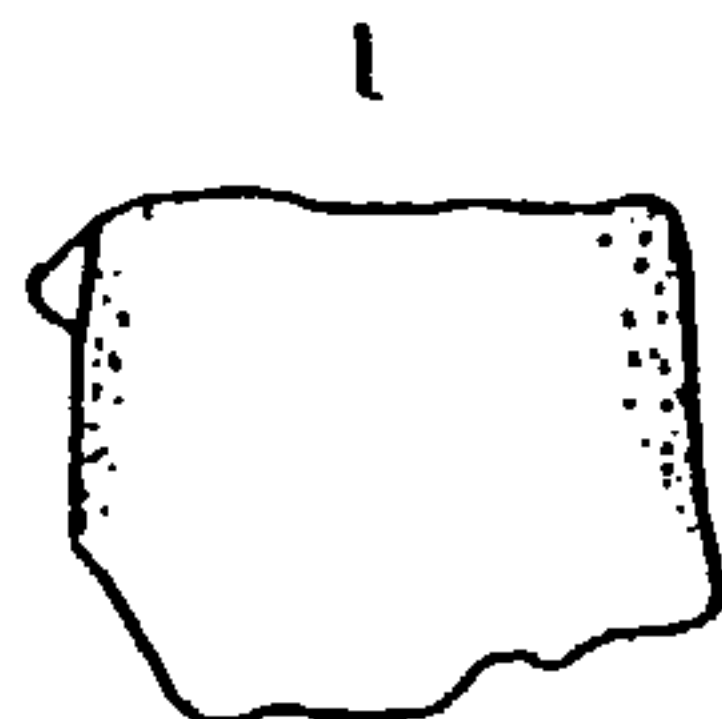
02/65



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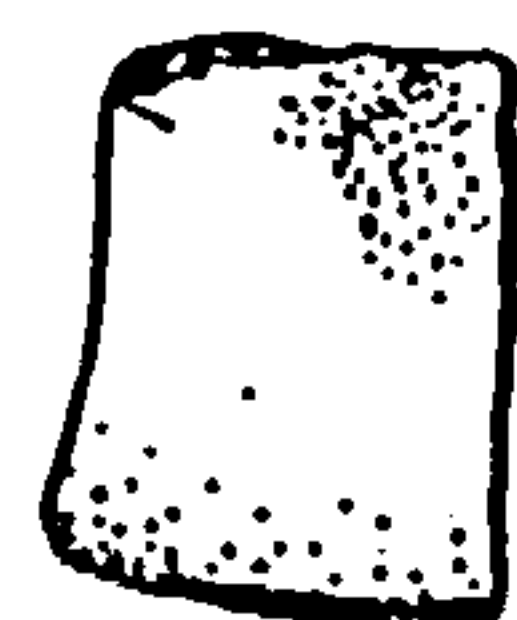
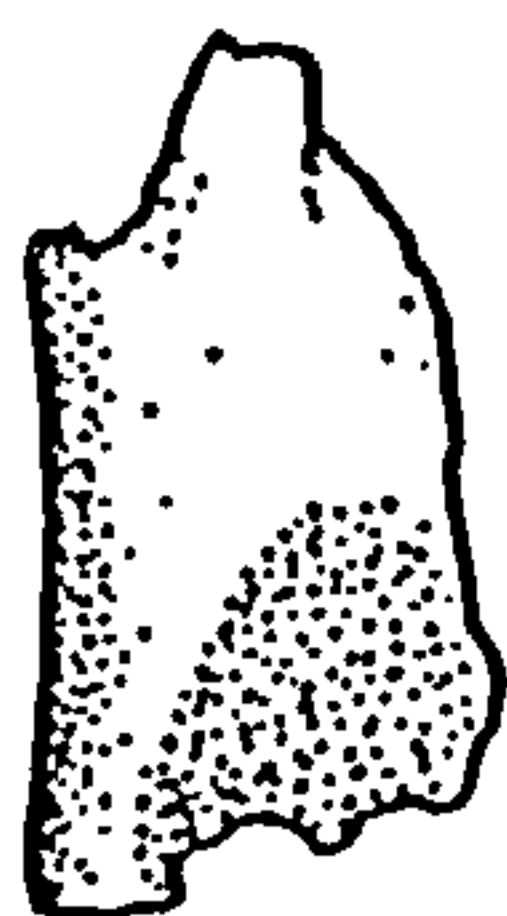
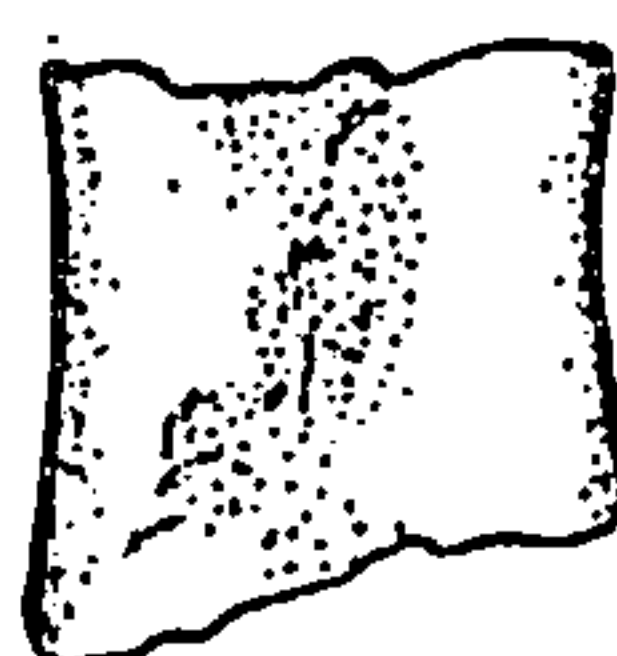


Fig. 11: The Grays Thurrock I Hoard (Ref. No. 02): Socketed Axe Fragments (iv)

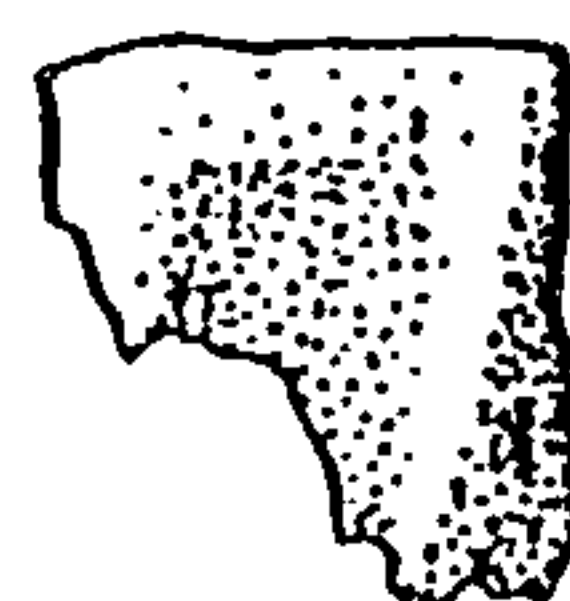
02/69



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02/71



0 2cm

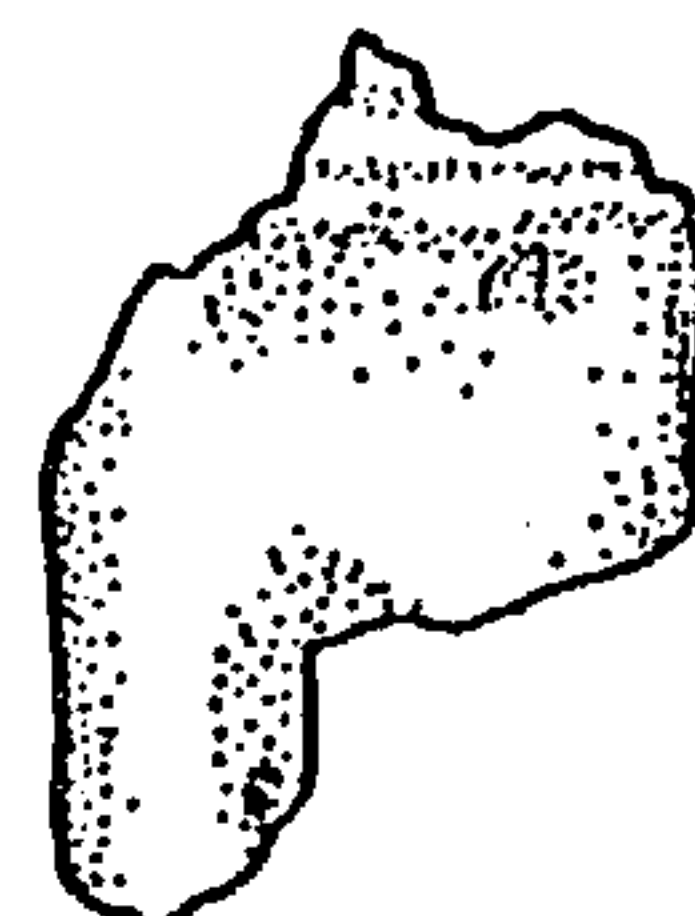
02/72



02/73



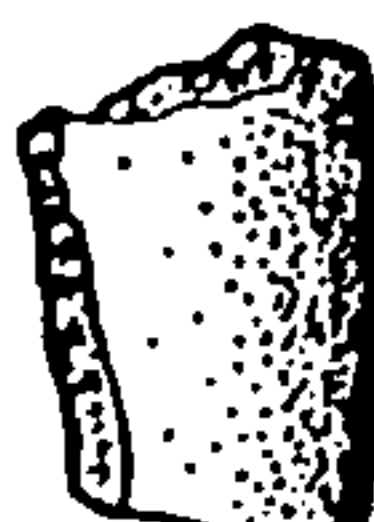
02/74



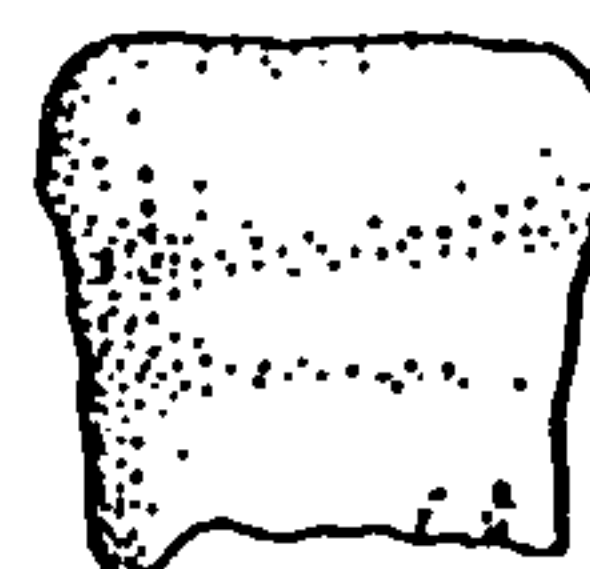
02/75



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02/77

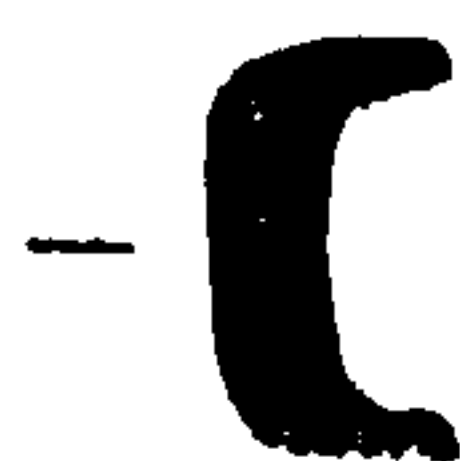
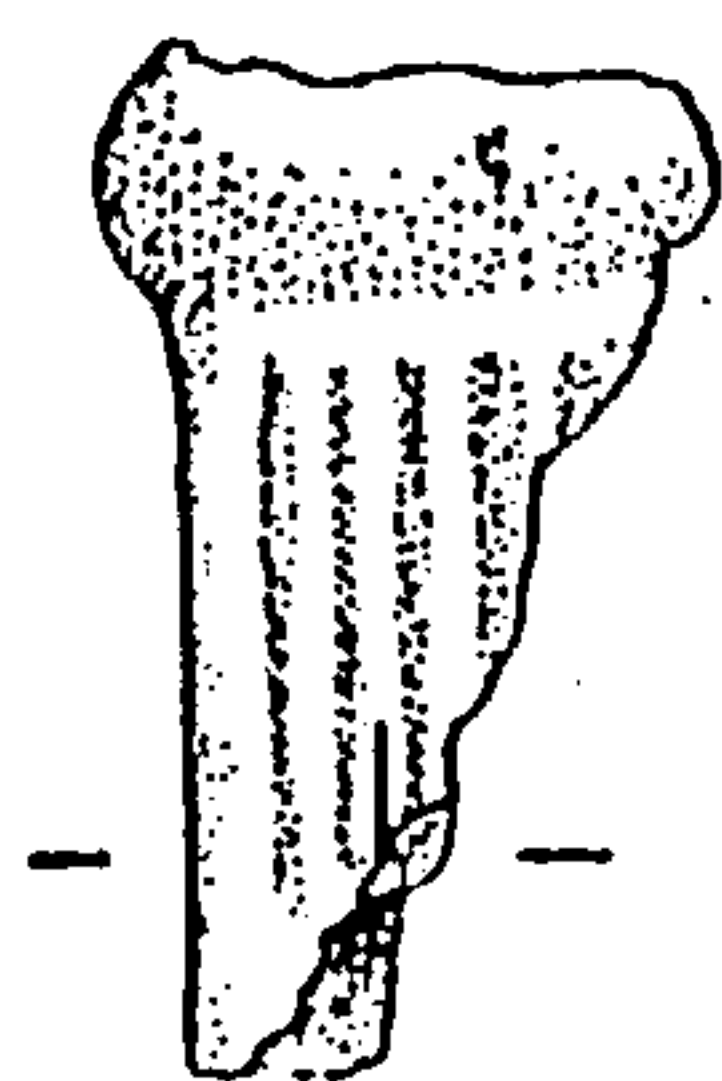


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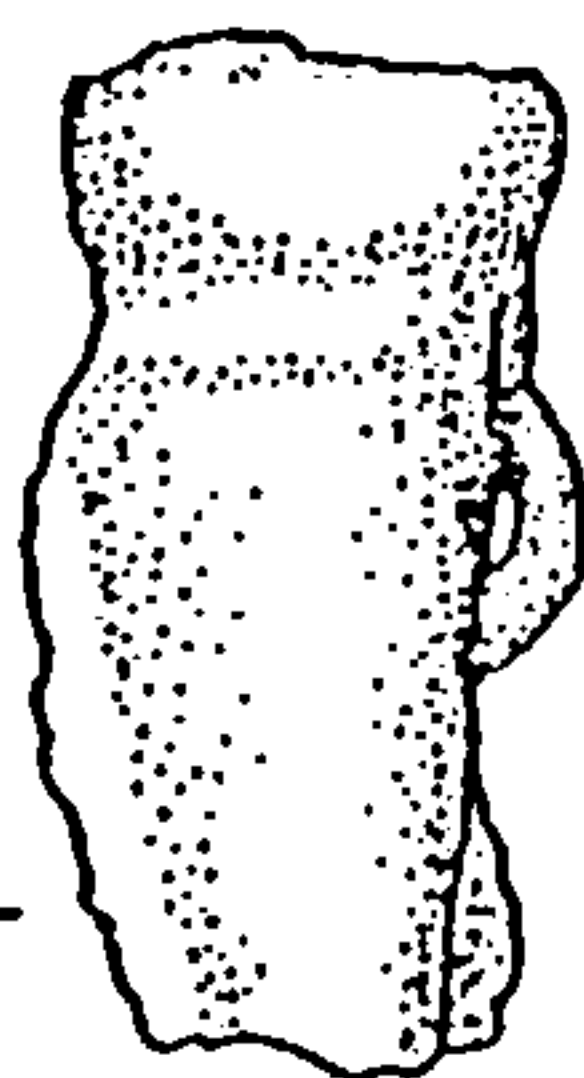


Fig. 12: The Grays Thurrock I Hoard (Ref. No. 02): Socketed Axe Fragments (v)

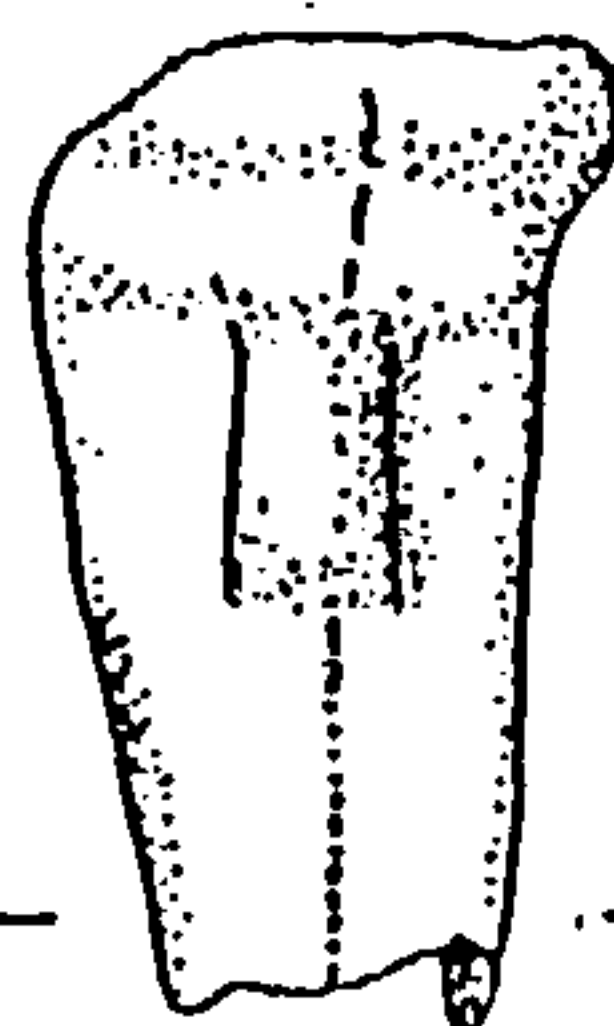
02/79



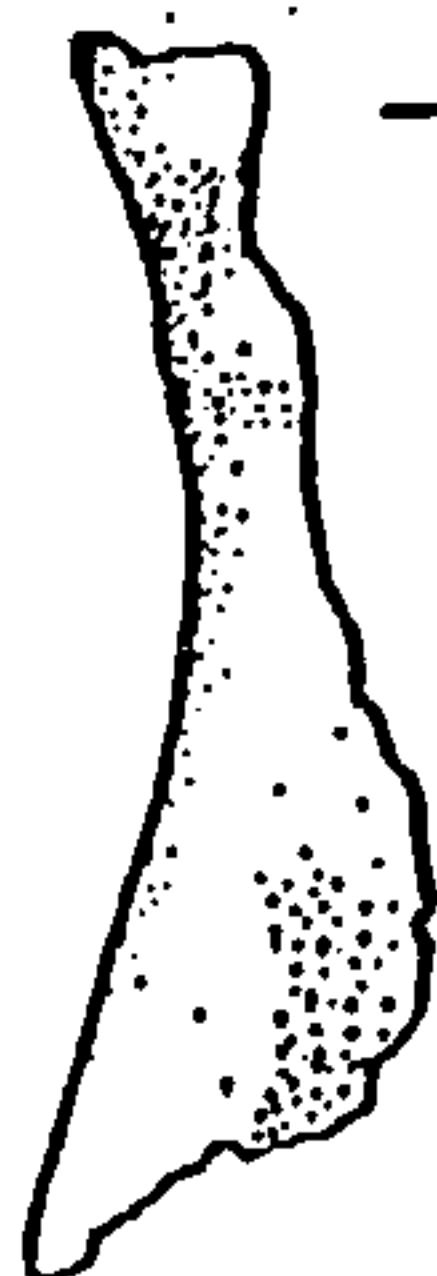
02/80



02/81



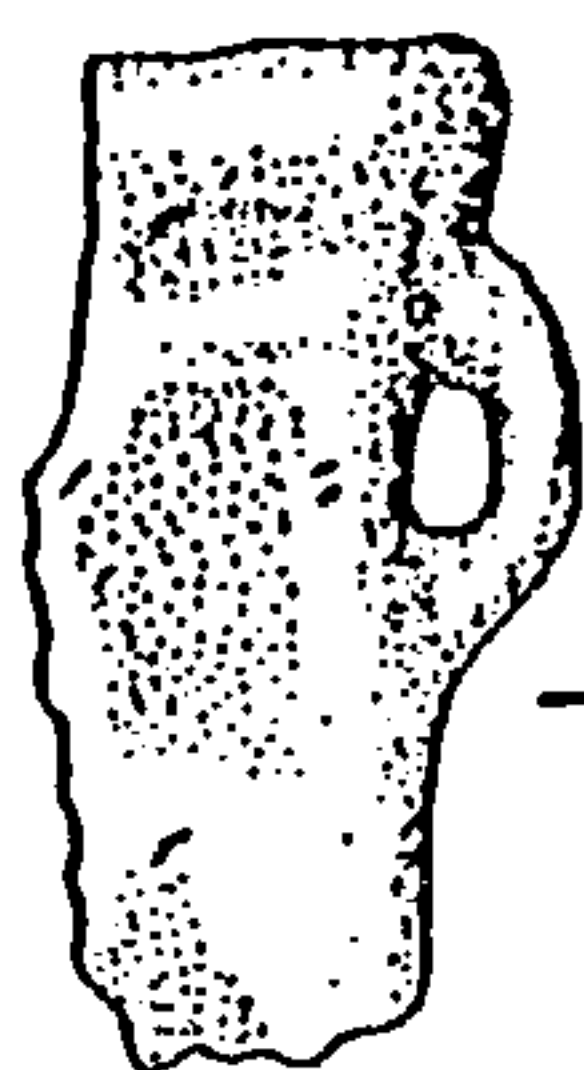
02/82



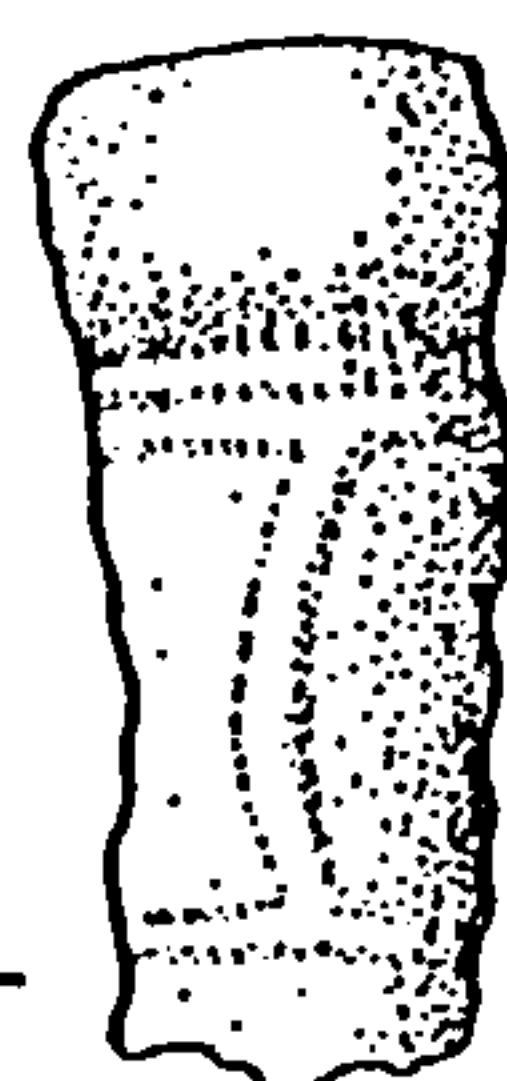
02/83



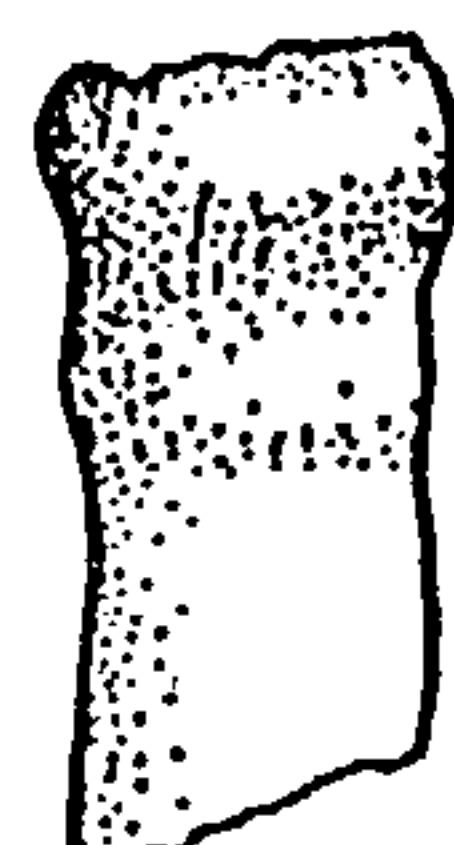
02/84



02/85



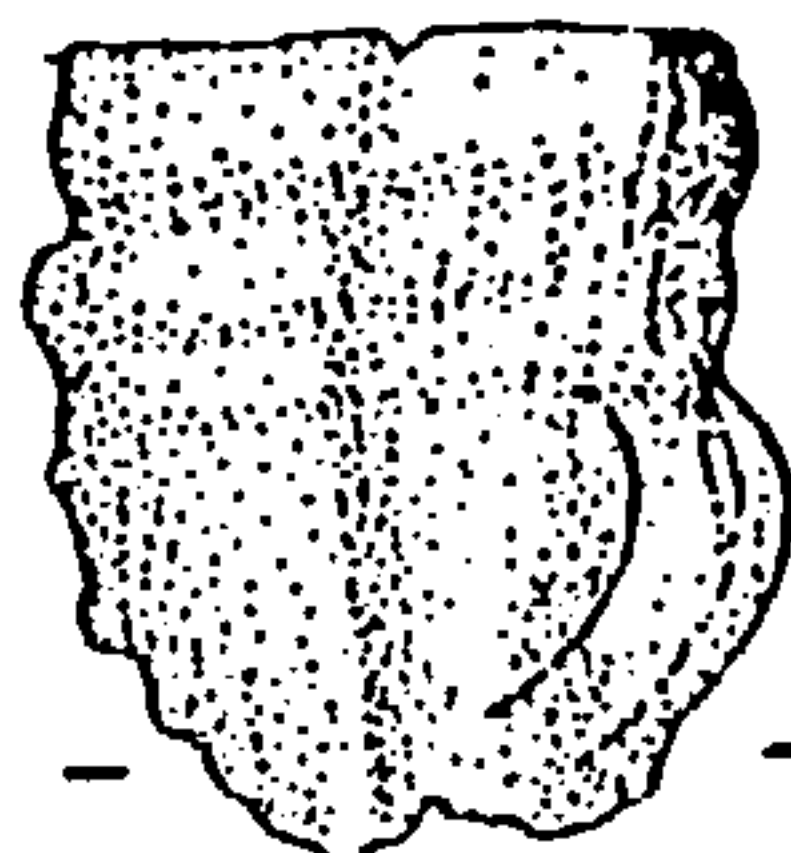
02/86



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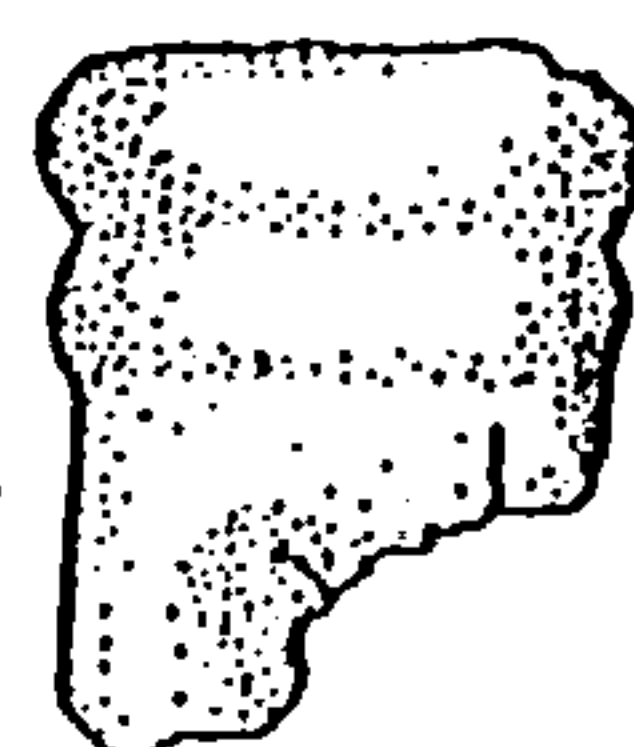


Fig. 13: The Grays Thurrock I Hoard (Ref. No.02): Socketed Axe Fragments (vi)

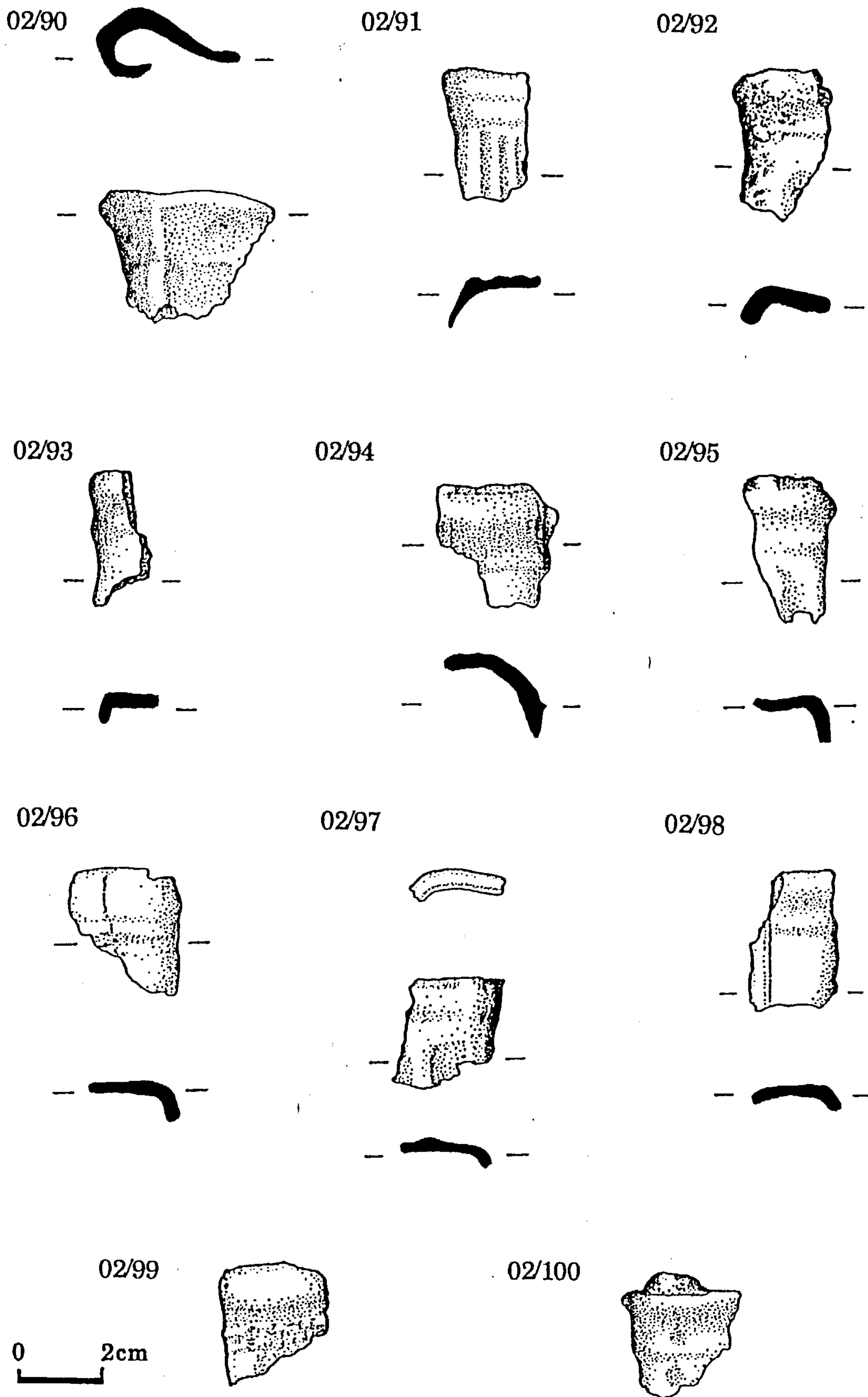
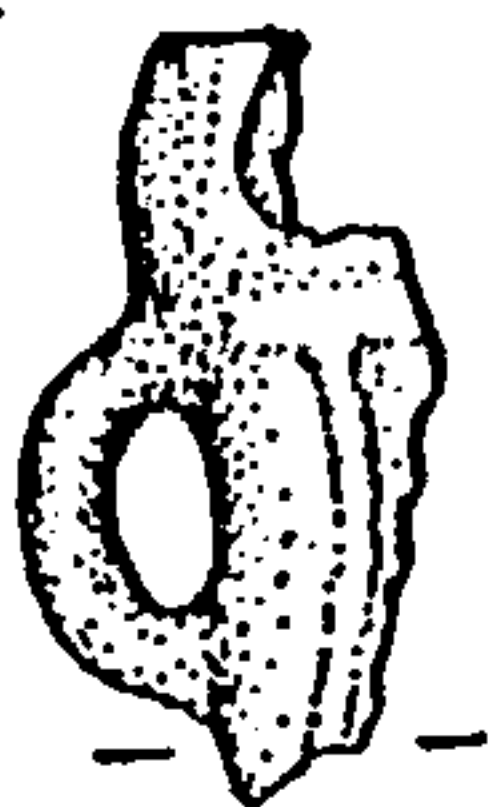
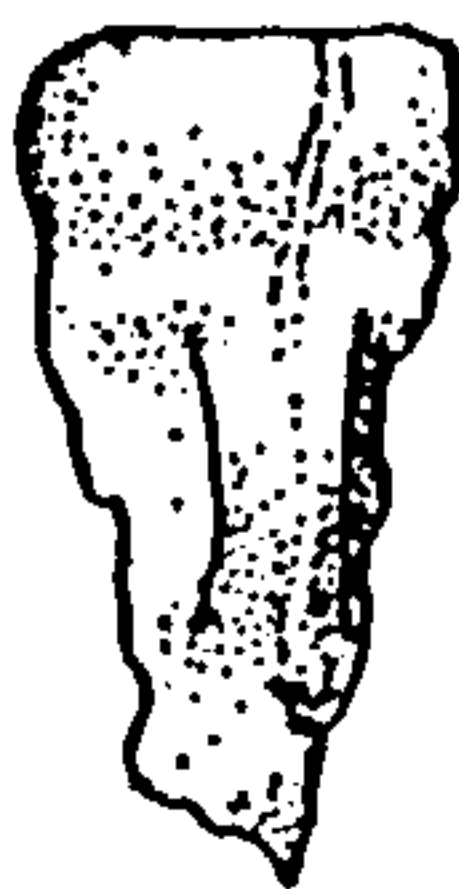


Fig. 14: The Grays Thurrock I Hoard (Ref. No. 02): Socketed Axe Fragments (vii)

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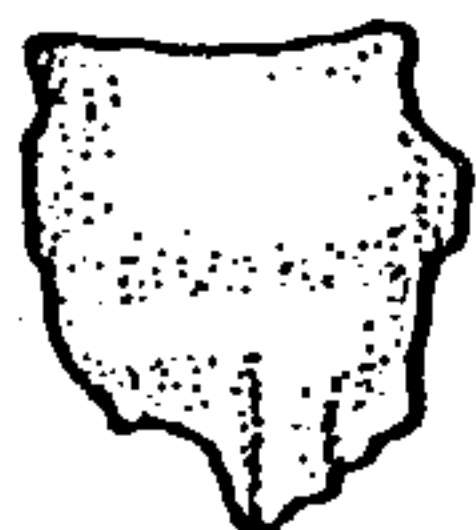
02/105



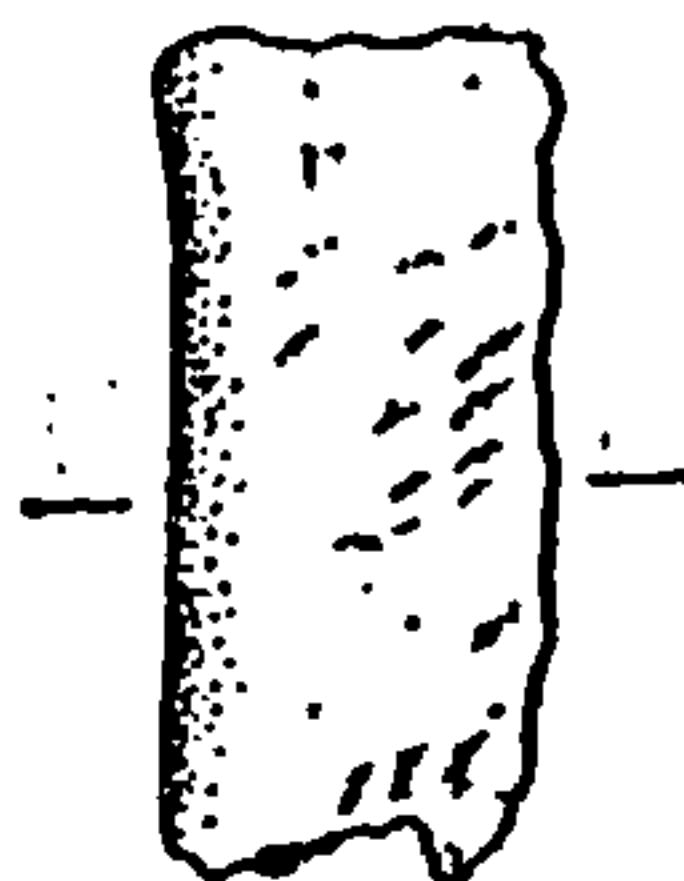
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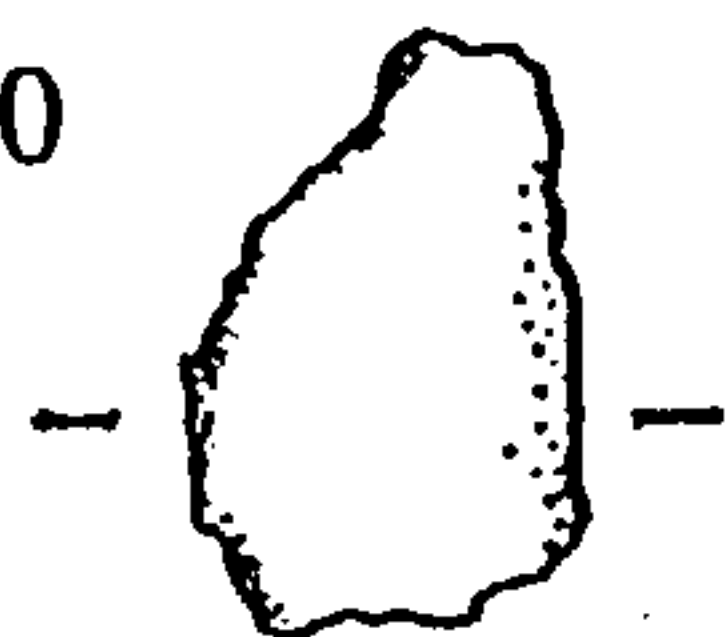
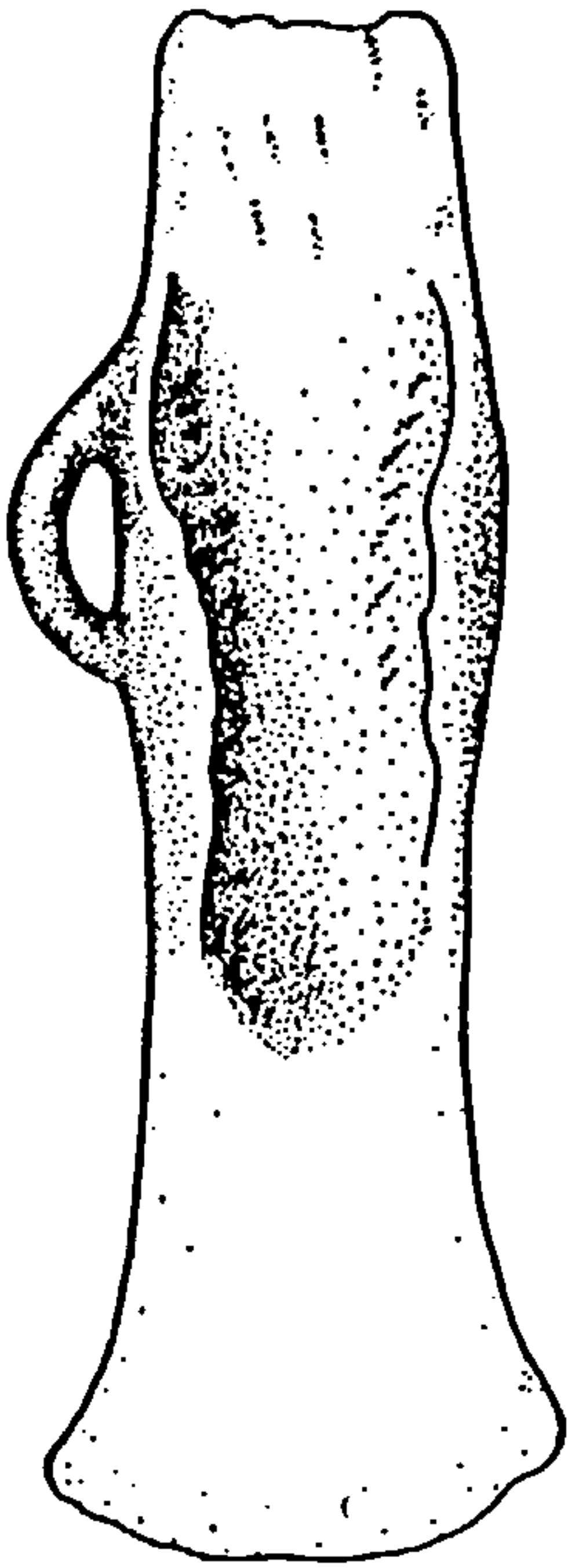
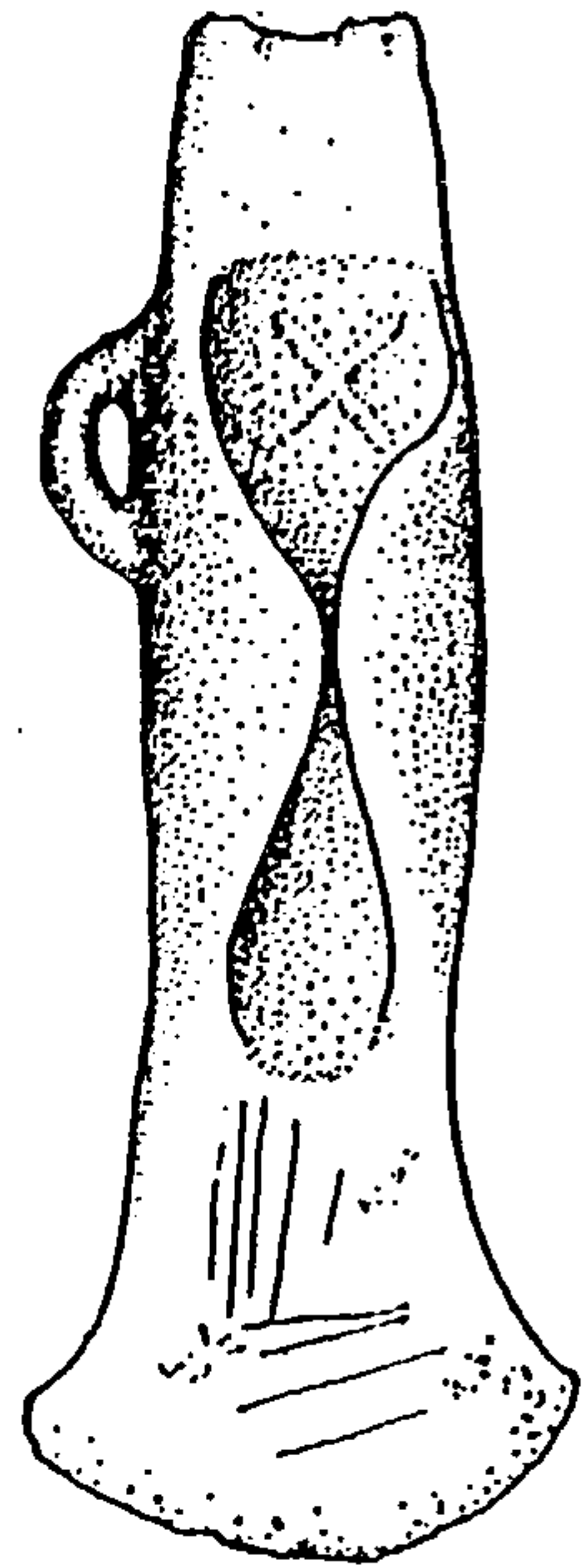


Fig. 15 The Grays Thurrock I Hoard (Ref. No. 02): Socketed Axe Fragments (viii)

02/111



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02/113



02/114



0 2cm

02/115

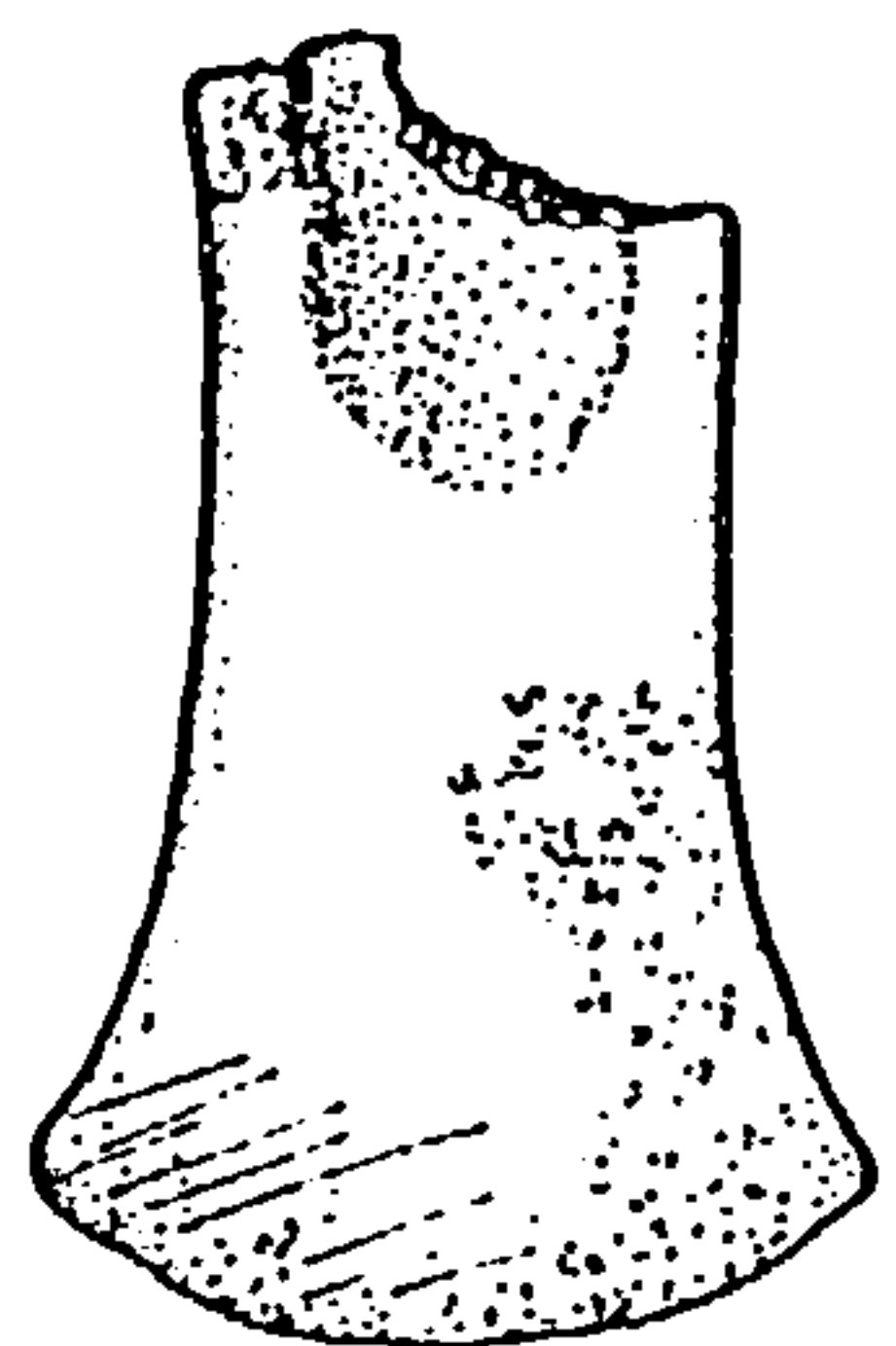
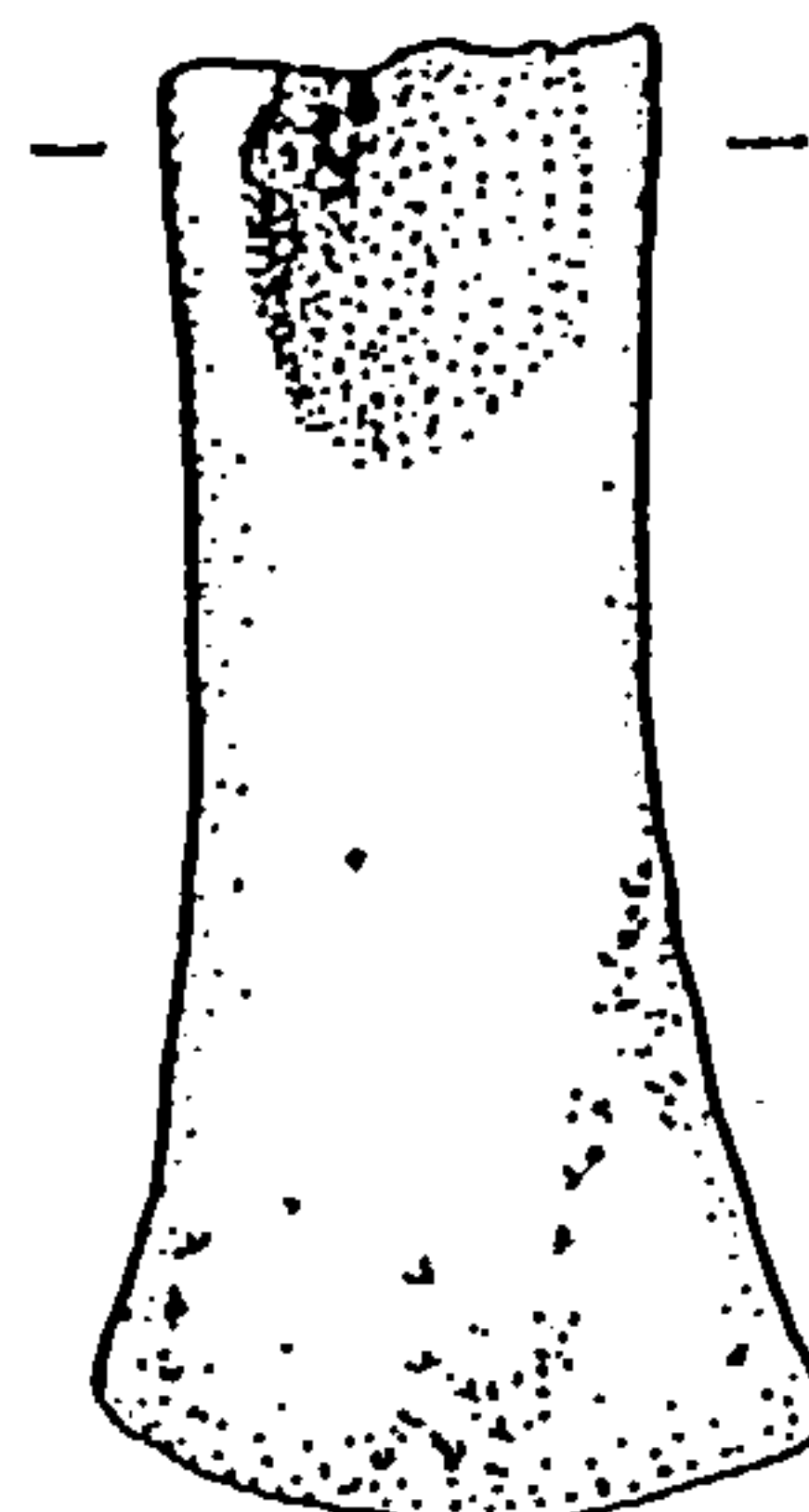
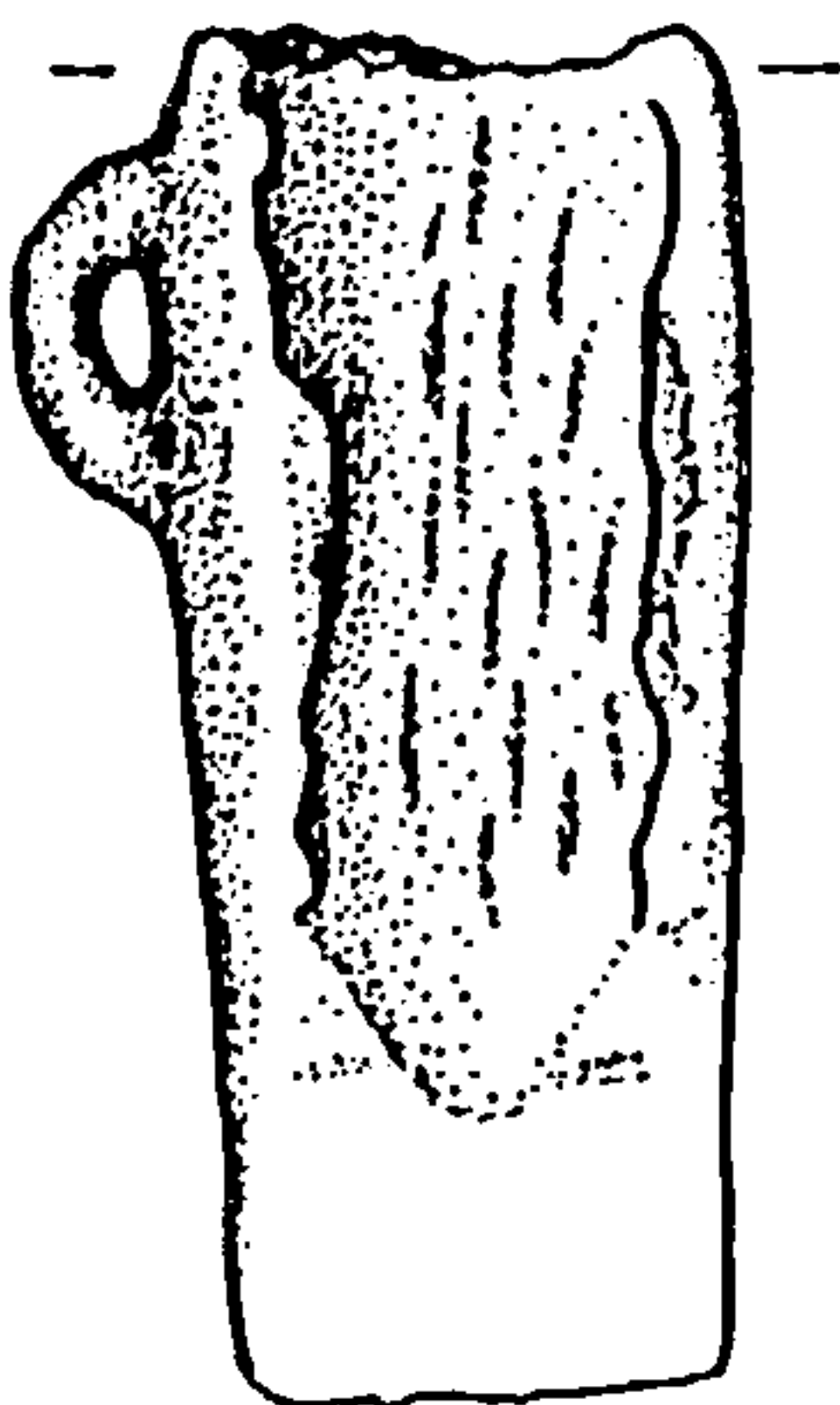
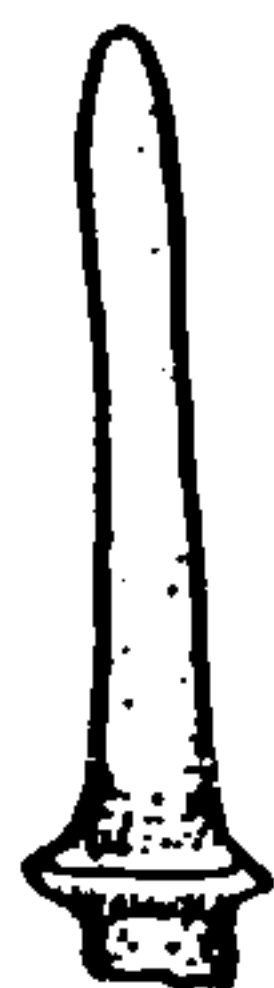
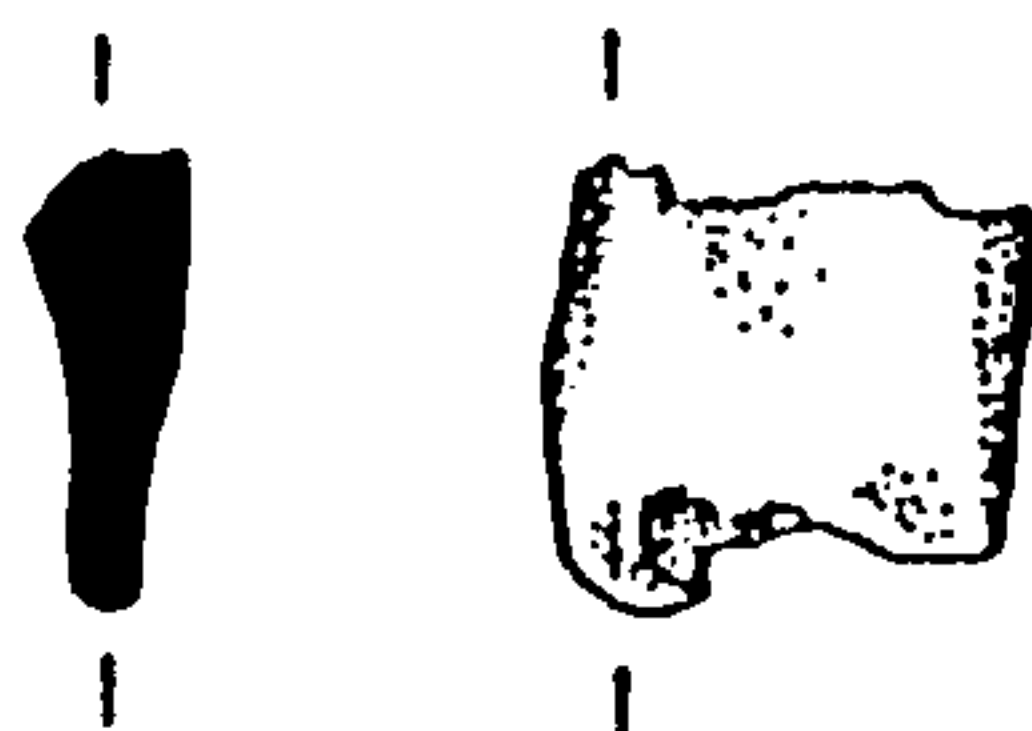


Fig. 16: The Grays Thurrock I Hoard (Ref. No. 02): Winged Axes

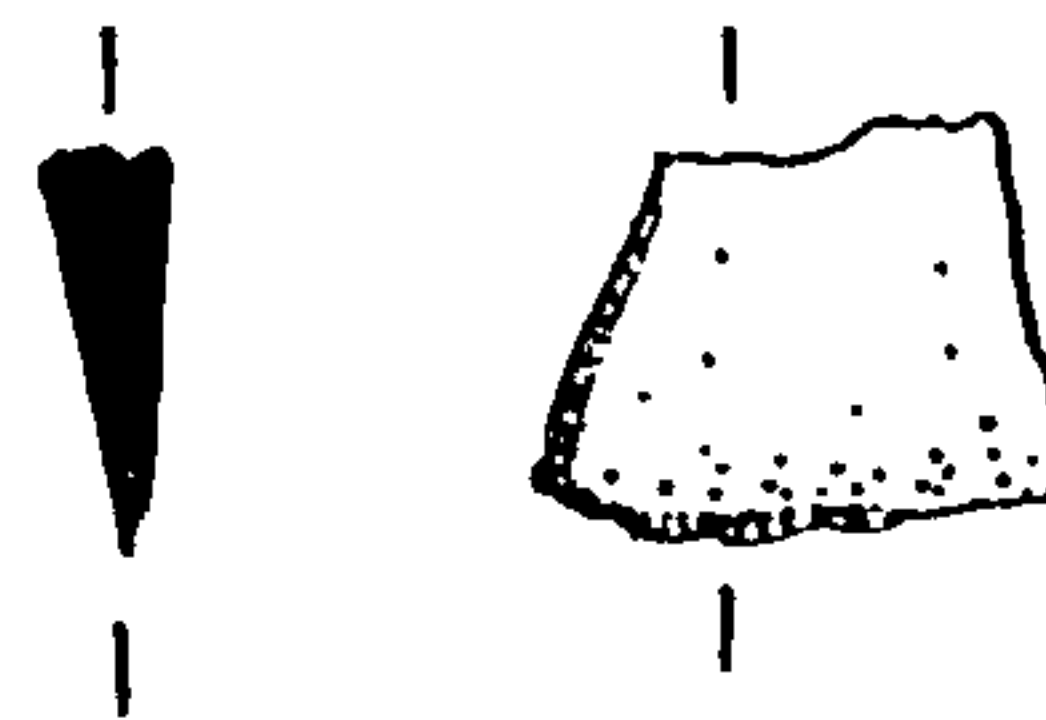
02/116



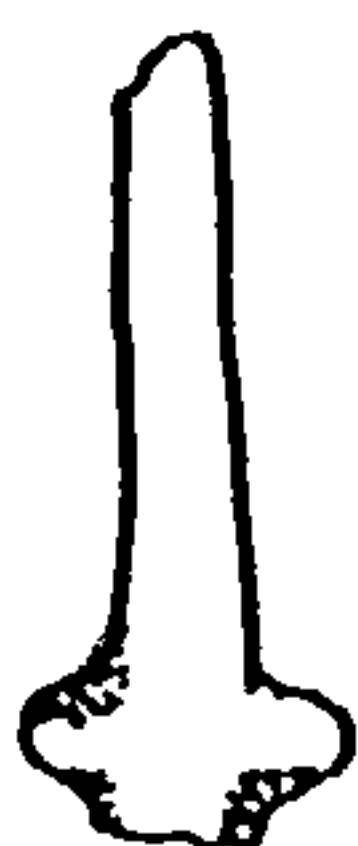
02/117



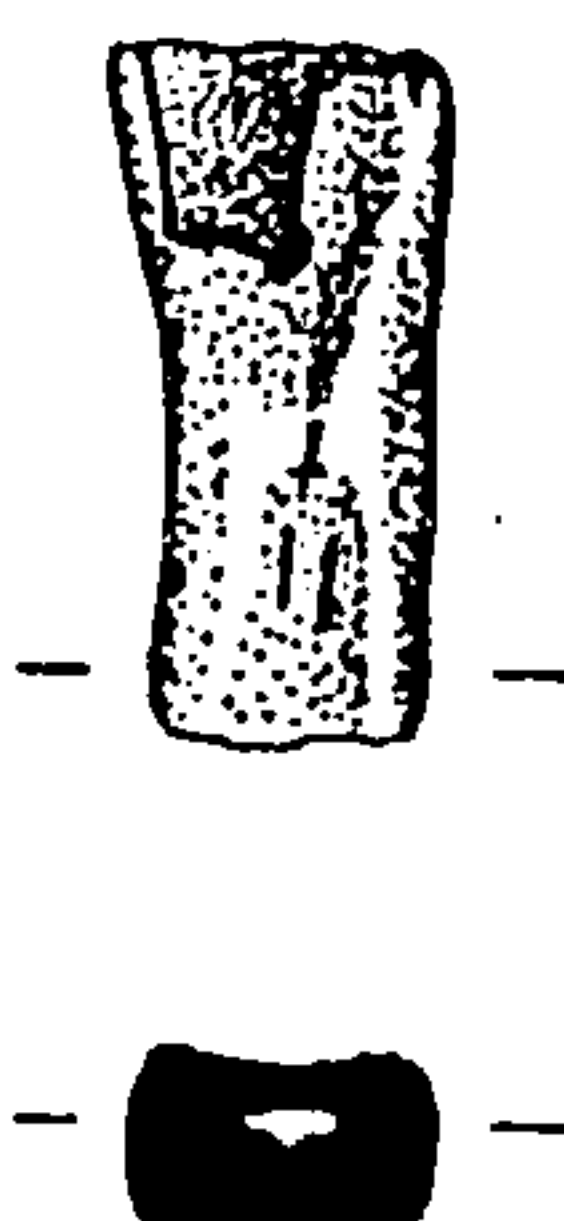
02/118



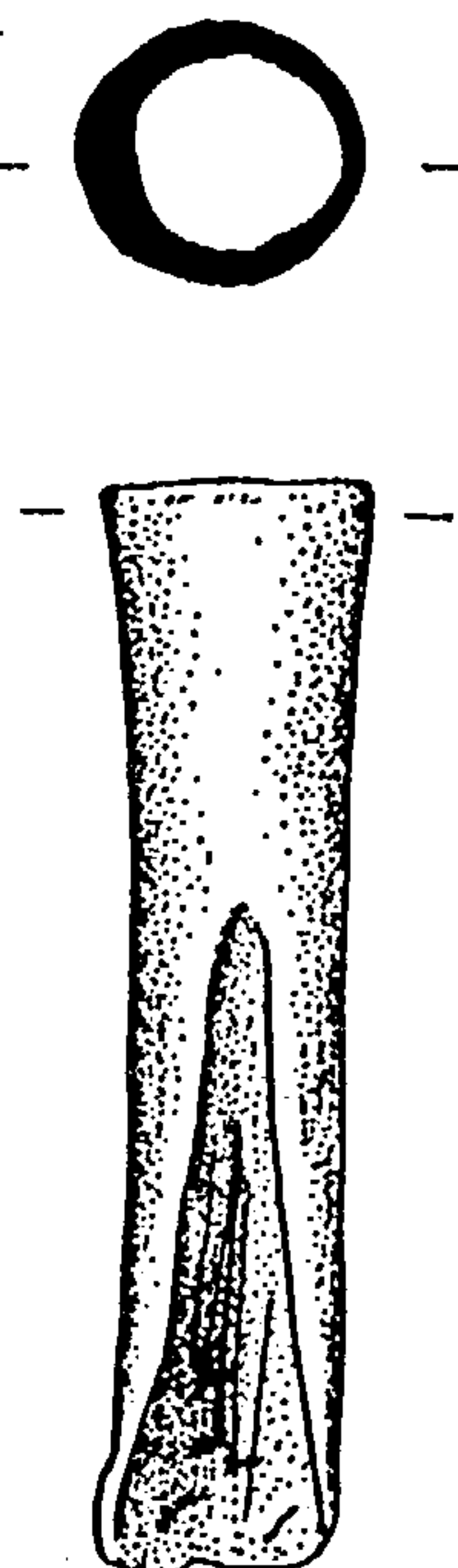
02/119



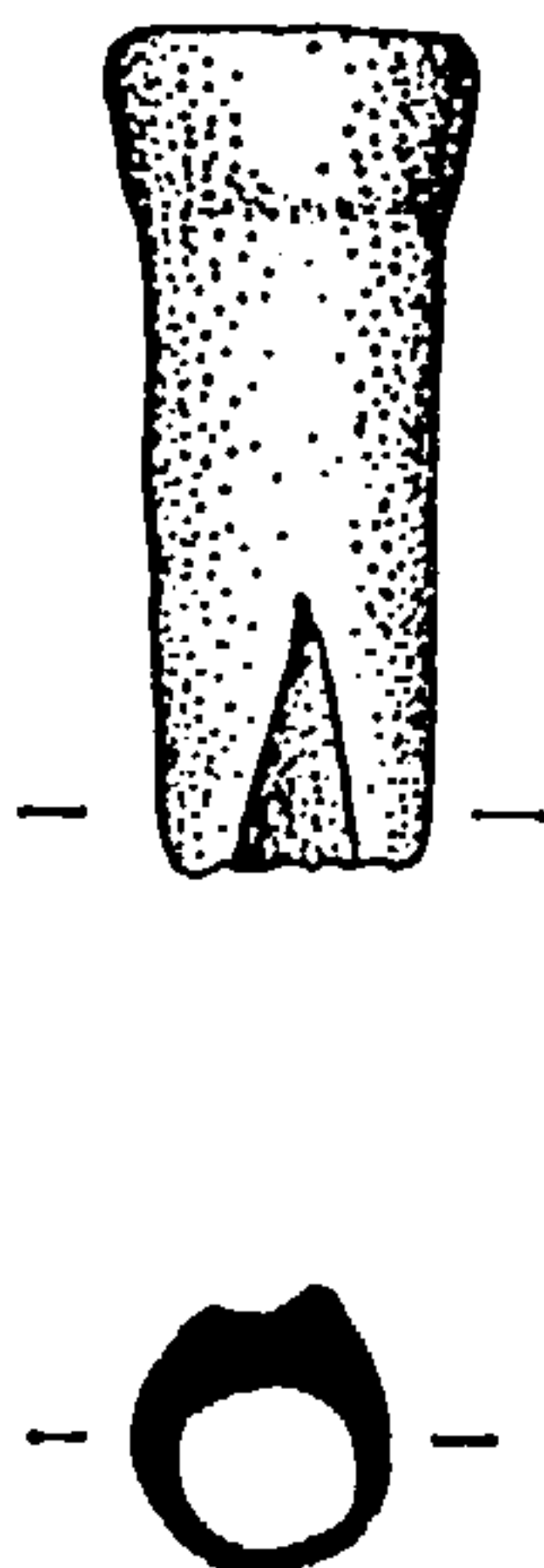
02/120



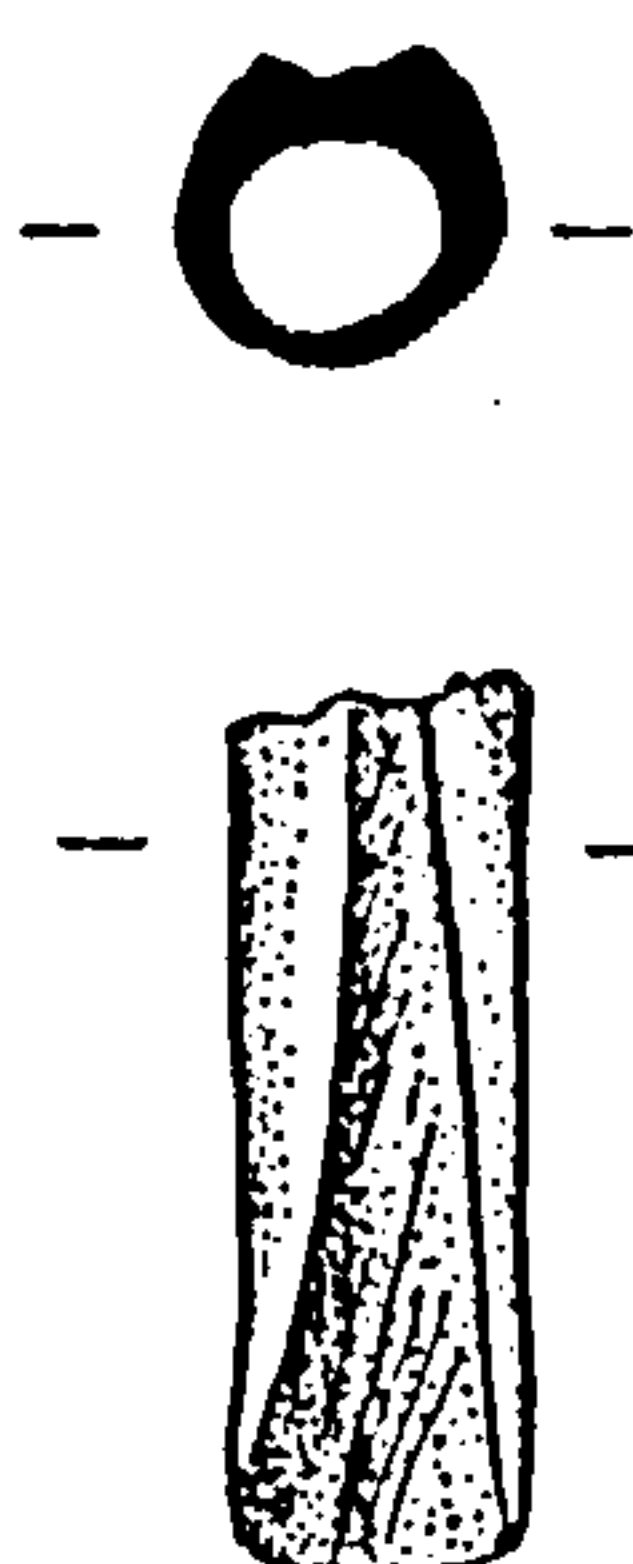
02/121



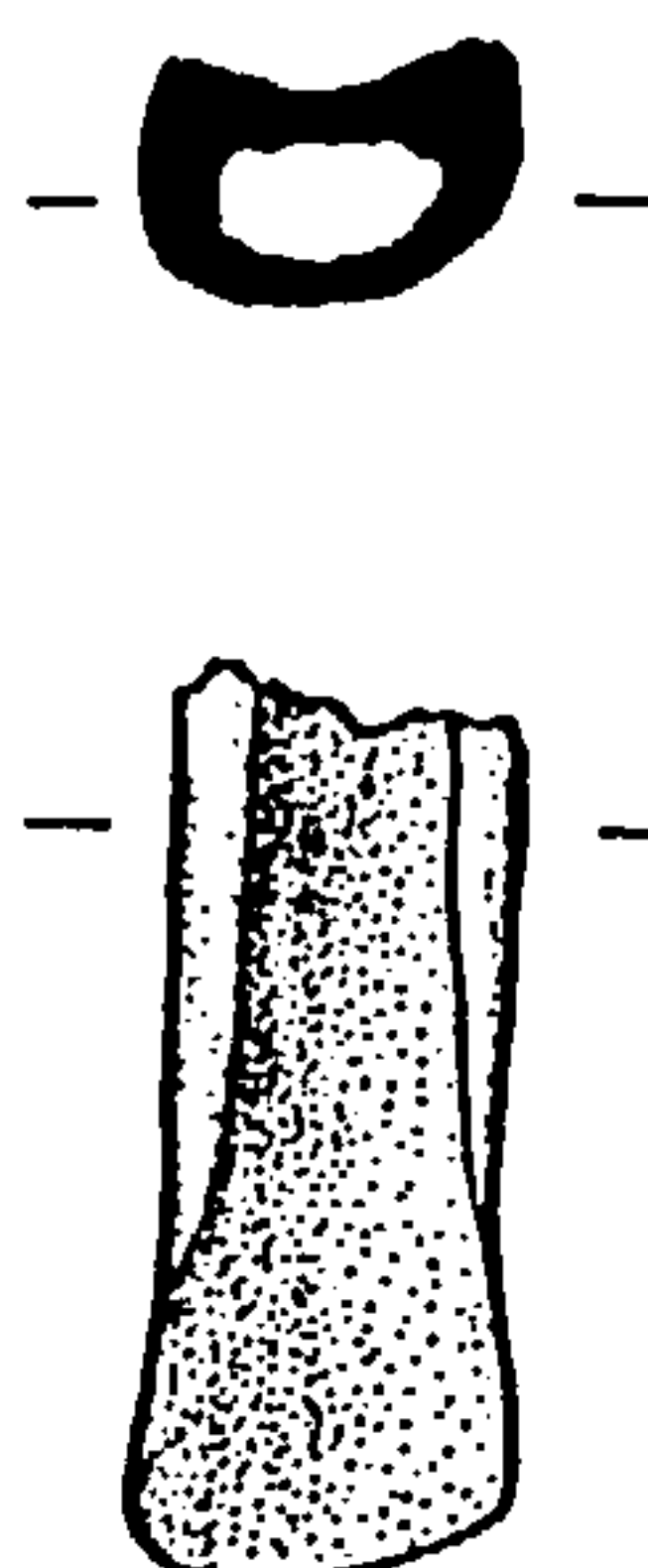
02/122



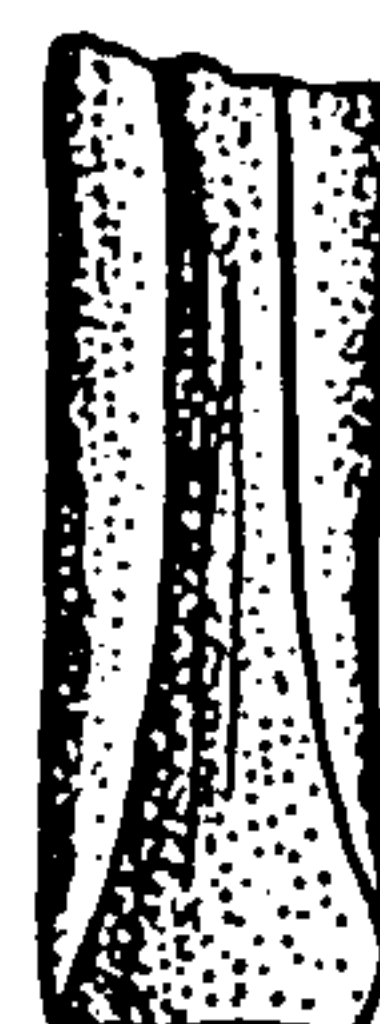
02/123



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02/125



0 2cm

Fig. 17: The Grays Thurrock I Hoard (Ref. No. 02): Chisels and Gouges

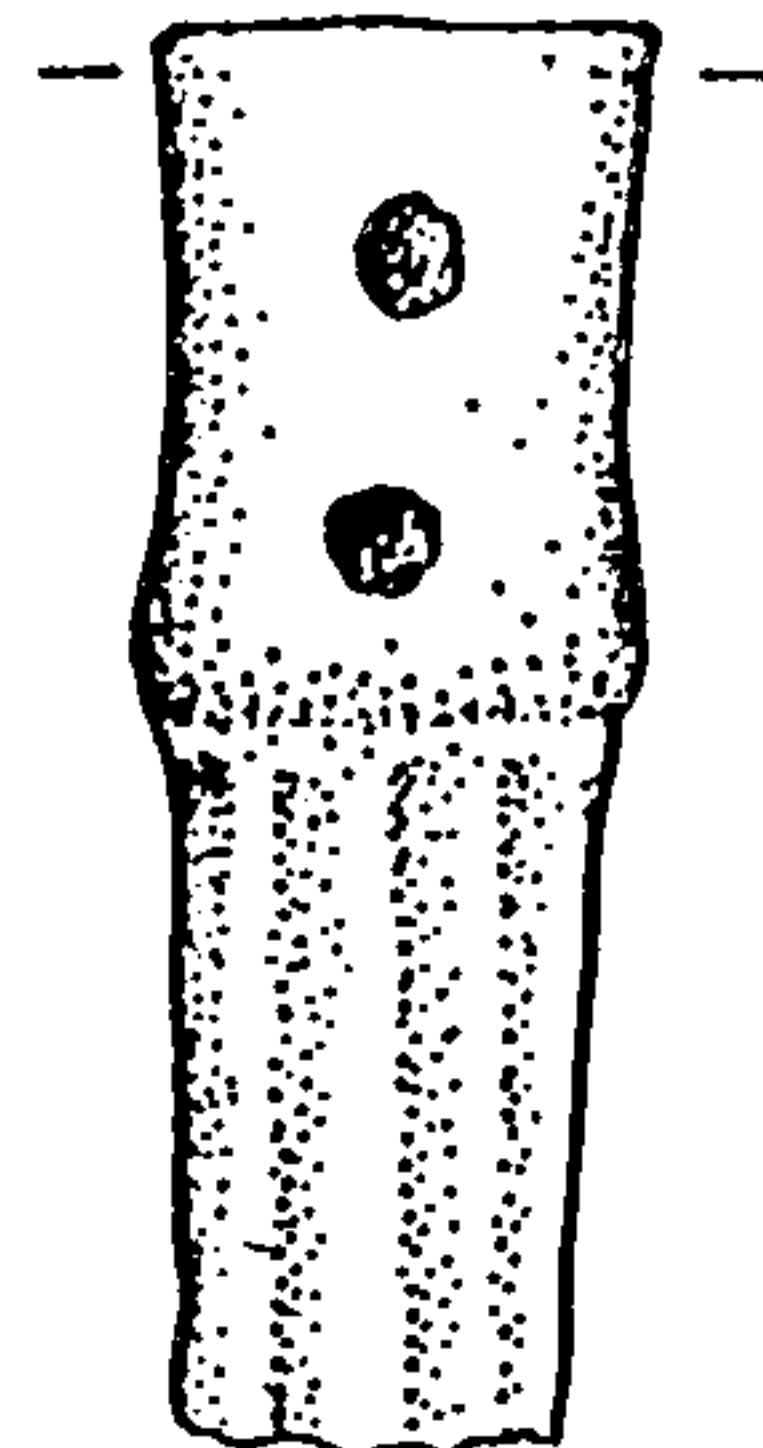
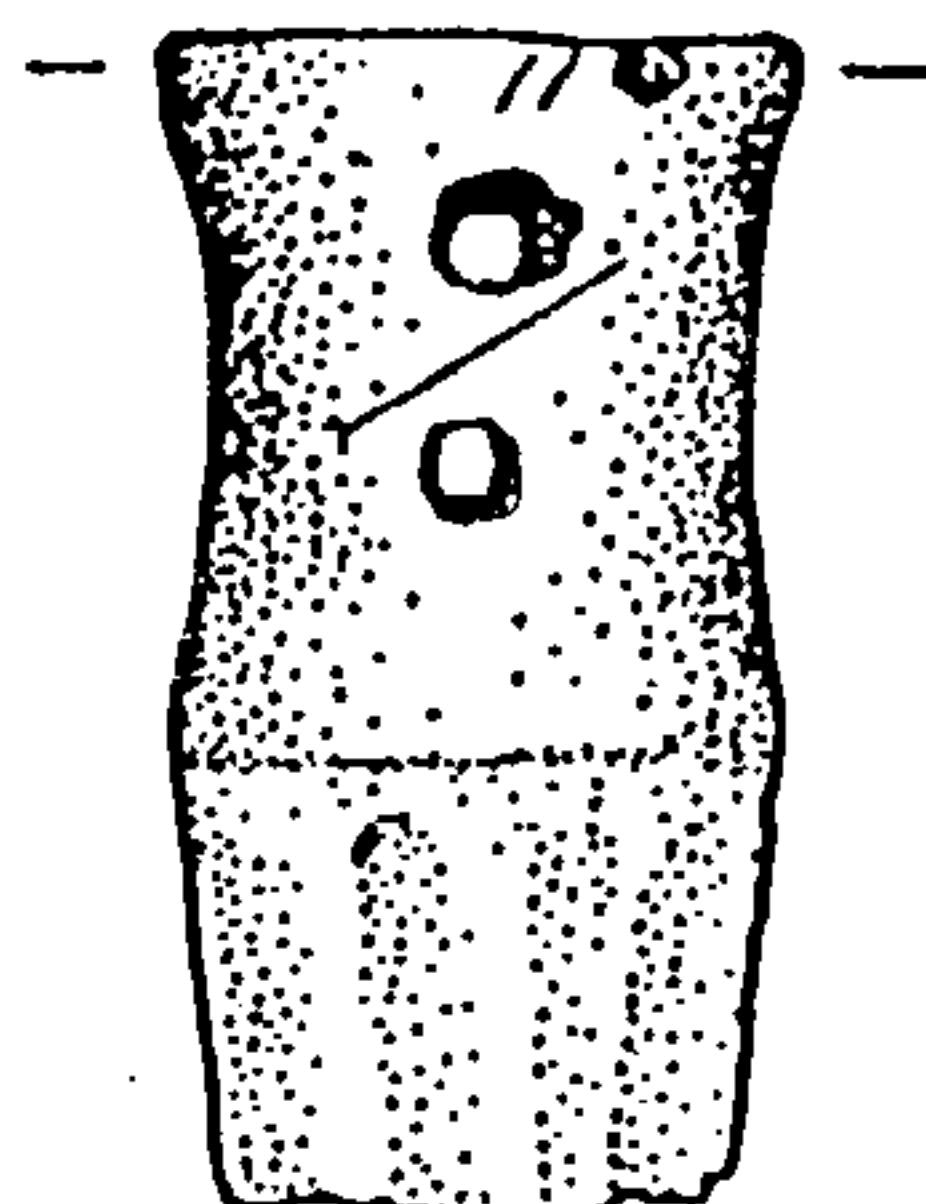
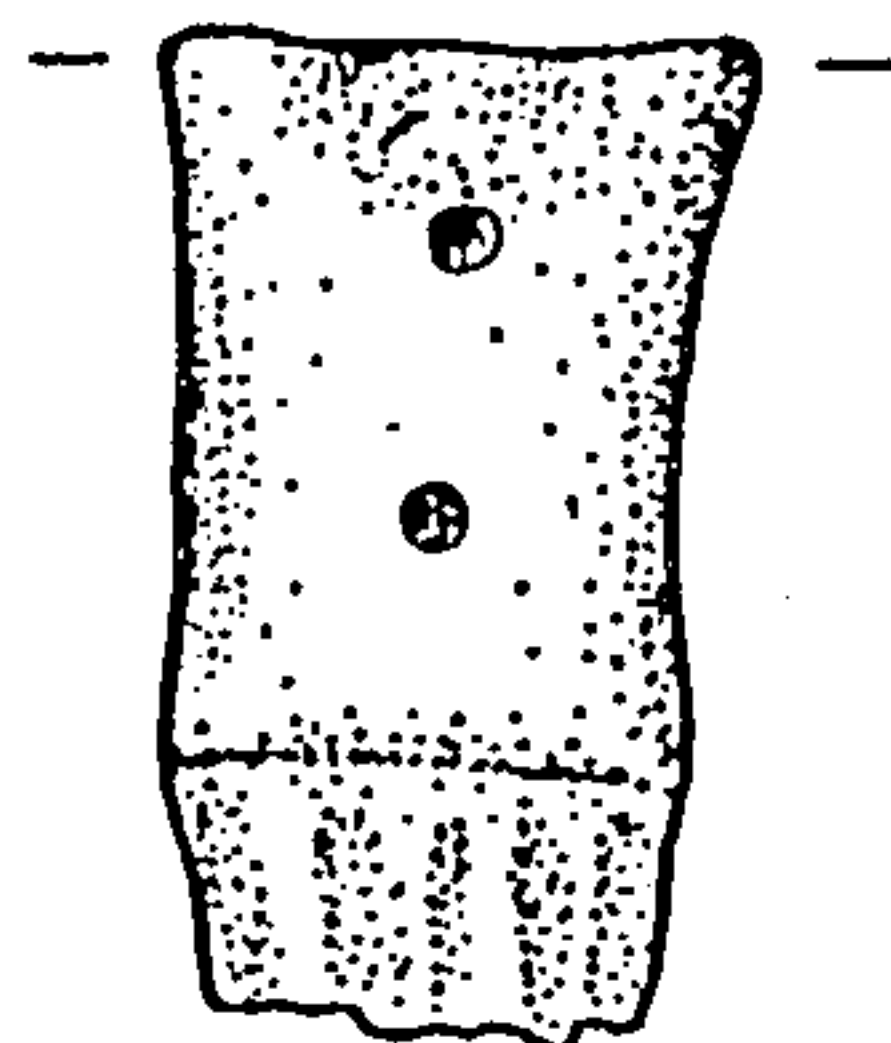
02/126



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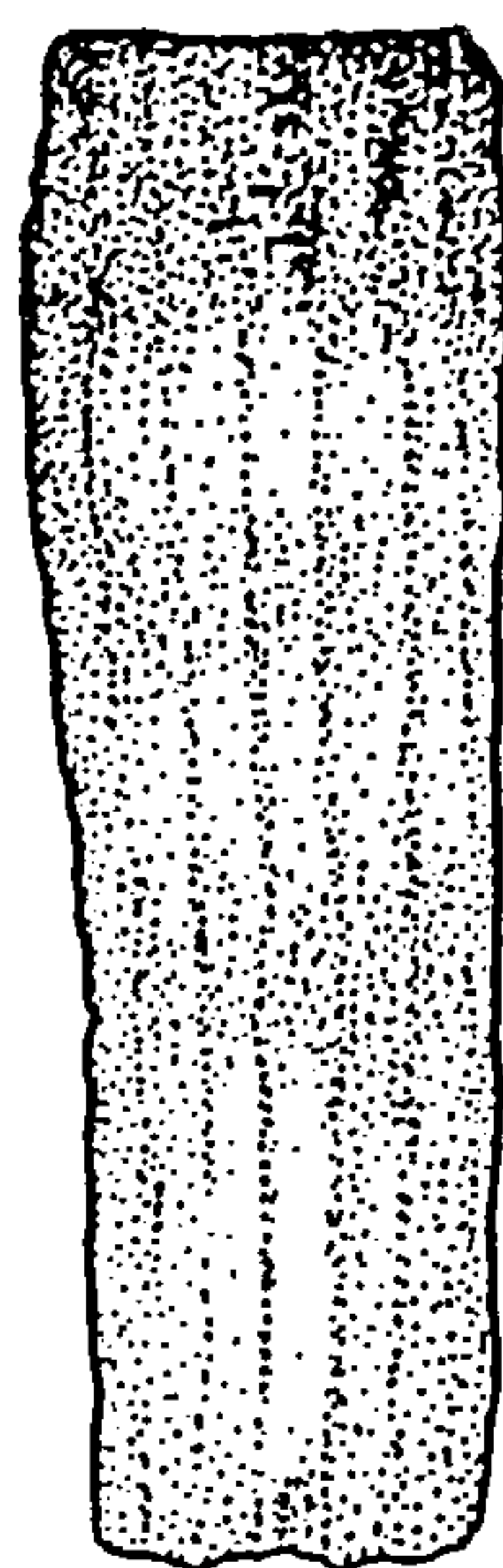
02/128



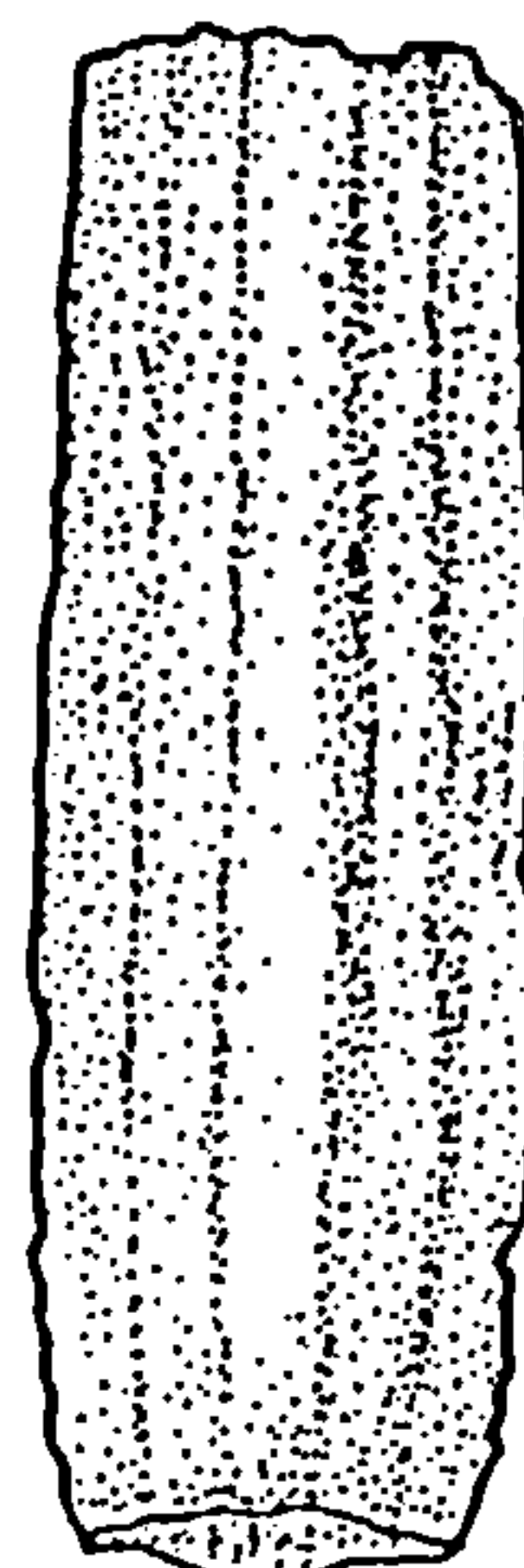
02/129



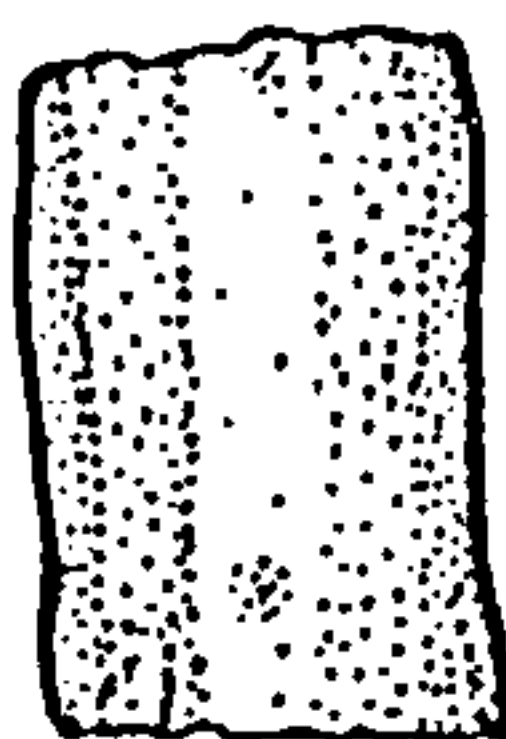
02/130



02/131



02/132



0 2cm

Fig. 18: The Grays Thurrock I Hoard (Ref. No. 02): Socketed Knives

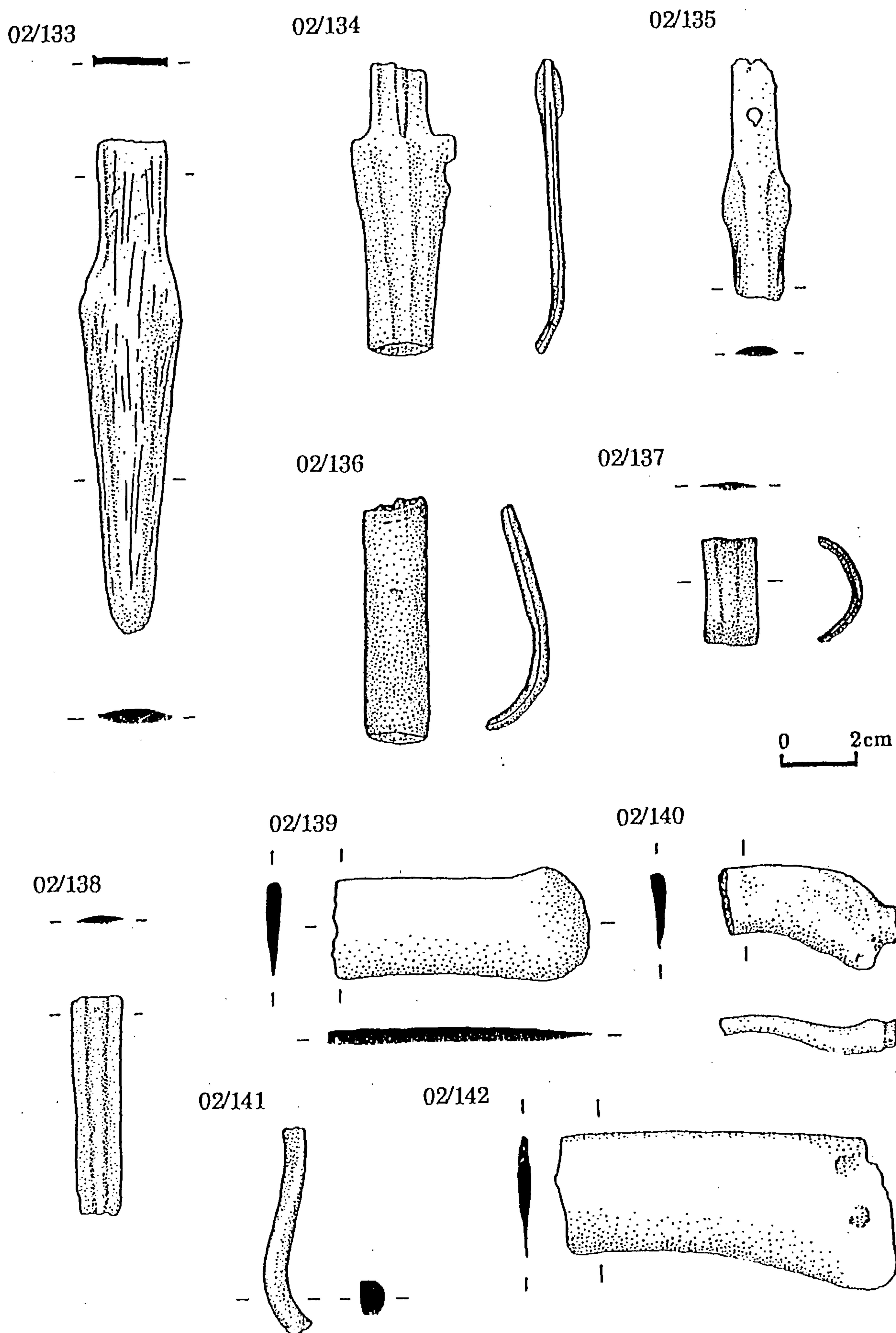
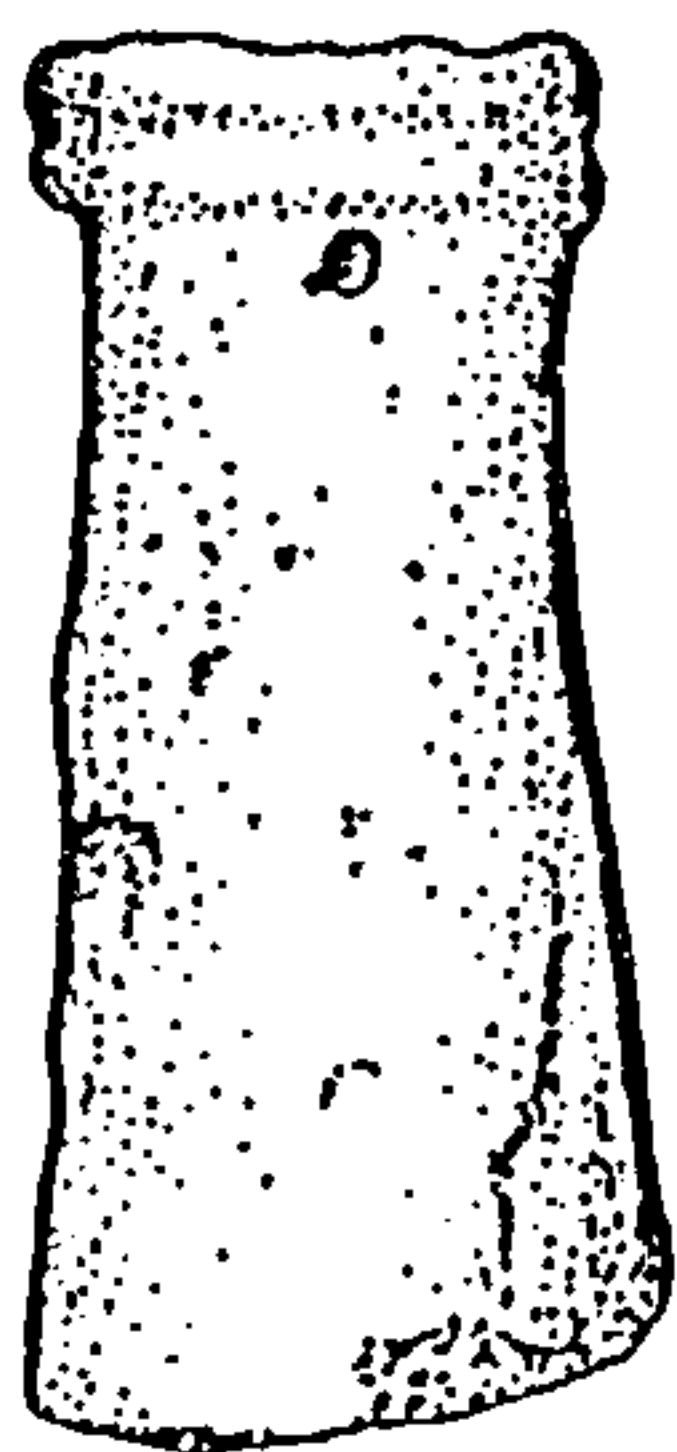


Fig. 19: The Grays Thurrock I Hoard (Ref. No. 02): Tanged Knives and Sickles

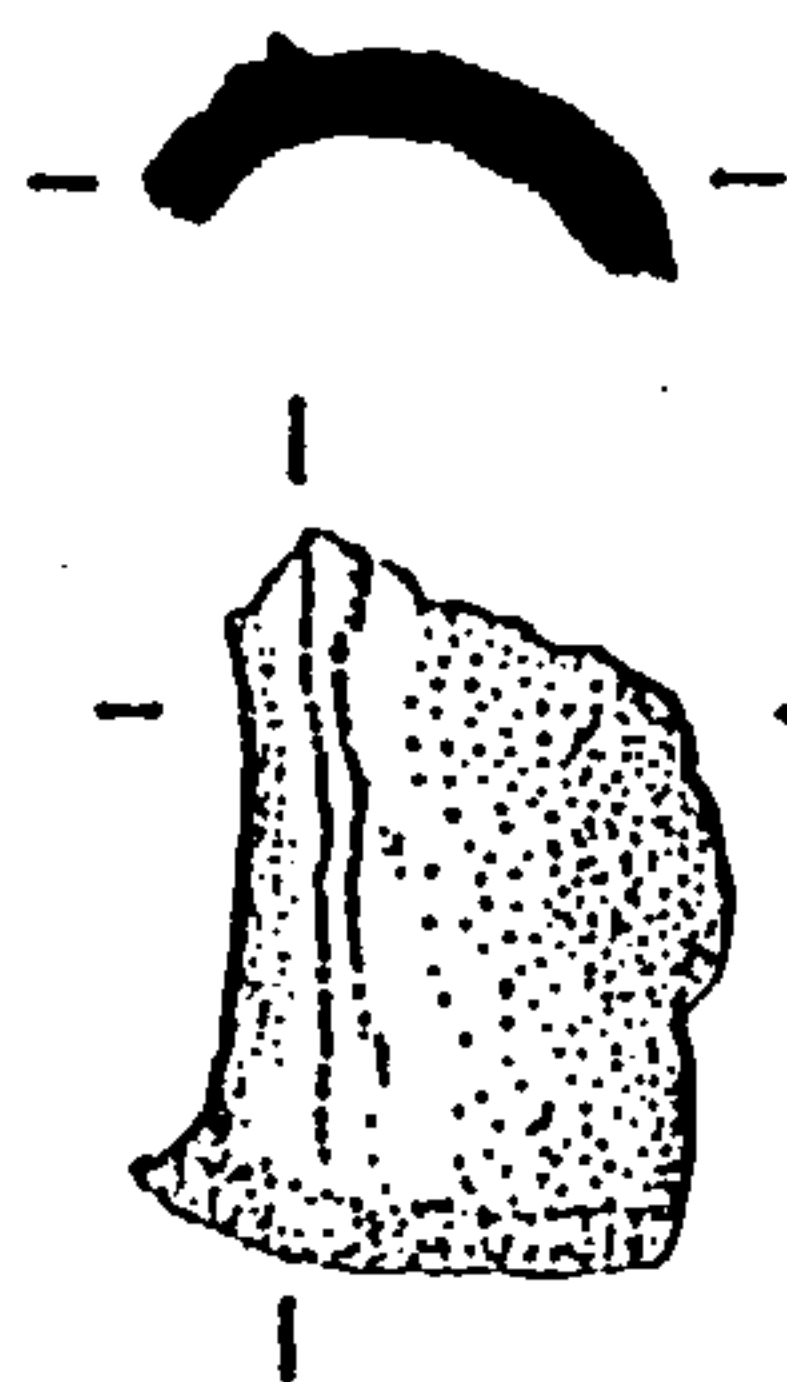
02/143



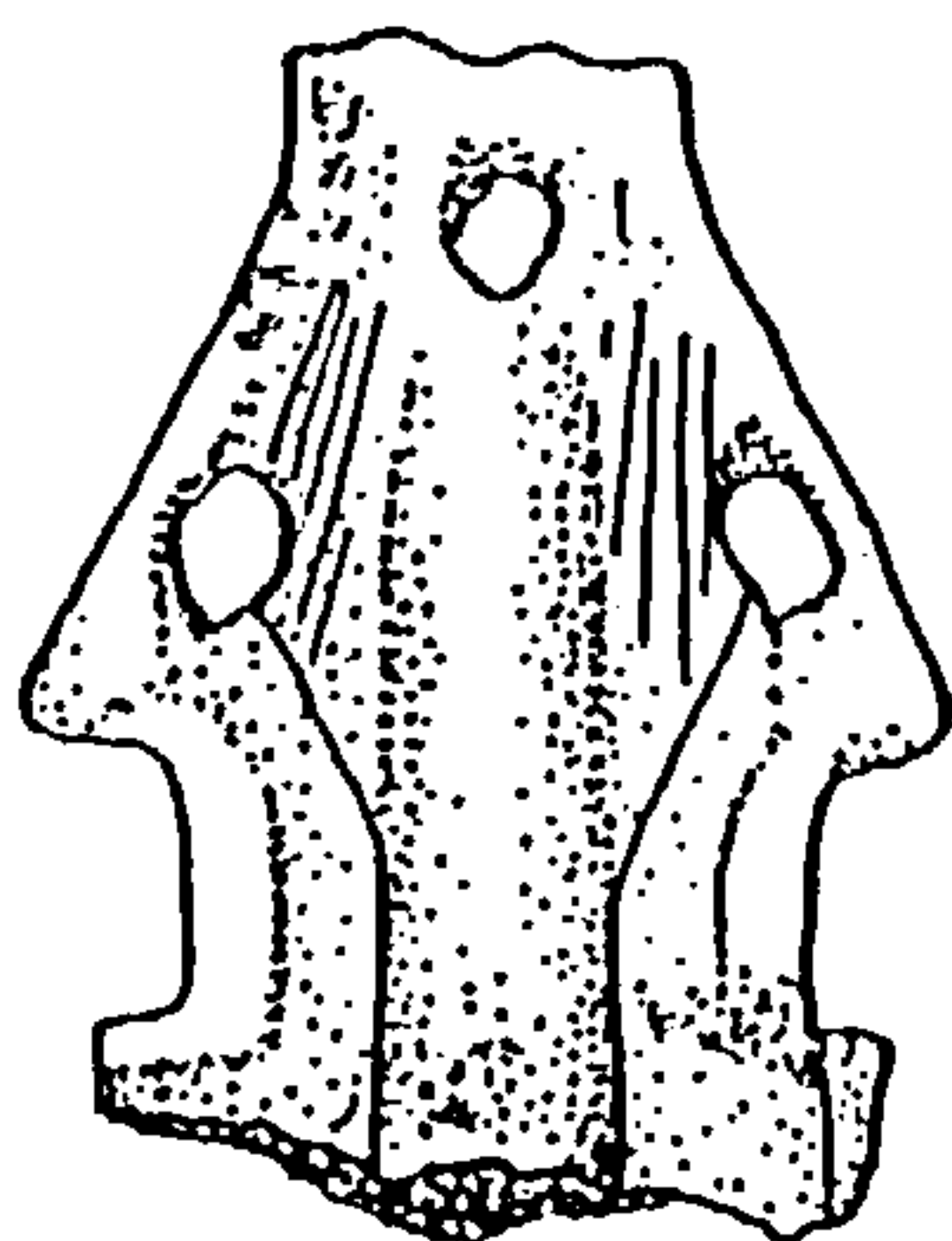
02/144



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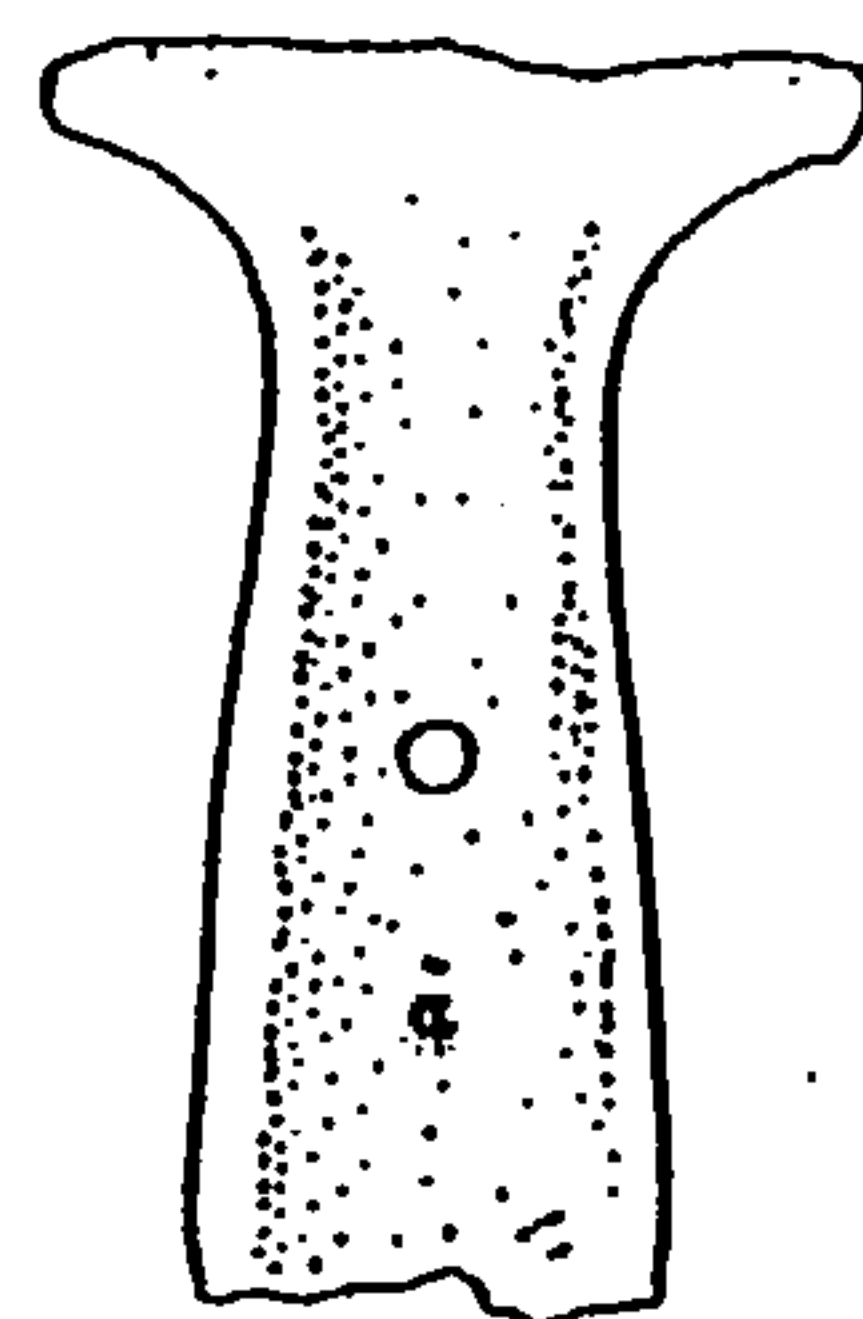
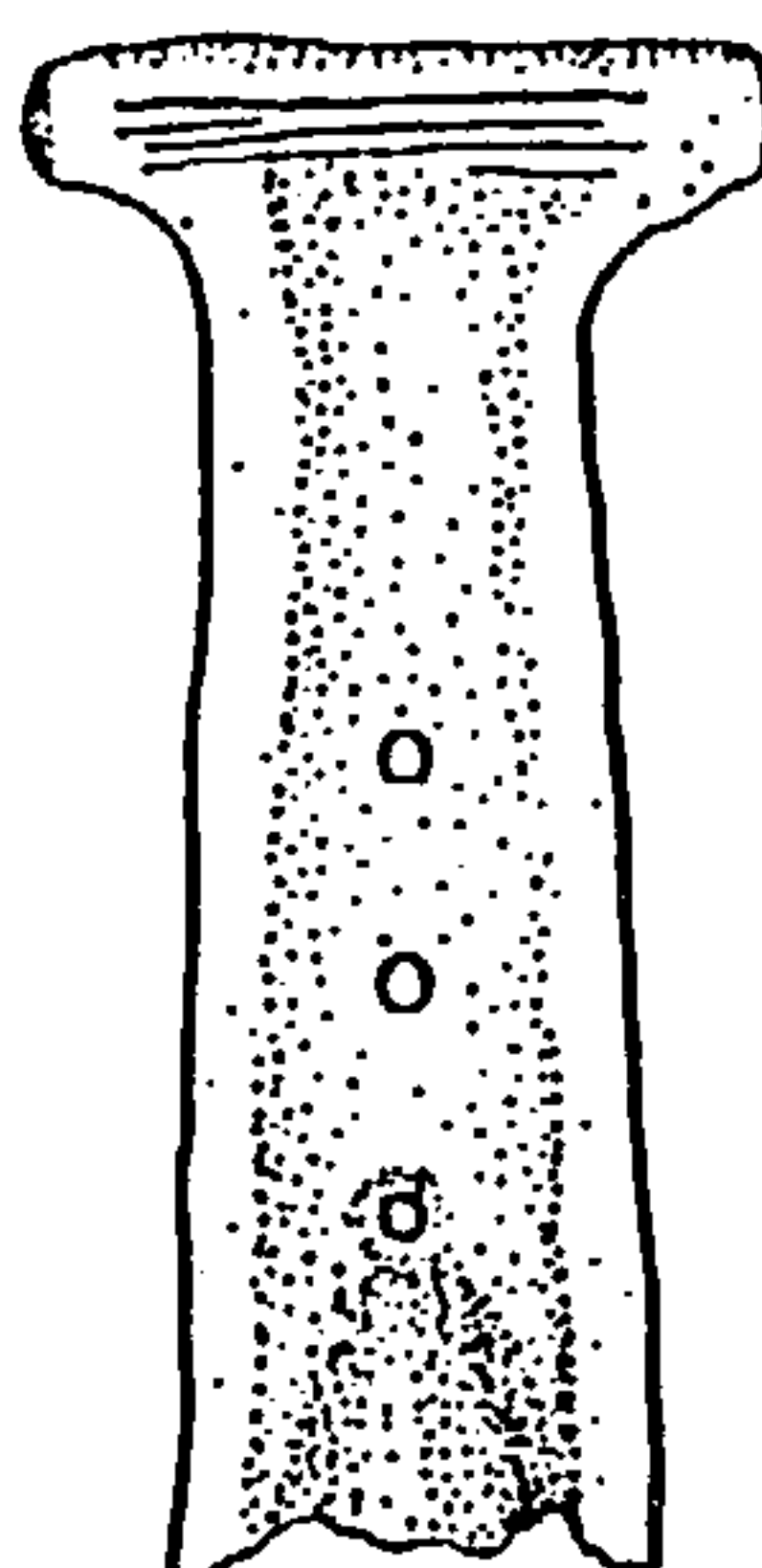
02/146



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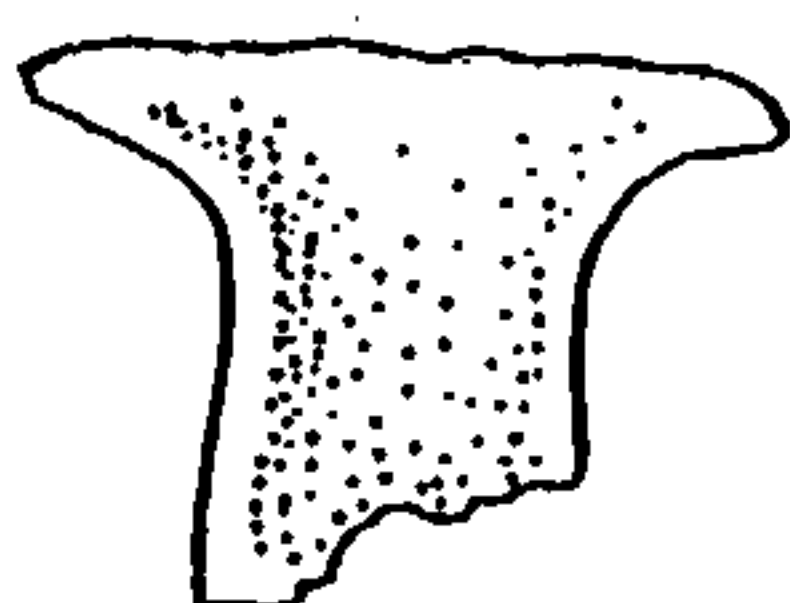


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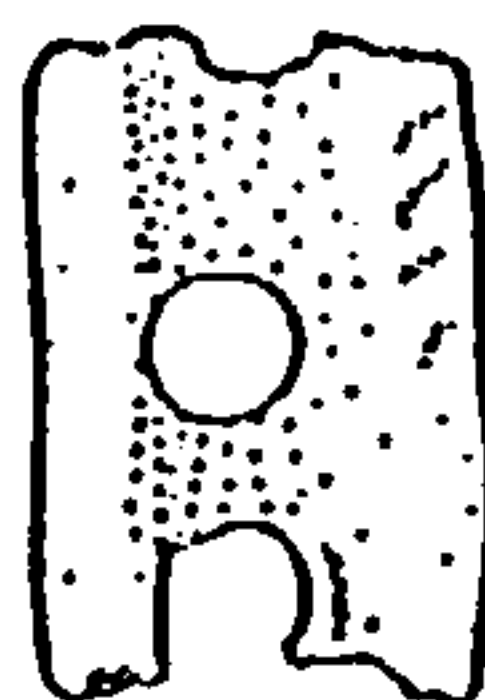


0 2cm

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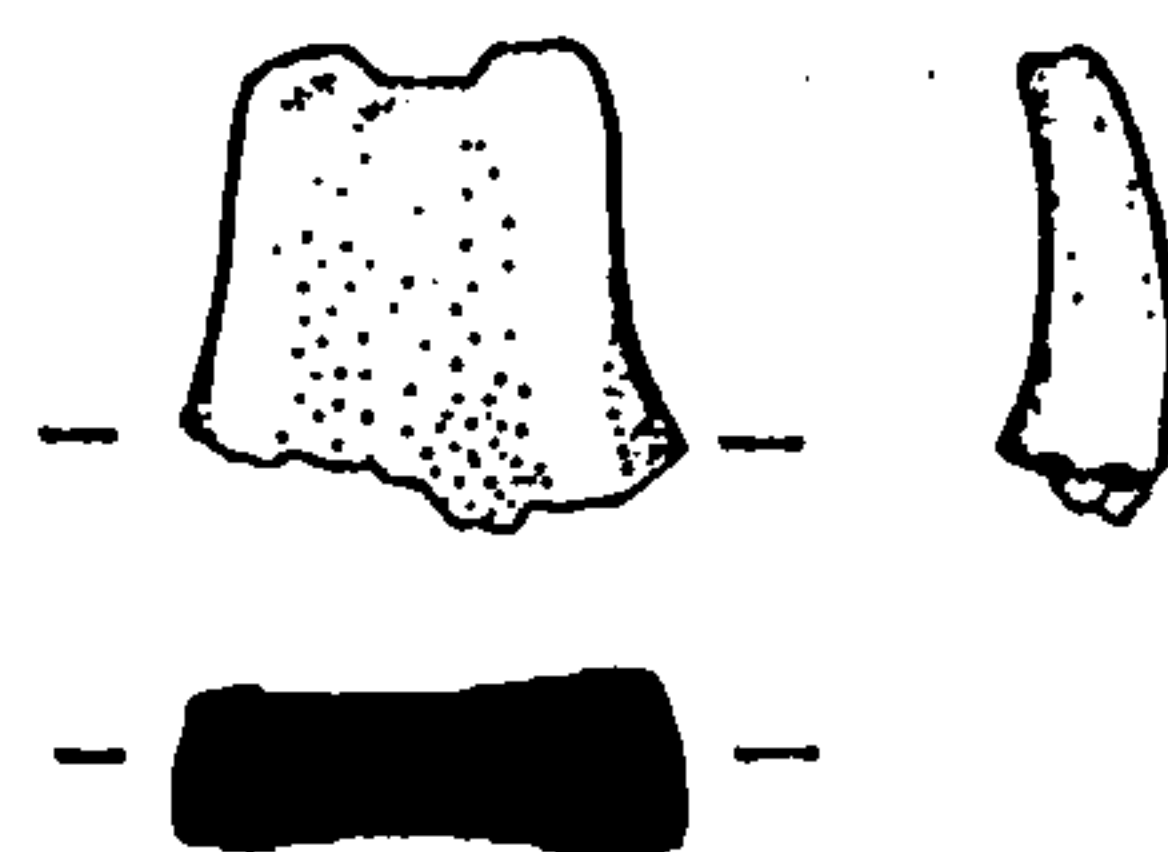
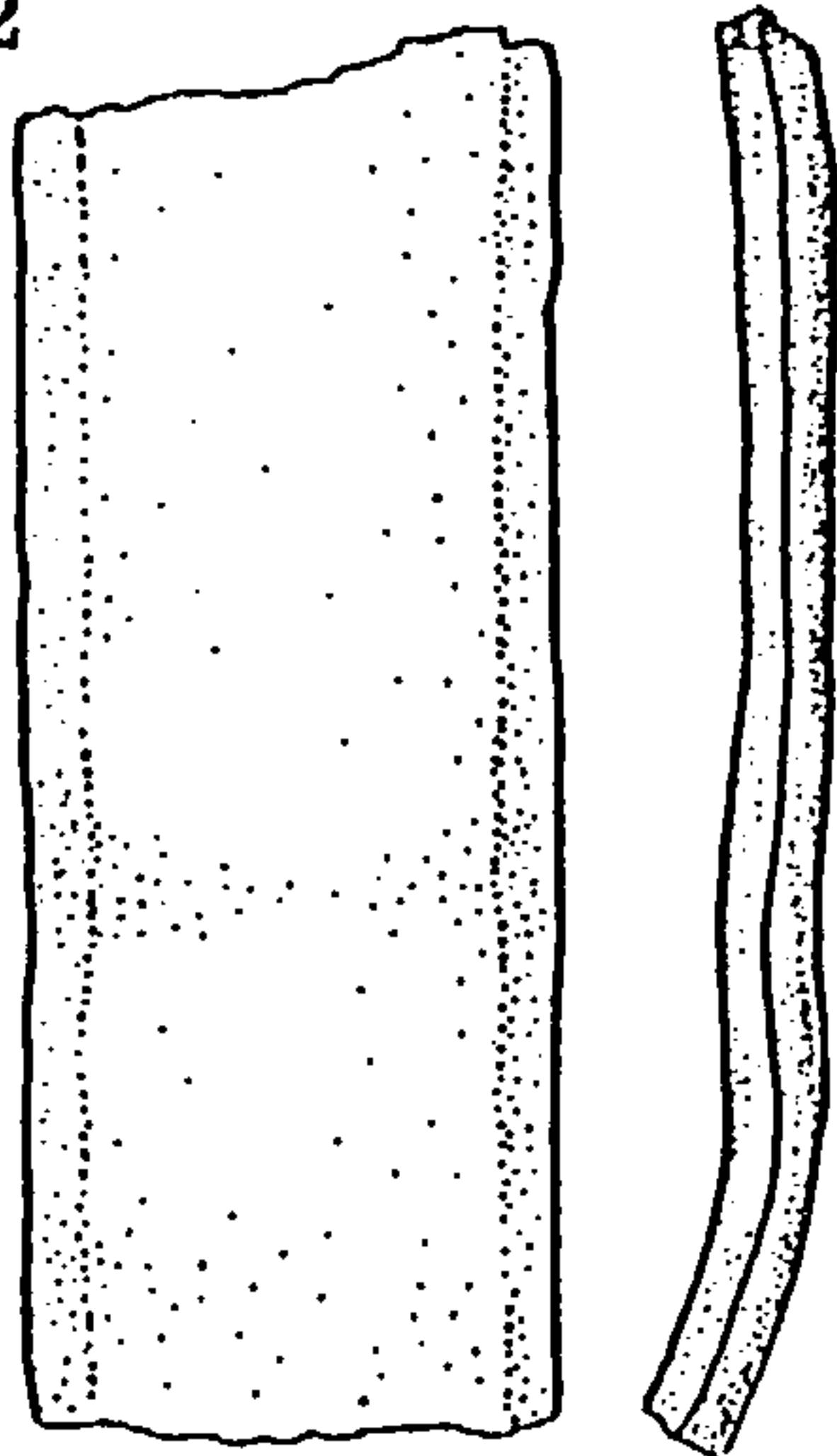
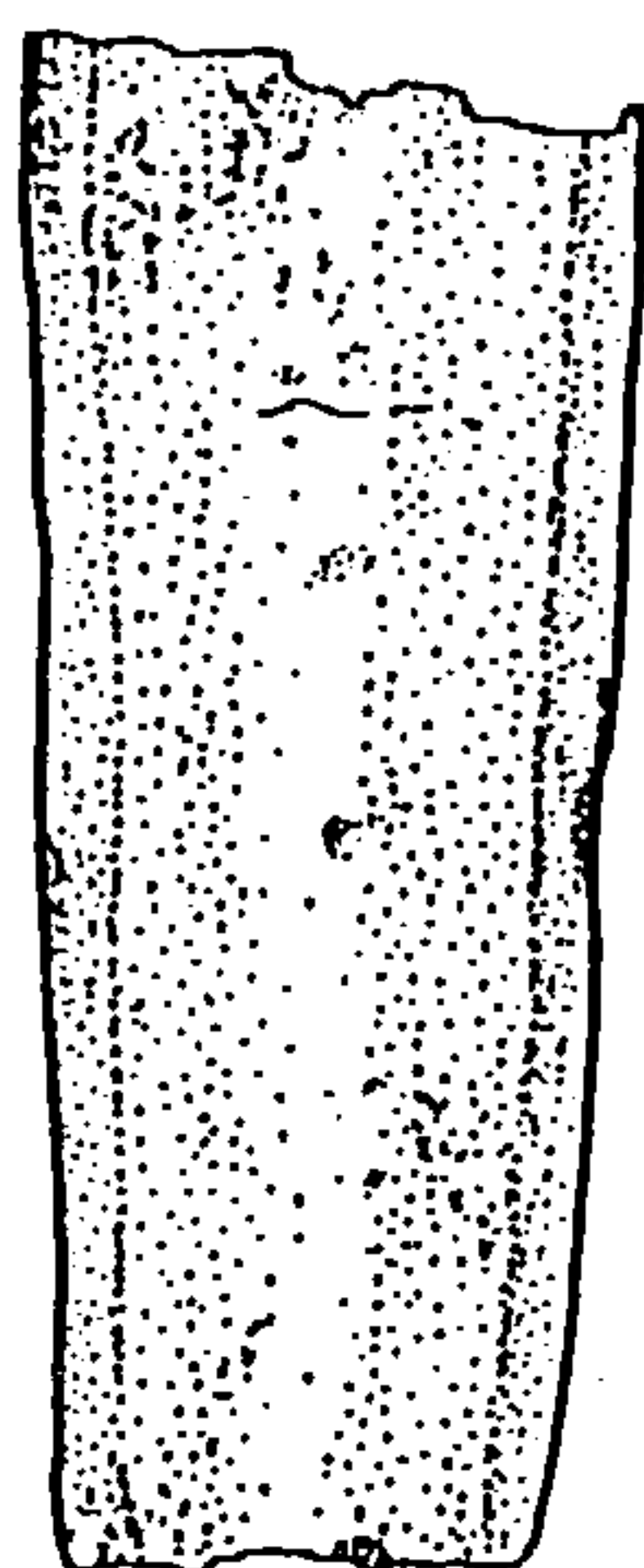


Fig. 20: The Grays Thurrock I Hoard (Ref. No. 02): Socketed Hammers and Sword Hilt Fragments

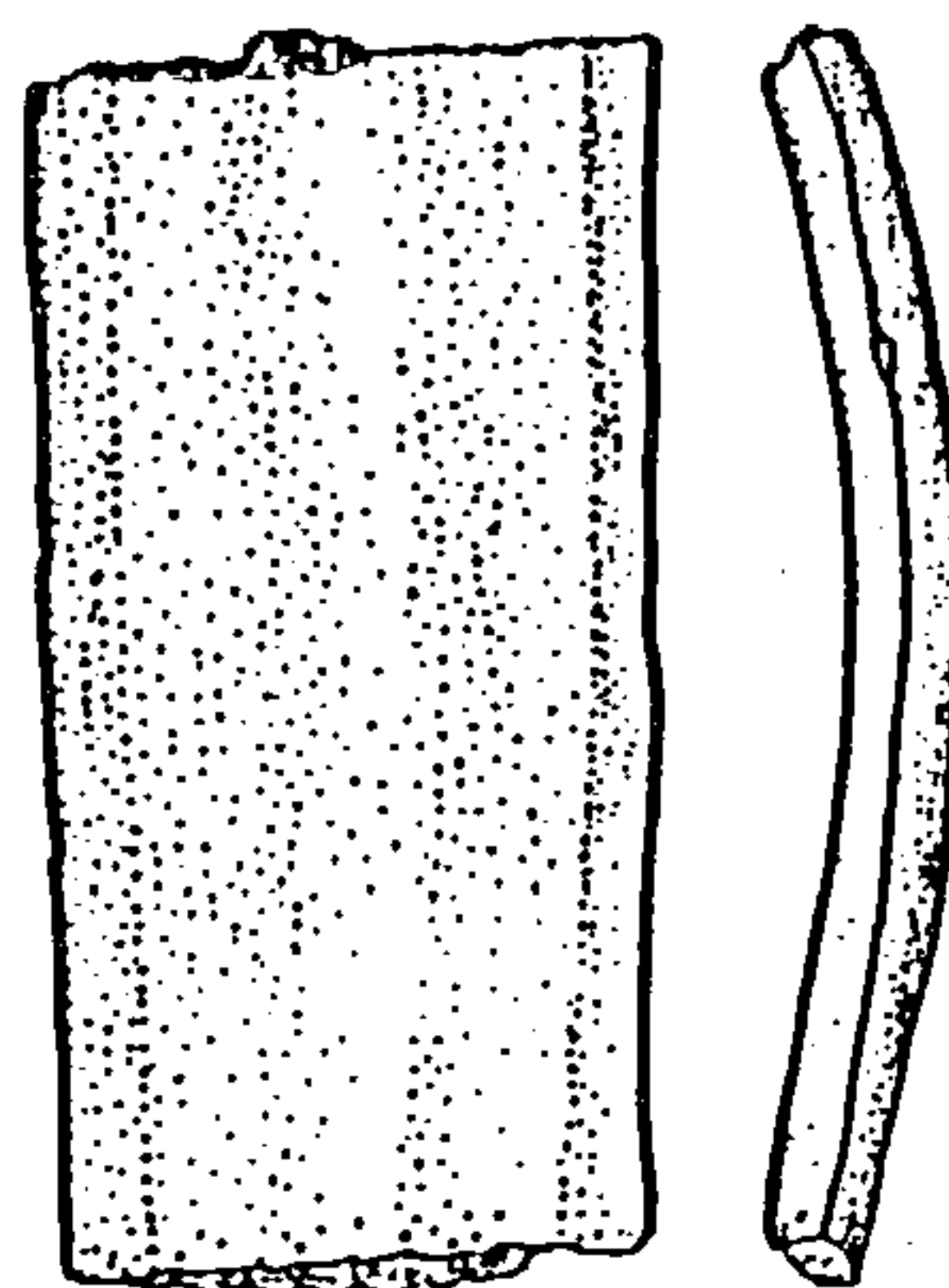
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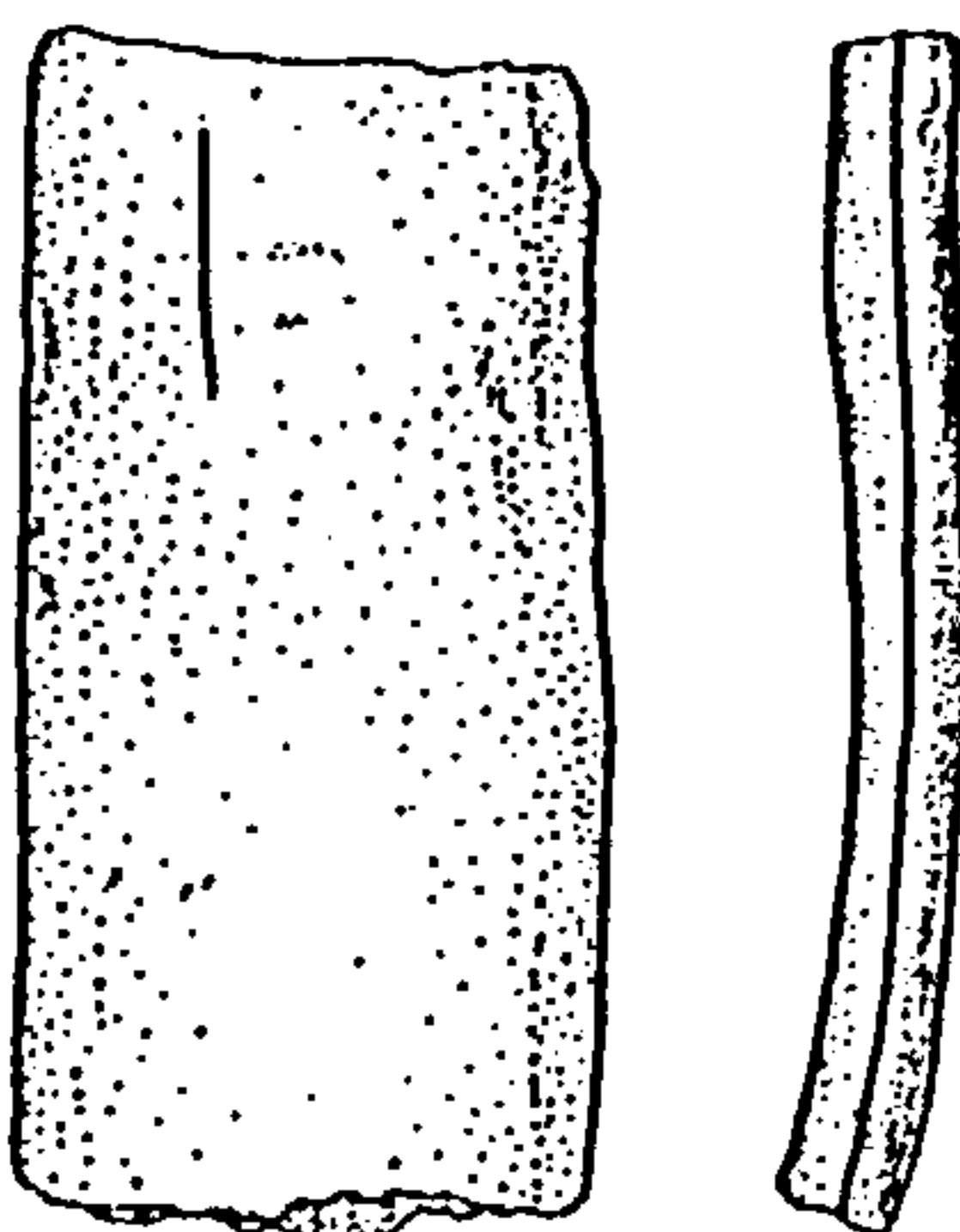


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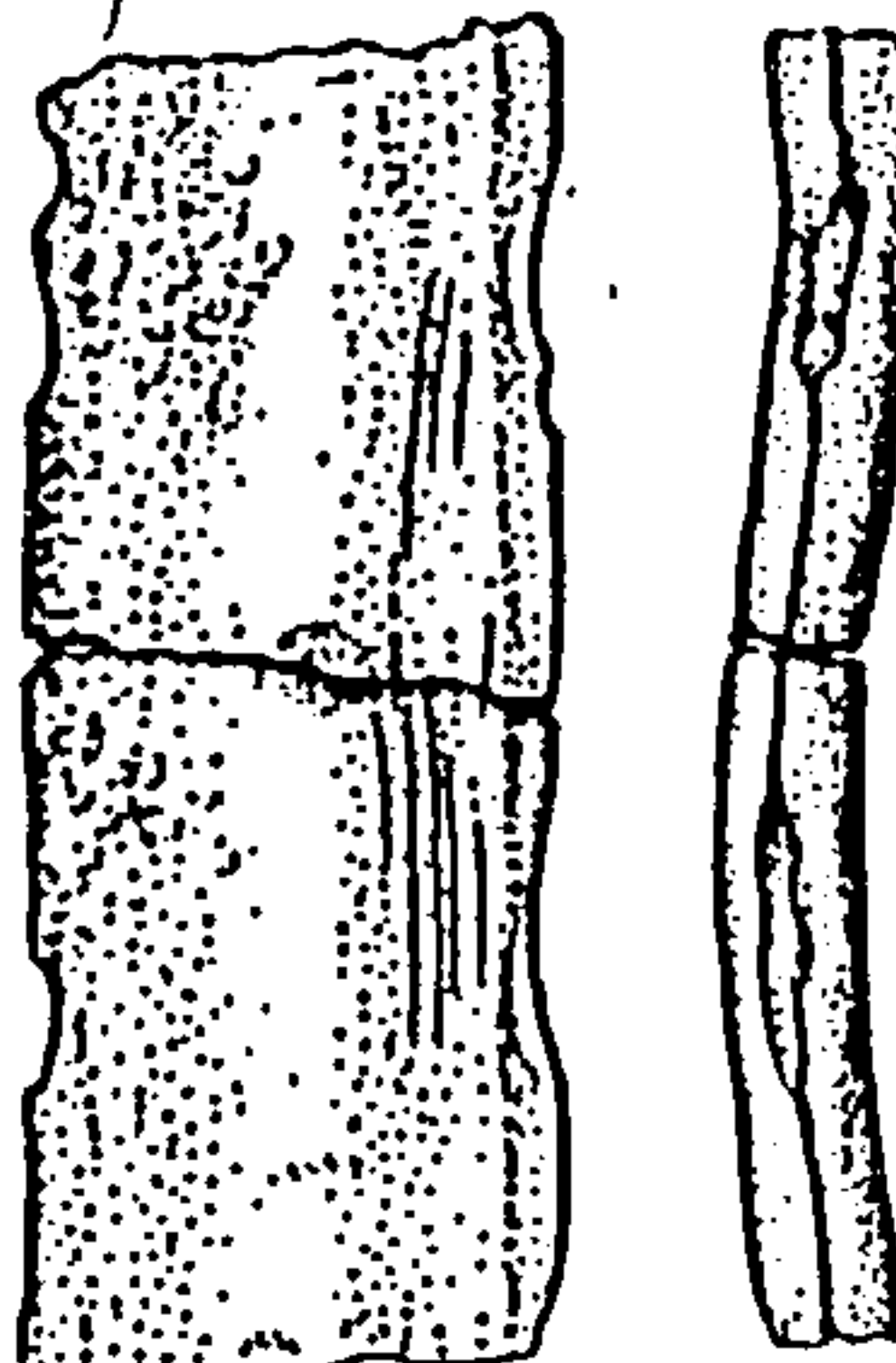


0 2cm

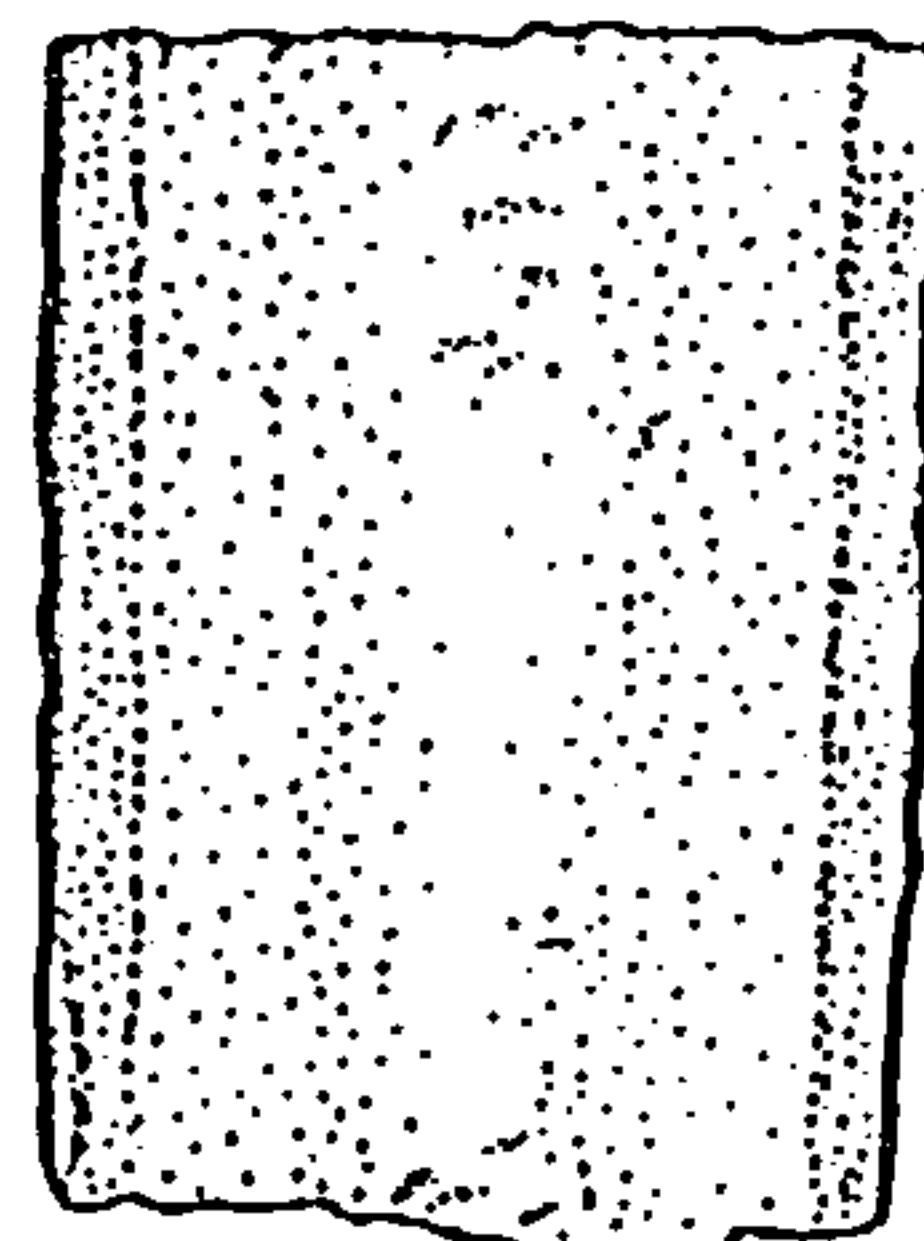
02/155



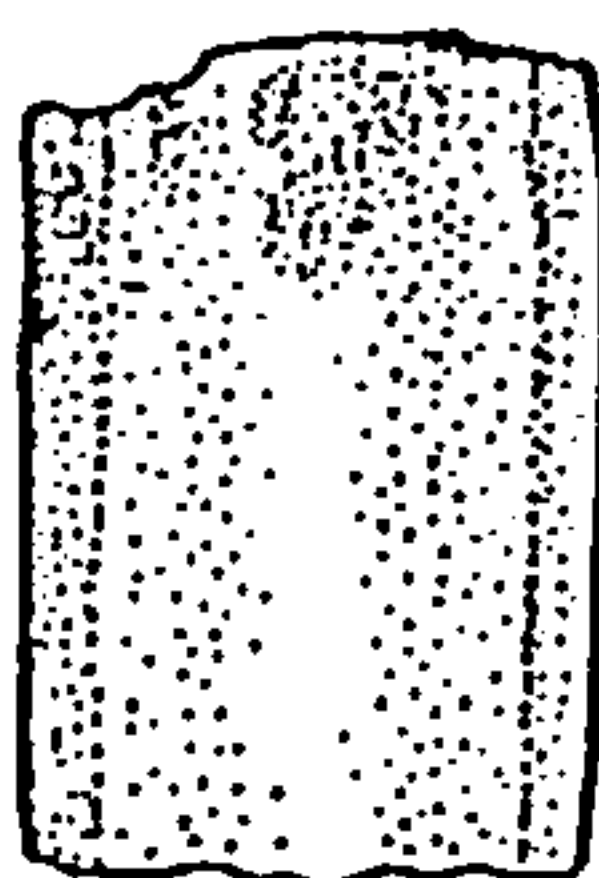
02/156



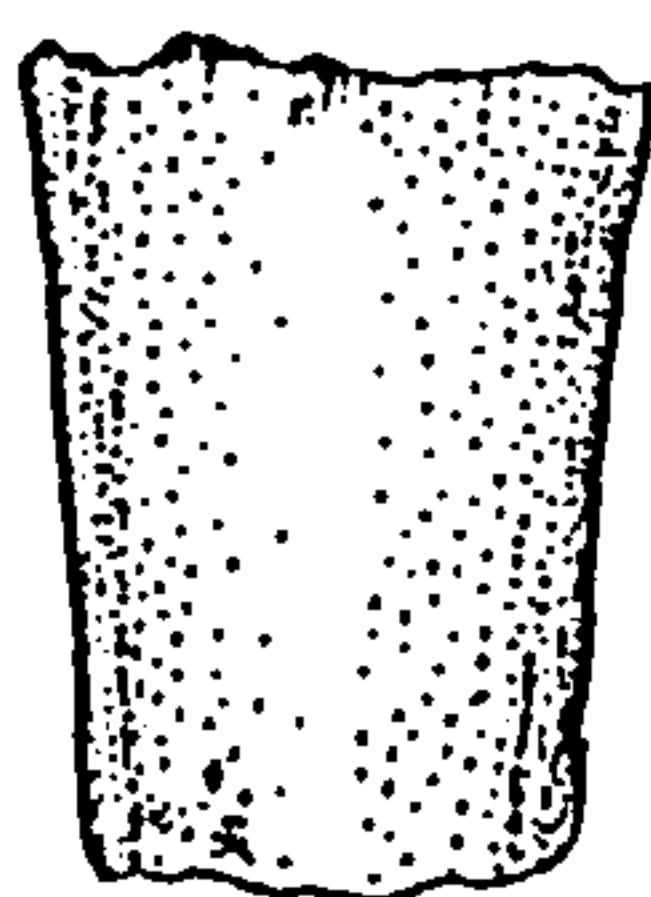
02/157



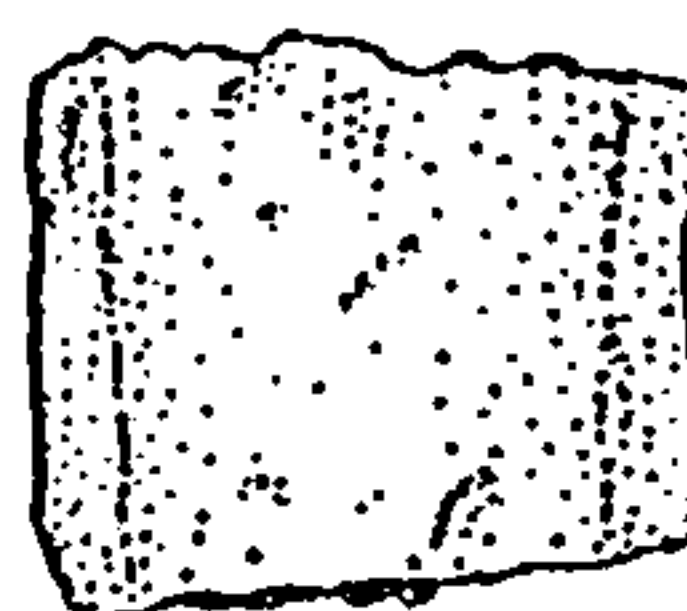
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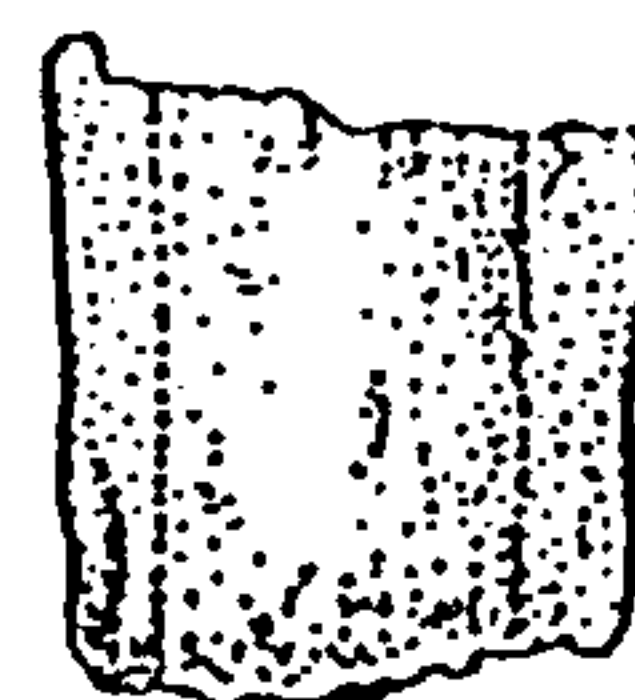
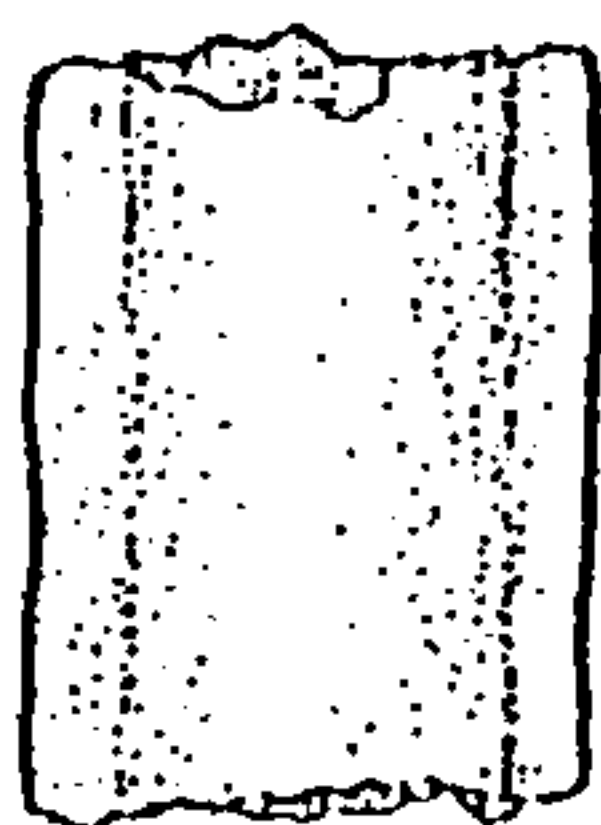
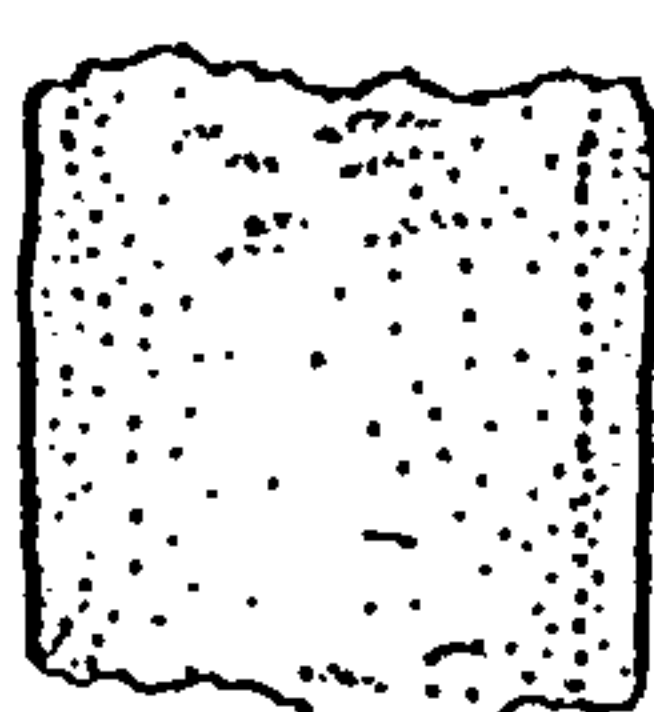


Fig. 21: The Grays Thurrock I Hoard (Ref. No. 02): Ewart Park Sword Fragments (i)

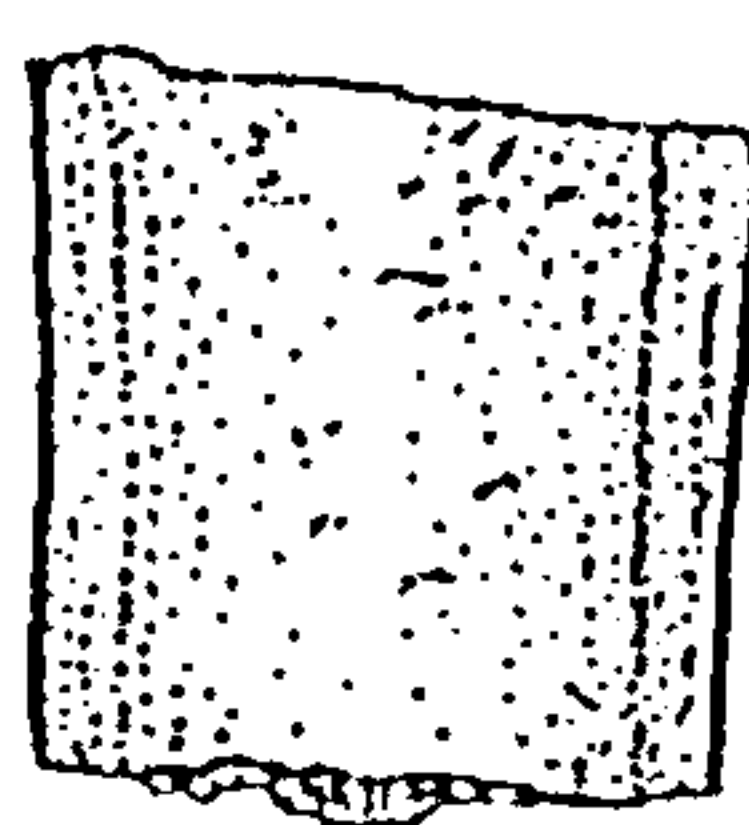
02/162



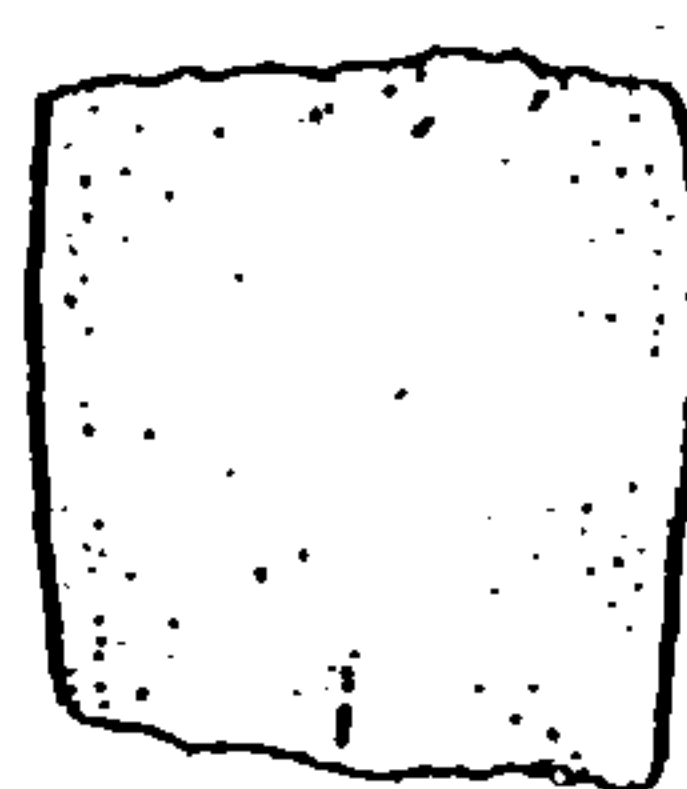
02/163



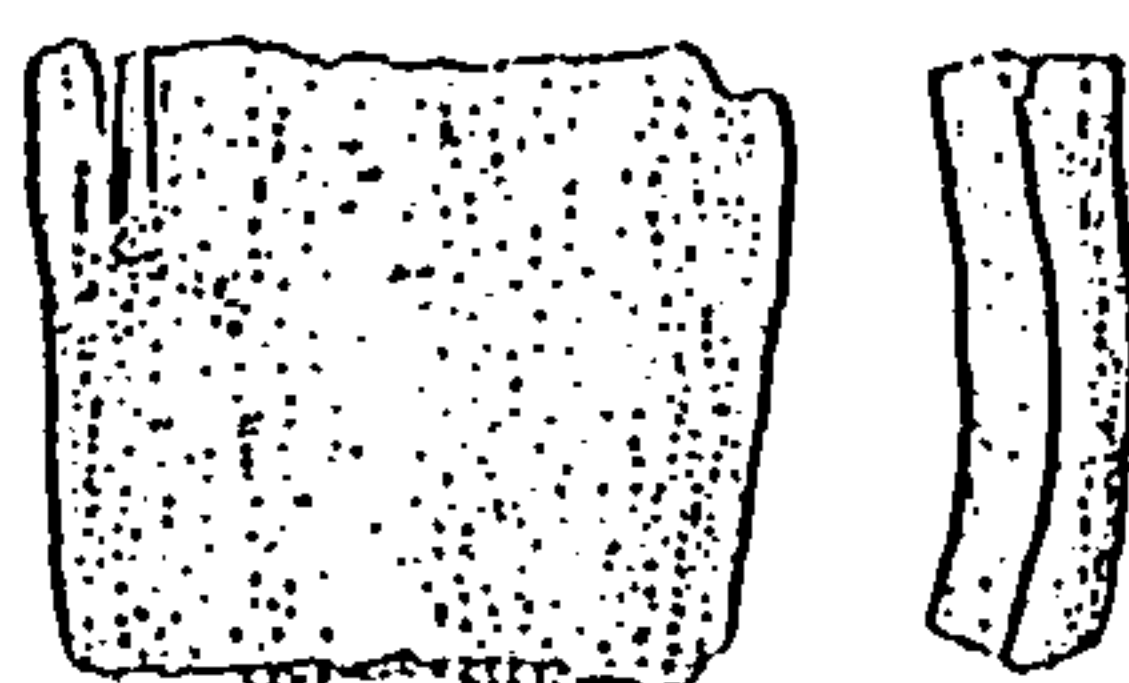
02/164



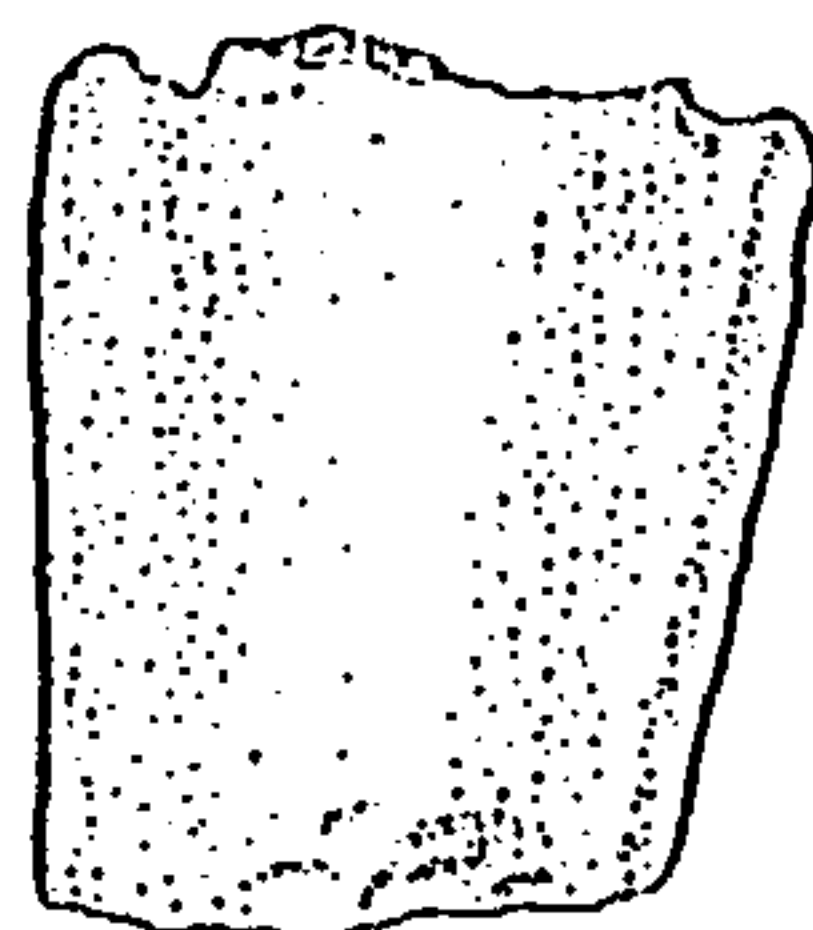
02/165



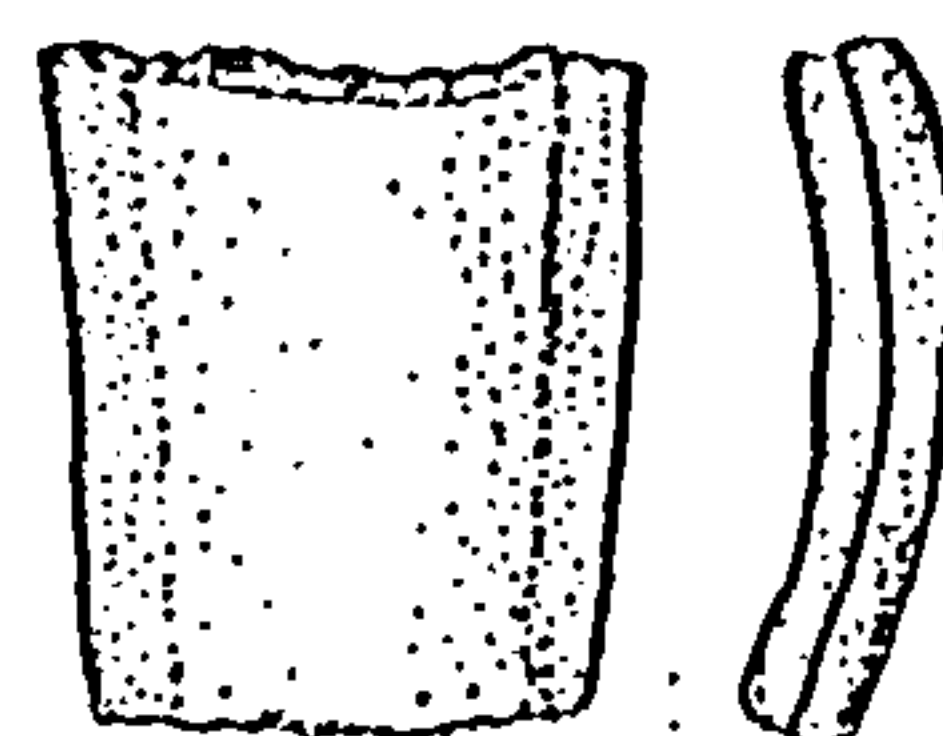
02/166



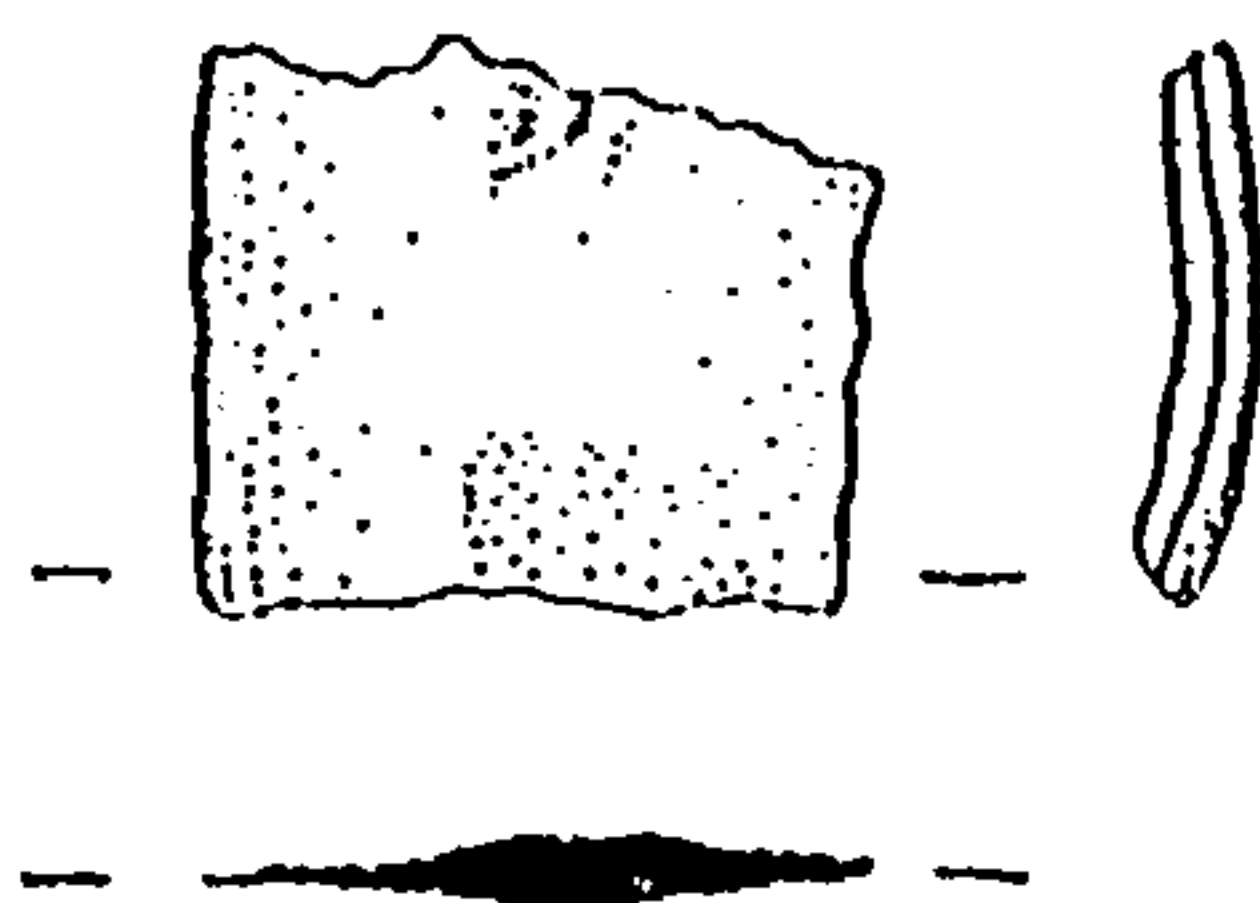
02/167



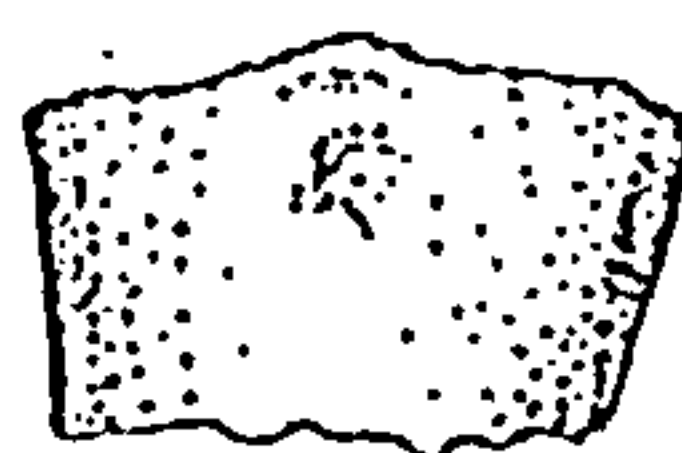
02/168



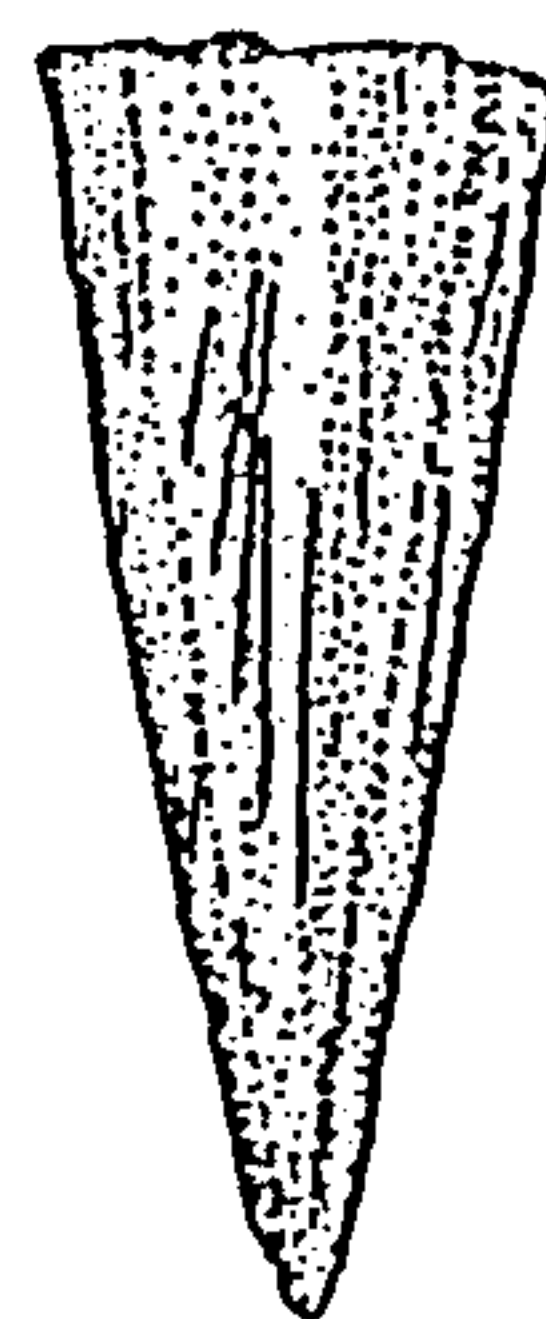
02/169



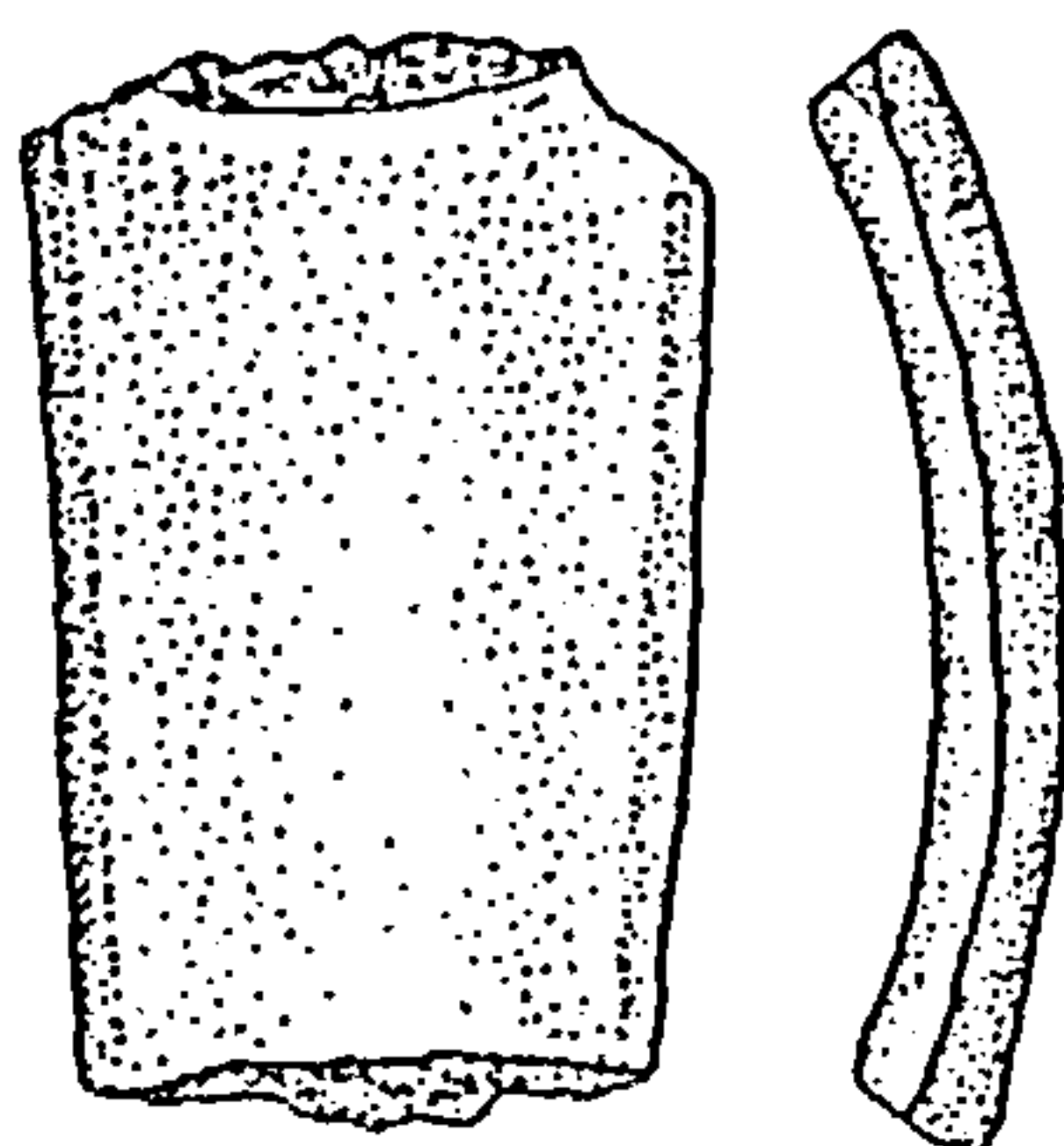
02/170



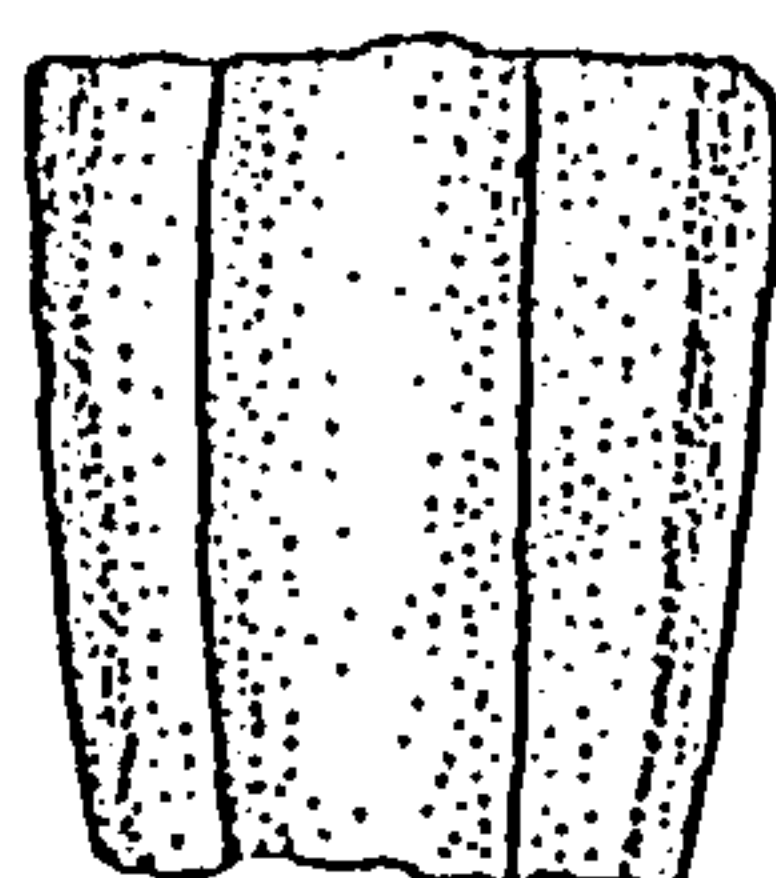
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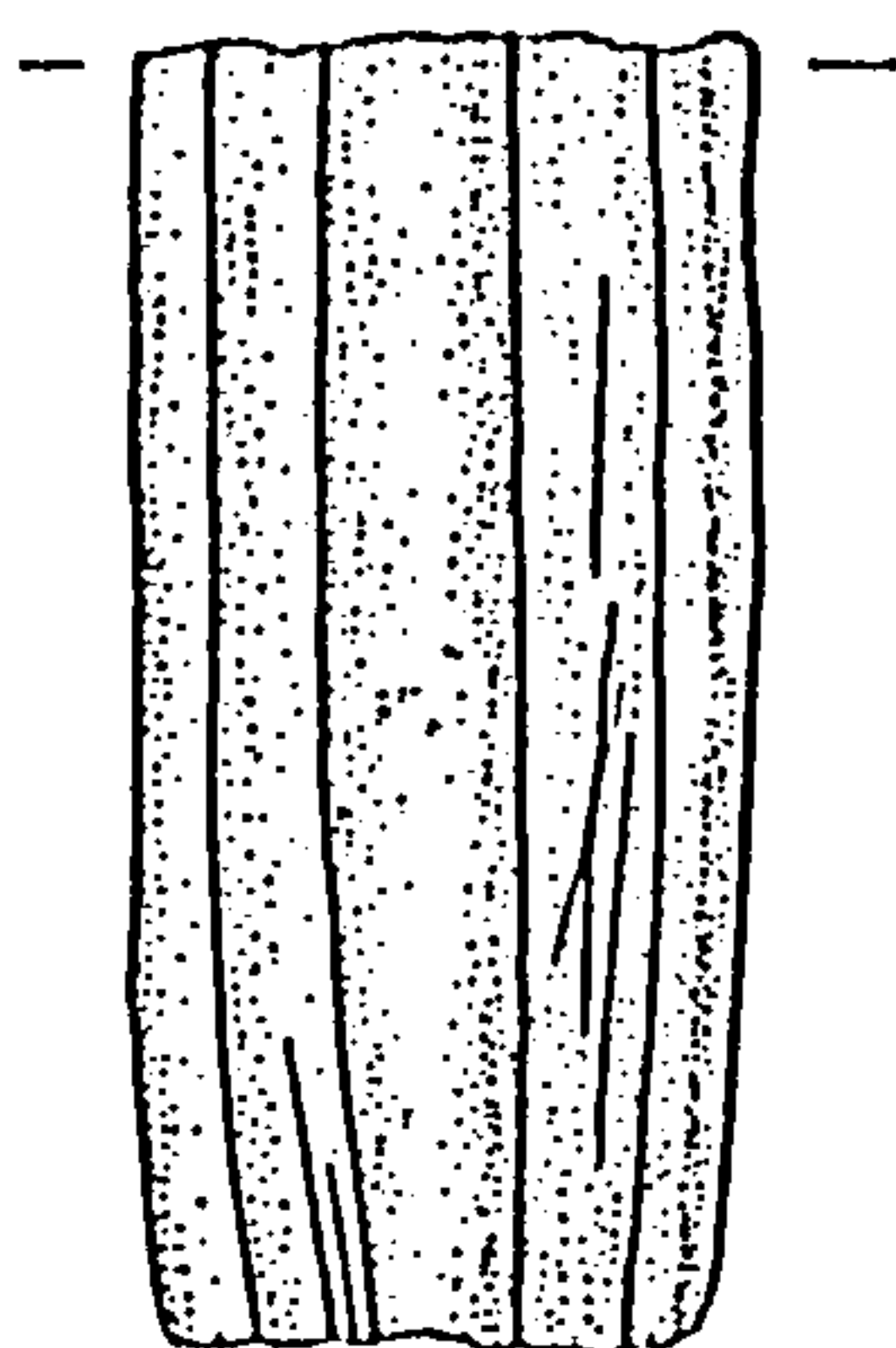
02/173



0 2cm

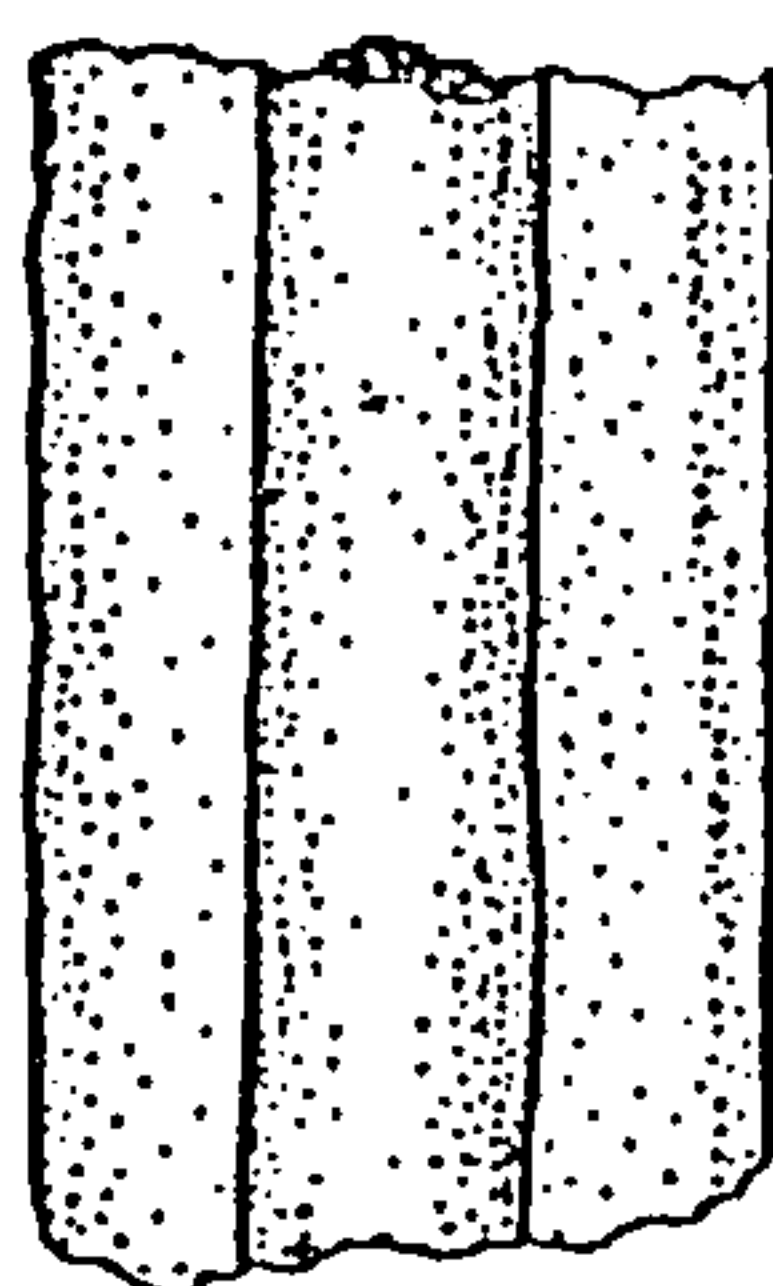
Fig. 22: The Grays Thurrock I Hoard (Ref. No. 02): Ewart Park Sword Fragments (ii)

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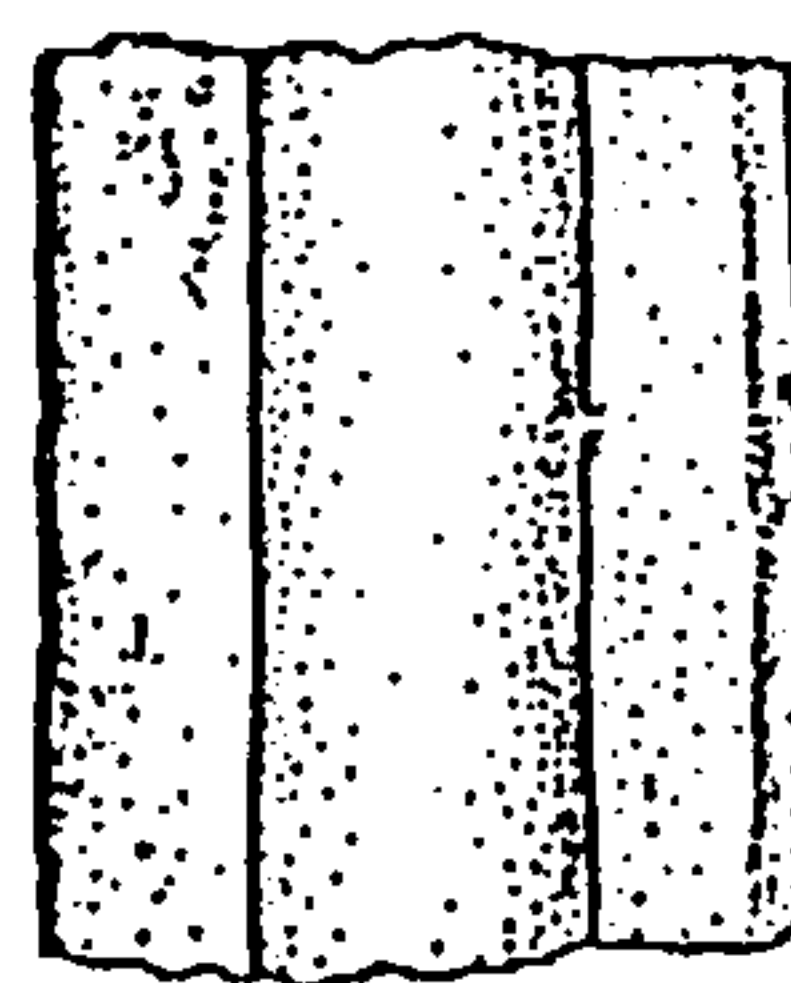


0 2cm

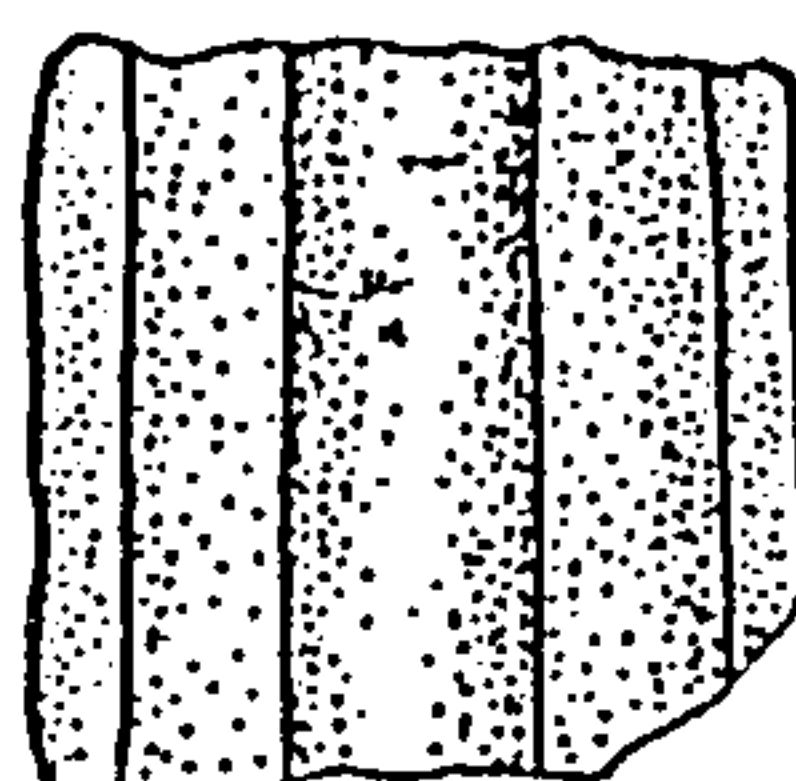
02/175



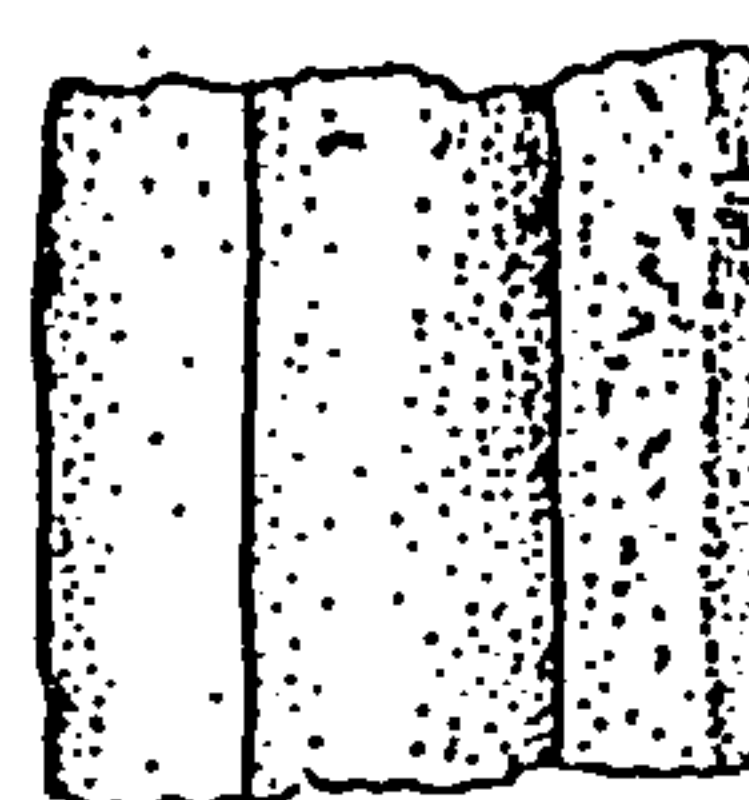
02/176



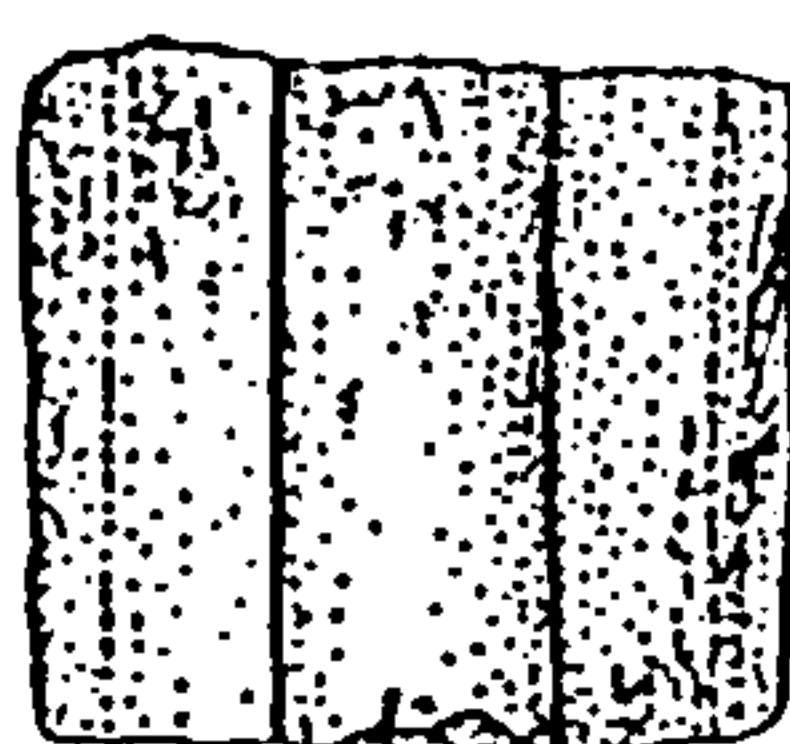
02/177



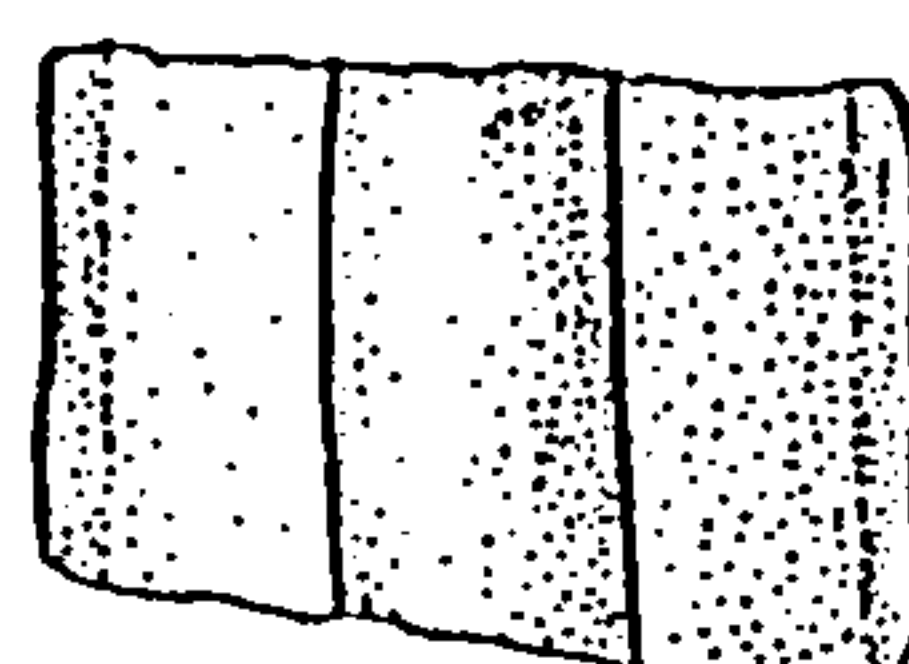
02/178



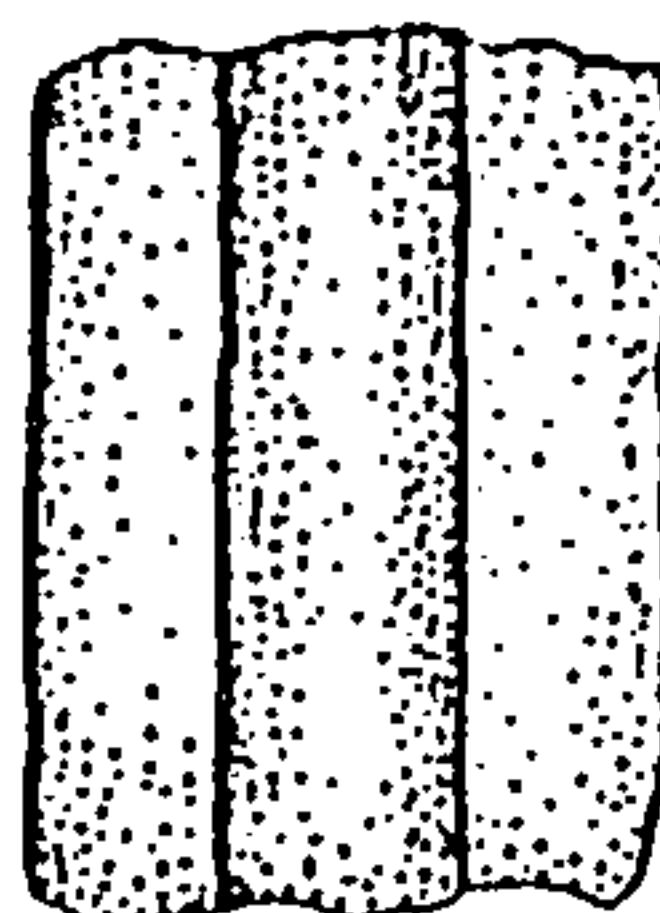
02/179



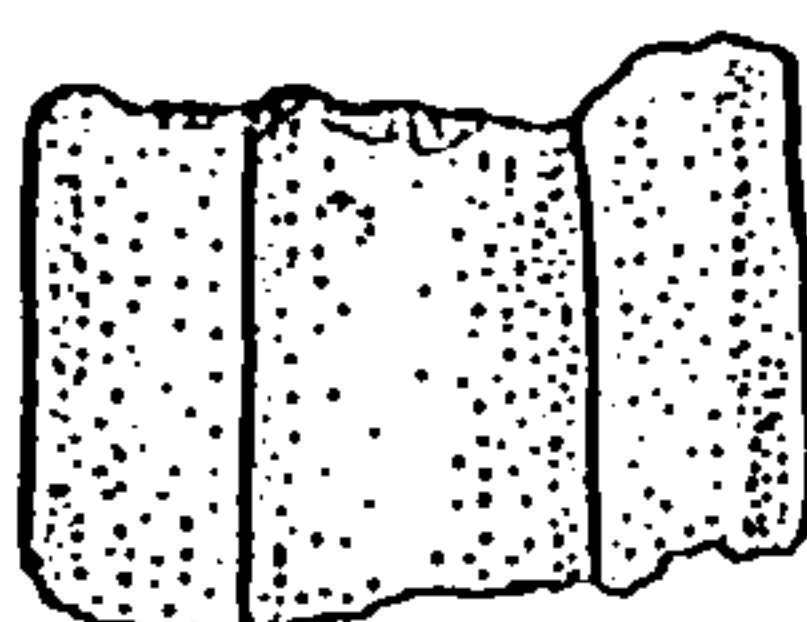
02/180



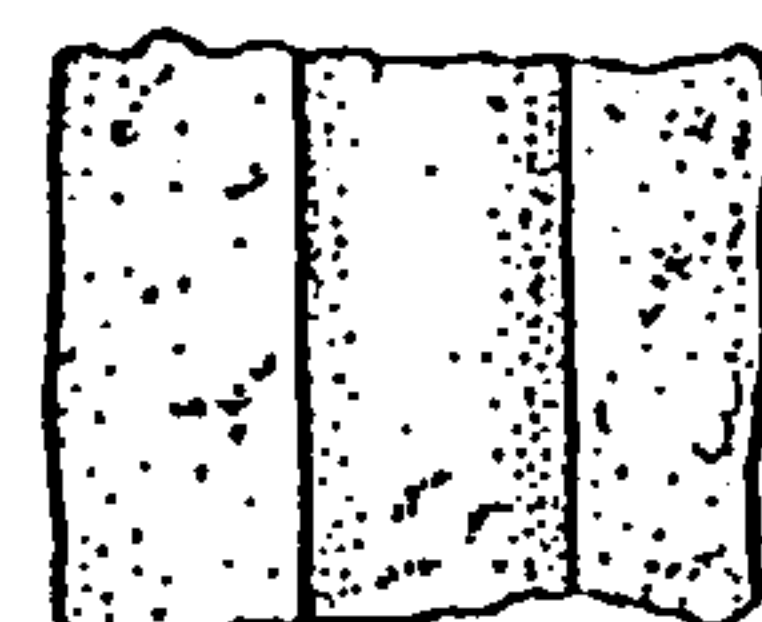
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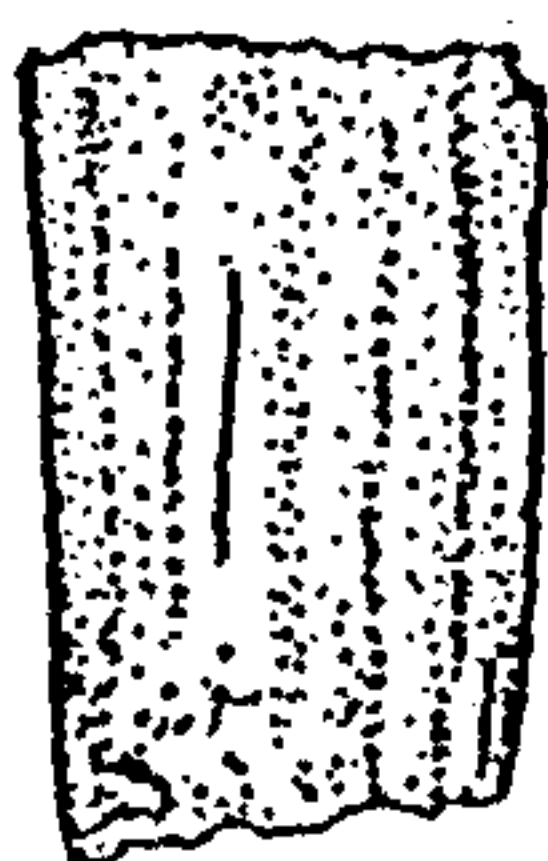


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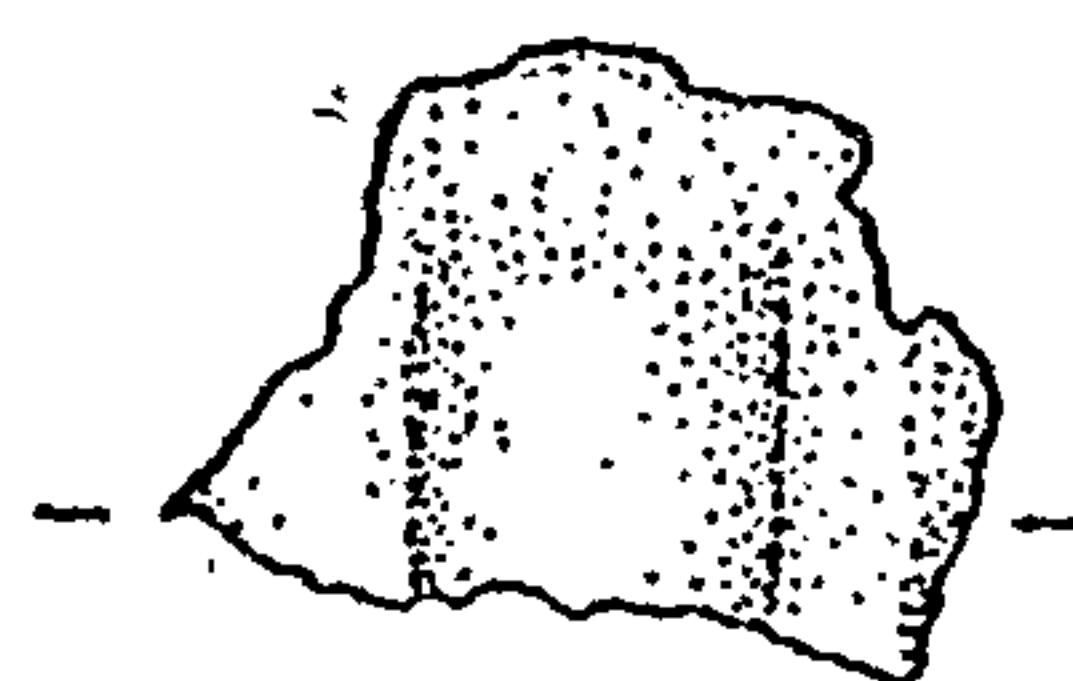


Fig. 23: The Grays Thurrock I Hoard (Ref. No. 02): Carp's Tongue Sword Fragments

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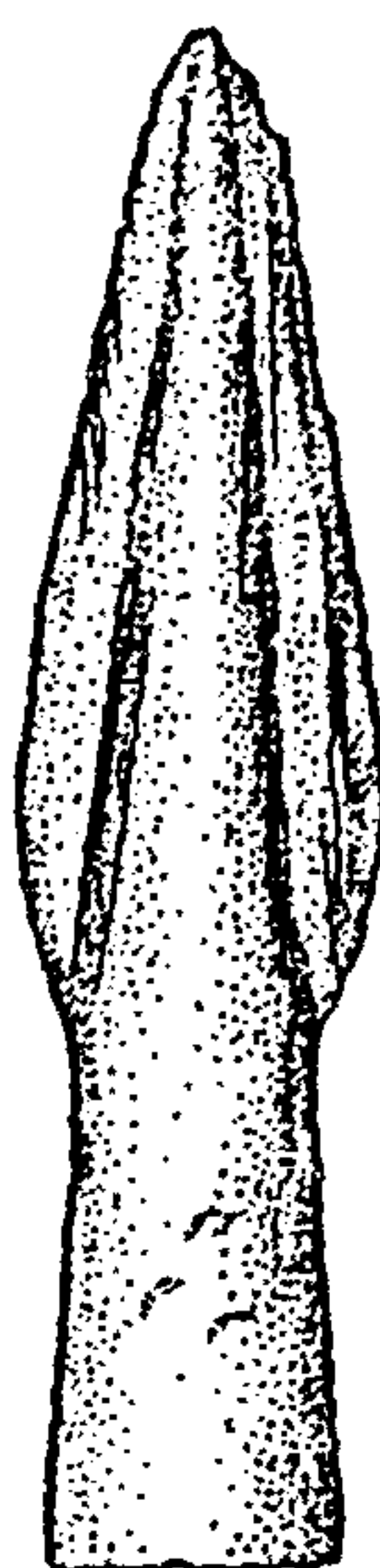


0 2cm

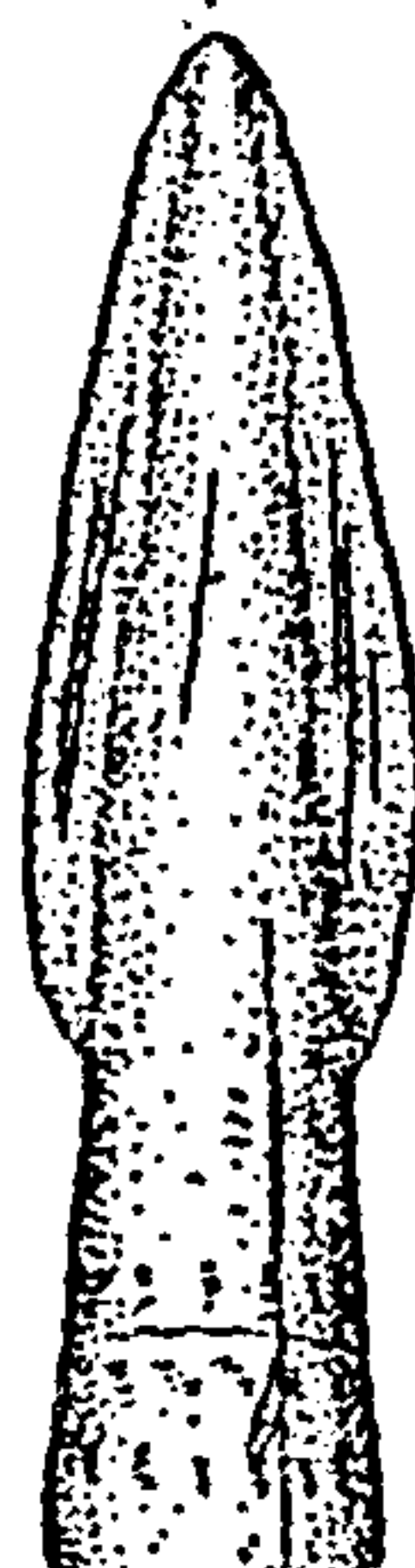
02/187



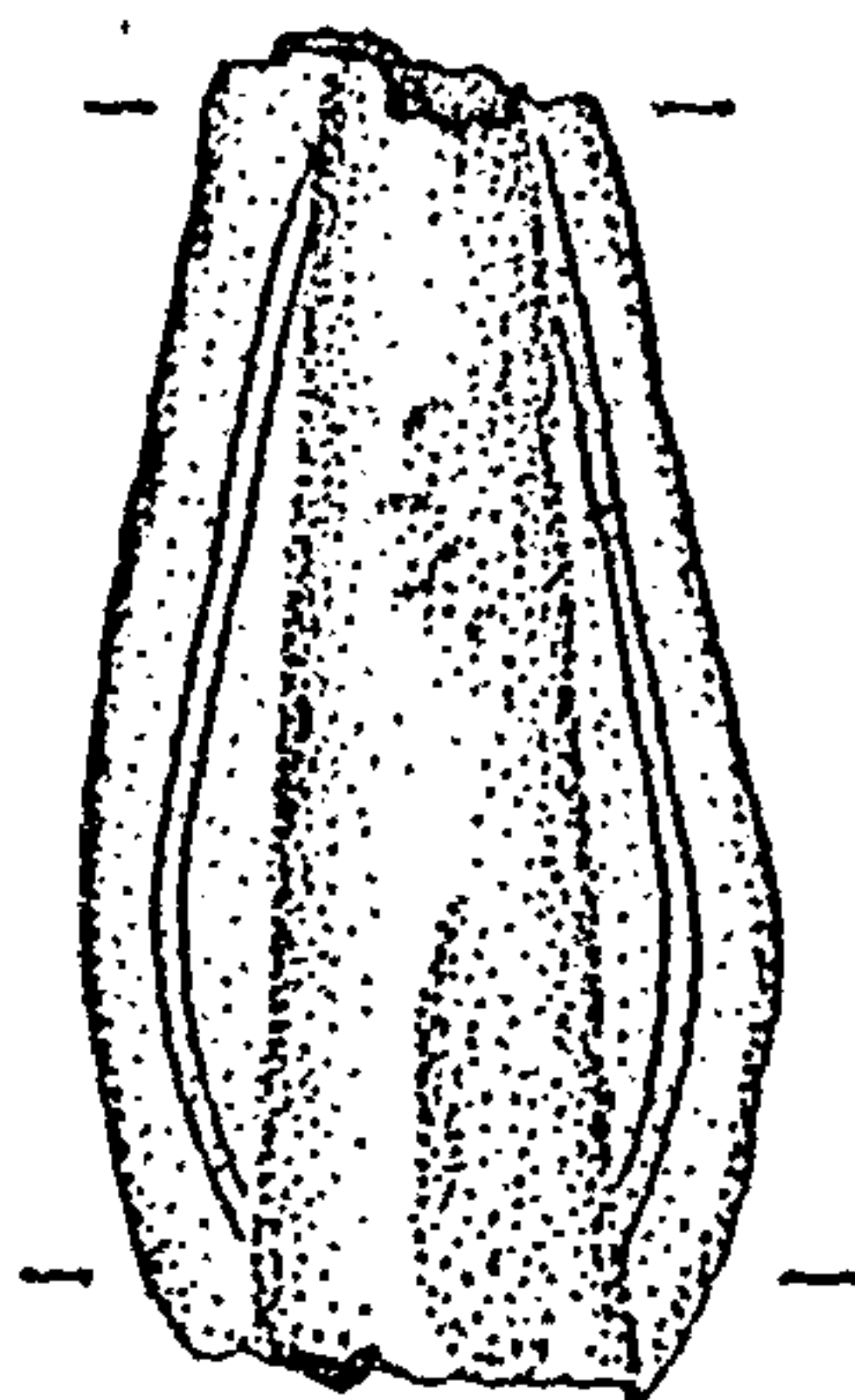
02/188



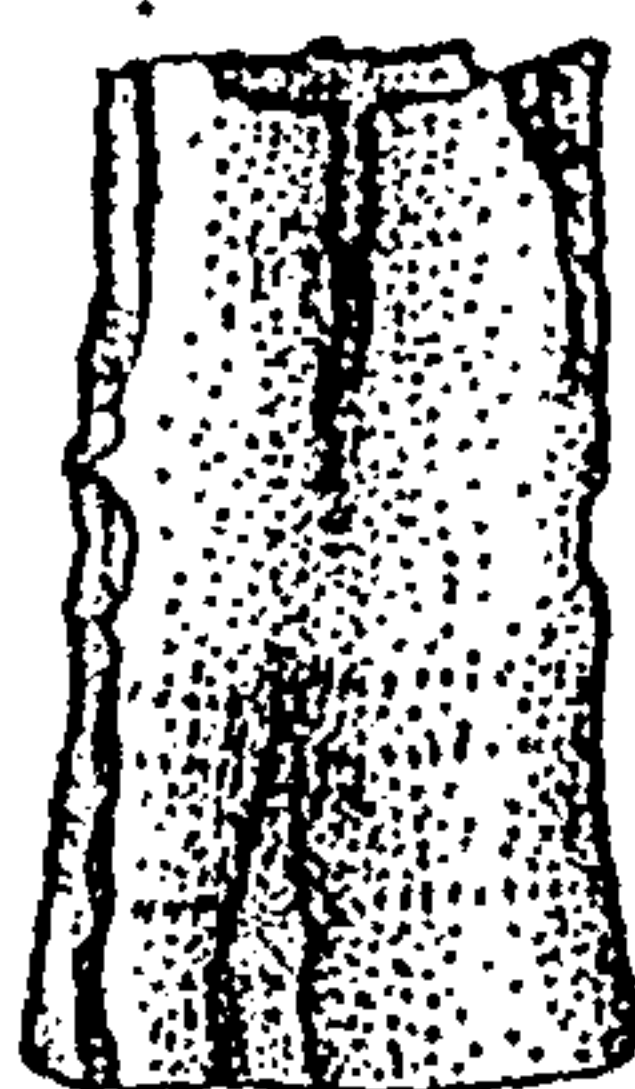
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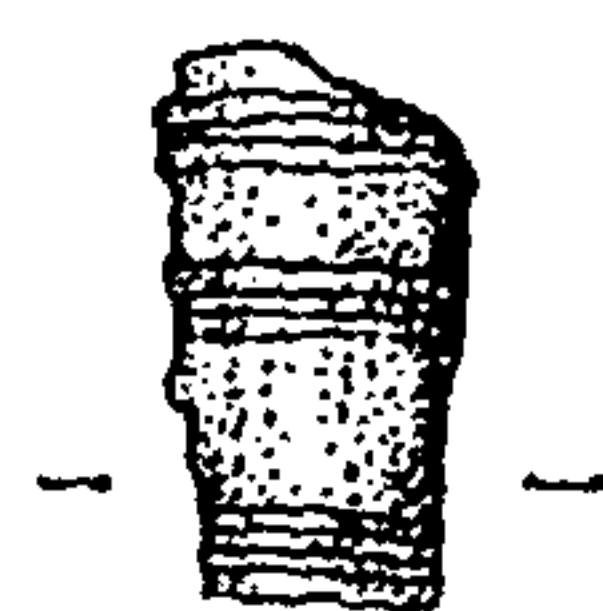
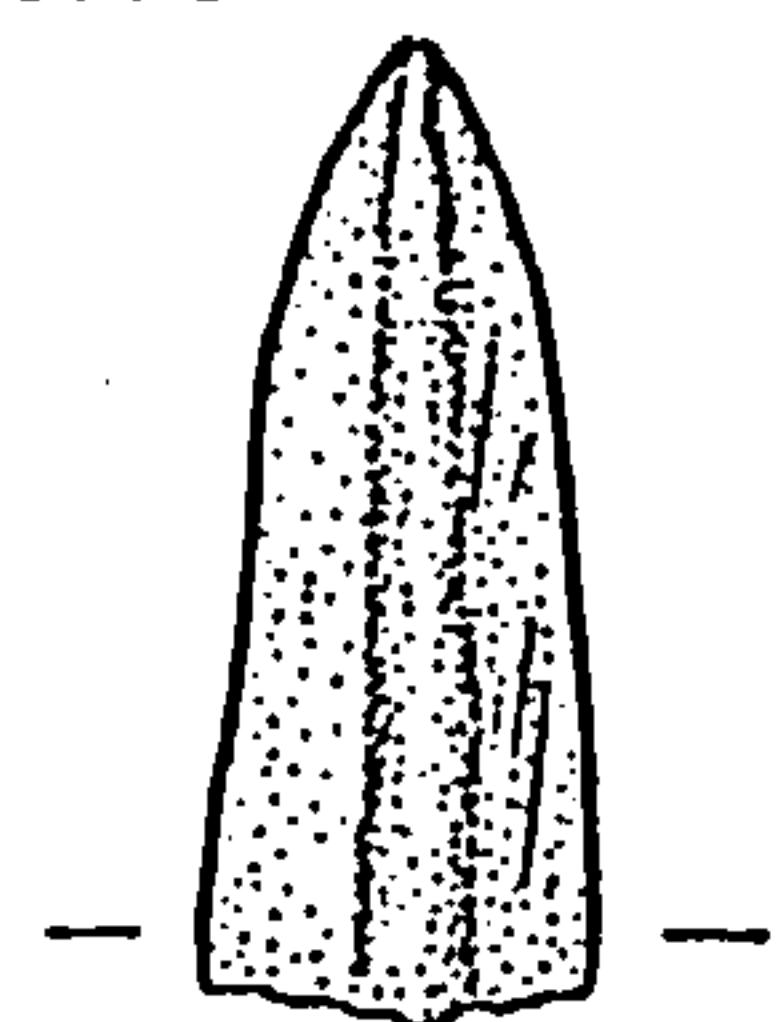
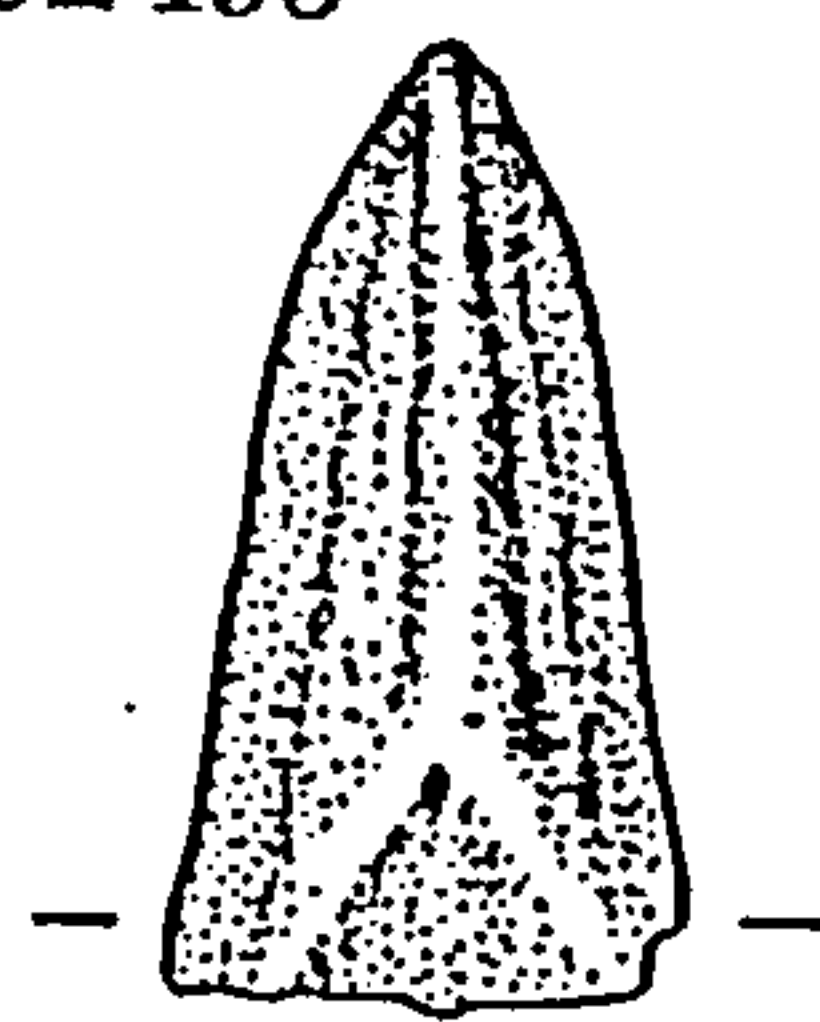


Fig. 24: The Grays Thurrock I Hoard (Ref.No. 02): Sword fragments, Chape and Spearheads

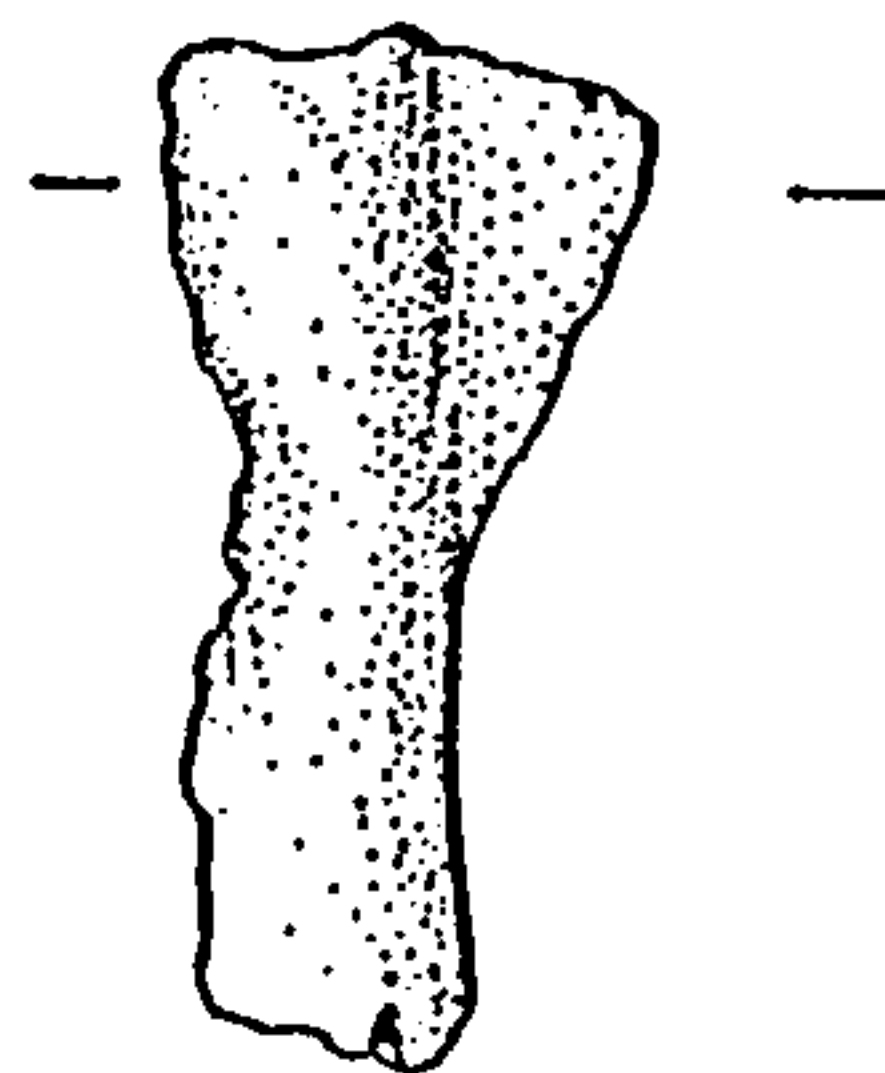
02/194



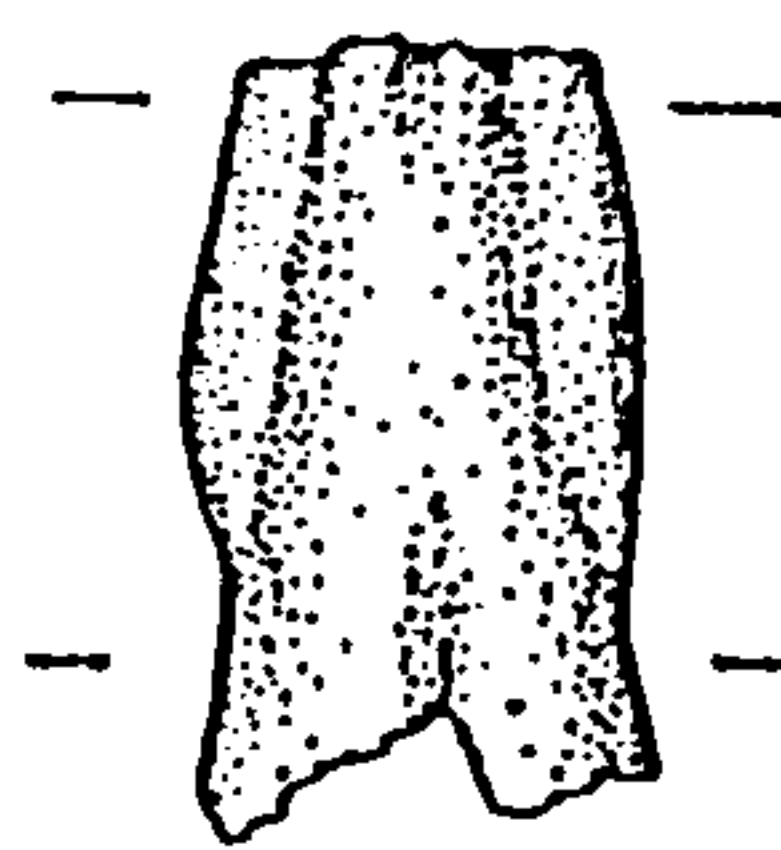
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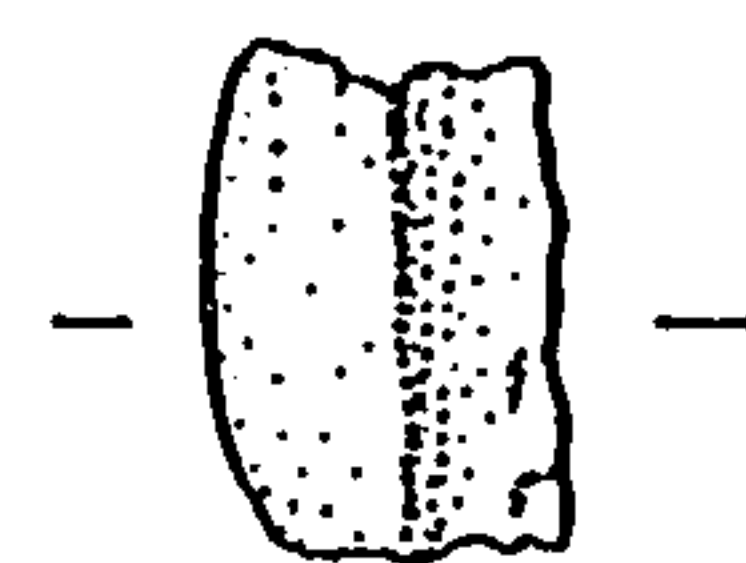
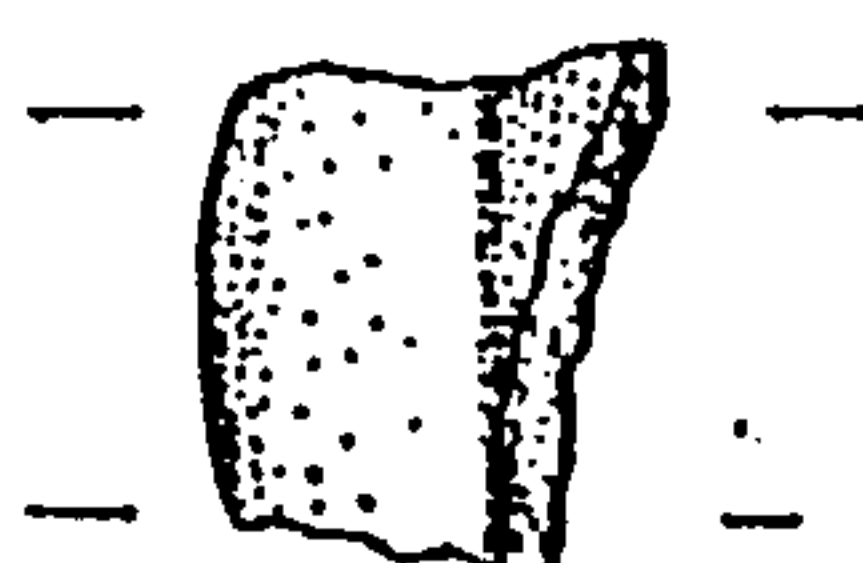
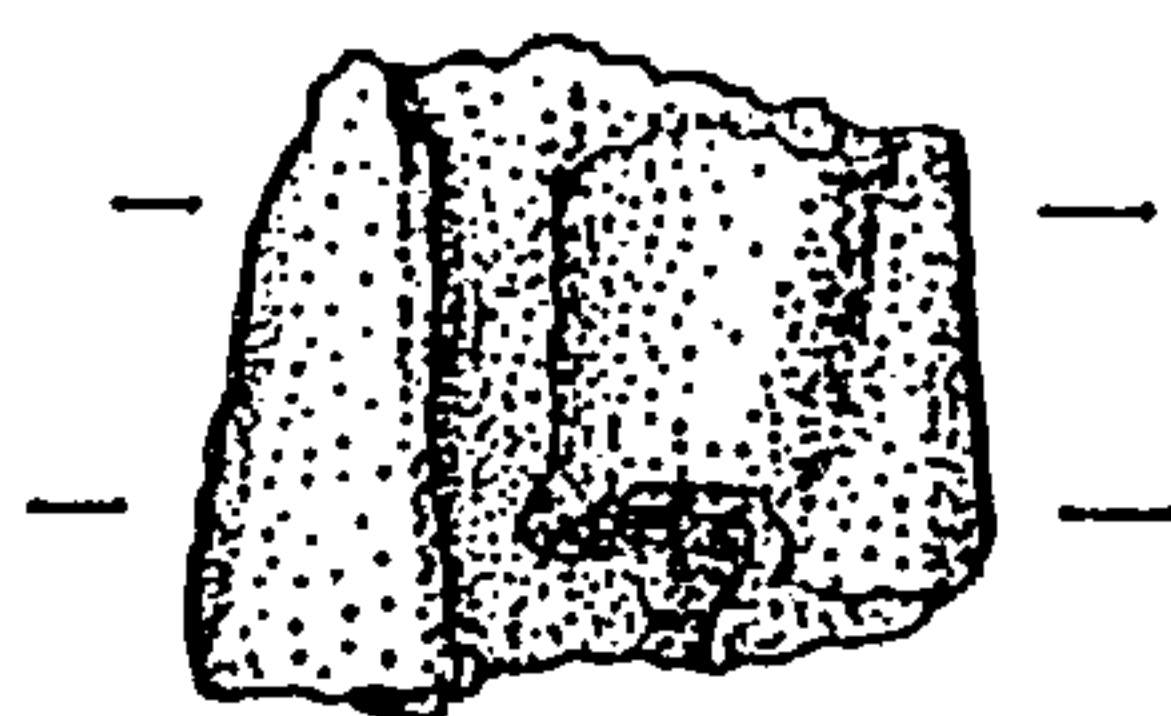


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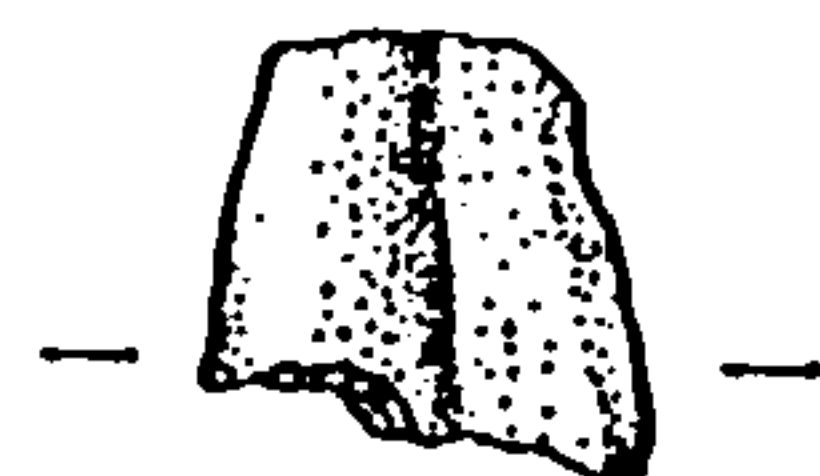


0 2cm

02/200



02/201



02/202

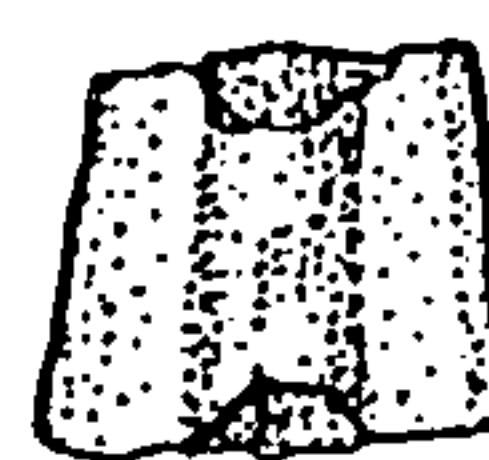


Fig. 25: The Grays Thurrock I Hoard (Ref. No. 02): Spearhead Fragments

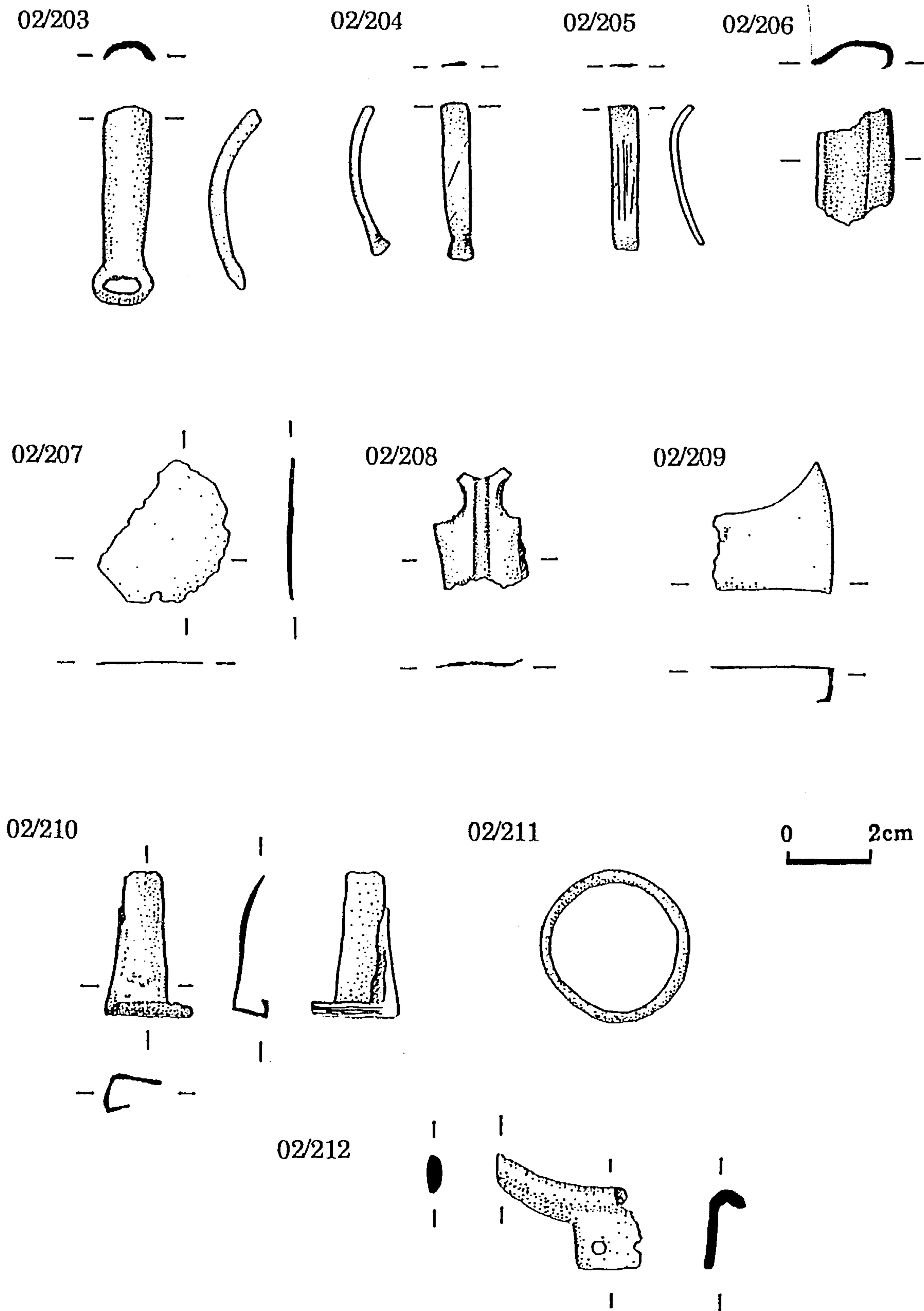
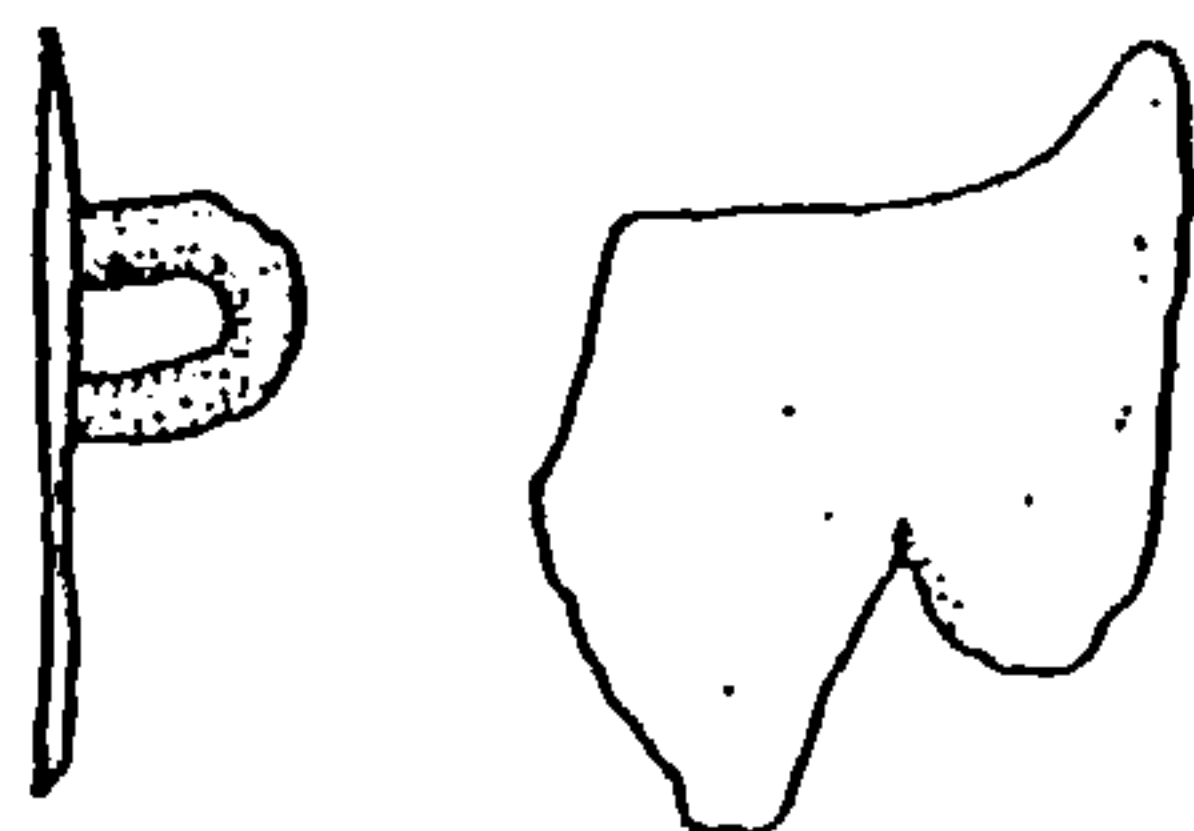
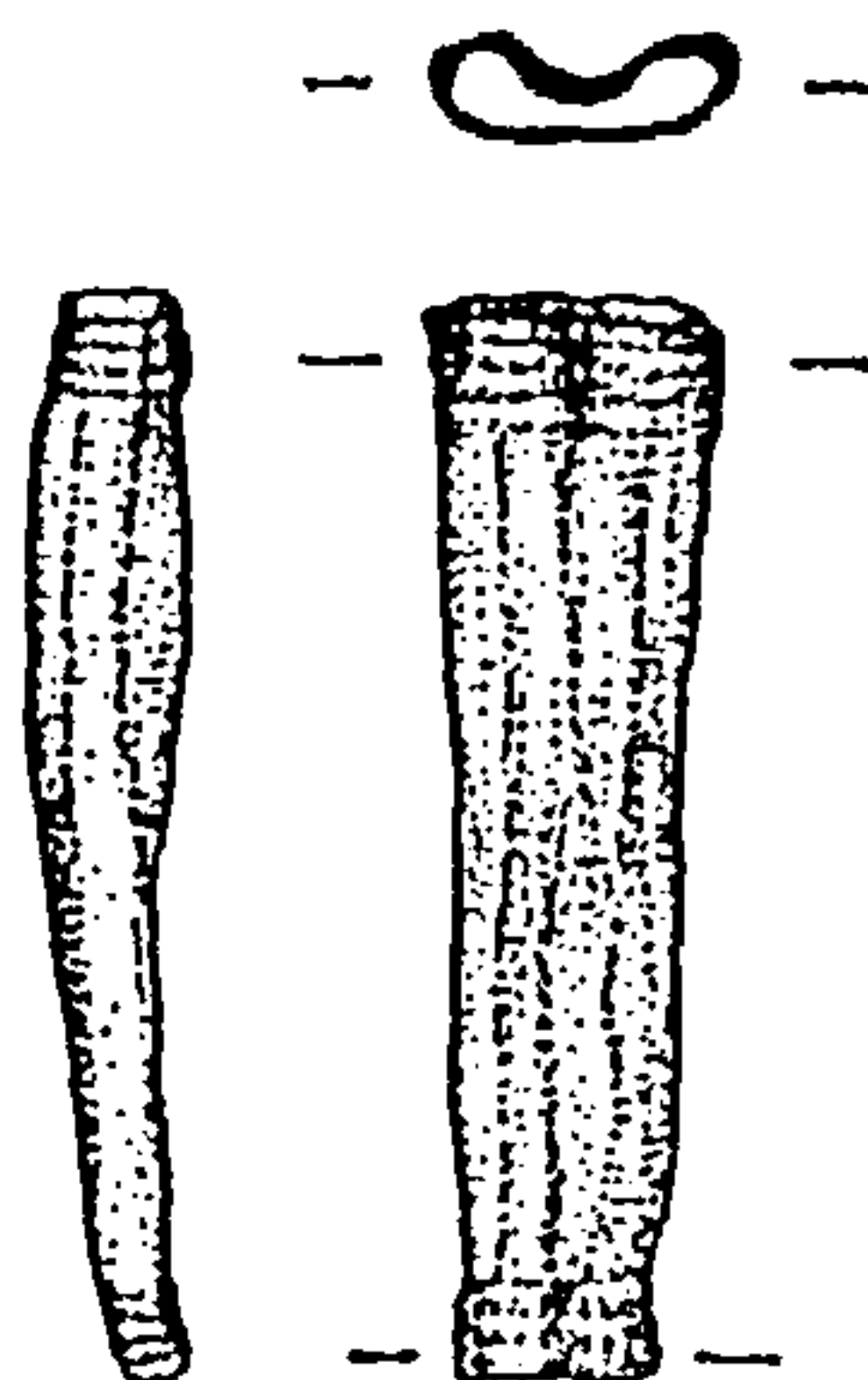


Fig. 26: The Grays Thurrock I Hoard (Ref. No. 02): Bracelets, Razors and Decorative Fittings

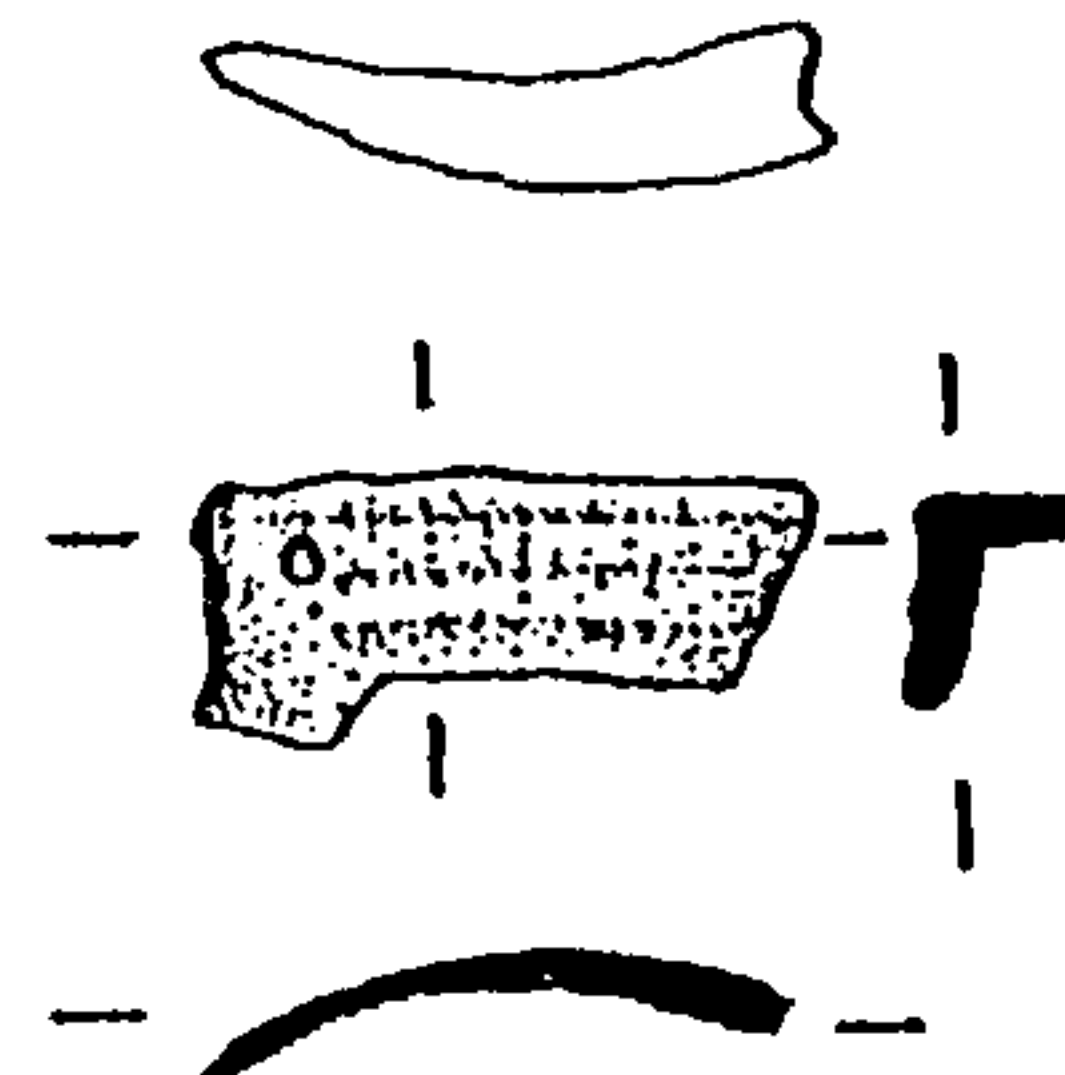
02/213



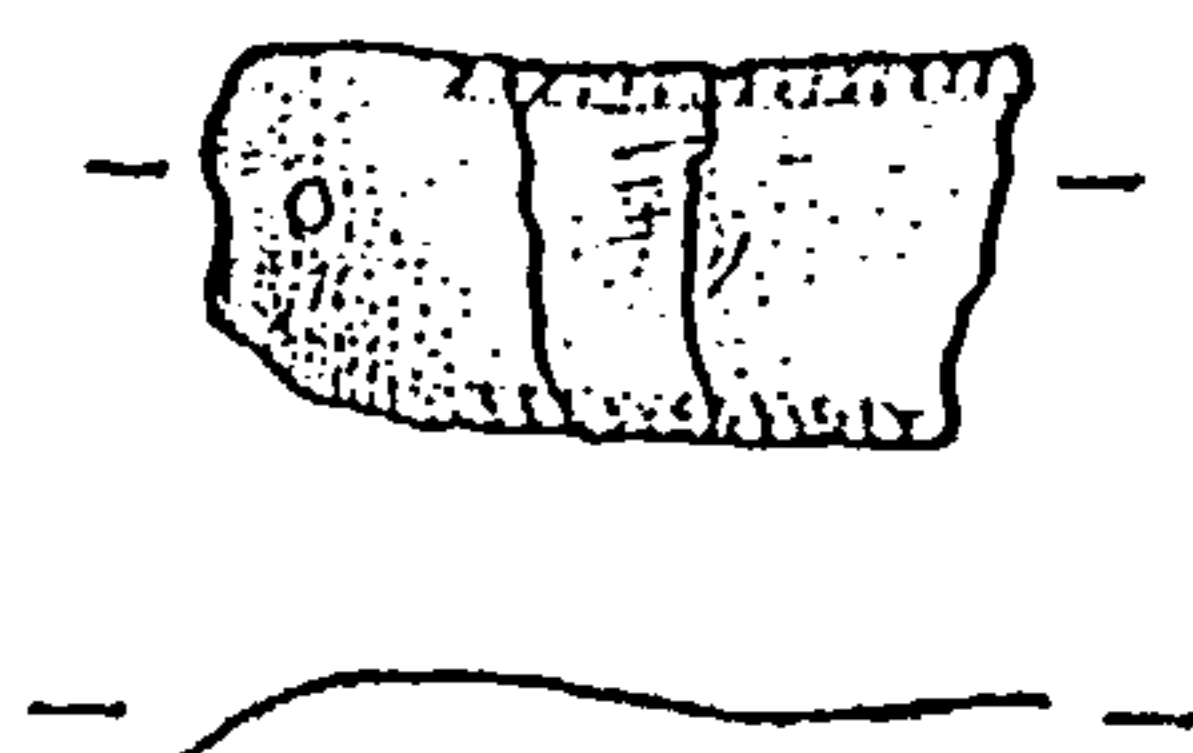
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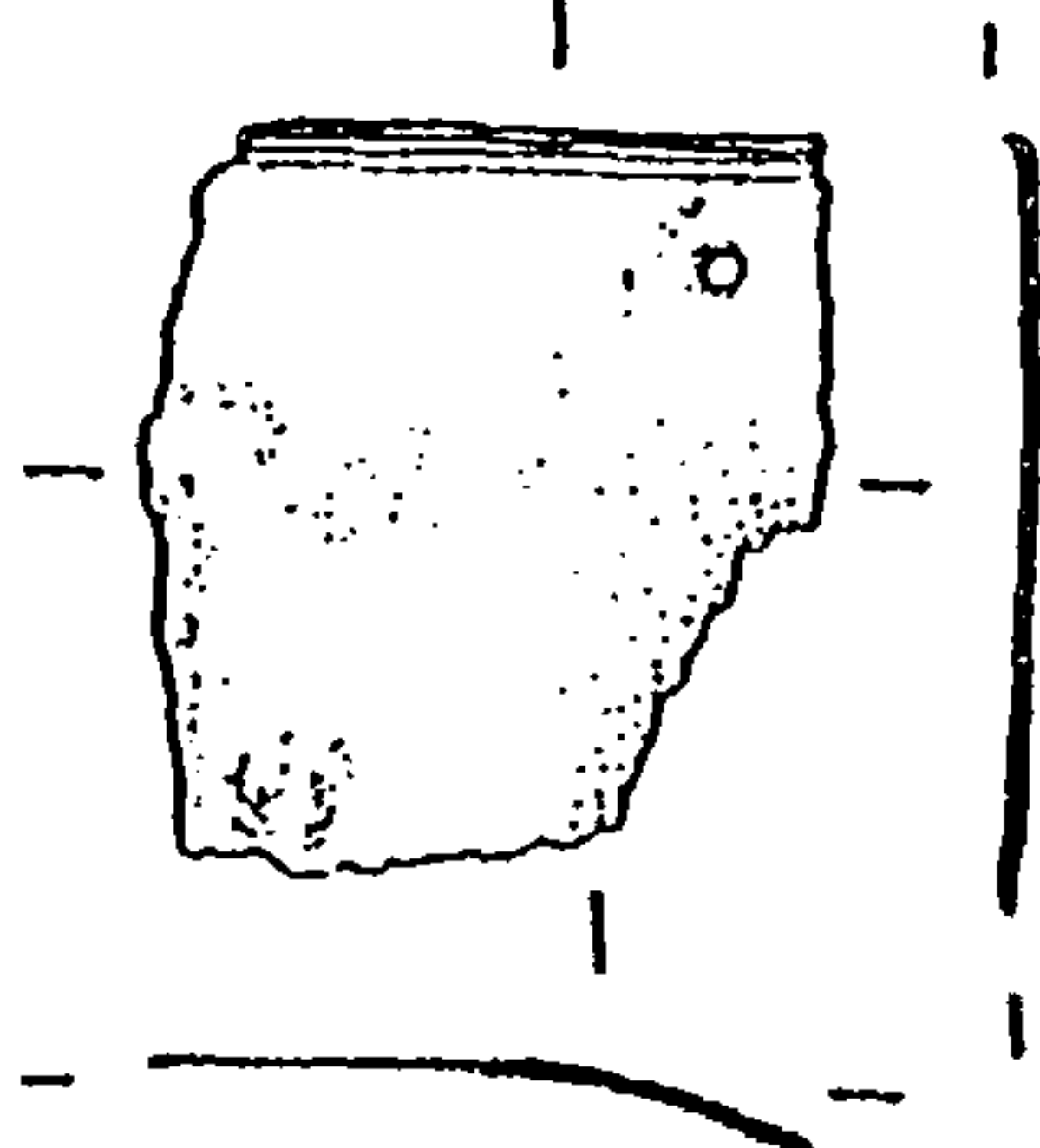
02/215



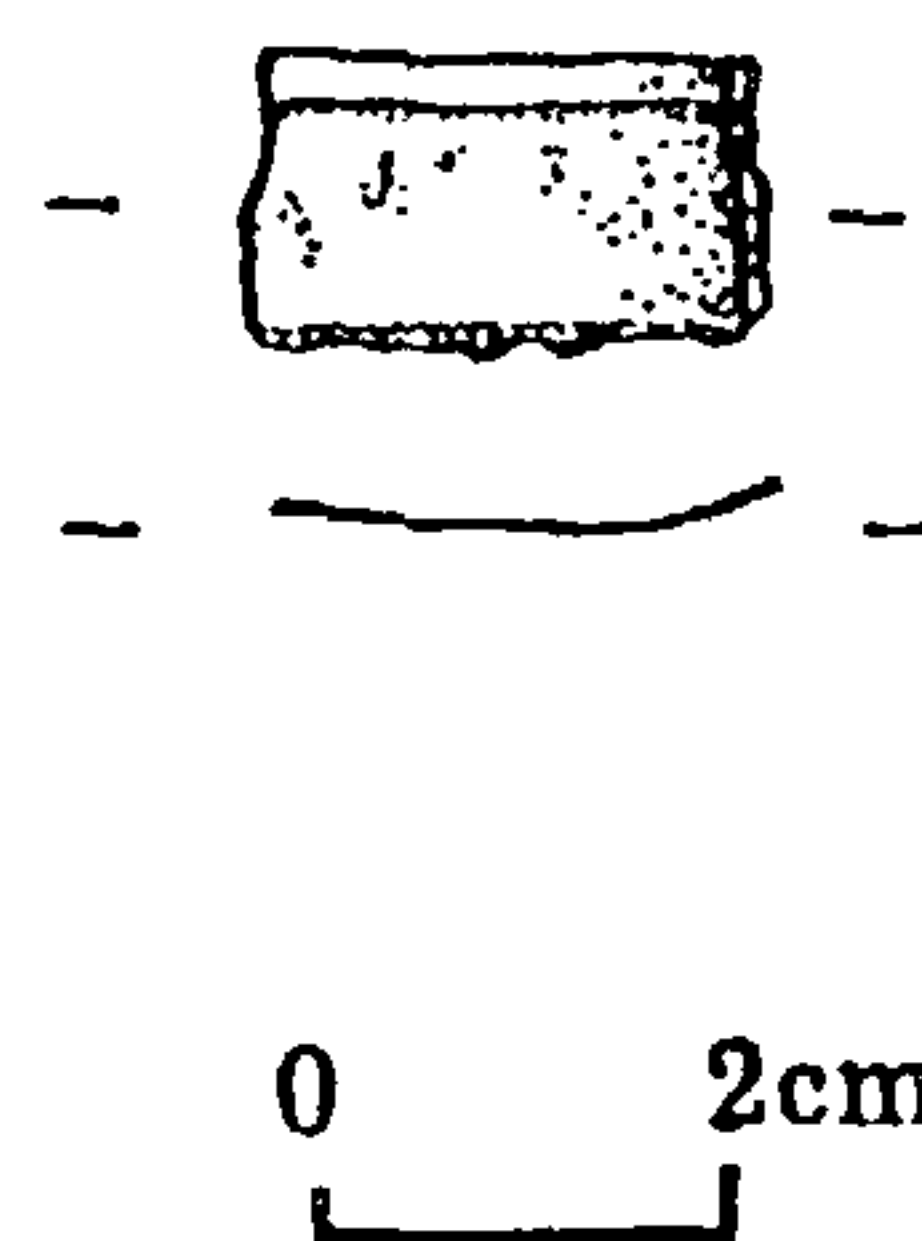
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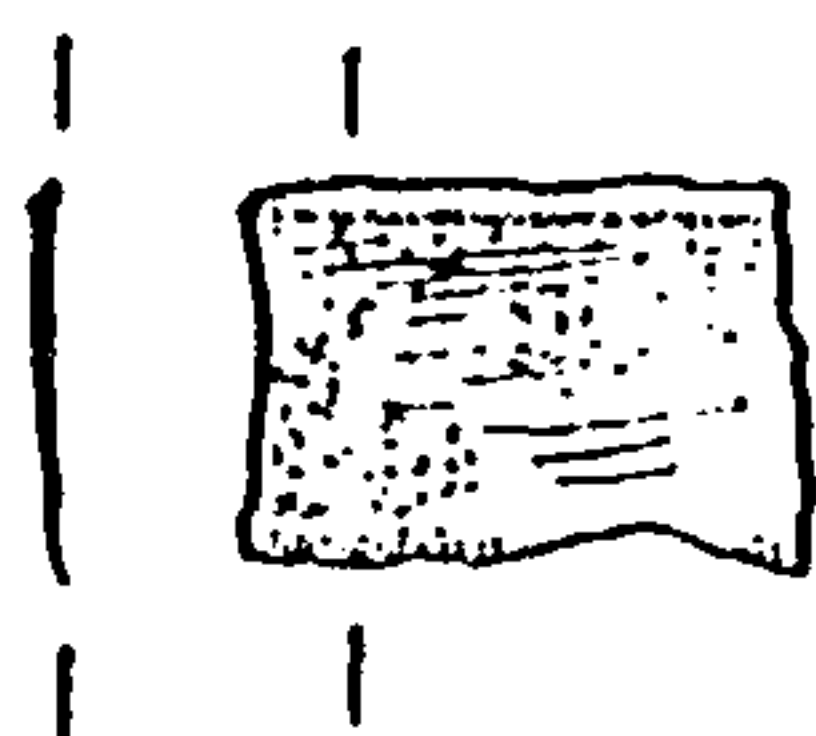


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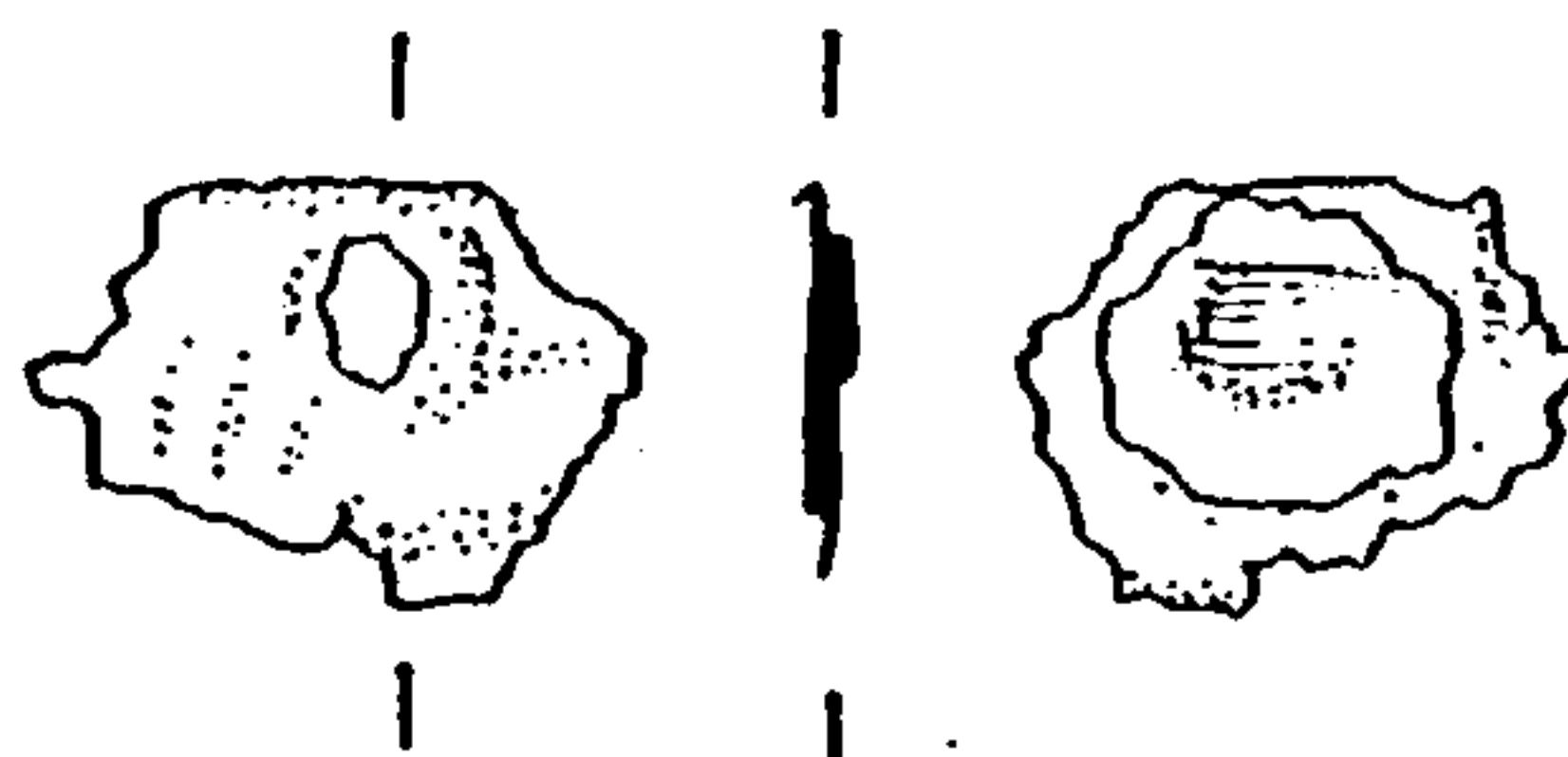


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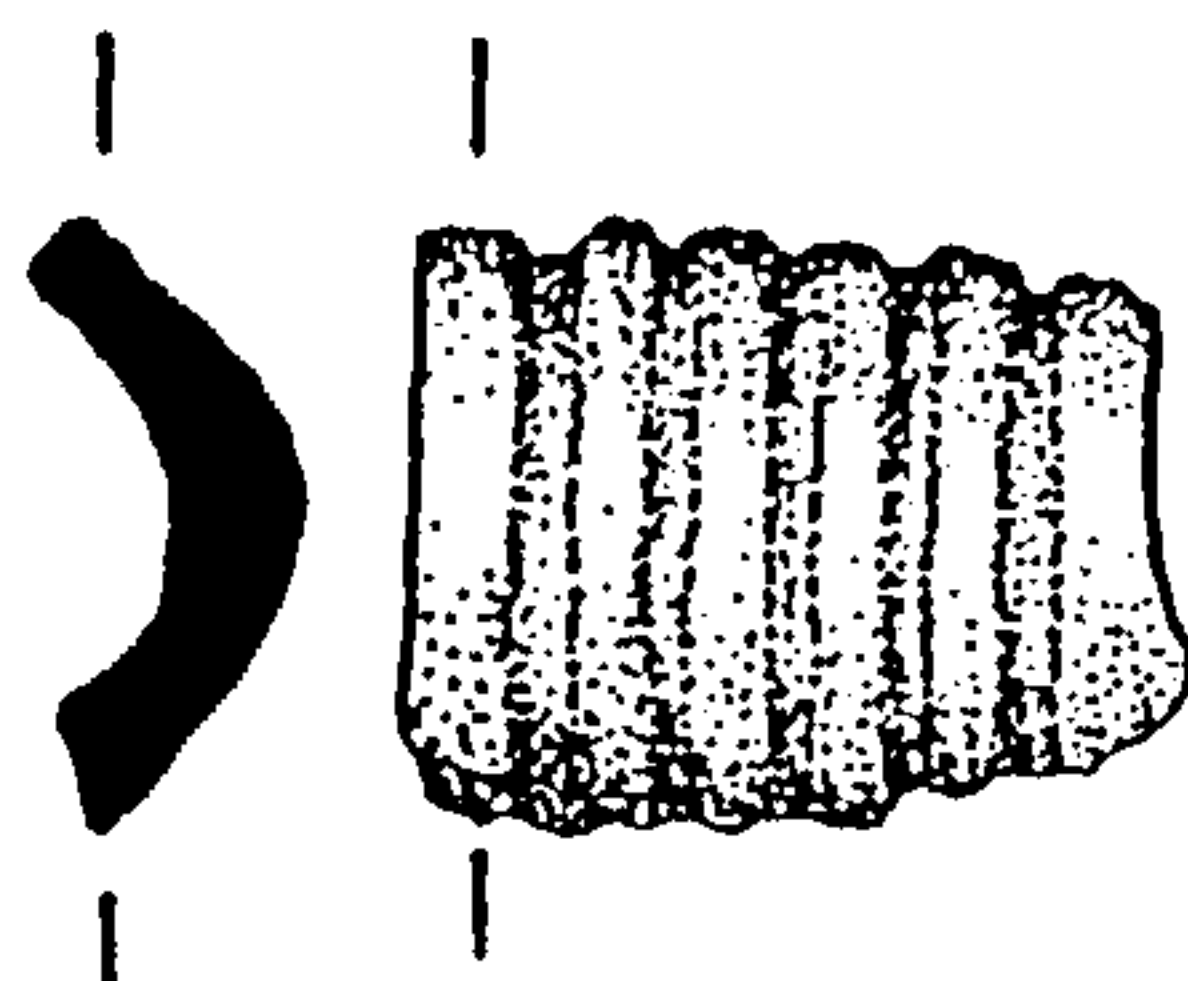
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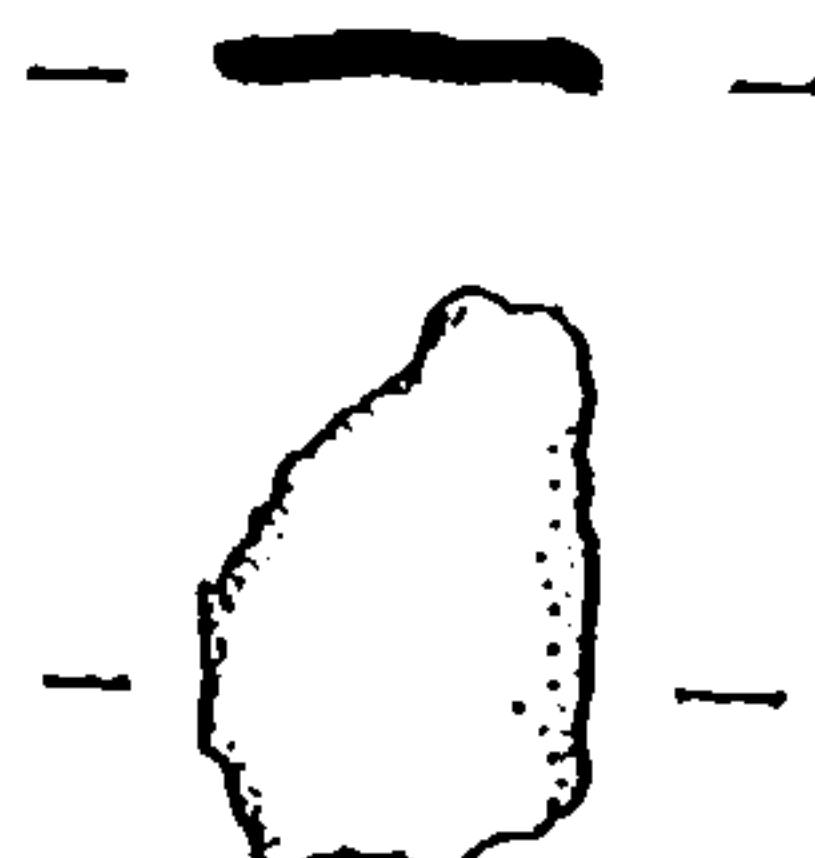
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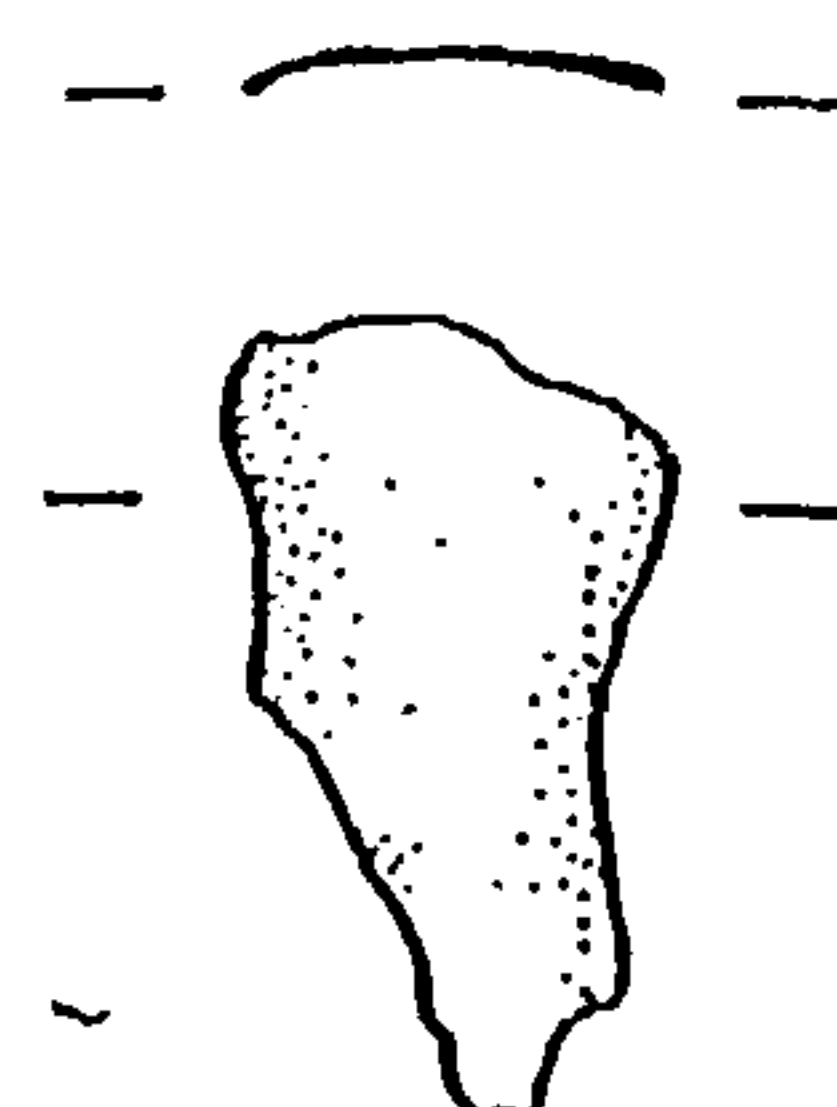
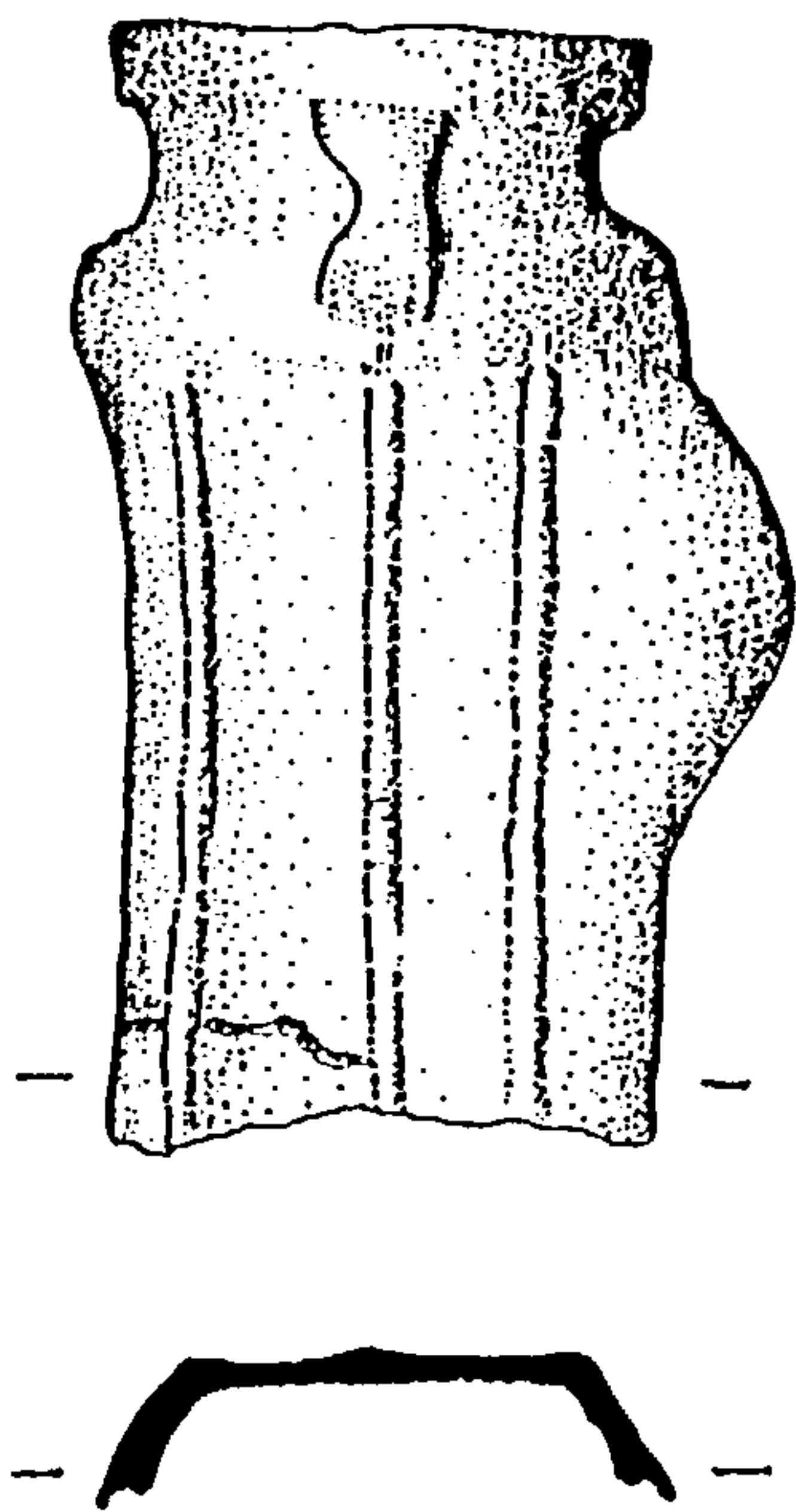
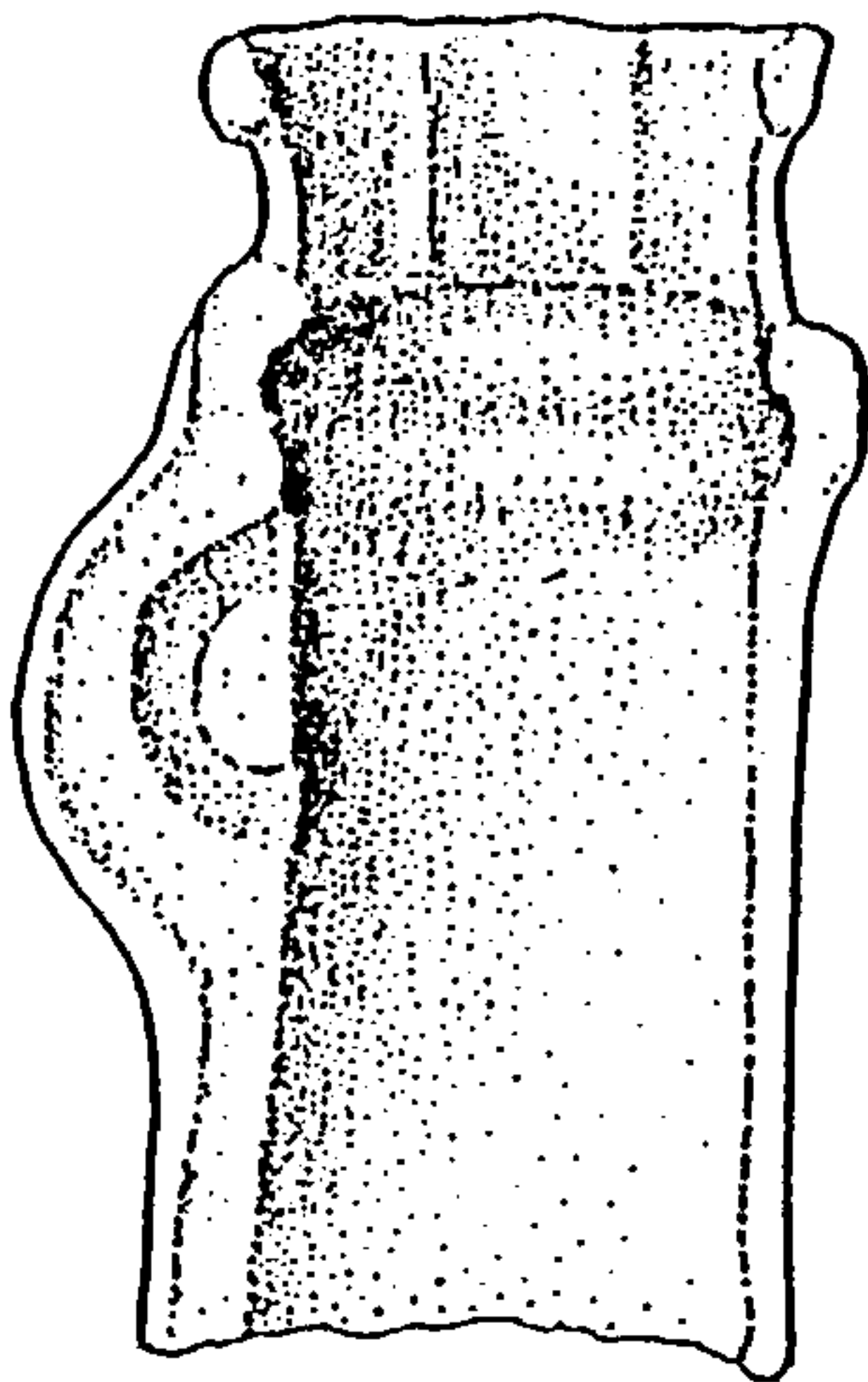


Fig. 27: The Grays Thurrock I Hoard (Ref. No. 02): Decorative Fittings, Cauldron Fragments and Miscellaneous Fragments

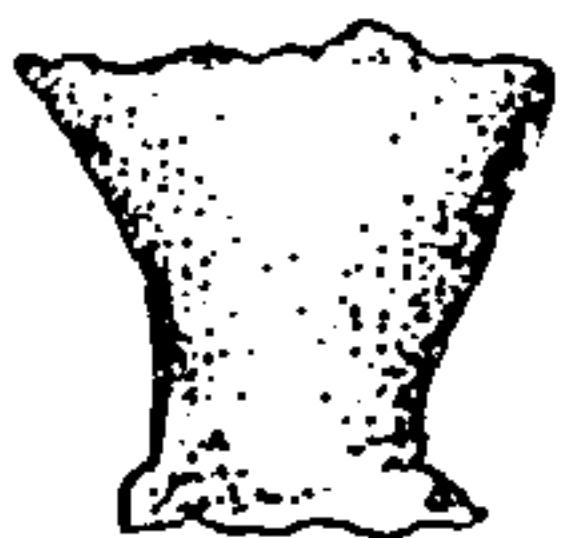
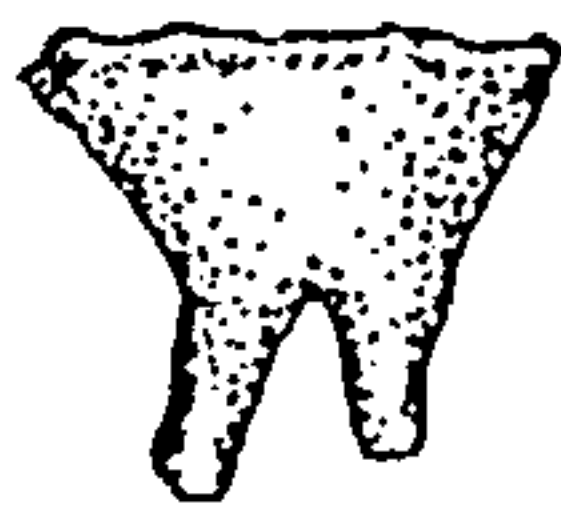
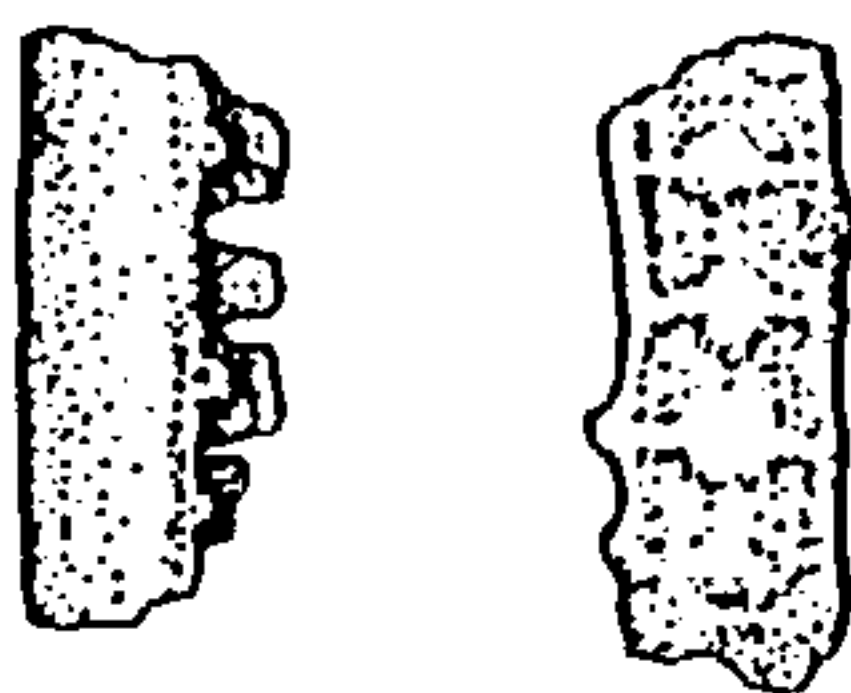
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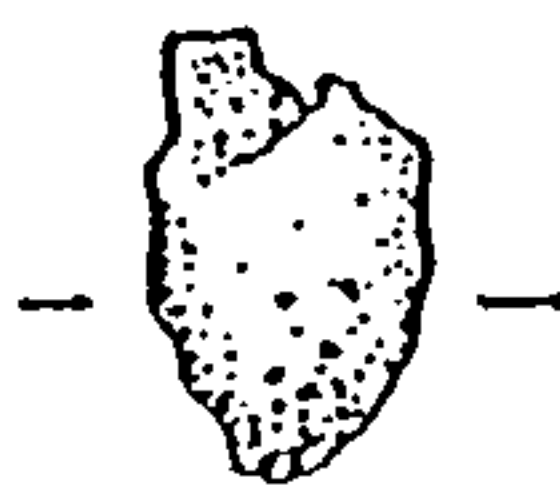
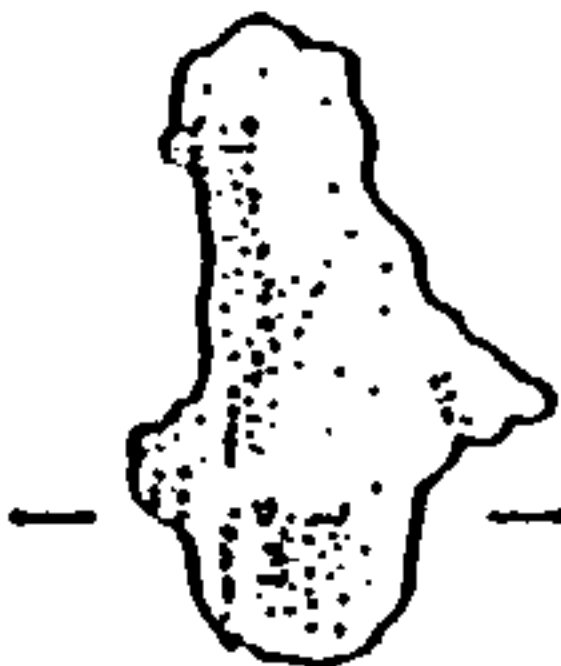
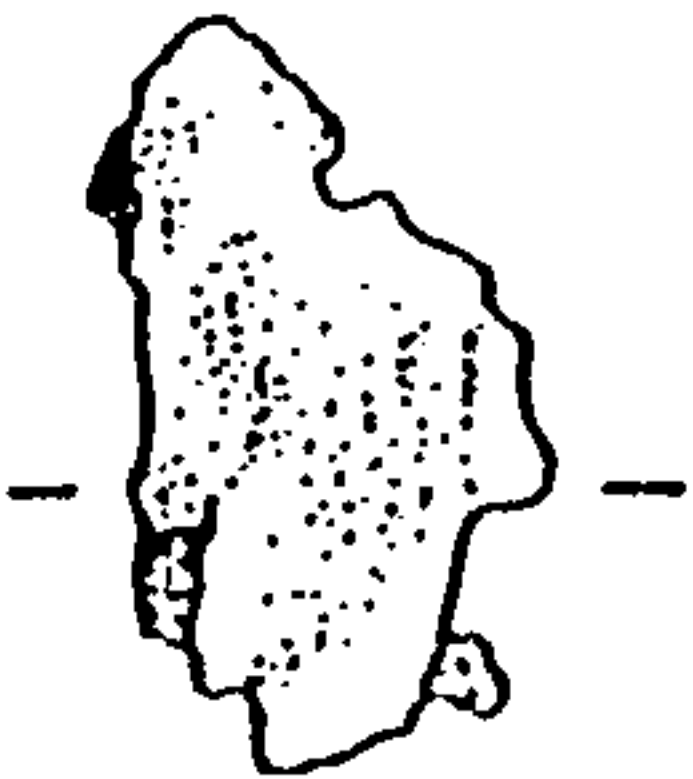
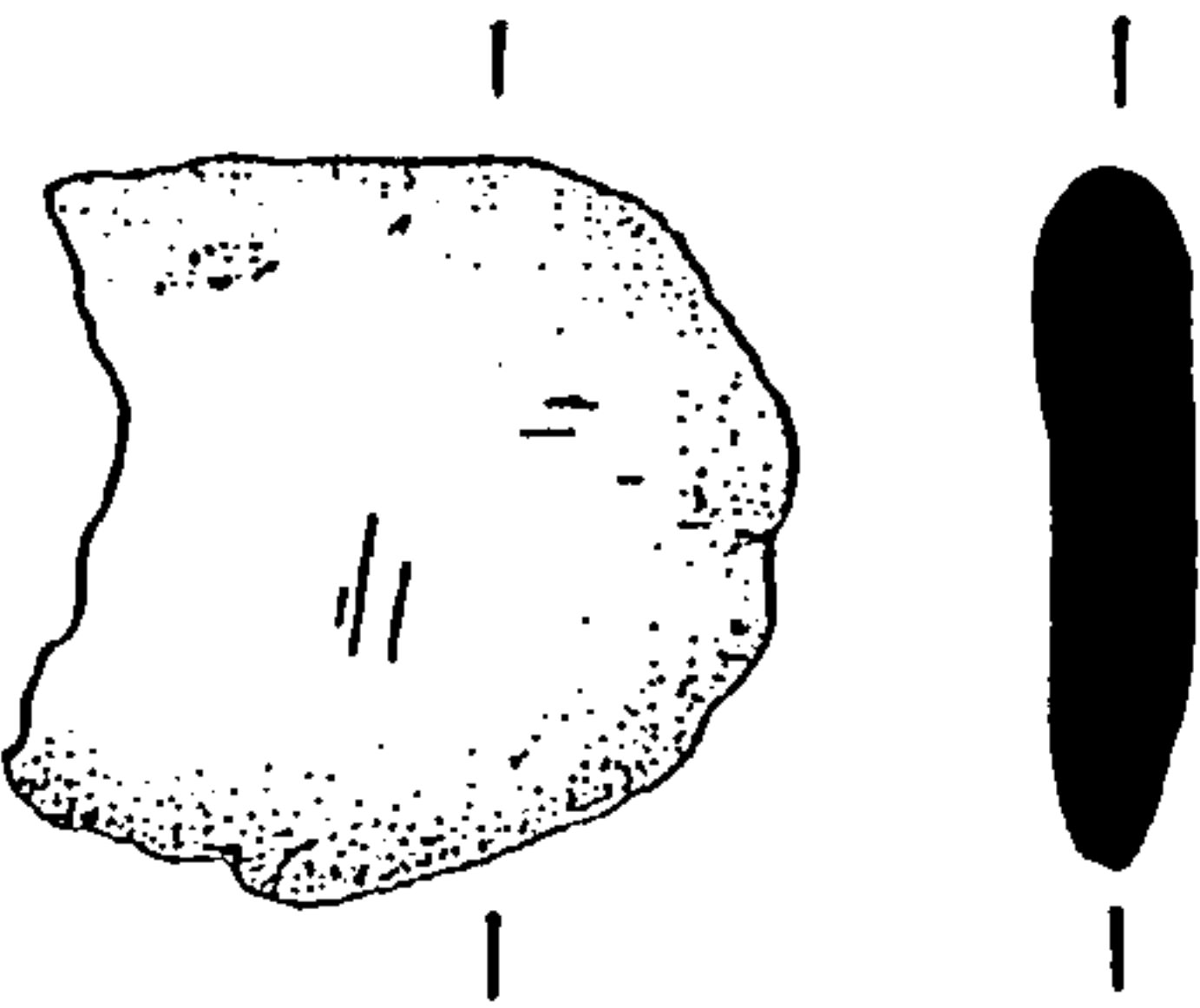
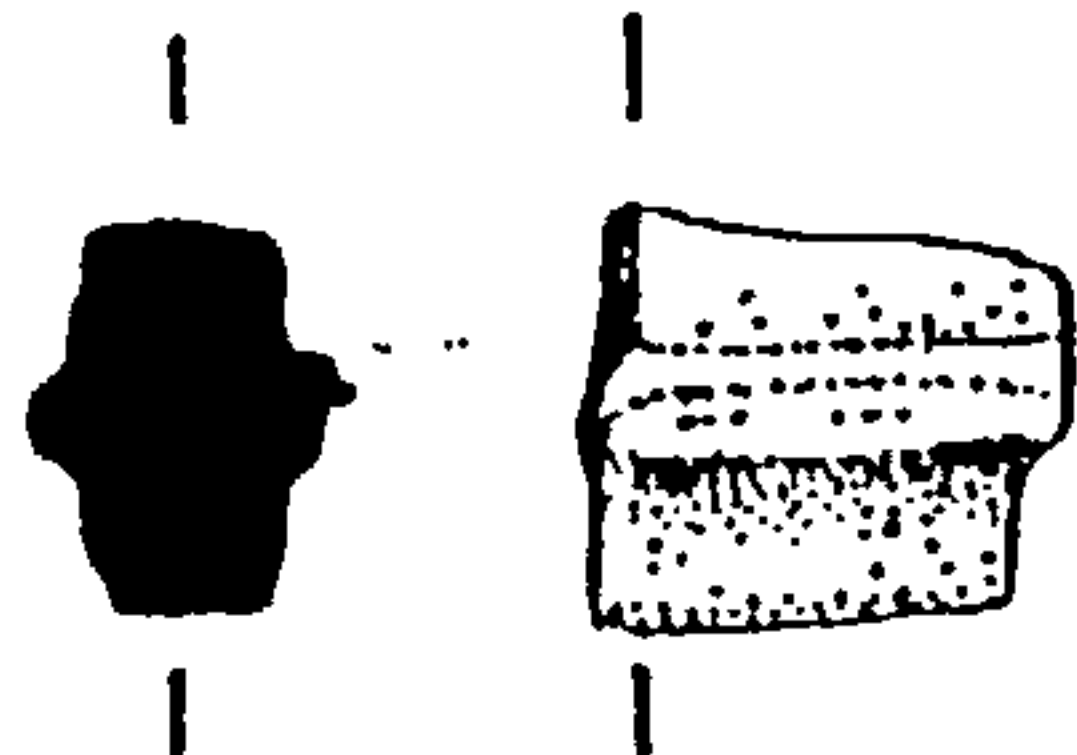
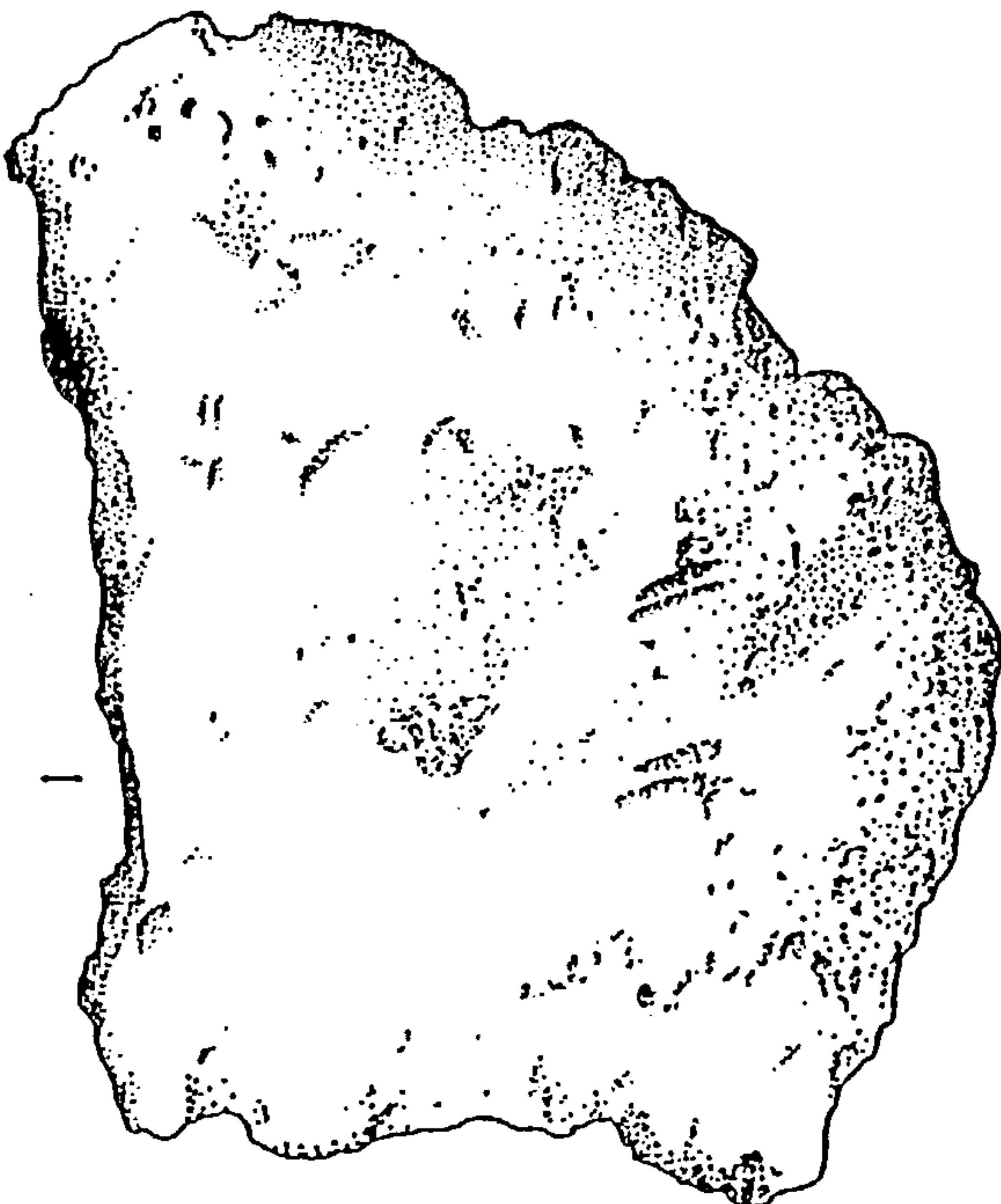


Fig. 28: The Grays Thurrock I Hoard (Ref. No. 02): Metalworking Debris

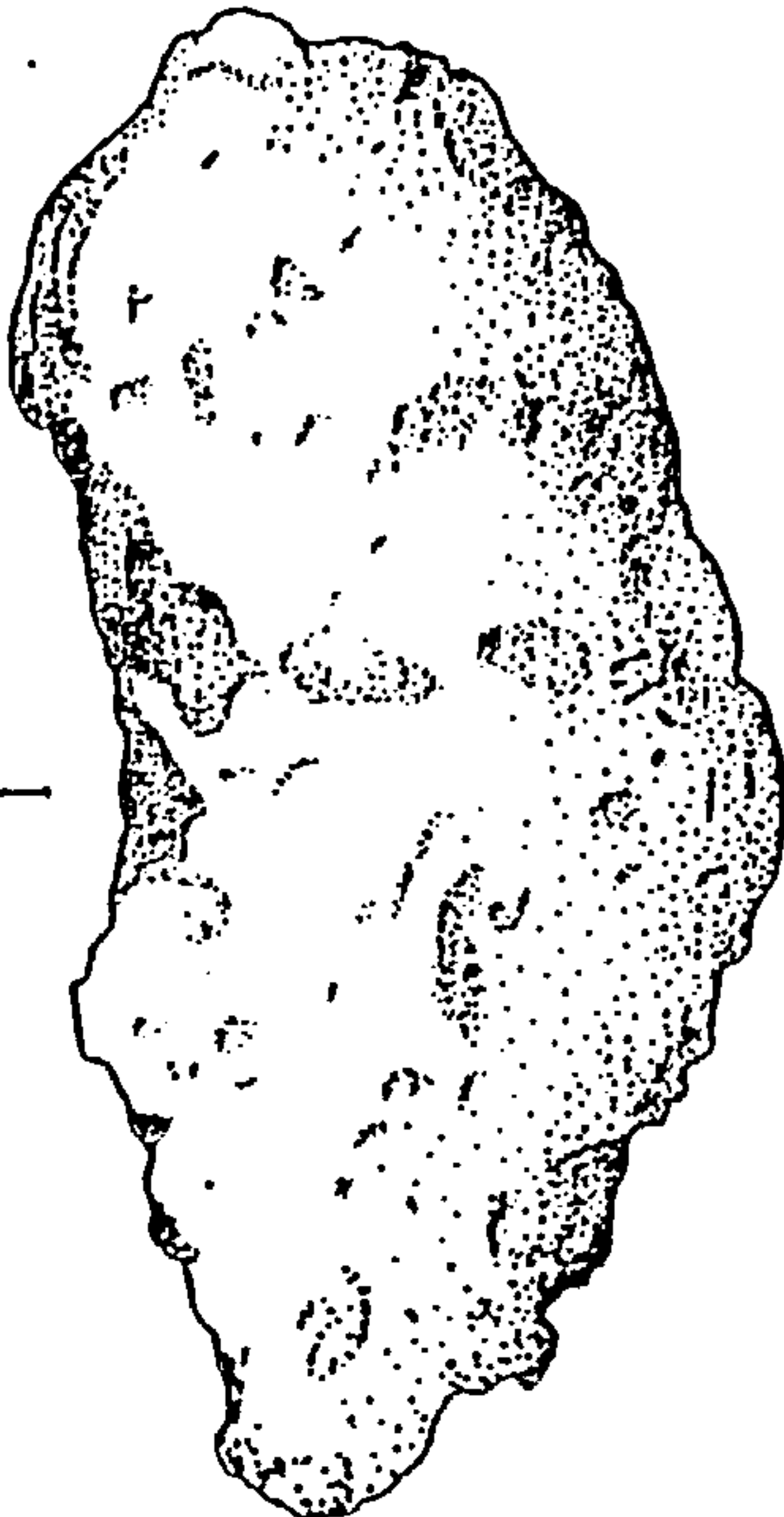
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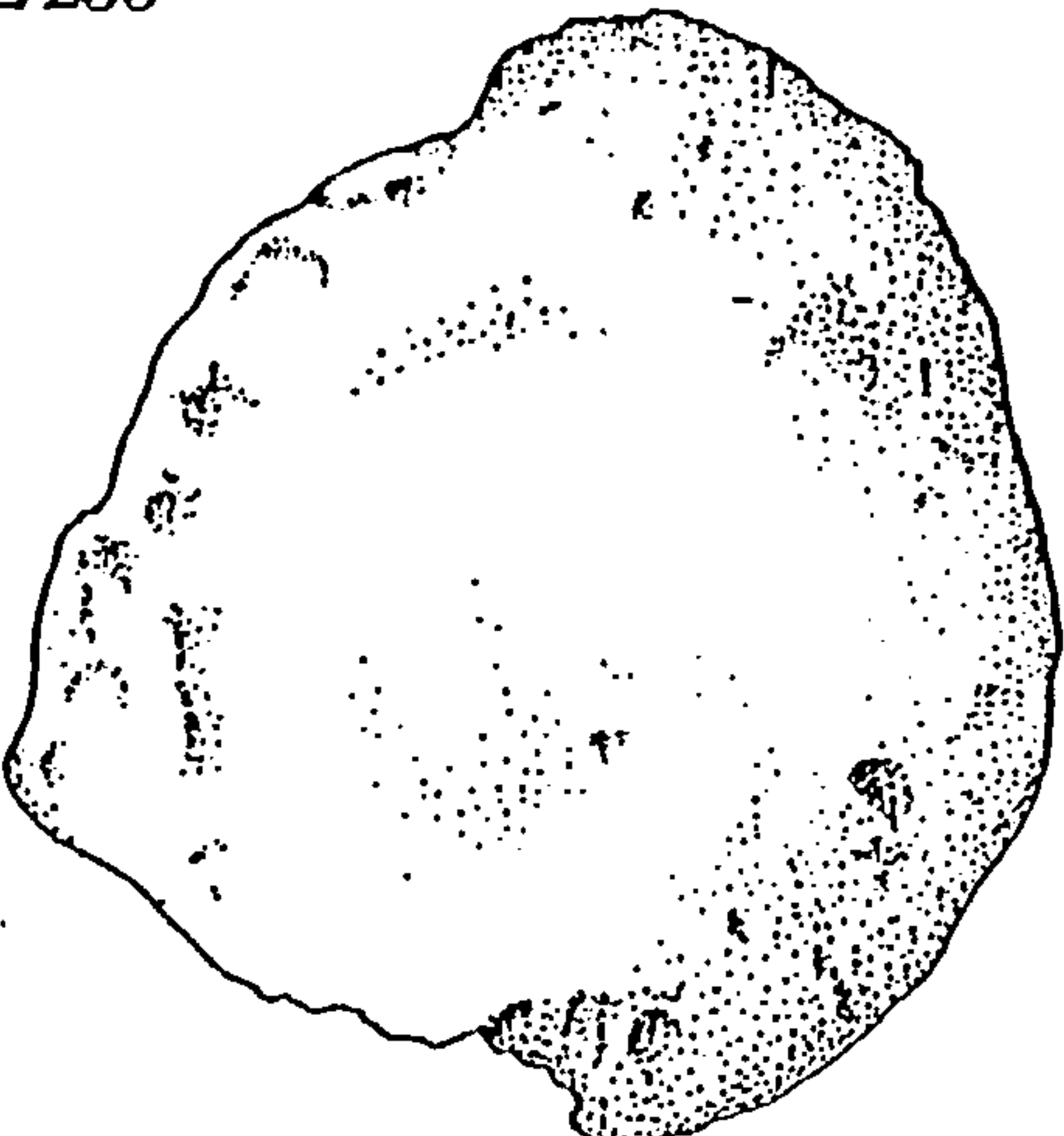
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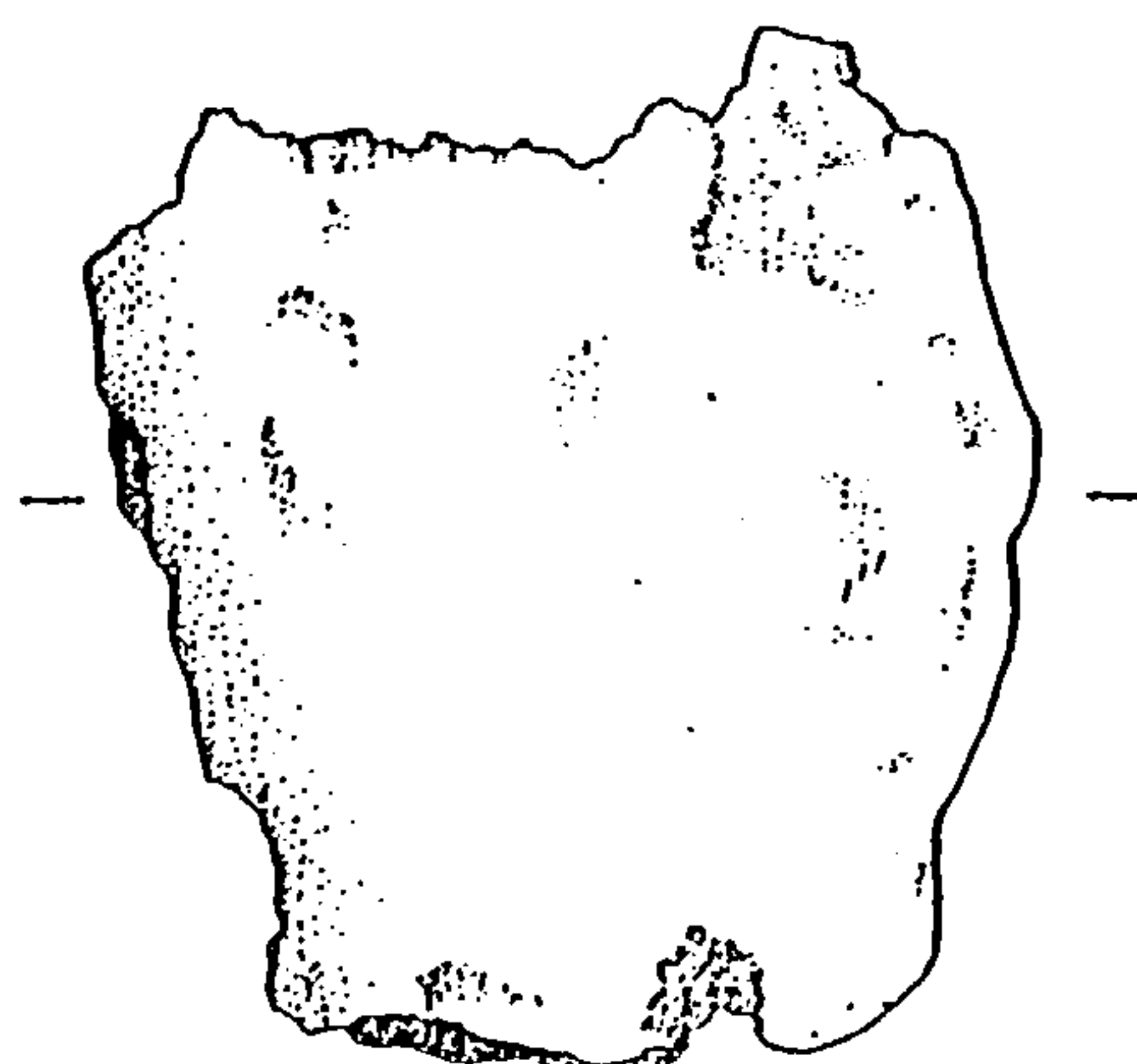
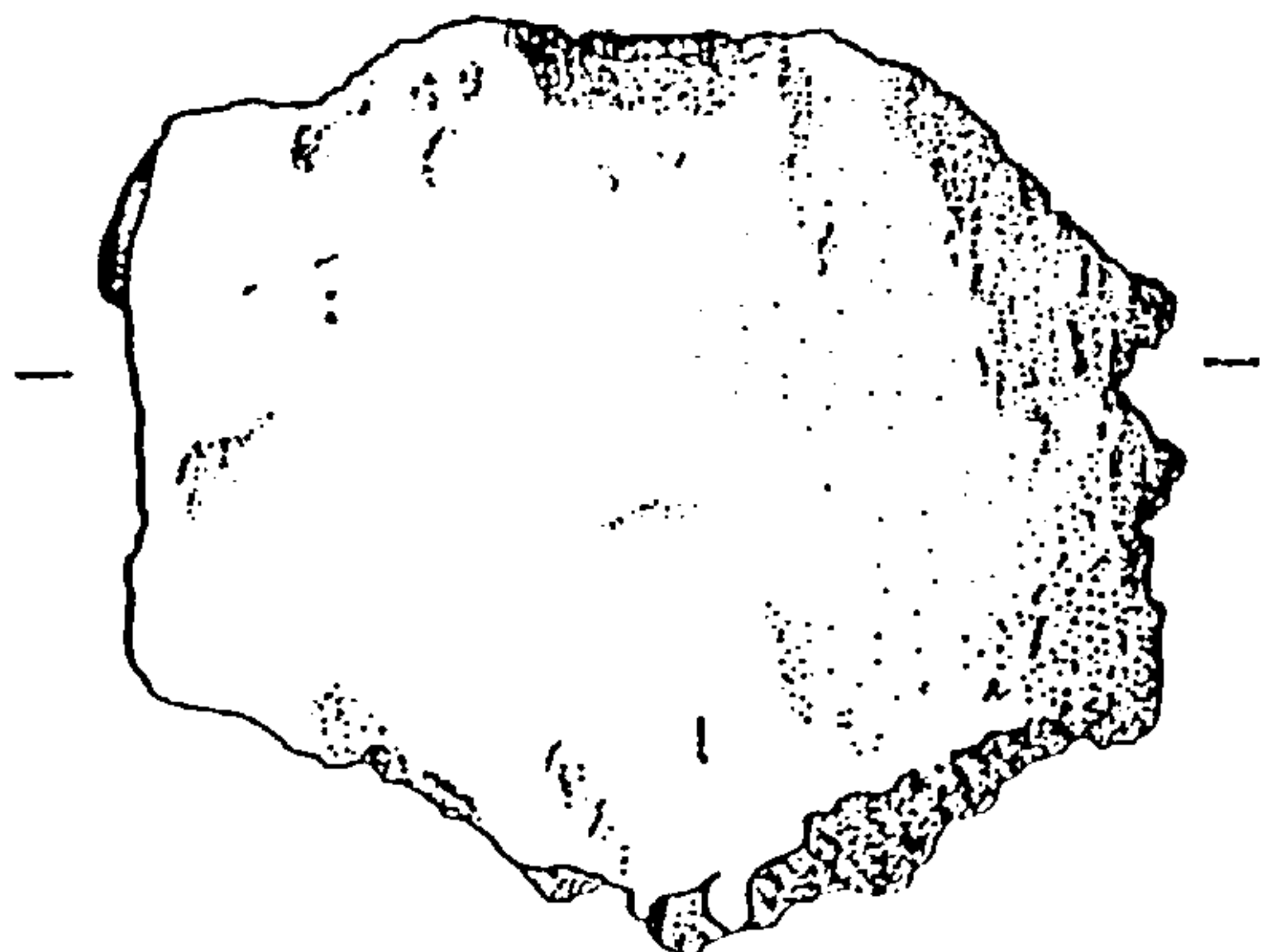


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Fig. 29: The Grays Thurrock I Hoard (Ref. No. 02): Ingot Metal (i)

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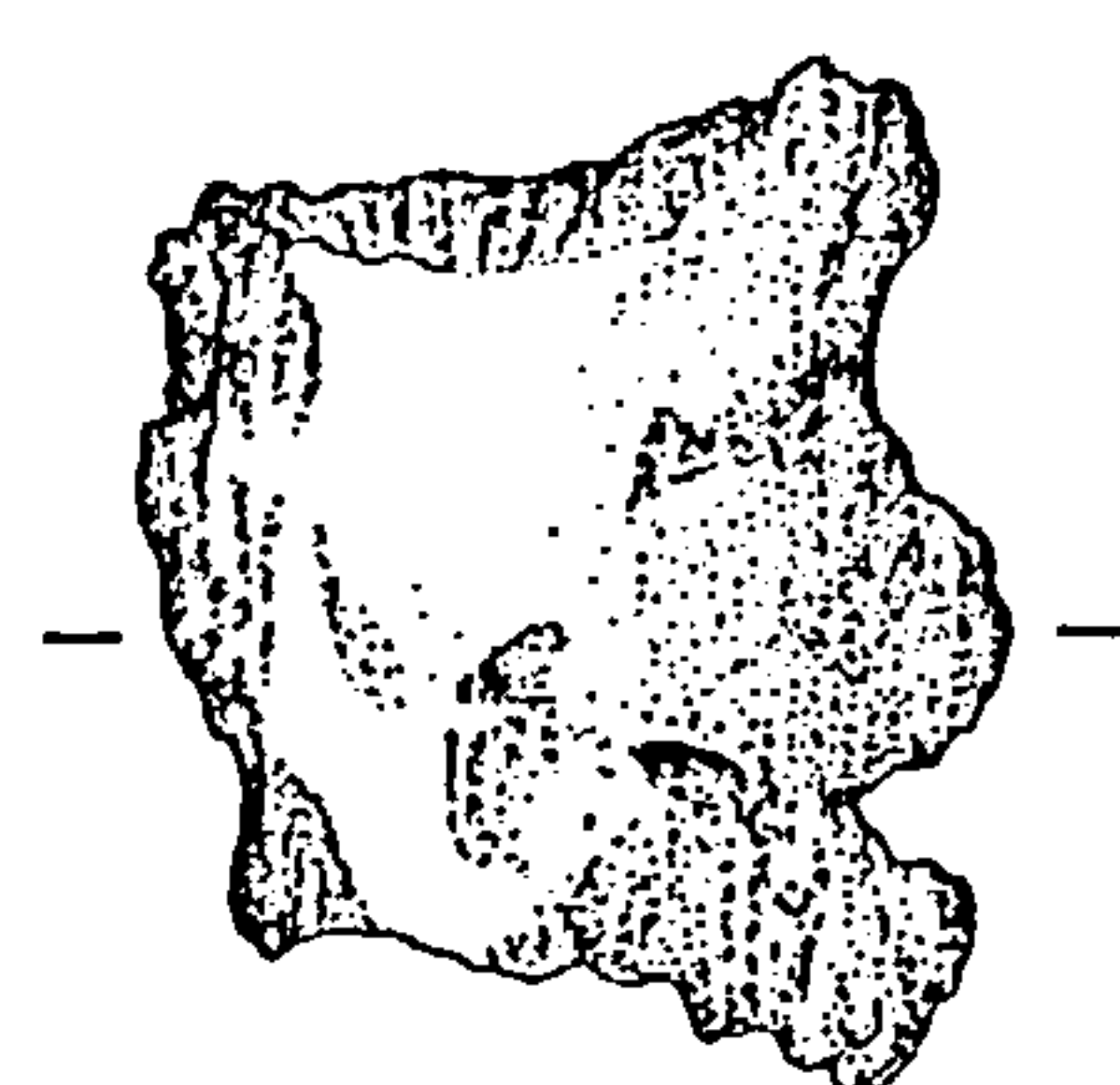
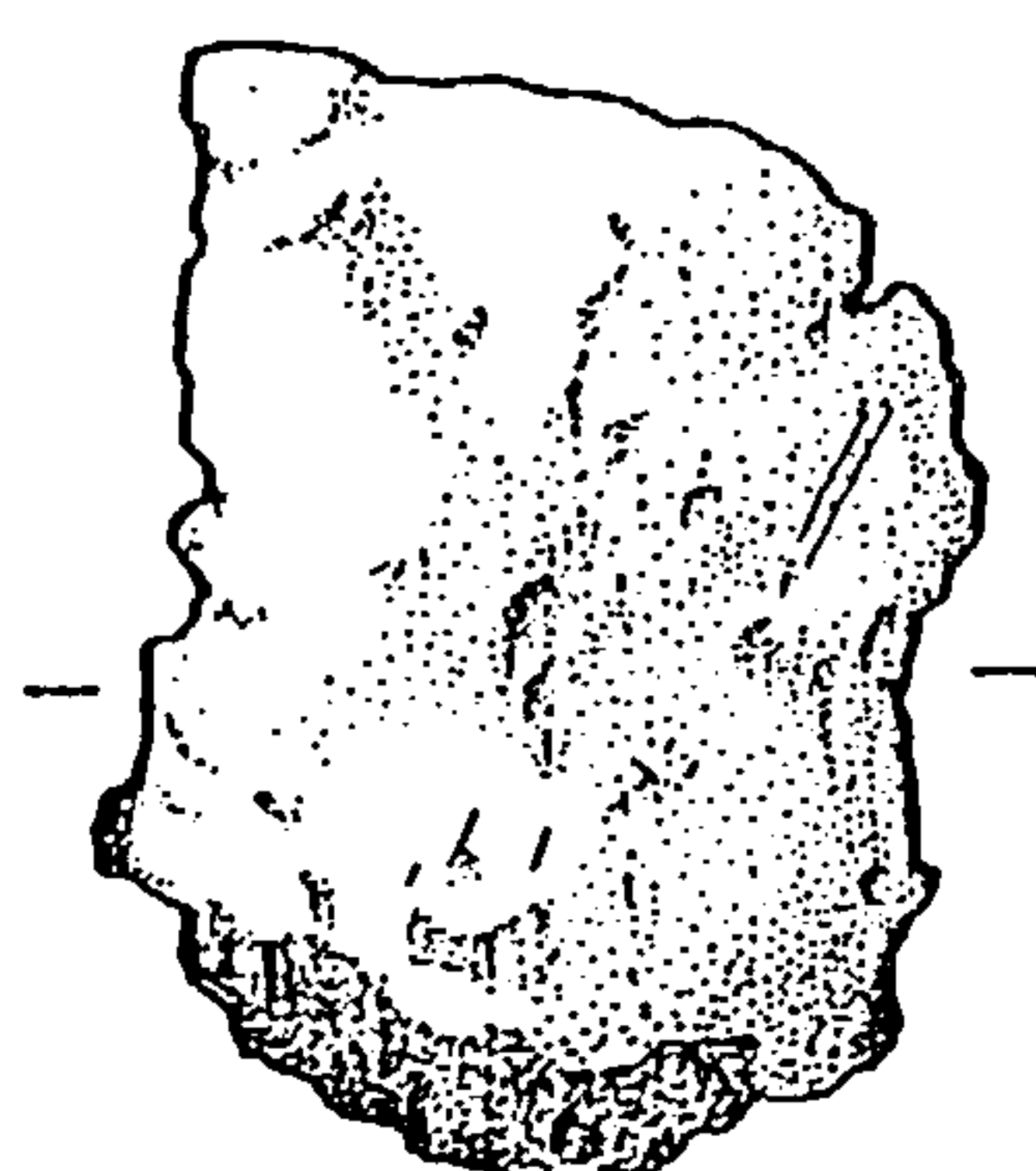
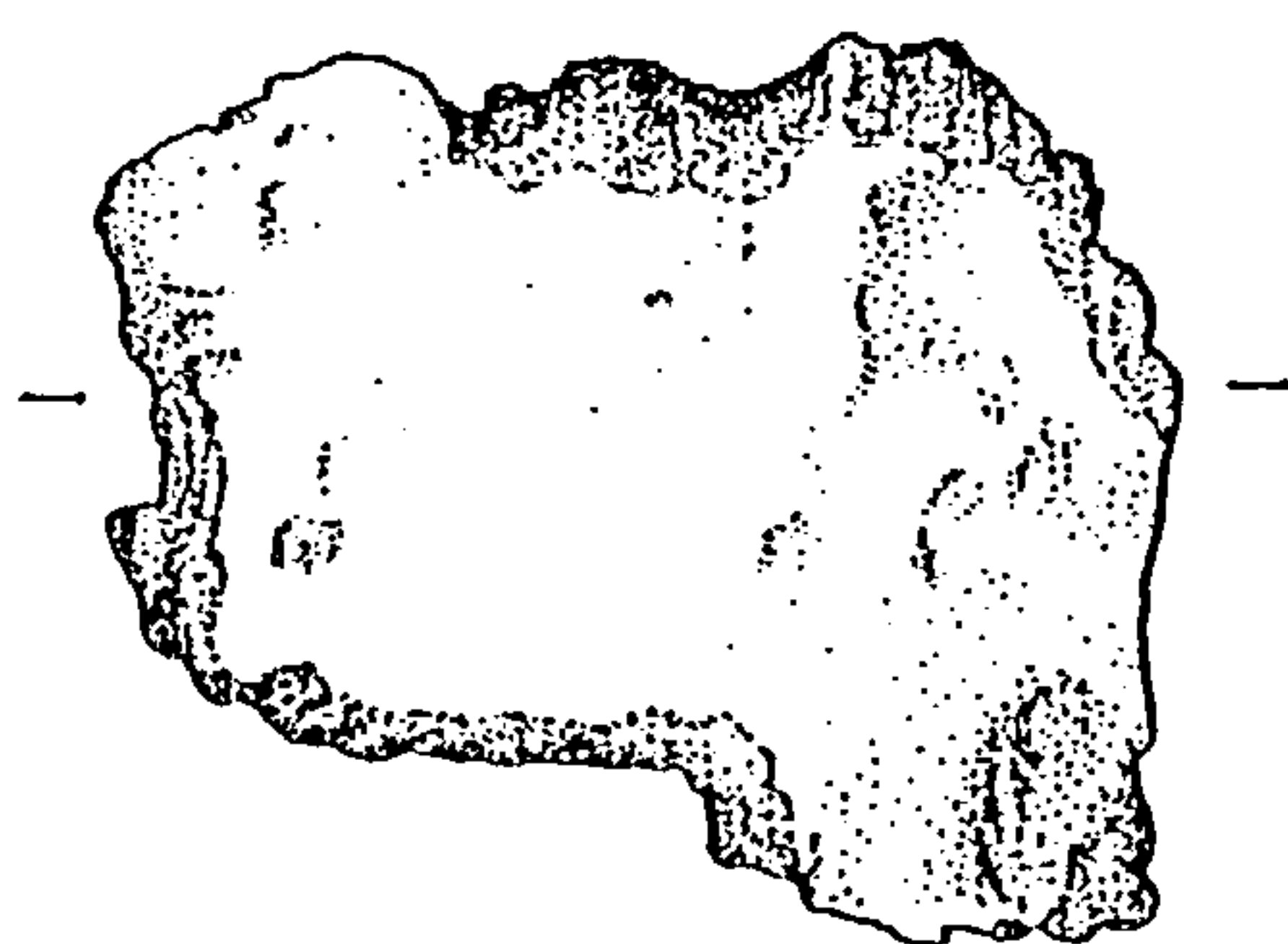
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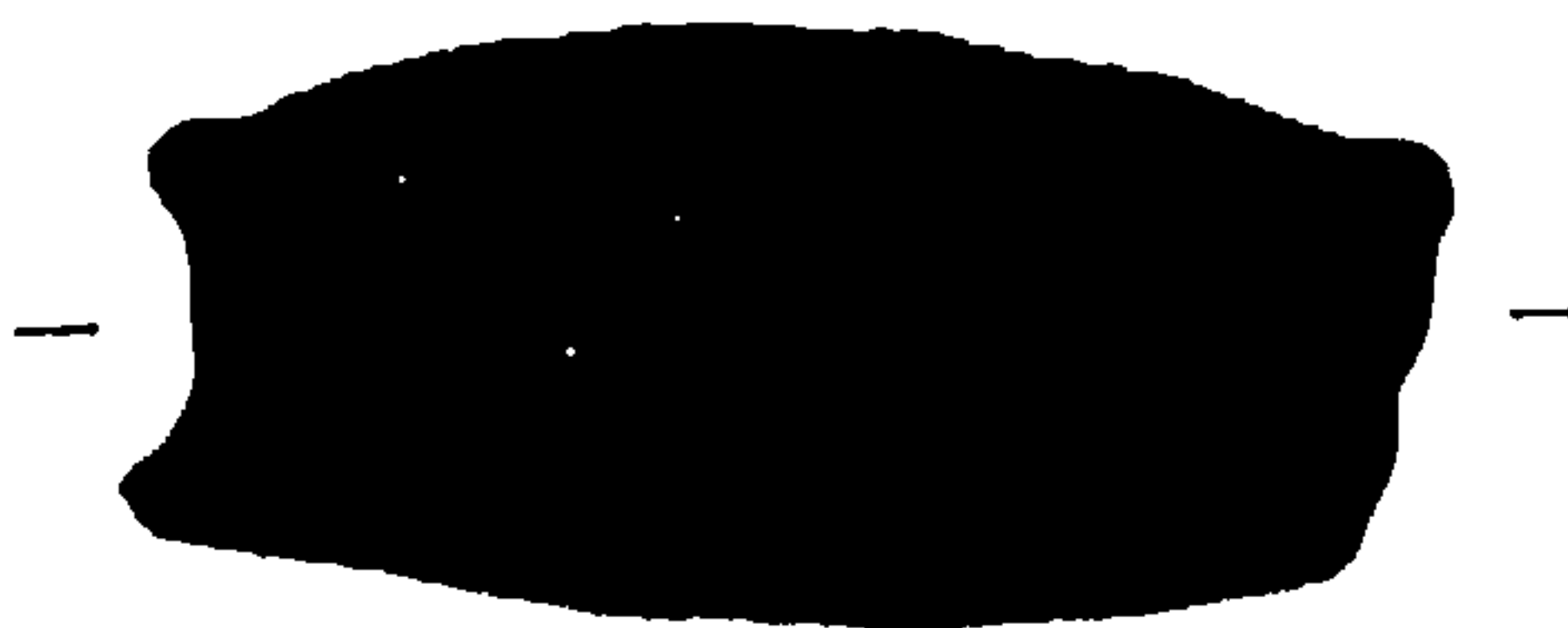
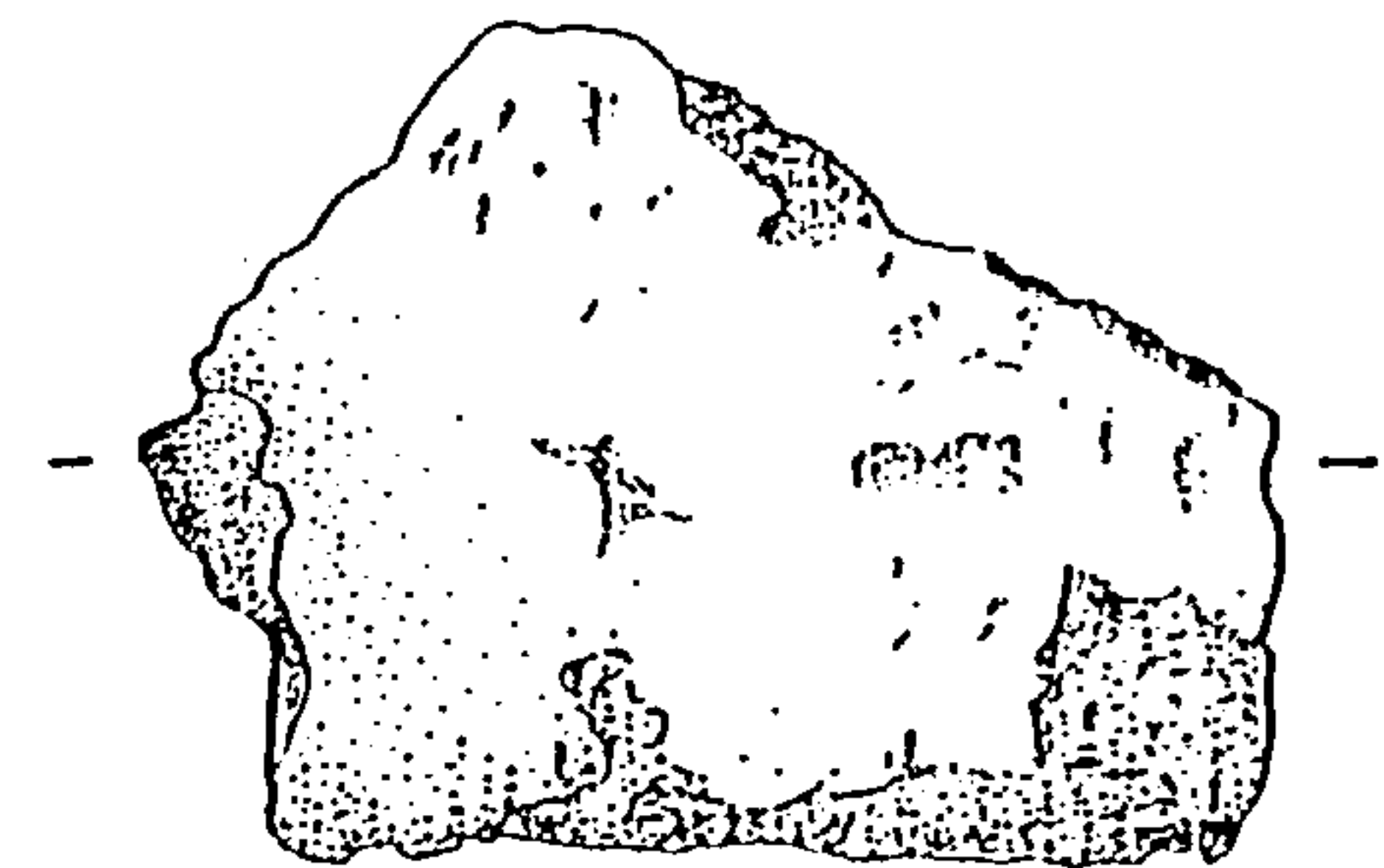
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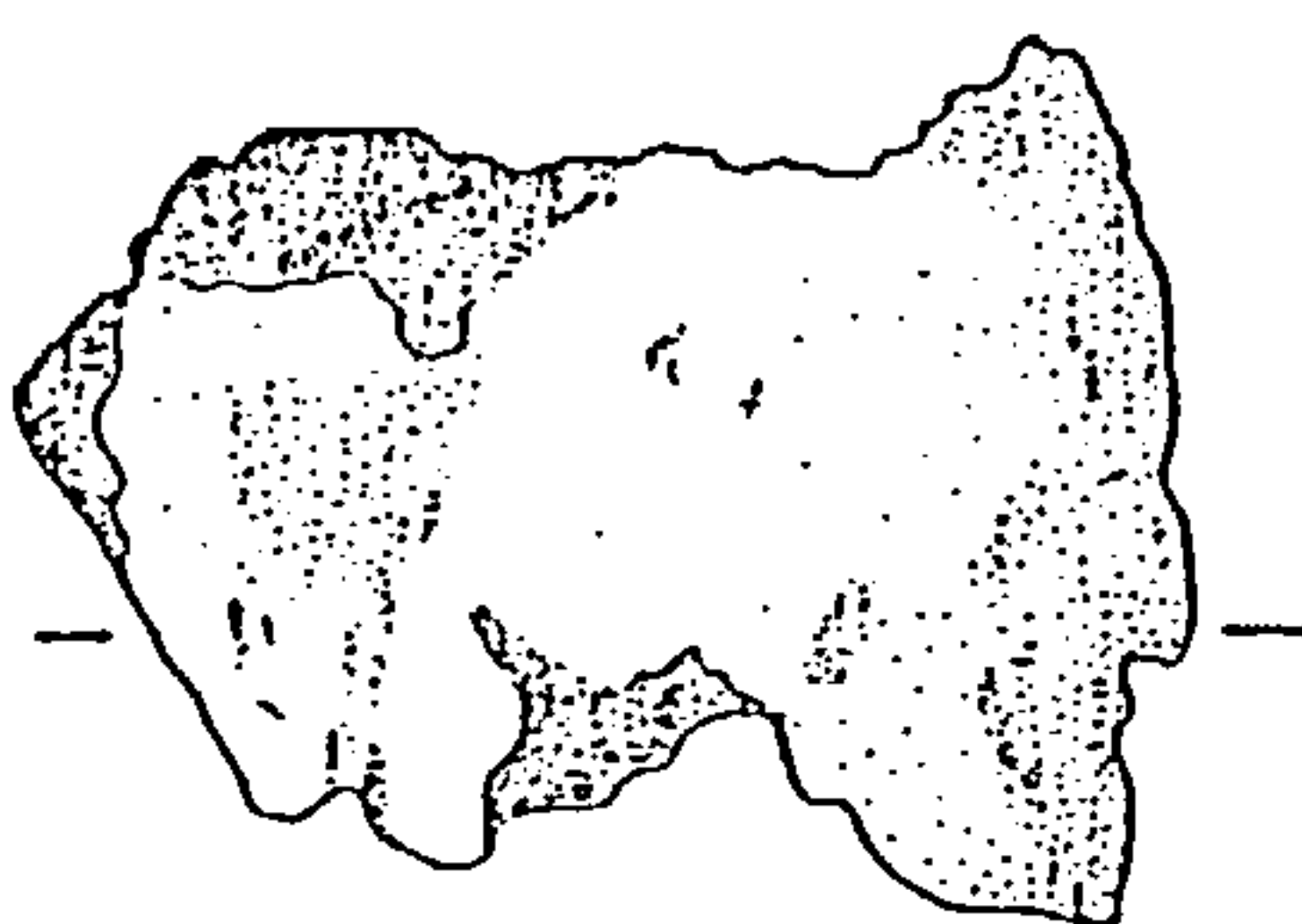
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Fig. 30: The Grays Thurrock I Hoard (Ref. No. 02): Ingot Metal (ii)

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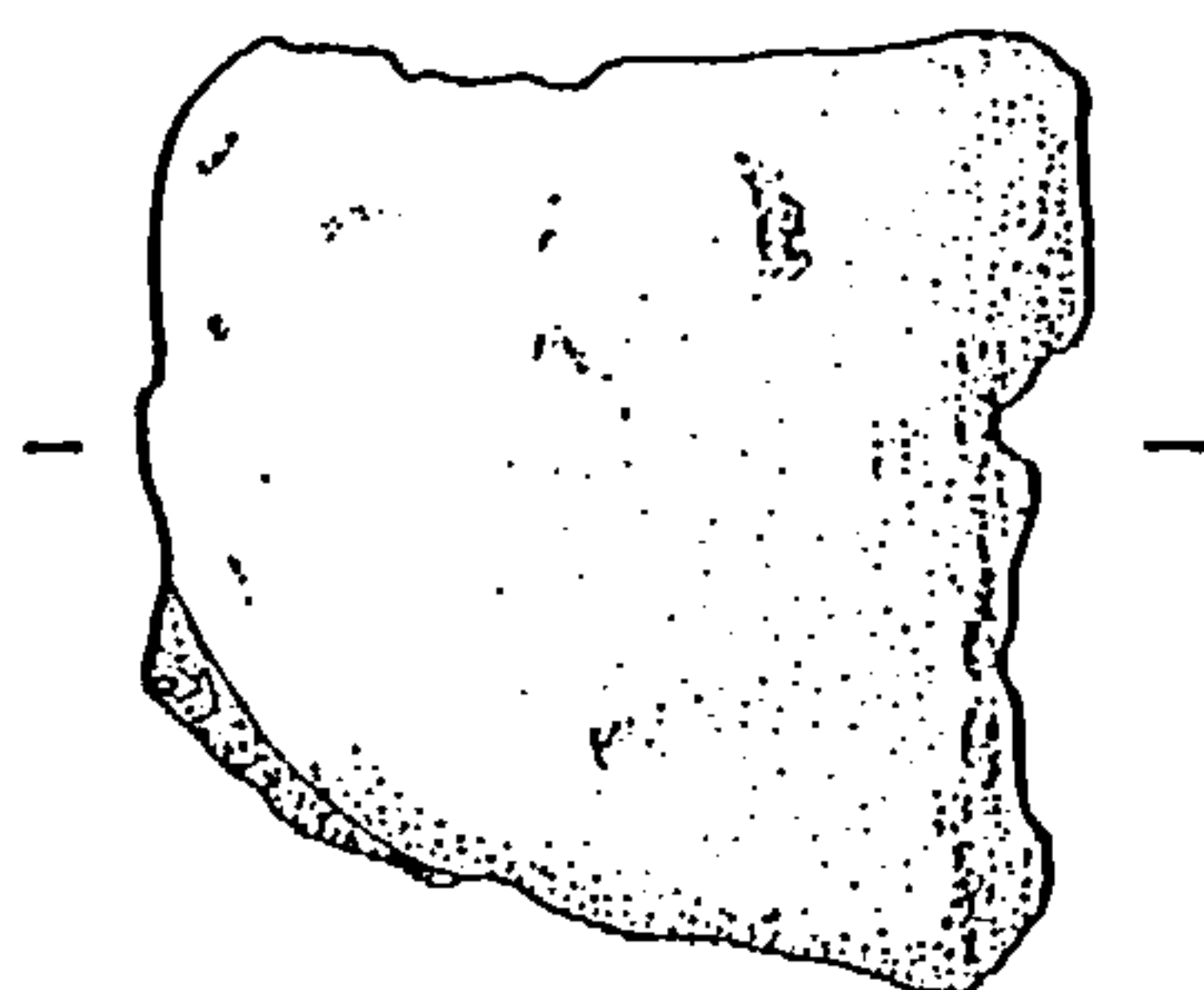


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0 2cm

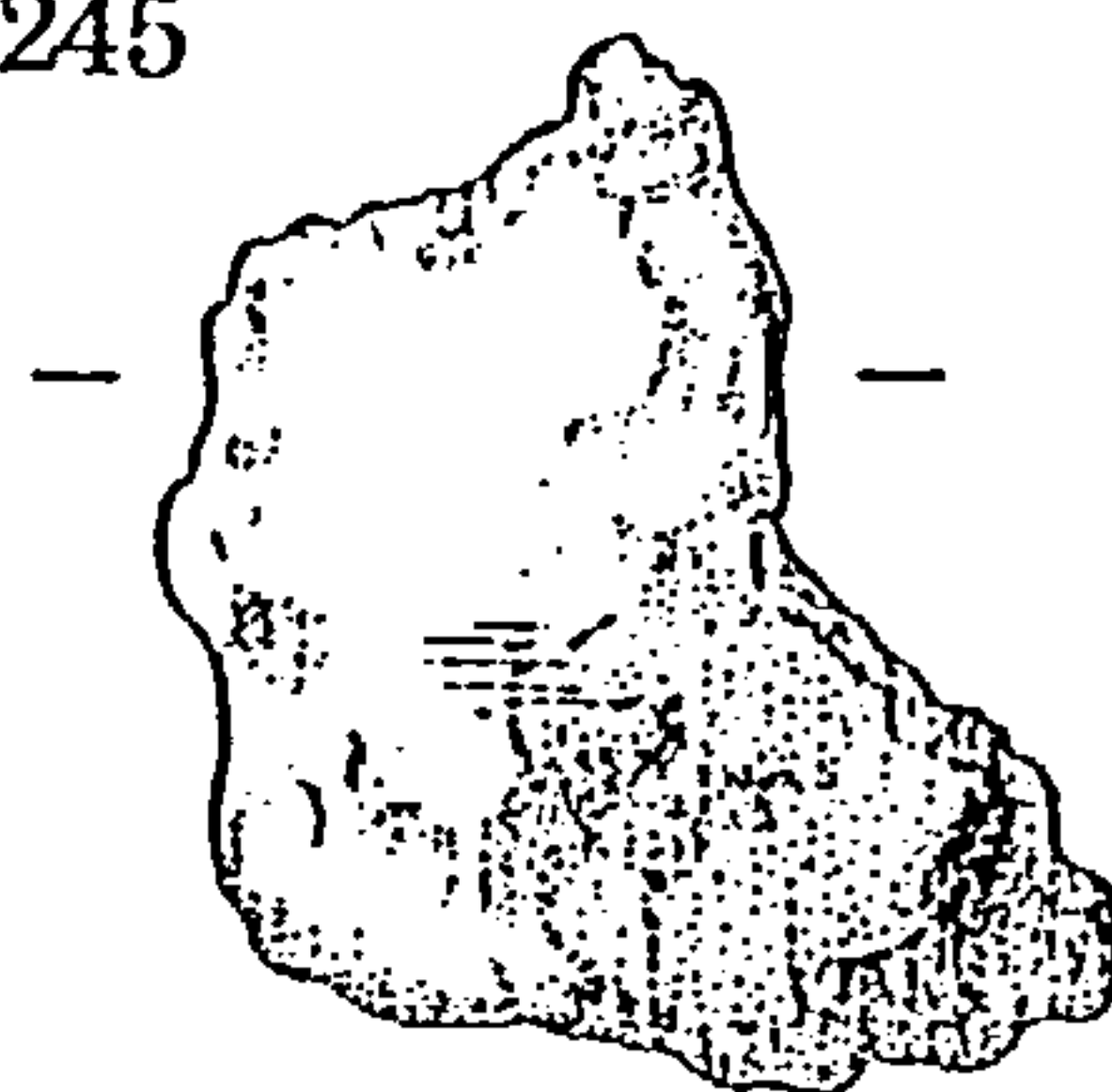
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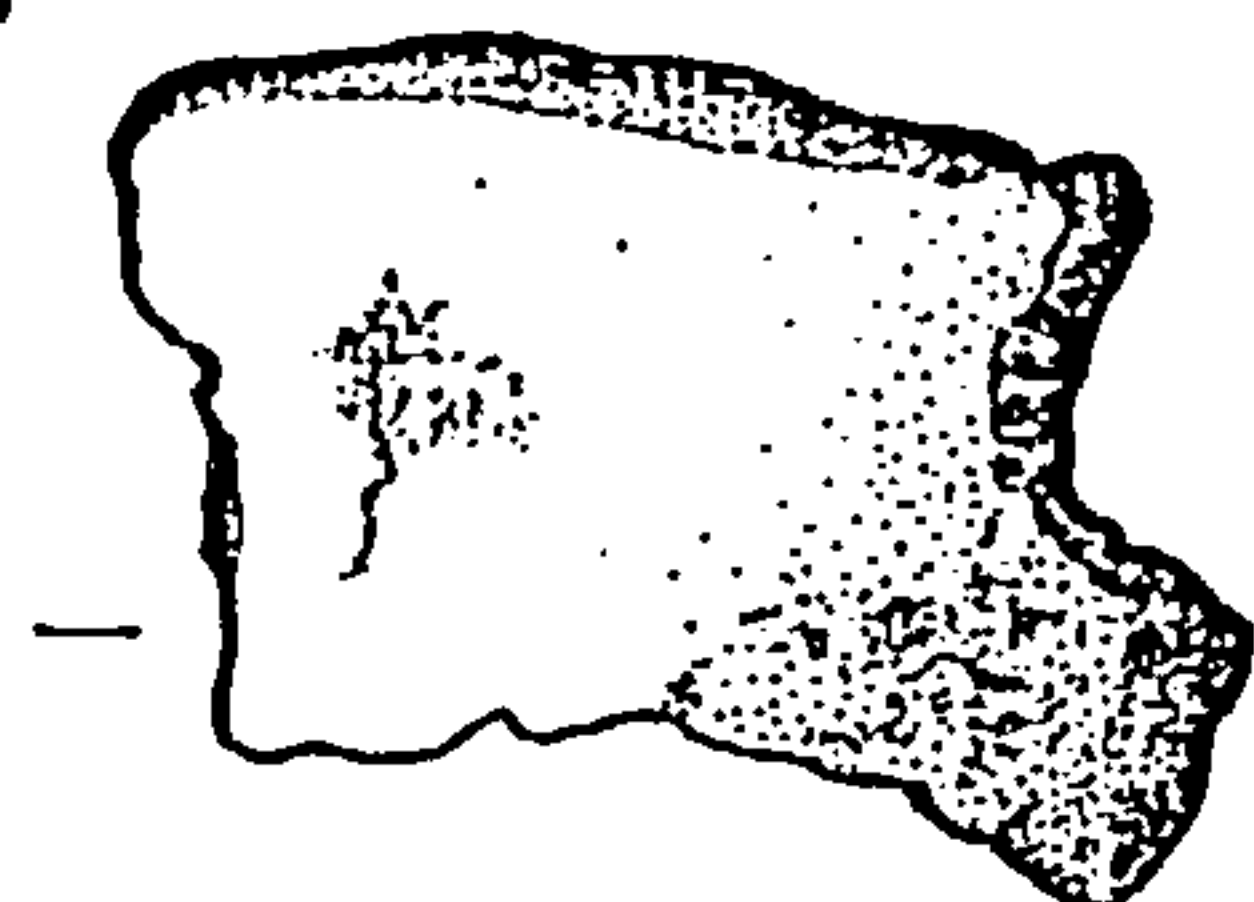
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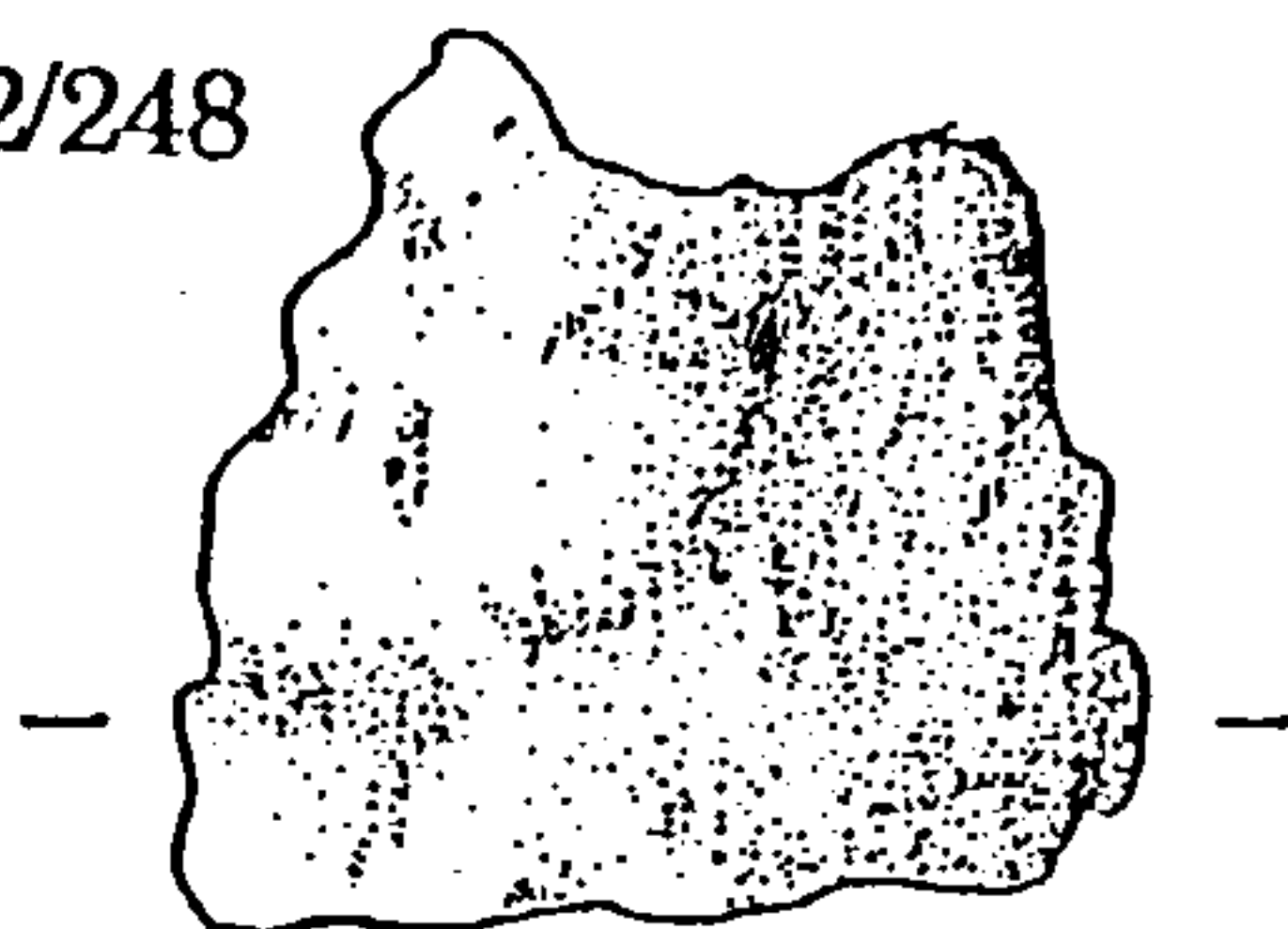
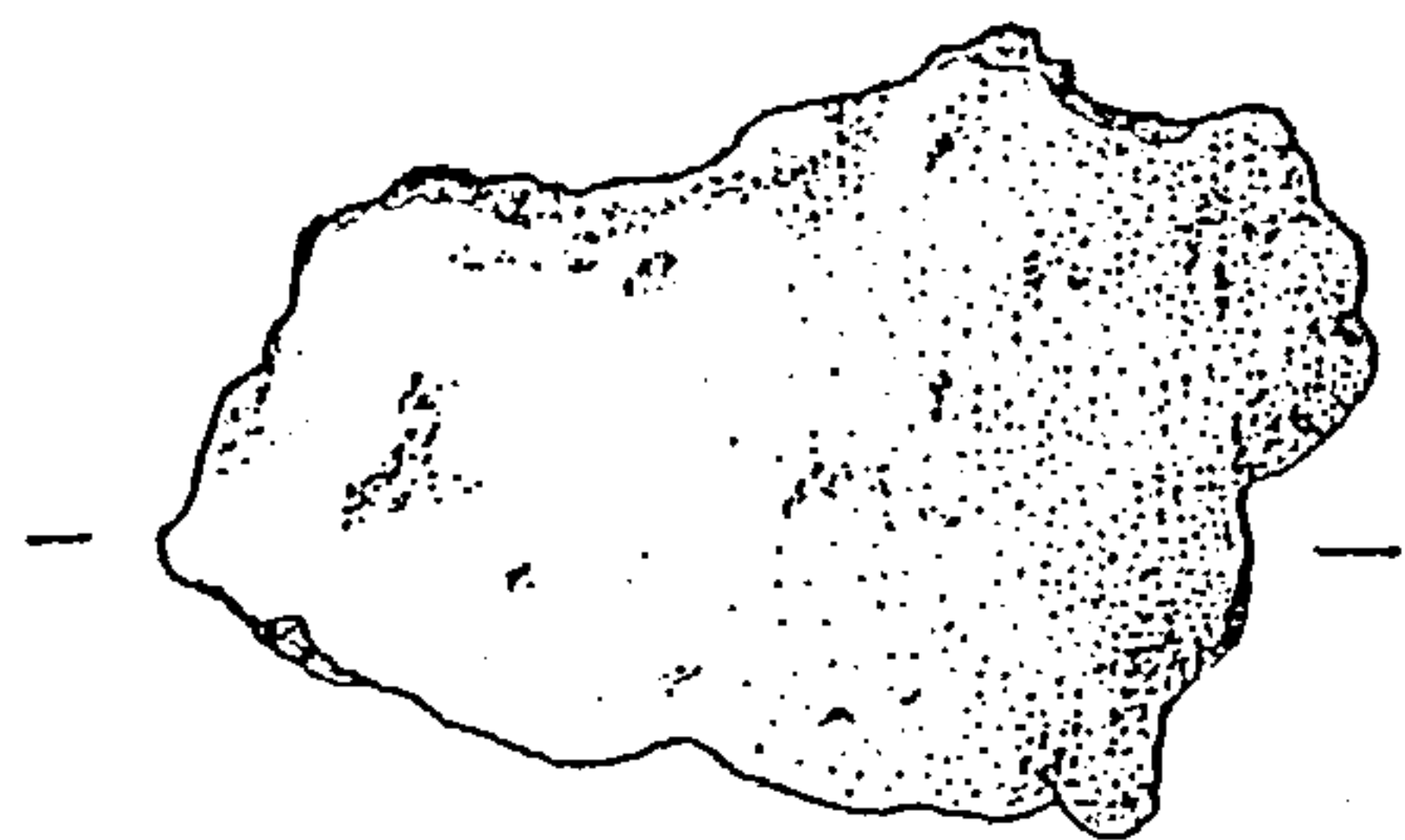
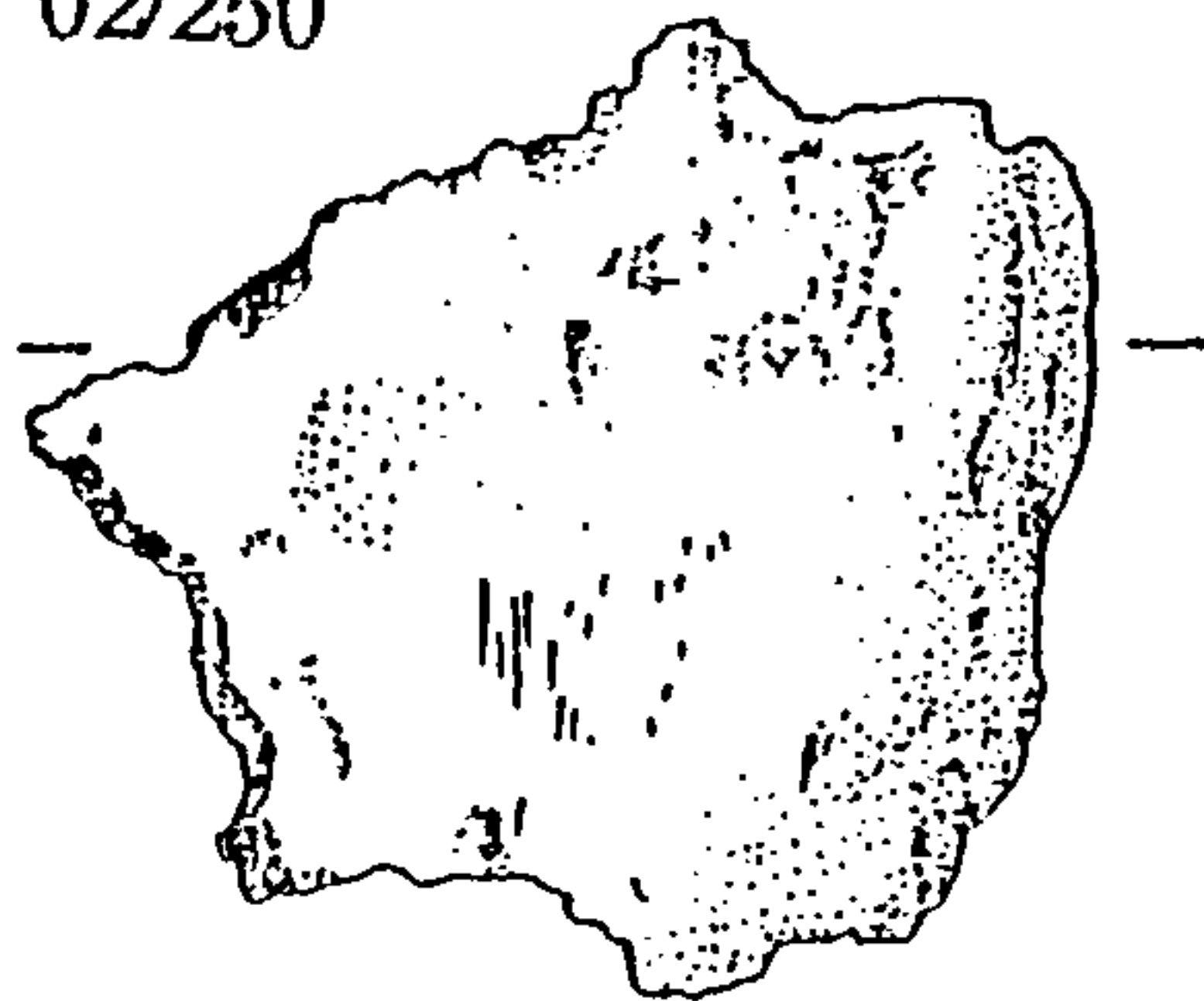


Fig. 31: The Grays Thurrock I Hoard (Ref. No. 02): Ingot Metal (iii)

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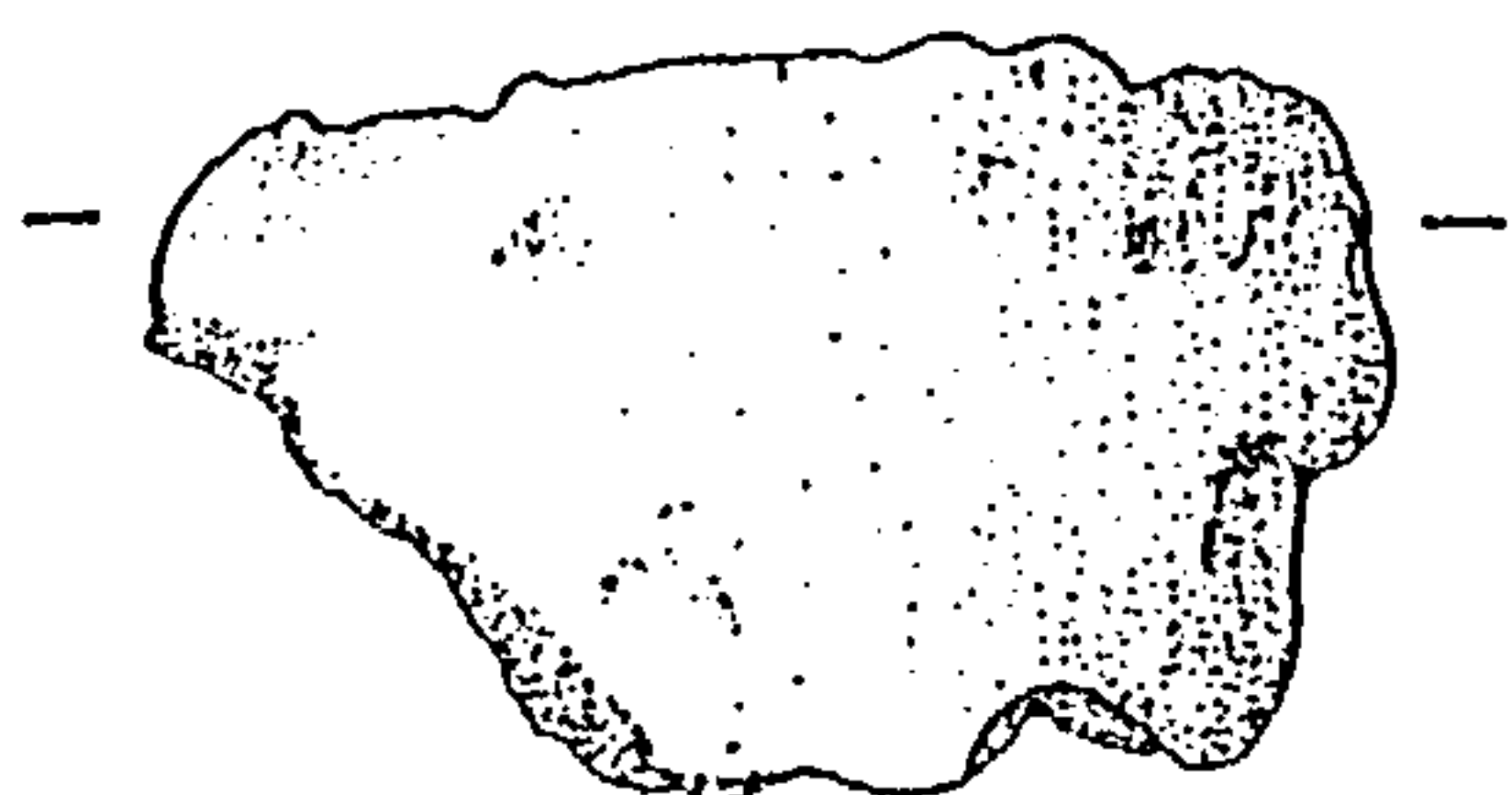
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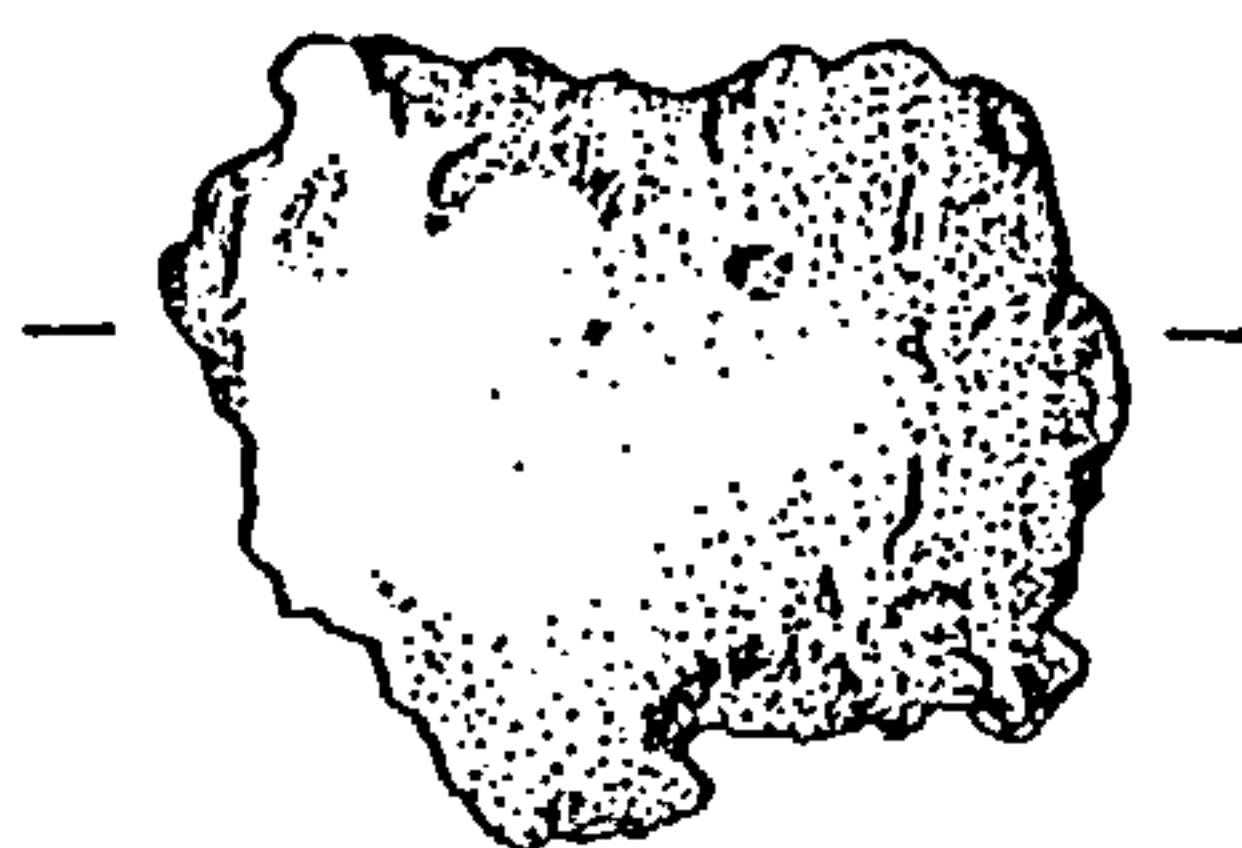
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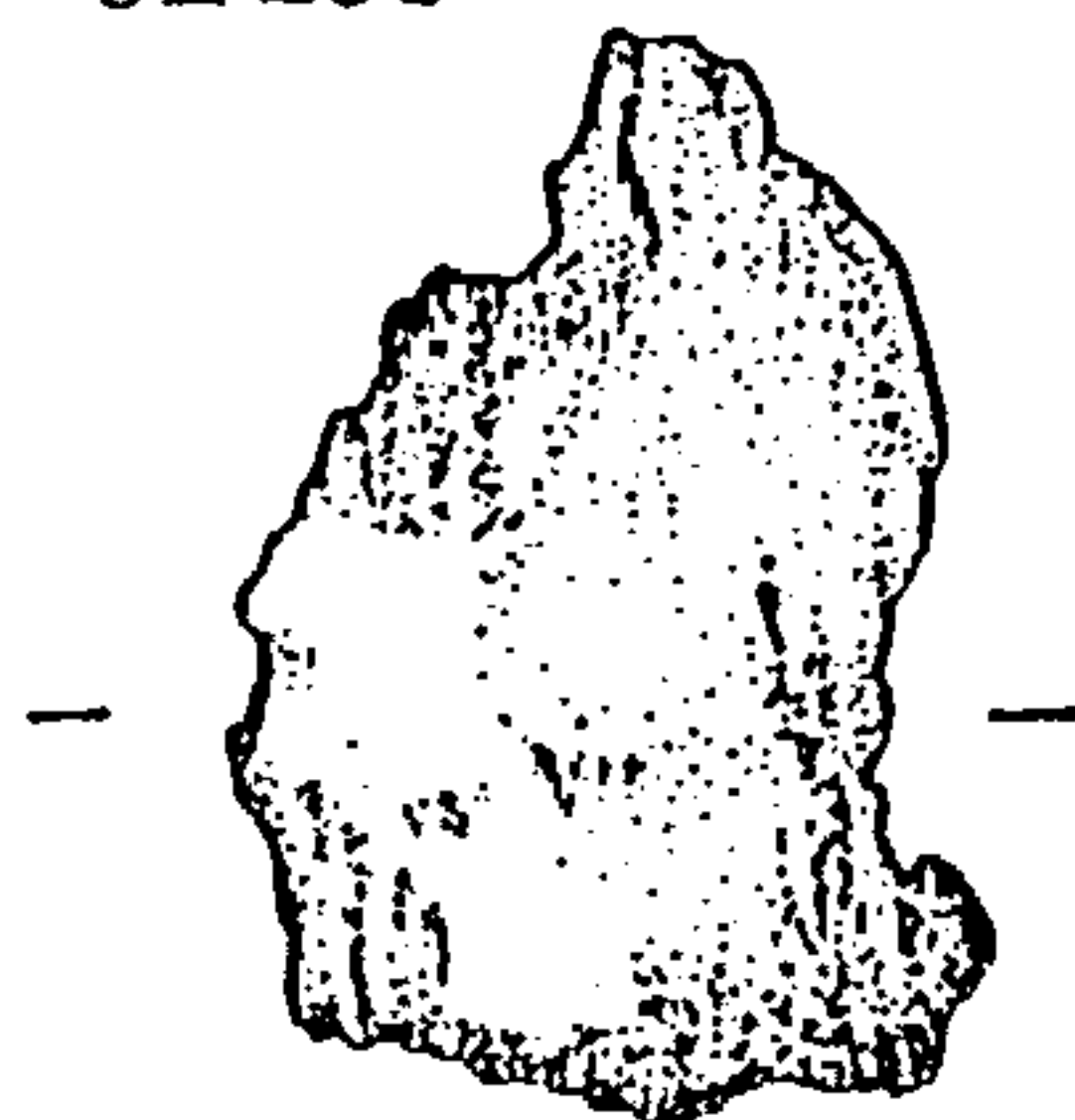
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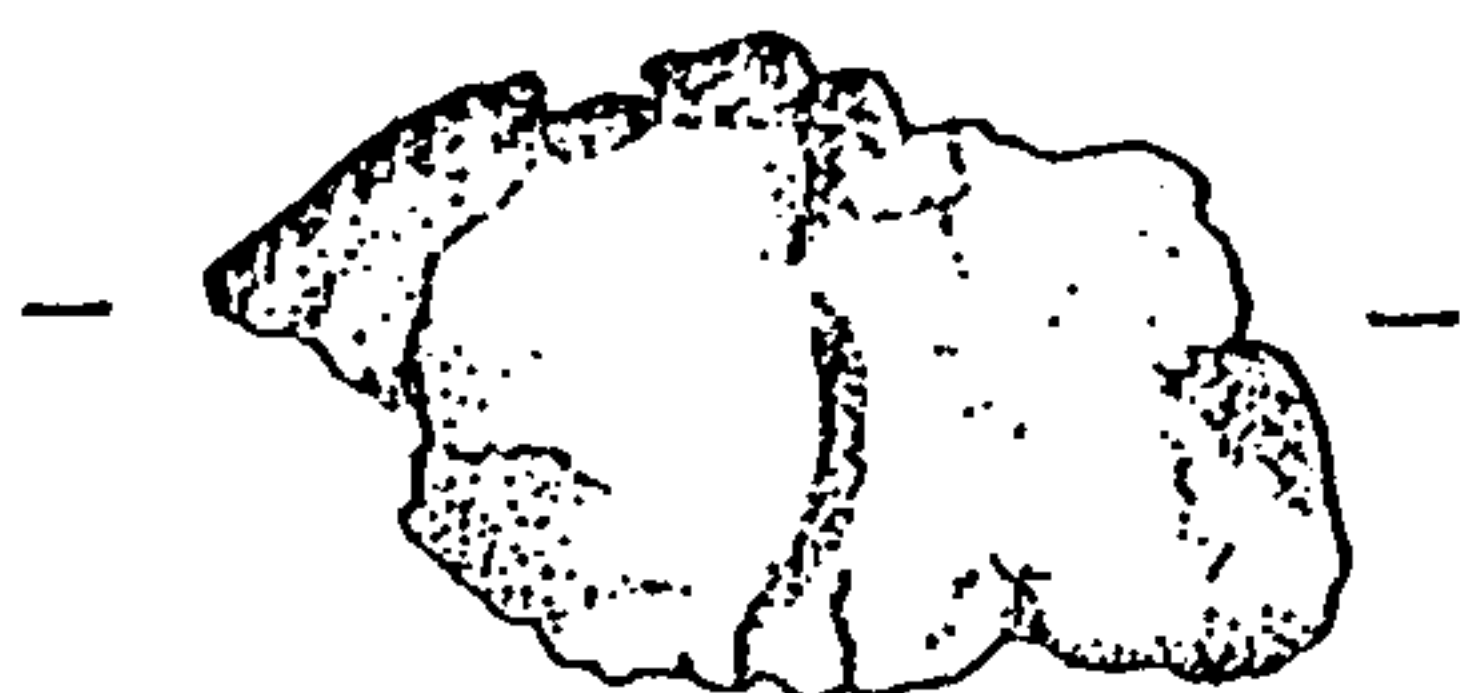
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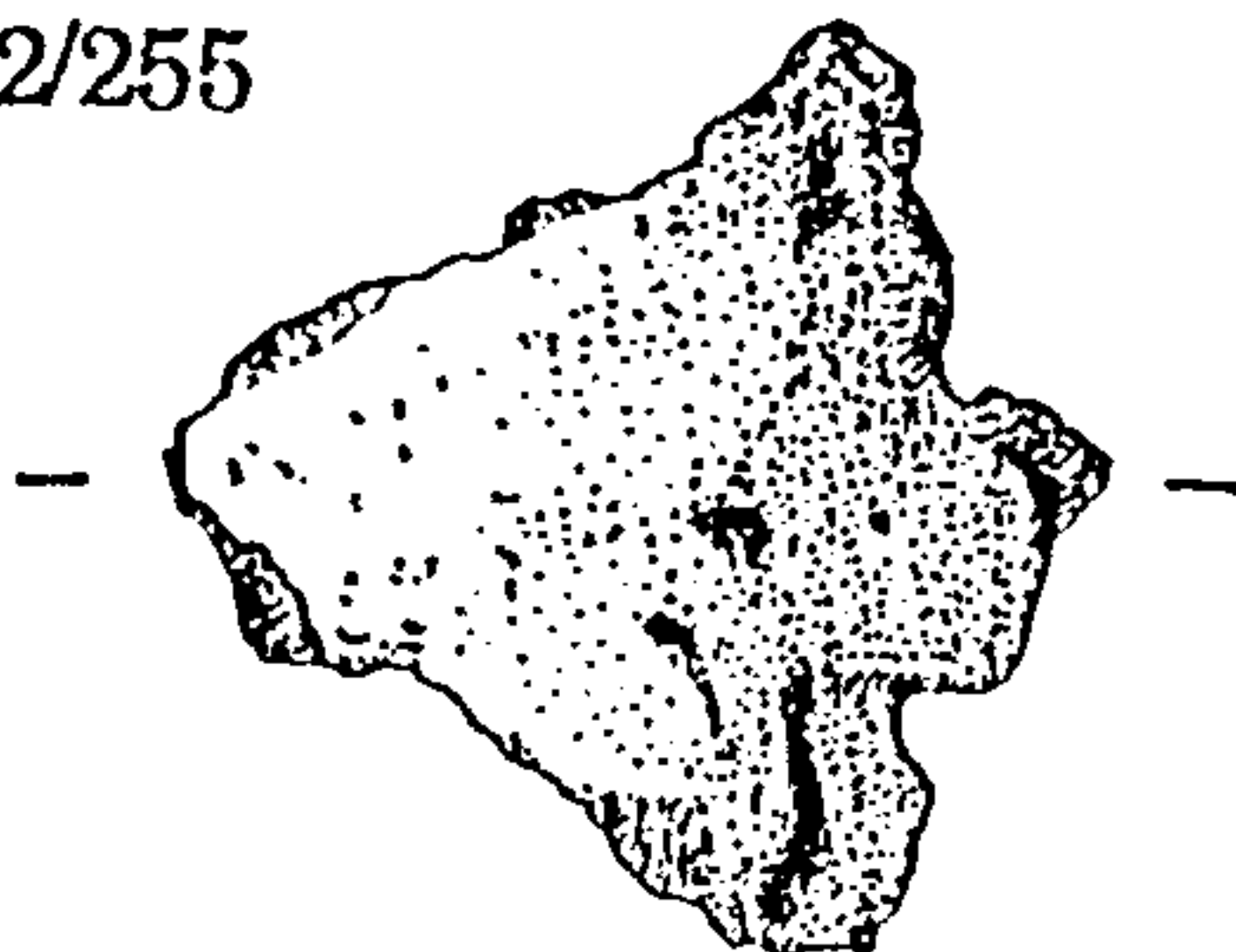
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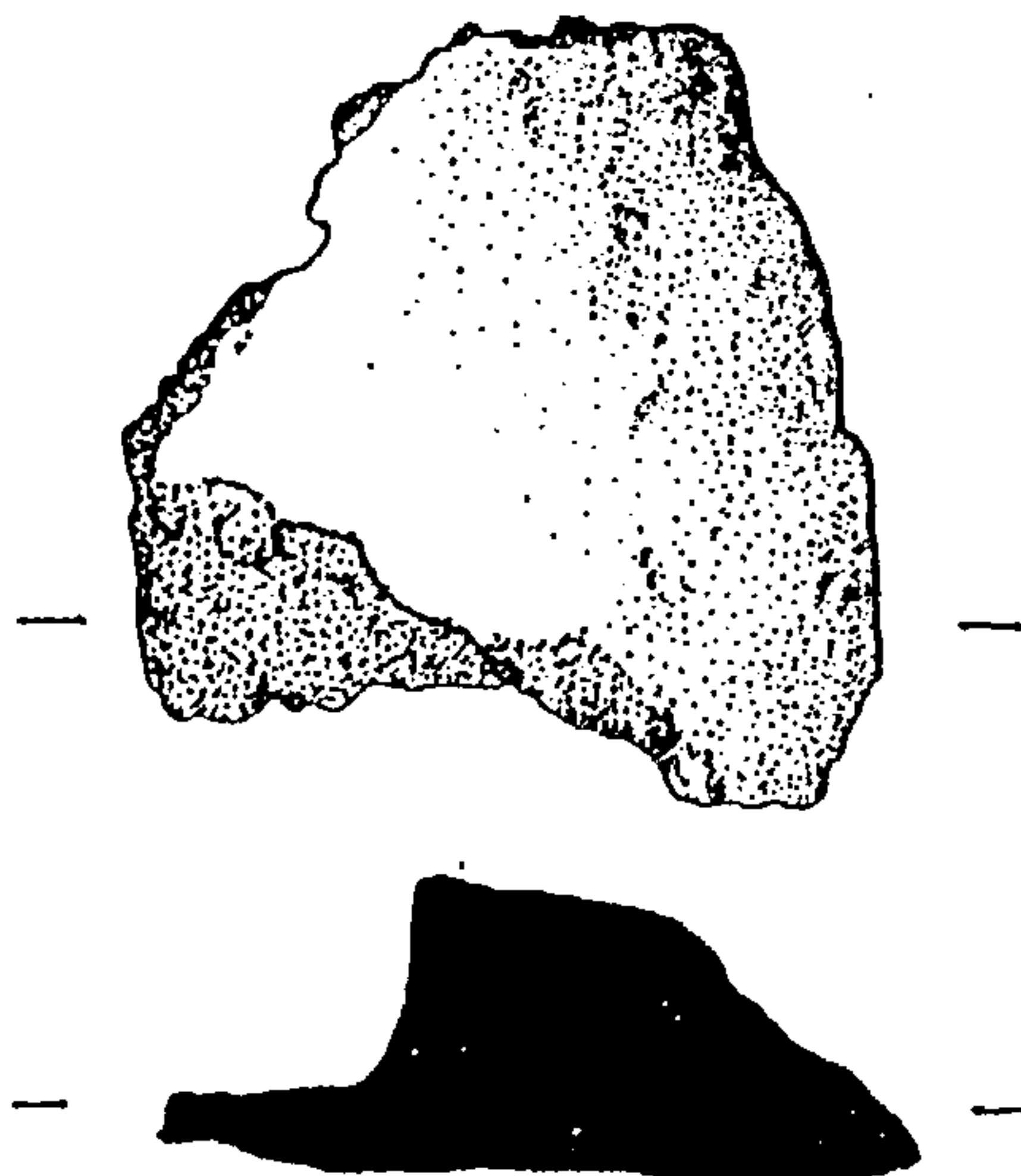
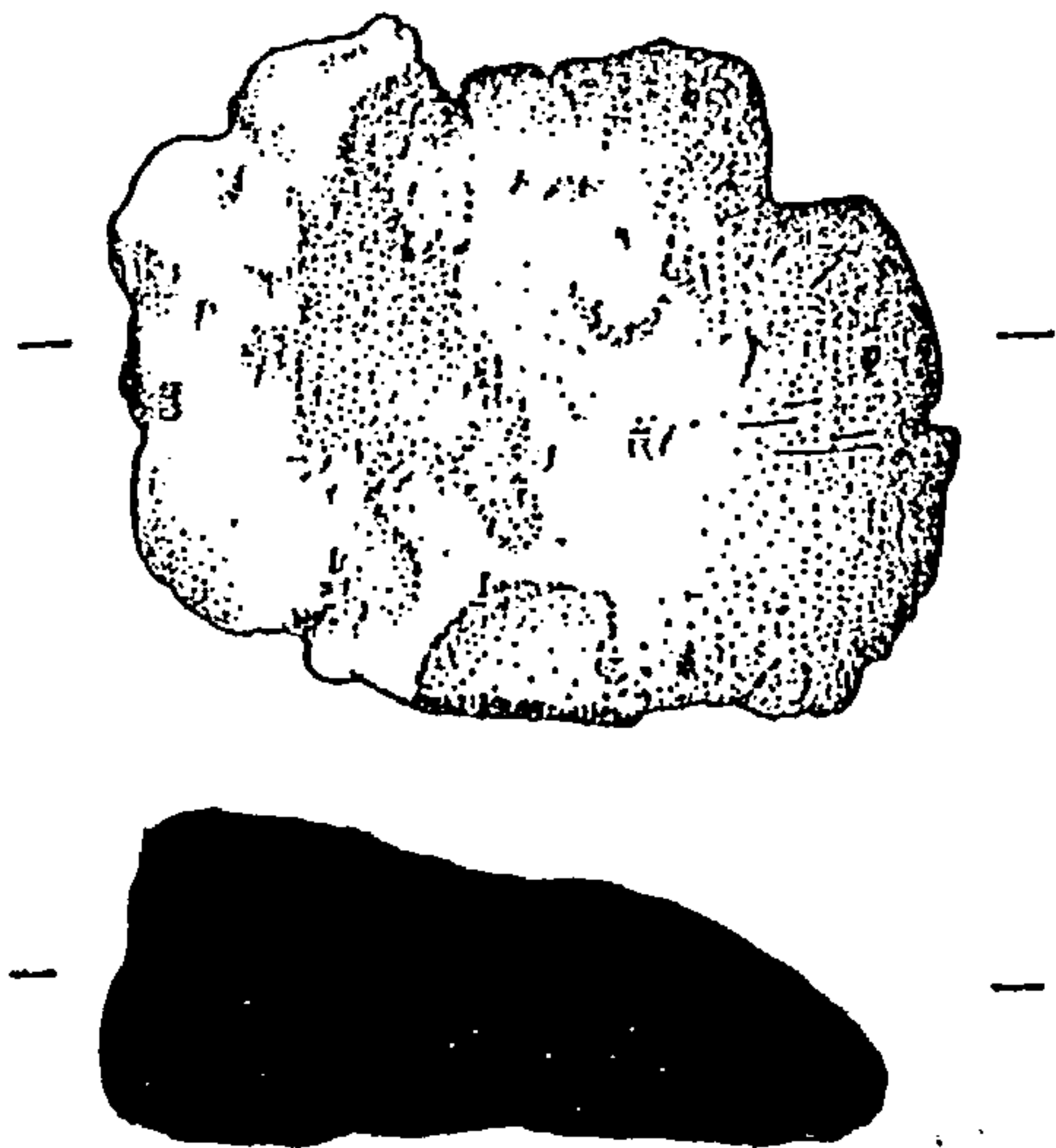
02/256



Fig. 32: The Grays Thurrock I Hoard (Ref. No. 02): Ingot Metal (iv)

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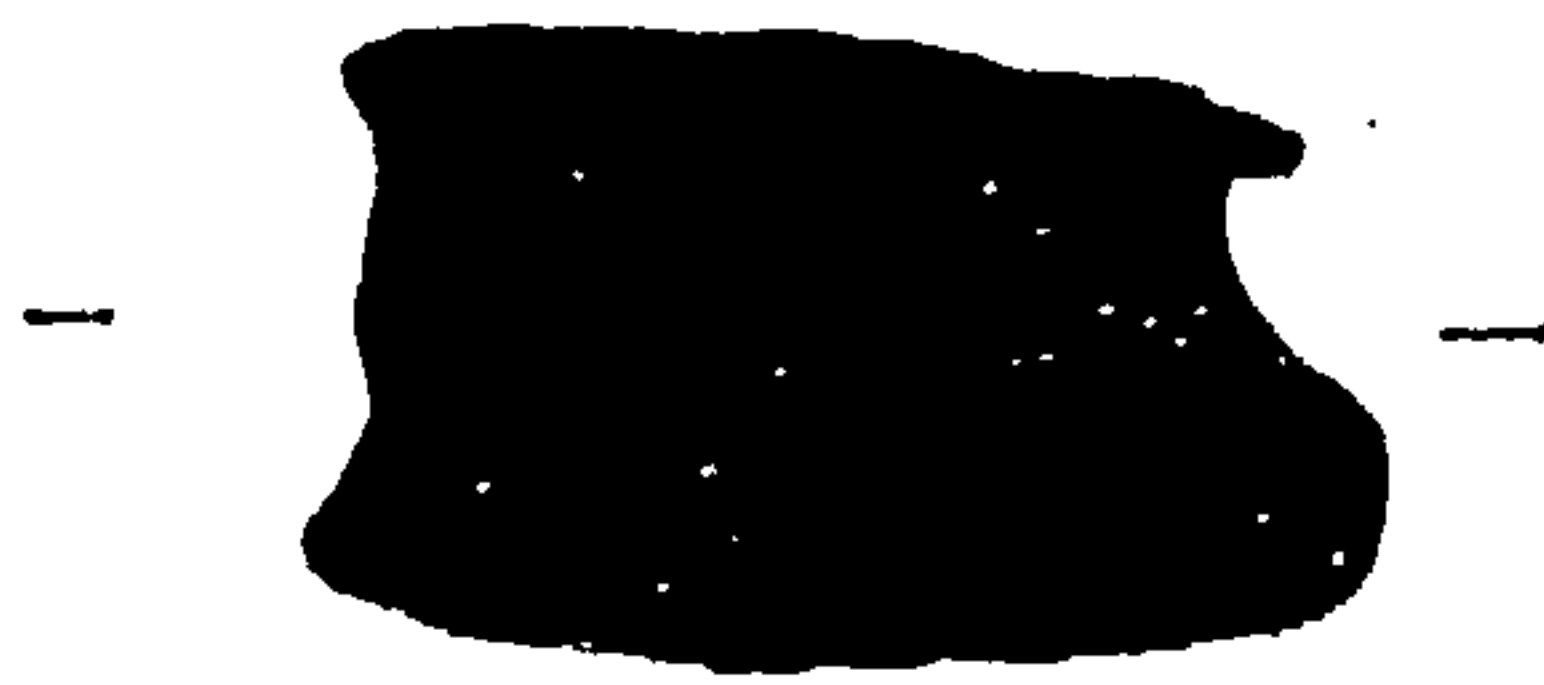
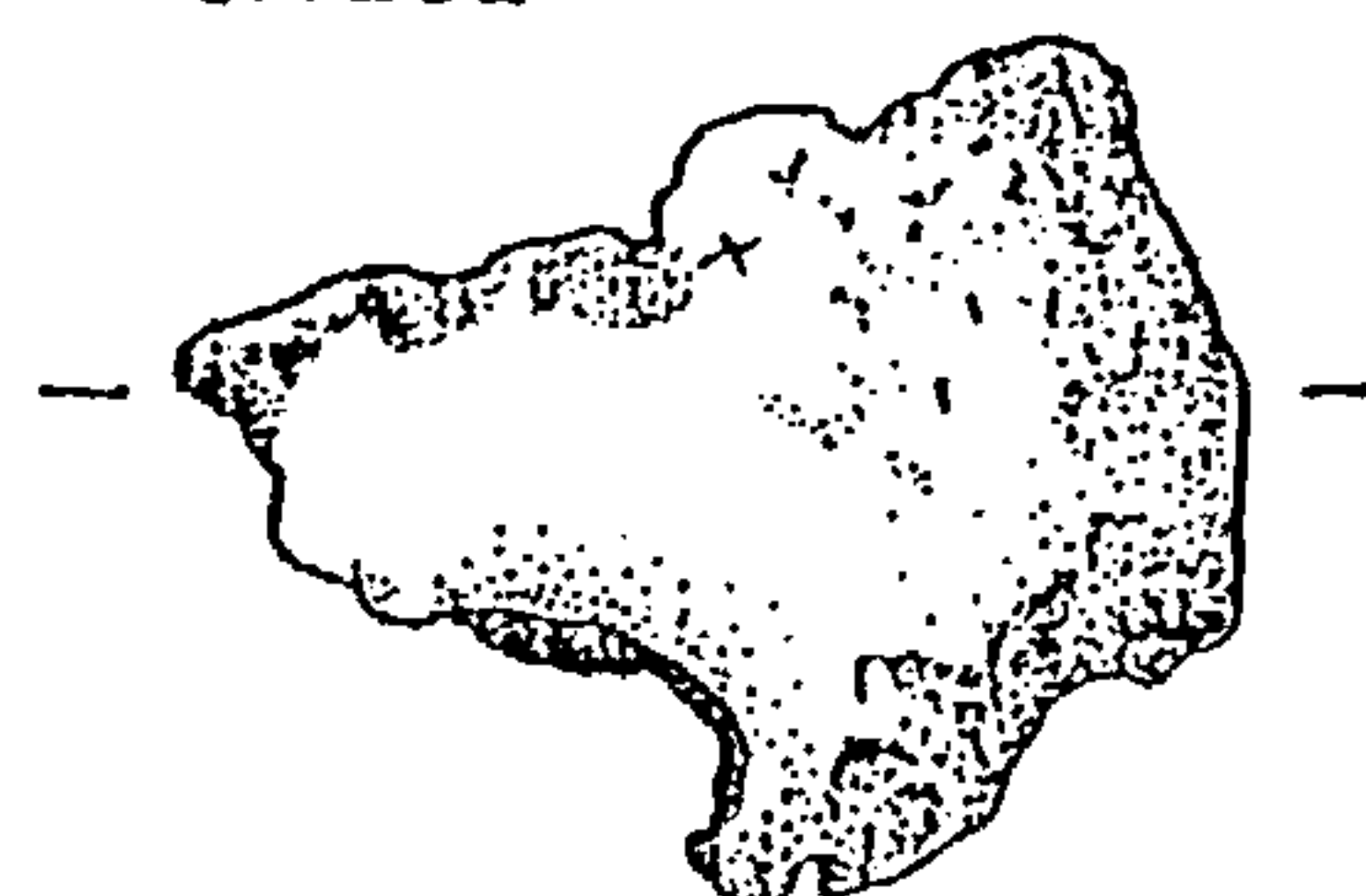
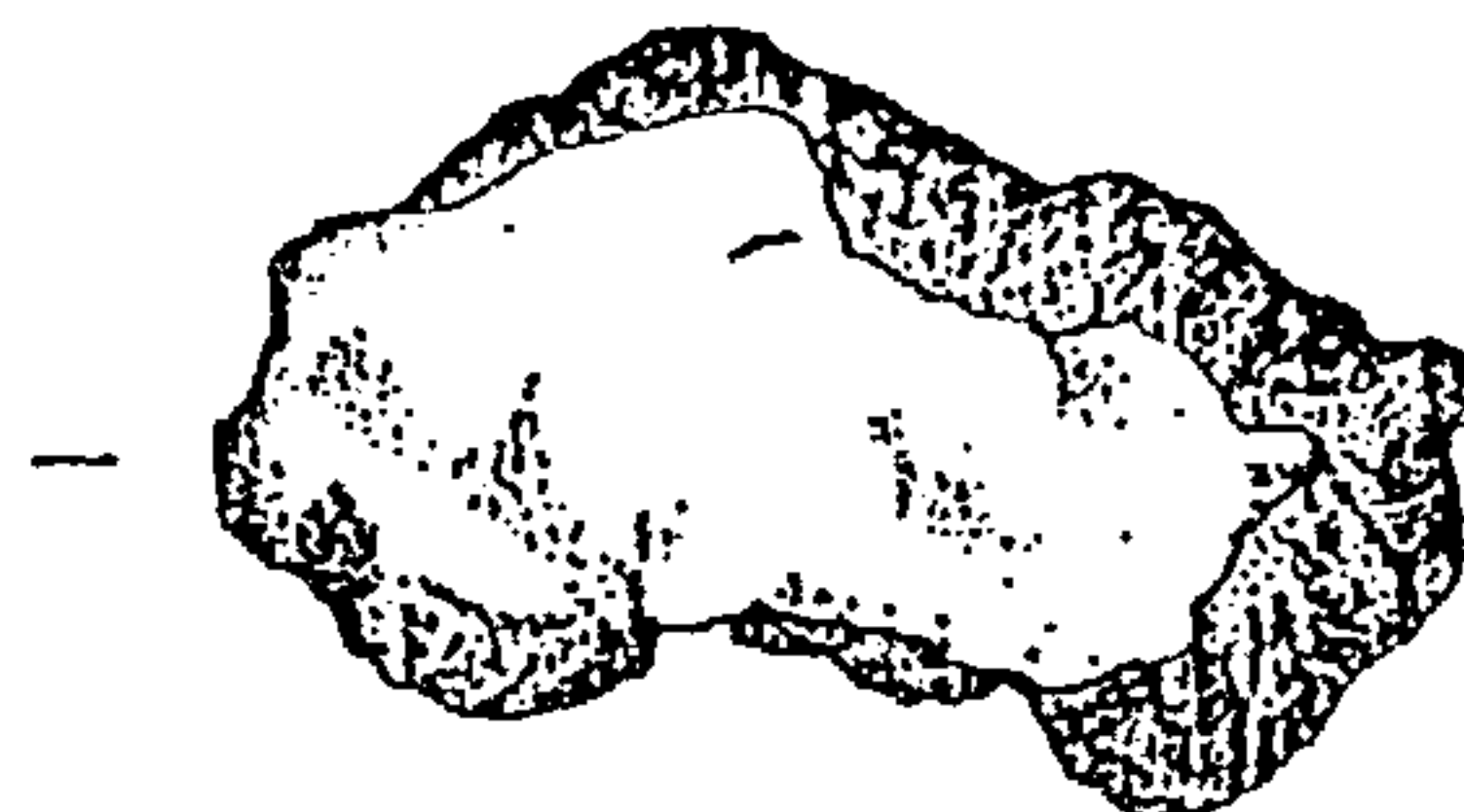
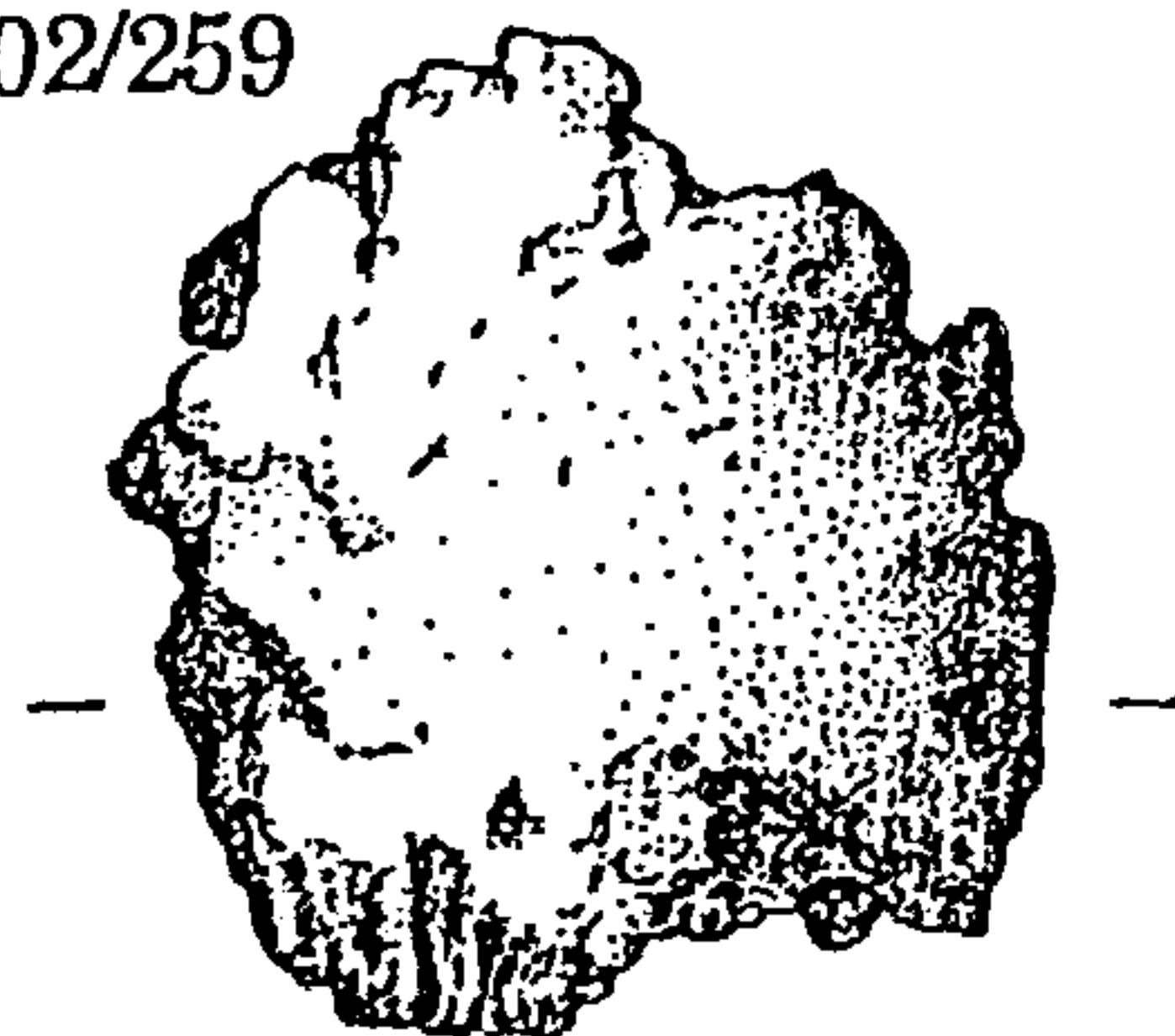
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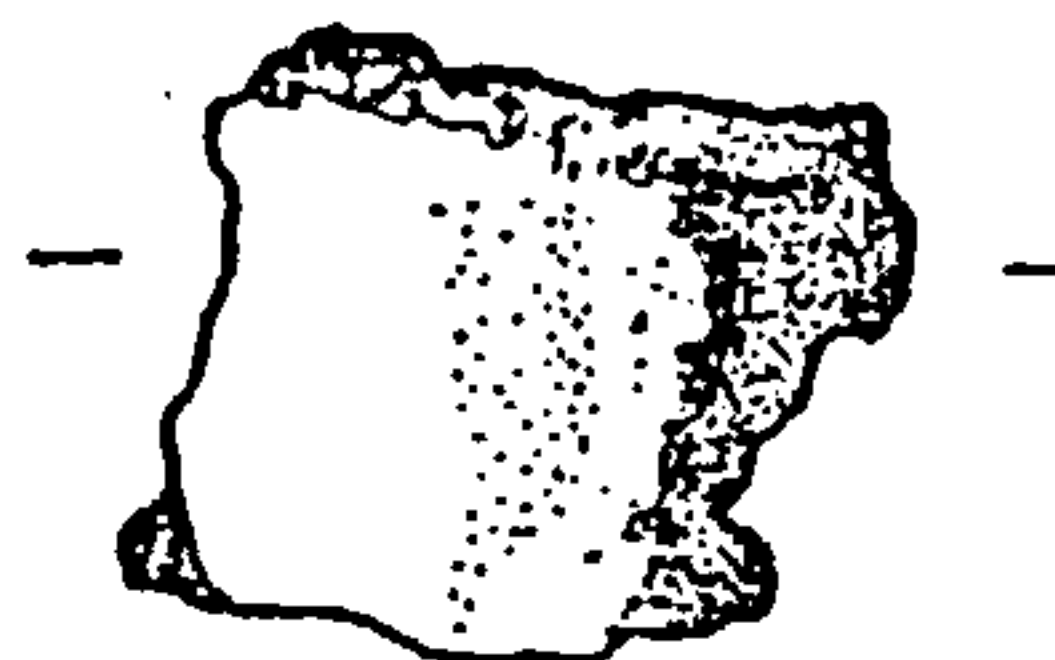
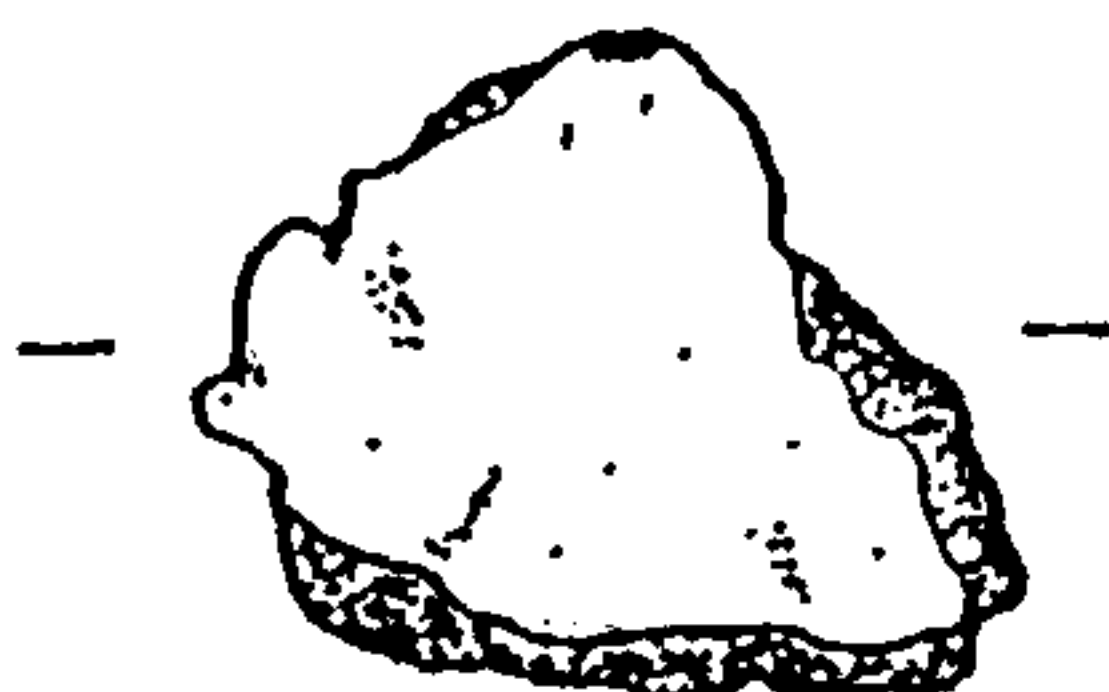
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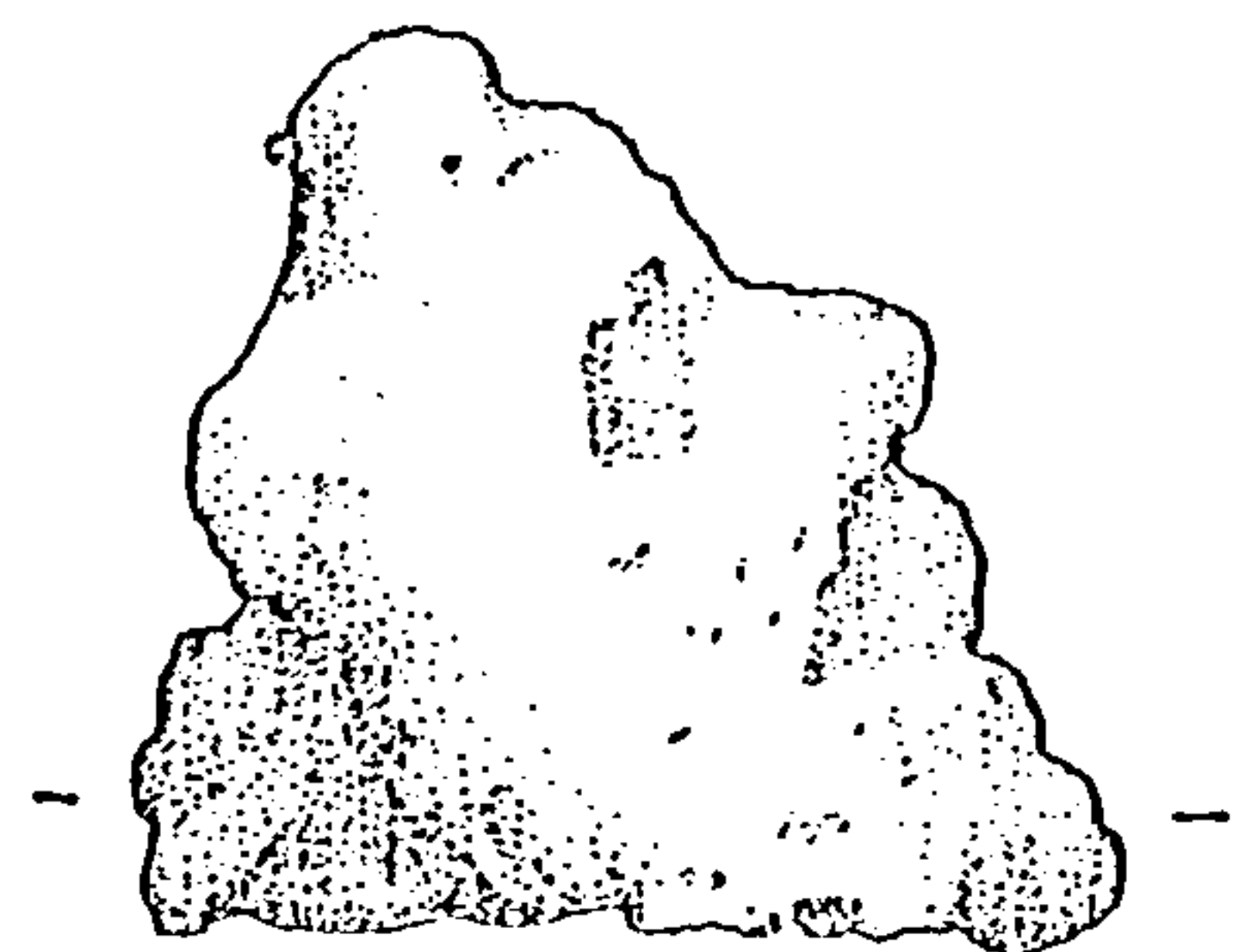
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0 2cm

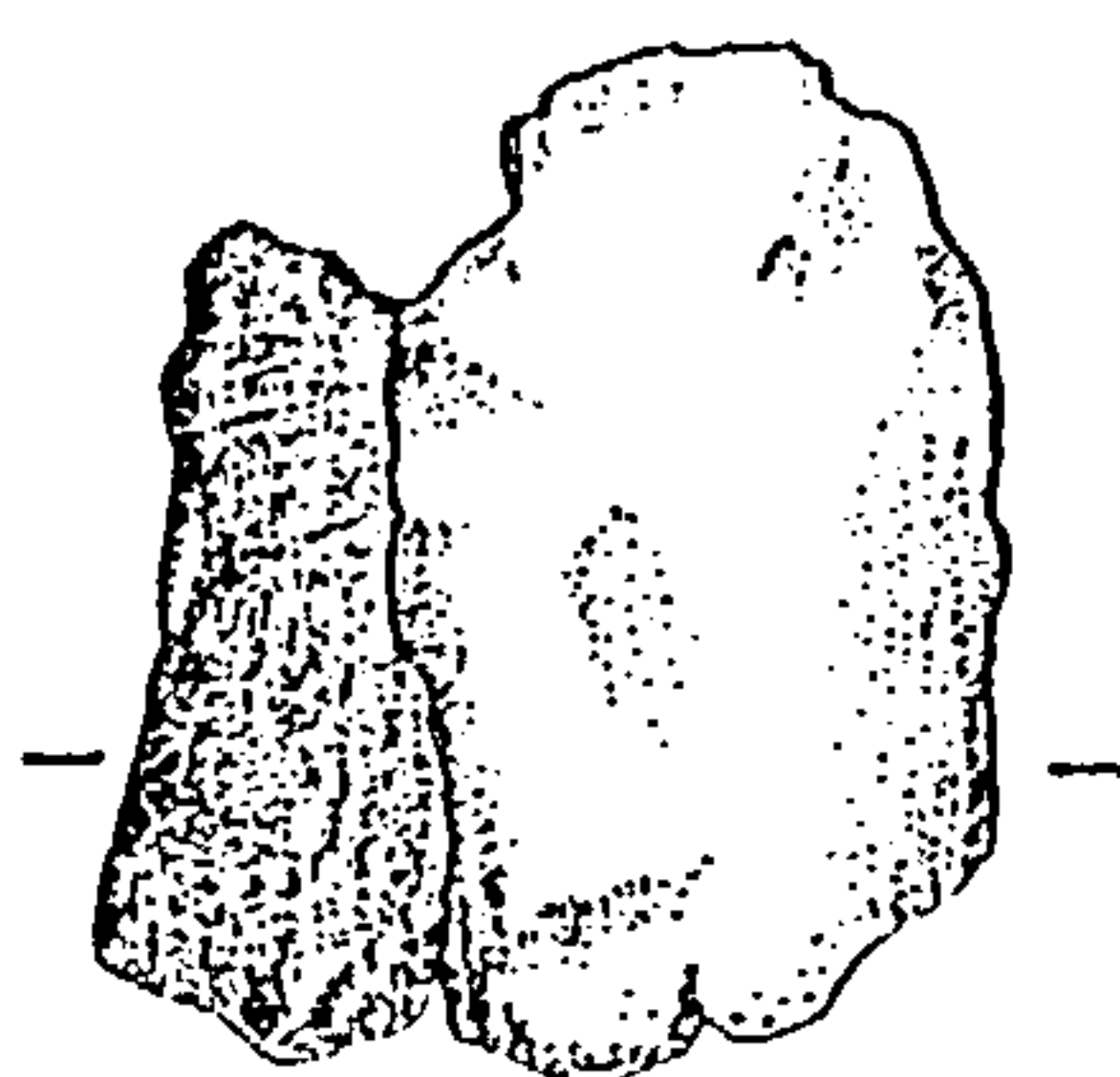
Fig. 33: The Grays Thurrock I Hoard (Ref. No. 02): Ingot Metal (v)

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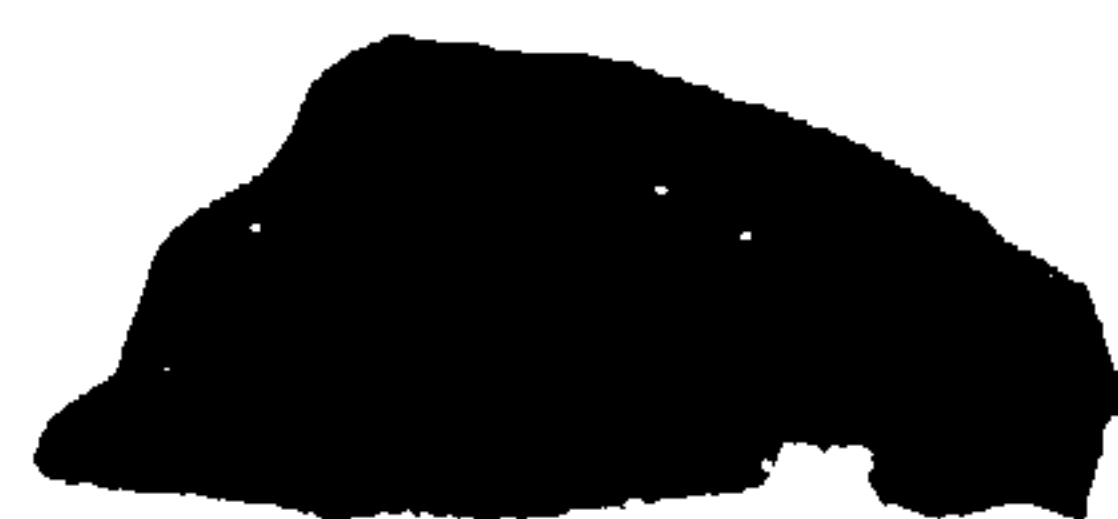
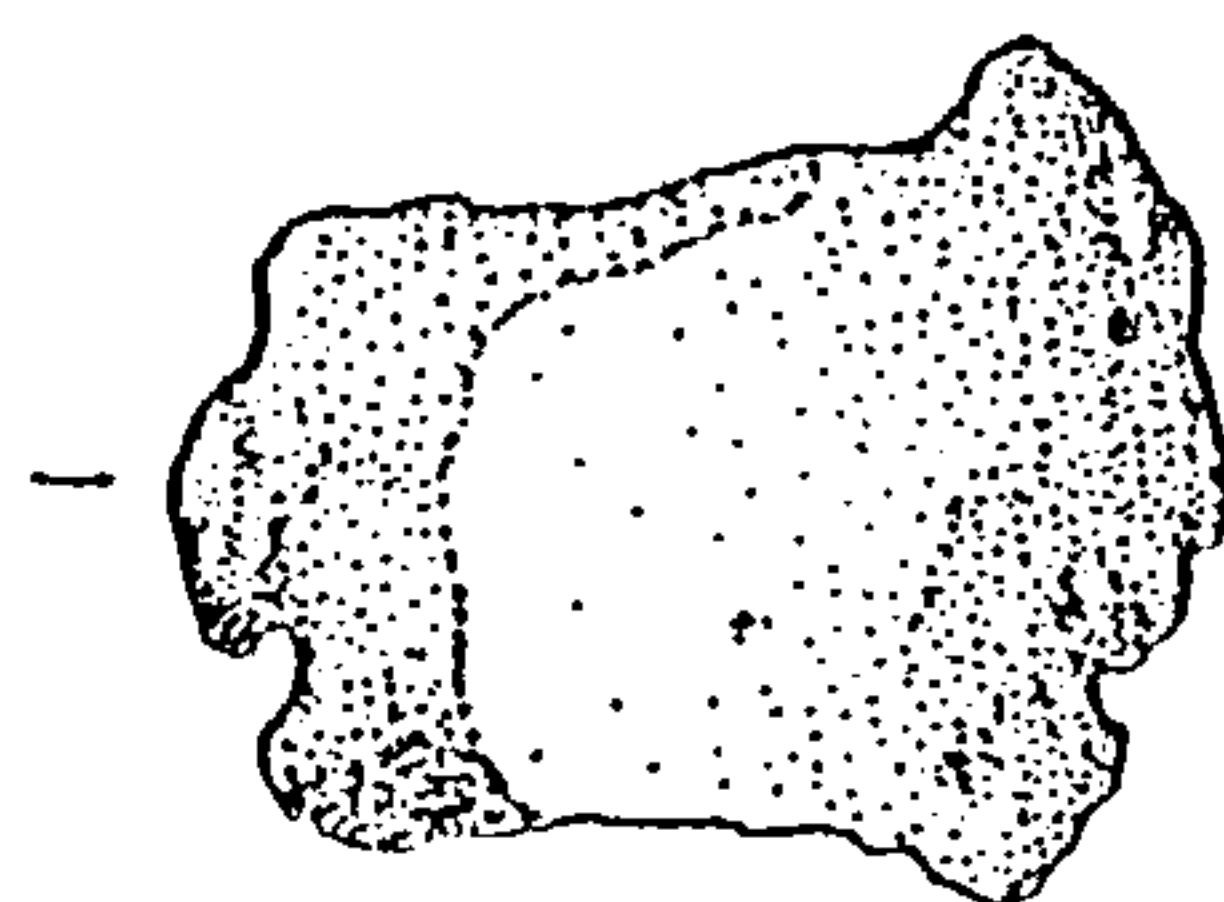


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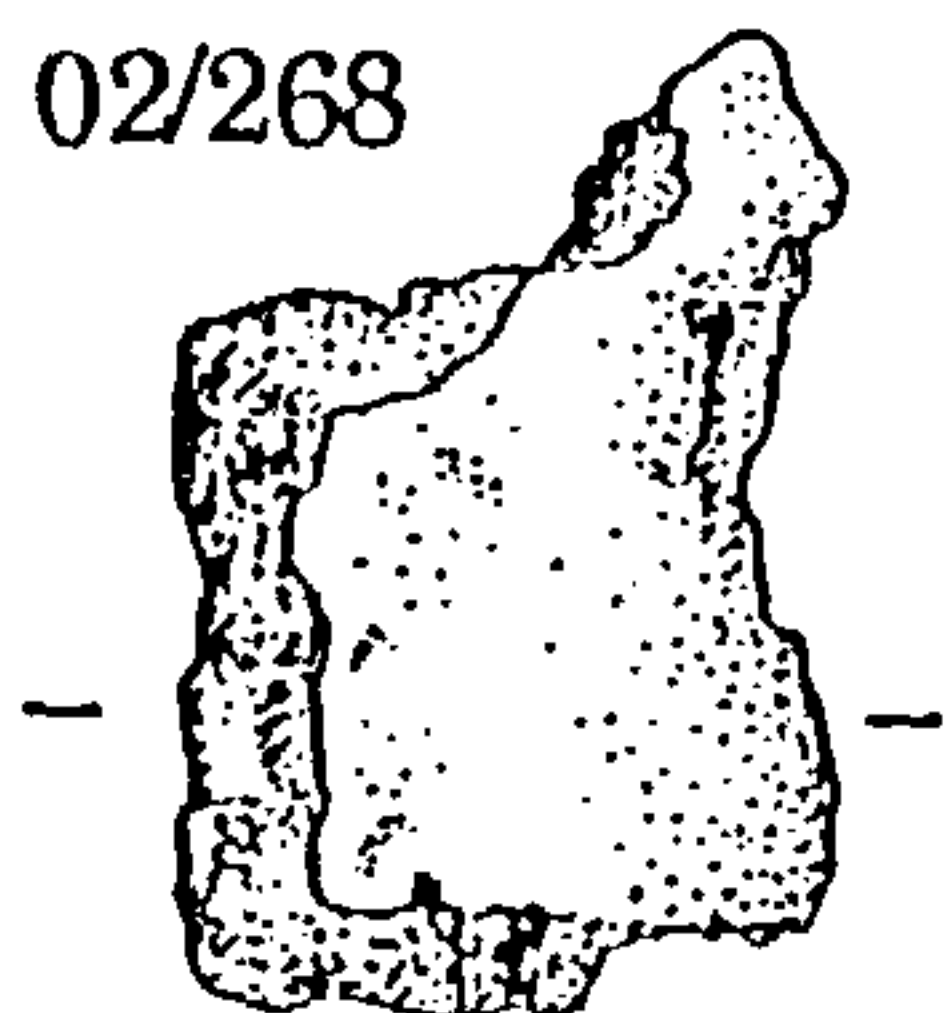
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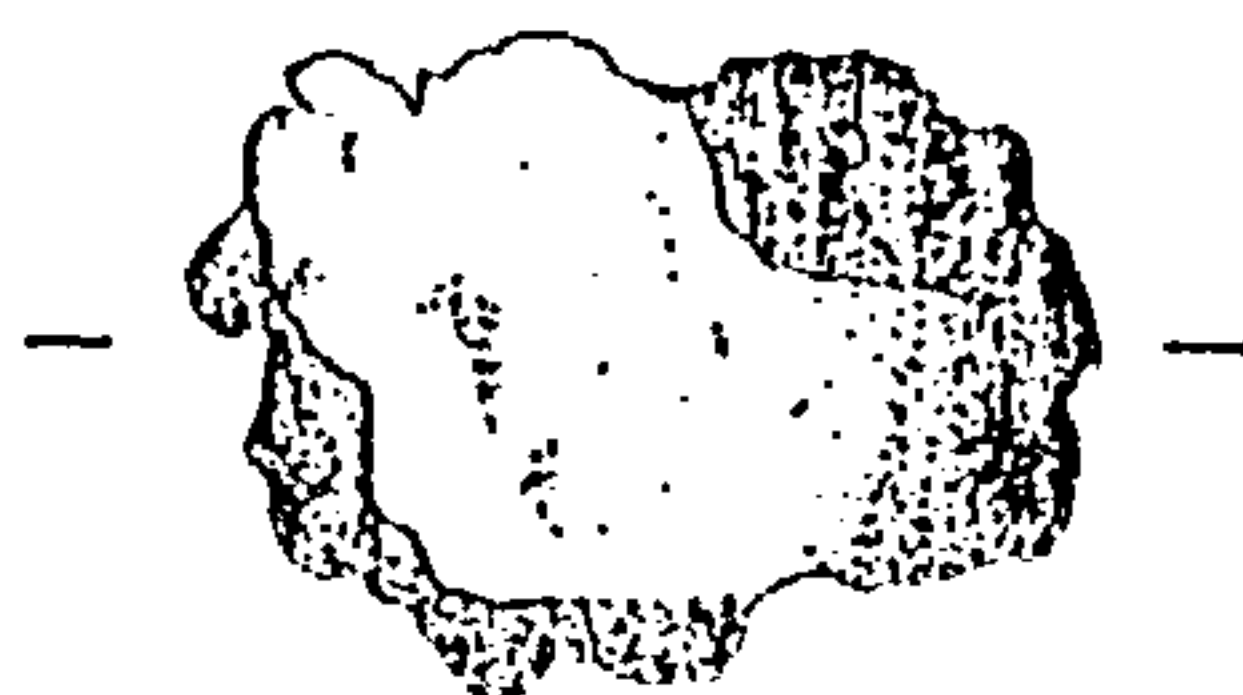
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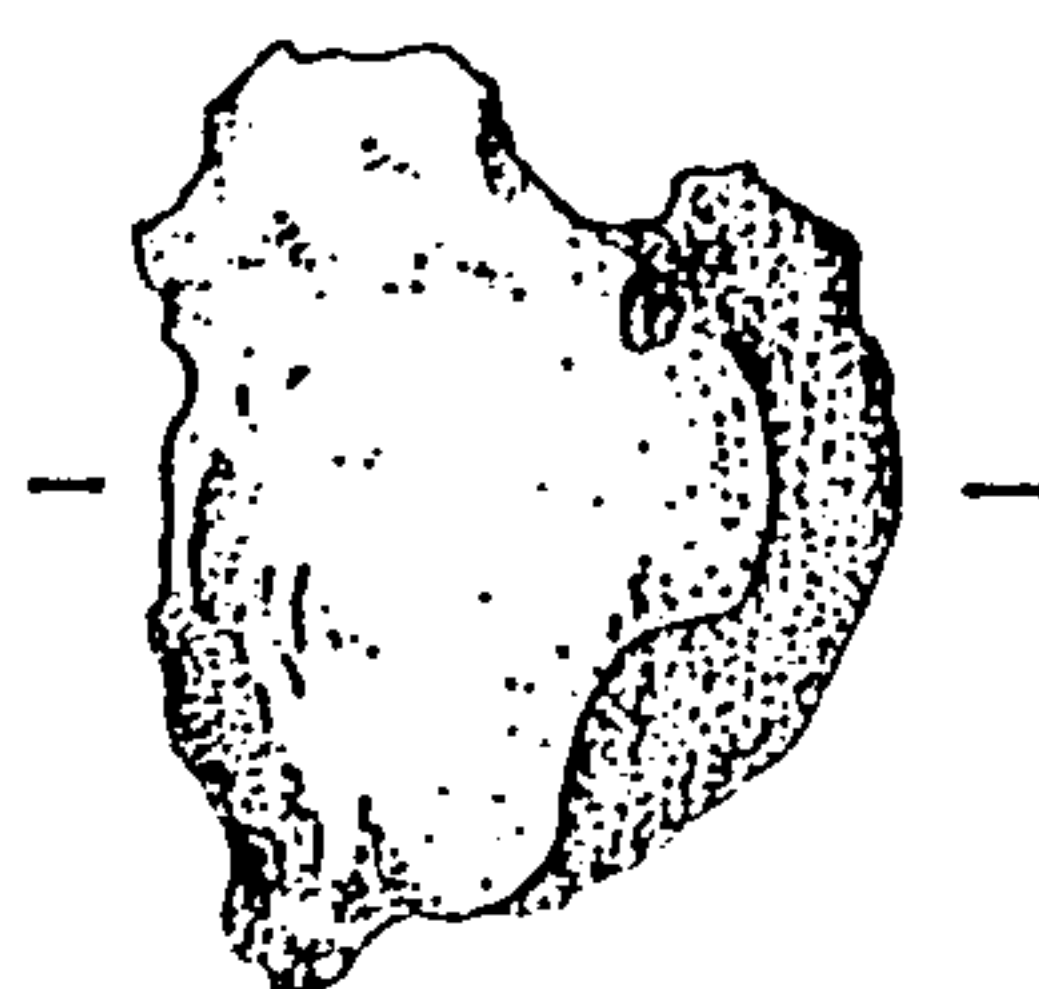
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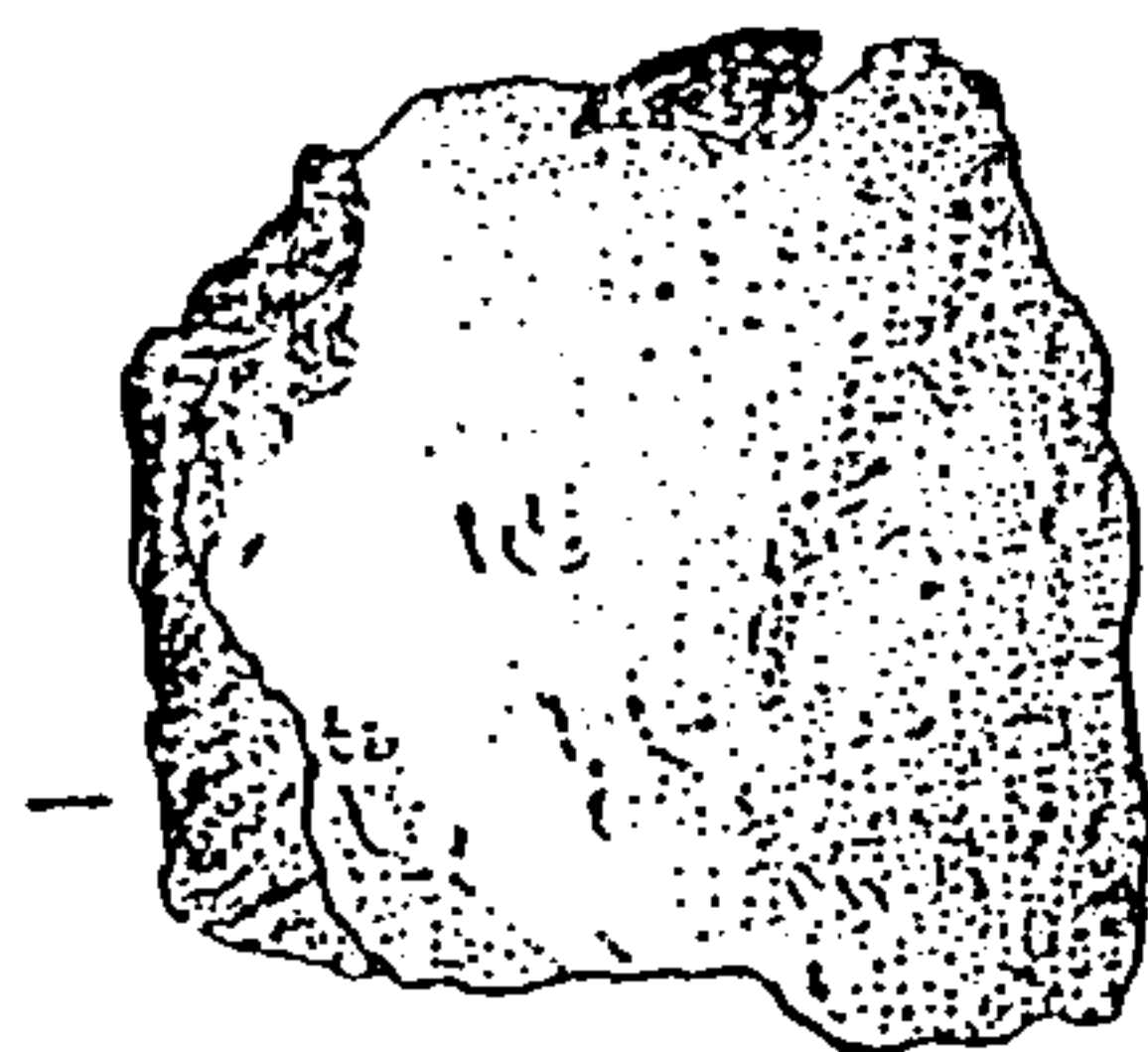


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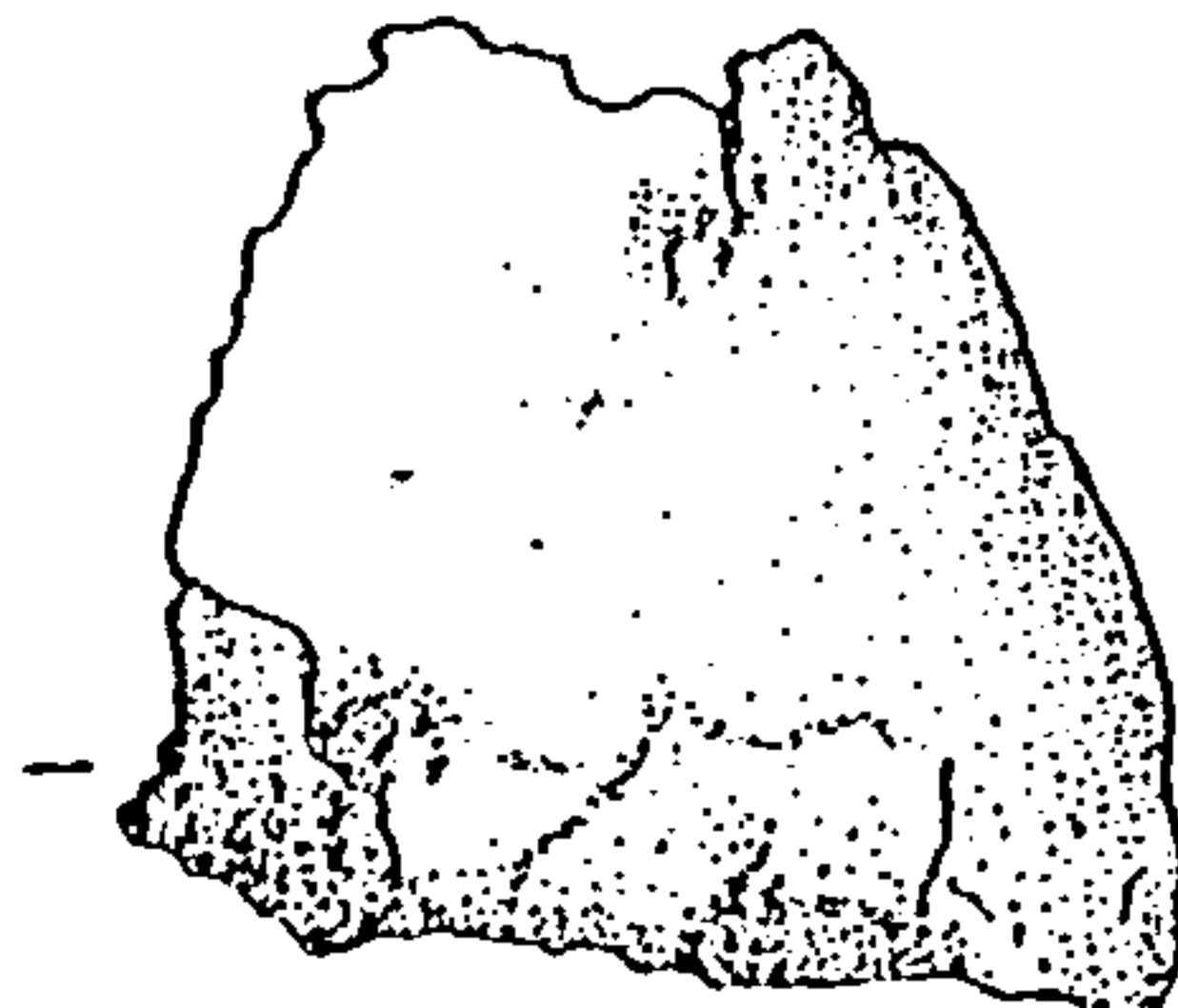


Fig. 34: The Grays Thurrock I Hoard (Ref. No. 02): Ingot Metal (vi)

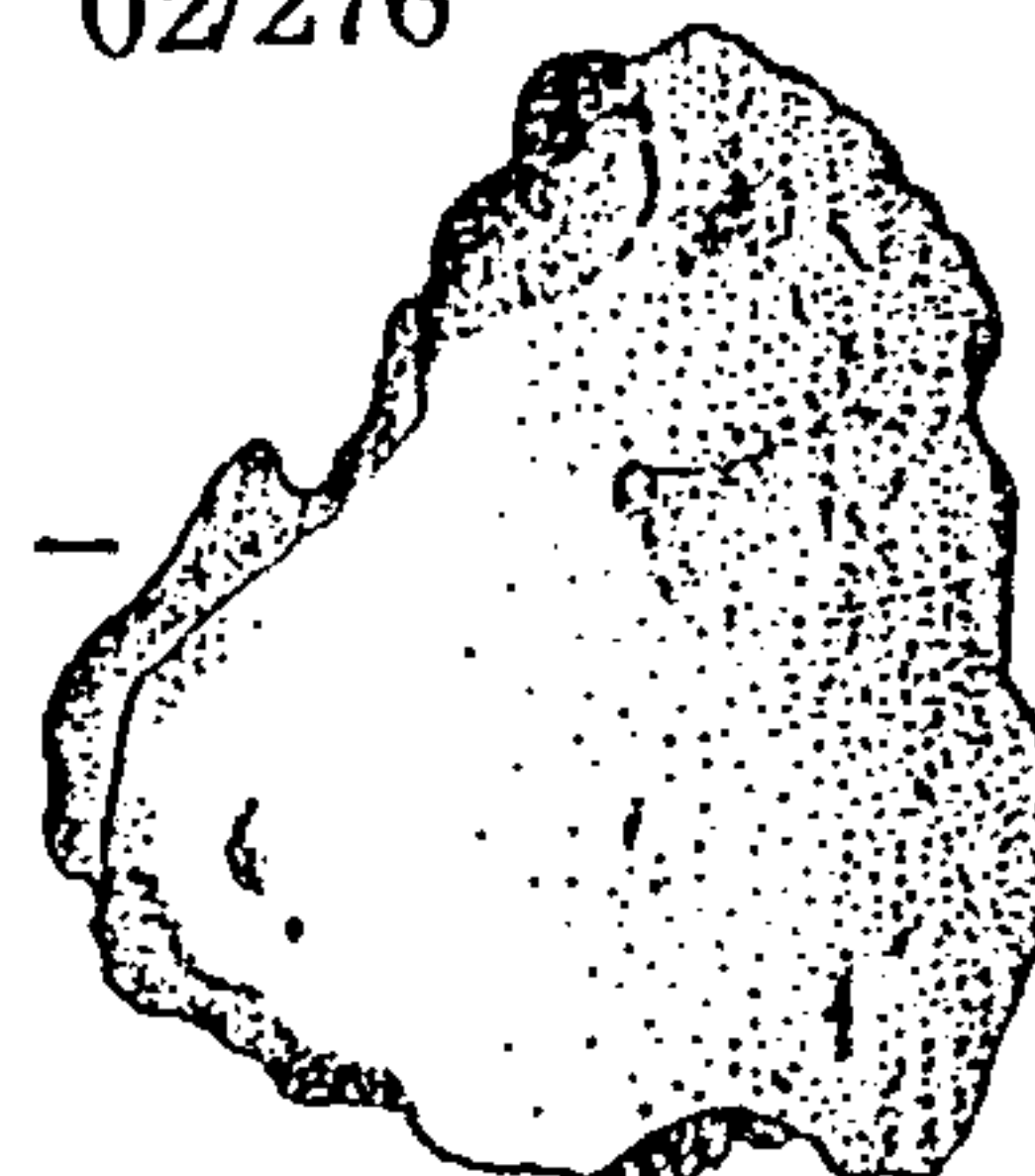
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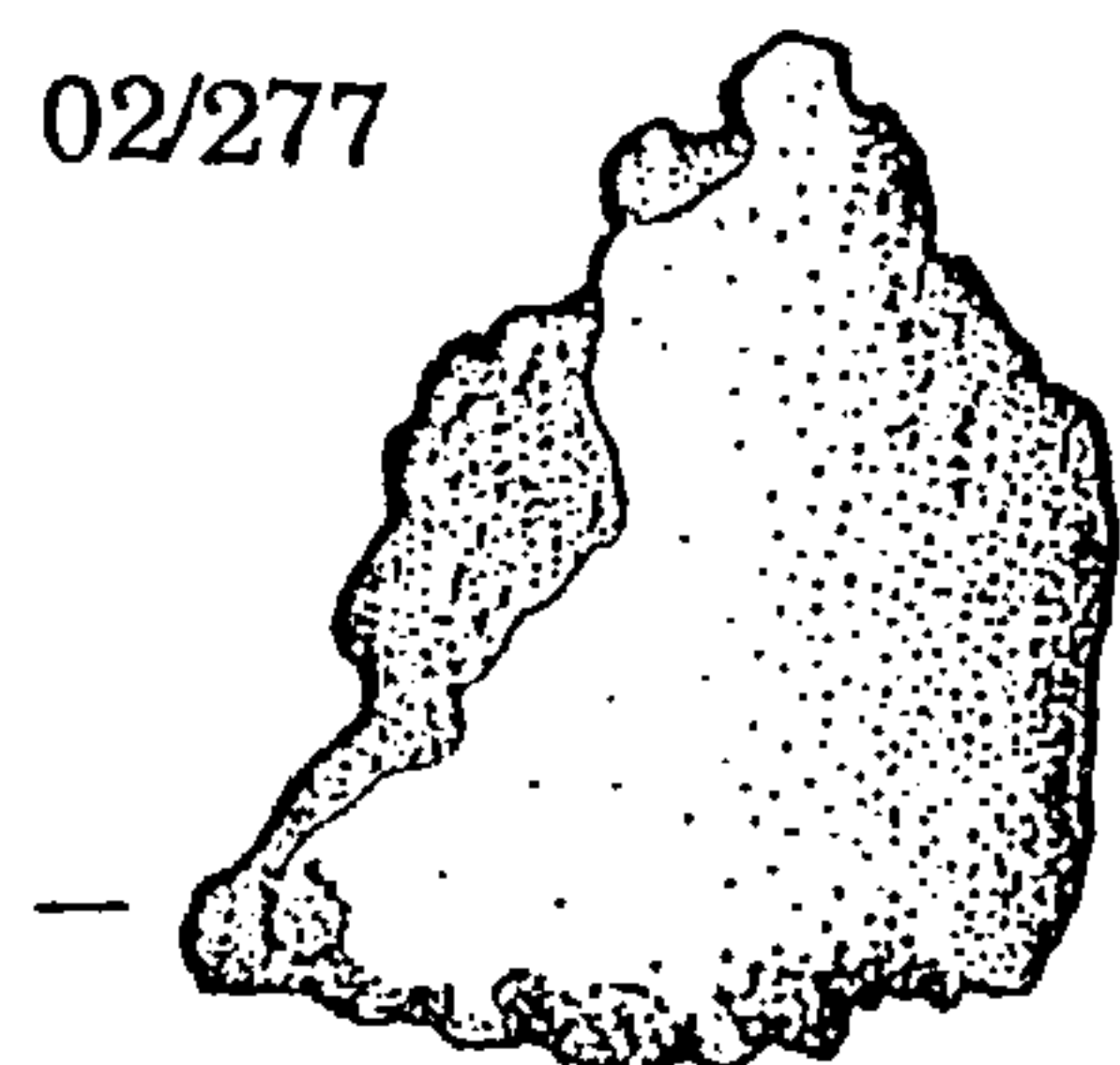


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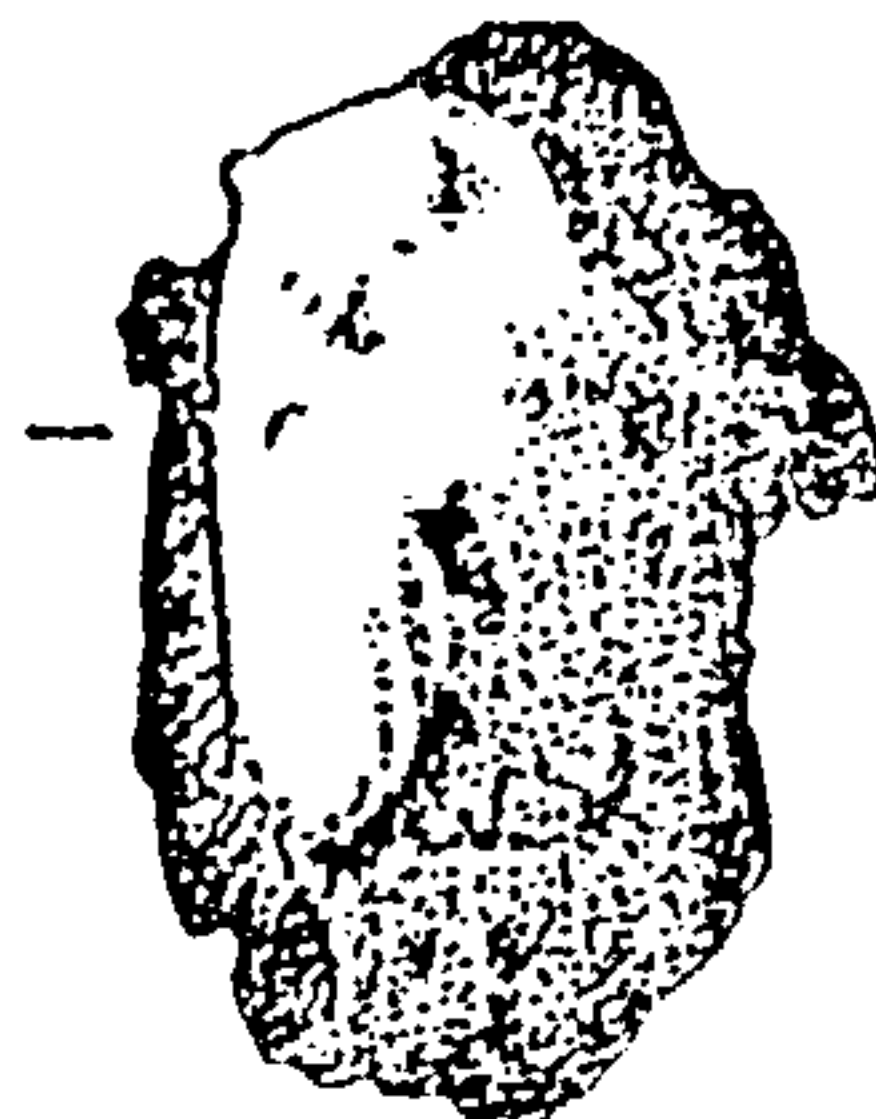


0 2cm

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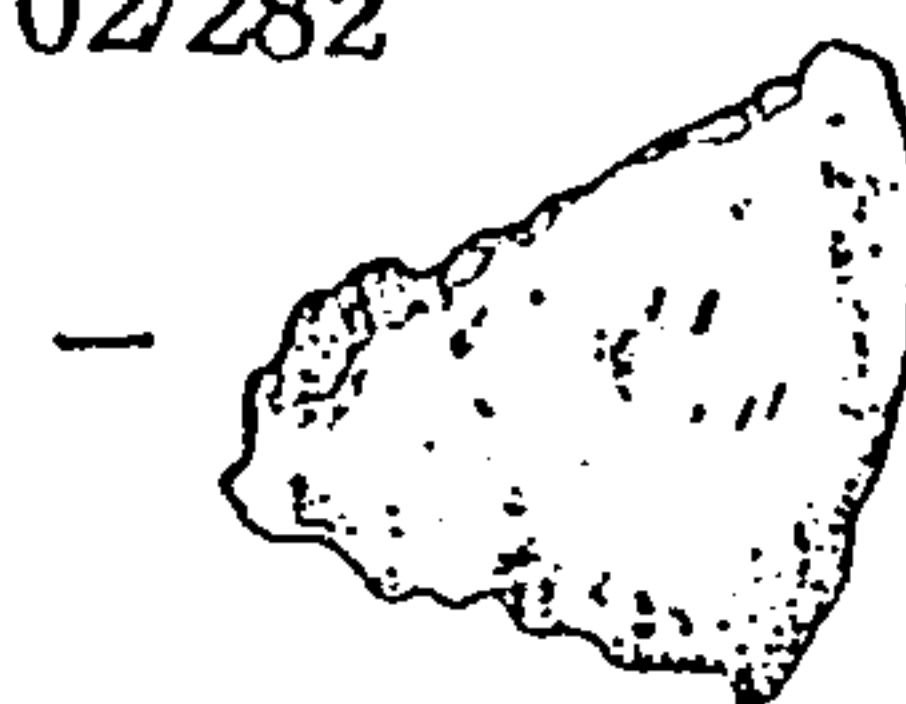
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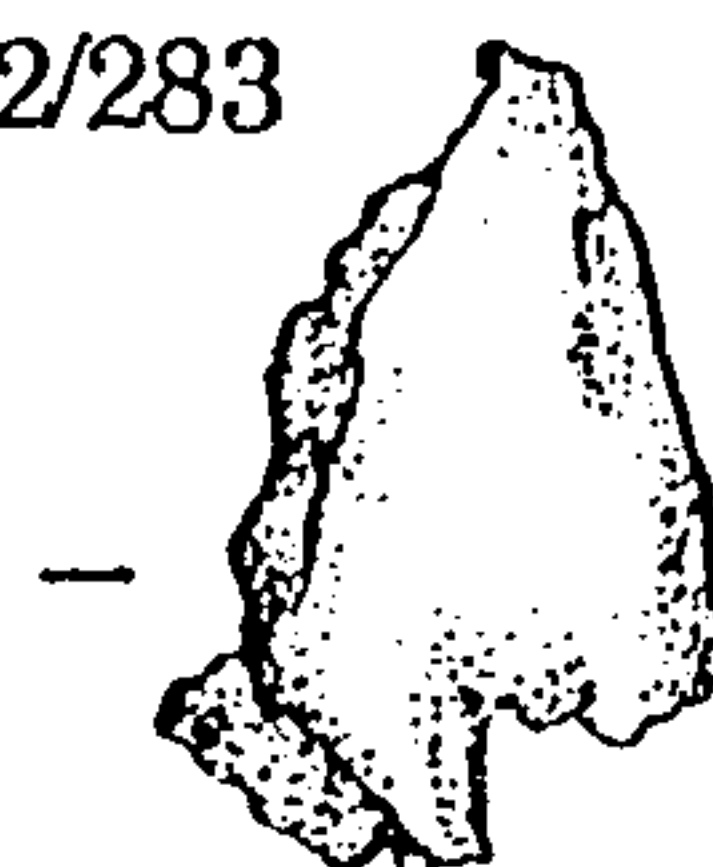


Fig. 35: The Grays Thurrock I Hoard (Ref. No. 02): Ingot Metal (vii)

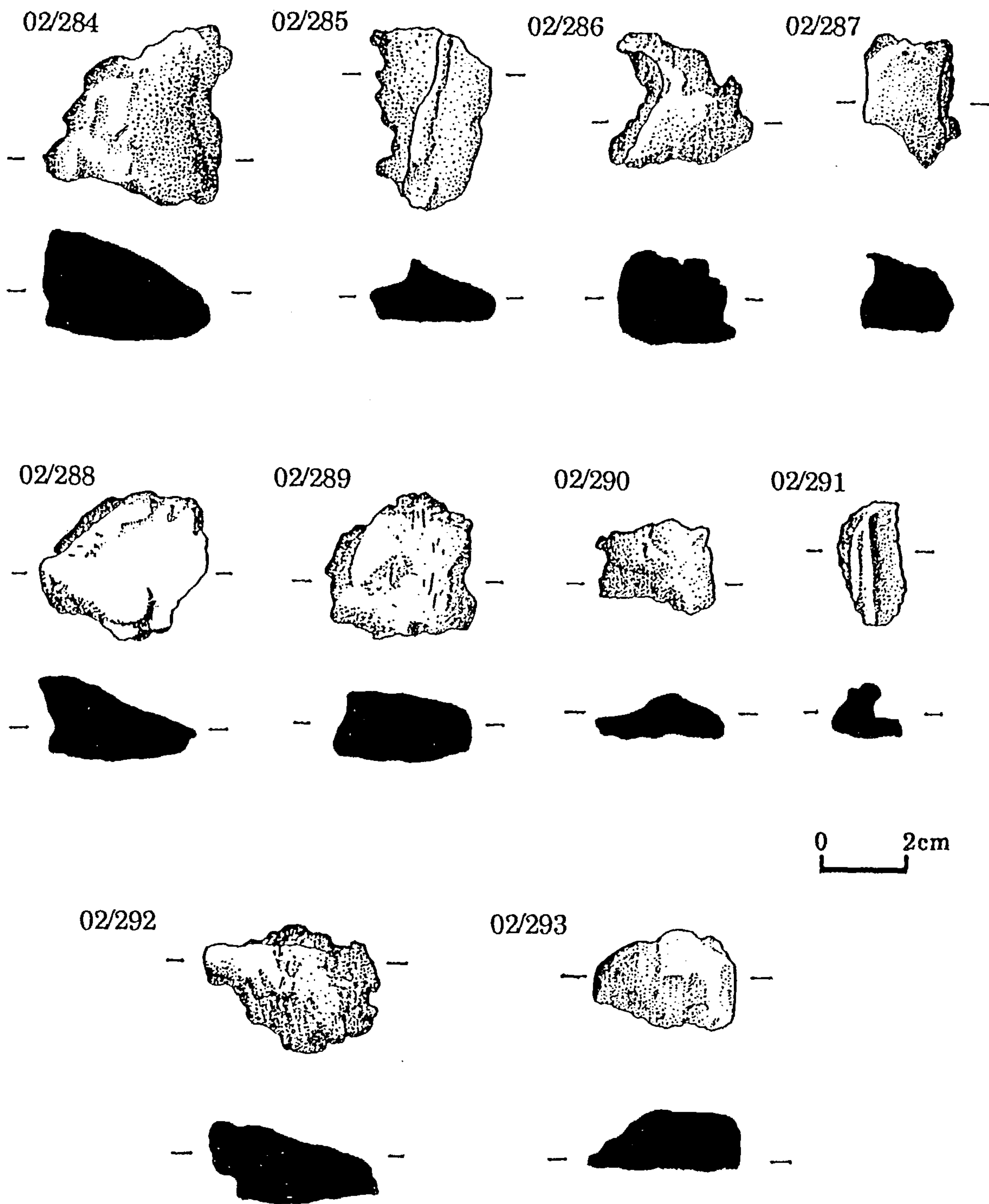
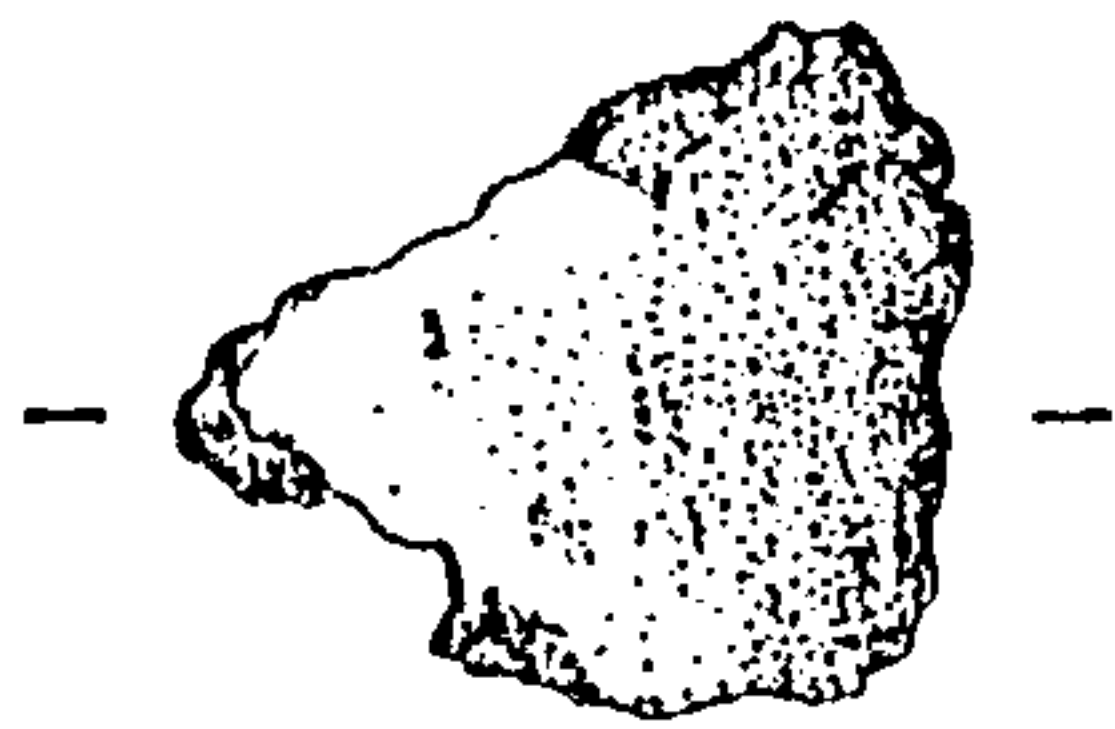
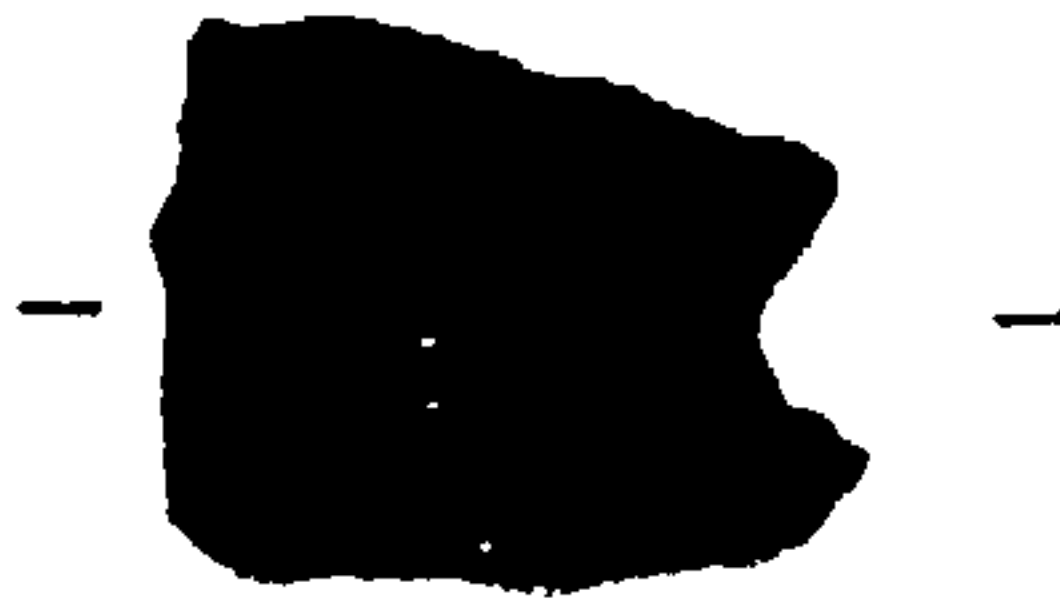


Fig. 36: The Grays Thurrock I Hoard (Ref. No. 02): Ingot Metal (viii)

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0 2cm

Fig. 37: The Grays Thurrock I Hoard (Ref. No. 02): Ingot Metal (ix)

Grays Thurrock II (Ref. No. 03)

Grid Reference: TQ 61 78 (centred).

Current Location: Colchester and Essex Museum, Accession Number 2491.12. The hoard contents are not individually numbered. It is likely that this hoard is not complete: the National Bronze Index states that there were nine fragments of ingot metal included in the hoard, but only six of these could be located during the museum visit. The current whereabouts of the missing objects remains uncertain, though it is possible that they have been accidentally stored in association with another hoard. This theory is supported by the fact that two of the fragments described below - 02/05 and 02/06 - were found amongst the contents of the Grays Thurrock I hoard.

Context: Unknown. The hoard was recorded as being found at Belmont Park, but no further details are available.

Bibliography: National Bronze Index.
Davies, 1979.

Contents:-

03/01

Description: Socketed axe, of undecorated 'south-eastern' type.

Dimensions: Length: 105mm. Cutting edge: 50mm. Weight: 261.1g.

Patina: Rough mottled green, but details are largely good.

Manufacture: The mouth is uneven, indicating that an inadequate supply of molten metal was used during casting. Vestigial traces of the feeders still remain visible at the mouth of the socket. Over the body, the upper casting seam has been trimmed, but it remains sharp over the upper half of the piece. Below this point, it has been flattened, though it is still prominent. The lower seam is prominent over much of its length, though it has been virtually obliterated over the lowermost third of the piece towards the blade. It appears flatter over the portion of the loop which lies closer to the blade, and there are possible grinding marks here. The cutting edge is very widely expanded and there is evidence of fine hammering on the blade. Horizontal grinding marks are visible over the cutting edge, and coarse grinding marks run vertically down the face in numerous places.

Use: The cutting edge is blunt and chipped along its length, although its poor condition may have been exaggerated by modern damage, as some fresh metal is revealed.

Reduction: Some small tool marks are visible in places, and these may have been inflicted during the separation of axehead and haft.

03/02

Description: Socketed axe, of undecorated 'south-eastern' type.

Dimensions: Length: 90mm. Cutting edge: 41mm. Weight: 195.0g

Patina: Rough mottled mid-green/olive.

Manufacture: This appears to be a poor quality casting. The bronze is pitted, in particular around the collar (mainly on the interior surfaces) and also on one face (not illustrated). This face also has a crack running along it. The mouth seems uneven, which indicates that an inadequate amount of metal was poured into the mould. Over the body, the upper casting seam has been trimmed and smoothed over its extent, but it remains prominent over much of its length. The finish is better towards the cutting edge, and over the last 10mm the seam has been flattened completely. The lower seam has been nearly obliterated over the loop, but remains very prominent between the loop and the collar mouldings, and between the loop and the lower body. Elsewhere, it is visible over much of its length, though it is difficult to determine the condition of the seam below the loop as a result of corrosion buildup. The blade has been well expanded.

Use: The cutting edge is very badly chipped and blunted. This damage largely originated in antiquity, though some of the larger notches may have been exaggerated in recent times, as fresh metal is revealed.

Reduction: Some punch and chisel marks are evident. These may have been inflicted during the separation of axehead and haft.

03/03

Description: Mouth and upper body of 'south-eastern' type socketed axe, with a single pellet decoration on either face. There is also a ribbed decoration running perpendicular to the loop on the underside, a feature which bears similarities to the underside of a wing-decorated axe.

Dimensions: Length (maximum): 72mm. Weight: 140.7g.

Patina: Dense olive green, details good.

Manufacture: The mouth seems rather uneven, indicating that an inadequate metal supply was used during casting. One wall is considerably thinner, giving evidence of core misalignment. The upper seam has been trimmed and ground over the surviving extent of the body, and has become almost invisible towards the break. The lower seam is poorly trimmed, remaining prominent and blunt over its surviving length, although it appears to have been obliterated from c.10mm above the break, and it has been flattened over the loop. Grinding marks are also apparent, with horizontal examples running across the collar and others running diagonally over the face. However, these are associated with fresh metal in places, so their antiquity is not entirely convincing.

Use: Impossible to determine.

Reduction: Notches are apparent around the collar, and these may have been inflicted during the separation of axehead and haft. An additional notch apparent on the interface between one face and the upper surface (illustrated) may also be related to this process. On one face, distortion of the section is evident in places, with crushing apparent in the vicinity of the pellet decoration, and in association with the break (illustrated). On the other face, damage is concentrated upon the lower body, and a slight crack in the metal may be associated with this. No individual hammer indents can be identified.

03/04

Description: Socketed gouge, with a single collar moulding visible in places.

Dimensions: Length: 82mm. Weight: 63.7g.

Patina: Very rough mid/dark green, with some encrustation. Details obscured.

Manufacture: Where the mouth is broken, the metal seems thin, indicating core misalignment. The casting seams are prominent over either side of piece, though they are not so noticeable near the cutting edge.

Use: The cutting edge is very badly chipped and broken. However, this damage may have been exaggerated through corrosion buildup. Breakage is evident at the mouth, and the association of this with a thin wall-section may indicate use-related damage.

Reduction: The collar shows slight indications of distortion near the break, but this must remain uncertain as the corrosion products obscure much detail here.

03/05

Description: Fragment from edge of copper ingot, with large voids apparent in the metal.

Dimensions: Length: 68mm. Width: 43mm. Thickness: 26mm. Weight: 159.6g.

03/06

Description: Fragment from edge of copper ingot.

Dimensions: Length: 40mm. Width: 27mm. Thickness: 20mm. Weight: 126.5g.

03/07

Description: Small fragment from interior of copper ingot.

Dimensions: Length: 37mm. Width: 18mm. Thickness: 18mm. Weight: 59.2g.

Observations: A possible notch at one side is associated with an overhanging lip of metal. This may have resulted from hammering over a void in the interior of the ingot. There are further striations which seem too sharp and well-defined to have resulted from cooling processes, and these may have been caused during the fragmentation of the ingot. There are also some long isolated grooves visible in places.

03/08

Description: Fragment from edge of copper ingot.

Dimensions: Length: 40mm. Width: 40mm. Thickness: 25mm. Weight: 159.1g.

03/09

Description: Fragment from edge of copper ingot.

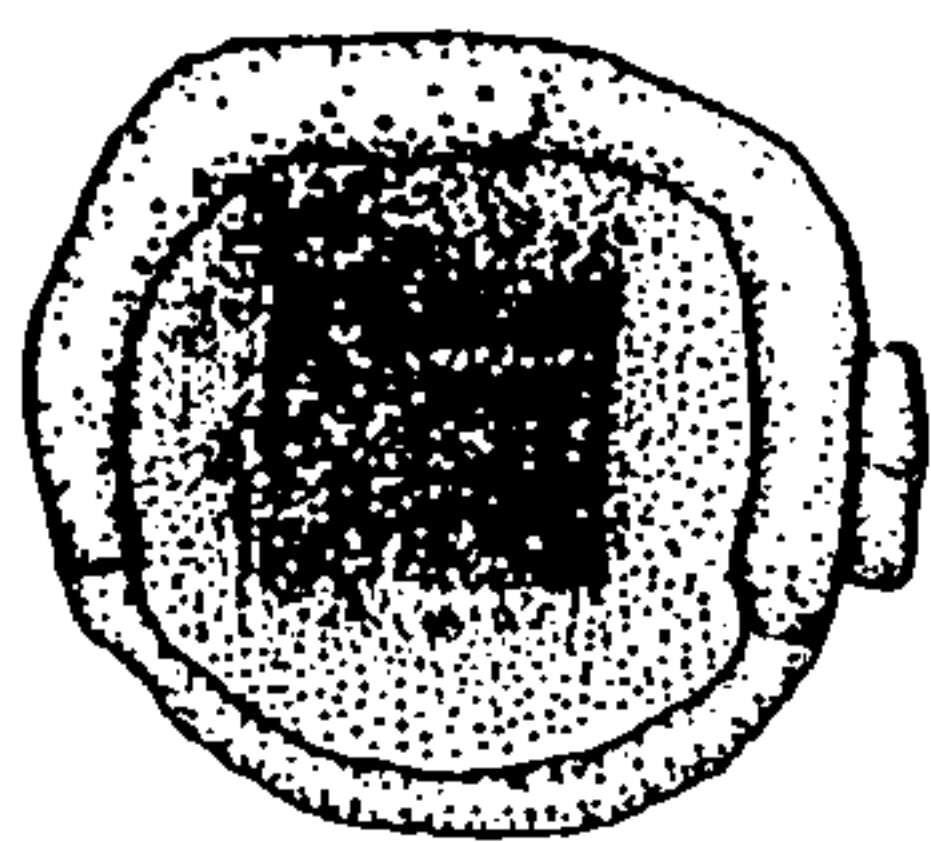
Dimensions: Length: 40mm. Width: 27mm. Weight: 126.5g.

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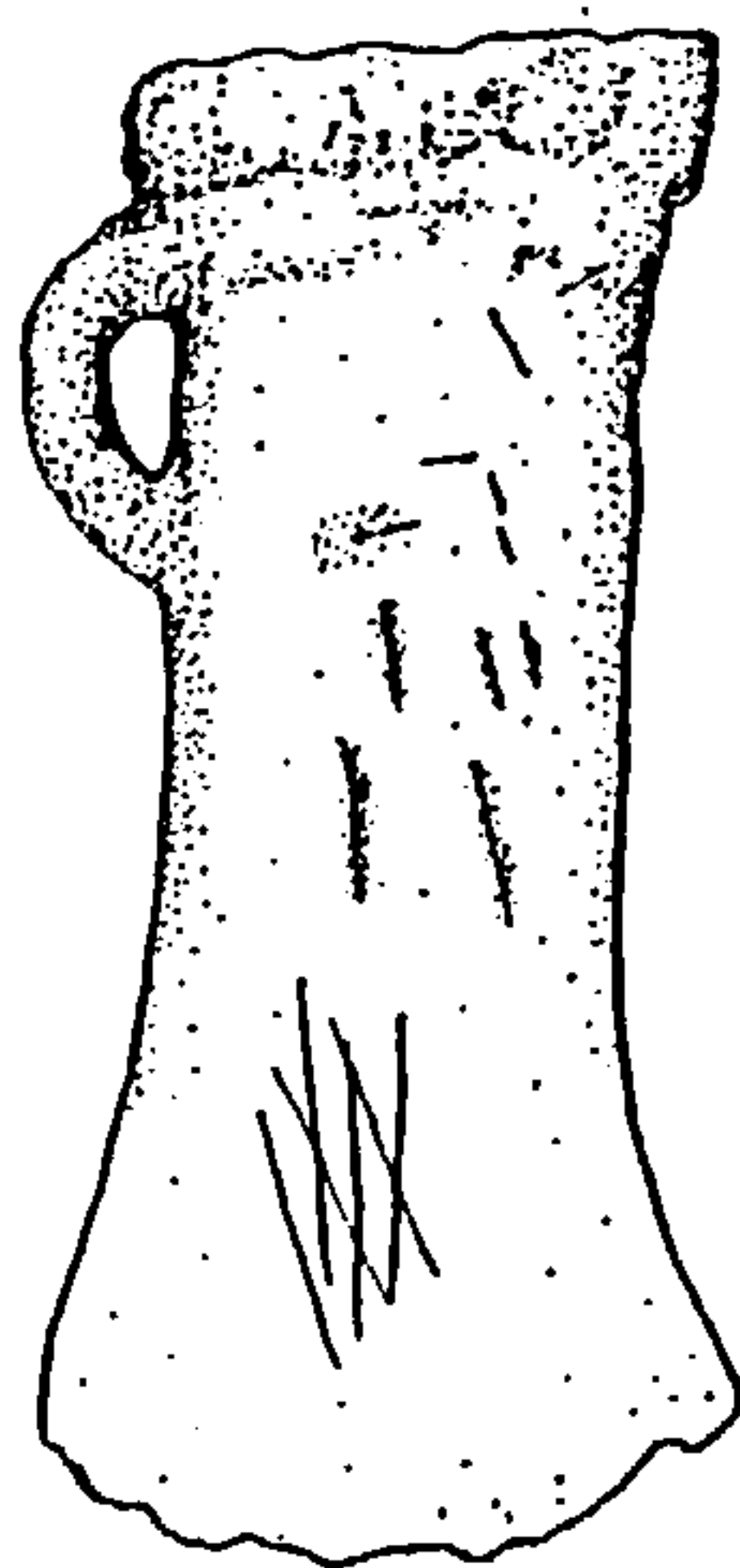
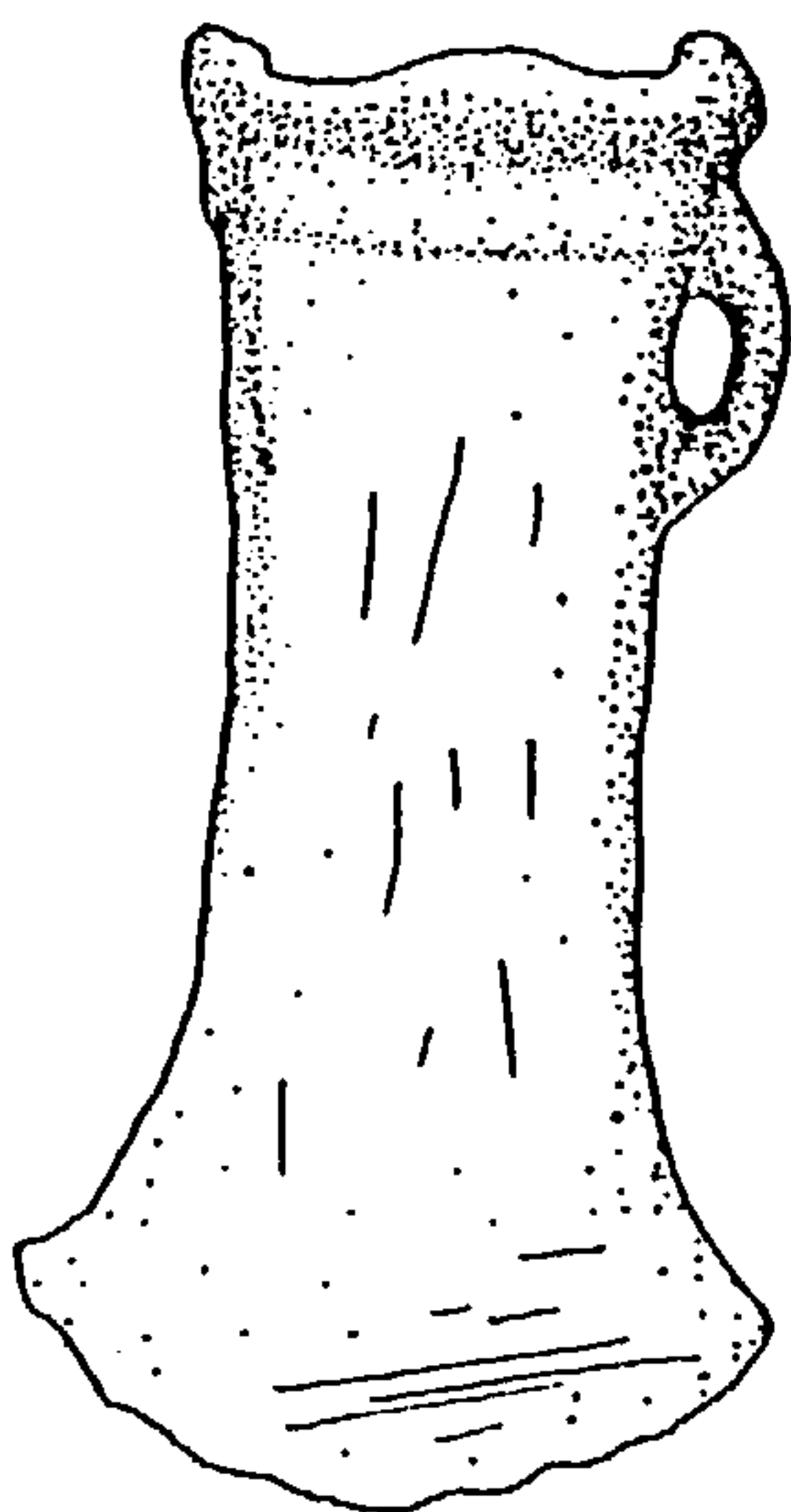
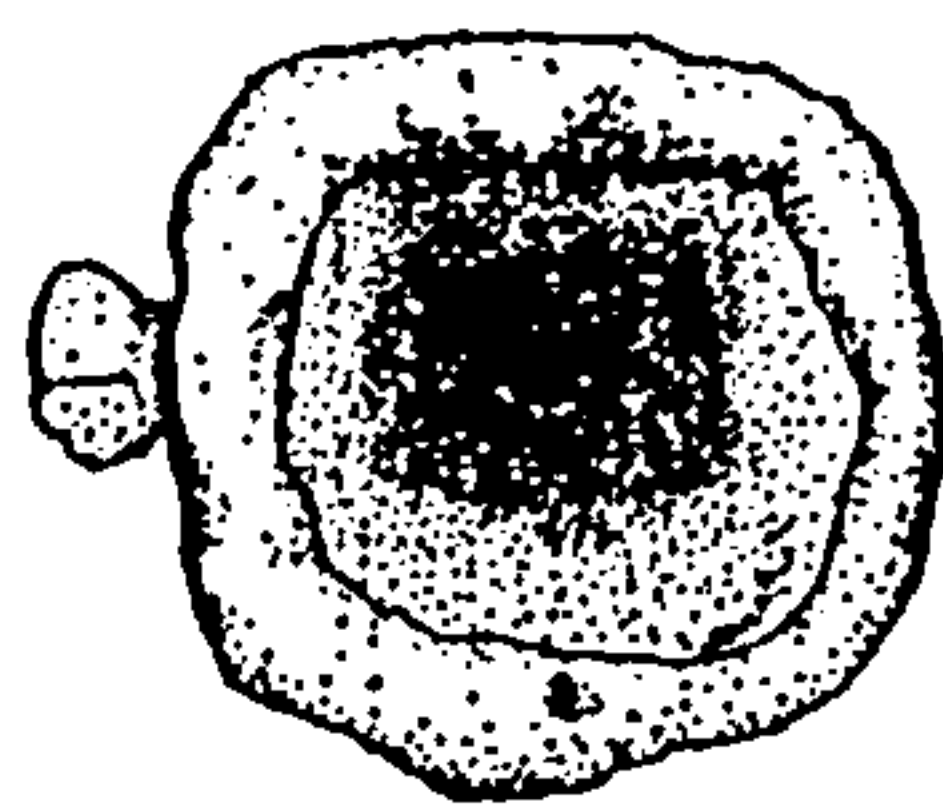
Description: Fragment from edge of copper ingot, with large voids apparent in the interior.

Dimensions: Length: 68mm. Width: 43mm. Thickness: 26mm. Weight: 159.6g.

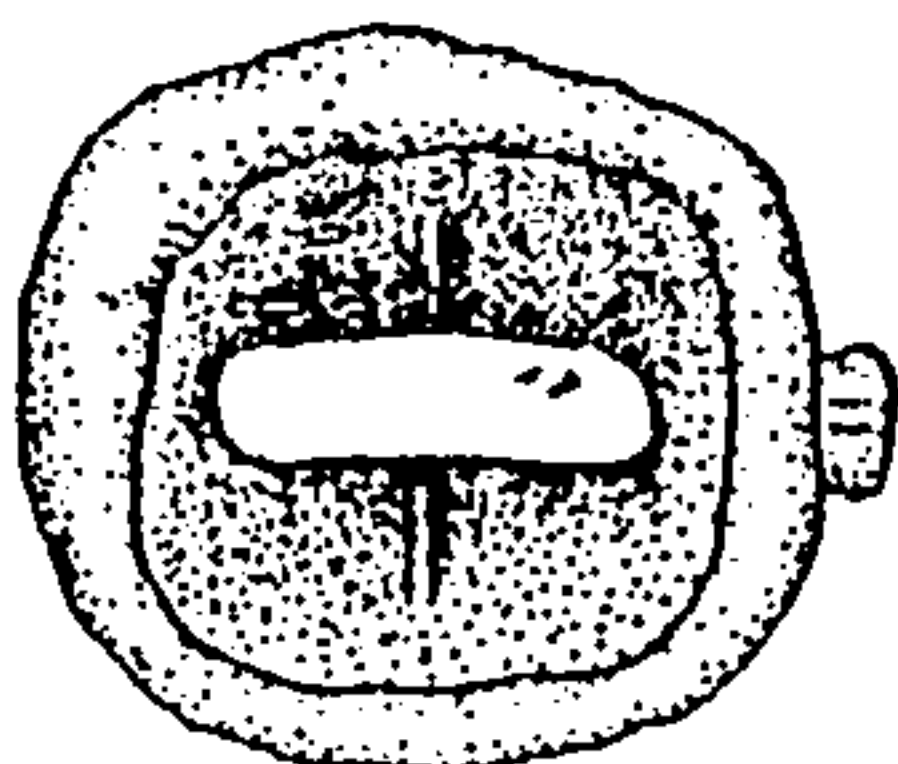
03/01



03/02



03/03



03/04

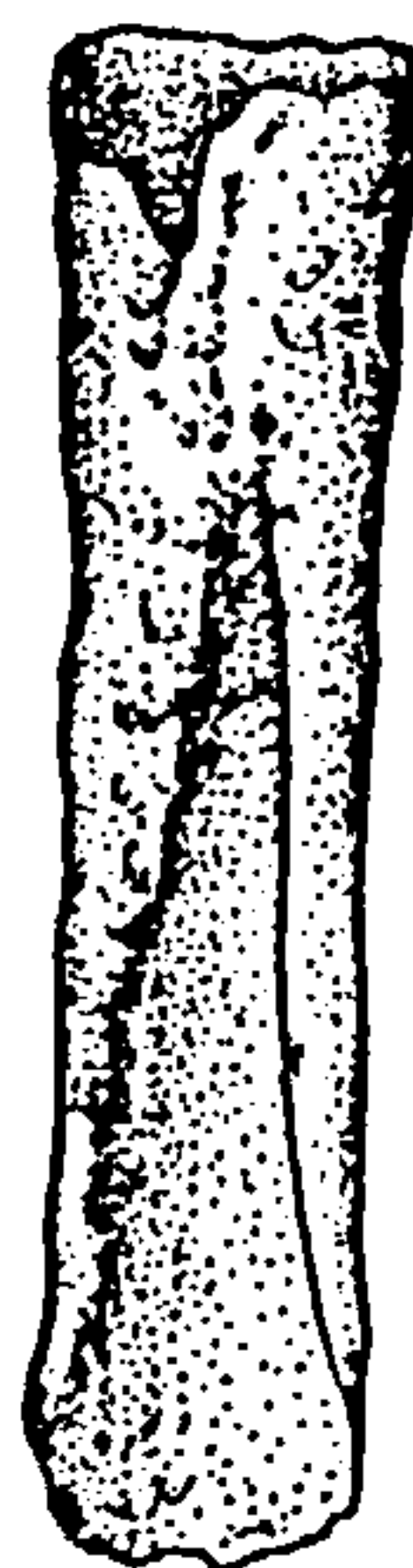
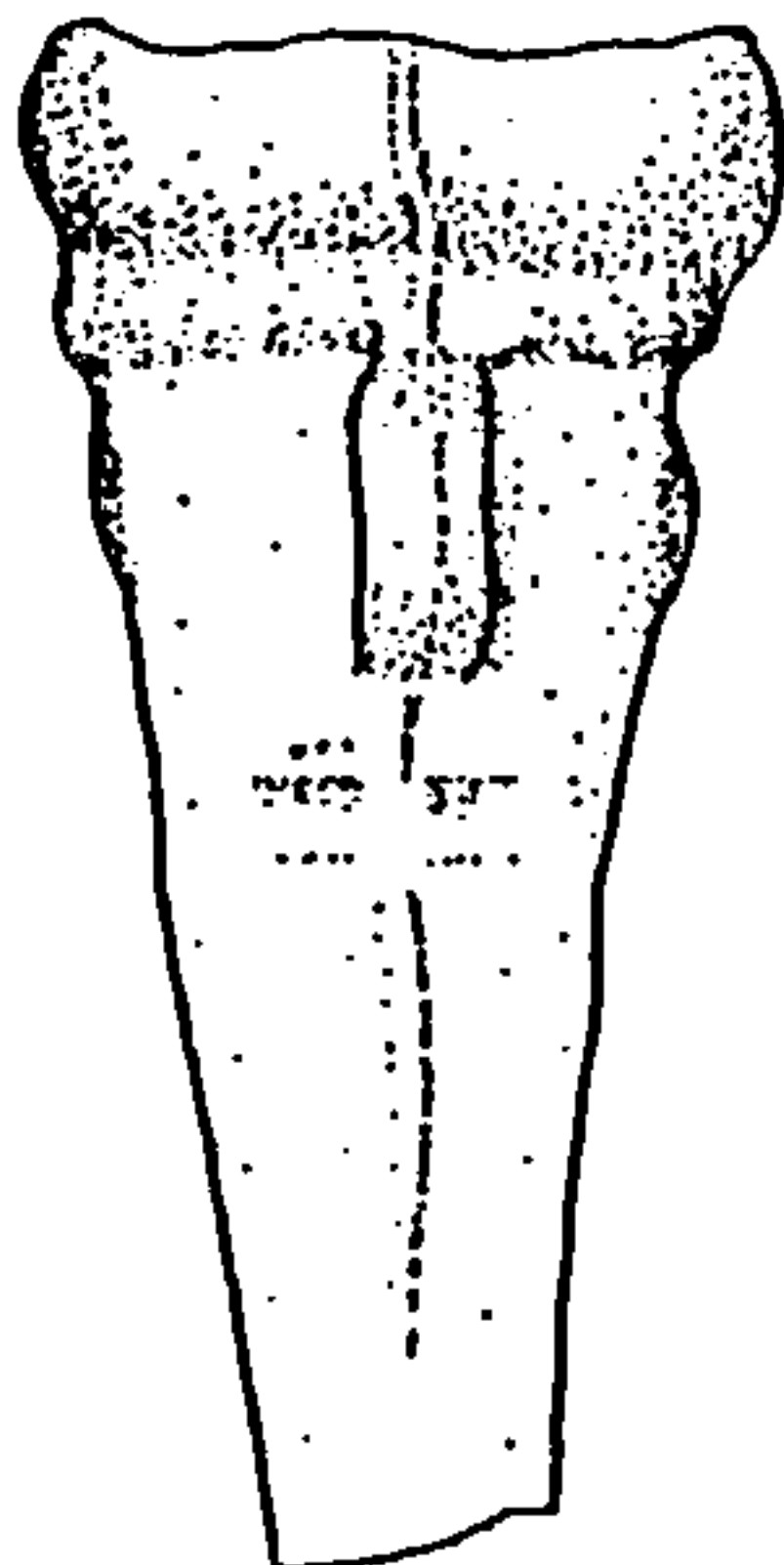
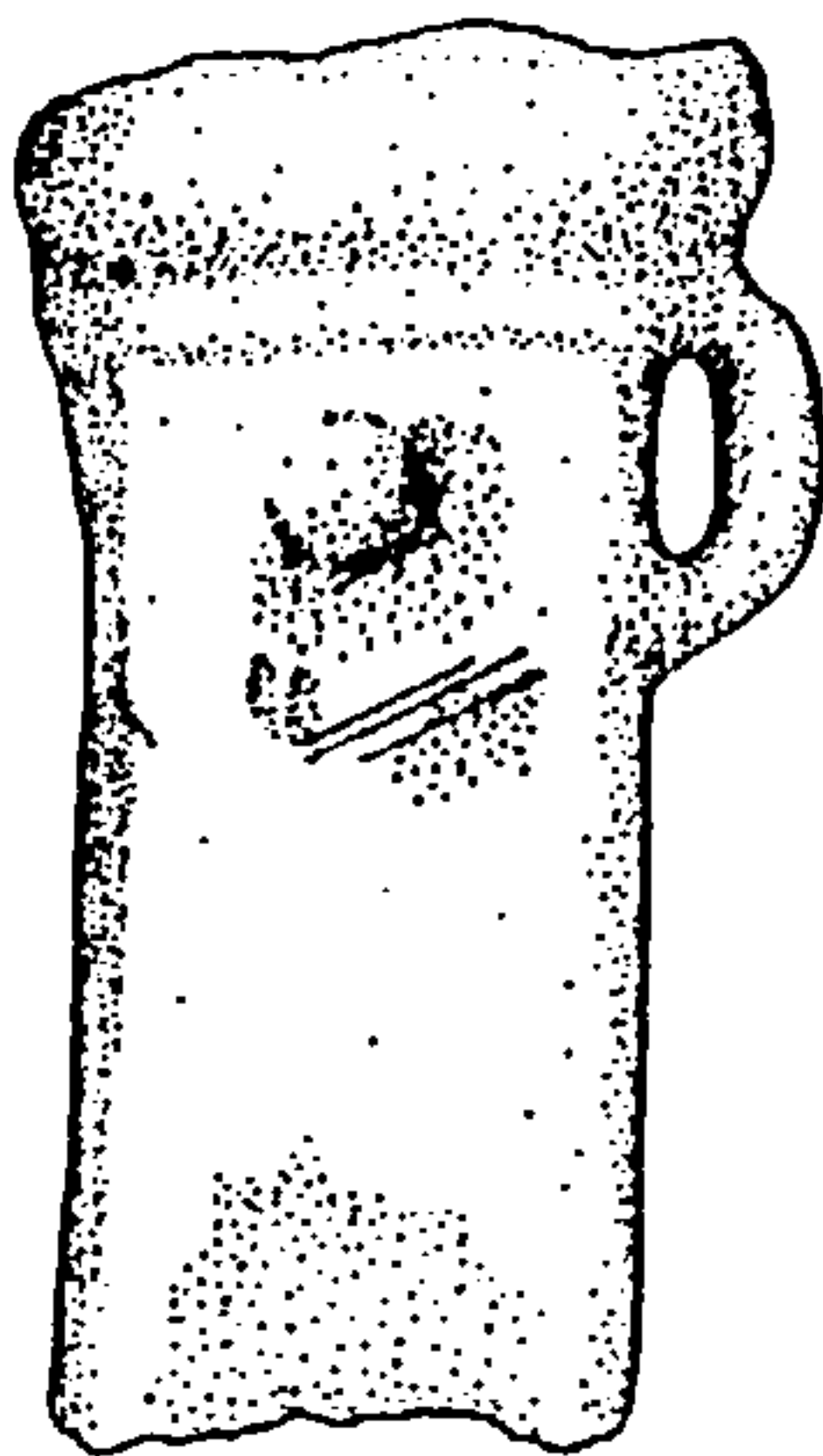
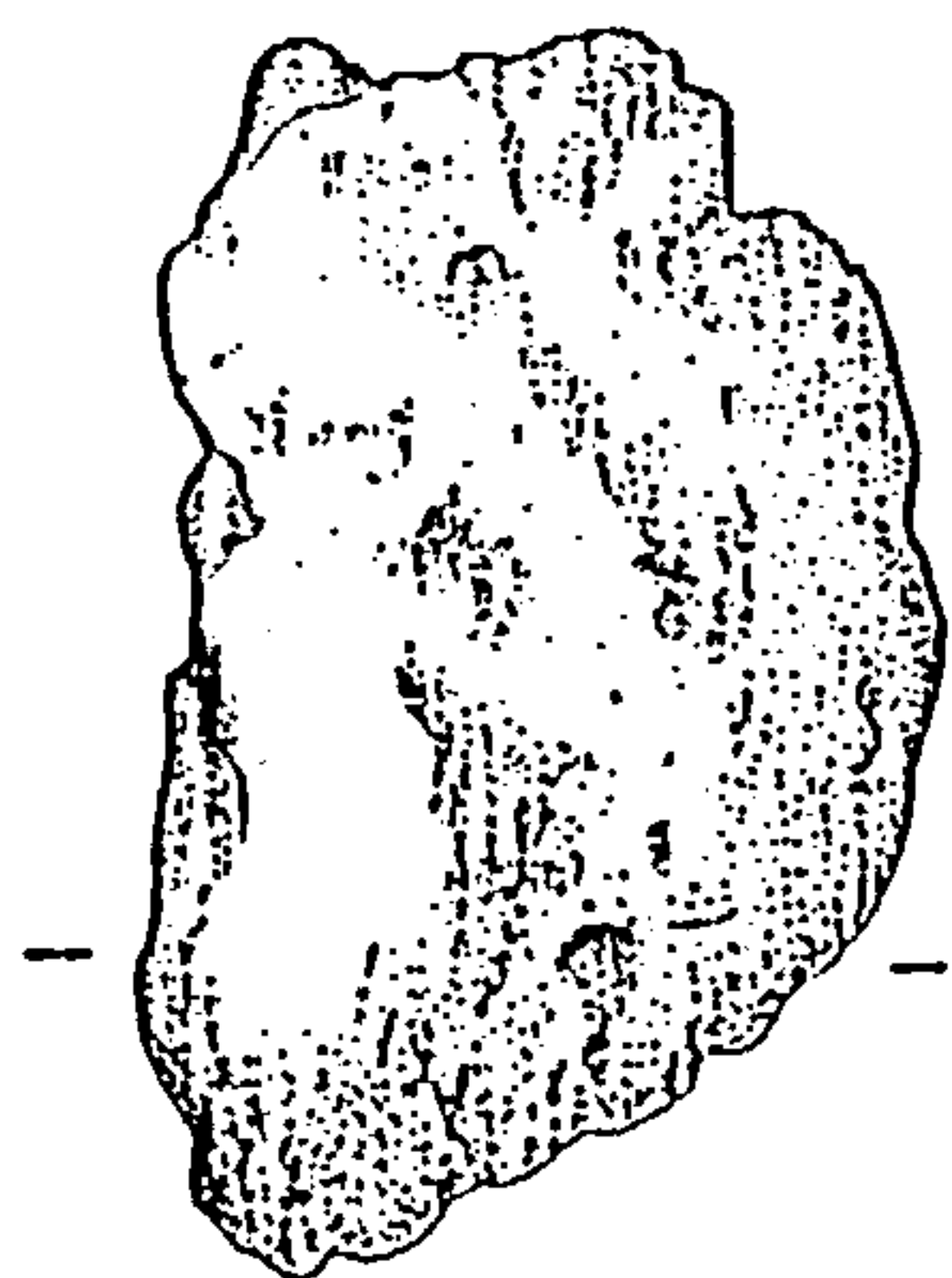
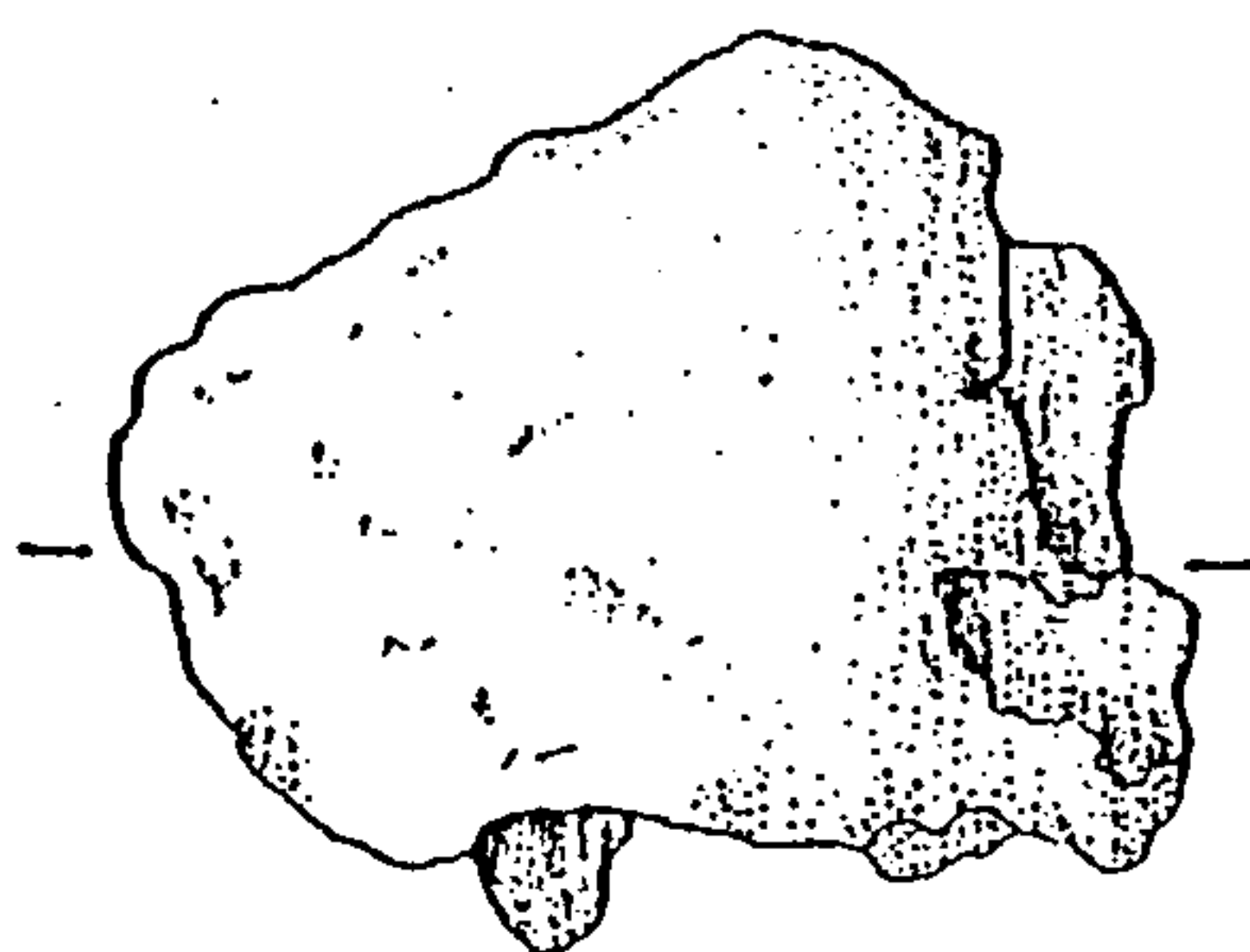


Fig. 38: The Grays Thurrock II Hoard (Ref. No. 03): Socketed Axes and Small Tools

03/05



03/06

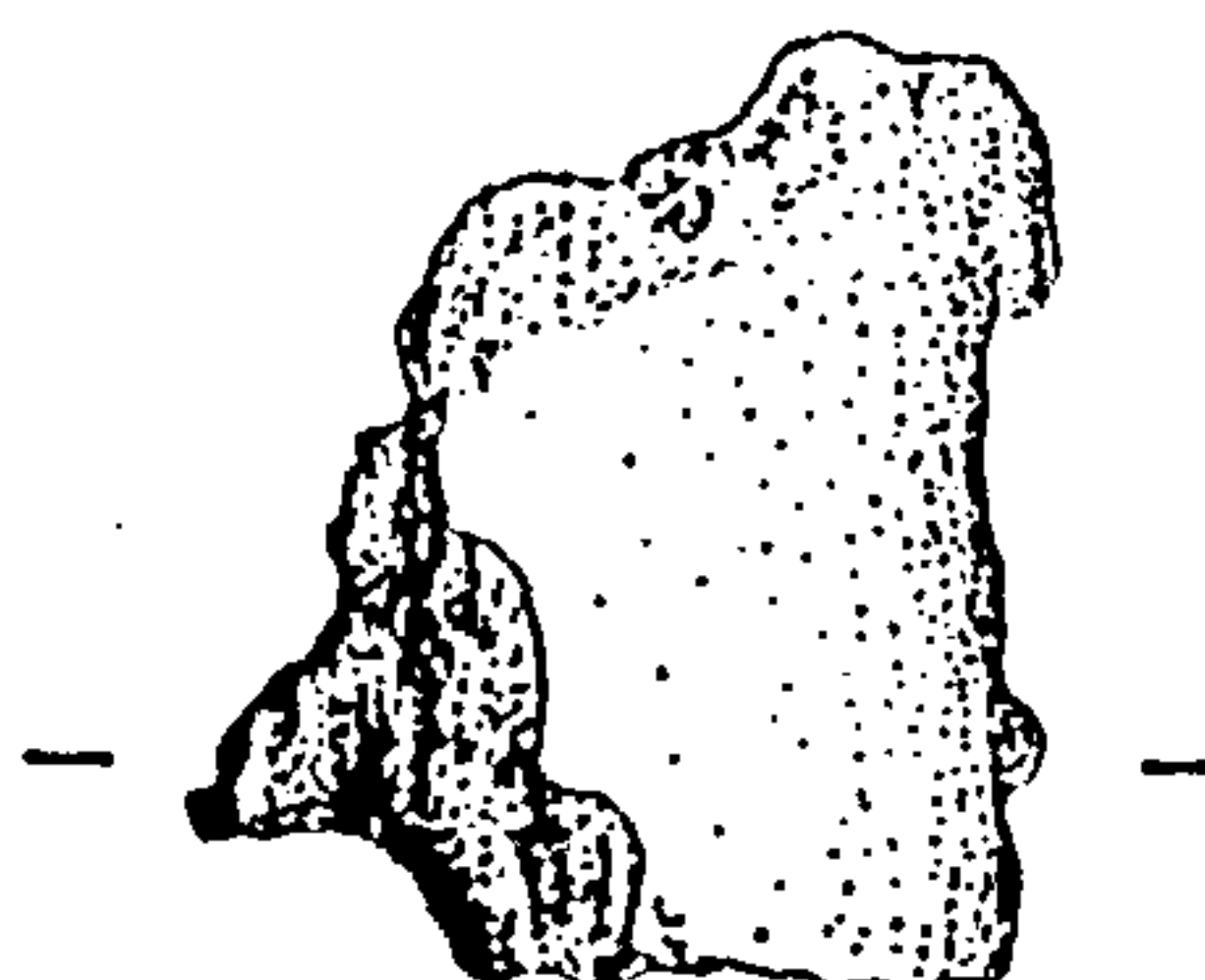


03/07



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03/09



03/10

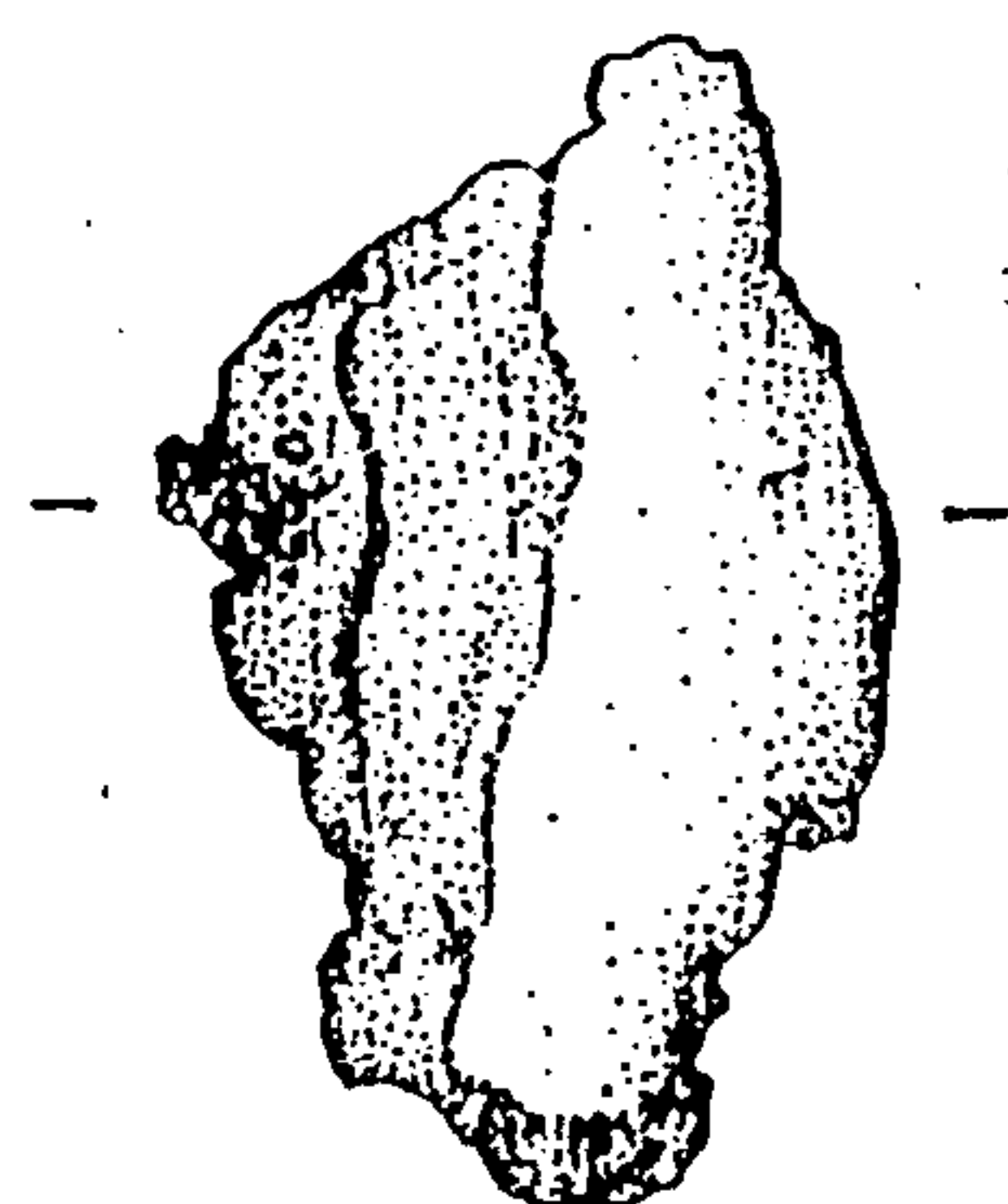


Fig. 39: The Grays Thurrock II Hoard (Ref. No. 03): Ingot Metal

Leigh I (Ref. No. 04)

Grid Reference: c. TQ 83 86.

Current Location: Colchester and Essex Museum. The National Bronze Index notes the presence of a fragment of ingot metal amongst the hoard contents, but this does not appear to have survived in association with the remainder of the hoard.

Context: Not recorded.

Bibliography: Butcher, 1921-3.
Davies, D. G., 1979.
National Bronze Index.

Contents:

04/01

Description: Socketed axe of 'south-eastern' type, with three slightly converging ribs on either face.

Dimensions: Length: 109mm. Cutting edge: 40mm. Weight: 201.5g.

Patina: The piece is in poor condition, its surface covered with a layer of thick grey-green encrustation. No details survive.

Manufacture: On the body, traces of the lower casting seam can be seen over the collar mouldings, but elsewhere corrosion buildup has obscured much detail. The cutting edge has been expanded, but it remains narrow in shape.

Use: Bevels over either corner of the cutting edge suggest that the blade was resharpened. The cutting edge is blunt and chipped over its extent, and while some of this damage may have been associated with corrosion loss in recent times, a substantial amount appears to have been use-related damage incurred in antiquity.

Reduction: The object is complete and there is no evidence relating to this process.

04/02

Description: Socketed axe of 'south-eastern' type, with different decorative motifs on either face. One face (illustrated) shows a very faint wing decoration in association with a single collar moulding. The other has a faint wing decoration, associated with a triple collar moulding.

Dimensions: Length: 107mm. Cutting edge: 45mm. Weight: 303.1g.

Patina: Dense dark-green, details obscured.

Manufacture: The mouth appears uneven, indicating that an inadequate supply of molten metal was used during casting. The mouth is well-finished, but over the body the seams are sharp and prominent, the loop remaining virtually infilled with untrimmed flash. The exterior of the loop has a marginally better appearance, but it does not appear well-finished in comparison to other similar axeheads. The axehead seems to have been prepared for use, though, as the blade has been widely expanded.

Use: The cutting edge is now in very poor condition, with both corners now missing. Some minor damage appears to have occurred in recent times, but most seems to have taken place in antiquity. The casting is cracked in the vicinity of the mouth, and this damage may be use-related.

Reduction: The socket has been blocked following the insertion of a mouth fragment of socketed axe, and also appears to have been infilled with rough metal.

04/03

Description: Socketed axe of 'south-eastern' type, both faces decorated with a wing-and-pellet motif. Three collar mouldings are evident.

Dimensions: Length: 101mm. Cutting edge: 34mm. Weight: 200.9g.

Patina: Thick grey-green, with some flaking of the corrosion product in places. Details locally good.

Manufacture: The mouth appears rough and uneven, which suggests that an inadequate supply of metal was used during casting. The upper seam has been trimmed and flattened, but it remains prominent over much of the body. It has, however, been obliterated over the final 20mm from the cutting edge. The lower seam is similar, though it has been more

carefully finished over the loop. The blade has been expanded, but it remains narrow in shape.

Use: The cutting edge is badly chipped over its extent, with none of the original edge remaining. Much of this damage appears to have taken place in antiquity.

Reduction: A fragment of rough metal is lodged in the base of the socket.

04/04

Description: Socketed axe, of plain 'south-eastern' type.

Dimensions: Length: 83mm. Weight: 178.8g.

Patina: Rough mid-green, details obscured.

Manufacture: The mouth appears rough, with some traces of the casting seam surviving, though the feeders have been removed. Over the body, the upper seam is evident near the collar, remaining prominent though it has been trimmed and flattened. No traces can be seen below this point. On the lower surface, only vestigial traces of the lower seam survive below the loop. Over the loop, however, the casting seam remains prominent, though it appears to have been flattened. The cutting edge has been expanded.

Use: One corner of the cutting edge has broken away, and the remainder is blunted. In the vicinity of the break the metal is burred and distorted.

Reduction: A spearhead fragment has been inserted within the mouth, and a piece of rough metal is evident lower down within the socket. The spearhead fragment is crushed in the vicinity of the midrib.

04/05

Description: Blade fragment of socketed axe.

Dimensions: Length (maximum): 28mm. Cutting edge: 47mm. Weight: 44.8g.

Patina: Very rough light green/grey. No details survive.

Manufacture: No traces of any casting seams can be seen on either side, though the patina obscures much detail. The cutting edge has been widely expanded, and has a crescentic appearance.

Use: The cutting edge appears blunt and chipped over its extent, though some of this damage may be linked with recent flaking of the corrosion product.

Reduction: No hammer indents or deformation of the section can be identified in association with the break.

04/06

Description: Socket fragment from unknown object. The presence of a collar moulding around the mouth suggests that the piece is likely to have been part of a socketed gouge.

Dimensions: Length (maximum): 34mm. Weight: 8.5g.

Patina: Dusty grey-green.

Manufacture: The section of the wall seems thin, suggesting core misalignment. The casting seam remains very prominent over the side of the socket, though no traces have survived around the mouth. It is possible that the piece was never finished, the lack of seam around the mouth having been the result of severe core misalignment, as the side seam is unusually prominent and the finish unusually rough for a socketed gouge.

Use: Impossible to determine.

Reduction: The section appears distorted, though no evidence of hammering can be seen.

04/07

Description: Blade fragment of socketed spearhead with fillet-defined midrib.

Dimensions: Length (maximum): 43mm. Weight: 26.7g.

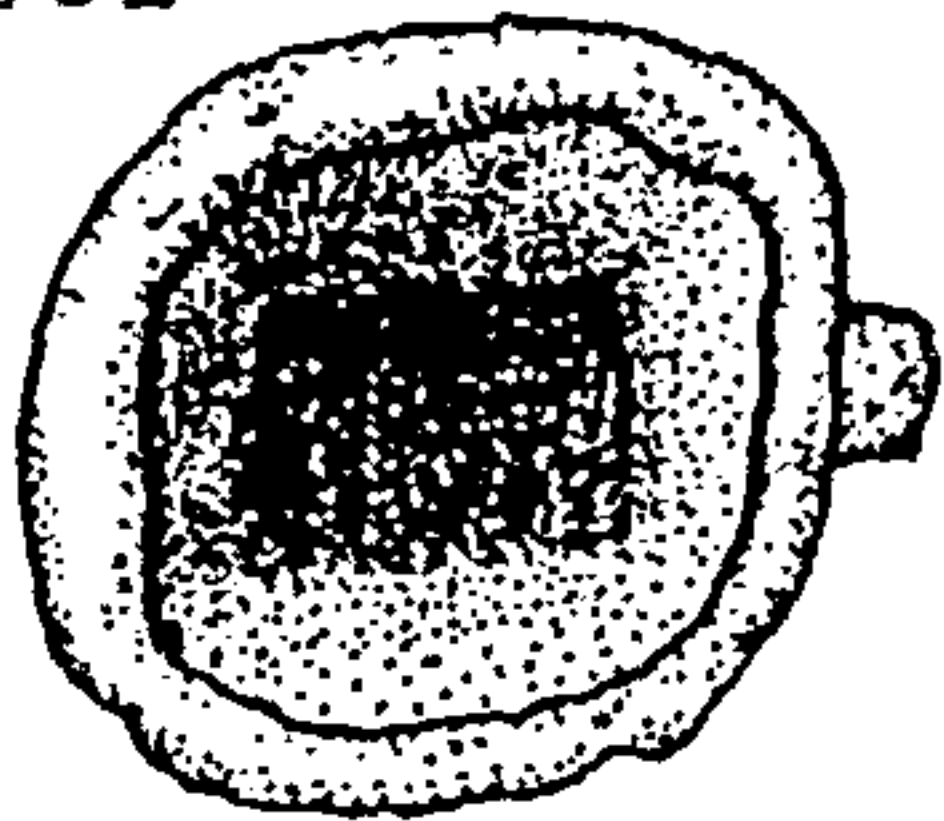
Patina: Dense dark green, details obscured.

Manufacture: One wall is markedly thinner in section, indicating core misalignment. No other details can be seen, though faint bevels can be seen running down either blade edge.

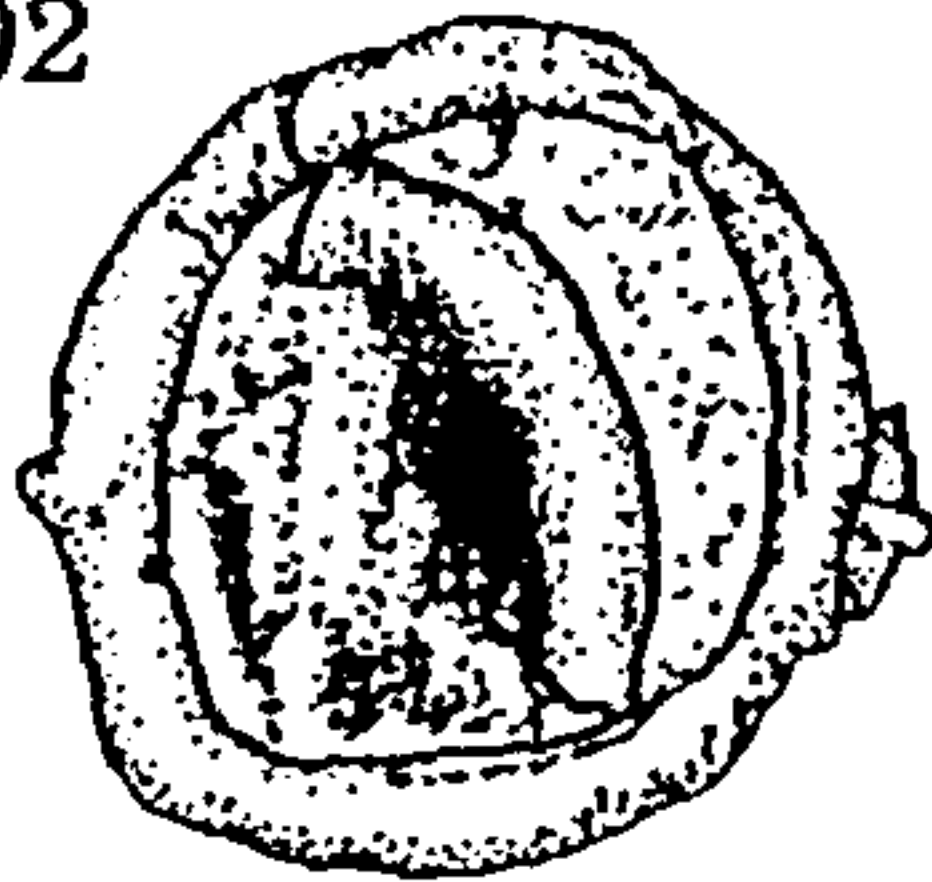
Use: The edges, where they survive, are chipped in places, though they remain mostly good.

Reduction: Isolated hammer indents can be seen on both faces in the vicinity of the lower break. The blade edge is largely missing towards the upper break on both sides of the midrib, and may have been subject to deliberate removal.

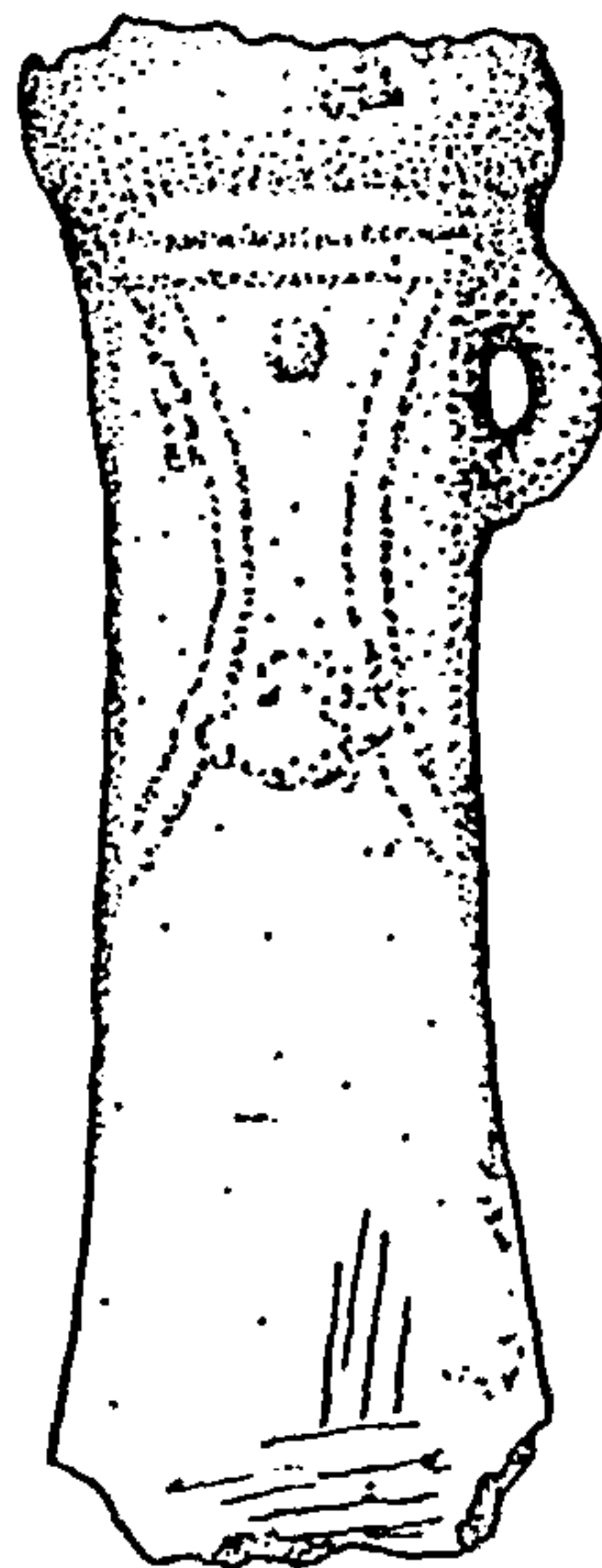
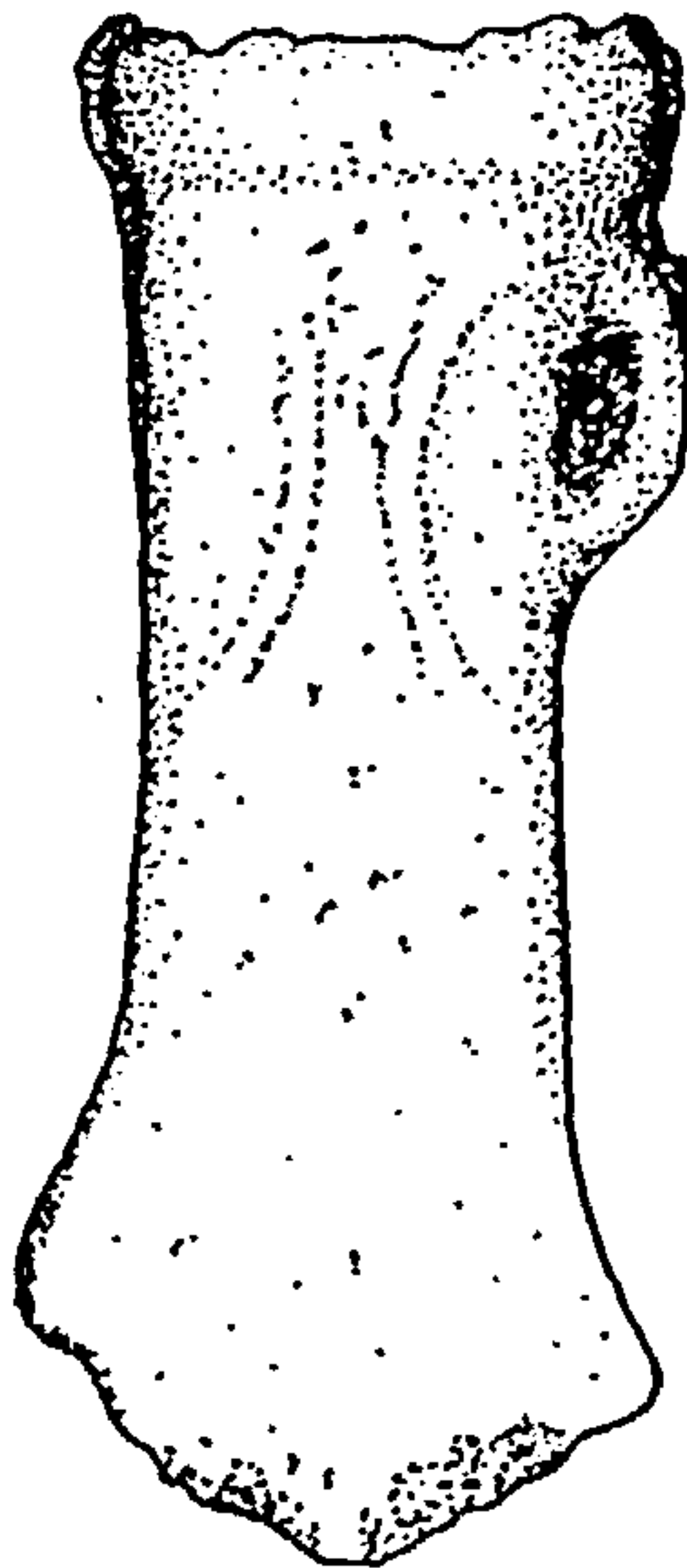
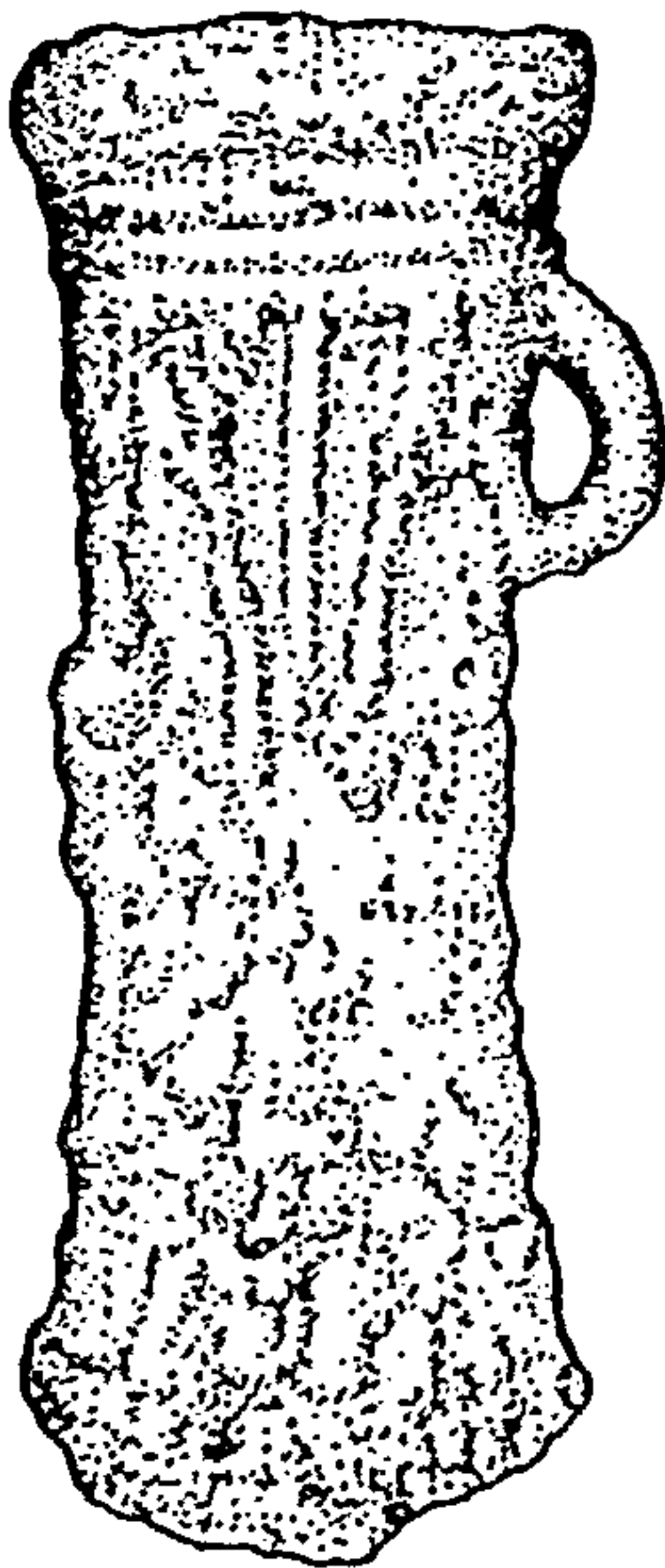
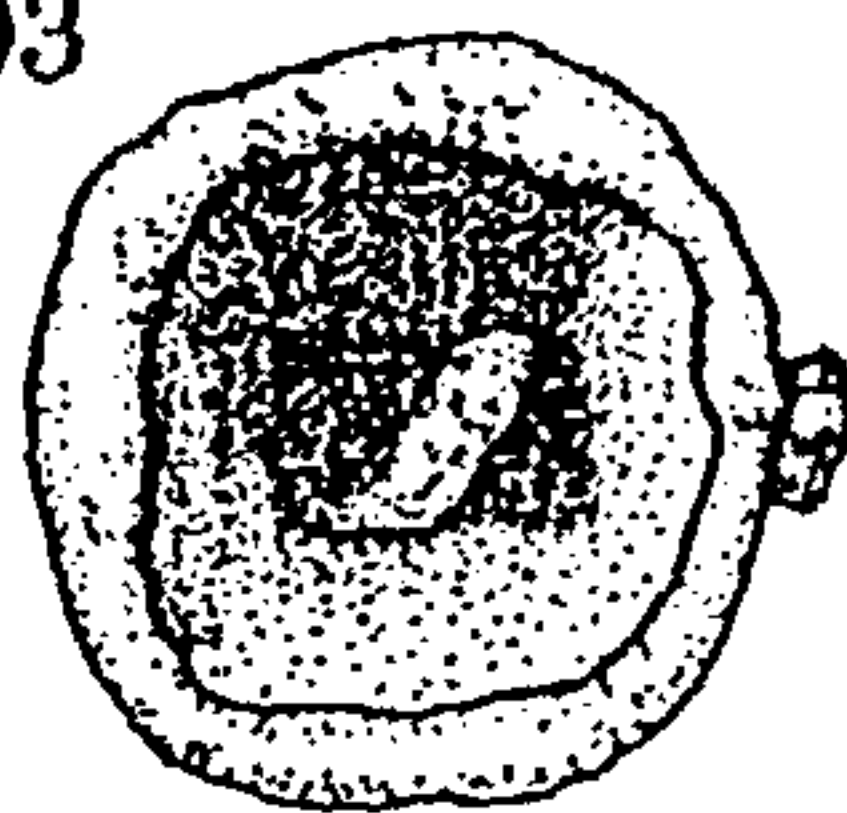
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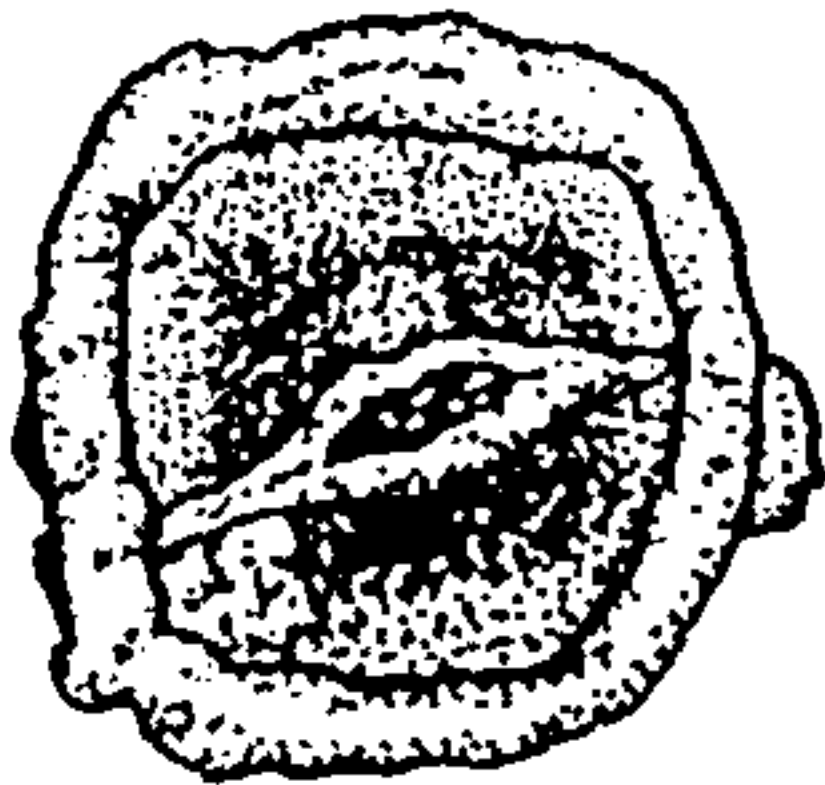
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04/03



04/04

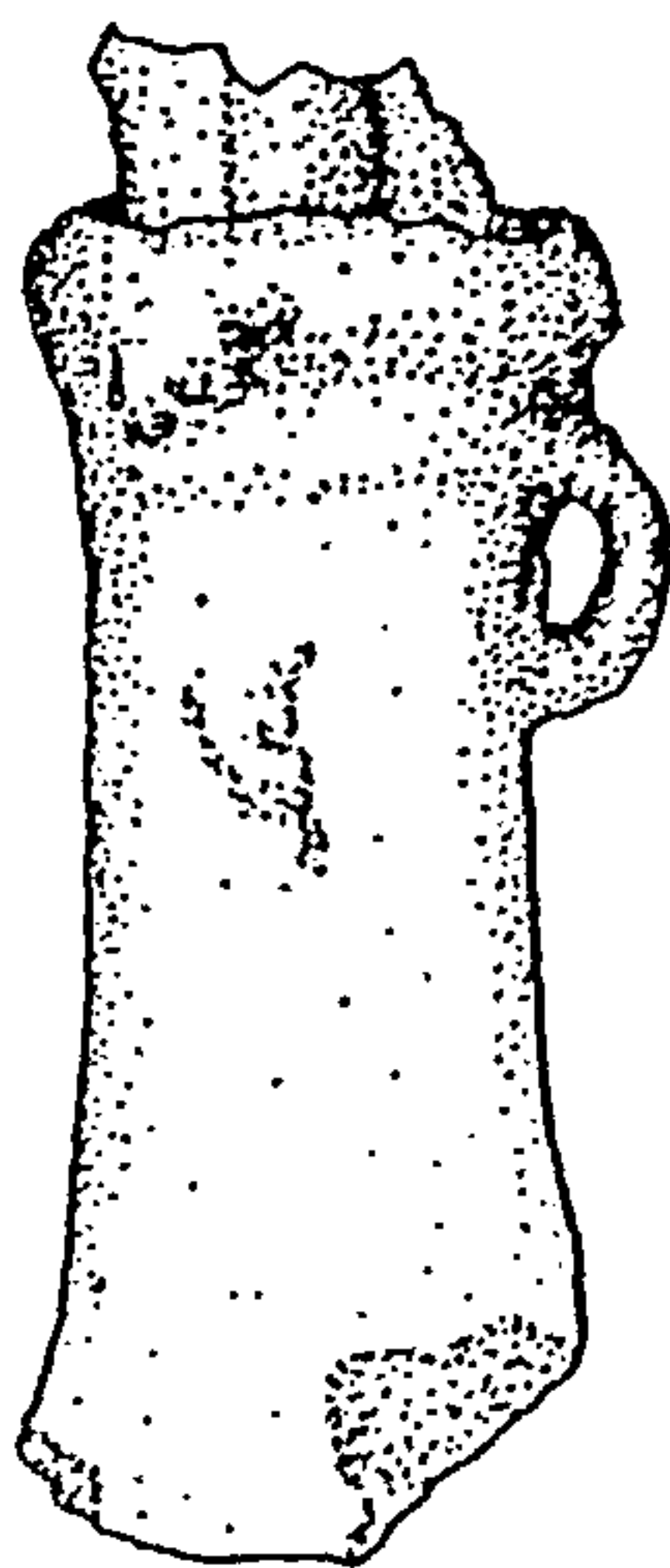
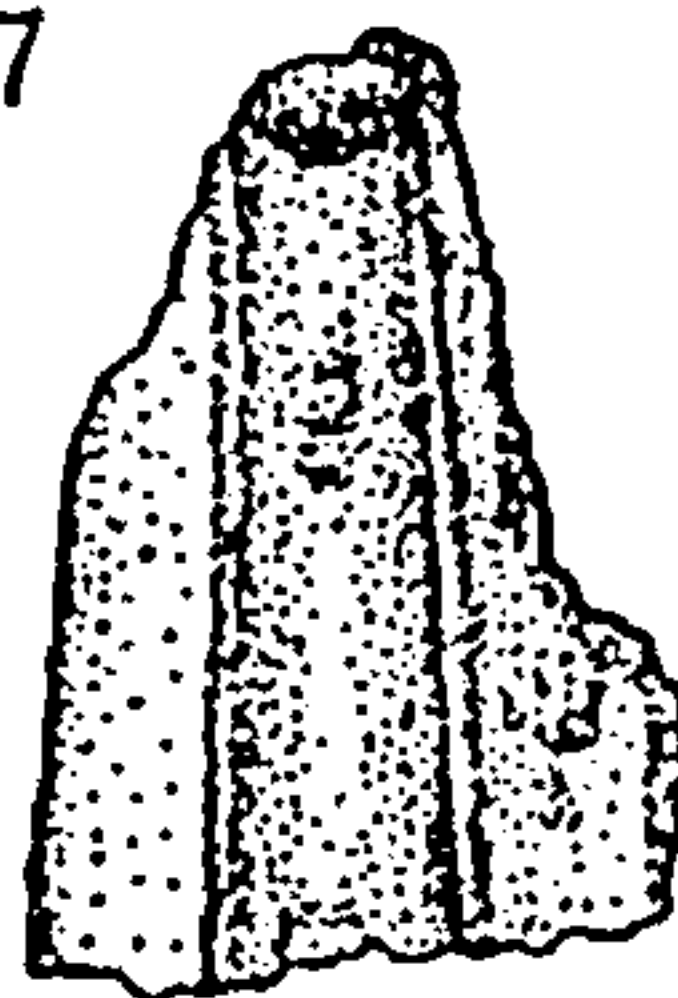


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04/06

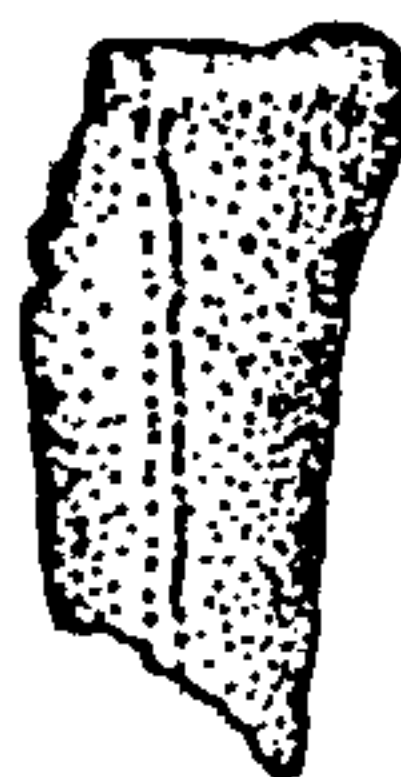


Fig. 40: The Leigh I Hoard (Ref. No. 04)

Leigh II (Ref. No. 05)

Grid Reference: TQ 838 868.

Current Location: Southend Museum.

Context: The hoard was recovered from 4' below the surface of the findspot, resting on undisturbed gravel a few feet from the Prittle Brook. Later excavation of the site revealed finds of charcoal and evidence of a fire, as well as additional finds of fragmentary bronze implements and waste debris (Pollitt, 1926).

Bibliography: Crowe, unpublished.
National Bronze Index.
Pollitt, 1926.
Pollitt, 1963.

Contents:

05/01 (276/3)

Description: Socketed axe, of faceted type.

Dimensions: Length: 110mm. Cutting edge: 48mm. Weight: 233g.

Patina: Dense dark-green, details excellent.

Manufacture: The mould valves used during casting appear to be mismatched (see side view in illustration), though this has had no effect on the quality of the casting, which appears otherwise excellent. The object is faintly rippled over much of its surface, following work-hardening and finishing which appears to have been more roughly executed in this example than on other socketed axe types. The casting seam has been completely removed from around the mouth, and no traces of the feeders survive. Over the body, the casting seams have been trimmed and flattened on both sides, though they remain prominent. Nearer the blade, however, from a point measuring approximately halfway down the length of the piece, the seams have been obliterated as a result of more intensive hammering and polishing.

Use: The cutting edge is chipped over its extent and shows slight signs of uneven wear.

Reduction: Some of the hammering may be related to this process, as the profile of the axehead appears slightly distorted. There are in addition some deep notches apparent in places, running in particular along the interfaces between the upper facets and their adjoining faces. These appear to have been made by a heavy, sharp object, the most likely candidate being perhaps another axe.

05/02 (276/4)

Description: Socketed axe, of faceted type.

Dimensions: Length: 109mm. Cutting edge: 49mm. Weight: 204g.

Patina: Dense dark green, with some bronze showing. Details excellent.

Manufacture: A slight dip is apparent in the mouth, and this is likely to be a minor casting defect. Around the mouth, the casting seam has been hammered flat, but it remains visible over its extent. Vestigial traces of the casting seam can be seen over the upper surface of the body, though it has been flattened over its extent. The situation is similar on the lower surface, and on both sides the seam has been obliterated over the lower body and the cutting edge and over the exterior of the loop. It remains prominent and sharp in places within the loop, though. The surface of the object has a rippled appearance, resulting from hammering executed in order to work-harden the piece. Like the other faceted socketed axe (05/01), the hammering appears more roughly executed than similar work carried out on other types of socketed axe. This hammering is particularly noticeable over the facets. Some vertical striations run down the face in places, while horizontal and vertical grinding marks can be identified over the cutting edge. The blade has been widely expanded.

Use: The cutting edge shows some indications of uneven wear. Vestigial traces of a sharp edge remain, but the blade is blunt over most of its length, with some stretches of chipping and one or two notches apparent. The crack in the metal which runs from the loop to the mouth may be use-related damage.

Reduction: It is possible that some of the intrusive hammer indents were inflicted during this stage of the object's history, perhaps during the separation of axehead and haft. On both faces, the centre of the blade appears slightly depressed on account of this hammering.

05/03 (276/46)

Description: Incomplete socketed axe of 'southern English' type. Five parallel ribs emerge from the lower collar moulding on either face.

Dimensions: Length (maximum): 86mm. Weight: 140g

Patina: Object covered by thick dark-green encrustation, details poor.

Manufacture: The casting seam is visible only for a short distance on the lower surface of the body, and towards the cutting edge on both sides the seams appear to have been obliterated, though it is difficult to be certain as a result of corrosion buildup. The blade has been well-expanded.

Use: Only a small portion of the original cutting edge survives, and this seems to be in poor condition.

Reduction: Much of the blade appears to have been deliberately removed, and hammering on either face has caused distortion of the section in the vicinity of the break. There are small tool marks apparent around the mouth, perhaps associated with the removal of the haft.

05/04 (276/8)

Description: Socketed axe, with four parallel ribs present on either face. Two lie upon the face itself, while the others define the interface between either face and the adjoining surfaces.

Dimensions: Length: 94mm. Cutting edge: 46mm. Weight: 214g.

Patina: Rough mottled pale and dark green, with encrustation in places. Details are much obscured.

Manufacture: One face appears pitted, which suggests a poor quality casting. The casting seam has been trimmed around the mouth, though the stump of one feeder survives. Over the body, the seams have been trimmed and flattened, though they remain prominent over their length. The blade has been expanded.

Use: The cutting edge is badly chipped and notched over its length, though some of this damage appears to be of recent origin, as fresh metal is revealed.

Reduction: The loop is broken, but the nature of this breakage is uncertain. Its absence may represent a casting defect, though it may also have resulted from use-related damage, or even breakage in recent times. Fresh metal is revealed here, which might support the latter possibility, though it seems more likely that this damage resulted from polishing of the metal for metallographic analysis. There are small tool marks apparent in the vicinity of the mouth, probably inflicted during the removal of the haft.

05/05 (276/13)

Description: Socketed axe of unknown type, with a single collar moulding and a plain blade.

Dimensions: Length: 72mm. Cutting edge: 37mm. Weight: 150g.

Patina: Bronze colour remains in most places, though green encrustation obscures most of the blade edge and the interior of the loop.

Manufacture: The mouth is well-finished, with the feeders removed and the casting seam hammered down over its extent, though vestigial traces remain visible. Elsewhere, the casting seams are still prominent over the body, though they have been flattened, and no traces survive over the exterior of the loop. The upper body appears as-cast, though hammering has occurred on the lower body and the cutting edge, and vertical grinding marks run down the body in places.

Use: Corrosion product has obscured the cutting edge, but some of its uneven shape may result from use-related breakage.

Reduction: Some small tool marks are present on the loop. These seem more likely to have resulted from the removal of the material which bound the haft in place, than the initial removal of the seam. A lump of rough metal adheres to the interior of the socket.

05/06 (276/1)

Description: Socketed axe of 'south-eastern' type. A faint arrangement of three pellets can be seen on one face, while the other appears to be undecorated.

Dimensions: Length: 119mm. Cutting edge: 40mm. Weight: 341g.

Patina: Some bronze remains visible, though other areas are obscured following the build-up of patches of dark-green encrustation, particularly around the loop and inside the socket. Details are locally excellent.

Manufacture: The upper collar moulding is uneven in places as a result of an inadequate supply of bronze having been used during casting. Some pitting is apparent in the metal elsewhere. These holes appear unusually regular, however, and are probably the result of recent drilling of the object for metallurgical analysis. The casting seams are visible on either side of the body over much of their extent, with the stump of a chaplet surviving on the upper surface. Some evidence of grinding and hammering can be seen in the vicinity of the chaplet, but no real efforts to obliterate the feature appear to have been made. The blade has been expanded, but remains narrow in shape.

Use: The cutting edge is badly chipped and broken over much of its extent.

Reduction: The axehead is complete and undamaged. Several additional fragments have been wedged within the socket, including a probable mouth fragment from a socketed axe, a probable body fragment from a socketed axe, and a fragment of rough metal.

05/07 (276/2)

Description: Socketed axe of 'south-eastern' type, with three collar mouldings present. One face has a wing decoration, with a faint central pellet visible through the corrosion product. The other face has a faint pellet decoration.

Dimensions: Length: 111mm. Cutting edge: 42mm. Weight: 227g.

Patina: The original bronze colour remains over much of the piece, though some green patches are evident. Details excellent.

Manufacture: One marked dip in the mouth appears to be a minor casting defect, but the casting appears to be otherwise excellent. The casting seam appears to have been well-finished around the mouth. Over the upper body, the seam remains prominent and sharp on both sides. Lower down the object towards the blade, though, the seams have been obliterated. Over the loop, the seam has been hammered flat, and it appears lumpy, though smooth, as a result of this. The blade has been expanded.

Use: The original cutting edge no longer survives, with both corners missing and burring evident on the central portion where vestigial portions of the edge still remain.

Reduction: Some deep notches are apparent on the interface between the upper surface and its adjoining face (illustrated), and there is a similar notch next to the loop. In other areas, clusters of small tool marks are apparent.

05/08 (276/10)

Description: Socketed axe, of wing-decorated 'south-eastern' type.

Dimensions: Length: 88mm. Cutting edge: 39mm. Weight: 181g.

Patina: Some bronze remains visible on one face, while the other is covered with dusty dark-green patina. Much of the piece is obscured as a result of corrosion build-up.

Manufacture: The loop has a waisted appearance, and this seems likely to represent a casting defect. The mouth also seems uneven in places, and the mould valves appear to have been slightly misaligned. The casting seams have been trimmed, flattened and polished over much of their extent, but their line still remains clear. Towards the mouth, the finish is not so good, however. Horizontal grinding marks are visible on one face (not illustrated), while diagonal striations are apparent on the other (illustrated). Evidence of fine hammering can be seen on the lower body on both faces. The blade has been well-expanded.

Use: The cutting edge, where not obscured through corrosion buildup, remains sharp.

Reduction: There is no evidence relating to this process. A fragment of sword tang now adheres to the piece, and rough hammering can be seen on this object, possibly inflicted during its fragmentation.

05/09 (276/14)

Description: Socketed axe of 'south-eastern' type, with wing-and-pellet decoration.

Dimensions: Length: 72mm. Cutting edge: 41mm. Weight: 124g.

Patina: One face remains in good condition, but the other is partly obscured with patches of encrustation upon it. Details are locally good.

Manufacture: The feeders remain prominent at the mouth, as does the intervening seam. The casting seams are similarly prominent over both sides of the body. Both faces are smooth, which suggests that fine hammering has taken place, though no individual hammer indents can be seen. Faint vertical striations run down the length of the body, while horizontal grinding marks can be clearly seen above the cutting edge. The blade has been widely expanded.

Use: The loop appears roughly broken, and this damage may be use-related.

Reduction: Small tool marks can be seen in one place on the upper body (illustrated). A piece of rough metal adheres within the interior of the socket.

05/10 (276/11)

Description: Socketed axe of 'south-eastern' type, with single pellet decoration.

Dimensions: Length: 69mm. Weight: 134g.

Patina: Dark green, with some bronze showing. Details much obscured.

Manufacture: The mouth is slightly uneven on one side, but the casting appears otherwise good. The mouth is well-finished, with no traces of the feeders or the intervening seam surviving. Over the body, the casting seams remain prominent, though they have been flattened over their length, and obliterated towards the cutting edge. Fine hammering is apparent over the cutting edge, and there are some traces of horizontal grinding marks here, too. The blade has been expanded, but it remains narrow in shape.

Use: The cutting edge is blunt and chipped over its length, and one corner has broken off.

Reduction: There are chisel marks evident near the broken corner of the cutting edge, and these might indicate deliberate breakage of the blade.

05/11 (276/12)

Description: Socketed axe of wing-decorated 'south-eastern' type.

Dimensions: Length: 70mm. Cutting edge: 34mm. Weight: 105g.

Patina: Dense dark-green, with patches of thick encrustation present. Details obscured.

Manufacture: There is a hole in one face, and the wall appears unusually thin here, suggesting core misalignment. Vestigial traces of one feeder survive at the mouth, while the other has been obliterated. Over the body, the upper seam has been flattened over much of its length, though it remains prominent over the collar mouldings. The lower seam appears similar, though it is even less well-finished near the mouth. The blade has been expanded.

Use: The cutting edge is in poor condition. One corner has broken away, while the remainder is chipped along its length. The jagged hole which now occupies much of one face is likely to be use-related, as it seems too rough around the edges to be a casting flaw. It was perhaps caused by a loose haft moving in the socket, causing strain and eventual cracking in an area of weakness.

Reduction: There is a chisel mark in the mouth, perhaps inflicted during the removal of the haft. A piece of rough metal now fills the base of the socket.

05/12 (276/6)

Description: Socketed axe of plain 'south-eastern' type, with three collar mouldings present.

Dimensions: Length: 102mm. Cutting edge: 45mm. Weight: 310g.

Patina: Much of the piece remains a bronze colour, but some patches of corrosion are apparent. Details largely excellent.

Manufacture: The mouth is uneven, with the upper moulding appearing deformed above the loop. No traces of the feeders or the intervening seam remain around the mouth, save for one vestigial trace just above the loop. On the uppermost surface, trimming of the casting seam appears to have been minimal over the upper body, though the seam has been flattened towards the cutting edge. The blade has been expanded.

Use: The blade is crescentic, which suggests that it was resharpened. The cutting edge is now in very poor condition, with large portions missing over its extent.

Reduction: There is a cluster of chisel marks apparent above the cutting edge on one face (not illustrated). A few chisel marks are also evident on the other face (illustrated) below the lowermost collar moulding, and these were probably inflicted during the separation of axehead and haft. The interior of the socket contains a lump of rough metal, possibly a fragment of copper ingot.

05/13 (276/5)

Description: Socketed axe of plain 'south-eastern' type.

Dimensions: Length: 107mm. Cutting edge: 51mm. Weight: 312g.

Patina: Dense olive, with some rough pale patches, and some dark green encrustation on one face (not illustrated). Details good.

Manufacture: The casting seams remain prominent around the mouth and over the body, though they have been flattened over their length, and traces of the feeders remain visible at the mouth, though these too have been flattened. Diagonal grinding marks are visible in places on the interfaces between the faces and the upper and lower surfaces, and both faces show indications of roughly-executed hammer working. There are horizontal grinding marks immediately above the cutting edge, which has been expanded.

Use: The cutting edge is chipped and notched in places, and is blunt where it remains intact.

Reduction: There are small tool marks visible in places, which may have been inflicted during the separation of axehead and haft.

05/14 (276/7)

Description: Socketed axe of plain 'south-eastern' type.

Dimensions: Length: 94mm. Cutting edge: 39mm. Weight: 223g.

Patina: Thick, sometimes rough, olive. Details much obscured.

Manufacture: The casting seams have been removed around the mouth, but the object still appears rough here. Over the body, the casting seams are prominent over much of their extent. They appear to have been trimmed, but they remain sharp, especially on the lower surface, though hammering has virtually obliterated the seams in the vicinity of the cutting edge. Much of the body has a rough, dimpled appearance, which suggests that no hammer working has taken place here. Horizontal grinding marks can be identified above the cutting edge. The blade has been expanded.

Use: The cutting edge is in reasonable condition, with a slight bevel evident in places, though it is blunt and chipped along its length.

Reduction: The object is complete and there is no evidence relating to this process.

05/15 (276/9)

Description: Socketed axe of plain 'south-eastern' type.

Dimensions: Length: 82mm. Cutting edge: 24mm. Weight: 142g.

Patina: Dense dark green, flaking in places, with patches of encrustation in others. Details obscured.

Manufacture: No traces of either the feeders or the intervening casting seam survive around the mouth. The upper seam has been trimmed and flattened over its extent, but it remains visible over much of the body, though it has been obliterated close to the cutting edge. The situation with the lower seam is similar, though no traces survive over the loop. There are diagonal grinding marks on one face (not illustrated) and traces of hammering on the lower body, but the blade seems unusually narrow, which might suggest that it remains unexpanded. The presence of horizontal grinding marks over the cutting edge argues against this possibility, however, and indicates that the axehead was prepared for use.

Use: The cutting edge appears blunted and chipped over its length, and shows indications of uneven wear.

Reduction: There are a number of small tool marks on both faces, probably inflicted by a chisel. Similar marks can be seen in places inside the socket, and these may be associated with the removal of the haft or perhaps even the removal of the clay core after casting.

05/16 (276/15)

Description: Incomplete socketed axe of plain 'south-eastern' type.

Dimensions: Length (maximum): 80mm. Weight: 139g.

Patina: Some bronze remains visible, though much of the piece is obscured by patches of thick green encrustation.

Manufacture: The casting seam can be identified only on the upper surface, where it has been flattened near the break, and virtually obliterated closer to the cutting edge. It is obscured elsewhere as a result of corrosion buildup, though all traces appear to have been obliterated over the loop.

Use: The cutting edge is in poor condition. This results in part from corrosion build-up, though it may be partly due to damage sustained during use. Where the edge remains intact, it is chipped and battered over its extent.

Reduction: Much of the mouth and upper body is now missing over both faces and the upper surface. Slight deformation of the section - associated with hammer indents - can be identified near the break, and this suggests that breakage was deliberately induced.

05/17 (276/47)

Description: Mouth and upper body from plain 'south-eastern' type socketed axe.

Dimensions: Length (maximum): 63mm. Weight: 125g.

Patina: The metal is cracked and rough following corrosion stripping. Details poor.

Manufacture: The loop is slightly misshapen, which indicates a minor casting defect, i.e. a failure of the molten bronze to flow properly in this part of the mould. The mouth appears well-finished, and vestigial traces of the casting seam survive over the body. The seam has been trimmed and flattened over its extent, and has been obliterated over the loop.

Use: Impossible to determine.

Reduction: Slight deformation of the section can be identified at the break on either face, and hammer indents can be seen in association with this.

05/18 (276/32)

Description: Mouth and upper body from plain 'south-eastern' type socketed axe.

Dimensions: Length (maximum): 59mm. Weight: 151g.

Patina: Dark green in colour, with some patches of bronze showing through in places. There are areas of encrustation apparent, and this has filled much of the interior of the loop.

Manufacture: One wall appears considerably thinner at the break, indicating core misalignment. The mouth also appears uneven. The mouth has been well-finished, though traces of the casting seam can still be identified near the loop. Over the surviving extent of the body, the upper seam has been trimmed and flattened, but remains prominent. The lower seam is sharper, which suggests that, although it has been subject to trimming, hammering has been minimal. Over the loop, however, the seam has been obliterated.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

05/19 (276/33)

Description: Mouth and upper body from plain 'south-eastern' type socketed axe, with three collar mouldings present.

Dimensions: Length (maximum): 56mm. Weight: 85g.

Patina: Mainly bronze, with some patches of encrustation present.

Manufacture: This is a very inferior casting. Much of the mouth is absent, and the object appears misshapen. The poor appearance of the piece results from a combination of an inadequate amount of molten metal having been used during casting and core misalignment. A crack runs down the length of the object's upper surface, too. The

surface of the metal is rough and dimpled in appearance, suggesting that no fine hammering took place after casting. This might indicate that the final stages of the finishing process were never completed. However, a rough appearance to the upper body is not unknown in other plain SE type axes which have been subject to completion and use, and the fact that the seams have been trimmed in this example strengthens the possibility that this axehead was prepared in readiness for use. It is possible, though, that the knob which protrudes from one face (illustrated) is in fact a chaplet which was never removed.

Use: The crack in the metal may indicate use-related breakage, though it is possible that this was a defect present throughout the object's life.

Reduction: Some hammer indents can be identified near the break on one face (not illustrated).

05/20 (276/34)

Description: Fragmentary mouth and upper body from plain 'south-eastern' type socketed axe.

Dimensions: Length (maximum): 50mm. Weight: 54g.

Patina: The exterior retains a metallic bronze finish, with some minor patches of encrustation present, while the interior is covered with thick dark-olive/black encrustation.

Manufacture: The wall appears thin, indicating core misalignment. The mouth is well-finished where it survives, though vestiges of one feeder survive. Over the body, the upper casting seam remains prominent, though it has been trimmed and flattened and the lower seam is similar, though it is better finished over the loop.

Use: Impossible to determine.

Reduction: There is a deep incision running across the upper collar moulding (illustrated). This appears to have been caused by a blow from a narrow-bladed implement such as a chisel. Nearby, there is a marked depression in the collar, associated with possible hammer indents, though these cannot be clearly identified. At the lower break some distortion of the section is apparent, and some hammer indents can be seen in the vicinity of the break.

05/21 (276/48)

Description: Probable body fragment of socketed axe, now missing mouth and cutting edge.

Dimensions: Length (maximum): 45mm. Weight: 72g.

Patina: Corrosion stripped, details poor.

Manufacture: There is no evidence relating to this process.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process, with no signs of any distortion or hammering apparent.

05/22 (276/95)

Description: Lower body and blade fragment from socketed axe of unknown type.

Dimensions: Length (maximum): 46mm. Weight: 37g.

Patina: Thick light green, flaking in places. Details largely obscured.

Manufacture: No traces of any casting seams survive, and the blade appears to have been well-expanded. There are horizontal grinding marks running parallel to the cutting edge on one side (not illustrated).

Use: The cutting edge survives in too poor a condition to gauge the degree of wear.

Reduction: The upper break is associated with hammering and crushing of the section. A chisel mark can be identified near the broken corner of the blade, which suggests that this damage may have been deliberately inflicted.

05/23 (276/16)

Description: Lower body and cutting edge from socketed axe.

Dimensions: Length (maximum): 52mm. Cutting edge: 49mm. Weight: 140g.

Patina: Mainly dark green, but patches of bronze remain in places.

Manufacture: One wall seems thin in section, indicating core misalignment. The casting seams have been trimmed and flattened on both sides and have now been virtually obliterated. The blade has been well-expanded, and fine hammering can be seen over the

lower body on both faces. Horizontal grinding marks run across the blade, and a number of tiny vertical grinding marks run back from the cutting edge.

Use: The blade is crescentic in shape, and has probably been resharpened. The cutting edge remains fine and sharp over its extent, with a fine bevel remaining visible along its length.

Reduction: Slight crushing of the section is apparent at the break, and numerous hammer indents can be seen in association with this deformation.

05/24 (276/17)

Description: Lower body and cutting edge from socketed axe.

Dimensions: Length (maximum): 52mm. Cutting edge: 40mm. Weight: 102g.

Patina: Dense green, with some encrustation apparent near the cutting edge.

Manufacture: On one side of the object, the casting seam has been trimmed and flattened. On the other, it has been totally obliterated. Vertical grinding marks run down the body, and fine hammering is evident over the blade, which has been well-expanded.

Use: The cutting edge is blunt and chipped over its length.

Reduction: The section shows crushing and deformation at the break on both faces, and hammer indents can be identified in association with this damage. Cracking of the metal is apparent in one place, too (illustrated), and both faces bear a number of tiny punch or chisel marks over their extent. A lump of rough metal adheres to the interior of the socket.

05/25 (276/18)

Description: Lower body and cutting edge from socketed axe.

Dimensions: Length (maximum): 50mm. Cutting edge: 42mm. Weight: 104g.

Patina: Some bronze remains visible, though much of the piece is now covered by a layer of mottled dark and light green patination. Much detail is obscured.

Manufacture: On one side the casting seam has been trimmed and flattened, but it remains visible, while on the other side it has been virtually obliterated. The blade has been widely expanded.

Use: The cutting edge is blunt over its length and chipped in places.

Reduction: Crushing of the section is apparent at the break on both faces. Hammer indents can be seen in association with this deformation on one face, but none can be identified on the other. Some faint traces of sharper indentations can be identified near the hammer indents, and these appear to be chisel marks.

05/26 (276/19)

Description: Lower body and cutting edge from socketed axe.

Dimensions: Length (maximum): 45mm. Cutting edge: 47mm. Weight: 69g.

Patina: Dense green, with some patches of encrustation. Details good.

Manufacture: One wall is markedly thinner, indicating core misalignment. The casting seams have been obliterated over either side of the object. Hammering can be seen over the blade, and horizontal grinding marks run across the cutting edge. The blade has been widely expanded.

Use: The cutting edge is in poor condition, and is battered and chipped over its length; with none of the original edge remaining. Some of this damage may have resulted from later loss of the corrosion product, but much may have occurred in antiquity.

Reduction: There is slight crushing of the section where the wall is thinner, and one hammer indent can be seen in association with this deformation.

05/27 (276/20)

Description: Lower body and cutting edge from socketed axe.

Dimensions: Length (maximum): 44mm. Cutting edge: 36mm. Weight: 73g.

Patina: Dense green, with little encrustation. Details obliterated.

Manufacture: No traces of any casting seams survive. There are vertical grinding marks running down the length of the piece. The blade has been expanded, but remains narrow in appearance.

Use: The cutting edge is badly chipped along its length.

Reduction: Hammer indents can be seen in association with the break on either face, with additional indents occurring further down each face, too. There are also some sharper punch or chisel marks visible on both faces.

05/28 (276/21)

Description: Lower body and cutting edge from socketed axe.

Dimensions: Length (maximum): 46mm. Cutting edge: 37mm. Weight: 51g.

Patina: Much bronze remains visible, though there is some encrustation in places.

Manufacture: One wall is markedly thinner, indicating core misalignment. The seams have been well-finished, and have been virtually obliterated over their extent. There are horizontal grinding marks visible in places on the blade, and some tiny grinding marks running perpendicular to the cutting edge.

Use: The cutting edge appears blunt and chipped in places.

Reduction: The section of the socket bulges outwards in one place. The wall here is slightly cracked, but any hammer indents that existed in association with this damage have been obscured following corrosion buildup.

05/29 (276/23)

Description: Lower body and cutting edge from socketed axe.

Dimensions: Length (maximum): 40mm. Cutting edge: 36mm. Weight: 92g.

Patina: Dense green, with much encrustation over one face. Details obscured.

Manufacture: The surface is too rough to make out any of the fine details pertaining to this process.

Use: The cutting edge is now absent, the metal now averaging 4-5mm in thickness in this area.

Reduction: One face appears distorted. Some individual hammer indents can be identified in association with this damage, and some crushing of the section has occurred, too. Clusters of small tool marks are also apparent in places. The damage to the cutting edge appears to have been deliberately inflicted, a possibility supported by the fact that the blade now has an undulating appearance, with some hammering evident along its extent.

05/30 (276/22)

Description: Lower body and cutting edge from socketed axe.

Dimensions: Length (maximum): 40mm. Cutting edge: 44mm. Weight: 82g.

Patina: Mainly bronze, though some patches of encrustation are apparent.

Manufacture: The casting seams have been obliterated on both sides of the piece. Horizontal grinding marks can be seen, running across the blade.

Use: The cutting edge appears battered and burred over its entire length, with none of the original edge surviving.

Reduction: The object has been subject to severe mutilation. Crushing of the section is apparent on either face, and this deformation is associated with hammer indents. The surface is also virtually covered with a dense blanket of small tool marks. Three types of tool marks can be identified: there are some thin straight incisions, probably inflicted by a chisel; some smaller examples, which may have been made by the same object, but struck using the corner and not the full length of the blade; and some curved impressions created perhaps by a socketed gouge. The surface appears rough and distorted over either face as a result of this damage, which bears similarities to that seen on winged axe fragment, 05/74.

05/31 (276/24)

Description: Cutting edge from socketed axe.

Dimensions: Length (maximum): 33mm. Cutting edge: 44mm. Weight: 60g.

Patina: Much bronze remains visible, but some patches of encrustation are present, one face now being virtually obscured as a result of corrosion buildup.

Manufacture: The casting seam has been obliterated on one side, while vestigial traces can just be identified on the other. Fine hammering is apparent on the interface between one face and the adjoining surface, and horizontal grinding marks run across the blade, which has been well-expanded.

Use: The cutting edge is blunt along its length, with several chips and notches missing.

Reduction: There is no evidence relating to this process.

05/32 (276/28)

Description: Cutting edge from socketed axe.

Dimensions: Length (maximum): 38mm. Cutting edge: 38mm. Weight: 43g.

Patina: Rough olive and light green patina, details obscured.

Manufacture: No casting seams can be identified, and the blade has been expanded.

Use: The cutting edge is badly burred and chipped along its length.

Reduction: The break appears to be associated with a cluster of impressions, perhaps made by a lightweight hammer. Numerous small tool marks are also present. A cluster of similar marks can also be seen on one face, though these may have been inflicted during the removal of the seam. A piece of rough metal now adheres to the axehead at the break.

05/33 (276/26)

Description: Cutting edge from socketed axe.

Dimensions: Length (maximum): 28mm. Cutting edge: 49mm. Weight: 47g.

Patina: Dense dark-green/brown with some patches of encrustation. Details obscured.

Manufacture: The casting seams have been virtually obliterated on either side. The blade has been well-expanded.

Use: The crescentic appearance of the blade suggests that it has resharpened. The cutting edge is now very blunt over its length, and is burred in places, too.

Reduction: A faint indentation can be seen near the break, but this is difficult to identify with confidence and must therefore remain doubtful.

05/34 (276/27)

Description: Cutting edge from socketed axe.

Dimensions: Length (maximum): 23mm. Cutting edge: 43mm. Weight: 36g.

Patina: Bronze remains visible over much of the piece, though some patches of encrustation are present.

Manufacture: No traces of any casting seams can now be identified. Horizontal grinding marks run across the blade, and fine vertical grinding marks run perpendicular to the blade edge. The blade has been well-expanded.

Use: The cutting edge is in virtually perfect condition, with a fine bevel remaining prominent over its extent.

Reduction: No hammer indents or distortion of the section can be identified in association with the break.

05/35 (276/?29)

Description: Lower body and cutting edge of socketed axe, with much of the cutting edge now missing.

Dimensions: Length (maximum): 30mm. Weight: 37g.

Patina: Rough dark green, with occasional patches of bronze showing through. Details obliterated.

Manufacture: Some evidence of core misalignment is apparent. The blade has been expanded.

Use: Where it remains intact, the cutting edge appears chipped, though much is now absent.

Reduction: Two sets of hammer indents can be seen. One group occurs in association with the break between blade and body. The other comprises a single hammer indent located immediately adjacent to the broken corner of the cutting edge (not illustrated). This supports the possibility that the edge was deliberately broken. Some small tool marks are also visible on one face (not illustrated).

05/36 (276/25)

Description: Cutting edge from socketed axe, or perhaps winged axe. The fragment has a solid section.

Dimensions: Length (maximum): 32mm. Cutting edge: 39mm. Weight: 79g.

Patina: Olive green, flaking of the corrosion product apparent. Details very poor.

Manufacture: The blade appears narrow, and is perhaps unexpanded, though the casting seams have apparently been removed.

Use: The object may never have been used. Its cutting edge remains in fine condition, and while some chipping is apparent here, this appears to have been the result of recent flaking of the corrosion product.

Reduction: Some possible hammer indents can be identified in places. It is difficult to be confident about their authenticity, however, as the surface is in such poor condition.

05/37 (276/31)

Description: Fragmentary cutting edge from socketed axe.

Dimensions: Length (maximum): 25mm. Weight: 16g.

Patina: Much bronze remains visible, though some pale green corrosion product has accumulated near the break.

Manufacture: A rounded notch towards the break seems to represent a casting flaw which might have seriously affected the object's successful function as an axehead. In spite of this, the casting seam has been obliterated, and the blade well-expanded.

Use: The object is in fine condition, with no damage to the edge apparent. It may therefore be unused, despite having been subject to completion.

Reduction: Slight distortion of the section near the break and some hammer indents occurring in association are evidence of deliberate fragmentation.

05/38 (276/30)

Description: Fragmentary cutting edge from socketed axe, or perhaps winged axe.

Dimensions: Length (maximum): 20mm. Cutting edge: 23mm. Weight: 14g.

Patina: Rough green, details obliterated.

Manufacture: The blade appears narrow, and the cutting edge blunt, which suggests that the object was never fully prepared for use, though no traces of any casting seams survive.

Use: The object may never have been used. The cutting edge is chipped, but this damage appears to be related to recent flaking of the corrosion product.

Reduction: No hammer indents can be seen, perhaps because the surface is now in poor condition. A fragment of rough metal now adheres to the blade.

05/39 (276/?117)

Description: Large body fragment of socketed axe.

Dimensions: Length (maximum): 38mm. Weight: 19g.

Patina: Dense dark-green exterior, with a rough appearance to the interior.

Manufacture: No traces of a casting seam can be seen on the surviving side. The walls seem thin, which may indicate core misalignment, though later hammering could have been responsible for this.

Use: Impossible to determine.

Reduction: The face has been subject to extensive hammering. Numerous hammer indents are visible, and the original section and profile of the fragment have suffered much distortion. The metal may have been flattened and thinned during this process, and cracking has occurred at the junction between the face and its adjoining side. Some chisel marks are also apparent in places.

05/40 (276/?)

Description: Body fragment of socketed axe.

Dimensions: Length (maximum): 41mm. Weight: 14g.

Patina: Mainly bronze, with some dark green encrustation. Details excellent.

Manufacture: The surface appears to have been subject to fine hammering, though this could conceivably have been inflicted during fragmentation.

Use: Impossible to determine.

Reduction: The hammer indents are particularly prominent towards the lower break (as illustrated). Here, the section has been pushed inwards and the metal is cracked near the break. The surface also shows a number of chisel marks over its extent.

05/41 (276/?)

Description: Body fragment of socketed axe.

Dimensions: Length (maximum): 37mm. Weight: 20g.

Patina: Original bronze remains visible, though the metal which adheres to the interior is a rough grey-green colour.

Manufacture: The casting seam has been trimmed and flattened to some extent on the surviving side, but remains visible and prominent nonetheless. Grinding marks are apparent on the interface between the face and the adjoining side.

Use: Impossible to determine.

Reduction: There are hammer indents occurring in association with the upper break (as illustrated). The marks of a chisel can also be identified here.

05/42 (276/125)

Description: Body fragment of socketed axe.

Dimensions: Length (maximum): 33mm. Weight: 14g.

Patina: Dense dark green, with a rougher appearance to interior.

Manufacture: There is no evidence relating to this process.

Use: Impossible to determine.

Reduction: The fragment has been subject to intensive hammering. Hammer indents can be identified in association with the lower break, and the section is distorted. In addition, the junction between the face and the adjoining side appears distorted, and hammer indents are present here, too.

05/43 (276/119)

Description: Body fragment of socketed axe.

Dimensions: Length (maximum): 31mm. Weight: 5g.

Patina: Rough olive, details good.

Manufacture: The wall is extremely thin, indicating core misalignment. This is so severe as to cause potential confusion as to the object's identity. The object has a similar appearance to a 'Thorndon' type knife socket, though the absence of any potential rivet holes argues against this possibility, and the nature of the finishing seems more akin to that seen on socketed axes, i.e. with grinding marks running down its length. Hammering is apparent, too, but this may be related to a later stage in the object's use-cycle.

Use: Impossible to determine.

Reduction: No distortion of profile or section is apparent, but it is possible that the hammer indents and chisel marks which are visible over the extent of the piece were inflicted during the destruction of the object.

05/44 (276/123)

Description: Body fragment of socketed axe.

Dimensions: Length (maximum): 23mm. Weight: 11g.

Patina: Dark green, with some pale dusty patches apparent, details obscured.

Manufacture: A casting seam runs down the length of the fragment. It appears to have been trimmed and flattened, though it remains prominent. The body shows indications of light hammering over its extent.

Use: Impossible to determine.

Reduction: The section is now much distorted, and some more obtrusive hammer indents can be identified near one of the breaks. Some chisel marks are apparent, too.

05/45 (276/?)

Description: Probable body fragment of socketed axe.

Dimensions: Length (maximum): 33mm.

Patina: Greyish-green, very rough in appearance.

Manufacture: There is no evidence relating to this process.

Use: Impossible to determine.

Reduction: There is a possible chisel mark present, but the nature of the patina obscures much detail. The poor condition of the object's surface may indicate that it was exposed to intense heat.

05/46 (276/?)

Description: Small body fragment of socketed axe.

Dimensions: Length (maximum): 27mm. Weight: 13g.

Patina: Rough mid-green, very rough in appearance.

Manufacture: There is no evidence relating to this process.

Use: Impossible to determine.

Reduction: There are some possible hammer indents near the lower break (illustrated) but it is difficult to be certain about these on account of the poor condition of the object. The rough appearance of the surface may indicate that the fragment was exposed to high temperatures.

05/47 (276/?)

Description: Probable body fragment from socketed axe.

Dimensions: Length (maximum): 24mm.

Patina: Dense green, details reasonable.

Manufacture: The wall seems thin, indicating core misalignment.

Use: Impossible to determine.

Reduction: The section is distorted, and some hammer indents are apparent in places. A large lump of rough metal now adheres to the piece.

05/48 (276/?)

Description: Probable body fragment from socketed axe.

Dimensions: Length (maximum): 19mm. Weight: 3g.

Patina: Dense olive, details good.

Manufacture: Fine hammering is evident over the surface of the object. This may be associated with the manufacturing process.

Use: Impossible to determine.

Reduction: There is a marked indent present where the face would have joined with the adjacent side. No hammer indents can be seen in association with any of the broken edges, though it is possible that the hammering noted in Manufacture above was in fact related to this stage in the object's life-cycle.

05/49 (276/?)

Description: Probable body fragment of socketed axe.

Dimensions: Length (maximum): 35mm. Weight: 6g.

Patina: Dense dark green, much detail obscured.

Manufacture: The wall is thin, indicating core misalignment.

Use: Impossible to determine.

Reduction: A number of obtrusive hammer indents can be identified near the break. These seem more likely to have been inflicted during fragmentation, as opposed to during manufacture. The marks of a chisel are also visible on the surface. Finally, there are grinding marks running perpendicular to the break. These date to antiquity, and appear to have been inflicted following breakage. Their purpose is unknown.

05/50 (276/121)

Description: Probable body fragment of socketed axe, an internal rib just visible at the upper edge (illustrated). Much is now obscured by a museum label.

Dimensions: Length (maximum) 34mm. Weight: 13g.

Patina: Rough mid-green, one side entirely covered by adhering corrosion products.

Manufacture: There is no evidence relating to this process.

Use: Impossible to determine.

Reduction: No hammering is visible, and the section shows little if any distortion.

05/51 (276/58)

Description: Probable body fragment of socketed axe.

Dimensions: Length (maximum): 22mm. Weight: 9g.

Patina: Thick, darkish green on exterior, paler inside. Details reasonable.

Manufacture: There is no evidence relating to this process.

Use: Impossible to determine.

Reduction: A cluster of hammer indents can be identified near one of the breaks, while other break has a group of chisel marks in its vicinity.

05/52 (276/?)

Description: Possible lower body fragment of socketed axe.

Dimensions: Length (maximum): 34mm. Weight: 42g.

Patina: Very rough grey-green.

Manufacture: There is no evidence relating to this process.

Use: Impossible to determine.

Reduction: The object is now much distorted, so much so that there remains some doubt over its identity. It is surrounded by rough metal which almost seems to be an integral part of the fragment. It can be surmised from this - and from the rough condition of the metal - that the object was subjected to intense heating, if not reduced to a semi-molten state.

05/53 (276/45)

Description: Long mouth fragment of 'south-eastern' type socketed axe.

Dimensions: Length (maximum): 70mm. Weight: 64g.

Patina: The exterior is dense dark green, with some bronze showing. Some lumps of pale green corrosion product adhere to the interior.

Manufacture: The casting seam has been trimmed, but remains sharp and prominent over its extent. Much of the face appears to be as-cast, with no indications of fine hammering apparent, though the collar mouldings are less rough in appearance. Some marks on the junction between the face and its adjoining side may be hammer indents.

Use: Impossible to determine.

Reduction: No evidence of deliberate destruction can be identified. The section shows no signs of distortion, and no hammer indents can be seen in association with any of the breaks.

05/54 (276/44)

Description: Long mouth fragment of 'south-eastern' type socketed axe.

Dimensions: Length (maximum): 66mm. Weight: 32g.

Patina: The piece remains a shiny bronze colour.

Manufacture: The mouth has been well-finished, but no other evidence relating to this process can be identified. The wall appears slightly thin, however, indicating core misalignment.

Use: Impossible to determine.

Reduction: A cluster of hammer indents can be identified near the lower break, and these are associated with slight distortion of the section. A piece of rough metal now adheres to the object.

05/55 (276/38)

Description: Long mouth fragment of 'south-eastern' type socketed axe.

Dimensions: Length (maximum): 50mm. Weight: 30g.

Patina: Mainly original bronze, with some pale green patches present.

Manufacture: The mouth appears rough in places, but no traces of any casting seams remain. The uneven appearance to the mouth may result at least in part from a minor casting defect.

Use: Impossible to determine.

Reduction: Some hammer indents can be seen in association with the break near the object's mouth.

05/56 (276/43)

Description: Mouth fragment of 'south-eastern' type socketed axe.

Dimensions: Length (maximum): 41mm. Weight: 19g.

Patina: Much of the original bronze remains visible.

Manufacture: The mouth appears well-finished, but no other evidence relating to this process can be identified.

Use: Impossible to determine.

Reduction: No signs of either deformation or hammer indents can be seen on the fragment. A large lump of rough metal now adheres to the fragment.

05/57 (276/?)

Description: Mouth fragment of 'south-eastern' type socketed axe.

Dimensions: Length (maximum): 50mm.

Patina: Rough mottled dark/pale green. Details obscured.

Manufacture: The body has a rough, as-cast appearance, but the mouth is well-finished, with no seams surviving. The wall is thin, indicating core misalignment.

Use: Impossible to determine.

Reduction: Some hammer indents are apparent in the vicinity of the collar mouldings, and this hammering has caused slight deformation of the lower collar moulding. Additional hammer indents are apparent around a crack which runs across the side of the object. The section is slightly distorted.

05/58 (276/42)

Description: Mouth fragment of socketed axe, probably of 'south-eastern' type.

Dimensions: Length (maximum): 36mm. Weight: 36g.

Patina: Thick and rather rough, details obscured.

Manufacture: The casting seam has been removed around the mouth, but remains prominent over much of the body. It has been obliterated over the collar mouldings, and some fine hammering apparent in this area may have been inflicted during its removal.

Use: Impossible to determine.

Reduction: Some possible hammer indents can be identified in association with the lower break, and there are possible chisel marks on the collar.

05/59 (276/?)

Description: Mouth fragment of socketed axe, with loop still present.

Dimensions: Length (maximum): Weight: 18g.

Patina: Rough dark-green.

Manufacture: The casting seam has been removed around the mouth, but remains visible and prominent over the collar mouldings.

Use: Impossible to determine.

Reduction: The loop is broken, and some deep notches in the vicinity of the break suggest that it was deliberately removed. There are some possible hammer indents at the lower break, just below the loop, but these are hard to identify with any certainty. The surface appears rough and distorted, and another piece of rough metal appears to have fused to the object. It therefore seems likely that this fragment was subject to intense heating.

05/60 (276/35)

Description: Small mouth fragment of socketed axe, with the loop still remaining.

Dimensions: Length (maximum): 31mm. Weight: 14g.

Patina: Rough dark green.

Manufacture: The mouth is well-finished. The casting seam remains visible over the collar mouldings, though it has been trimmed and flattened, but has been obliterated over the loop.

Use: Impossible to determine.

Reduction: There is chisel mark on the uppermost collar moulding, but no traces of any hammering can be seen in association with any of the broken edges. Some rough metal now adheres to the loop.

05/61 (276/?)

Description: Mouth fragment from 'south-eastern' type socketed axe, including loop.

Dimensions: Length (maximum): 43mm. Weight: 34g.

Patina: Dense dark-green exterior, interior rougher in appearance, with lumps of rough metal adhering.

Manufacture: The surface has been subject to fine hammer working over its extent. The casting seams have been trimmed and flattened, but they remain visible, and the seam has been hammered over the loop.

Use: Impossible to determine.

Reduction: There are some possible hammer indents near the break, though these are difficult to differentiate from the fine hammering that covers much of the piece. Some pronounced hammering is evident in the vicinity of the loop, and this seems likely to have been inflicted during with the fragmentation process. Small tool marks are also apparent on the piece.

05/62 (276/126)

Description: Mouth fragment of socketed axe. One collar moulding is clearly visible, and another may be present, though it has been flattened and virtually obliterated during the fragmentation process.

Dimensions: Length (maximum): 22mm. Weight: 9g.

Patina: Dense green, some bronze showing, some encrustation across the interior.

Manufacture: The mouth has been well finished, with no traces of any casting seams surviving. Some diagonal and vertical grinding marks are visible on the object, but these are largely obscured by a museum label.

Use: Impossible to determine.

Reduction: The piece has been much distorted as a result of extensive hammering, which presumably led to the object's fragmentation. Some cracking of the metal is apparent on the interior surface.

05/63 (276/?)

Description: Two mouth fragments from socketed axes, now adhering to one another.

Dimensions: Combined weight: 20g.

Patina: One fragment is reddish in colour, the other dark green.

Manufacture: No traces of any casting seams can be identified on either piece. No other details are visible.

Use: Impossible to determine.

Reduction: The exterior of both objects is obscured by their relative position to one another and by the rough nature of the corrosion product, and no evidence of any hammering, etc. can be identified on either as a result.

05/64 (276/40)

Description: Mouth fragment from 'south-eastern' type socketed axe.

Dimensions: Length (maximum): 44mm. Weight: 35g.

Patina: Rough olive with a number of flaking light green patches, some encrustation evident around collar. Details obscured.

Manufacture: The casting seam has been removed around the mouth, though some traces of the seam remain visible over the object's body. The seam has been obliterated towards the break, and it seems likely that the later hammering which took place during fragmentation contributed to its disappearance.

Use: Impossible to determine.

Reduction: The upper moulding has been notched as the result of a blow made by a sharp object, and there are likely hammer indents in association with the broken edges. There are small tool marks apparent around the interior of the socket, and these were probably inflicted during the removal of the haft.

05/65 (276/37)

Description: Mouth fragment of socketed axe. One collar moulding survives, but another may once have been present.

Dimensions: Length (maximum): 33mm. Weight: 17g.

Patina: Rough green, with some lighter encrustation. Details obscured.

Manufacture: The wall seems rather thin, though this may be the result of later hammering as opposed to core misalignment. The casting seam survives in places around the mouth, which has a rough appearance. Over the surviving extent of the body, the seam remains sharp and prominent, though it appears to have been trimmed.

Use: Impossible to determine.

Reduction: The fragment has been crushed and flattened, and the loop has been displaced and pushed to one side as a result. The metal shows evidence of strain and cracking. A piece of rough metal adheres to the exterior of the socket.

05/66 (276/?)

Description: Mouth fragment of 'south-eastern' type socketed axe.

Dimensions: Length (maximum): 40mm.

Patina: Very rough, details poor.

Manufacture: The stump of a feeder survives at the mouth. The casting seam remains visible over the collars, though it appears to have been obliterated further down the piece.

Use: Impossible to determine.

Reduction: The surface is covered with hammer indents, on both the interior and the exterior surfaces, and the collar appears rough and messy as a result. The apparently poor condition of the piece may be due at least in part to the nature of the corrosion product, however. The metal appears thin, and while this is normally an indication of core misalignment, it may in this case have been caused by hammering, though the section shows only minor distortion.

05/67 (276/50)

Description: Mouth fragment of socketed axe, probably of 'south-eastern' type.

Dimensions: Length (maximum): 27mm. Weight: 14g.

Patina: Thick green, details reasonable.

Manufacture: The wall seems thin, indicating core misalignment. The casting seam has been removed around the mouth, though traces remain visible along one of the broken edges of the body.

Use: Impossible to determine.

Reduction: The object has been roughly hammered over its extent, and some hammer indents can be identified in association with the breaks. There are, in addition, chisel marks along the body, and on the upper collar moulding.

05/68 (276/54)

Description: Mouth fragment of socketed axe, including loop. Probably of 'south-eastern' type.

Dimensions: Length (maximum): 26mm.

Patina: Rough dark green, chipped in places; with occasional bronze showing.

Manufacture: The wall appears thin in section, indicating core misalignment. The mouth is well-finished, with no traces of any casting seams surviving. Between the loop and the collar mouldings, the casting seam appears smooth and rounded, and it could be untrimmed here. The casting seam has been hammered over the loop, and no traces now survive.

Use: The loop is broken. This damage was probably sustained through use, as the wall is thin in section at the lower surface, and the casting will have been weak here as a result. It is possible, though, that this breakage took place during fragmentation.

Reduction: There are small tool marks around the mouth, and rough hammer indents are apparent over the object's extent.

05/69 (276/?)

Description: Mouth fragment of socketed axe, including loop.

Dimensions: Length (maximum): 32mm. Weight: 19g.

Patina: Rough grey-green, surface in poor condition.

Manufacture: A stump of a feeder remains prominent at the mouth, though elsewhere the casting seam has been removed. Over the surviving extent of the body, however, the seam is still apparent as a prominent line.

Use: Impossible to determine.

Reduction: The poor condition of the surface and the distorted appearance of the fragment suggests that it was subject to intense heating at the closing stages of its life-cycle. The loop has been partially removed, and there are a series of deep, parallel notches occurring in association with this damage.

05/70 (276/51)

Description: Mouth fragment of socketed axe.

Dimensions: Length (maximum): 24mm. Weight: 7g.

Patina: Original bronze survives over much of the piece.

Manufacture: The stump of a feeder is prominent at the mouth, and the casting seams remain visible over the entire piece. They appear to have been flattened and smoothed over their extent, although prior trimming may have been negligible.

Use: Impossible to determine.

Reduction: No hammering can be seen in association with any of the breaks, and no distortion of the section is apparent.

05/71 (276/52)

Description: Mouth fragment of socketed axe, probably of 'south-eastern' type.

Dimensions: Length (maximum): 39mm. Weight: 14g.

Patina: Thick pale green, details obscured.

Manufacture: The wall is thin, indicating core misalignment. The piece appears well-finished, however, with no traces of any casting seams surviving.

Use: Impossible to determine.

Reduction: There appear to be hammer indents associated with one of the broken edges, though it is difficult to be certain about these as the surface is in poor condition. Some probable chisel marks can be seen in places on the collar mouldings.

05/72 (276/49)

Description: Small mouth fragment of socketed axe, possibly of 'south-eastern' type.

Dimensions: Length (maximum): 34mm. Weight: 8g.

Patina: Thick green, details reasonable.

Manufacture: The wall is thin, indicating core misalignment. The piece appears well-finished, with no traces of any casting seams surviving.

Use: Impossible to determine.

Reduction: Hammer indents are apparent on the collar mouldings. This hammering has caused distortion of the upper moulding, and has virtually obliterated the lower moulding. The section and the profile have been distorted as a result of this hammering, which is likely to have contributed to the fragmentation process.

05/73 (276/54)

Description: Small mouth fragment of socketed axe, possibly of 'south-eastern' type.

Dimensions: Length (maximum): 24mm. Weight: 17g.

Patina: Dense green in places, with some bronze remaining visible.

Manufacture: The casting seam remains visible around the mouth, and is unusually prominent in places, though it has been flattened over some of its extent. Some striations are apparent on the collar mouldings.

Use: Impossible to determine.

Reduction: The upper collar moulding appears distorted, and this damage is associated with one single hammer blow. There are clusters of small hammer indents associated with the broken edges in places, including a group located near the mouth, and another situated further down towards the lower edge. Small tool marks are visible inside the socket, and these may have been inflicted during the removal of the core material or perhaps the haft.

05/74 (276/?)

Description: Body fragment of winged axe.

Dimensions: Length (maximum): 48mm. Weight: 73g.

Patina: Some bronze remains visible, but thick dark green patches of encrustation are present. A small piece of rough metal adheres to one face.

Manufacture: The object has been subject to such severe mutilation that it is difficult to identify any specific details which can be linked with this phase. The casting seams appear to have been removed, however, with one side in particular showing careful attention to this process. Here, all traces have been obliterated, though on the other side vestigial traces still remain.

Use: The loop is broken. This may indicate use-related damage, though it is possible that breakage took place during the fragmentation process.

Reduction: Both faces are covered with a large number of roughly-executed hammer indents, and the fragment appears distorted as a result. The wings may have been broken.

deliberately, and hammering appears to have been continued over their broken edges. Where the original surface remains visible, a number of chisel marks can also be seen.

05/75 (276/?)

Description: Small fragment of winged axe, comprising part of the body with vestigial traces of the adjoining wings surviving.

Dimensions: Length (maximum): 28mm. Weight: 35g.

Patina: Mainly rough pale green, with some encrustation. Details obscured.

Manufacture: On one side (not illustrated), a row of superimposed hammer indents runs along the junction between the wing and the body. Judging from comparisons with other examples of complete winged axes, it seems feasible to suggest that this hammering was inflicted during the manufacturing process, as opposed to being associated with fragmentation.

Use: Impossible to determine.

Reduction: On one side (illustrated), hammering is apparent near one broken edge, and a cluster of small tool marks can be seen where the wing remains intact.

05/76

Description: Fragment of upper blade from winged axe, with the depression at the base of the body remaining visible.

Dimensions: Length (maximum): 39mm. Weight: 91g.

Patina: Rough mottled dark/light green, details virtually obliterated.

Manufacture: All traces of the casting seams have been removed.

Use: Impossible to determine.

Reduction: The object has been subject to hammering, and some possible chisel marks can be identified in places (illustrated). However, the patina is extremely uneven and rough, and the validity of these markings must therefore remain uncertain.

05/77 (276/57)

Description: Palstave fragment, comprising the lower half of the body with the butt and the blade now missing.

Dimensions: Length (maximum): 61mm. Weight: 167g.

Patina: Mainly dense olive, details good.

Manufacture: The casting seams have been removed, and the grinding marks associated with this process can still be identified. Hammering is evident; particularly around the flanges, but this may have been inflicted during fragmentation.

Use: Impossible to determine.

Reduction: The hammering noted in Manufacture above may have been inflicted during this stage of the object's life-cycle.

05/78 (276/107)

Description: Incomplete socketed gouge, with much of its front face, blade and mouth now missing. A fragmentary bracelet, decorated with an incised pattern similar to that seen on a bracelet from Shoebury I (06/21) has been wedged firmly into the socket.

Dimensions: Length (maximum): 62mm. Weight: 31g.

Patina: Original bronze remains visible over the gouge, while the bracelet is dark green in colour.

Manufacture: The gouge appears to have been subject to final finishing. No casting seams survive, and there are some traces of light hammering and also vertical grinding marks in places. Despite this, the interior is filled with clay, as if the core were never removed, and the bracelet appears to have been inserted into this material.

Use: There is no way of assessing the degree of wear sustained by the gouge. The decoration on the bracelet, however, differs in clarity over its extent, which suggests that the piece may have been subject to considerable wear.

Reduction: It is possible that the infilling of the socket and the insertion of the bracelet took place when the object's useful life was over. However, it is also conceivable that the bracelet fragment was used to assist in the removal of the clay core, during which process it became stuck within the core material. This scenario seems unlikely, however, as a

significant amount of finishing (e.g. fettling) already appears to have been carried out upon the gouge. There was, in addition, a small piece of sheet bronze noted in association with the gouge and bracelet. This object was apparently found rolled around the bracelet. It had been subject to hammering, and grinding marks were also apparent over its surface.

05/79 (276/91)

Description: Upper blade fragment of socketed gouge.

Dimensions: Length (maximum): 37mm. Weight: 19g.

Patina: Dense dark green, some encrustation present.

Manufacture: The casting seams have been obliterated over the surviving extent of the fragment. Hammer indents around the exterior of the blade may have resulted from the manufacturing process, though it is more likely that they were inflicted during fragmentation.

Use: Impossible to determine.

Reduction: The object has been crushed at the upper break, resulting in severe distortion of the section. Hammer indents can be identified in association with the break on either side. Hammering appears to have continued down one side of the gouge, causing distortion of the blade in this location.

05/80 (276/?)

Description: Fragment of sickle blade, with two parallel ribs defining the uppermost edge.

Dimensions: Length (maximum): 44mm. Weight: 8g.

Patina: Dense olive, with some thicker pale-green/brown patches. Details excellent.

Manufacture: The casting seams have been removed from the upper edge, and the blade shows evidence of fine hammering over its extent. Diagonal grinding marks can also be identified in places.

Use: Impossible to determine, as none of the original cutting edge survives.

Reduction: No individual hammer indents can be confidently linked with this process. The profile of the piece is, however, distorted, which suggests that the piece was subject to deliberate fragmentation.

05/81 (276/106)

Description: Probable butt fragment of knobbed sickle.

Dimensions: Length (maximum): 22mm. Weight: 18g.

Patina: Some bronze remains visible, with thick patches of dark green corrosion product covering much of the piece.

Manufacture: One edge, probably the cutting edge, appears thinner, and is associated with fine hammering, and some possible grinding marks. No traces of any casting seams survive.

Use: Impossible to determine. The blunt nature of the cutting edge might suggest that the object was never completed ready for use, but since this fragment is from the butt of the sickle, a sharp edge would not have been required here anyway.

Reduction: There is no evidence relating to this process.

05/82 (276/?)

Description: Probable fragment of sickle blade, the line of the upper edge marked by a flange.

Dimensions: Length (maximum): 40mm. Weight: 5g.

Patina: Original bronze colour remains visible.

Manufacture: There is evidence of fine hammering apparent over the object's extent, and no casting seams remain visible.

Use: Impossible to determine, as so little of the cutting edge remains intact.

Reduction: Some hammer indents appear to be associated with this process. These have been roughly executed, and distortion of the section is apparent in their vicinity. At one of the breaks, a single blow from a hammer or similar blunt object has flattened the flange. Small tool marks are also evident in places.

05/83 (276/61)

Description: Socket and upper blade fragment from 'Thorndon' type socketed knife. Two opposing rivet holes are clearly apparent on either side of the socket. On one side (illustrated), there is an additional rivet hole located further down the socket towards the blade. A similar example may be present on the other face, but this is difficult to identify with certainty on account of the corrosion buildup.

Dimensions: Length (maximum): 73mm. Weight: 53g.

Patina: Original bronze remains visible over most of the piece, though some patches of encrustation are apparent.

Manufacture: The socket appears rough, and is perhaps as-cast, though the casting seams have been removed. Vertical and diagonal grinding marks are apparent, running down the length of the blade in several places. Hammering is apparent along the junction between the blade and the socket, which suggests that the blade was work-hardened even if the socket received no similar treatment.

Use: The cutting edge is missing over the entire length of the blade on either side.

Reduction: The edges may have been removed deliberately, a possibility supported by the evidence of rough hammering apparent in places over the extent of the blade. In some areas, the ribbed appearance of the blade has been reduced as a result of this hammering.

05/84 (276/62)

Description: Socket and upper blade of 'Thorndon' type socketed knife, with two opposing rivet holes in the socket.

Dimensions: Length (maximum): 42mm. Weight: 23g.

Patina: Bronze remains visible over much of the piece, details good.

Manufacture: No traces of any casting seams can be identified, and the blade appears to have been subject to fine hammering.

Use: Impossible to determine.

Reduction: An intrusive hammer indent can be seen at the junction between the blade and the rivet hole. This has caused distortion of the socket, and has rendered the junction between the socket and the blade less distinct.

05/85 (276/110)

Description: Possible socket fragment from 'Thorndon' type socketed knife, though it has been suggested that this is a distorted spearhead socket (Crowe, unpublished). This possibility cannot be discounted, for the socket seems unusually thick in section to represent a knife hilt, though its shape and dimensions closely resemble those of a knife (c.f. 05/83 and 84).

Dimensions: Length (maximum): 30mm. Weight: 4g.

Patina: Corrosion stripped, surface now in very poor condition.

Manufacture: There is no evidence relating to this process.

Use: Impossible to determine.

Reduction: The object has been subject to rough hammering, and cracking of the metal has occurred as a result. The interior is now filled with rough metal or corrosion products.

05/86 (276/72)

Description: Probable blade fragment from 'Thorndon' type socketed knife.

Dimensions: Length (maximum): 42mm. Weight: 24g.

Patina: Dense olive-green, rather rough in appearance.

Manufacture: There are hammer indents visible on one side of the blade, but these may have been inflicted during the fragmentation process.

Use: The cutting edges are chipped and battered over their length. In the few places where they remain intact, they appear blunt.

Reduction: A possible hammer indent can be identified in association with the lower break. Hammering is apparent over the blade on one side, and since this appears to reduce the ribbed effect of the blade, it can be assumed that it was associated with fragmentation, as opposed to manufacture.

05/87 (276/66)

Description: Fragment of knife blade.

Dimensions: Length (maximum): 40mm. Weight: 6g.

Patina: Occasional patches of bronze remain, but most of the object is covered with dense green corrosion products. Details are largely obscured.

Manufacture: Some faint horizontal grinding marks are apparent, and there are possible traces of fine hammering, too.

Use: The cutting edge appears blunt and chipped along its length, though its condition cannot be confidently assessed on account of the corrosion buildup.

Reduction: The profile appears slightly distorted, and there is a possible hammer indent at the lower break. Any similar marks associated with the upper break will have been obscured following corrosion buildup.

05/88 (276/55)

Description: Socketed hammer, with a single collar moulding around the mouth.

Dimensions: Length: 72mm. Weight: 67g.

Patina: Much bronze remains visible, but dark green encrustation is apparent in places. This obscures much of one face, and some of the sides, too.

Manufacture: The casting seams remain prominent over the entire object. This hammer has a peculiar stepped appearance to the rear face, which presumably matches the point where the hollow section of the socket merges into the solid-sectioned blade (c.f. the indented socketed axes of the Sturry hoard, Ref. No. 22). While the piece is generally rough in appearance, much preparation of the striking platform appears to have taken place, with a large number of horizontal grinding marks apparent on the tip.

Use: The object, judging from its profile, has been used, as it appears to be unevenly worn. Judging from the fine condition of the tip, it has been subject to regrinding, and would surely have been capable of further use. The breakage around the mouth seems likely to have been use-related, however, and this may have led to the hammer having been discarded.

Reduction: There is no evidence of deliberate destruction.

05/89 (276/?)

Description: Tip from socketed hammer, thin section to striking platform.

Dimensions: Length (maximum): 32mm. Weight: 38g.

Patina: Original bronze colour remains visible over much of the piece.

Manufacture: No traces of any casting seams survive. The blade is covered by diagonal striations, while the striking platform has been ground across its extent, giving a blunt, slightly bevelled, edge. The blade has also been subject to fine hammer working.

Use: The object may have been subject to resharpening, but it remains in good condition.

Reduction: Adjacent to the break are several pronounced hammer indents, and these seem likely to have been inflicted during the fragmentation of the object.

05/90 (276/60)

Description: Shoulders and upper blade from 'Ewart Park' type sword.

Dimensions: Length (maximum): 100mm. Weight: 126g.

Patina: Dense and rather rough dark green, details obscured.

Manufacture: The rivet holes have been punched through following casting. Some of the blade appears as-cast, with no evidence of fine hammer-working apparent. Diagonal grinding marks can be identified in the vicinity of the ricasso, and additional tiny grinding marks run perpendicular to the cutting edge in places.

Use: The blade edges appear chipped and blunt along their length.

Reduction: Hammer indents are clearly visible at the upper break. Any similar examples associated with the lower break have been obscured as a result of corrosion buildup.

05/91 (276/64)

Description: Hilt and shoulders of 'Carp's Tongue' sword, with grooves defining midrib and bevels. Two rivets remain *in situ*, and an additional two rivet holes survive in vestigial form at the upper break.

Dimensions: Length (maximum): 83mm. Weight: 128g.

Patina: One side is original bronze, with some encrustation present, while the other is largely obscured with encrustation.

Manufacture: No traces of any casting seams survive. Vertical grinding marks run down the bevels, and additional tiny grinding marks can be seen running perpendicular to the cutting edge in places. More grinding marks can be seen on the rivets. These run diagonally across the piece and are coarser in appearance than those on the blade. In places the midrib appears largely as cast, though elsewhere fine hammering has taken place, in particular over the bevels.

Use: Where the cutting edges survive, they seem blunt. Large portions are missing, and areas of burring can be identified in places.

Reduction: A possible hammer indent is visible in association with the upper break, and the metal is cracked here. The severe burring apparent on the broken edges suggests that this damage may have been deliberately inflicted.

05/92 (276/65)

Description: Small hilt fragment of 'Carp's Tongue' type sword. One rivet hole survives intact, with another fragmentary example apparent at the upper break. A groove running from the lower rivet holes would once have defined the midrib.

Dimensions: Length (maximum): 38mm. Weight: 33g.

Patina: Some original bronze survives, but much of the piece is now covered with dense corrosion products which obscure much detail.

Manufacture: No traces of any casting seams survive. The flanges which border the tang appear to have been finely hammered over their length, and there are possible grinding marks visible in the ricasso notch.

Use: There is no visible evidence of use-related damage.

Reduction: There are likely hammer indents in the vicinity of the lower break, and a chisel mark can be seen in the ricasso notch.

05/93 (276/63)

Description: Fragmentary sword tang. An incomplete rivet hole or slot is visible at the lower break.

Dimensions: Length (maximum): 30mm. Weight: 22g.

Patina: Much of the piece is dense olive, with some bronze showing. Details reasonable.

Manufacture: The casting seam remains prominent over the upper edge of the terminal. Elsewhere, all traces of the seams have been obliterated. Fine hammering is apparent over the terminal.

Use: Impossible to determine.

Reduction: Some rough hammer indents can be identified on the tang, and these may have been inflicted during the fragmentation process. Chisel marks are also visible in this same area. The profile is slightly distorted.

05/94 (276/113)

Description: Probable hilt fragment of sword, probably of 'Carp's Tongue' type. The hilt mechanism is unusual, featuring slots as opposed to rivet holes.

Dimensions: Length (maximum): 28mm. Weight: 24g.

Patina: Bronze remains visible over much of the object.

Manufacture: No traces of any casting seams survive. Although the metal appears polished and shiny, the surface seems to be largely as-cast.

Use: Impossible to determine.

Reduction: There are hammer indents visible on the midrib. A piece of rough metal now adheres to one face.

05/95 (276/104)

Description: Hilt from 'frame-hilted' sword. A slight ricasso notch is visible.

Dimensions: Length (maximum): 65mm. Weight: 70g.

Patina: One side is largely dense olive, while on the other patches of encrustation are apparent. Details are good.

Manufacture: Vestigial traces of the casting seam can be seen on one side of the hilt, but on the other the seam has been completely obliterated. On the side where the finish is poorer, hammering is evident over the extent of the seam, and some grinding marks can be seen in this location, too. Grinding marks are also visible below the hilt, and on one side (not illustrated) additional striations can be seen over the bevel.

Use: The upper break may be use-related. The hilt is twisted and distorted, and such damage seems consistent with strain placed upon the object during use.

Reduction: Small tool marks can be seen on the blade. These may have been inflicted during the fragmentation process.

05/96 (276/?)

Description: Fragmentary sword tang, now adhering to a large lump of rough metal.

Dimensions: Length (maximum): 17mm. Weight: 31g.

Patina: Much of the original bronze remains visible over the sword fragment, though the rough metal to which it adheres is a dusty pale-green.

Manufacture: No traces of any casting seams remain on either edge of the fragment.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

05/97 (276/67)

Description: Blade fragment of 'Ewart Park' type sword.

Dimensions: Length (maximum): 63mm. Weight: 32g.

Patina: Very rough mottled dark/light green, details obscured.

Manufacture: The blade has been sharpened, and some hammer indents are apparent. However, these occur in isolation and have been roughly executed, which suggests that they are more likely to have been inflicted during the fragmentation process.

Use: One of the cutting edges survives virtually intact, though several notches are missing from its extent. The other is now entirely absent along its length.

Reduction: The hammering noted in Manufacture above is probably associated with this process. The hammer indents are rough and intrusive, and in one location the section appears to have been flattened somewhat. Some rough metal adheres to the fragment in places (not illustrated).

05/98 (276/100)

Description: Blade fragment of 'Ewart Park' type sword.

Dimensions: Length (maximum): 39mm. Weight: 28g.

Patina: Rough olive, with encrustation covering much of the surface. Details obscured.

Manufacture: There is no evidence relating to this process.

Use: Impossible to determine.

Reduction: There are some possible hammer indents occurring in association with either break, though it is difficult to be certain of these as corrosion buildup obscures the surface.

05/99 (276/82)

Description: Blade tip from 'Ewart Park' type sword.

Dimensions: Length (maximum): 93mm. Weight: 46g.

Patina: Mainly original bronze, with some patches of encrustation apparent on either face.

Manufacture: Bevels run down either side of the blade. These are associated with fine hammering, and vertical grinding marks are visible on the blade in places.

Use: The blade edges survive in poor condition, with both sides being badly chipped along their extent. In some places, larger notches are missing. This may be use-related damage, but deliberate destruction of the cutting edges cannot be discounted.

Reduction: The profile of the object shows distortion, and there are a number of possible hammer indents visible in association with the upper break.

05/100 (276/80)

Description: Blade tip from 'Ewart Park' type sword.

Dimensions: Length (maximum): 47mm. Weight: 19g.

Patina: Original bronze remains, with a few patches of encrustation present.

Manufacture: Some faint vertical and horizontal grinding marks can be seen on the blade. Where not obscured by corrosion products, the object is covered by fine hammer indents, particularly down the length of the bevels.

Use: Some of the original cutting edge remains intact, but it is notched in places over its extent. In some places, burring of the edges is apparent. The tip is now missing, and this may be use-related damage.

Reduction: It is possible that the edges were deliberately broken. There are rough hammer indents apparent in association with the break, probably inflicted during this phase, but little distortion of the section is apparent.

05/101 (276/83)

Description: Blade tip from 'Ewart Park' type sword.

Dimensions: Length (maximum): 40mm. Weight: 28g.

Patina: Dense green, some encrustation present. Details obscured.

Manufacture: A few grinding marks can be seen in places, and the blade has a smooth and polished appearance, which suggests that it has been finely hammered over its extent.

Use: The blade edges are chipped and blunt over their length, with little of the original edge remaining.

Reduction: No traces of any hammering can be seen in association with the break; but both the profile and the section of the object show distortion. There is a crack in the metal, running parallel to the break and situated c. 5mm away from it, and this has resulted from the strain brought about by the fragmentation process.

05/102 (276/84)

Description: Blade tip from 'Ewart Park' sword.

Dimensions: Length (maximum): 50mm. Weight: 11g.

Patina: Rough dark green, details obscured.

Manufacture: There is no evidence relating to this process.

Use: The cutting edges are in very poor condition, with none of the original edges surviving.

Reduction: The fragment appears to have been subject to intensive hammering. Hammering appears to have been concentrated near the tip, with no indents occurring in association with the actual break. Some marked hammer indents are apparent on the blade edges, too, which suggests that they were deliberately damaged. The profile of the fragment is distorted.

05/103 (276/85)

Description: Blade tip from 'Ewart Park' type sword.

Dimensions: Length (maximum): 33mm. Weight: 6g.

Patina: Mainly original bronze, with some dark green patches. Details excellent.

Manufacture: There is a smooth, polished appearance to the surface. Some horizontal grinding marks run across the blade, while diagonal grinding marks can be identified along the edges.

Use: The cutting edges are chipped along their length, but remain in reasonable condition.

Reduction: Evidence of hammering is apparent on both faces, though the implements used on each face appear to differ. On one face (illustrated), two indents are apparent, inflicted by a hammer that had a large striking platform (e.g. Grays Thurrock I, 02/143-145). On the other face, a number of smaller indents are apparent, suggesting the use of a lightweight hammer (Leigh II, 05/88) or even a trunnion chisel.

05/104 (276/71)

Description: Blade tip from 'Ewart Park' type sword.

Dimensions: Length (maximum): 44mm. Weight: 18g.

Patina: Dense olive, some bronze showing, with occasional rough patches present. Details excellent.

Manufacture: The object has been subject to fine hammering over both faces. Some diagonal grinding marks run back from the cutting edge in places.

Use: The cutting edge appears chipped and notched in places, but still remains quite sharp. A number of isolated scores and grooves can be identified on either face, and these may indicate use-related damage.

Reduction: The grooves mentioned in 'Use' above may have been inflicted during this process, as the object appears to have been struck across its face, rather than used to block the downwards sweep of another sword blade. There are small tool marks apparent in places, too, and hammer indents can be seen in association with the upper break. A large piece of rough metal now adheres to the blade.

05/105 (276/101)

Description: Probable blade fragment of 'Ewart Park' type sword.

Dimensions: Length (maximum): 32mm. Weight: 10g,

Patina: Dense pale-green, details obscured.

Manufacture: There is no evidence relating to this process.

Use: The cutting edges are absent over their entire length.

Reduction: The cutting edges are burred in places, and may have been subject to deliberate removal. The object is now in two pieces. The break shows fresh copper on either side, indicating that this damage took place in recent times.

05/106 (276/70)

Description: Blade fragment of 'Carp's Tongue' sword, with grooves defining midrib and bevels.

Dimensions: Length (maximum): 39mm. Weight: 36g.

Patina: Much original bronze remains visible, though some encrustation has built up on one face (illustrated).

Manufacture: The piece is very fine in appearance, and it seems likely that the surface has been subject to hammered and then fine polishing. Individual hammer indents can still be seen in places, running down the length of the longer edge.

Use: The cutting edges remain in good condition over their extent, though one slight notch is visible. On one side (not illustrated), hammering of the blade has reduced the clarity of the groove which runs down the length of the bevel. Since this is not a situation encountered often on these swords, it might be suggested that the blade was hammered out following manufacture, perhaps to resharpen it.

Reduction: One break has a hammer indent associated with the broken edge on both sides (depicted as the lower break on illustration), while the other has one possible hammer indent on the midrib.

05/107 (276/69)

Description: Blade fragment of 'Carp's Tongue' sword, with grooves defining the midrib.

Dimensions: Length (maximum): 49mm. Weight: 61g.

Patina: One side is dense olive, while the other is covered by a more powdery light green form of corrosion product. Details are obscured over much of the piece.

Manufacture: There is no evidence relating to this process.

Use: The cutting edges are in poor condition, appearing notched and battered over its length.

Reduction: Both faces show possible hammer indents in association with one of the breaks, but it is impossible to be confident of their validity as a result of corrosion buildup.

05/108 (276/86)

Description: Blade fragment of 'Carp's Tongue' sword, with grooves defining the midrib.

Dimensions: Length (maximum): 20mm. Weight: 51g.

Patina: Original bronze remains visible over much of the fragment, but some patches of encrustation are apparent, and much rough metal now adheres to the piece. This obscures much detail.

Manufacture: Some of the hammering noted in 'Reduction' below may be linked with this process.

Use: Some deep striations cross the blade. These occur in isolation, and may be use-related damage. One of the cutting edges remains fine and sharp, while the other appears quite battered.

Reduction: A rough hammer indent can be identified in association with one of the breaks. Additional examples are present further down the midrib, but these are of finer appearance, and may have been inflicted during the manufacturing process.

05/109 (276/75)

Description: Lower blade and socket of leaf-shaped socketed spearhead, with parallel grooves defining the bevels which runs the length of the cutting edges. On both faces - but on one side only - two grooves are apparent, while on the other only a single groove is clearly visible (c.f. Grays Thurrock I 02/190).

Dimensions: Length (maximum): 53mm. Weight: 36g.

Patina: Much original bronze remains visible on the midrib, though the blade is covered by olive-green corrosion products.

Manufacture: No traces of any casting seams survive. The midrib appears largely as-cast, though fine hammering is apparent over the blade. Vertical grinding marks run down the length of the blade in places.

Use: The cutting edges are badly notched and chipped over their extent, and some deep isolated striations which run down the midrib might be use-related.

Reduction: Rough hammering is apparent in places along the midrib, and the socket has been crushed at the point where it meets the blade. The blade has also been subject to deliberate damage, the edges curling upwards slightly at the upper break. The metal shows signs of cracking and straining in places, with a horizontal crack occurring in the midrib on one face (not illustrated) and additional cracking of the metal apparent around the base of the blade and the socket. A piece of rough metal now adheres to one face.

05/110 (276/74)

Description: Lower blade fragment of leaf-shaped socketed spearhead.

Dimensions: Length (maximum): 52mm. Weight: 42g.

Patina: Dense green, with some bronze remaining visible on the midrib.

Manufacture: The object has been subject to fine hammering over its extent, and vertical grinding marks run down the length of the blade. The cutting edge is finely bevelled along its length.

Use: The cutting edges are in very poor condition, and the damage they have suffered is so severe as to suggest that they were deliberately mutilated.

Reduction: The base of the socket has been crushed on both sides, and fragmentation has resulted. On one side (not illustrated), much of the midrib is now missing. On the upper and lower breaks on both sides, hammer indents can be seen in association with the broken edges. In addition, the damage to the cutting edges noted in Use above may have been deliberately inflicted.

05/111 (276/76)

Description: Lower blade fragment of leaf-shaped socketed spearhead.

Dimensions: Length (maximum): 36mm. Weight: 31g.

Patina: Much original bronze remains visible, but patches of dark green corrosion product obscure much detail. Lumps of corrosion or rough metal adhere to the blade in places, too. Consequently, most details are obscured.

Manufacture: One wall appears thin, indicating core misalignment.

Use: The cutting edges survive in reasonable condition. One has just one marked notch present, while the other appears rather blunt.

Reduction: The section has been crushed at either break, and individual hammer indents can be seen in association with this damage. One chisel mark is visible on the midrib, too.

05/112 (276/77)

Description: Lower blade fragment of leaf-shaped socketed spearhead.

Dimensions: Length (maximum): 30mm. Weight: 20g.

Patina: Thick dark-green, with some encrustation present. Details obscured.

Manufacture: Vertical grinding marks run down the interface between the blade and the midrib, and down the length of the blade, too. The object appears to have been prepared for use, though the midrib still retains its clay core.

Use: The cutting edges are now absent, and this may be use-related damage.

Reduction: The socket has been crushed at the lower break, and individual hammer indents are apparent on the midrib.

05/113 (276/79)

Description: Blade tip from leaf-shaped socketed spearhead.

Dimensions: Length (maximum): 53mm. Weight: 22g.

Patina: Thick green, with some patches of encrustation apparent. Details obscured.

Manufacture: Some vertical grinding marks can be seen at the interface between the midrib and the blade, and the clay core has been removed.

Use: The blade edges are notched and chipped over their extent, with little if any of the original cutting edge surviving.

Reduction: Intrusive hammer indents can be identified near the break, on either side of the midrib. The section is distorted here, and cracking of the metal is apparent in places (not illustrated). Also apparent, superimposed on one face (not illustrated) are three tiny chisel or punch marks. A lump of rough metal now adheres to the object (illustrated).

05/114 (276/?)

Description: Blade fragment of socketed spearhead.

Dimensions: Length (maximum): 43mm. Weight: 34g.

Patina: Thick dense dark green, with some encrustation. Details much obscured.

Manufacture: Faint diagonal grinding marks can be seen on the blade edges in places. There are also indications of hammering over the bevel on one side (not illustrated). The clay core appears to remain *in situ*.

Use: The cutting edge is notched in places, but remains otherwise reasonable. Some isolated vertical striations running down the midrib may be use-related damage.

Reduction: Little evidence can be linked with the fragmentation process. No crushing of the section is apparent, and no hammer indents can be identified. The profile of the piece, however, appears slightly distorted.

05/115 (276/68)

Description: Blade fragment of leaf-shaped socketed spearhead.

Dimensions: Length (maximum): 34mm. Weight: 19g.

Patina: Bronze remains visible over the extent of the piece, with some lumps of corrosion product adhering to the blade.

Manufacture: One of the lumps of corrosion product noted in Patina above is unusually regular in shape. It may represent the remains of a chaplet which has been left *in situ*. One wall seems thin, indicating core misalignment. The blade has been subject to fine hammering over its length.

Use: The cutting edges remain sharp over much of their extent, but one side is notched in places.

Reduction: The profile of the fragment is distorted, but no hammer indents can be identified in association with any of the breaks.

05/116 (276/73)

Description: Blade fragment of leaf-shaped socketed spearhead.

Dimensions: Length (maximum): 24mm. Weight: 18g.

Patina: Dense green, with some bronze still showing in places. Details obscured.

Manufacture: The interior is blocked, perhaps with clay core material, though on close examination this substance has a fibrous appearance. It may therefore instead represent the remains of the shaft, though the survival of organic material seems unlikely in this context. One wall is thinner, indicating core misalignment.

Use: The cutting edge remains largely intact on one side, with only one notch apparent. The other side of the blade has none of the original edge surviving.

Reduction: The midrib is crushed as a result of hammering. Hammering can also be identified along the blade edges, though this could be linked with manufacture.

05/117 (276/?)

Description: Fragment of socket and adjoining blade from leaf-shaped socketed spearhead, with one rivet hole surviving.

Dimensions: Length (maximum): 49mm.

Patina: Dense green patina covers the exterior, while the interior is rougher. Some bronze remains visible in places.

Manufacture: Some vertical grinding marks run down the length of the blade and the midrib. No traces of any casting seams survive.

Use: The cutting edge, where it remains, appears blunt, with some notches missing. This damage may have been inflicted deliberately (see Reduction below).

Reduction: The socket has been subject to intensive hammering, and has been flattened as a result. The blade also appears to have been hammered, and some of the damage apparent along the cutting edge may have resulted from this. A lump of copper adheres to the interior of the socket.

05/118 (276/?)

Description: Small fragment of spearhead socket, decorated by concentric grooves which are grouped together into three discrete bands.

Dimensions: Length (maximum): 22mm. Width: 18mm. Weight: 8g.

Patina: Rough dark green.

Manufacture: There is no evidence relating to this process.

Use: Impossible to determine.

Reduction: The socket has been hammered and is now virtually flat. Rough metal now adheres to the interior of the piece.

05/119 (276/115)

Description: Probable socket fragment from socketed spearhead.

Dimensions: Length (maximum): 37mm. Weight: 16g.

Patina: Much is dense olive in colour, with some patches of rough pale green.

Manufacture: No traces of any casting seams survive. The surface has been subject to fine hammer working.

Use: Impossible to determine.

Reduction: Some sharp notches can be identified in places. They seem too sharp to have been caused by a hammer, and are perhaps too substantial to have been caused by a chisel. It is therefore possible that these marks were inflicted by a heavier object, such as an axe. Some more typical hammer indents are apparent in the vicinity of the lower break, and deformation of the section has occurred over the fragment's surviving extent. The interior appears to have been infilled with molten metal, and additional rough metal now adheres to the exterior.

05/120 (276/126)

Description: Lozenge-shaped fitting, which perhaps functioned as a sword pommel. Two small rivet holes can be seen on either side of the object.

Dimensions: Length (maximum): 39mm. Weight: 9g.

Patina: Rough mottled green, with much encrustation.

Manufacture: The piece is finely finished, with no traces of any casting seams surviving.

Use: The metal has broken in the vicinity of the rivet holes, and this damage may have resulted through excessive use.

Reduction: The breaks noted above may have been inflicted at this stage, i.e. in the process of prising the object from its original position during use. No hammering is evident, though, and the piece shows no signs of any distortion.

05/121 (276/99)

Description: Bag-shaped object, the front face of which is curved, while the rear is flat. Two rivet holes survive, and a third may be present beneath a dense build-up of

corrosion product, located to the right of the piece (as illustrated). The fragment could conceivably be part of a large scabbard chape.

Dimensions: Length (maximum): 30mm. Width: 30mm. Weight: 53g.

Patina: The exterior is mainly bronze coloured, with mottled dark/light green patches occurring around the edge.

Manufacture: A few grinding marks are visible around the curved edge. A lump of rough metal adheres to the reverse of the piece. This may be fortuitous, though it is possible that the lump represents a chaplet which was never removed.

Use: Impossible to determine.

Reduction: Hammering has created a depression in the centre of the piece, and hammering also seems to have resulted in the distortion and breakage which has occurred at the reverse of the piece.

05/122 (276/128)

Description: Semi-circular sheet bronze fitting, with adomed appearance. One tab survives on the reverse. The object may represent some kind of scabbard chape.

Dimensions: Length (maximum): 46mm. Width (maximum): 45mm. Weight: 24g.

Patina: Much of the piece is covered with encrustation, though some bronze remains visible around the edges.

Manufacture: The object is likely to have been subject to fine hammering, but any hammer indents associated with this process have now been obscured by later damage to the object.

Use: Impossible to determine.

Reduction: The domed surface has been distorted as a result of rough hammering, and the broken edge (rejoined in modern times) is associated with a number of intrusive hammer indents.

05/123 (276/88)

Description: Solid-cast bronze ring.

Dimensions: Diameter: 42mm. Weight: 13g.

Patina: Polished dense dark-green.

Manufacture: No traces of any casting seams survive. The surface appears highly polished, though this may indicate wear.

Use: Uneven wear is apparent. On one side of the ring, the diameter of the section is 4mm in width, while on the other it is only 2mm.

Reduction: The object has broken into four fragments. There is no patina covering the broken edges, save for a few spots of copper chloride, i.e. active bronze disease. It therefore seems likely that these breaks occurred in recent times.

05/124 (276/88)

Description: Bronze ring, probably solid-sectioned, with slots running through the opposing sides.

Dimensions: 22 x 17mm. Weight: 17g.

Patina: Much of the piece retains its original bronze colour, but rough metal/corrosion product has adhered to the piece, and this has obscured much detail.

Use: One of the slots appears alightly rough around the edge. The metal at either side of the slot appears to be of differing thickness, and this may indicate uneven wear.

Reduction: Some possible hammer indents are apparent near the adhering rough metal at one point (towards the lowermost part of the drawing). It is impossible to establish whether or not they are linked with this stage of the object's life-cycle, however.

05/125 (276/87)

Description: Bronze ring, probably solid-sectioned, of circular section.

Dimensions: c.35mm in diameter. Weight: 35g.

Patina: Mottled bronze/dark green, with pale green patches.

Manufacture: No traces of any casting seams remain. There are some small tool marks on the exterior, and grinding marks run around the interior.

Use: There are no clear indications of wear. The section of the ring is of uneven thickness, and yet the survival of the grinding marks suggests that the ring has seen little if any use.

Reduction: There is no evidence relating to this process.

05/126 (276/91)

Description: Fragmentary bracelet or armlet, octagonal in section.

Dimensions: Length (maximum): 62mm. Weight: 51g.

Patina: Bronze colour, with some rough encrustation apparent.

Manufacture: No traces of any casting seams survive. The surface seems largely as-cast, with no visible indications of fine hammering or polishing apparent.

Use: The interior is smooth, and this may result from wear.

Reduction: Hammering on the exterior of the object in the vicinity of the break has caused some distortion of the octagonal section in this location. This hammering is likely to have been inflicted during fragmentation.

05/127 (276/92)

Description: Fragment of 'Covesea' type bracelet, with a knobbed terminal, and decorated near the terminal with four impressed grooves.

Dimensions: Length (maximum): 43mm. Weight: 7g.

Patina: Rough dark green, with some pale green patches apparent.

Manufacture: The casting seams have been removed, but the piece is rough in appearance. The poor condition of the surface could largely be due to the nature of the patina, however.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

05/128 (276/?)

Description: Probable bracelet fragment, section tapering towards the terminal.

Dimensions: Length: c. 78mm. Weight: 5g.

Patina: Dense dark-green, with some chipping along its length.

Manufacture: The casting seam survives in vestigial form, and the piece is highly polished in appearance.

Use: The polished appearance to the surface may be wear-related.

Reduction: There is no evidence relating to this process.

05/129 (276/?)

Description: Possible fragment of hollow-sectioned bracelet (c.f. Grays Thurrock I, 02/206). Some lumps of rough metal adhere to the piece.

Dimensions: Length (maximum): 16mm. Weight: 9g.

Patina: Mainly dense olive.

Manufacture: The clay core still appears to remain *in situ* within the interior of the object.

Use: It is impossible to determine whether the object was used or not. The survival of the core does, however, suggest that the object was never fully prepared for use.

Reduction: Hammer indents are visible in association with either break, and the metal is cracked in places.

05/130 (276/93)

Description: Fragment of lenticular-sectioned strip. The piece seems likely to represent the remains of an unfinished bracelet fragment.

Dimensions: Length (maximum): 25mm. Weight: 2g.

Patina: Rough olive, chipped in places.

Manufacture: No clear evidence of any casting seams survive, though the rough appearance to one side of the fragment might indicate that the piece is unfinished.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

05/131 (276/?)

Description: Fragmentary finger ring, with knobbed terminal.

Dimensions: Length (maximum): c.49mm. Weight: 1g.

Patina: Rough mid-green, chipped in places.

Manufacture: No traces of any casting seams survive, and the surface appears highly polished.

Use: The polished appearance may be the result of excessive wear.

Reduction: There appear to be a series of small tool marks on the exterior of the object. These are poorly defined, and they may represent a decorative motif which has been worn away. There is also a possible hammer indent present, but this is very faint, even under magnification, and must therefore remain doubtful.

05/132 (276/59)

Description: Hog-backed knife.

Dimensions: Length: 44mm. Width (maximum): 80mm. Weight: 76g.

Patina: Much original bronze remains visible, with occasional dusty dark green patches.

Manufacture: The casting seams have been completely removed, except within the rivet hole, which remains rough and poorly trimmed. The lowermost edge is bevelled, with fine hammering and diagonal grinding marks apparent over its length. There are in addition clusters of vertical grinding marks present at either end of the piece.

Use: The cutting edge is chipped over much of its length, and the piece has a rather battered appearance.

Reduction: Some small tool marks are visible in places on one face (illustrated) and these may be associated with this stage of the object's life-cycle.

05/133 (276/86)

Description: Fragmentary hog-backed knife.

Dimensions: Length: 45mm. Width (maximum): 42mm. Weight: 50g.

Patina: The original bronze remains visible in places. The corrosion may have been stripped, but if this is the case, then the piece remains in remarkably good condition.

Manufacture: A slight bevel can be identified along the bottom edge, and this is associated with fine hammering and some grinding marks. The central hole is surrounded by a bevel, and evidence of hammering can be seen here, too. The upper edge appears rough, though no traces of any casting seams survive.

Use: The cutting edge is blunt and chipped along its length, and is notched in places, too.

Reduction: Some hammer indents are apparent on both faces, most notably at the interface between the cutting edge and the adjoining side. There is also a faint hammer mark in association with the break at the upper part of the piece. Marks made by a small sharp tool can be identified on both faces, probably inflicted by a chisel or punch.

05/134 (276/81)

Description: Fragmentary hog-backed knife. The object is unusually ornate, with a decorative inner and outer bevel apparent in addition to the narrow bevel which runs along the cutting edge of the piece.

Dimensions: Length: 38mm. Width (maximum): 47mm. Weight: 15g.

Patina: Some encrustation is present, covering much of one face. On the other, detail is good.

Manufacture: Both of the surviving edges have been sharpened, and some tiny grinding marks can be identified over their surviving extent.

Use: The cutting edges are chipped and broken over much of their length.

Reduction: There is no evidence relating to this process.

05/135 (276/?)

Description: Fragmentary object of slightly curved section, with four flattened ribs apparent on one surface. It is likely to represent part of a cauldron staple.

Dimensions: Length (maximum): 28mm. Width (maximum): 16mm.

Patina: Rough mid-green, with paler patches.

Manufacture: Traces of the casting seam can be identified where the edge survives.

Use: Impossible to determine.

Reduction: A possible hammer indent can be identified near the edge of the piece, but this must remain doubtful.

05/136 (276/?)

Description: Fragment of unknown object, with one small rivet hole present. It may represent a fragmentary tang, or perhaps a fragmentary fitting. The latter seems more feasible, as one side is markedly better in finish, which suggests that only one side was intended for viewing.

Dimensions: Length: 28mm.

Patina: Smooth on one side, with much bronze remaining, while the other appears rough.

Manufacture: The object is covered with fine hammer indents. However, it is uncertain whether these were inflicted during manufacture or during fragmentation. Certainly the workmanship seems poor in comparison to other objects. Grinding marks are apparent, though, which might suggest that the hammering took place before grinding and was thus associated with the manufacturing stage.

Use: The rivet hole is in good condition with no signs of distortion apparent.

Reduction: The hammering may have been inflicted during this process, but this must remain doubtful (see 'Manufacture' above).

05/137 (276/?)

Description: Fragment of unknown bronze object. It may once have been part of a socketed gouge, or a bracelet, or even a socketed axe, but it has now been distorted beyond all recognition.

Dimensions: Length (maximum): 44mm.

Patina: Rough green, some encrustation present.

Manufacture: Diagonal grinding marks are apparent on one side (illustrated).

Use: Impossible to determine.

Reduction: The piece has been subject to intensive hammering over its extent. This has resulted in distortion, so that now its original form can no longer be determined.

05/138 (276/107)

Description: Fragment of sheet bronze, now broken into two pieces.

Dimensions: Length (maximum): 13mm.

Patina: Bronze remains visible over much of one face, while the reverse is covered with clay or soil.

Manufacture: Some grinding marks are visible, and the piece seems to have been subject to fine hammering over its extent.

Use: Impossible to determine.

Reduction: There is some evidence of rough hammering upon the surface. A note found in association with this object suggests that it was originally rolled around the bracelet inserted in gouge 05/77.

05/139 (276/?122)

Description: Fragment of unknown object. The thickness of the wall is thin, which suggests that the piece would have had a decorative function. It comprises a hollow-sectioned horn protruding from a flat piece of sheet-bronze.

Dimensions: Length (maximum): 28mm.

Patina: The interior of the curved protrusion appears polished, the rest of the object being rough pale green.

Manufacture: The piece has been hammered over its extent. Some possible grinding marks can be identified in the interior of the protrusion.

Use: The polished appearance to the curved protrusion may indicate wear.

Reduction: There is no evidence relating to this process.

05/140 (276/?)

Description: Tiny fragment of sheet bronze. It could conceivably be a fragmentary spearhead socket.

Dimensions: Length (maximum): 20mm.

Patina: Rough green, rough metal adhering to the reverse of the piece.

Manufacture: If the object was part of a spearhead socket, then its wall-section is too thin, indicating core misalignment. The object is smooth in appearance, and is likely to have been subject to fine hammering, though this will have been obscured by later hammering associated with the reduction process.

Use: Impossible to determine.

Reduction: The object has been roughly hammered, and the section appears distorted as a result. Rough metal now adheres to the reverse of the piece.

05/141 (276/?)

Description: Tiny fragment of sheet bronze.

Dimensions: Length (maximum): 18mm.

Patina: Rough green, with some encrustation apparent.

Manufacture: There is no evidence relating to this process.

Use: Impossible to determine.

Reduction: It is likely that this object was subject to rough hammering as part of the fragmentation process, as distortion of the section is apparent.

05/142 (276/?)

Description: Fragment of unknown object, perhaps part of a socketed axe, gouge, or mortising chisel, etc.

Dimensions: Length (maximum): 19mm.

Patina: Rough green, some encrustation apparent.

Manufacture: There is no evidence relating to this process.

Use: Impossible to determine.

Reduction: The object has been subject to rough hammering, probably as part of the fragmentation process.

05/143 (276/?)

Description: Fragment of tubular hollow-sectioned object, perhaps part of a bracelet or ring.

Dimensions: Length (maximum): 20mm.

Patina: Rough green, with lumps of rough metal adhering.

Manufacture: The interior appears to be filled with clay, which suggests that the piece was unfinished.

Use: Impossible to determine.

Reduction: The piece has a distorted appearance, with one side appearing rounded in section, the other flat. Hammering inflicted during fragmentation probably caused this deformation.

05/144 (276/?)

Description: Tiny fragment of unknown object.

Dimensions: Length (maximum): 12mm.

Patina: Rough mid-green.

Manufacture: There is no evidence relating to this process.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

05/145 (276/?)

Description: Tiny fragment of unknown object.

Dimensions: Length (maximum): 12mm.

Patina: Rough mid-green.

Manufacture: There is no evidence relating to this process.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

05/146 (276/97)

Description: Casting jet, possibly originating from a socketed axe.

Dimensions: Length: 28mm. Weight: 28g.

05/147 (276/120)

Description: Fragment of bronze spill, or possible casting jet.

Dimensions: Maximum Extent: 45mm. Weight: 120g.

05/148 (276/?)

Description: Large piece from edge of copper ingot.

Dimensions: Length: 58mm. Width: 46mm. Thickness: 23mm. Weight: 216g.

Observations: Various pieces now adhere to this item, including an additional small fragment of ingot metal, and a mouth fragment from a socketed axe. It is unclear whether these additional items have adhered to molten metal spilt during antiquity, or to corrosion products which have accumulated since deposition.

05/149 (276/?)

Description: Two pieces of copper ingot, now adhering to one another. One (i) is very large, comprising roughly one quarter of an ingot, while the other (ii) is much smaller and thinner. Rough metal adheres to the object in places.

Dimensions: Length (i): 50mm. Width (i): 48mm. Thickness (i): 25mm. Weight (i + ii): 233g.

05/150 (276/?)

Description: Three adhering fragments of ingot metal.

Dimensions: Length (maximum): 45mm. Width (maximum): 38mm.

05/151 (276/?)

Description: Small fragment of waste spill or rough metal.

Dimensions: Length: 25mm. Width: 18mm. Thickness: 4mm.

05/152 (276/?)

Description: Small fragment of waste spill or casting jet, with a possible casting seam apparent down one side.

Dimensions: Length: 23mm. Weight: 11g.

05/153 (276/?)

Description: Fragment of copper ingot, with rough metal adhering in places.

Dimensions: Length: 25mm. Width: 23mm. Weight: 63g.

05/154 (276/?)

Description: Fragment of copper ingot or waste spill. A blob of rough metal now adheres to the piece.

Dimensions: Length: 27mm. Width: 22mm. Weight: 31g.

05/155 (276/?)

Description: Fragment of waste spill.

Dimensions: Length: 23mm. Width: 27mm. Thickness: 6mm. Weight: 19g.

05/156 (276/?)

Description: Fragment from edge of copper ingot.

Dimensions: Length: 25mm. Width: 24mm. Thickness: 13mm. Weight: 28g.

05/157 (276/?)

Description: Piece from interior of copper ingot.

Dimensions: Length: 68mm. Width: 43mm. Thickness: 39mm.

05/158 (276/?)

Description: Large piece from edge of copper ingot.

Dimensions: Length: 74mm. Width: 62mm. Thickness: 25mm. Weight: 286g.

05/159 (276/?)

Description: Two edge fragments from copper ingots, now adhering to one another with rough metal.

Dimensions (i): Length: 40mm. Width: 20mm. Thickness: 18mm.

Dimensions (ii): Length: 20mm. Width: 15mm. Thickness: 15mm. Combined weight: 104g.

05/160 (276/?)

Description: Piece from interior of copper ingot, rough metal adhering in places.

Dimensions: Length: 47mm. Width: 32mm. Thickness: 27mm. Weight: 246g.

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Dimensions: Length: 35mm. Width: 20mm. Weight: 64g.

Observations: Possible hammer indents can be identified on one surface, which appears smoother here.

05/177 (276/?)

Description: Piece from edge of copper ingot, very thin in section.

Dimensions: Length: 42mm. Width: 30mm. Thickness: 18mm. Weight: 76g.

05/178 (276/?)

Description: Piece from edge of copper ingot.

Dimensions: Length: 35mm. Width: 35mm. Thickness: 20mm. Weight: 119g.

Observations: One surface shows a probable chisel mark (illustrated).

05/179 (276/?)

Description: Fragment from interior of copper ingot.

Dimensions: Length: 38mm. Width: 26mm. Thickness: 18mm. Weight: 76g.

05/180 (276/?)

Description: Small piece from edge of ingot metal. Much of the interior is occupied by a massive void.

Dimensions: Length: 40mm. Width: 36mm. Weight: 42g.

05/181 (276/?)

Description: Fragment from interior of copper ingot.

Dimensions: Length: 40mm. Width: 23mm. Thickness: 20mm. Weight: 73g.

05/182 (276/?)

Description: Small piece from interior of copper ingot.

Dimensions: Length: 25mm. Width: 25mm. Thickness: 24mm. Weight: 87g.

05/183 (276/?)

Description: Small piece from edge of copper ingot.

Dimensions: Length: 25mm. Width: 25mm. Thickness: 18mm. Weight: 67g.

05/184 (276/?)

Description: Fragment of copper ingot, some rough metal adhering.

Dimensions: Length: 22mm. Width: 16mm. Weight: 15g.

05/185 (276/?)

Description: Small edge fragment of copper ingot, with much rough metal now adhering.

Dimensions: Length: 35mm. Width: 22mm. Weight: 43g.

05/186 (276/?)

Description: Fragment from edge of copper ingot, with many small voids present.

Dimensions: Length: 25mm. Width: 23mm. Weight: 30g.

05/187 (276/?)

Description: Possible edge fragment of copper ingot, though its unusual appearance may indicate that it is instead a fragment of waste spill.

Dimensions: Length: 37mm. Width: 21mm. Weight: 46g.

Observations: The surface appears smooth and yet pitted over its extent. The object may have been exposed to intense heat and partial melting.

05/188 (276/?)

Description: Fragment from interior of copper ingot.

Dimensions: Length: 34mm. Width: 24mm. Weight: 40g.

05/189 (276/?)

Description: Fragment from edge of copper ingot.

Dimensions: Length: 37mm. Width: 18mm. Thickness: 19mm. Weight: 56g.

05/190 (276/?)

Description: Small piece from edge of copper ingot, with voids apparent in the piece.

Dimensions: Length: 28mm. Width: 23mm. Thickness: 18mm. Weight: 32g.

05/191 (276/?)

Description: Fragment of copper ingot.

Dimensions: Length: 23mm. Width: 18mm. Thickness: 17mm. Weight: 38g.

05/192 (276/?)

Description: Fragment from edge of thin-sectioned copper ingot.

Dimensions: Length: 28mm. Width: 15mm. Thickness: 8mm. Weight: 20g.

05/193 (276/?)

Description: Piece from edge of copper ingot.

Dimensions: Length: 30mm. Width: 15mm. Thickness: 13mm. Weight: 20g.

05/194 (276/?)

Description: Small fragment from interior of copper ingot.

Dimensions: Length: 28mm. Width: 25mm. Thickness: 15mm. Weight: 50g.

05/195 (276/?)

Description: Small fragment from interior of copper ingot.

Dimensions: Length: 22mm. Width: 17mm. Thickness: 16mm. Weight: 35g.

05/196 (276/?)

Description: Small piece from interior of copper ingot.

Dimensions: Length: 30mm. Width: 24mm. Thickness: 26mm. Weight: 109g.

05/197 (276/?)

Description: Small piece from interior of copper ingot.

Dimensions: Length: 36mm. Width: 15mm. Thickness: 15mm. Weight: 41g.

05/198 (276/?)

Description: Small piece from edge of copper ingot.

Dimensions: Length: 35mm. Width: 35mm. Weight: 79g.

Observations: A marked notch in one surface (illustrated) may be a small tool mark.

05/199 (276/?)

Description: Small fragment from edge of copper ingot.

Dimensions: Length: 23mm. Width: 22mm. Thickness: 8mm. Weight: 25g.

Observations: There are some possible small tool marks on one surface, but these must remain tenuous.

05/200 (276/?)

Description: Small piece of copper ingot.

Dimensions: Length: 30mm. Width: 18mm. Thickness: 18mm. Weight: 52g.

05/201 (276/?)

Description: Fragment of copper ingot, with some lumps of rough metal or bronze spill adhering.

Dimensions: Length: 35mm. Width: 12mm. Weight: 33g.

05/202 (276/?)

Description: Fragment from edge of copper ingot.

Dimensions: Length: 26mm. Width: 22mm. Thickness: 15mm. Weight: 62g.

05/203 (276/?)

Description: Small piece from interior of copper ingot.

Dimensions: Length: 48mm. Width: 40mm. Weight: 116g.

05/204 (276/?)

Description: Small piece from edge of copper ingot.

Dimensions: Length: 42mm. Width: 25mm. Weight: 109g.

Observations: The edge appears smooth, with possible hammer indents over its extent.

05/205 (276/?)

Description: Small fragment from interior of copper ingot.

Dimensions: Length: 35mm. Width: 23mm. Thickness: 12mm. Weight: 43g.

05/206 (276/?)

Description: Fragment from interior of copper ingot, with some rough metal adhering.

Dimensions: Length: 21mm. Width: 18mm. Thickness: 10mm. Weight: 37g.

05/207 (276/?)

Description: Fragment from interior of copper ingot, with some rough metal adhering.

Dimensions: Length: 32mm. Width: 26mm. Thickness: 13mm. Weight: 38g.

05/208 (276/?)

Description: Small fragment from edge of copper ingot.

Dimensions: Length: 27mm. Width: 15mm. Thickness: 12mm. Weight: 17g.

05/209 (276/?)

Description: Probable fragment of copper ingot.

Dimensions: Length: 32mm. Width: 15mm. Thickness: 13mm. Weight: 28g.

05/210 (276/?)

Description: Possible edge fragment from copper ingot. The crazed appearance of the surface suggests that the object was subject to intense heating in antiquity.

Dimensions: Length: 33mm. Width: 25mm. Thickness: 12mm. Weight: 30g.

05/211 (276/?)

Description: Small fragment from interior of copper ingot.

Dimensions: Length: 33mm. Width: 28mm. Weight: 39g.

05/212 (276/?)

Description: Small fragment from interior of copper ingot.

Dimensions: Length: 20mm. Width: 15mm. Thickness: 15mm. Weight: 23g.

05/213 (276/?)

Description: Small piece of spilt bronze or possible casting jet.

Dimensions: Length: 30mm. Weight: 37g.

05/214 (276/?)

Description: Fragment of copper ingot, now much obscured by adhering rough metal.

Dimensions: Length: 20mm. Width: 20mm. Thickness: 10mm. Weight: 24g.

05/215 (276/?)

Description: Fragment of copper ingot, with much rough metal adhering.

Dimensions: Length: 35mm. Width: 20mm. Thickness: 15mm. Weight: 22g.

05/216 (276/?)

Description: Small fragment from interior of copper ingot.

Dimensions: Length: 26mm. Width: 23mm. Thickness: 11mm. Weight: 31g.

05/217 (276/?)

Description: Fragment of copper ingot, with some rough metal adhering.

Dimensions: Length: 22mm. Width: 18mm. Weight: 15g.

05/218 (276/?)

Description: Fragment from edge of copper ingot.

Dimensions: Length: 30mm. Width: 12mm. Thickness: 17mm. Weight: 21g.

05/219 (276/?)

Description: Piece of rough metal. The object may be part of a copper ingot, though this seems unlikely. Some additional lumps of rough copper adhere.

Dimensions: Length: 30mm. Width: 20mm. Thickness: 8mm. Weight: 17g.

05/220 (276/?)

Description: Tiny fragment from edge of copper ingot.

Dimensions: Length: 23mm. Width: 15mm. Thickness: 12mm. Weight: 19g.

05/221 (276/?)

Description: Fragment of copper ingot, with some rough metal adhering.

Dimensions: Length: 35mm. Width: 20mm. Weight: 22g.

05/222 (276/?)

Description: Piece of waste spill or runner.

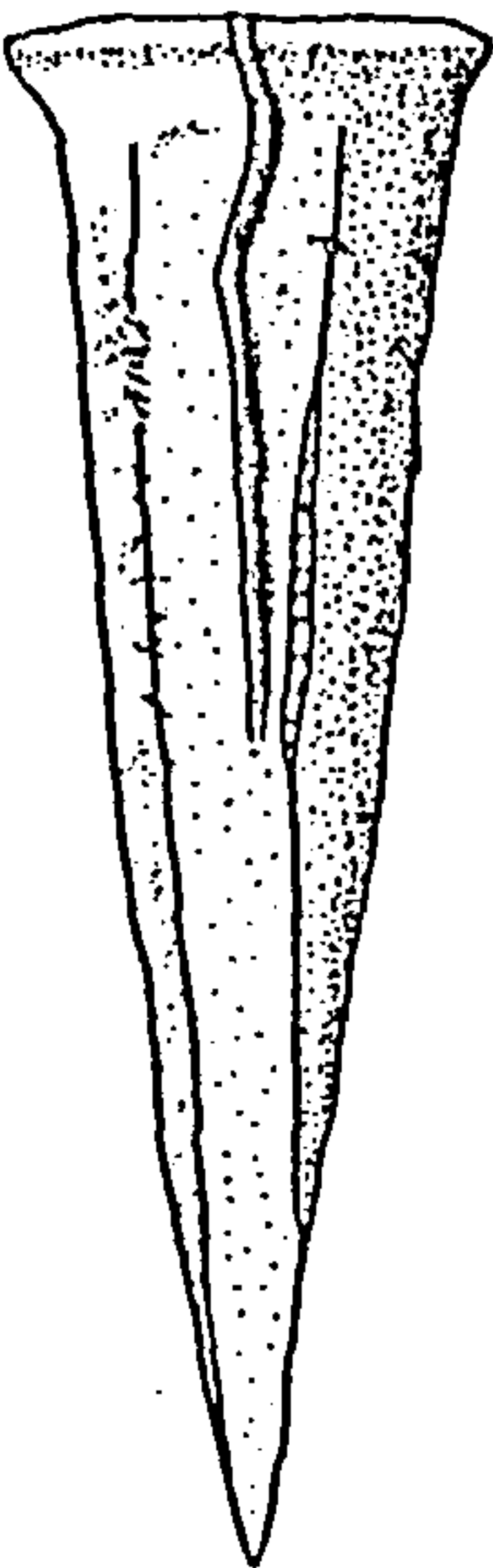
Dimensions: Length: 38mm. Weight: 4g

05/223 (276/120)

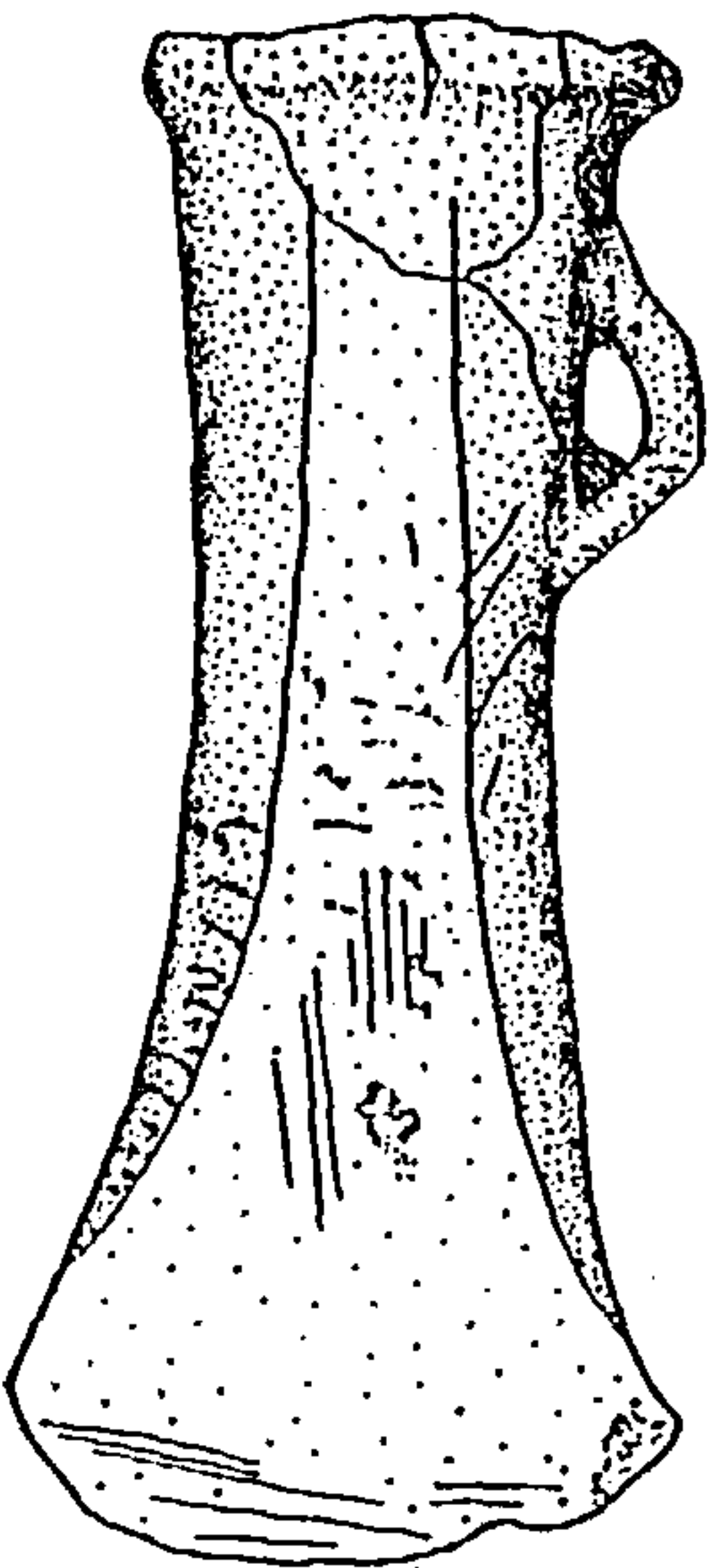
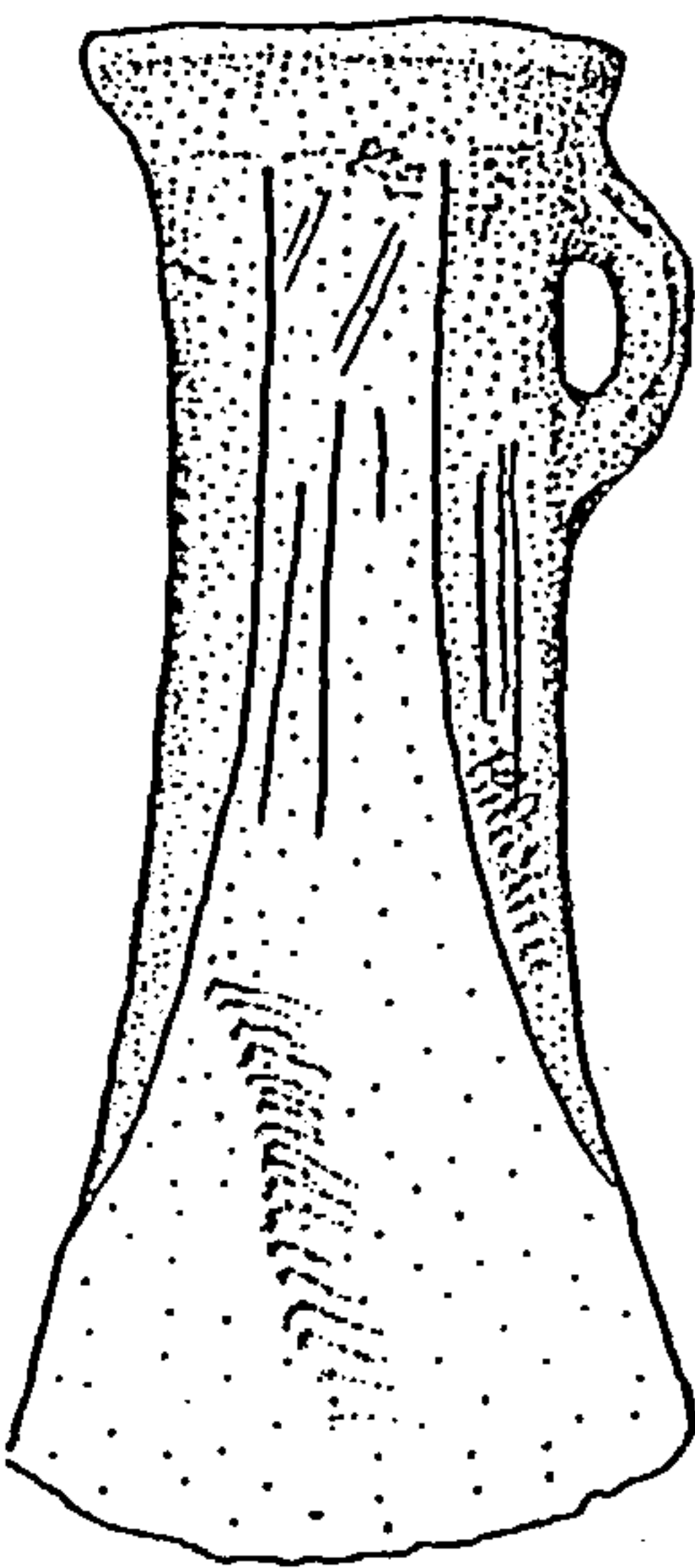
Description: Fragment of waste spill or possible casting jet.

Dimensions: Length: 44mm. Weight: 13g.

05/01



05/02

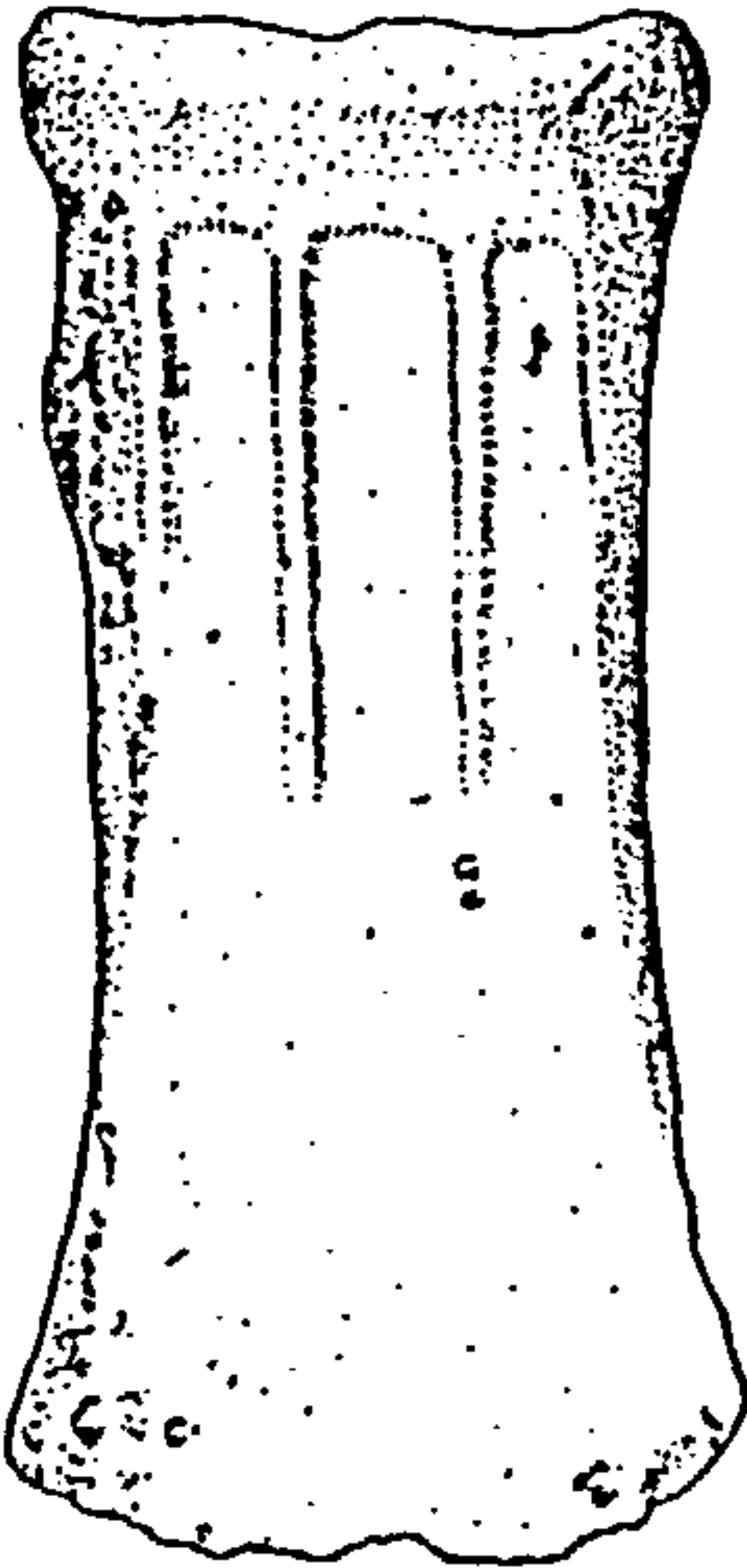


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05/03



05/04



05/05

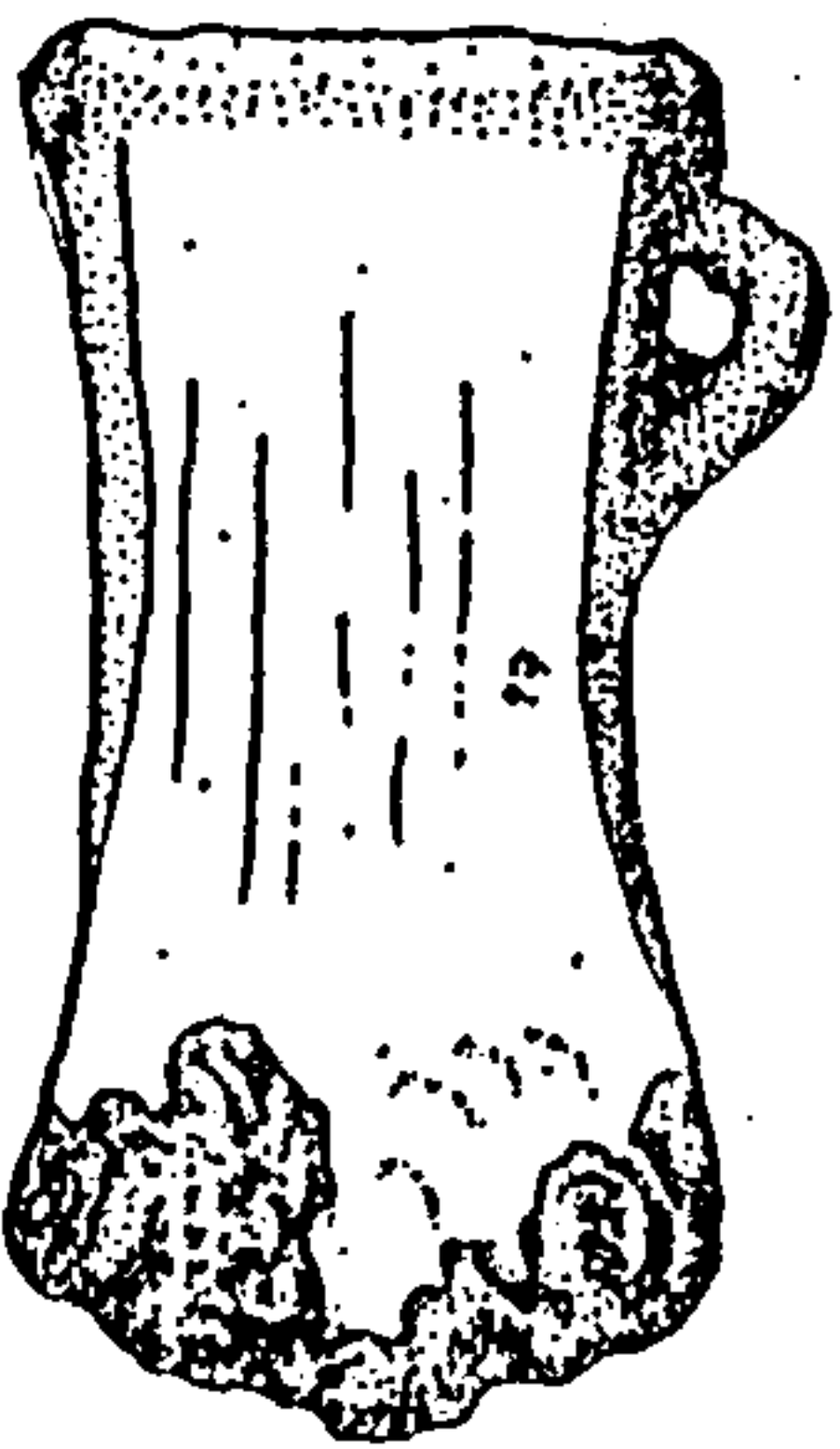
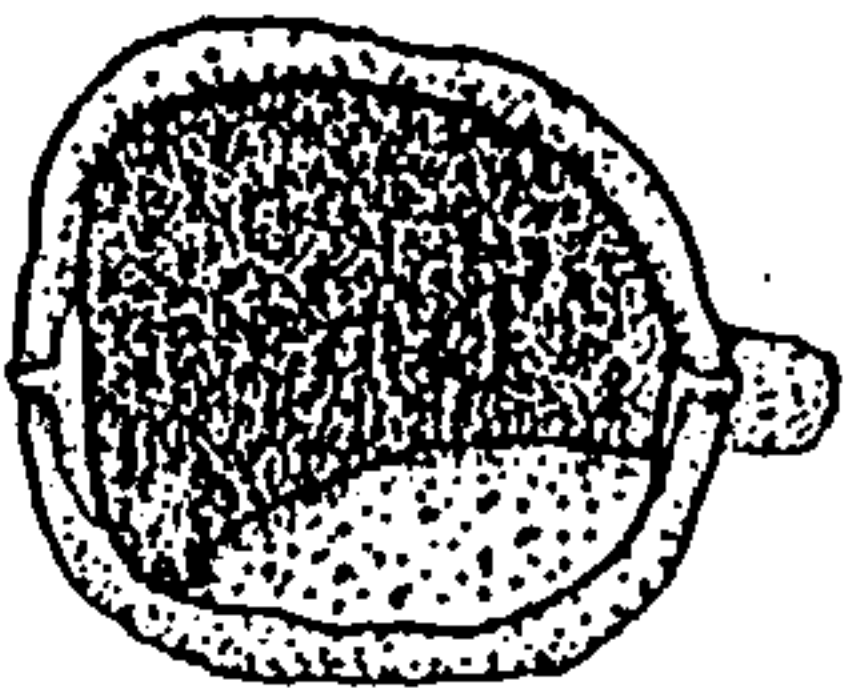
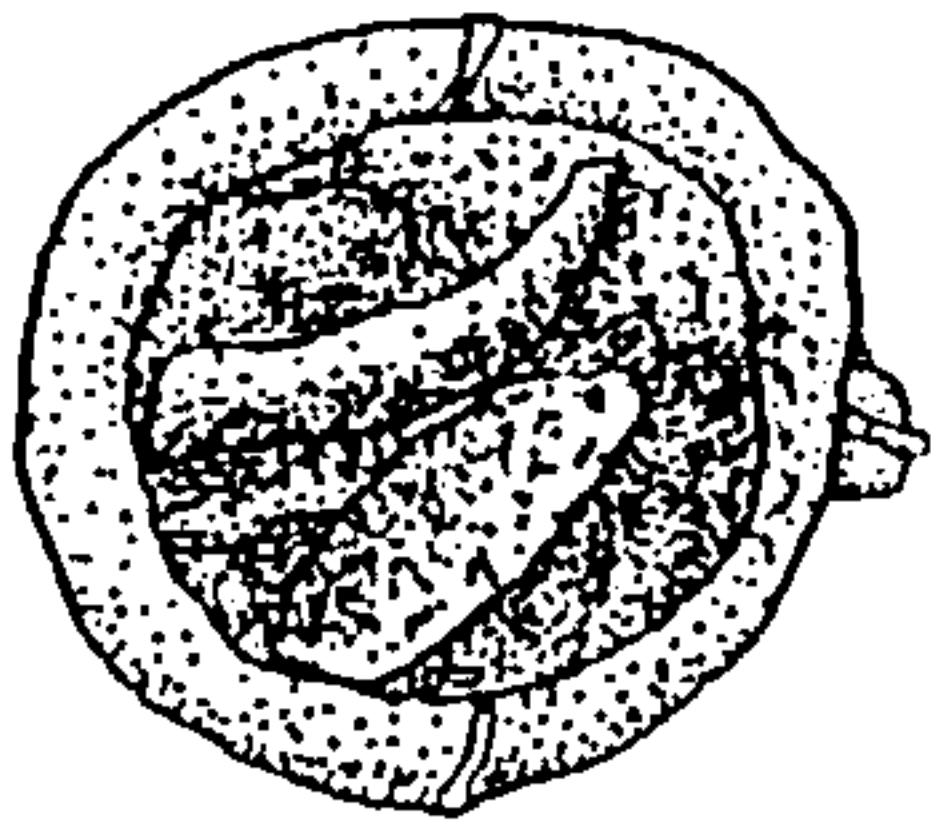


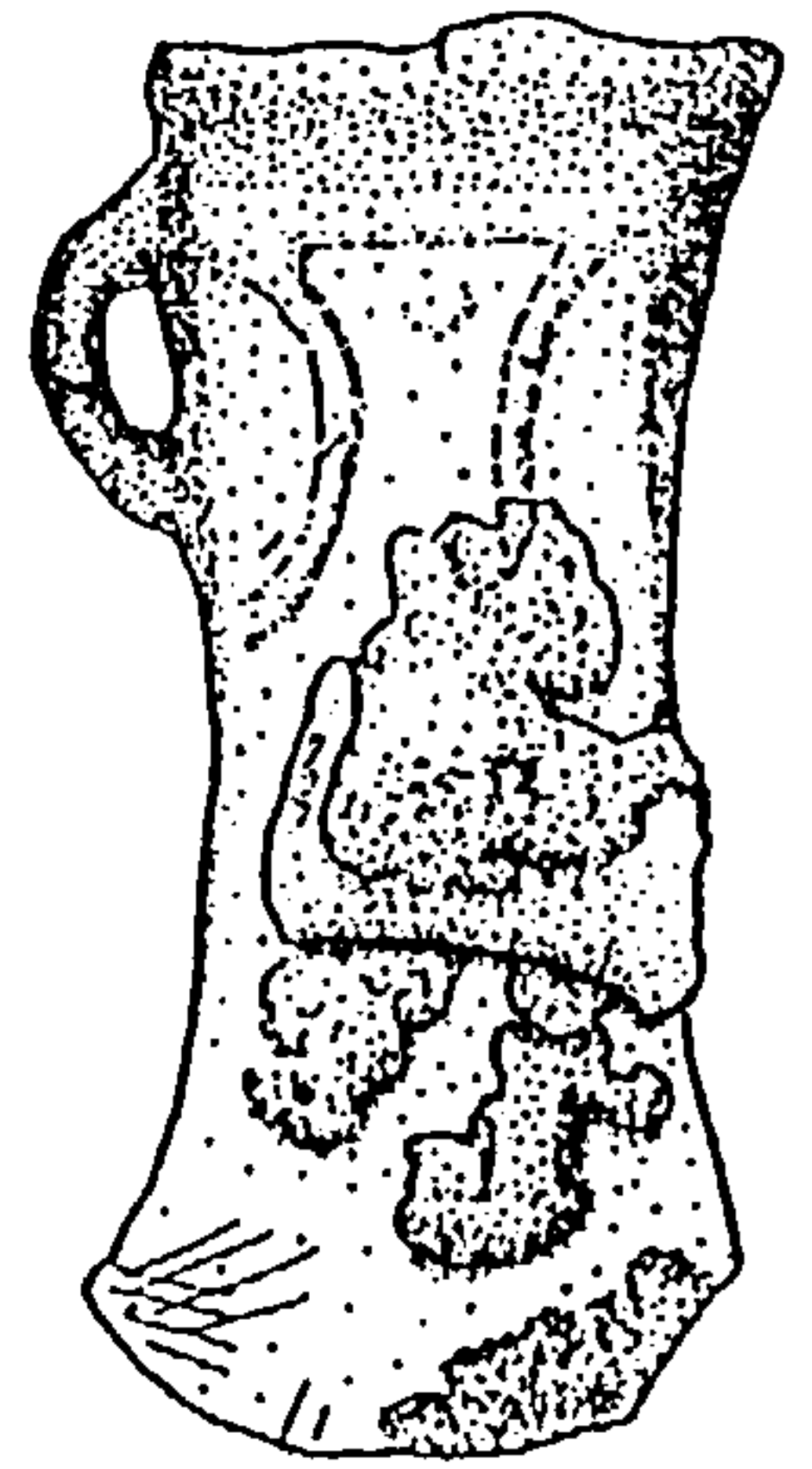
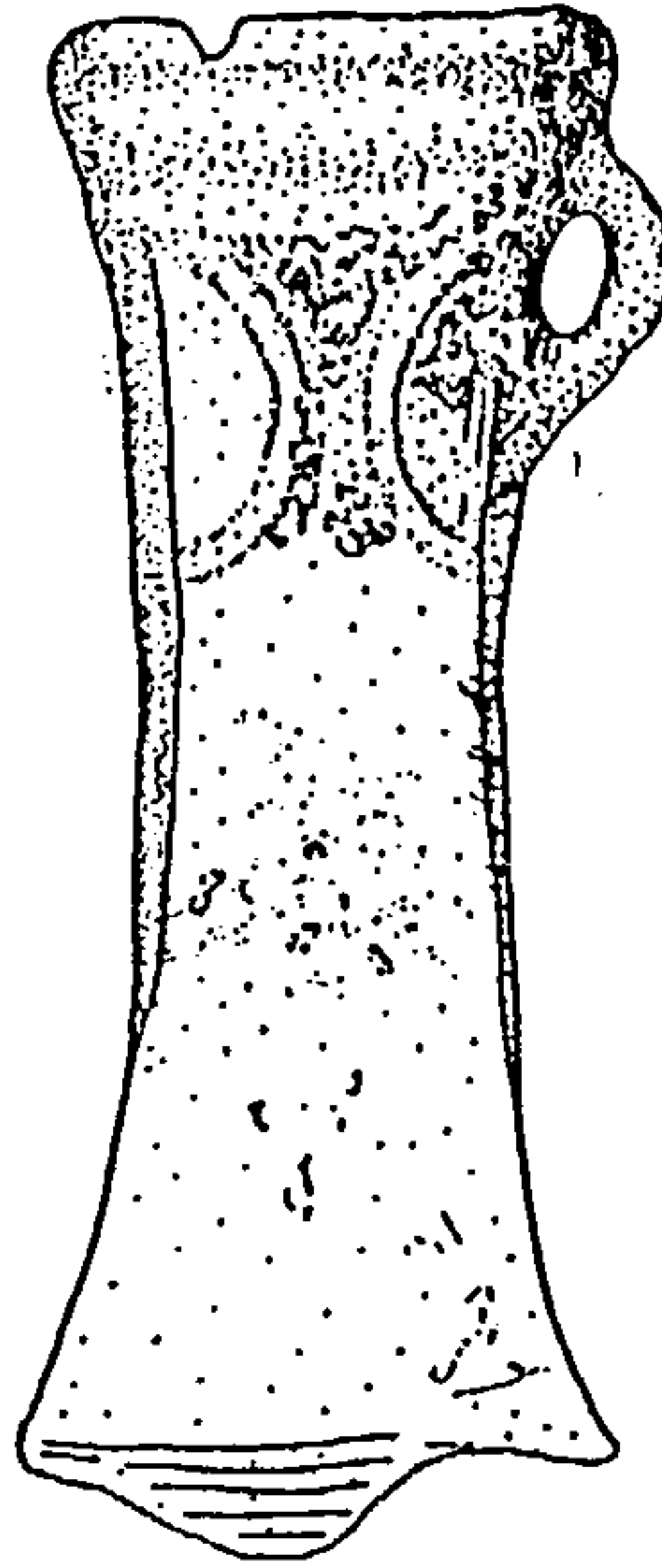
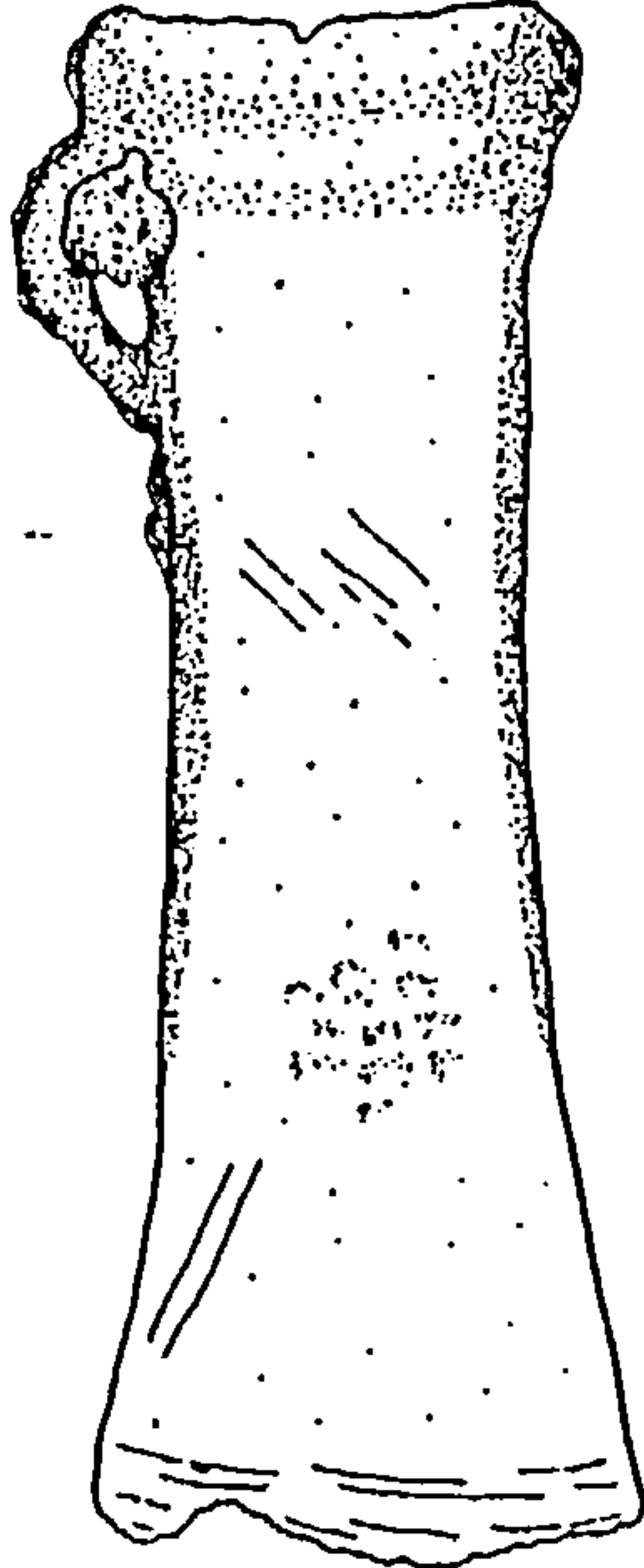
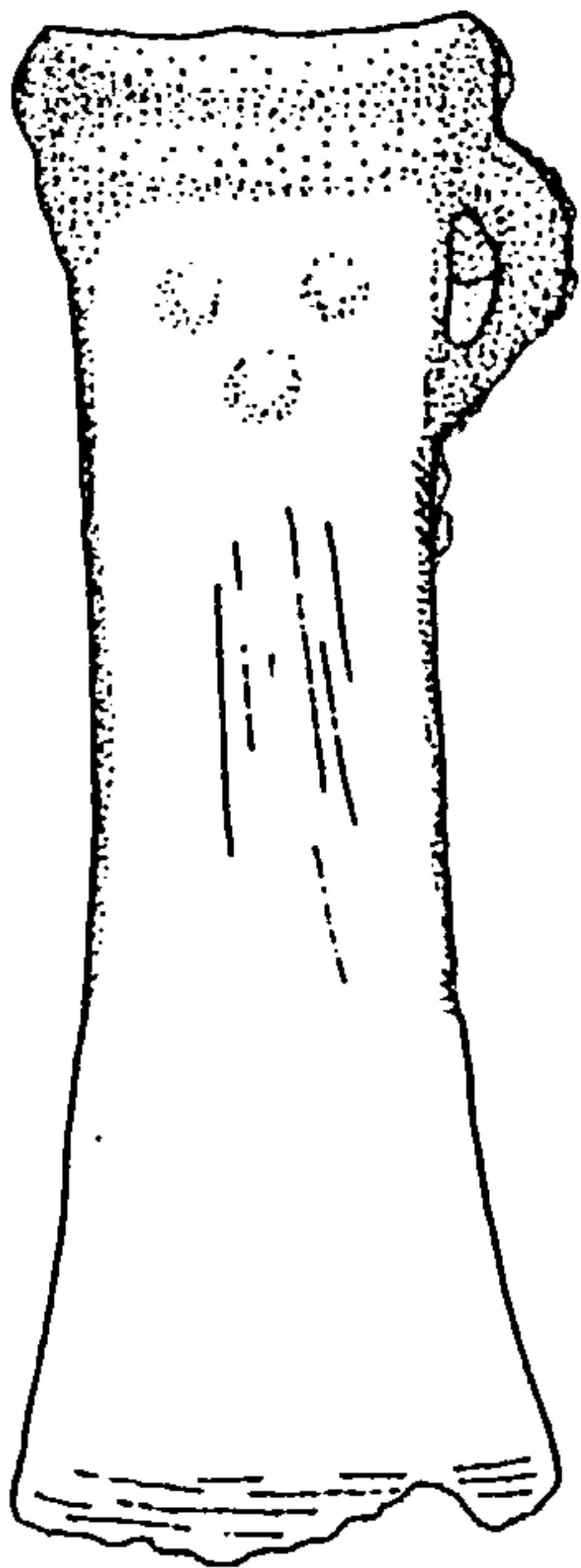
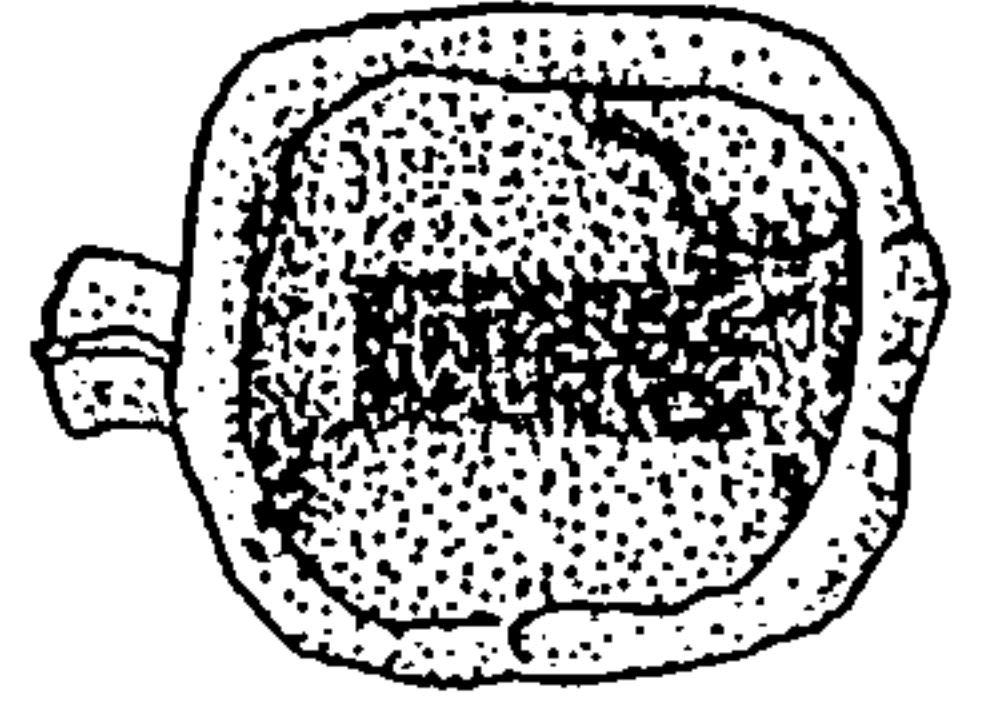
Fig. 41: The Leigh II Hoard (Ref. No. 05): Socketed Axes (i)

05/06



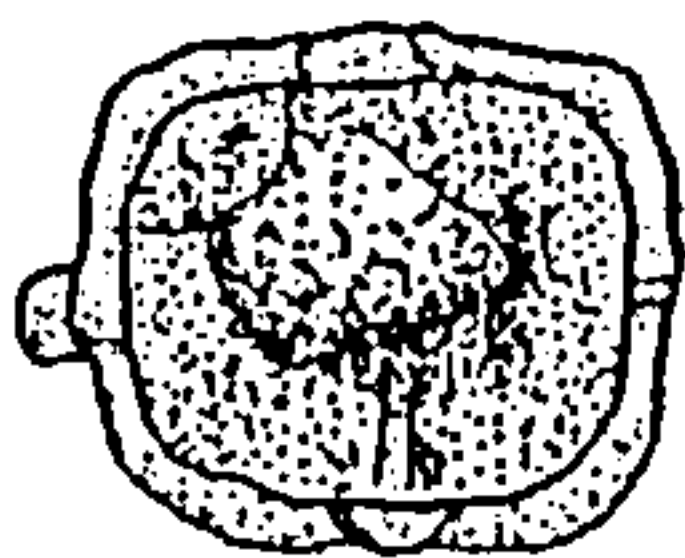
05/07

05/08



0 2cm

05/09



05/10

05/11

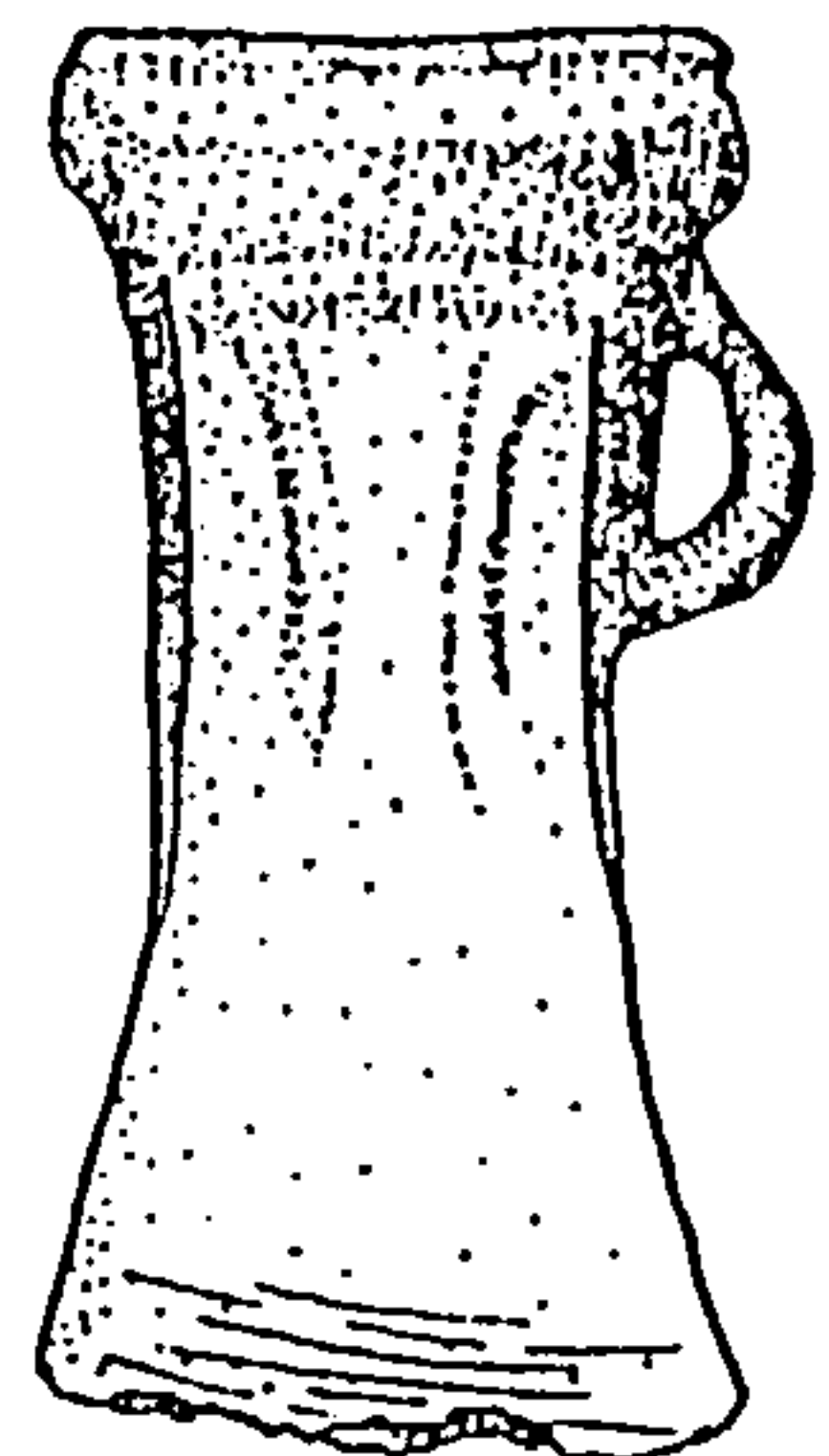
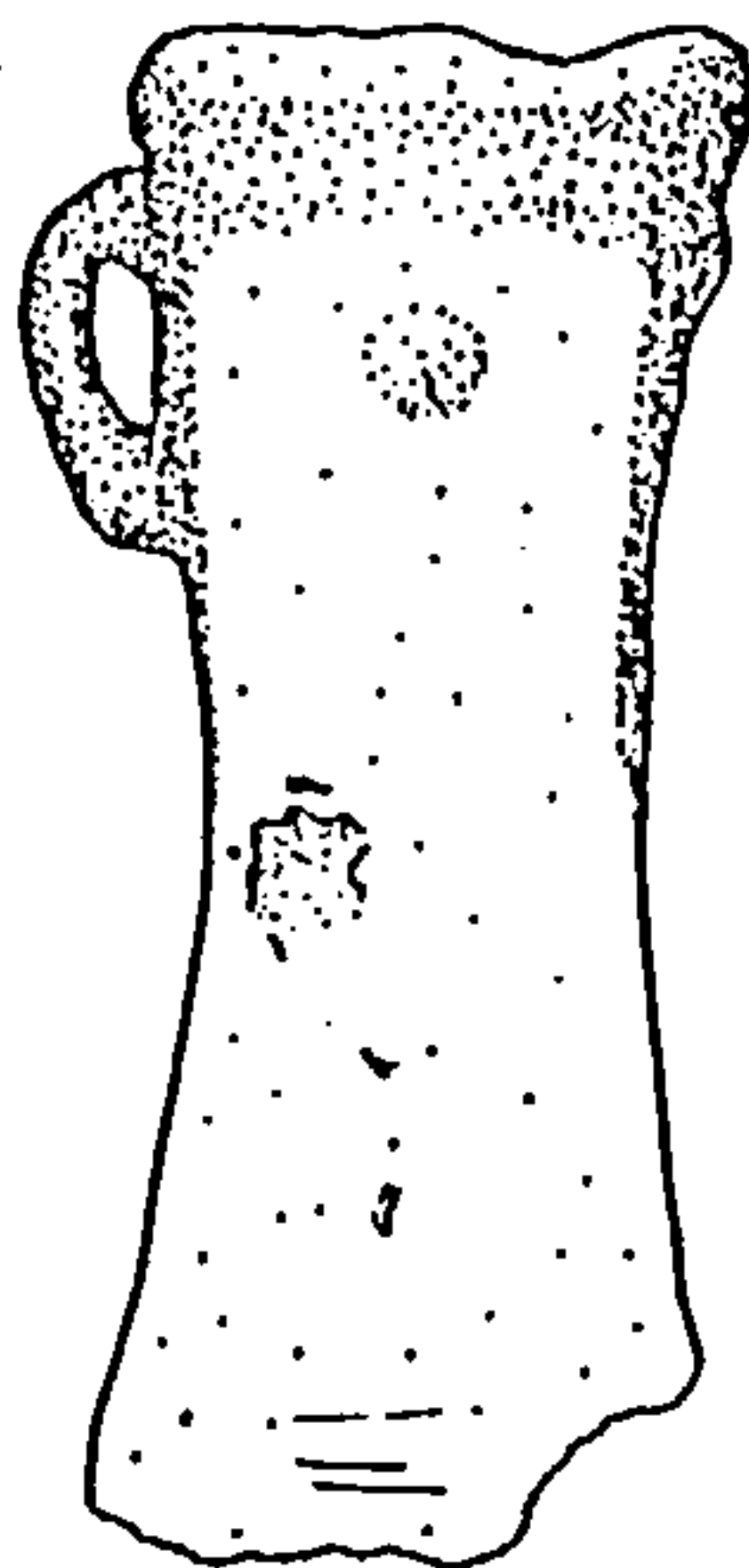
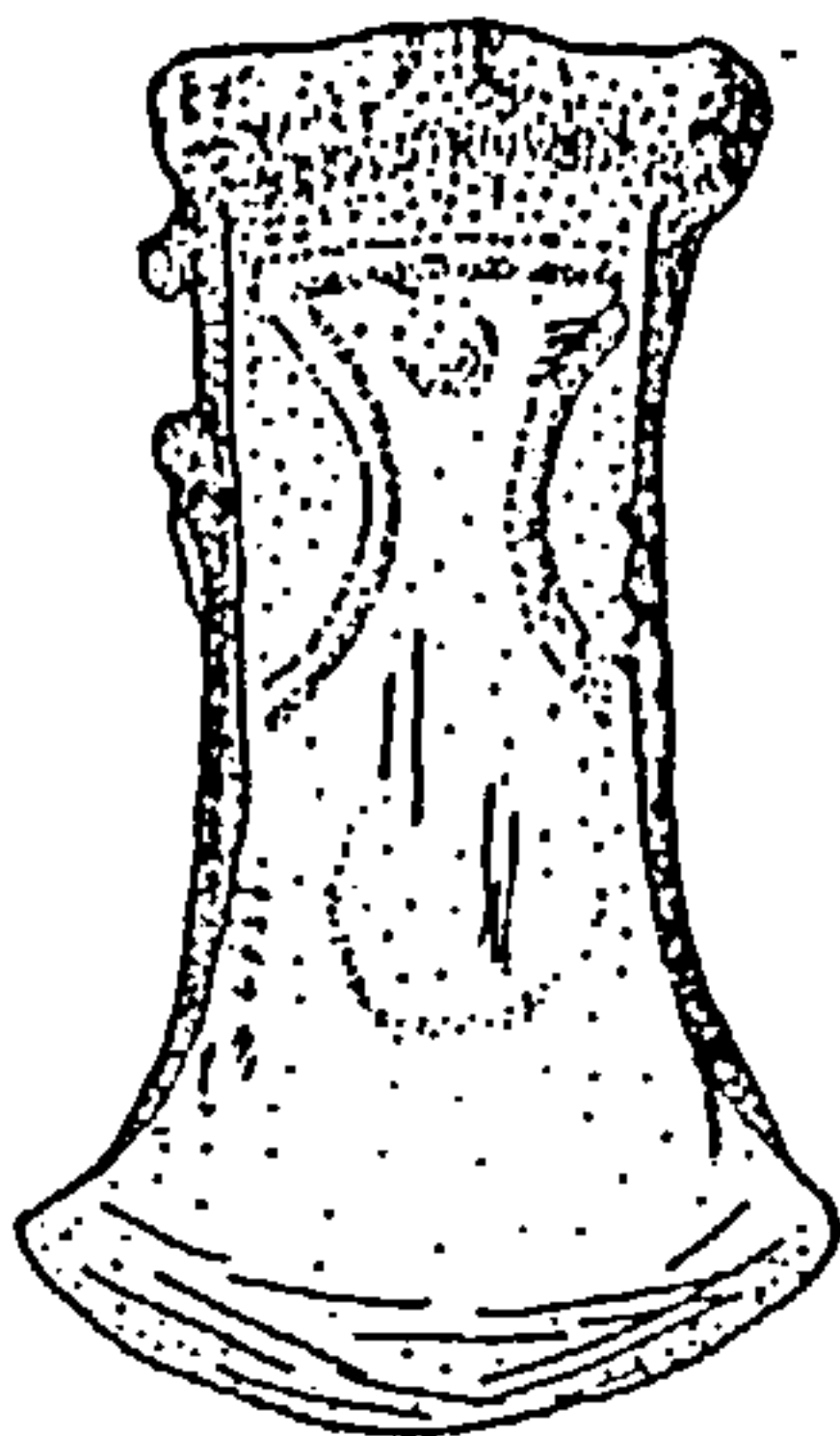
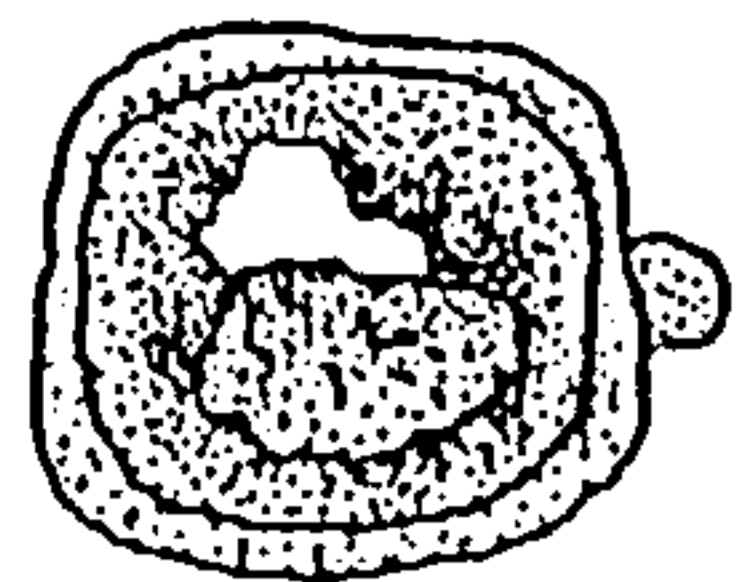
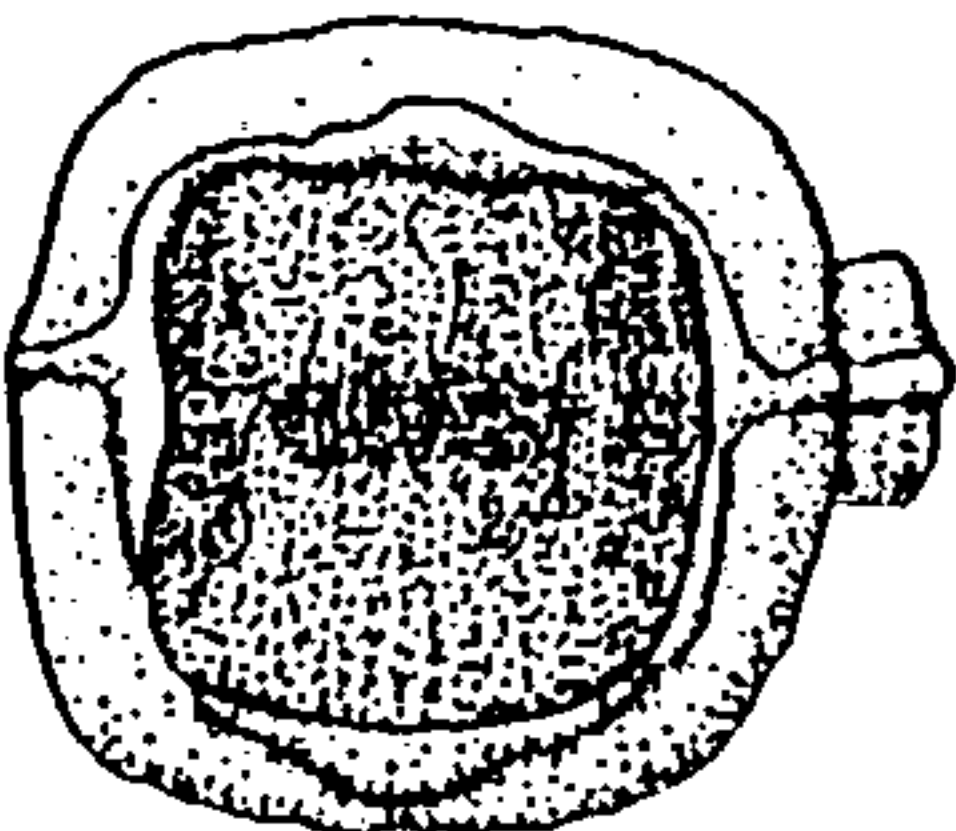
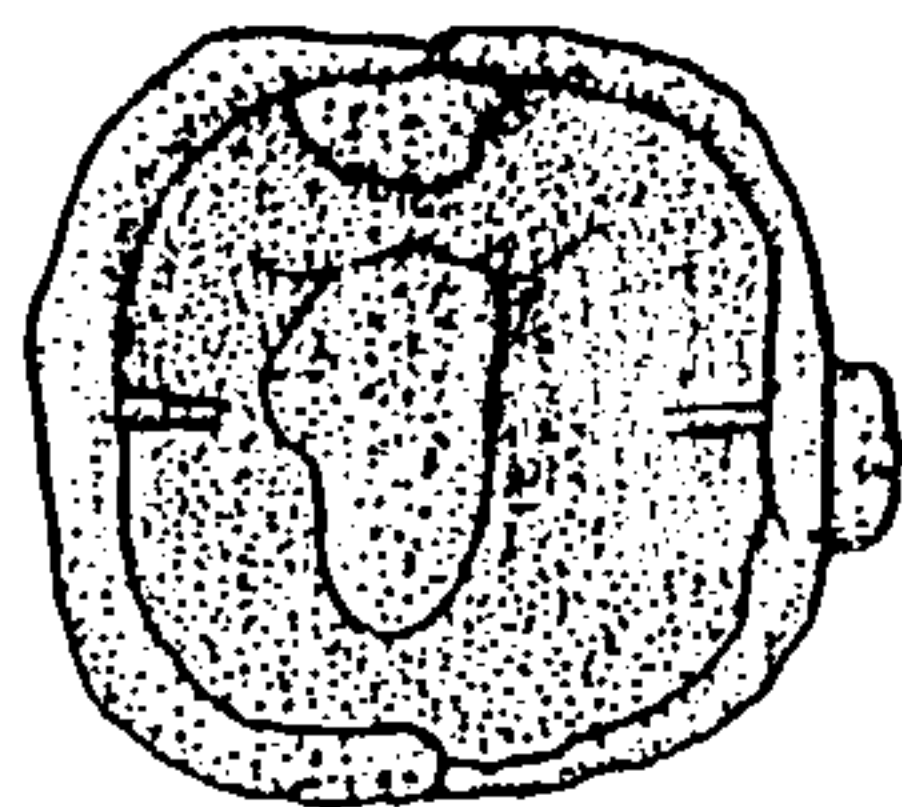


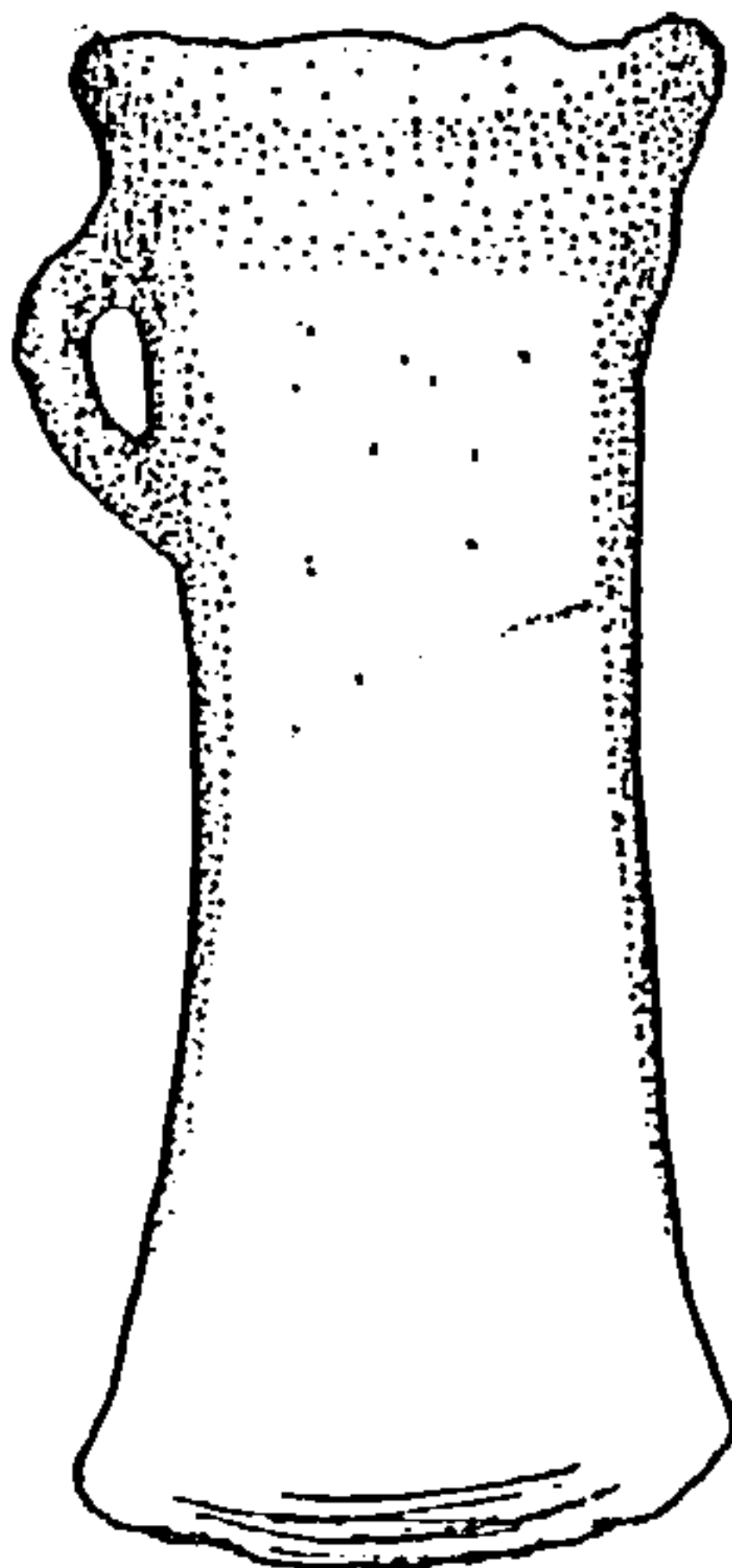
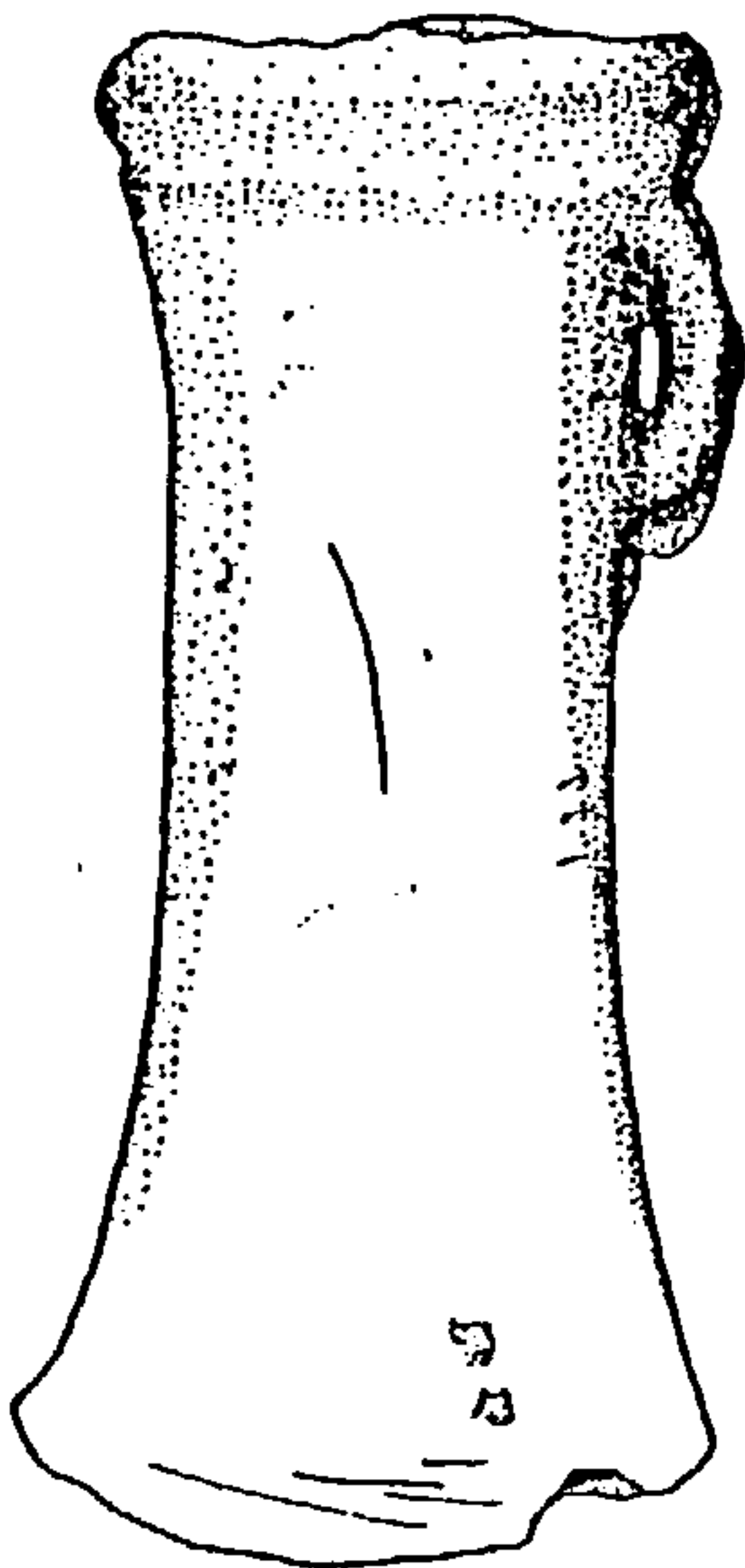
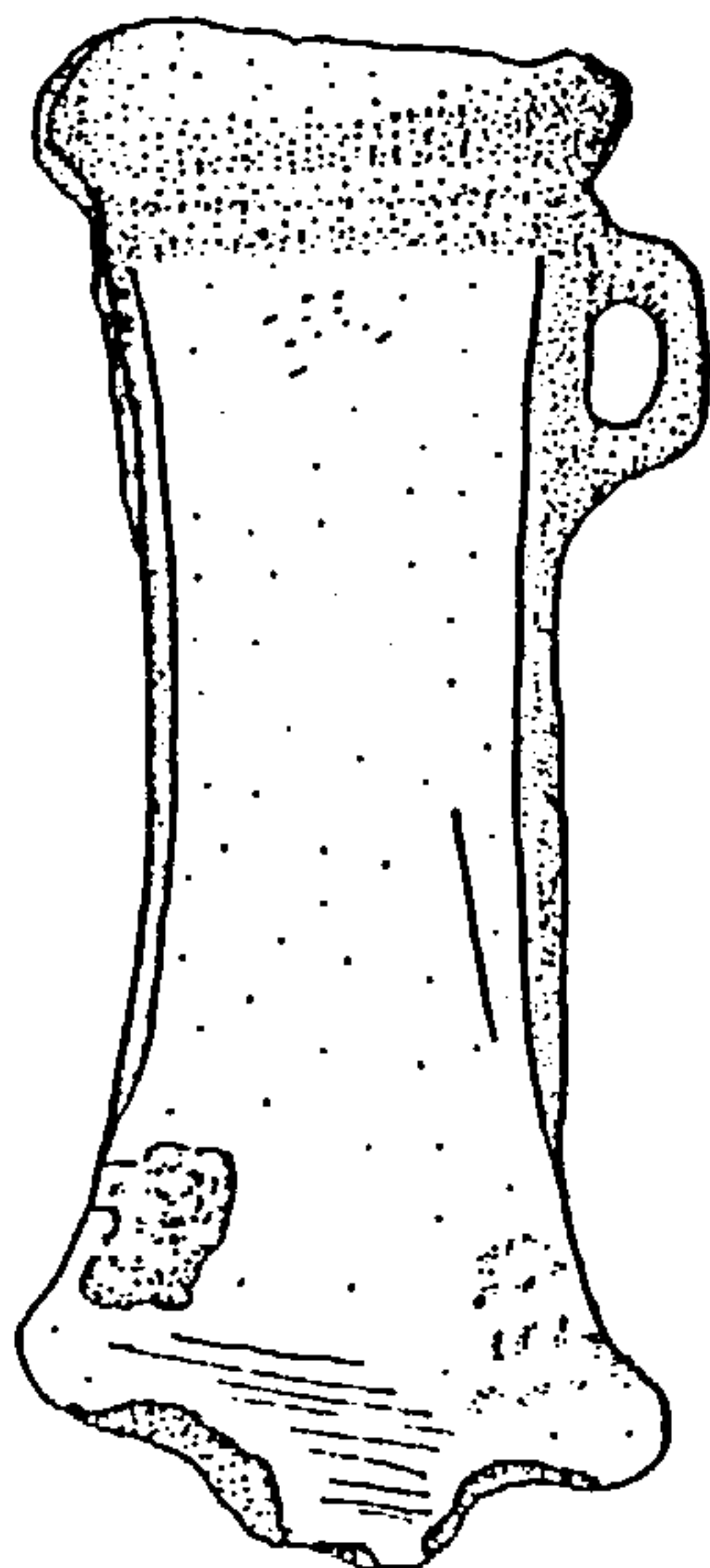
Fig. 42: The Leigh II Hoard (Ref. No. 05): Socketed Axes (ii)

05/12

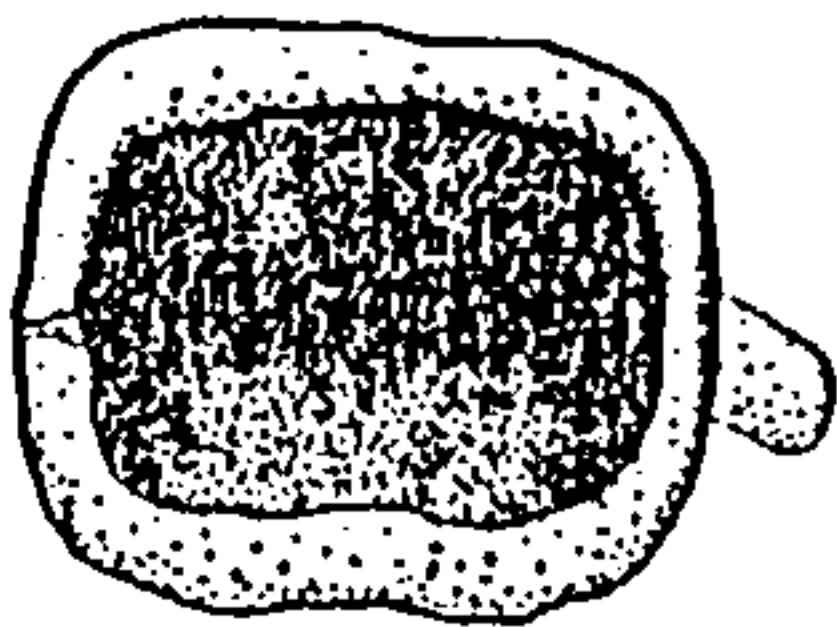
05/13



05/14



05/15



0 2cm

05/16

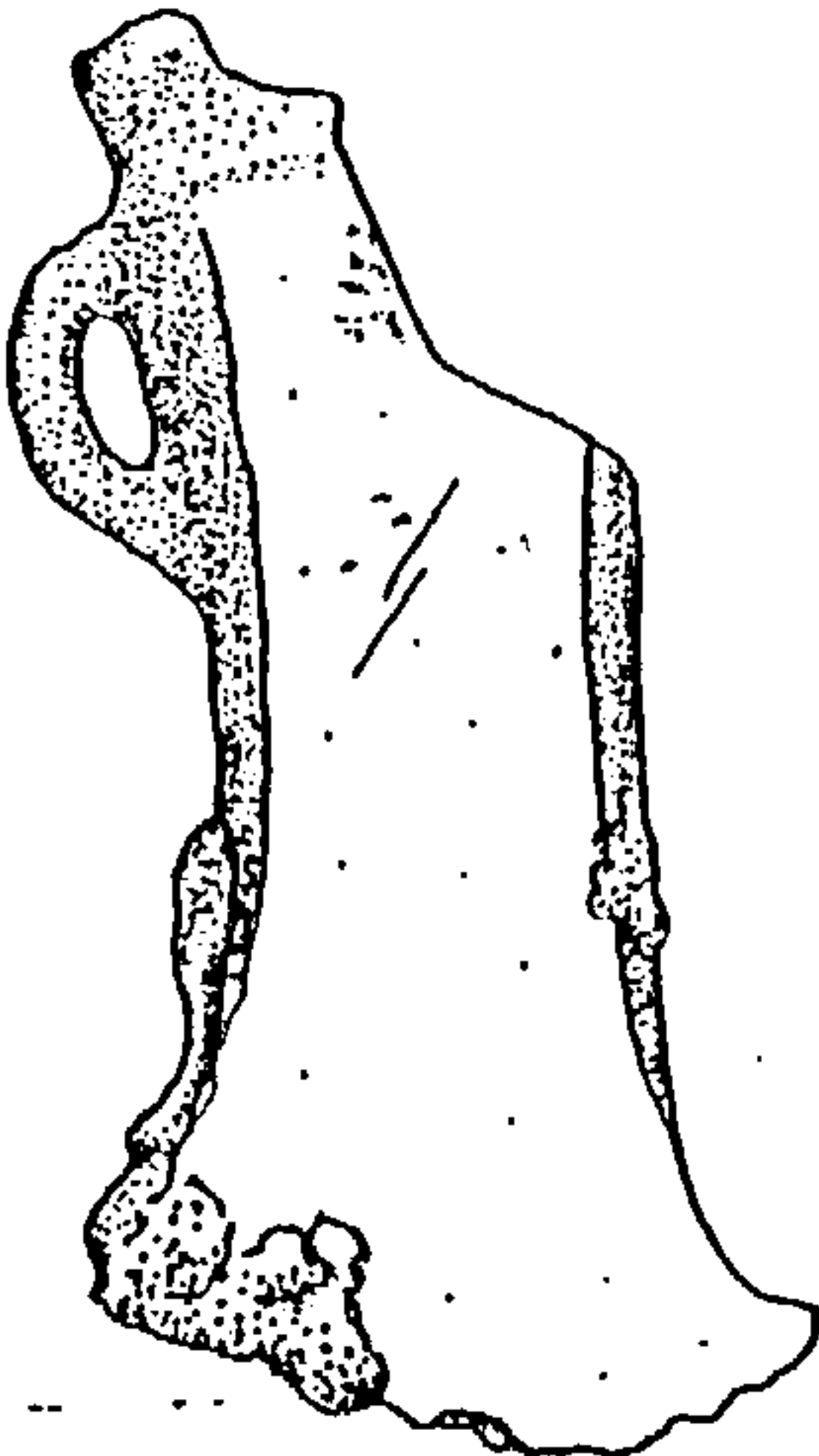
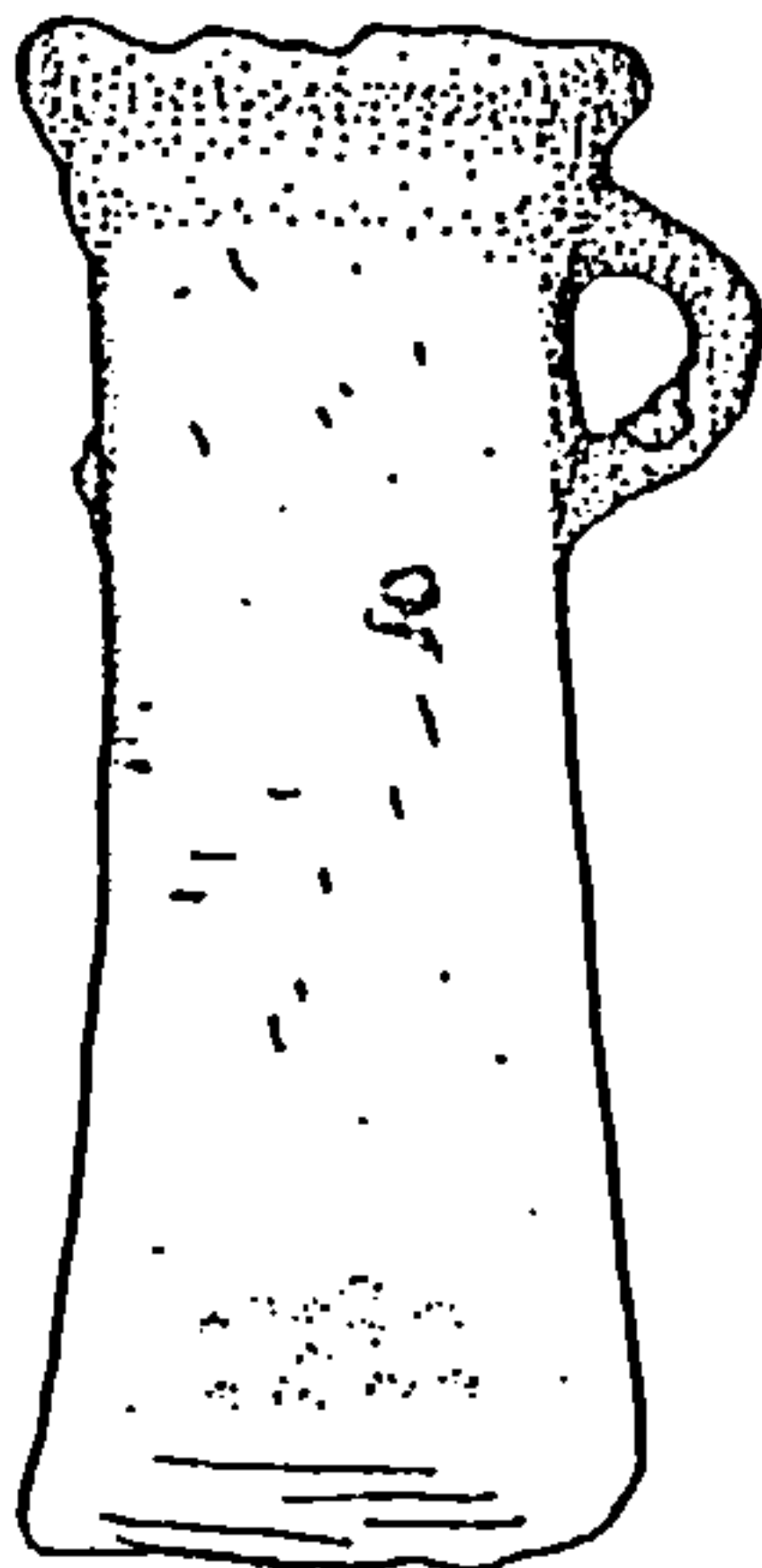
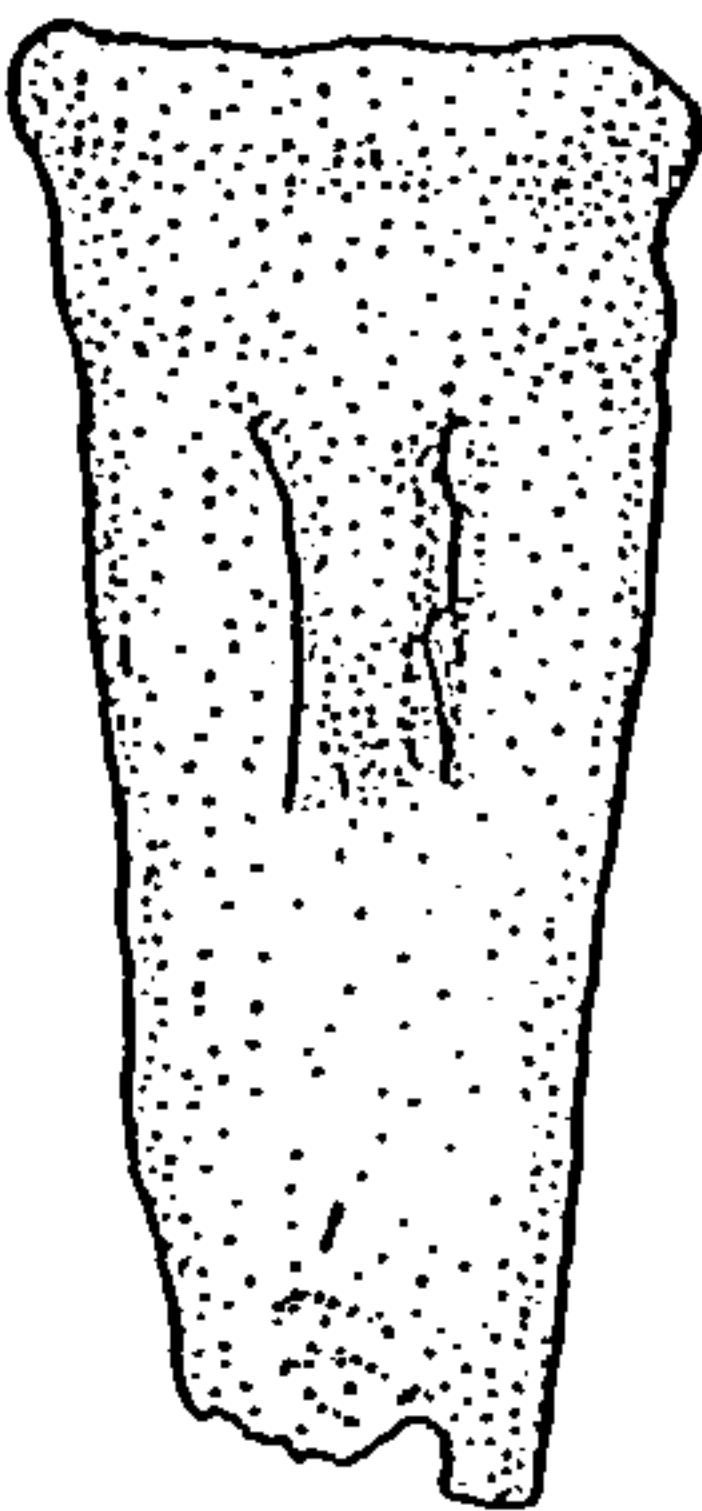
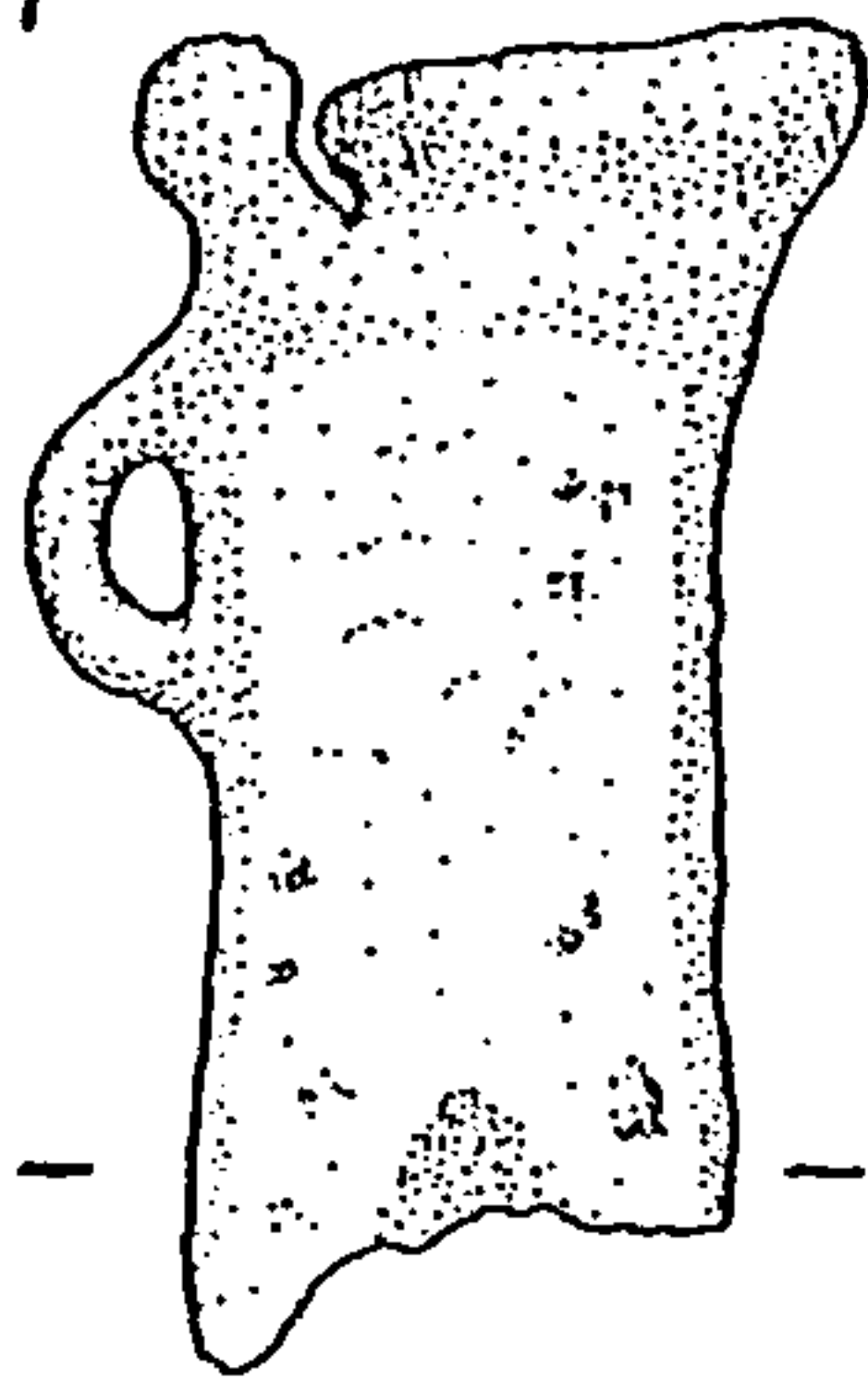
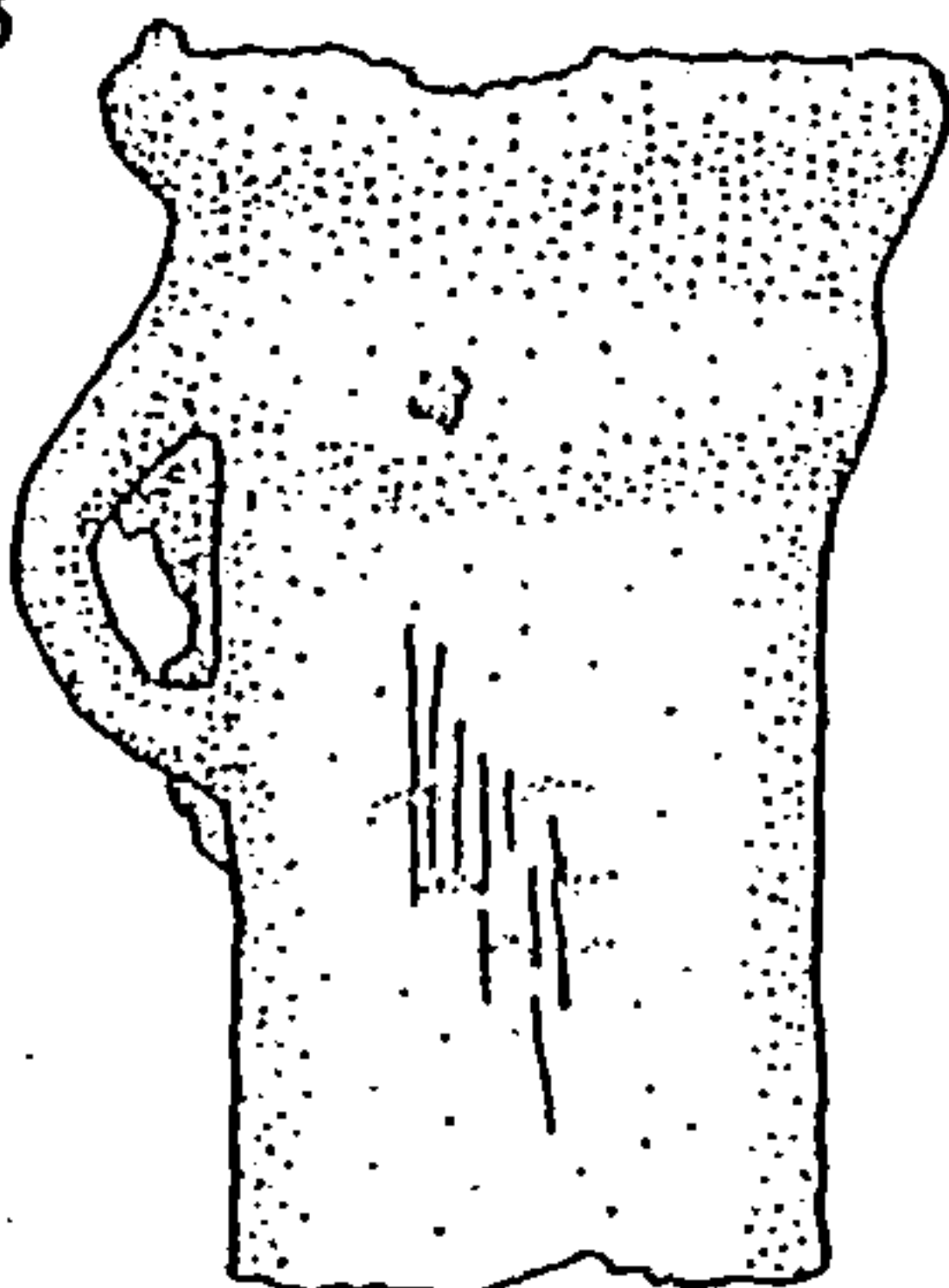


Fig. 43: The Leigh II Hoard (Ref. No. 05): Socketed Axes (iii)

05/17

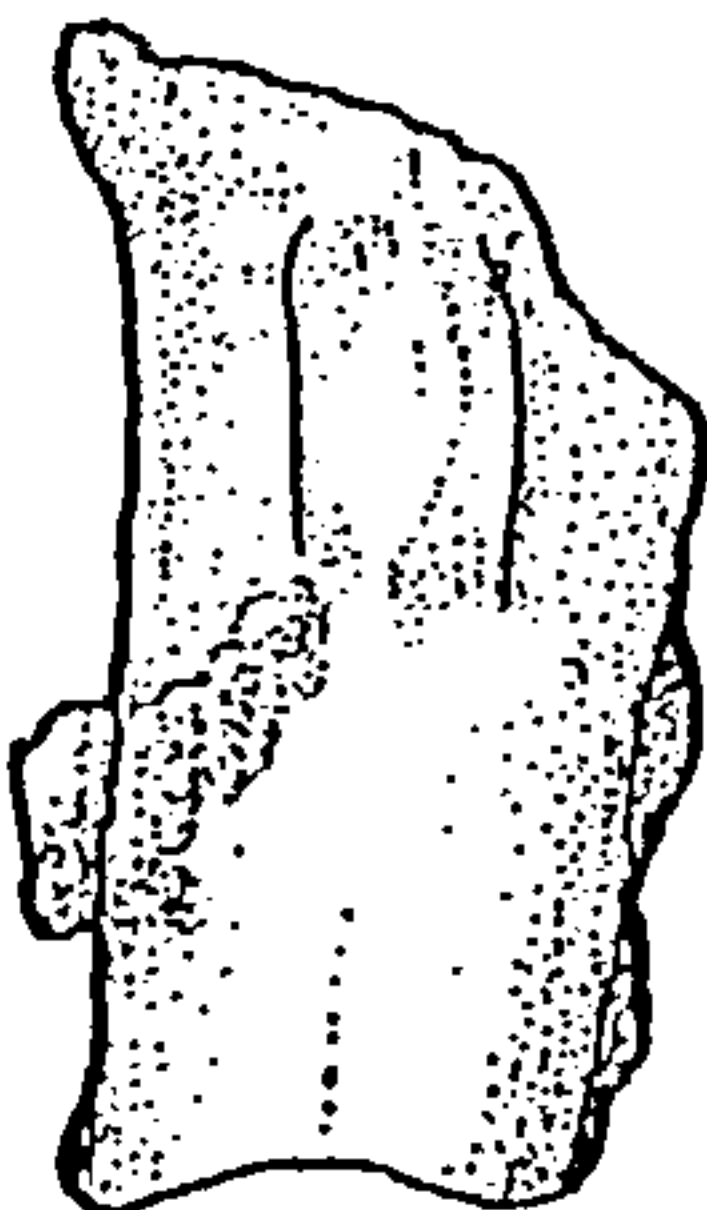
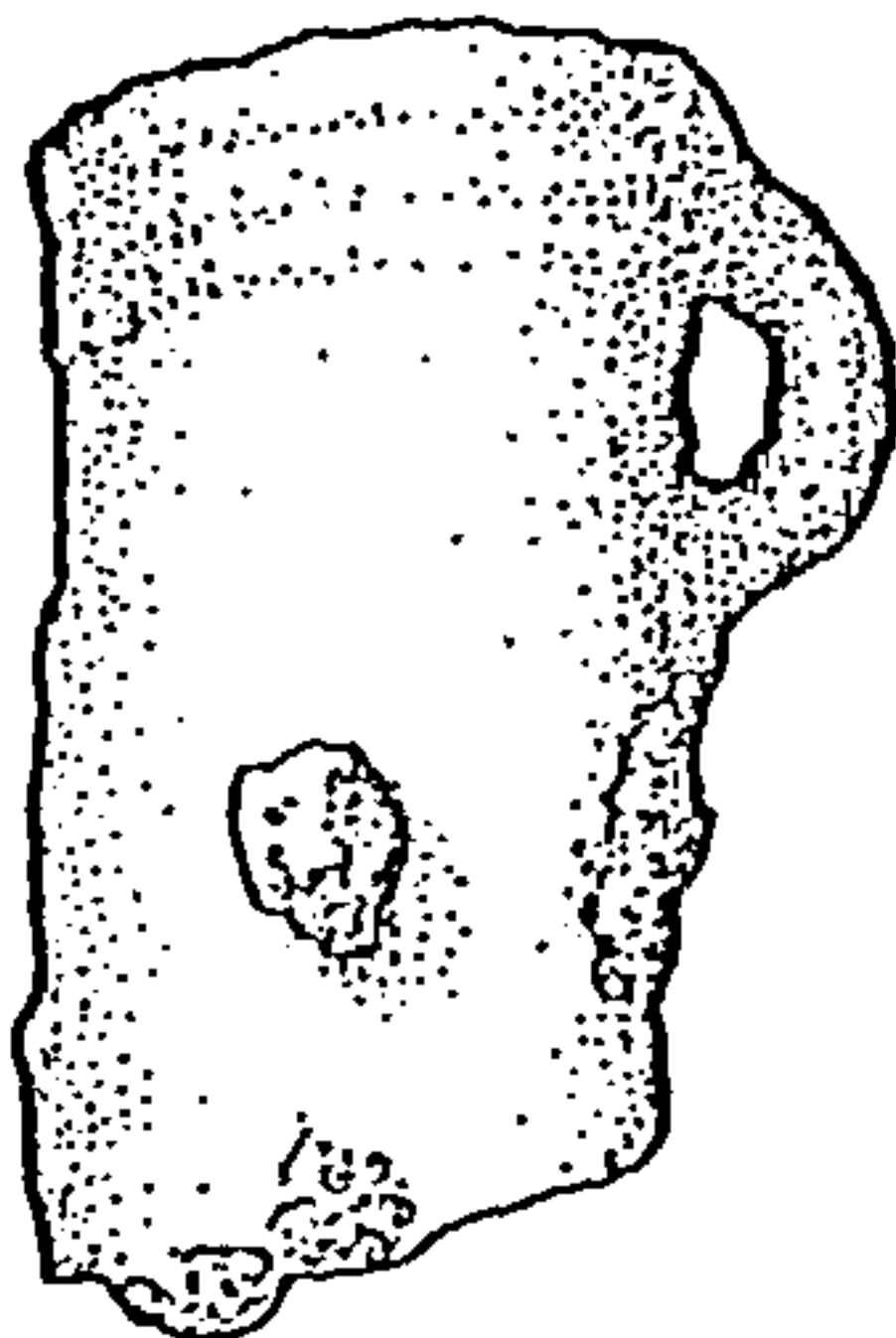


05/18

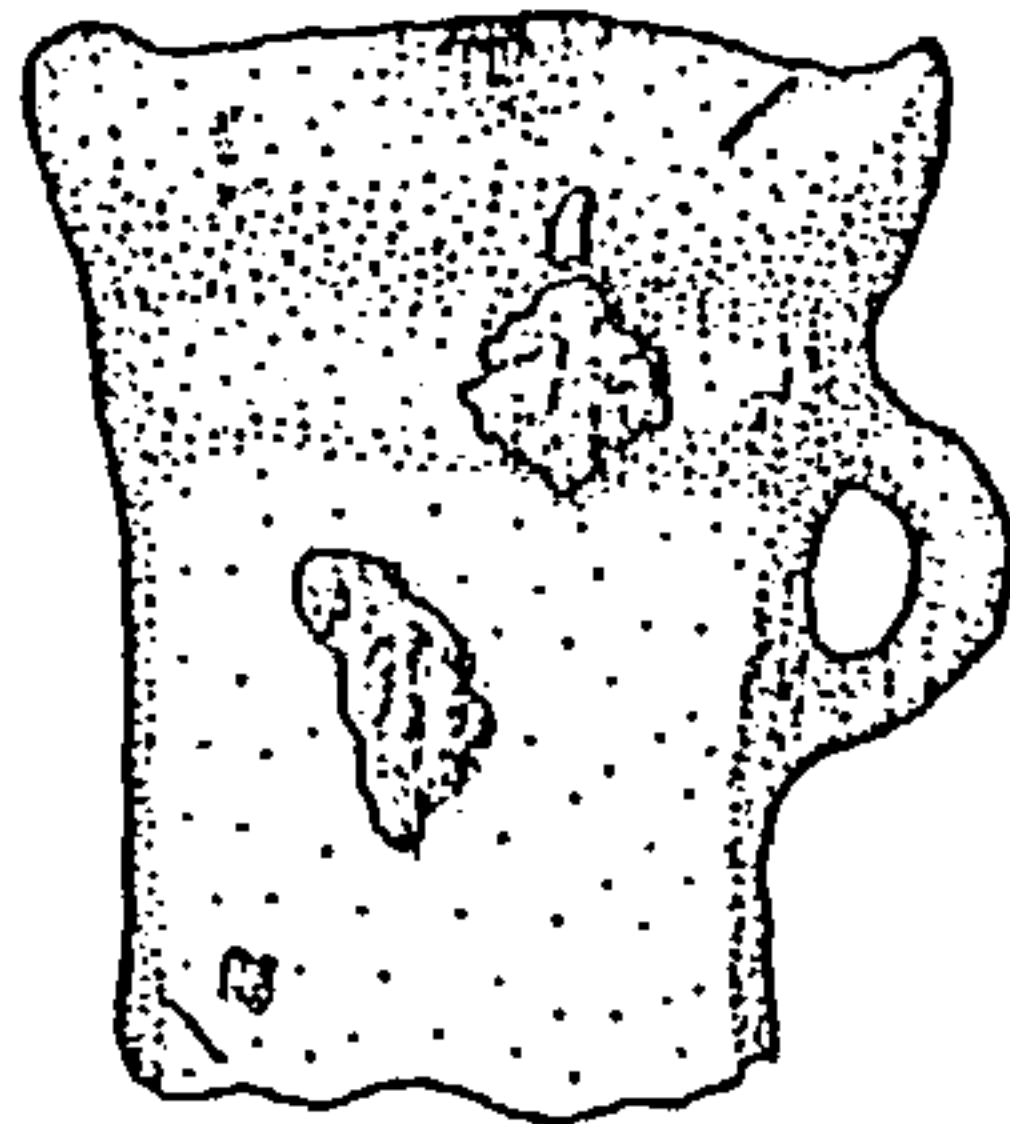
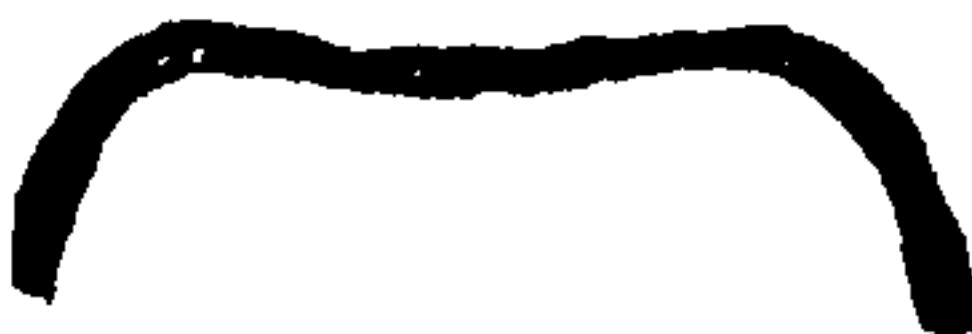


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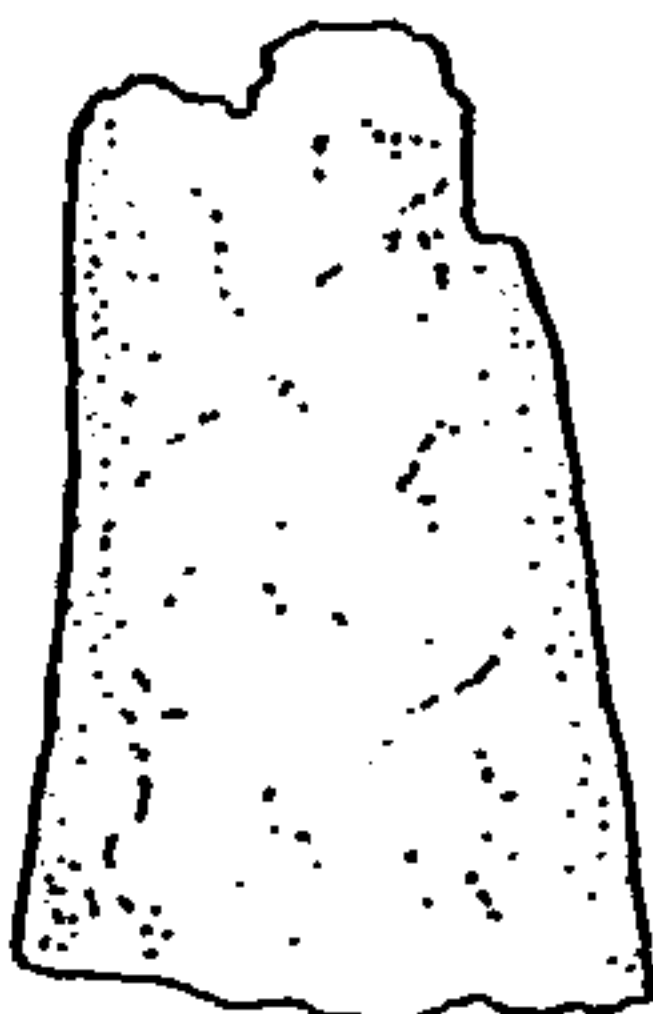
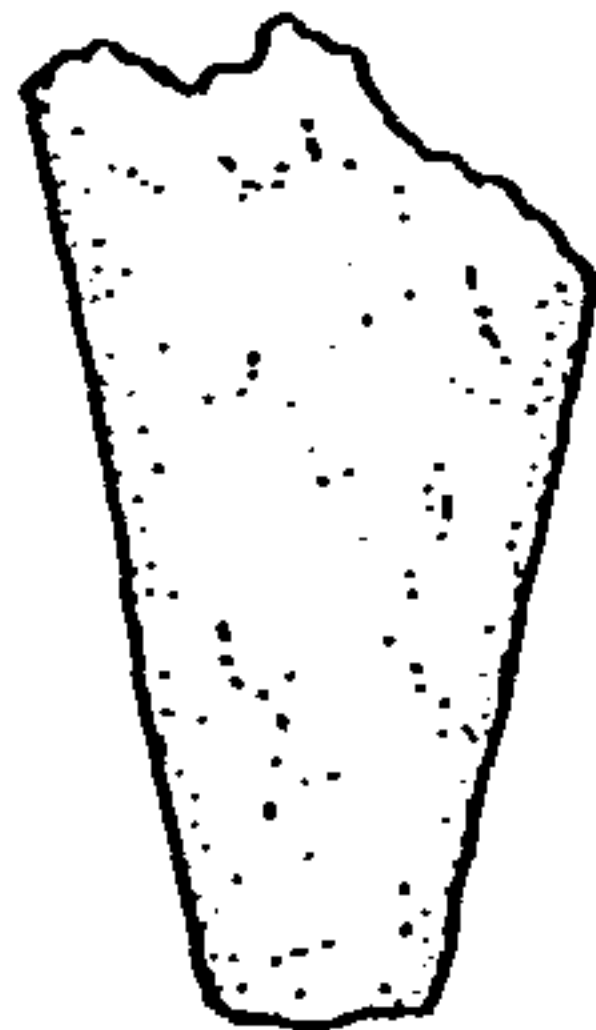
05/19



05/20



05/21



05/22

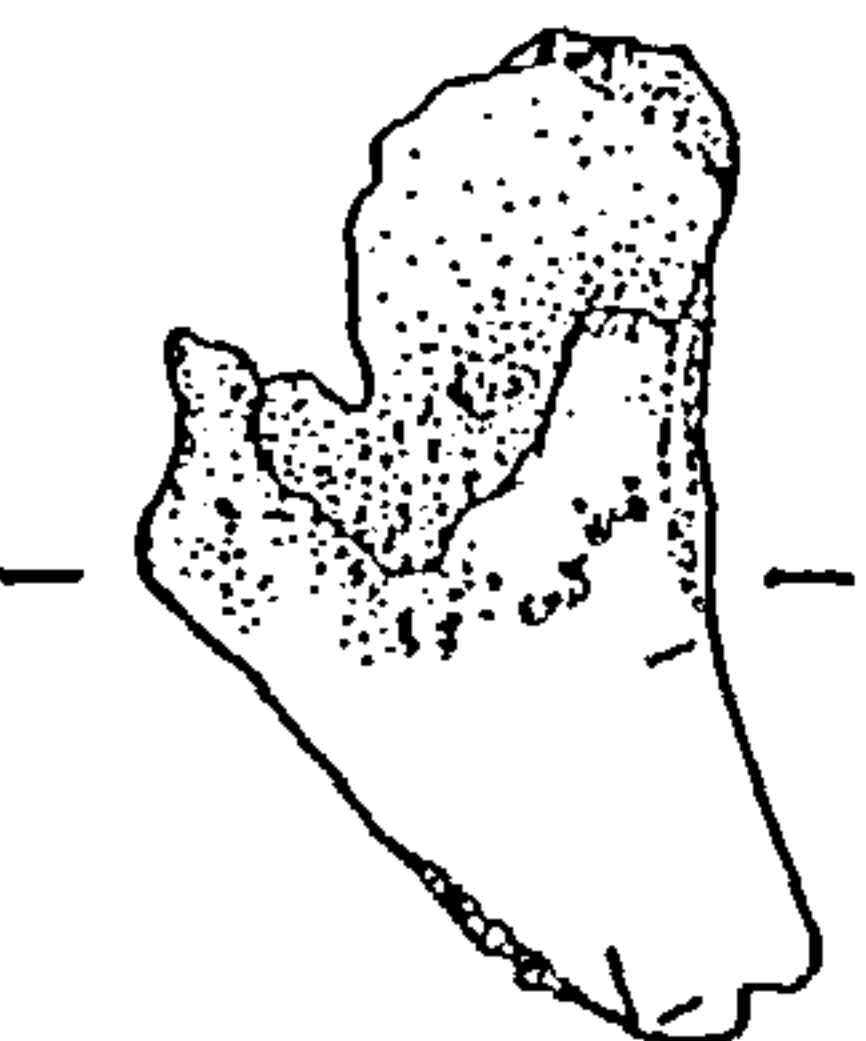


Fig. 44: The Leigh II Hoard (Ref. No. 05): Socketed Axe Fragments (i)

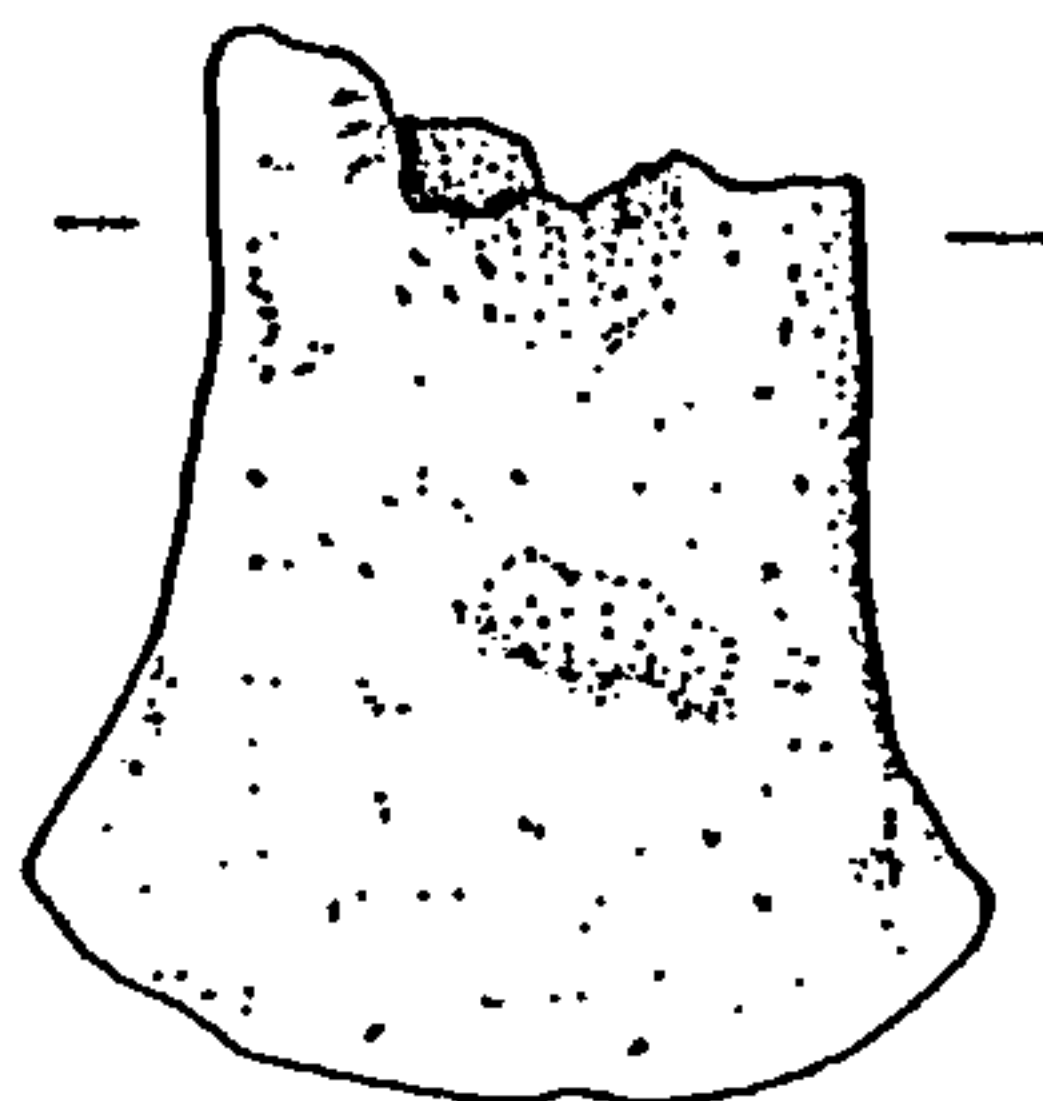
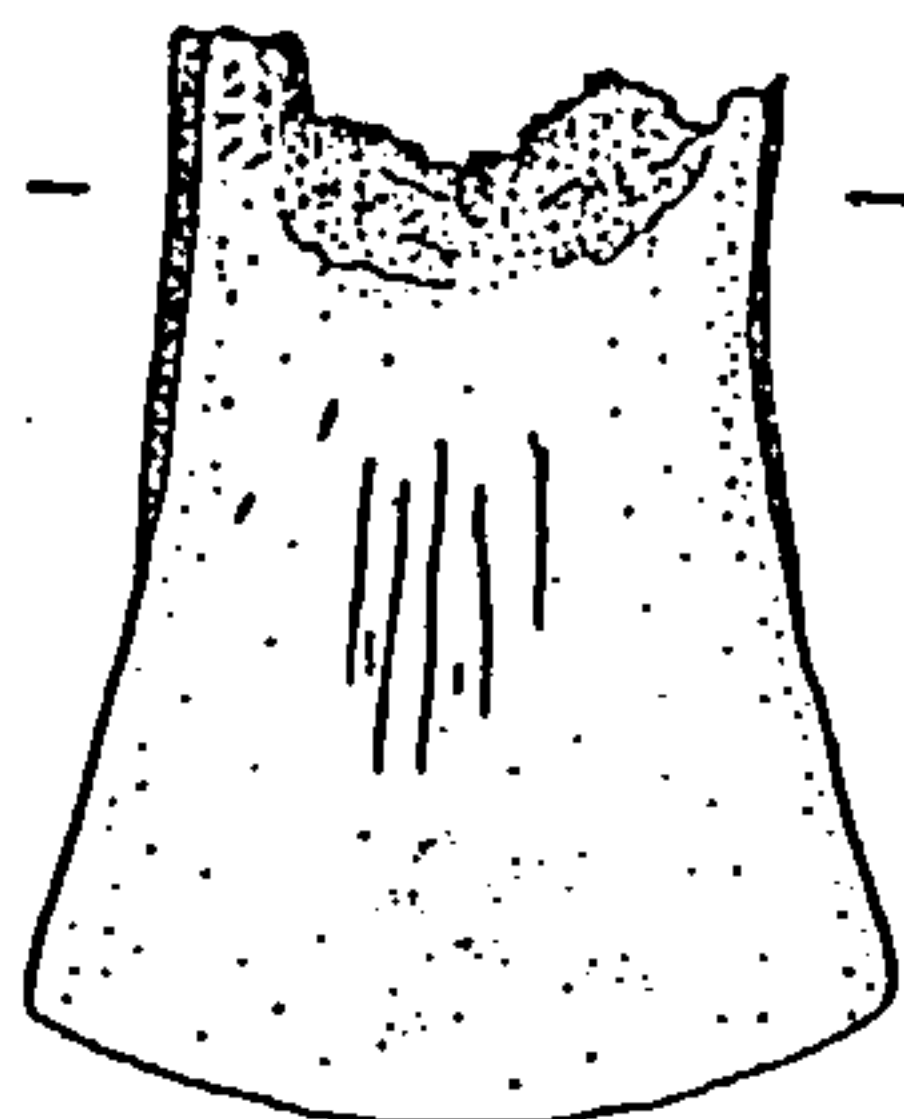
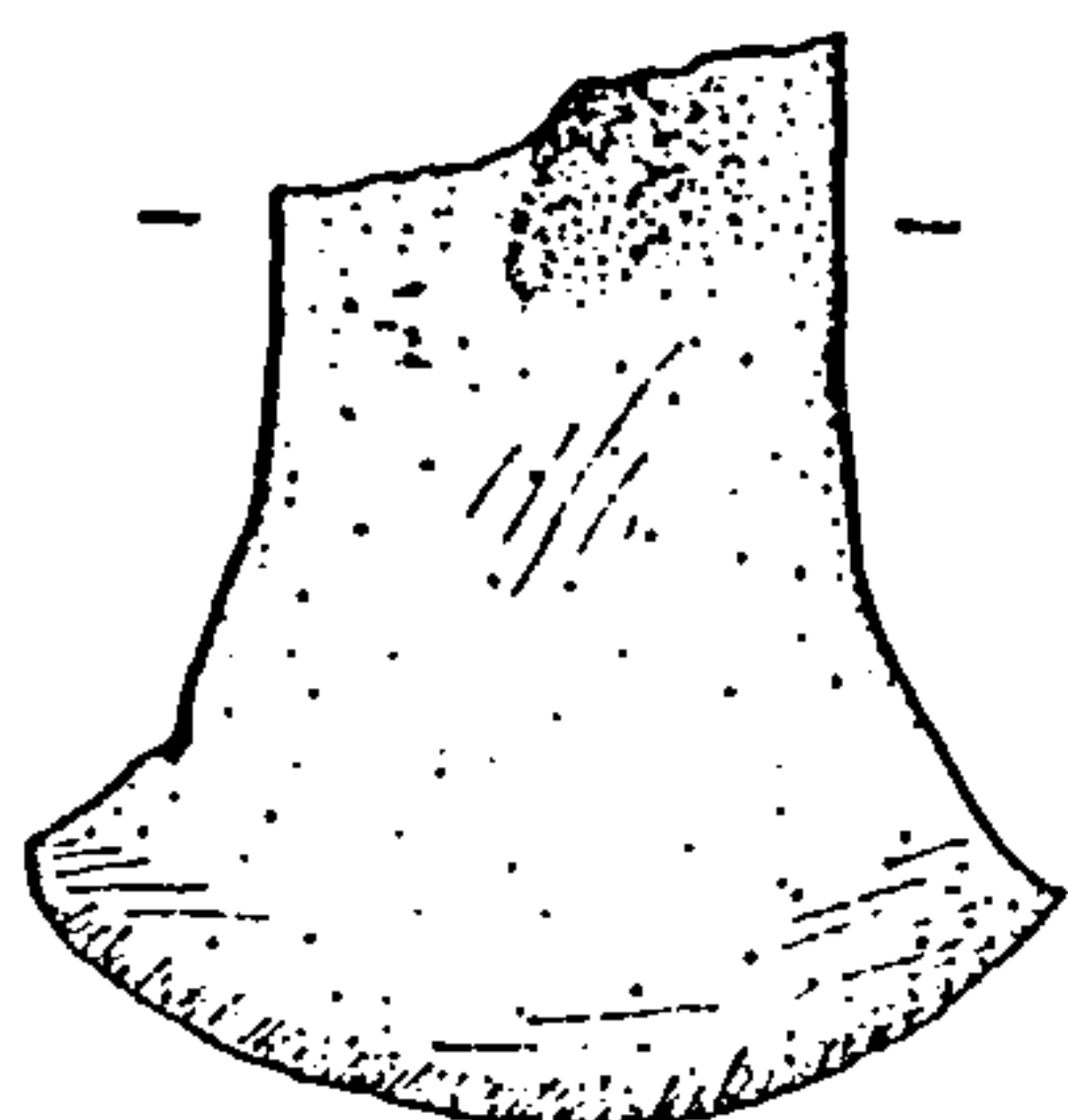
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05/24



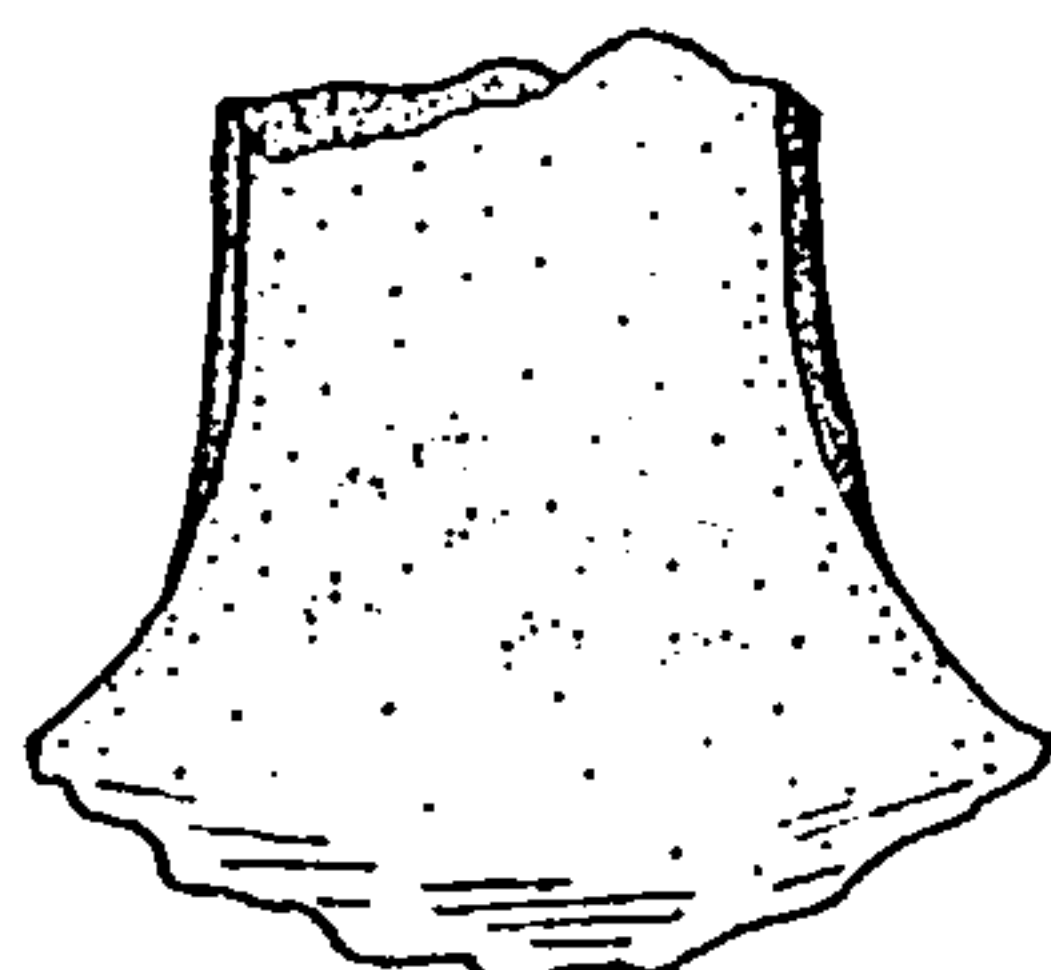
05/25



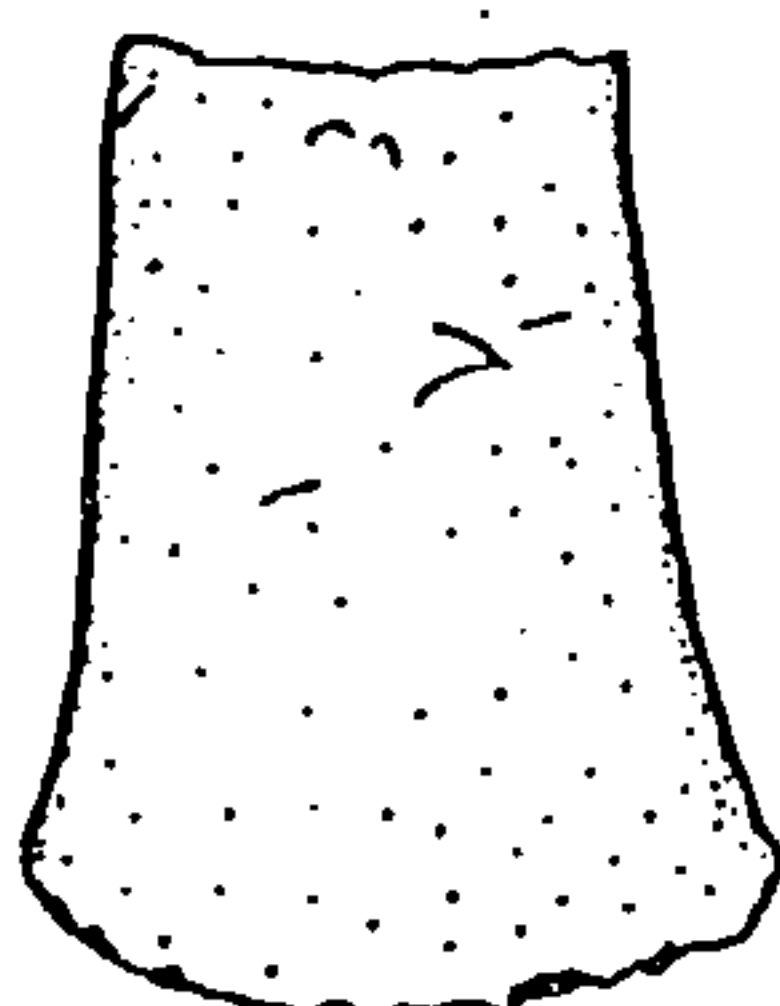
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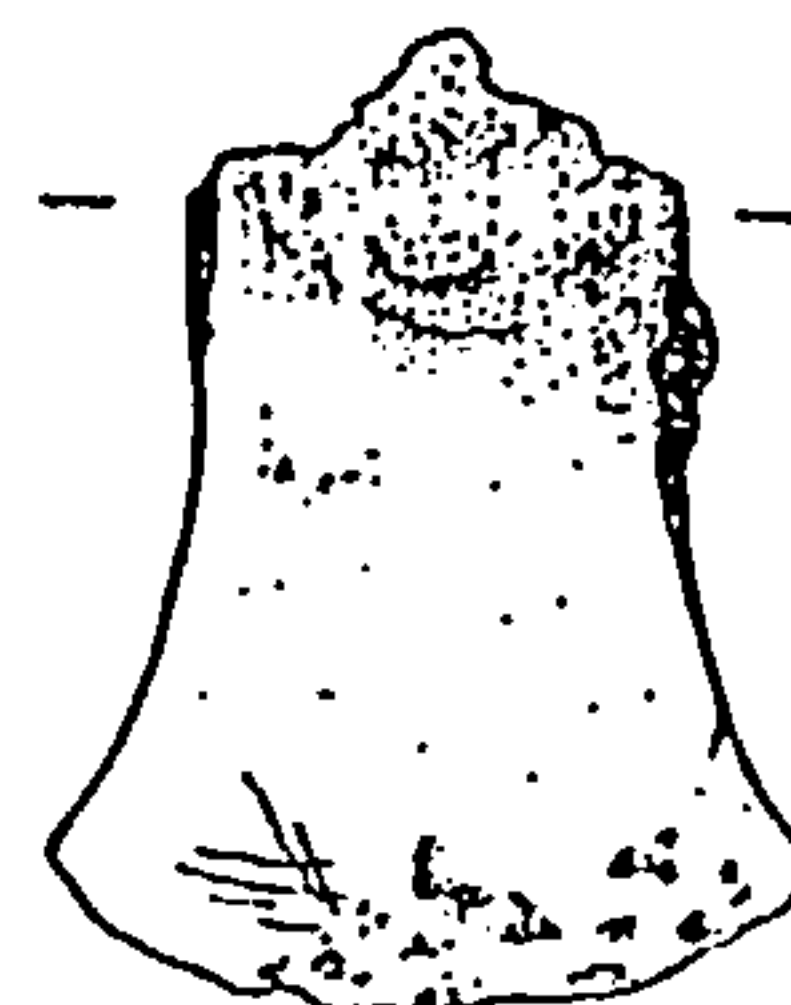
05/26



05/27



05/28



05/29

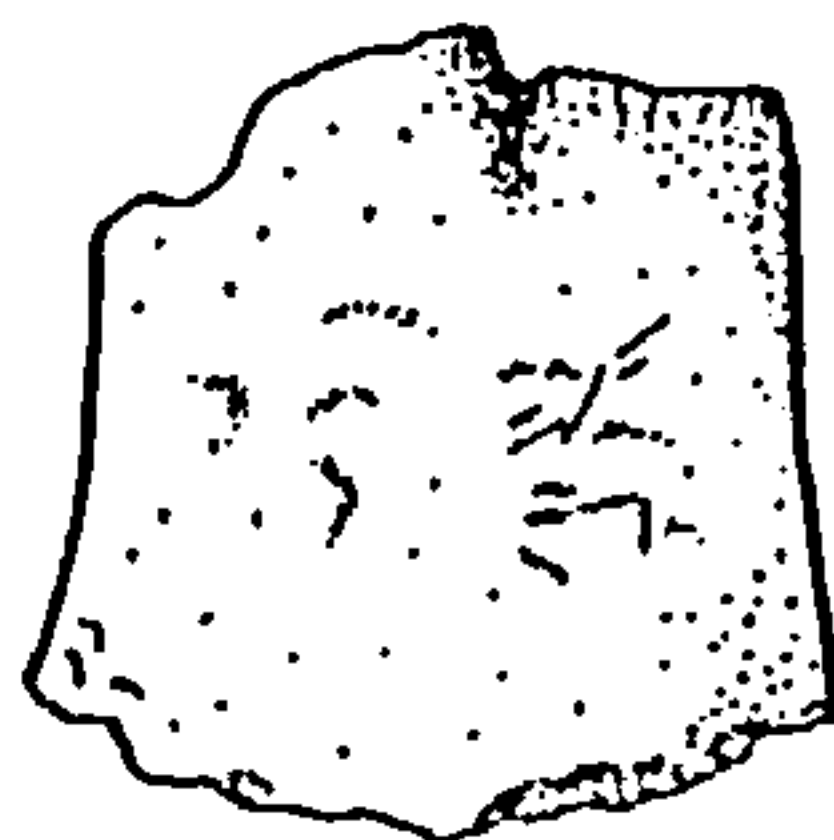
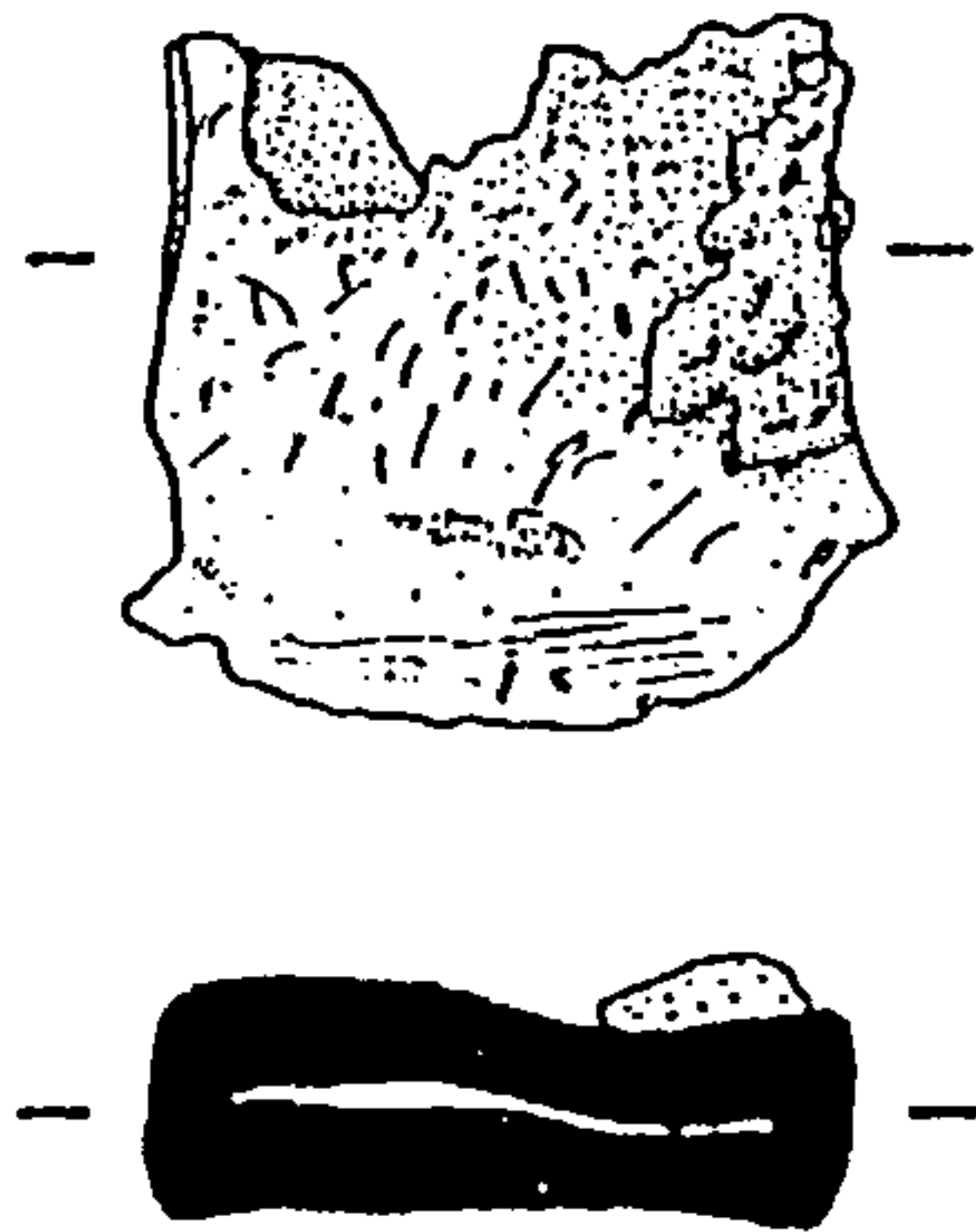
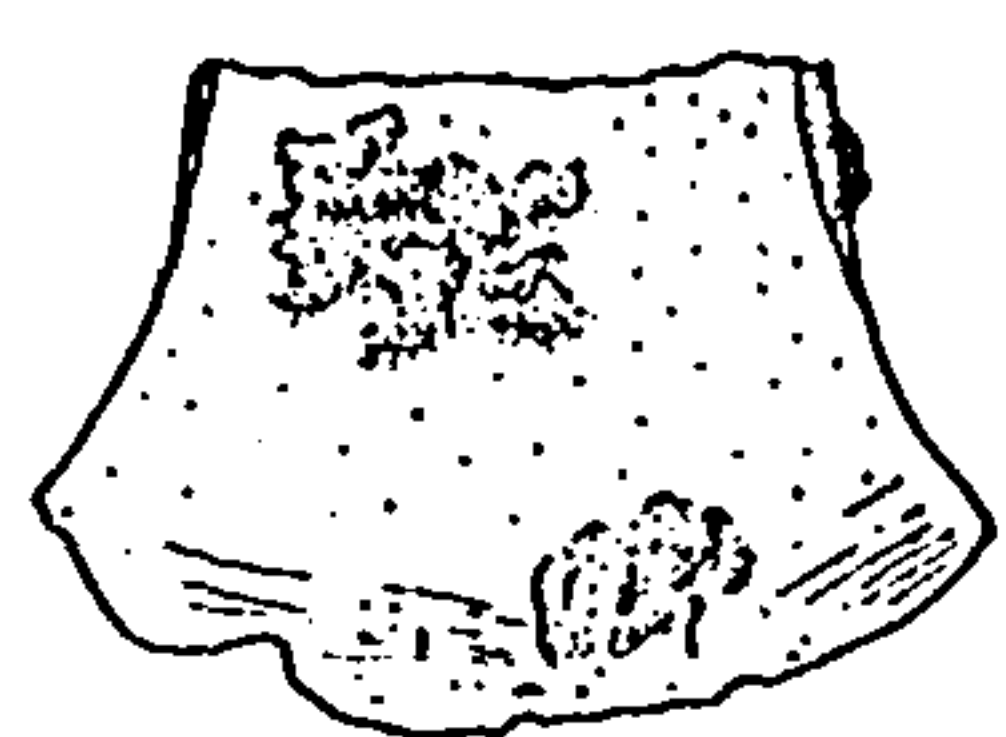


Fig. 45: The Leigh II Hoard (Ref. No. 05): Socketed Axe Fragments (ii)

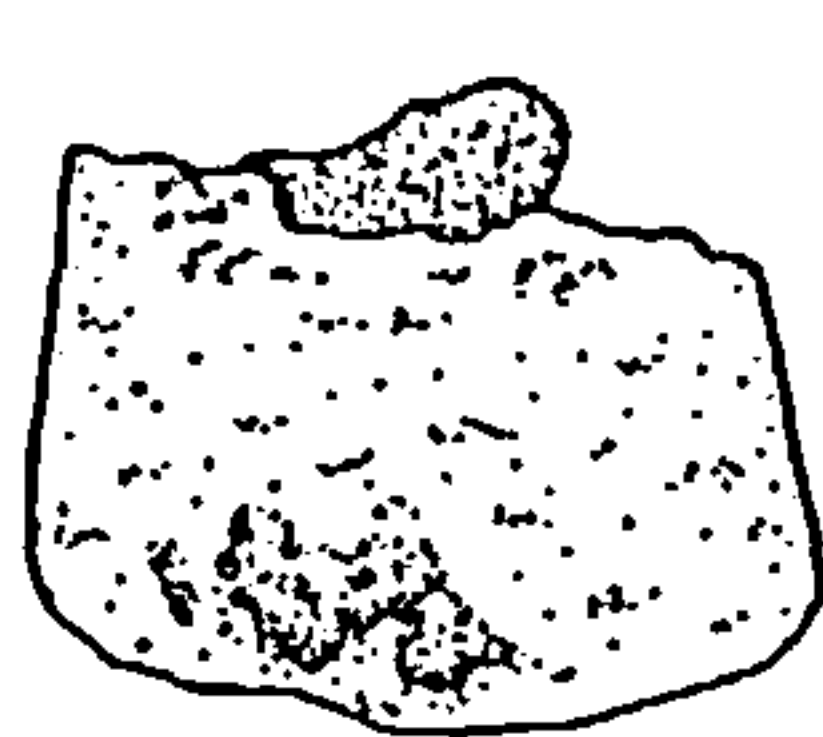
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05/31



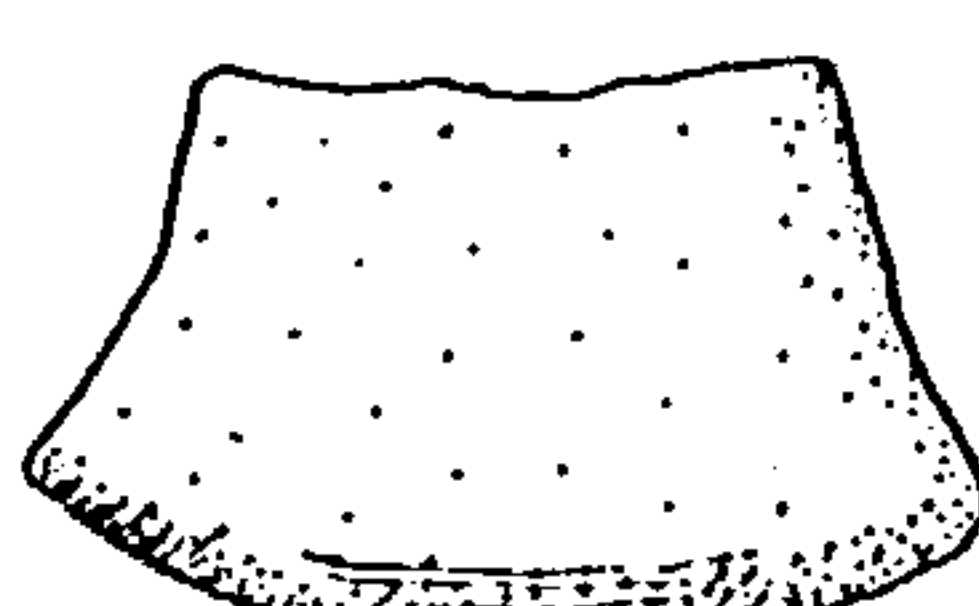
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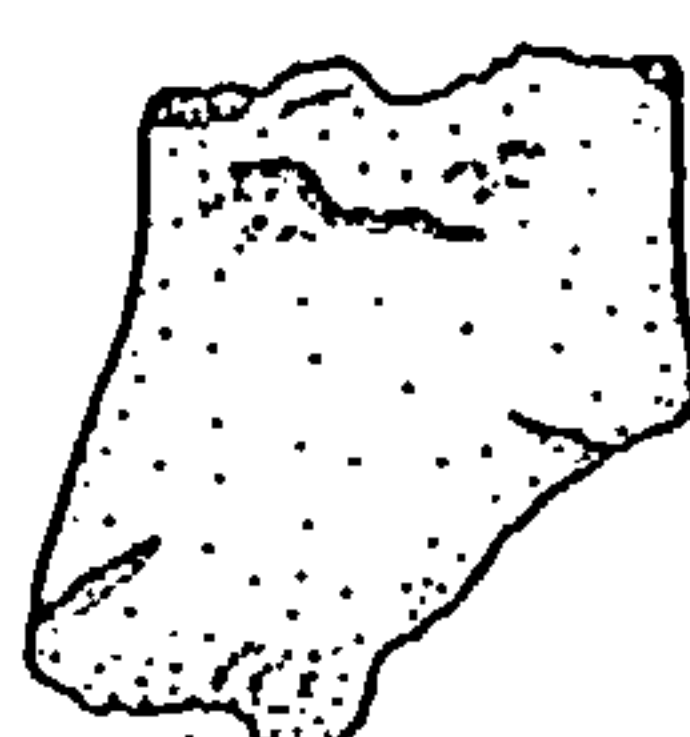
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05/34



05/35



05/36



05/37



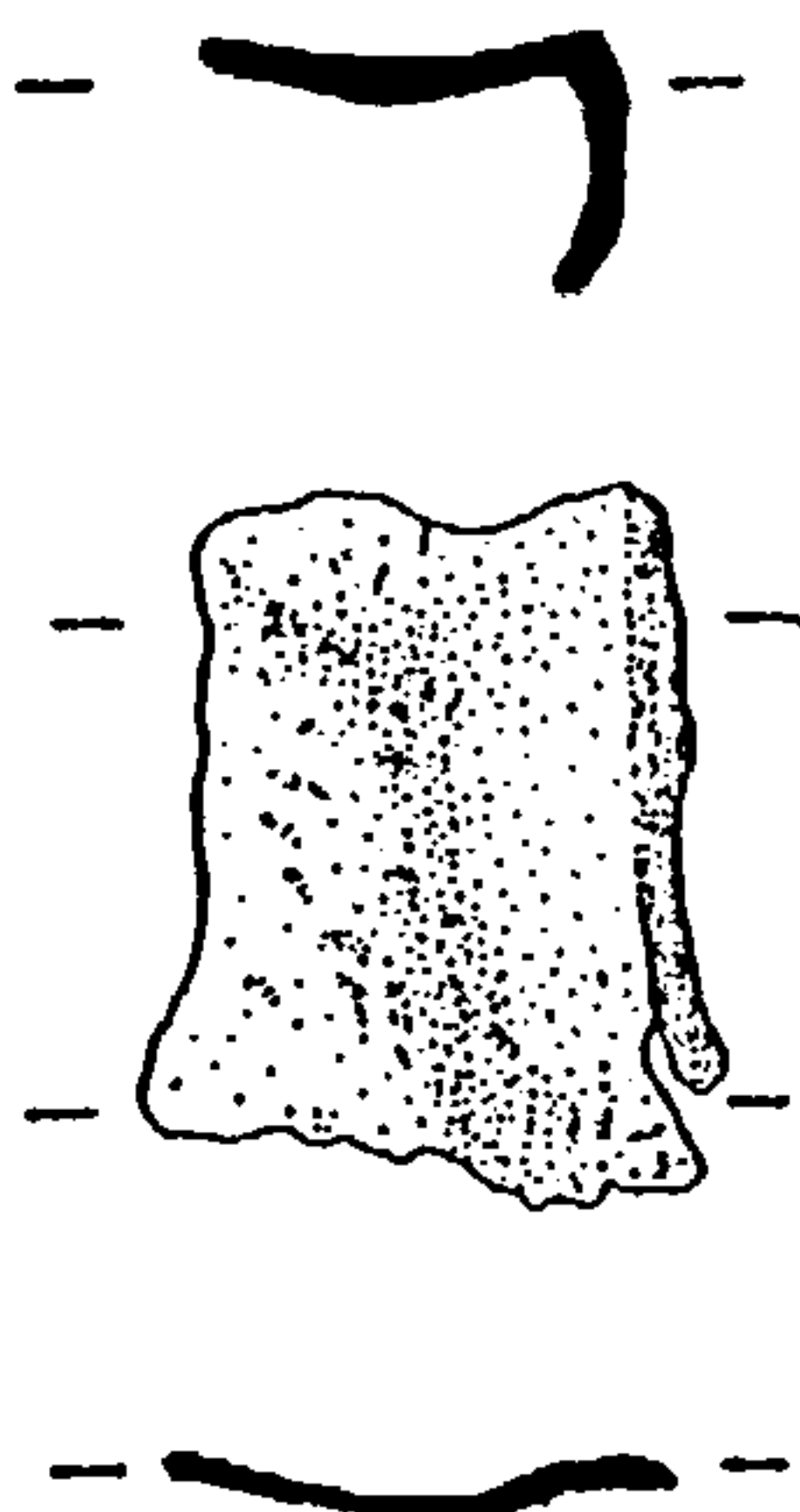
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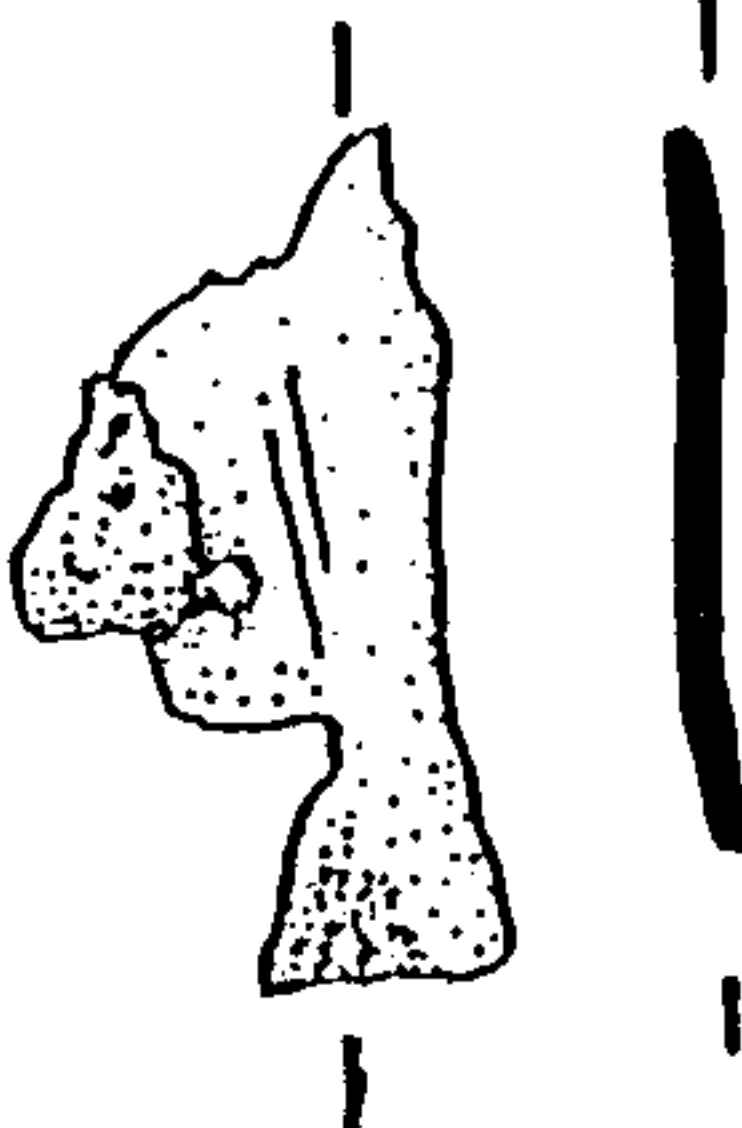
 Rough Metal/Corrosion Product

Fig. 46: The Leigh II Hoard (Ref. No. 05): Socketed Axe Fragments (iii)

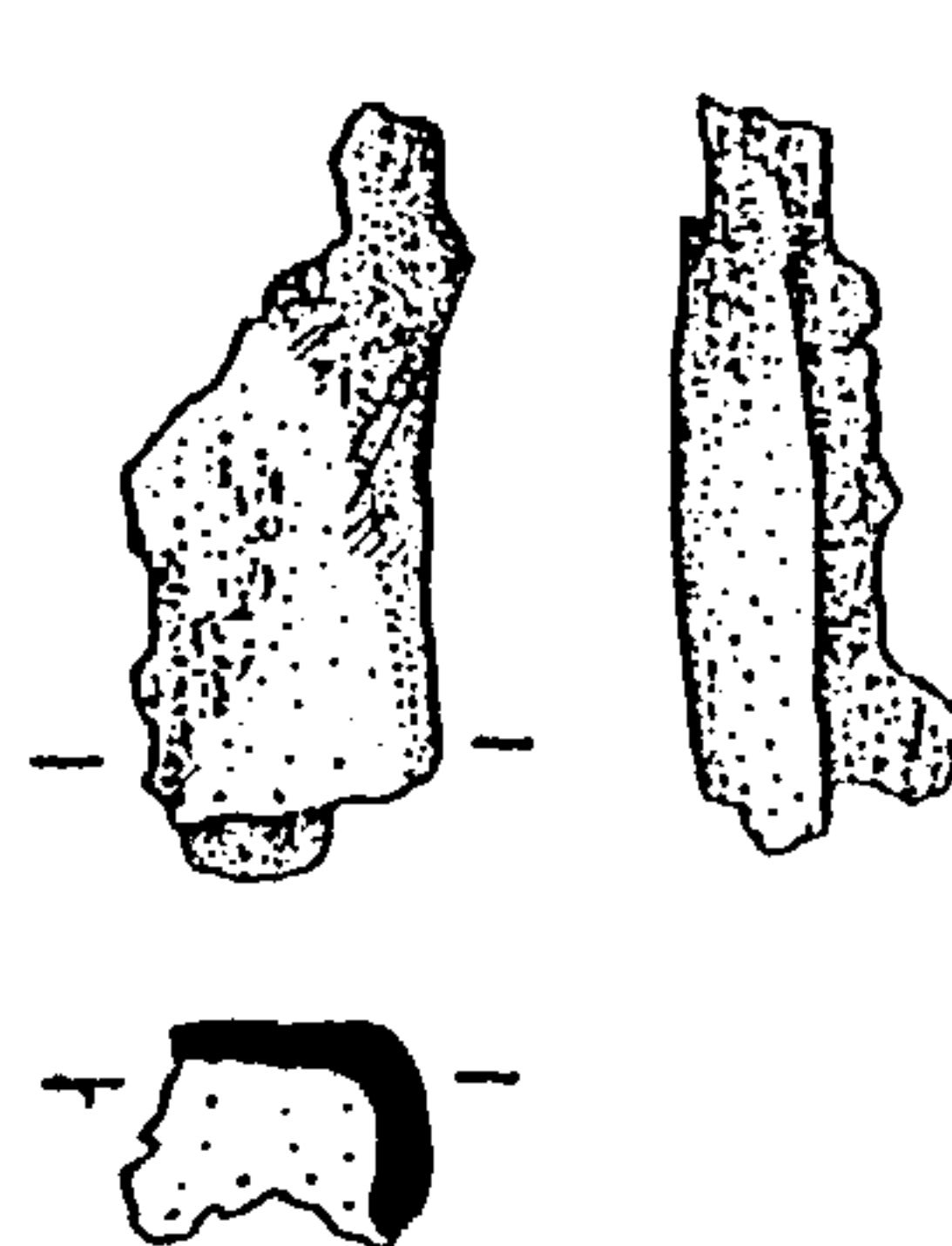
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05/40



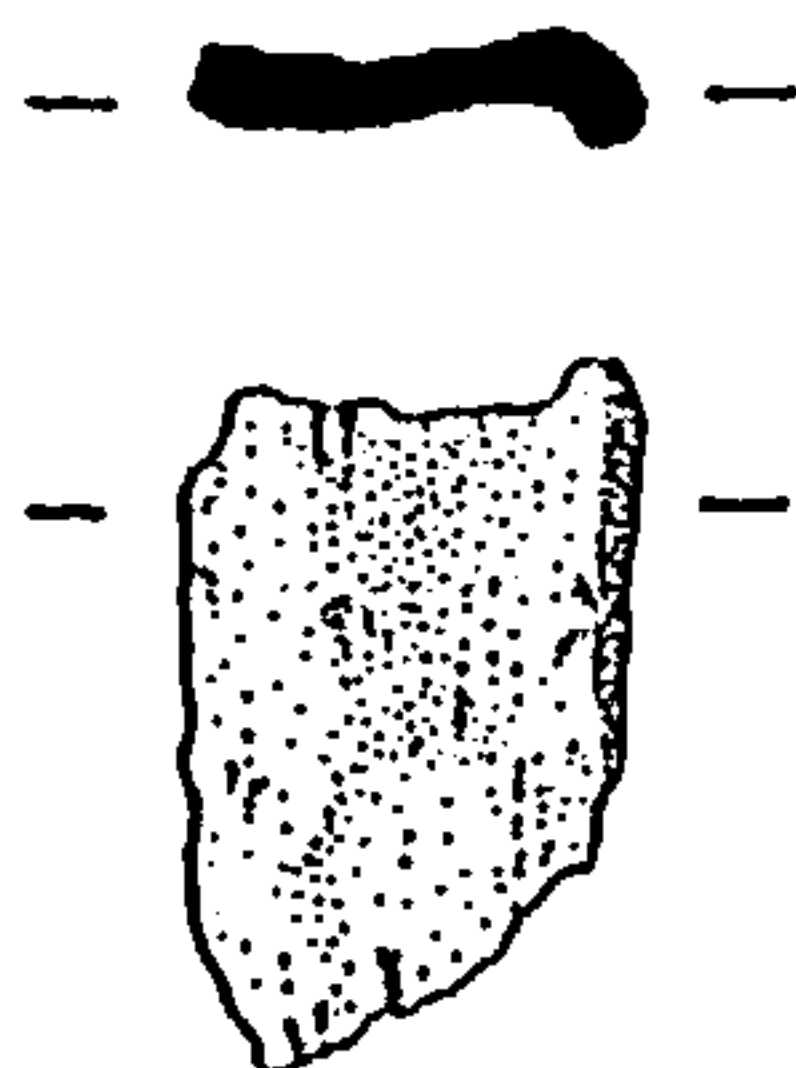
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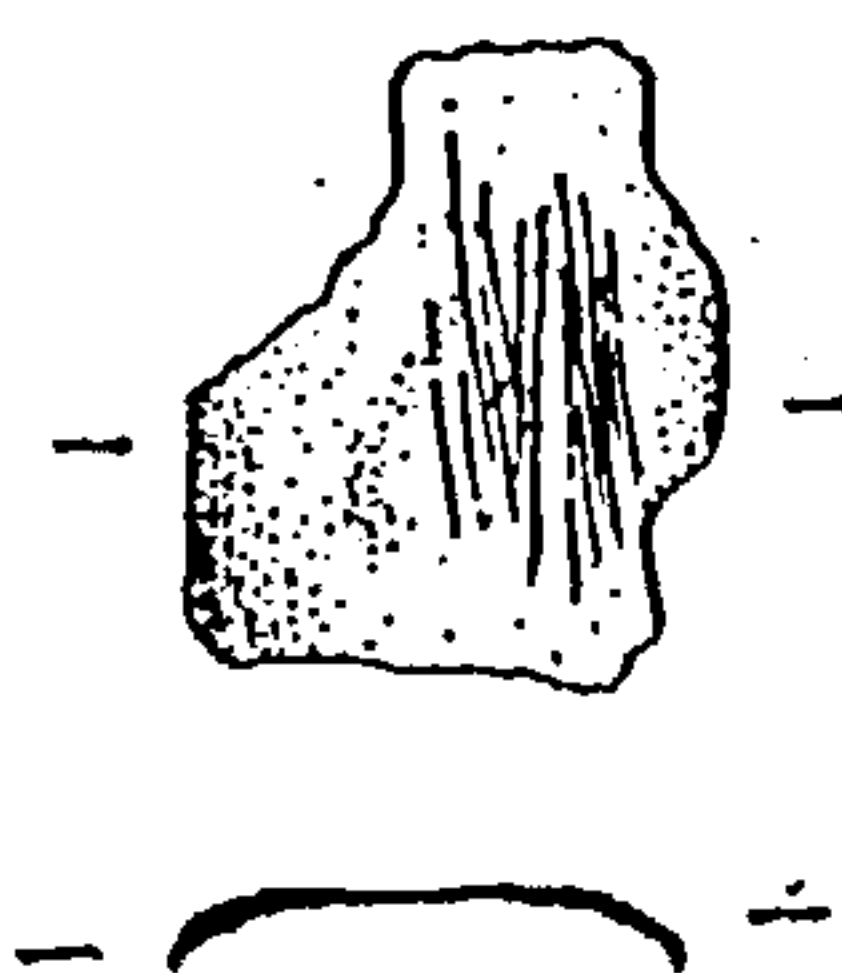
Rough Metal/
Corrosion Product

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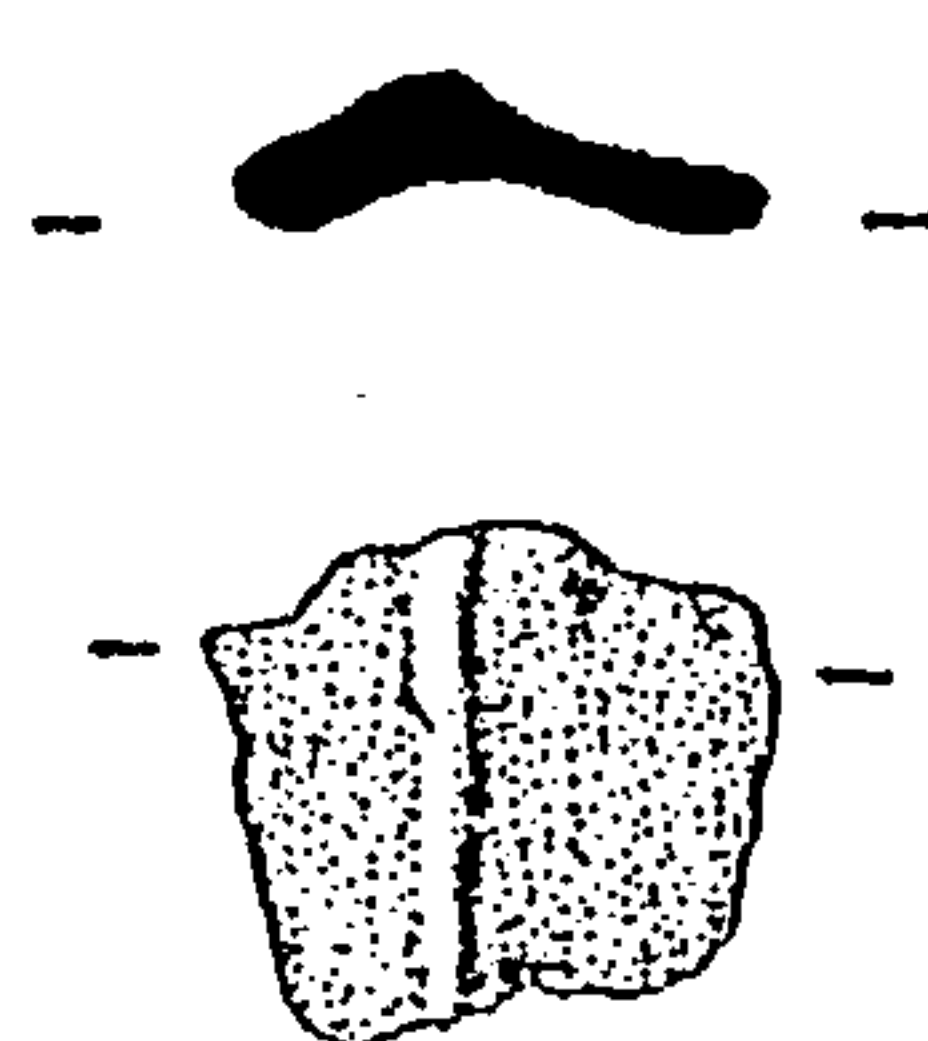
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05/43



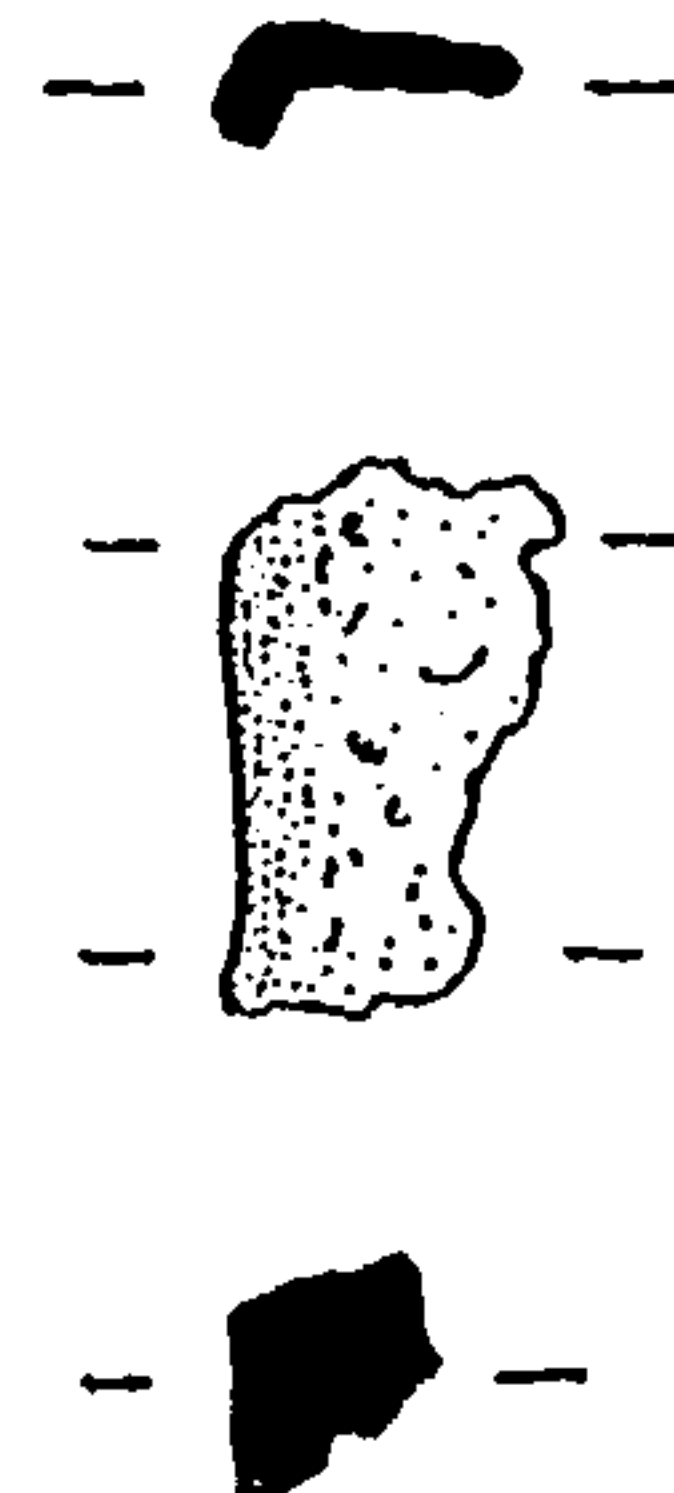
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05/45



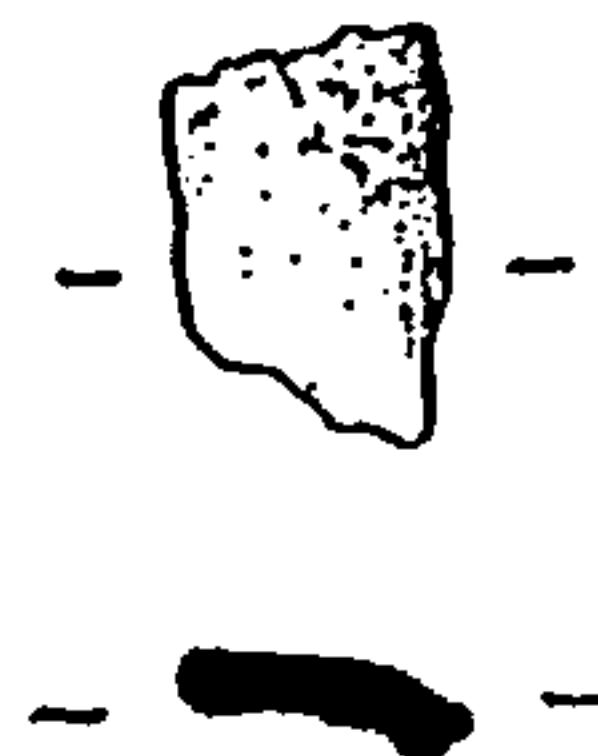
05/46



05/47



05/48



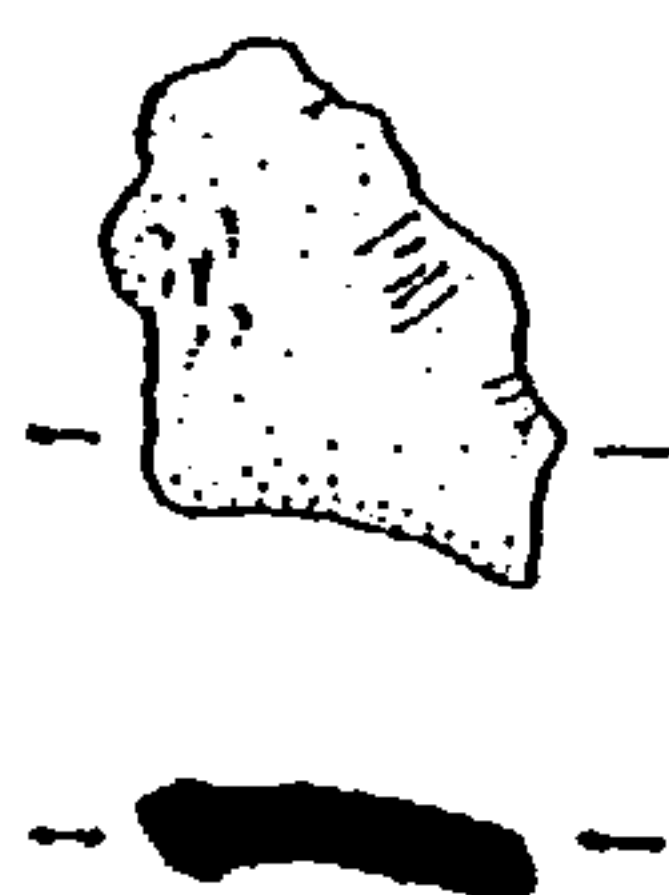
05/49



05/50



05/51



05/52

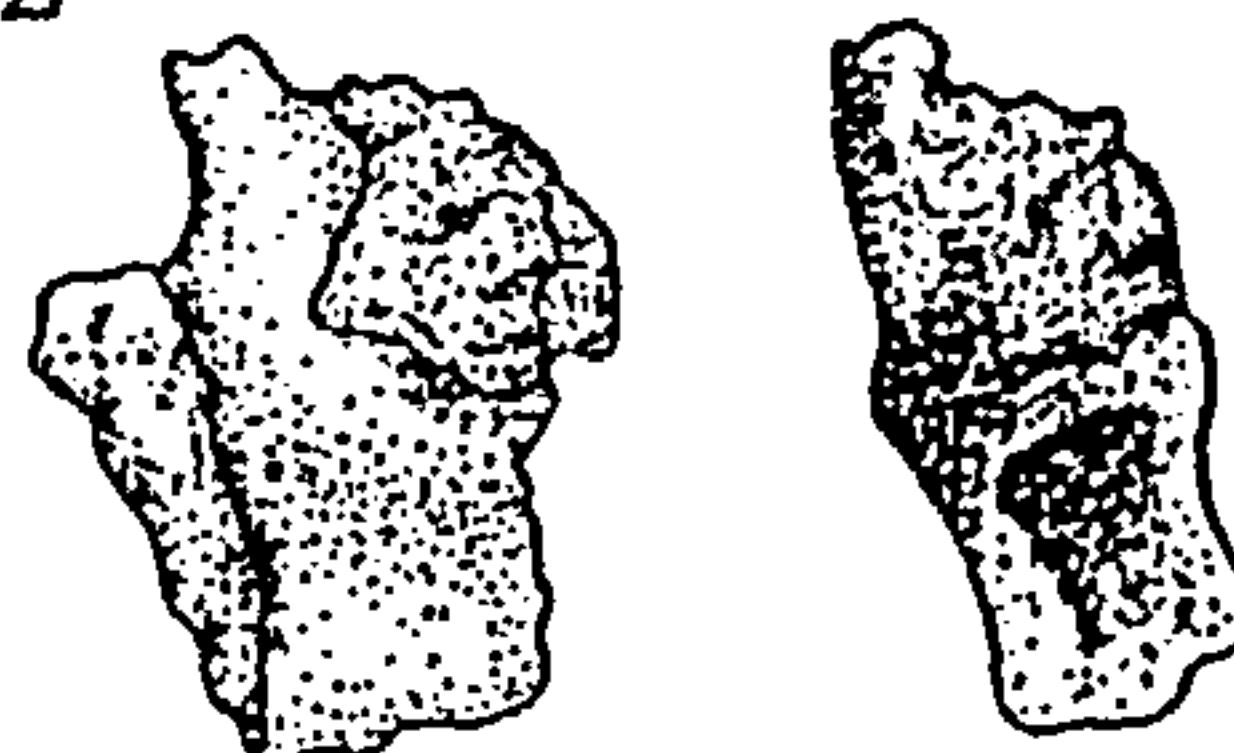
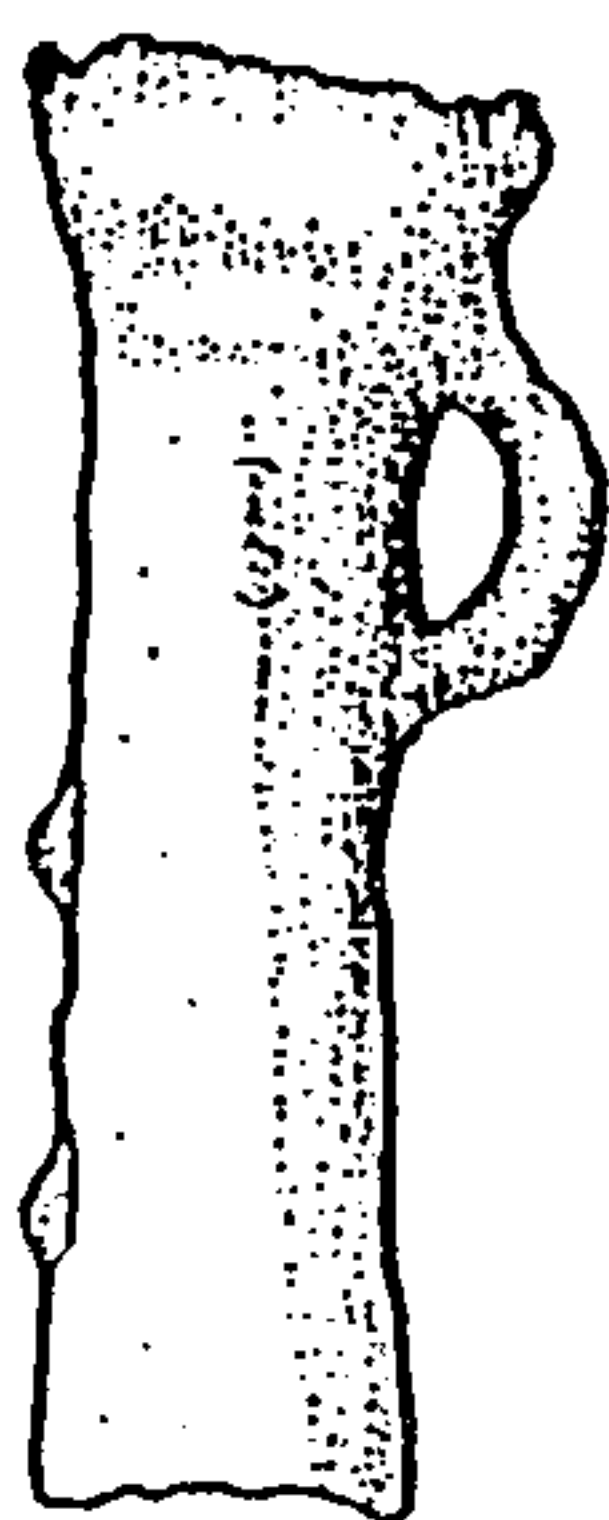
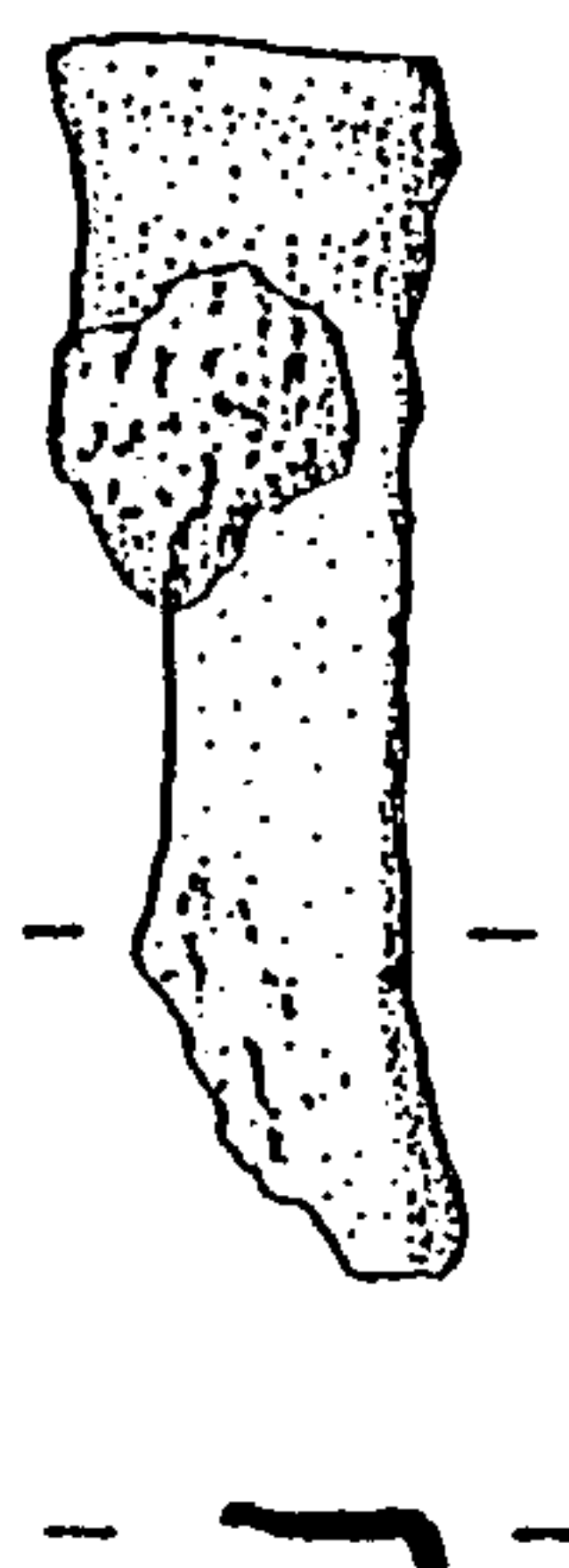


Fig. 47: The Leigh II Hoard (Ref. No. 05): Socketed Axe Fragments (iv)

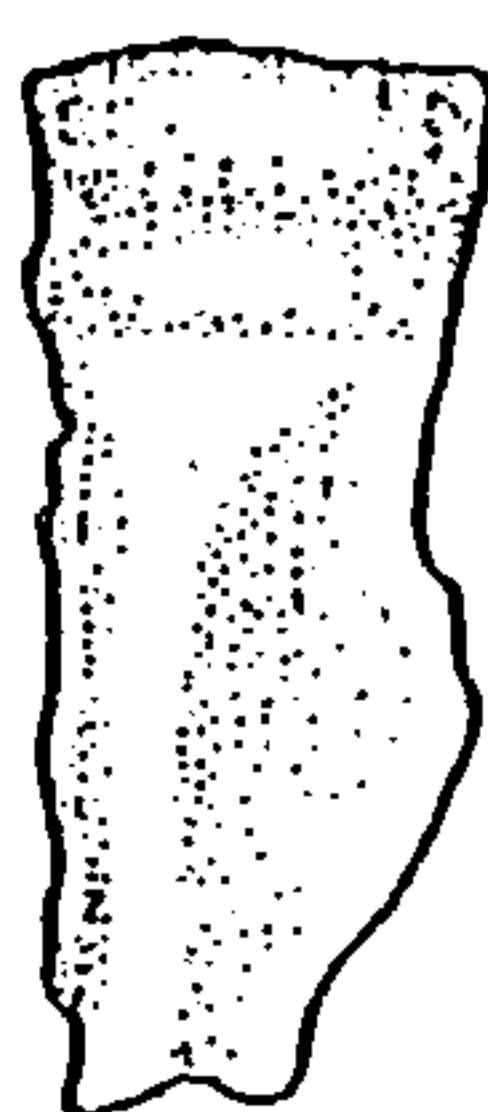
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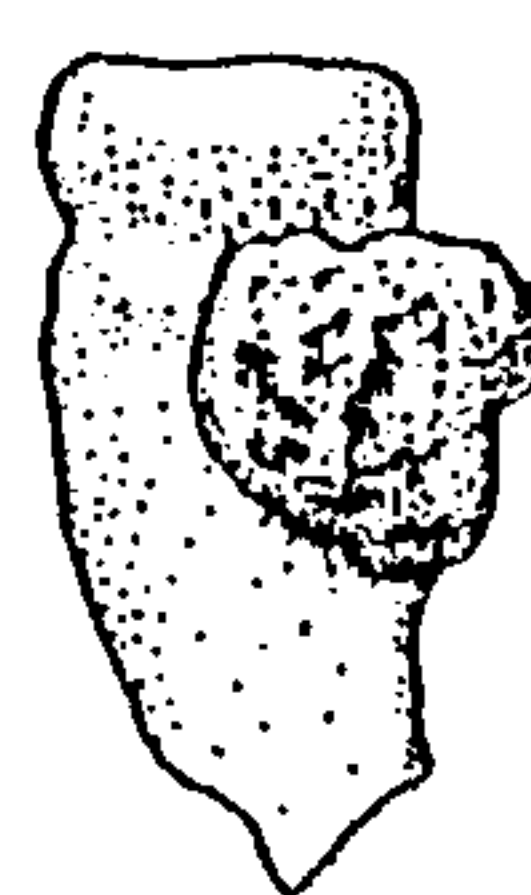
05/54



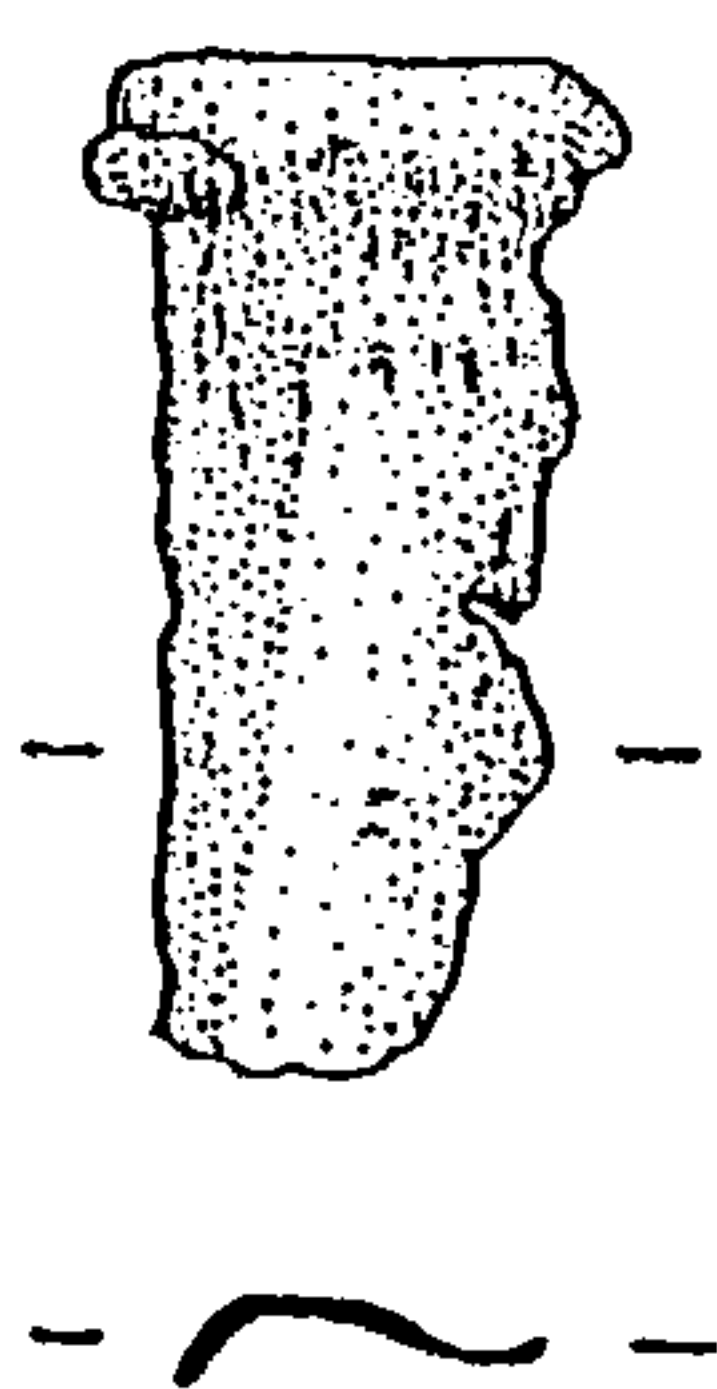
05/55



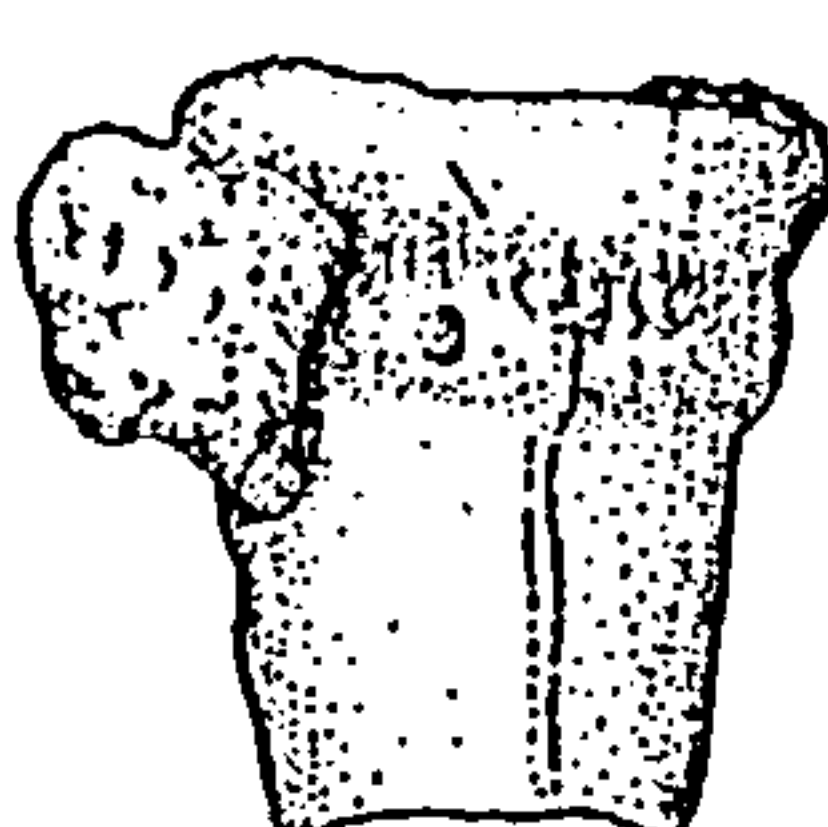
05/56



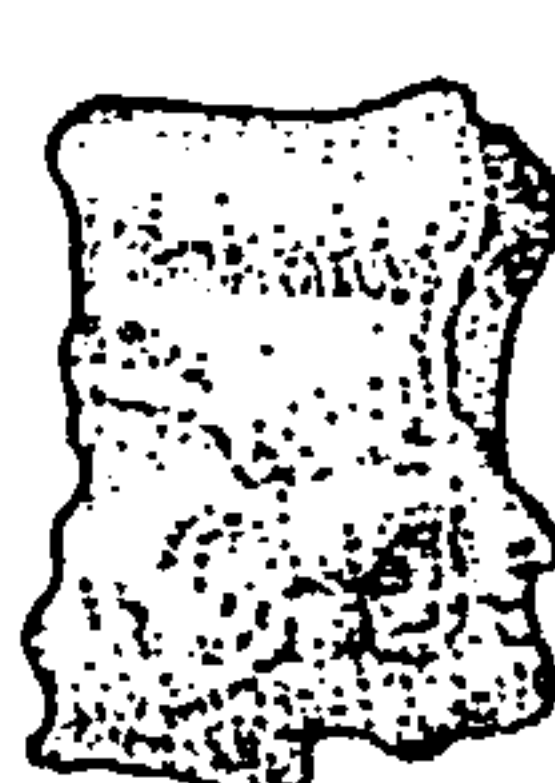
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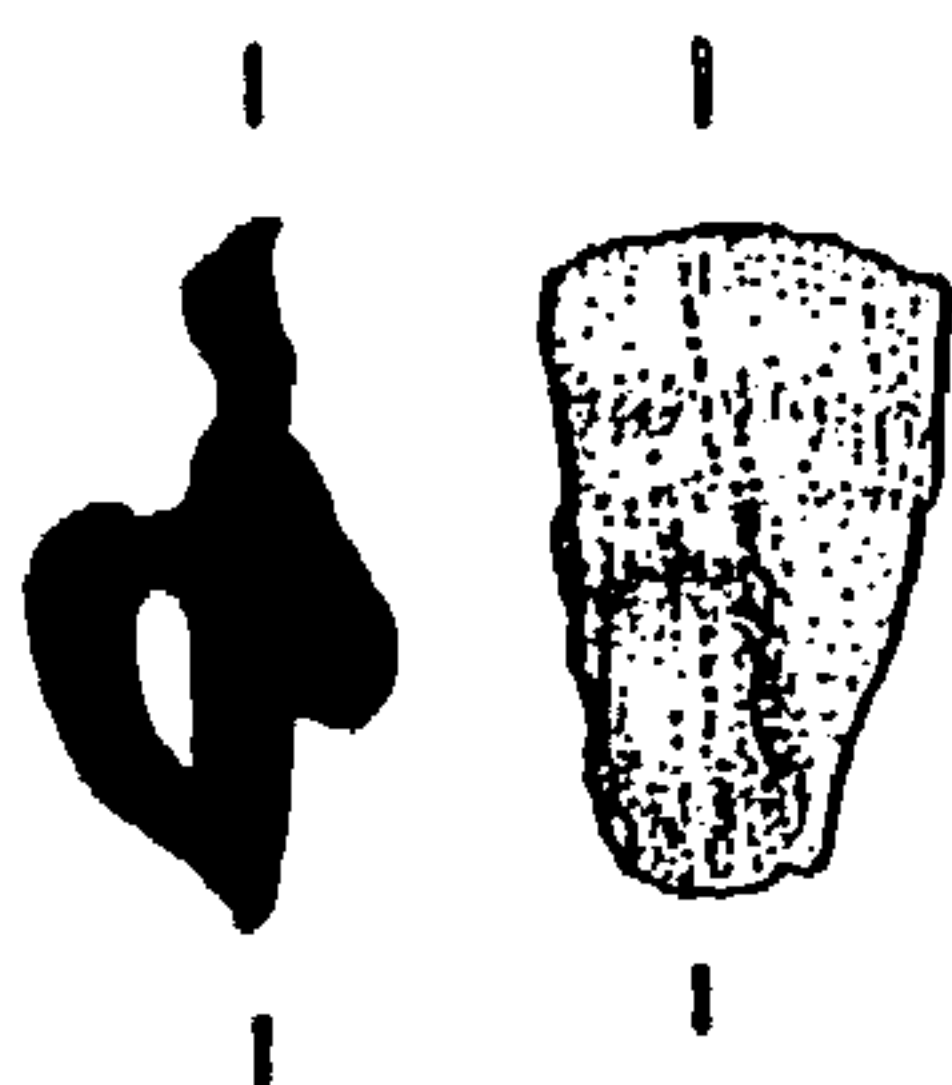
05/58



05/59

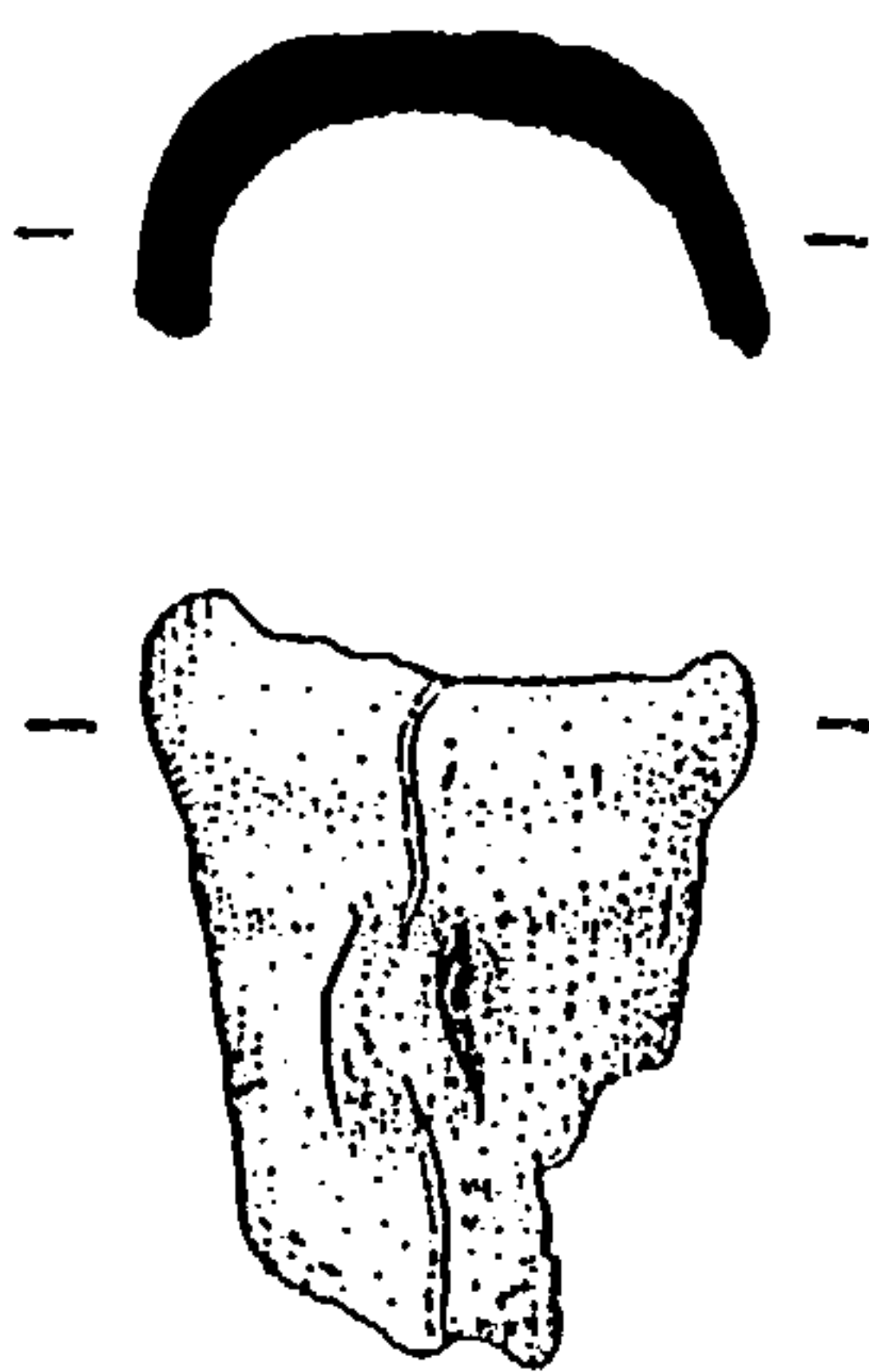


05/60

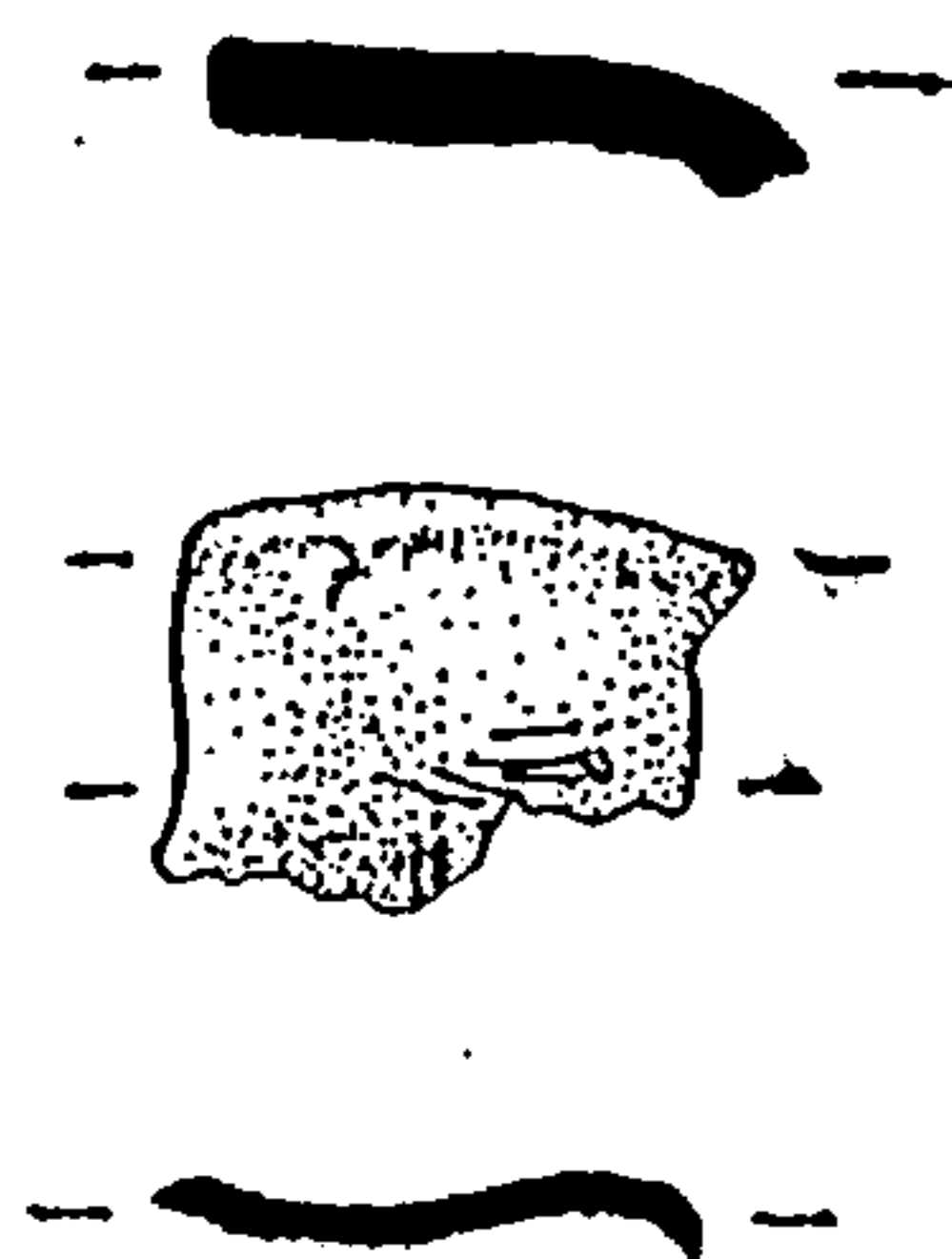


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05/61



05/62



05/63

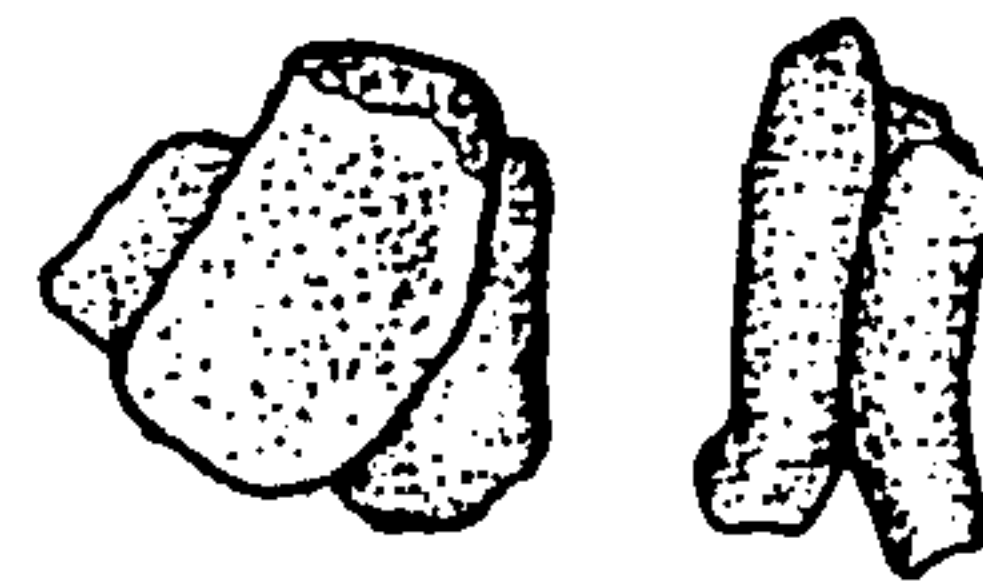
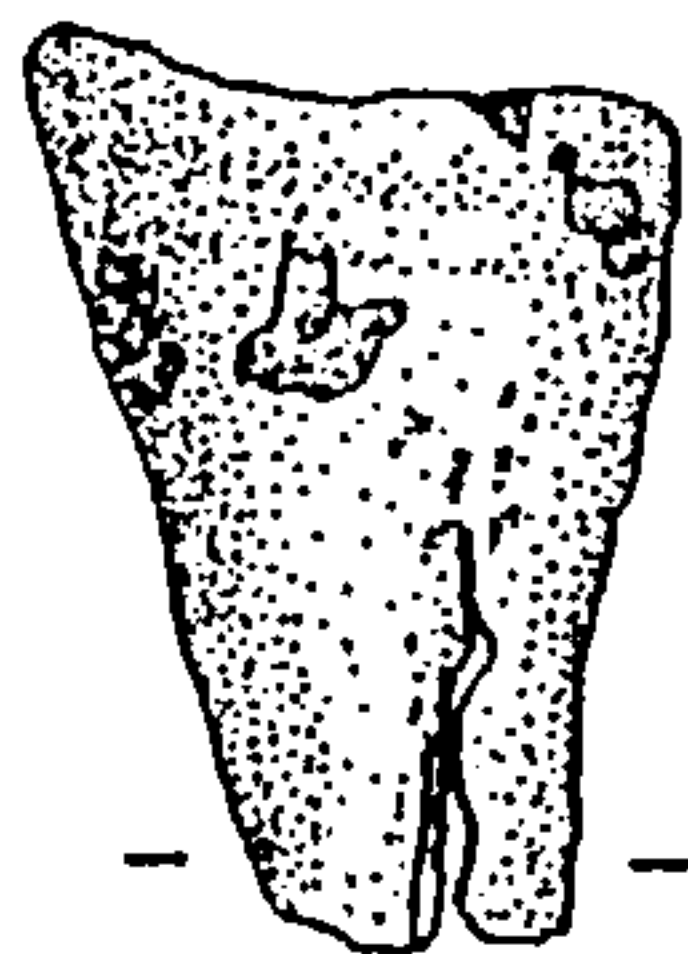
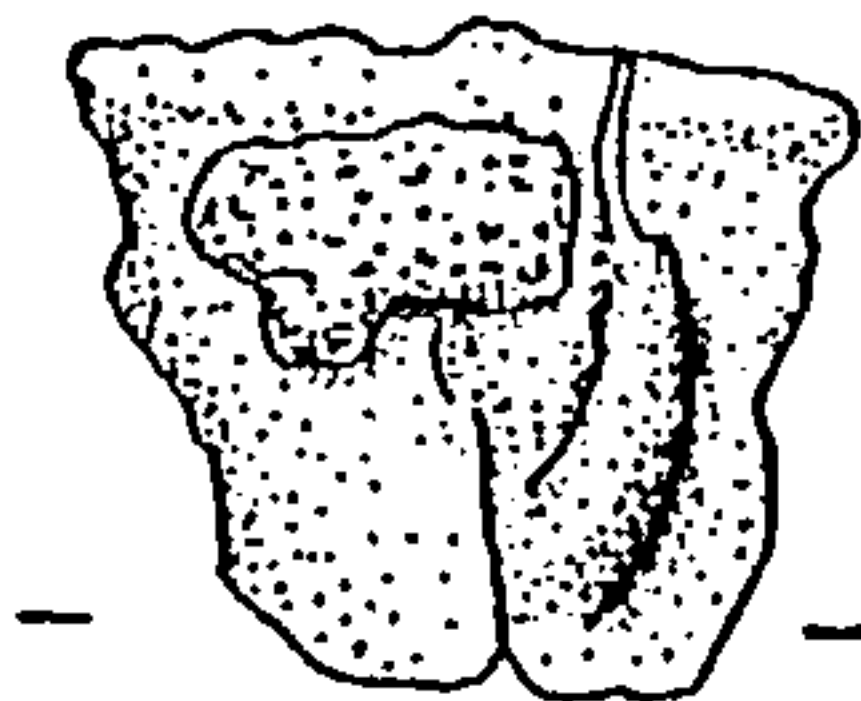


Fig. 48: The Leigh II Hoard (Ref. No. 05): Socketed Axe Fragments (v)

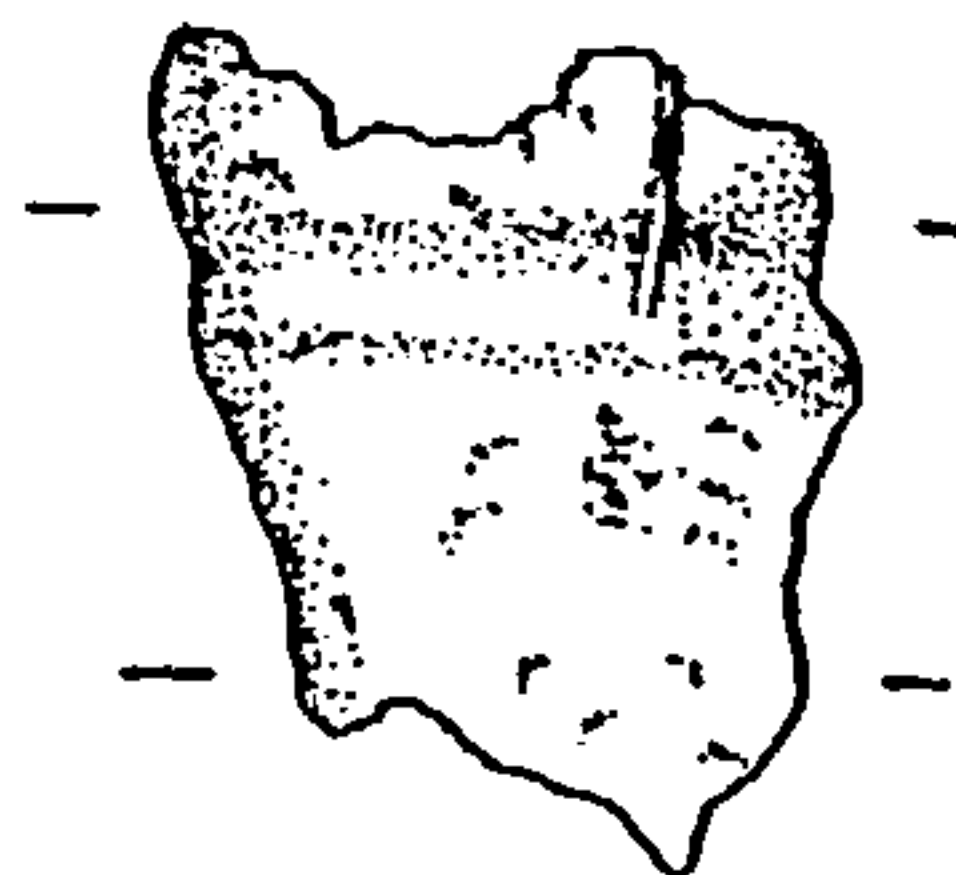
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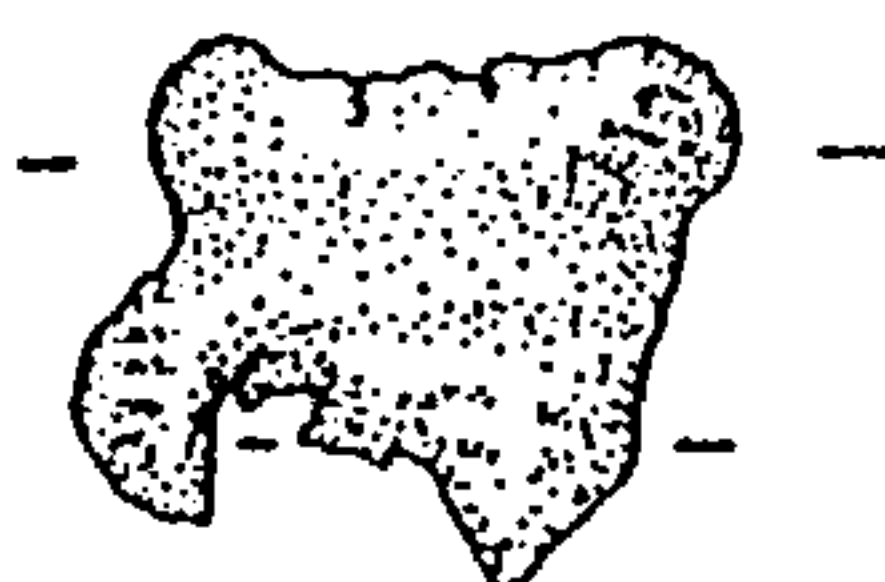
05/66



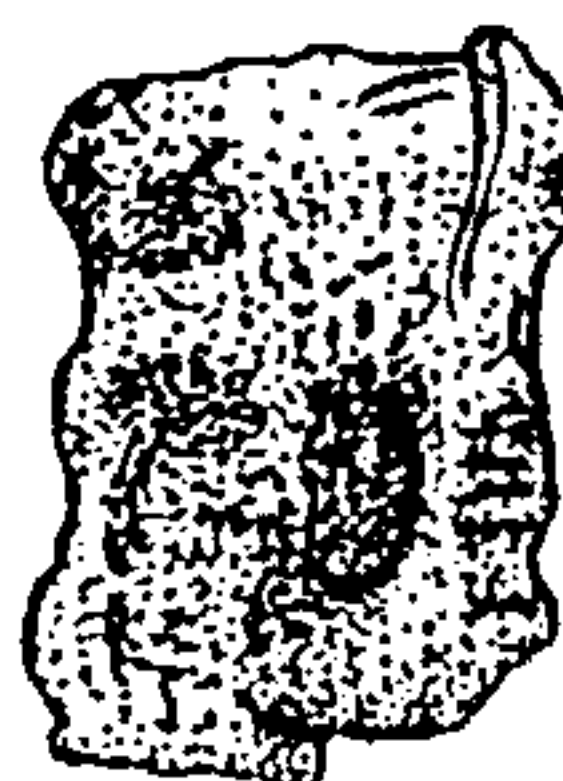
05/67



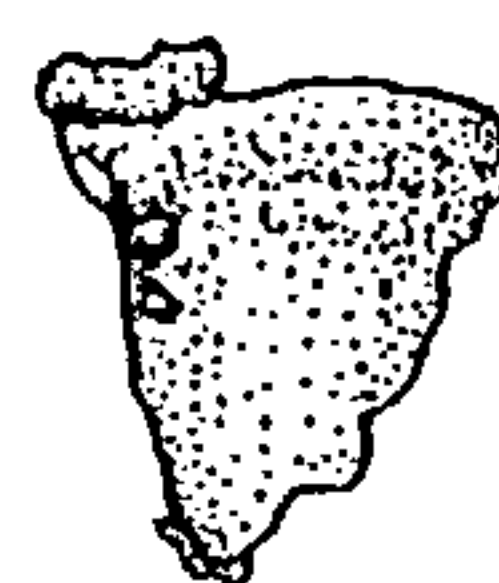
05/68



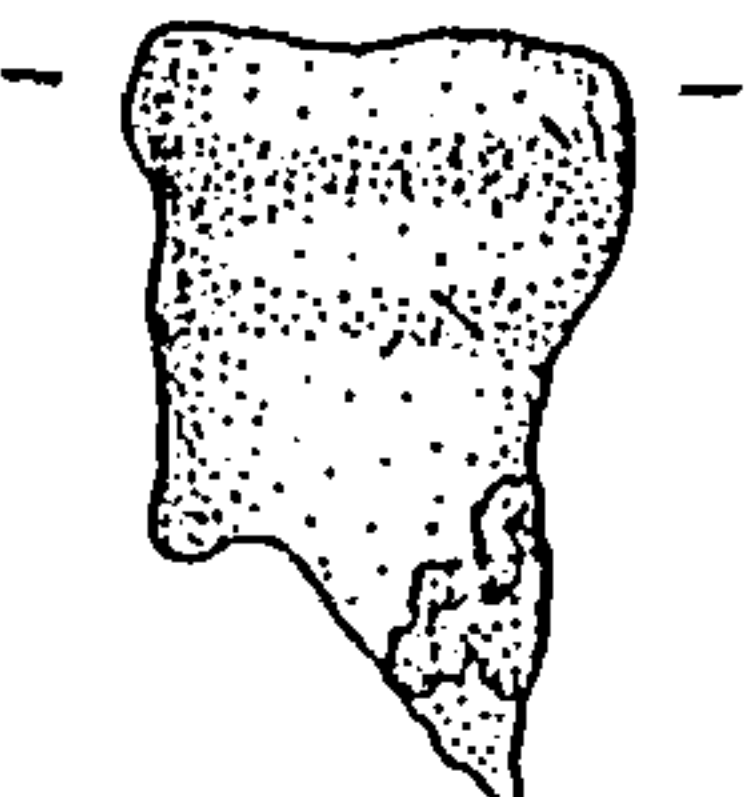
05/69



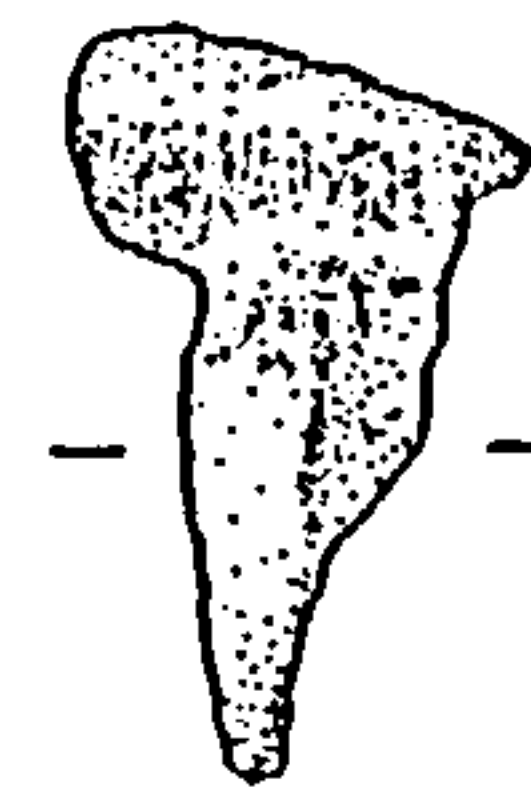
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05/73



Fig. 49: The Leigh II Hoard (Ref. No. 05): Socketed Axe Fragments (vi)

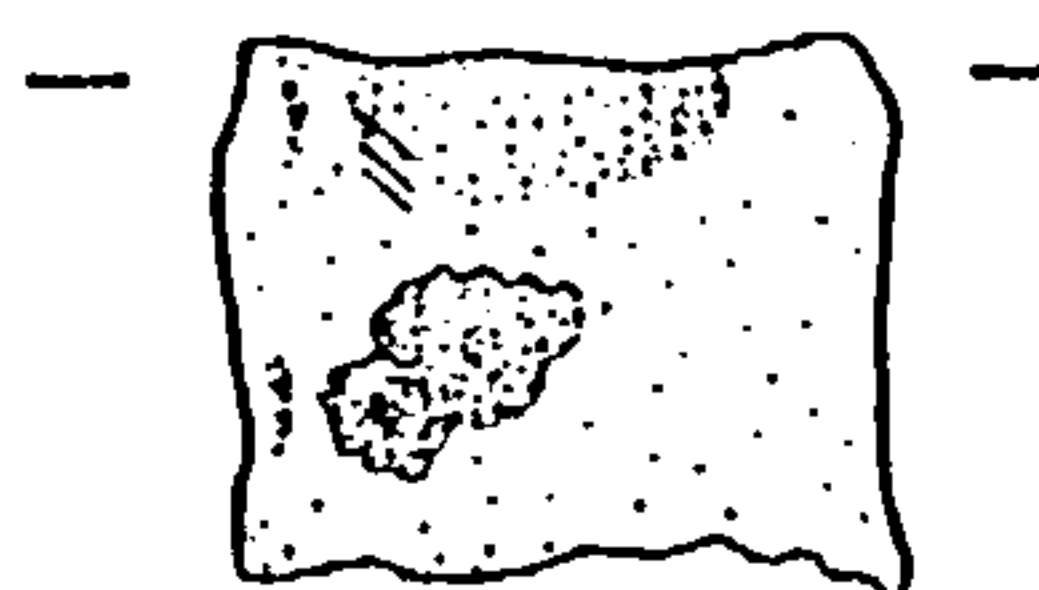
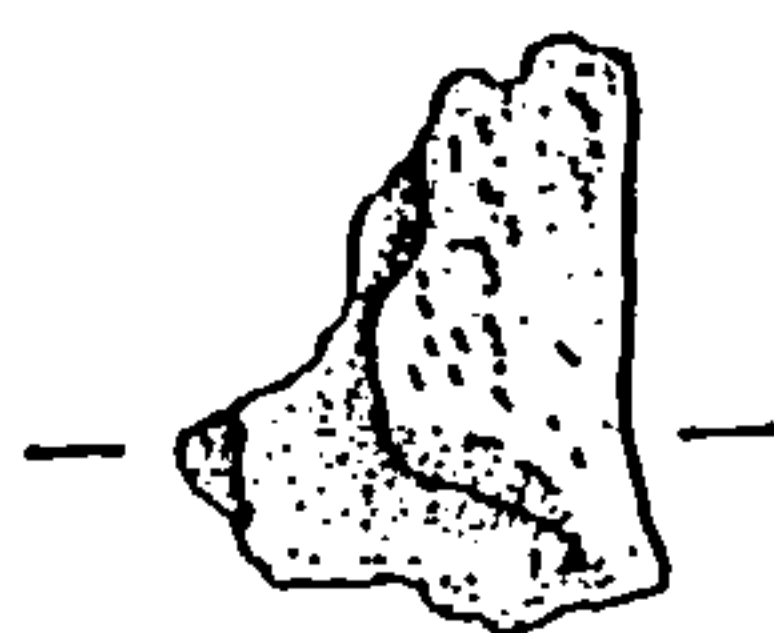
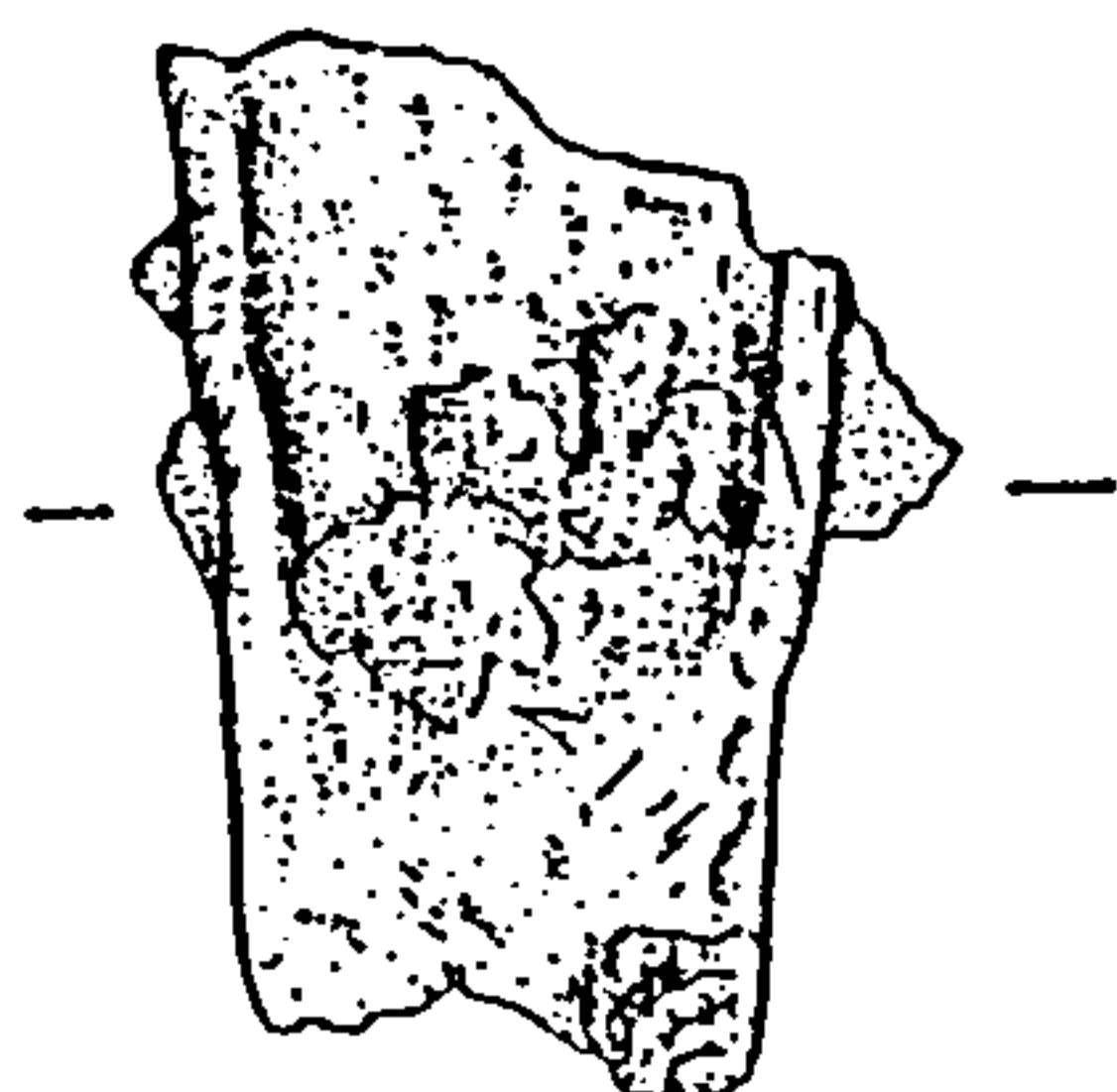
05/74



05/75



05/76



0 2cm



Clay



Rough Metal/Corrosion Product

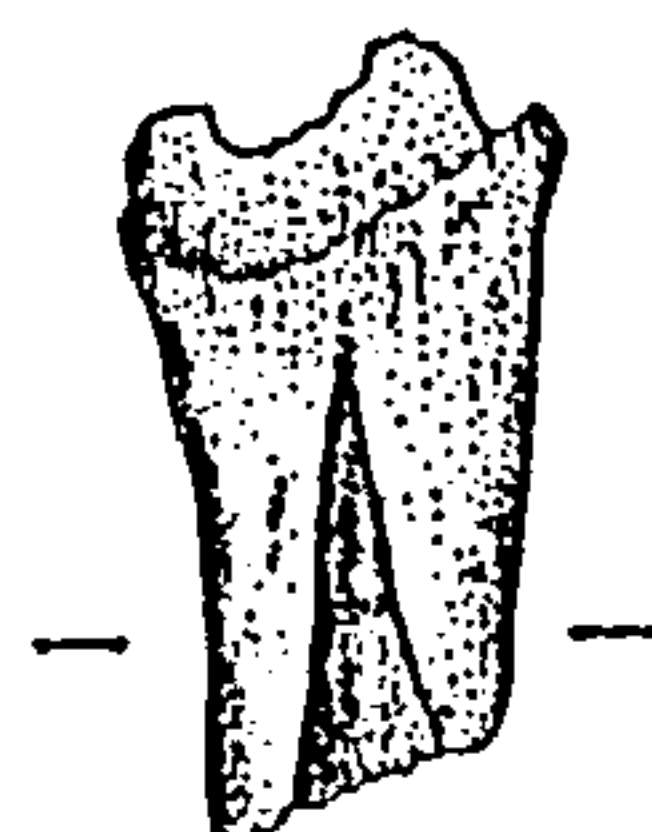
05/77



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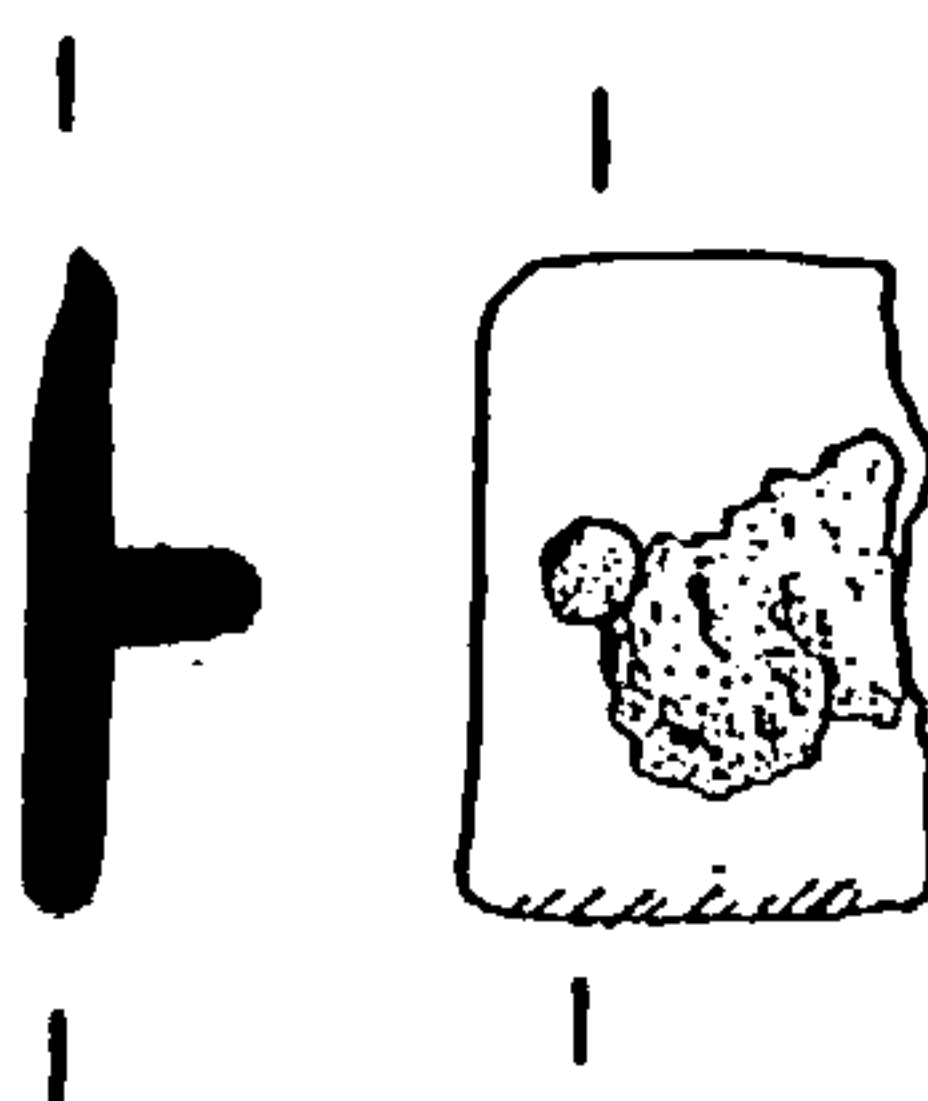
05/79



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05/81



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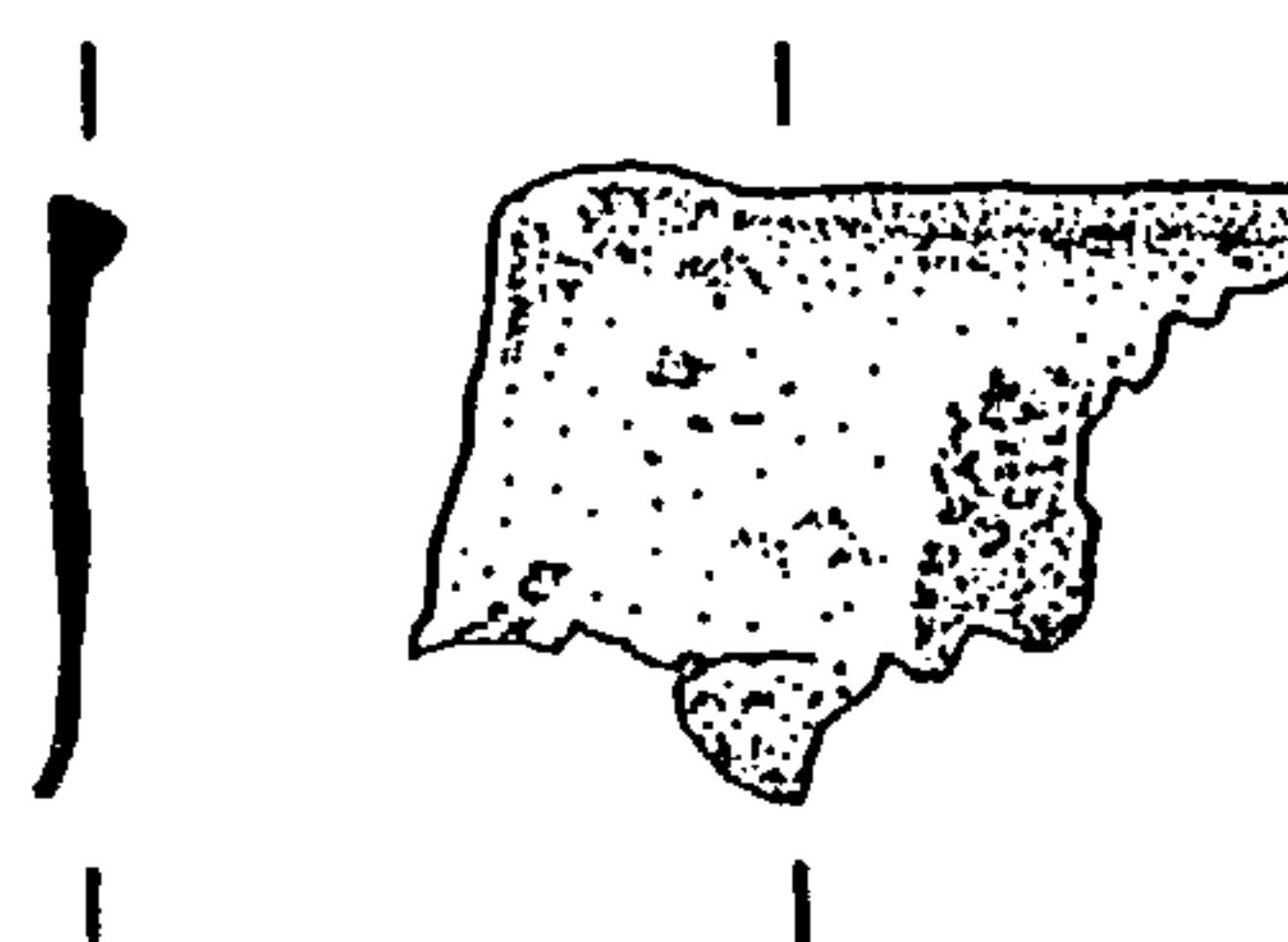
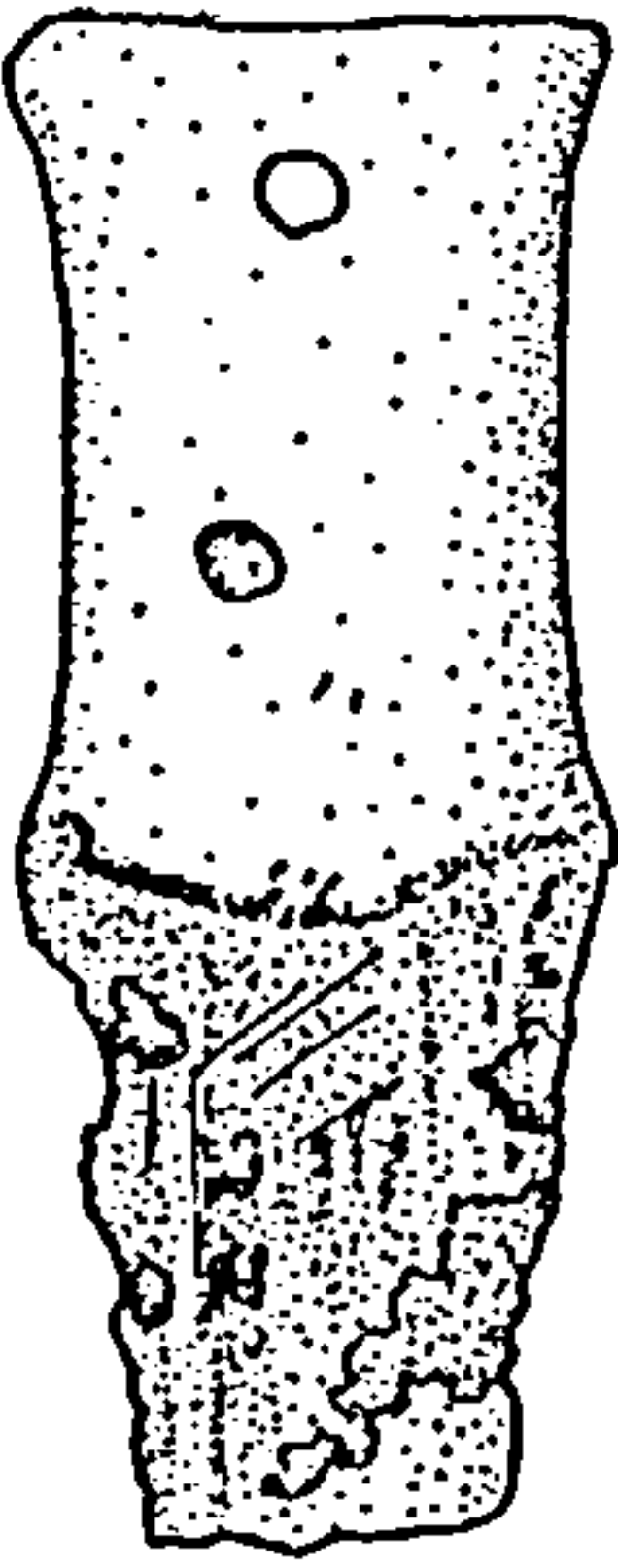
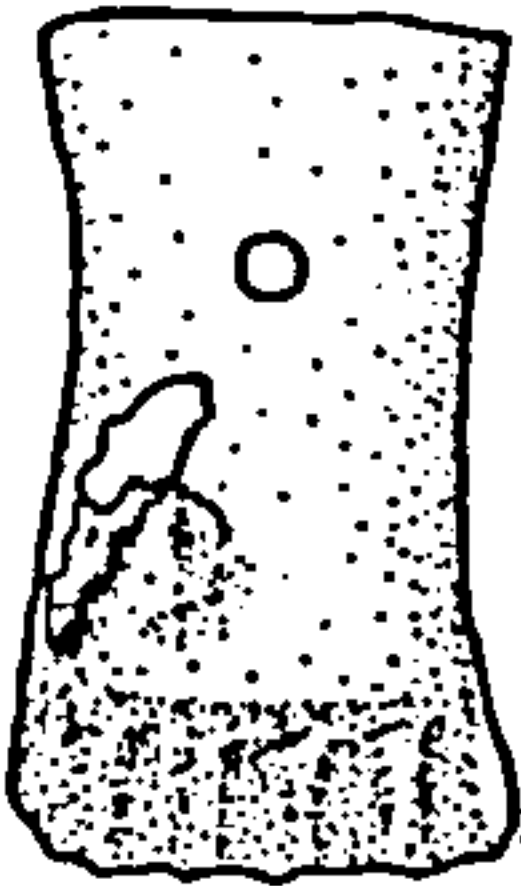


Fig. 50: The Leigh II Hoard (Ref. No. 05): Winged Axe, Socketed Gouge and Sickle Fragments

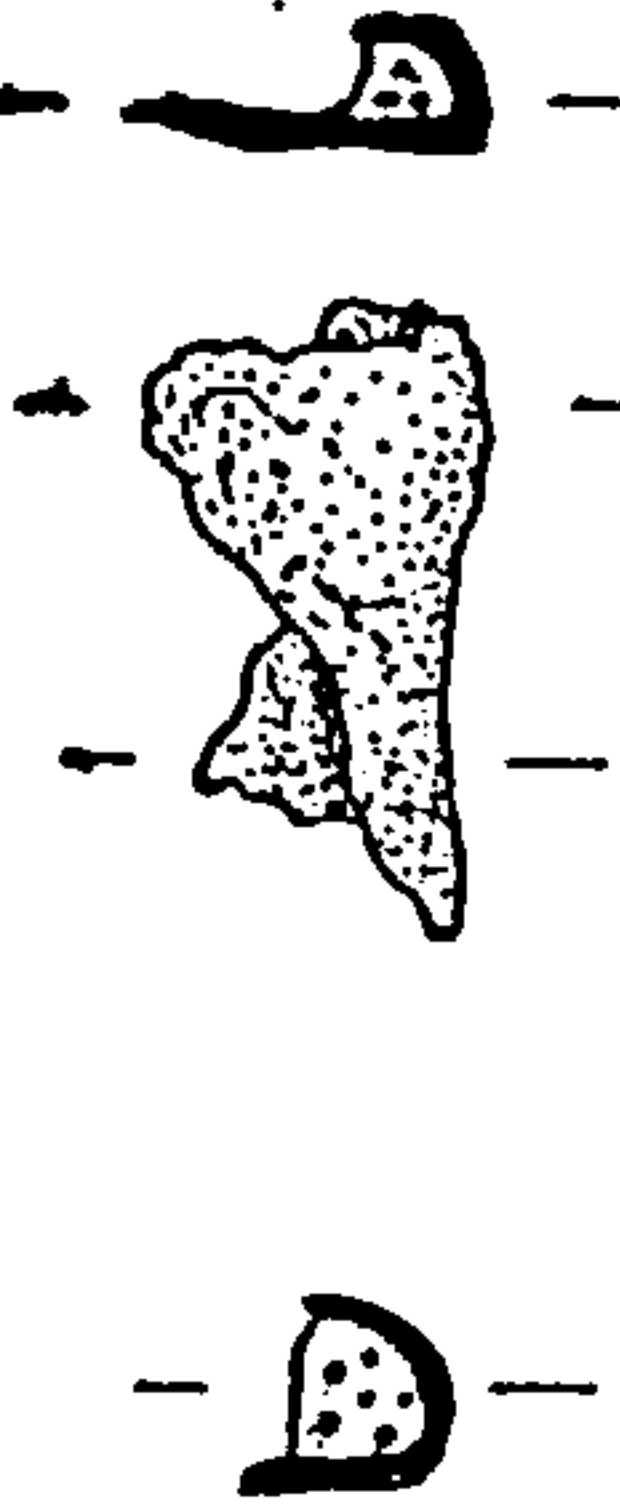
05/83



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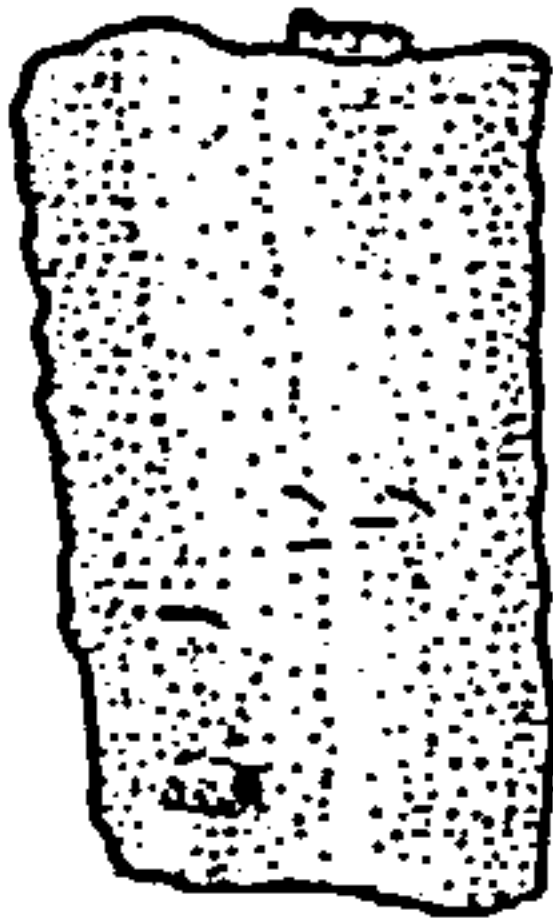
05/85



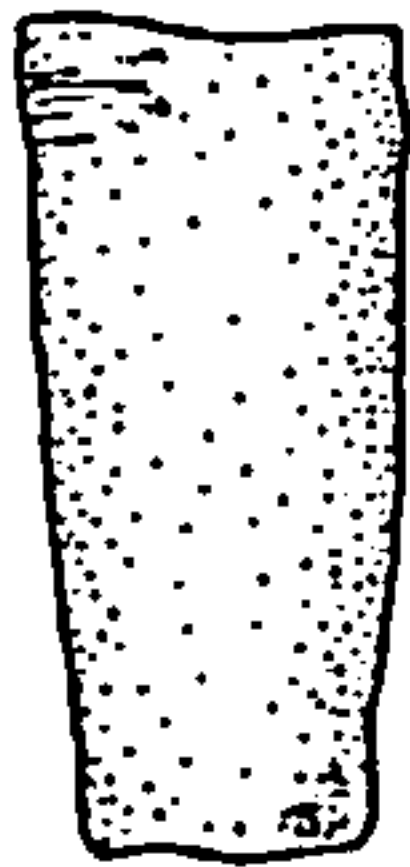
0 2cm

 Rough Metal/Corrosion Product

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05/88



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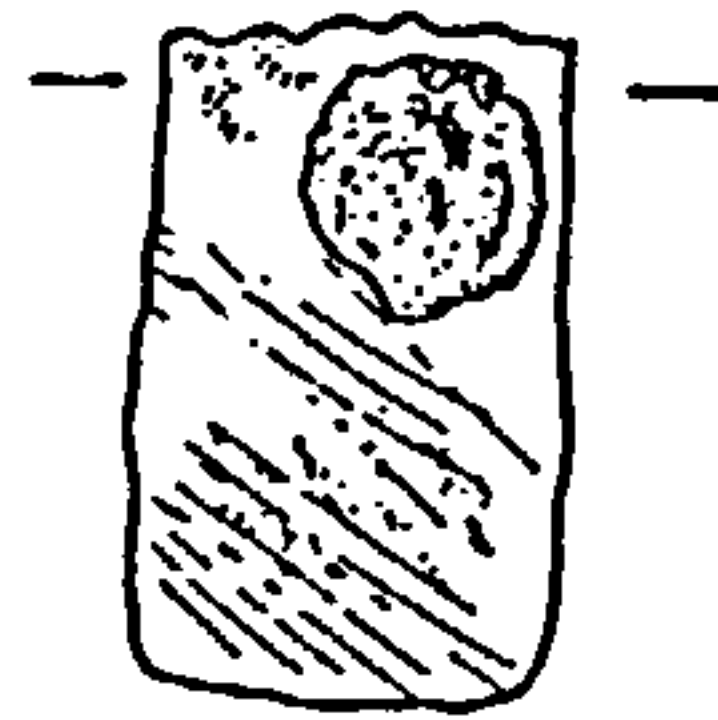
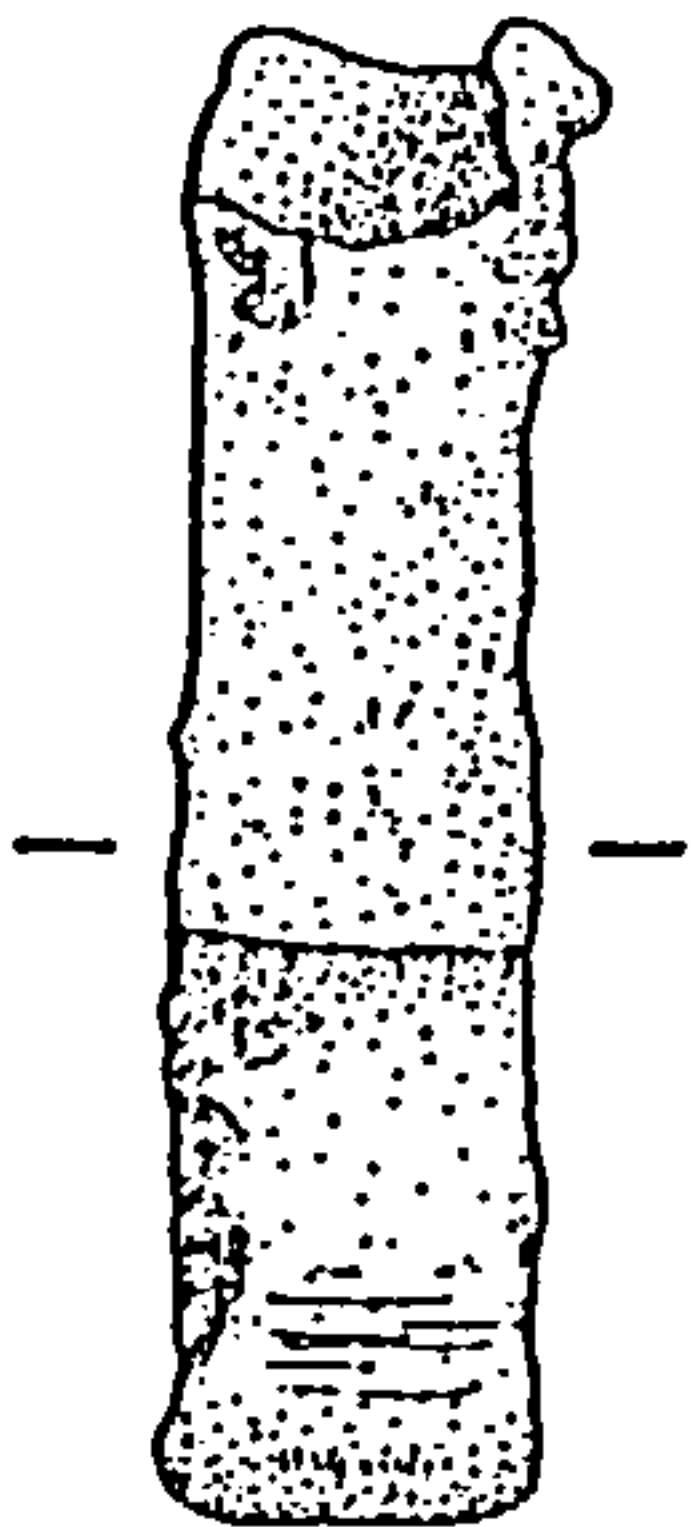
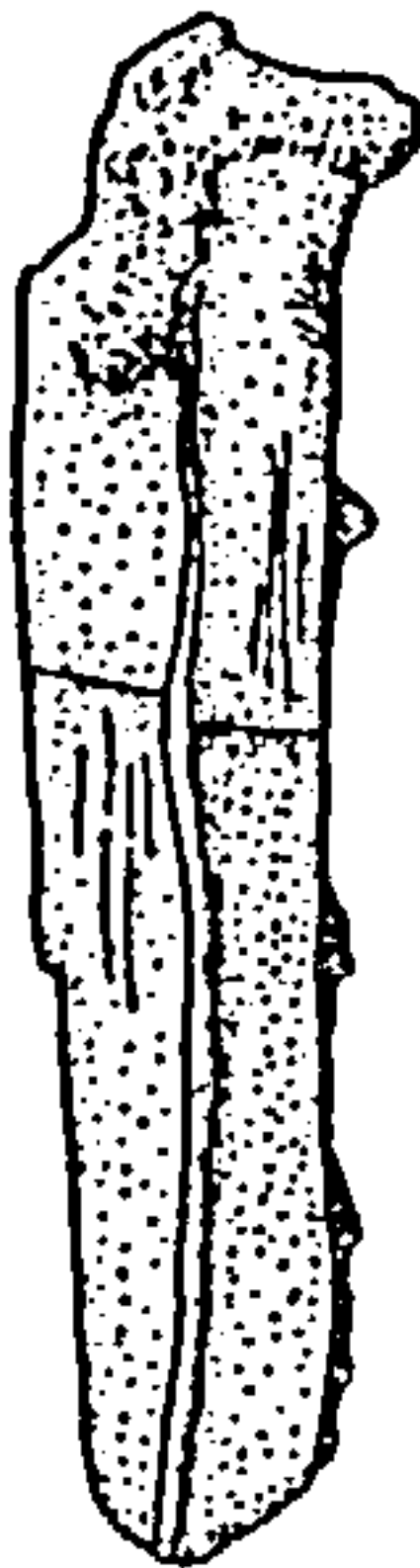
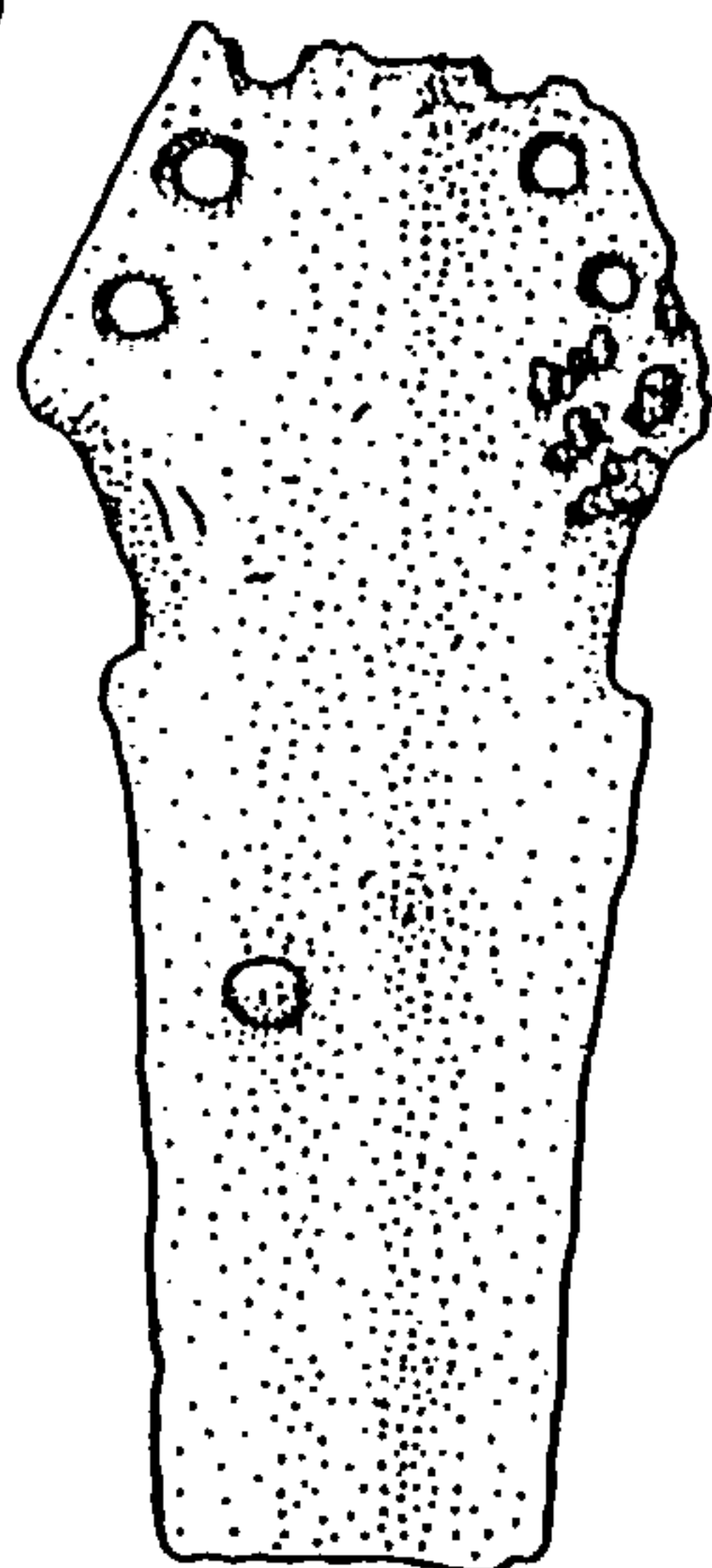
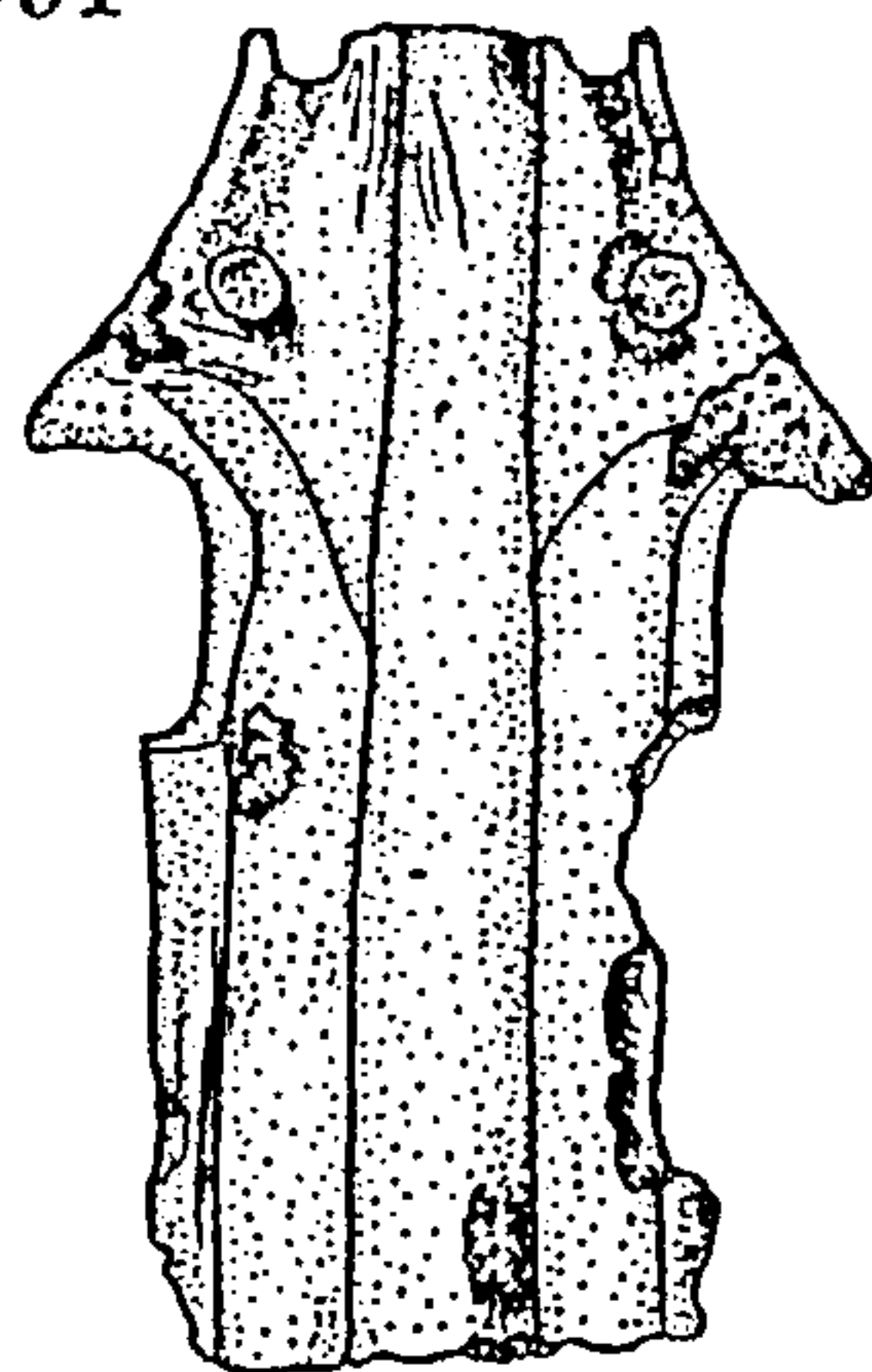


Fig. 51: The Leigh II Hoard (Ref. No. 05): Socketed Knife and Hammer Fragments

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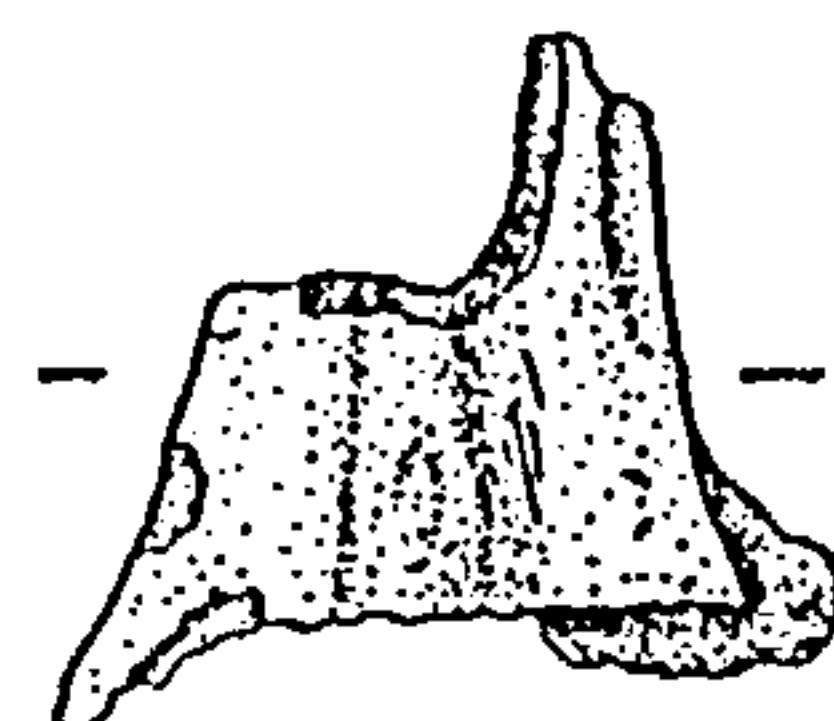
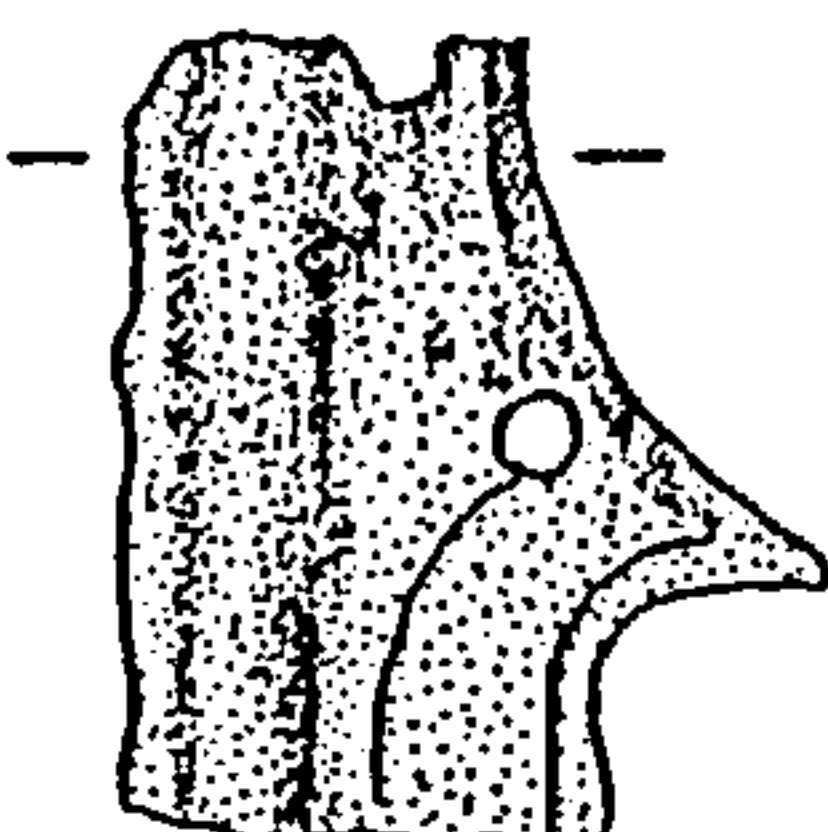
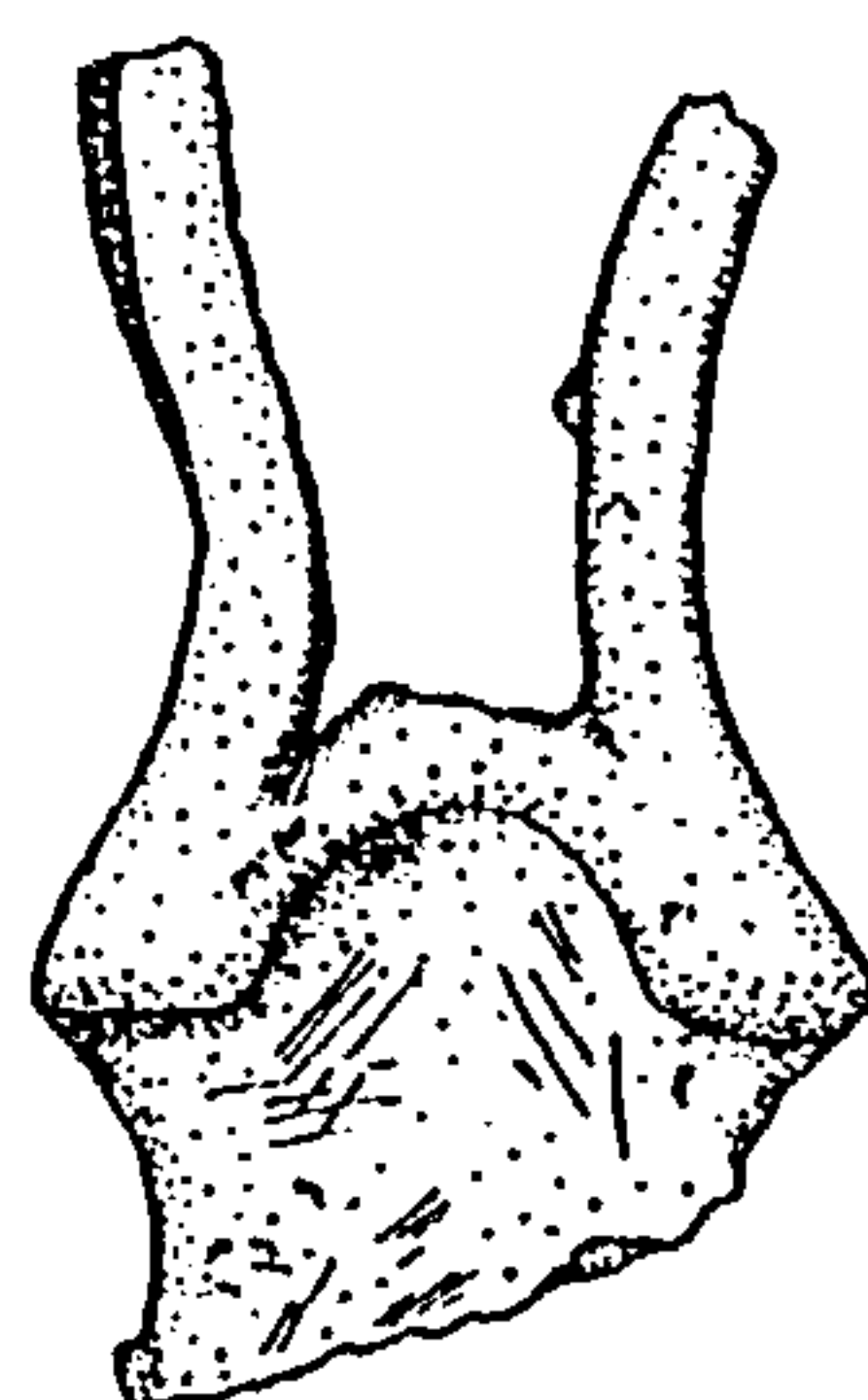
05/92



05/93

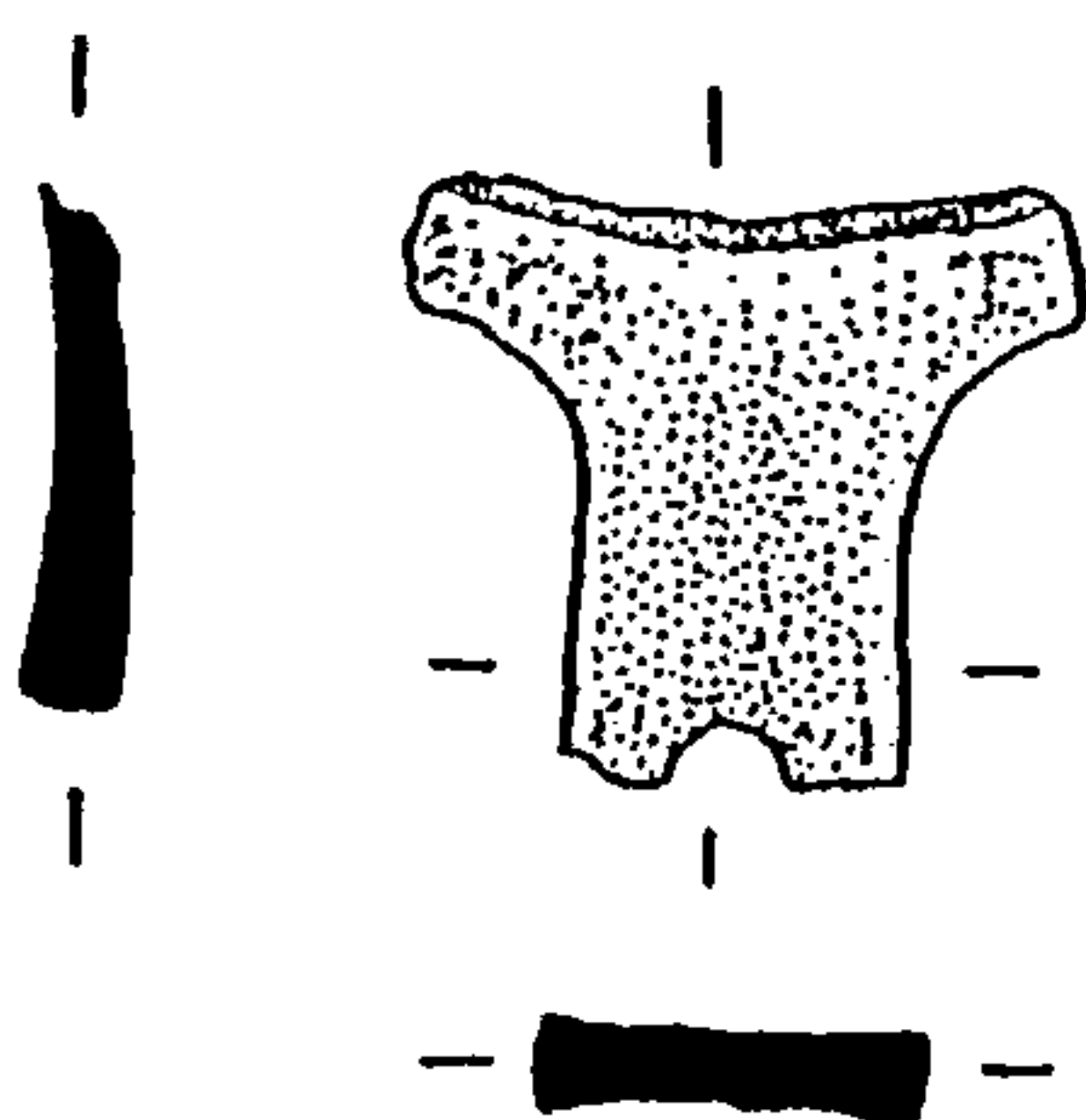


05/94



0 2cm

05/95

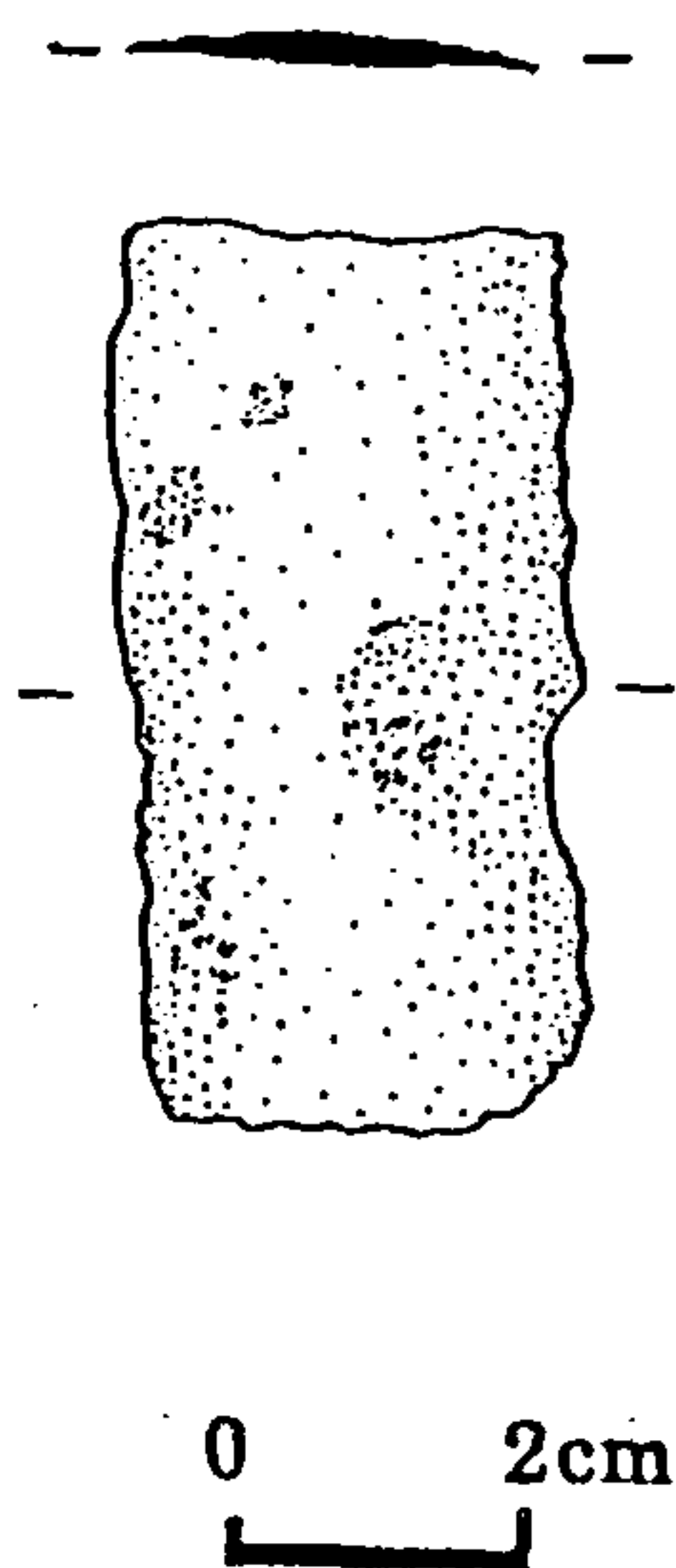


05/96

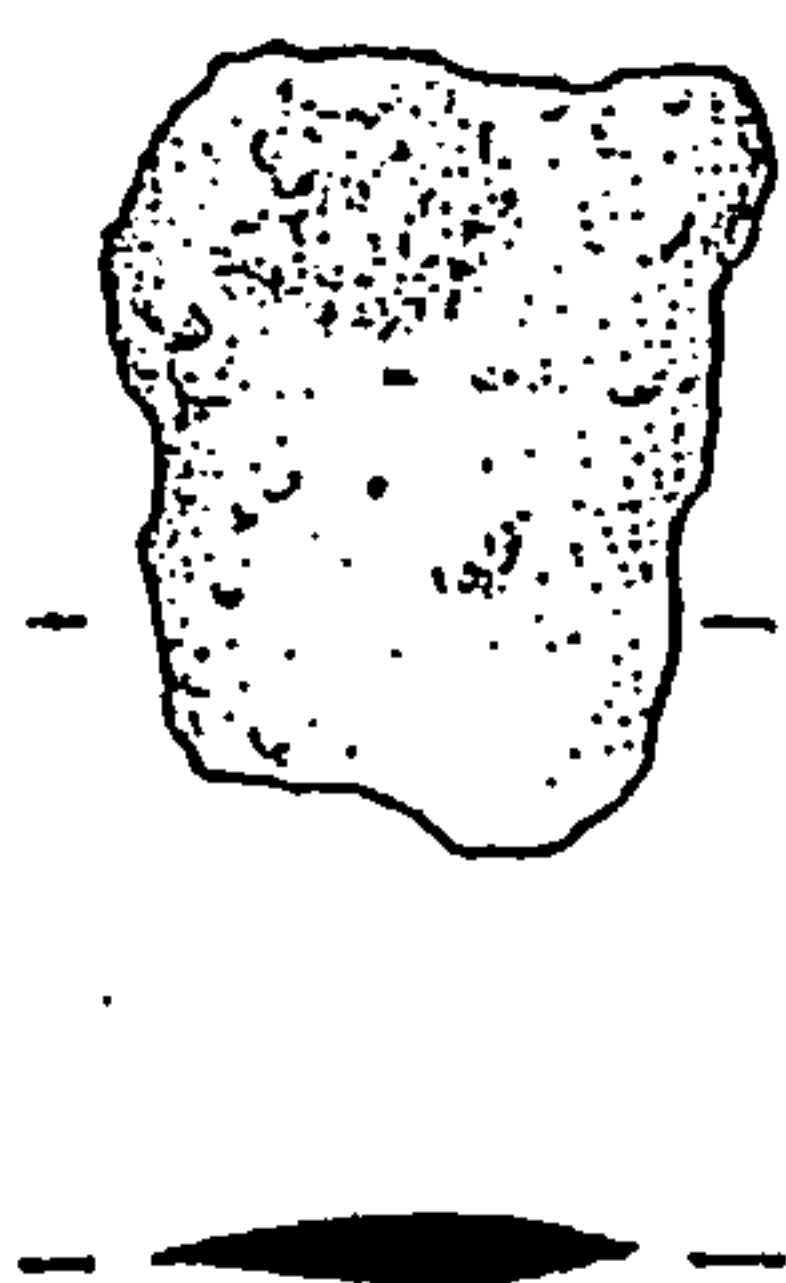


Fig. 52: The Leigh II Hoard (Ref. No. 05): Sword Hilt and Shoulder Fragments

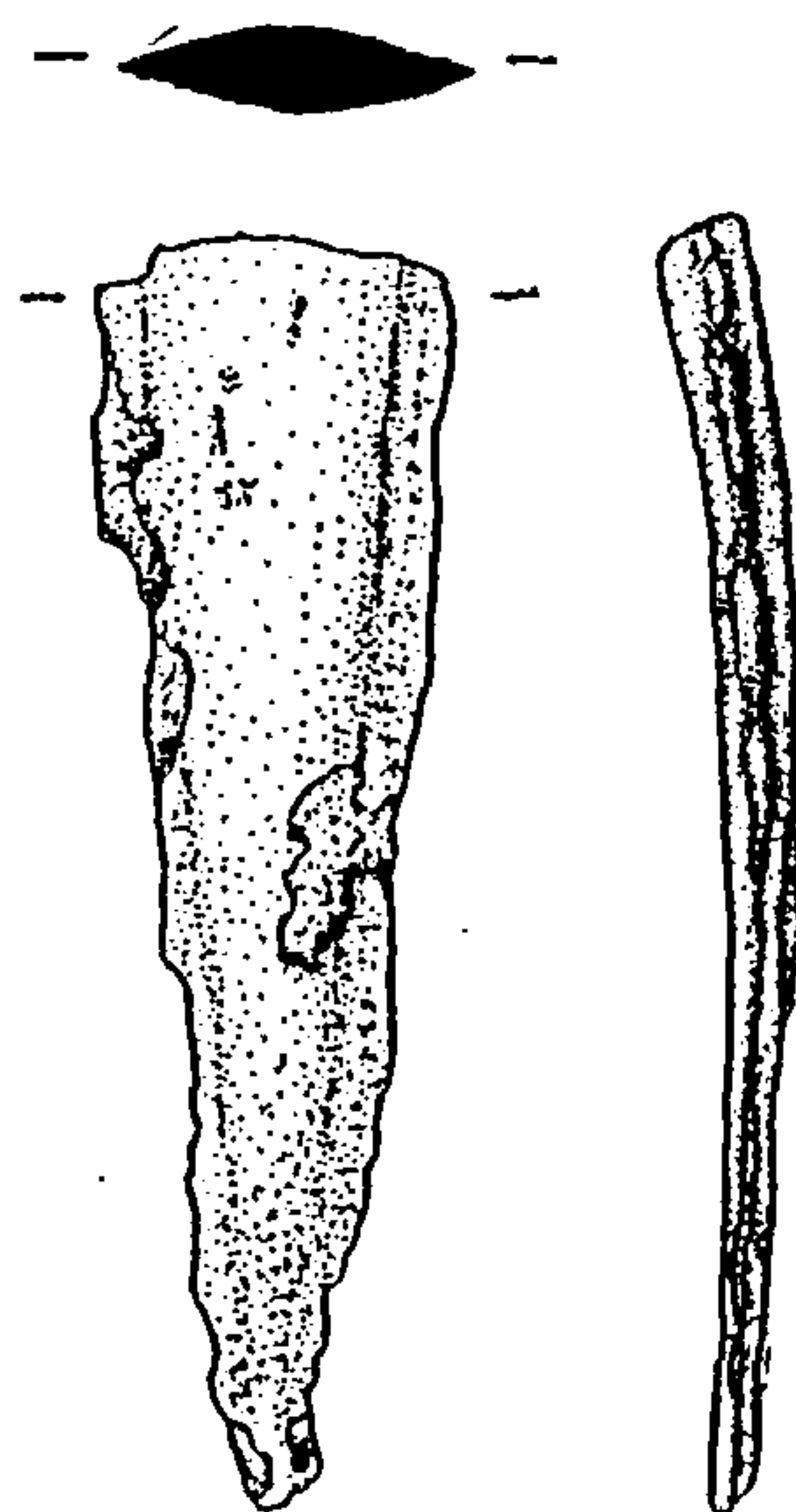
05/97



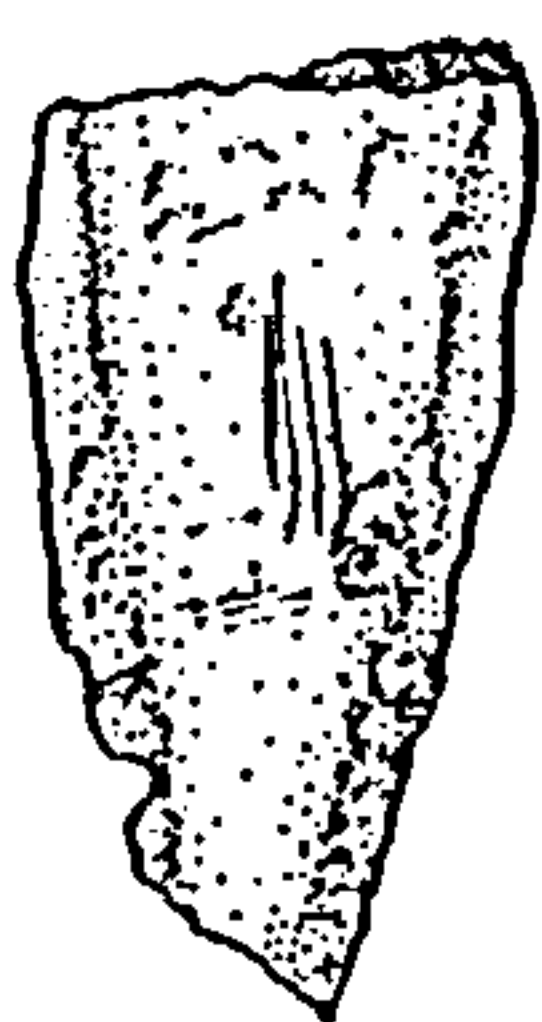
05/98



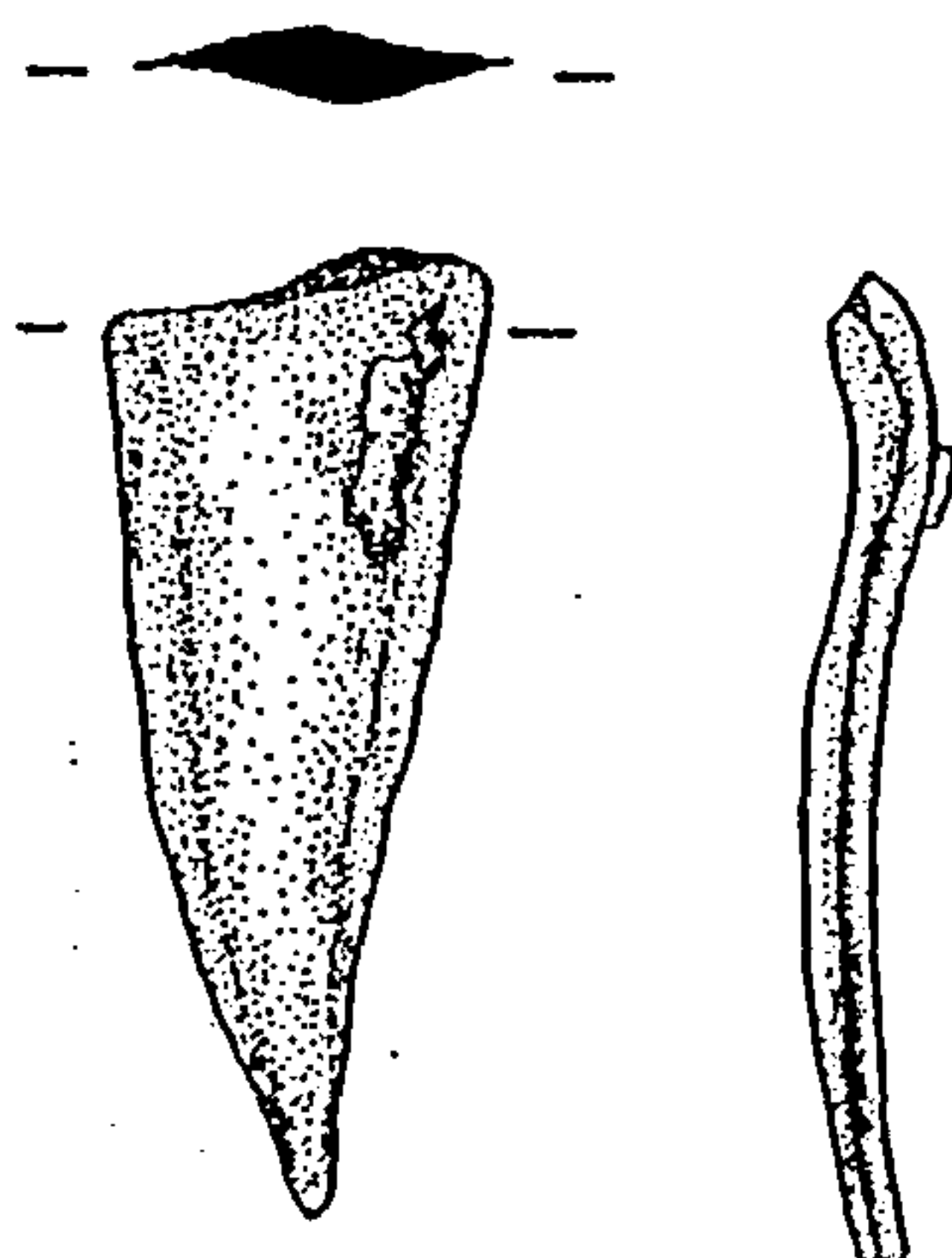
05/99



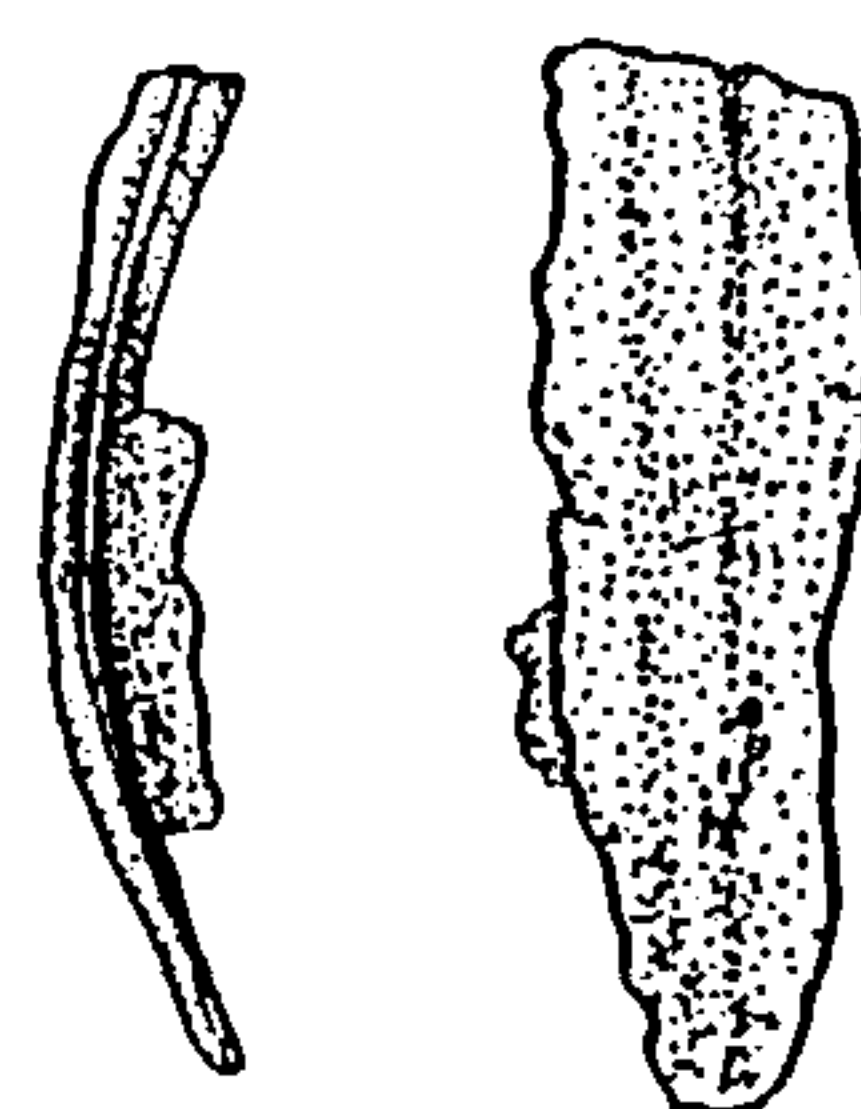
05/100



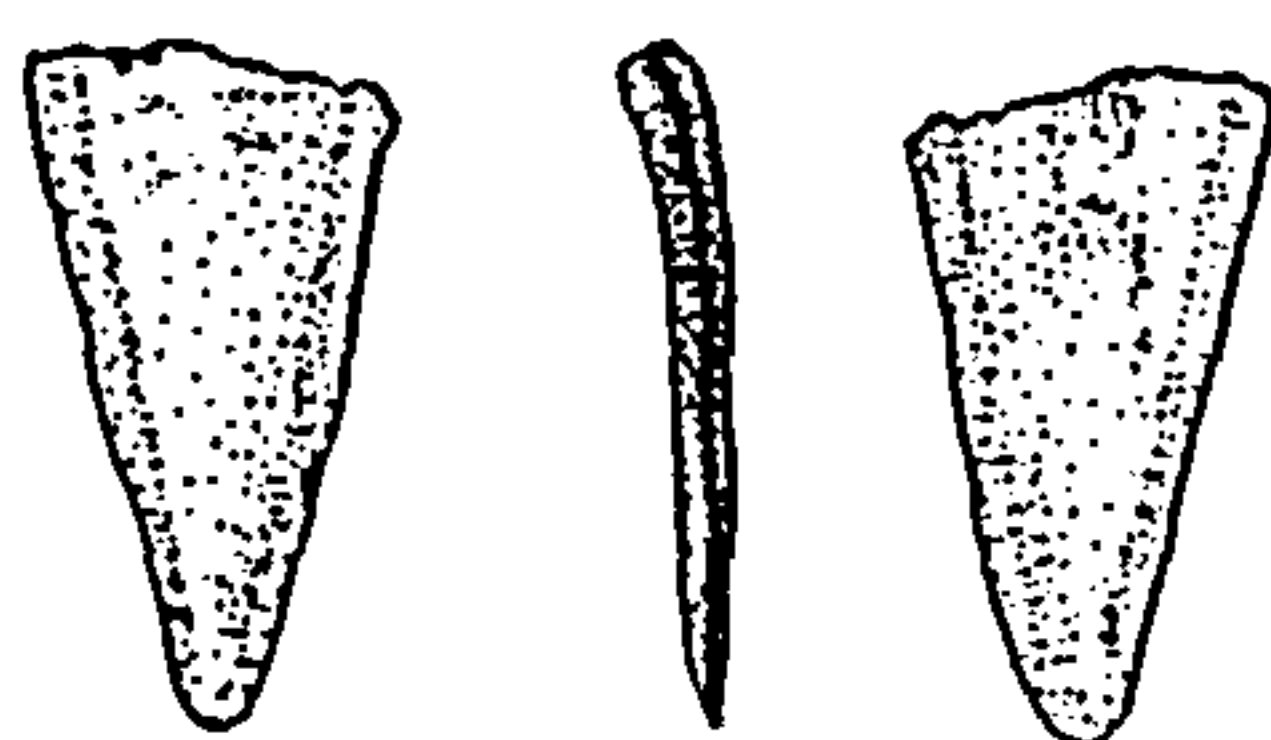
05/101



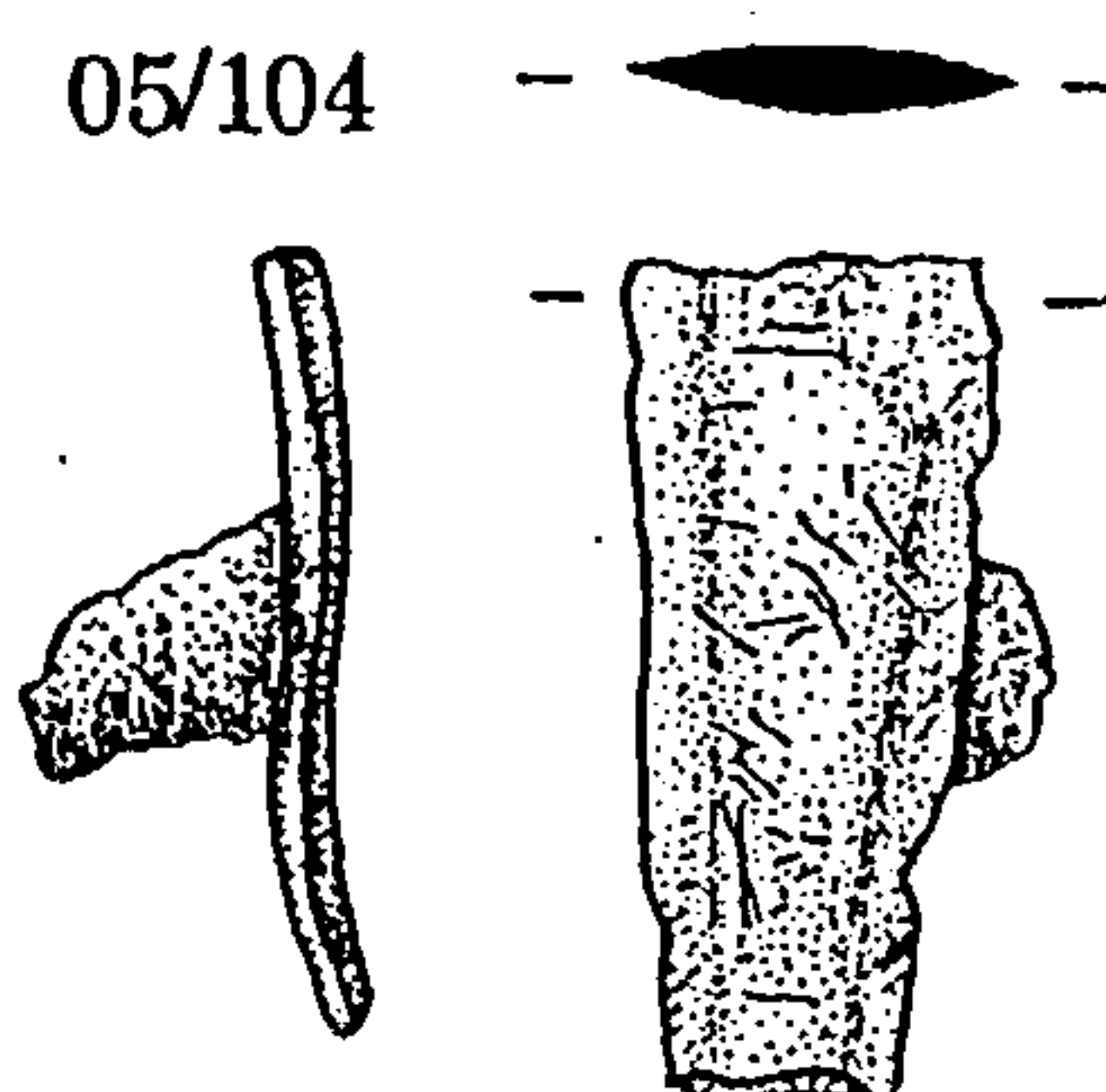
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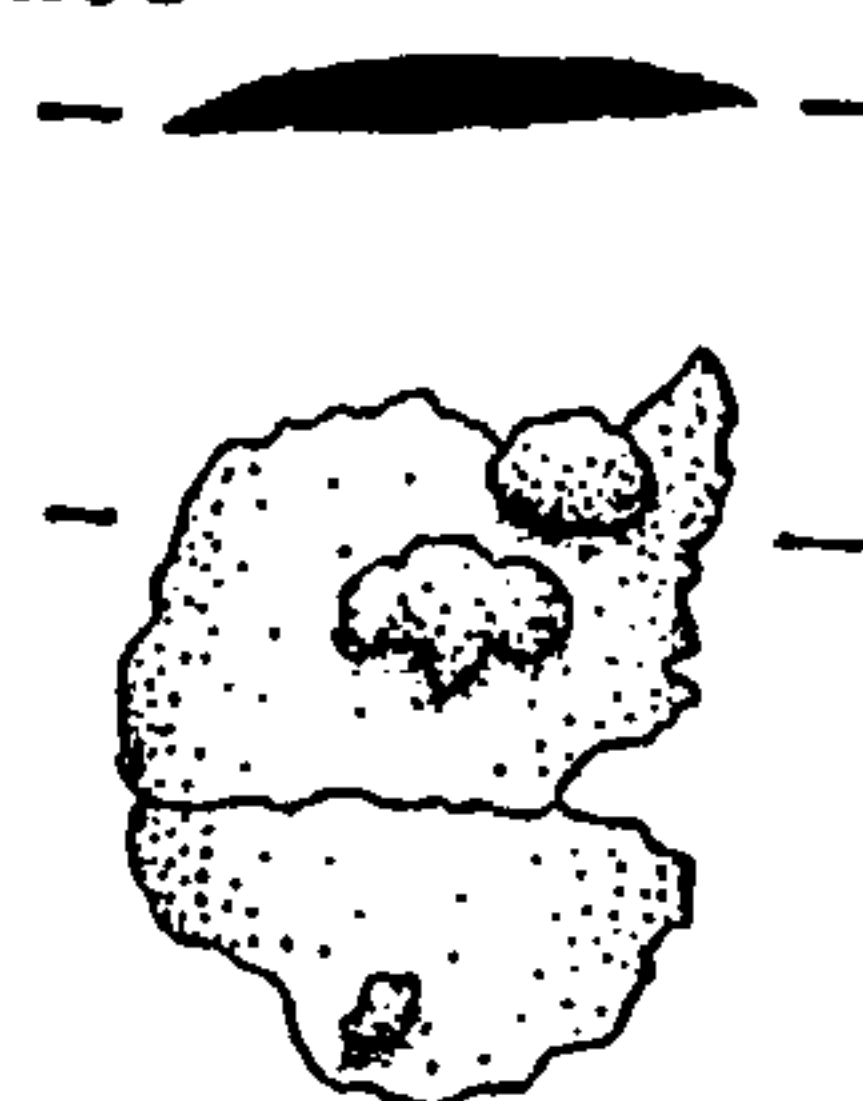
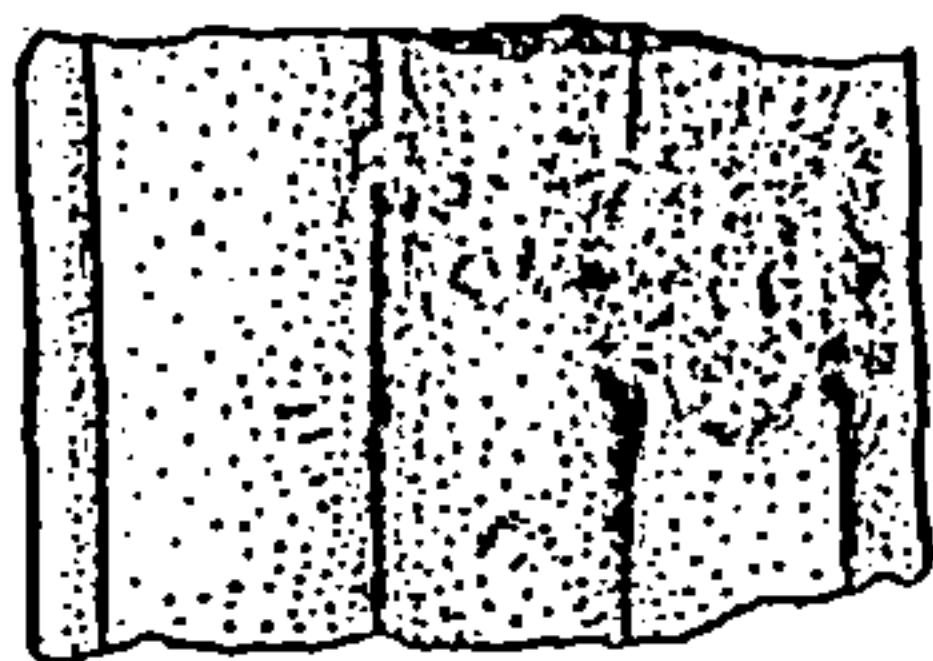
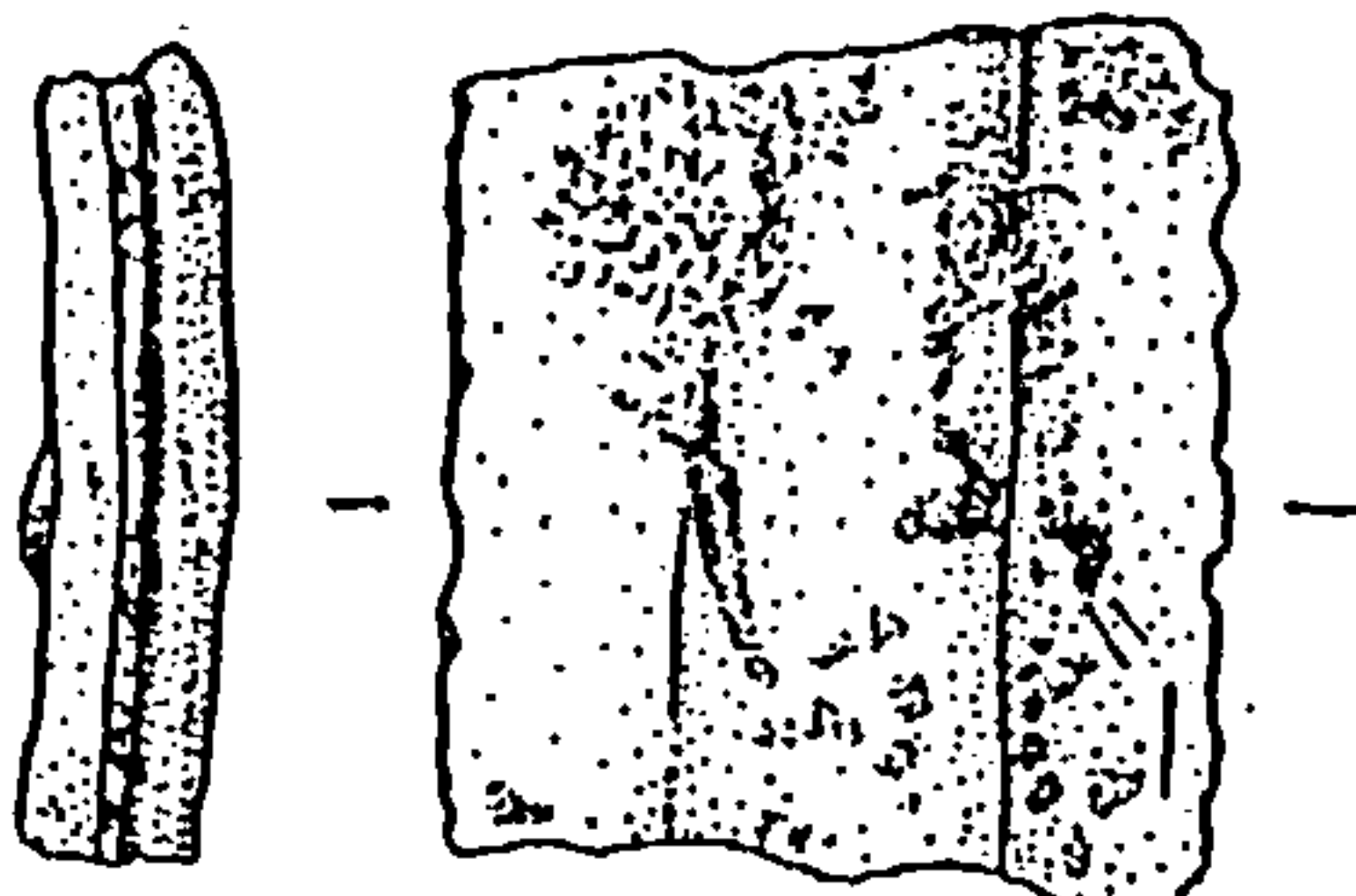


Fig. 53: The Leigh II Hoard (Ref. No. 05): Ewart Park Sword Fragments

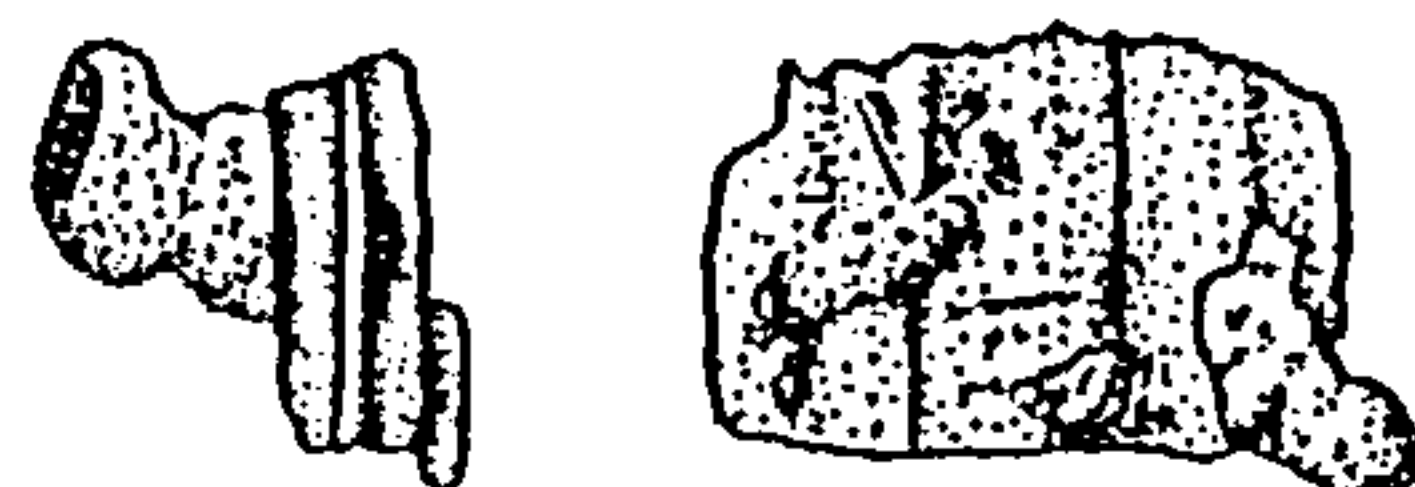
05/106



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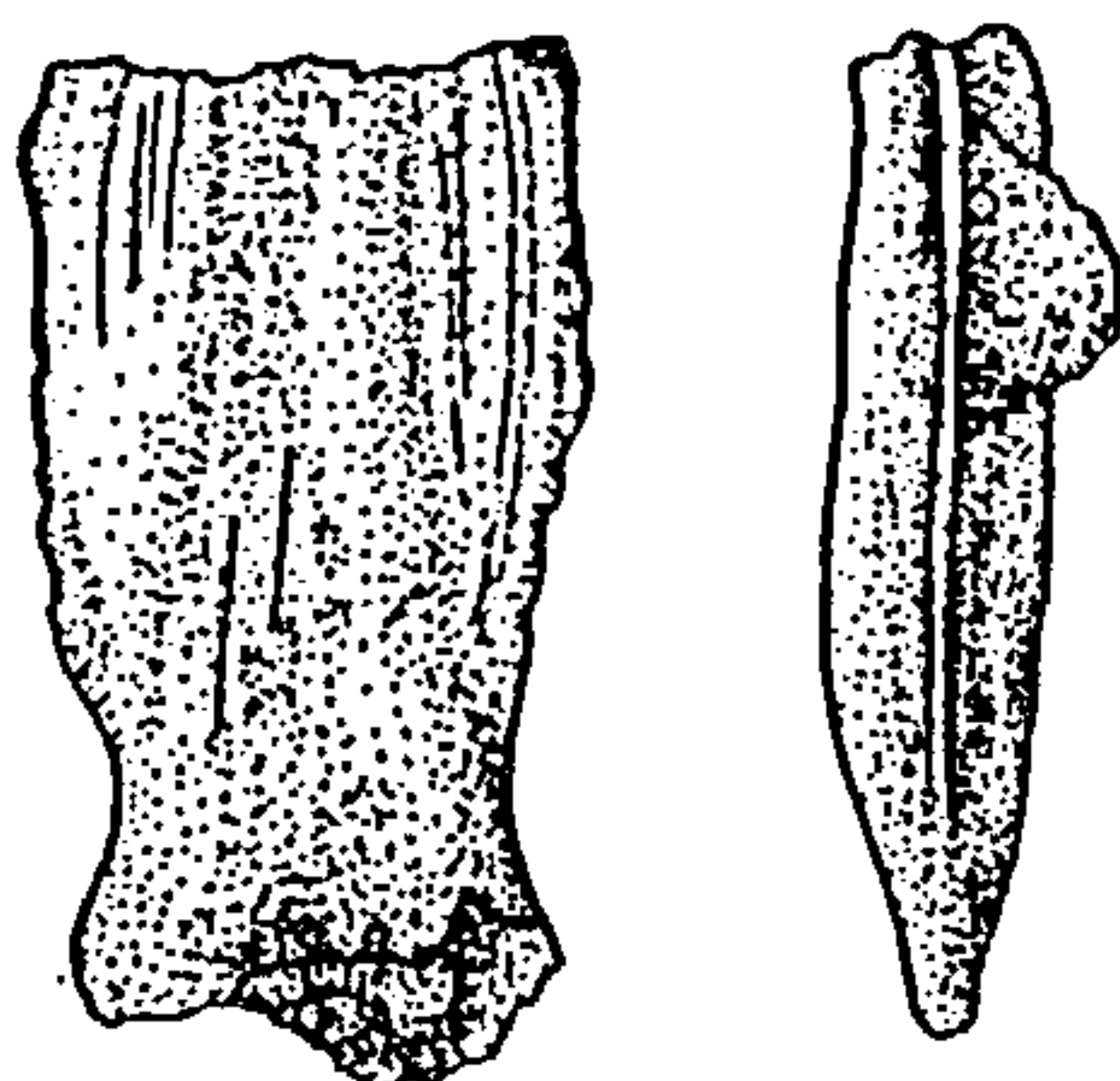


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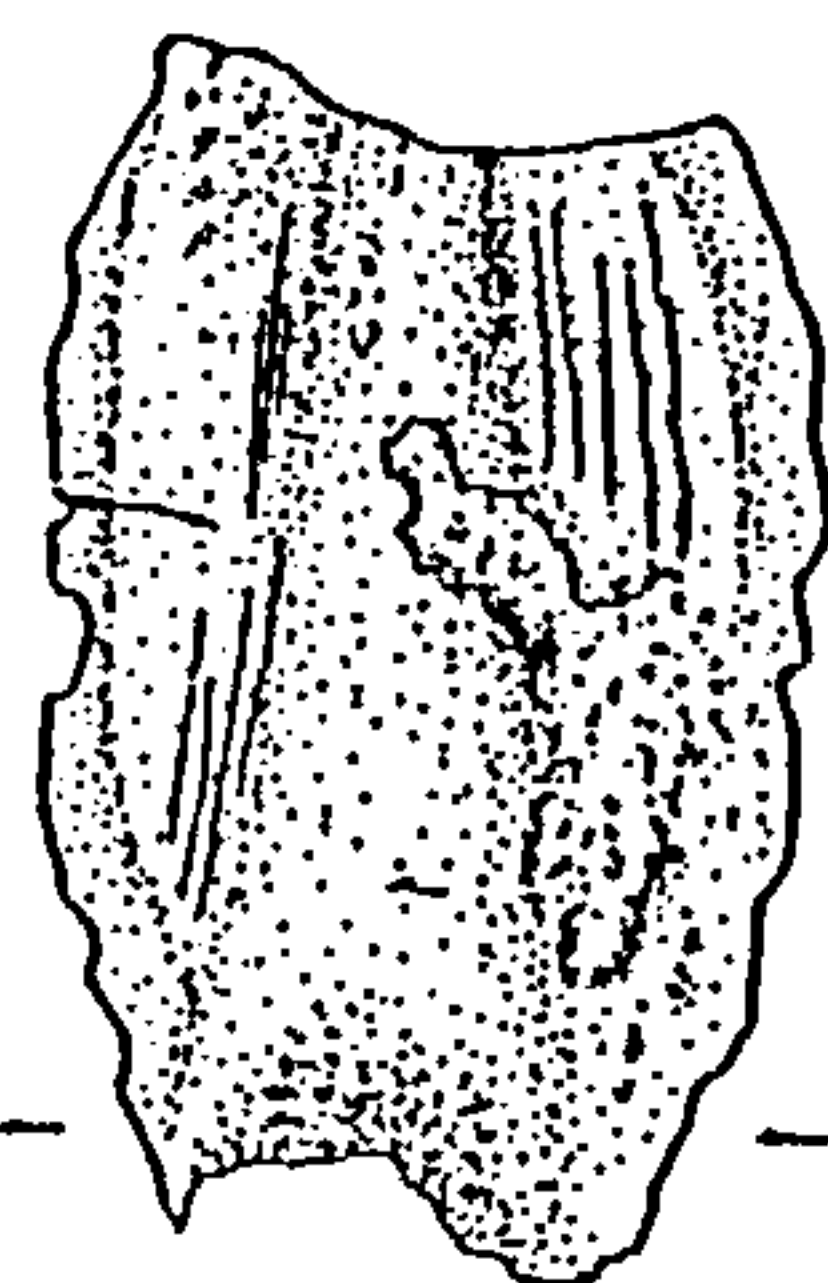


0 2cm

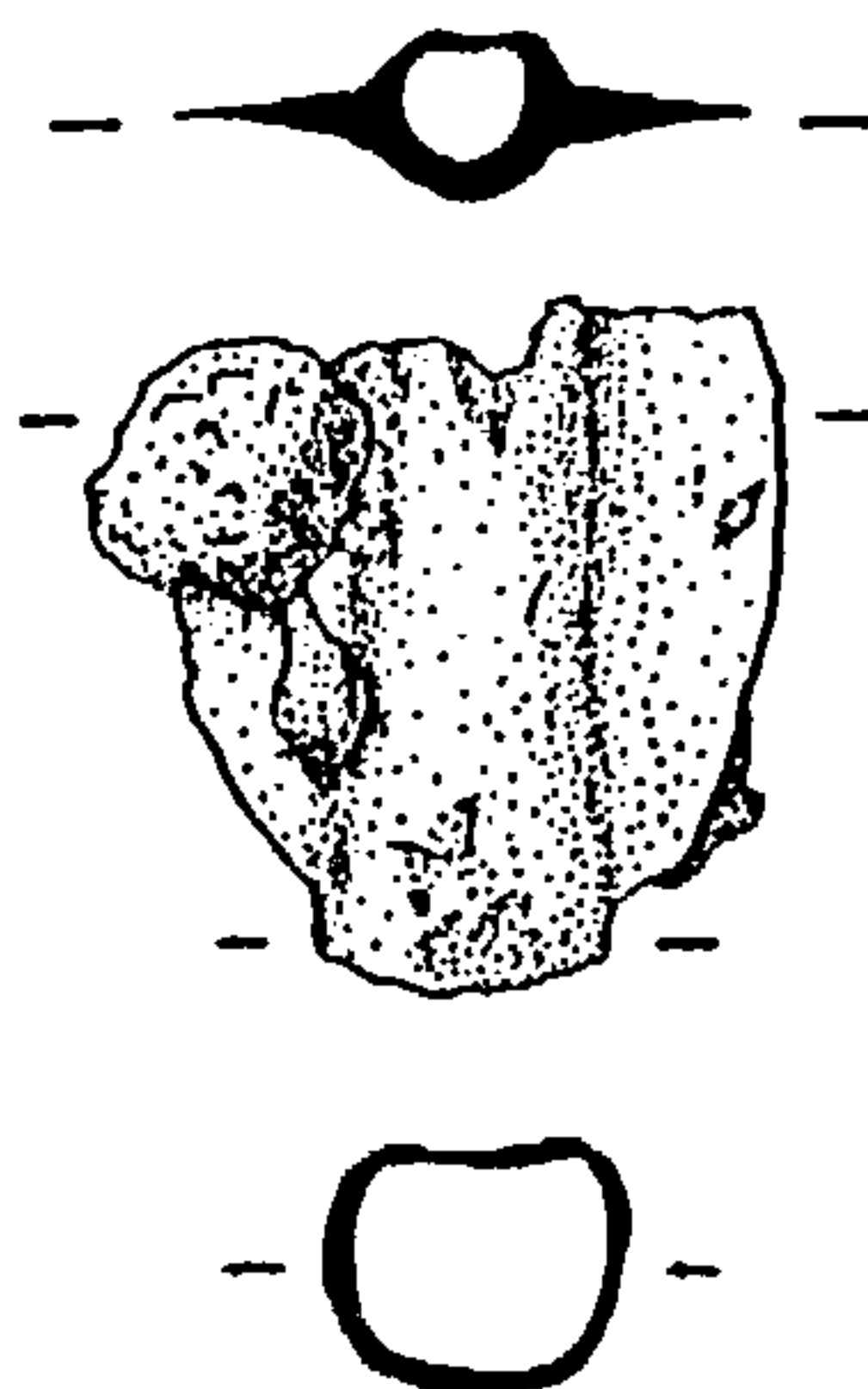
05/109



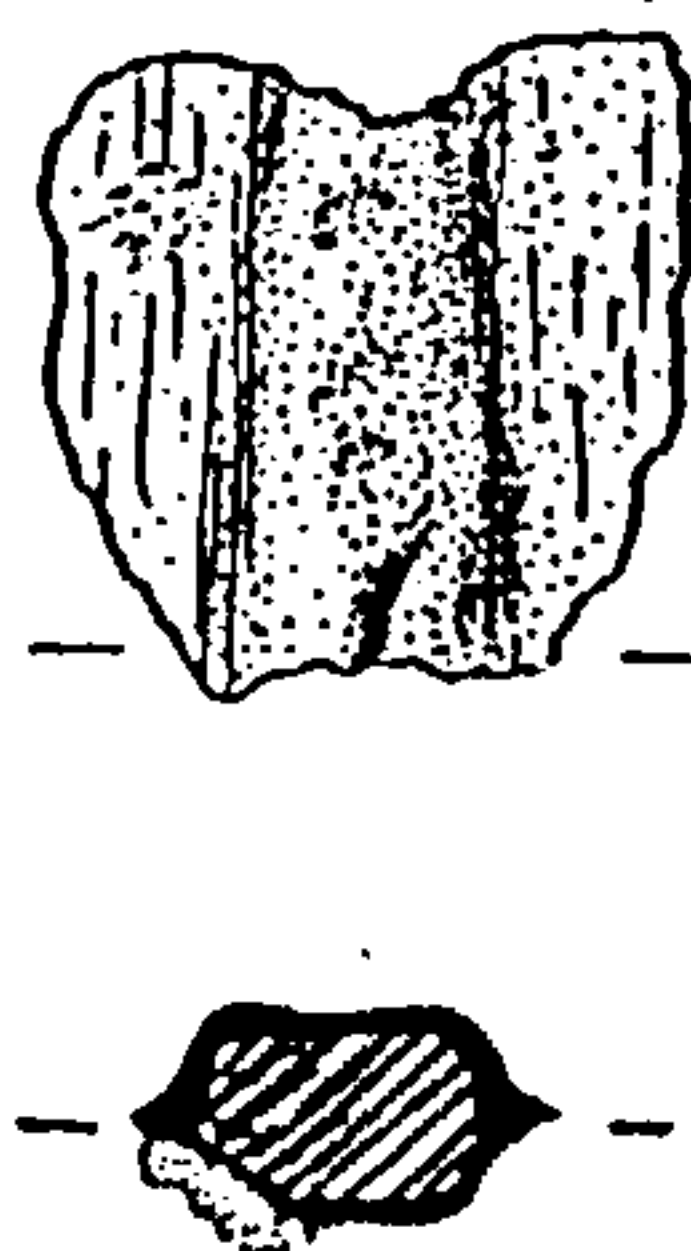
05/110



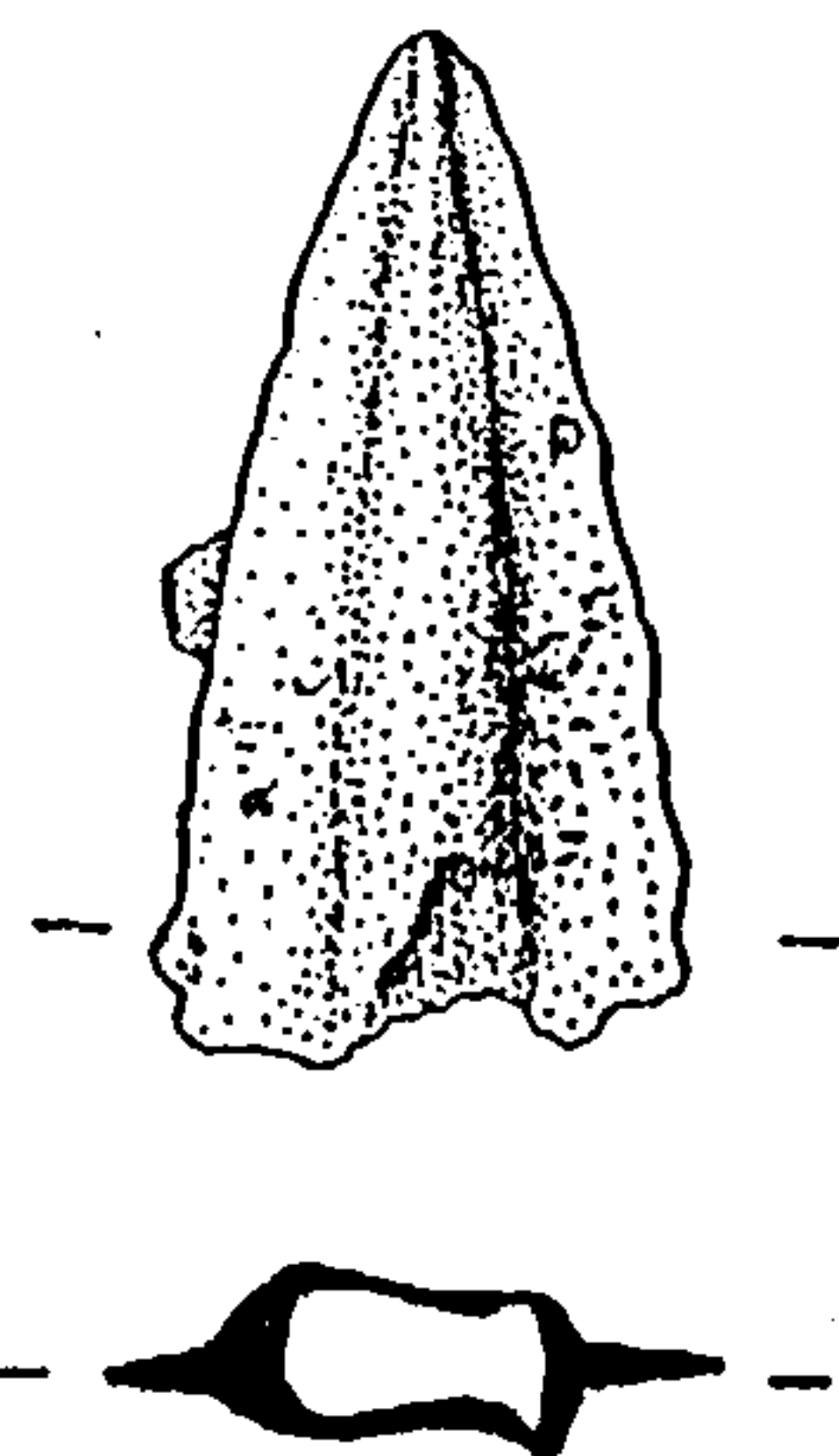
05/111



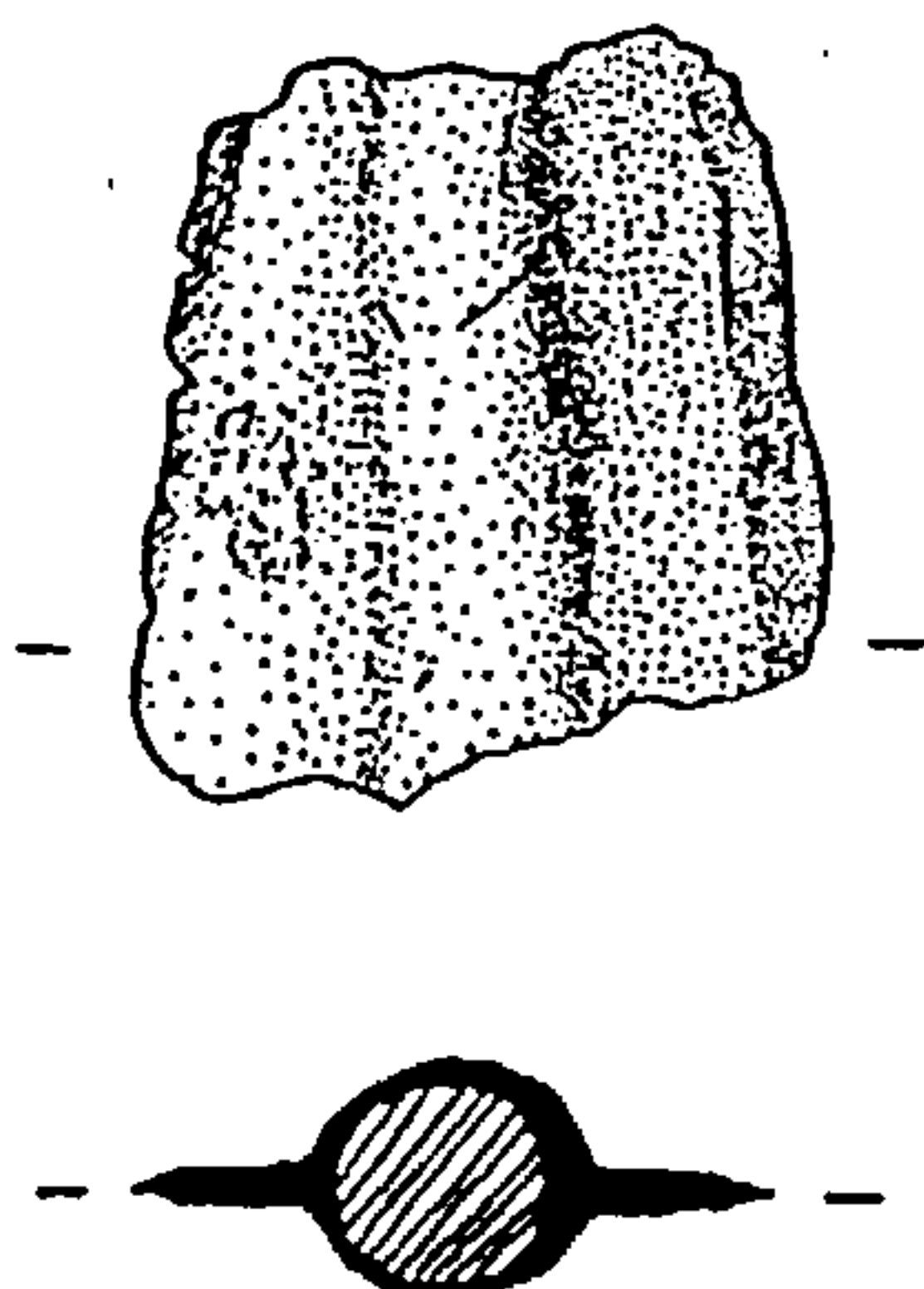
05/112



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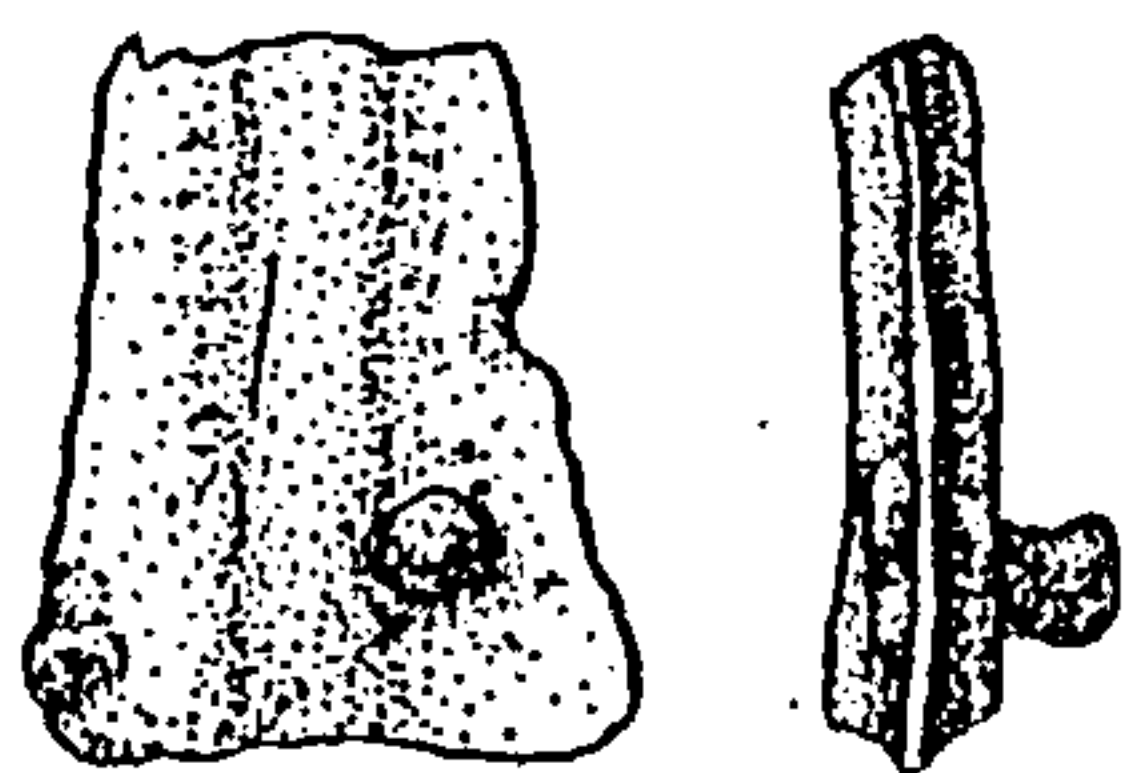
Clay



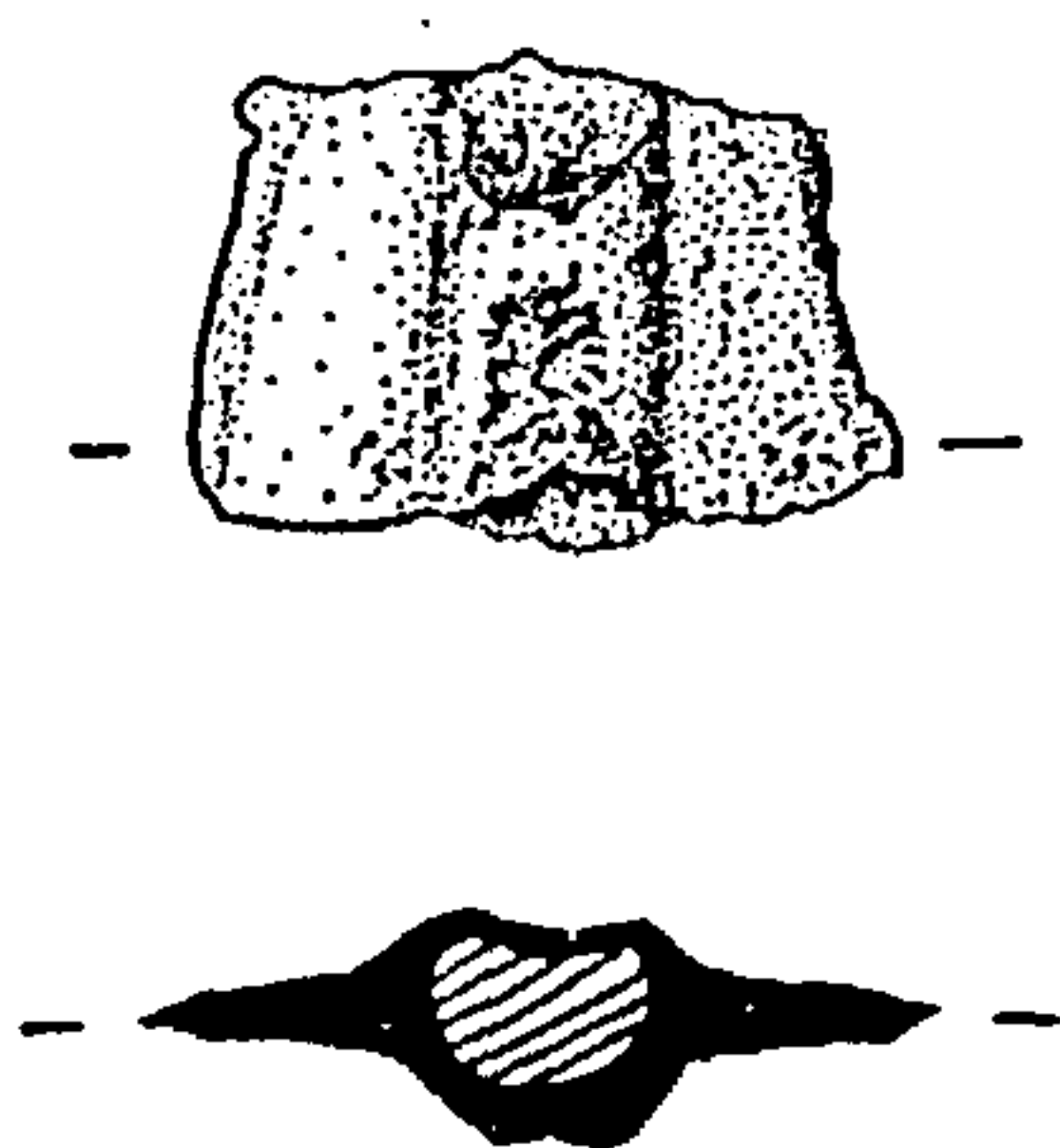
Corrosion Product

Fig. 54: The Leigh II Hoard (Ref. No. 05): 'Carp's Tongue' Sword and Spearhead Fragments (i)

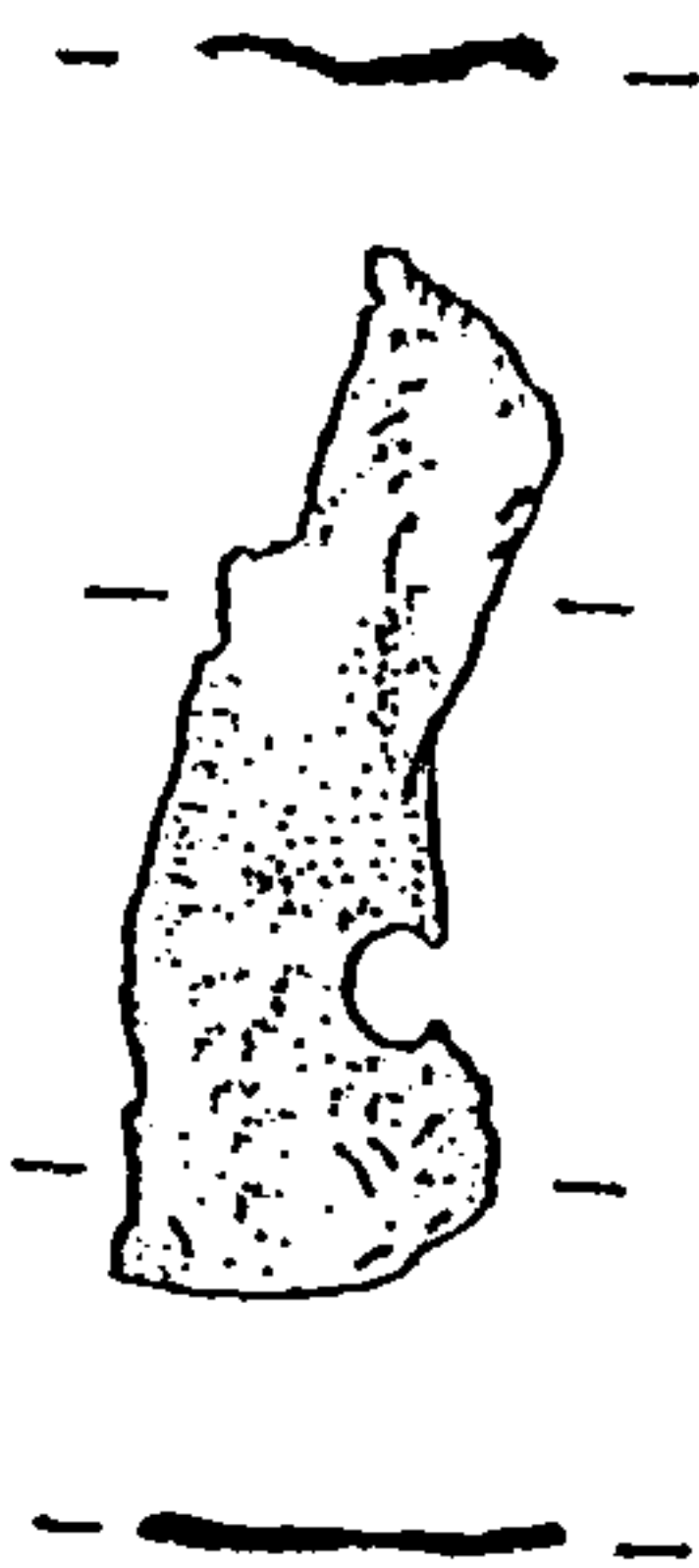
05/115



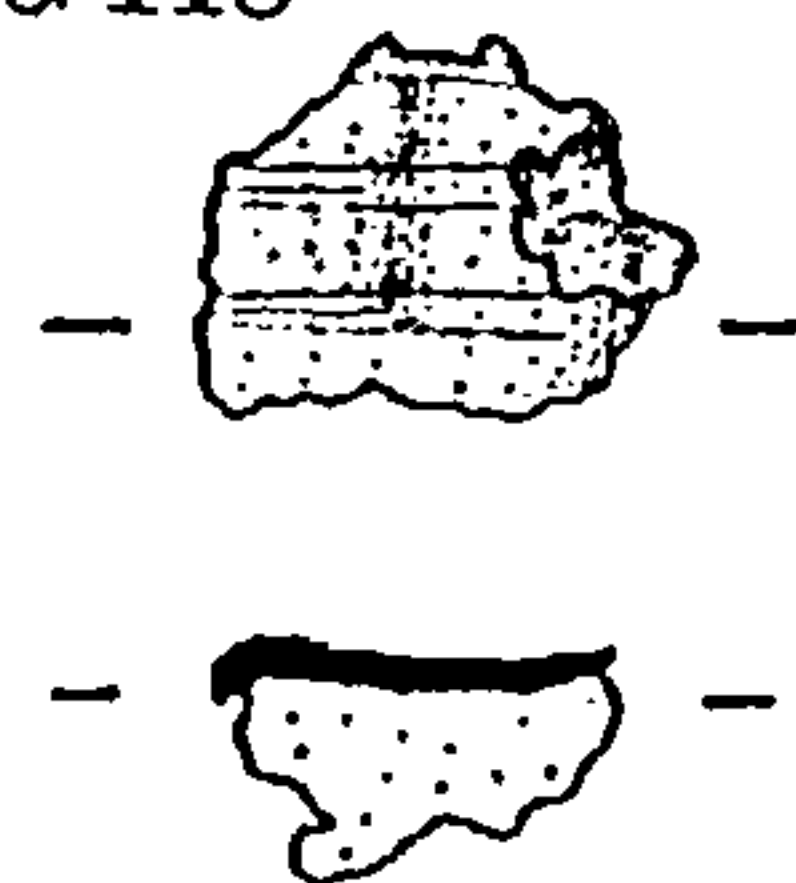
05/116



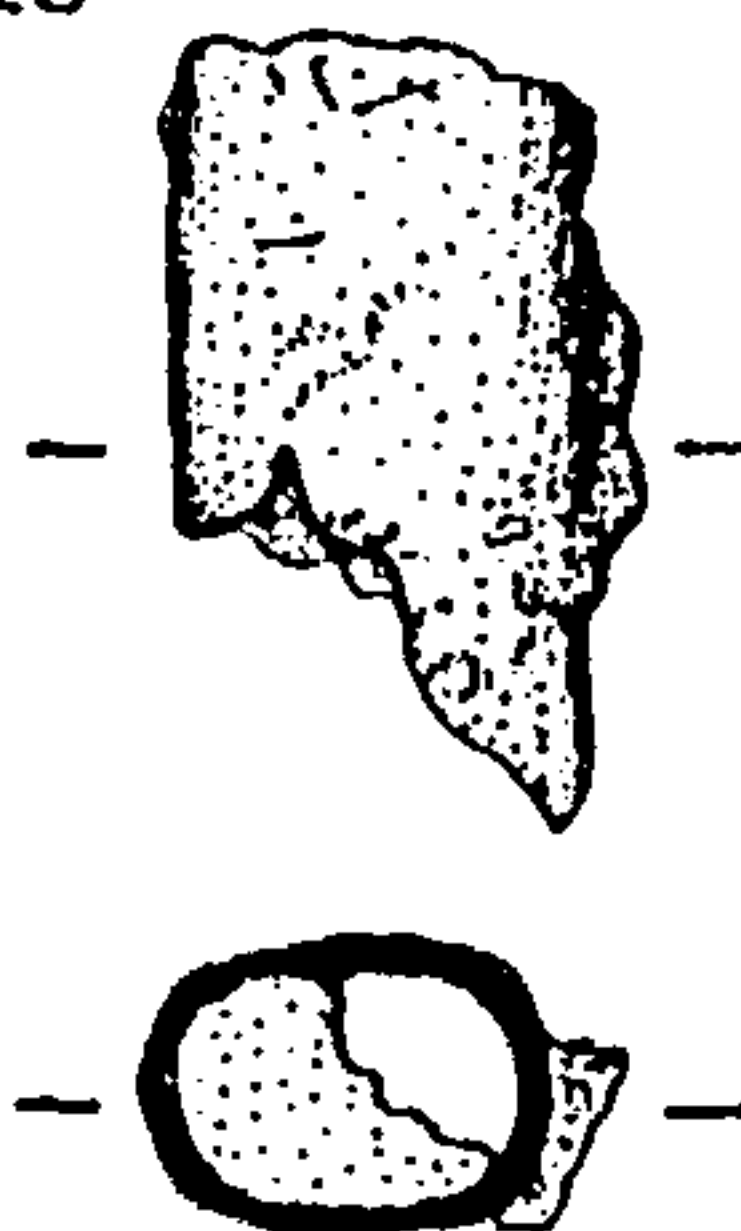
05/117



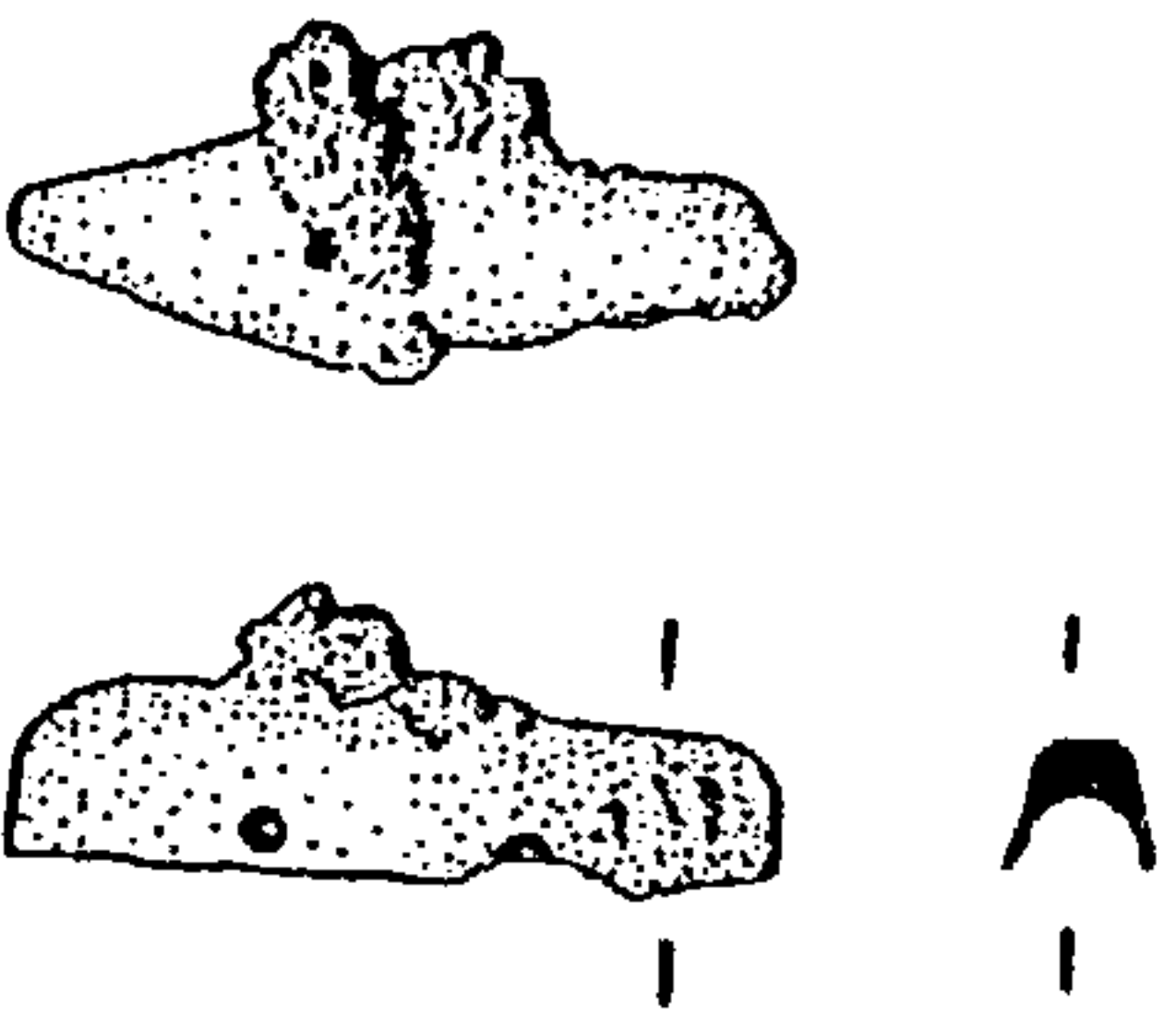
05/118



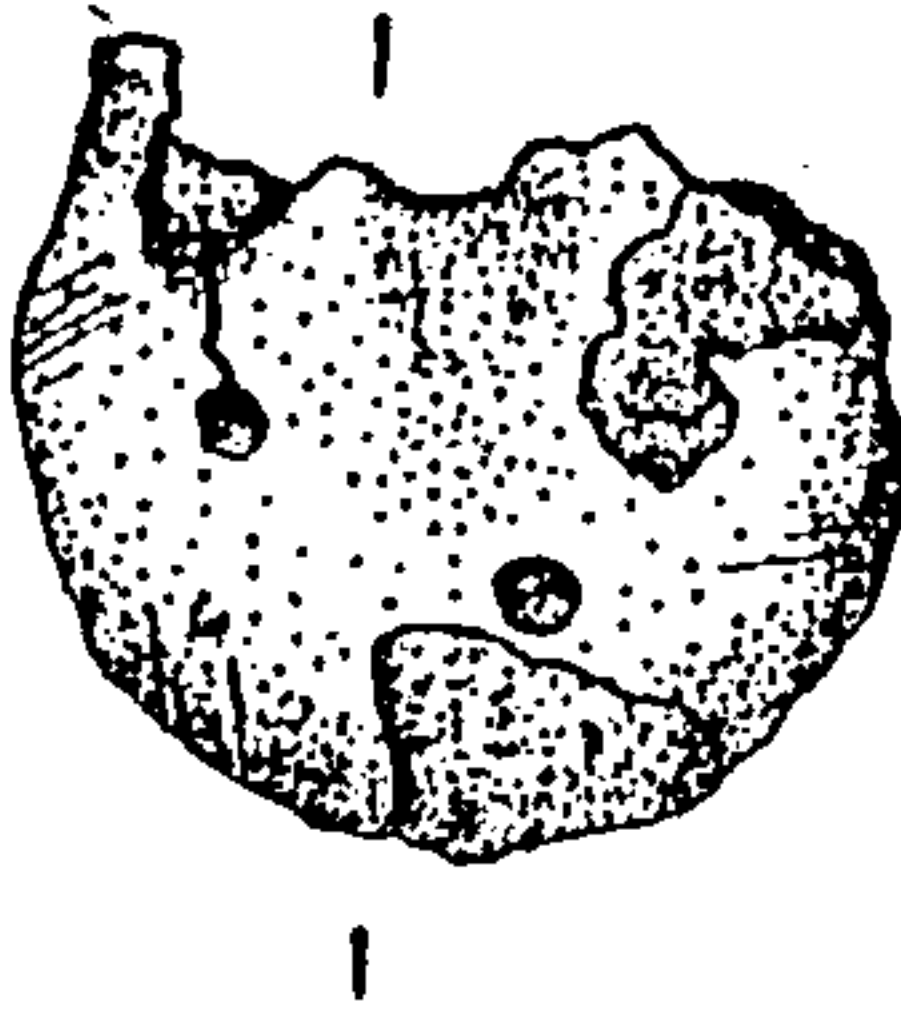
05/119



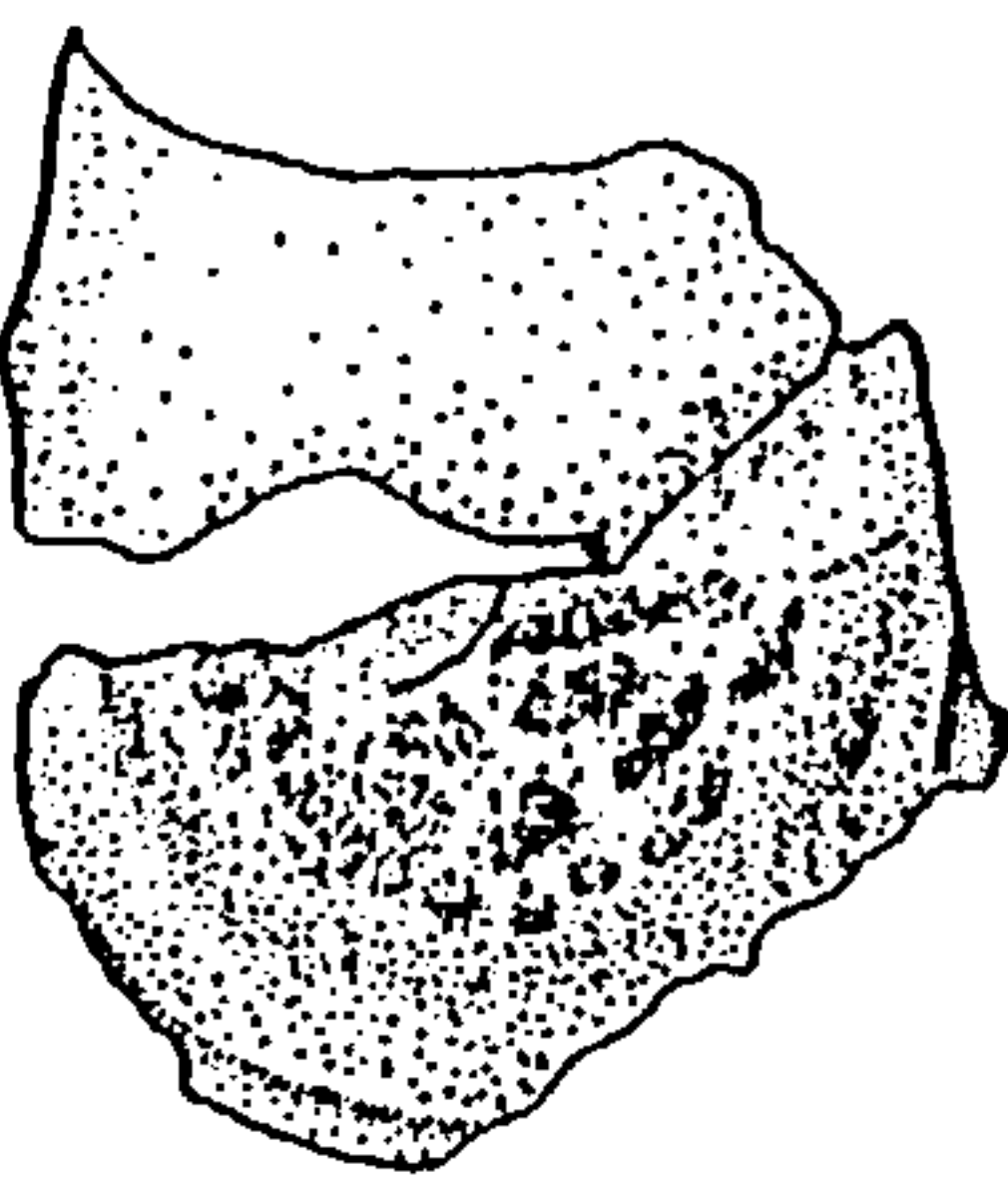
05/120



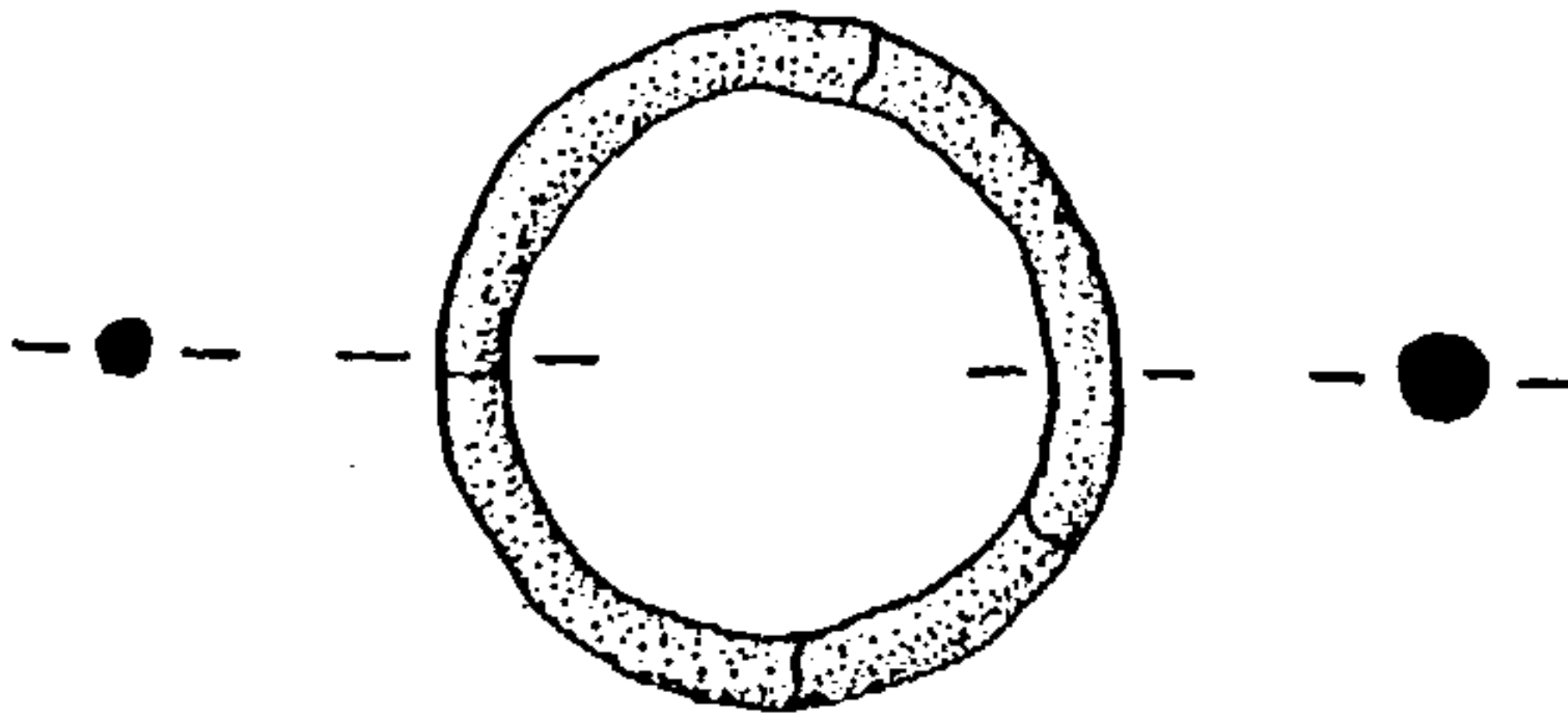
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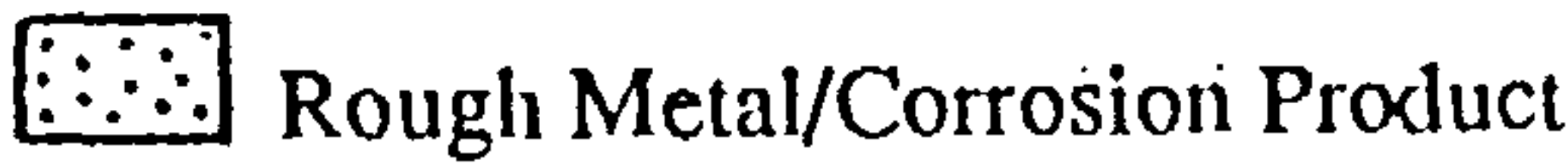
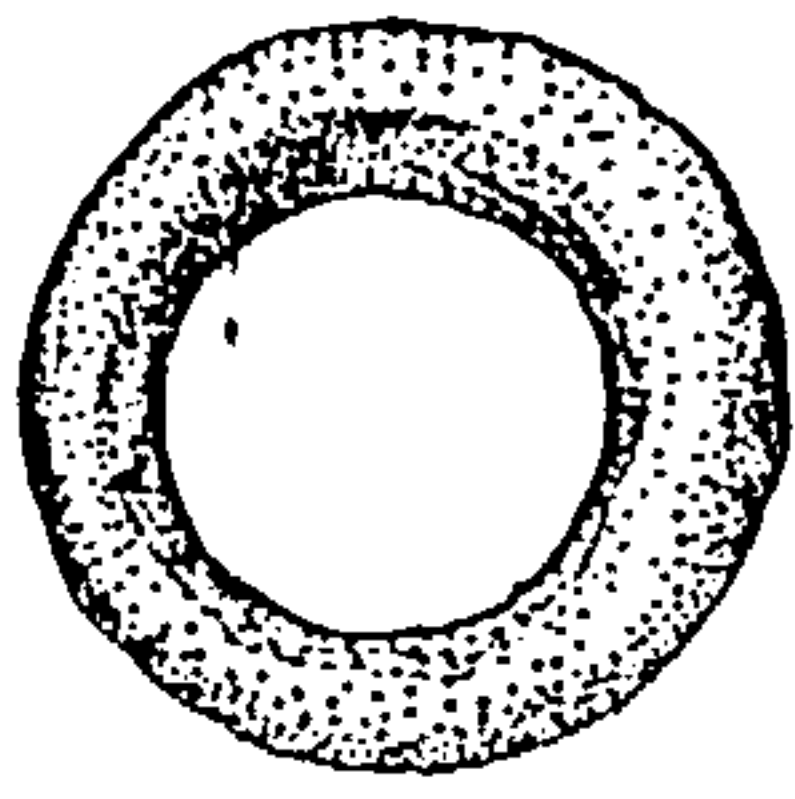


Fig. 55: The Leigh II Hoard (Ref. No. 05): Spearhead Frägments (ii) and Decorative Fittings

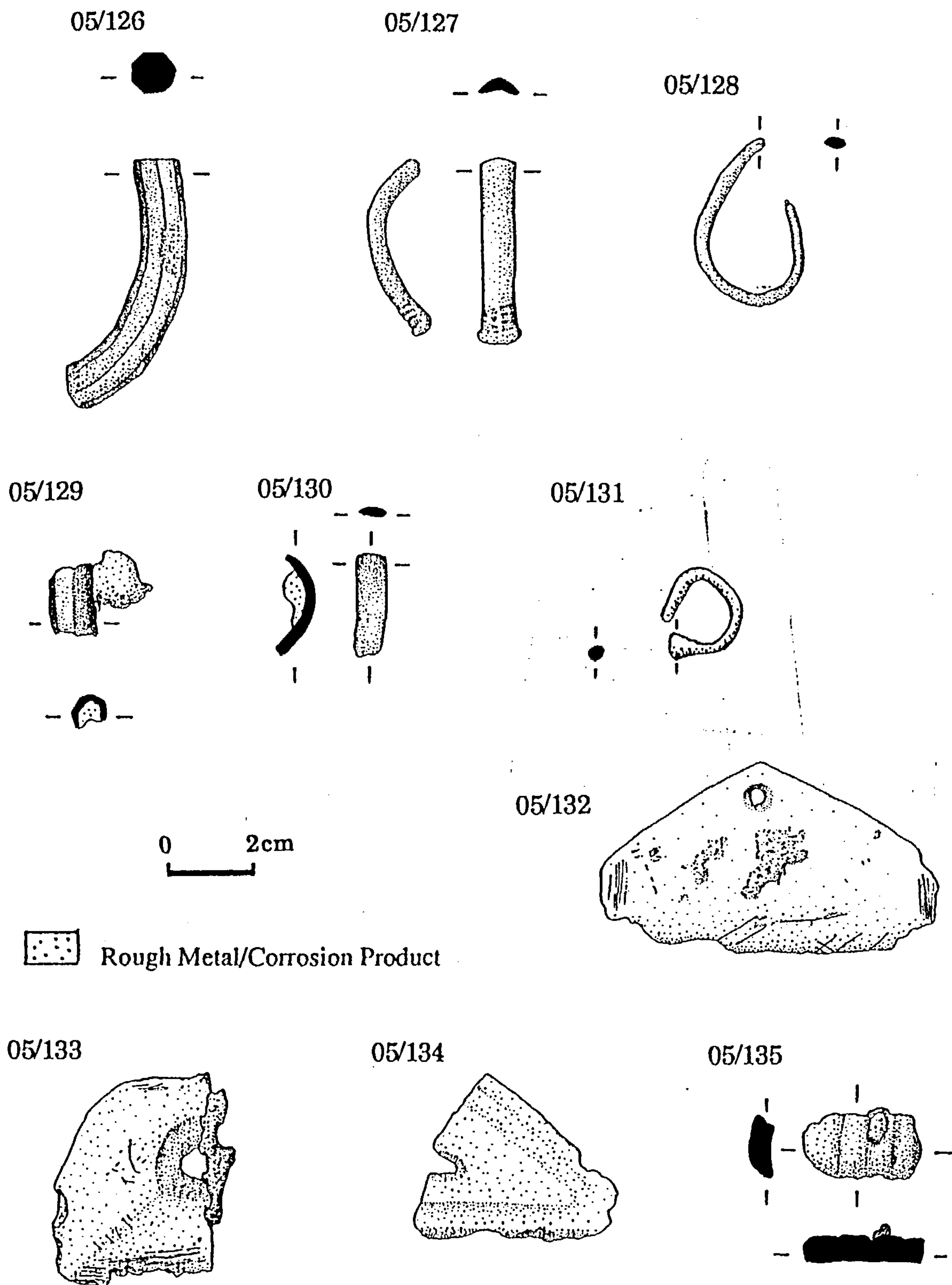


Fig. 56: The Leigh II Hoard (Ref. No. 05): Bracelet Fragments, Hog-backed Knives and Cauldron Fragments

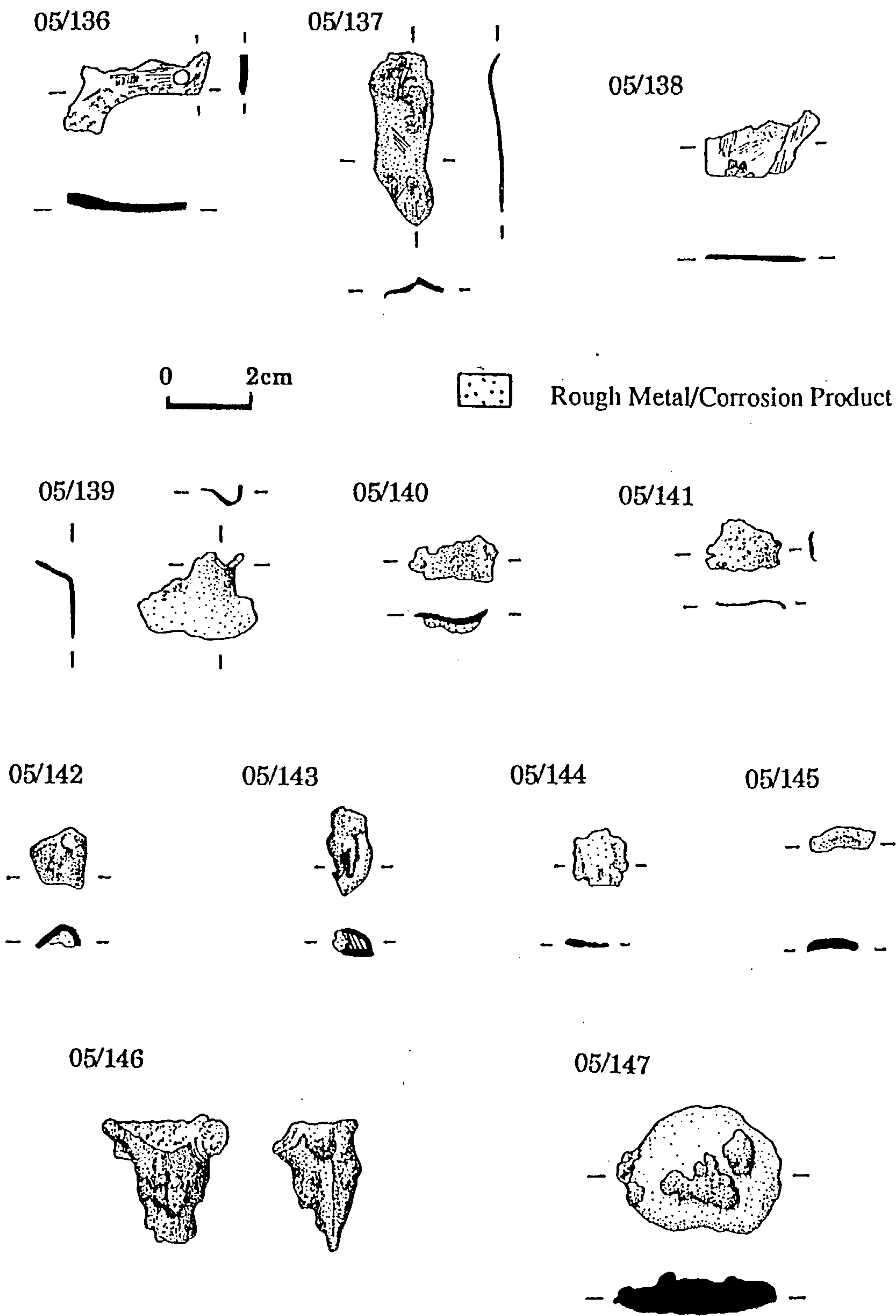
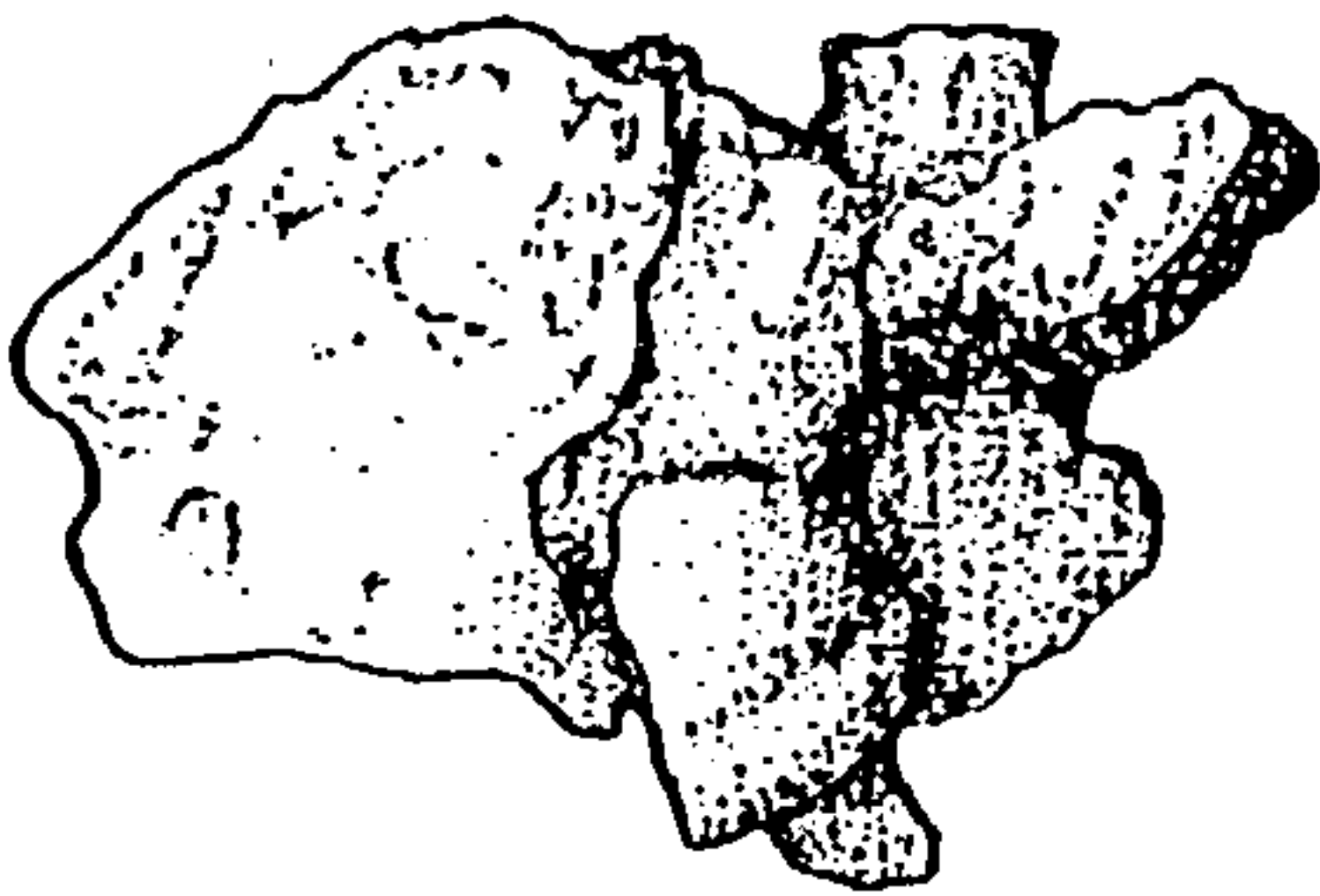
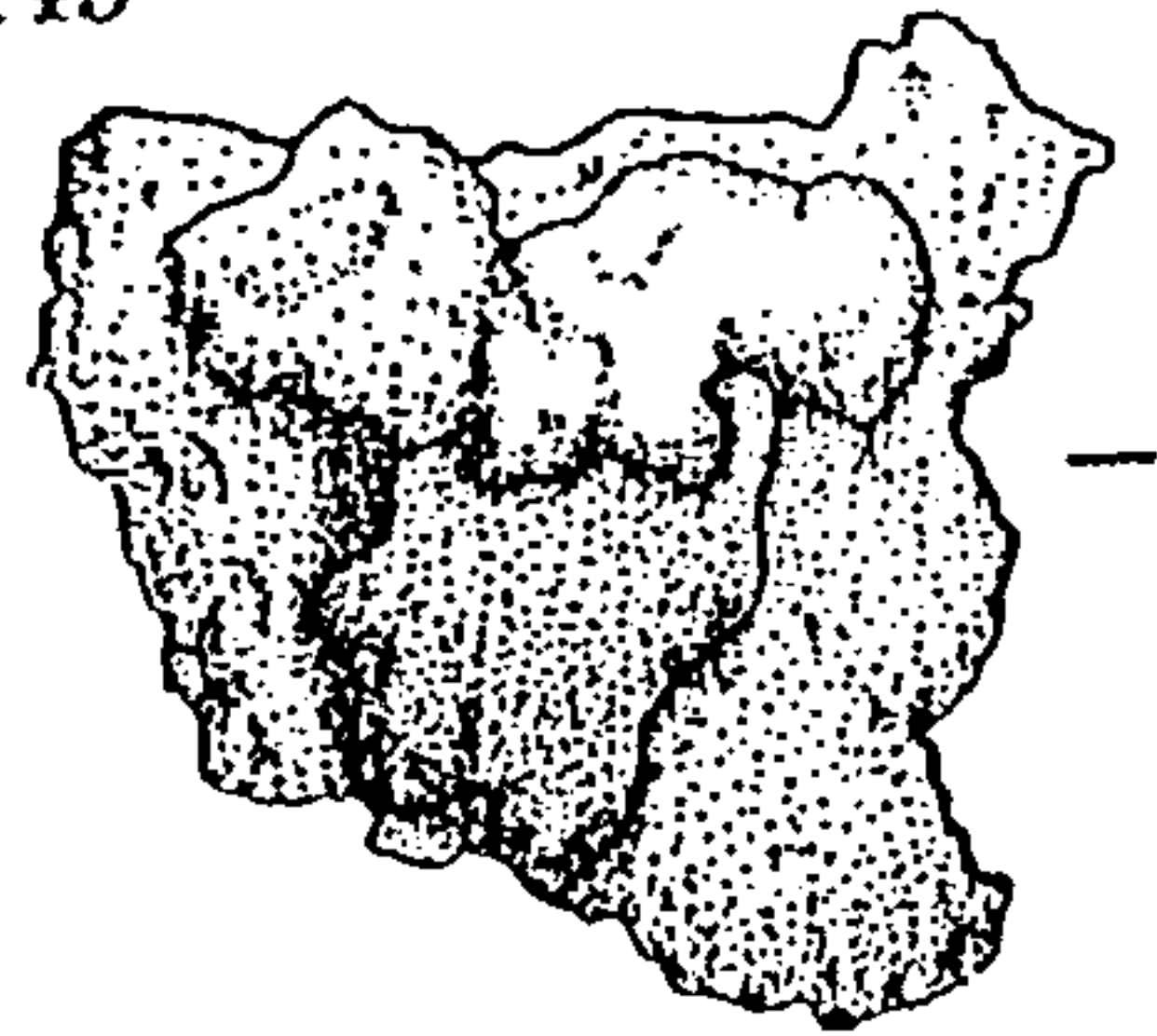


Fig. 57: The Leigh II Hoard (Ref. No. 05): Miscellaneous Fragments and Casting Debris

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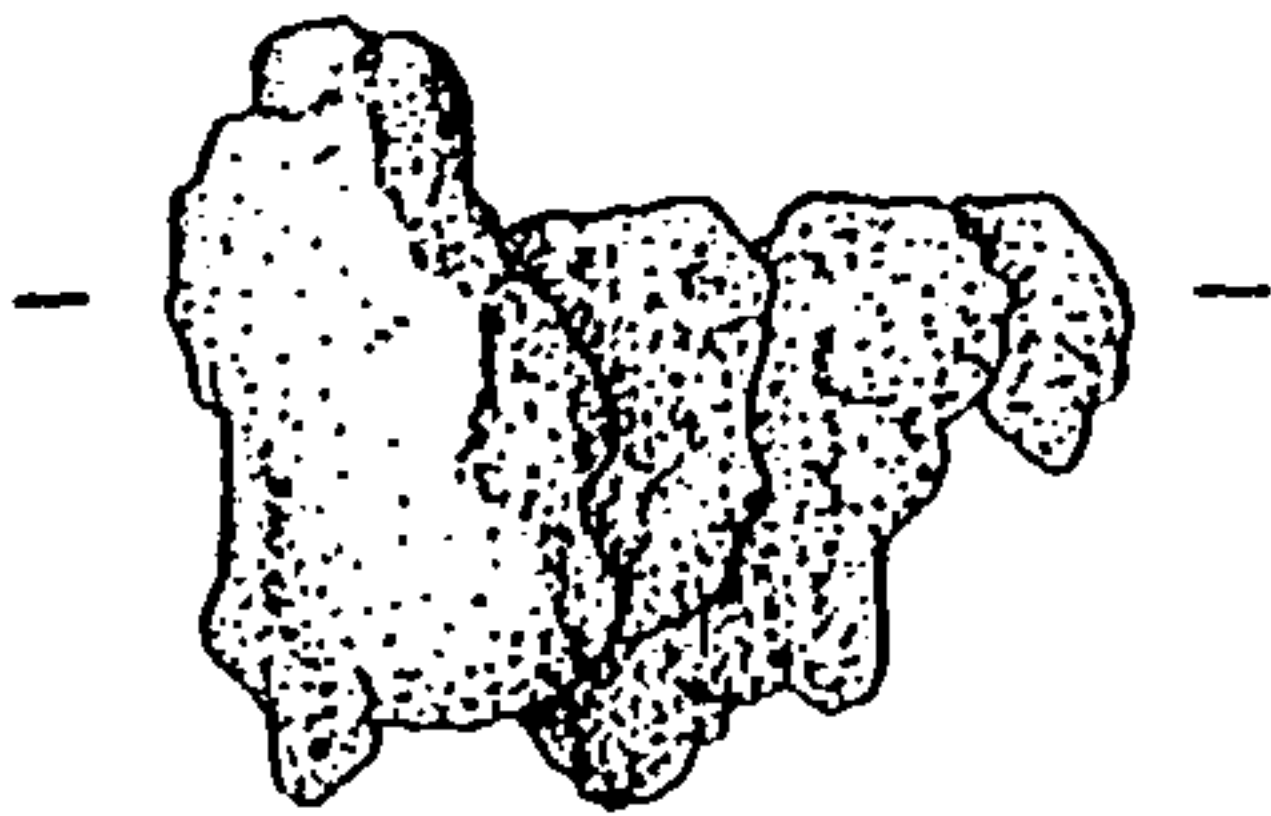
05/149



0 2cm



05/150



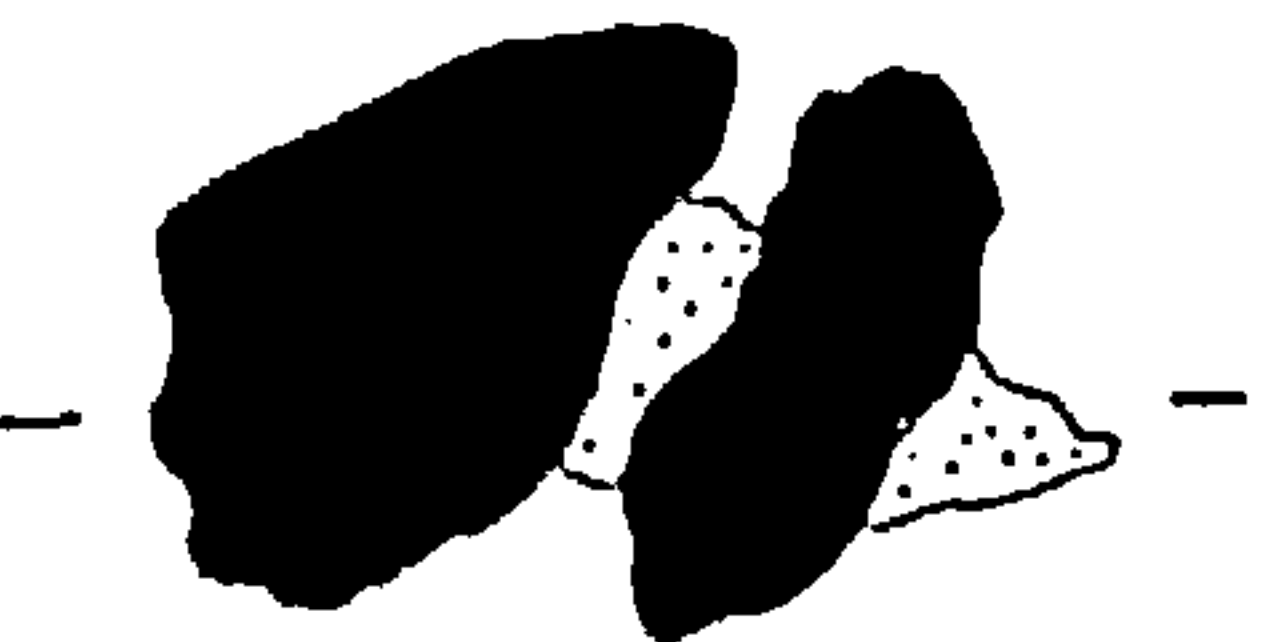
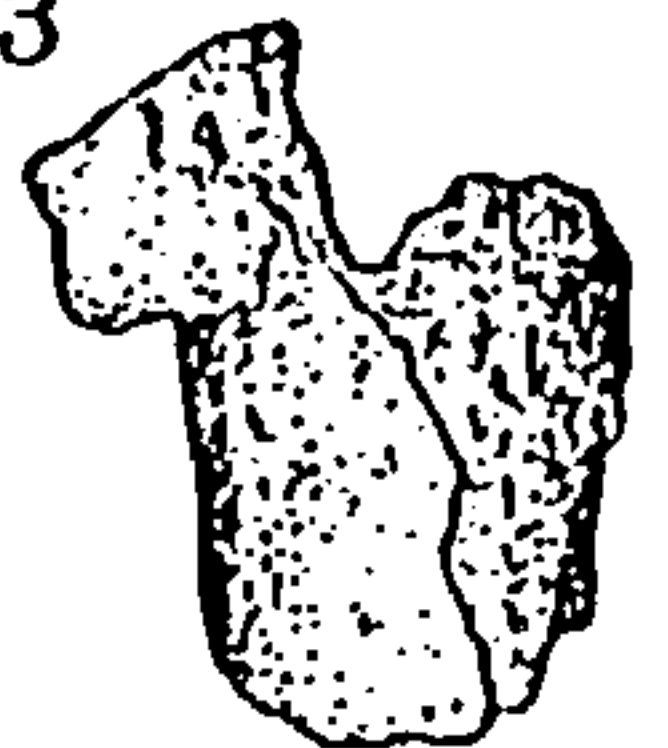
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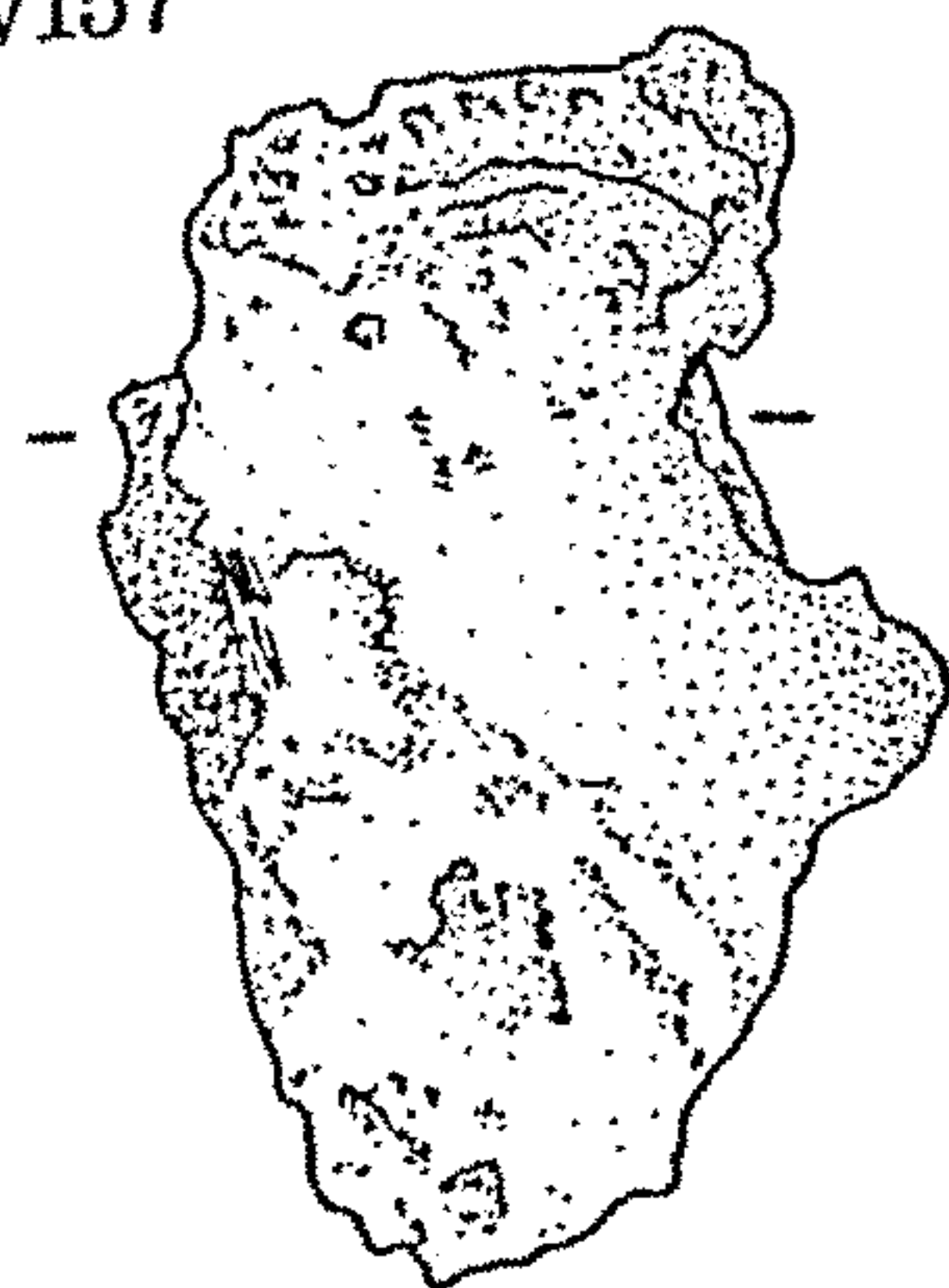
05/156



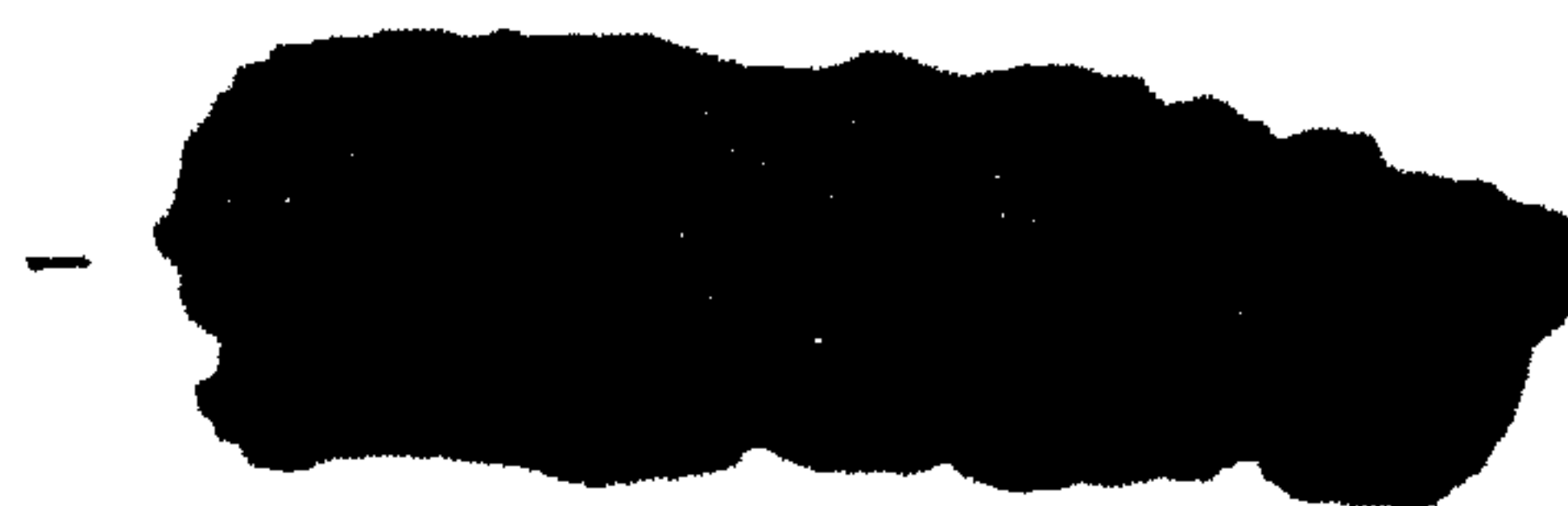
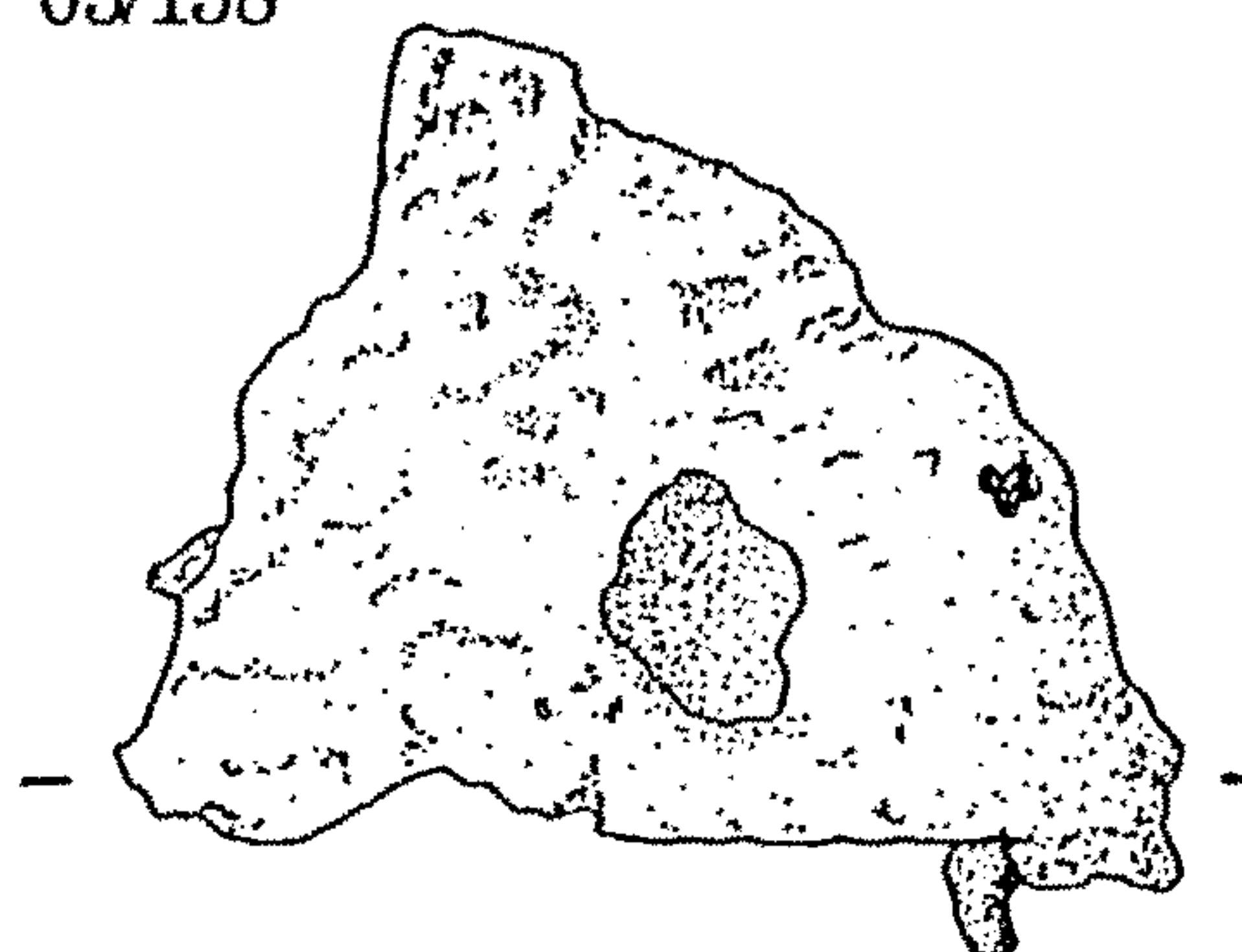
Rough Metal/Corrosion Product

Fig. 58: The Leigh II Hoard (Ref. No. 05): Ingot Metal (i)

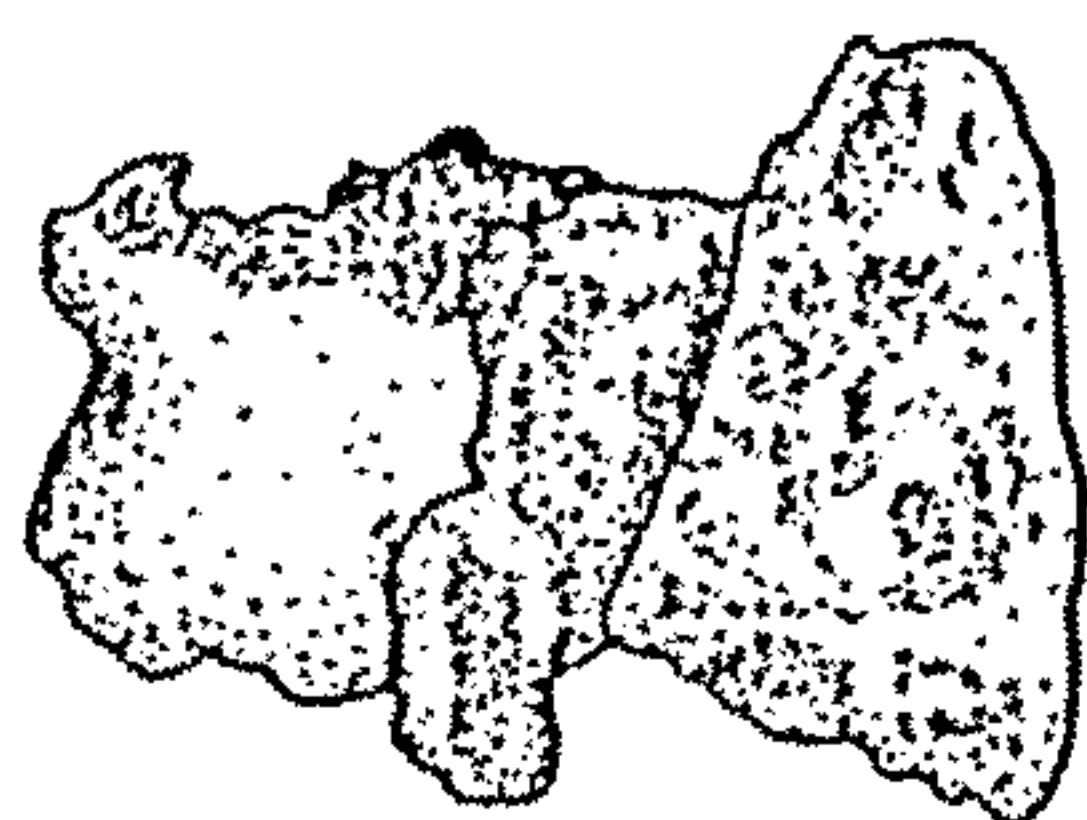
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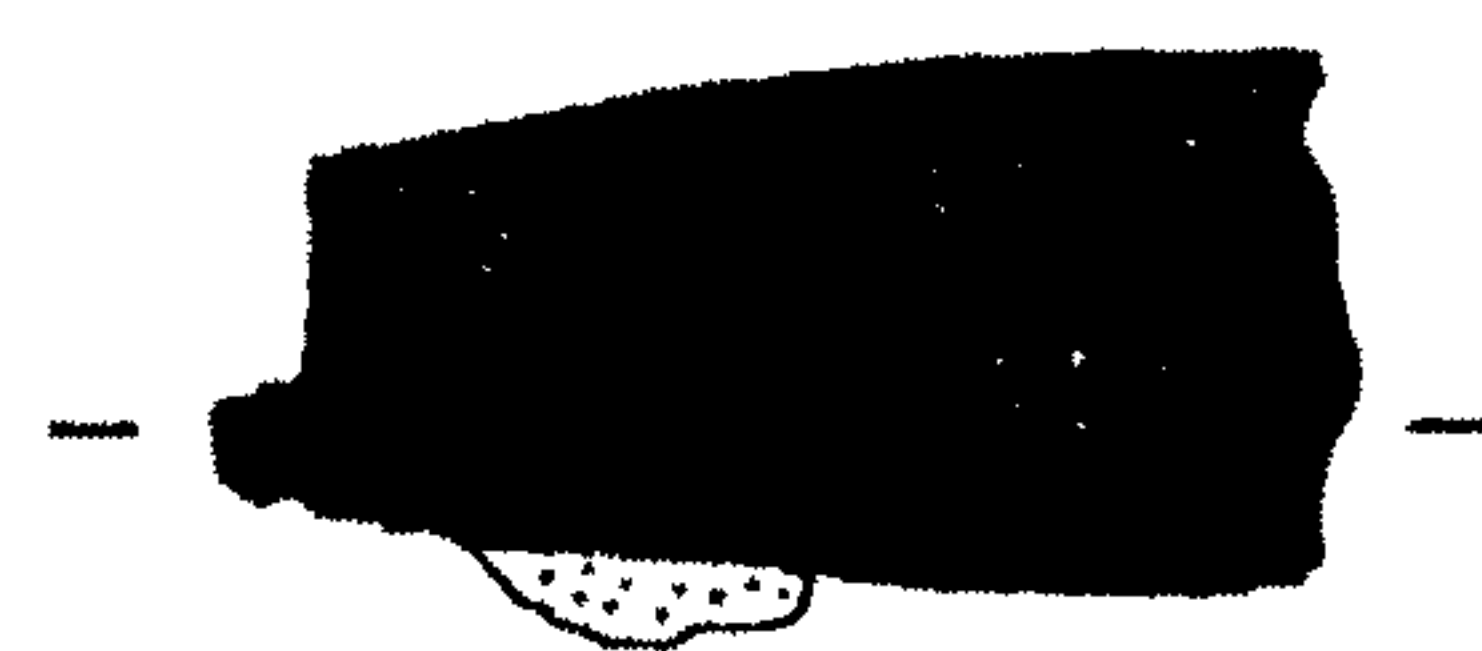
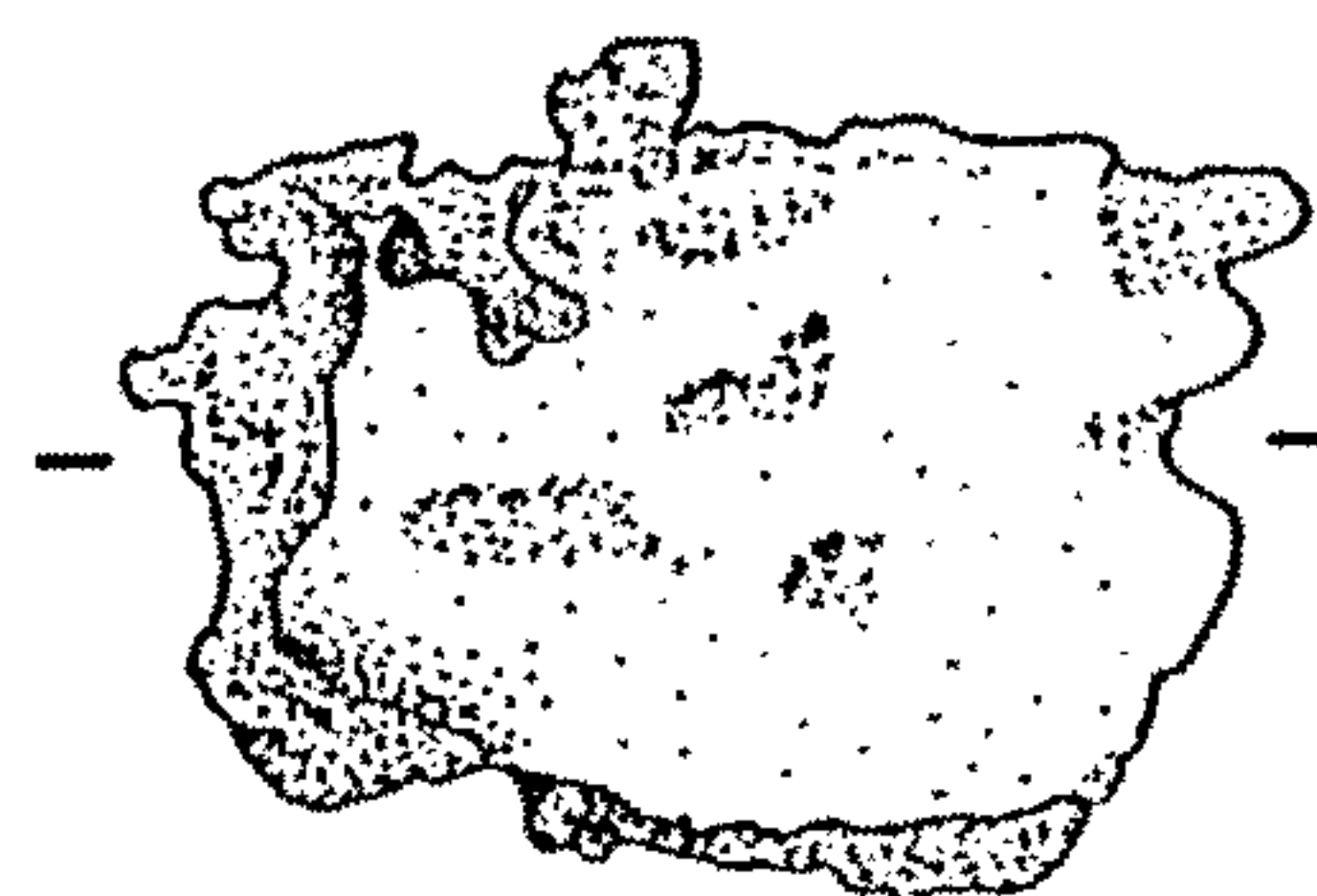


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0 2cm

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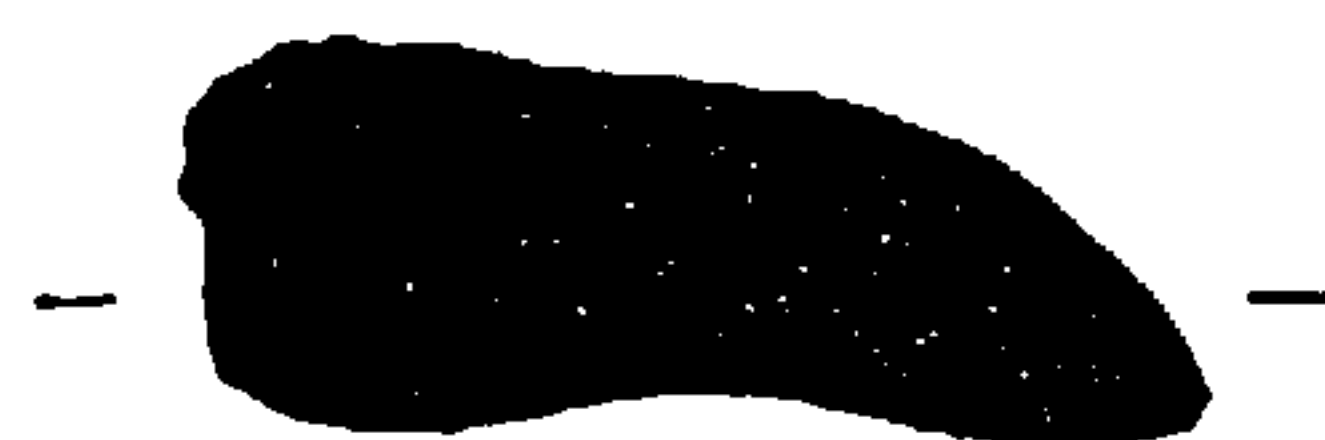
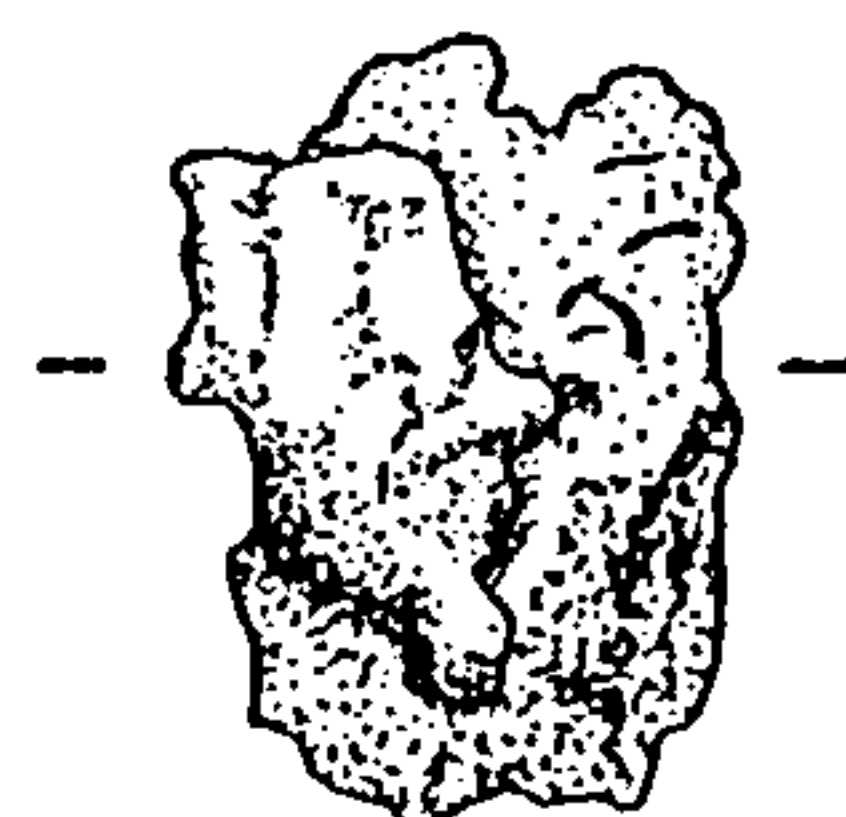
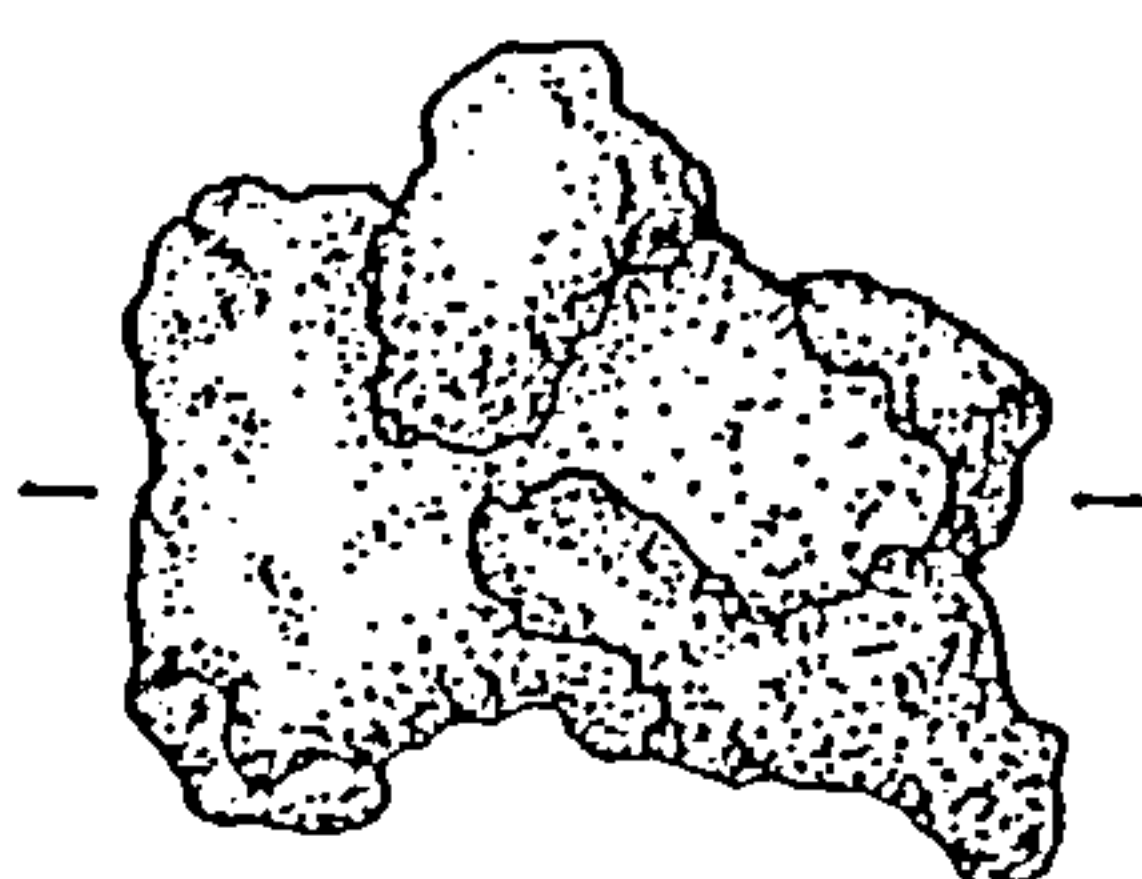
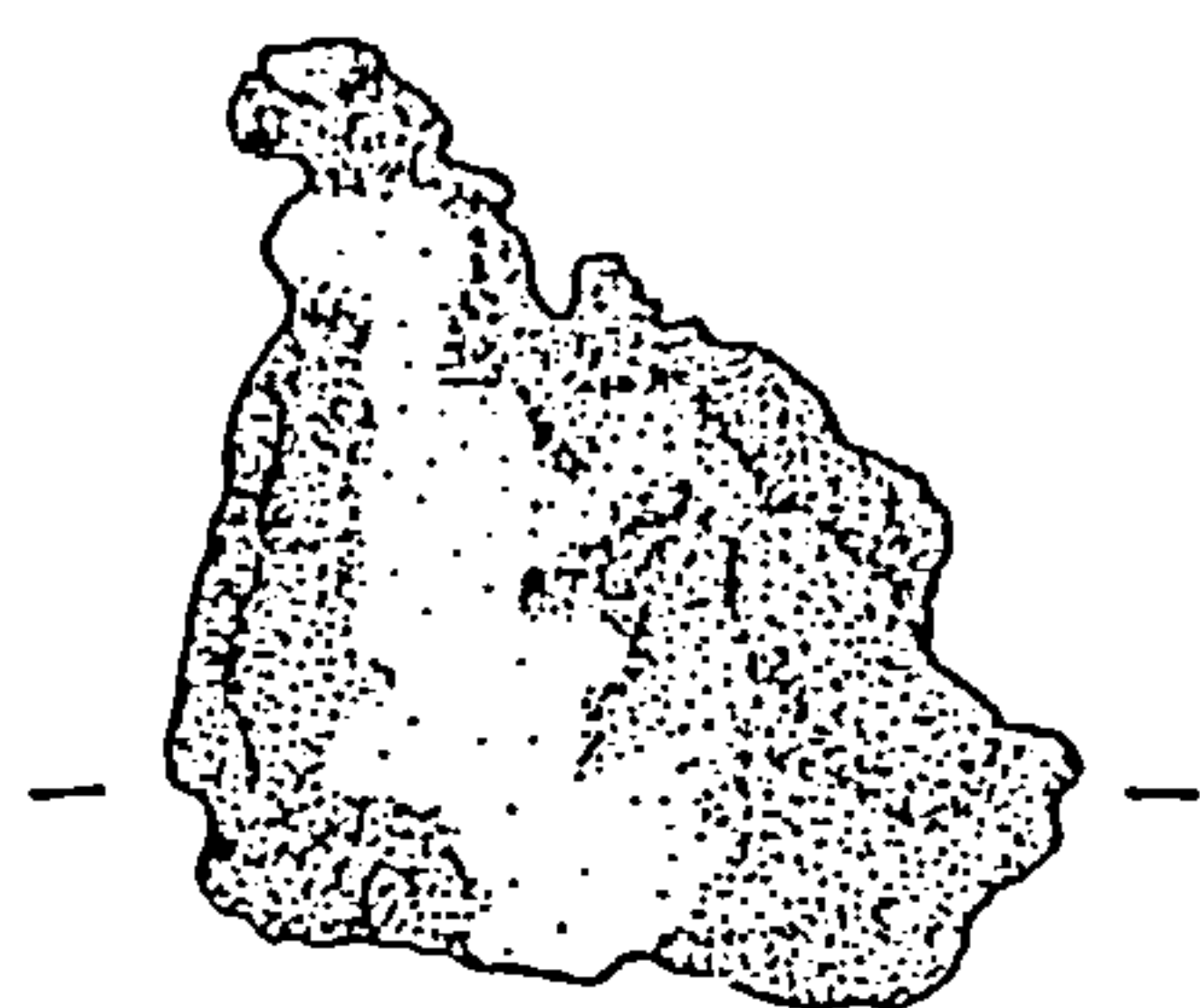
Rough Metal/Corrosion Product

Fig. 59: The Leigh II Hoard (Ref. No. 05): Ingot Metal (ii)

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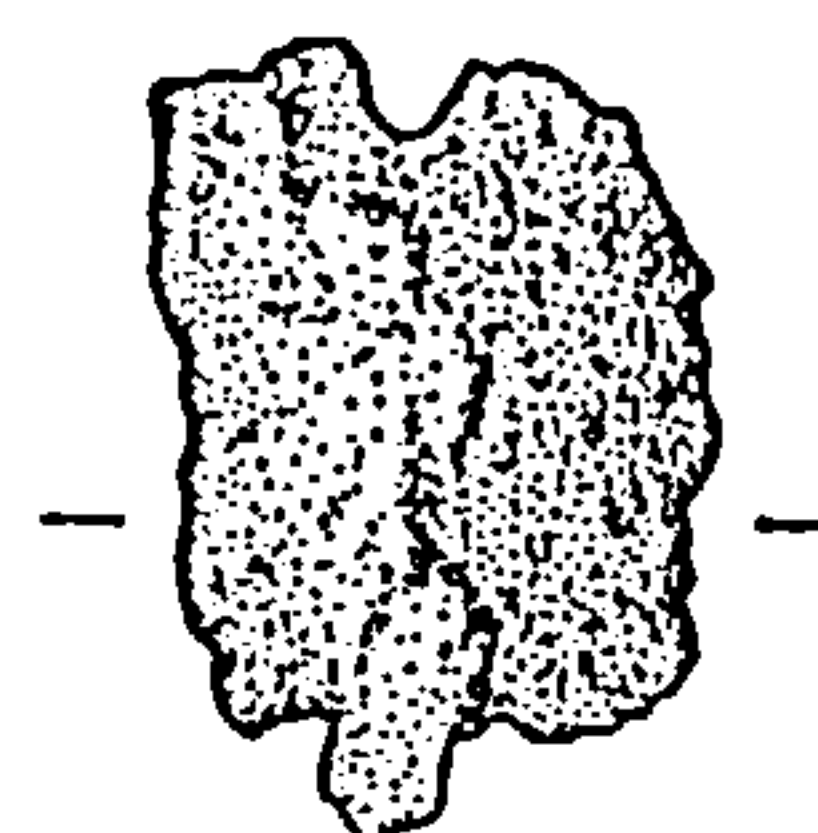
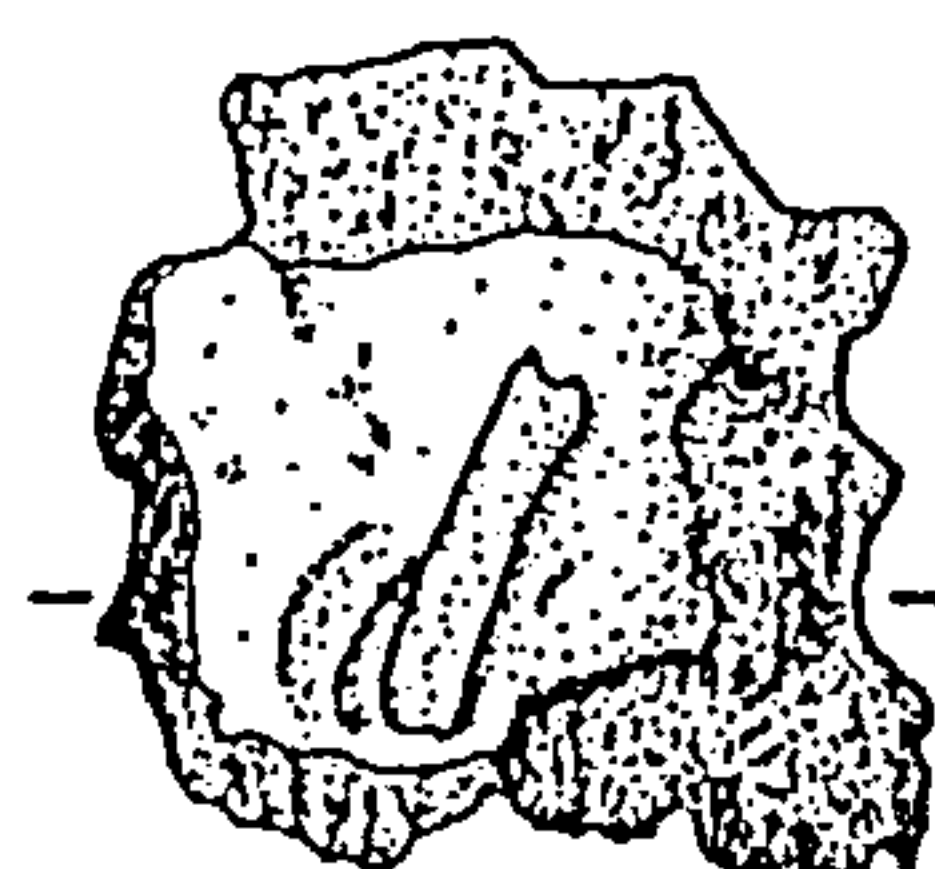
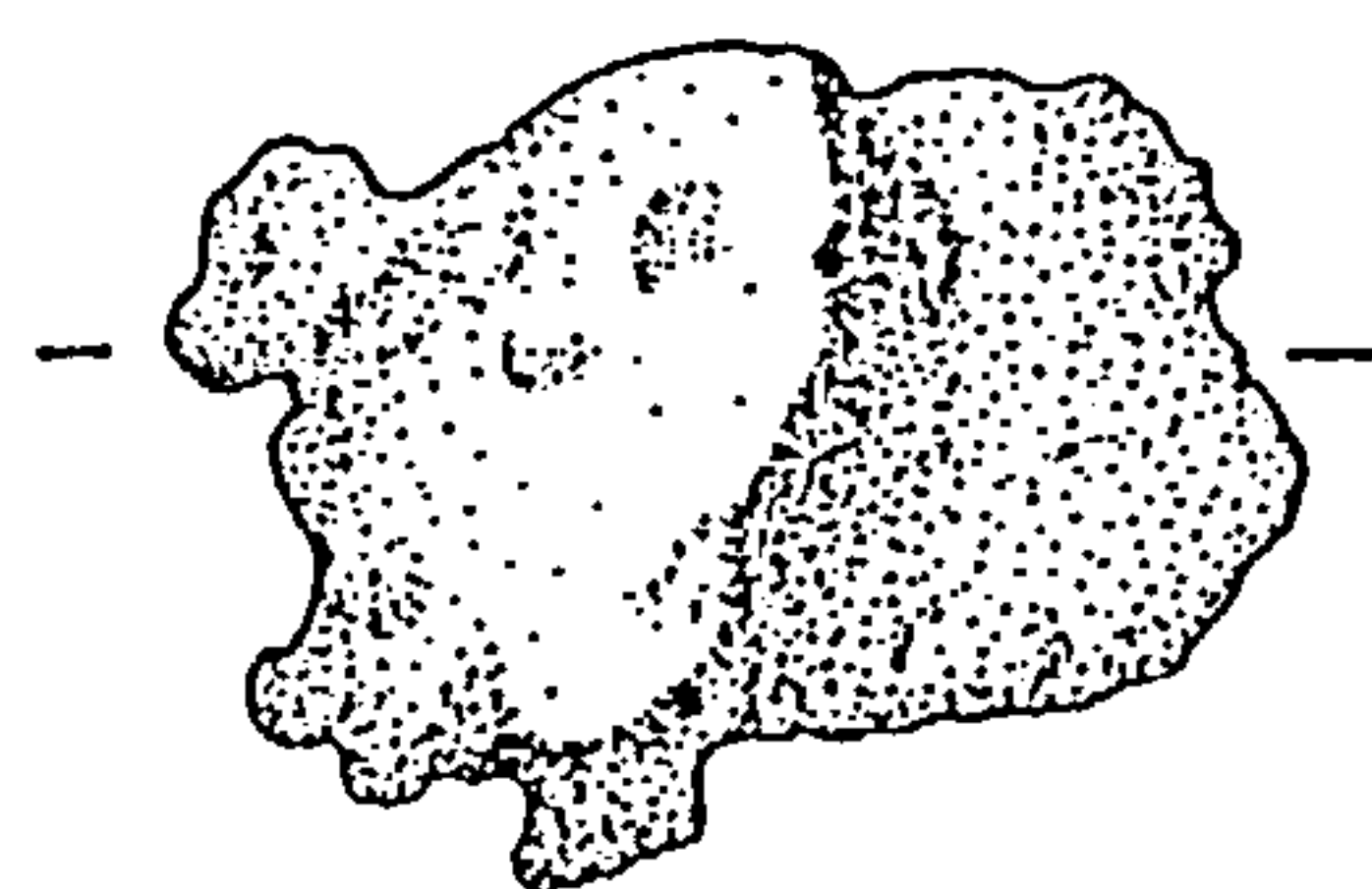
0 2cm

 Rough Metal/Corrosion Product

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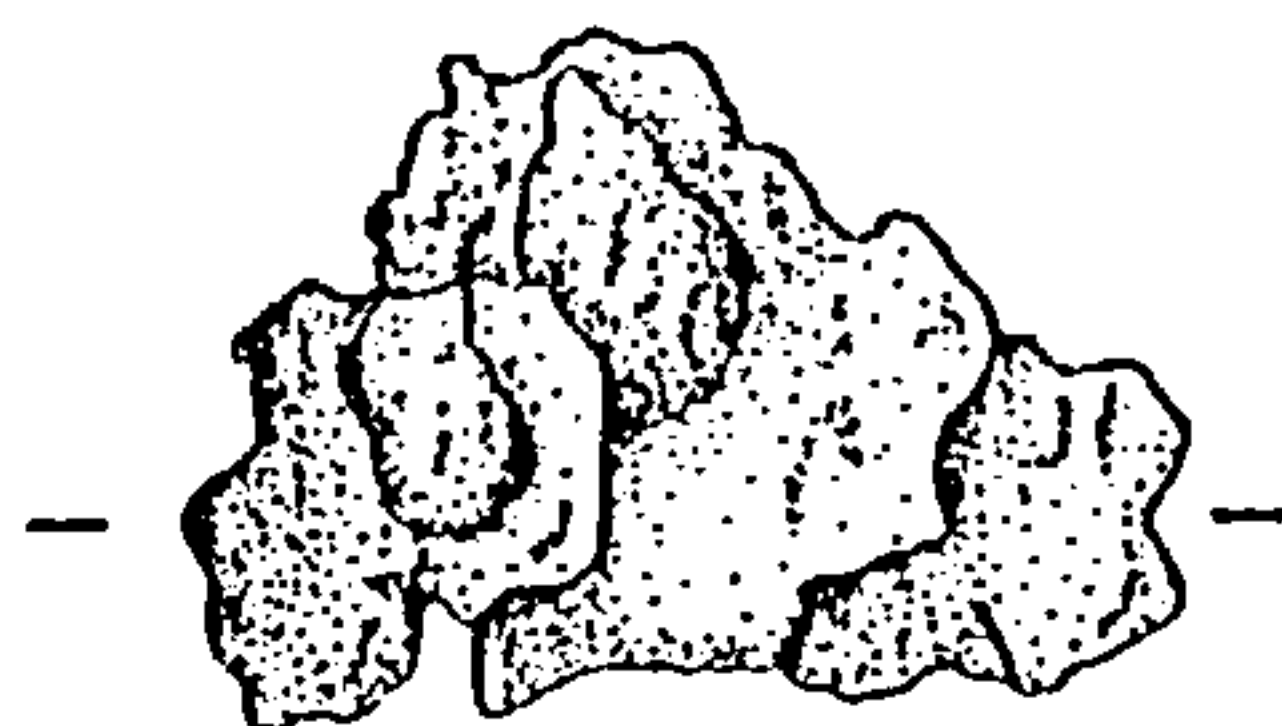


Fig. 60: The Leigh II Hoard (Ref. No. 05): Ingot Metal (iii)

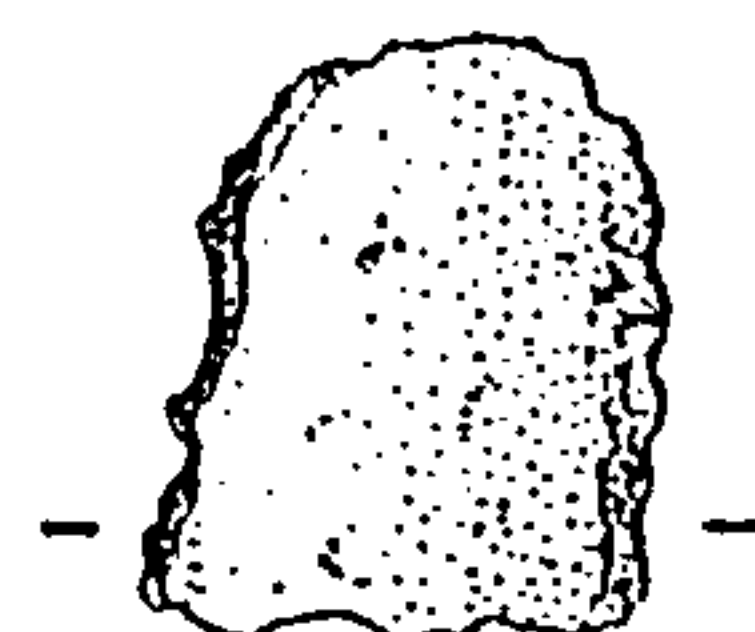
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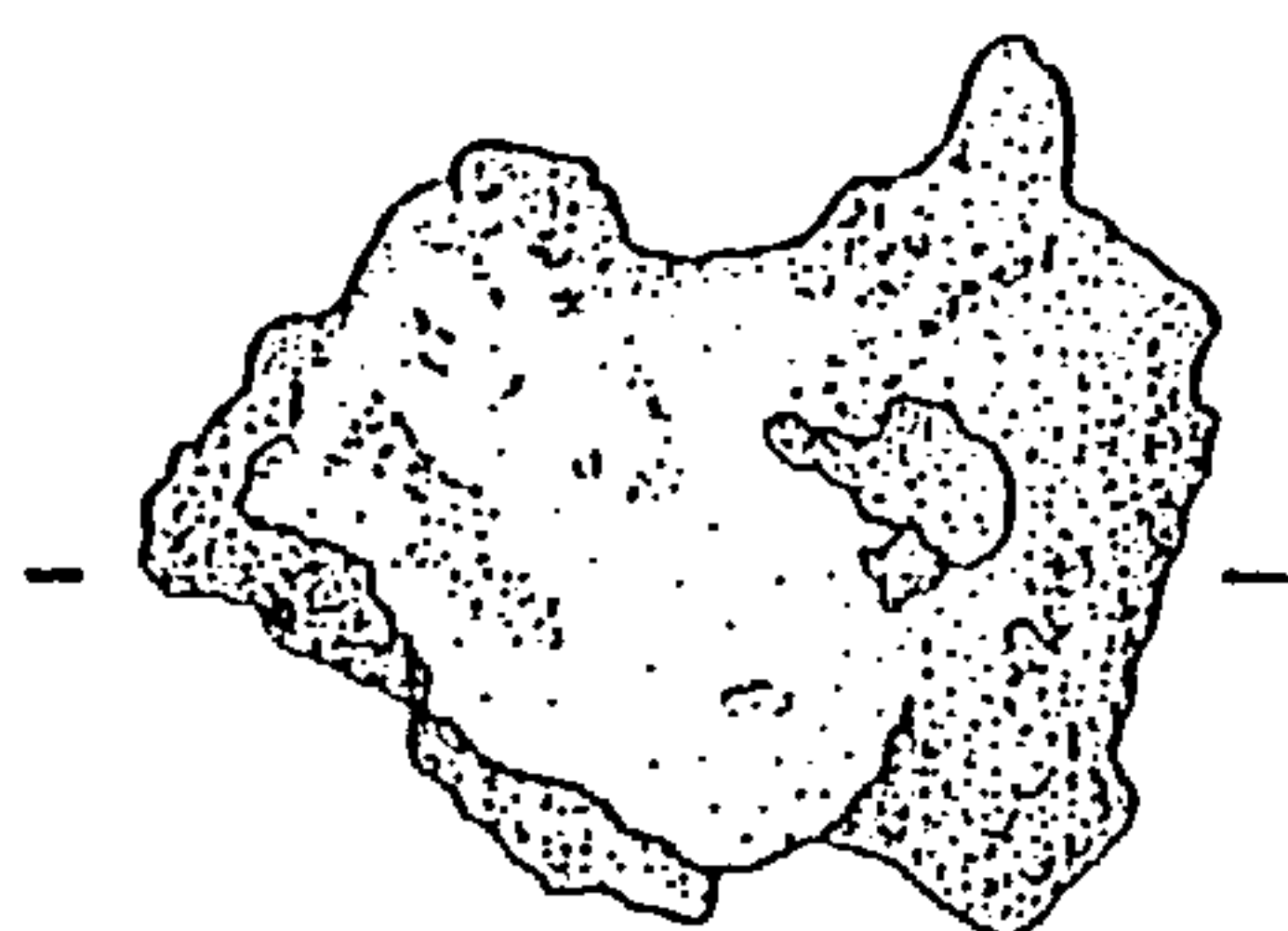


0 2cm

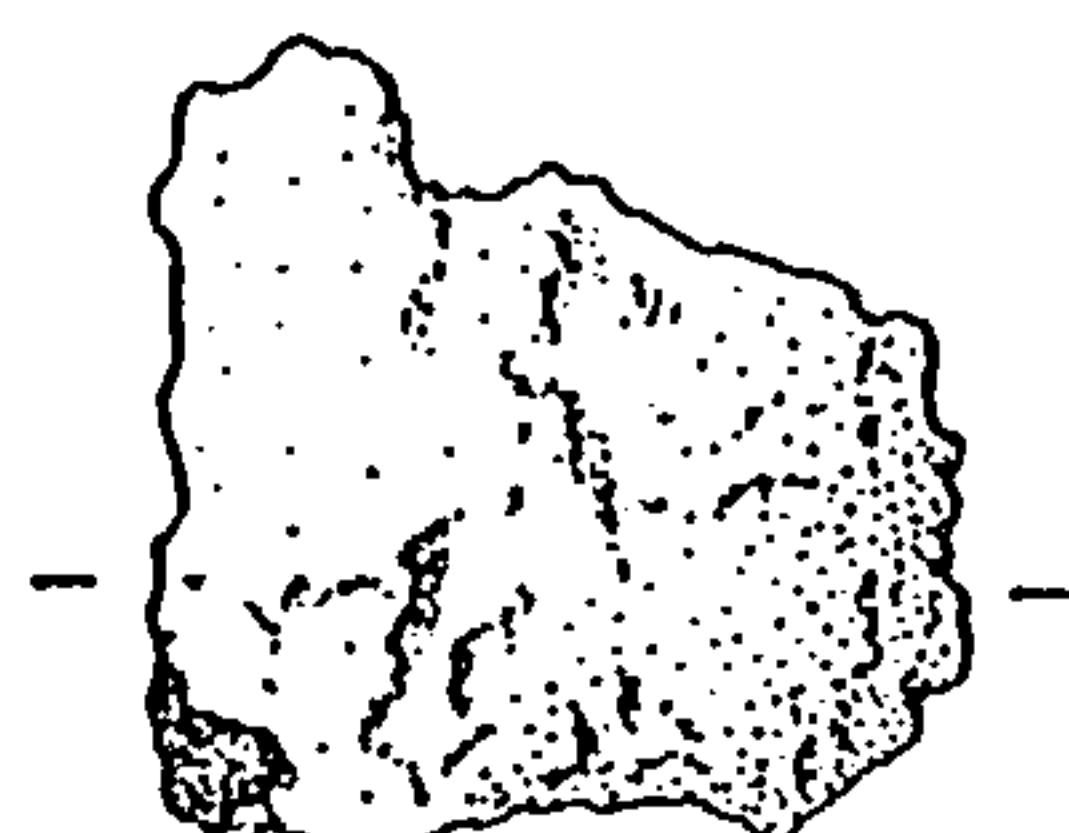


Rough Metal/Corrosion Product

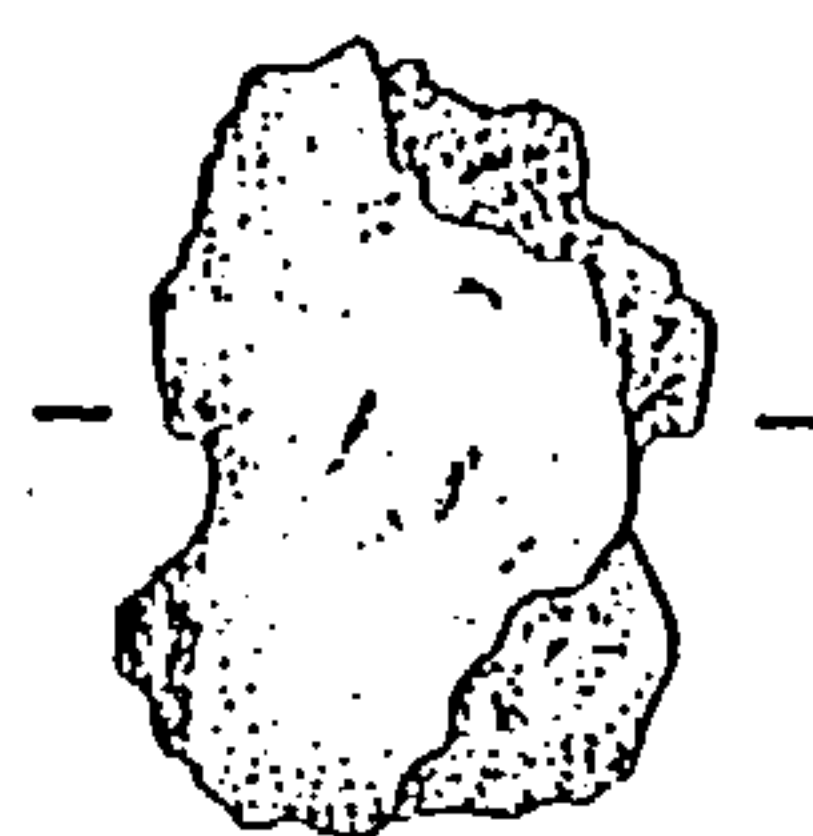
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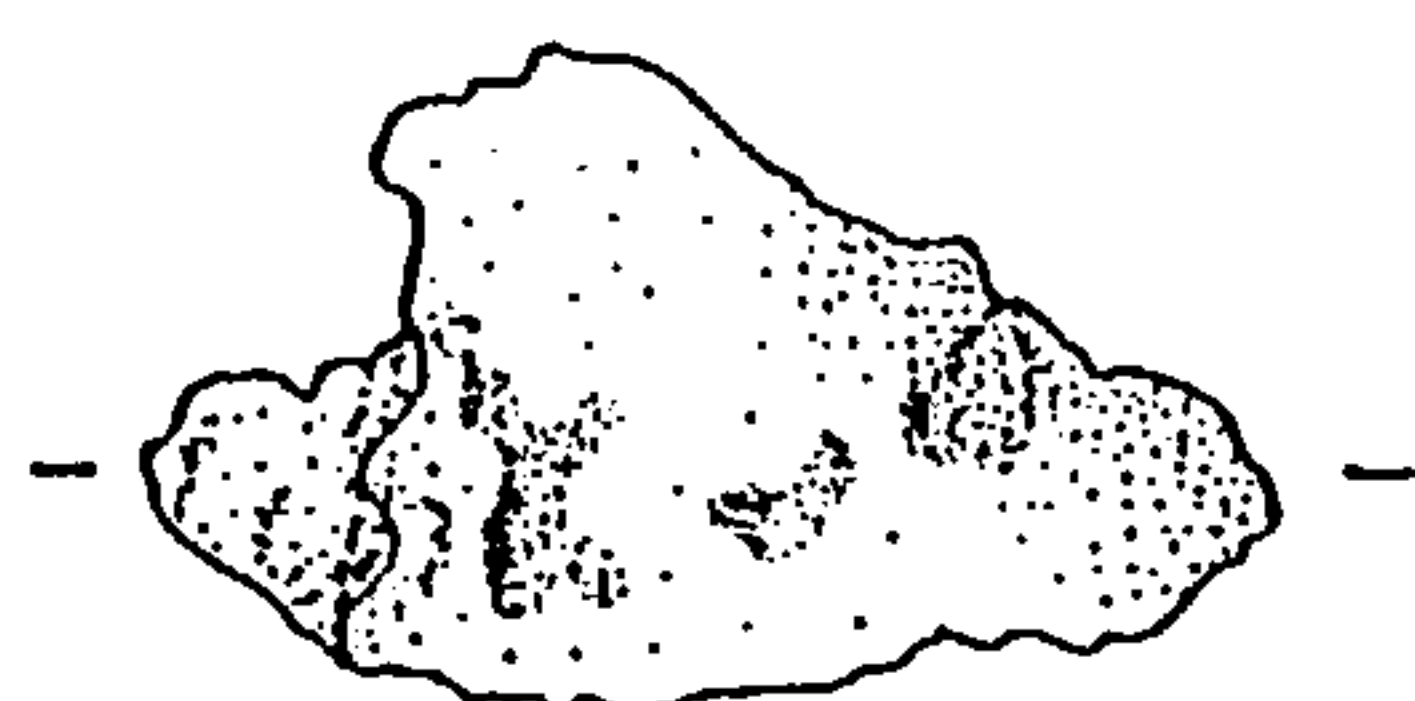
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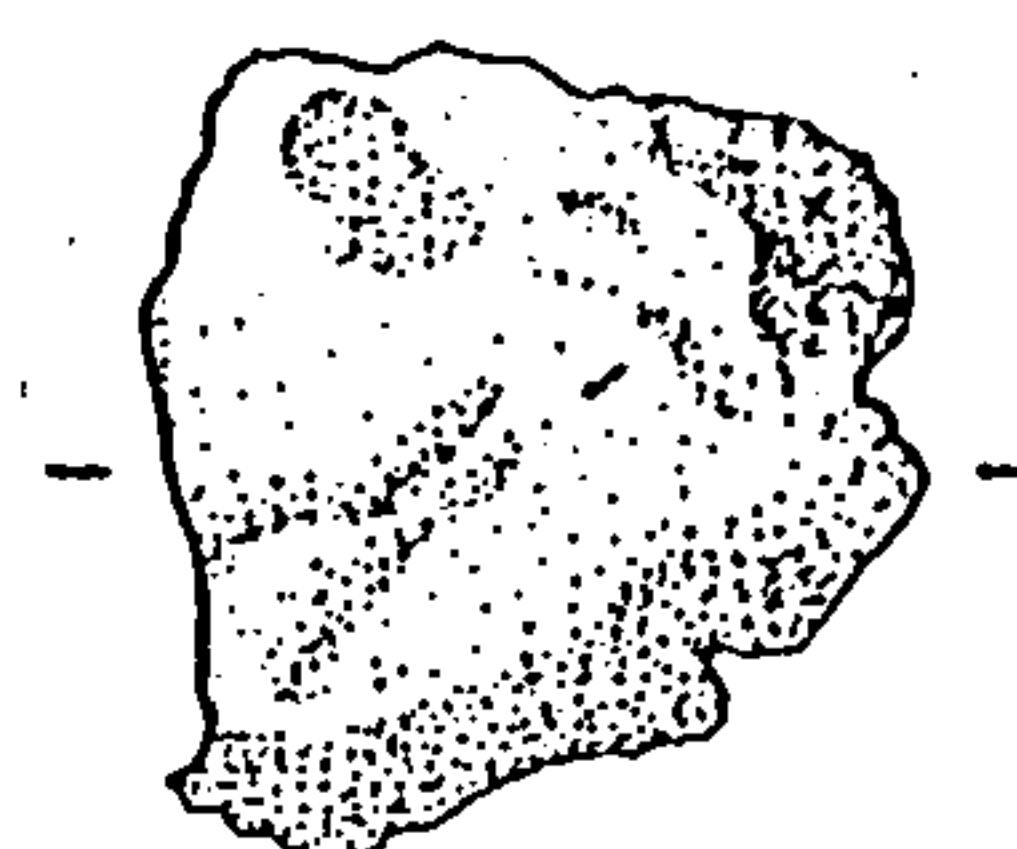
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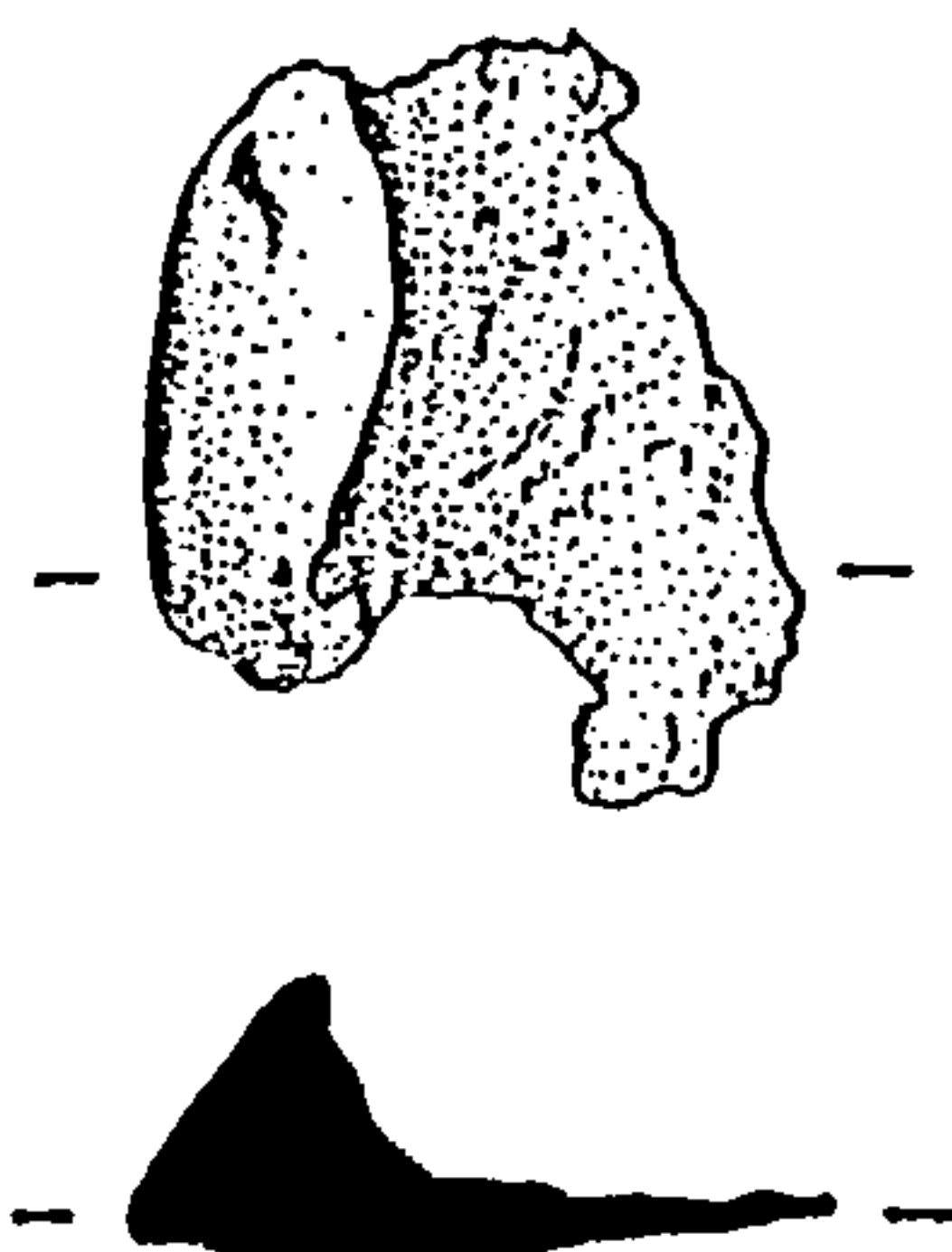


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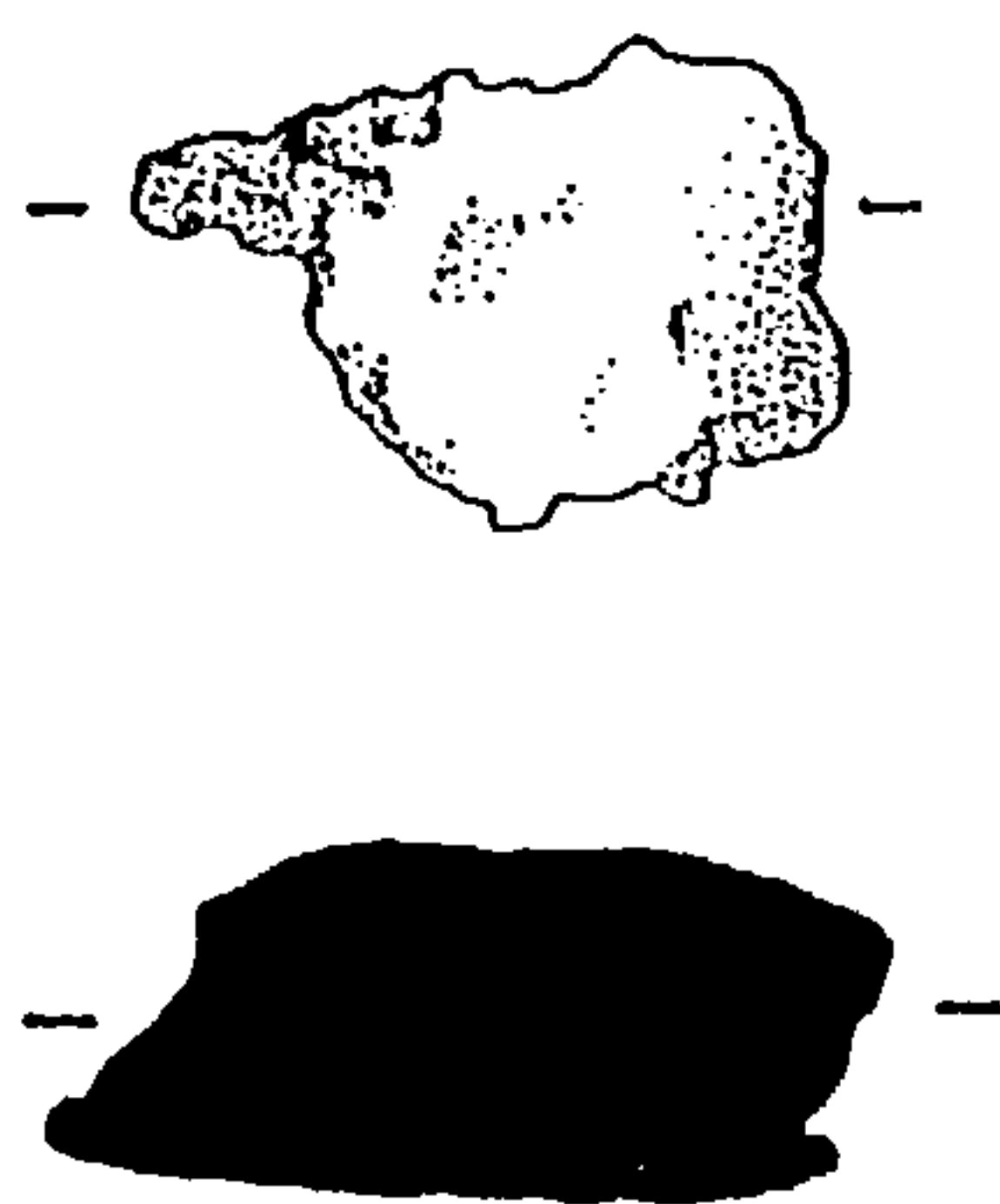


Fig. 61: The Leigh II Hoard (Ref. No. 05): Ingot Metal (iv)

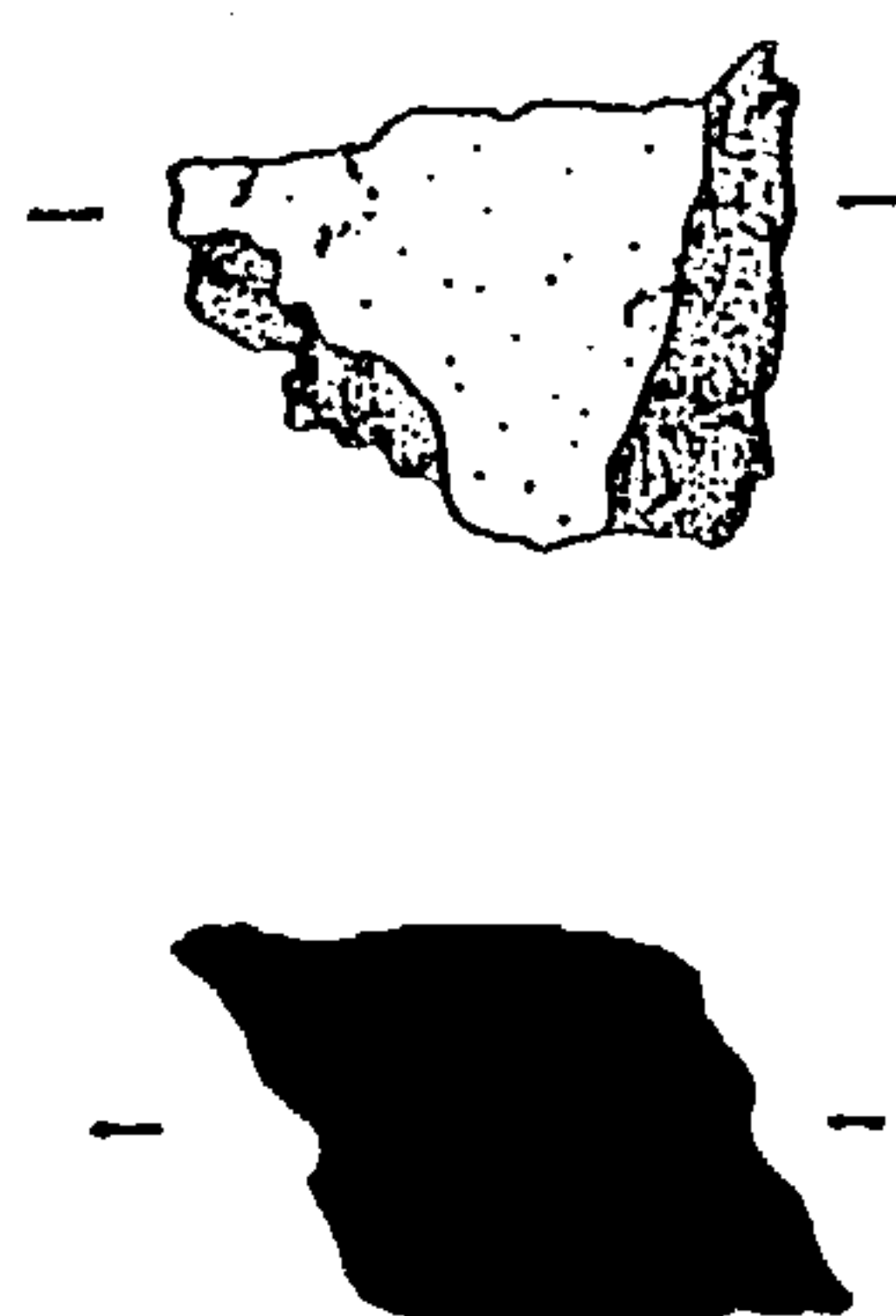
05/180



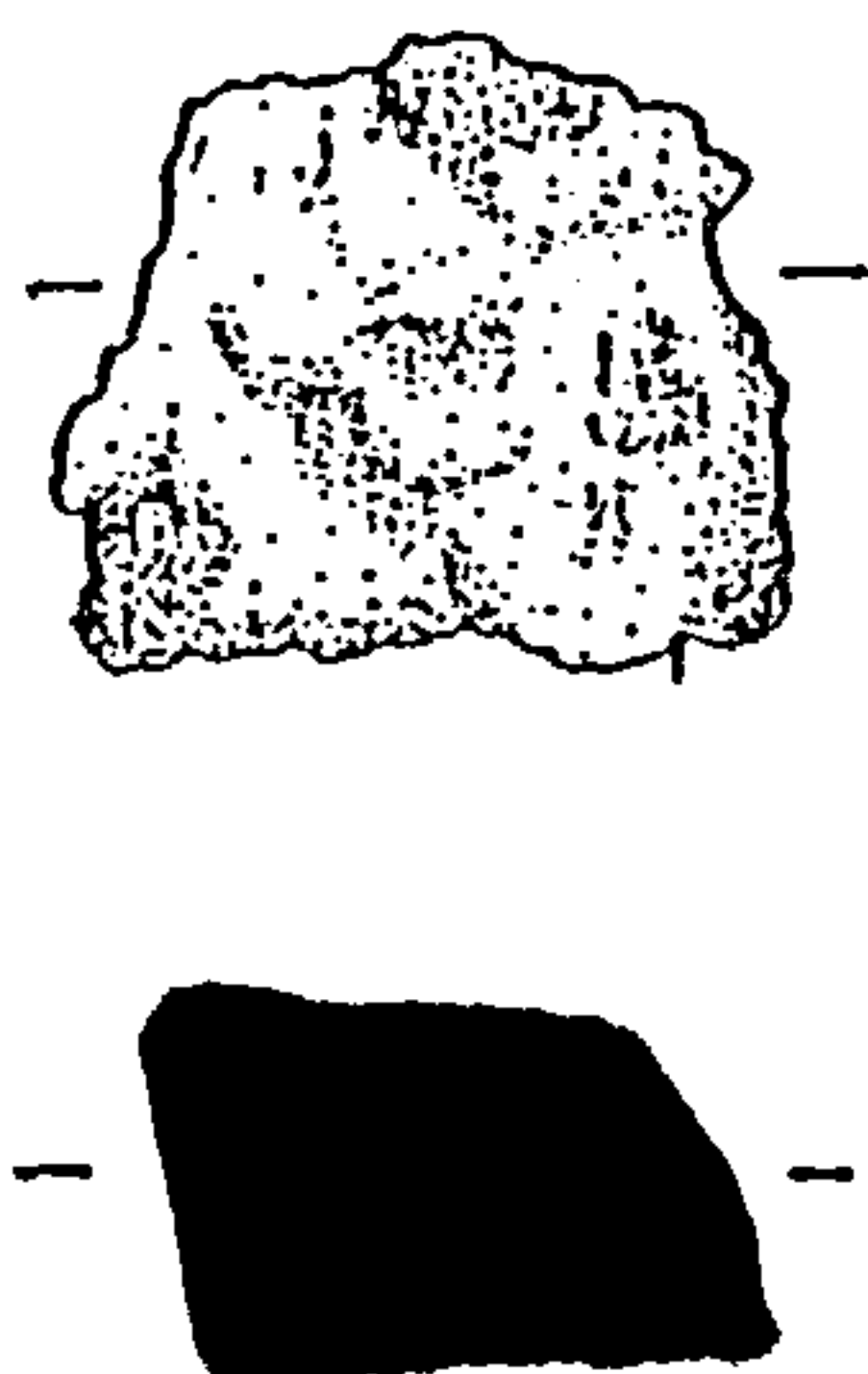
05/181



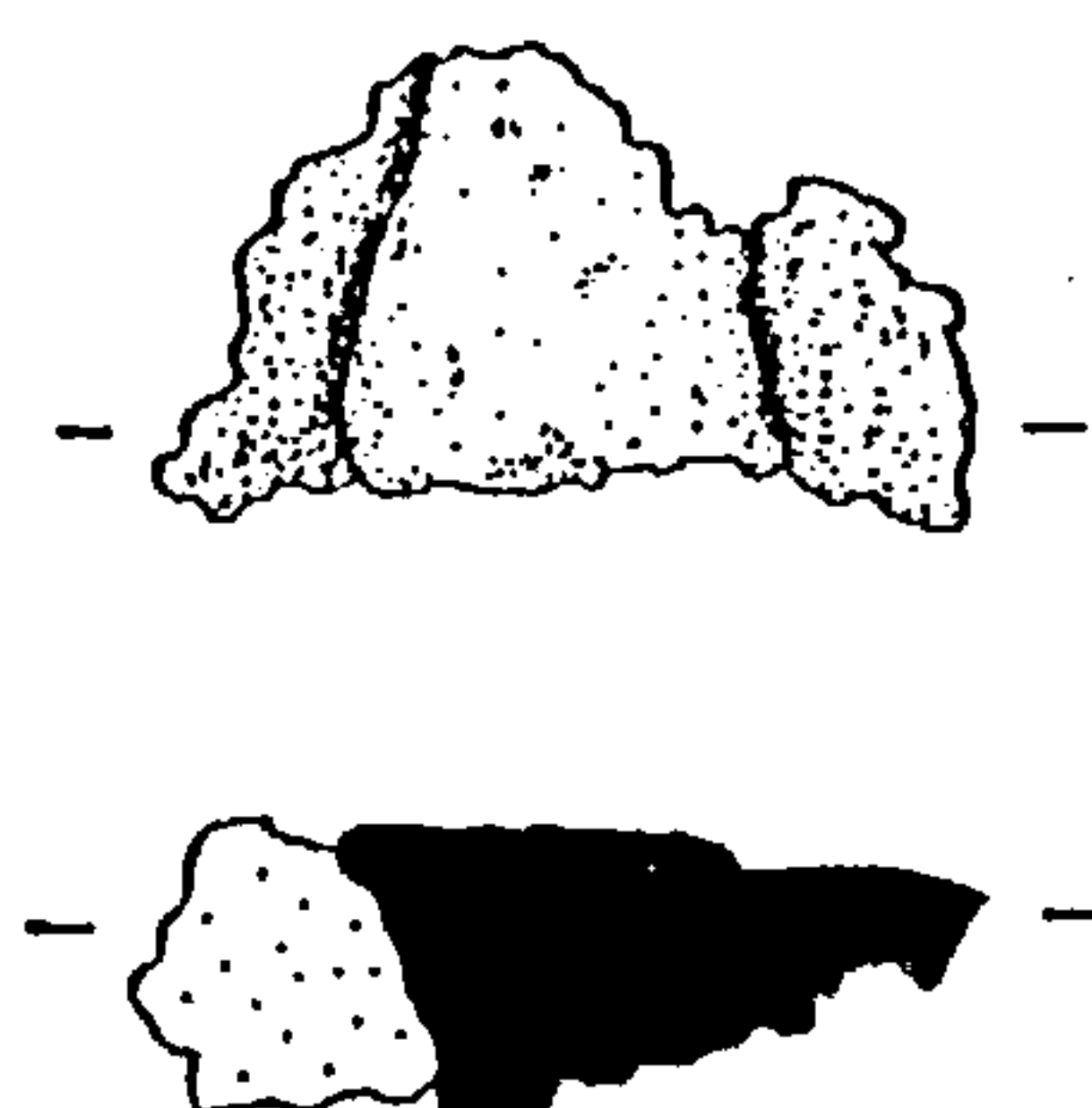
05/182



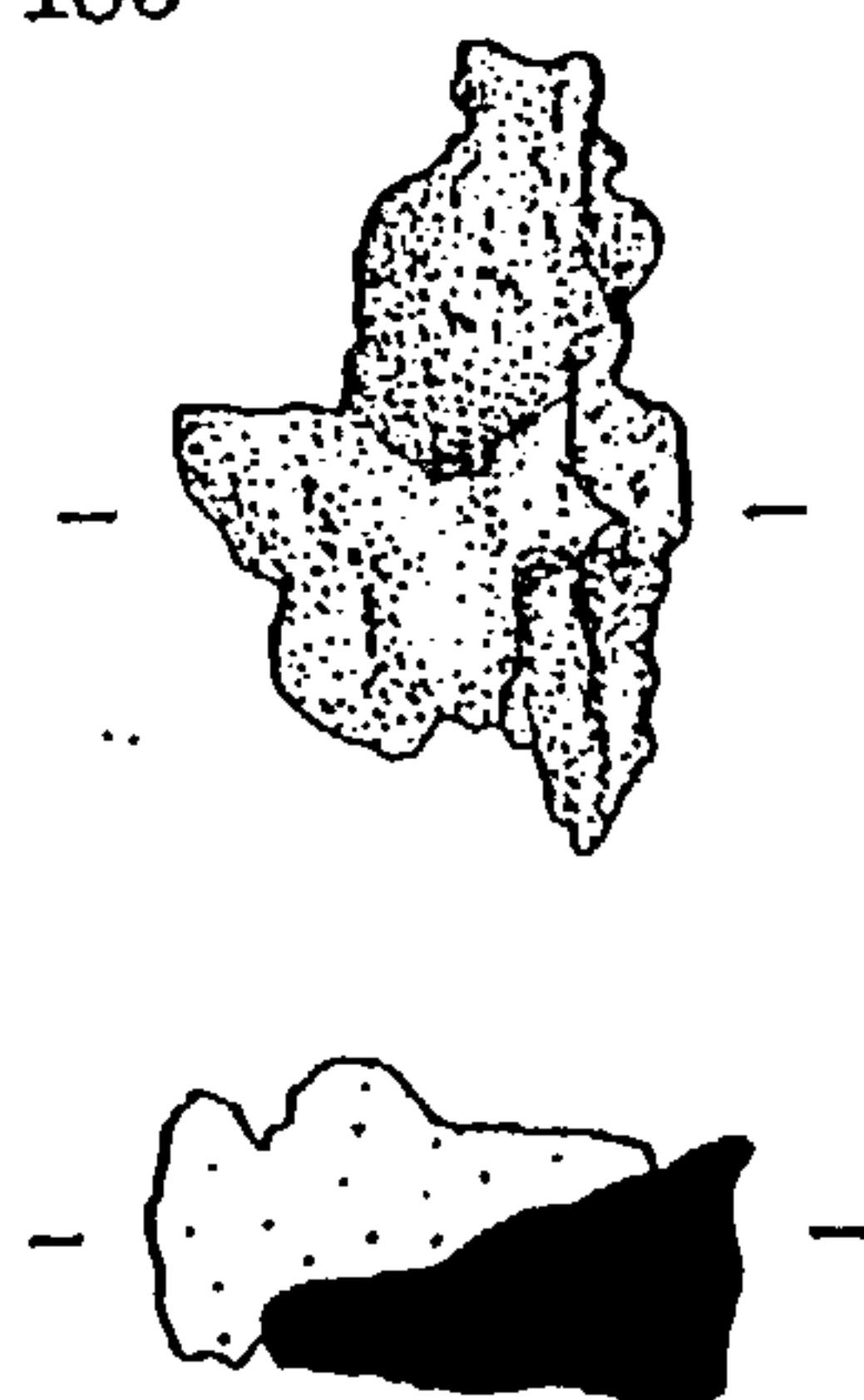
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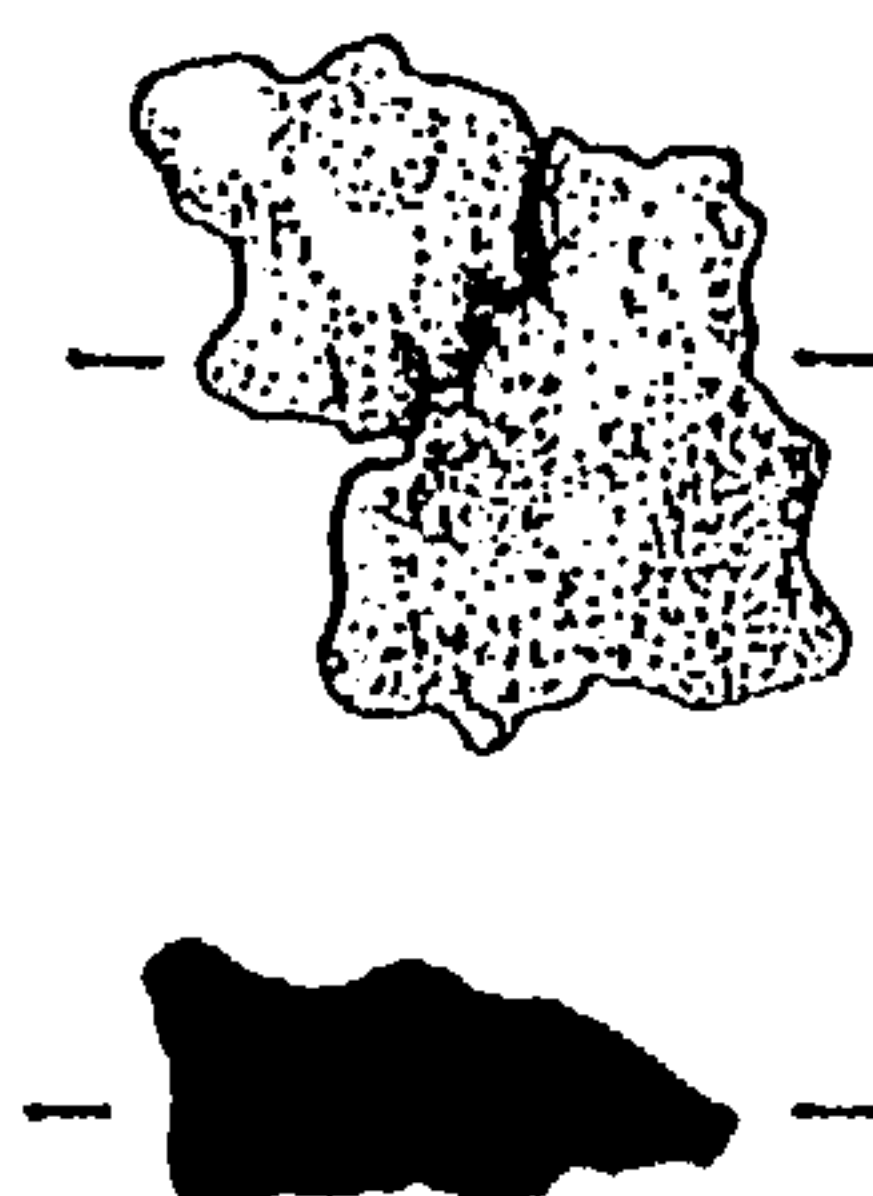
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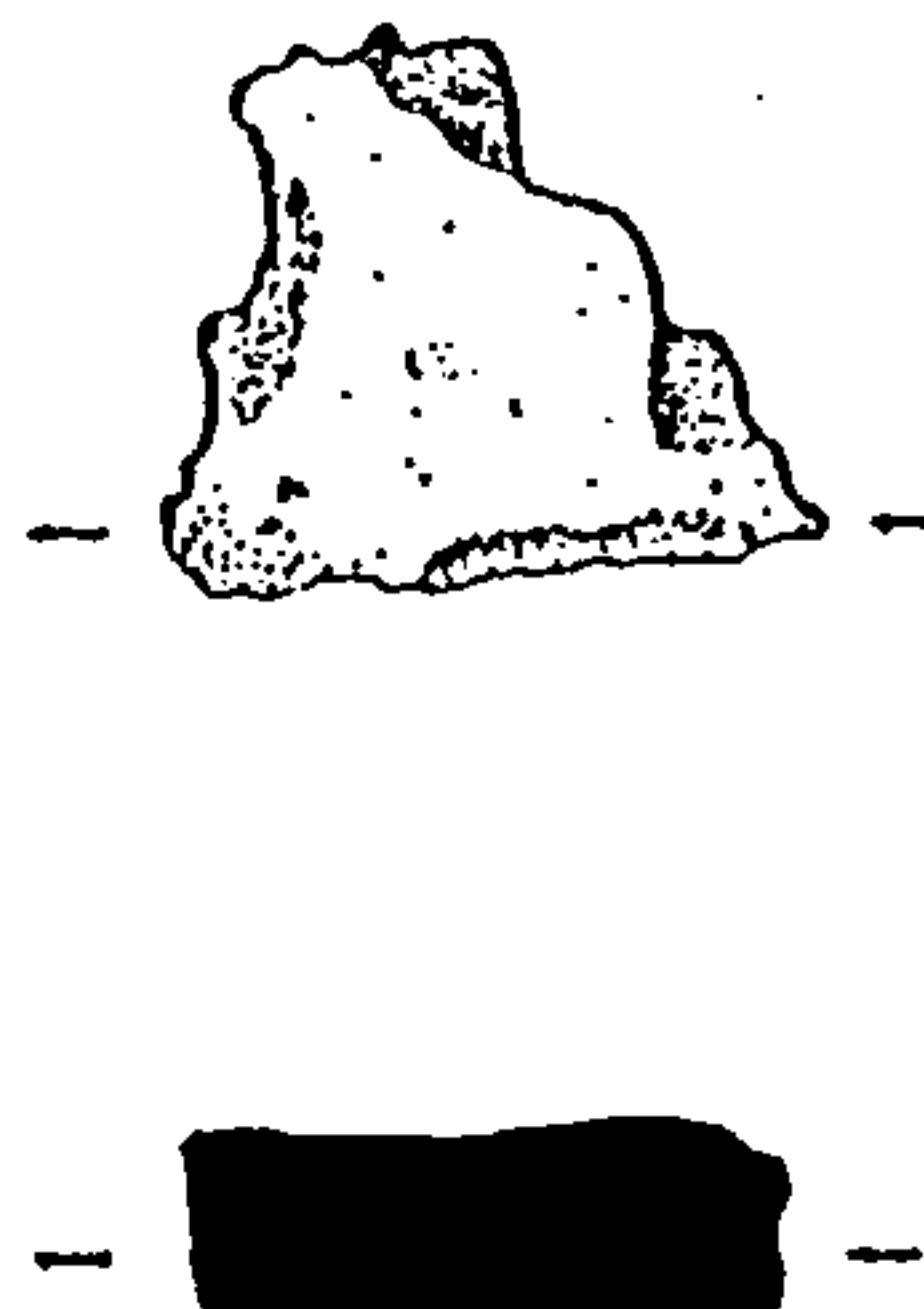
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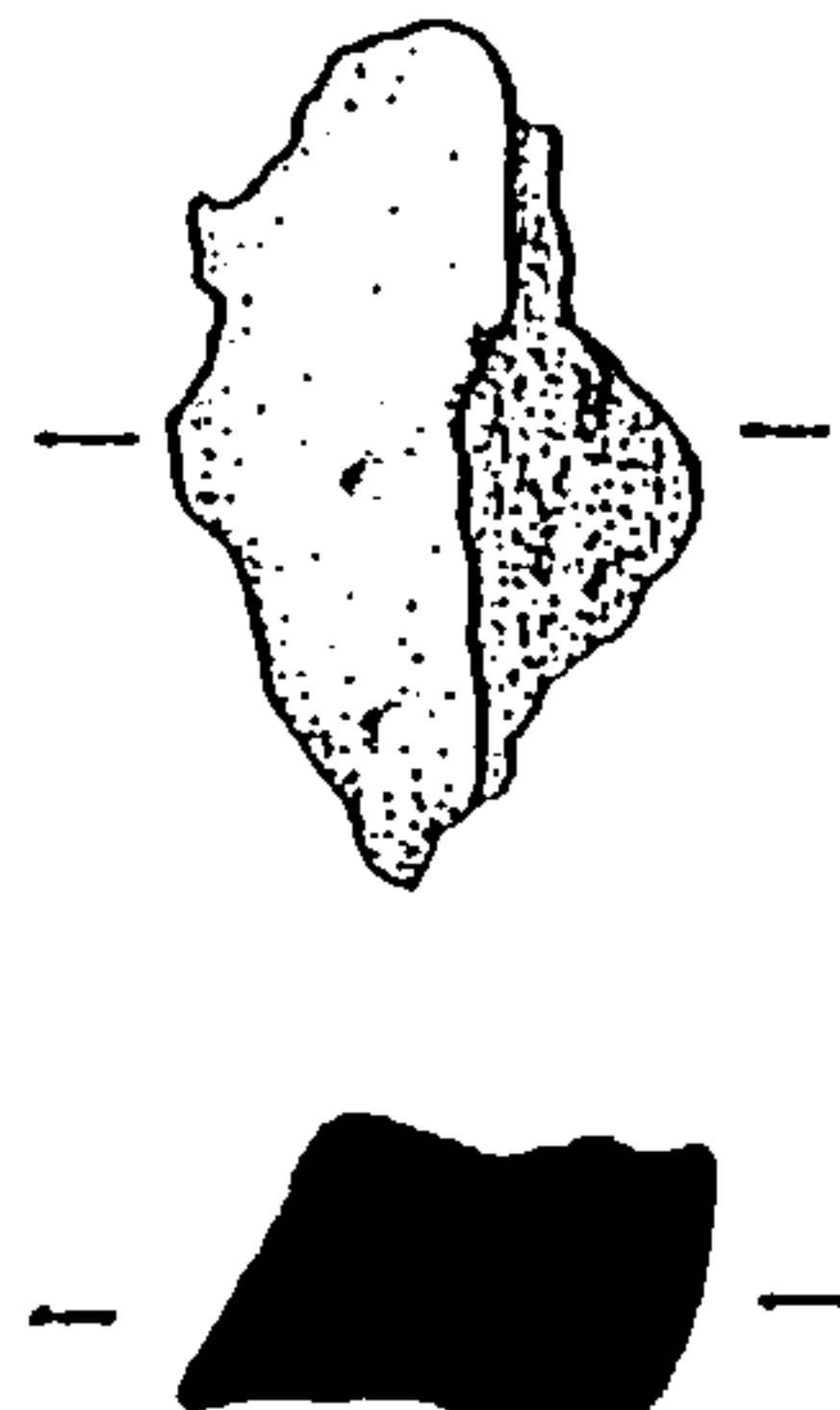
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05/189



 Rough Metal/Corrosion Product

0 2cm

Fig. 62: The Leigh II Hoard (Ref. No. 05): Ingot Metal (v)

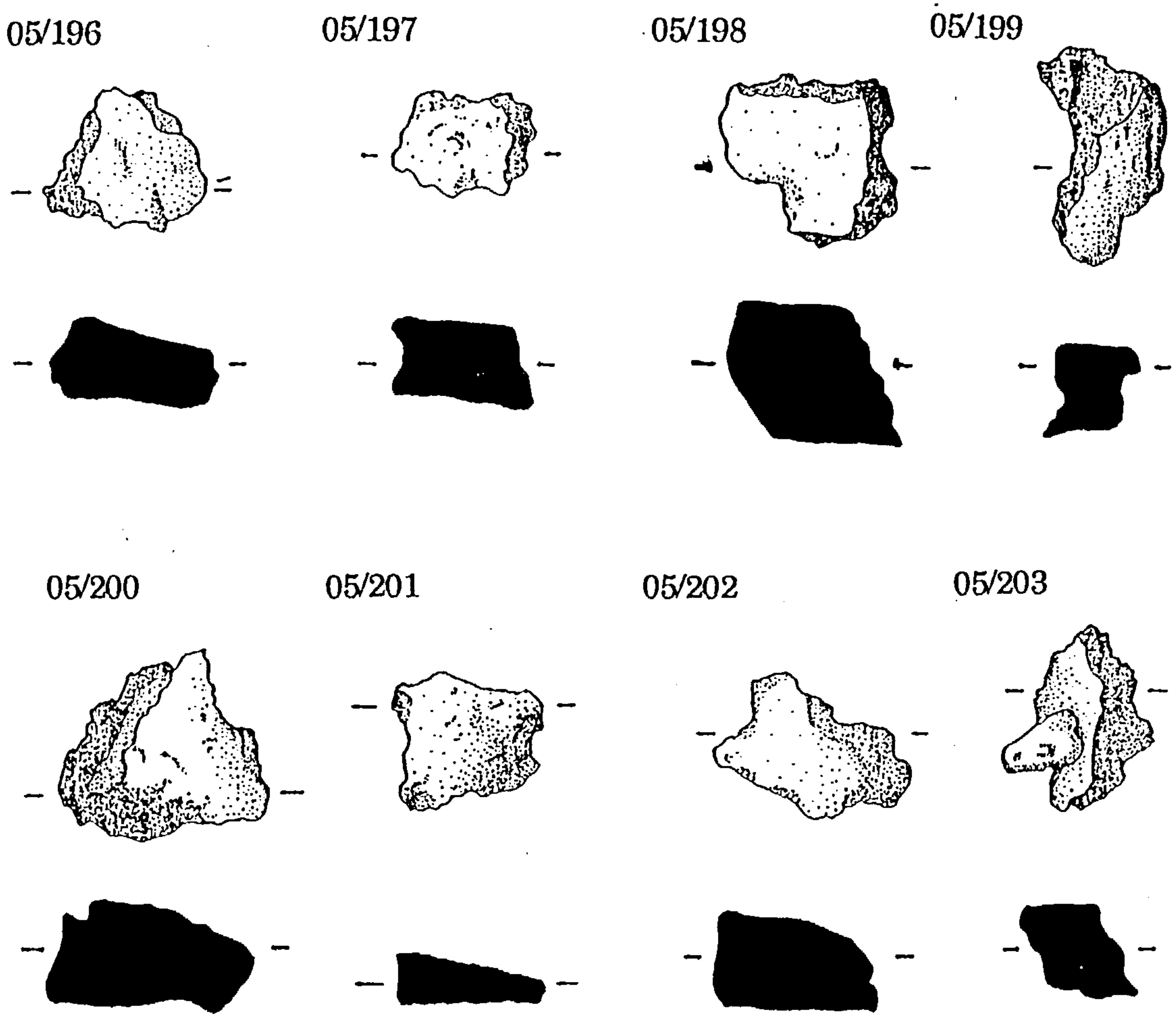
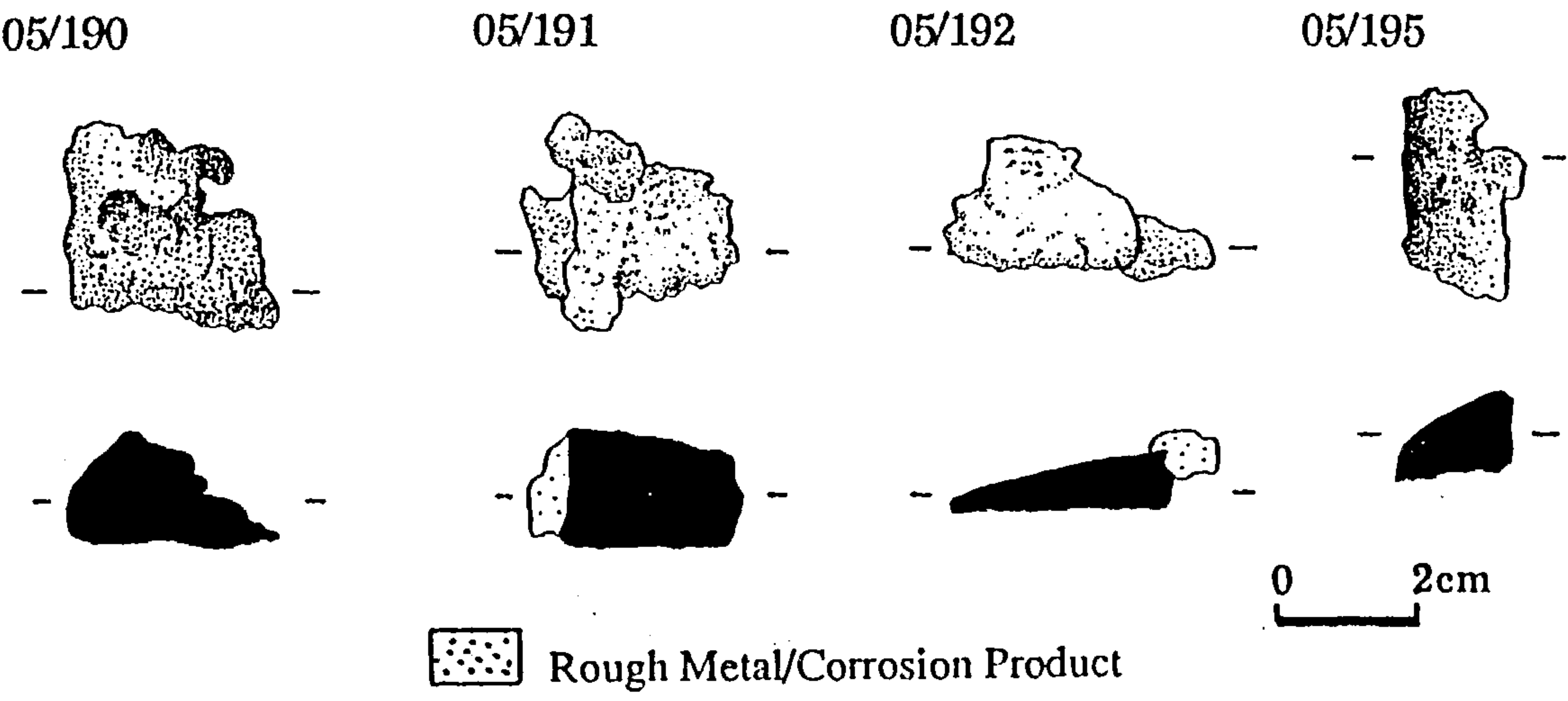
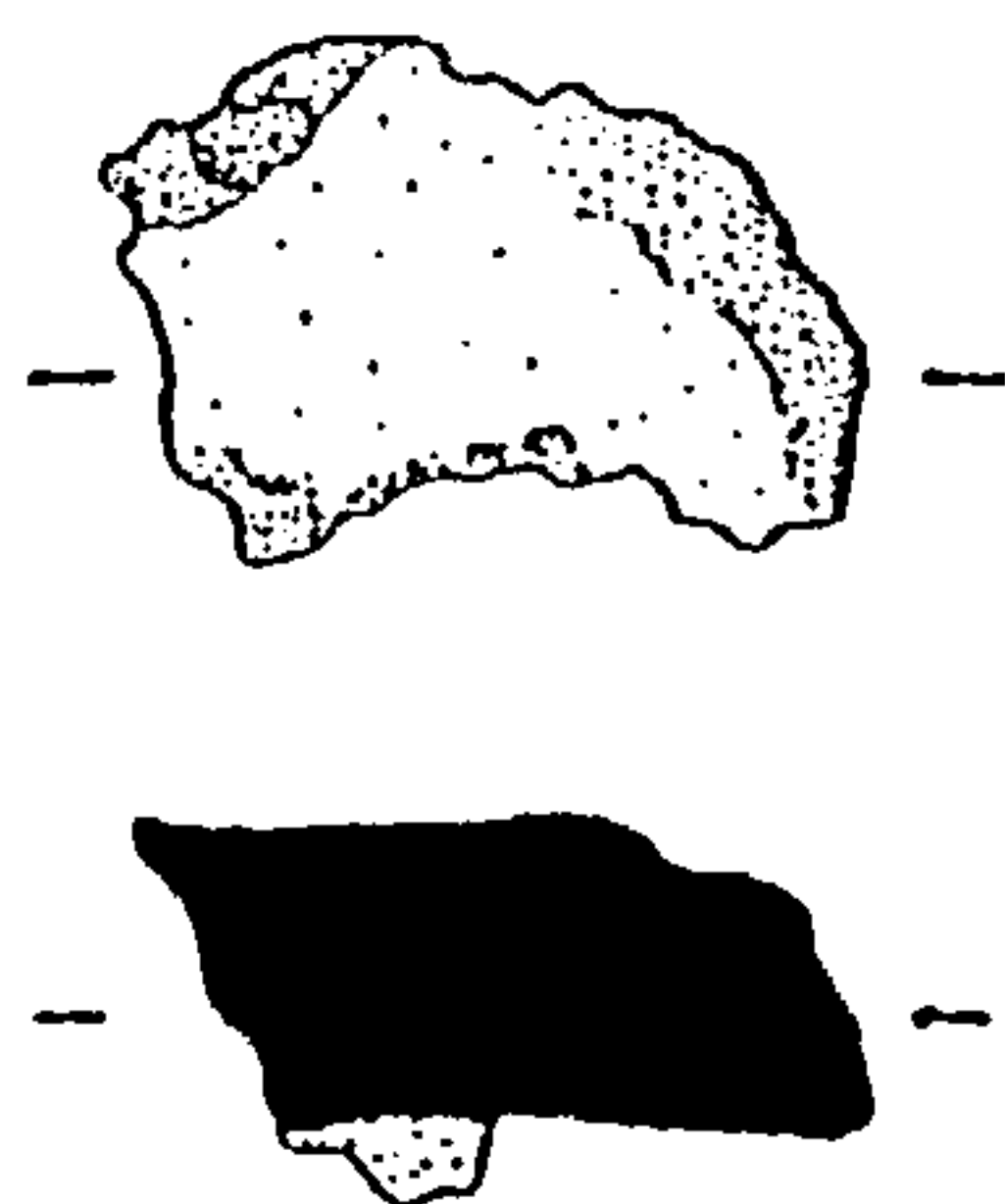
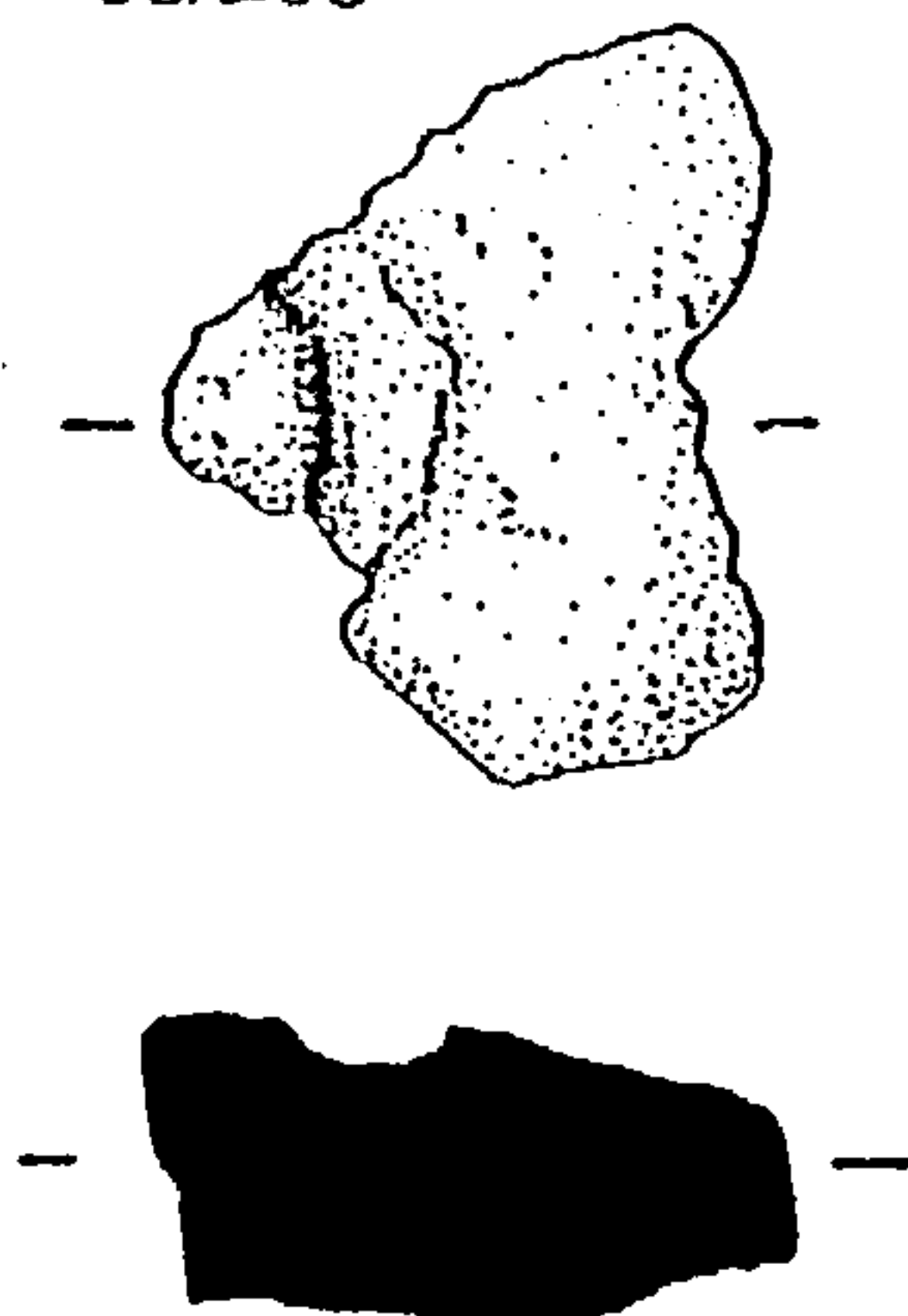


Fig. 63: The Leigh II Hoard (Ref. No. 05): Ingot Metal (vi)

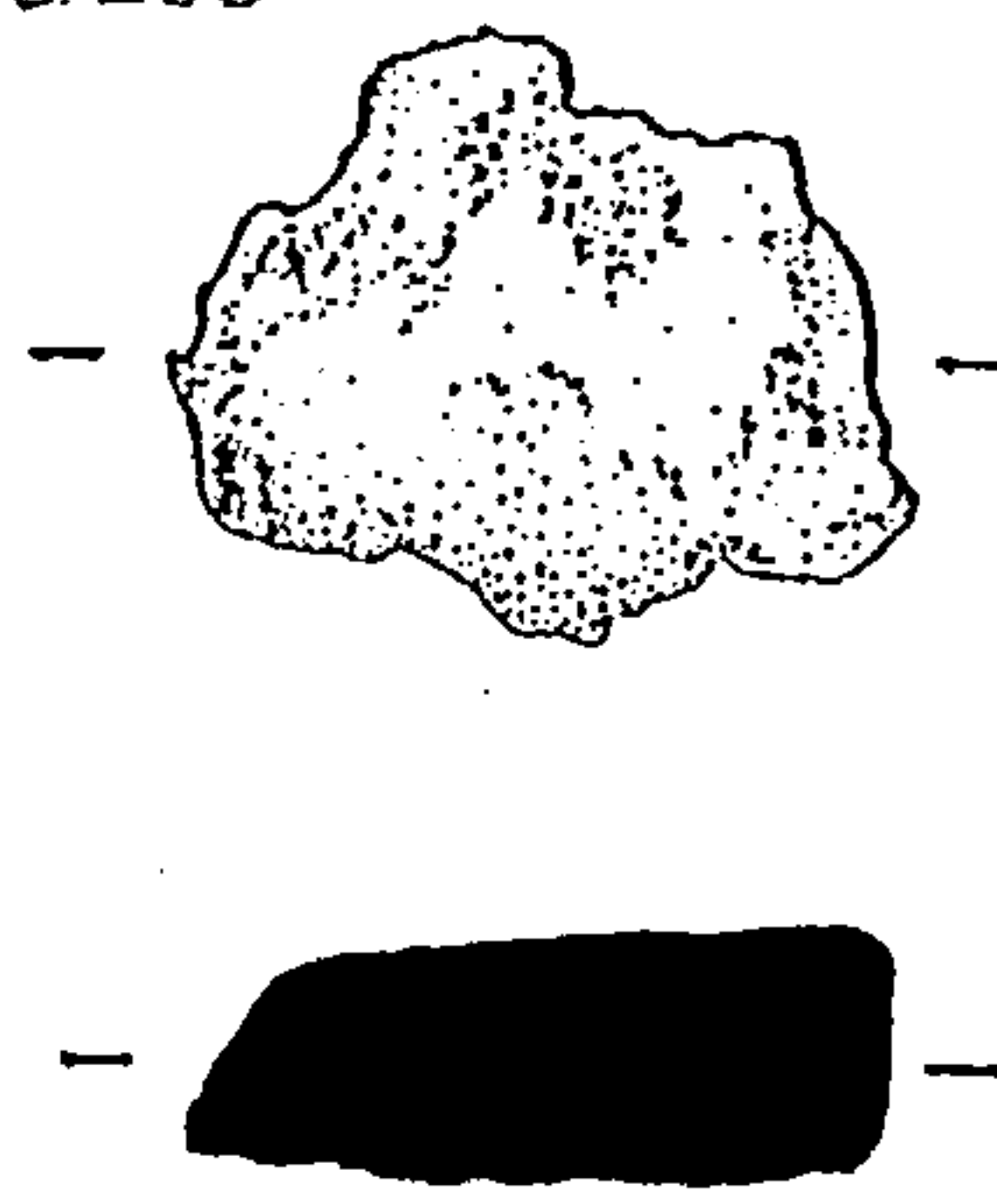
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05/205



05/206



0 2cm

 Rough Metal/Corrosion Product

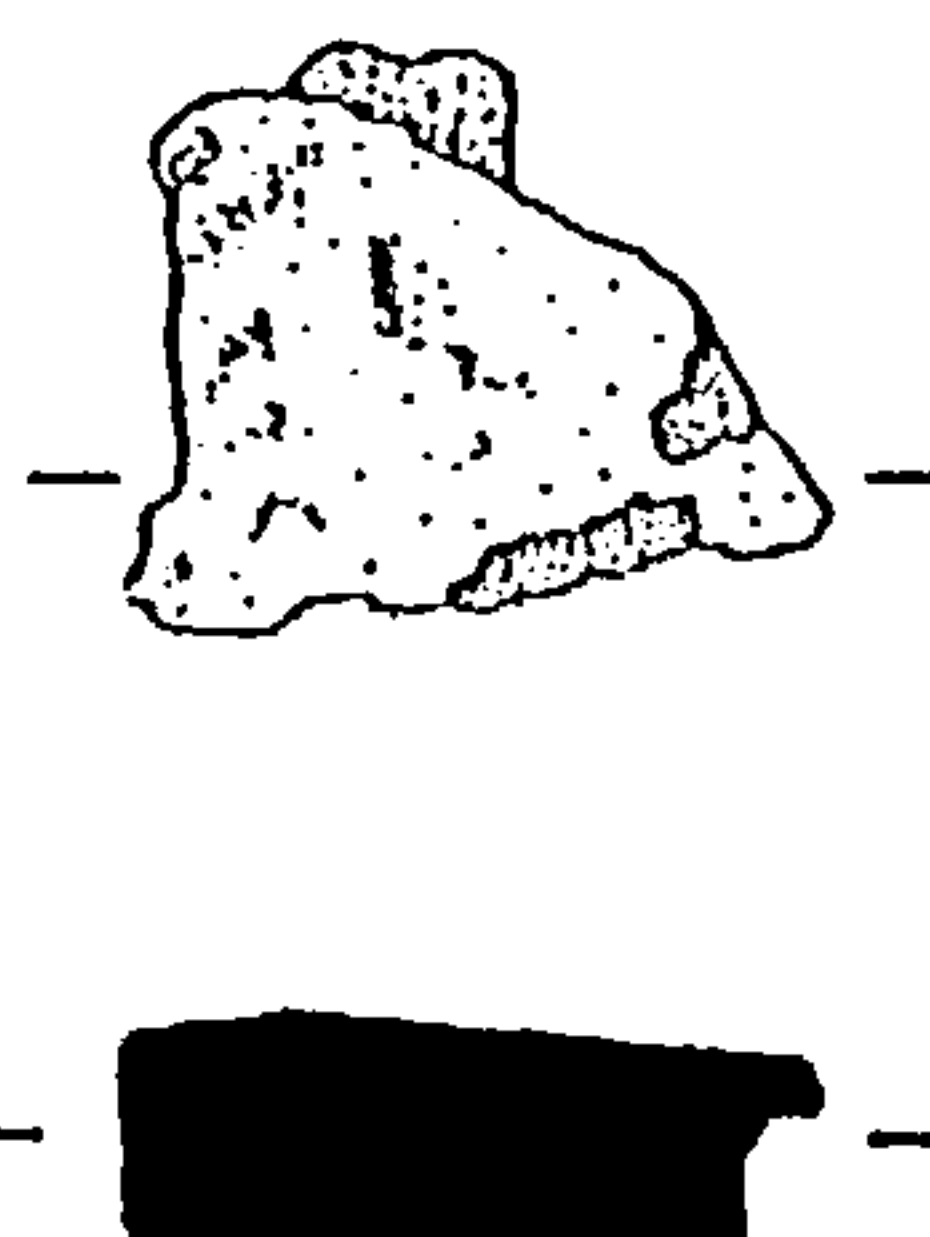
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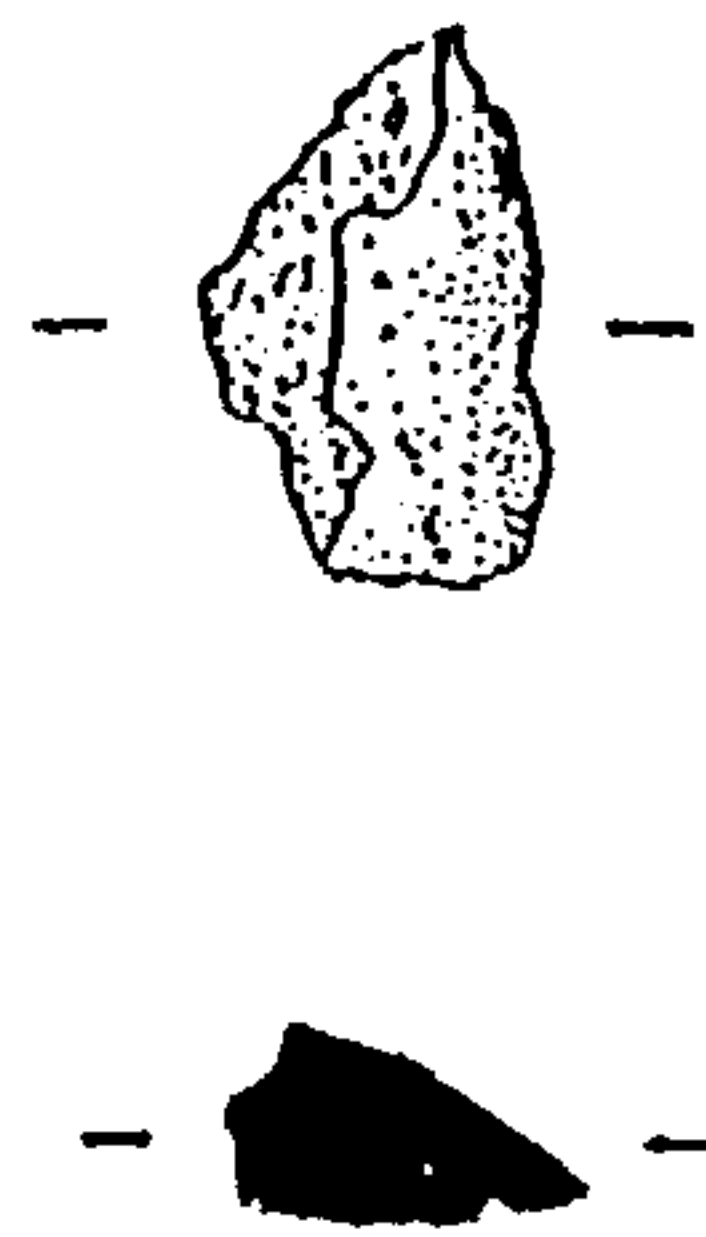
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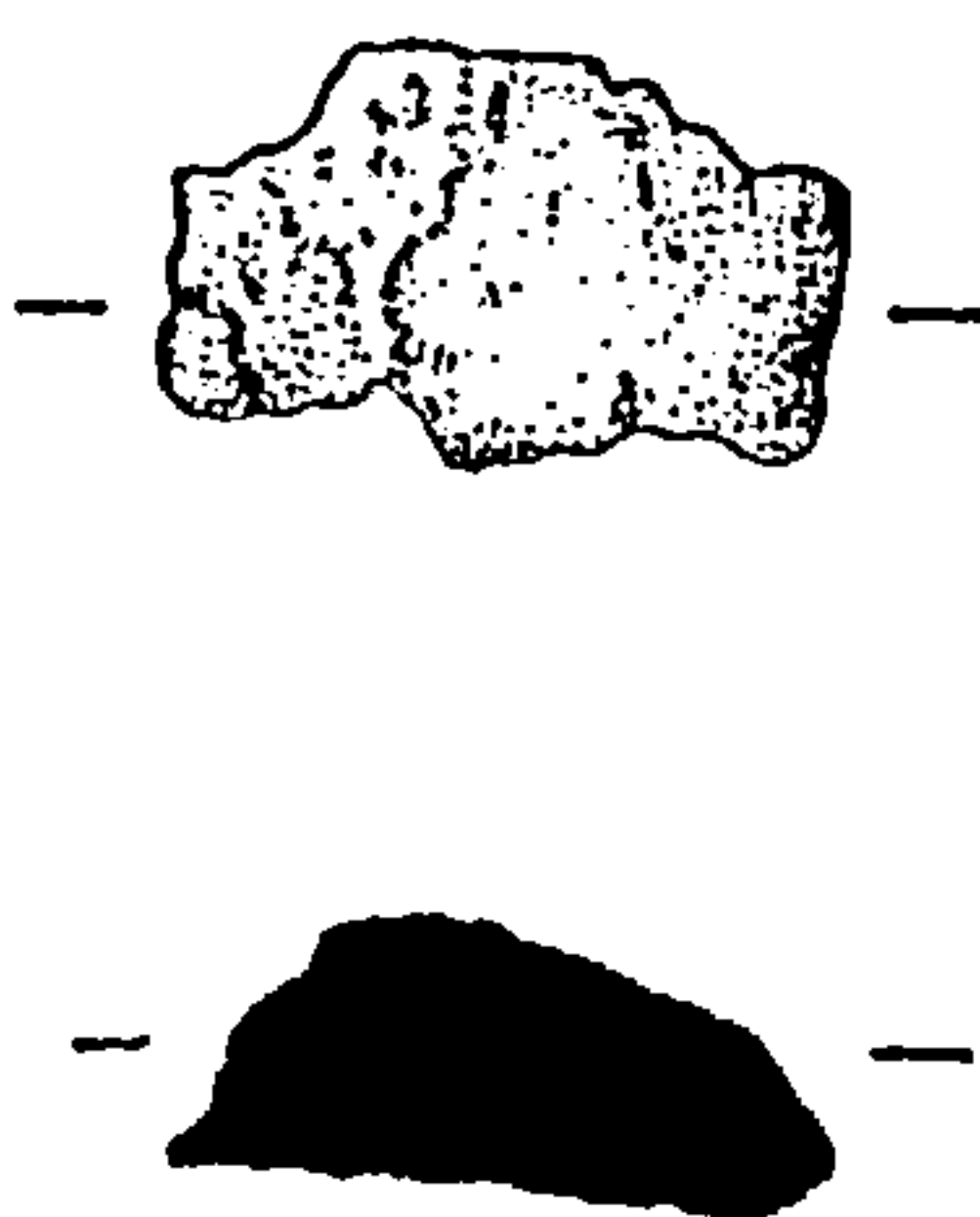
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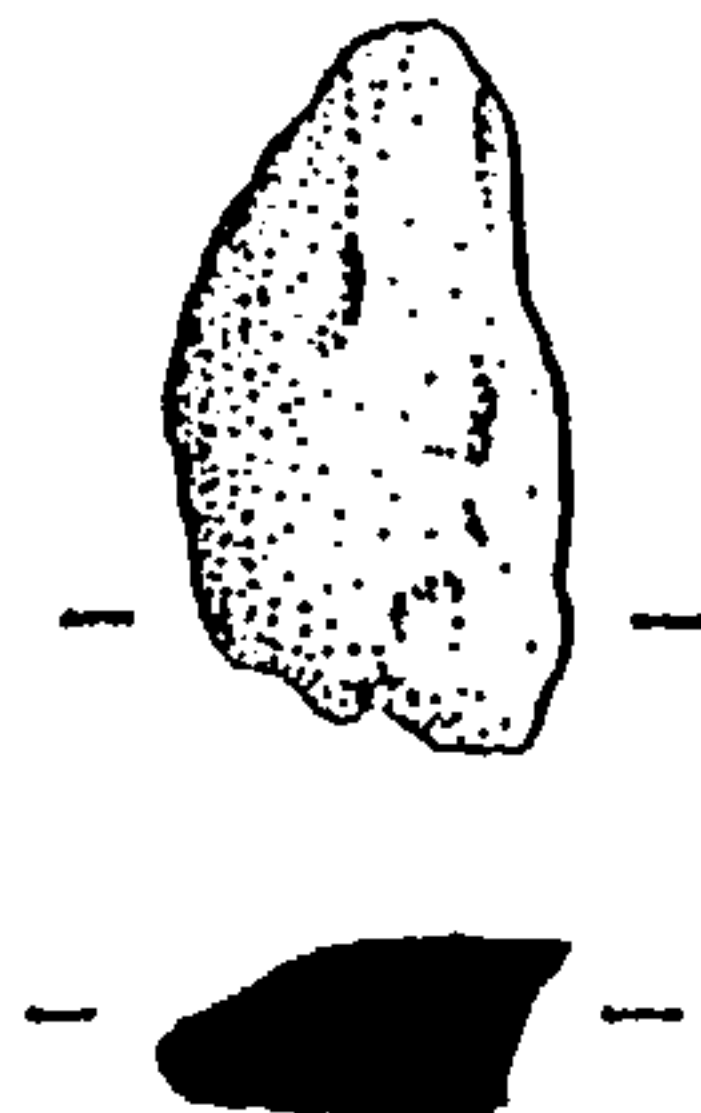
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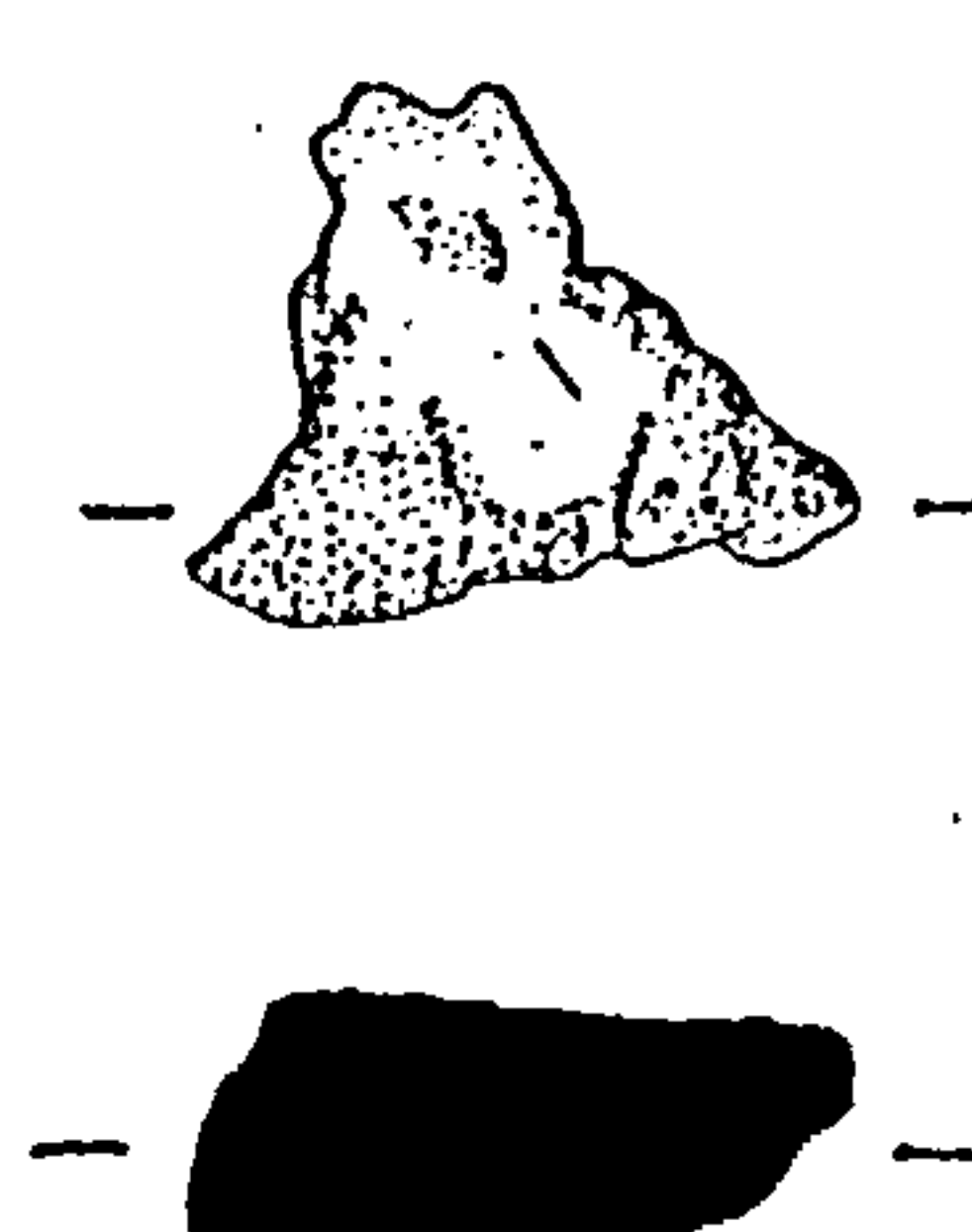
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05/214

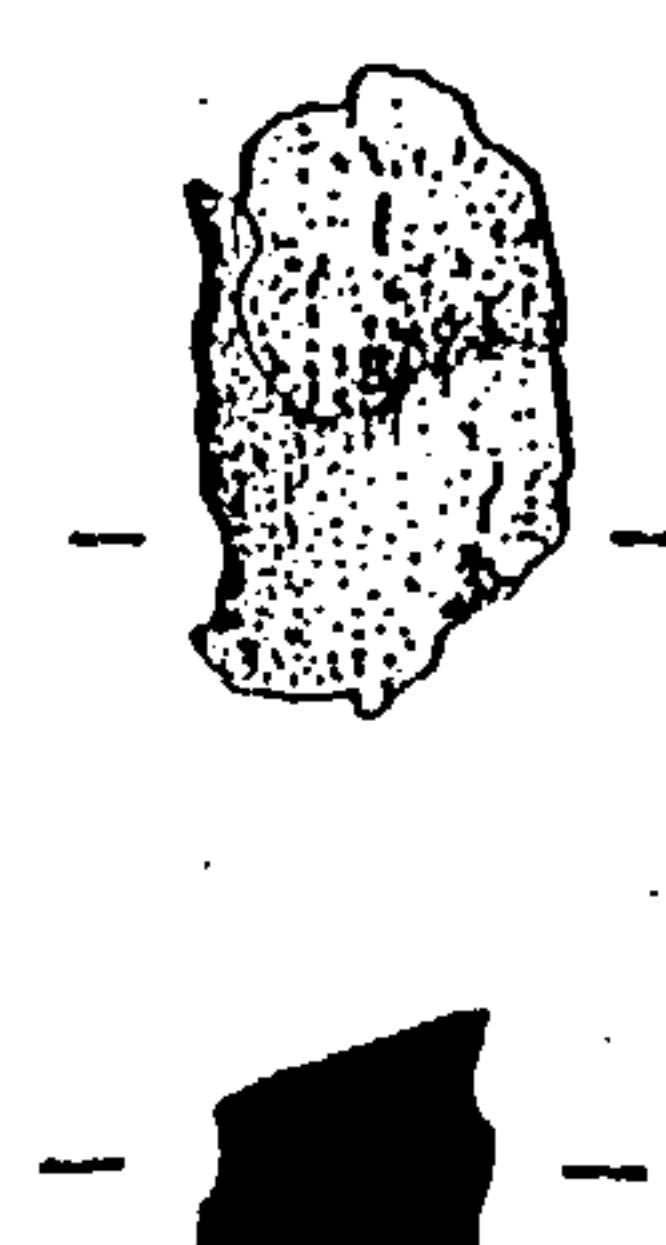


Fig. 64: The Leigh II Hoard (Ref. No. 05): Ingot Metal (vii)

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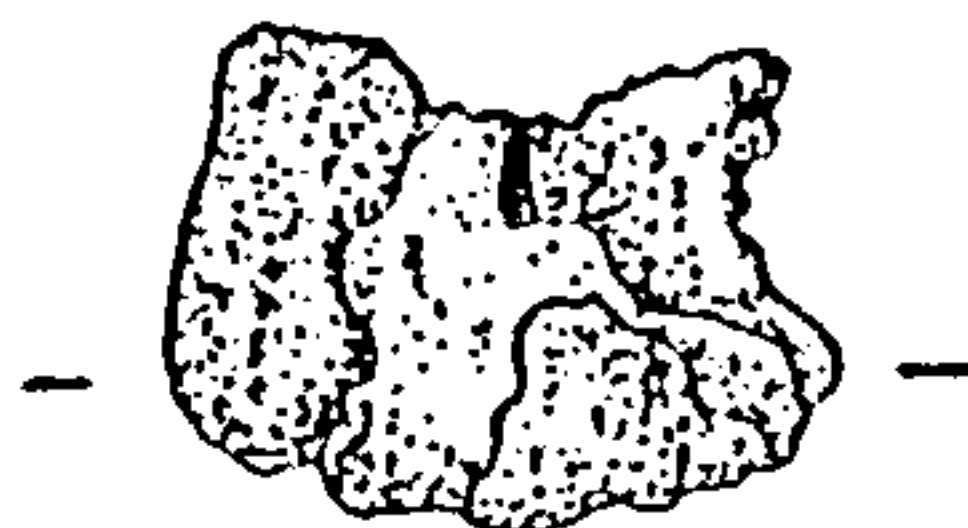
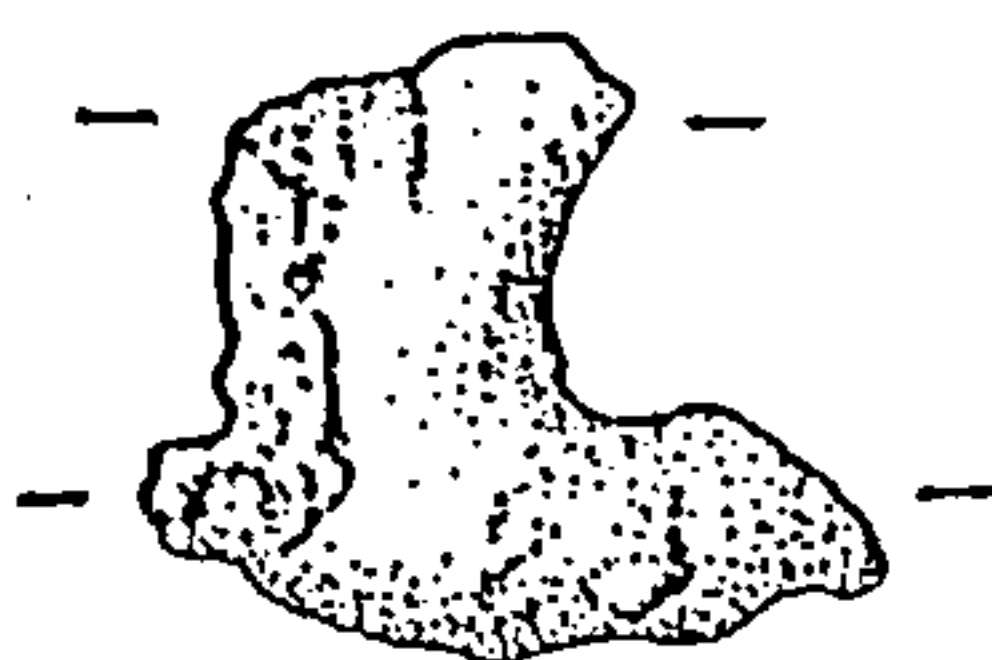


Rough Metal/Corrosion Product



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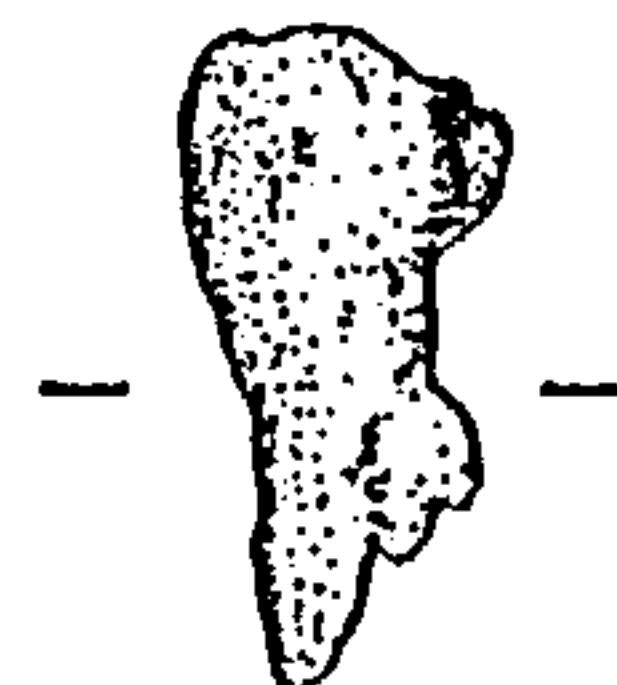
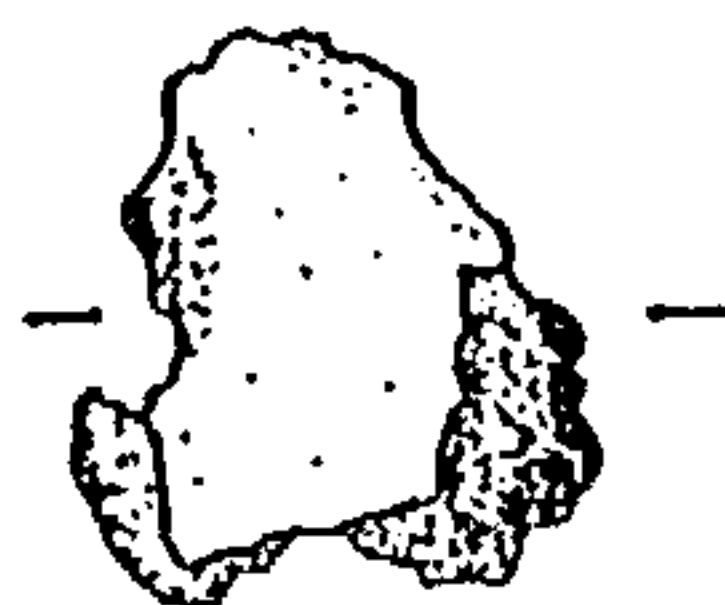
0 2cm

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Fig. 65: The Leigh II Hoard (Ref. No. 05): Ingot Metal (viii)

Shoebury I (Ref. No. 06)

Grid Reference: c.TQ 94 86

Current Location: British Museum, Accession Numbers, 92: 6-13: 1-21.

Context: The hoard was recovered during digging for brick-earth (Read, 1892), along with some sherds of pottery once believed to be associated with the metalwork. While the metalwork hoard itself is believed to be a single closed deposit (but note the ambiguous nature of objects 06/29-33, described as 'possible' members of the Shoebury hoard), the accompanying pottery has been dismissed as problematic (Smith, 1958), as the sherds include fragments of wheel-turned pottery, including some of Roman origin.

Bibliography: National Bronze Index.

Read, 1892.

Smith, 1958.

Contents:

06/01 (Acc. No. 92: 6-13: 21)

Description: Socketed axe of 'southern English' type, with three ribs on either face.

Dimensions: Length: 91mm. Cutting edge: 52mm. Weight: 233.5g.

Patina: Dense dark green, with some encrustation present.

Manufacture: The mouth is poorly finished. It is uneven in appearance, with the stumps of the feeders surviving. Over the body, the upper casting seam remains visible, though over much of its extent its line is obscured by lumps of encrustation. The lower seam is prominent along its length, though it has been flattened throughout, and obliterated over the loop. Vertical grinding marks run between the ribs, and some additional examples can be seen running perpendicular to the cutting edge.

Use: The cutting edge is crescentic, which suggests that the axehead was subject to re-sharpening, perhaps on more than one occasion. The blade is slightly asymmetrical, indicating uneven wear.

Reduction: There is no evidence relating to this process.

06/02 (Acc. No. 92: 6-13: 20)

Description: Socketed axe of 'southern English' type, decorated with three ribs on either face. Opposing ribs run down the interior of either face.

Dimensions: Length: 93mm. Cutting edge: 50mm. Weight: 214.5g.

Patina: Thick, rather dense green/olive, with much encrustation apparent, especially around the cutting edge.

Manufacture: The mouth appears well-finished, with the feeders and the intervening casting seam now absent, but the surface survives in poor condition here, making it difficult to assess the details with any confidence. The upper casting seam has been trimmed over the body, but it remains prominent to c.10mm from the cutting edge. The situation is similar on the underside, and it is impossible to determine whether or not the seam has been removed over the loop on account of corrosion buildup.

Use: The blade is crescentic, which suggests that it has been resharpened. The cutting edge is chipped and notched over much of its length, although its poor condition may have been exaggerated by flaking of the corrosion product. The blade has been unevenly worn.

Reduction: A crack runs down the upper body on one face (illustrated). It appears to be associated with a marked indentation near the mouth, and may be the result of efforts made to separate axehead and haft.

06/03 (Acc. No. 92: 6-13: 7)

Description: Socketed axe of plain 'south-eastern' type.

Dimensions: Length: 100mm. Cutting edge: 48mm. Weight: 255.4g.

Patina: Bronze remains visible over much of the piece, but some mottled green/red/brown patches obscure a reasonable amount of detail in places.

Manufacture: There is a rounded notch in the loop, which indicates a casting flaw. No traces of the casting seam survive around the mouth, which has an uneven appearance. On both sides of the body, the casting seams have been trimmed, though they are still visible

right down to the cutting edge. A knob which protrudes from the loop represents the remains of a chaplet which was properly removed during the finishing process. Possible coarse striations run down the length of the upper surface, adjacent to the casting seam.

Use: The cutting edge, which is well-expanded and virtually crescentic in shape, is notched and burred in places.

Reduction: Faint indentations on the upper surface show evidence of hammering, which may have been inflicted during the removal of the haft.

06/04 (Acc. No. 92: 6-13: 8)

Description: Socketed axe of plain 'south-eastern' type.

Dimensions: Length: 99mm. Cutting edge: 46mm. Weight: 182.0g.

Patina: Some bronze-colour remains, but much of the piece is covered with a thin, rough layer of mottled greens and browns. Few details survive.

Manufacture: The loop has a waisted appearance, indicating a failure of the molten metal to flow properly through the mould. The mouth appears uneven, but is well-finished, with no traces of either the feeders or the intervening casting seam surviving. The upper seam remains visible over the body, though it has been trimmed and flattened over most of its length. The lower seam has been virtually obliterated over the lower half of the piece, and is no longer visible over the loop.

Use: The blade is crescentic in appearance, which suggests that it has been subject to resharpening. The cutting edge is in poor condition, with a large notch broken from its extent. Where the edge survives, it is blunt and chipped, though its condition may have deteriorated following corrosion buildup.

Reduction: The object is complete and there is no evidence relating to this process.

06/05 (Acc. No. 92: 6-13: 9)

Description: Socketed axe of plain 'south-eastern' type.

Dimensions: Length: 100mm. Cutting edge: 47mm. Weight: 262.7g.

Patina: Rough bronze/olive in colour, with some encrustation. Details obscured.

Manufacture: The feeders have been removed around the mouth, though some vestigial traces of the casting seam remain here. Over the body, the upper seam has been trimmed and flattened, though it remains visible to c.15mm from the cutting edge. The situation is similar with the lower seam, though all traces have been obliterated over the loop. There is evidence of fine hammering on the upper body.

Use: The blade is crescentic in appearance, which suggests that it has been resharpened. The cutting edge is in poor condition, being chipped and burred over much of its length, and badly notched in places.

Reduction: The object is complete and there is no evidence relating to this process.

06/06 (Acc. No. 92: 6-13: 10)

Description: Socketed axe of plain 'south-eastern' type.

Dimensions: Length: 97mm. Cutting edge: 52mm. Weight: 251.2g.

Patina: Rough bronze colour, with greenish patches. Details obscured.

Manufacture: Some traces of the casting seam remain around the mouth, although the feeders have been removed. On the body, the seams have been virtually been obliterated over their extent on both sides, with no traces surviving over the loop.

Use: The blade is crescentic in appearance, and may have been resharpened on more than one occasion. The cutting edge is badly notched and burred over much of its extent, appearing blunt where it still remains intact.

Reduction: The object is complete and there is no evidence relating to this process.

06/07 (Acc. No. 92: 6-13: 11)

Description: Socketed axe, of plain 'south-eastern' type. Two opposing ribs run down the interior of either face.

Dimensions: Length: 93mm. Cutting edge: 48mm.

Patina: Rough bronze-olive, details poor.

Manufacture: There is a waisted appearance to the loop, which suggests that the metal failed to flow properly in the mould during casting. The feeders are still apparent, having

been subject to only rough trimming. Elsewhere the casting seams have been subject to minimal finishing. They remain prominent over much of their length, though they have been flattened over the final 20mm towards the cutting edge on either side. They are especially prominent over the collar mouldings, and remain obtrusive over the loop.

Use: The blade is unevenly worn, and the cutting edge appears rough over its extent.

Reduction: The object is complete and there is no evidence relating to this process.

06/08

Description: Socketed axe of plain 'south-eastern' type.

Dimensions: Length: 97mm. Cutting edge: 49mm. Weight: 245.0g.

Patina: Rough mottled olive/brown, with some encrustation present. Details virtually obliterated.

Manufacture: The vestigial traces of one feeder can be identified. On the body, the casting seams survive over much of the piece, except in those areas immediately adjacent to the cutting edge, where, presumably, the hammering out of the blade has obliterated them. The seam appears to have been obliterated over the loop, though this area is much obscured following corrosion buildup. Some horizontal grinding marks can be identified over the cutting edge, which has a faint bevel running along its length.

Use: The blade is crescentic in appearance, which indicates resharpener. The cutting edge remains reasonable over most of its length, though a large notch near one corner would surely have rendered the piece unusable.

Reduction: The notch on the cutting edge may have been deliberately inflicted, as there appear to be a series of sharp indentations associated with it. They may have been caused by a series of blows from a chisel or perhaps even from another axe.

06/09 (Acc. No. 93: 6-13: 13)

Description: Socketed axe of plain 'south-eastern' type.

Dimensions: Length: 87mm. Cutting edge: 44mm. Weight: 155.7g.

Patina: Some dense olive patches in places, with the rest of the piece being rough olive or green. Details much obscured.

Manufacture: The mouth appears to have been well-finished, but is slightly uneven; and some pitting may indicate the presence of air bubbles in the casting. On the body, the upper casting seam has been obliterated over the lower half of the object, and it survives only as a vestigial trace elsewhere. The lower seam has been virtually obliterated over most of its length.

Use: The blade has a crescentic appearance, and has probably been resharpener. It shows evidence of uneven wear and is chipped over much of its length.

Reduction: The object is complete and there is no evidence relating to this process.

06/10 (Acc. No. 92: 6-13: 14)

Description: Socketed axe of plain 'south-eastern' type.

Dimensions: Length: 85mm. Cutting edge: 41mm. Weight: 156.7g.

Patina: Rough dark-green with pale green patches, details obscured.

Manufacture: Vestigial traces of the feeder jets survive around the mouth, and traces of the intervening casting seam can be identified, too. The upper casting seam has been virtually obliterated over the length of the body. The seam still remains as a vestigial trace on the lower surface, however, though it has been obliterated over the loop.

Use: The blade is crescentic in appearance, and was probably resharpener. The cutting edge is in poor condition, being unevenly worn, and badly notched over its length.

Reduction: The object is complete and there is no evidence relating to this process.

06/11 (Acc. No. 92: 6-13: 15)

Description: Socketed axe of plain 'south-eastern' type.

Dimensions: Length: 108mm. Cutting edge: 45mm. Weight: 223.1g.

Patina: Rough mottled pale/dark green/brown. Very messy, with no details visible.

Manufacture: One feeder survives as a vestigial trace. The casting seams are visible on both sides of the body, but have been trimmed and flattened over much of their length. The lower seam has been obliterated over the extent of the loop.

Use: The blade has a crescentic appearance, as a result of resharpener. It is chipped over much its length, but this damage may have been exaggerated through recent flaking of the corrosion products, as the edge does not look particularly worn, and remains in reasonable condition. Breakage of the axehead has occurred, and part of the mouth is now missing. The object's section shows outwards distortion as opposed to crushing, and the wall section appears slightly thin here. This damage may therefore have been sustained through use.

Reduction: See Use above.

06/12 (Acc. No. 92: 6-13: 16)

Description: Socketed axe of plain 'south-eastern' type.

Dimensions: Length: 100mm. Cutting edge: 44mm.

Patina: Rough mottled olive/pale green, with some bronze-coloured patches remaining. No details can be seen.

Manufacture: No traces of the feeders or the intervening seam survive around the mouth. The casting seams have been obliterated on both sides over the lower portion of the piece. They remain prominent over the upper body, though they appear to have been trimmed. The line of the seam can still be identified over the loop.

Use: The blade has a crescentic appearance, which suggests that it was resharpener. The cutting edge has been unevenly worn, and is blunt and chipped over its length, though this damage may be exaggerated by recent flaking of the corrosion products.

Reduction: A large part of one face is now missing, damage which seems likely to have occurred at this closing stage in the object's life-cycle. However, no distortion is evident in the section, and no hammer indents can be seen in association with any of the broken edges, though the absence of the latter may be related to corrosion buildup.

06/13 (Acc. No. 92: 6-13: 18)

Description: Mouth and upper body of 'south-eastern' type socketed axe, with three collar mouldings present.

Dimensions: Length (maximum): 70mm. Weight: 158.8g.

Patina: Rough dark-green/brown. Details obscured.

Manufacture: Faint traces of the casting seam can be identified on one side of the mouth though it has been flattened and ground and the finish is basically good here. The casting seams remain as vestigial traces over both sides of the body, having been virtually obliterated over their extent. The condition of the seam over the loop cannot be determined as corrosion buildup obscures the surface detail here.

Use: Impossible to determine.

Reduction: No distortion of the section is apparent, and no hammer indents can be identified in association with the break, though the surface detail here has been obscured.

06/14 (Acc. No. 92: 6-13: 17)

Description: Lower body and cutting edge from socketed axe, probably of 'south-eastern' type.

Dimensions: Length (maximum): 70mm. Cutting edge: 49mm. Weight: 155.0g.

Patina: Mainly rough dark green/brown, but some polished olive patches near the cutting edge on one side reveal some details.

Manufacture: Some traces of the casting seams are visible on both sides, but the patina obscures much detail. The seams appear to survive right up to the cutting edge in this example. Horizontal grinding marks are visible near the cutting edge on one side (illustrated).

Use: The blade is crescentic in appearance, which suggests that the object was subject to resharpener. The cutting edge is unevenly worn, but remains in reasonable condition over its extent.

Reduction: No distortion of the section is apparent, and no hammer indents can be identified in association with the break, though corrosion buildup obscures much detail here.

06/15 (Acc. No. 92: 6-13: 6)

Description: Winged axe.

Dimensions: Length: 110mm. Cutting edge: 34mm. Weight: 222.5g.

Patina: Some bronze-coloured metal survives near the blade edge, while the rest is a rough mottled green/brown. Details are locally good, though most of the surface is in poor condition.

Manufacture: The casting seams appear to have been obliterated over the extent of the piece. Some coarse striations run along the original line of the seam on the lower surface, and these are probably related to the removal of the seam. Some diagonal and horizontal grinding marks run across the cutting edge in places.

Use: Bevels are apparent over either corner of the cutting edge, which indicates that the blade was resharpened, perhaps on more than one occasion. The cutting edge is blunt and burred over its length, and is chipped in places, though this latter damage may be the result of flaking corrosion products.

Reduction: The object is complete and there is no evidence relating to this process.

06/16 (Acc. No. 92: 6-13: 4)

Description: Butt fragment of winged axe. The butt is very thick in section in comparison with other examples.

Dimensions: Length (maximum): 77mm. Weight: 253.5g.

Patina: Mottled dark/light green, rather rough in appearance.

Manufacture: No traces of any casting seams can be identified on the piece.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

06/17 (Acc. No. 92: 6-13: 5)

Description: Winged adze, with the butt now missing.

Dimensions: Length (maximum): 90mm. Cutting edge: 39mm. Weight: 146.6g.

Patina: Rough pale green/brown, with some polished olive patches.

Manufacture: No traces of any casting seams survive. Evidence of fine hammering can be identified along the junction between one wing and the body, and also on the wing itself.

Use: The cutting edge is in poor condition, one corner having broken away. The loop also appears uneven, though whether this results from excessive wear or is evidence of a casting defect cannot be ascertained.

Reduction: The butt was broken in antiquity, but modern damage is also apparent here. This casting has been subject to cracking and breakage, presumably in recent times, and the broken fragment has been re-attached. The wings were damaged in antiquity, possibly during the removal of the haft. No individual hammer indents can be identified in association with this latter damage.

06/18 (Acc. No. 92: 6-13: 3)

Description: Broad-bladed palstave, with trident-decoration on the blade.

Dimensions: Length: 165mm. Cutting edge: 58mm. Weight: 470.2g.

Patina: Very rough grey-green/brown patina. Details are now very poor.

Manufacture: The feeder jets are untrimmed at the butt, and the edge is very blunt and flat in appearance. The casting seams, though they appear to have been trimmed, are still very much apparent, especially near the cutting edge, and the object appears to be unfinished.

Use: The object may never have been used.

Reduction: The object is complete, and there is no evidence relating to this process.

06/19 (Acc. No. 92: 6-13: 1)

Description: Hilt and shoulders of 'Ewart Park' sword, with two complete rivet holes present.

Dimensions: Length (maximum): 109mm. Weight (with 06/20): 156.0g.

Patina: Very rough mottled green, details obscured.

Manufacture: A fissure in the midrib, located between the rivet holes, may represent a minor casting defect. The piece is well-finished, with no traces of any casting seams surviving, and possible evidence of fine hammering is apparent around the edges of the hilt.

Use: The cutting edges are badly chipped over their extent, though their poor condition may have resulted at least in part from later flaking of the corrosion product. Little if any of the original blade edge remains intact.

Reduction: There are probable hammer indents visible in association with the upper break, and the profile of the fragment shows distortion.

06/20 (Acc No. 92: 6-13: 2)

Description: Blade fragment of 'Ewart Park' sword.

Dimensions: Length (maximum): 83mm. Weight: 107.7g.

Patina: Rough dark-green, with some mottled green/brown patches, and encrustation in places. Details obscured.

Manufacture: Fine bevels run down the length of either cutting edge. Evidence of fine hammering and traces of vertical grinding marks can be seen in association with these bevels.

Use: The cutting edges are chipped and notched over their extent. Their condition may have deteriorated following deposition as a result of corrosion buildup, but it seems likely that much of this damage took place in antiquity.

Reduction: There is a faint bend to the profile, but no hammer indents can be seen in association with either break.

06/21 (Acc. No. 92: 6-13: 22)

Description: Fragment of bracelet, with an expanded terminal. The exterior is completely covered with decoration.

Dimensions: Outer circumference of bracelet (surviving): 77mm. Weight: 73.9g.

Patina: Dense dark-green, polished appearance, with details reasonable.

Manufacture: The clay core has been removed, and the interior appears rough, suggesting minimal finishing. The presence of a rough knob on the terminal has been used as evidence to suggest that the object is unfinished (Inv. Arch.). This seems a feasible possibility, the knob perhaps being a chaplet or feeder.

Use: The piece may never have been used.

Reduction: There is a crack evident in the casting close to the break, but there are no traces of hammering in association with the break which might yield conclusive evidence of deliberate fragmentation. The surface of the interior is too rough for any detail to be seen.

06/22 (No accession number)

Description: Large piece from edge of copper ingot. A large void can be seen on the underside.

Dimensions: Length: 92mm. Width: 98mm. Thickness: 40mm. Weight: 973.7g.

06/23 (Acc. No. 92: 92: 6-13: 23)

Description: Piece from edge of copper ingot.

Dimensions: Length: 70mm. Width: 53mm. Thickness: 45mm. Weight: 539.9g.

06/24 (Acc. No. 92: 6-13: 24)

Description: Small piece from edge of copper ingot, very smooth in appearance, with some rough copper adhering.

Dimensions: Length: 52mm. Width: 32mm. Thickness: 25mm. Weight: 296.9g.

06/25 (Acc. No. 92: 6-13: 22A)

Description: Piece from edge of copper ingot.

Dimensions: Length: 82mm. Width: 54mm. Weight: 803.3g.

06/26 (Acc. No. 92: 6-13: 21A)

Description: Large piece from edge of copper ingot.

Dimensions: Length: 119mm. Width: 83mm. Thickness: 30mm. Weight: 988.6g.

06/27 (Acc. No. 92: 6-13: 26)

Description: Small piece from edge of copper ingot.

Dimensions: Length: 48mm. Width: 70mm. Thickness: 22mm. Weight: 240.5g.

06/28 (Acc. No. 92: 6-13: 25)

Description: Piece from edge of copper ingot.

Dimensions: Length: 78mm. Width: 60mm. Thickness: 23mm. Weight: 528.2g.

Observations: Some chisel marks are apparent on one surface (illustrated).

Note: One additional socketed axe mouth fragment which can be securely ascribed to the Shoebury I hoard (see Smith, 1958, No. 10) has not been included amongst this catalogue of material. In addition, there are a number of items included in the Greenwell Collection which have been attributed to the Shoebury I hoard (06/29-33), but their provenance should be considered doubtful. These include: 3 socketed axes, 1 fragment of copper cake, 1 bone pin, and 1 fragment of body sherd from a fine pottery vessel, undecorated, and with what appears to be a temper of crushed burnt flint. The accuracy of their provenance can be questioned on two counts. First of all, while an association between bone pins and later Bronze Age metalwork is not unknown (e.g. Heathery Burn Cave, as described in Greenwell, 1894) such an association is unmatched amongst the other 'Carp's Tongue' hoards of Essex and Kent. Secondly, and perhaps more importantly, is the fact that - while the patina which has built up over the Greenwell Collection axes noted below is consistently similar - it bears no resemblance to that which is characteristic of the other objects more securely attributed to the Shoebury I hoard. It is dangerous to rely too much upon differences in patina when provenancing objects, as there are numerous examples of hoards where the patina has varied greatly from one object to the next, but it seems in this instance that both collections of objects are sufficiently different to strongly question the possibility that they form part of the same metalwork hoard.

06/29 (Acc. No. WG 2184)

Description: Socketed axe of undecorated 'south-eastern' type. Two opposing ribs are present in the interior of the socket.

Dimensions: Length: 108mm. Cutting edge: 42mm. Weight: 316.6g.

Patina: Thick, rather rough dark-green patina. Details locally good.

Manufacture: The casting seam has been virtually obliterated around the mouth. Elsewhere, over the body, the seams are prominent on both sides, although they no longer survive over the upper collar moulding, and have been obliterated over the last c.20mm towards the cutting edge on both sides. Traces of the seam still remain visible over the loop, however. Coarse vertical grinding marks run down the length of the body on both faces. Fine hammering is visible over the blade, and though the cutting edge is narrow, there is a bevel present, which suggests that the blade was fully prepared for use.

Use: This object may never have been used. The cutting edge is blunt, but it shows little signs of any damage, though the blade is slightly uneven in shape.

Reduction: There is one rough hammer indent (illustrated), which may have been inflicted during the separation of axehead and haft. There is a possible chisel mark present above the loop on one side (not illustrated).

06/31 (Acc. No. WG 2185)

Description: Socketed axe, of 'south-eastern' type.

Dimensions: Length: 106mm. Cutting edge: 43mm. Weight: 266.6g.

Patina: Thick olive with rough dark-green patches. Details much obscured.

Manufacture: There is a possible casting flaw in the lower collar moulding (illustrated). This consists a shallow indent, though it is possible that this feature was the result of later hammering. The stump of one feeder remains very prominent at the mouth, though the casting seam has been obliterated here. The upper seam is visible over much of the body, though it has been trimmed and flattened, and it has been obliterated over the last 30mm towards the cutting edge. The lower seam has been virtually obliterated, and is now absent over the lowermost half of the piece. It remains very prominent over the collar, though it has been flattened over the loop. Hammer facets can be seen over the loop, and these are likely to have been inflicted during finishing of the seam. The blade is narrow and rather blunt in appearance, and it is possible that the piece was never fully prepared for use.

Use: The object may be unused.

Reduction: Some rough hammering is evident on the body, and the indent on the collar (see Manufacture above) may relate to the separation of axehead and haft, though this would suggest that the object was in fact subject to final finishing.

06/32 (Acc. No. 92: 11-4: 46)

Description: Bone pin or gouge, most likely to be of ovicaprid origin.

Length: 155mm.

Observations: Highly polished on the exterior, with fine grinding marks visible.

06/33 (Acc. No. WG 2186)

Description: Socketed axe, with three diverging ribs on either face. Likely to be of a 'highland' socketed axe type, i.e. Yorkshire.

Dimensions: Length: 86mm. Cutting edge: 53mm. Weight: 204.3g.

Patina: Some bronze remains visible, but much of the surface is a dense dark green.

Manufacture: A large pit in one face is likely to be the result of a casting flaw (not illustrated). Vestigial traces of the feeders survive around the mouth, though the intervening casting seam has been removed here. Over the upper side of the body, the casting seam has been flattened, but it remains obvious right up to the cutting edge. On the underside, the seam is still visible over the loop, though it has been flattened. A knob which protrudes from the loop represents the remains of a chaplet which has not been removed during finishing. There are horizontal grinding marks visible in places over the cutting edge, which has been widely expanded.

Use: Deep striations are evident in places on both faces, and these could be the result of use-related damage. The cutting edge appears quite rough, but remains in reasonable condition.

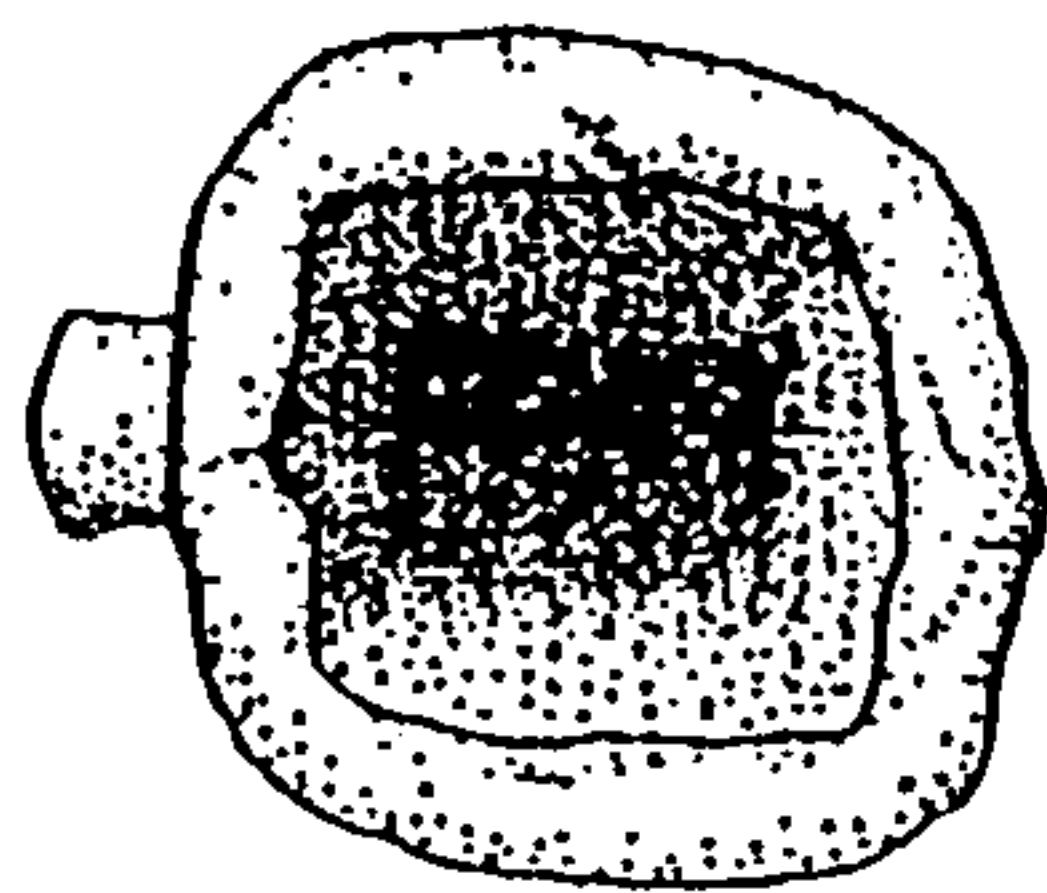
Reduction: The object is complete and there is no evidence relating to this process.

06/34 (Acc. No. WG 2187)

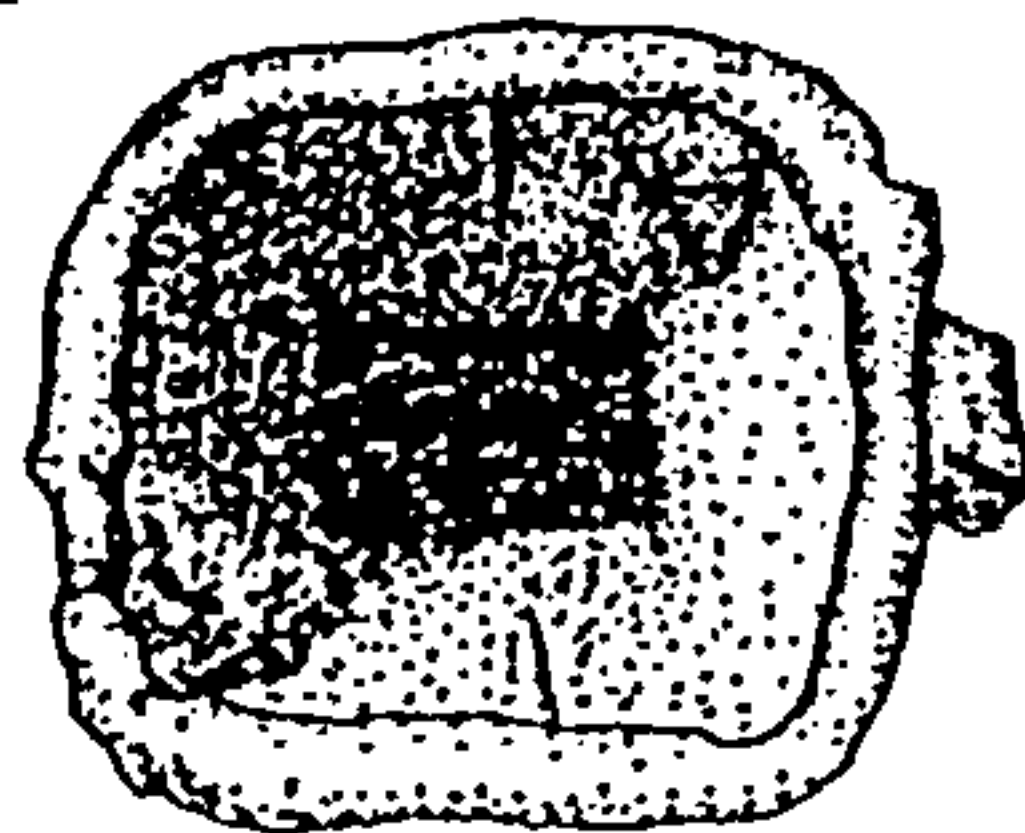
Description: Large piece from edge of copper cake.

Dimensions: Length: 64mm. Width: 73mm. Thickness: 25mm. Weight: 438.4g.

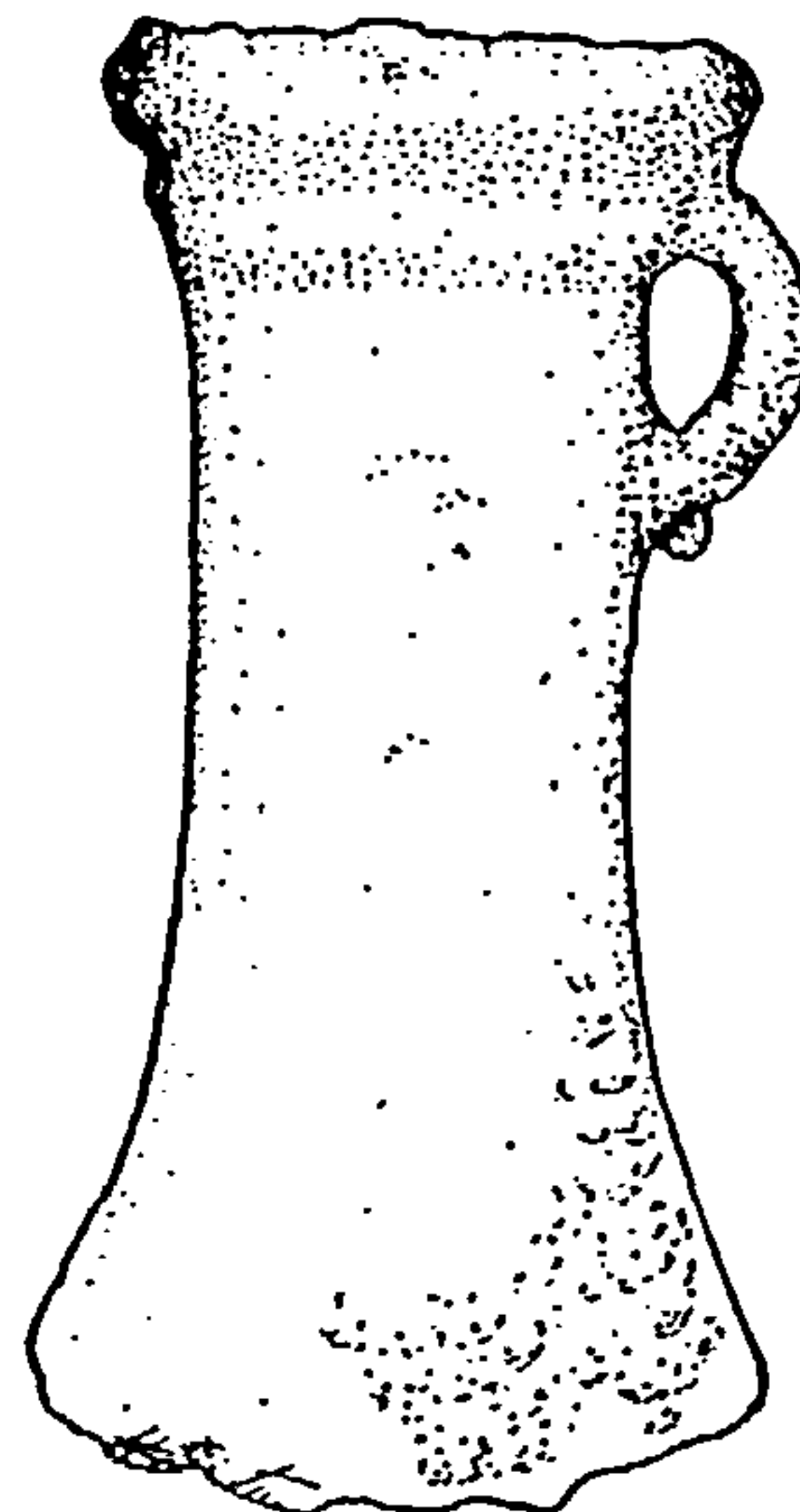
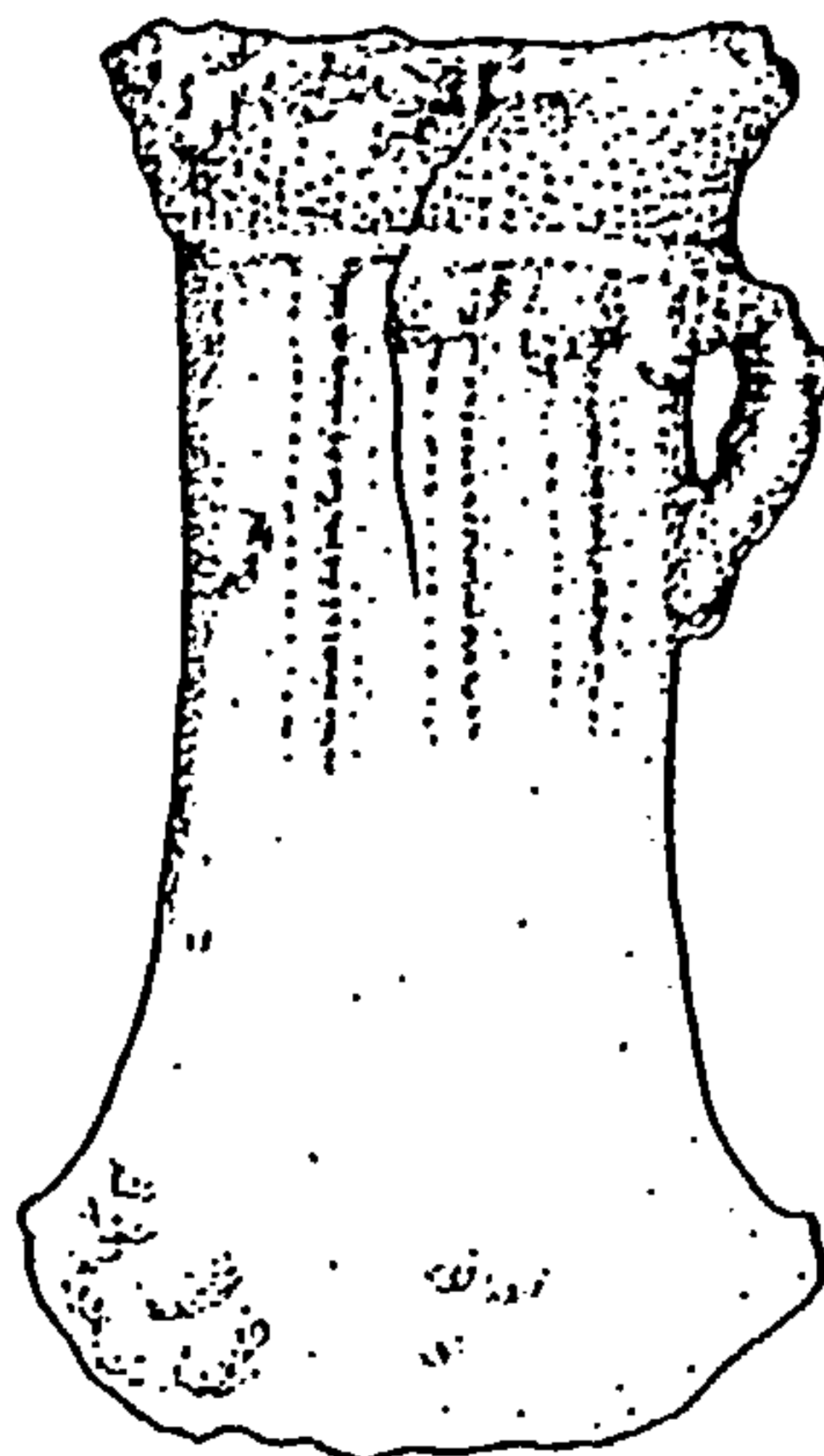
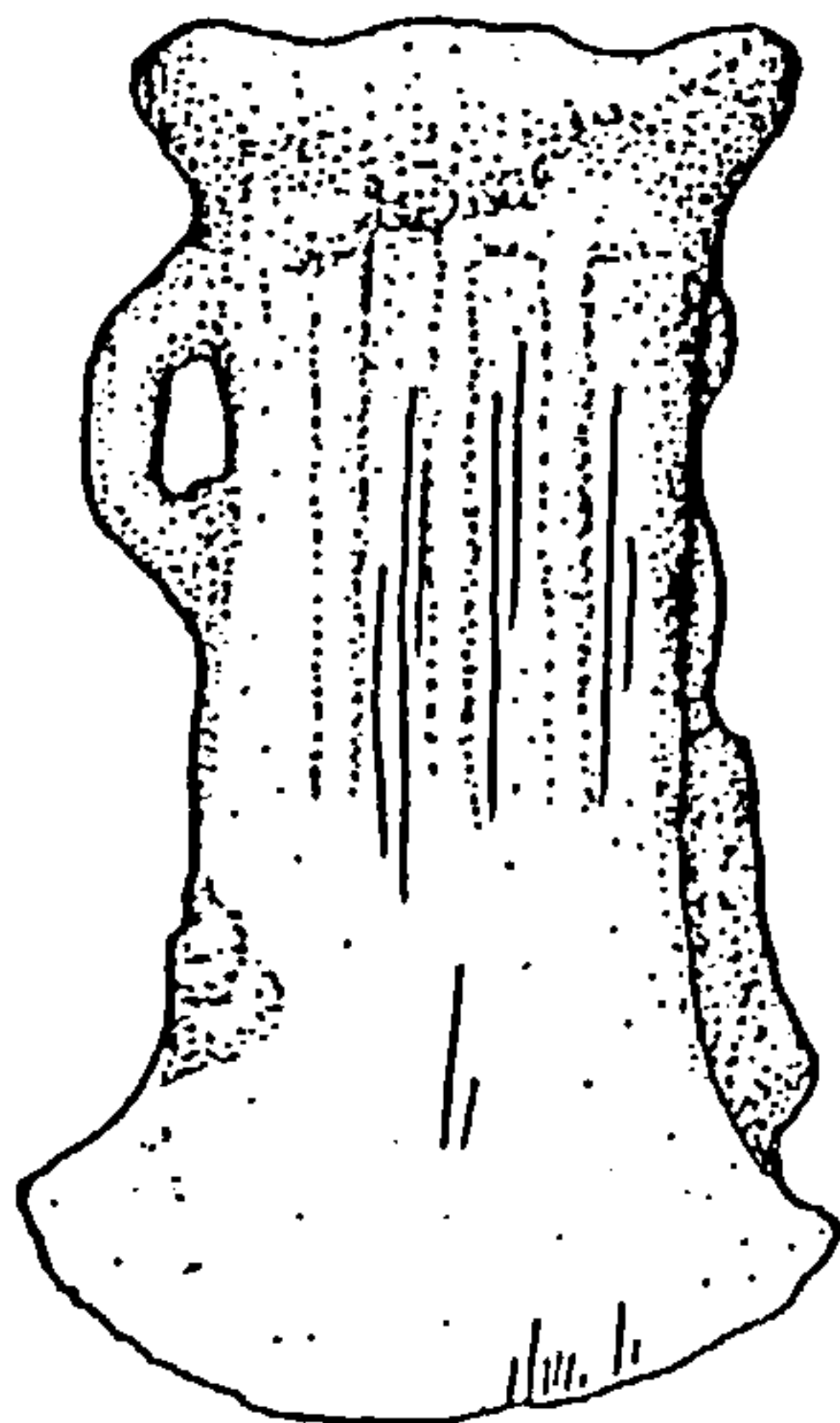
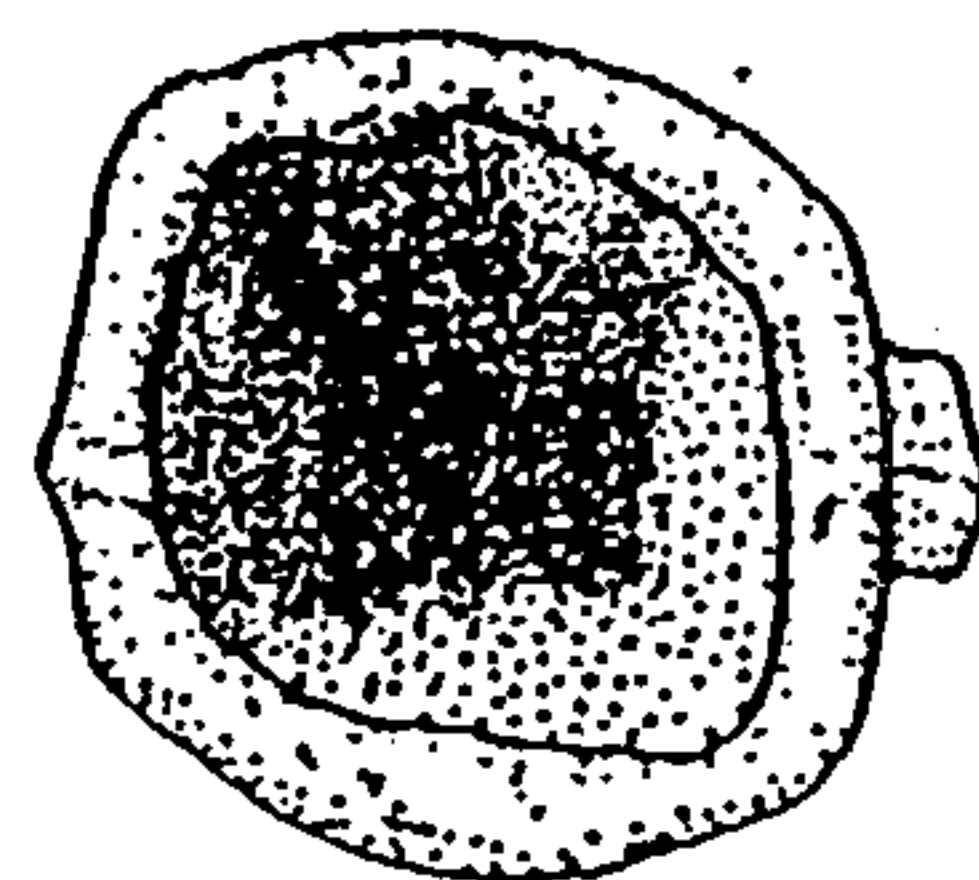
06/01



06/02

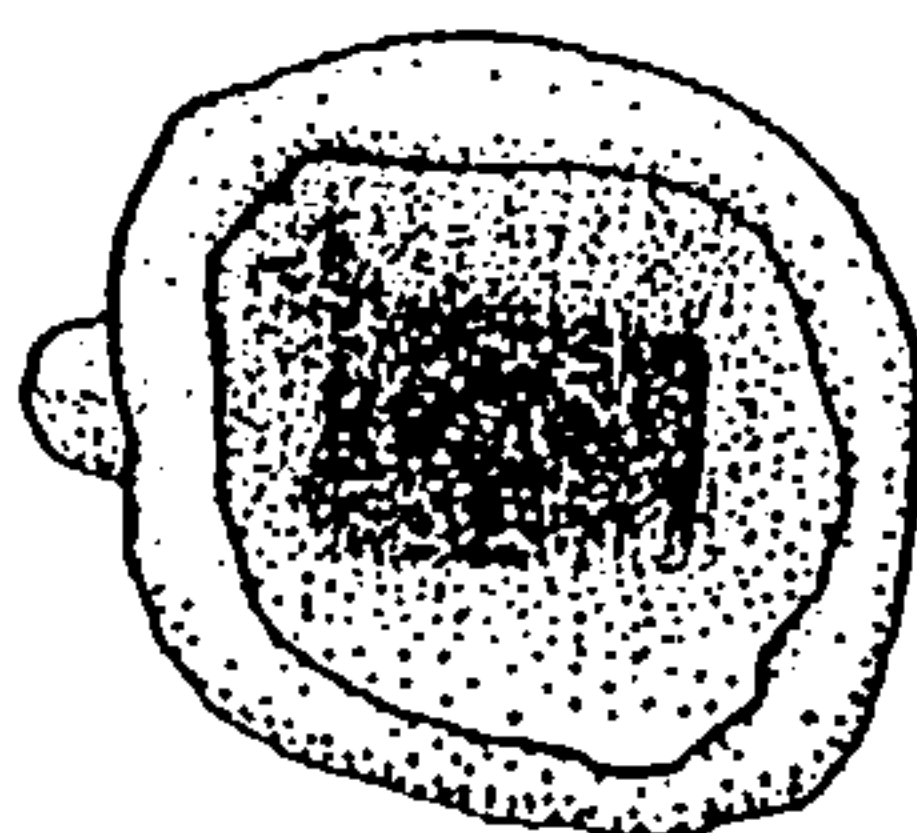


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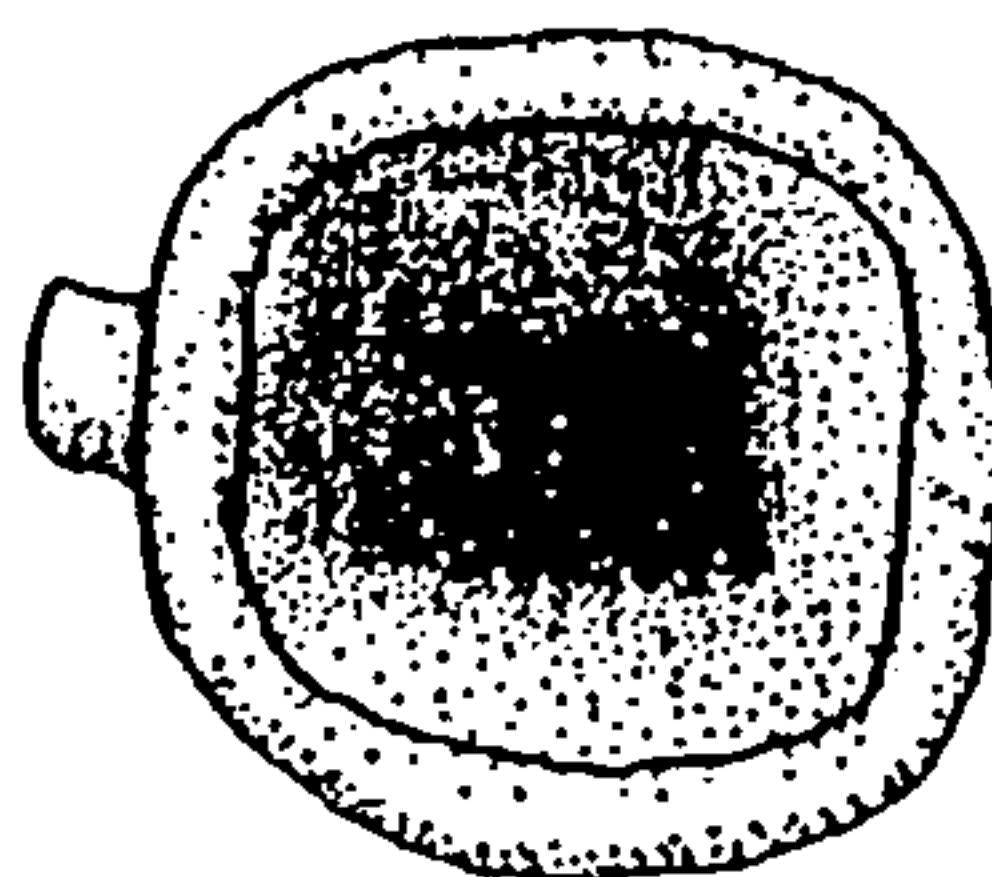


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06/04



06/05



06/06

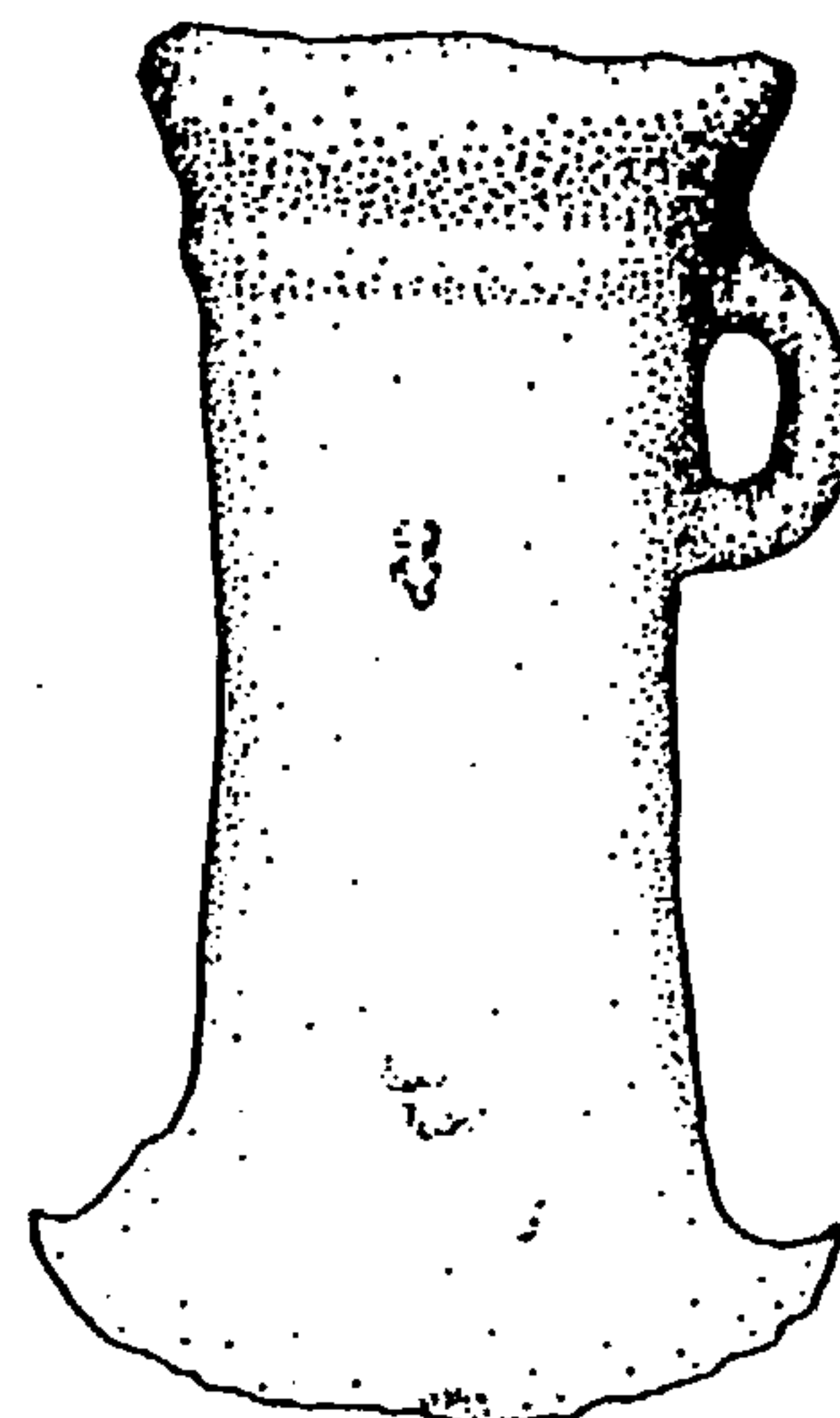
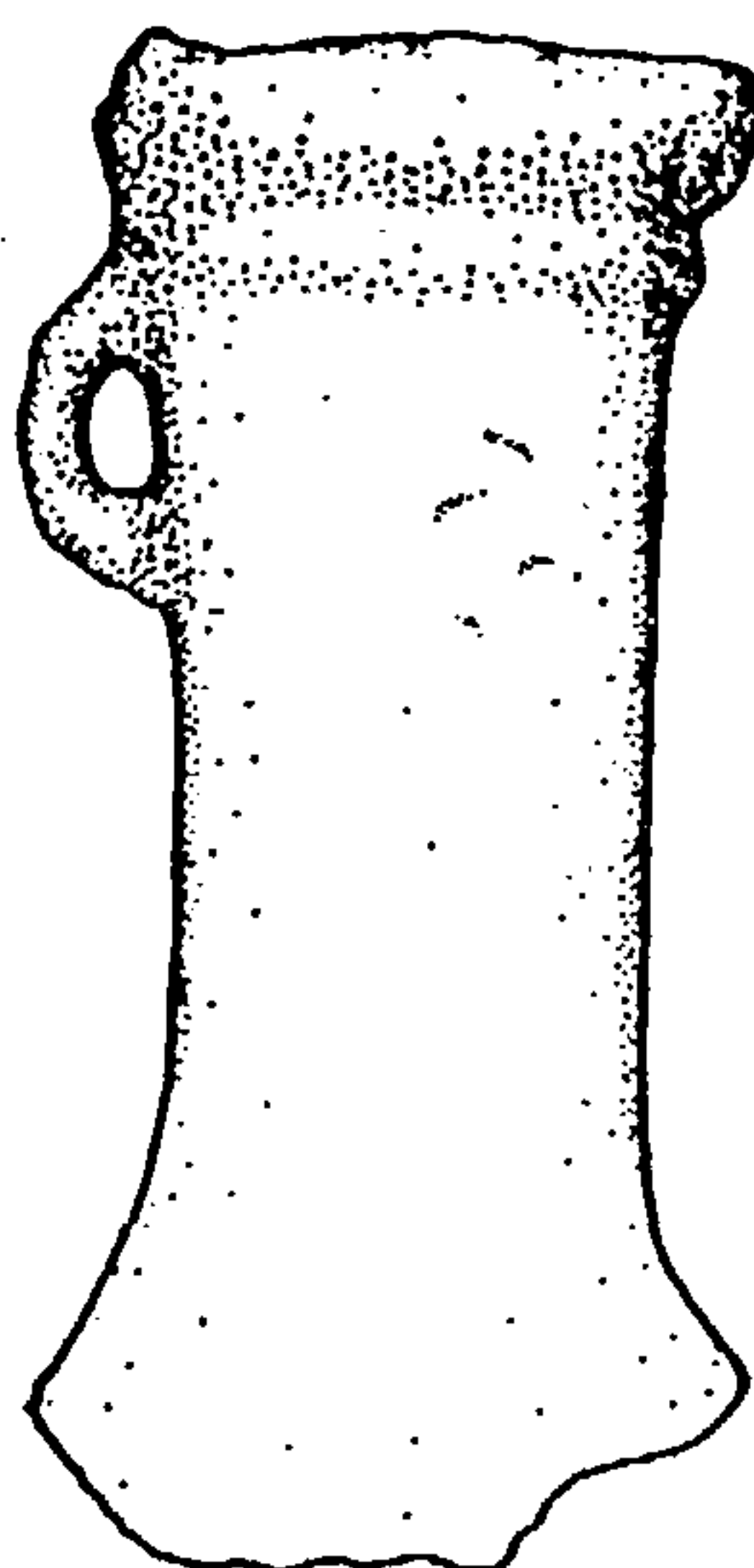
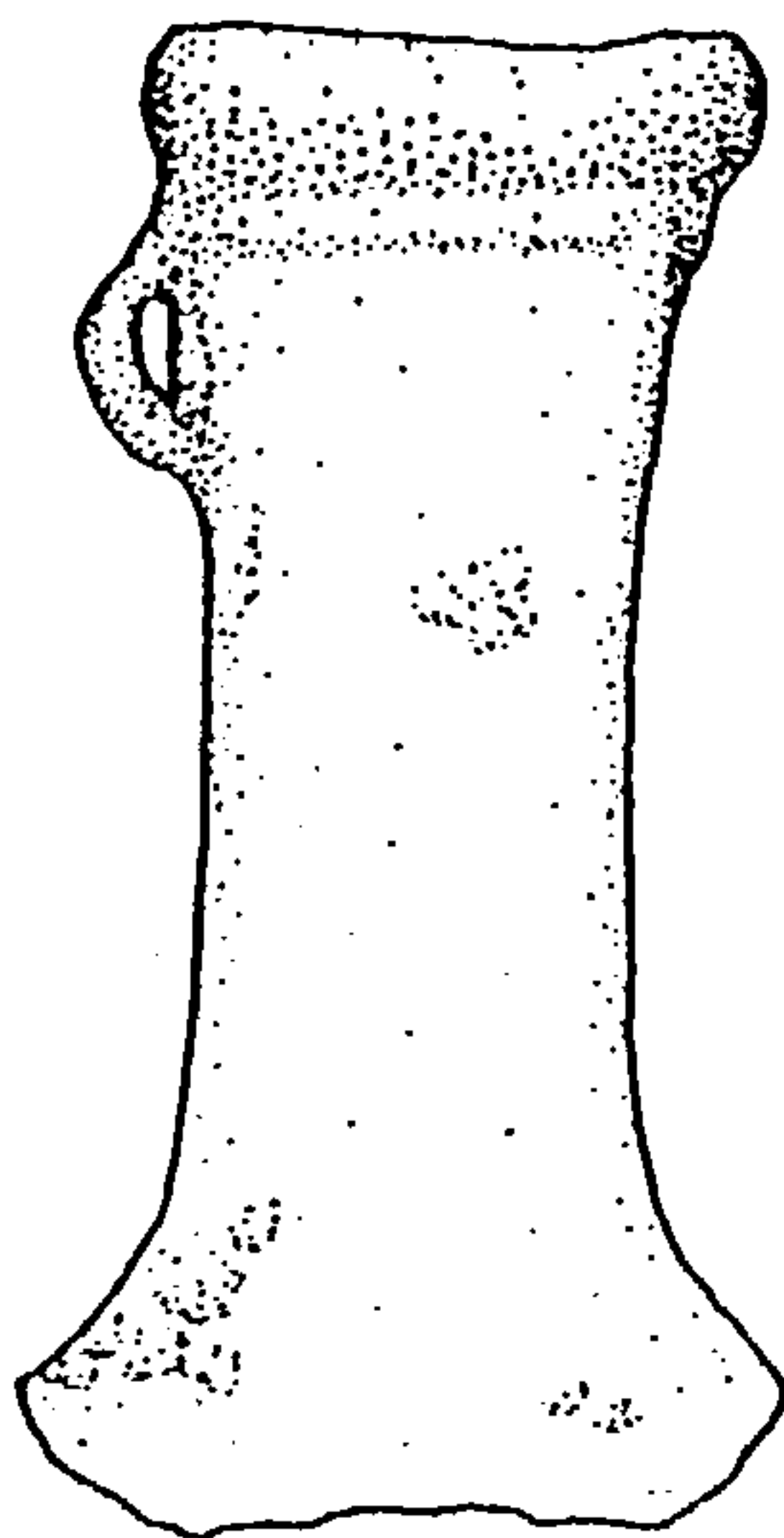
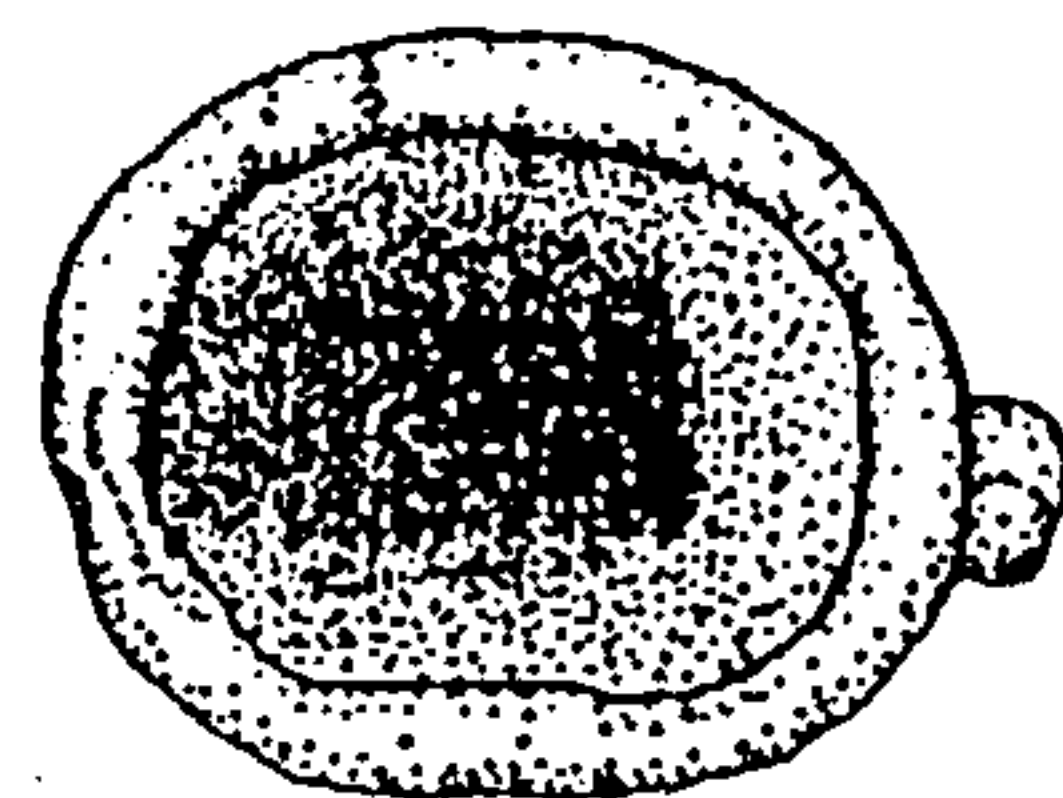
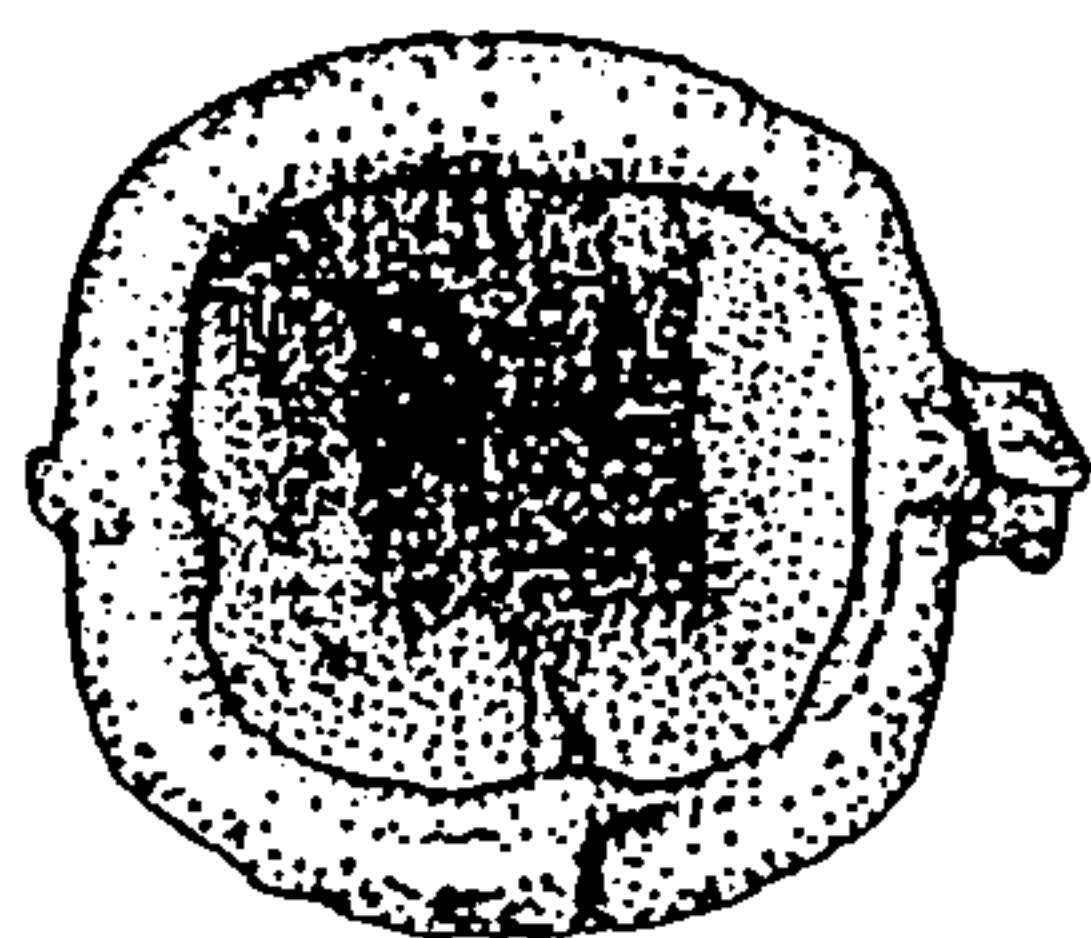
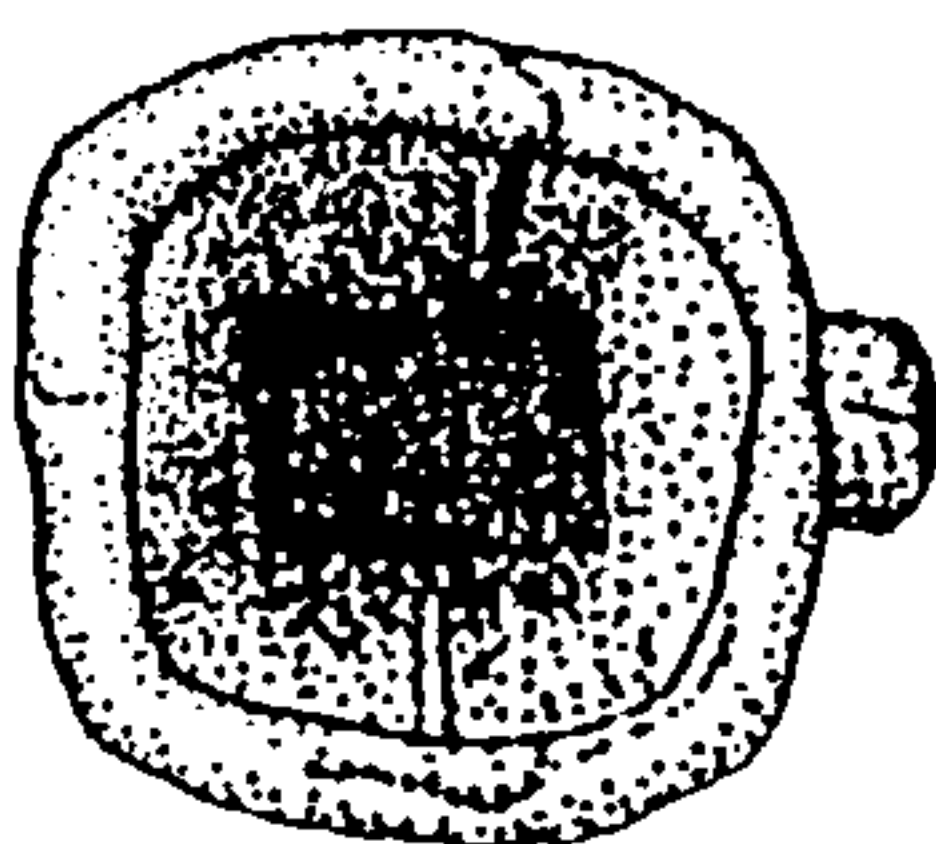


Fig. 66: The Shoebury I Hoard (Ref. No. 06): Socketed Axes (i)

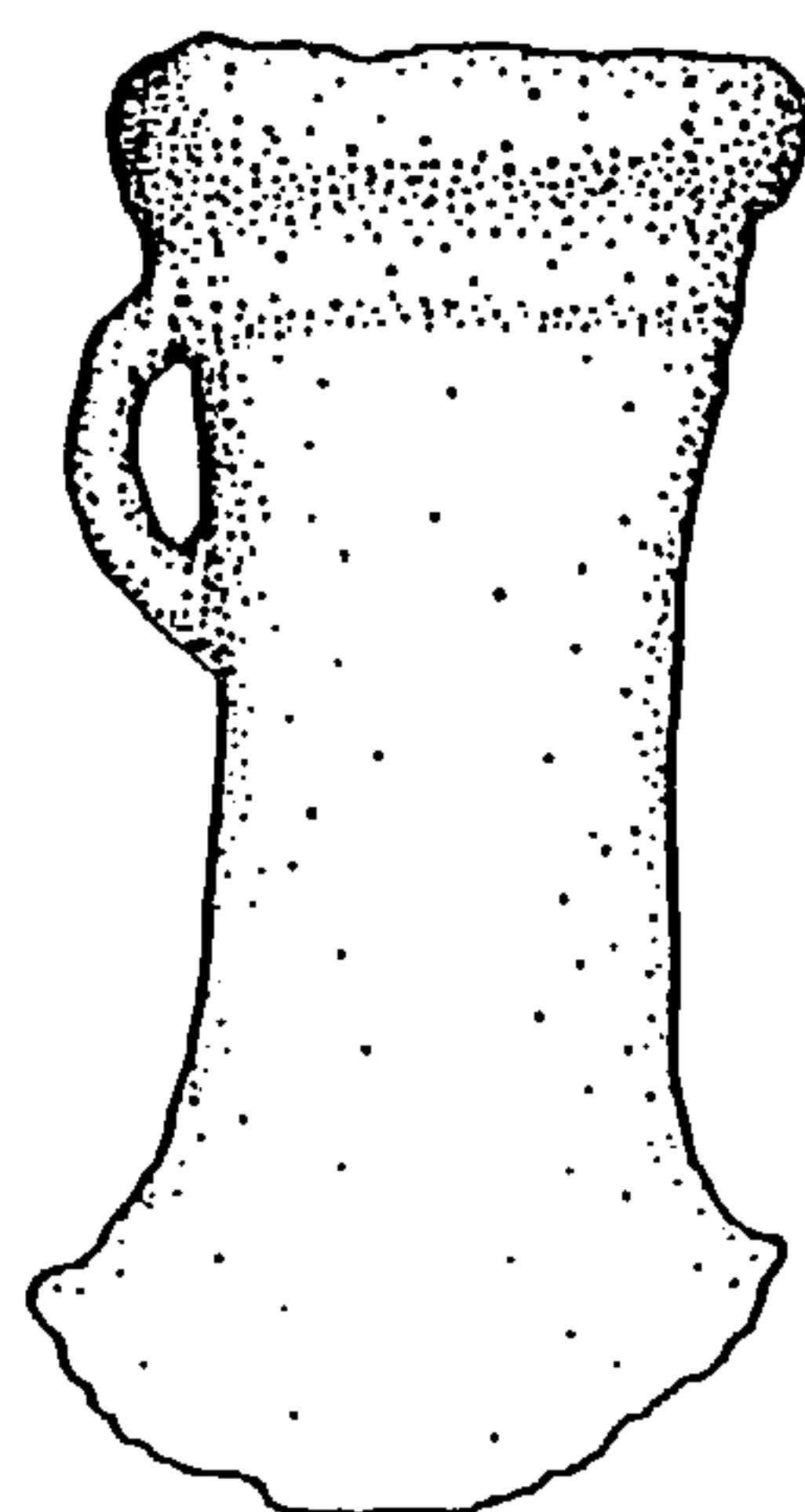
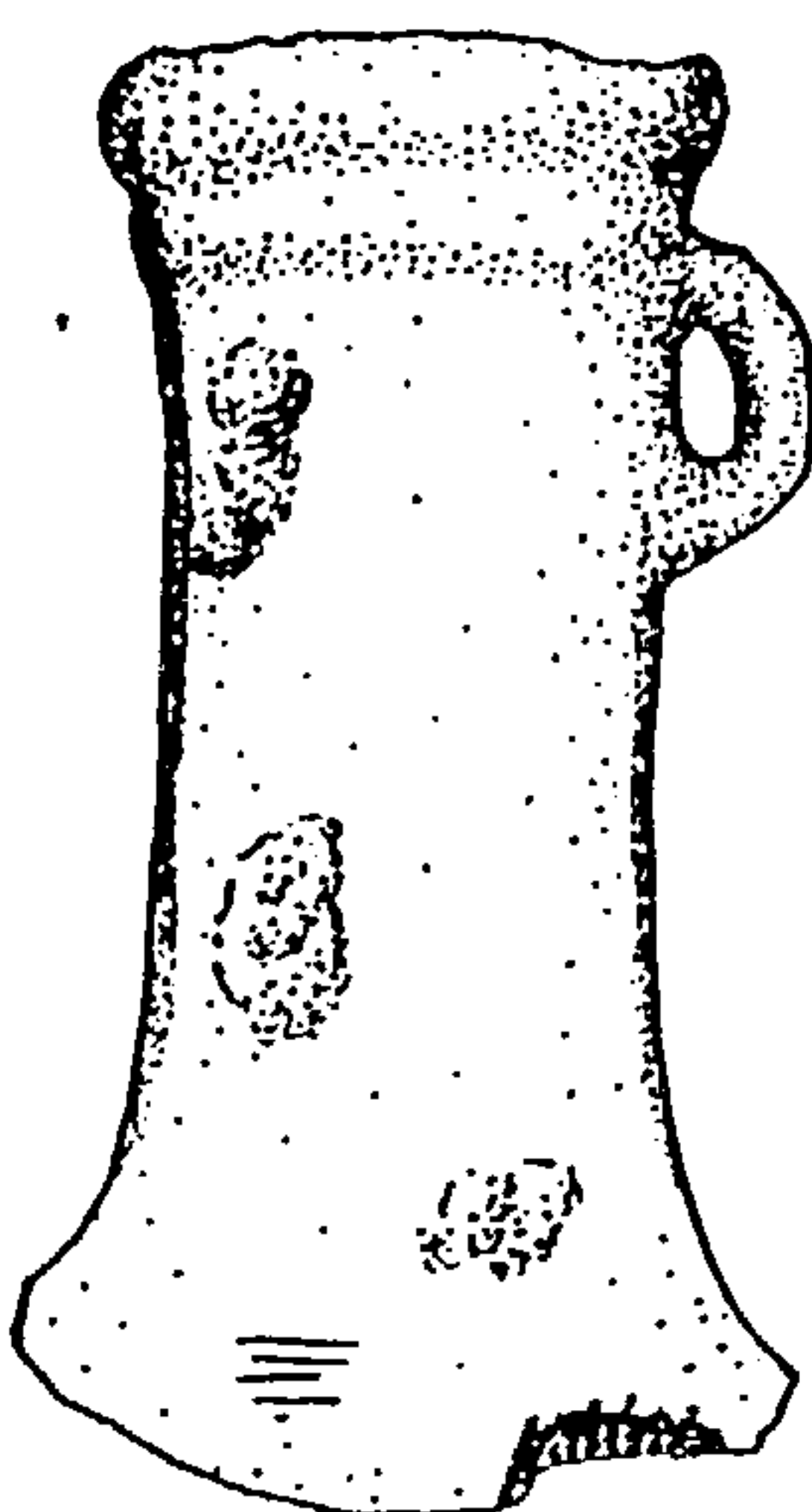
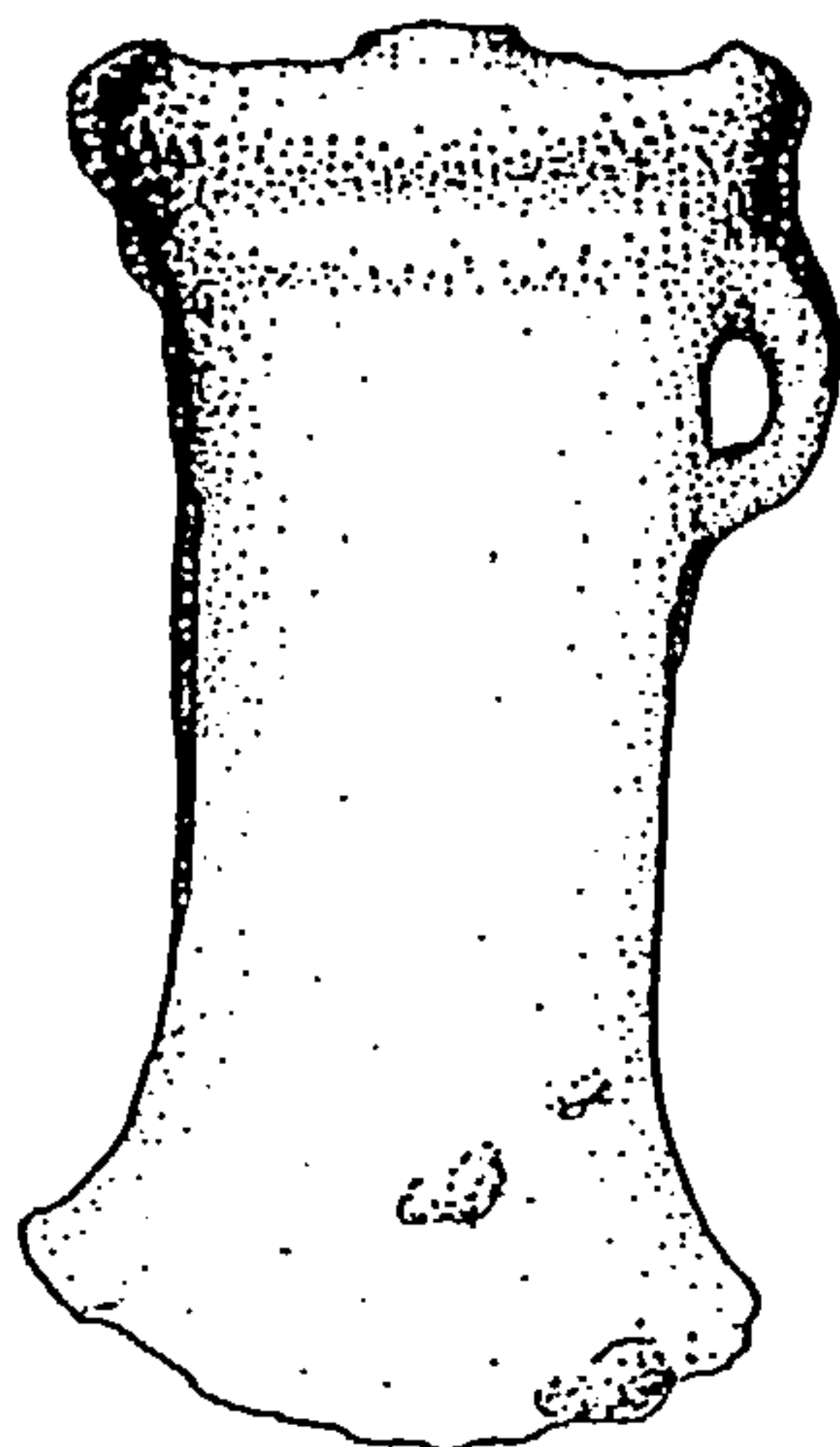
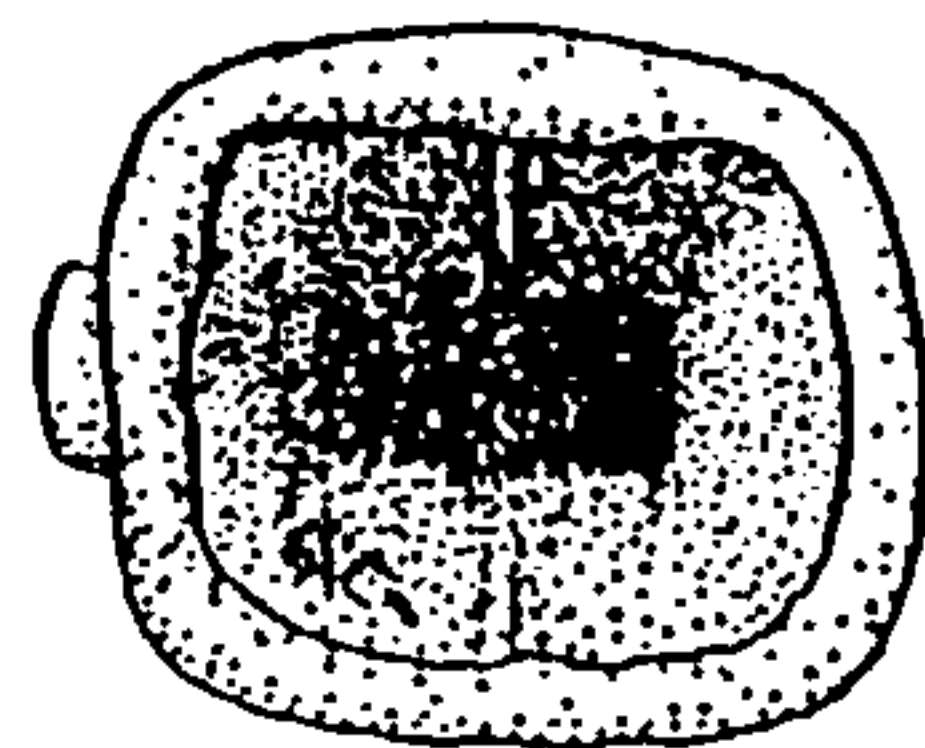
06/07



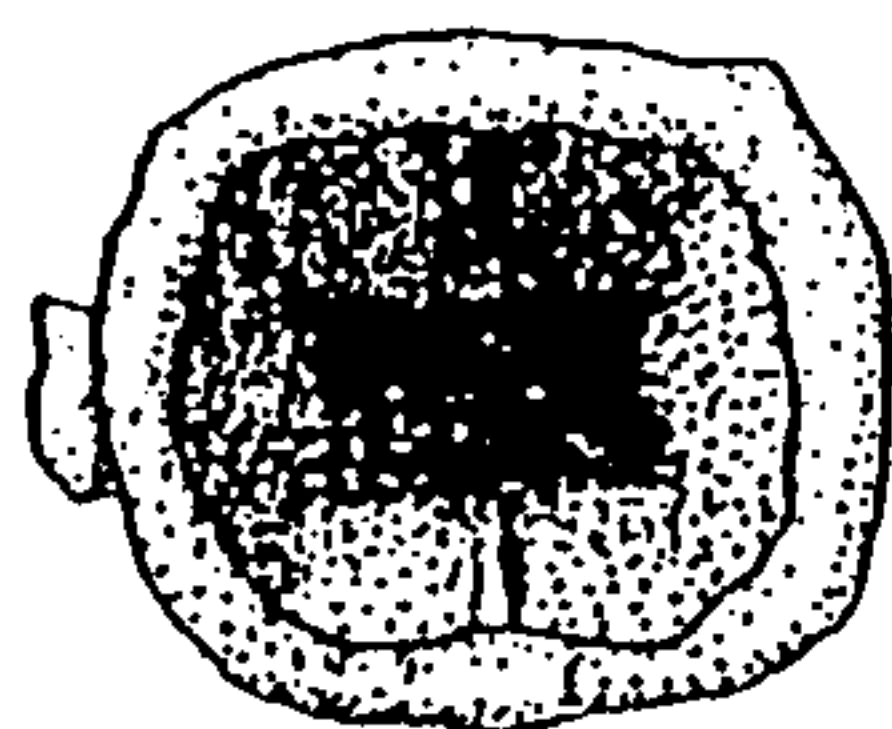
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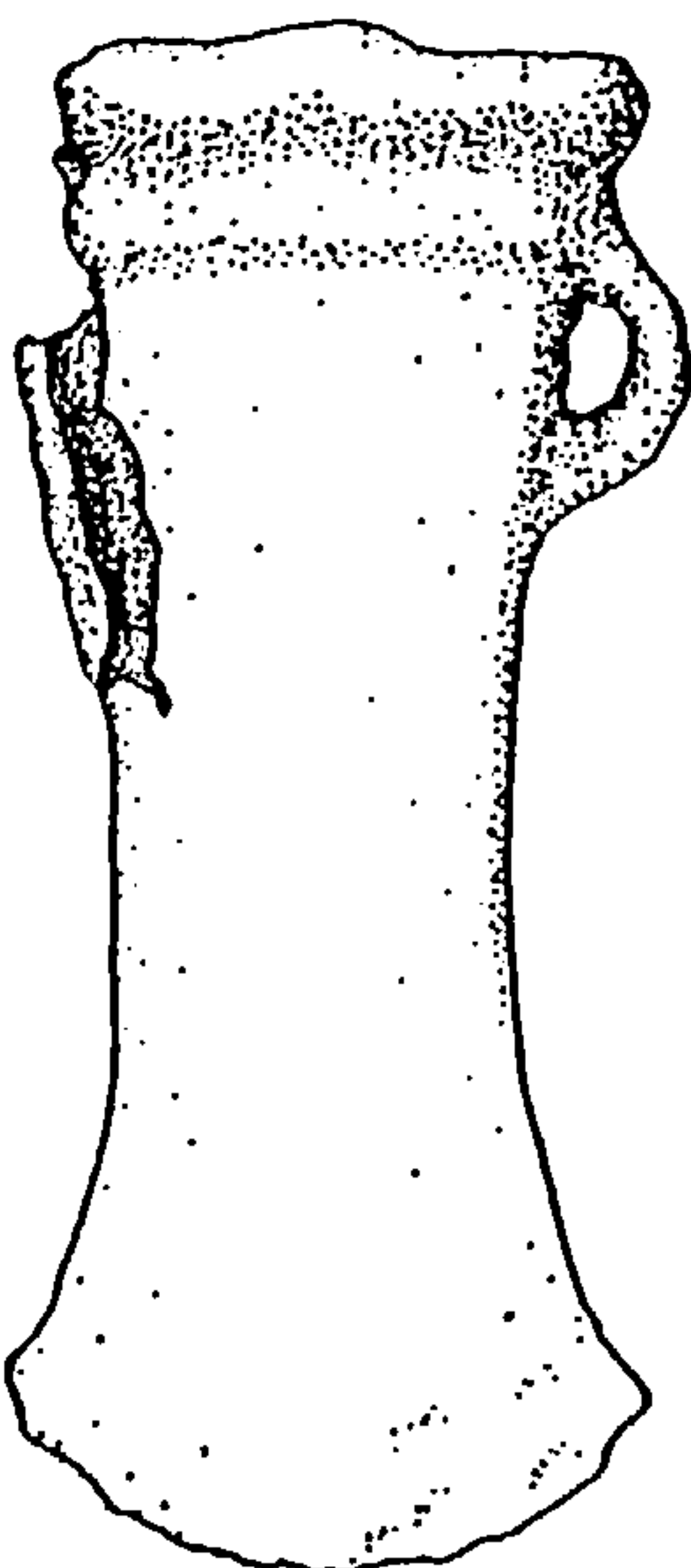
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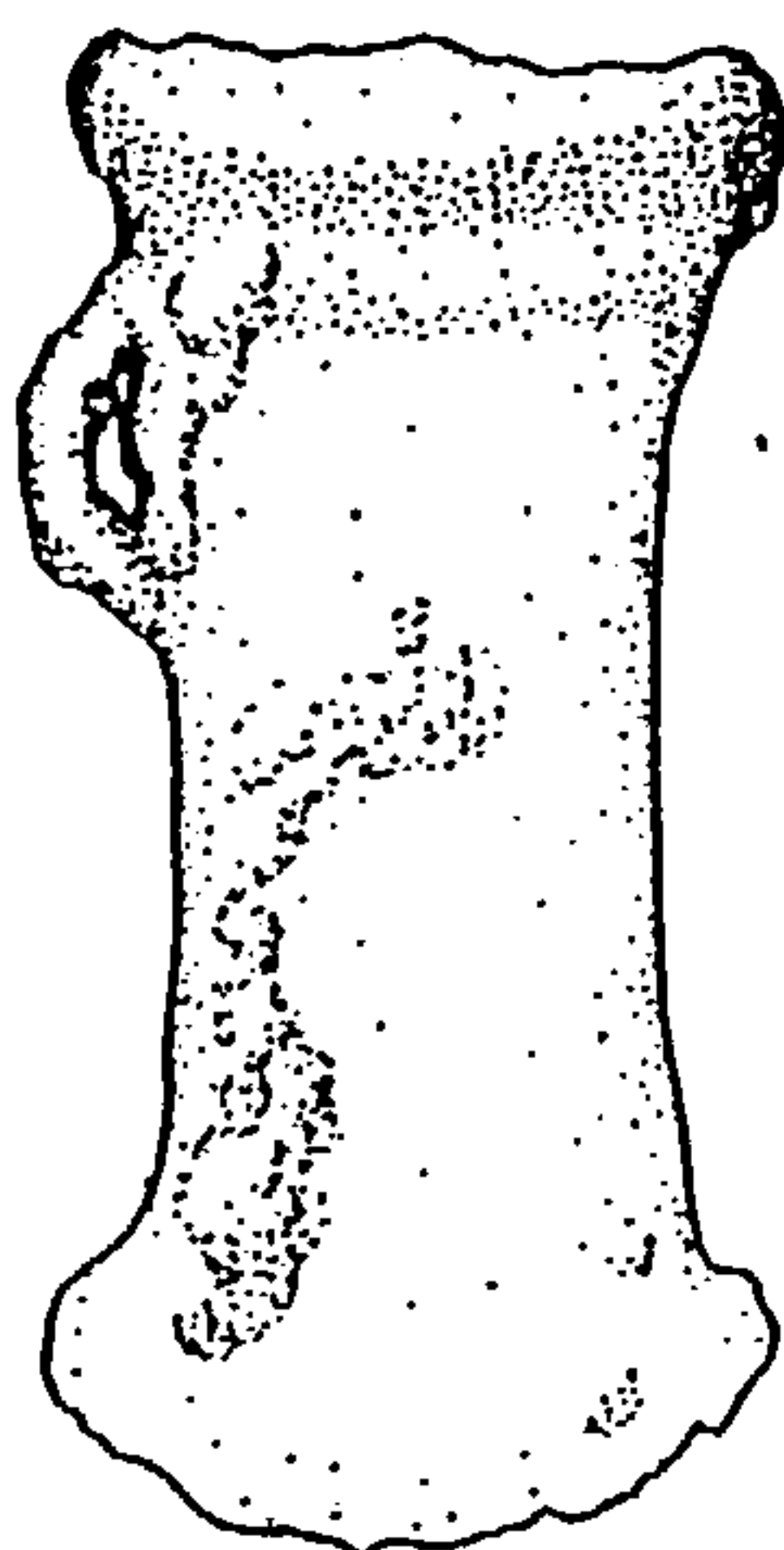
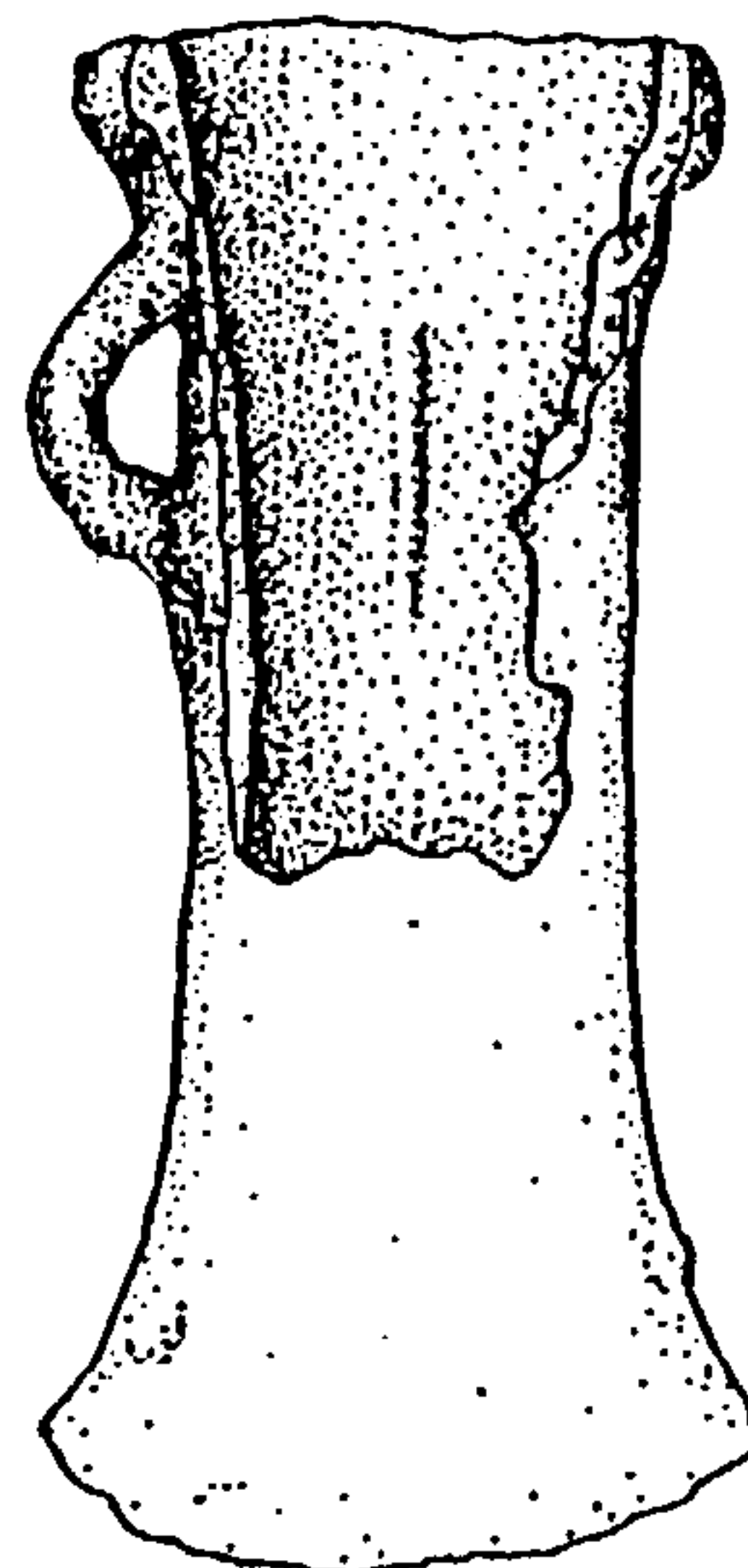
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06/11



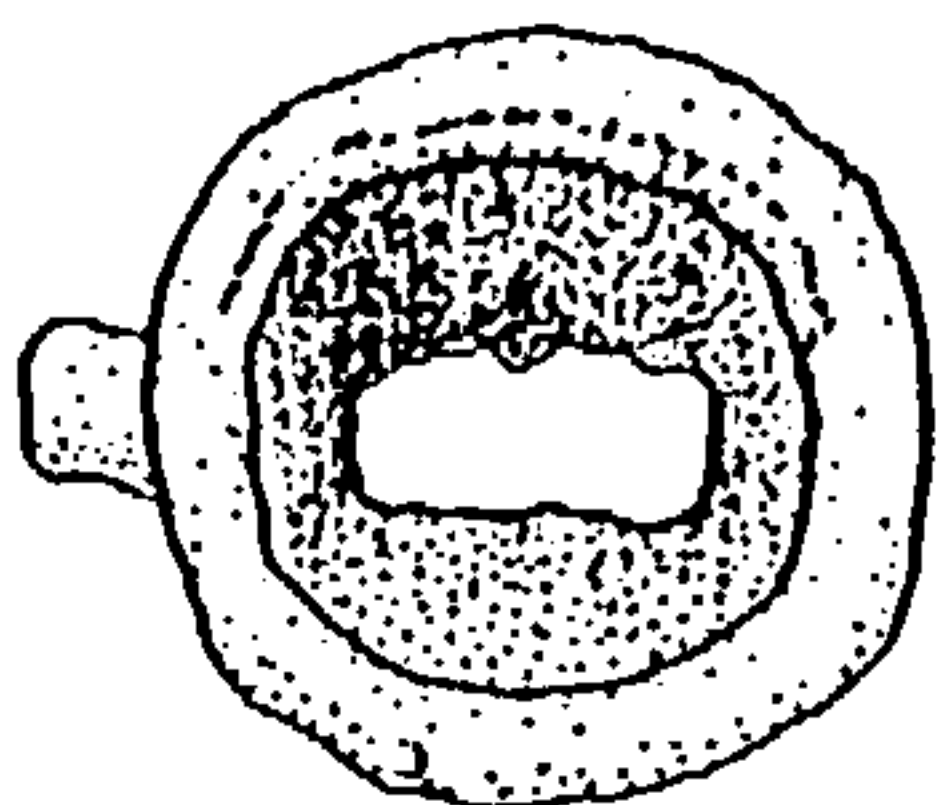
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0 2cm

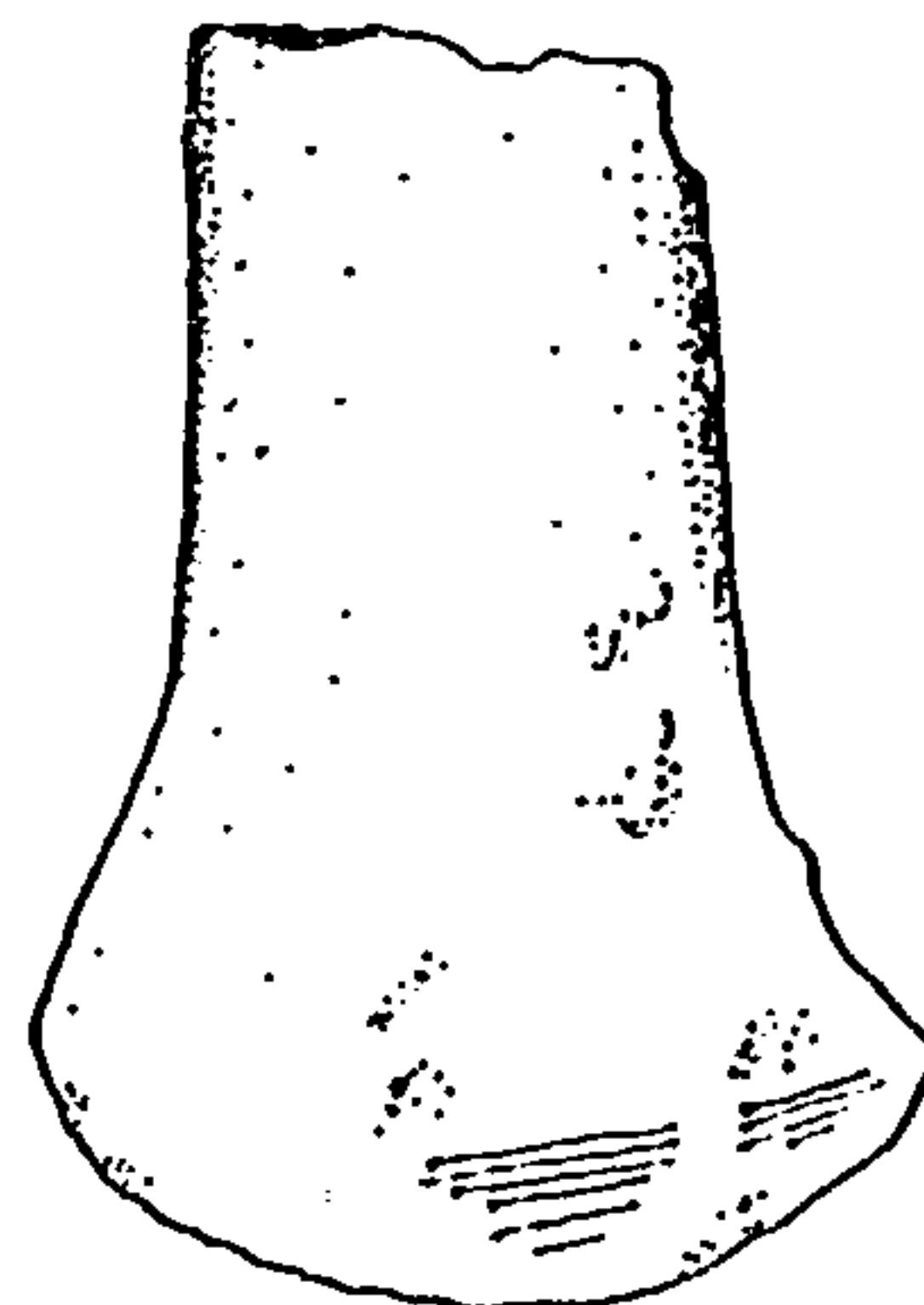
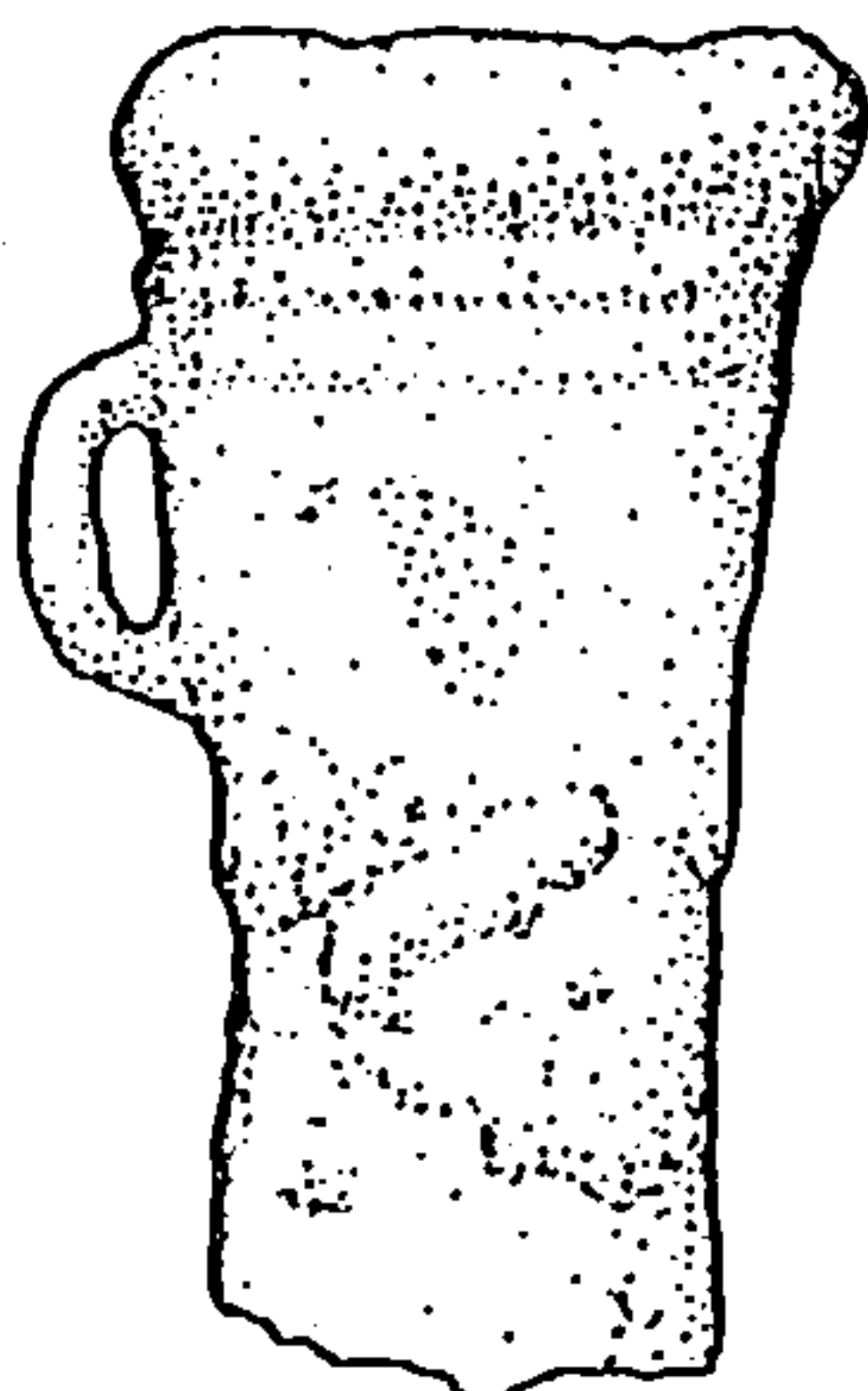
Fig. 67: The Shoebury I Hoard (Ref. No. 06): Socketed Axes (ii)

06/13

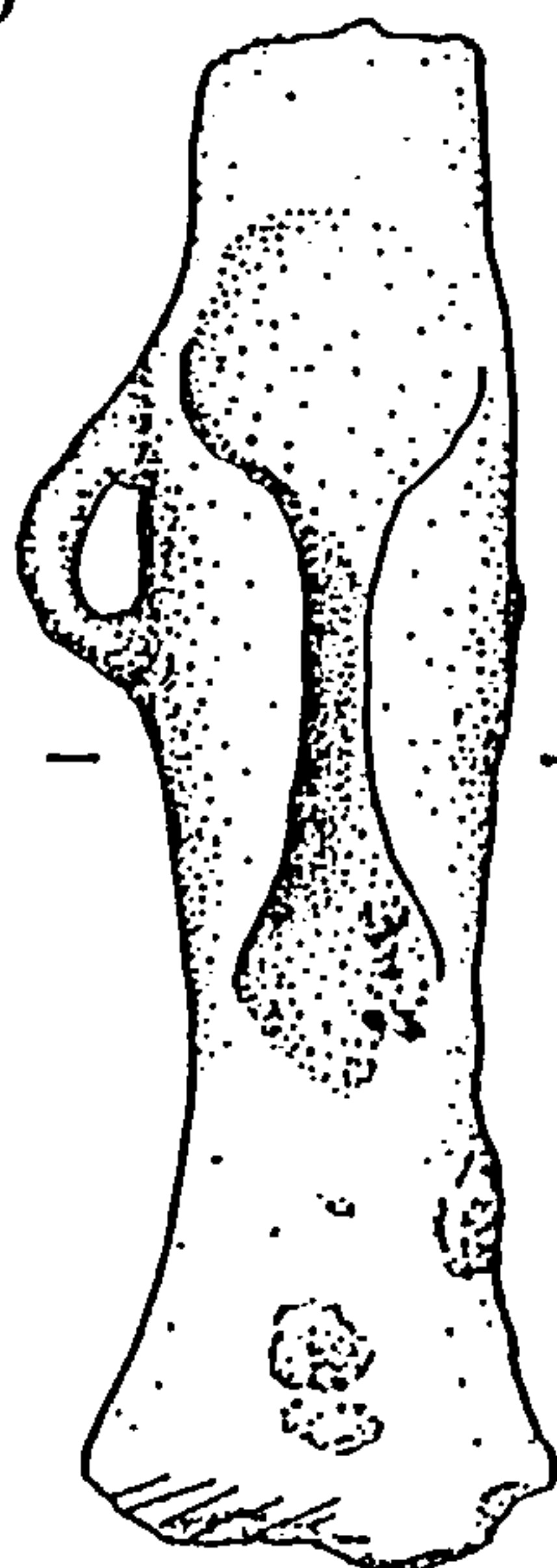


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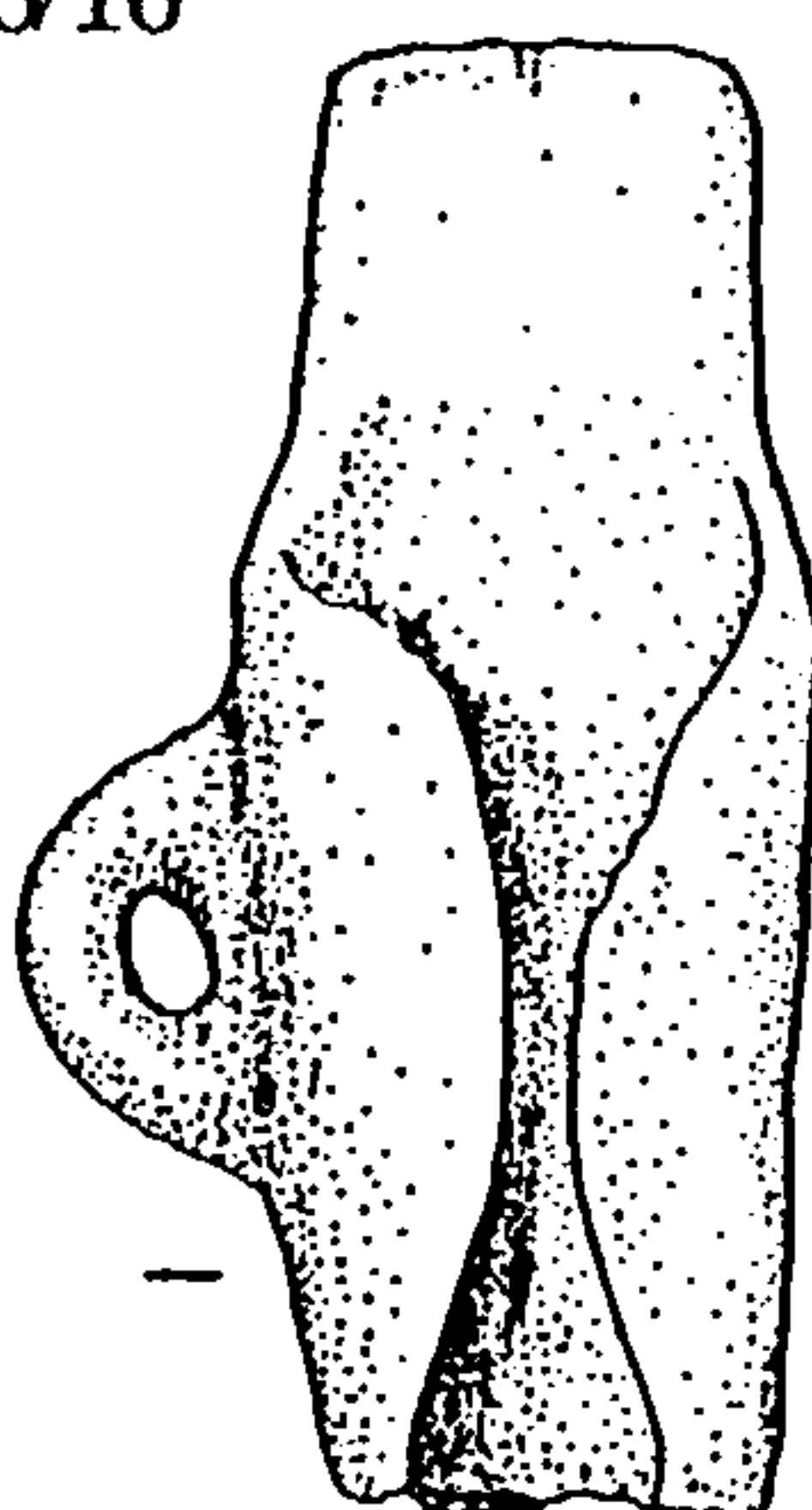
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06/17

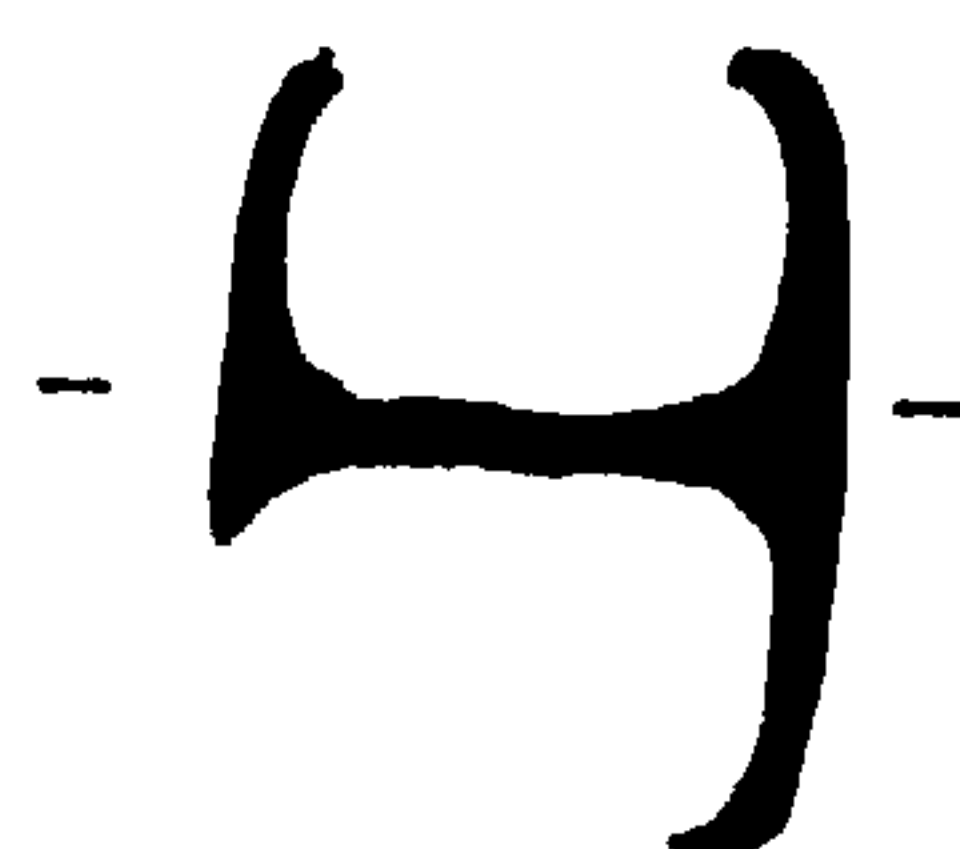
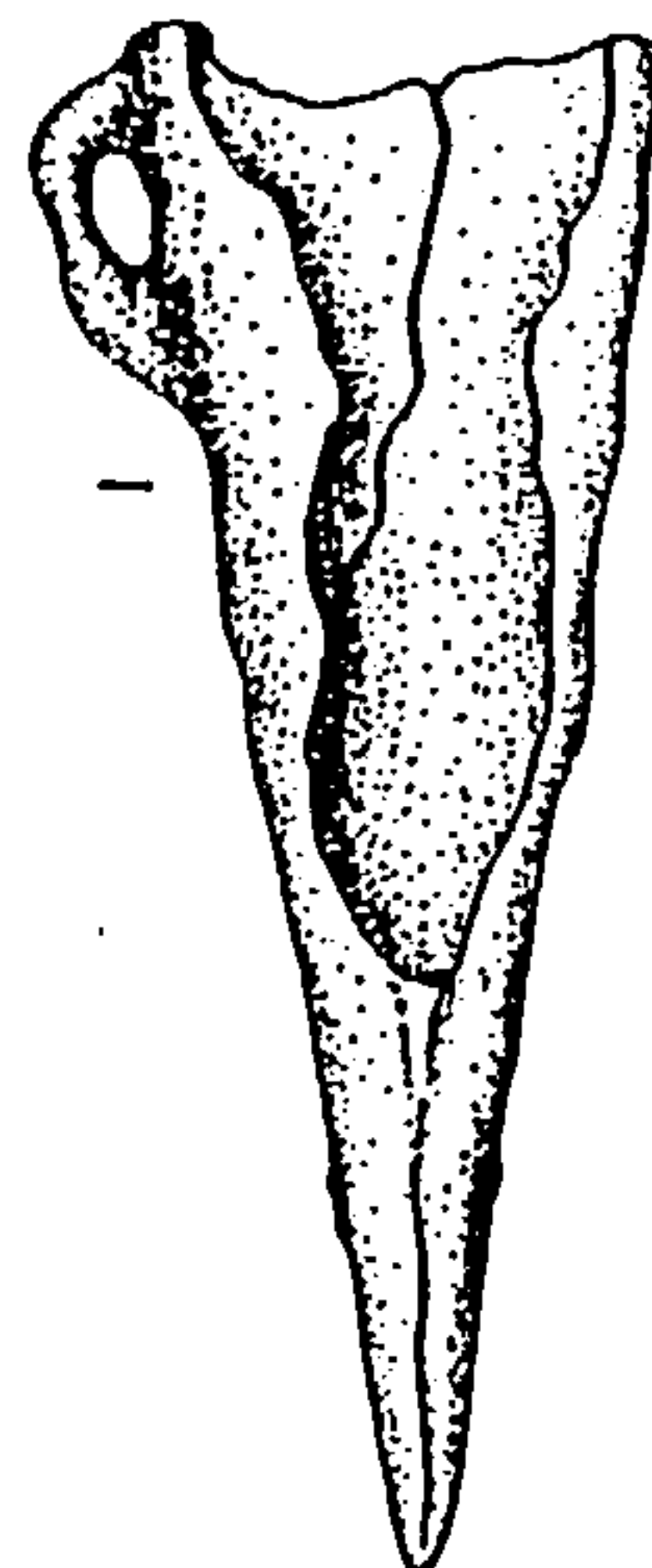
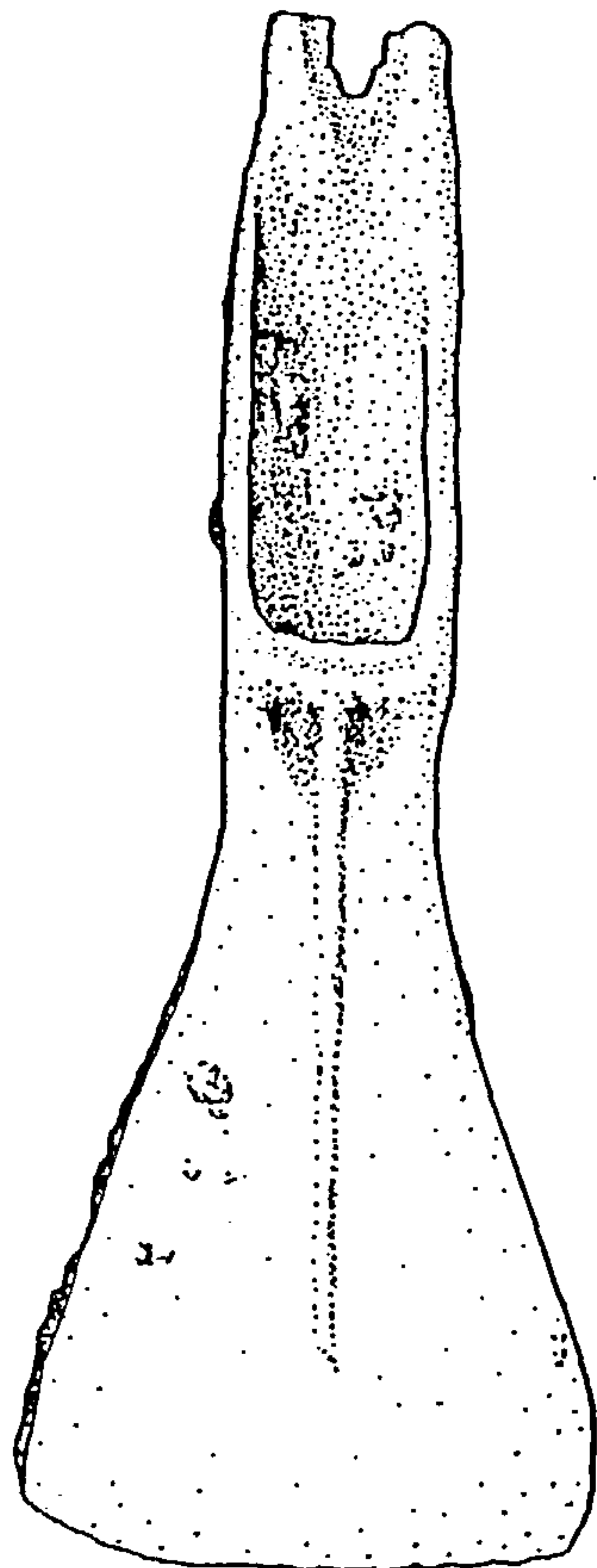
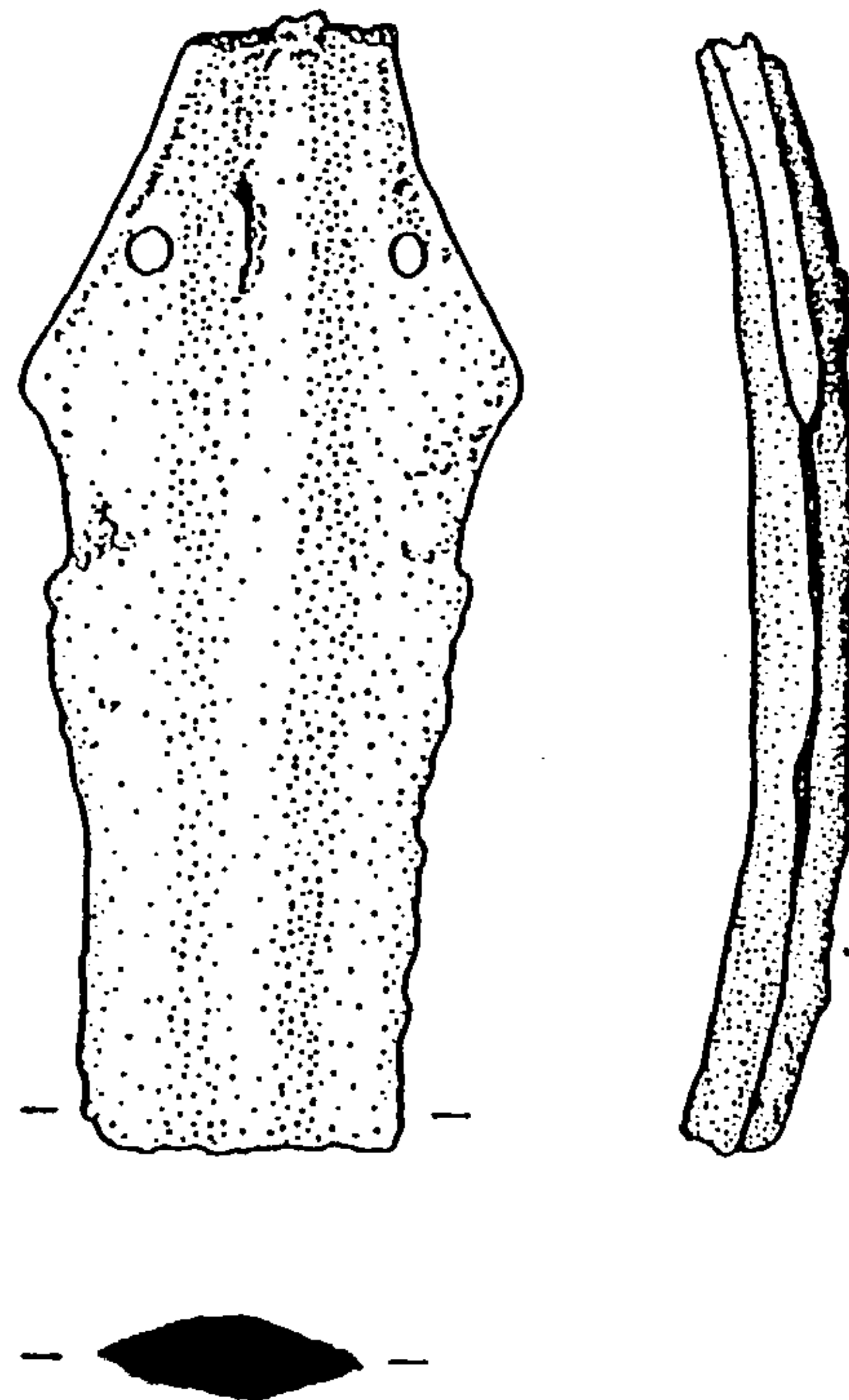


Fig. 68: The Shoebury I Hoard (Ref. No. 06): Socketed Axe Fragments and Winged Axes

06/18

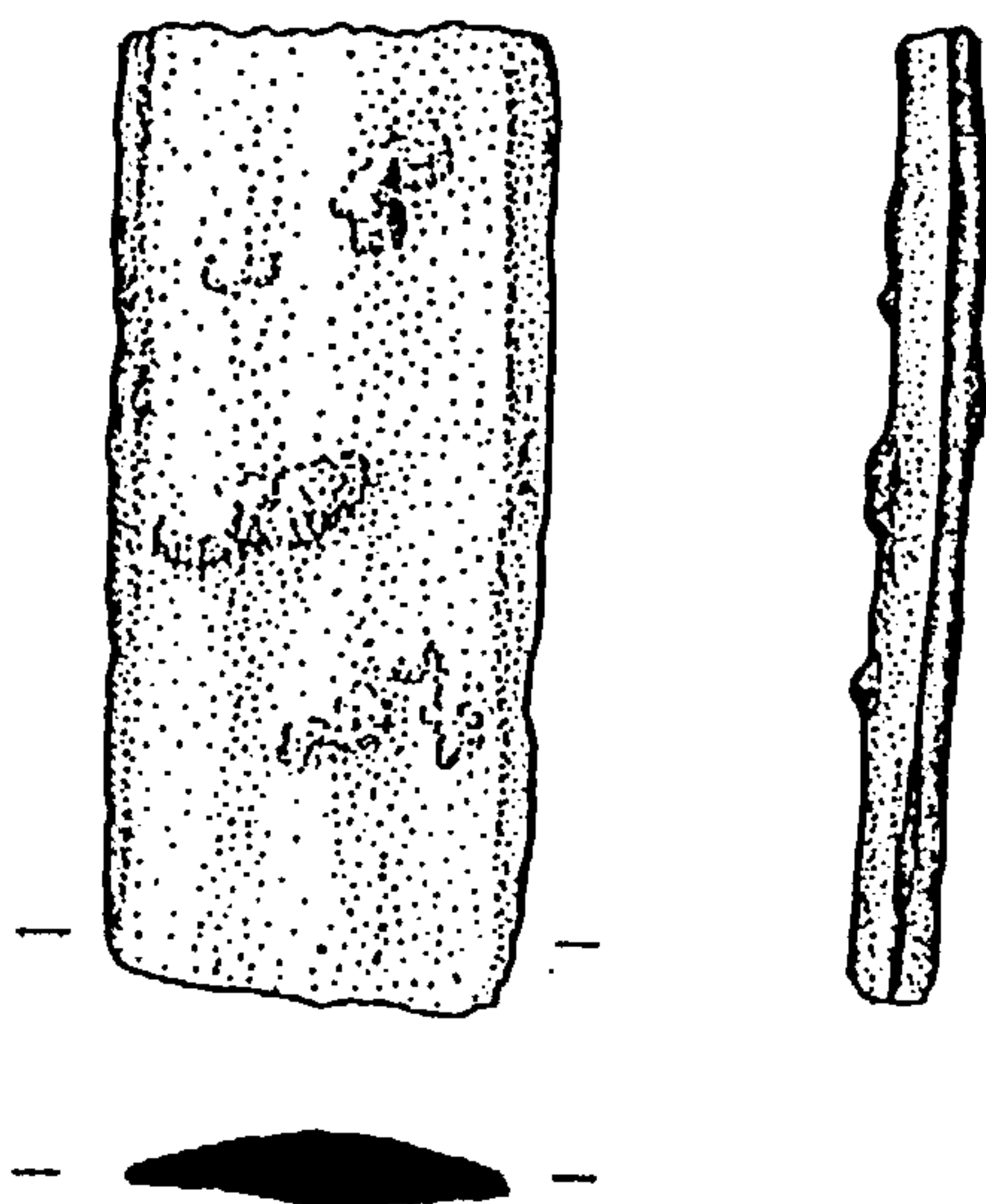


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0 2cm

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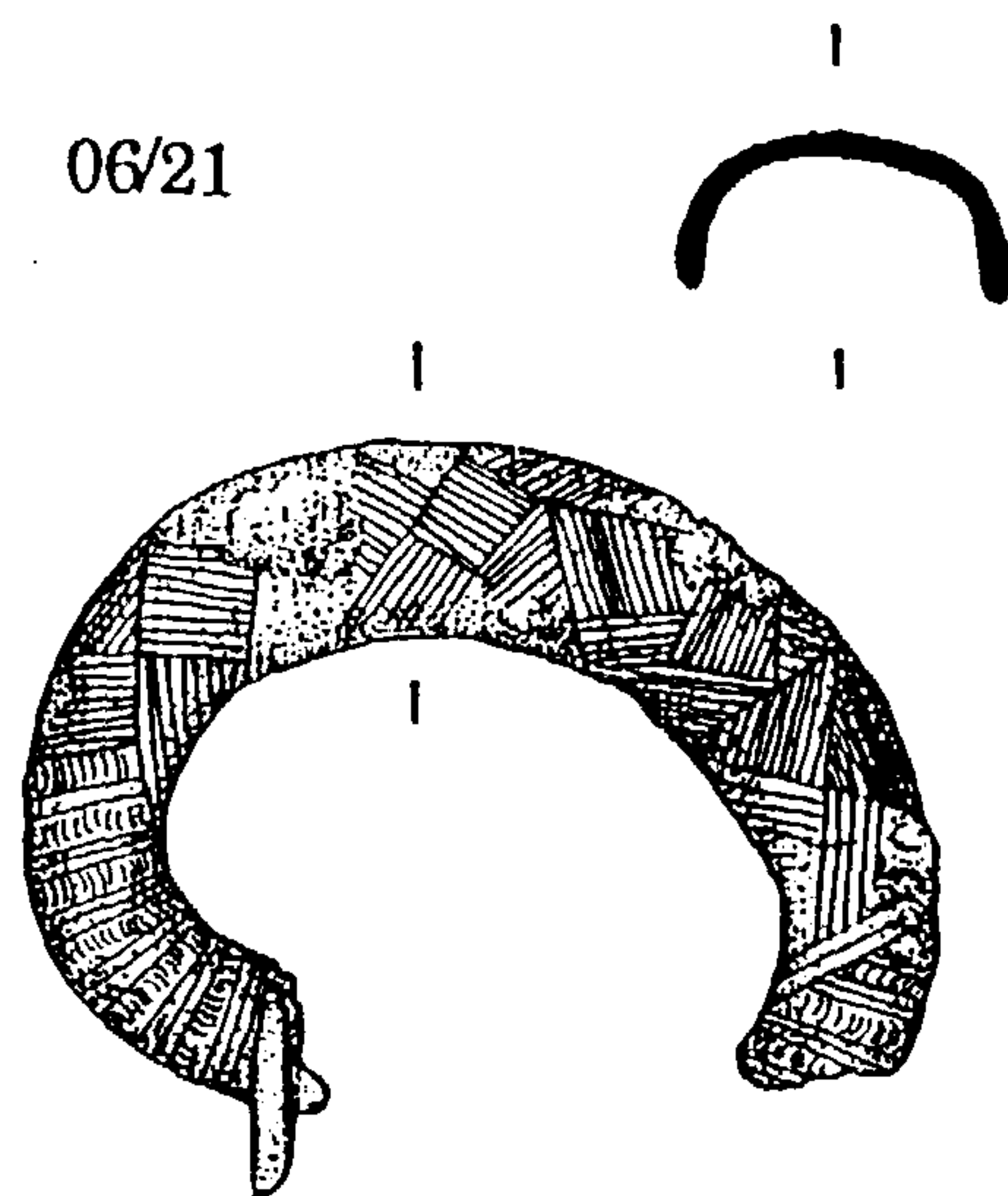
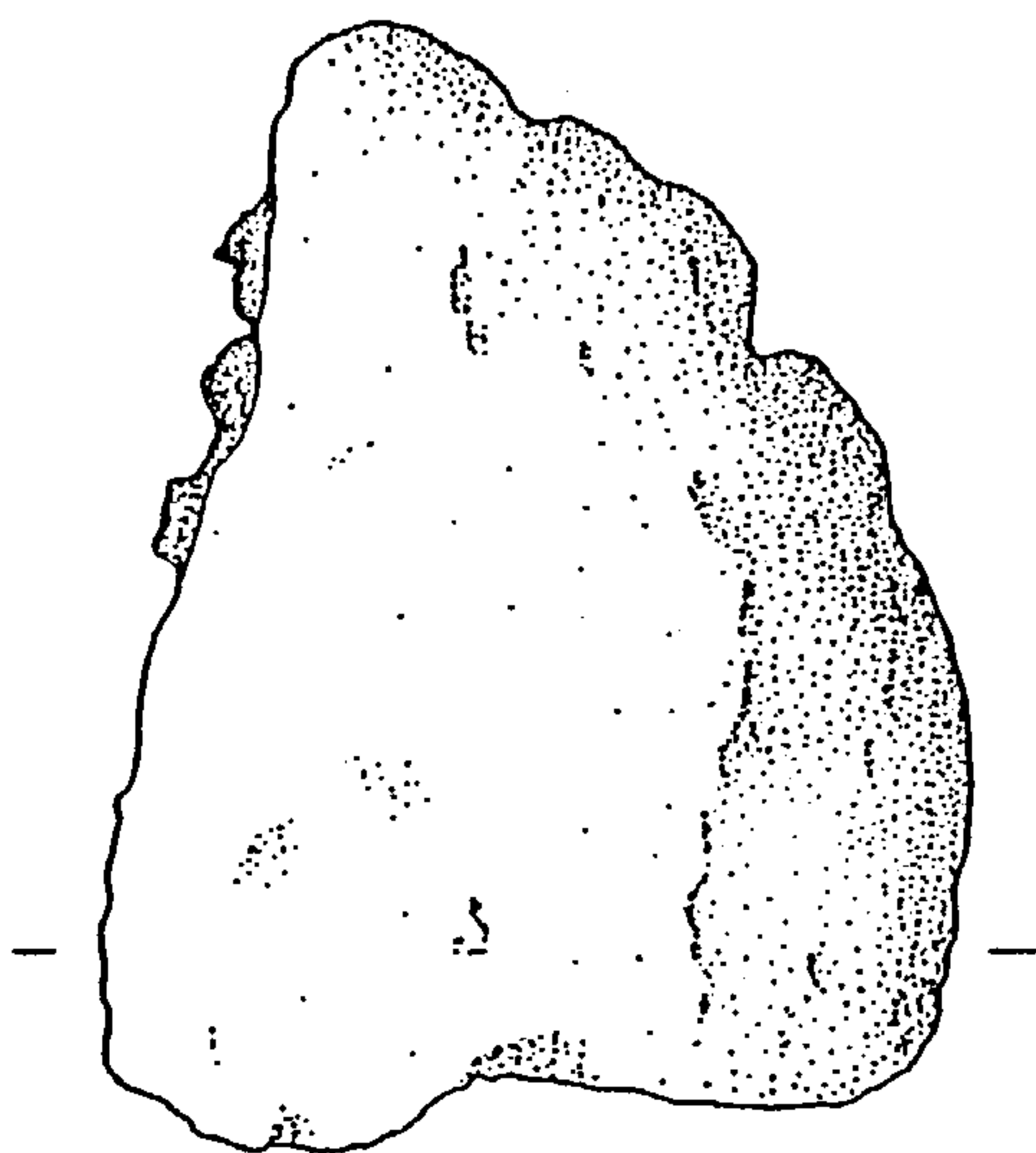


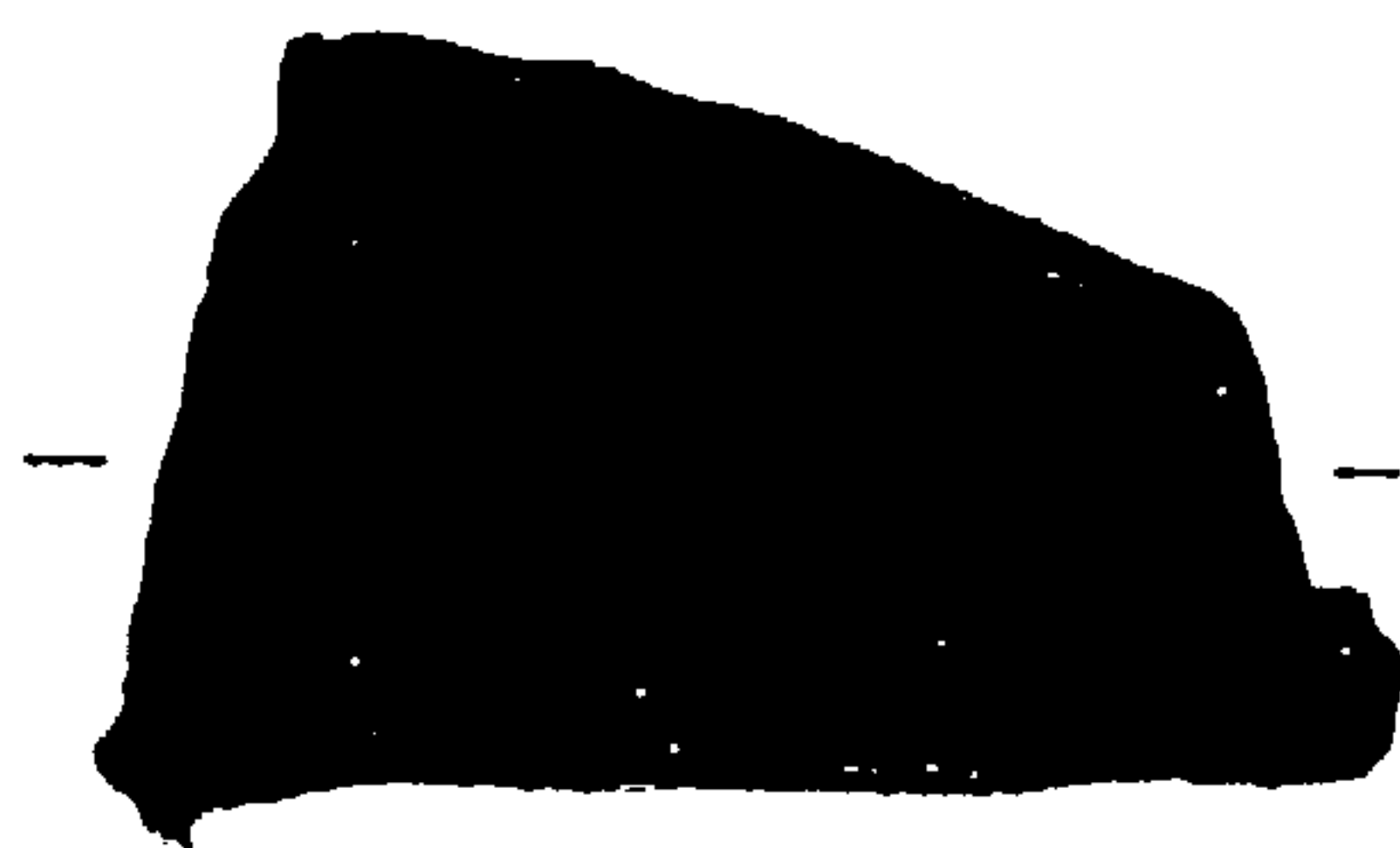
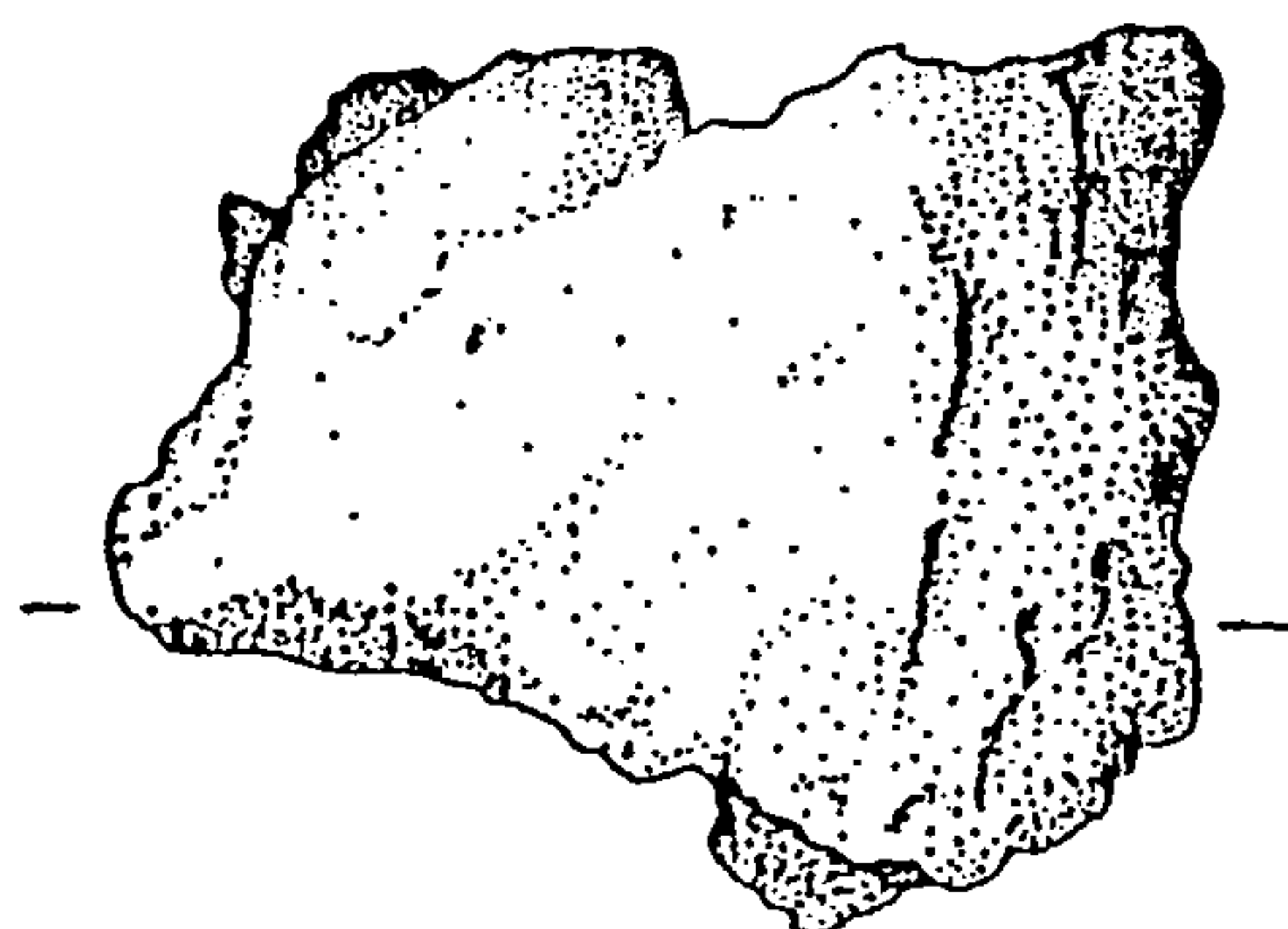
Fig. 69: The Shoebury I Hoard (Ref. No. 06): Miscellaneous Items

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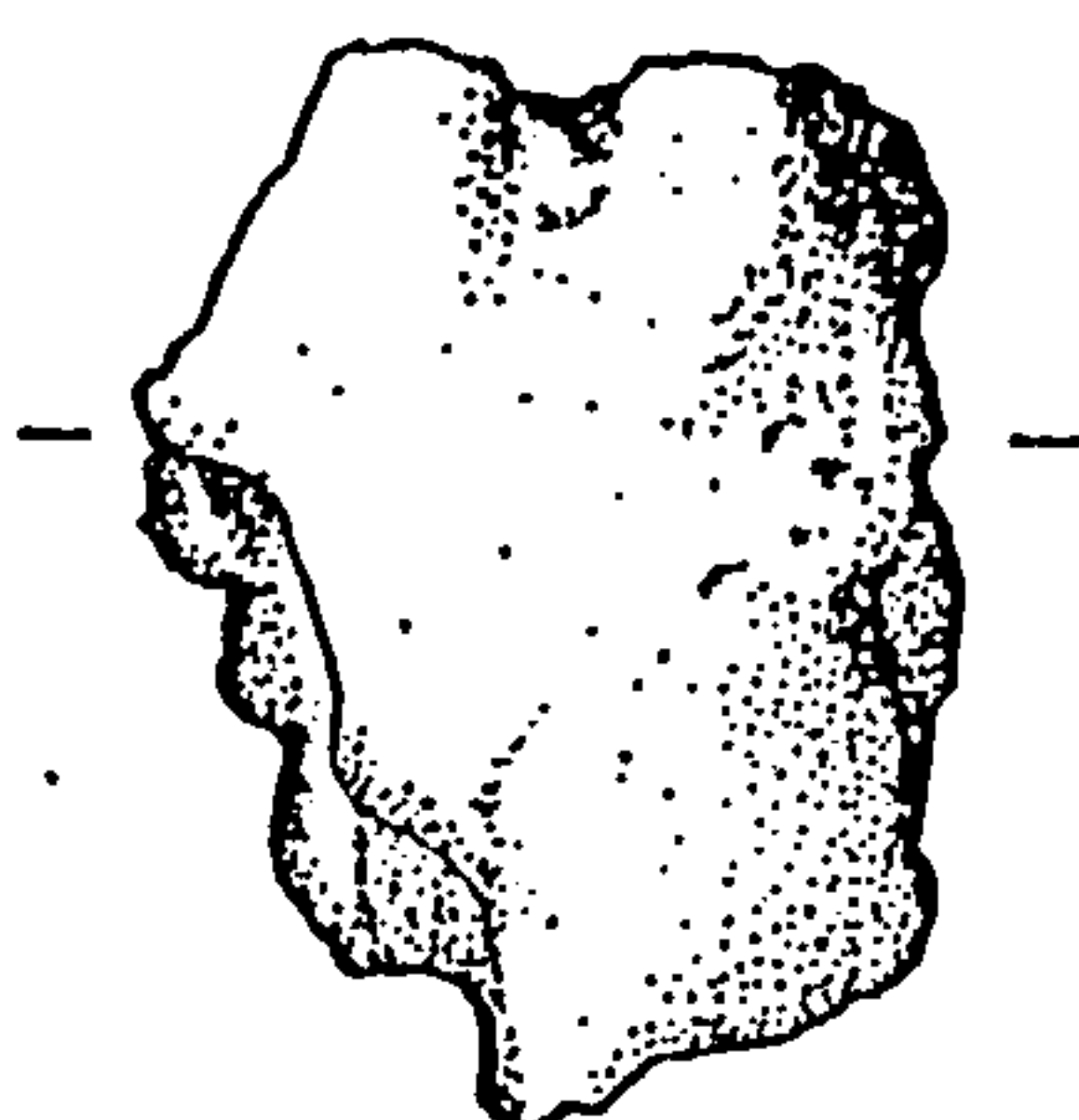
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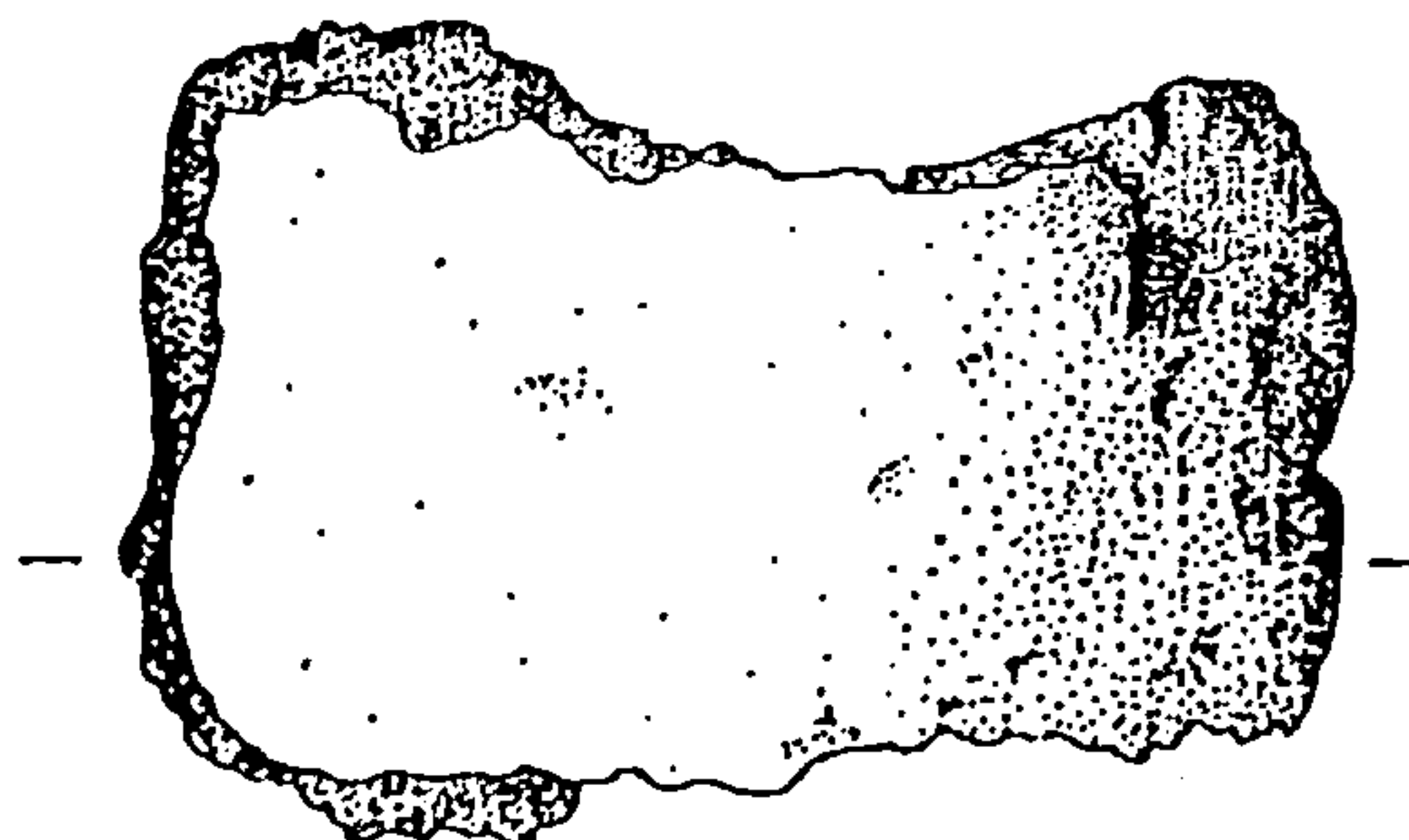
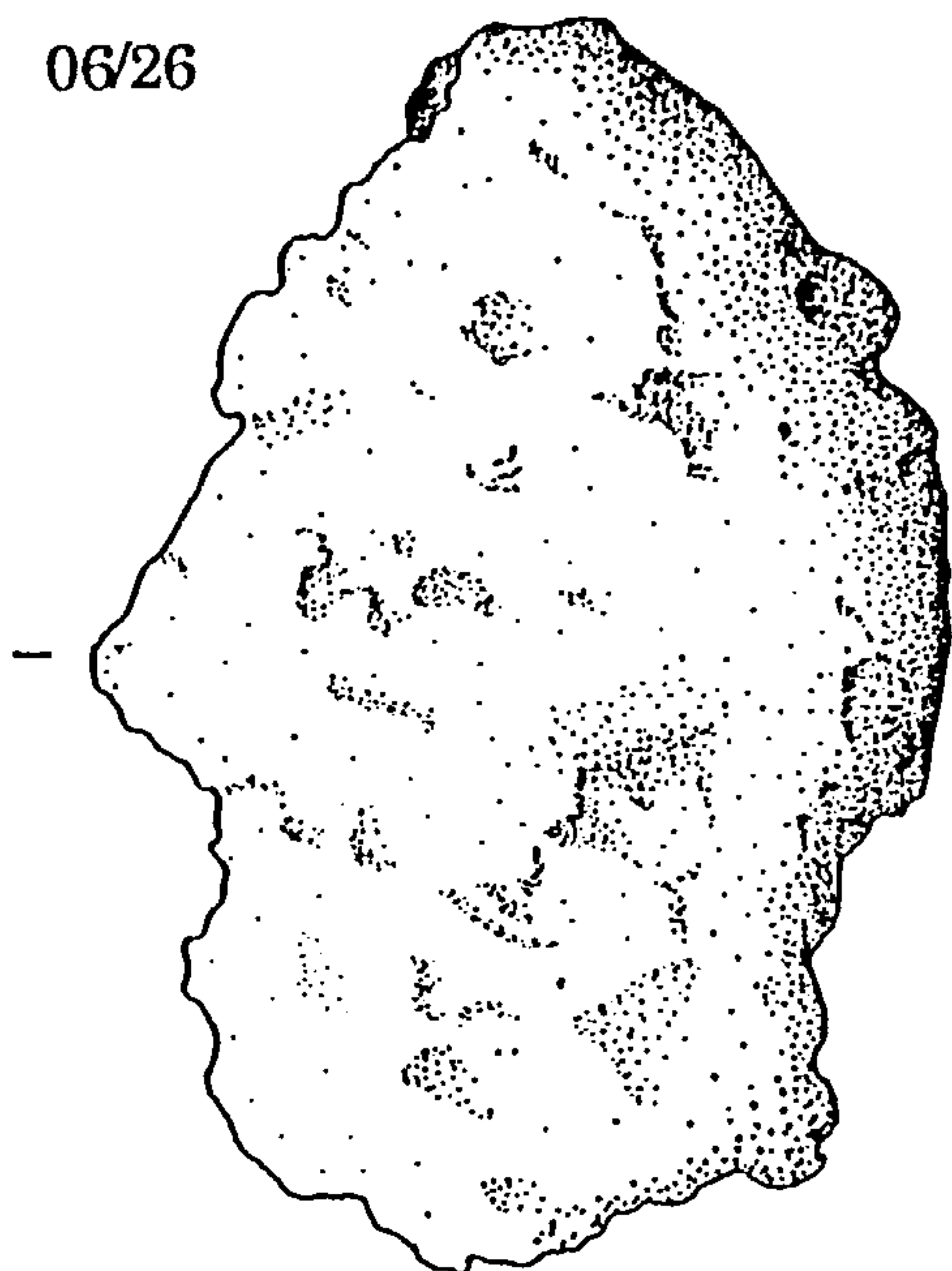


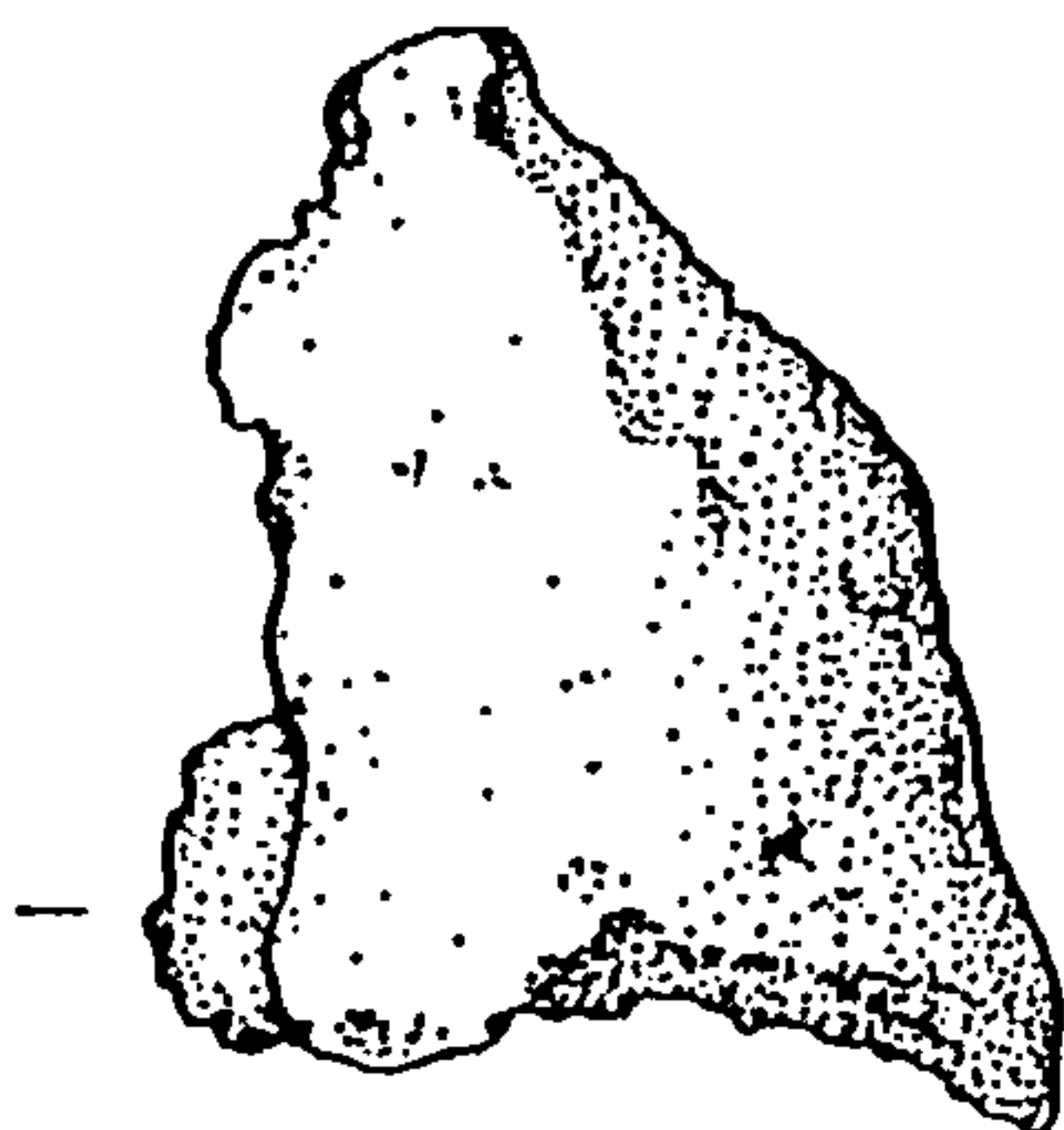
Fig. 70: The Shoebury I Hoard (Ref. No. 06): Ingot Metal (i)

06/26



0 2cm

06/27



06/28

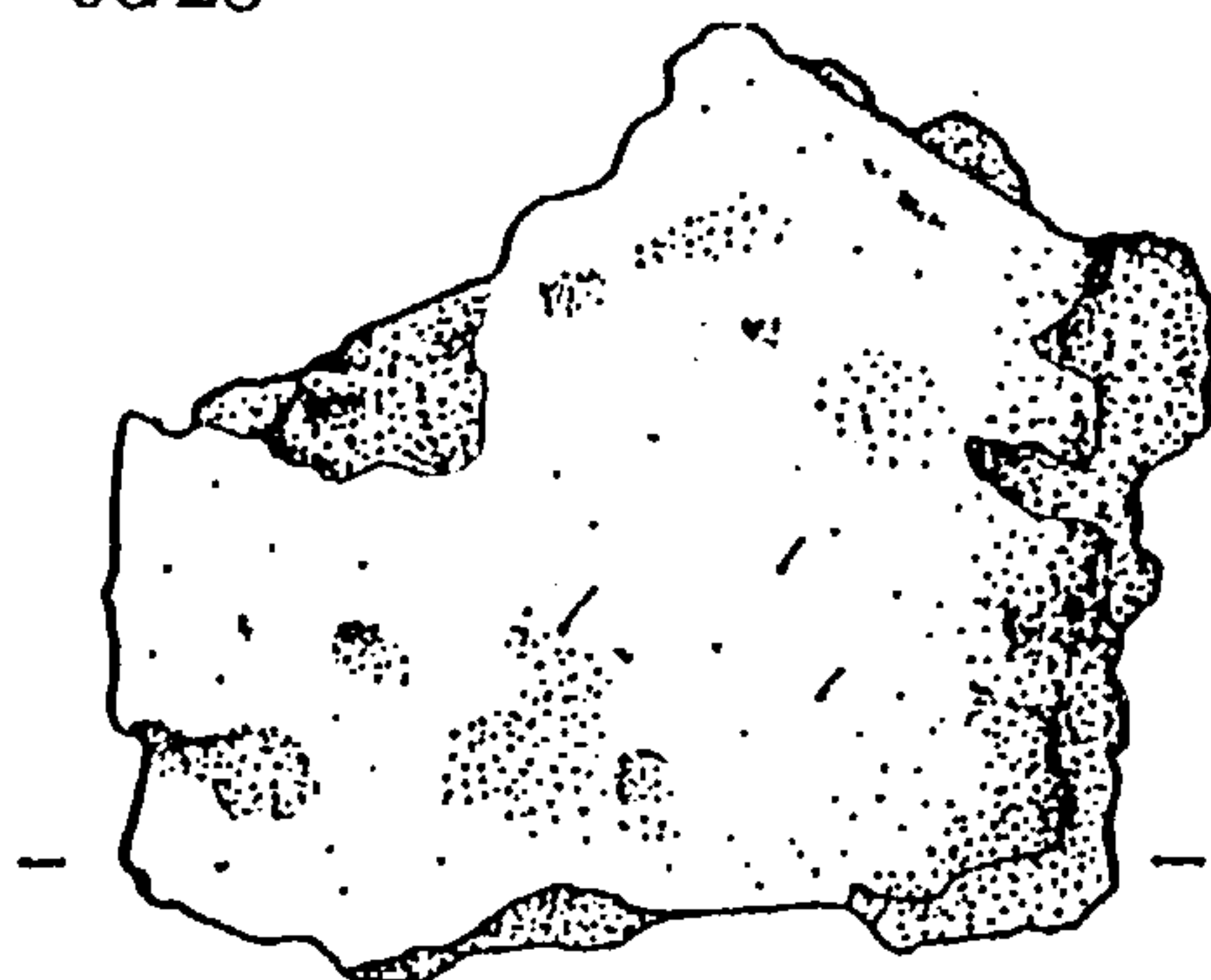
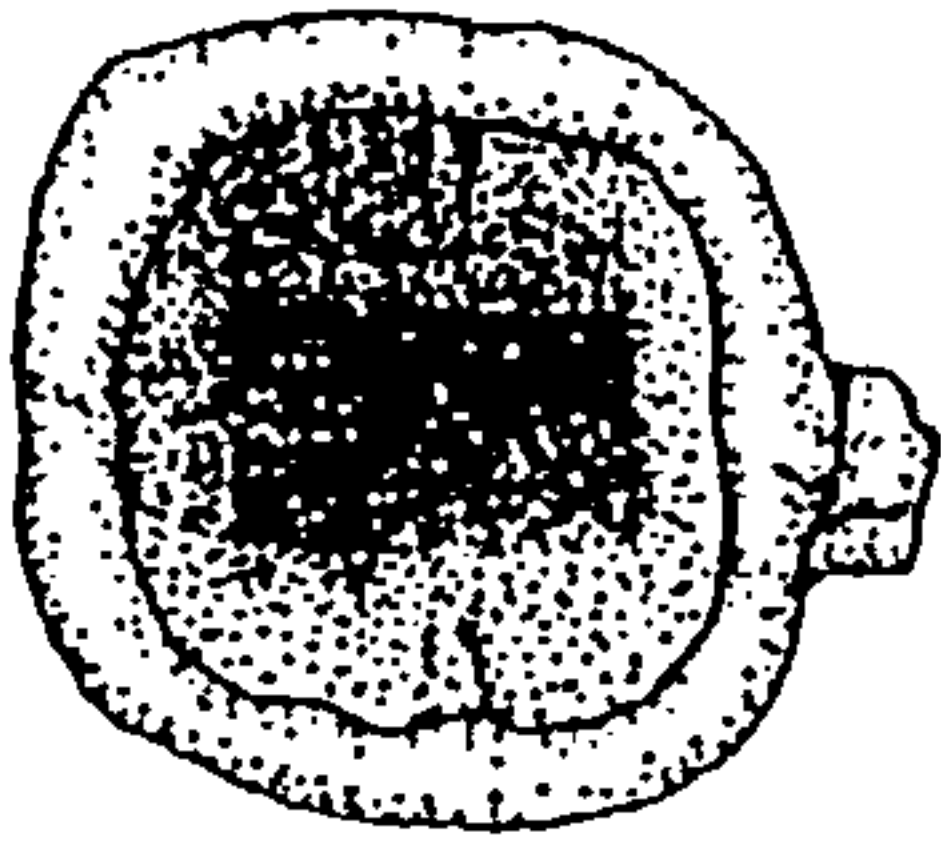
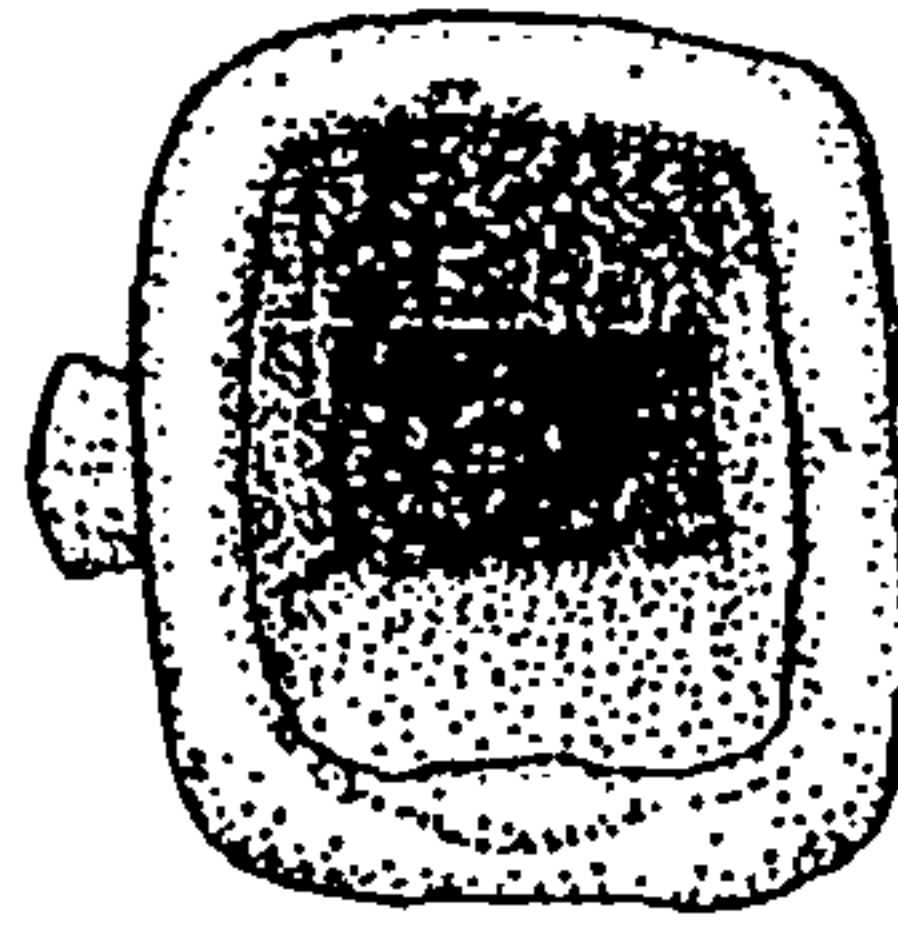


Fig. 71: The Shoebury I Hoard (Ref. No. 06): Ingot Metal (ii)

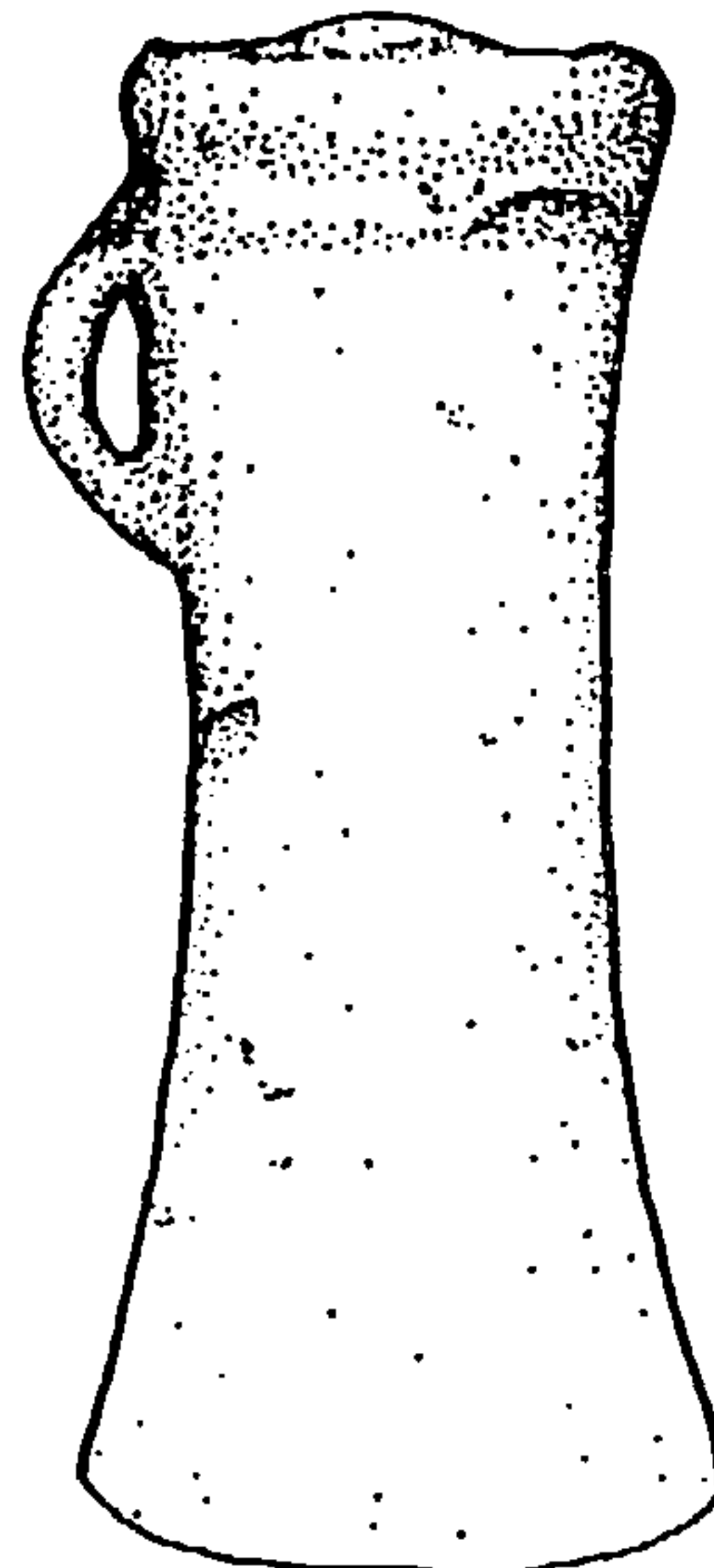
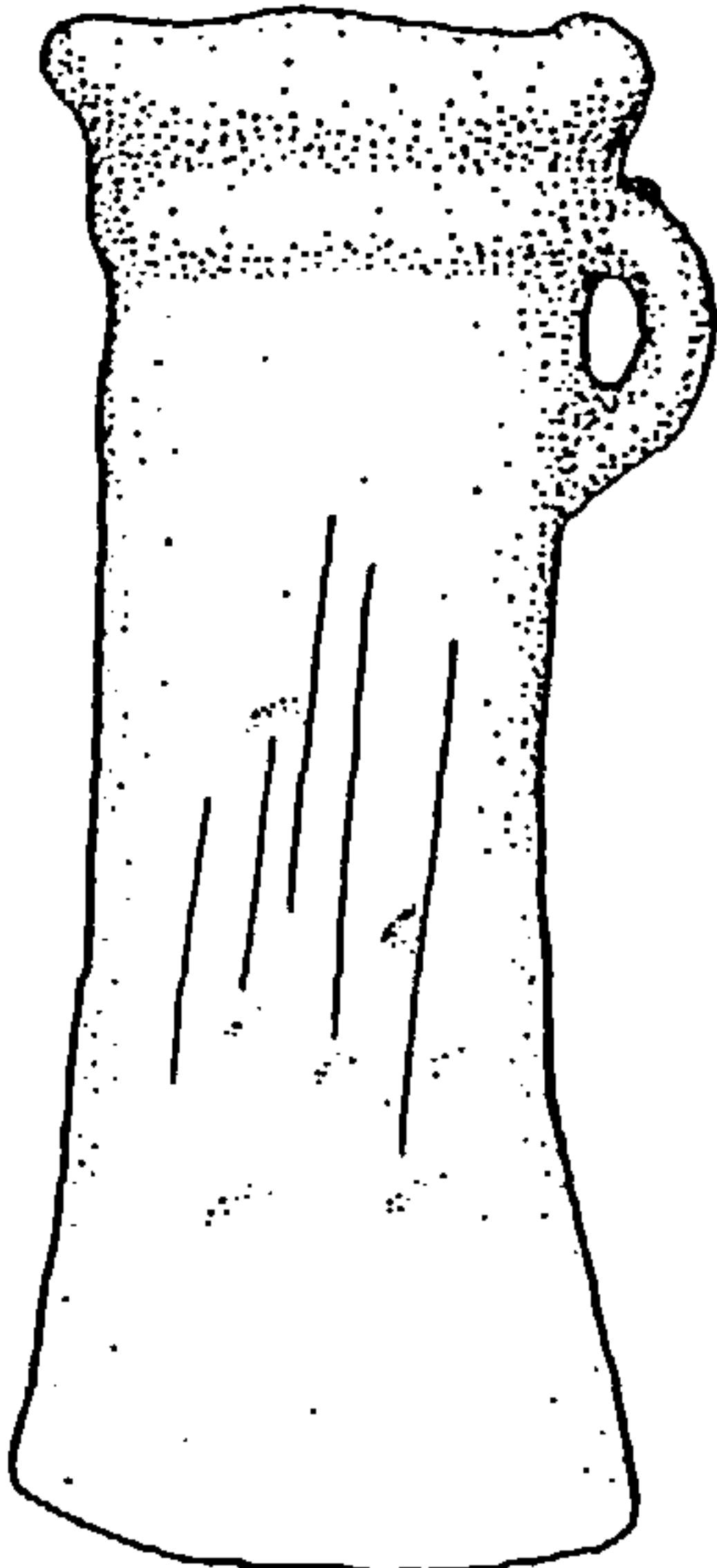
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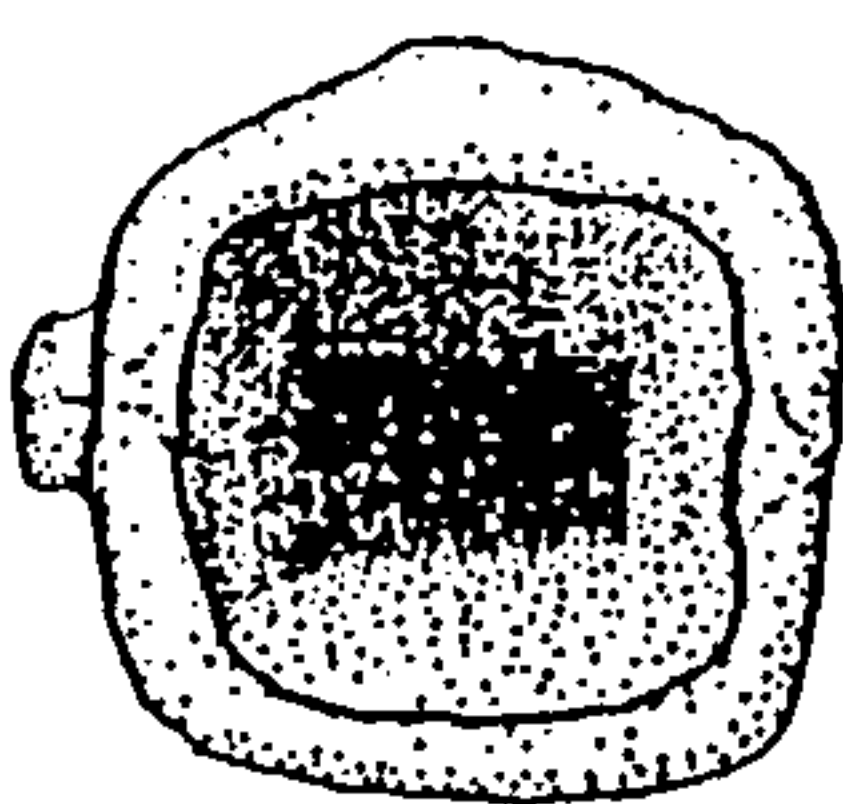


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0 2cm

06/32



06/33

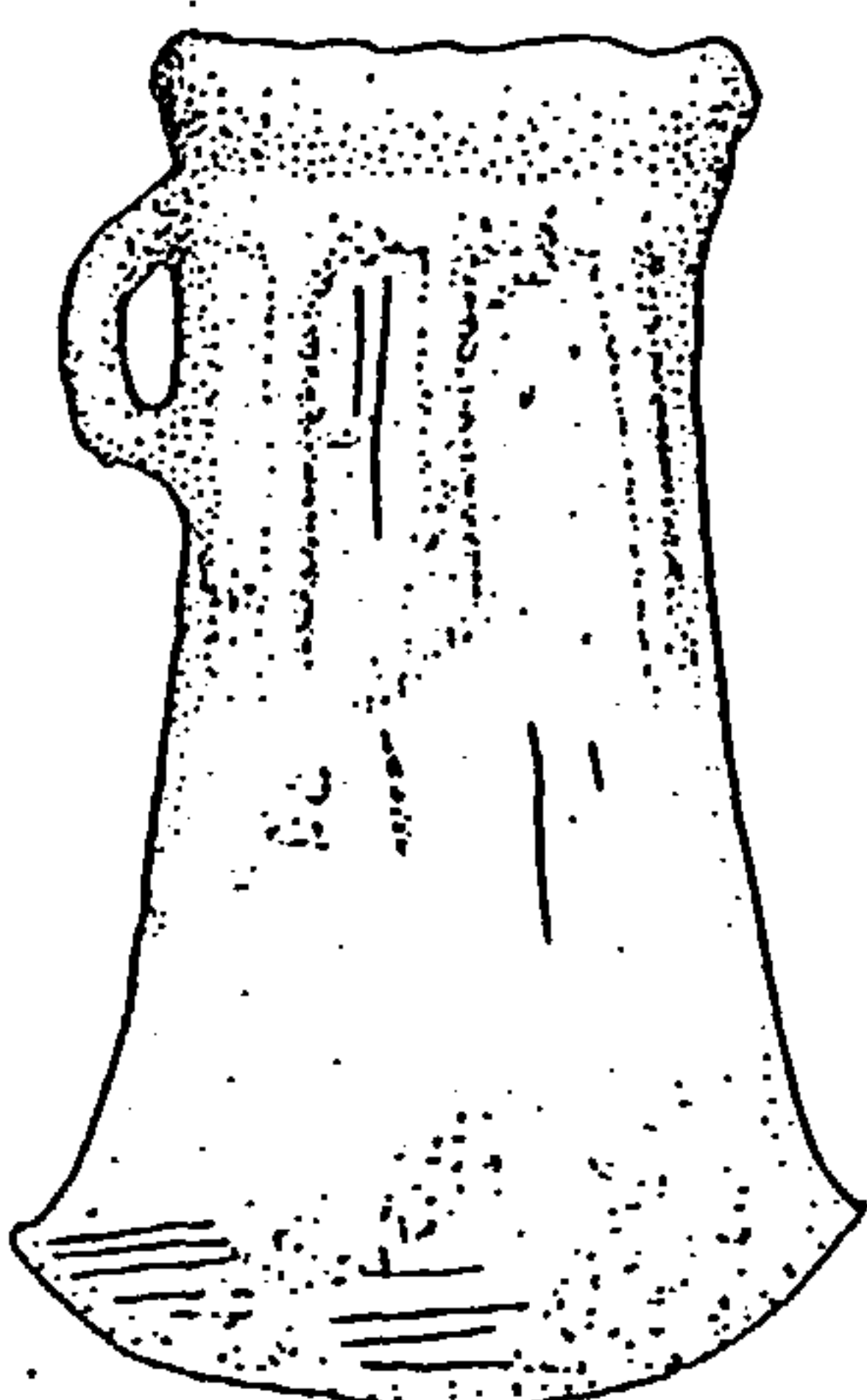
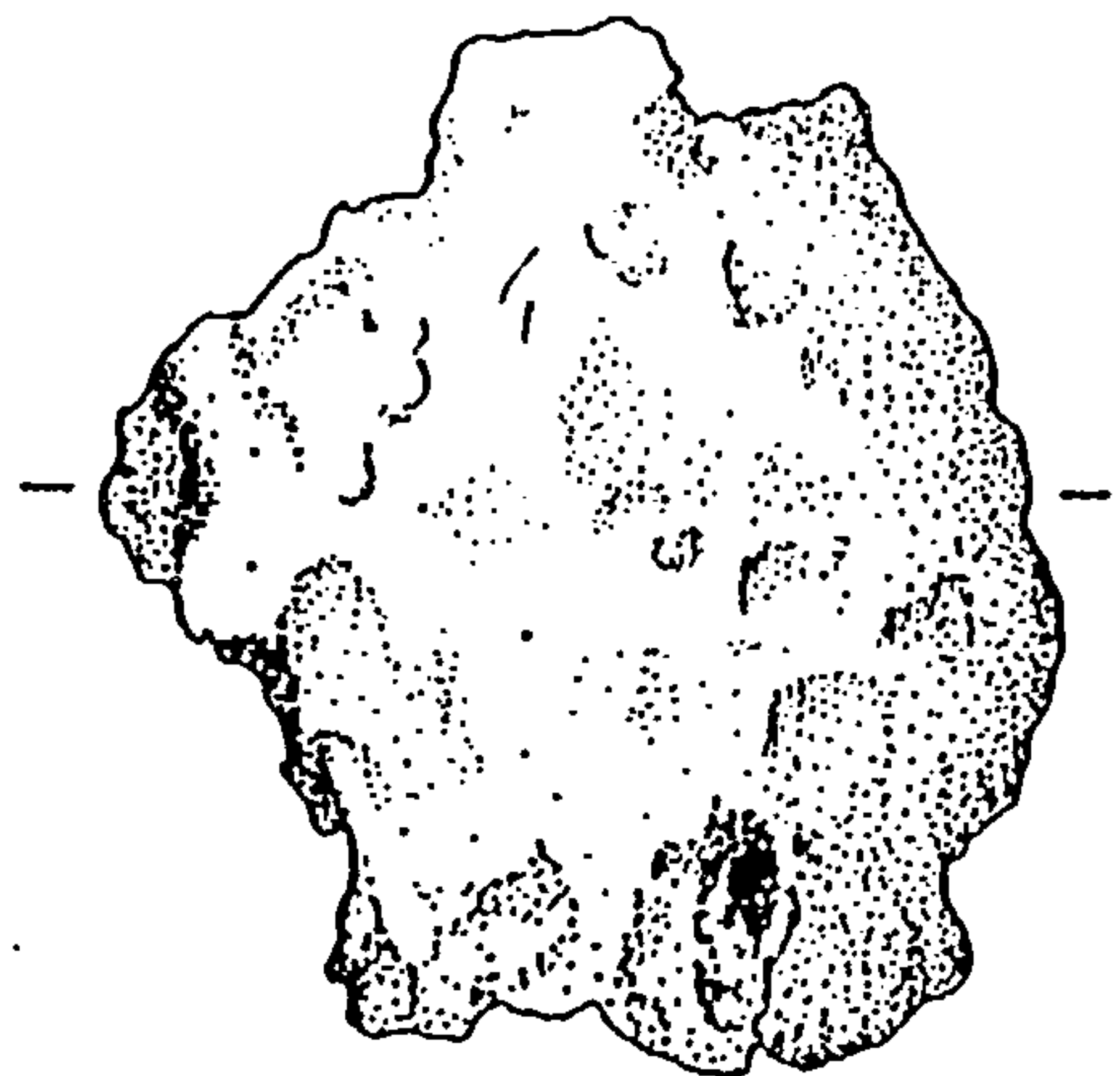


Fig. 72: The Shoebury I Hoard (Ref. No. 06): Additional Items Allegedly Belonging to the Shoebury I Hoard

Shoebury II (Ref. No. 07)

Grid Reference: c. TQ 94 86.

Current Location: Southend Museum, Accession Number LS1/1-7. It is likely that this hoard no longer survives in its complete form. Archive material pertaining to the find makes reference to additional pieces which were dispersed soon after the hoard's discovery. According to museum records, these consisted of 'a few' pieces of ingot metal. This material passed into the possession of a local schoolmaster, and is now unlocated.

Context: No information available.

Bibliography: Kendrick and Hawkes, 1932.
National Bronze Index.
Pollitt, 1932.
Southend Museum Accession Notes.

Contents:-

07/01 (LS1/?3)

Description: Socketed axe of undecorated 'south-eastern' type.

Dimensions: Length: 84mm. Cutting edge: 40mm. Weight: 100g.

Patina: Rough dark-green, detail much obscured.

Manufacture: The feeders have been removed around the mouth, and the intervening casting seam is well-finished here. On the upper surface of the body, it is difficult to assess the condition of the casting seam following corrosion buildup, but the line of the seam appears to be prominent here. On the lower surface, however, the seam is only faintly visible, and it has been obliterated over the loop. There are possible diagonal grinding marks on one face (not illustrated), and the blade appears to be well-expanded.

Use: The cutting edge is chipped and blunt over its extent.

Reduction: This piece, though remaining complete, appears to illustrate the process by which many of the axeheads included in these hoards were reduced into fragments. On one face, there is a marked indentation where the bronze has an unusually polished appearance, which suggests that it has been intensively hammered. At an equivalent point on the other face, a crack runs across the width of the body. No evidence of any hammering can be seen in association with this cracking. It seems reasonable to suggest that if this treatment had been continued further, separation of upper body and cutting edge would have occurred.

07/02 (Acc. No. LS1/2)

Description: Socketed axe of 'south-eastern' type. Both faces bear a variant on the wing-decorated theme, comprising two diverging ribs. There is one internal rib present.

Dimensions: Length: 88mm (maximum).

Patina: Very rough dark-green/olive. Details remain reasonable in most areas.

Manufacture: There is a small hole in one face, and this represents a small casting defect. The mouth has a rather uneven appearance, which suggests that an inadequate supply of metal was used during casting. Vestigial traces of two feeders survive at the mouth, though the intervening casting seam is well-finished. On the upper surface of the body, the casting seam has been roughly flattened, but it remains visible over its extent. The situation is similar on the underside, though the seam has been more carefully finished over the loop. Coarse vertical striations run down the entire length of the body on all sides, and giving it a rough appearance quite unlike any of the other axeheads encountered in this or any other hoard.

Use: It is apparent that the blade was originally crescentic in shape, as vestigial traces survive of the hollows which developed over the corners of the cutting edge as a result of resharpening.

Reduction: The cutting edge is now absent, having been separated from the main portion of the axehead. There is not an excessive amount of deformation evident in association with the break, though there is one hammer indent apparent on one face (not illustrated). A sword tip or fragmentary knife blade has been wedged firmly into the lower reaches of the socket.

07/03 (Acc. No. LS1/1)

Description: Small winged adze.

Dimensions: Length: 106mm. Cutting edge: 35mm. Weight: 125.0g.

Patina: Dense olive, details good.

Manufacture: A slight notch in the edge of one wing appears to be a minor casting defect, but otherwise the casting seems good. All casting seams have been completely removed, and the object is well-finished, though in one area the metal appears rather pitted and rough. The blade is covered with a series of long striations, as are the edges of the wings, with what appear to be unusually coarse grinding marks. There are some indications of fine hammering over the wings.

Use: The blade is notched and chipped over its extent.

Reduction: The object is complete and there is no evidence relating to this process.

07/04 (Acc. No. LS1/4)

Description: Leaf-shaped socketed spearhead.

Dimensions: Length: 103mm.

Patina: Shiny dark-green, with some rough patches. Details reasonable.

Manufacture: The casting seams have been removed completely from the socket. Fine hammering is evident on the blade, and grinding marks run vertically down the length of the blade, and along the interface between blade and midrib.

Use: Both cutting edges are notched and chipped, one side appearing burred in places. Some isolated grooves across the midrib could be use-related damage.

Reduction: Hammer indents at the tip could be linked with this phase, inflicted perhaps during the separation of spearhead and shaft.

07/05 (Acc. No. LS1/7)

Description: Described as a 'harness piece', the object consists of a bow-shaped, hollow-cast horned fitting with a knobbed terminal which adjoins a socket. The piece is asymmetrical in appearance, though its original condition cannot be determined as it is now, unfortunately, in fragmentary condition. It may conceivably be a harness-fitting, but though it seems loosely similar in appearance to the bone 'cheekpieces' seen in the Heathery Burn Cave (Greenwell, 1894), it seems too small to have functioned as a bridle-bit. The flattened appearance to the terminal knob suggests that the object was designed to function with one side facing outwards. The piece could be interpreted as a weapon-fitting, perhaps a sword-pommel, or even a scabbard-chape.

Dimensions: Weight: 39.0g.

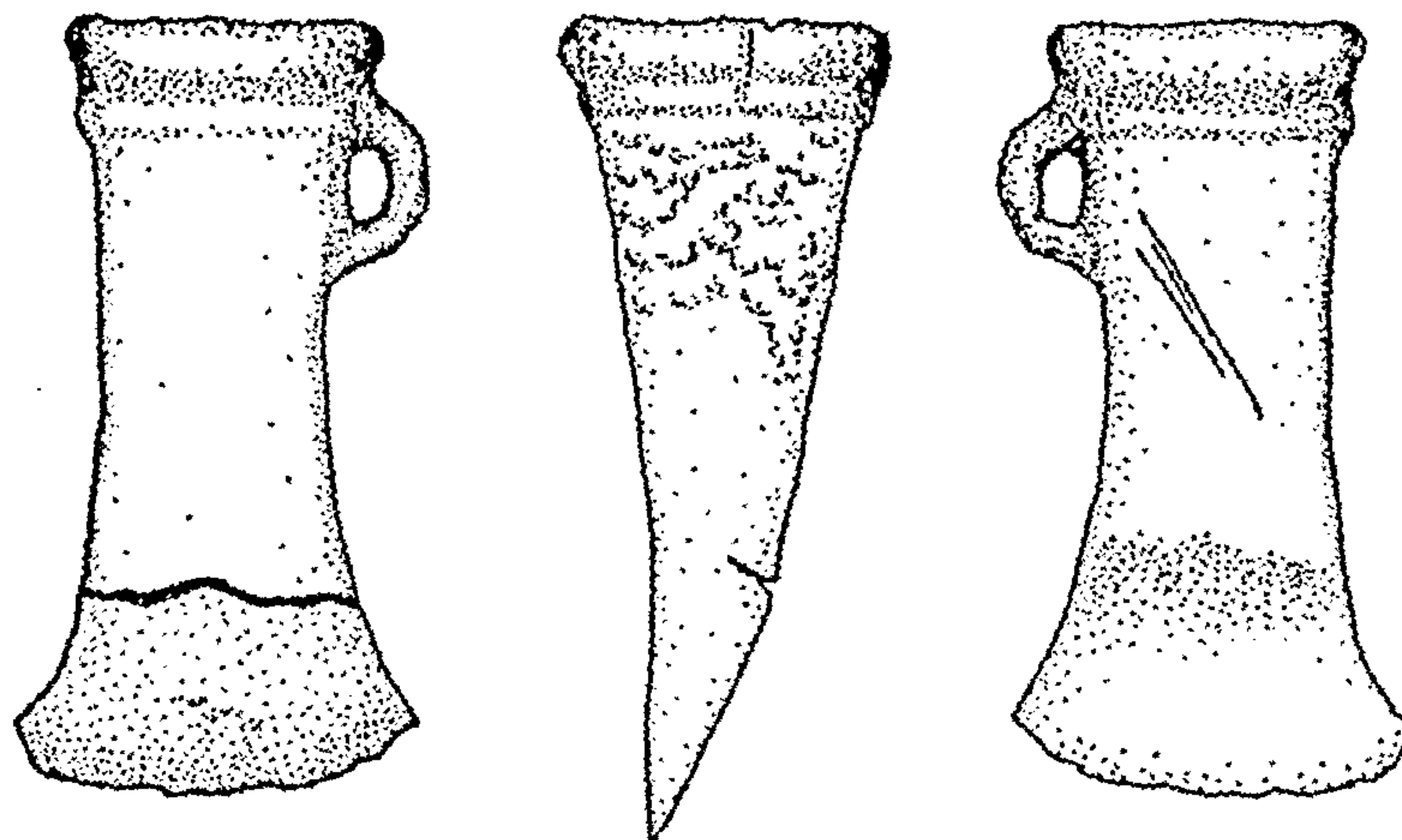
Patina: Rather rough olive, details obscured.

Manufacture: There are some possible diagonal grinding marks visible at the rear of the intact terminal, but it is difficult to identify any details following corrosion buildup.

Use: The knobbed terminal seems unusually smooth on its interior surfaces, and this may indicate wear.

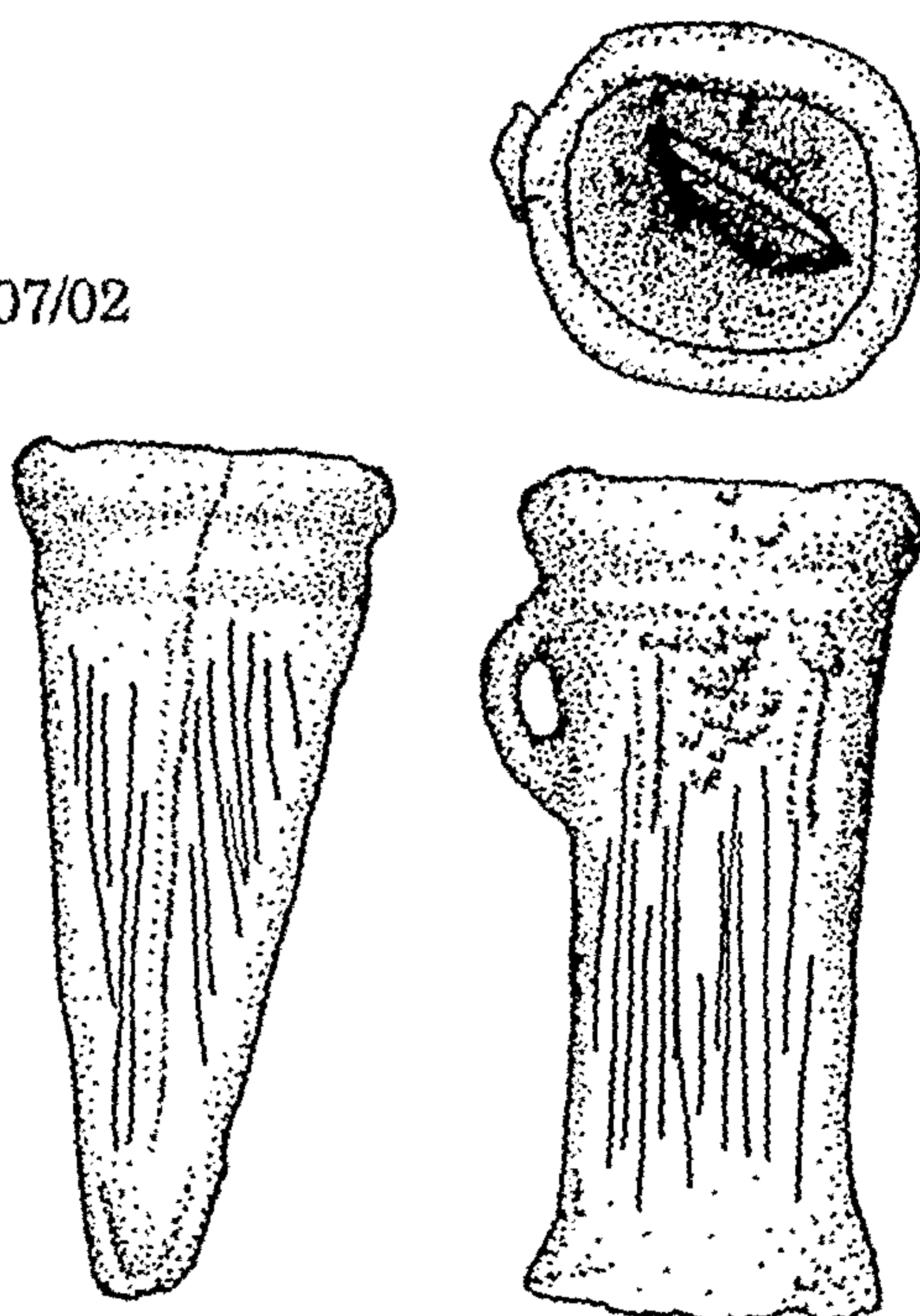
Reduction: The piece has broken, possibly in antiquity, but the break has been repaired in recent times. No evidence of hammering or distortion can be found in association with the break.

07/01

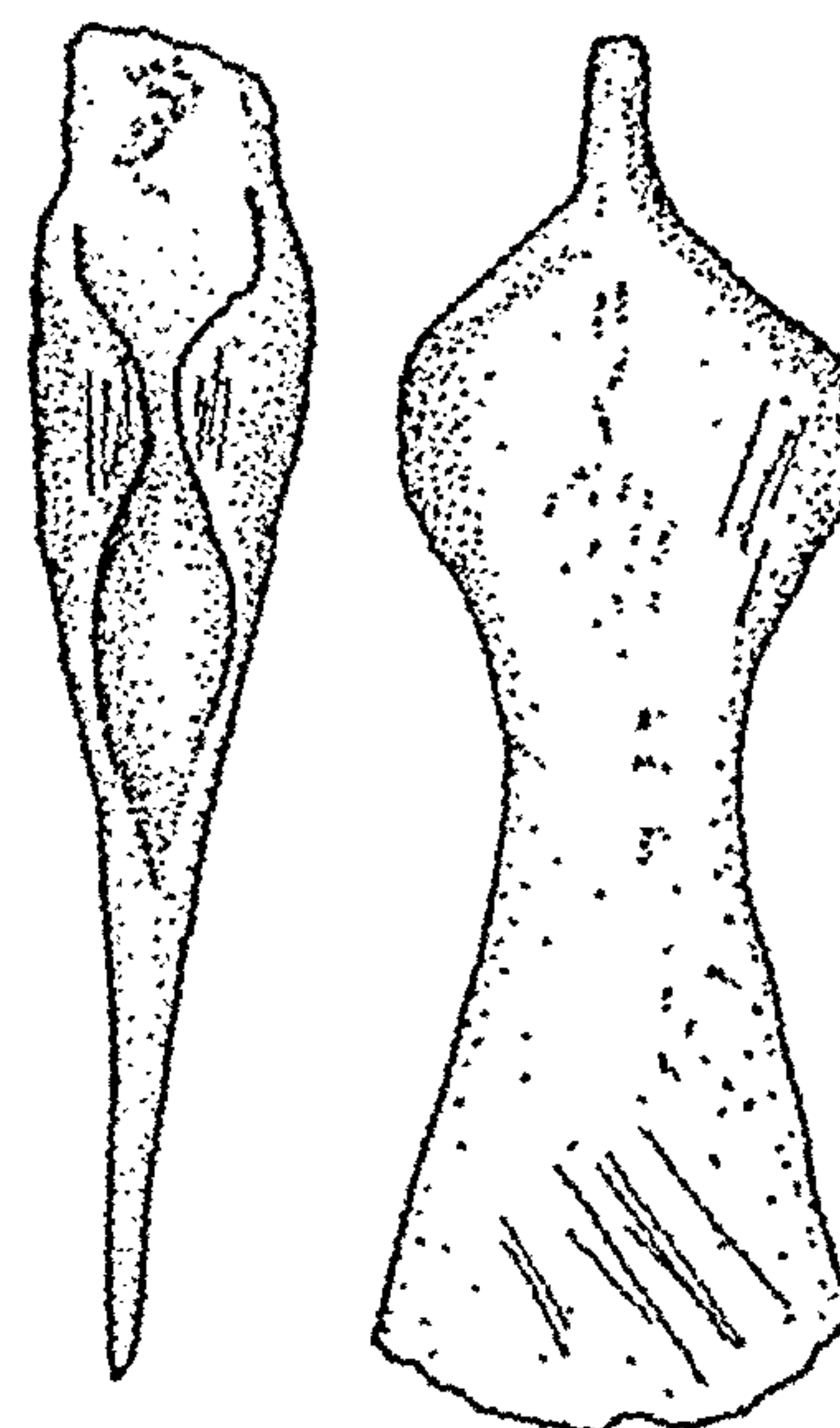


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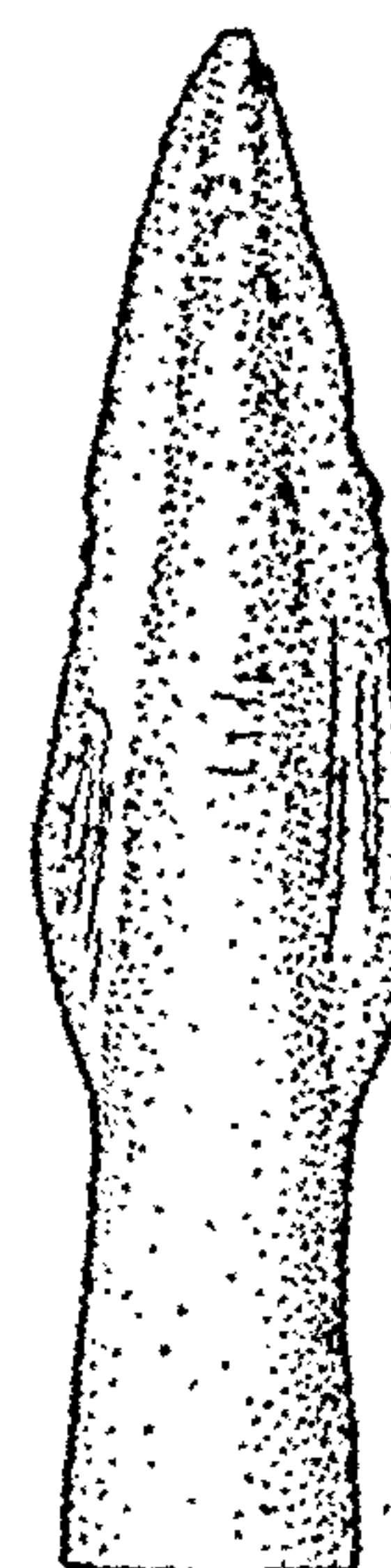
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07/05



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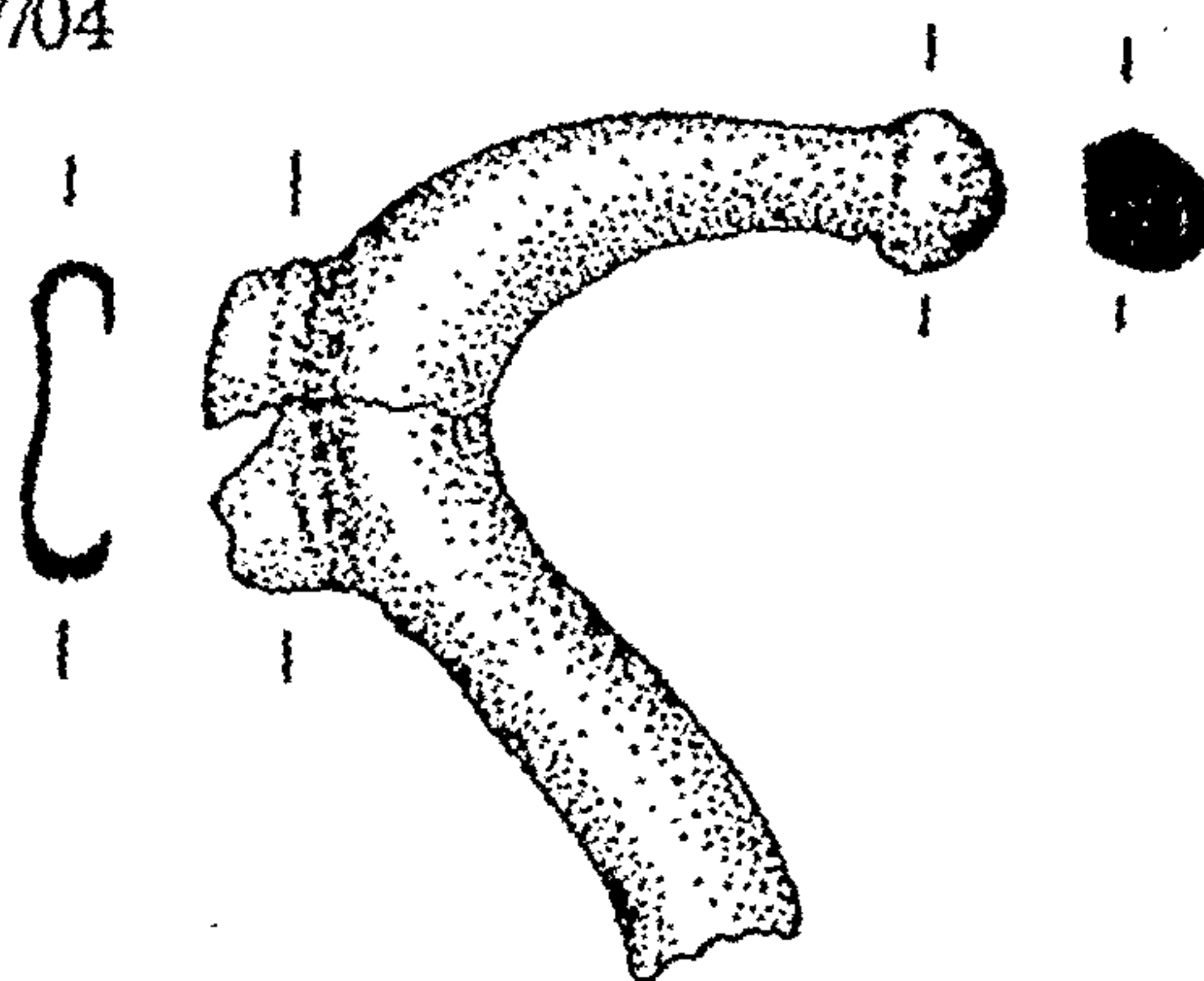


Fig. 73: The Shoebury II Hoard (Ref. No. 07)

Shoebury III ('Shoeburyness') (Ref. No. 08)

Grid Reference: c. TQ 94 86.

Current Location: Colchester and Essex Museum, Accession Number 840.

Context: No information available.

Bibliography: Butcher, 1923.

Coombs, 1971.

National Bronze Index.

Contents:

08/01

Description: Lower body and cutting edge from socketed axe.

Dimensions: Length (maximum): 74mm. Cutting edge: 45mm. Weight: 122.9g.

Patina: Very rough pale-green, overlain with a brown powdery layer. The piece is messy in appearance, with all surface details obscured.

Manufacture: The casting seams have been trimmed and flattened, but they remain visible to c.10mm from the cutting edge. The blade has been widely expanded, and is almost crescentic in appearance.

Use: The blade is asymmetrical, i.e. it shows evidence of uneven wear, and it was probably resharpened. The cutting edge is blunt and chipped over its extent, though its condition has probably deteriorated as a result of corrosion buildup. One corner of the cutting edge has broken away, damage which took place in antiquity.

Reduction: Both faces have been hammered and crushed at the break, and some hammer indents are visible in association with the broken edge on one face (illustrated). On the other face, a cluster of curved impressions can be seen, and these probably represent gouge marks. A crack runs across this face just above the cutting edge, probably marking the point where the solid metal of the cutting edge gives way to the hollow-sectioned portion of the body.

08/02

Description: Piece of undecorated sheet bronze strip, slightly tapering over its length (33mm in width at one end, 28mm at the other). Four rivet holes are apparent, three of which still hold rivets in situ. The rivets seem to be formed out of small pieces of folded sheet bronze. The piece is broken at either end, and has, in addition, been broken in two.

Dimensions: Length (approximate): 109mm. Weight: 19.2g.

Patina: Rough grey-green, details obliterated.

Manufacture: The piece has been subject to hammering. This damage was probably inflicted during the reduction process, though the sheet metal must surely have been hammered at an earlier point in its life-cycle, i.e. during manufacture. The 'rivets' are very unusual.

Use: One of the rivet holes seems strained, and is now empty, but this damage could have occurred during fragmentation.

Reduction: The entire piece has been roughly hammered, the surface appearing undulating and distorted as a result. This is particularly noticeable on the smaller of the two fragments. From the profile of the fragments, it can be deduced that the piece was folded over on itself. The breakage appears to have occurred in recent times, as fresh metal is revealed.

08/03

Description: Piece of copper ingot.

Dimensions: Length: 63mm. Width: 35mm. Thickness: 22mm. Weight: 270.0g.

08/04

Description: Large piece of copper ingot.

Dimensions: Length: 86mm. Width: 75mm. Thickness: 33mm. Weight: 732.1g.

Observations: There are some small tool marks on one surface (illustrated), including one large notch.

08/05

Description: Fragment from interior of copper ingot.

Dimensions: Length: 32mm. Width: 26mm. Thickness: 19mm. Weight: 115.6g.

Observations: Isolated chisel and/or punch marks are apparent on one surface (not illustrated).

08/06

Description: Piece from edge of copper ingot, with numerous voids apparent.

Dimensions: Length: 65mm. Width: 62mm. Thickness: 20mm. Weight: 438.8g.

Observations: A possible chisel mark is apparent on one surface (illustrated).

08/07

Description: Large piece from edge of copper ingot.

Dimensions: Length: 85mm. Width: 63mm. Thickness: 16mm.

08/08

Description: Small piece from interior of copper ingot. One surface (not illustrated) seems rather misshapen, resembling a much distorted body fragment from a socketed axe. This could indicate that corrosion build-up during burial caused two disparate fragments to adhere to one another.

Dimensions: Length: 45mm. Width: 40mm. Thickness: 27mm. Weight: 169.6g.

08/09

Description: Small piece from edge of copper ingot.

Dimensions: Length: 42mm. Width: 32mm. Thickness: 18mm. Weight: 170.6g.

08/10

Description: Fragment from edge of copper ingot, with voids apparent in the interior.

Dimensions: Length: 49mm. Width: 30mm. Thickness: 17mm. Weight: 88.1g

08/11

Description: Fragment from edge of copper ingot, with voids apparent in the interior.

Dimensions: Length: 35mm. Width: 22mm. Thickness: 15mm. Weight: 54.4g.

08/12

Description: Small piece from edge of copper ingot.

Dimensions: Length: 42mm. Width: 40mm. Thickness: 19mm. Weight: 148.1g.

Observations: The upper surface seems smooth in places, and there are possible indications of hammering and associated small tool marks apparent here.

08/13

Description: Small fragment from interior of copper ingot.

Dimensions: Length: 38mm. Width: 23mm. Thickness: 20mm. Weight: 101.1g.

08/14

Description: Piece from edge of copper ingot.

Dimensions: Length: 61mm. Width: 51mm. Thickness: 21mm. Weight: 311.1g.

Observations: Part of the lower surface appears smooth and polished, as if it has been subject to hammering.

08/15

Description: Piece from edge of copper ingot.

Dimensions: Length: 60mm. Width: 60mm. Thickness: 18mm. Weight: 189.4g.

Observations: The depression in the centre of the piece is accompanied by a glossy, polished appearance to the surface, which suggests that it may be the result of hammering.

08/16

Description: Edge fragment from copper ingot.

Dimensions: Length: 65mm. Width: 31mm. Thickness: 17mm.

Observations: There are a series of grooves apparent in the metal at the break, running vertically and horizontally across the broken edge. It is possible that these marks resulted from natural cooling processes in the metal, though they could indicate damage inflicted

during the fragmentation of the ingot. In addition, there are possible small tool marks on one surface (not illustrated).

08/17

Description: Piece from edge of copper ingot, with voids apparent in the interior.

Dimensions: Length: 66mm. Width: 45mm. Thickness: 23mm. Weight: 245.6g.

08/18

Description: Piece from interior of copper ingot.

Dimensions: Length: 62mm. Width: 55mm. Thickness: 25mm. Weight: 358.0g.

Observations: Some areas of the surface appear smooth, suggesting that hammering took place here. However, the most distinctive feature to be seen upon this fragment is a large regular groove on one of the edges. The nature of this damage suggests that the piece was notched by a sharp, heavy object - perhaps an axe - in antiquity.

08/19

Description: Fragment of copper ingot, thin in section.

Dimensions: Length: 89mm. Width: 45mm. Thickness: 15mm. Weight: 126.7g.

08/20

Description: Fragment from interior of copper ingot.

Dimensions: Length: 45mm. Width: 30mm. Thickness: 26mm. Weight: 148.5g.

08/21

Description: Small piece from interior of copper ingot.

Dimensions: Length: 65mm. Width: 42mm. Thickness: 22mm. Weight: 283.2g.

Observations: A series of small impressions can be seen on one surface, and these may represent superimposed chisel marks.

08/22

Description: Small piece from edge of copper ingot.

Dimensions: Length: 50mm. Width: 48mm. Thickness: 28mm. Weight: 235.8g.

08/23

Description: Small piece from edge of copper ingot.

Dimensions: Length: 48mm. Width: 30mm. Thickness: 30mm.

Observations: One surface (illustrated) shows a series of superimposed chisel marks.

08/24

Description: Piece from edge of copper ingot.

Dimensions: Length: 54mm. Width: 40mm. Thickness: 25mm. Weight: 281.0g.

08/25

Description: Piece from interior of copper ingot.

Dimensions: Length: 60mm. Width: 36mm. Thickness: 26mm. Weight: 329.6g.

08/26

Description: Piece from edge of copper ingot.

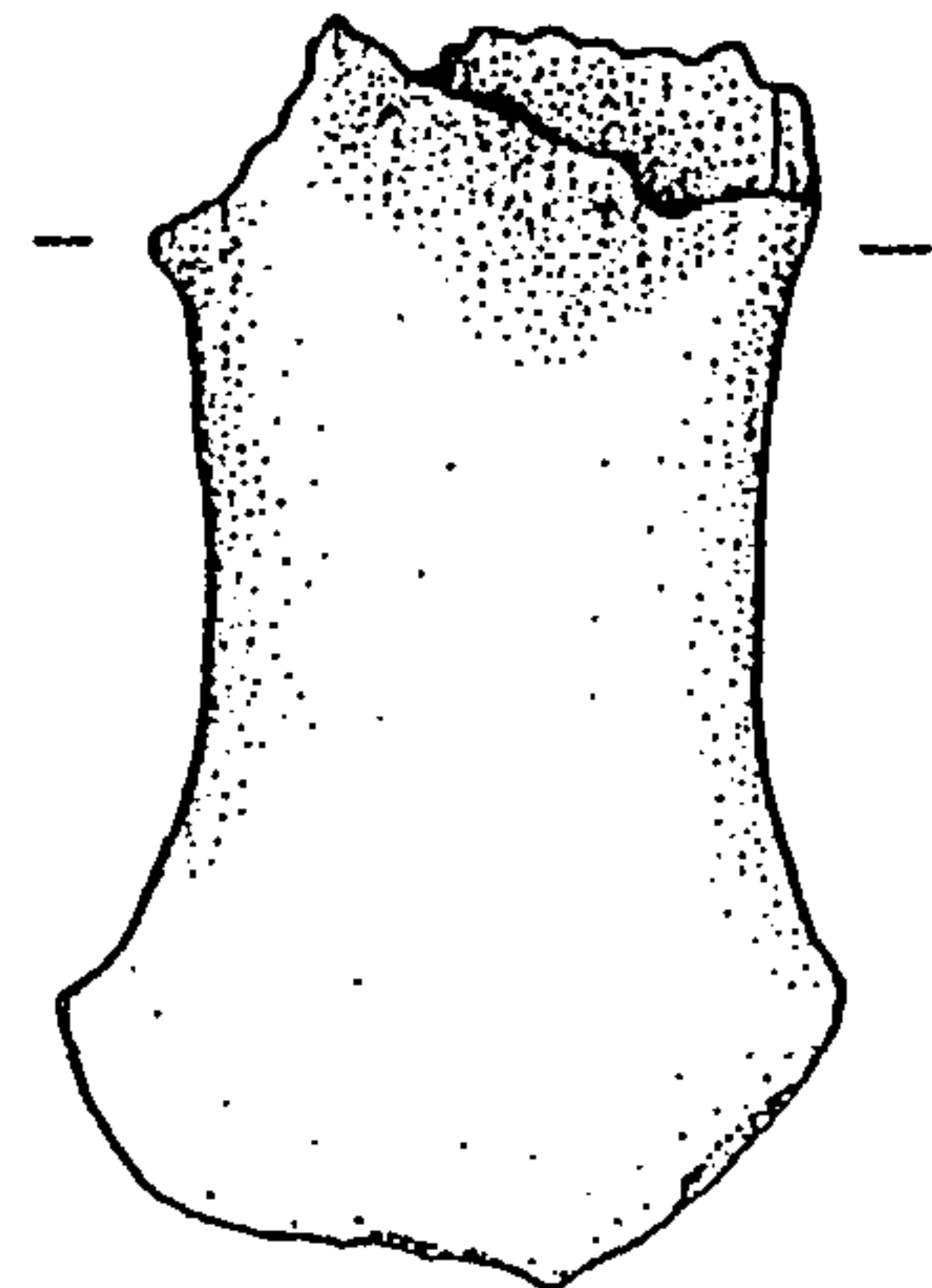
Dimensions: Length: 55mm. Width: 40mm. Thickness: 26mm. Weight: 240.1g.

08/27

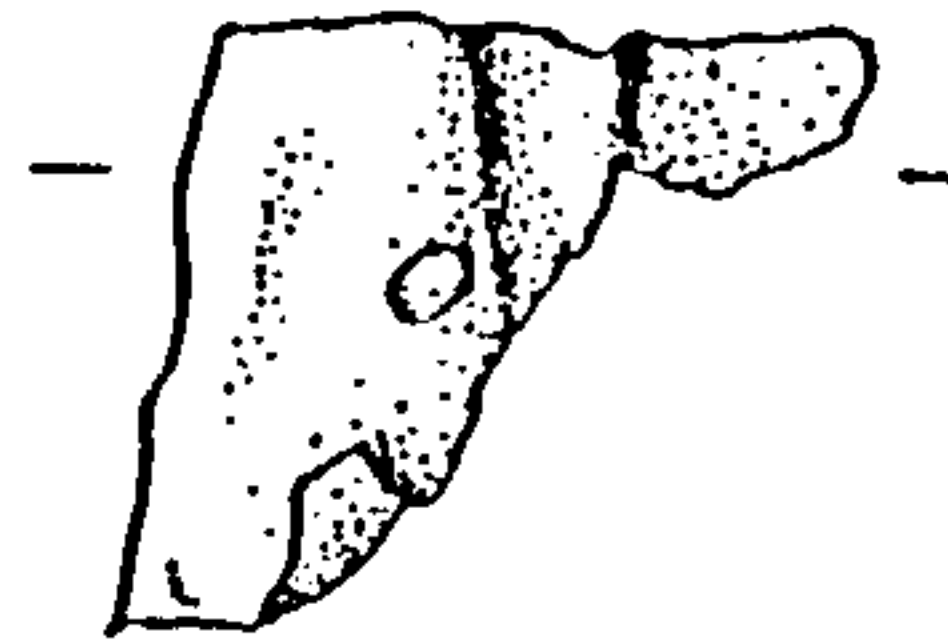
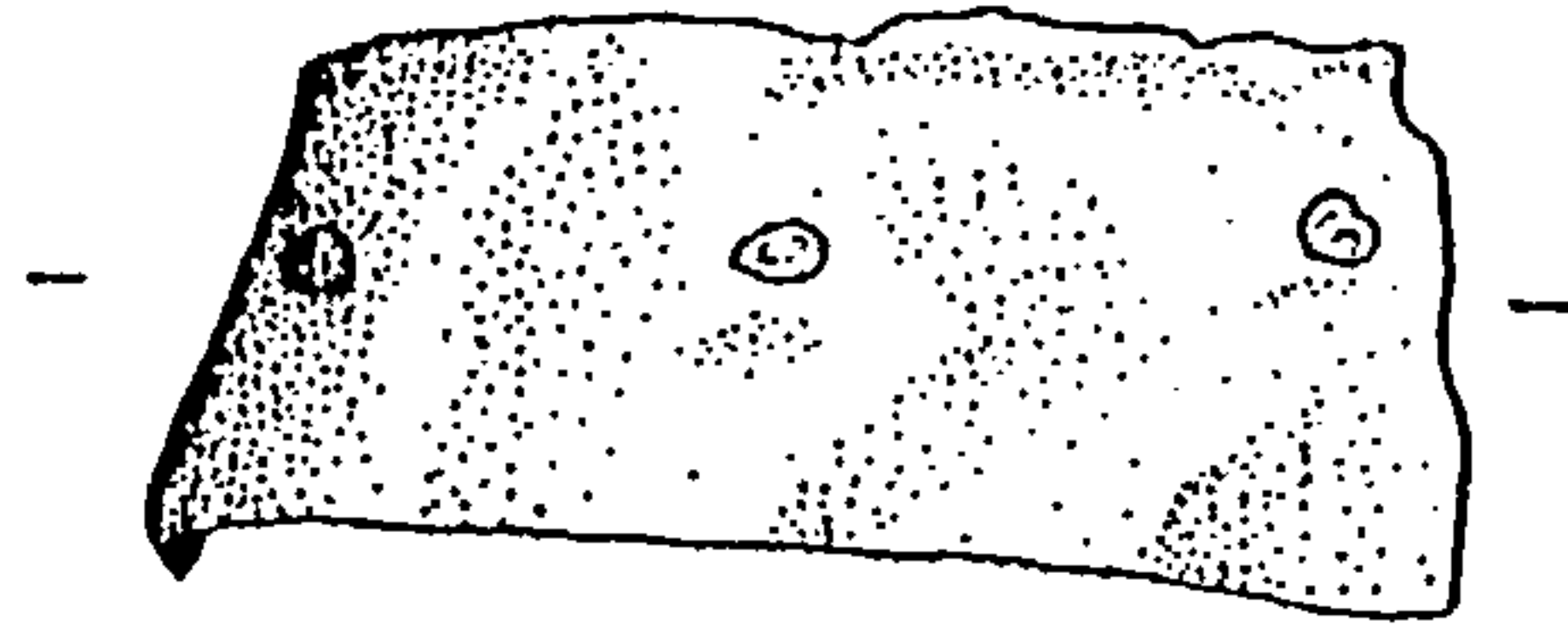
Description: Small piece from edge of copper ingot.

Dimensions: Length: 50mm. Width: 46mm. Thickness: 28mm. Weight: 182.4g.

08/01

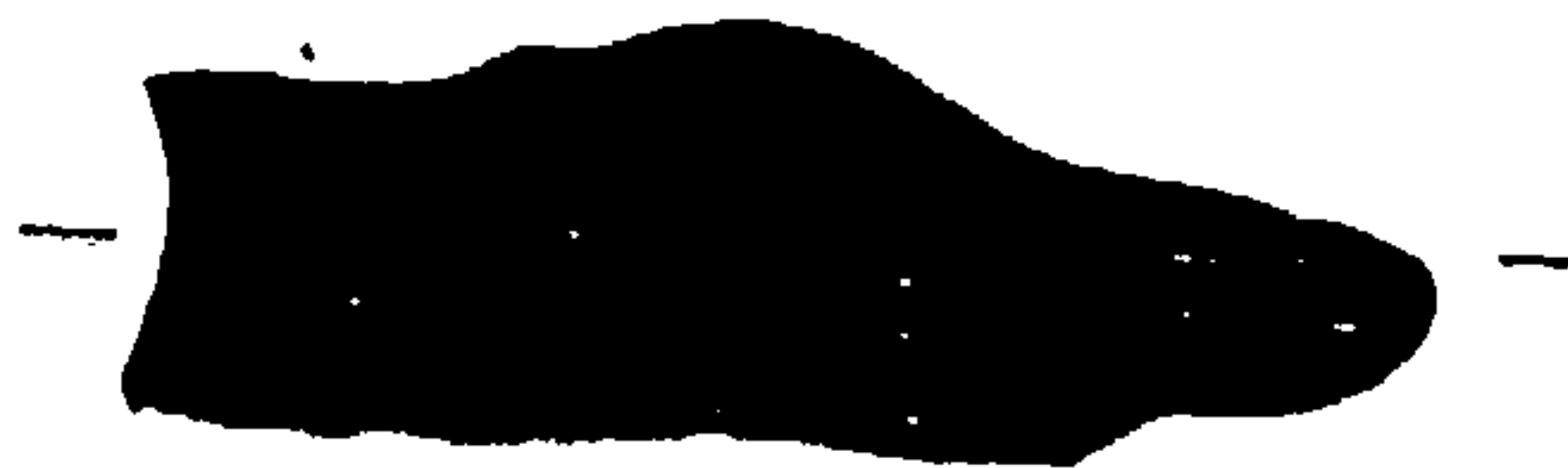
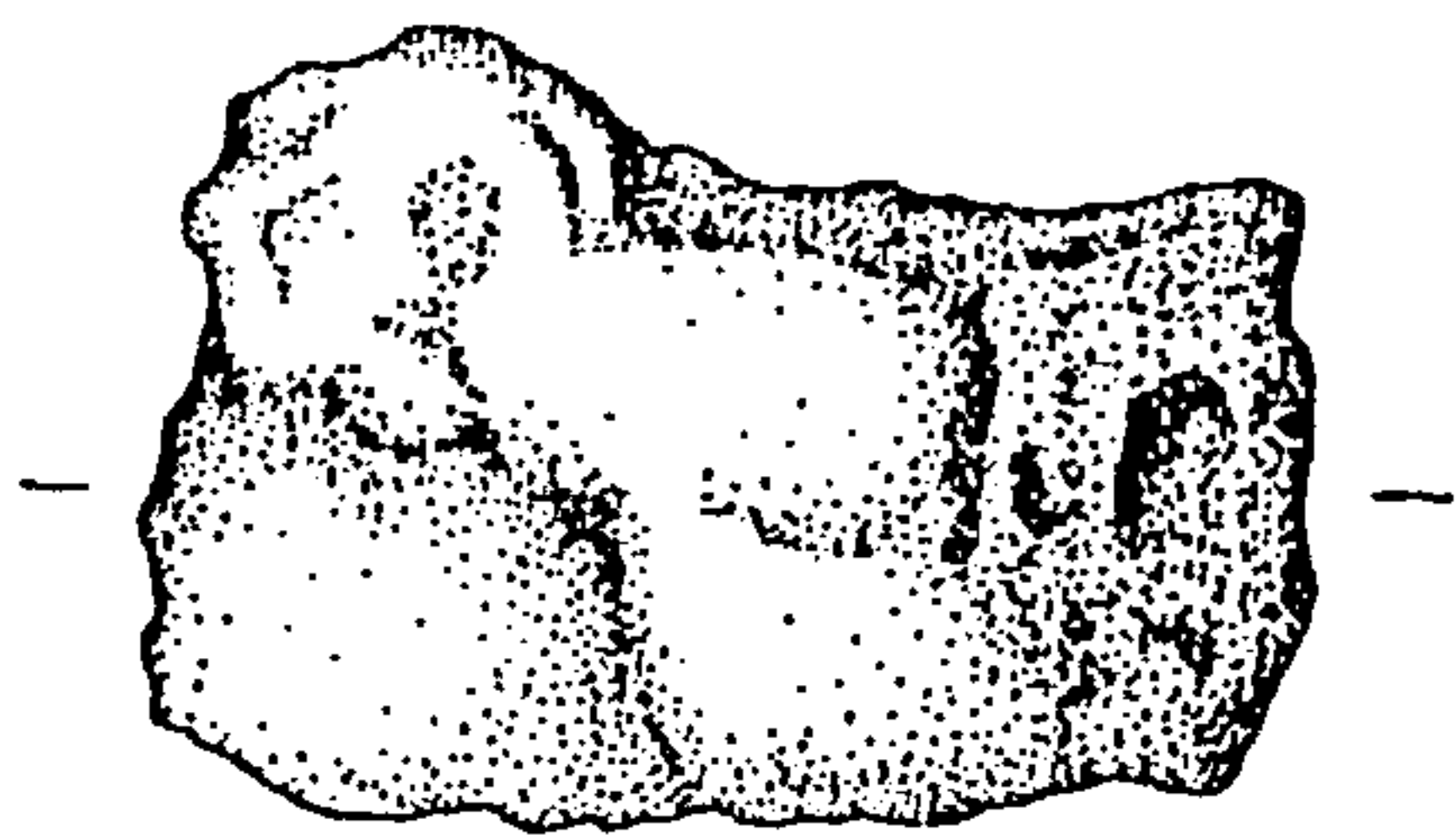


08/02

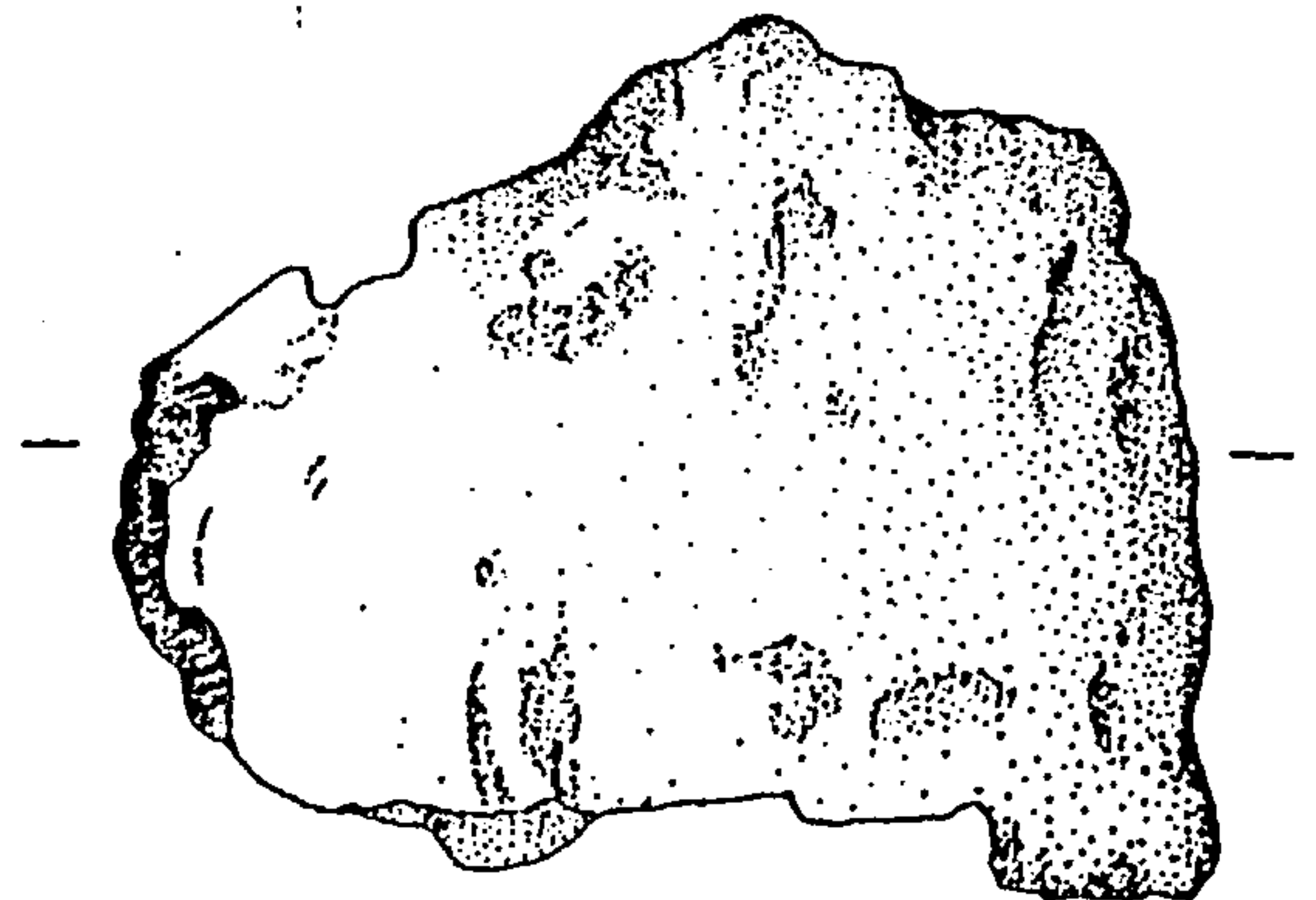


0 2cm

08/03



08/04



08/05

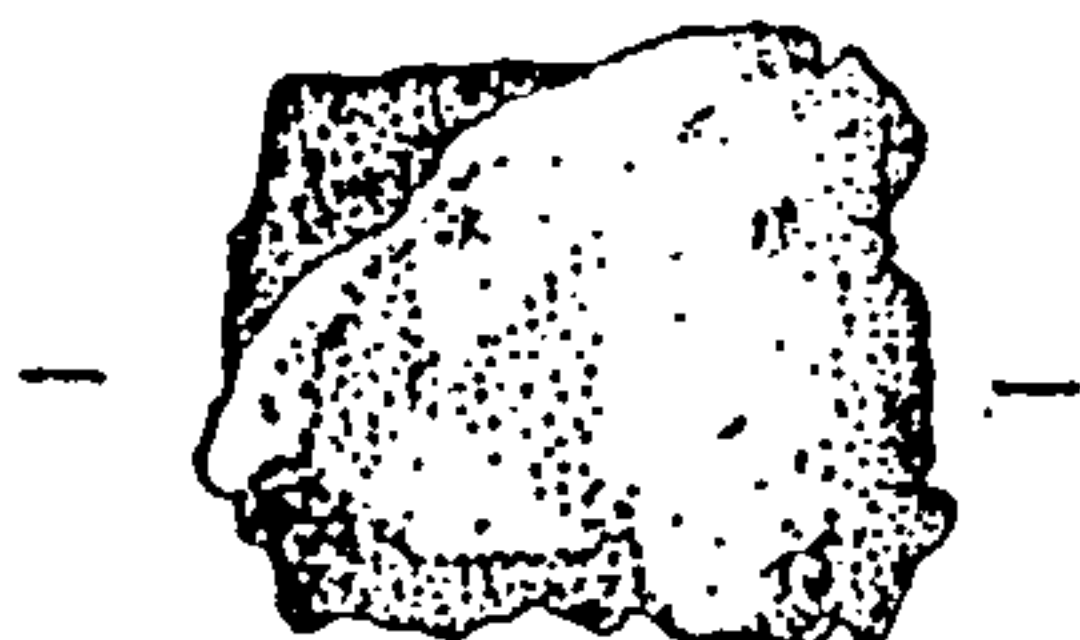
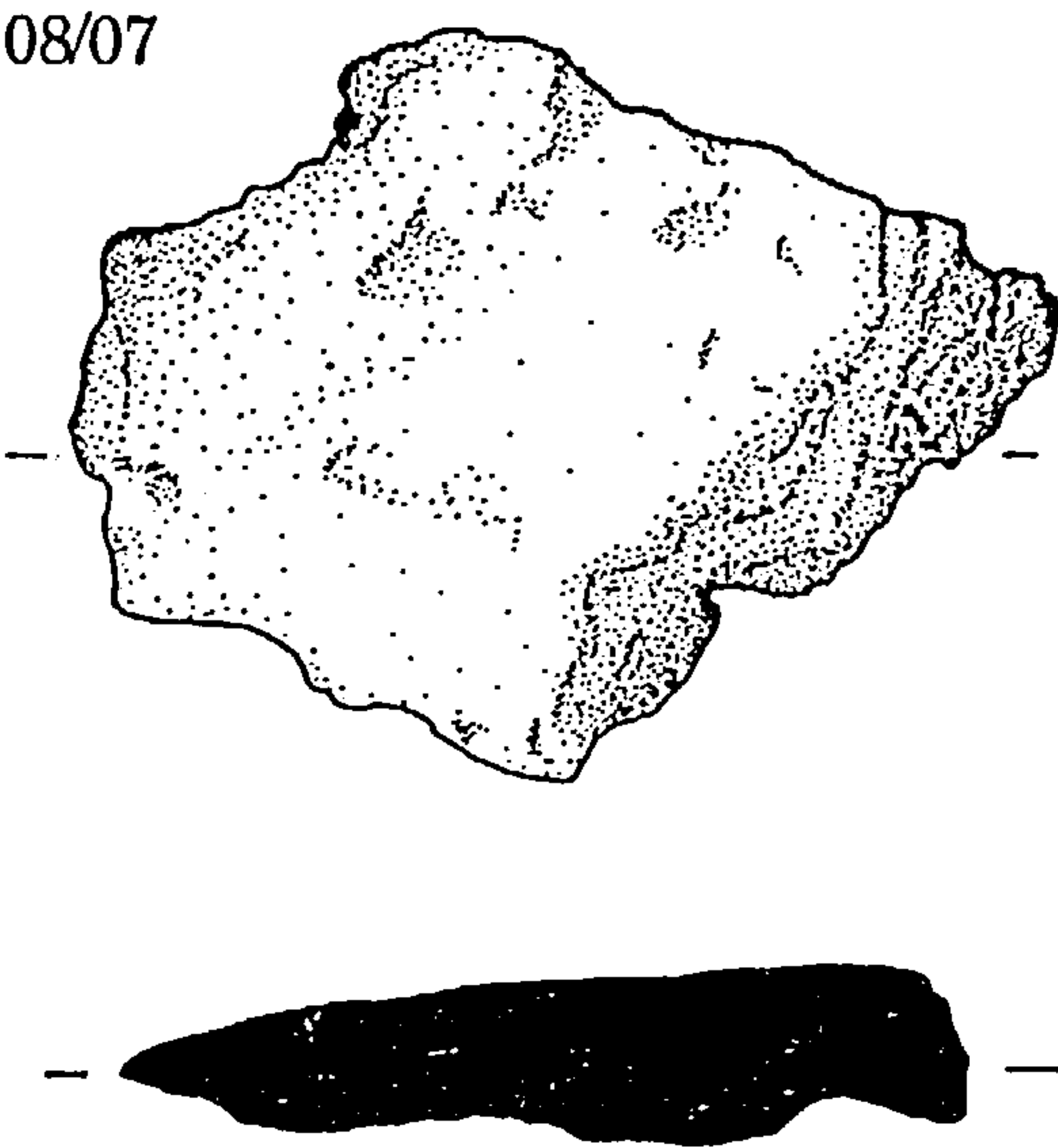
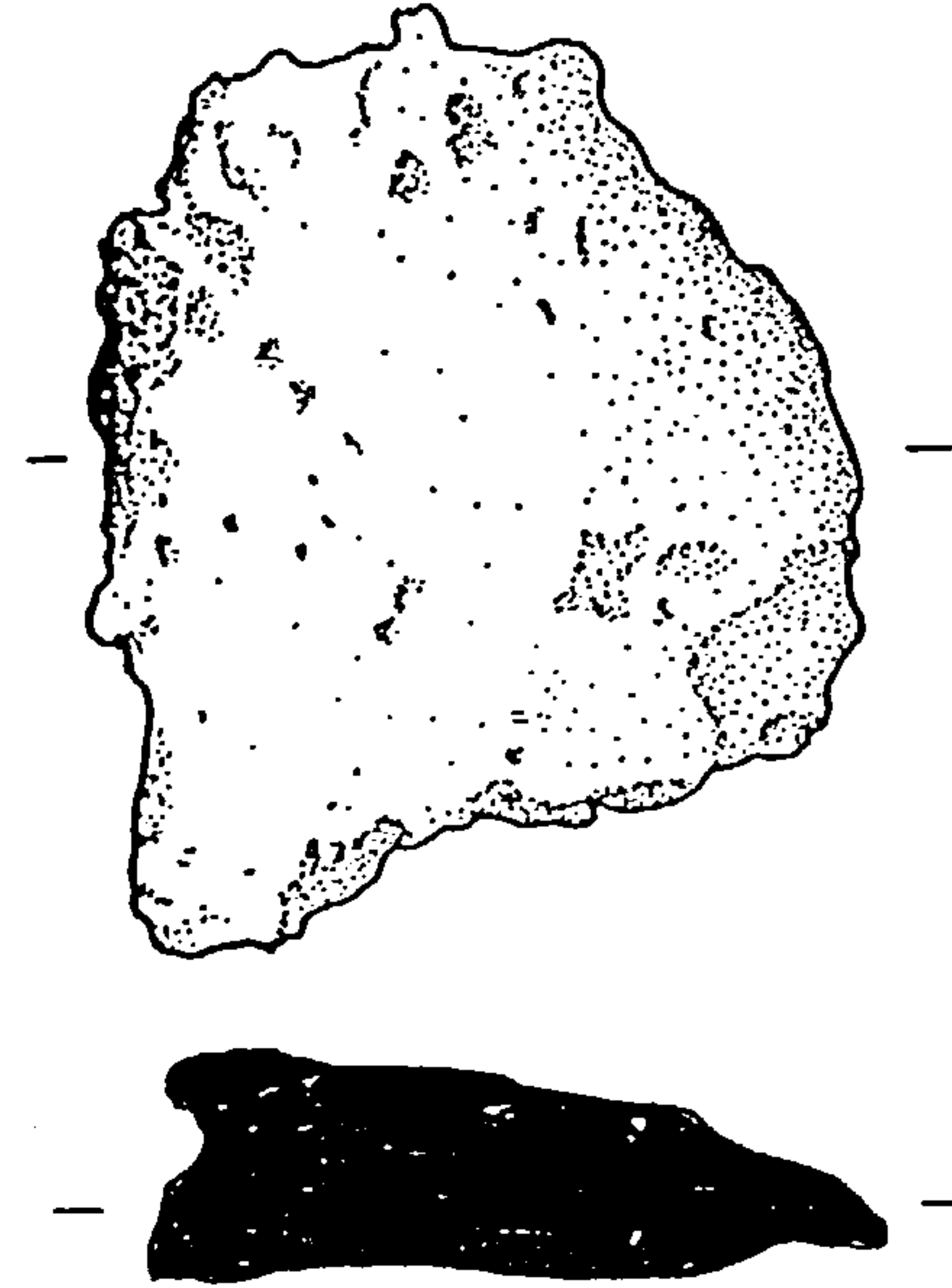


Fig. 74: The Shoebury III Hoard (Ref. No. 08): Socketed Axe, Sheet Metal and Ingot Metal (i)

08/06

08/07

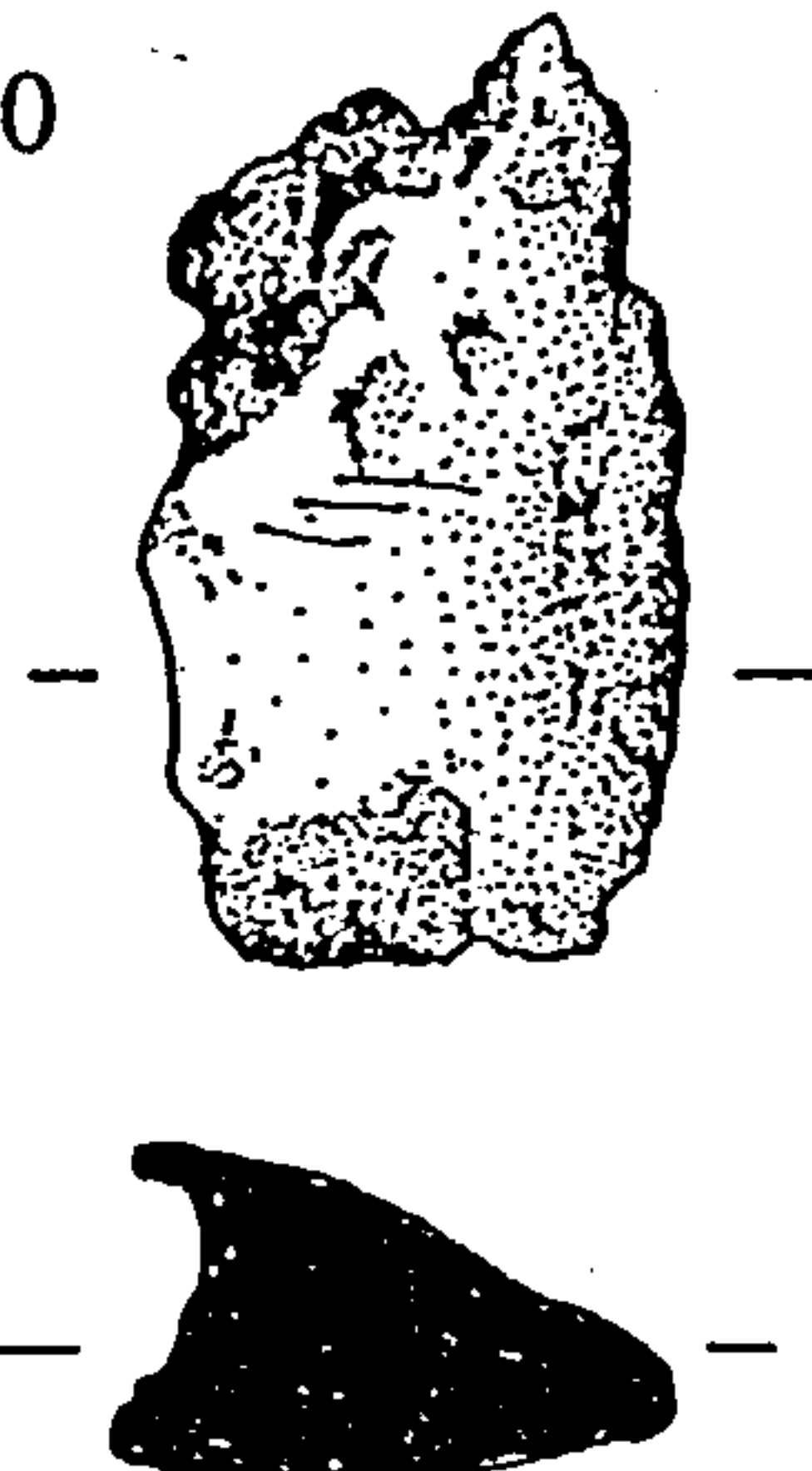
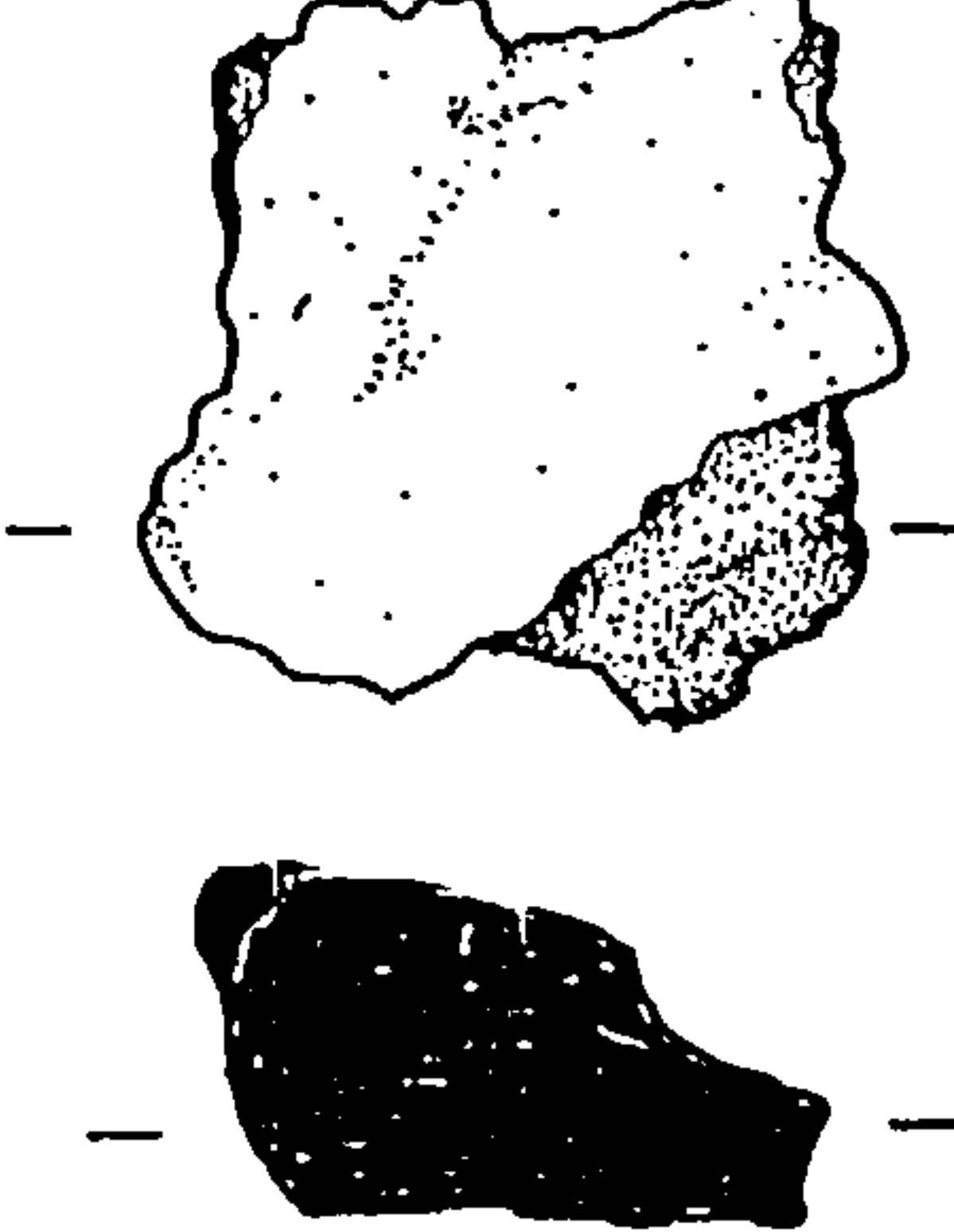
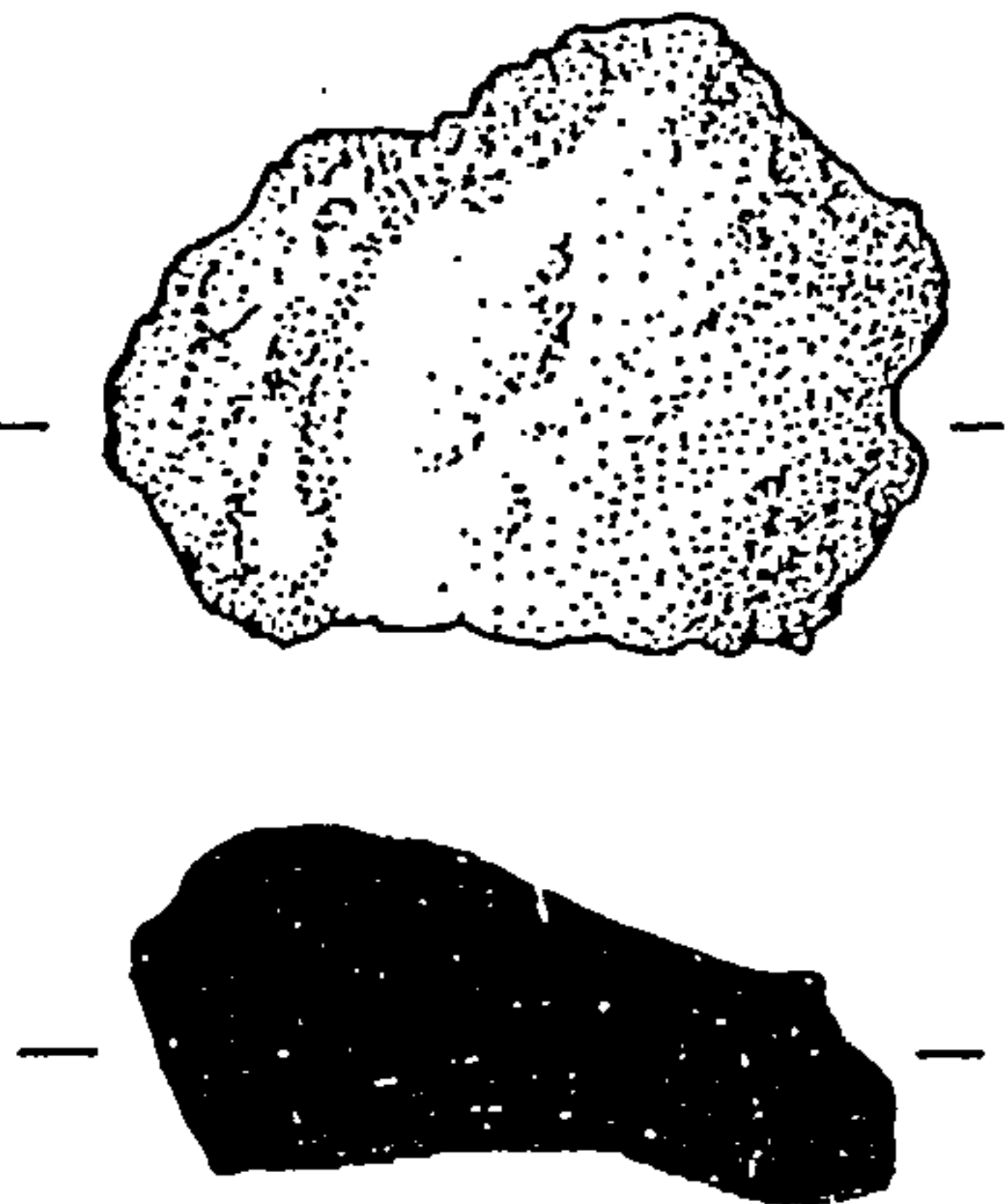


0 2cm

08/08

08/09

08/10



08/11

08/12

08/13

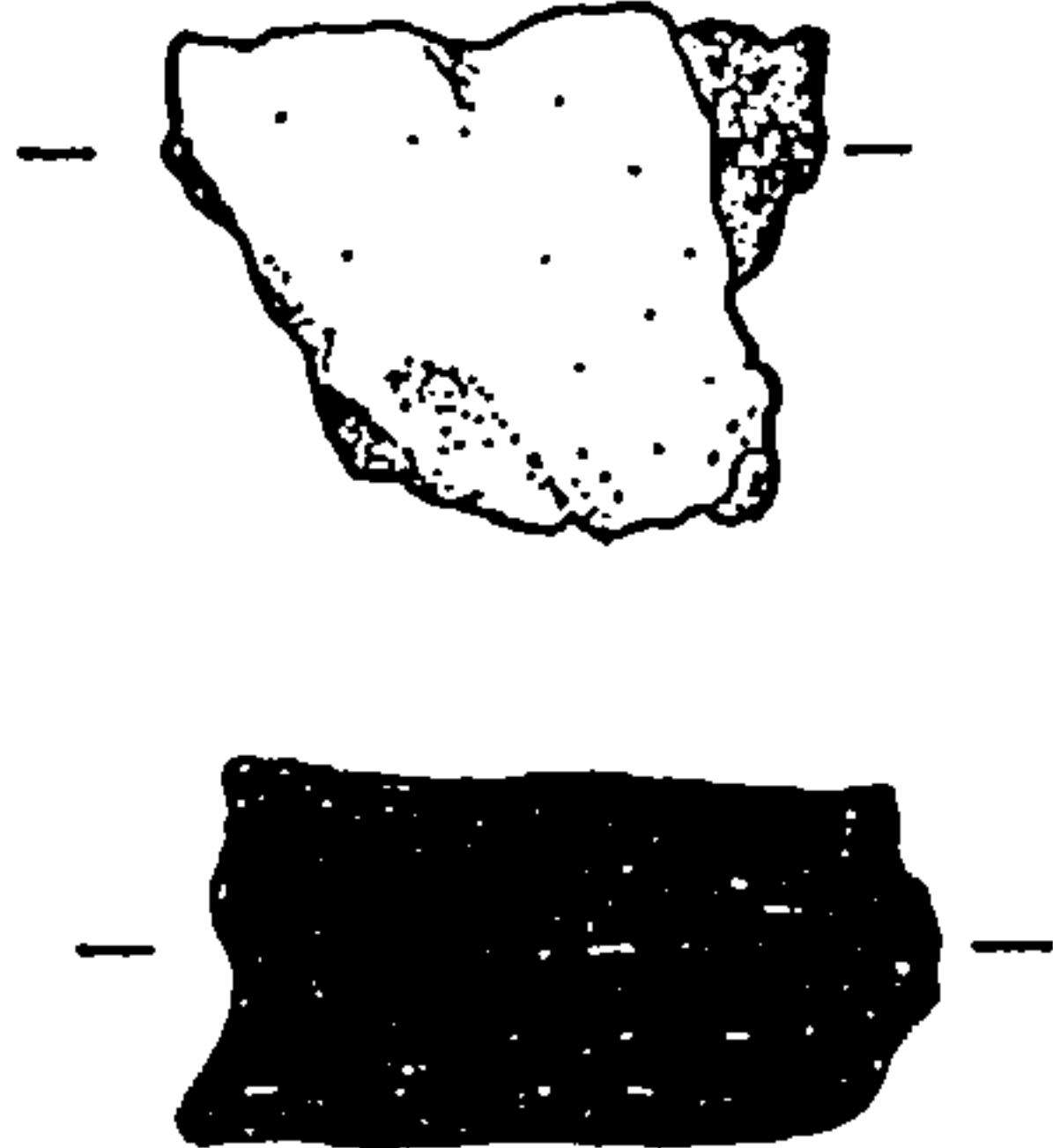
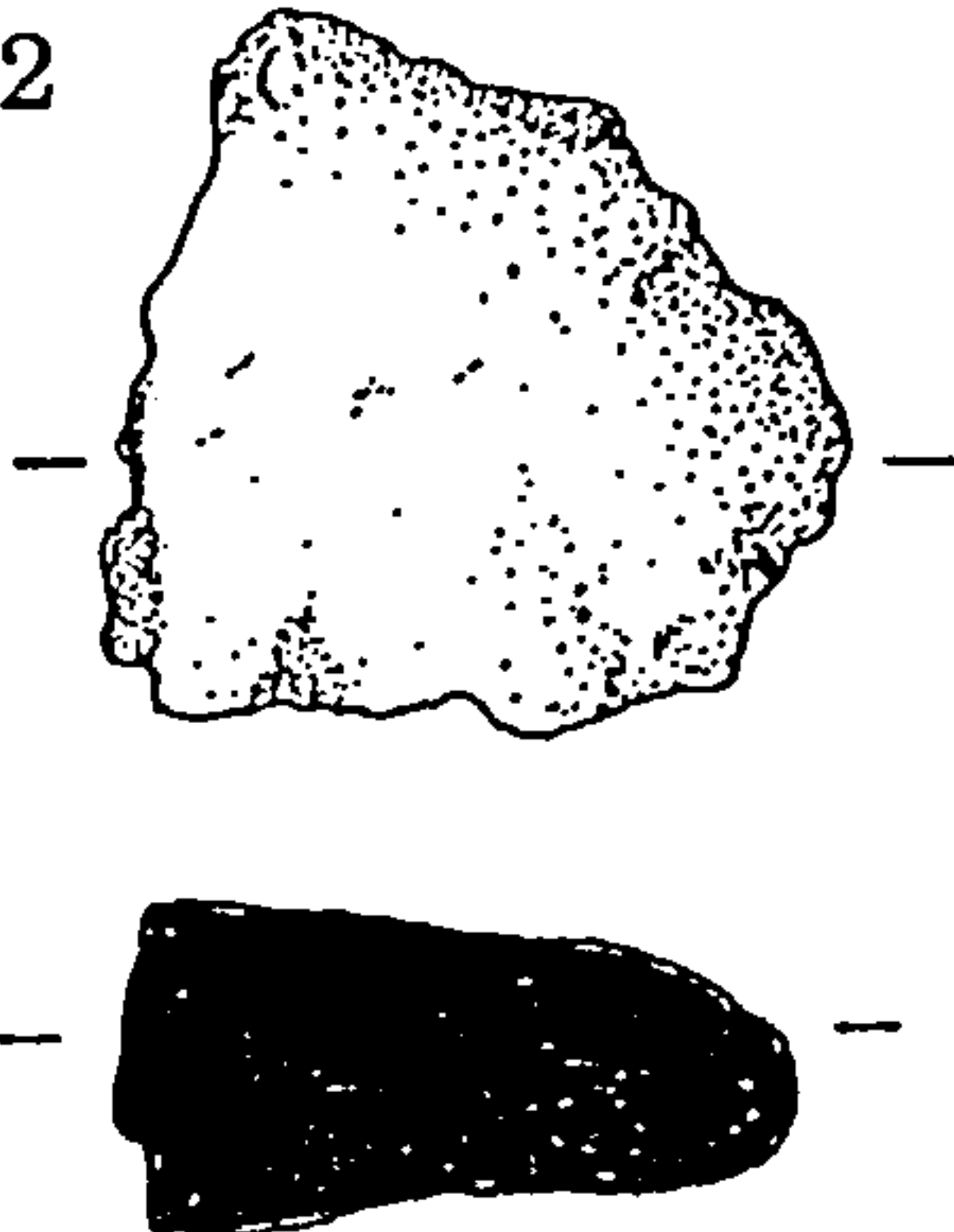
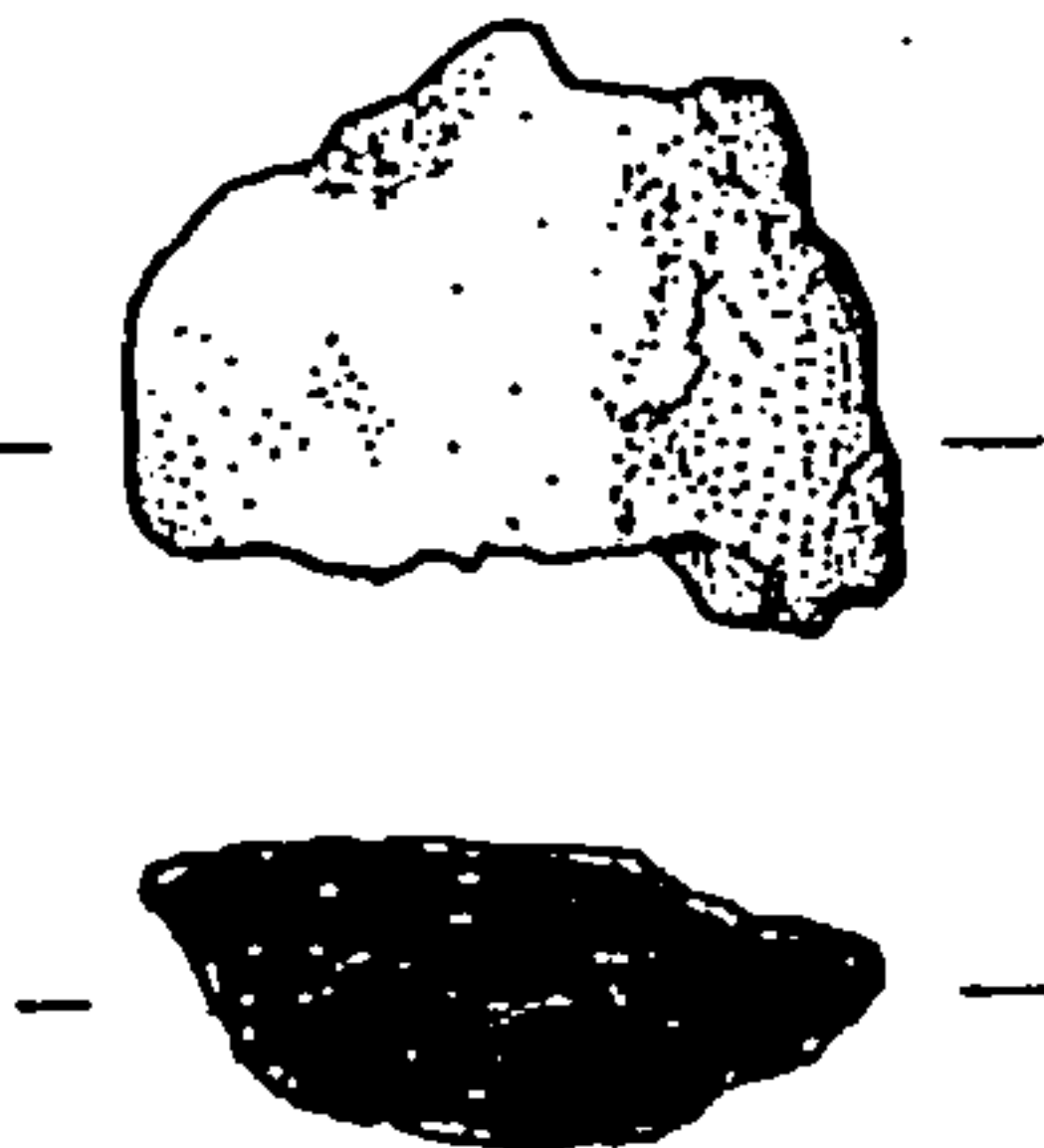
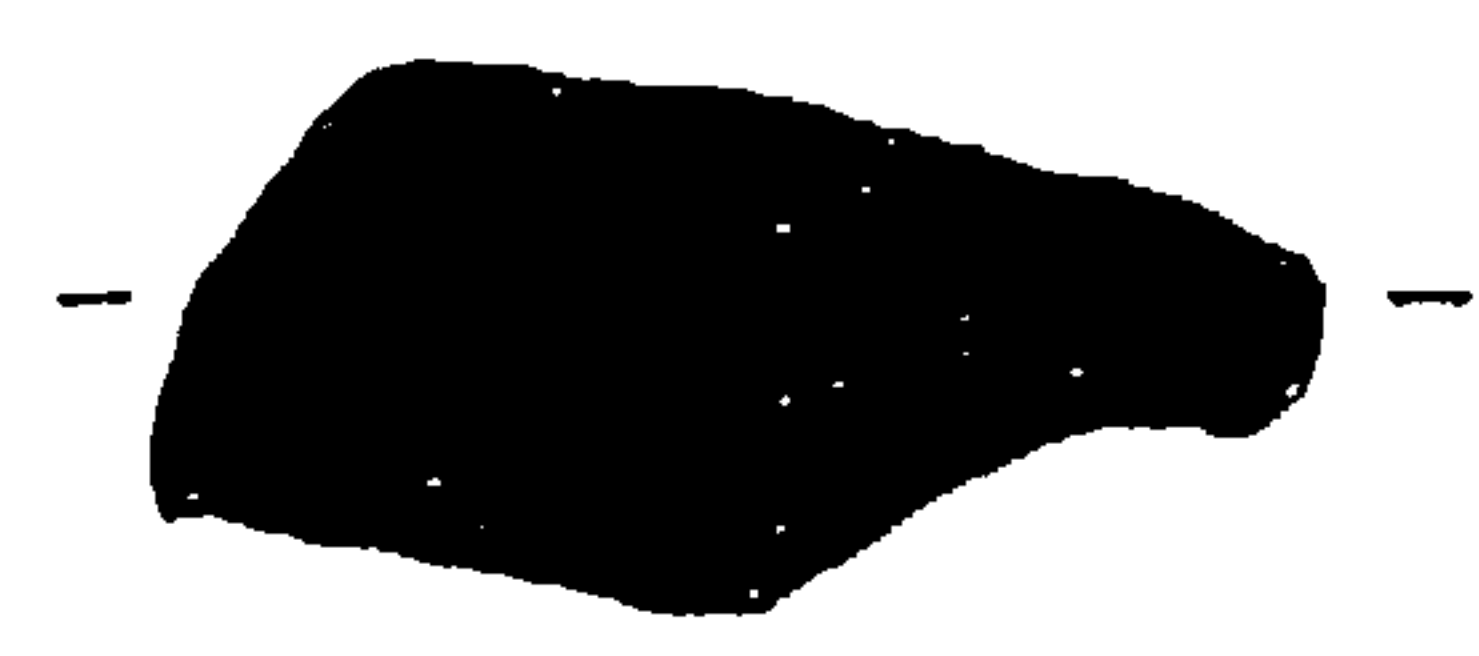
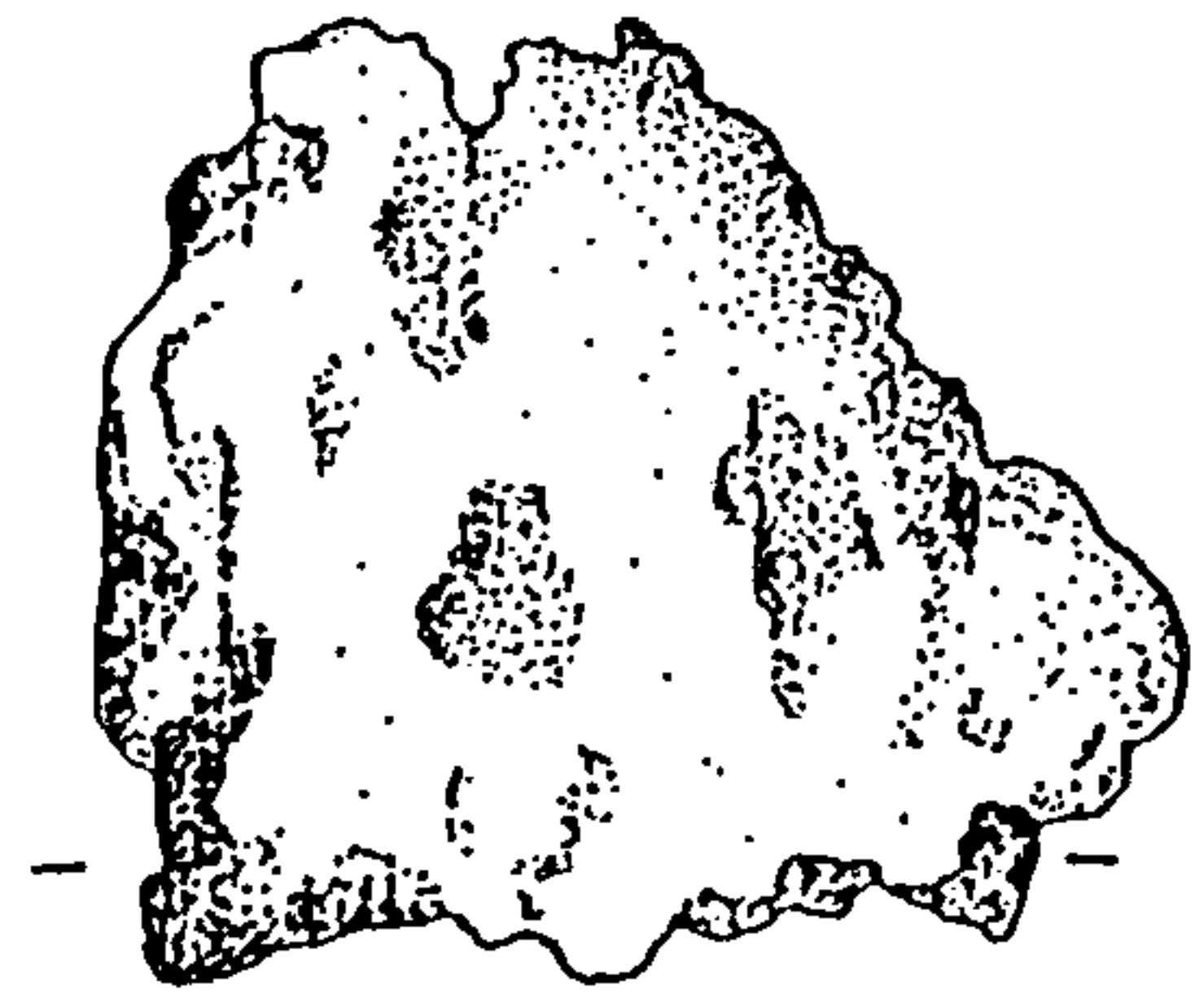
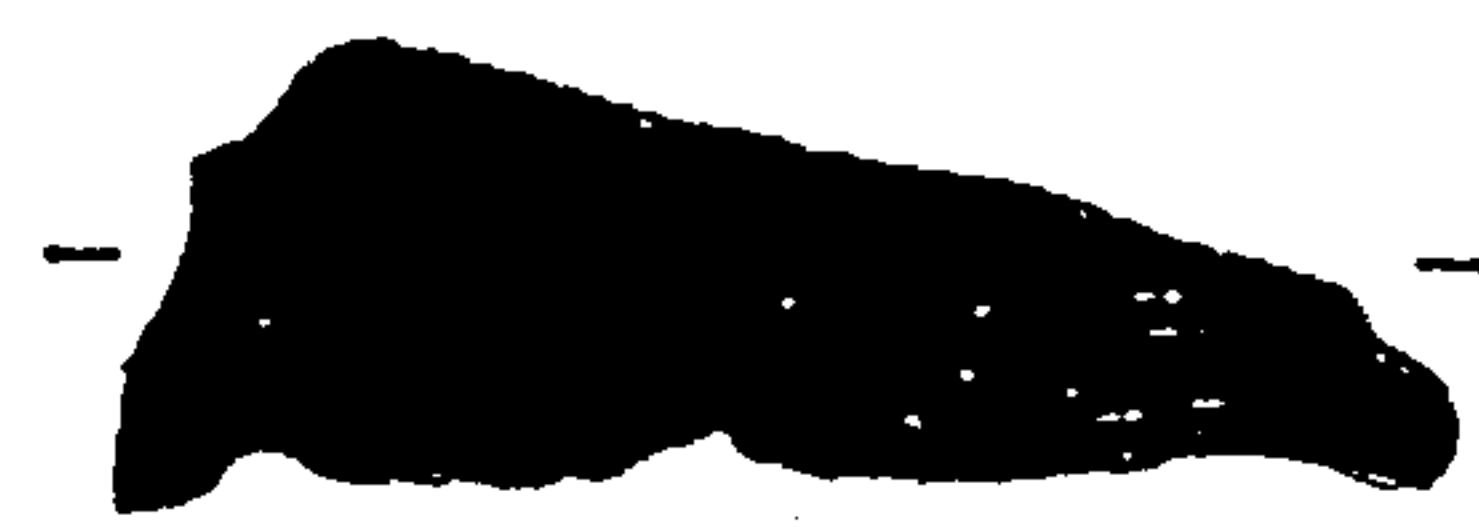
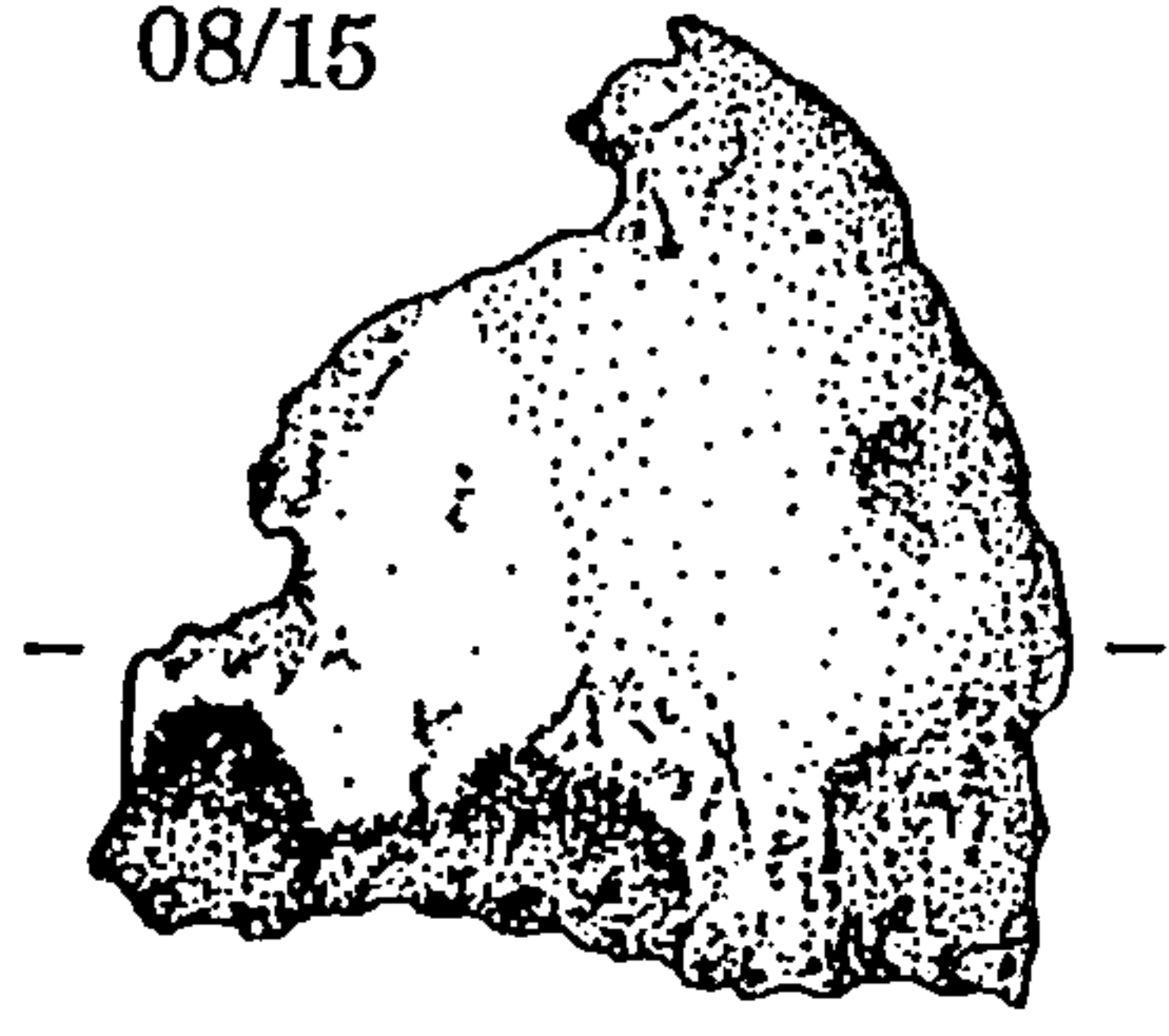


Fig. 75: The Shoebury III Hoard (Ref. No. 08): Ingot Metal (ii)

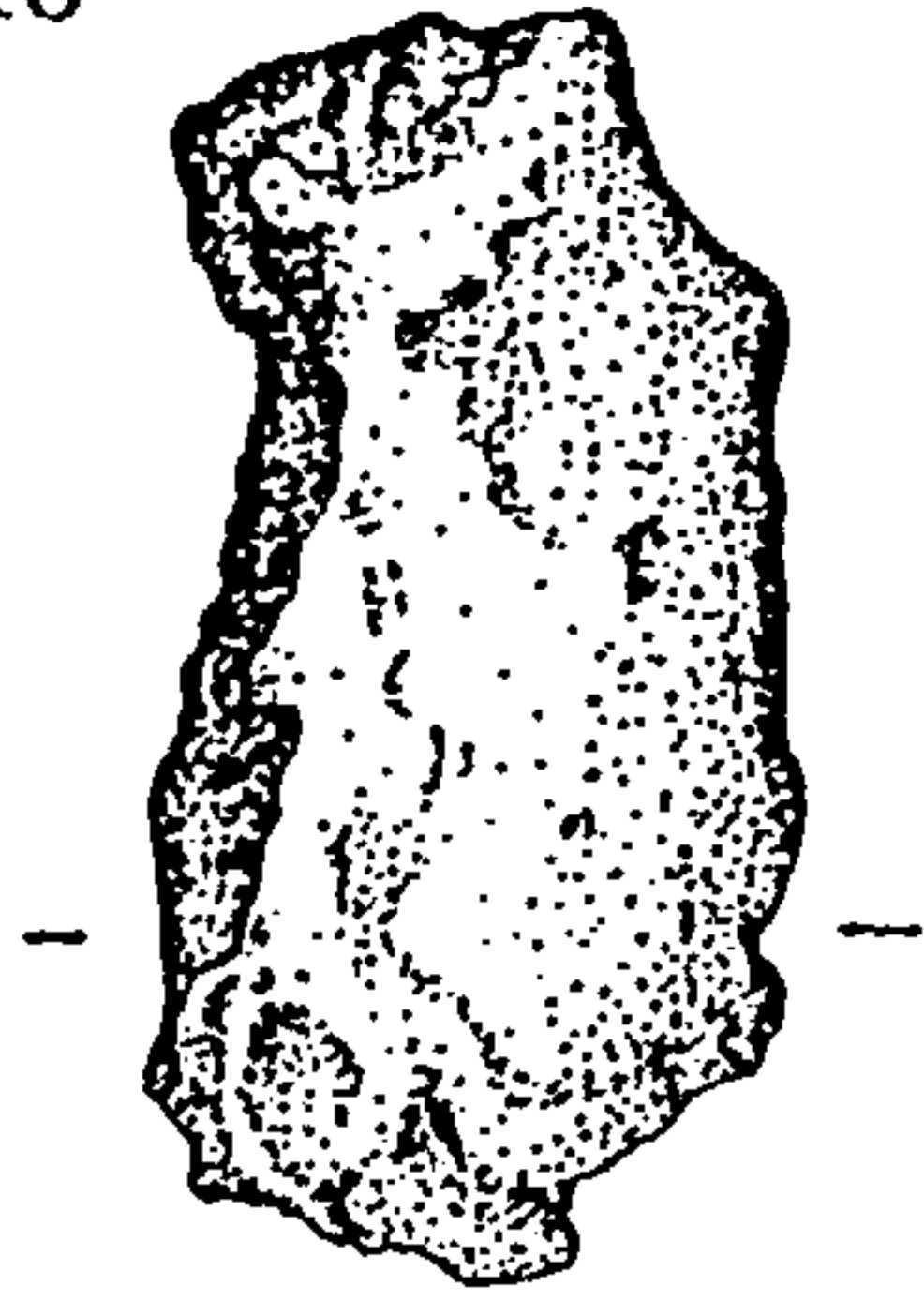
08/14



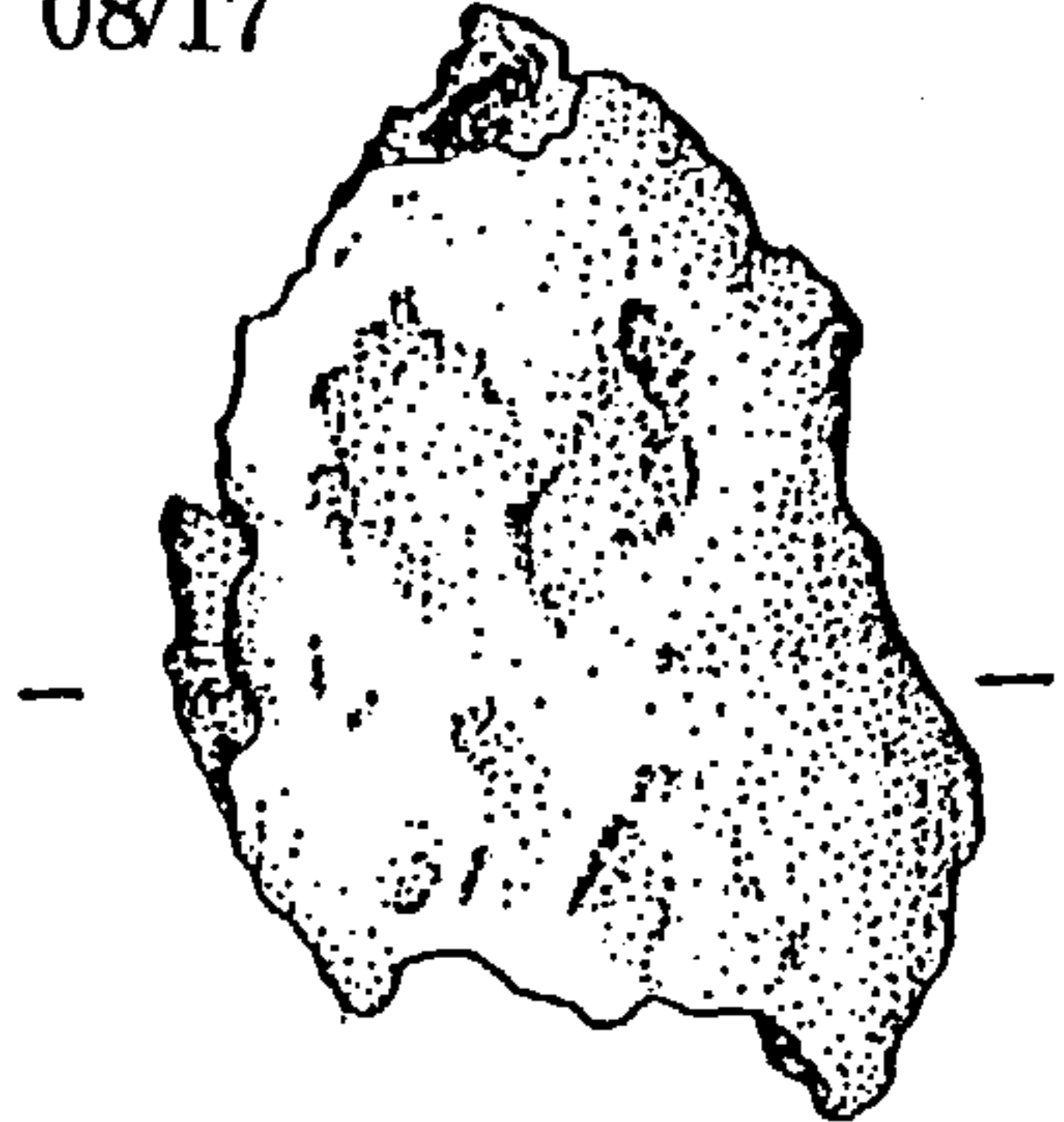
08/15



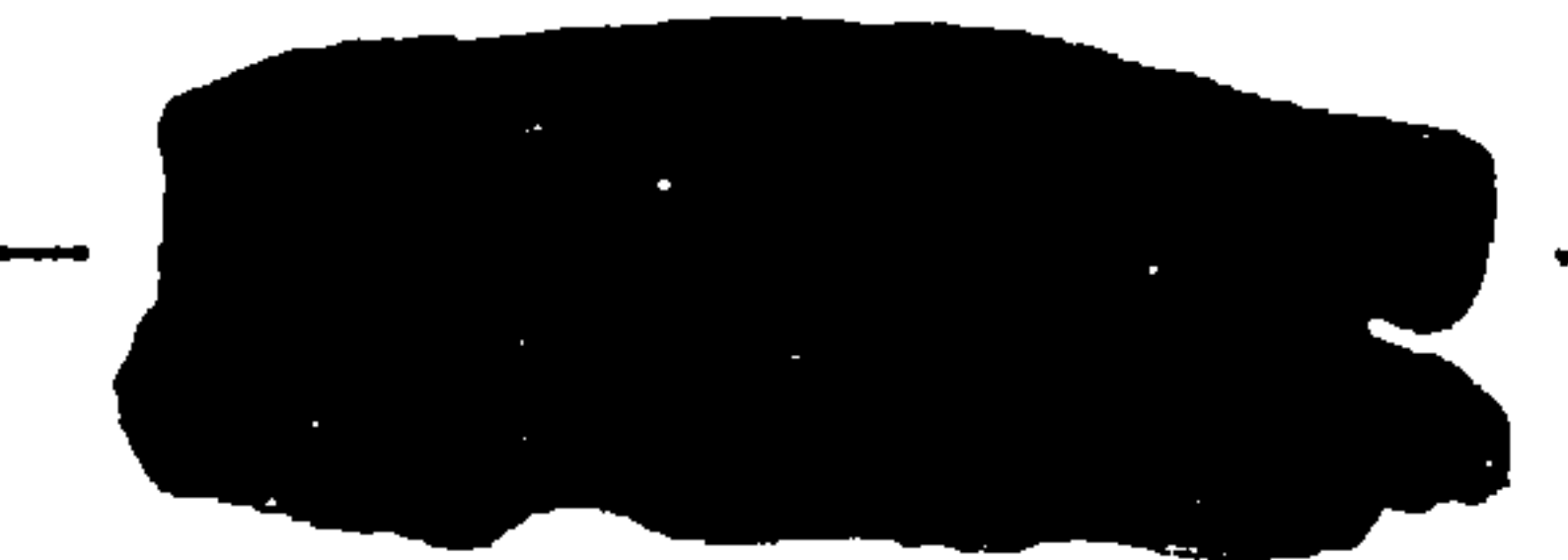
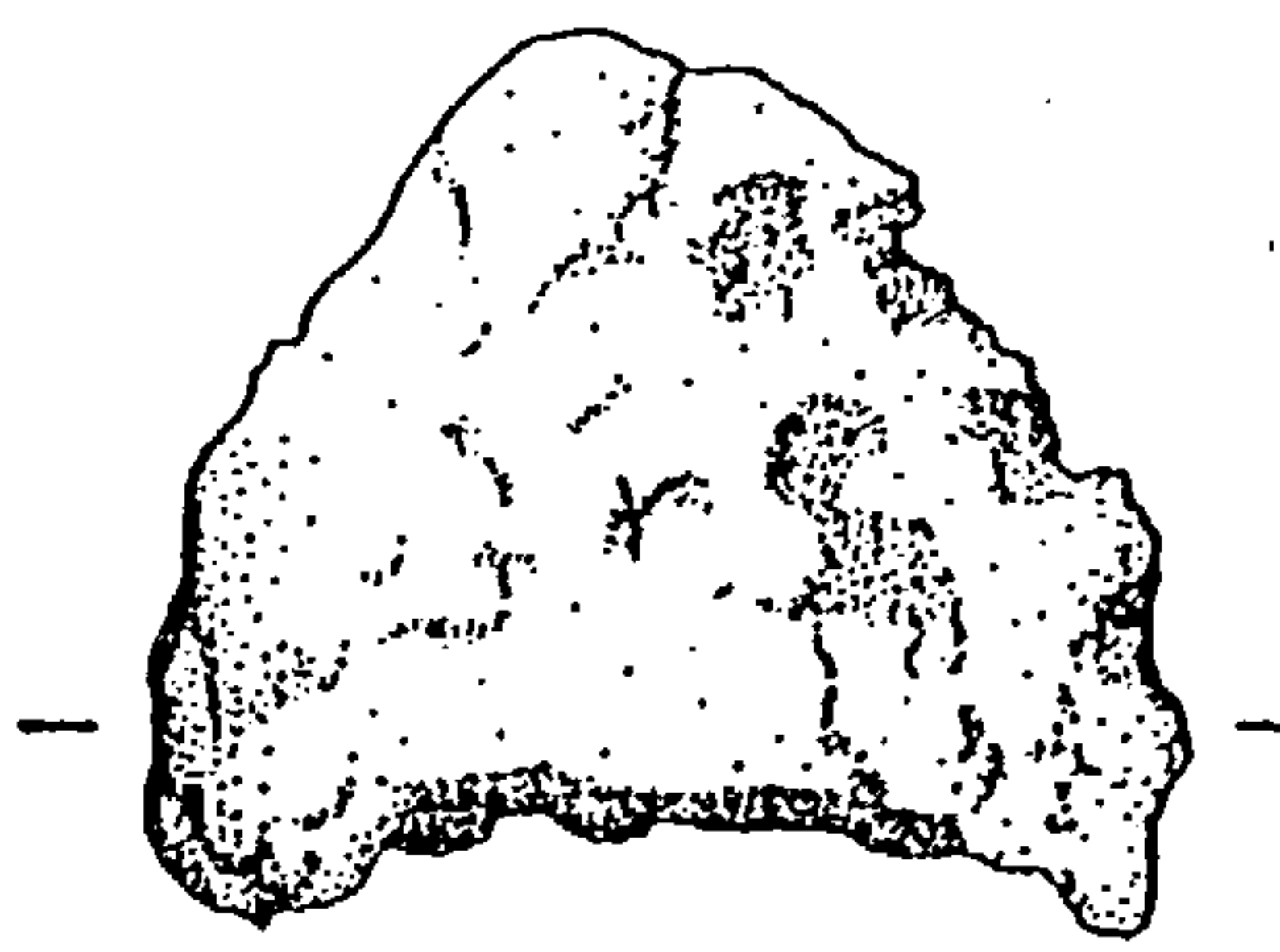
08/16



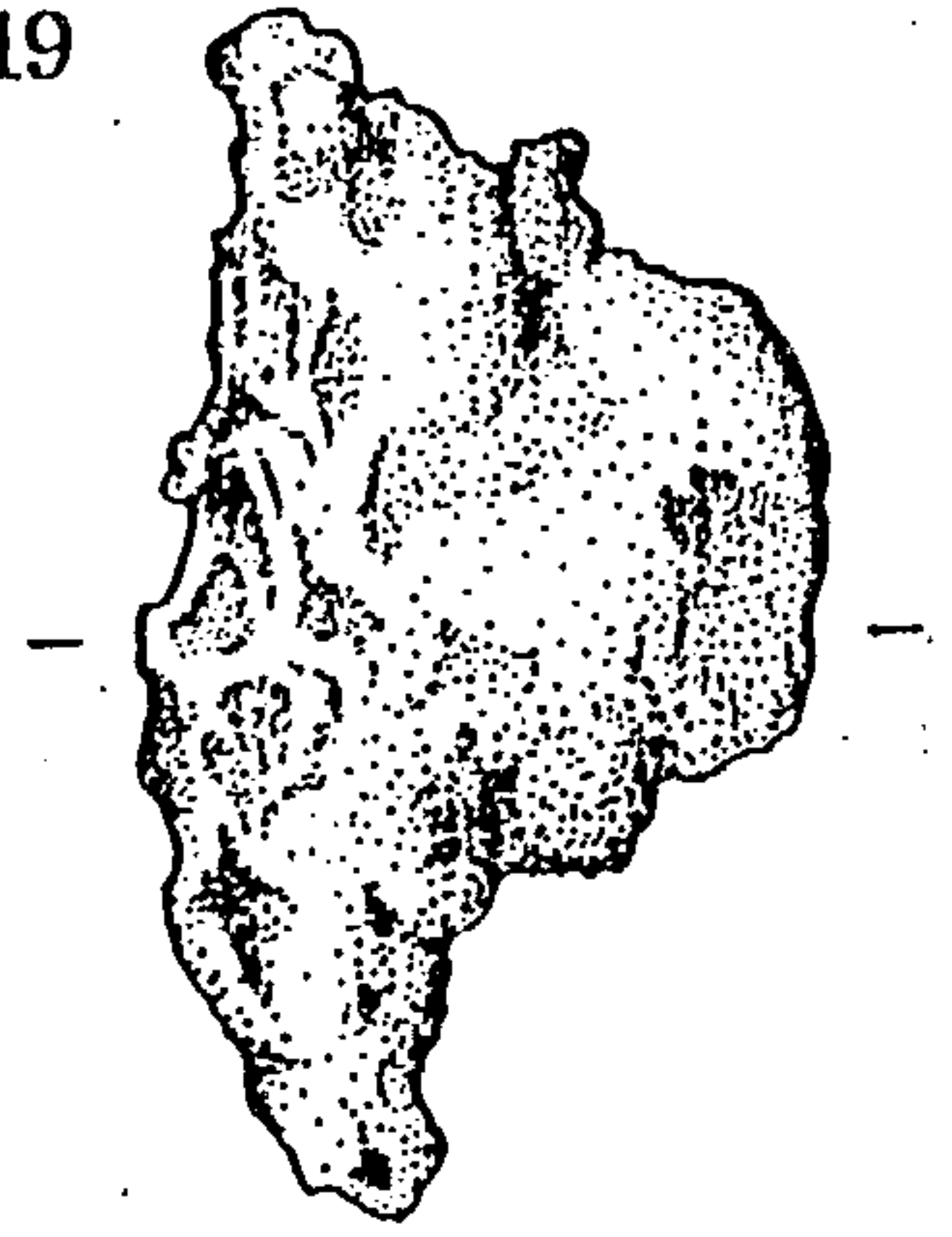
08/17



08/18



08/19



0 2cm

08/20

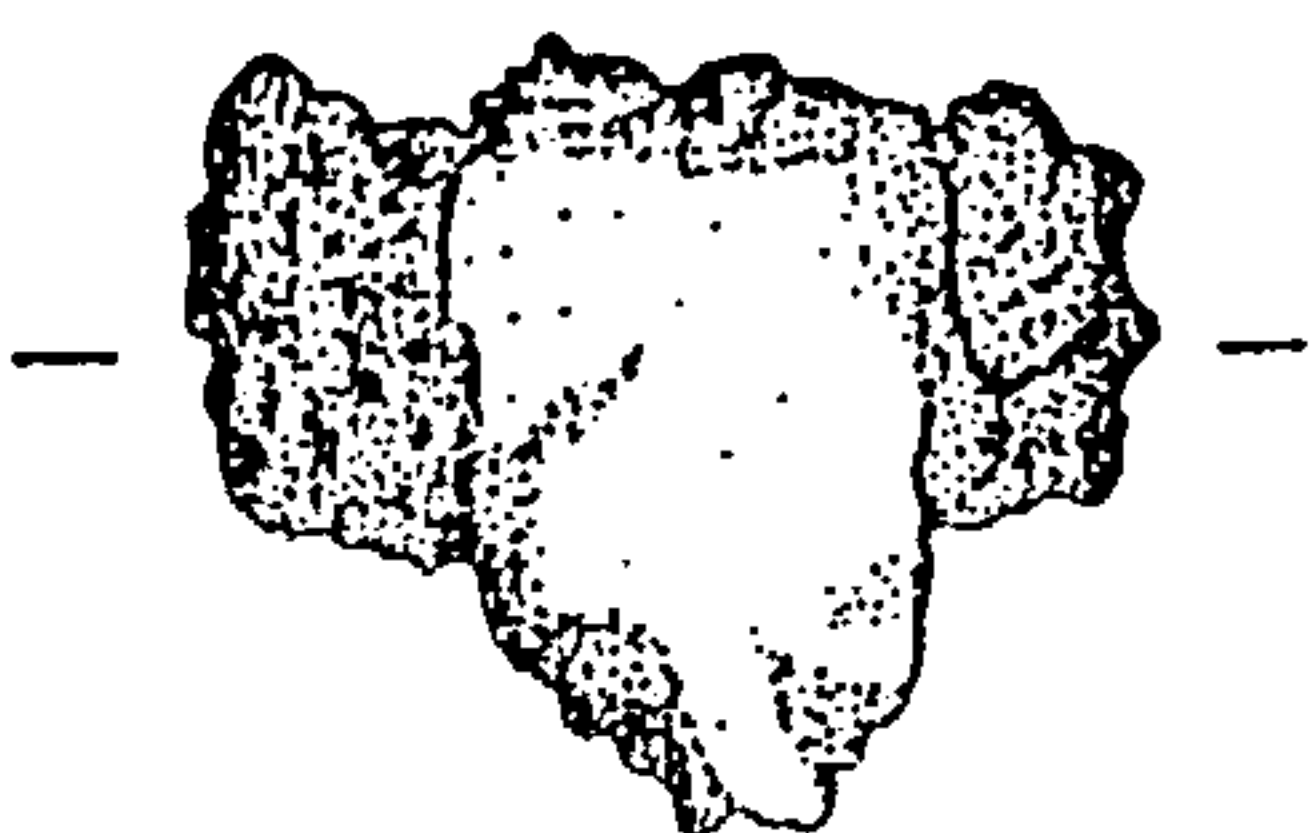
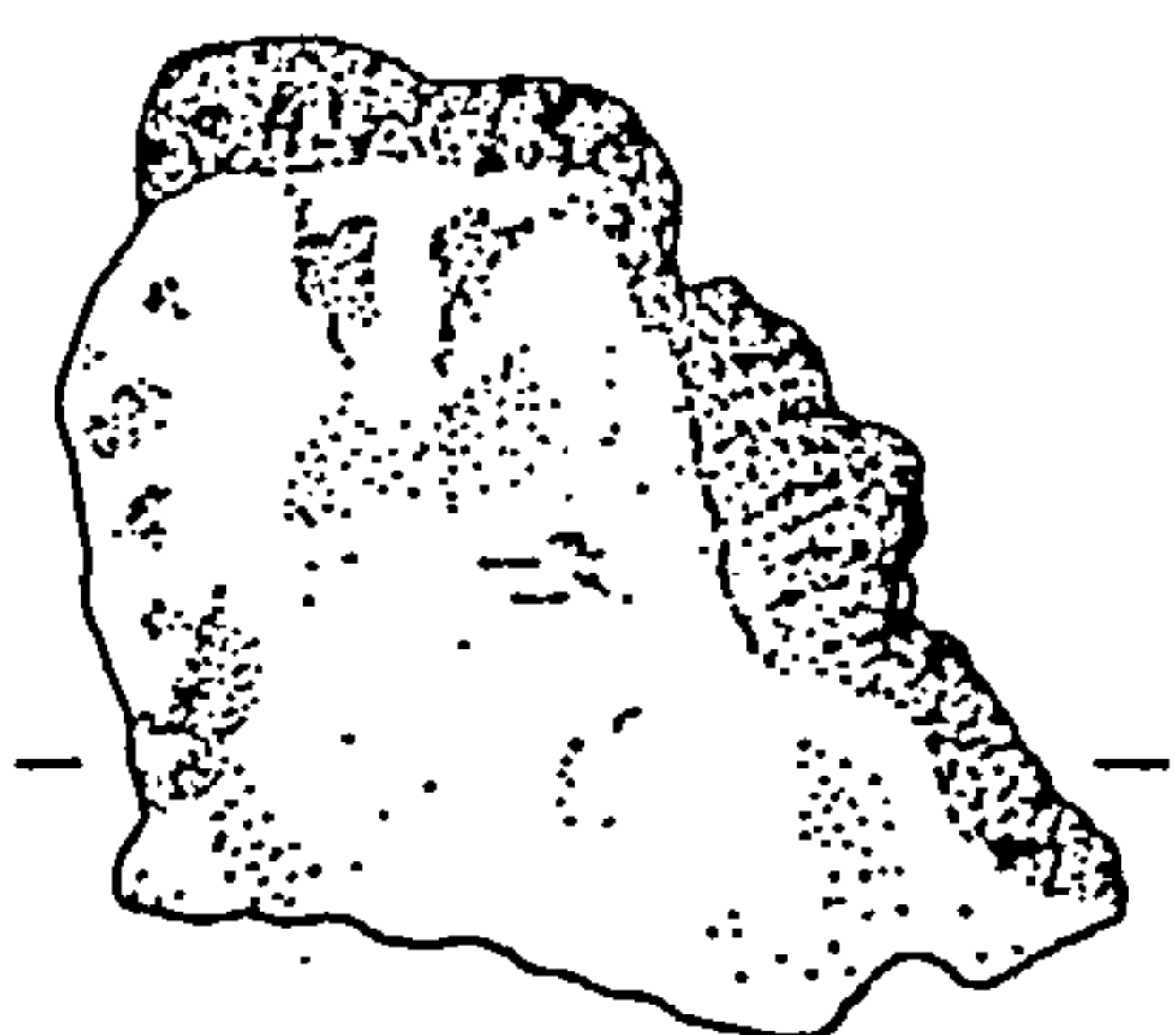
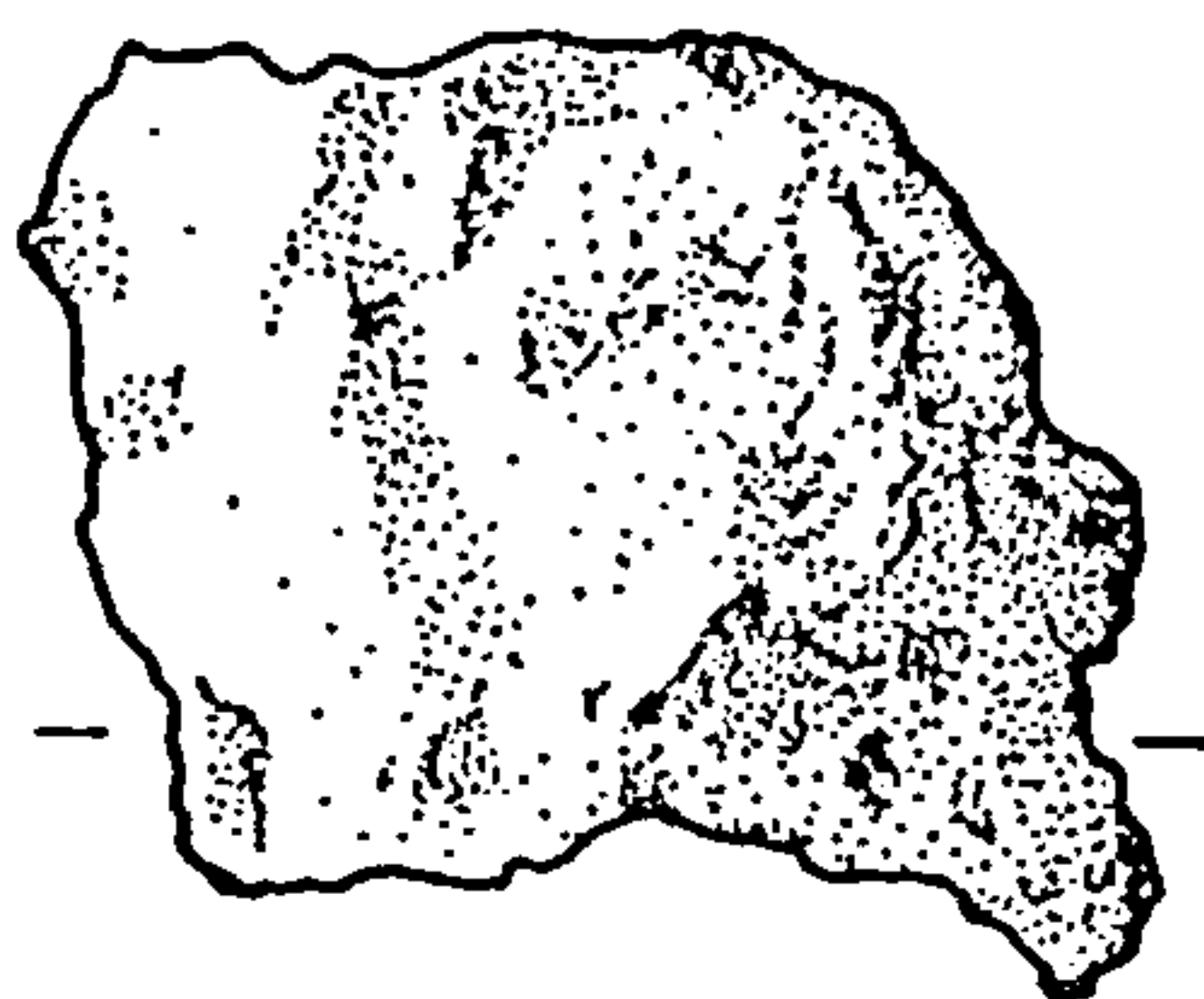


Fig. 76: The Shoebury III Hoard (Ref. No. 08): Ingot Metal (iii)

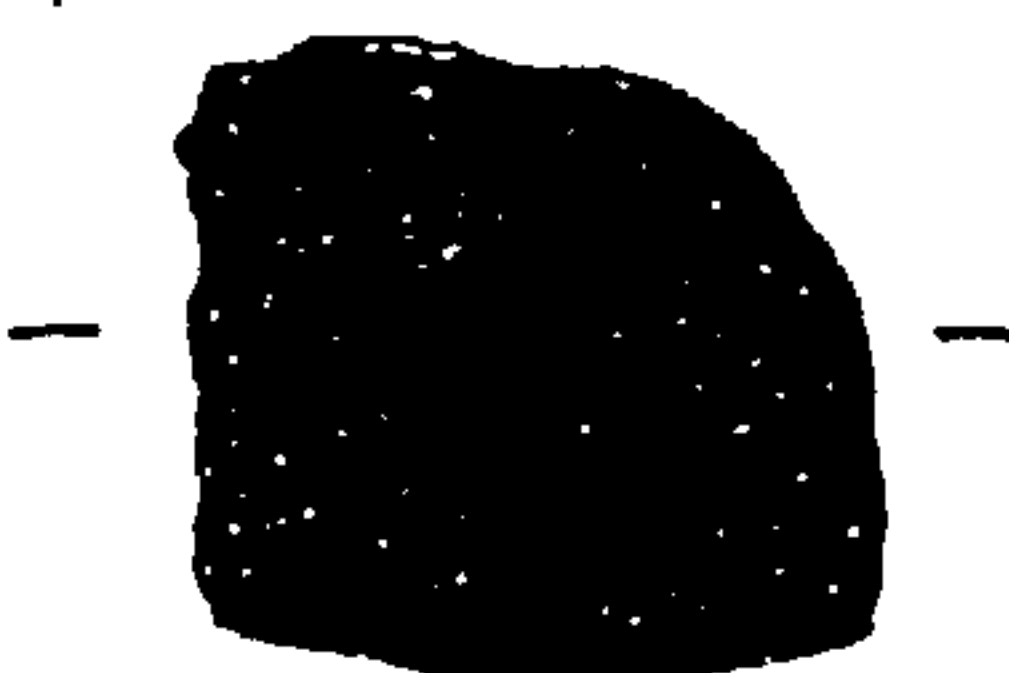
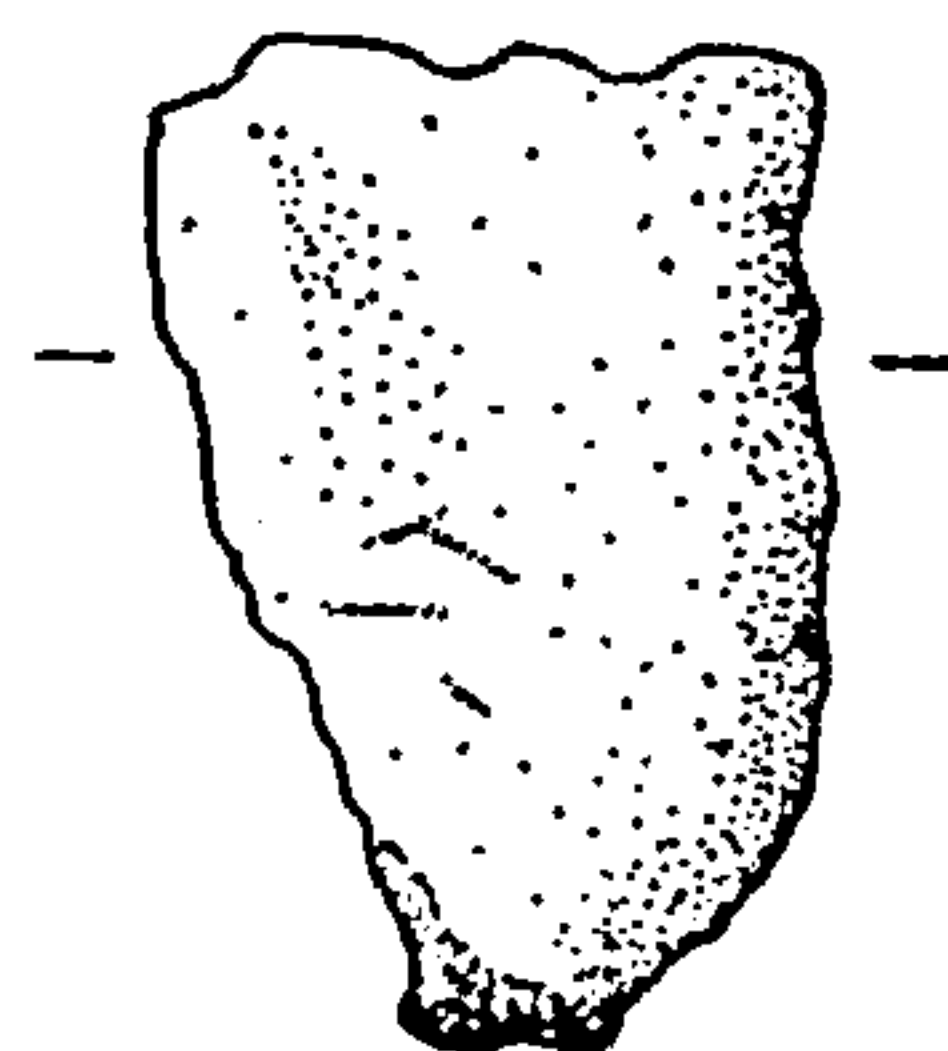
08/21



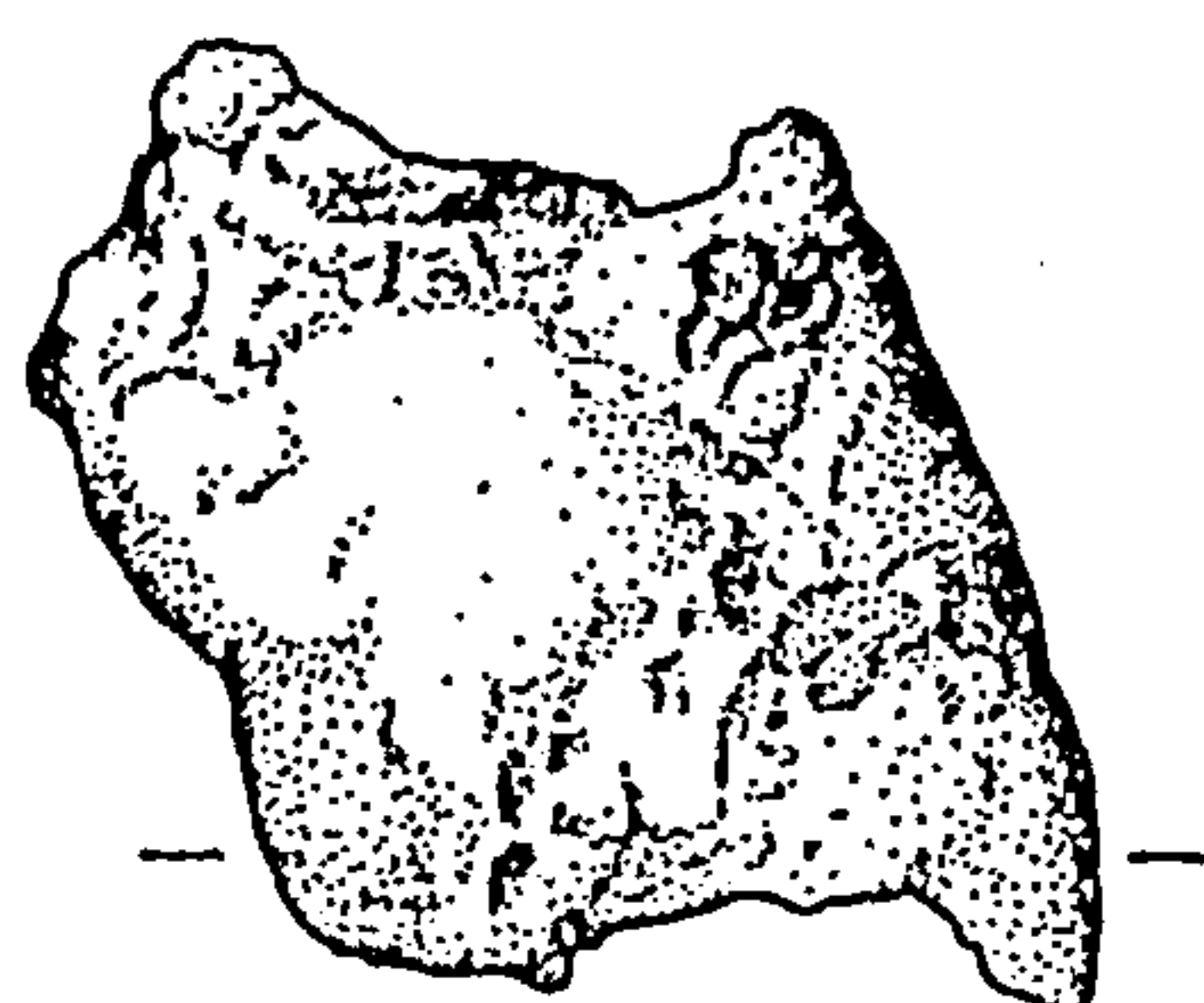
08/22



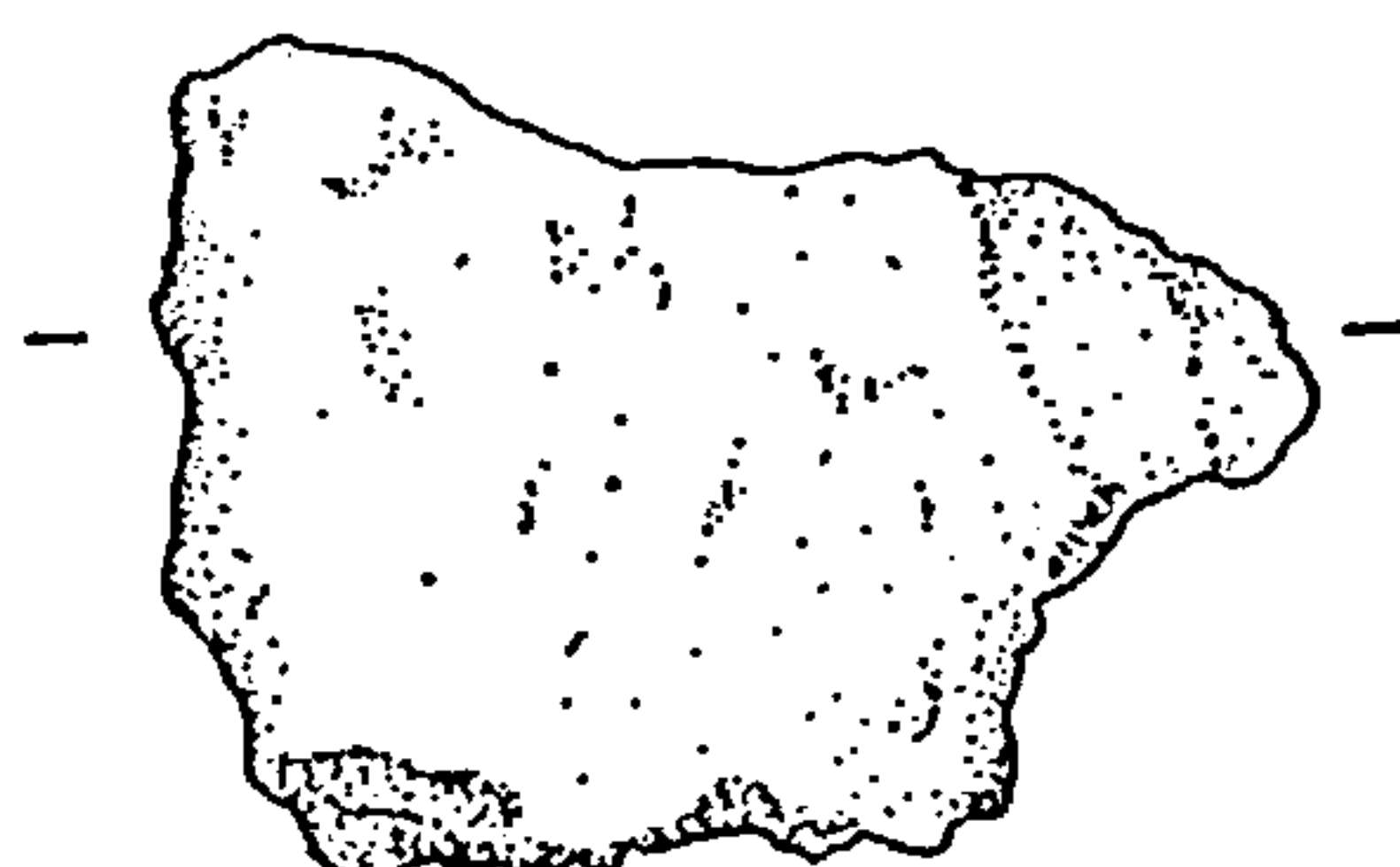
08/23



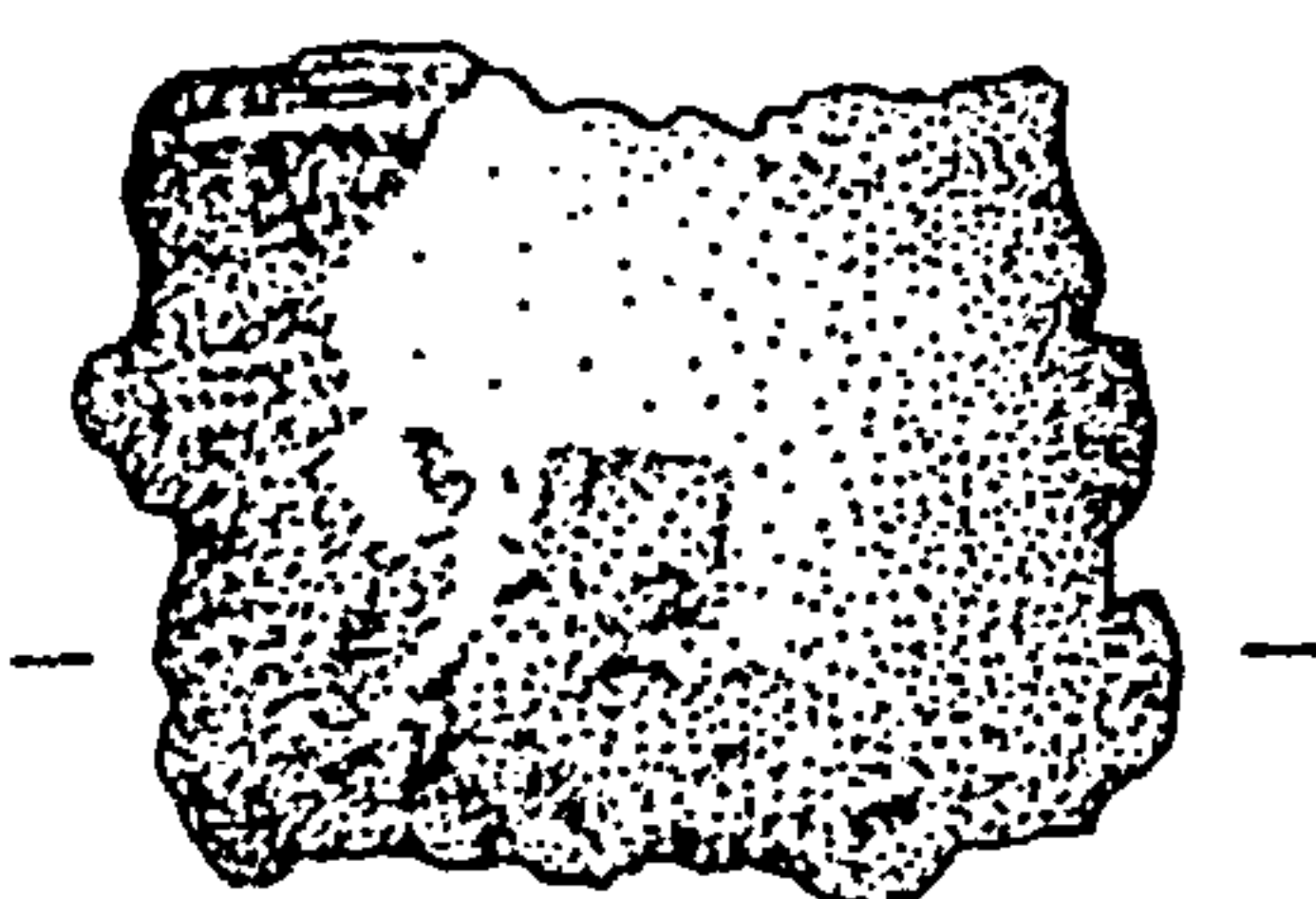
08/24



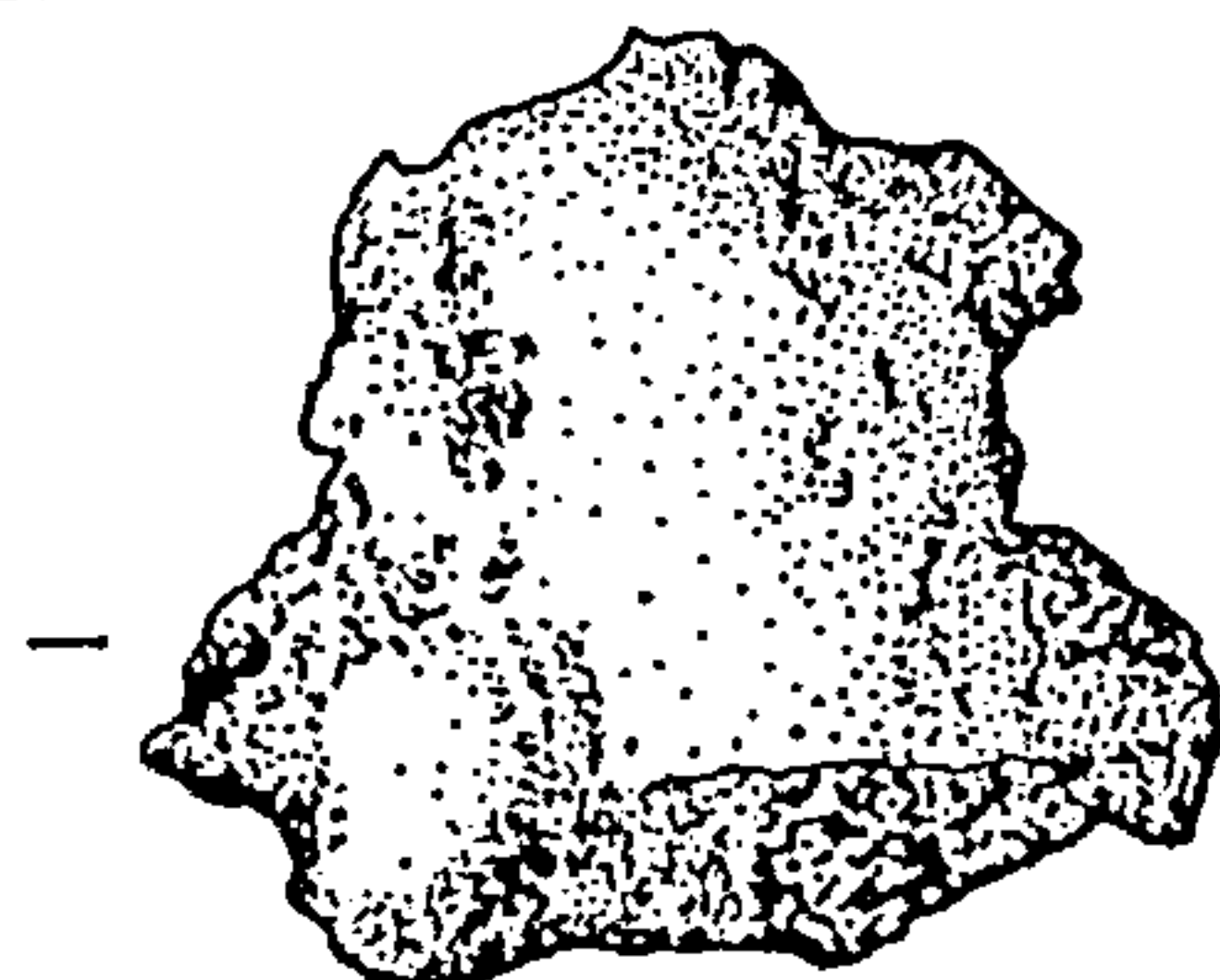
08/25



08/26



08/27



0 2cm

Fig. 77: The Shoebury III Hoard (Ref. No. 08): Ingot Metal (iv)

Southchurch I (Ref. No. 09)

Grid Reference: TQ 9047 8490

Current Location: Colchester and Essex Museum, Accession Number 180.96.

Context: The hoard was found within a pottery vessel c.0.75m below the surface of the ground. The findspot was located within a brickfield.

Bibliography: Butcher, 1921-3.
Davies, 1979.
National Bronze Index.

Contents:

09/01

Description: Incomplete socketed axe of faceted type, with much of the mouth and also the cutting edge now missing.

Dimensions: Length (maximum): 73mm. Weight: 158.6g.

Patina: Rough dark-green, details mostly gone.

Manufacture: The mouth, where it survives, appears well-finished. The uppermost seam has been obliterated over the body, and some coarse hammer indents which follow the original line of the seam were probably inflicted during its removal. The lower seam has been virtually obliterated below the loop, but remains prominent, though smooth, over the loop and the collar.

Use: It is possible that the cracking and breakage apparent around the mouth was use-related.

Reduction: The cutting edge is now absent. The break is straight and clean, suggesting deliberate removal rather than accumulated damage. A mouth fragment from a socketed axe and another piece of thick, flat metal (possibly a body fragment from a socketed axe) have been jammed into the mouth, along with some rough metal.

09/02

Description: Mouth and upper body from undecorated 'south-eastern' type socketed axe.

Dimensions: Length (maximum): 65mm. Weight: 123.4g.

Patina: Dense dark-green, details poor. One face is now a rough grey-green, and here the top layer of the corrosion product appears to have flaked away.

Manufacture: The piece appears ragged and poorly finished around the mouth, with stumps of the feeders and traces of the casting seam remaining. On the body, the uppermost casting seam has been trimmed and flattened, but it remains visible over its length, though it is less obvious towards the break. The lower seam is largely well-finished, but there is a marked lump on the loop which probably represents the remains of a chaplet. The seam has been largely obliterated over the loop.

Use: Impossible to determine.

Reduction: On one face (not illustrated) a faint depression can be identified above the break and the profile of the piece is slightly distorted here.

09/03

Description: Body fragment of socketed axe.

Dimensions: Length (maximum): 56mm. Weight: 94.3g.

Patina: Very rough, mid/light green, with much encrustation present. Details poor.

Manufacture: One wall is slightly thinner in section, indicating minor core misalignment. The casting seams cannot be identified, perhaps because corrosion buildup has obscured much detail.

Use: Impossible to determine.

Reduction: On the face, where the wall is thinner in section, hammering and distortion of the section can be seen in association with either break.

09/04

Description: Lower body and cutting edge of socketed axe.

Dimensions: Length (maximum): 61mm. Cutting edge: 45mm. Weight: 129.9g.

Patina: Rough dark-green, with some encrustation evident.

Manufacture: Slight mismatching of the mould valves is evident, for though the seams have been well-finished, a faint step in the section is evident on either side of the axehead. On one side, where the surface is more favourable for observation, there are traces of fine hammering over the original line of the casting seam, and these were probably inflicted during its removal. The cutting edge is well-expanded, and is virtually crescentic in appearance.

Use: The cutting edge is slightly uneven, and one corner is slightly chipped.

Reduction: Both faces have been hammered near the break, and the section appears distorted as a result.

09/05

Description: Blade fragment of socketed axe.

Dimensions: Length (maximum): 34mm. Cutting edge: 41mm. Weight: 75.2g.

Patina: Rough grey-green, details obscured.

Manufacture: The casting seams have been obliterated on both sides. The cutting edge does not seem well expanded, but a faint bevel along its length suggests it has been fully prepared for use.

Use: The blade is in good condition, though it appears blunt and it is chipped in places. Most of this damage appears to have taken place in antiquity, but some may have resulted through later flaking of the corrosion product. It is possible that the axehead saw little if any use.

Reduction: A slight indentation can be seen in association with the break on one face (illustrated).

09/06

Description: Cutting edge of socketed axe.

Dimensions: Length (maximum): 43mm. Cutting edge: 45mm. Weight: 88.6g.

Patina: Rough grey-green, no details visible.

Manufacture: On one side, no traces of the casting seam survive. On the other, the area of the seam has been obliterated by an adhering lump of rough metal. The cutting edge has been well-expanded.

Use: The cutting edge is blunt and chipped over its extent, and much of this damage appears to have occurred in antiquity.

Reduction: The rough metal in the central area does not appear to be an integral part of the piece, thus suggesting later insertion, i.e. the base of the socket has been in-filled with molten copper (c.f. Borstal, 16/14).

09/07

Description: A group of adhering fragments, comprising:-

1) Socketed axe body fragment, comprising the loop and part of one face. Maximum Length: 20mm. Some evidence of the casting seam remains over the loop, but it has been trimmed and flattened and virtually obliterated. There are possible traces of rough hammering around the lower break which may have been inflicted during fragmentation.

2) Fragment of flattened bronze, possibly of lenticular section. It could conceivably be a blade fragment from a sword or knife.

3) Fragment of thin sheet bronze, now folded over on itself. The section seems too thin and insubstantial for it to be the socket of a knife or a spearhead. It has been hammered and is now much distorted as a result of this process.

These pieces now adhere to one another with rough metal. Their surfaces are very rough and they survive in poor condition. The possibility that they were subject to intense heating in antiquity cannot be ruled out.

Combined Weight: 39.5g.

09/08

Description: Small mouth fragment of socketed axe including loop.

Dimensions: Length (maximum): 32mm. Weight: 21.8g.

Patina: Rough grey-green, details obscured.

Manufacture: The casting seam is no longer visible over the body, possibly because corrosion buildup has obscured much of the surface here. The mouth, however, is well-finished.

Use: Impossible to determine.

Reduction: There are some possible hammer indents associated with the break, but these must remain dubious on account of corrosion buildup. Some rough metal adheres to the surface.

09/09

Description: Mouth fragment of socketed axe, probably of 'south-eastern' type.

Dimensions: Length (maximum): 43mm. Weight: 27.1g.

Manufacture: The wall seems thin in section, indicating core misalignment. The mouth appears rough and uneven, suggesting that an inadequate amount of metal was used in casting the object. No trace of any casting seam survives around the mouth, but the seam remains visible over the surviving extent of the body. It has been trimmed and flattened along its length, and has been virtually obliterated over the loop.

Use: It is possible that this fragment results from use-related breakage, a possibility which is supported by the unusually thin section of the wall.

Reduction: There are no hammer indents associated with any of the breaks, and there is no distortion of either profile or section.

09/10

Description: Mouth fragment of socketed axe, probably of 'south-eastern' type.

Dimensions: Length (maximum): 40mm. Weight: 30.6g.

Patina: Rough grey-green, details obscured.

Manufacture: The wall appears thin, indicating core misalignment. The mouth is well-finished, with no traces of the casting seam surviving. Over the surviving portion of the body, a casting seam remains thick and prominent. Finishing appears to have been minimal here, though the seam has been flattened to some extent over the loop.

Use: This fragment may be the result of use-related breakage, a possibility supported by the unusually thin section of the wall.

Reduction: No hammer indents can be identified in association with any of the broken edges, and no distortion of either profile or section is apparent.

09/11

Description: Mouth fragment of socketed axe, with four collar mouldings present. The axehead was probably of 'south-eastern' type.

Dimensions: Length (maximum): 31mm. Weight: 26.9g.

Patina: Rough, grey-green, with details largely obscured.

Manufacture: The mouth is very well-finished and even in appearance. The casting seam remains prominent over the body, but has been trimmed and flattened.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

09/12

Description: Mouth fragment of socketed axe, probably of 'south-eastern' type.

Dimensions: Length (maximum): 29mm.

Manufacture: The mouth appears well-finished where it survives.

Use: Impossible to determine.

Reduction: The section is distorted as a result of hammering. This damage is likely to have been inflicted during fragmentation. A single pronounced hammer indent can be seen in the vicinity of the lower break.

09/13

Description: Mouth fragment of socketed axe, probably of 'south-eastern' type.

Dimensions: Length (maximum): 34mm. Weight: 21.9g.

Patina: Rough grey-green, details poor.

Manufacture: The mouth, where it survives, is well-finished. Over the surviving extent of the body, the casting seam remains as a thin line, which suggests that it was trimmed without any subsequent hammering.

Use: Impossible to determine.

Reduction: Some possible hammer indents can be identified in association with the lower break (not illustrated).

09/14

Description: Mouth fragment of socketed axe, probably of 'south-eastern' type.

Dimensions: Length (maximum): 34mm. Weight: 24.8g.

Manufacture: The mouth appears slightly uneven, but is generally well-finished. Over the surviving extent of the body, the casting seam remains sharp and prominent between the lower collar and the loop, but has been obliterated over the upper collar moulding and the loop.

Use: Impossible to determine.

Reduction: A piece of rough metal now blocks the loop. This may have been a deliberate insertion which took place at this stage in the object's life-cycle.

09/15

Description: Two socketed axe mouth fragments, now adhering to one another. Both are probably from 'south-eastern' type axes.

Dimensions: Length (maximum): i) 44mm: ii) 18mm. Combined Weight: 28.7g.

Patina: Rough grey-green, details obscured.

Manufacture: Neither fragment has any traces of its casting seams surviving.

Use: Impossible to determine.

Reduction: The pieces now adhere to one another following corrosion buildup around an intervening piece of rough metal. The larger fragment (i) is distorted towards the lower break, and some possible hammer indents can be identified here.

09/16

Description: Mouth fragment of socketed axe.

Dimensions: Length (maximum): 35mm. Weight: 11.1g.

Patina: Rough grey-green, though there are some dense patches. Some details remain visible.

Manufacture: The mouth is well-finished with no trace of the casting seam surviving, but it appears rather rough nonetheless. Horizontal grinding marks are evident in the hollow beneath the collar moulding, and vertical/diagonal grinding marks are visible over the body in places.

Use: Impossible to determine.

Reduction: Faint distortion is evident in the profile, associated with some possible hammer indents. A slight crack is evident in the uppermost surface, but this may be the result of recent damage.

09/17

Description: Mouth fragment of socketed axe.

Dimensions: Length (maximum): 19mm. Weight: 5.9g.

Patina: Rough grey-green. Details obscured.

Manufacture: The edge of the mouth appears well-finished, though it remains rather rough.

Use: Impossible to determine.

Reduction: No evidence relating to this process can be identified.

09/18

Description: Mouth fragment of socketed axe.

Dimensions: Length (maximum): 23mm. Weight: 10.3g.

Patina: Rough grey-green, details obscured.

Manufacture: The casting seam has been removed around the mouth, but no other evidence can be identified.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

09/19

Description: Mouth fragment of socketed axe, probably of 'south-eastern' type.

Dimensions: Length (maximum): 22mm. Weight: 16.6g.

Patina: Rough grey green, details obscured.

Manufacture: No trace of the casting seam survives around the mouth, but the finish appears rather rough here. No other evidence can be linked with this process.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

09/20

Description: Body fragment of socketed axe, with vestigial traces of an internal rib.

Dimensions: Length (maximum): 23mm. Weight: 15.3g.

Patina: Rough dark-green, details obscured.

Manufacture: No details can be seen as a result of corrosion buildup.

Use: Impossible to determine.

Reduction: There are some possible hammer indents near the break, but they must remain doubtful on account of the corrosion buildup.

09/21

Description: Body fragment of socketed axe.

Dimensions: Length (maximum): 28mm. Weight: 31.7g.

Patina: Rough grey-green, details obscured.

Manufacture: Vestigial traces of a casting seam run down the length of the piece, though it has been trimmed and flattened down well. The wall seems unusually thick, which suggests that the object was subject to core misalignment.

Use: Impossible to determine.

Reduction: Some possible hammer indents can be seen in association with the break, though these must remain dubious as a result of corrosion buildup.

09/22

Description: Body fragment of wing-decorated 'south-eastern' type socketed axe.

Dimensions: Length (maximum): 30mm. Weight: 18.9g.

Patina: Rough grey-green, details obscured.

Manufacture: There is no evidence relating to this process.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

09/23

Description: Body fragment of socketed axe.

Dimensions: Length (maximum): 36mm. Weight: 12.3g.

Patina: Rough green/brown, details obscured.

Manufacture: One wall is thinner in section, indicating core misalignment.

Use: Impossible to determine.

Reduction: Some possible hammer indents can be identified near one of the broken edges on the side of the object (not illustrated). Their validity is difficult to establish, however, due to the nature of the patina. A small piece of rough metal now adheres to what would once have been the interior of the axehead.

09/24

Description: Body fragment of socketed axe.

Dimensions: Length (maximum): 26mm.

Manufacture: The side wall seems unusually thick in section, indicating core misalignment.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

09/25

Description: Museum notes describe this as a piece of rough metal, but its surface is smooth, as if subject to work-hardening. This evidence of finishing, along with the wedge-shaped cross-section, makes it likely that this object is a blade fragment from a winged axe or palstave.

Dimensions: Length (maximum): 25mm . Weight: 24.5g.

Patina: Rough grey-green.

Manufacture: The piece is possibly unfinished. The cutting edge is blunt, with a possible casting seam surviving in places.

Use: The cutting edge appears badly chipped and broken over its extent. This argues against the possibility that the object was unused prior to deposition, though deliberate damage could be responsible for its poor condition.

Reduction: The apparent survival of the casting seam along the blade may be fortuitous, i.e. the result of hammering along the cutting edge. The presence of a possible hammer indent in association with the rough portion of the cutting edge supports this possibility. There is evidence of intensive hammering on either side of the fragment in the vicinity of the uppermost break.

09/26

Description: Incomplete tanged object, with only the tang surviving. The fragment probably came from a tanged chisel.

Dimensions: Length (maximum): 46mm. Weight: 29.3g.

Patina: Rough mid-green, details faintly visible.

Manufacture: No traces of any casting seams survive, which suggests that they have been obliterated over the surviving portion of the piece. Vertical grinding marks run down the sides of the tang.

Use: Impossible to determine.

Reduction: Slight distortion of the section is apparent at the lower break, and this could have occurred during fragmentation. However, no hammer indents can be seen in association with either break.

09/27

Description: Socketed gouge, with no collar mouldings present.

Dimensions: Length (maximum): 75mm. Weight: 91.4g.

Patina: Thick rather rough, dark green. Some details remain visible.

Manufacture: The casting seam has been trimmed and flattened on one side, but it remains visible over its extent. On the other side, it is less well-finished, appearing rougher and more prominent. The piece has been well-finished around the mouth, with no traces of feeders or casting seam surviving. Some vertical grinding marks run down the interior of the blade.

Use: The cutting edge has broken, and this may be use-related damage. The possibility of deliberate damage cannot be ruled out, however (see Reduction below).

Reduction: A possible hammer indent can be identified in association with the break, though this must unfortunately remain dubious as corrosion buildup has obscured much detail here. The piece has been infilled with metal, something which must have occurred after use. In this example, the presence of a solid section cannot be used to argue that the core was accidentally omitted during casting, as the casting and the infill remain quite distinctive in character.

09/28

Description: Butt fragment of sickle, hafted in the same manner as a palstave. Two rivet holes are present.

Dimensions: Length (maximum): 97mm. Weight: 61.7g.

Patina: Rough mid-green, details poor.

Manufacture: The casting seam is very much in evidence over the butt, and the area contained within the flanges shows evidence of fine hammer-working.

Use: The butt seems rather messy, with some isolated coarse striations running down one side (not illustrated). These appear to date from antiquity, though their cause is unknown.

Reduction: There is no evidence relating to this process.

09/29

Description: Hilt and upper blade fragment of 'Thorndon' type socketed knife, with one rivet hole surviving.

Dimensions: Length (maximum): 52mm. Weight: 27.2g.

Patina: Rough dark-green/light green, with much encrustation present.

Manufacture: The casting seams have been obliterated over the sides of the hilt and around the mouth.

Use: None of the blade edge survives. Its poor condition may be the result of use-related damage, though it is possible that it was removed deliberately.

Reduction: Part of the mouth has broken away, though whether this damage resulted from use or whether it was deliberately inflicted cannot be established. The blade and the hilt are covered with rough lumps of metal: these may be patches of rough metal which now adhere to the piece, though it is possible that they result from corrosion buildup, or even from partial melting of the object in antiquity.

09/30

Description: Hilt fragment of 'Thorndon' type socketed knife, with two rivet holes in the socket.

Dimensions: Length (maximum): 51mm. Weight: 17.7g.

Patina: Rough light green/brown. No details visible.

Manufacture: The casting seams appear to have been obliterated, though the mouth of the socket seems rough.

Use: None of the cutting edge survives, and this damage could be use-related.

Reduction: The loss of the cutting edge is so extensive that deliberate removal cannot be discounted. There are possible indications of hammering down the blade which might support this possibility, but these must remain doubtful on account of the corrosion buildup.

09/31

Description: Fragment of lenticular-sectioned blade with adjoining tang, probably representing part of a tanged knife. The outline of another fragment can be identified on one side (not illustrated), and documentary sources suggest that 09/50 originally adhered here (Davies, 1979).

Dimensions: Length (maximum): 34mm. Weight: 18.3g.

Patina: Rough green/brown, details obscured.

Manufacture: The edge of the tang appears rough, but no traces of any casting seams can be identified.

Use: The cutting edge appears unusually thin towards the top of the blade - this is associated with notching and folding of the metal, and may represent over-zealous sharpening and subsequent use-related damage.

Reduction: Hammer indents are apparent near the lower break on one side (not illustrated).

09/32

Description: Fragment of sword tang. Two incomplete rivet holes survive, one at either break, and there are traces of a third example which was never punched through.

Dimensions: Length (maximum): 29mm. Weight: 19.2g.

Patina: Rough grey-green, details obscured.

Manufacture: No traces of any casting seams can be identified.

Use: Pitting in the metal near the uppermost rivet hole may indicate a weakness in the casting which led to cracking or even breakage during use, but no conclusive evidence can be identified which supports this possibility.

Reduction: There is no evidence relating to this process.

09/33

Description: Blade fragment of 'Carp's Tongue' sword, the midrib defined by grooves.

Dimensions: Length (maximum): 19mm. Weight: 18.9g.

Patina: Rough olive/green. Details obscured.

Manufacture: There is no evidence relating to this process.

Use: The cutting edge appears blunt and chipped over its length, but any damage which originated in antiquity has undoubtedly been exaggerated by the buildup and subsequent flaking of corrosion products.

Reduction: On one side, the blade has been removed, the line of separation following the groove which divided blade and midrib. No hammering can be identified in association with any of the breaks, probably on account of corrosion buildup.

09/34

Description: Blade fragment of 'Carp's Tongue' sword, the midrib defined by grooves.

Dimensions: Length (maximum): 25mm. Weight: 28.7g.

Patina: Rough dark-green/brown. Details obscured.

Manufacture: There is no evidence relating to this process.

Use: The cutting edges are in good condition, with no indications of damage, the only exception being those areas immediately adjacent to the breaks. They seem blunt, but this seems likely to be the result of corrosion buildup.

Reduction: The blade edges undulate slightly, which might indicate deliberate distortion. No evidence of any hammering can be identified, though, either in conjunction with the distorted cutting edges or in association with the breaks. The absence of hammer indents could, however, be the result of corrosion buildup.

09/35

Description: Blade fragment of 'Carp's Tongue' sword, the midrib defined by grooves.

Dimensions: Length (maximum): 39mm. Weight: 31g.

Patina: Rough mid-green.

Manufacture: The grooved decoration which runs down the midrib appears poorly executed. No other details can be identified.

Use: Only one of the cutting edges survives. This is badly chipped and blunted along its length, though its poor condition may have resulted at least in part from recent flaking of corrosion products. The other edge is entirely absent.

Reduction: Deliberate breakage of the cutting edge seems likely along one side of the fragment. Here, there appear to be notches associated with those places where the cutting edge is now missing. There are no indications of hammering in association with either the upper or the lower break, but corrosion buildup has obscured much detail here.

09/36

Description: Probable blade fragment of Ewart Park type sword.

Dimensions: Length (maximum): 44mm. Weight: 30.9g.

Patina: Rough green, details obscured by large amounts of encrustation.

Manufacture: Some pitting is visible in the section at the upper break, seemingly dating to antiquity. This may indicate a poor quality casting. No other evidence can be identified.

Use: The potentially poor quality of the casting might suggest that the piece cracked or broke during use, though there is no unequivocal evidence which supports this possibility. Only one stretch of the original cutting edge remains intact, and this is sharp and in good condition, with no notches present.

Reduction: The absence of much of the cutting edge may indicate deliberate removal, as opposed to use-related damage.

09/37

Description: Blade fragment of Ewart Park type sword.

Dimensions: Length (maximum): 41mm. Weight: 44.8g.

Patina: Thick green, details largely obscured.

Manufacture: Possible vertical grinding marks run down the length of the cutting edge.

Use: The cutting edges survive in reasonably good condition. They are blunt over their extent, but corrosion buildup may have been largely responsible for this deterioration. One sharp notch is apparent on one side.

Reduction: There is a marked bend to the profile of the fragment, and clear evidence of deliberate fragmentation can be identified, with some chisel marks visible near the upper break, and some rough hammer indents occurring in association with the lower break.

09/38

Description: Blade fragment of Ewart Park type sword.

Dimensions: Length (maximum): 60mm. Weight: 68.1g.

Patina: Rough green/brown, details obscured.

Manufacture: There is no evidence relating to this process.

Use: The cutting edges survive in reasonable condition. On one side they remain good, though they are chipped in places, while on the other, they are more blunt in appearance.

Reduction: There is a faint bend apparent in the profile, but no hammer indents can be seen in association with either break.

09/39

Description: Blade fragment of Ewart Park type sword, now adhering to a fragment of ingot metal.

Dimensions: Combined length: 36mm. Combined Weight: 104.0g.

Patina: Very rough pale-green/brown, details obscured.

Manufacture: There is no evidence relating to this process.

Use: The cutting edges seem blunt over their extent but they remain in reasonable condition, with only one marked notch present.

Reduction: Some of the copper cake is notched in places, as if roughly hacked, perhaps during fragmentation. No evidence of deliberate fragmentation can be identified on the sword fragment.

09/40

Description: Fragment of lenticular-sectioned object, likely to be the much-abraded tip of a Ewart Park type sword.

Dimensions: Length (maximum): 34mm. Width: 28mm. Weight: 15.0g.

Patina: Rough mid-green, detail largely obscured.

Manufacture: There is no evidence relating to this process.

Use: Only one of the cutting edges survives, and this seems to be in relatively good condition. Though it is chipped in places, this damage appears to be the result of flaking corrosion products in recent times.

Reduction: There are possible hammer indents apparent in the vicinity of the upper break, but they must remain inconclusive on account of the poor condition of the surface here. A small tool mark, possibly inflicted by a chisel, is also clearly visible in association with this break. One of the cutting edges and also the tip are very badly damaged, and their poor condition may have been the result of deliberate mutilation.

09/41

Description: Fragmentary purse-chape, decorated with two parallel grooves.

Dimensions: Length: 65mm. Weight: 7.6g.

Patina: Mostly dense olive with some rougher patches in places. Details locally good.

Manufacture: The piece has been carefully finished, with horizontal grinding marks apparent over its exterior in places.

Use: The decoration is less clearly represented towards one end of the chape, which seems likely to be an indication of wear.

Reduction: There is a slight indentation apparent on one side (illustrated), and this may represent a hammer indent. However, this distortion is very subtle, and it is as likely to have been inflicted during manufacture as during the fragmentation process. The other side of the chape is now missing. The object has been crushed, and evidence of rough hammering can be identified in association with the break. Some rough metal now lies within the base of the object.

09/42

Description: Blade tip from socketed spearhead.

Dimensions: Length (maximum): 45mm. Weight: 13.6g.

Patina: Thick, dark green/olive, details obscured.

Manufacture: Some of the clay core appears to remain within the the midrib.

Use: The cutting edge survives along one side only. Here it remains sharp in places, though it is badly chipped and notched over its extent.

Reduction: A faint hammer indent is visible in association with the break on one side (not illustrated), and the profile of the piece is slightly distorted.

09/43

Description: Blade tip from socketed spearhead.

Dimensions: Length (maximum): 32mm. Weight: 10.2g.

Patina: Rough dark-green/olive, details obscured.

Manufacture: Faint bevels can be identified on the cutting edges where they survive.

Use: On one side, the cutting edge remains intact and reasonably sharp, while on the other it appears more blunt.

Reduction: The profile of the piece is distorted, though no hammer indents can be identified in association with the break.

09/44

Description: Blade fragment of socketed spearhead.

Dimensions: Length (maximum): 54mm. Weight: 30.9g.

Patina: Rough olive-green, details obscured.

Manufacture: There is no evidence relating to this process.

Use: Impossible to determine, as the blade is now in very poor condition.

Reduction: Crushing of the midrib is apparent at the lower break, and there are less pronounced indentations evident near the upper break on one side (illustrated). The metal has broken here, probably as a result of hammering, though flaking of the corrosion product may have exaggerated any such damage. The exceptionally poor condition of the cutting edges might indicate deliberate mutilation which took place at this stage of the object's life-cycle.

09/45

Description: Small fragment of socketed spearhead, comprising part of the midrib and an adjoining portion of blade.

Dimensions: Length (maximum): 43mm. Weight: 16.4g.

Patina: Rough dark-green, much encrustation present.

Manufacture: No evidence relating to this process can be identified.

Use: Only a small portion of the cutting edge survives, and this is notched and blunted over its extent.

Reduction: The poor condition of the cutting edge may indicate deliberate removal at this stage in the object's life-cycle. A slight indentation in the midrib is evidence of the hammering which caused longitudinal division of the fragment. A small piece of rough metal adheres to the interior of the midrib.

09/46

Description: Socket from socketed spearhead, with two rivet holes surviving.

Dimensions: Length (maximum): 55mm. Weight: 31.5g.

Patina: Rough dark-green/olive. Details obscured.

Manufacture: No traces of any casting seams remain. The metal seems rather rough around one of the rivet holes, which might indicate that the piece was poorly finished here.

Use: Impossible to determine.

Reduction: The piece has been crushed and flattened along its length, and the surface of the fragment undulates as a result of intensive hammering. The metal has cracked in places at the mouth of the socket and at the break. The interior now appears to be blocked, probably through corrosion buildup.

09/47

Description: Fragment of spearhead socket, with a crudely-executed incised decoration apparent. This consists of three groups of five concentric parallel lines which run around the circumference of the socket.

Dimensions: Length (maximum): 25mm. Weight: 17.3g.

Patina: Rough dark-green/brown, details poor.

Manufacture: No traces of any casting seams survive.

Use: Impossible to determine.

Reduction: The piece has been crushed and flattened along its length.

09/48

Description: Fragment of a tubular object with a slightly waisted appearance and a closed-off end. The piece seems most likely to be the terminal of a bugle-shaped object.

Dimensions: Length (maximum): 42mm. Weight: 11.3g.

Patina: Rough grey-green, details locally reasonable.

Manufacture: No traces of any casting seams survive. Horizontal and vertical grinding marks can be identified in places.

Use: Impossible to determine.

Reduction: Two notches can be identified on one side of the fragment, and these seem likely to have been caused by a chisel. Opposite these an indentation can be seen in association with the break, and this may represent a hammer indent inflicted during fragmentation of the object.

09/49

Description: Tubular bronze object, slightly flaring towards the mouth. As Davies suggests (Davies, 1979), this may be a fragmentary bugle-shaped object. However, it could also conceivably be a fragmentary socketed gouge. A slight indentation at the break supports this latter possibility, as it may represent the beginning of the 'V' shaped indent which is so characteristic of the socketed gouge. It is possible, though, that this feature is a fortuitous result of damage inflicted during scrapping.

Dimensions: Length (maximum): 32mm. Weight: 24.6g.

Patina: Rough pale-green, details poor.

Manufacture: The section shows uneven thickness at the lower break, indicating core misalignment. Some faint traces of the casting seam are evident on one side of the tube. Its survival here also argues against the bugle hypothesis, as bugle-shaped objects are consistently well-finished.

Use: Impossible to determine.

Reduction: The 'V' shaped indentation may be a hammer indent inflicted during fragmentation, though its unusually regular appearance argues against this possibility.

09/50

Description: Fragment of bronze, which originally adhered to 09/29 (see Davies, 1979). It is slightly curved in section, and its original function cannot be determined.

Dimensions: Length (maximum): 41mm. Weight: 13.8g.

Patina: Dense, rather thick green, details obscured.

Manufacture: The piece has been subject to fine hammering across its extent.

Use: Impossible to determine.

Reduction: Some of the hammer indents appear to have been more roughly executed, causing slight distortion of the surface. This damage is more likely to be associated with fragmentation than manufacture.

09/51

Description: Casting jet, comprising two feeders and an intervening reservoir.

Dimensions: Length: 32mm. Weight: 62.8g.

09/52

Description: Piece from edge of copper ingot.

Dimensions: Length: 55mm. Width: 30mm. Thickness: 15mm.

Observations: Some possible trunnion chisel or hammer marks can be identified in places.

09/53

Description: Fragment from interior of copper ingot.

Dimensions: Length: 23mm. Width: 17mm. Thickness: 20mm.

09/54

Description: Fragment from edge of copper ingot.

Dimensions: Length: 39mm. Width: 19mm. Thickness: 10mm. Weight: 212.0g.

09/55

Description: Fragment from interior of copper ingot, with voids apparent in the metal.

Dimensions: Length: 40mm. Width: 27mm. Thickness: 15mm. Weight: 74.1g.

09/56

Description: Piece from interior of copper ingot.

Dimensions: Length: 39mm. Width: 30mm. Thickness: 17mm. Weight: 79.0g.

Observations: There are some possible hammer indents along one edge.

09/57

Description: Fragment from edge of copper ingot.

Dimensions: Length: 32mm. Width: 28mm. Thickness: 19mm. Weight: 69.0g.

09/58

Description: Fragment of copper ingot.

Dimensions: Length: 25mm. Width: 25mm. Thickness: 13mm. Weight: 37.3g.

09/59

Description: Small piece of copper ingot, with voids apparent in the interior.

Dimensions: Length: 34mm. Width: 34mm. Thickness: 14mm. Weight: 72.9g.

09/60

Description: Fragment of copper ingot, with voids apparent in the interior.

Dimensions: Length: 25mm. Width: 36mm. Thickness: 13mm. Weight: 53.3g.

09/61

Description: Fragment of copper ingot, with voids apparent in the interior.

Dimensions: Length: 34mm. Width: 32mm. Thickness: 16mm. Weight: 64.8g.

Observations: Both surfaces - though especially the upper one - have been subject to intensive hammering. Individual hammer marks are evident, as are some potential punch marks. The surfaces appear shiny, and the metal which surrounds the largest of the interior voids has been pushed downwards. It is likely that this damage took place during fragmentation.

09/62

Description: Fragment from interior of copper ingot.

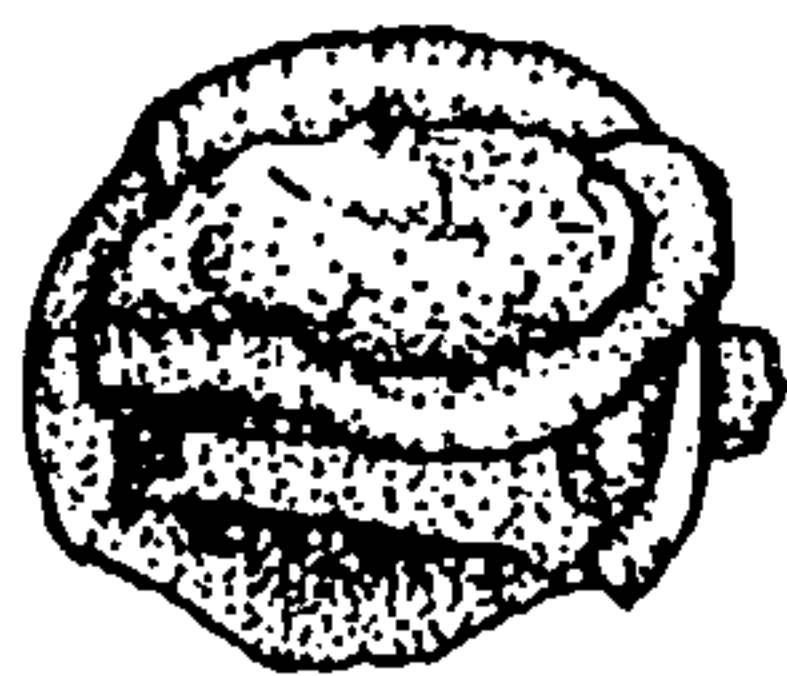
Dimensions: Length: 28mm. Width: 26mm. Thickness: 13mm. Weight: 46.7g.

09/63

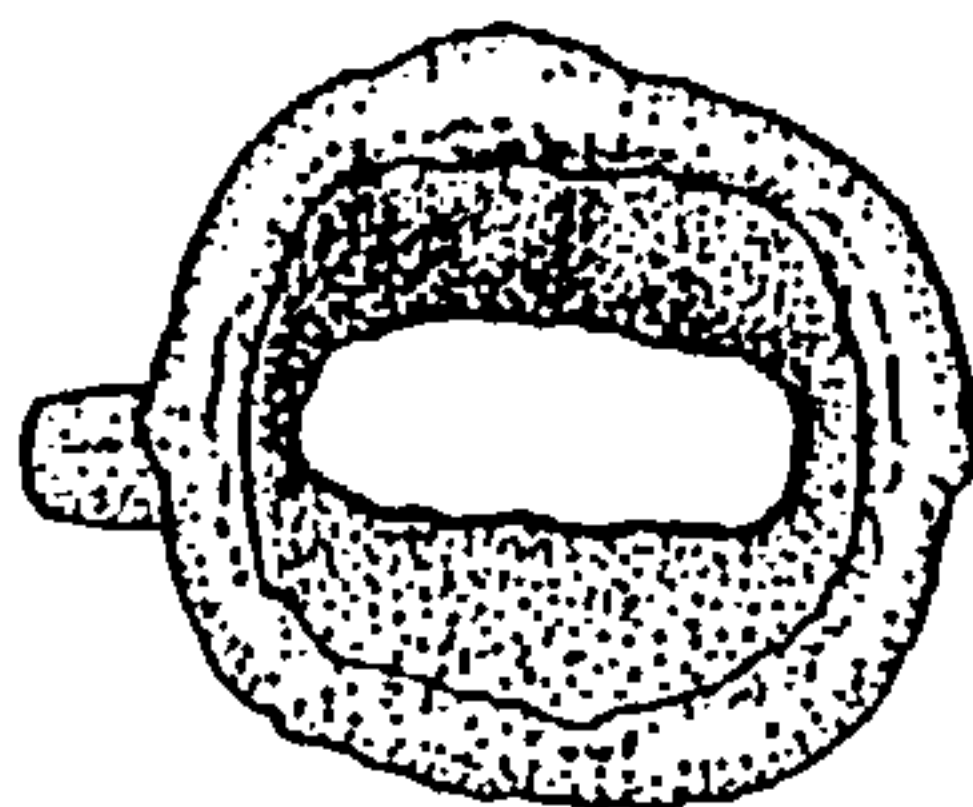
Description: Small fragment of copper cake.

Dimensions: Length: 20mm. Width: 11mm. Thickness: 24mm. Weight: 28.0g.

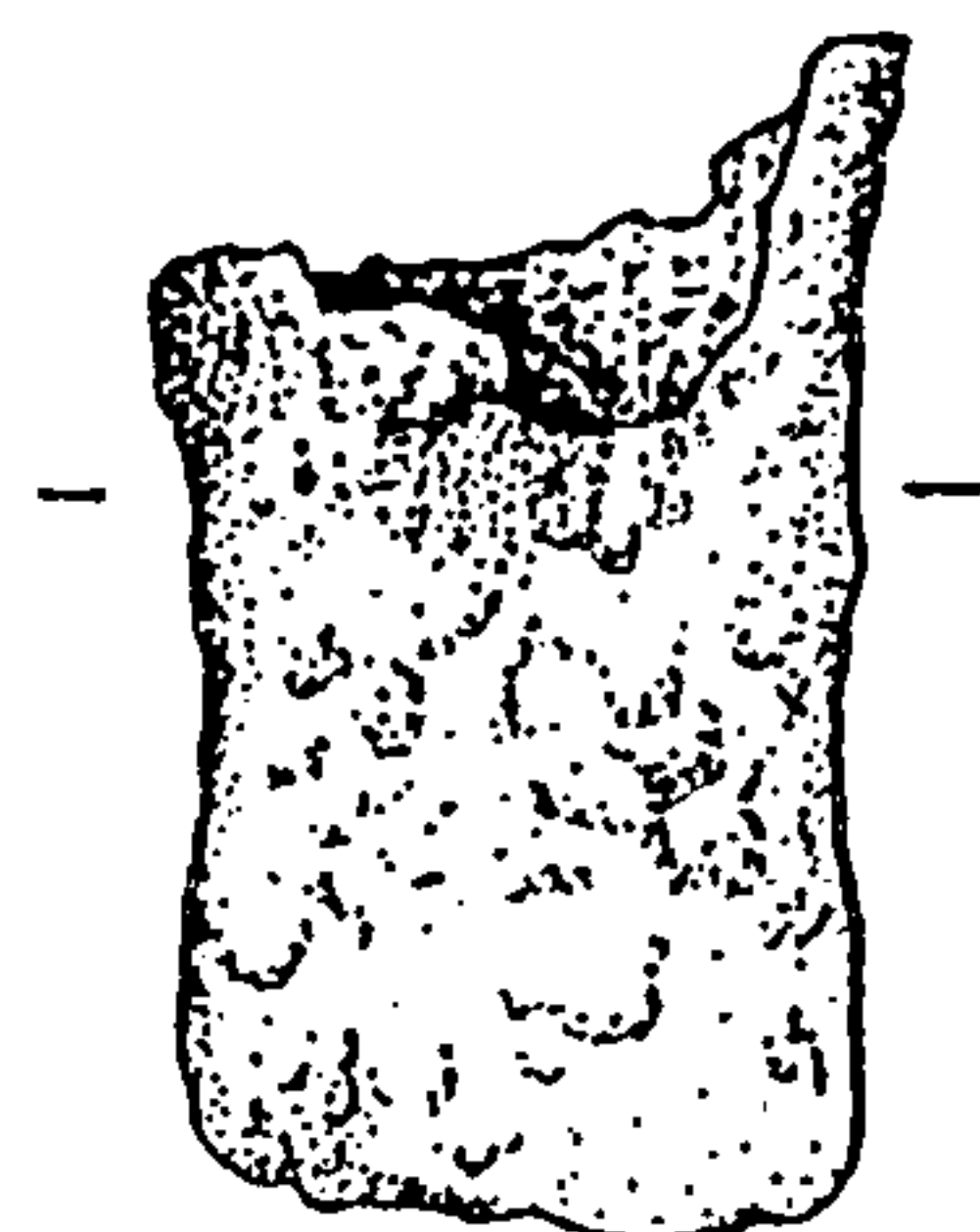
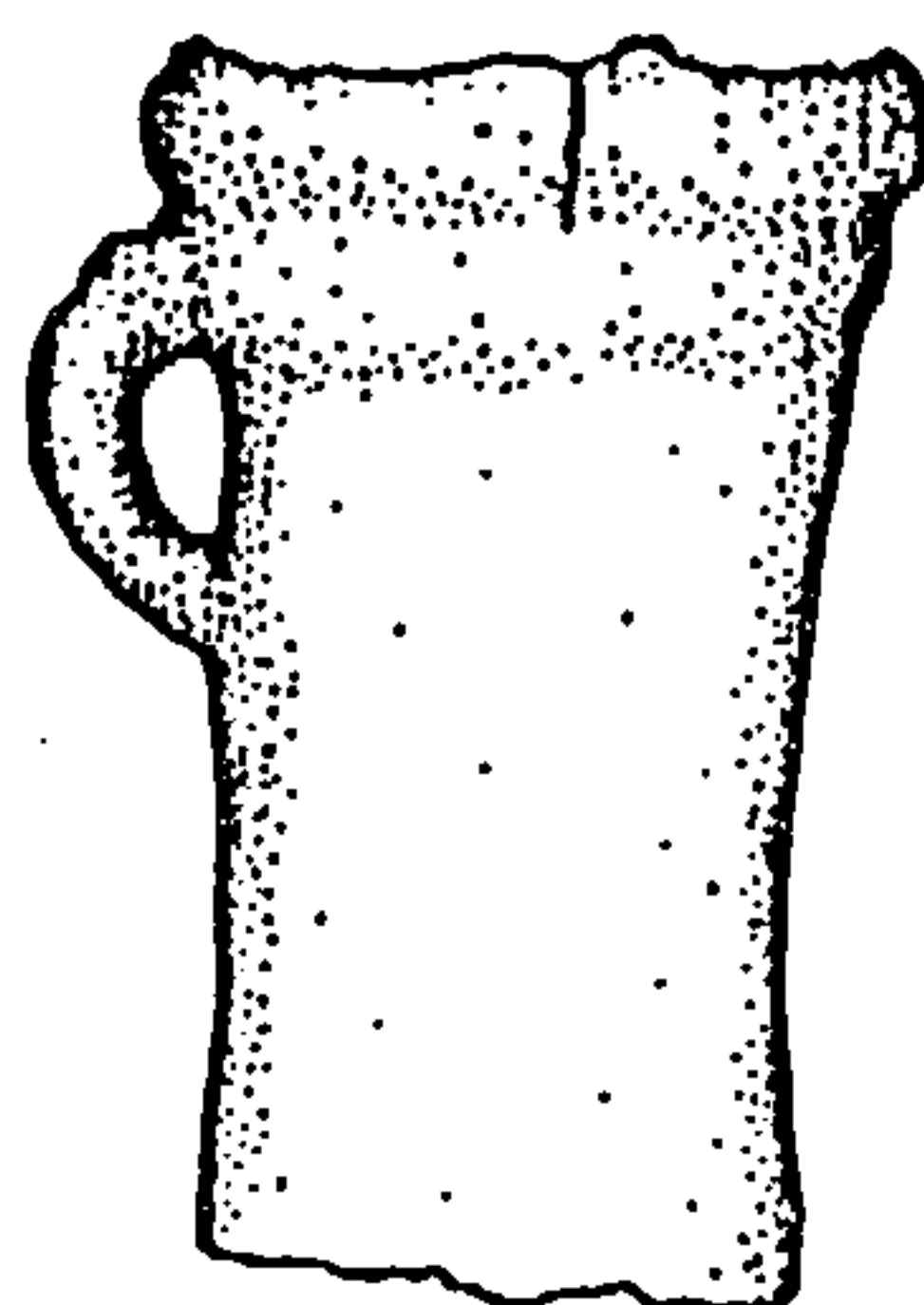
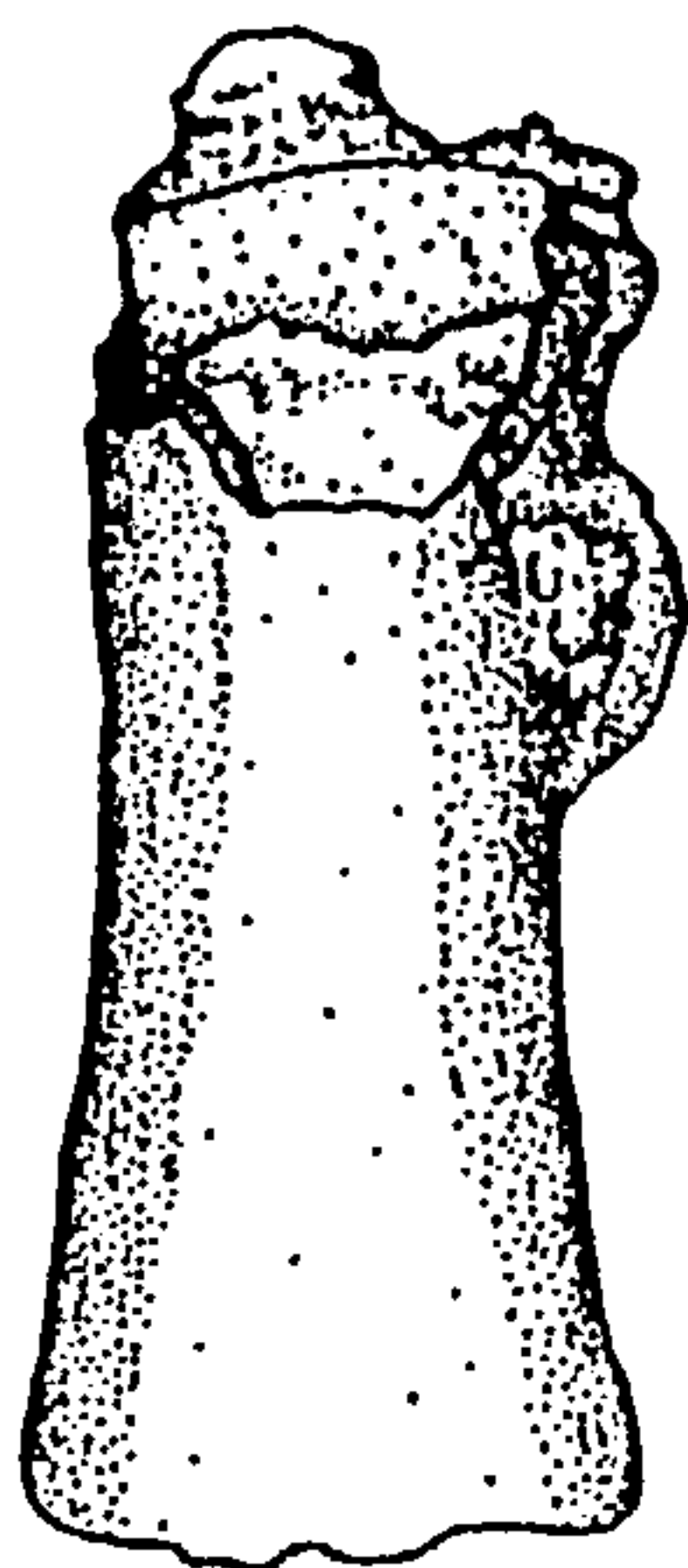
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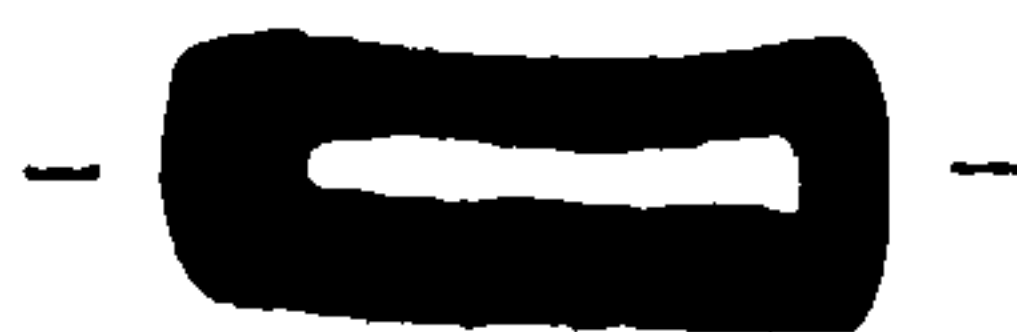


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09/05



09/06

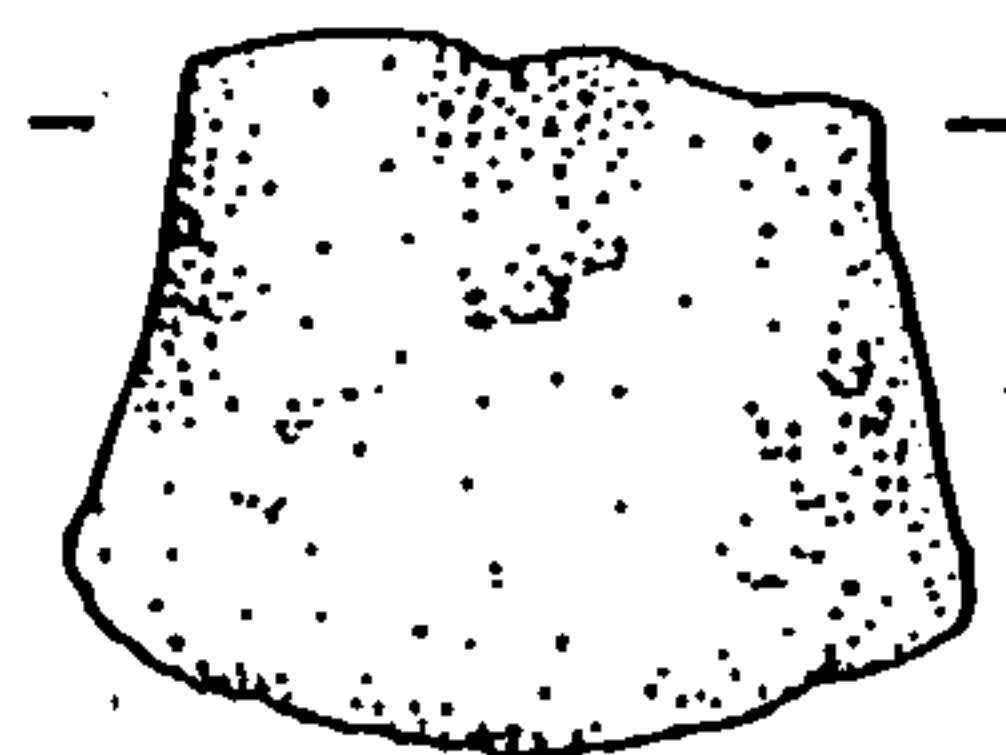
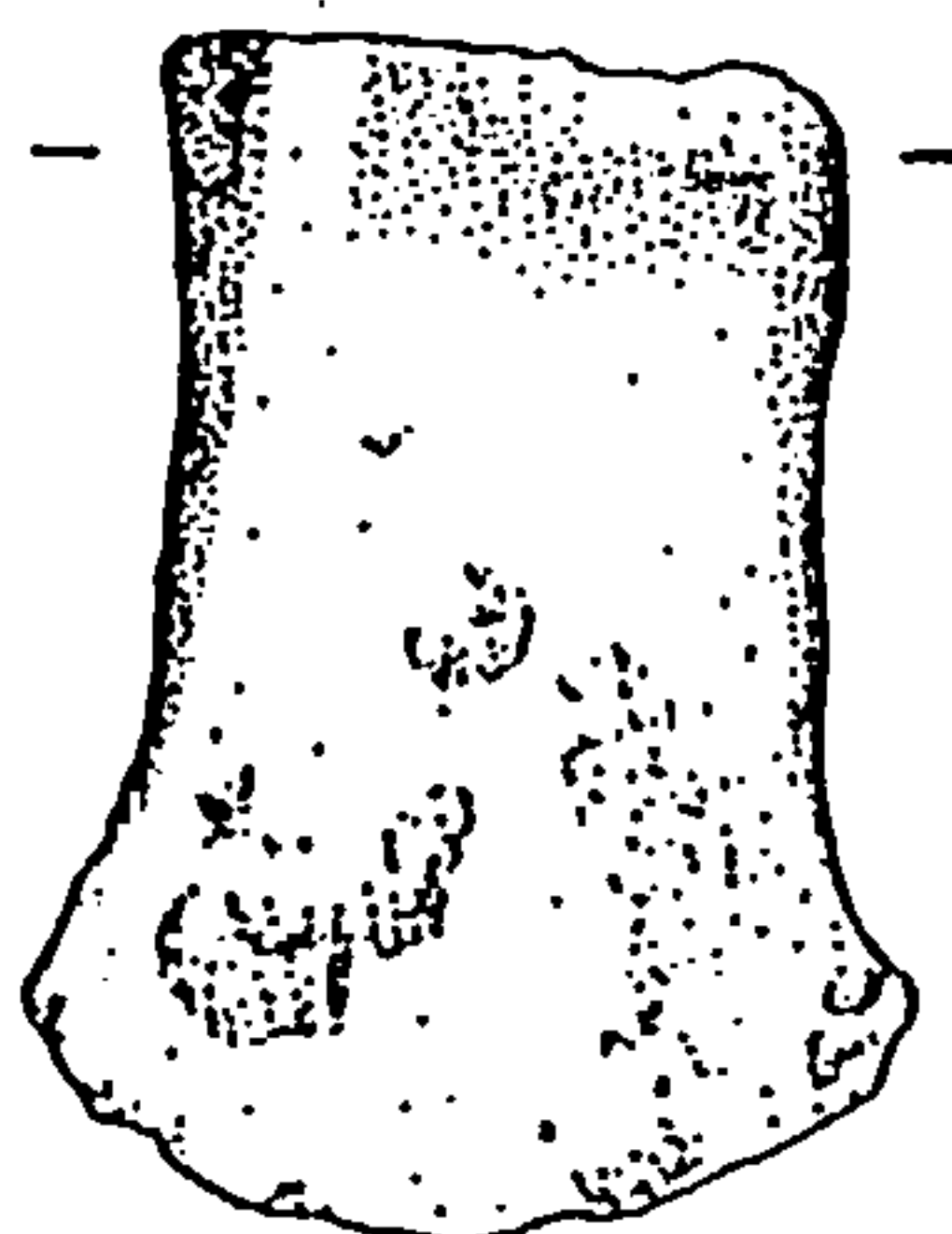


Fig. 78: The Southchurch Hoard (Ref. No. 09): Socketed Axe Fragments (i)

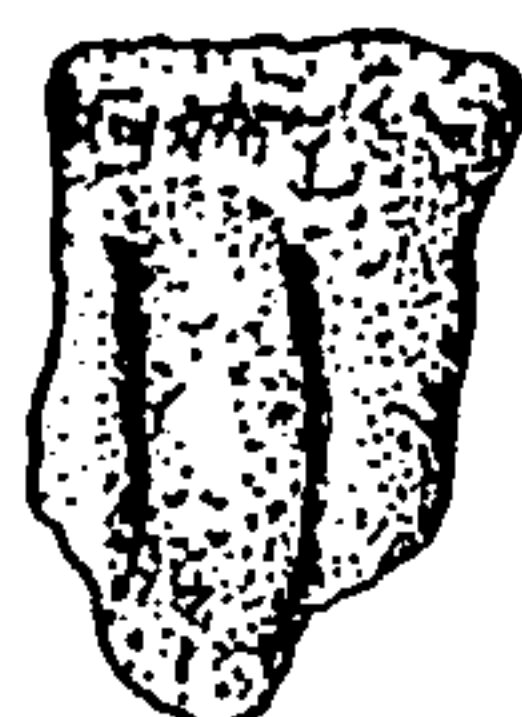
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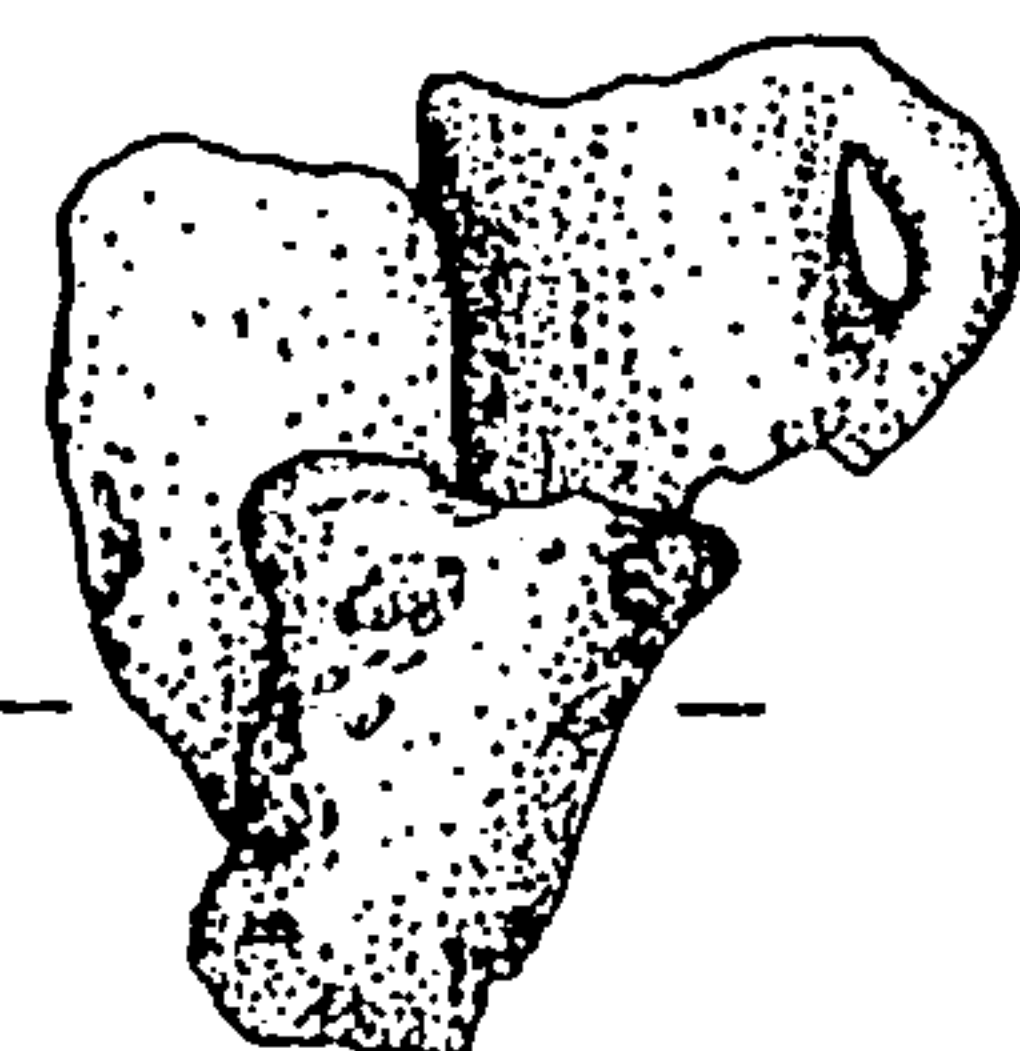
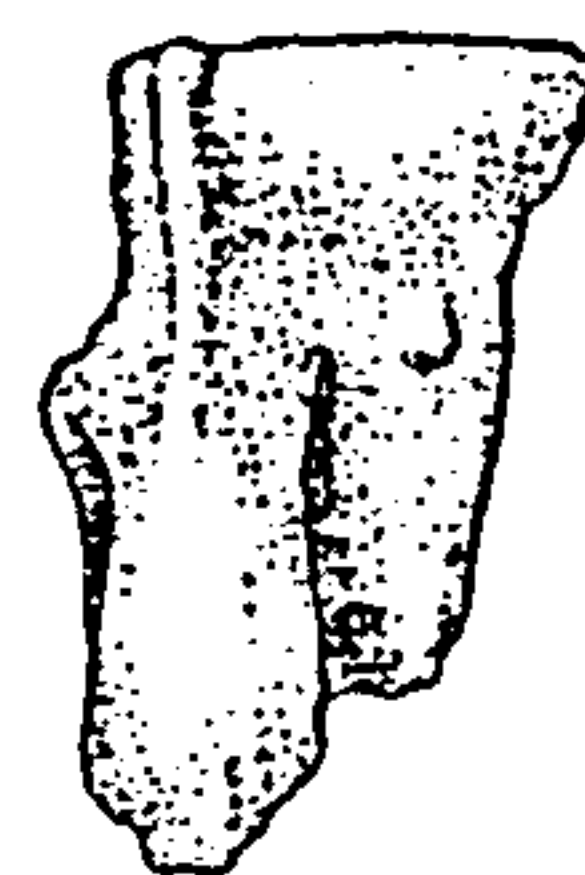
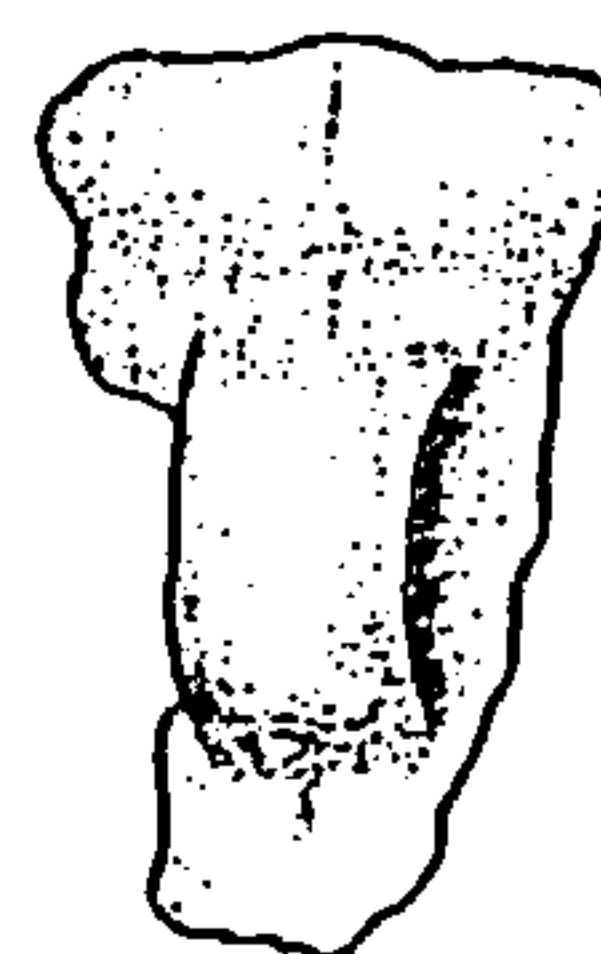
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09/09



09/10

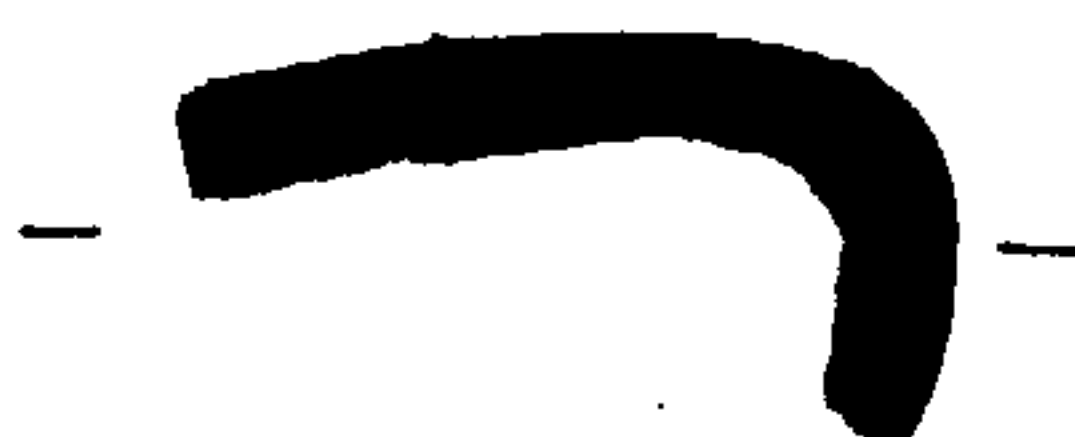


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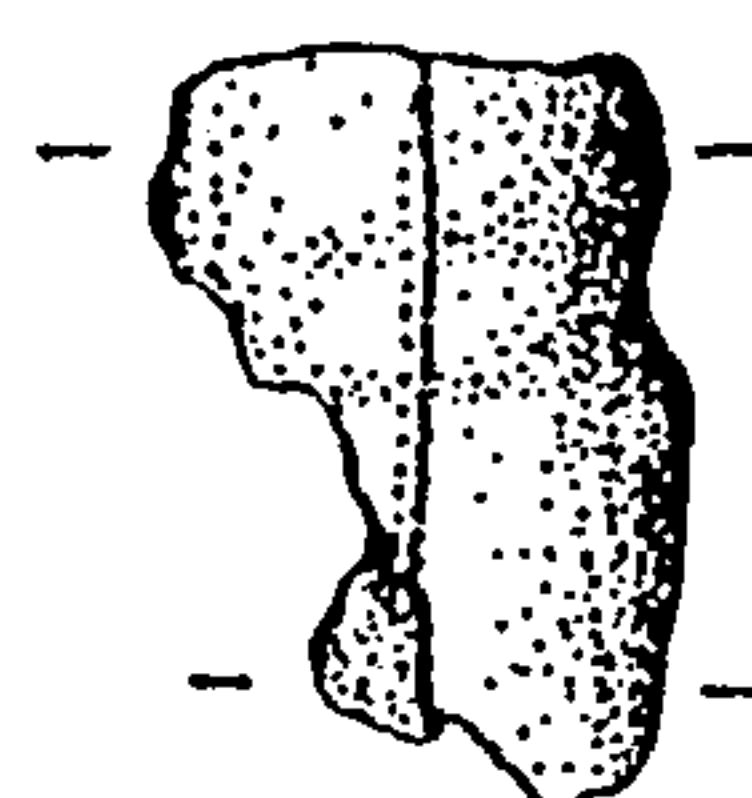
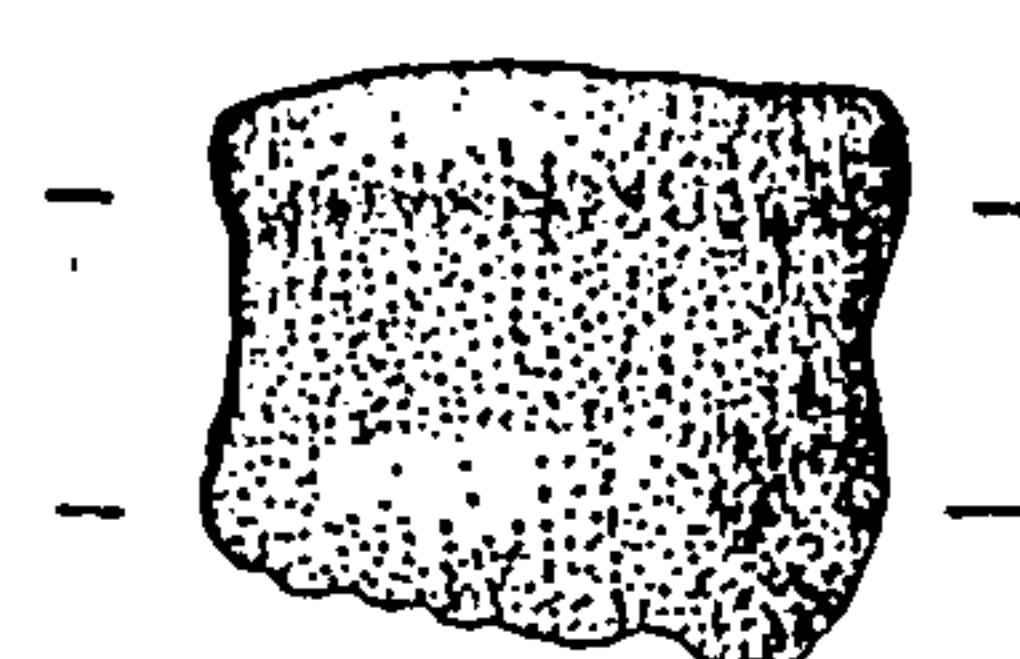
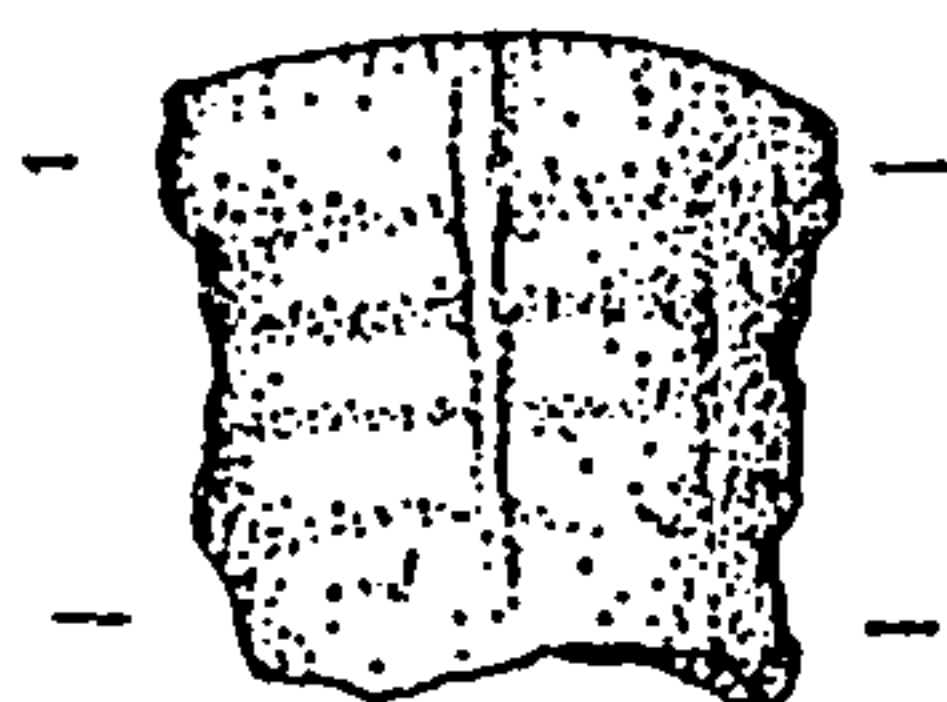
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09/12



09/13



Rough Metal/Corrosion Product

Fig. 79: The Southchurch Hoard (Ref. No. 09): Socketed Axe Fragments (ii)

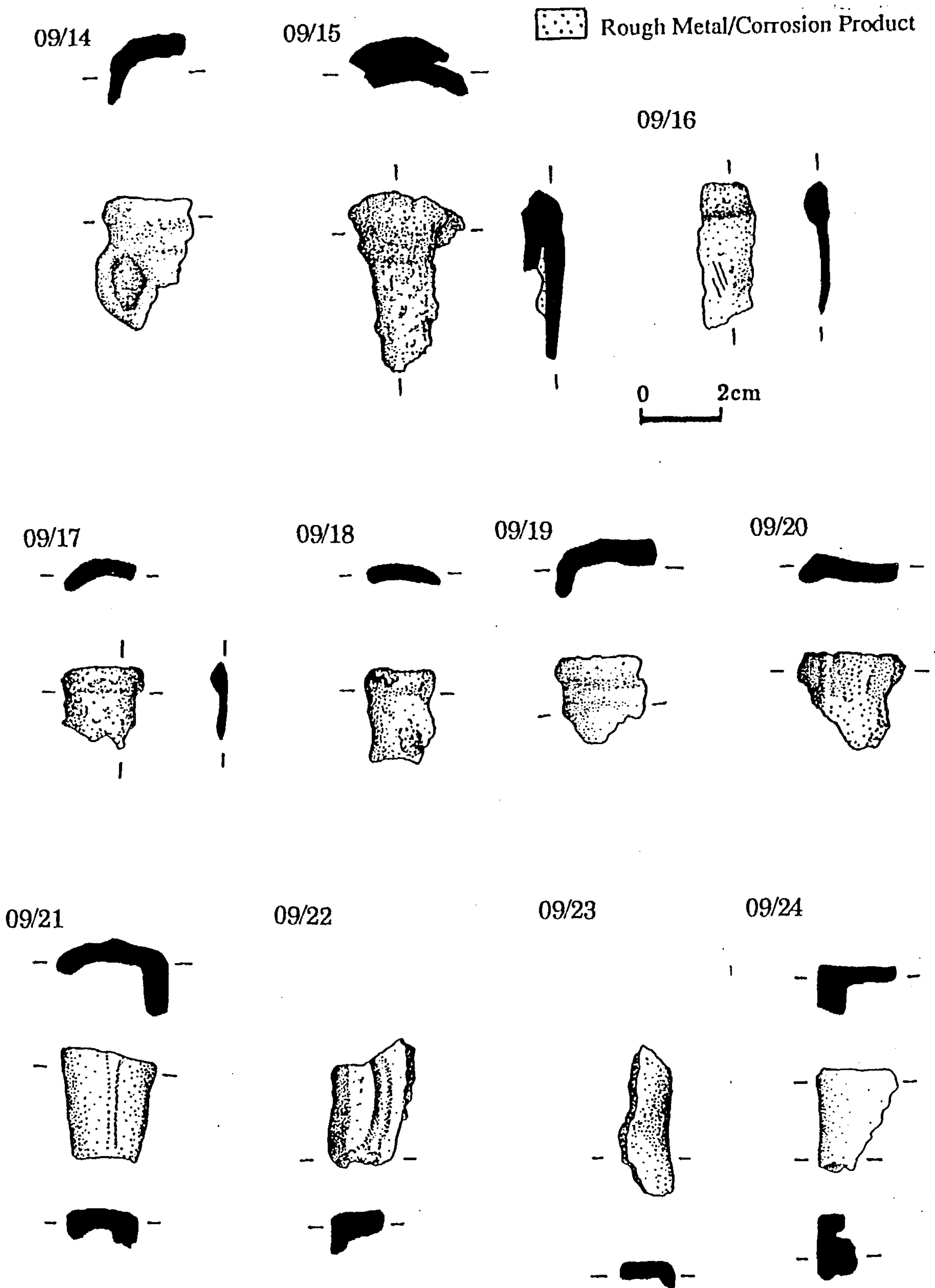
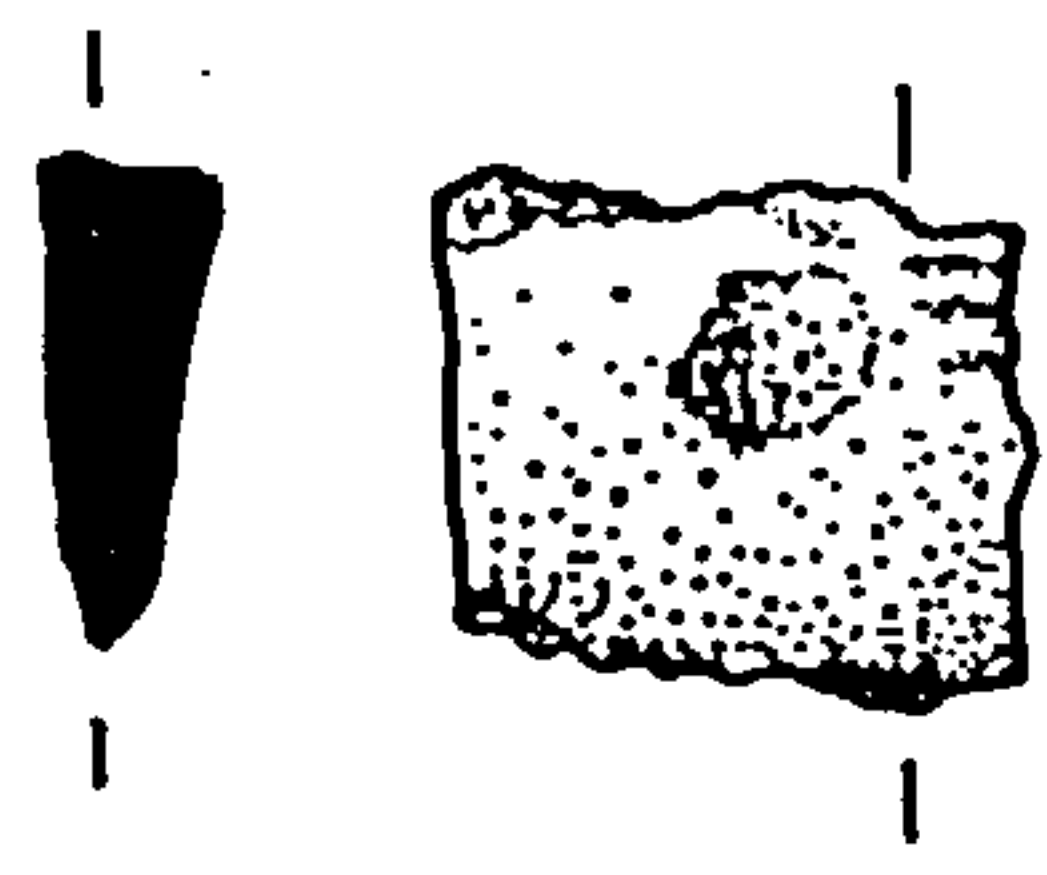


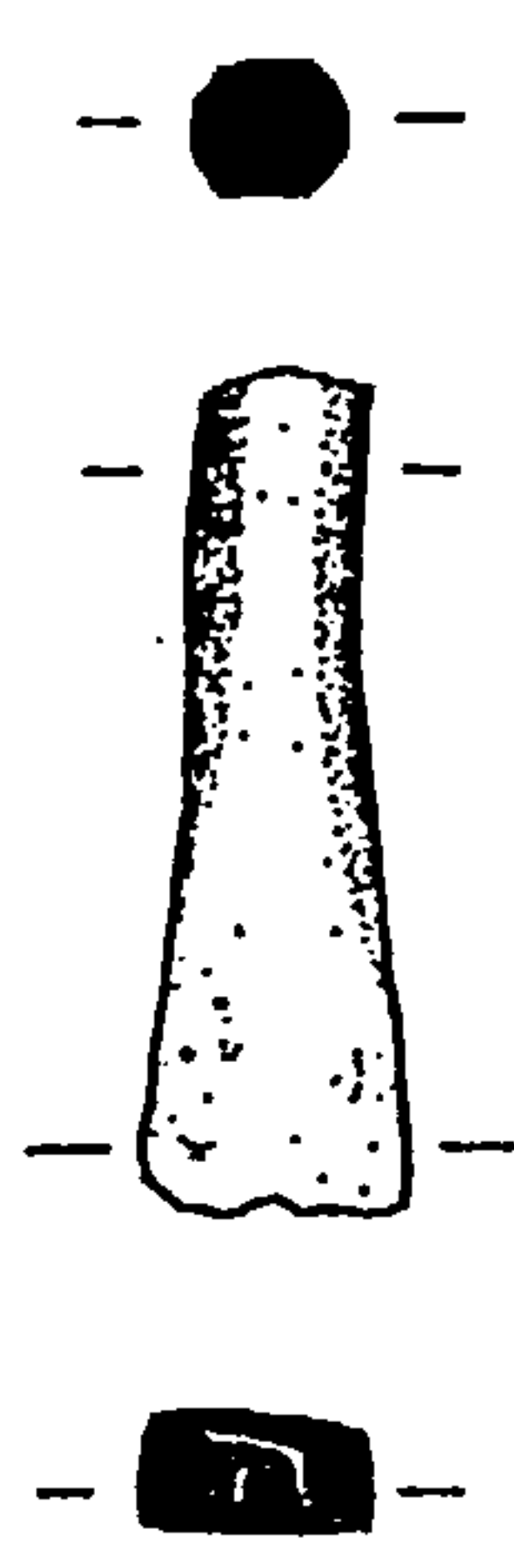
Fig. 80: The Southchurch Hoard (Ref. No. 09): Socketed Axe Fragments (iii)

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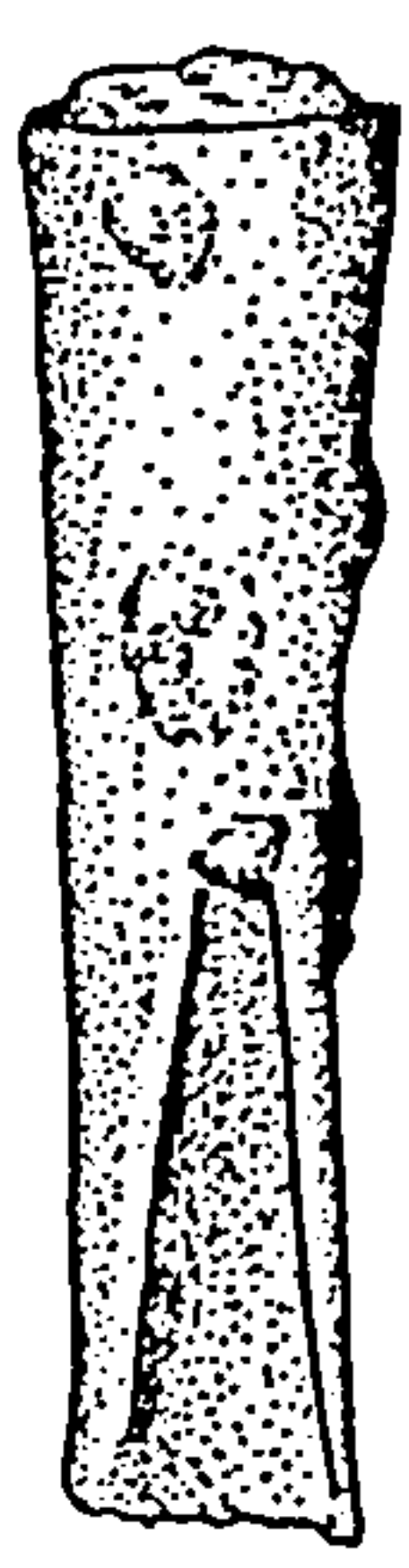


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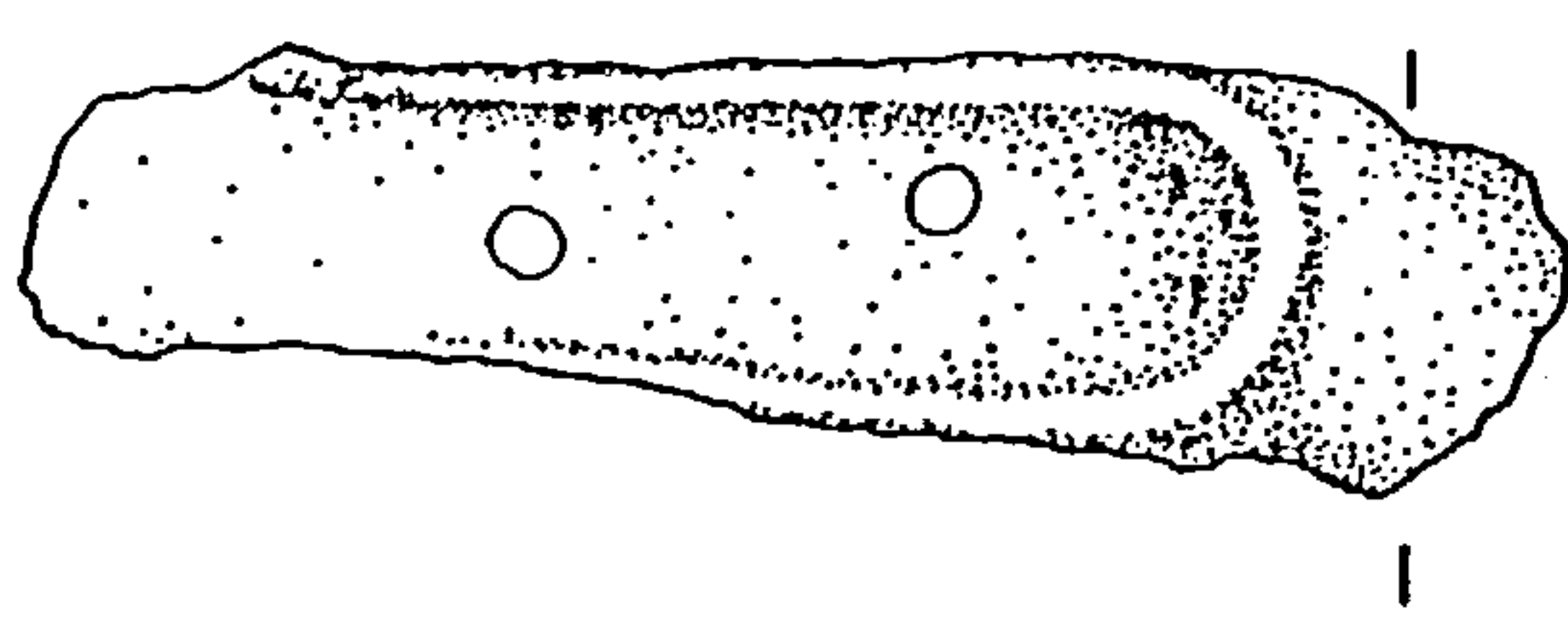
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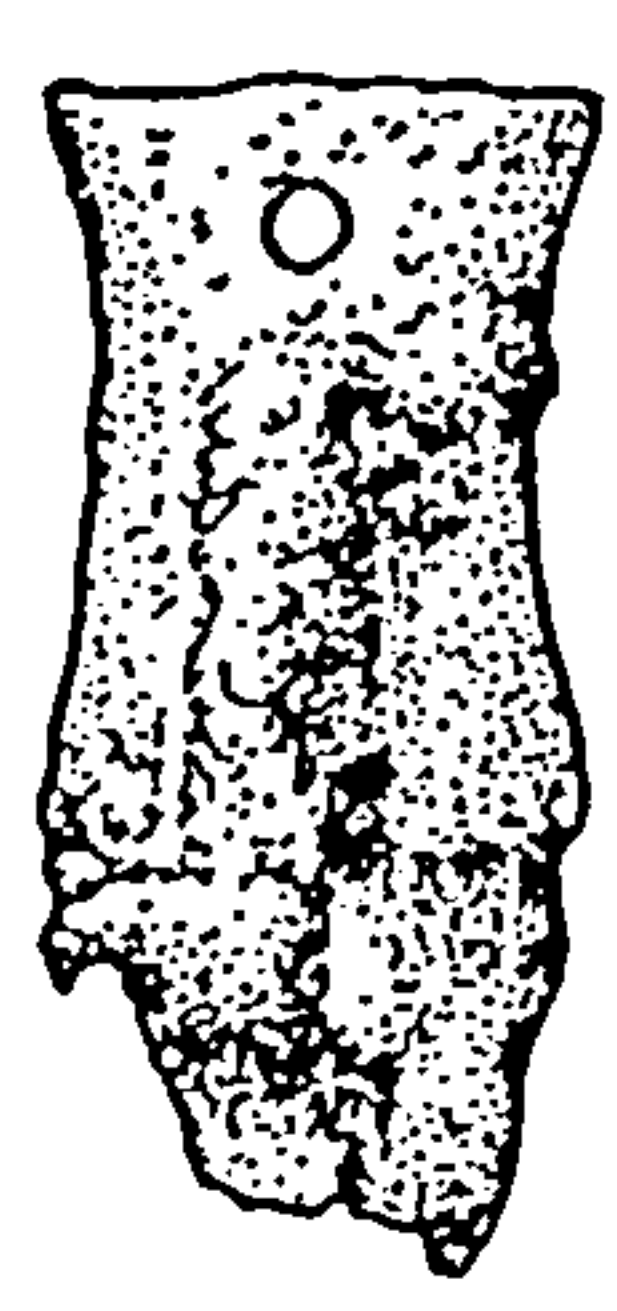
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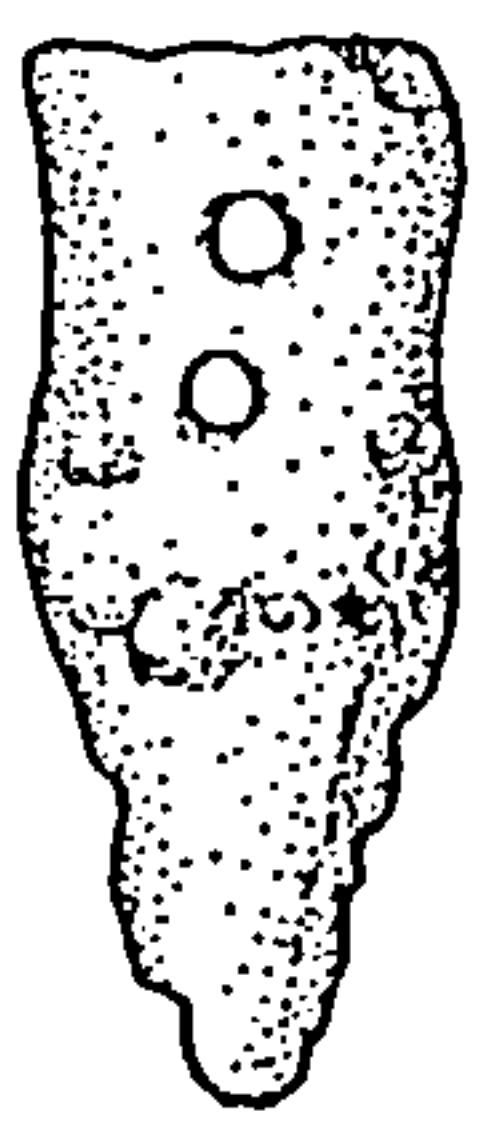
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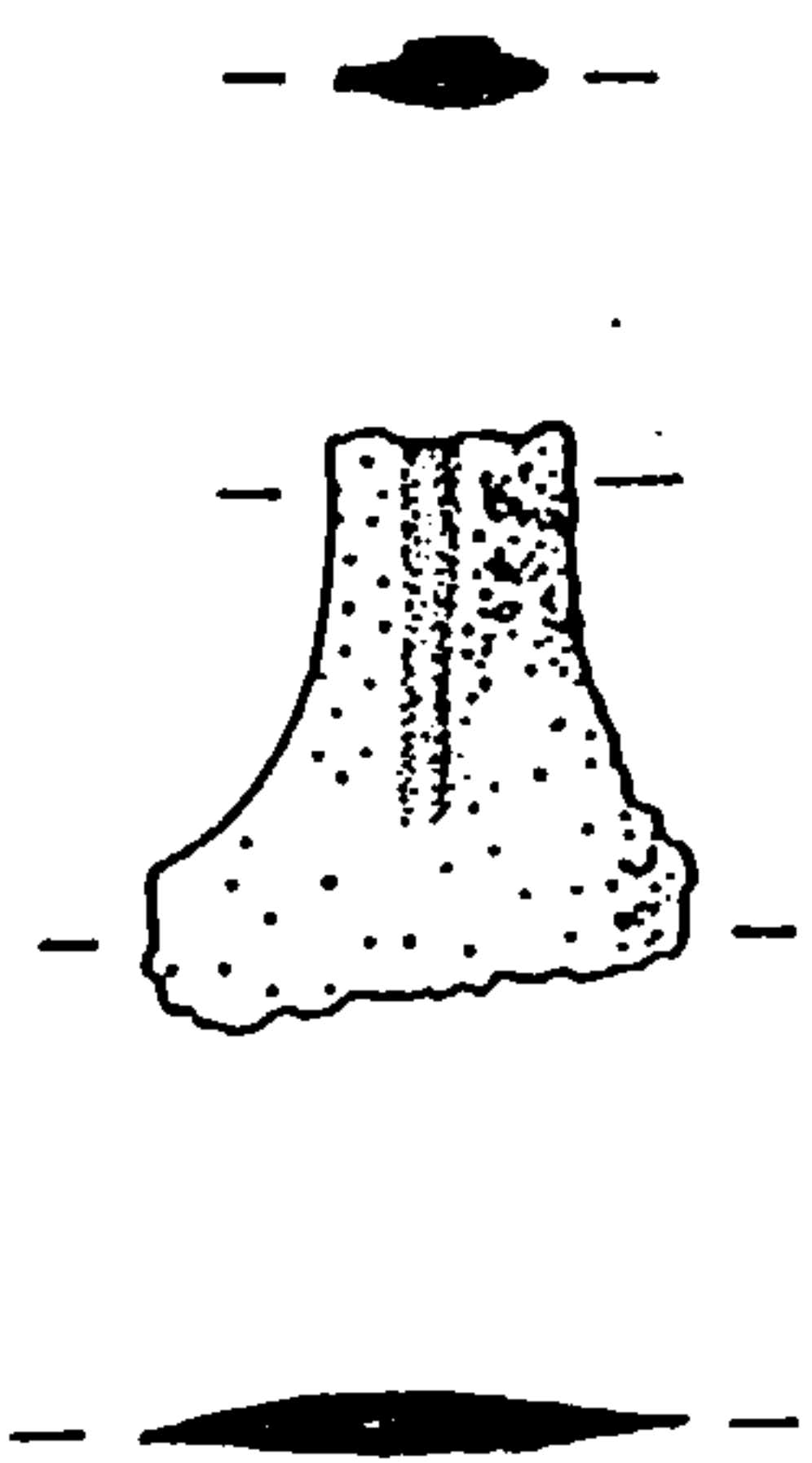
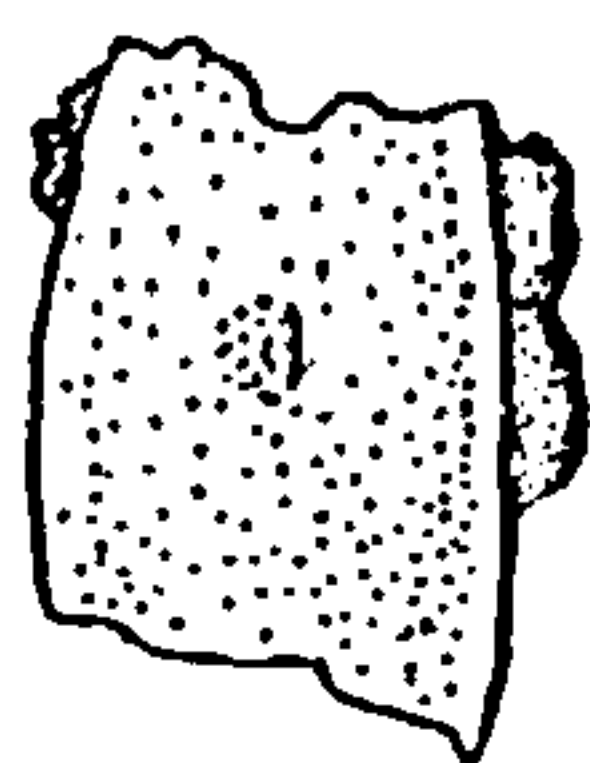
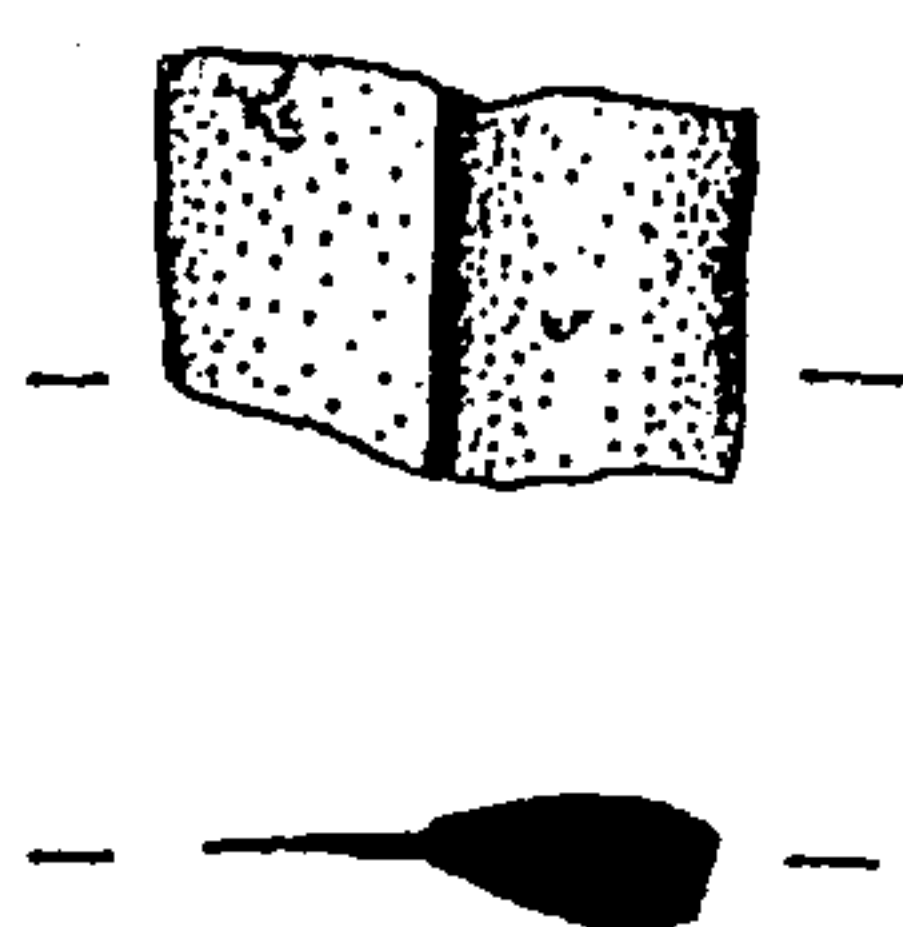


Fig. 81: The Southchurch Hoard (Ref. No. 09): Small Tools

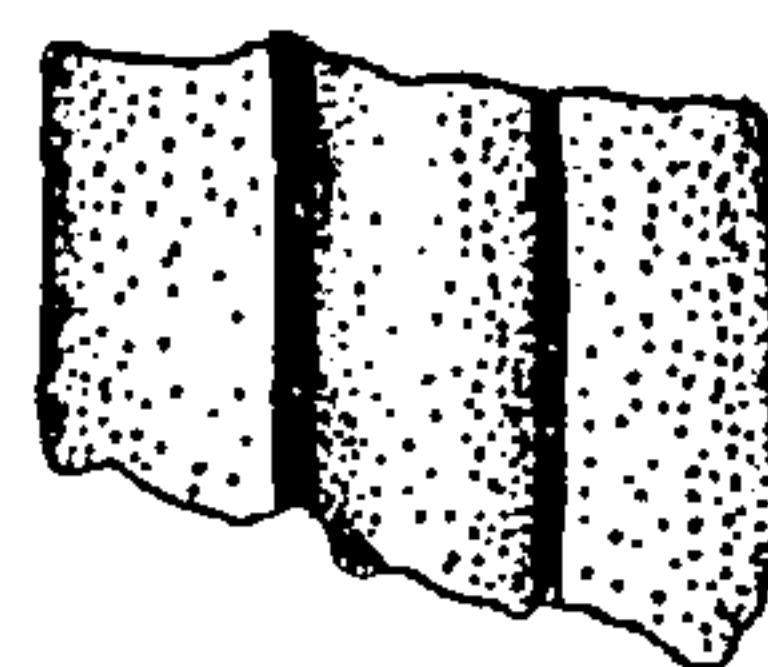
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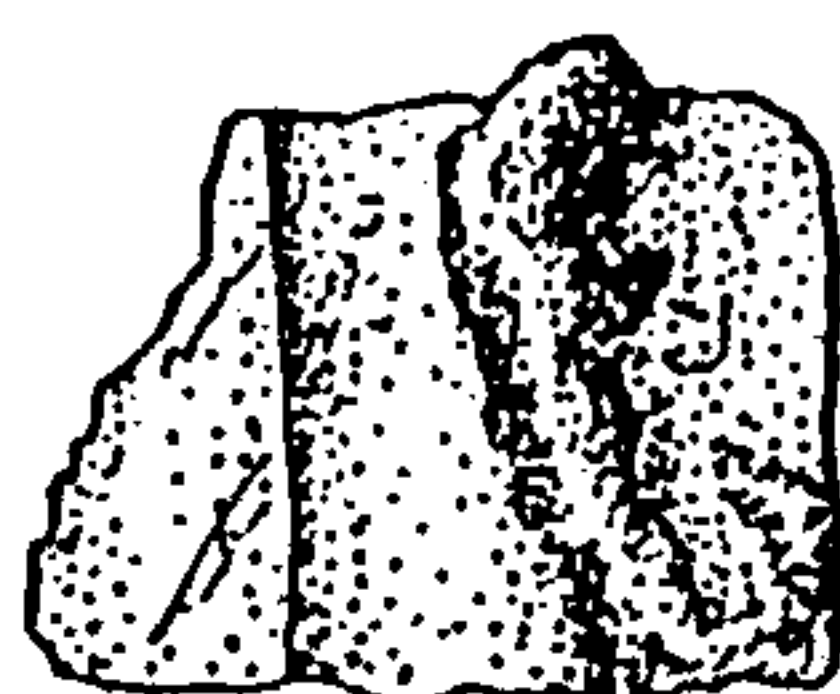
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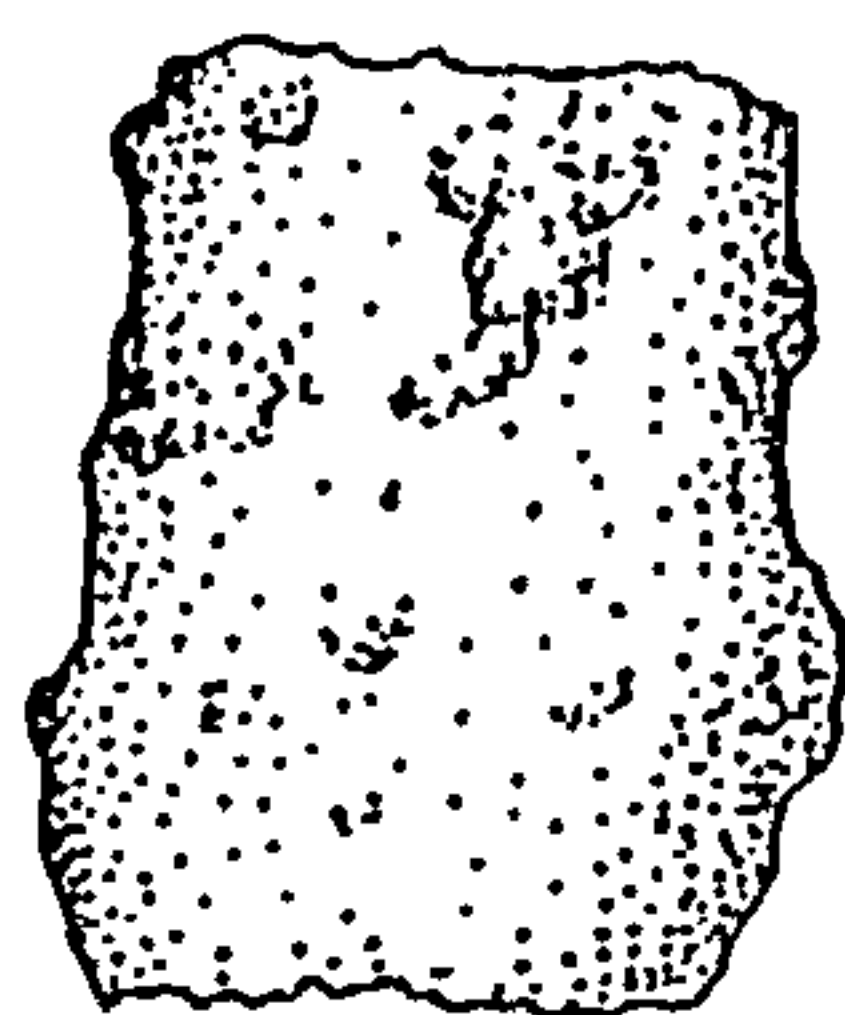
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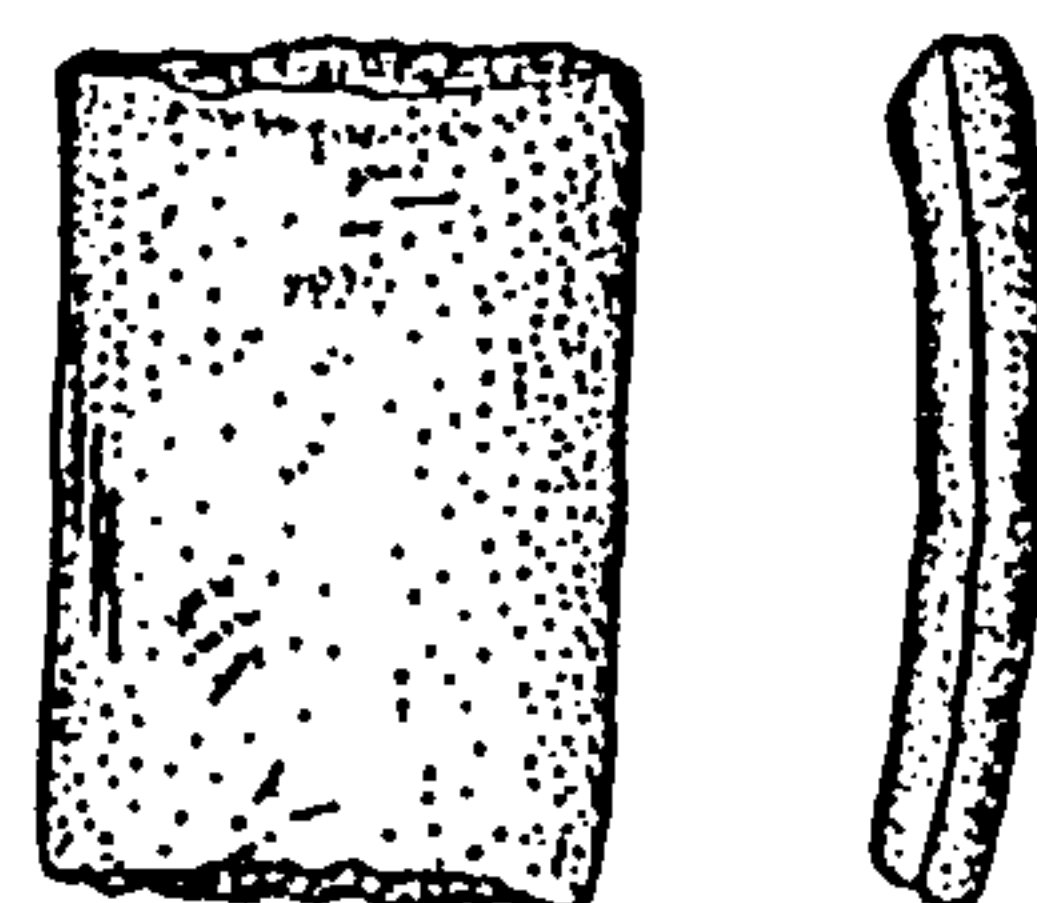
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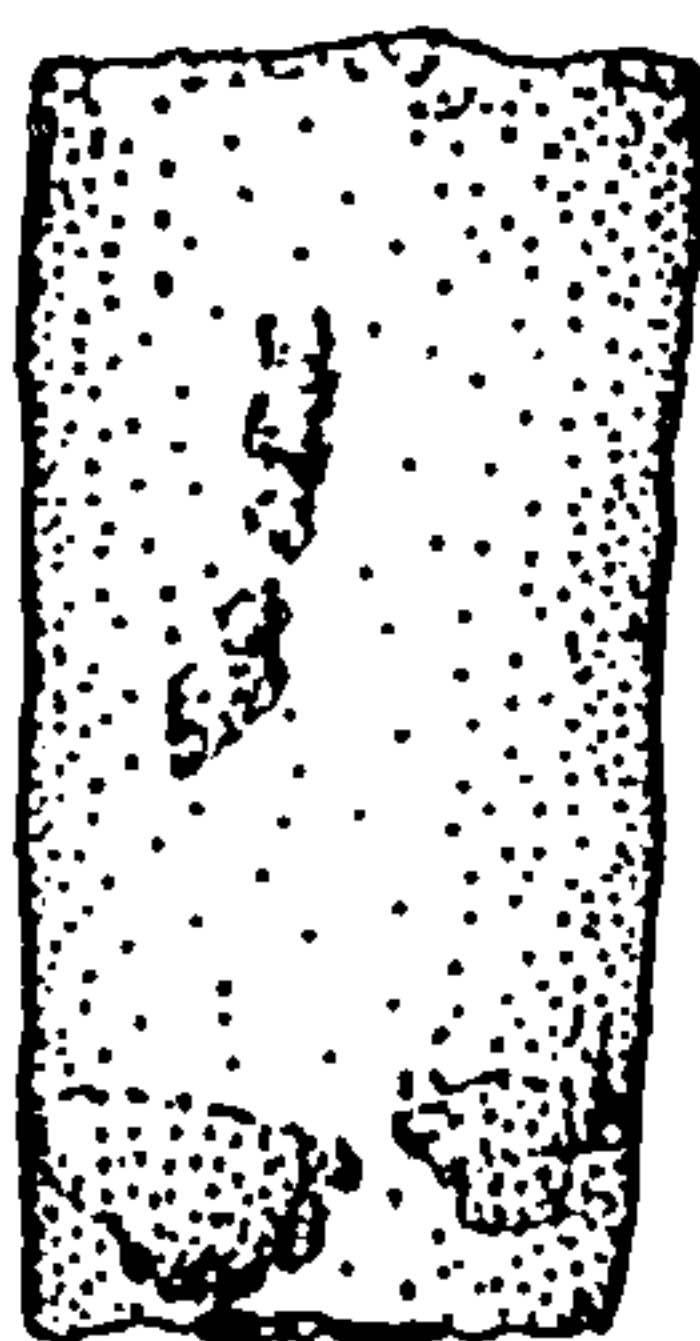


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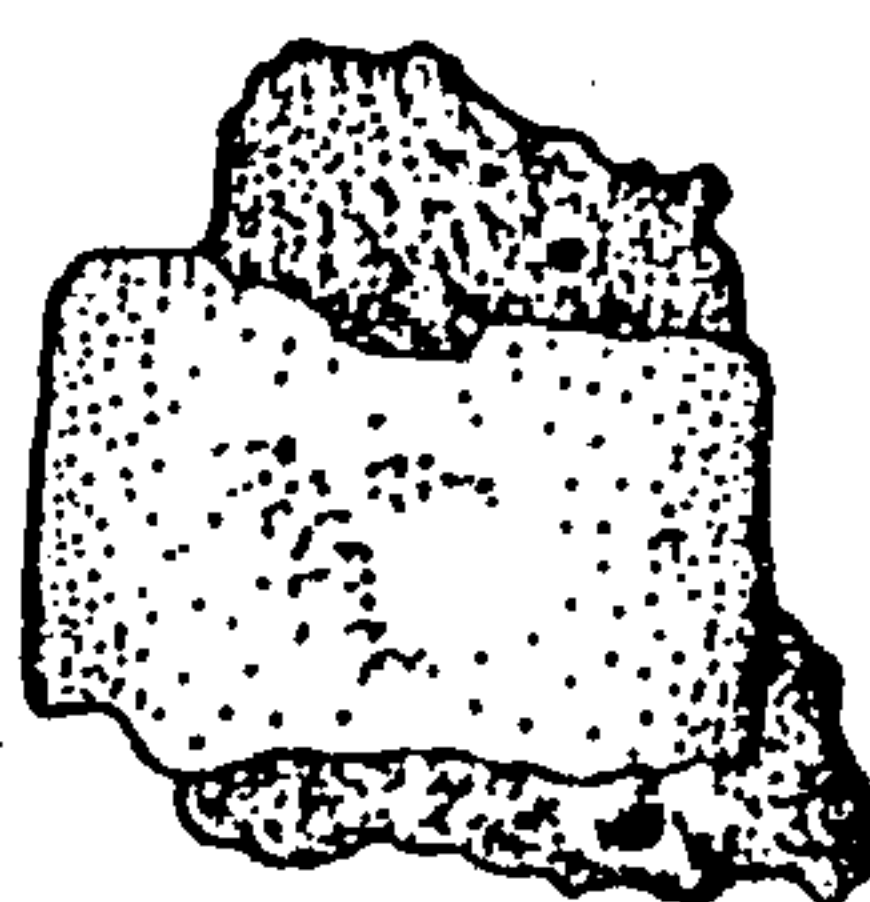


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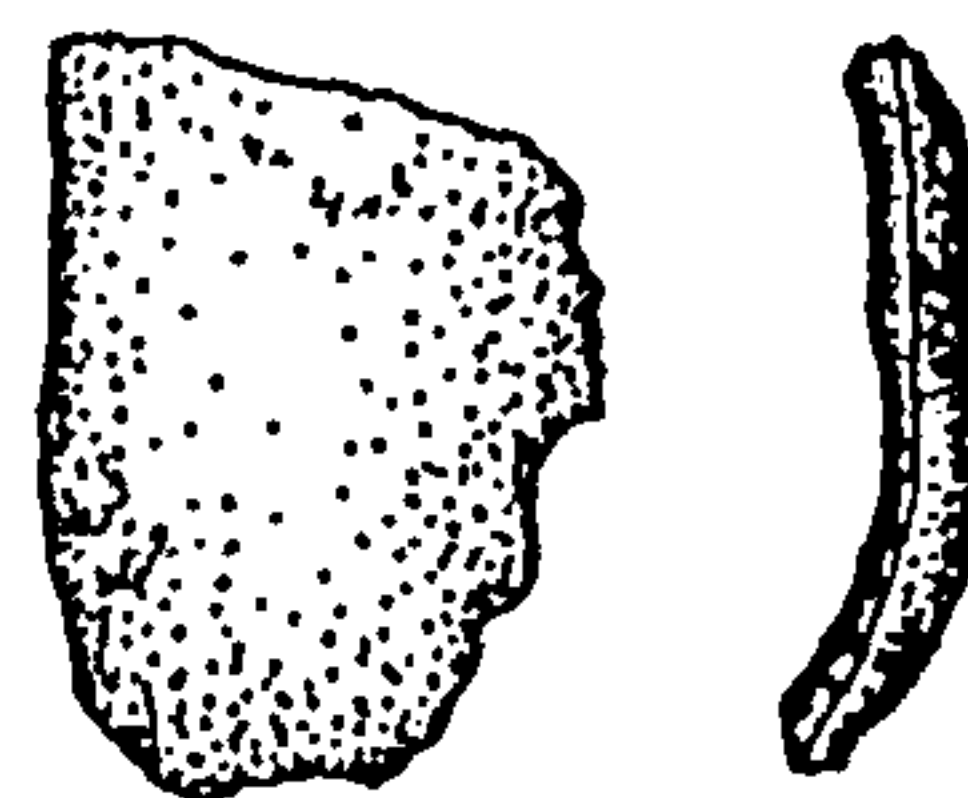


Fig. 82: The Southchurch Hoard (Ref. No. 09): Sword Fragments

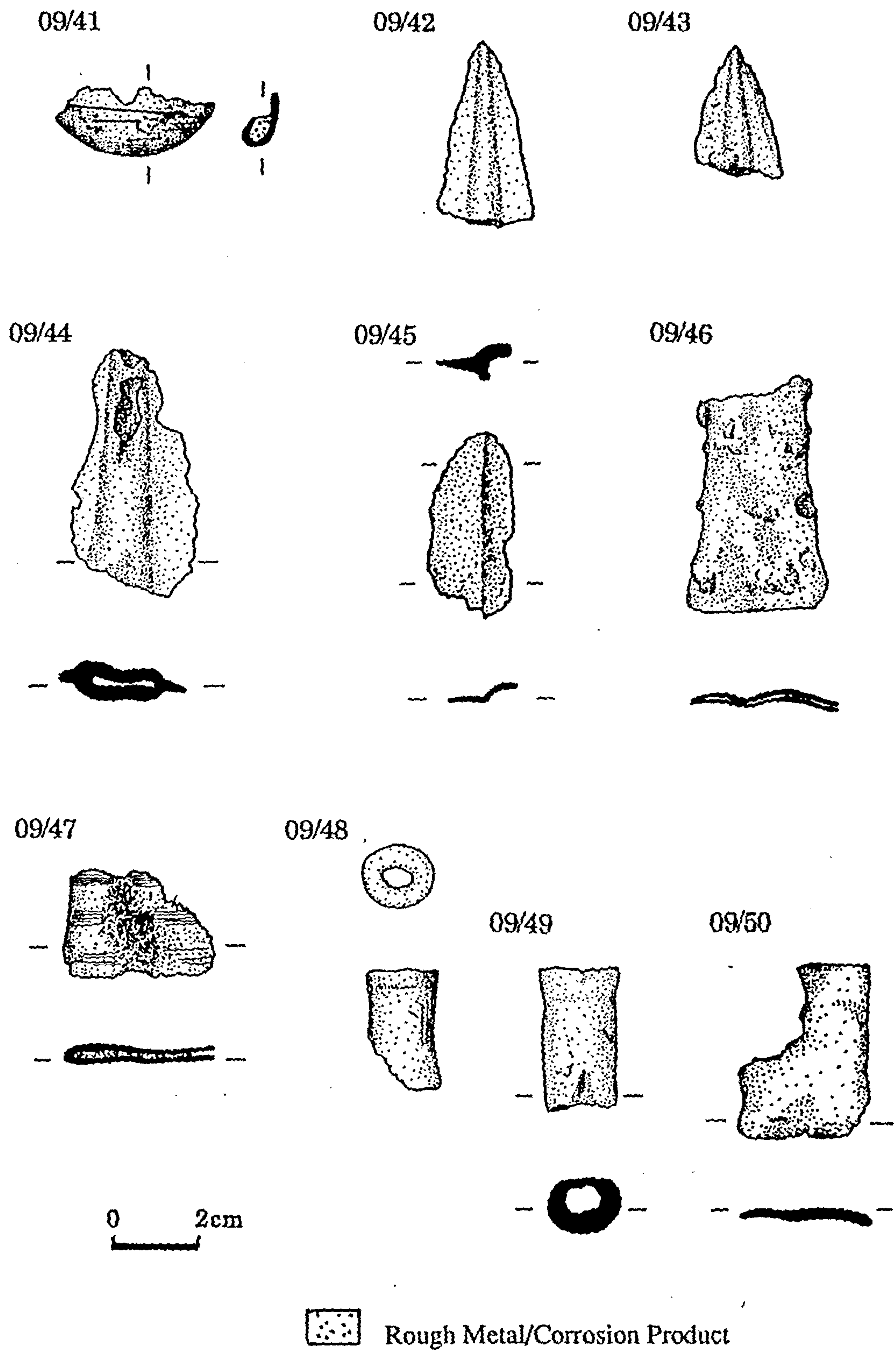
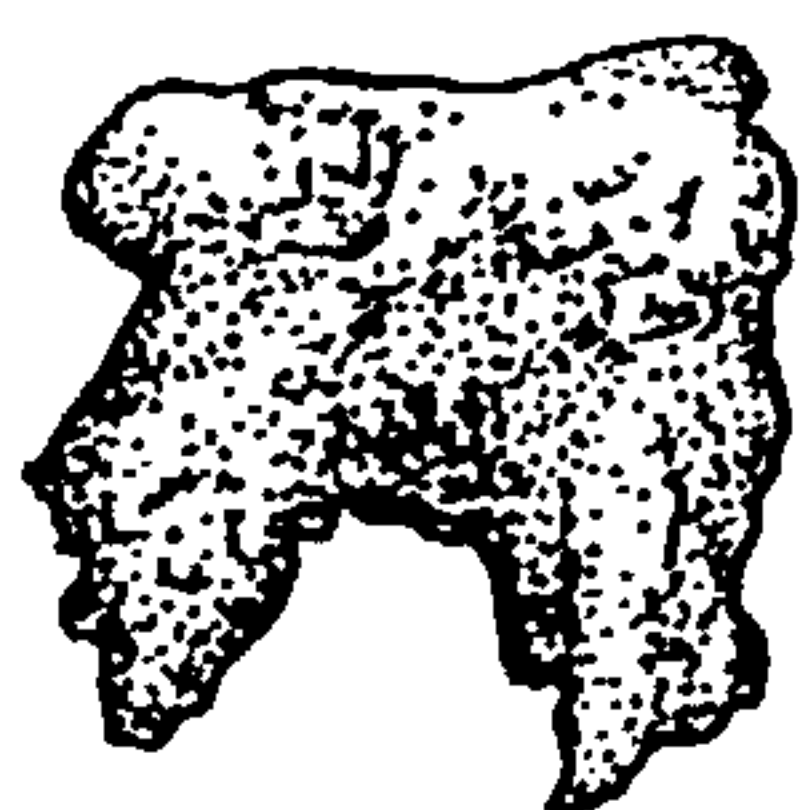
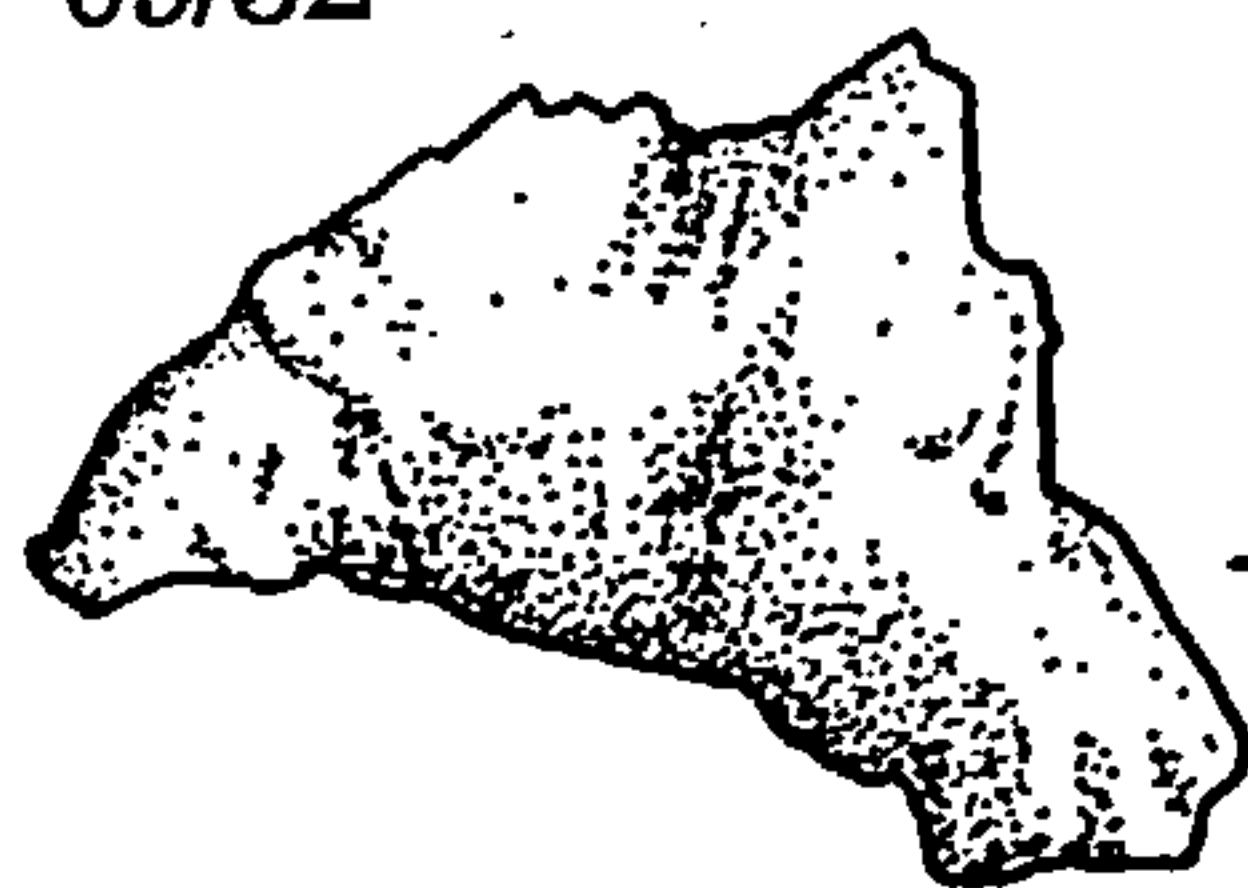


Fig. 83: The Southchurch Hoard (Ref. No. 09): Spearhead Fragments and Miscellaneous Items

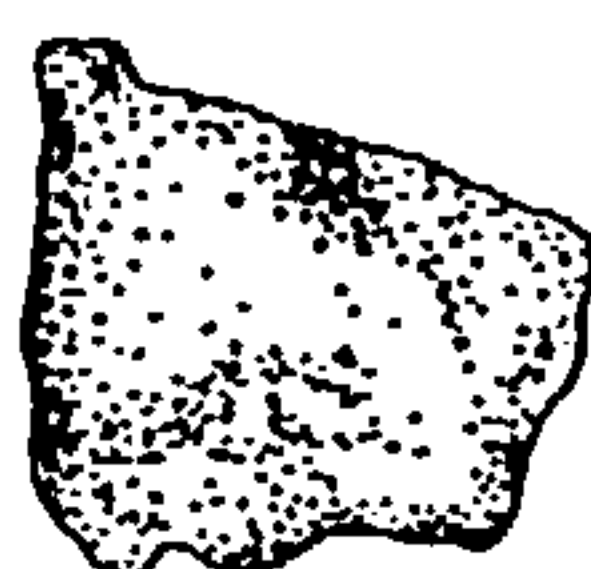
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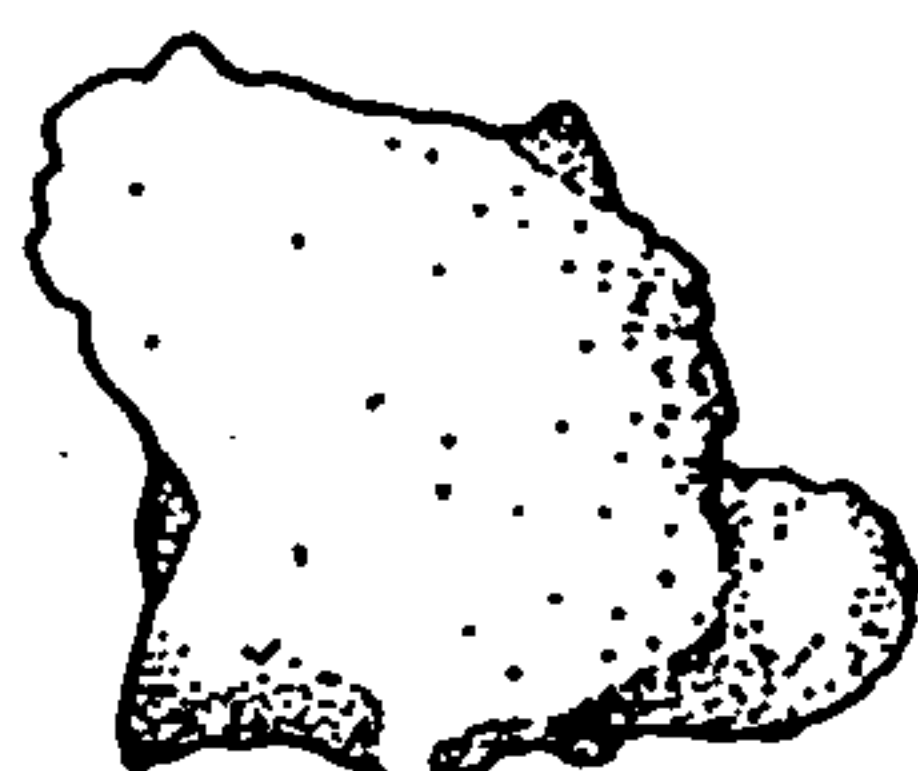
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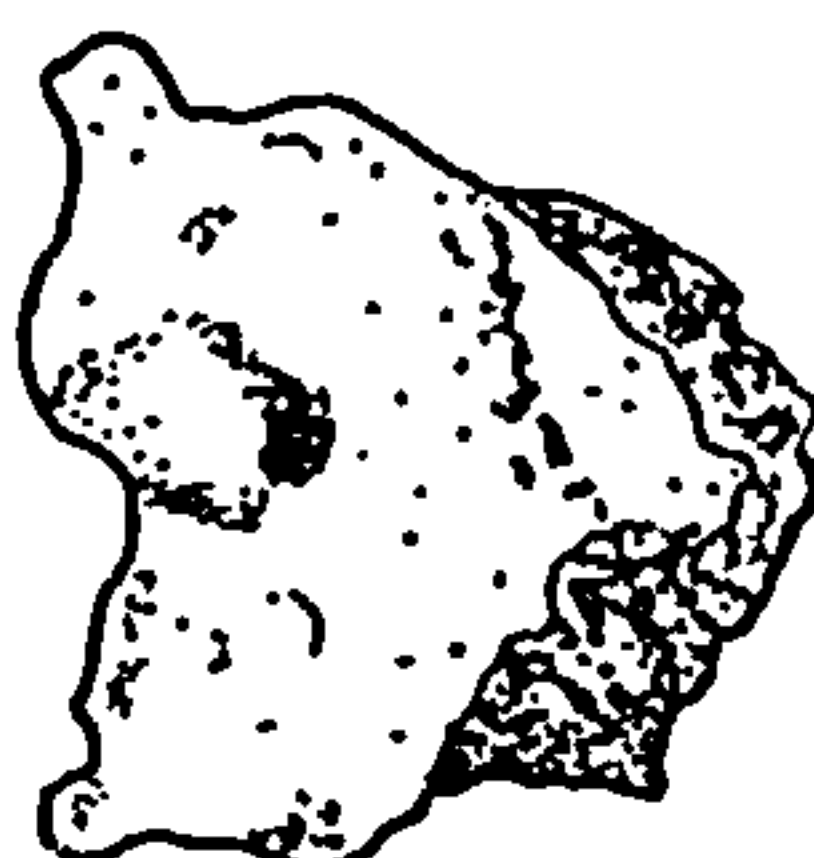
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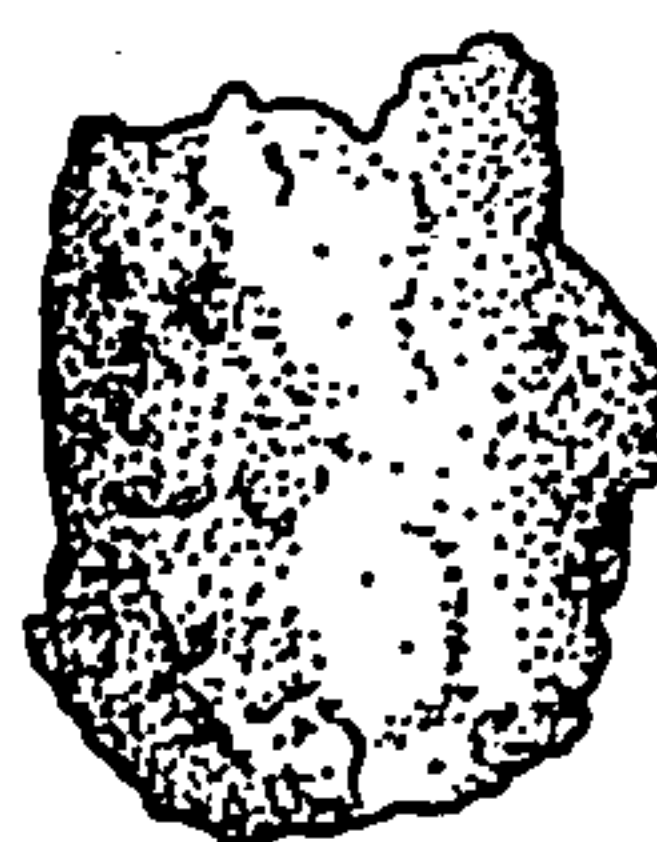
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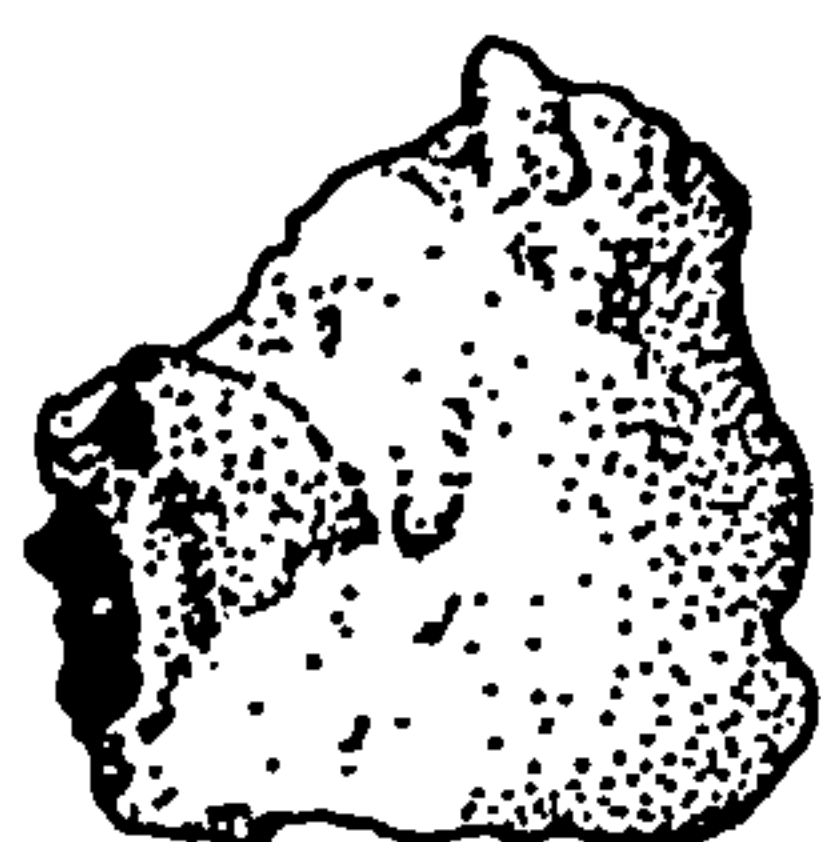
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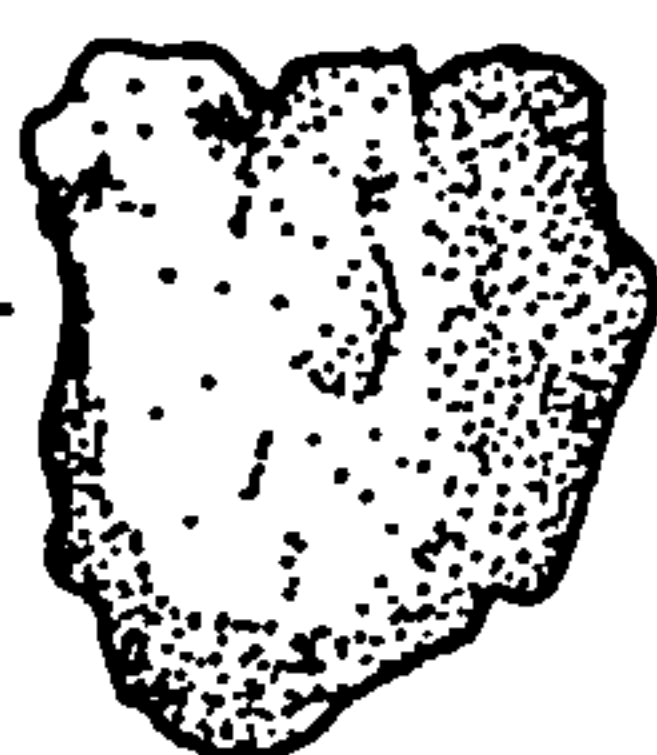
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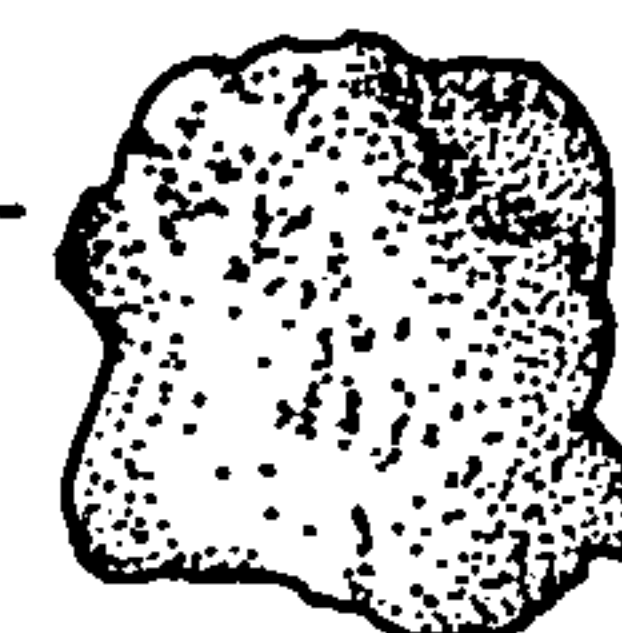
09/60



09/61



09/62



09/63



0 2cm

Fig. 84: The Southchurch Hoard (Ref. No. 09): Ingot Metal (i)

Southchurch II ('Near Southchurch') (Ref. No. 10)

Grid Reference: c. TQ 90 84.

Current Location: Southend Museum.

Context: The hoard was recovered from a gravel-pit in Thorpe Hall Avenue during 1924. The six lumps of ingot metal were allegedly situated around the shoulders of a pottery vessel. Only five lumps of metal and the pottery vessel have survived.

Bibliography: Pollitt, 1953.

Contents:

10/01

Description: Piece from edge of copper ingot, with voids in the interior.

Dimensions: Length: 54mm. Width: 45mm. Thickness: 24mm. Weight: 202g.

10/02

Description: Piece from edge of copper ingot, with voids in the interior.

Dimensions: Length: 59mm. Width: 47mm. Thickness: 24mm. Weight: 204g.

10/03

Description: Small piece from edge of copper ingot.

Dimensions: Length: 62mm. Width: 34mm. Thickness: 19mm. Weight: 119g.

10/04

Description: Fragment from interior of copper ingot, with numerous voids apparent.

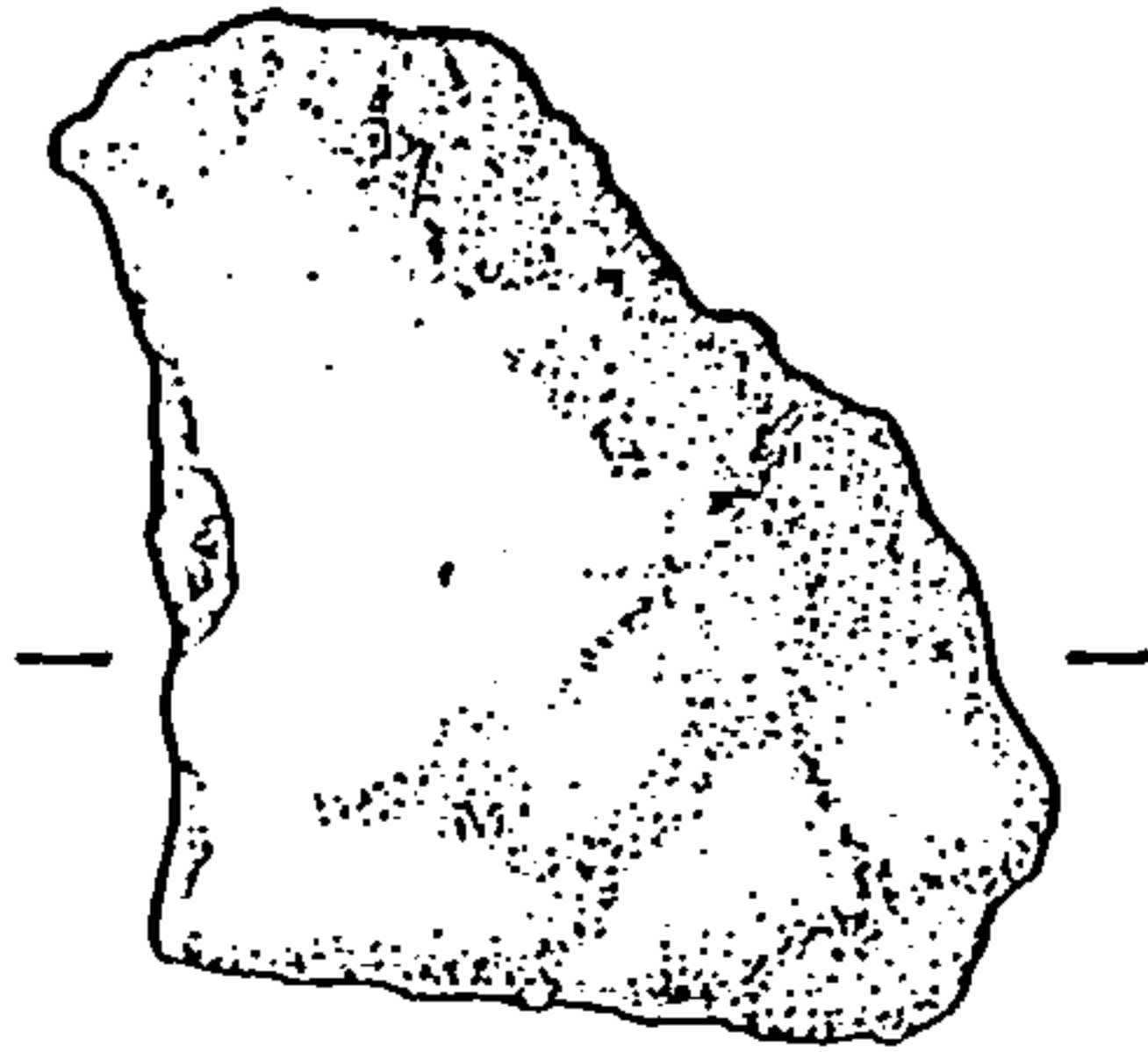
Dimensions: Length: 33mm. Width: 22mm. Thickness: 23mm. Weight: 62g.

10/05

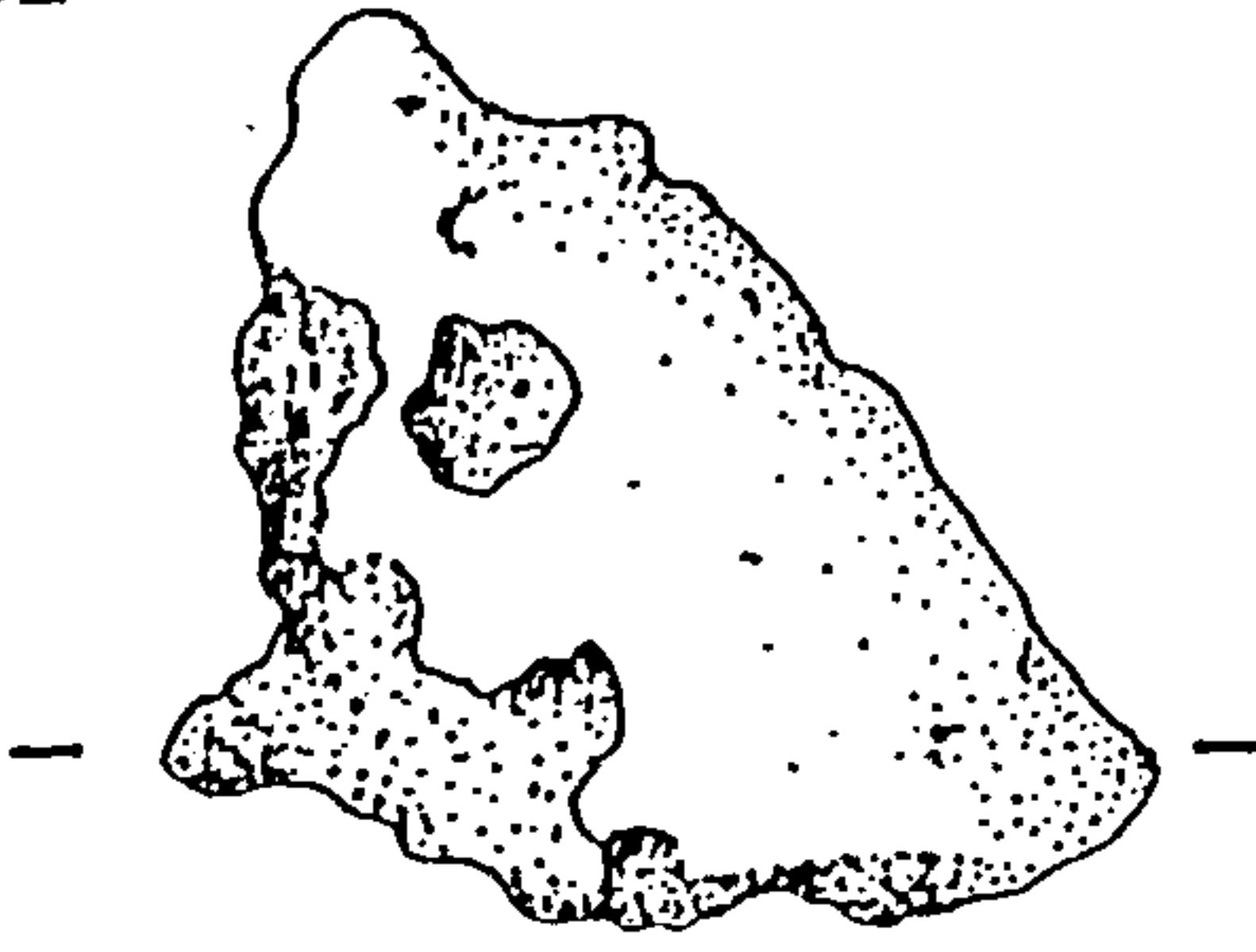
Description: Fragment from edge of copper ingot.

Dimensions: Length: 25mm. Width: 16mm. Thickness: 16mm. Weight: 13g.

10/01

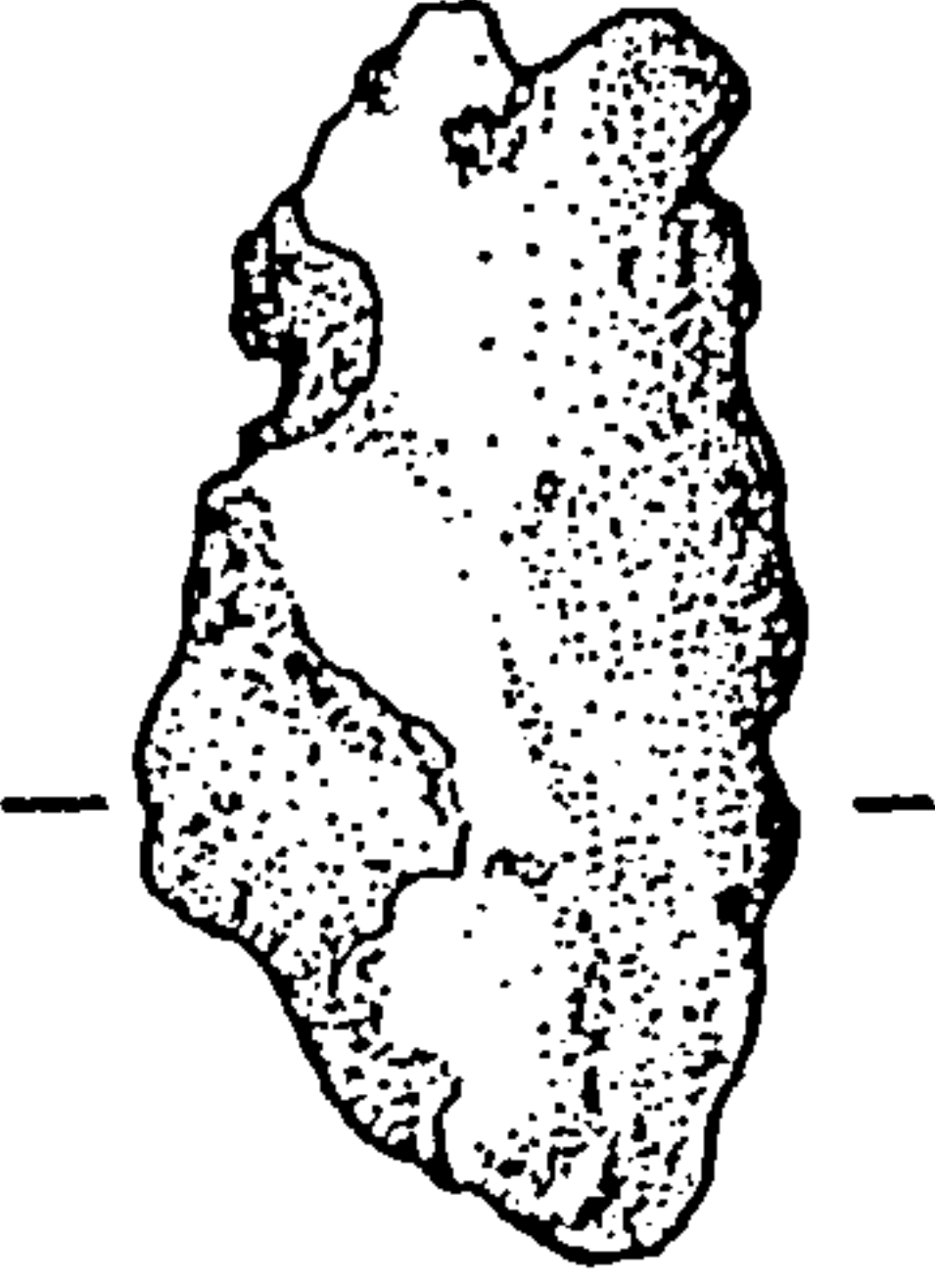


10/02



0 2cm

10/03



10/04



10/05



Fig. 85: The Southchurch II Hoard (Ref. No. 10)

Vange (Basildon) (Ref. No. 11)

Grid. Reference: c. TQ 72 87.

Current Location: Colchester and Essex Museum. The hoard is now in very poor condition following conservation treatment. Many of the objects have fragmented as a result, and consequently it proved impossible to obtain much information from them. On account of this, a decision was made to concentrate only upon the larger pieces, and to disregard the many small and unidentifiable fragments which were likely to have broken off larger objects within the hoard.

Context: No information available.

Bibliography: Coombs, 1971.
National Bronze Index.

Contents:

11/01

Description: Body and cutting edge from socketed axe. Its narrow shape and slightly waisted appearance suggest that it was of the 'south-eastern' type.

Dimensions: Length (maximum): 96mm. Cutting edge: 38mm. Weight: 116.1g.

Patina: Corrosion stripped, details lost.

Manufacture: The line of the casting seam can be traced along one side. It remains visible over the upper half of the fragment, and appears to have been obliterated further down towards the blade. On the other side, its condition is difficult to ascertain as a result of the corrosion removal. The blade has been expanded.

Use: A long shallow notch is evident on one corner of the cutting edge. This may indicate a casting defect, though use-related damage cannot be ruled out. Which of the two options is the more likely explanation cannot be determined because the object survives in such a poor condition.

Reduction: There is no evidence relating to this process.

11/02

Description: Body and cutting edge from socketed axe. A single vertical rib survives where the upper portion of one face remains intact, and an interior rib is also present.

Dimensions: Length (maximum): 84mm. Cutting edge: 49mm.

Patina: Corrosion stripped, details lost.

Manufacture: On one side, the casting seam remains visible over much of its length, though it appears to have been trimmed. On the other side, no traces remain, but the damage to the surface caused by the corrosion removal appears worse here, and this may have contributed to its absence. The blade has been very widely expanded, and is virtually crescentic in shape.

Use: The blade is markedly asymmetrical in appearance, indicating uneven wear. The object has been subject to resharpening, possibly on more than one occasion.

Reduction: On one face (not illustrated), there are traces of hammering at the break, and the section is slightly distorted here.

11/03

Description: Body and cutting edge from a socketed axe, which is now missing its mouth and which has its loop surviving only surviving in vestigial form. An internal rib can be seen.

Dimensions: Length (maximum): 60mm. Cutting edge: 32mm. Weight: 70.0g.

Patina: Corrosion stripped, details lost.

Manufacture: The casting seam survives as a vestigial trace on the underside of the piece, though it appears to have been obliterated over lower half of the piece, i.e. towards the cutting edge. The blade appears to have been expanded, though its shape remains narrow.

Use: The cutting edge is burred in places, and is broken over much of its length.

Reduction: There is an indentation apparent in the upper surface which may be related to this stage in the object's life-cycle. However, the metal is unusually thin here, and so it

cannot be determined whether this indent was caused by hammering, or whether the metal only appears distorted following the stripping of the corrosion products.

11/04

Description: Lower body and cutting edge of socketed axe, possibly of faceted type.

Dimensions: Length (maximum): 70mm. Cutting edge: 31mm. Weight: 63.6g.

Patina: Corrosion stripped, details lost.

Manufacture: No traces of any casting seams are visible on either side. No other evidence can be identified.

Use: The blade appears to have been unevenly worn, but is now in very poor condition following removal of the corrosion products.

Reduction: There are possible indications of hammering in association with the breaks on either face, and faint distortion of the section is apparent, too. Once again, however, it is difficult to be confident about these observations.

11/05

Description: Lower body and cutting edge of socketed axe.

Dimensions: Length (maximum): 49mm. Cutting edge: 28mm. Weight: 48.6g.

Patina: Corrosion stripped, details obliterated.

Manufacture: The blade is narrow in appearance, and may be unexpanded. No other details can be identified.

Use: The cutting edge has been broken at one corner, but this damage may have occurred during the removal of the corrosion product.

Reduction: Some evidence of hammering can be seen at the break on one face (illustrated).

11/06

Description: Lower blade and cutting edge from socketed axe.

Dimensions: Length (maximum): 45mm. Cutting edge: 37mm. Weight: 61.8g.

Patina: Corrosion stripped, details lost.

Manufacture: The vestigial trace of a casting seam can be seen just behind the cutting edge on one side, but no other evidence of any seams can be identified. The blade looks as if it were once widely expanded - if not crescentic - as bevels are evident at either corner. However, removal of the corrosion product has resulted in a more narrow appearance to the blade.

Use: The cutting edge appears worn and broken over its extent, though its poor condition has been considerably exaggerated by corrosion removal.

Reduction: The section is distorted, with depressions apparent on either face, and on one face (illustrated) shallow hammer indents are associated with the break. Cracking of the metal is also evident lower down the blade on one face (illustrated).

11/07

Description: Lower body and cutting edge of socketed axe.

Dimensions: Length (maximum): 56mm. Cutting edge: 38mm. Weight: 56.7g.

Patina: Corrosion stripped, details lost.

Manufacture: No traces of any casting seams survive. The blade appears to have been well-expanded.

Use: The cutting edge is notched and uneven, and some of this damage seems likely to have been use-related, though stripping of the corrosion product will undoubtedly have caused the condition of the edge to deteriorate still further.

Reduction: The section appears slightly distorted, though it is difficult to be confident about this observation due to the poor condition of the object.

11/08

Description: Lower body and cutting edge of socketed axe.

Dimensions: Length (maximum): 42mm. Weight: 51.1g.

Patina: Corrosion stripped, details lost.

Manufacture: The faint trace of a casting seam can be seen over one side, though no evidence of a seam is visible on the other. The cutting edge is narrow, but appears to have been expanded.

Use: The crescentic appearance of the cutting edge suggests that the blade was resharpened.

Reduction: There is no evidence relating to this process.

11/09

Description: Cutting edge from socketed axe.

Dimensions: Length (maximum): 38mm. Cutting edge: 42mm. Weight: 65.2g.

Patina: Corrosion stripped, details lost.

Manufacture: The walls are of uneven thickness, indicating core misalignment. No traces of either casting seam survive, and the blade appears to have been well-expanded.

Use: The cutting edge is notched and broken over its length. This damage is probably the result of use-related damage, though the poor condition of the edge has undoubtedly been exaggerated as a result of the corrosion stripping.

Reduction: There is no evidence relating to this process.

11/10

Description: Cutting edge from socketed axe.

Dimensions: Length (maximum): 37mm. Cutting edge: 40mm. Weight: 62.3g.

Patina: Corrosion stripped, details lost.

Manufacture: No traces of any casting seams can be seen on either side. The blade is well-expanded, and there are some possible diagonal grinding marks running back from the cutting edge. However, these must remain tenuous on account of the corrosion stripping.

Use: Some of the blade remains fine and sharp, but about two-thirds of its extent is now absent. This damage has been exaggerated by corrosion stripping.

Reduction: There is a depression in the metal near the break (illustrated). This should not be interpreted as unequivocal evidence of hammering, as the metal appears thinner here, and the damage may instead have been the result of over-zealous removal of the corrosion products.

11/11

Description: Cutting edge from socketed axe.

Dimensions: Length (maximum): 32mm. Cutting edge: 46mm. Weight: 41.0g.

Patina: Corrosion stripped, details lost.

Manufacture: No traces of any casting seams remain. The blade is well-expanded, and almost crescentic in appearance, with bevels evident over either corner of the cutting edge.

Use: The cutting edge still remains reasonably sharp along its length. The marked notch evident towards one corner may have resulted from corrosion stripping, though it seems more likely to be evidence of use-related damage exaggerated following removal of the corrosion products.

Reduction: There is no evidence relating to this process.

11/12

Description: Cutting edge from socketed axe.

Dimensions: Length (maximum): 43mm. Cutting edge: 33mm. Weight: 37.5g.

Patina: Corrosion stripped, details lost.

Manufacture: The faint trace of a casting seam runs down one side of the object. The cutting edge would once have had a crescentic appearance.

Use: It is difficult to determine the condition of the cutting edge as it was prior to the removal of the corrosion products, as this latter process has left the edge jagged and rough over its surviving extent.

Reduction: There is no evidence relating to this process.

11/13

Description: Cutting edge from socketed axe.

Dimensions: Length (maximum): 30mm. Cutting edge: 38mm. Weight: 30.6g.

Patina: Corrosion stripped, details obliterated.

Manufacture: The blade is widely expanded, with no other details surviving.

Use: The cutting edge is very blunt in appearance, and is broken towards one corner. The poor condition of the edge may, however, be due at least in part to corrosion stripping.

Reduction: There is no evidence relating to this process.

11/14

Description: Fragmentary upper body of socketed axe, with one collar moulding apparent. An interior rib is present.

Dimensions: Length (maximum): 55mm. Weight: 83.4g.

Patina: Corrosion stripped, details lost.

Manufacture: No trace of any casting seam survives around the mouth. The upper seam remains as a jagged and prominent line down the length of the fragment.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

11/15

Description: Mouth fragment of socketed axe, probably of 'south-eastern' type.

Dimensions: Length (maximum): 39mm. Weight: 21.9g.

Patina: Corrosion stripped, details obliterated.

Manufacture: The mouth seems uneven, and while its rough appearance may have been - at least in part - the result of corrosion stripping, it seems likely that an inadequate supply of molten bronze was used during casting.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

11/16

Description: Mouth fragment of socketed axe.

Dimensions: Length (maximum): 28mm. Weight: 29.3g.

Patina: Corrosion stripped, details obliterated.

Manufacture: The casting seam survives as a faint trace over the collar moulding, but no other details are apparent.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

11/17

Description: Mouth fragment of socketed axe, with two collar mouldings present. Possibly of 'south-eastern' type.

Dimensions: Length (maximum): 34mm. Weight: 20.4g.

Patina: Corrosion stripped, details lost.

Manufacture: The casting seam remains prominent over the length of the piece, and the mouth is very rough in appearance.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

11/18

Description: Mouth fragment of socketed axe, with two collar mouldings present.

Dimensions: Length (maximum): 28mm. Weight: 11.5g.

Patina: Corrosion stripped, details lost.

Manufacture: A vestigial trace of the seam can be seen between the loop and the collar mouldings. The mouth is rough in appearance, but corrosion stripping may have contributed to its poor condition.

Use: Impossible to determine.

Reduction: The section appears distorted and flattened, and there is a possible hammer indent associated with the break.

11/19

Description: Mouth fragment of socketed axe, with two collar mouldings and an internal rib present. Possibly of 'south-eastern' type.

Dimensions: Length (maximum): 21mm. Weight: 10.4g.

Patina: Corrosion stripped, details lost.

Manufacture: The mouth, where it survives, appears uneven. No other evidence can be identified.

Use: Impossible to determine.

Reduction: There is a possible chisel mark on the collar, though it is difficult to be confident of its authenticity due to the poor condition of the fragment.

11/20

Description: Small mouth fragment of socketed axe, with one heavy collar moulding present.

Dimensions: Length (maximum): 20mm. Weight: 7.5g.

Patina: Corrosion stripped, details obliterated.

Manufacture: A casting seam runs down the length of the fragment, and the mouth, though well-finished, appears rough.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

11/21

Description: Small mouth fragment of socketed axe. The edge of the mouth is flat, the mouth circular in shape, and the collar moulding rather flared in appearance, which suggests that this is a fragment from a faceted type axehead.

Dimensions: Length (maximum): 14mm.

Patina: Corrosion stripped, details lost.

Manufacture: No traces of any casting seams can be identified. Where it survives, the object appears to have been well-finished.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

11/22

Description: Body fragment of socketed axe.

Dimensions: Length (maximum): 36mm. Weight: 28.1g.

Patina: Corrosion stripped, details lost.

Manufacture: There is no evidence relating to this process.

Use: Impossible to determine.

Reduction: The surviving face shows cracking in association with either break. A large depression in the centre of the face is apparent, and while this is likely to have been caused by hammering, no individual hammer indents are visible.

11/23

Description: Body fragment of socketed axe.

Dimensions: Length (maximum): 32mm. Weight: 13.8g.

Patina: Corrosion stripped, details lost.

Manufacture: No traces of any casting seams survive. No other evidence can be linked with this stage of the object's life-cycle.

Use: Impossible to determine.

Reduction: There is one possible hammer indent on the surviving side wall, but this must remain doubtful due to the condition of the surface. The face has been pushed inwards, though no evidence of hammering can be seen in association with this damage.

11/24

Description: Small body fragment of socketed axe, with part of the loop remaining.

Dimensions: Length (maximum): 40mm. Weight: 12.0g.

Patina: Corrosion stripped, details lost.

Manufacture: Vestigial traces of the casting seam survive at the junction between the loop and the body.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

11/25

Description: Small winged adze.

Dimensions: Length (maximum): 71mm. Weight: 80.4g.

Patina: Corrosion stripped, details obliterated.

Manufacture: No traces of any casting seams survive. The blade is crescentic in appearance.

Use: The blade is very short and stubby in appearance, and has probably been subject to excessive resharpener. It now appears blunt and is in poor condition, though its appearance may have deteriorated as a result of corrosion stripping. The loop is broken, and it is possible that this damage was incurred during use.

Reduction: There is no evidence relating to this process.

11/26

Description: Small fragment of socketed gouge.

Dimensions: Length (maximum): 31mm. Weight: 10.5g.

Patina: Corrosion stripped, details obliterated.

Manufacture: There are possible grinding marks running down the length of the piece, but it is difficult to establish the authenticity of these as a result of the corrosion removal.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

11/27

Description: Fragmentary socket, likely to part of socketed gouge 11/26 above. Both fragments appear to be adjoining.

Dimensions: Length (maximum): 40mm. Weight: 10.5g.

Patina: Corrosion stripped, details lost.

Manufacture: No traces of any casting seams survive, and no other evidence can be identified which relates to this process.

Use: Impossible to determine.

Reduction: A slight indentation near one break may be linked with the fragmentation of the object.

11/28

Description: Small fragment of sickle blade.

Dimensions: Length (maximum): 35mm. Weight: 7.1g.

Patina: Corrosion stripped, details obliterated.

Manufacture: There is no evidence relating to this process.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

11/29

Description: Probable knife blade fragment.

Dimensions: Length (maximum): 36mm. Weight: 17.6g.

Patina: Corrosion stripped, details lost.

Manufacture: There is no evidence relating to this process.

Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

11/30

Description: Fragment of socketed hammer.

Dimensions: Length (maximum): 40mm. Weight: 69.6g.

Patina: Corrosion stripped, details obliterated.

Manufacture: There are faint traces of casting seams on either side of the piece.

Use: Impossible to determine, as the striking platform is now missing.

Reduction: Cracking in association with the break on either side seems likely to be linked with fragmentation, though no hammer indents can be identified in association.

11/31

Description: This object has been interpreted as a sickle blade, due to its curved shape. However, the line of the midrib does not match the curve of the 'blade'. Instead, this fragment seems more likely to be a much mutilated sword blade. Its section is similar to that of a 'Carp's Tongue' sword, though the absence of grooved decoration defining the midrib might argue against this.

Dimensions: Length (maximum): 85mm. Weight: 60.6g.

Patina: Corrosion stripped, details obliterated.

Manufacture: There is no evidence relating to this process.

Use: Only two short stretches of the original cutting edge remain. These are rough in appearance, probably as a result of corrosion stripping.

Reduction: There is no evidence relating to this process.

11/32

Description: Shoulders and upper blade of 'Carp's Tongue' sword. Grooves define the midrib and branch off towards the rivet holes. One rivet hole remains intact on one shoulder, while its equivalent on the other shoulder survives in fragmentary form.

Dimensions: Length (maximum): 77mm. Weight: 102.9g.

Patina: Corrosion stripped, details obliterated.

Manufacture: There are possible grinding marks running down the length of the piece, but they must remain doubtful as the surface is in such poor condition.

Use: The original cutting edges no longer survive. Whether this results from use-related damage, deliberate breakage or corrosion loss cannot be determined.

Reduction: There is a probable hammer facet visible at the lower break (illustrated).

11/33

Description: Fragment of 'Carp's Tongue' sword blade, comprising only a small length of the midrib, with some traces of the grooves which once defined the midrib surviving in places.

Dimensions: Length (maximum): 35mm. Weight: 21.3g.

Patina: Corrosion stripped, details obliterated.

Manufacture: There is no evidence relating to this process.

Use: Impossible to determine.

Reduction: The blade has been removed on both sides of the midrib, but no evidence which directly relates to this process, i.e. hammer indents or distortion, can be identified.

11/34

Description: Blade fragment of Ewart Park sword.

Dimensions: Length (maximum): 130mm. Weight: 97.2g.

Patina: Corrosion stripped, details obliterated.

Manufacture: A fine bevel runs along the cutting edge in places.

Use: The cutting edges, where they survive, are sharp, but a number of notches are present, on one side in particular. These seem likely to have been inflicted during use, but have probably been much exaggerated by the corrosion stripping.

Reduction: There is a marked bend to the profile in association with one of the breaks (the upper break, as illustrated).

11/35

Description: Blade fragment of Ewart Park sword.

Dimensions: Length (maximum): 76mm. Weight: 48.1g.

Patina: Corrosion stripped, details obliterated.

Manufacture: There is no evidence relating to this process.

Use: The cutting edge only survives intact over one short stretch, and it is blunt here. Some notches are apparent, but it is unclear whether they might have been caused by use-related damage, deliberate damage linked with fragmentation, or during the recent removal of the corrosion products.

Reduction: See Use above.

11/36

Description: Blade fragment of Ewart Park sword.

Dimensions: Length (maximum): 50mm. Weight: 53.0g.

Patina: Corrosion stripped, details obliterated.

Manufacture: There are some possible grinding marks running down the length of the blade edge, though it is difficult to be confident about their authenticity on account of the poor condition of the surface.

Use: The cutting edge seems reasonably fine where it survives, though it appears unduly rough following corrosion stripping.

Reduction: There is no evidence relating to this process.

11/37

Description: Small blade fragment of Ewart Park sword.

Dimensions: Length (maximum): 20mm. Weight: 14.4g.

Patina: Corrosion stripped, details lost.

Manufacture: No visible indications.

Use: The cutting edges no longer survive. Casual inspection suggests that the blade remains sharp over its extent on one side, but the uneven thickness of the metal in this location instead argues that this 'edge' is illusory, resulting instead from corrosion removal.

Reduction: There is no evidence relating to this process.

11/38

Description: Small dome-shaped boss, which probably formed part of an unknown decorative fitting.

Dimensions: Diameter (maximum): 13mm. Weight: 2.9g.

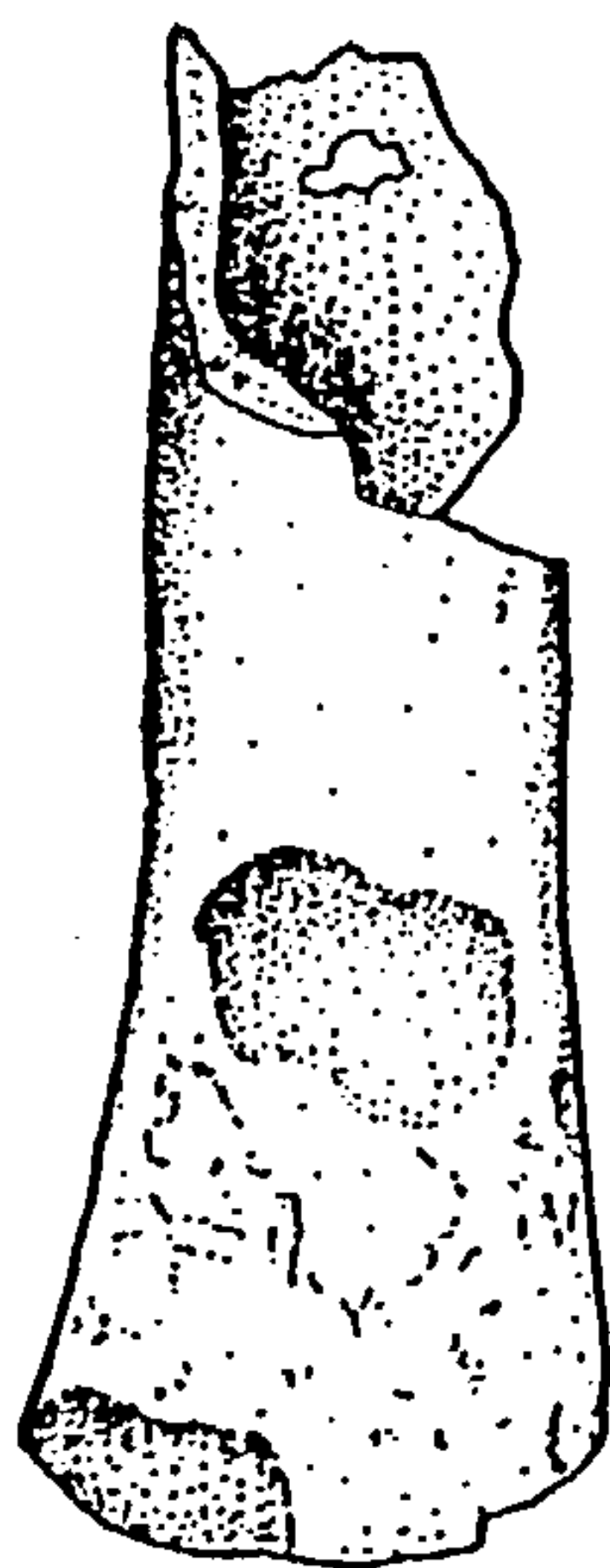
Patina: Corrosion stripped, details lost.

Manufacture: There is no evidence relating to this process.

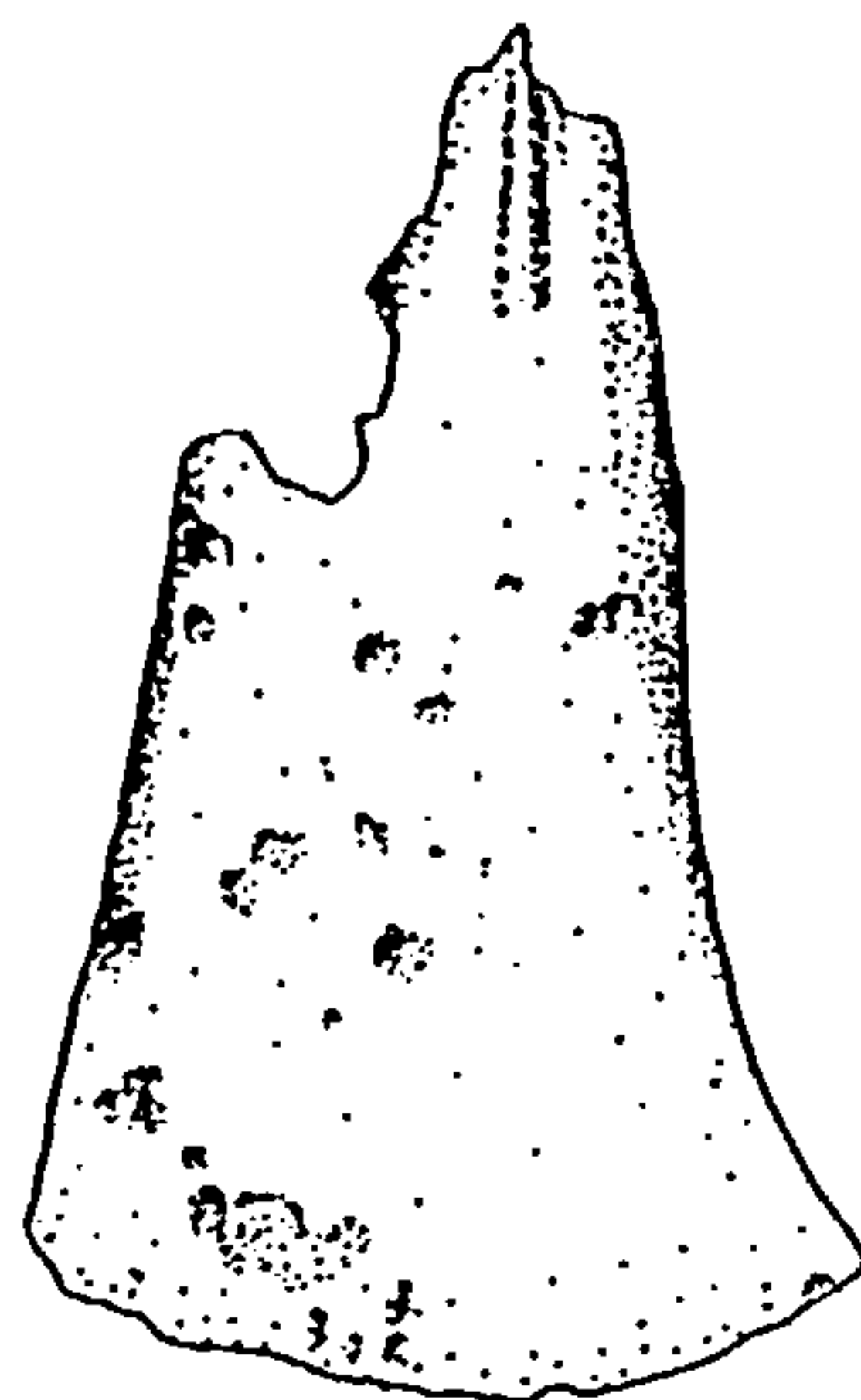
Use: Impossible to determine.

Reduction: There is no evidence relating to this process.

11/01



11/02

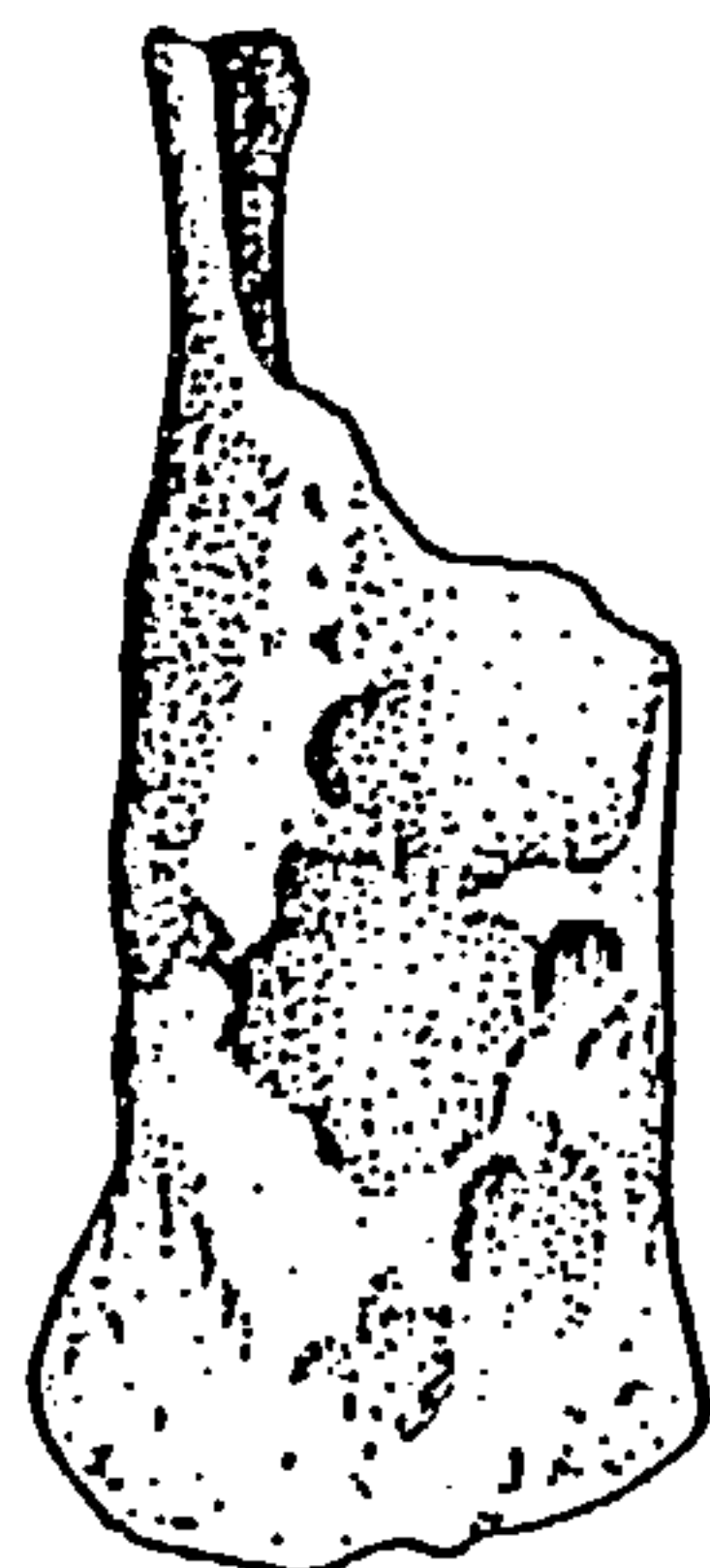


11/03

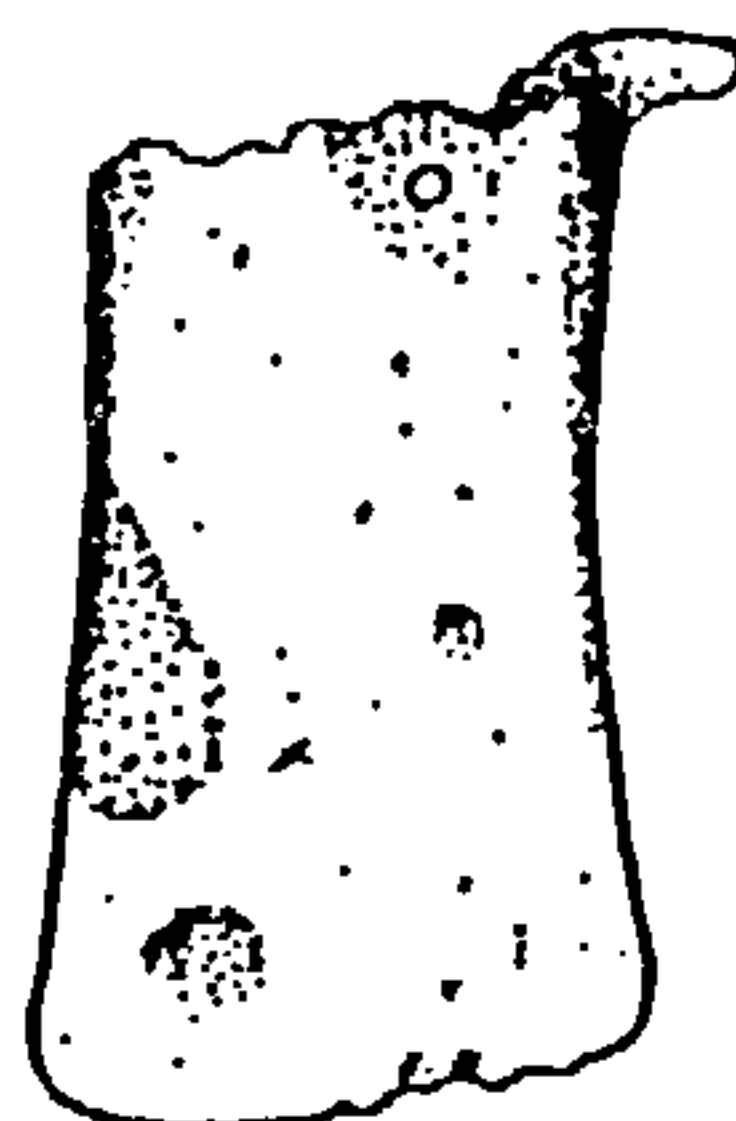


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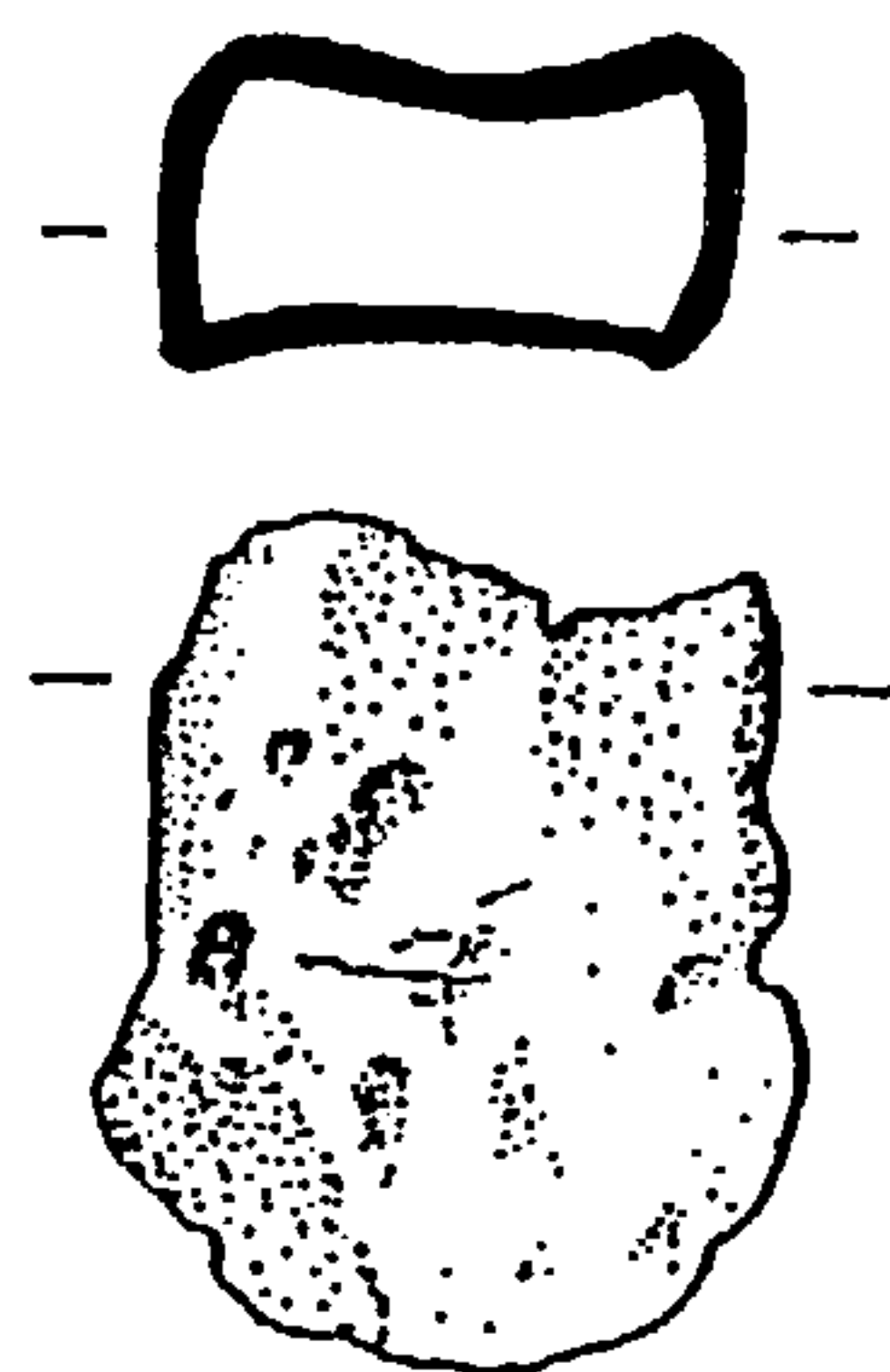
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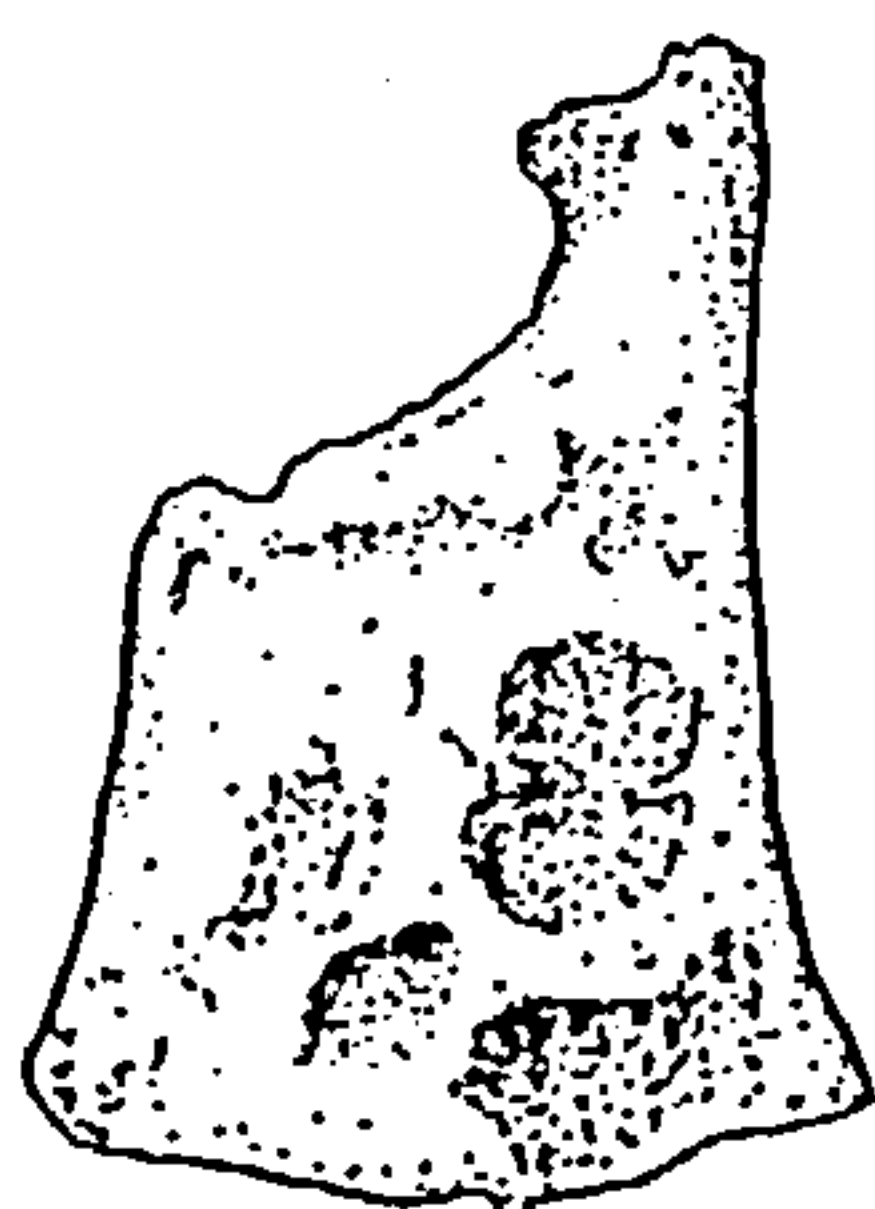
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11/08



11/09

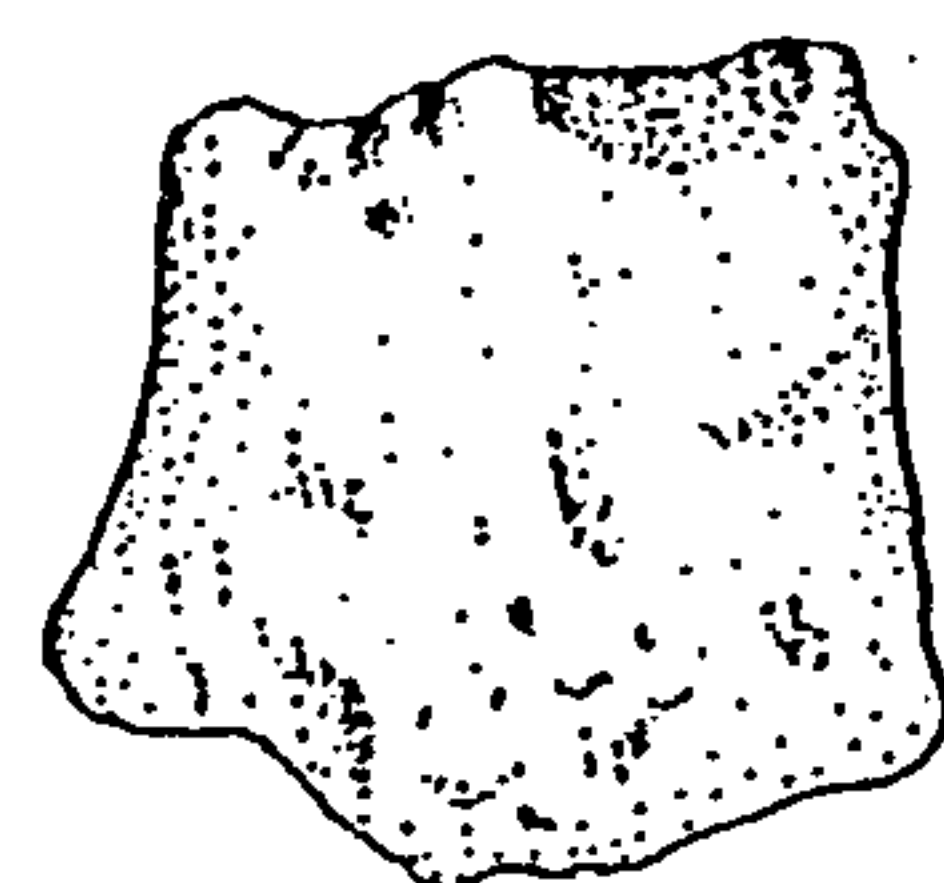
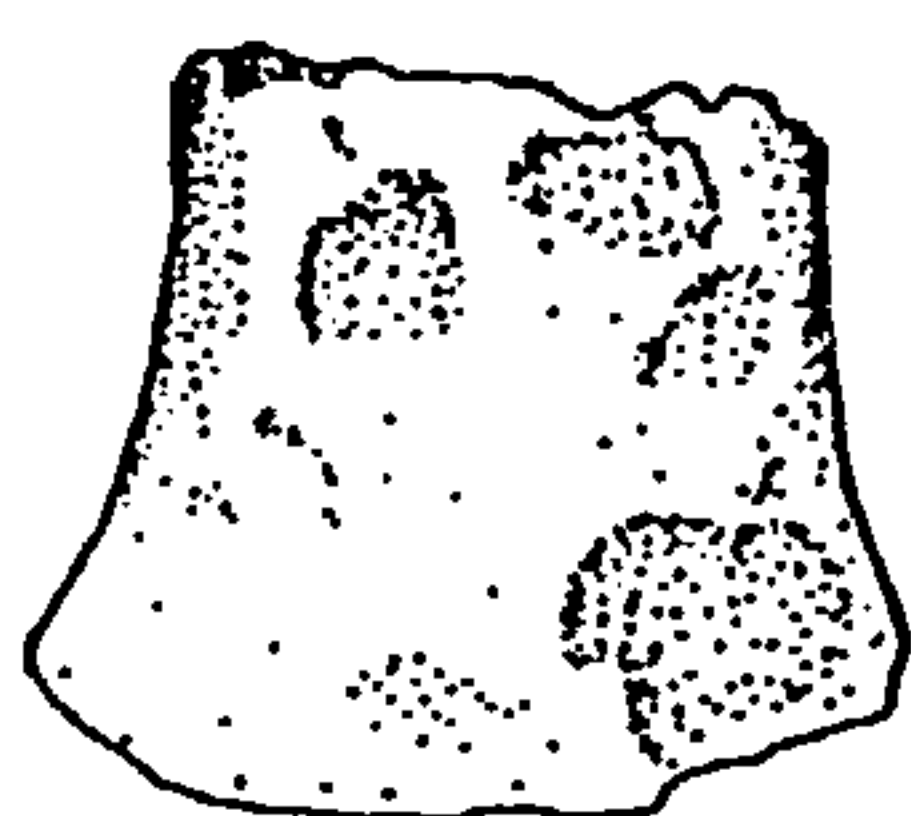
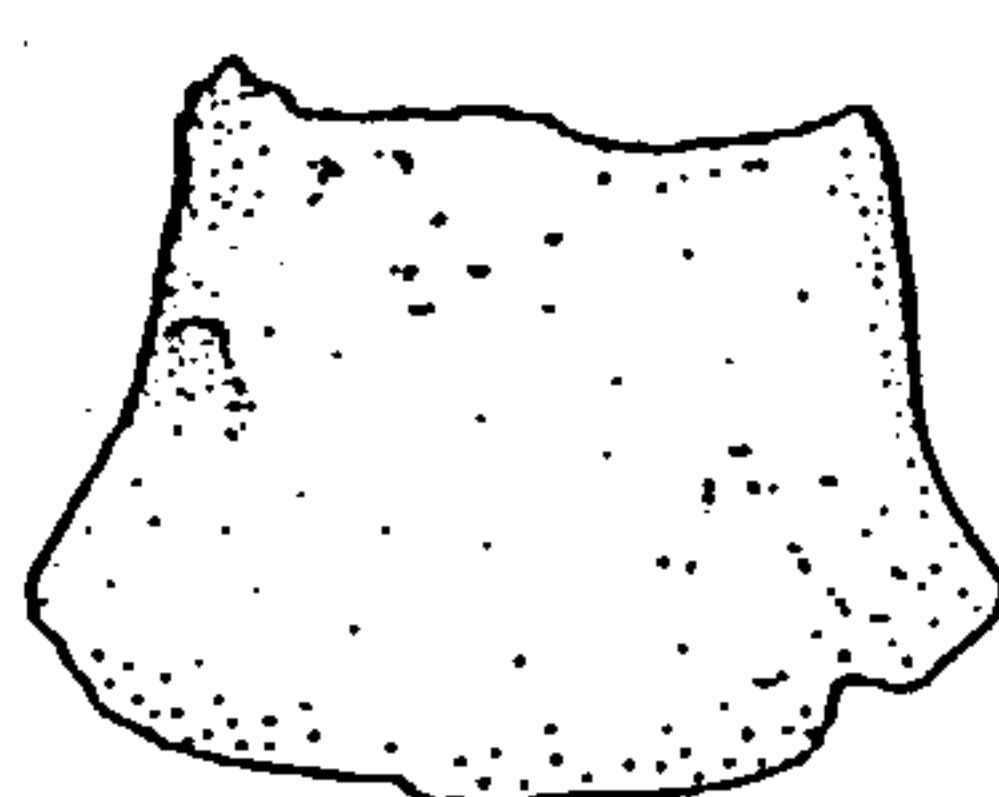


Fig. 86: The Vange Hoard (Ref. No. 11): Socketed Axe Fragments (i)

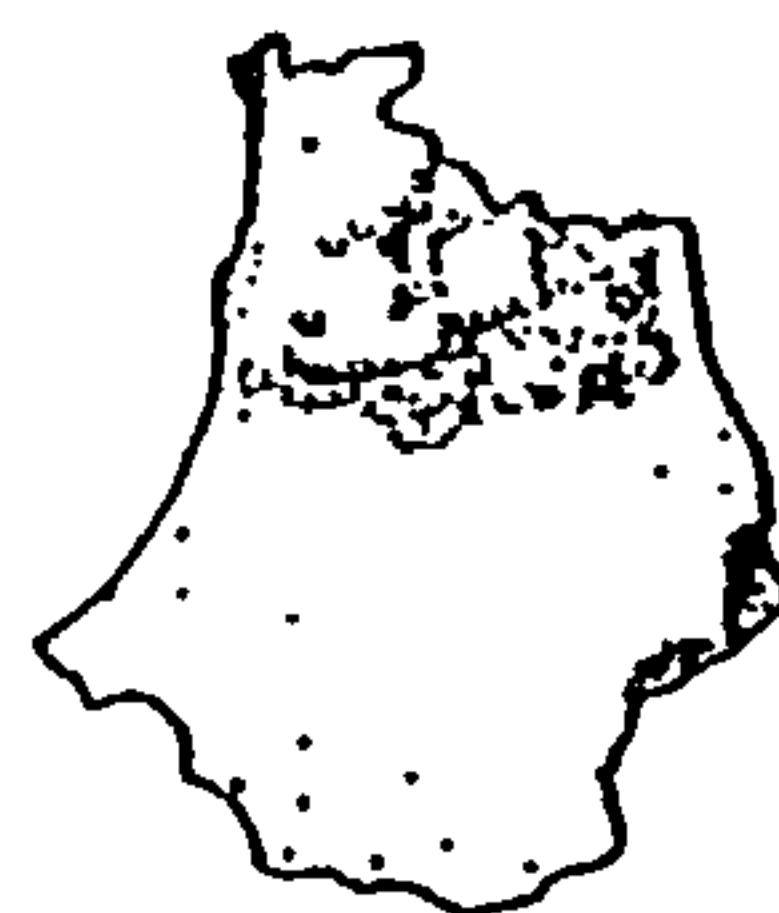
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11/11



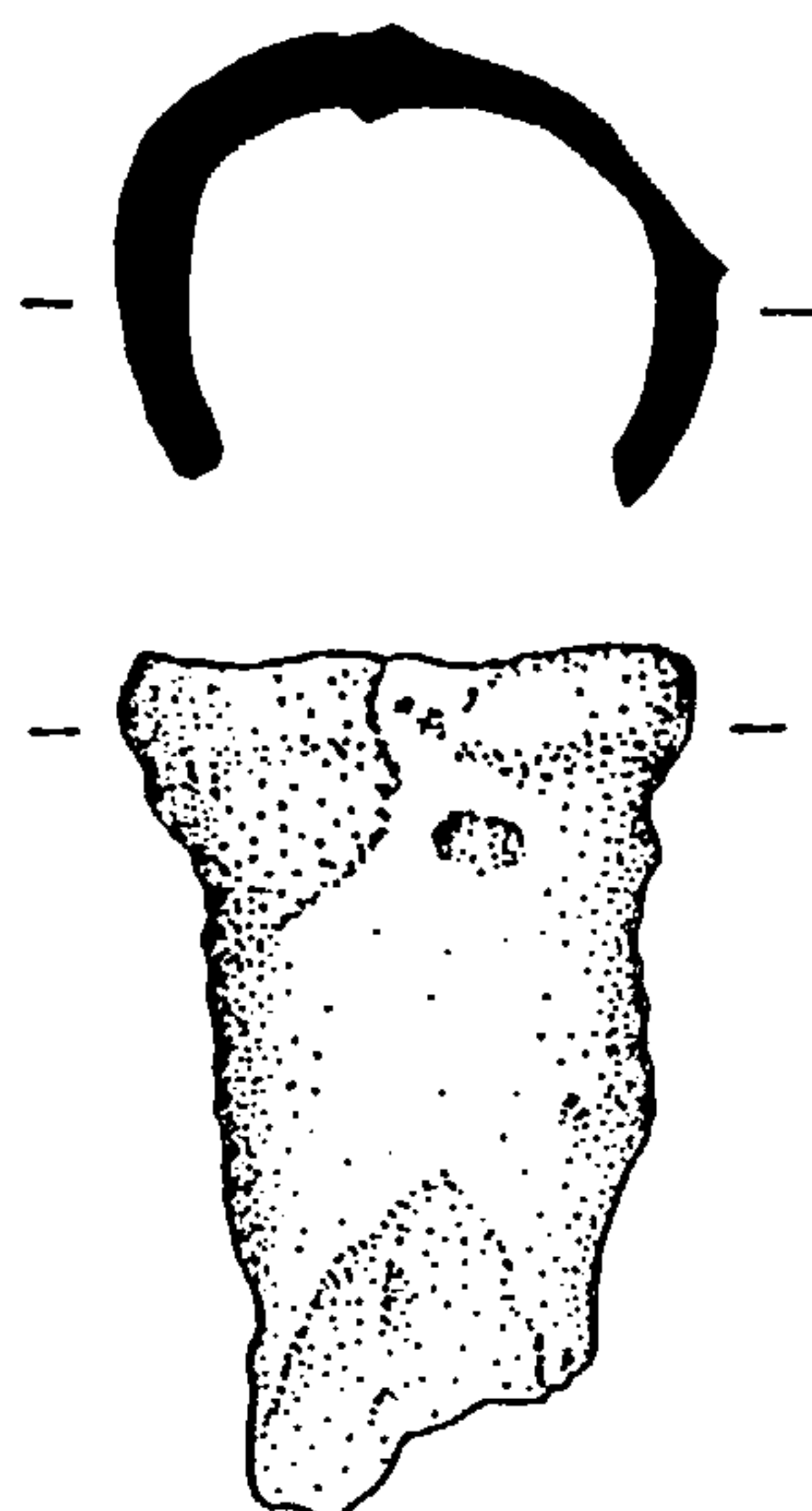
11/12



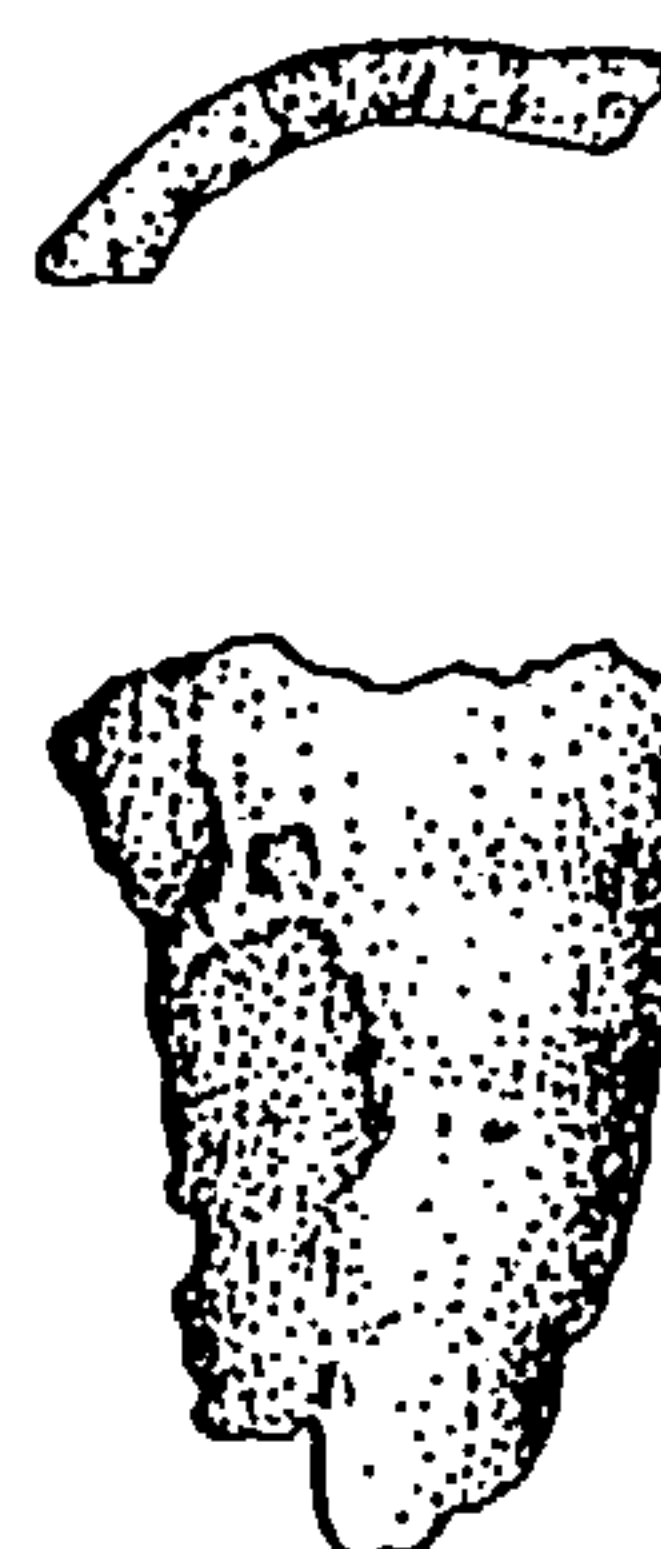
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11/14

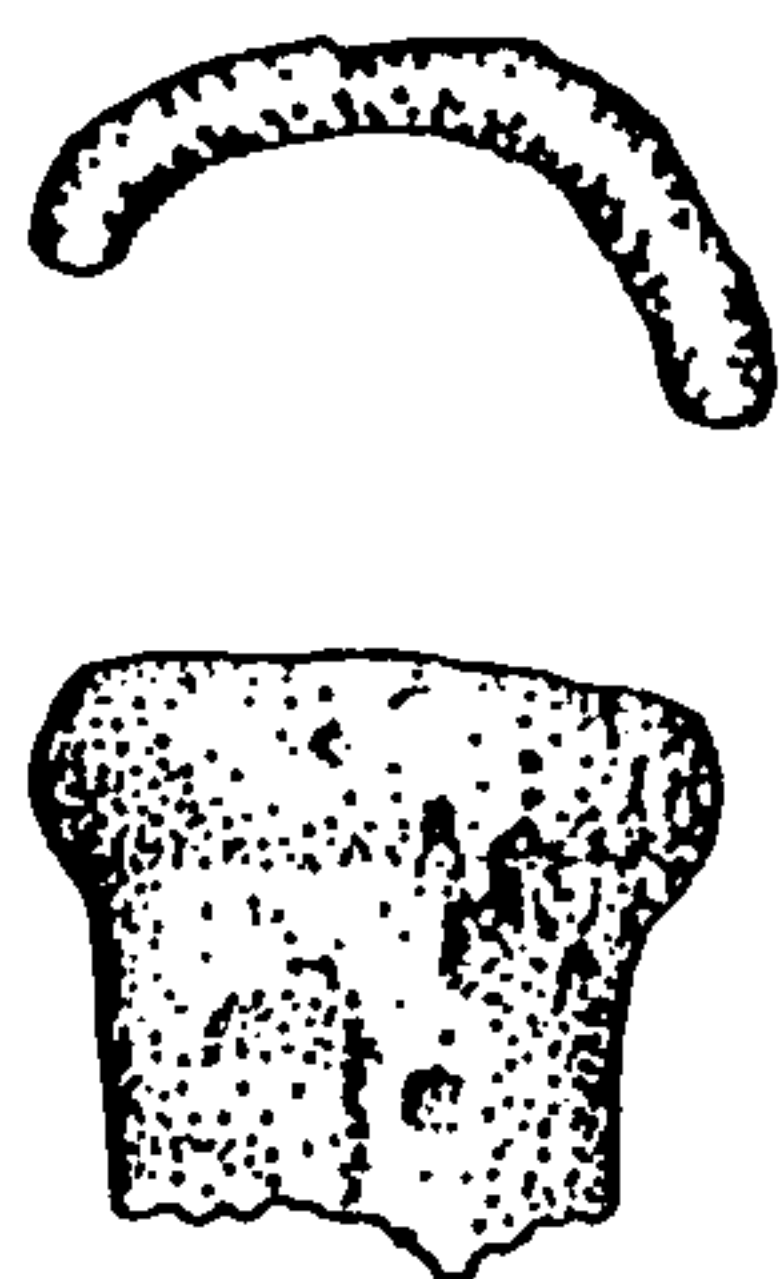


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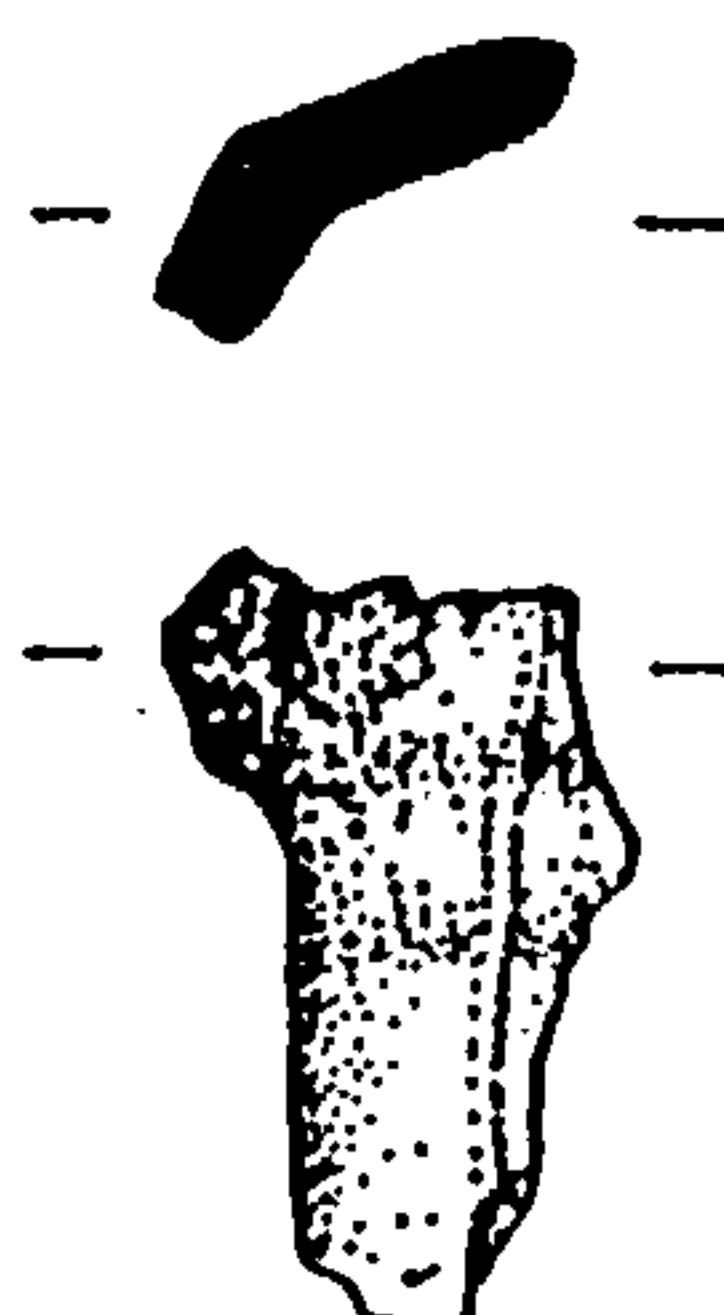


0 2cm

11/16



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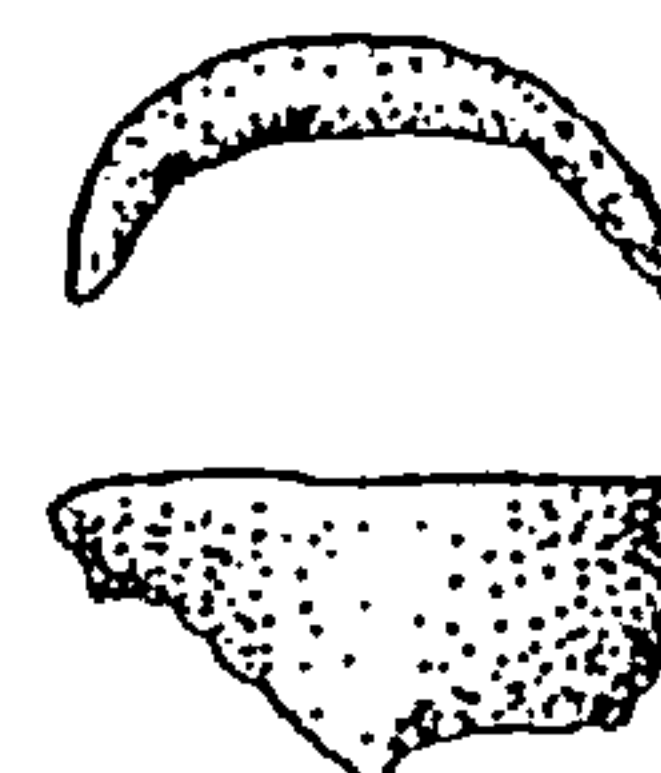
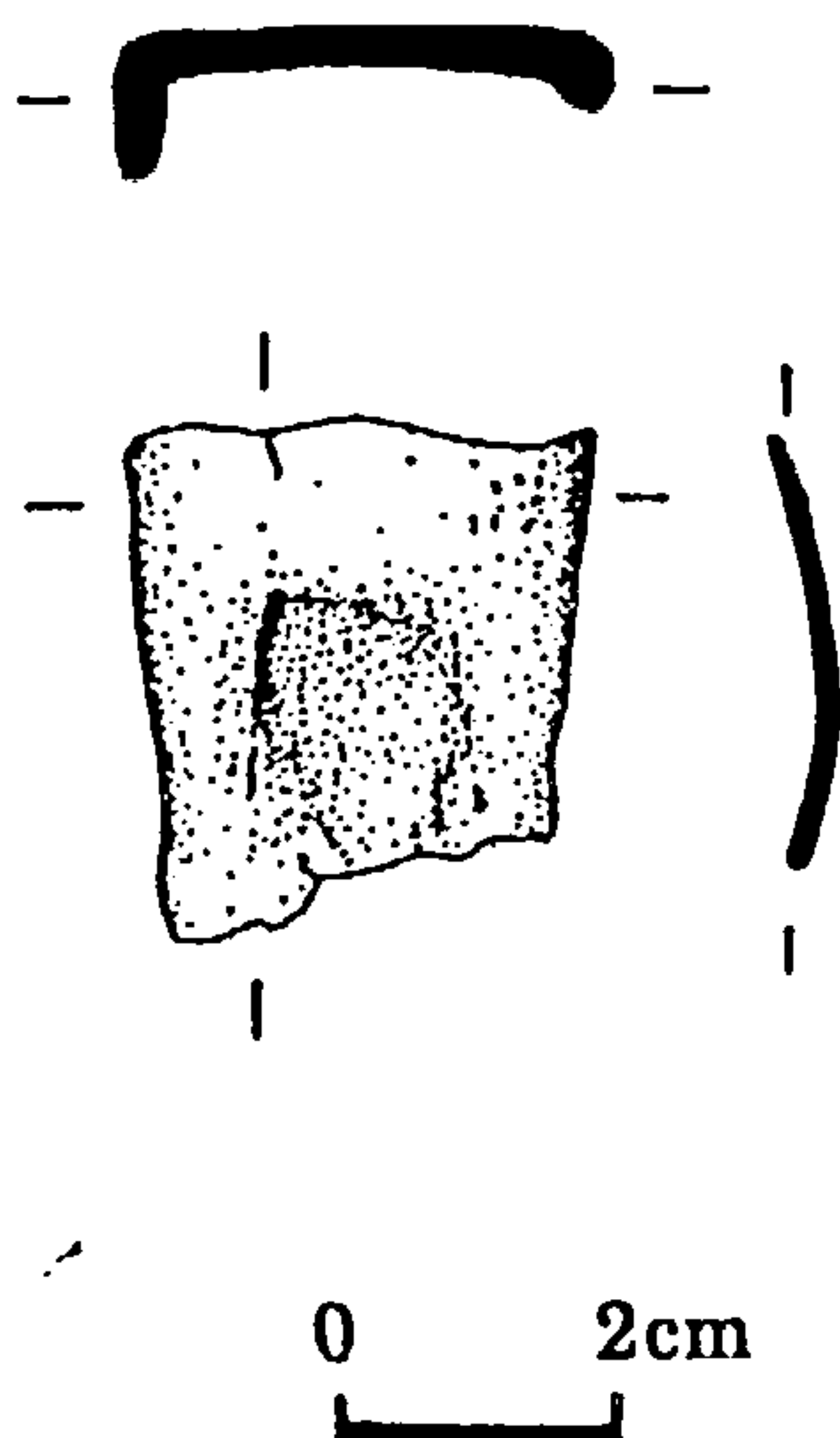
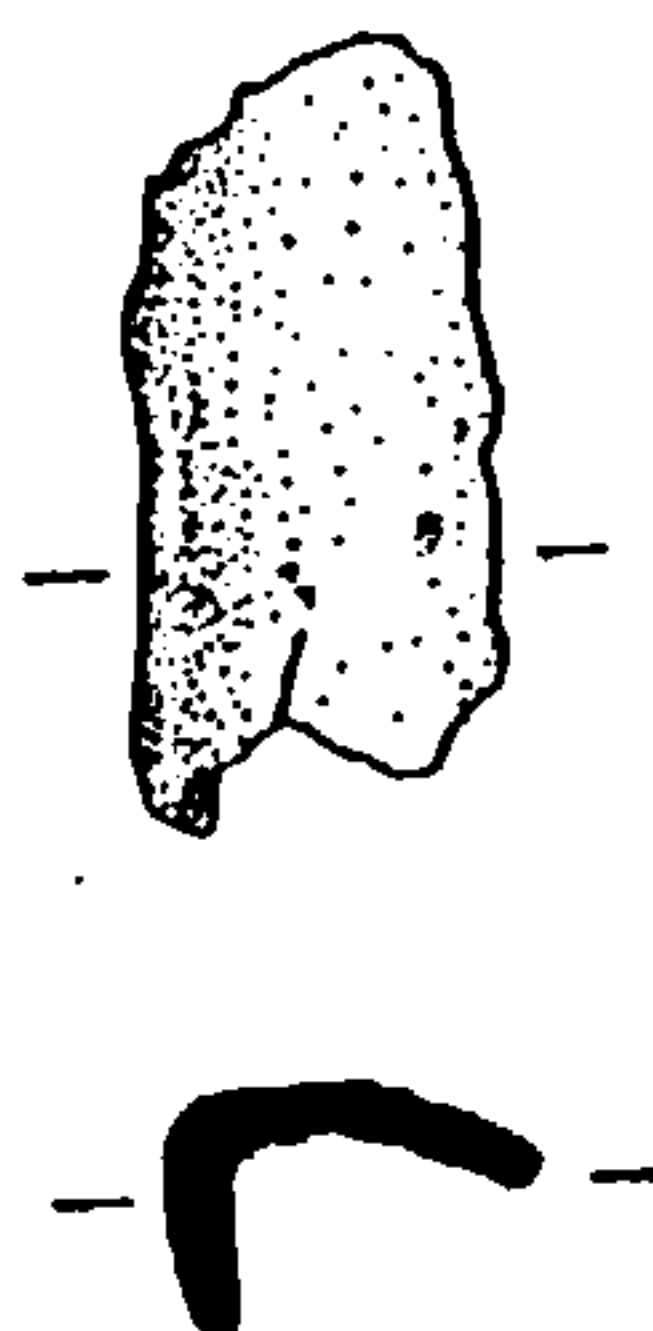


Fig. 87: The Vange Hoard (Ref. No. 11): Socketed Axe Fragments (ii)

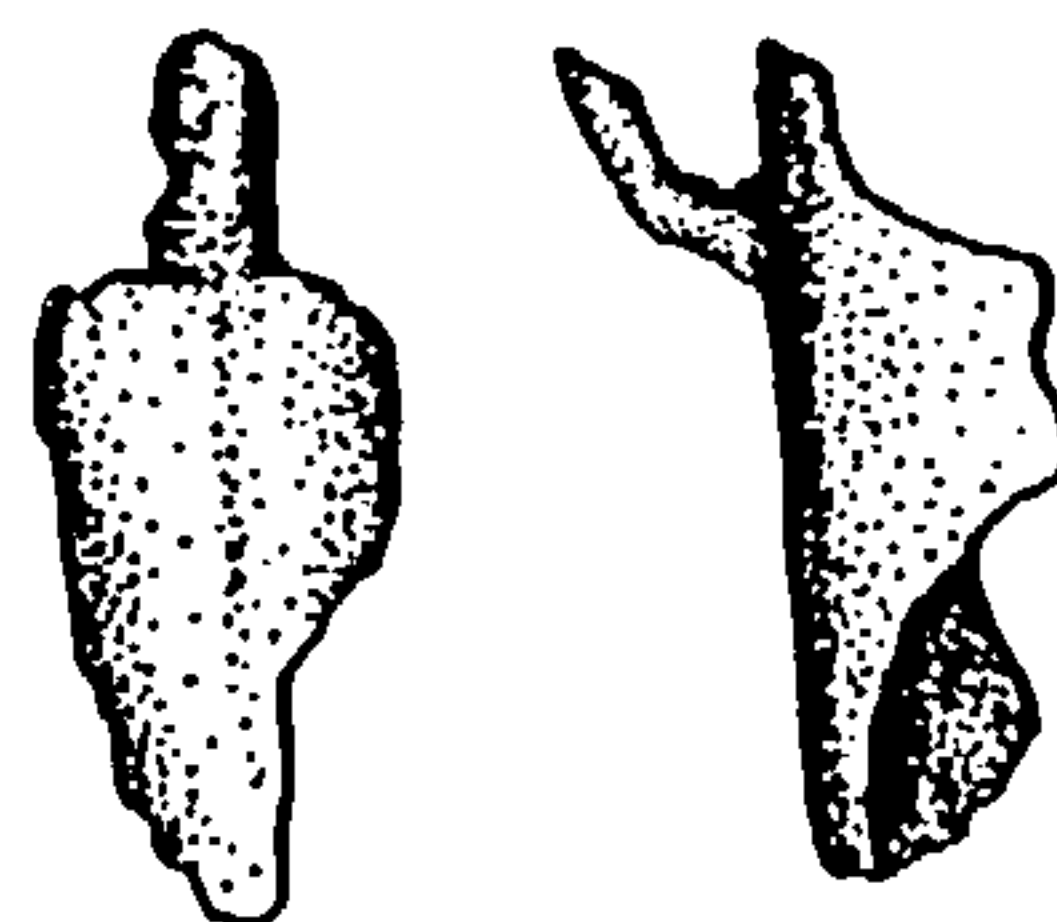
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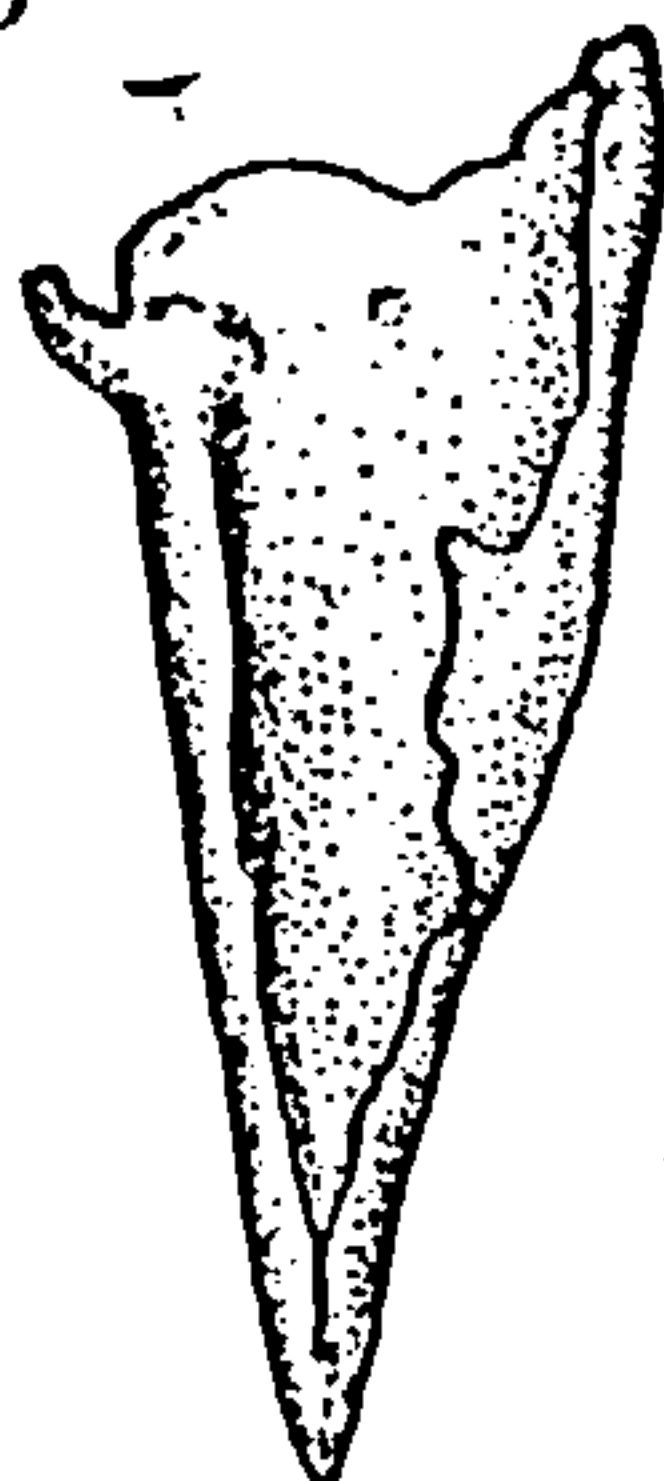
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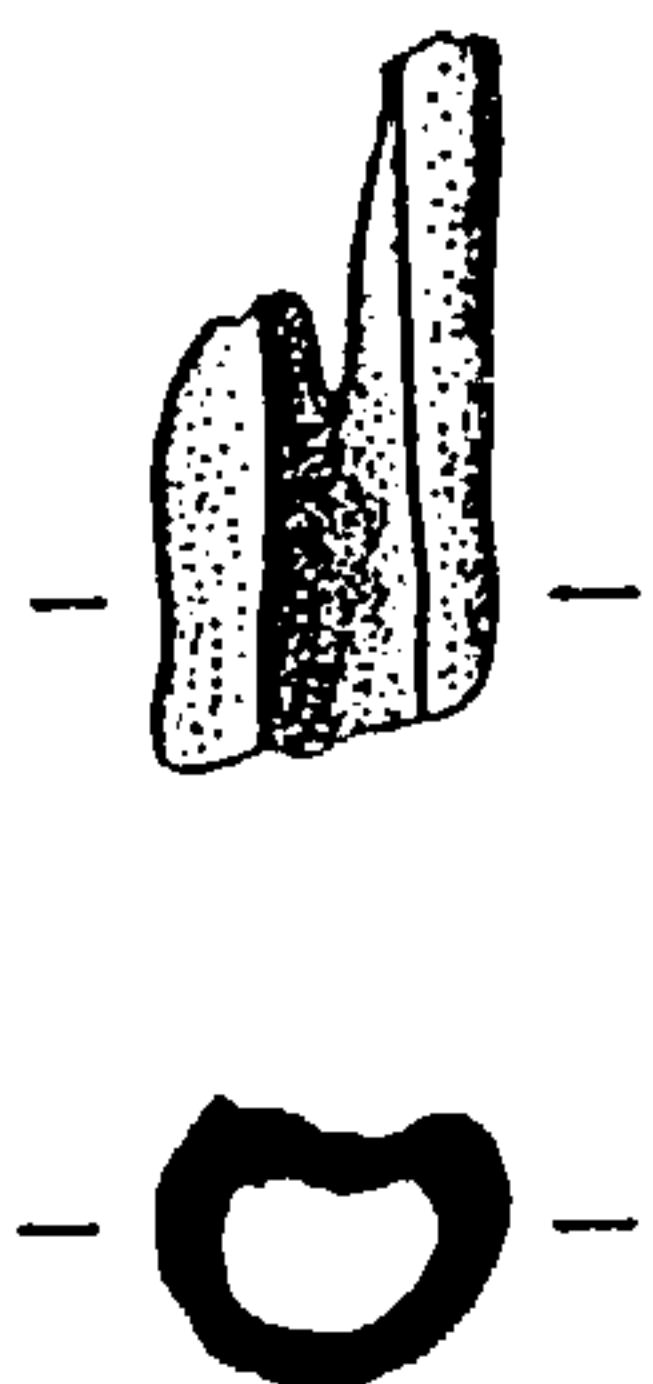
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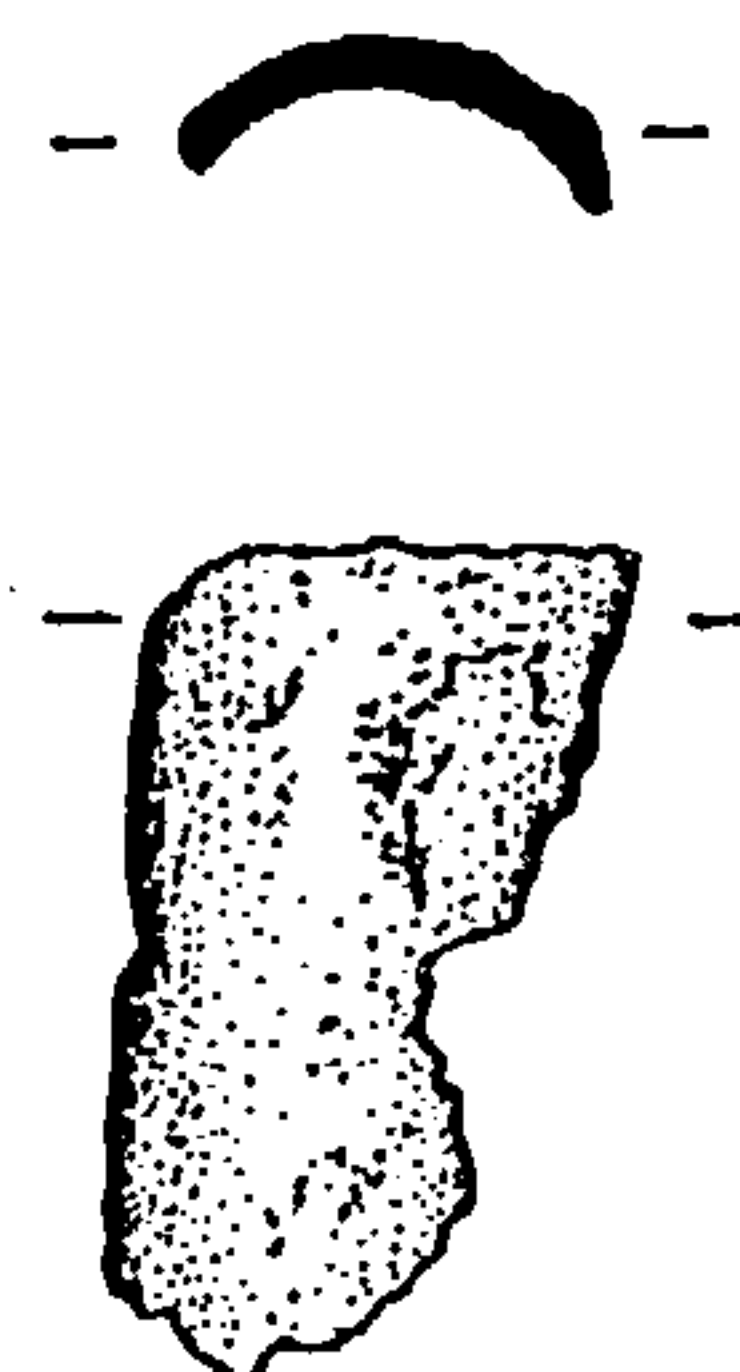
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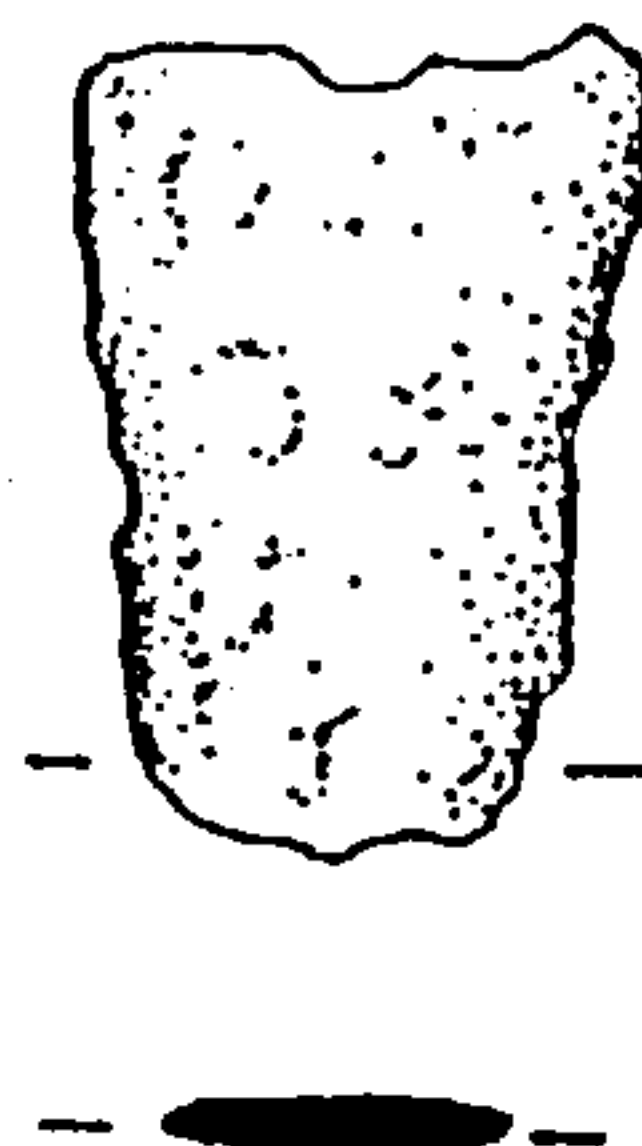
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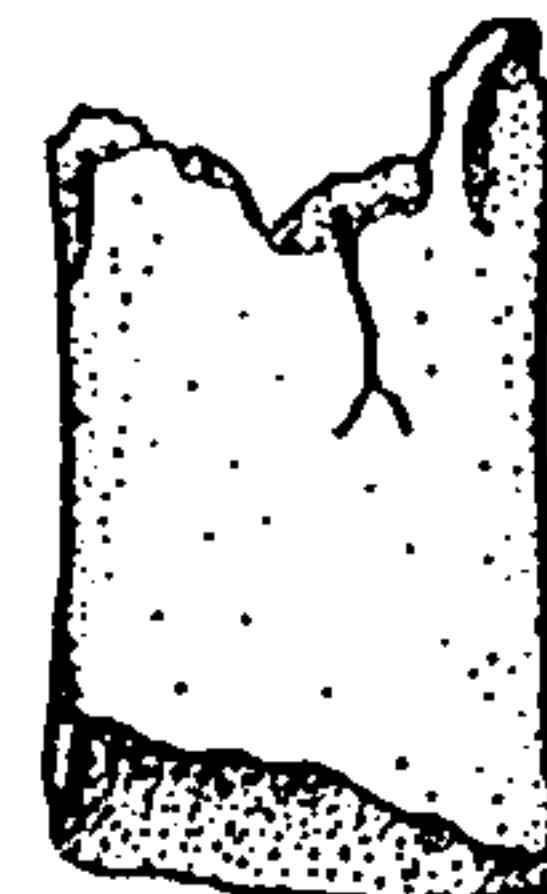
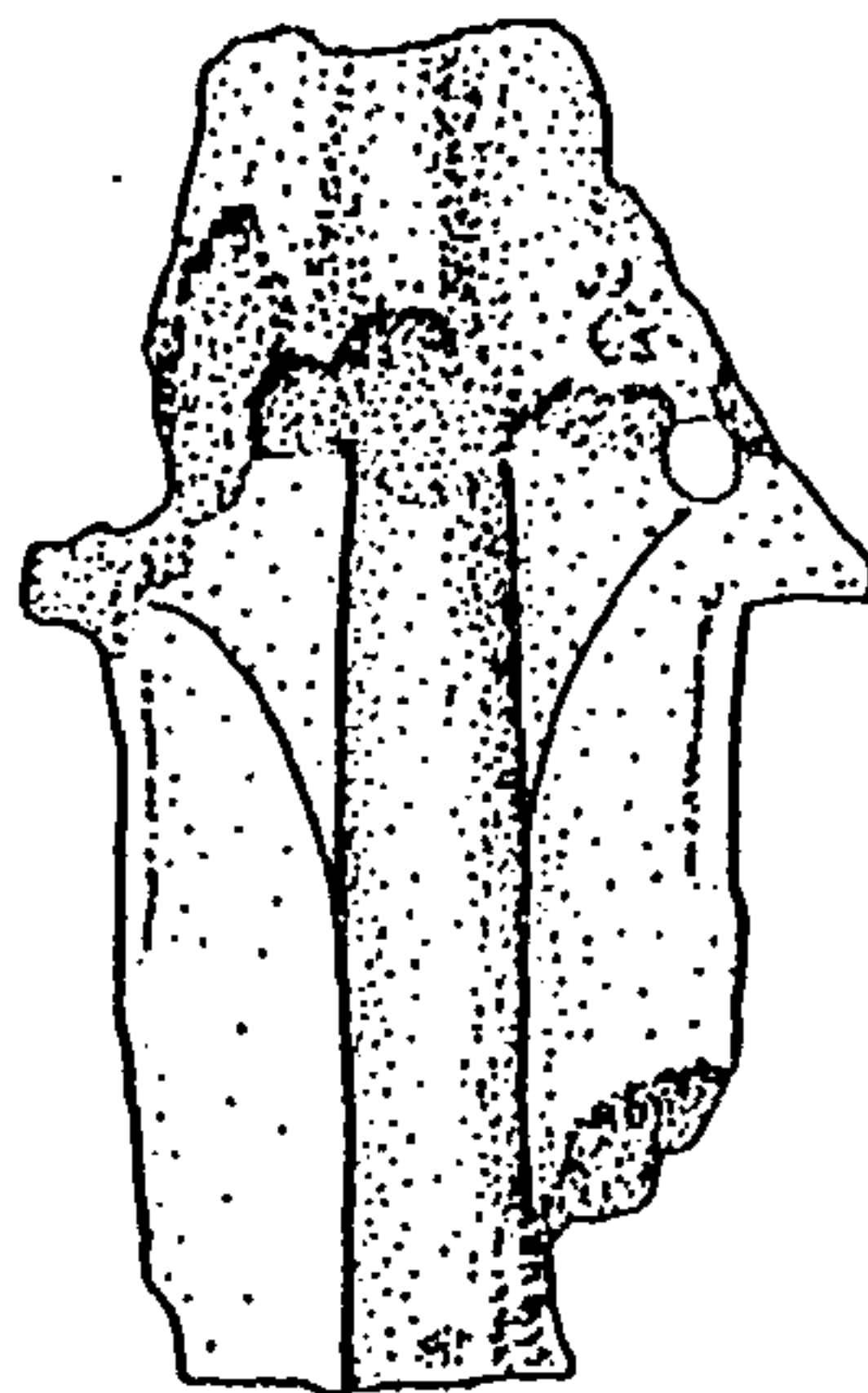


Fig. 88: The Vange Hoard (Ref. No. 11): Socketed Axe Fragments (iii), Winged Axes and Small Tools

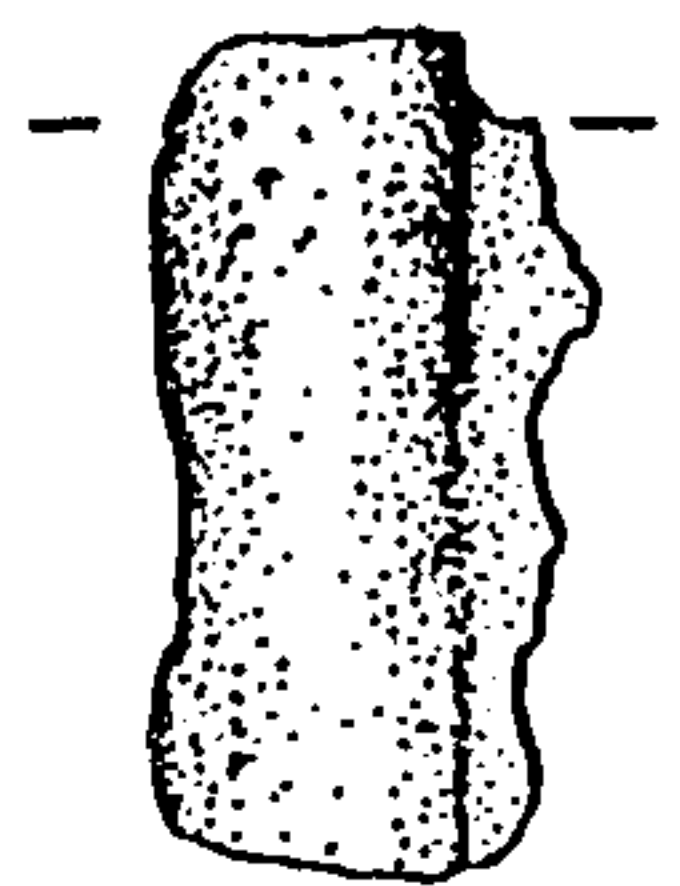
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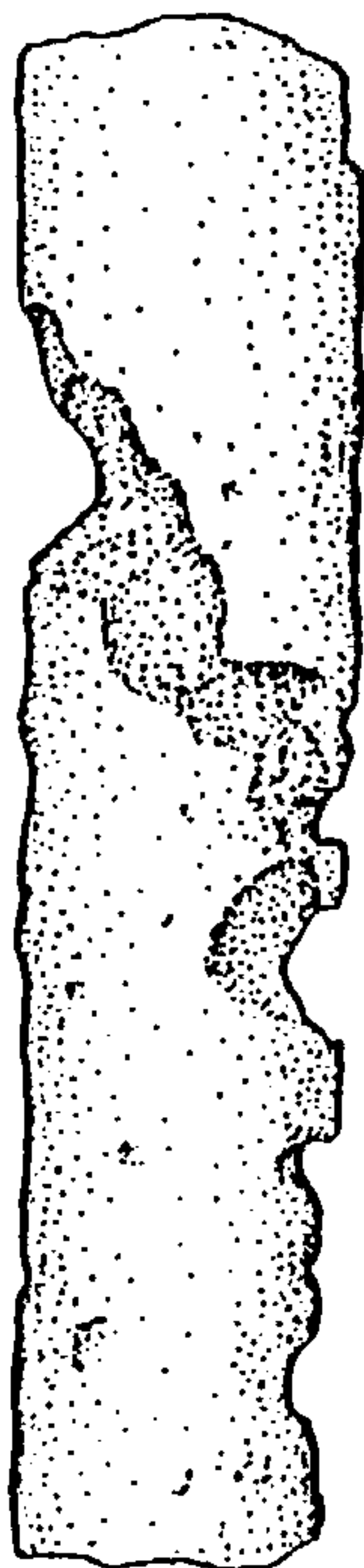


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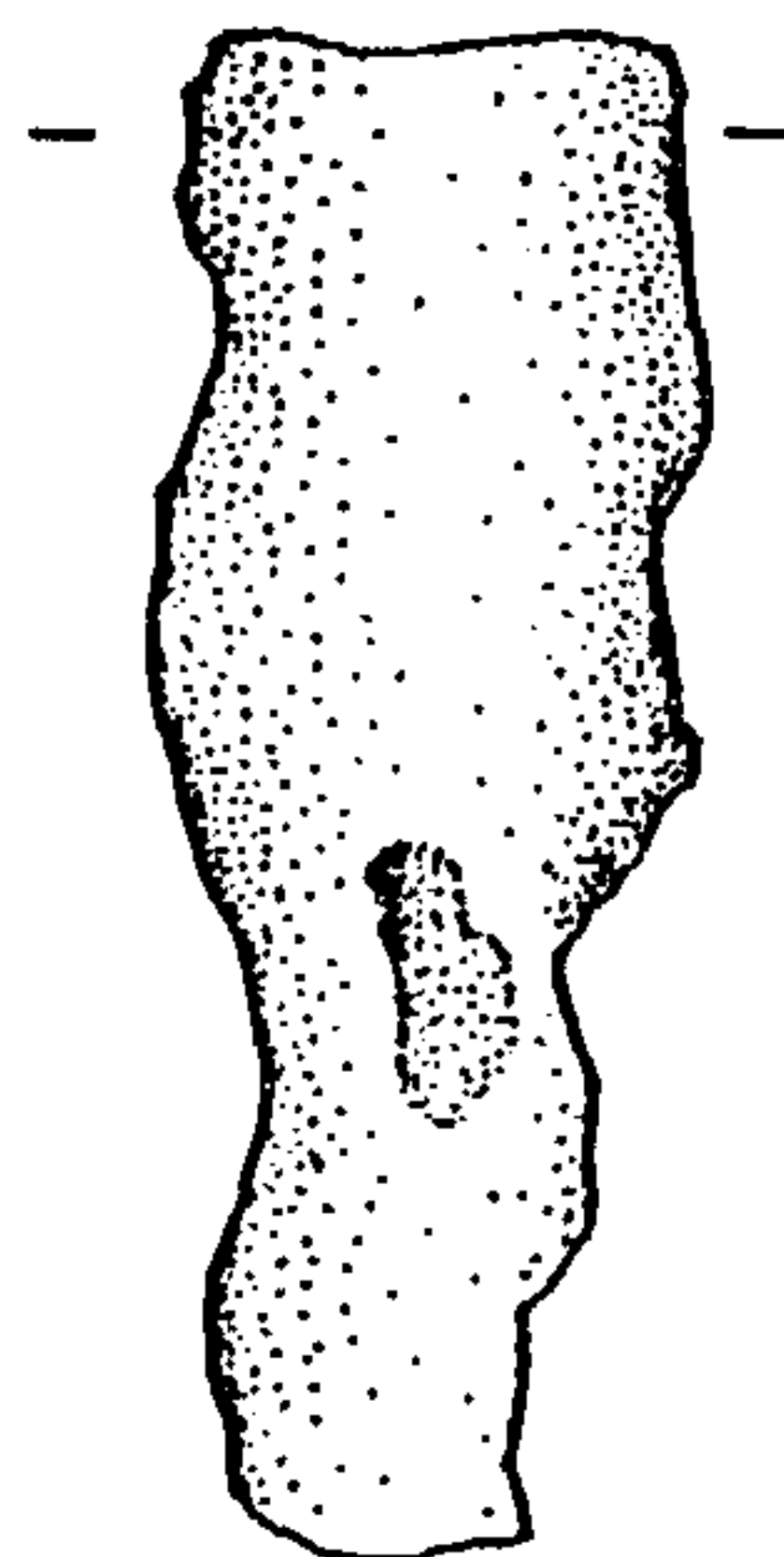


0 2cm

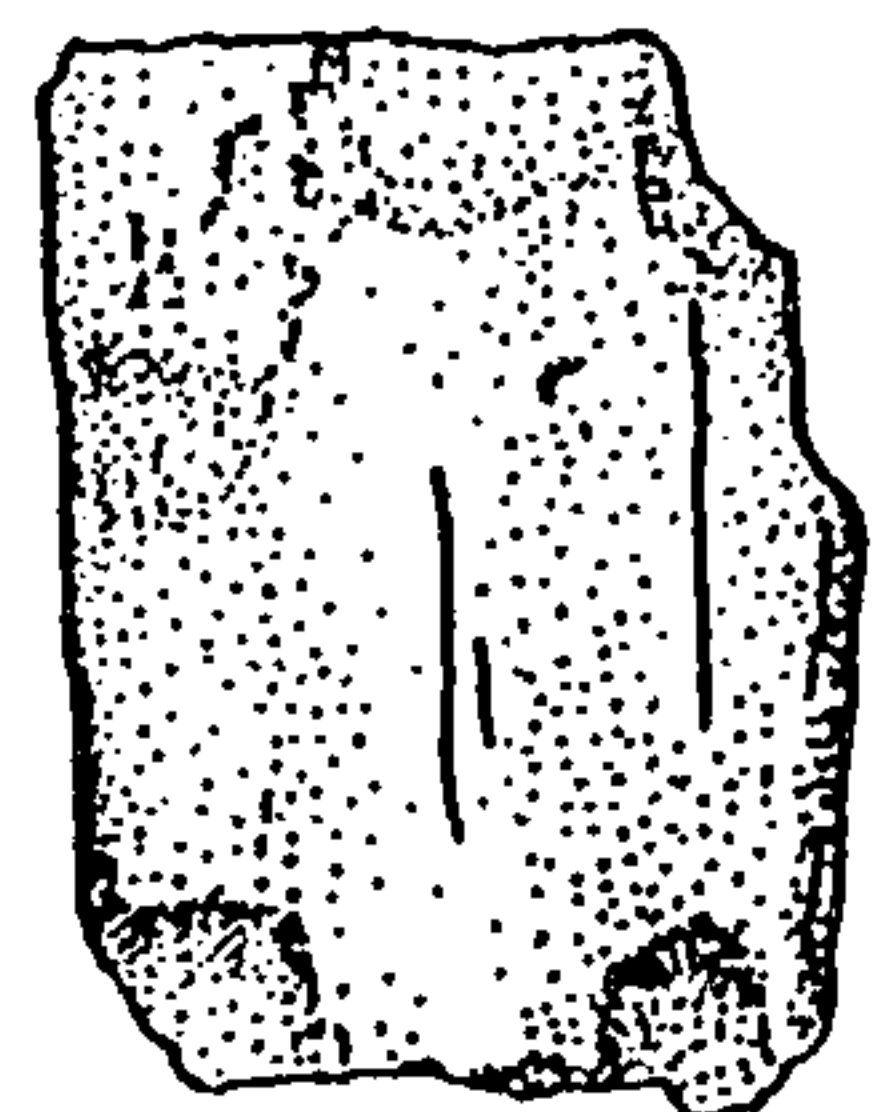
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Fig. 89: The Vange Hoard (Ref. No. 11): Weaponry and Decorative Fittings