3 AREA II : THE NORSE ASSEMBLAGE

THE LOWER NORSE HORIZON

The lower Norse horizon included a number of phases of which the plan (Ill 5: 2) shows in detail only the two most recent: Rooms VI and VII, Passage-ways 1 and 2, the drainage system; and VIII, the so-called Boat Slip.

Paving slabs obtruding from the edge of the cliff had indicated occupation below the middle Norse horizon and when the loose earth above them was removed the rectangular sunken hearth of Room VI was revealed. The middle Norse horizon Rooms, 9, 10, 11, 12, and the upper Norse horizon Rooms 13 and 14 were removed to open up the wide Passages 1 and 2 and to expose part of the five stone-lined and slab-covered drains which radiate from a point just to the S of the main complex (Ill 32).

Although Rooms VI and VII both opened into Passage 2 it is agreed that they were of later construction. The E end of Room VI had been destroyed by a cliff fall either before or after a fire. The floor of the room was paved. It was covered by a layer about 130 mm deep of a mixture of wood ash and red peat ash, above that was a layer of sandblow about 50 mm thick and then a tumble of fairly large stones and earth. A channel lined and covered with slabs ran alongside the remaining walls, leading under the W wall to a pit lined by one end slab and two side slabs. When excavated, the pit was damp and full of the shells of whelks and limpets, with damp earth and a few bones.

ILL 32 : Passages 1 and 2 and the drainage system of the lower Norse horizon

The channels were interpreted by Dr Richardson as drains and the pit as a sump. Inside the room on a raised slab built against the W wall was a large heap of oyster shells and animal bones. Some of the covering slabs of the channels were tilted on edge and inside the channels were fragments of boat nails, including *491, 492, 494, 496.* The hearth was rectangular, the bottom roughly paved. Buried in the ashes filling it were the remains of bell *467,* Dr Richardson's first impression on the finding of the bell was that this building had belonged to the Celtic monastery which the discovery of the Pictish symbol stone had led him to expect, and it is described as such in the account and the plan published in the RCAHMS Inventory 1946; but the presence of Norse objects render this unlikely. Dr Radford (1959) subsequently identified it as the remains of Earl Thorfinn's hall and interpreted the channels as heating ducts and the sump as a fire pit.

Room VII, which Dr Radford called a Bath House, is also built of dressed stones, the room divided into compartments by upright slabs. There was no trace of a hearth but a considerable amount of peat ash was found on the floor of the W half of the room and over a hundred small round stones were scattered over the floor. They showed no signs of firing.

In 1956 Dr Radford found evidence of an earlier longhouse, the N end forming the foundation of Room VII, stretching SE along the cliff edge. Few traces remained as it had largely been destroyed by coastal erosion. There were no finds recorded.

VIII (Ill 33) has been always referred to as a Boat Slip, which it might well have been, continuing to a lower level before cliff falls cut it off some 3 m above the height of the beach. It has also been suggested that it might have been a passage up to the Brough. There is no evidence for or against either possibility. There were few finds but it was filled with some rubbish and a very large amount of peat ash.

The compact complex of interconnecting rooms (Rooms 1 to 6 of the middle Norse horizon) being considered too important for destruction, the excavation of the earlier occupation levels below was limited; a few of the hearths and paved floors were temporarily raised to expose some earlier walling and to trace the line of the drains, but the earlier floor levels were never fully determined. A number of finds were recovered. Since their horizontal location is known only in relation to the

ILL 33 : The boat slip

standing walls of the middle Norse horizon their position is referred to by the number of the middle Norse horizon room above, using Roman instead of Arabic numerals.

Other earlier Norse phases were revealed in the 1973-74 excavations under Room 5 and a full report on these by J Hunter and C Morris, and analyses of bone and organic remains are included in the Appendix, but the finds from these excavations are included in the main catalogue. Consequently subdivisions have been added to the stratigraphy below Room 5; 3a, 3b, 4a, 4b are discussed as lower Norse horizon Room V, although 4a and 4b could be middle Norse.

As far as the finds are concerned, there are problem areas which could belong to either the lower or middle Norse horizons. The first of these consists of Room VII and Passage 1. On neither of these areas was there subsequent building, and when excavation began in 1936, the outline of the S and W walls of Room VII was visible with a hollow in the turf between the walls. Both areas became rubbish tips in the middle Norse horizon (Ill 5: 1, Midden a and Midden b). Both were filled with a mixture of loosely packed bones, stones and small broken finds, often in groups; for example five nail-headed pins in one small heap. The best solution seems to be to group only the finds from on the early pavement level with those from the lower Norse horizon and the finds in the fill with those from the middle Norse horizon, regardless of typology. VIII (the Boat Slip) was a similar case. After it was abandoned, possibly due to a cliff fall or to changing circumstances, it too became a rubbish tip (Midden c) but there were few finds above the pavement level, and the space between the walls was almost entirely filled with ashes. A similar grouping of the finds has been followed.

Two other areas also present a difficulty as they are not related to standing walls. Area X is to the W and N of Zone 1, in part overlying the area of the well. Area Y is W of Room VII and S of Passage 2 (Ill 5). They both have rough paving. Both yielded a quantity of finds comparable to those from the lower Norse horizon and they are dicussed with the finds from stratified lower Norse levels.

BONE AND ANTLER

Small hipped pins (Ill 7)

Seventeen small hipped pins (*2,20, 22, 23, 25, 26, 28, 29, 32, 33, 38, 39, 49, 51, 52, 59, 69*) were found in the lower Norse horizon. They are generally regarded as a Pictish type and are fully discussed with the comparable pins from the Pictish horizon.

Large pins not perforated (Ill 48)

88 is made from animal bone and has an elaborately carved head formed of rectangular facets each with a narrow rim and a dot in the centre. This type of head is more usually found on bronze pins than on bone (Armstrong 1922), but two bone examples from York are cited by Waterman (1959, 81, fig 12: 8, 9). Other long unperforated bone pins are *84* with a roughly carved head, *82* with a globular head, and *85* with a double button head and coarse incomplete shank. The remaining seven large bone pins from the lower Norse horizon either have flat straight heads or are skewer pins varying in length from 74 mm to 110 mm. With the exception of one made from antler and another of whalebone, they are made from pig fibula.

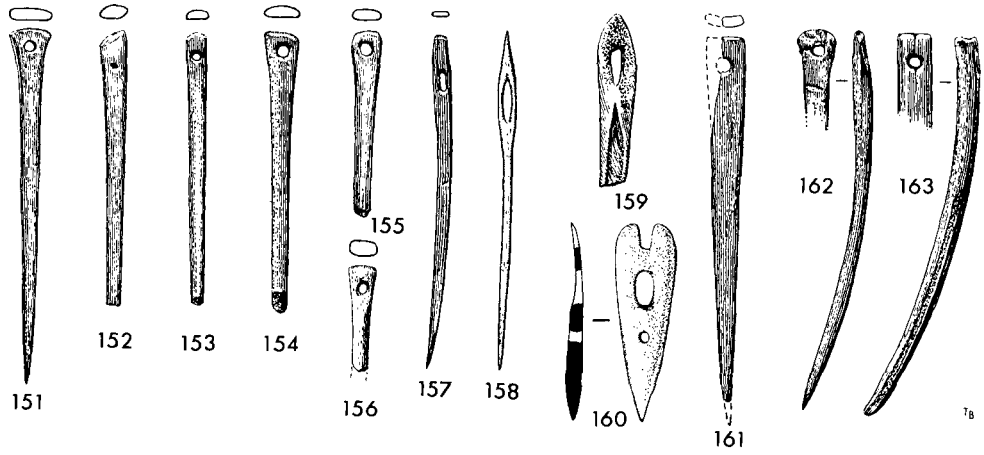
Large pins with perforated heads (Ill 48)

The greater numbers of large perforated pins are from the middle Norse horizon; only six (*107, 109, 121, 122, 126, 128*) came from the lower Norse horizon. They are unremarkable, the heads either flat-topped or annular; all are of long bone except for one which is of antler. They are indistinguishable from pins or netting needles from sites in Scandinavia (Andersen et al 1971, 110) and from York (Waterman 1959, 83, 84, fig 14).

Needles (Ill 8, 34)

The needles too are unremarkable, for the most part similar to those from the Pictish or middle Norse horizons; there are thirteen from the lower Norse horizon including *144* (Ill 8) which is unusual

in having a flat head decorated with a horizontal line of dots. *158* (Ill 34) has an unusually long pointed head and an elongated eye. *159* (Ill 34) is made from antler with a pointed head and large oblong eye, rather larger than the Pictish variety but broadly similar to those from the middle Norse horizon; the shank is incomplete, broken off at 30 mm length.



ILL 34 : Large bone needles. Scale 1/2

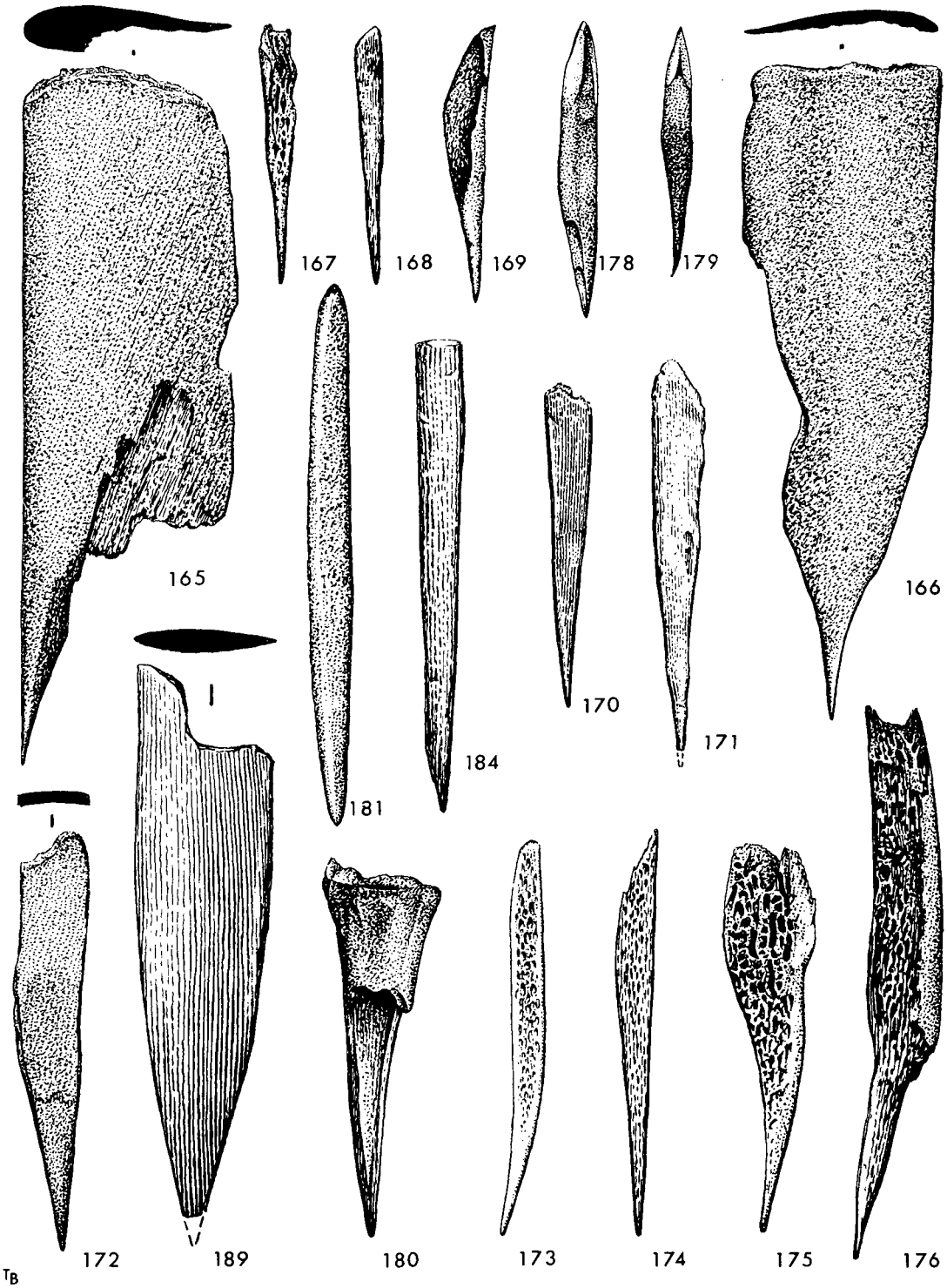
Picks and pointed implements (Ill 35)

There were many bone picks which were unshaped except for being sharply pointed. Two of these, *165* and *166* were large, 105 mm and 97 mm long respectively. The remainder varied in length from 38 mm to 86 mm, the majority came from rib fragments; the exceptions were *180* from a sheep or goat metatarsal, and *178* and *179*, which were simply pig incisors with sharpened roots. One of these picks (*172*) came from the Pictish horizon and one (*174*) from the middle Norse horizon. The others were all from the lower Norse horizon, six from the paving of VIII, the Boat Slip, and the rest from the floor level of Passage 1. It seems possible that the smaller of these picks may have been used as 'winkle-pickers'. A large number of limpets and winkles were found in the drains and particularly in the stone sump in Passage 1 outside Room VI. In the report on the bone material Dr Sellar (Appendix 8: 2) mentions shell fish as a source of food on the Brough.

Other pointed implements are in a different category having been carefully shaped. Their purpose is not clear. *183* is a rod tapered at both ends. Two other examples come from the upper Norse horizon. They are not unlike the thread pickers found at Southampton (Addyman and Hill 1969, 76, pl 7b) and in Denmark (Andersen et al 1971, Ill, CEC) but the ends are not so sharp and there is little other evidence of weaving on the site except for the small weaving tablet *243* (Ill 38) from the lower Norse horizon and a perforated stone which could have been a loom weight, *580*, from the upper Norse horizon. Two other rounded bone implements *184* and *185*, are pointed at one end only, their tops cut off square; *185* has a dot in the centre of the top. Another group consists of objects still with pointed ends, but flat; *189* is wide at the top, narrowing to a pointed end. *191* is leaf-shaped, only 42 mm long.

Double-sided combs: Type B (Ill 10)

The double-sided combs are divided into Types A and B. The distribution of Type A both on Pictish sites and in Ireland suggests that they were a native type. All the Type A combs at Birsay were from the Pictish horizon. Type B combs, on the other hand, were, with one exception, from the lower Norse horizon. The thirteen discovered vary considerably one from another and it is easiest to define their characteristics by comparing them with the Type A combs; they are longer; the teeth are not graduated and do not usually extend to the end of the comb, where there is a narrow vertical band; their connecting plates are not bevelled, are shallower and are semi-elliptical in form; their decoration



ILL 35 : Bone picks, awls and borers. Scale 1/1

is less ornate. It seems appropriate to describe them as native in the sense that they cannot be claimed as Pictish, nor are they imported. Rather there is a resemblance to English combs (Peers and Radford 1943, 63, fig 14). However, there does seem to have been a mingling of styles typified by *200*. It is a long comb. The teeth, only slightly graduated, have a wide vertical band as large as those of Type A between each end of the comb and the connecting plates, which are decorated with a row of dot-in-circle flanked by rather widely grooved lines. *193* also follows the earlier tradition with

the connecting plates decorated with a row of incised oblique opposing lines. The end segments being missing it would be assumed to be a Type A comb if it were not that an exact parallel with an end complete, from Buckquoy (Ritchie 1977, fig 7: 55), shows it to be of Type B. The other combs vary considerably in decoration. Two are undecorated; *202* has had one end broken off and has been filed smooth for re-use, while *203* is almost complete. Fragments of nine other combs were found, all decorated with dot-in-circle.

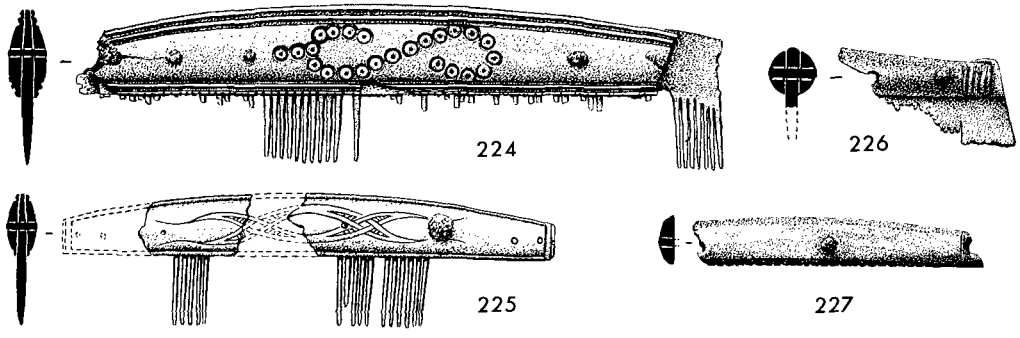
This type of long comb is represented on Class II Pictish Symbol Stones, which were carved in low relief and, while Christian, still made use of Pictish symbols. Examples are the Maiden Stone, Pitcaple, Aberdeenshire (Allen and Anderson 1903, 191, fig 207) and three stones in Angus: Kingoldrum, Kirriemuir and Monifieth (Allen and Anderson 1903, 226-8, fig 238, 239, 241).

Single-sided combs: high-backed (Ill 9)

Four examples of this type of comb have been found in the lower Norse horizon (*217, 218, 220, 221,* fragments *216, 222, 223*) and three were found in the Pictish horizon. They are thought to be a Pictish type and have been discussed with the examples from the Pictish horizon.

Single-sided combs: Norse types (Ill 36)

In contrast to the number of native double-sided combs only three Norse combs are represented in the lower Norse horizon; they are single-sided, all of antler and all have iron rivets. *224* represents a widespread Norse type; the base of the connecting plate is flat, the upper side curved, outlined by a double contour line. The central decoration is formed from dot-in-circle in the well known recumbent S pattern, with in this case a short projection added at one side. A Franco-Frisian type, it is known from Haithabu, Dorestad, Birka and other Scandinavian sites (Roes 1965, 60-1, pl 27); a particularly good example is from the Black Earth at Birka (Danielsson 1973, 41, fig 25). Another example from Scotland came from a Norse grave on South Uist (Greig 1940, 74, fig 42). *225* is a

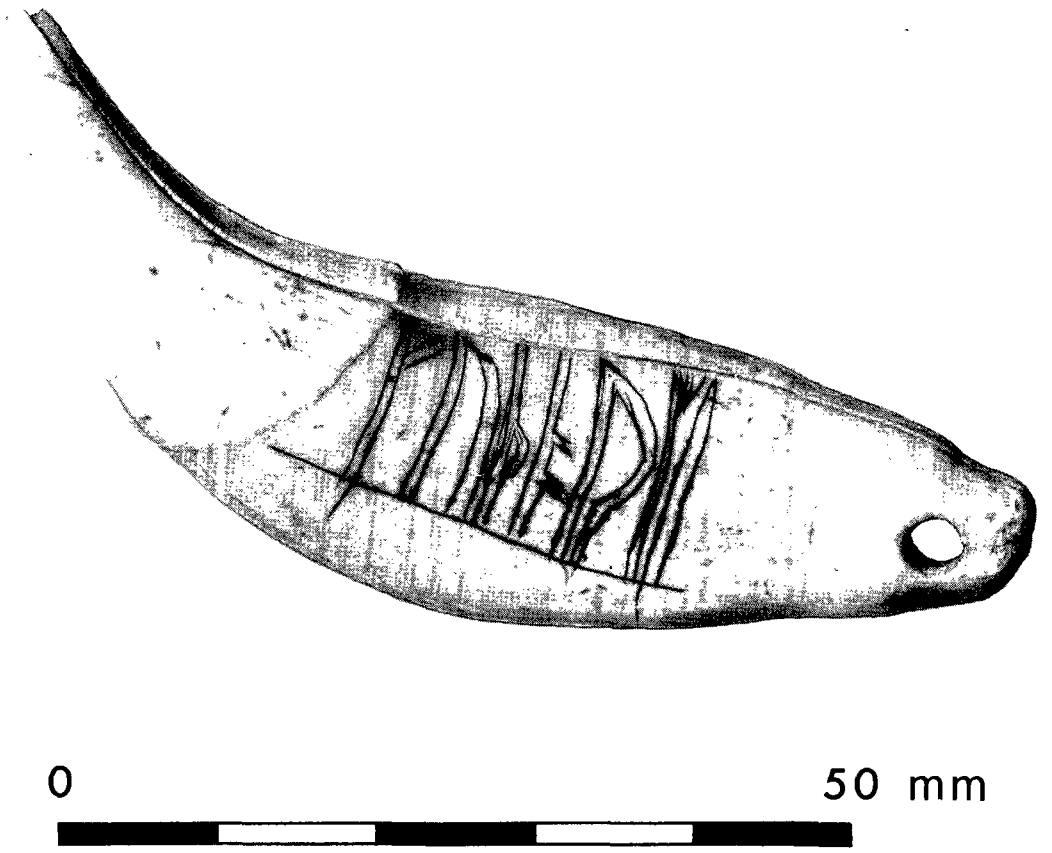


ILL 36 : Norse single-sided combs. Scale 1/2

smaller comb, incomplete, in a similar tradition. The remaining connecting plate is outlined by a single contour line with a central ornament composed of interwoven lines with cross hatching. *227* was unstratified, and all that remains is part of one connecting plate with one rivet.

Another single-sided comb, *226*, of which there remains only a short piece of the connecting plates and a fragment of one end tooth plate, is of a different although also widespread, Norse type. The connecting plates are hemispherical in cross section, with a short band of vertical incised lines, the 'coiled rope' pattern, at each end. The end tooth segment protrudes above the plates at the end of the comb and has an outward slant. It is one of the most common of the later Norse types. Blomqvist (1942, 136, fig 8) has described several examples from Lund. An example from York has been dated by Waterman (1959, 87, pl 18: 6) to the late-10th or 11th century and others have been found in Dublin in an 11th-century context (O'Ríordaín 1971, pl 9).

That there were nearly three times as many native combs as imported ones seems curious. The Norse may have had readier access to a local factory similar to that recorded at Southampton (Addyman and Hill, 1969, pl 6a) than to supplies from abroad. Native combs are never found in Norse graves and it may well be that the Norse single-sided combs were in short supply and more highly treasured.



ILL 37 : Seal's tooth pendant 253 with runic inscription

Pendant from a seal's tooth (Ill 37, 38)

An unusual and possibly unique object is a pendant, *253*, found on the paving of Passage 1. It is in the form of a seal's tooth, polished, perforated for suspension, and engraved with a runic inscription. Pendants such as this but without inscriptions were not it seems uncommon in Norway and continued in use over a considerable period of time. Two examples in the museum at Tromsø date from the Merovingian and Viking periods and another at Trondheim is attributed to the Middle Ages (not published, seen in Museum collections by author).

In the opinion of Aslak Liestøl of the University of Olso the Birsay pendant was an amulet, a charm protecting the wearer from evil. He has kindly contributed the following:

> "The seal's tooth from the Brough of Birsay is an unusual object. No seal's tooth with an inscription in runes is previously known, if we exclude walrus tusks, the ivory of the north. The inscription itself is most extraordinary: just the first part of the runic alphabet, the six first runes, with the values fuþark, which have given the rune alphabet its modern

name *futhark*. The runic forms are those used in Old Norse inscriptions throughout the rune-writing period, from the early Viking Age up to about 1200. They are thus of no help in dating the object. The lines are double except for the arms of the first rune 'f'. We may choose to regard the two strokes as one double-lined arm, which will give a rune with the value 'k'. There is however no doubt that 'f' was intended, and probably the inscriber felt he had completed an 'f' after the two strokes, forgetting for the moment that he was writing double lines. In Scandinavia and Greenland double-lined runes are known in inscriptions from the 12th and 13th centuries and this might suggest a late dating of the futhark on the seal's tooth. Inscriptions consisting of, or containing, a futhark or part of one are found in great numbers. Some of them are undoubtedly the result of practising in the course of learning to write runes, or just attempts to show off, or even mere doodling. Quite a few however seem to have been used for some magical purpose or other. They occur in connection with clearly magical formulae and are presumably put there to enhance the effect. In such usage the rune sequence may have been considered just another powerful formula, as occasionally also befell our Latin alphabet."

In the case of the Birsay inscription one must suggest that it was a magic formula, for the letters were so lightly inscribed that they could not have been deciphered at a distance of more than a few centimetres and were certainly not intended to be ornamental.

Vice or clamp (Ill 50)

A further unusual bone object, *287*, found in the layer of sandblow just over the ashes of Room VI is made of whalebone, 76 mm long, the base flat, the top curved, decorated with four rows of dot-in-circle, and with one end rounded; part of the other end is broken off but enough remains to show it was square and pierced by an iron pin or screw, too corroded to identify in detail. I am grateful to Dr A Lundström for sending me drawings of two parallels, also in whalebone, from the Black Earth at Birka, which show it to be the top half of a vice or clamp: one object (Stockholm Hist Mus inv nr 914) is 93 mm long, with flat base, and curved top decorated with dot-in-circle, one end round, the other squared, pierced with an iron pin; the other, (Stockholm Hist Mus inv nr 915) is complete in two parts and thus shows the function of these objects. It is smaller, 56 mm long and undecorated. The top half is similar to SHM inv nr 914 and to the Birsay object. The lower half is nearly flat on both sides. A curious feature is that in each case the iron pin or screw pierced the vice nearer to one end rather than half way along. A simpler form in antler from Hedeby is illustrated by Graham-Campbell (1980, 135: 472), and another was found in an 11th-century context at Trondheim (Long 1975, 30, fig 11g).

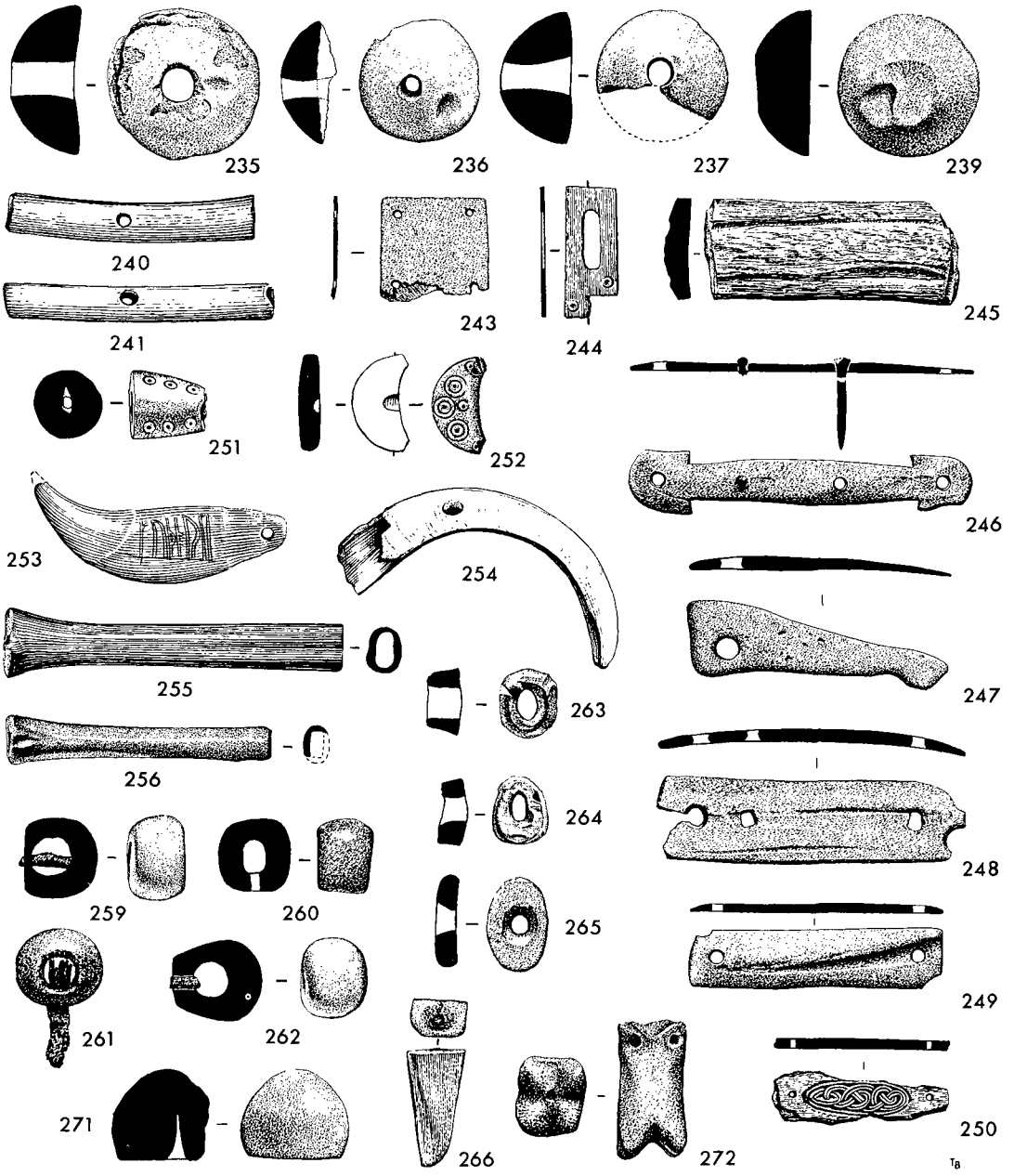
Weaving Tablet (Ill 38)

243 is a small square weaving tablet, probably made from the scapula of a small ungulate; it is 30 mm across and perforated at each corner. Such tablets, used in weaving narrow braids, were not uncommon in Scandinavia in the 9th and 10th centuries (Geijer 1938, 65, 76-98, pl 39 and Shetelig 1937, 336, pl 56b).

Mountings (Ill 38)

246 is made from antler cortex. It is 98 mm long with shaped terminals and four perforations in one of which its original bone peg, 16 mm long with rounded head, was still in place; this is not unique. An example of a mount with three remaining pegs came from the Broch of Burrian (MacGregor 1974, fig 9: 130). *248* appears to have been broken and re-used with fresh perforations cut further in from the ends; the two original holes were circular, and the later rectangular.

249 is smaller, 72 mm long, and the circular perforations may have been bored; a horizontal groove is natural. Two opposing corners have had a small chip taken out. *247* which is very worn, with only one large perforation remaining, may have been a mounting. *245* is perhaps a rough out for one.



ILL 38 : Miscellaneous bone objects. Scale 1/2

Handles (Ill 38)

There are two socketed handles, *255* and *256* both made from sheep or goat metatarsals pierced centrally with the distal end hollowed out. Unstratified objects *251* and *257* may have been parts of similar handles.

Hollow Bird Bones (Ill 38)

There are two hollow cylinders (*240, 241*) pierced laterally, each was made from the long bone of a large bird, possibly a goose. A third, *242*, came from middle Norse horizon Midden a, just above the lower Norse horizon Passage 1. These are common objects from house sites in Norway (Petersen 1951, 323, fig 177) and are described variously as 'otter whistles' or 'needle cases'. One example was found in a Norse grave on Oronsay (Grieg 1940, 43, fig 24). It may be relevant to mention that

Dr Sellar in his analysis of the bone material below Room 5 (Appendix 8: 2) mentions otter bones and the possibility that there were tame otters on the Brough.

Pins with iron shanks and globular heads (Ill 38)

Three pins of this type, *259-261*, were found in the lower Norse horizon. Another (262) was found in the Pictish horizon. It is generally accepted that they are a native type (Stevenson 1955, 292-3).

Beads (Ill 38)

263 and *264*, are beads with large perforations cut from tusks, possibly of seal.

CLAY

Tuyères and Blowpipes (Ill 25)

405 is a fragment of a tuyère probably used for iron working, while *406* is a fragment of a blowpipe (O'Kelly pers comm). Both were found in Area X, possibly contemporary to the lower Norse horizon.

BRONZE

Pins (Ill 39)

There are only three bronze pins from the lower Norse horizon. The smallest, *418*, is of a Pictish type with spatulate head. *422*, a ring pin with free circular head and the point of the shank flattened, is an Irish type but with a wide distribution. Another bronze pin, *425*, now badly corroded, has a lozenge shaped head resting on a collar; when found there was a small protuberance at each point, now missing; the edges on the front side are decorated with short oblique engraved lines. In his article on Irish bronze pins of the Christian period, Armstrong (1922, 85, fig 410, pl 13) mentioned a pin resembling *425*; this is one of a number of Irish type pins found in York (Waterman 1959, fig 11, 15). Two other bronze pins of well known Irish types from Area III can be placed in the same group as *425*; both types are described by Armstrong (1922, 76, fig 23b); *423* is bramble headed, 52 mm long (the shank incomplete) and *424* is crutch headed; a parallel for the latter, found in the Outer Isles, is in the Mackenzie Collection (Close-Brooks and Maxwell 1974, fig 2: 974).

421, is an Irish enamelled pin with a fixed ring. The head is complete although the shank is broken. Long rectangles of yellow alternate with short panels of blue on a green ground now faded to white. A close parallel, now in the National Museum of Ireland, was found in a crannog in Ireland, the panels on this example differing, being in threes instead of fours, and with an additional square panel between the head and the shank (Armstrong 1922, pl 16, fig 1. Henry 1936, 243, fig 13). *421* was found in Area X, overlying Pictish Zone 1, it may belong to the lower Norse horizon, but the stratigraphy is uncertain.

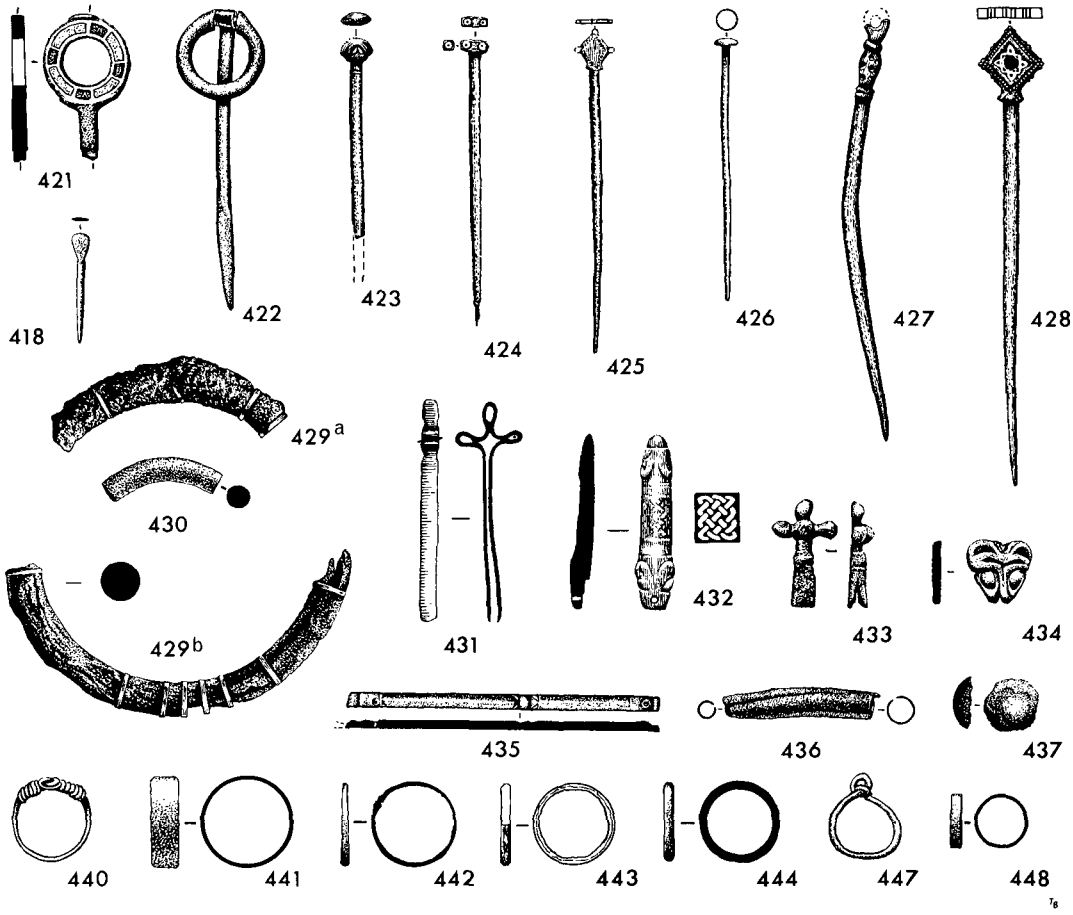
Finger and other rings (Ill 39)

There is a group of three rings; *440*, a finger ring of wire with the ends entwined to form a bezel, is a well known type found in England from the Anglo-Saxon period (British Museum Guide to Anglo-Saxon Antiquities, 1923, 45, fig 45). Two other rings, *442* and *443* are both made from thin sheet bronze folded over to form a circle.

Penannular brooch and fragment (Ill 15)

One of the most interesting finds from the whole site is a bronze penannular brooch, *452*, found on the paving of Room VI. It was in five fragments, the only part missing being half the cartouche. It is the same type of brooch as that shown on the matrix of mould *298* (Ill 13) but larger, 70 mm across the hoop, and with rather more elaborate terminals, showing a less degenerate version of the animal head between two horns. The central setting also shows signs of a linear decoration of

close-set short oblique lines and central perforations implying attachment of glass studs. Here is a brooch which one can assume to have been cast on the Brough and in the very pattern of a St



ILL 39 : Bronze pins, rings and tweezers. Scale 1/2

Ninian's Isle brooch. This raises an interesting question as to whether the Norsemen acquired it by raiding, trading, or gifts. Often native brooches were found in Norse women's graves. A fragment (*453*) may be from the terminal of a similar brooch.

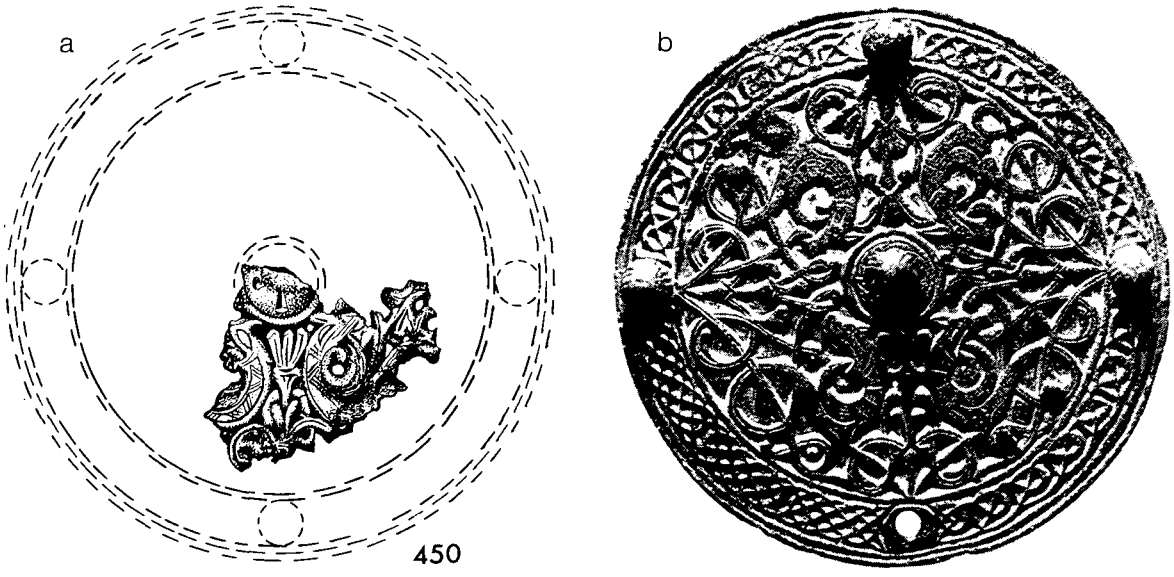
Tweezers (Ill 39)

431 is a pair of tweezers made from a single strip of bronze; a fragment of wire held inside the loop of one of the arms. It is not an uncommon Norse type (Gustafson 1906, 116, fig 499). Graham-Campbell (1980, 50-1: 177) cites a similar pair which have suspension-loops of bronze wire through each arm, from one of which hangs a small toilet article.

Gilt-Bronze Disc (Ill 40)

One of the most puzzling finds was a group of four fragments of a gilt-bronze ornamental disc, *450*, found on the paving beneath the layer of ashes in Room VI. The largest fragment, measuring 45 mm by 35 mm, is in a less damaged condition than the other three and on it sufficient detail can be distinguished of entwined animals and foliage to identify the design with that on the central part of a circular gilt-bronze disc from Hillesøy, Tromsø, in Norway, found in a woman's grave of the 9th century (Sjøvold 1951, 127). Not only in design but even in details of casting, the two

are so similar that even though the border, consisting of panels of interlacing on the Hillesøy disc, is too damaged for identification on the Birsay find, it seems at first glance possible that they were cast from the same master pattern. The Hillesøy central boss is ornamented with a design of curving



ILL 40 : (a) Gilt bronze ornamental disc fragments 450 (b) ornamental disc from Hillesøy, Tromsø, Norway (not to scale)

lines and dots, while on that of the Birsay fragment an equal armed cross with slightly expanded arms can just be distinguished and appears to have been cast but could have been engraved subsequently. The other differences are secondary to the casting; the Hillesøy animal bodies are decorated with rows of incised short horizontal lines set between vertical bars and with decorative dots, those of Birsay with oblique opposing incised lines between narrow borders.

The Hillesøy disc is well known and has been discussed in detail by Dr Bruce-Mitford (1956, 199, pl 31b) and Mr Bakka (1963, 6-11, figs 1-4); both agree that it is Anglo-Saxon in origin and an 8th-century piece. Bakka states that it had been re-used as a brooch and that the pin mechanism is secondary. He considers its original purpose uncertain.

Bar (Ill 39)

435, a bronze bar, 83 mm long and 4 mm wide, is triangular in section, one end is fractured; at what may have been the centre is a transverse depression with two possibly zoomorphic figures on each side. The end which is complete has two transverse ridges and is perforated. At the fractured end two somewhat broader transverse ridges survive.

IRON

Iron was in use in all the Norse phases. Fragments of iron objects were common although many were too fragmentary and corroded to be identifiable.

Some or all of the various individual items could well have been of local manufacture. There was evidence of iron working at all levels, chiefly in the form of iron slag and small indeterminate pieces of corroded iron, but more specifically the tuyères already described and two furnace bottoms, *499* and *500a; 499* is from middle Norse horizon midden c and *500a* from lower Norse horizon Room V, Phase 4a. But more detailed evidence must wait for Mr Hunter's reports on iron furnaces on other parts of the Brough.

Nails (Ill 41x)

The only objects found in any quantity were nails. One group of these is of particular interest because it was found in the drain, or duct, running along the S side of Room VI, sealed in beneath the layer of ashes and the subsequent deposit of sandblow. It is composed of at least twelve broken boat nails, recognised as such because two, *492* and *497* have the 'roove', a flat disc resembling a washer approximately 25 mm in diameter, still attached to one end of the nail, the head being missing; while another two, *491* and *494*, have the flat head, 15 mm and 11 mm in diameter still in place but no roove. The modern method of fastening the planks of clinker built boats uses copper instead of iron nails but the technique is otherwise unchanged: the end of the nail, inserted through a prepared hole in the overlapping planks, protrudes through the roove; a larger hammer is then held against the head of the nail while the end, which has been cut off, is riveted or 'clinched' over the roove. Other nail fragments (*496, 498*) found with this group are almost certainly also boat nails.

Rings (Ill 41)

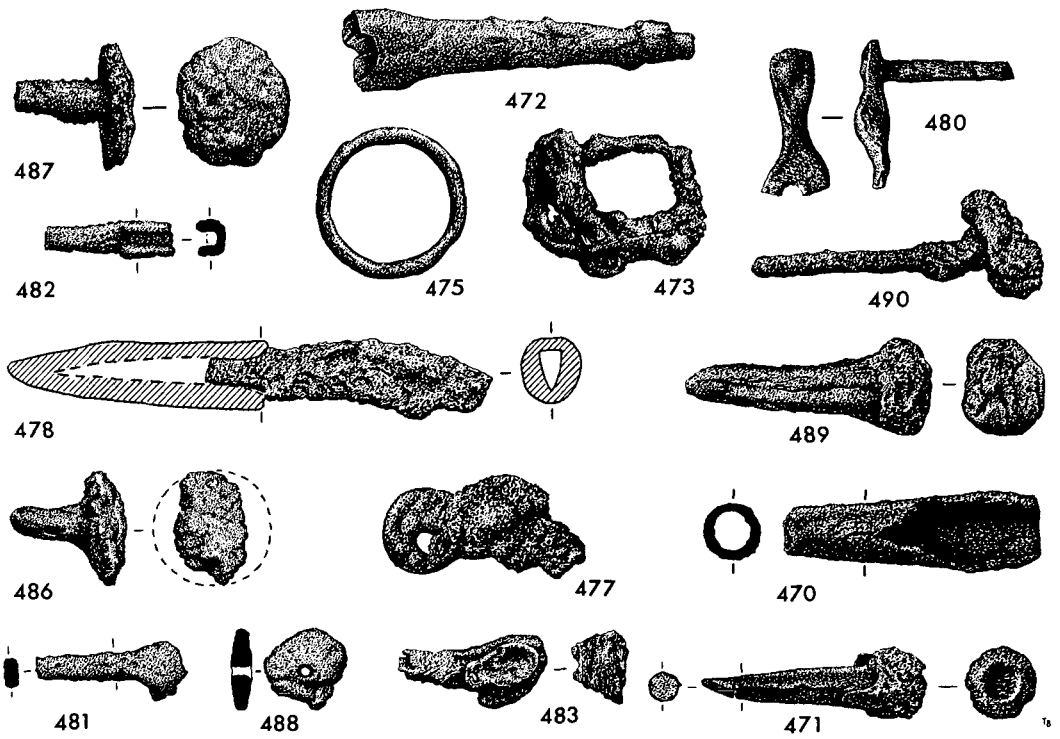
475 has an inner diameter of 40 mm and is oval in section. *474* is rather smaller with an inner diameter of 30 mm and is flatter in section. Such rings were common in Norway and formed part of a variety of objects from harness mounts to vessels handles.

Buckle (Ill 41, 41x)

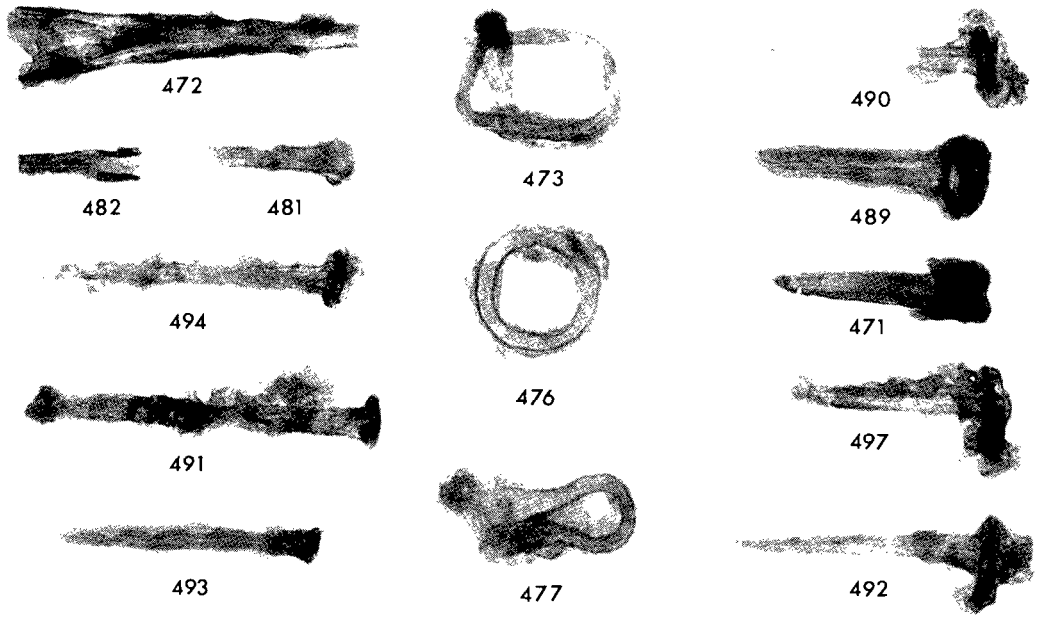
473 is a buckle, it is bent out of shape but the X-ray photograph reveals the pin to be still in place.

Handle (Ill 41, 41x)

477 is part of a handle made from a circular rod bent round and the ends flattened to form a plate. Parallels from Norway include handles from iron vessels (Petersen 1951, 526, fig 198).



ILL 41 : Iron objects. Scale 1/2



ILL 41x : X-ray photographs of iron objects

Knife (Ill 41)

478 is a small knife blade with part of a tang.

Socket (Ill 41)

470 from Area X is part of a large socket, 66 mm long, the point is missing and part of the other end is flattened and bent round.

Bars (Ill 41, 41x)

482 is the remnant of a small bar, with one end flattened and the sides turned in. *485* is part of a long flat strip.

LEAD (Ill 53)

505 is a small object in the shape of a spindle whorl but with a very small perforation approximately 20 mm in diameter; it may possibly have been a washer, but it has been damaged by fire and the base is incomplete. It is the only lead from the lower Norse horizon.

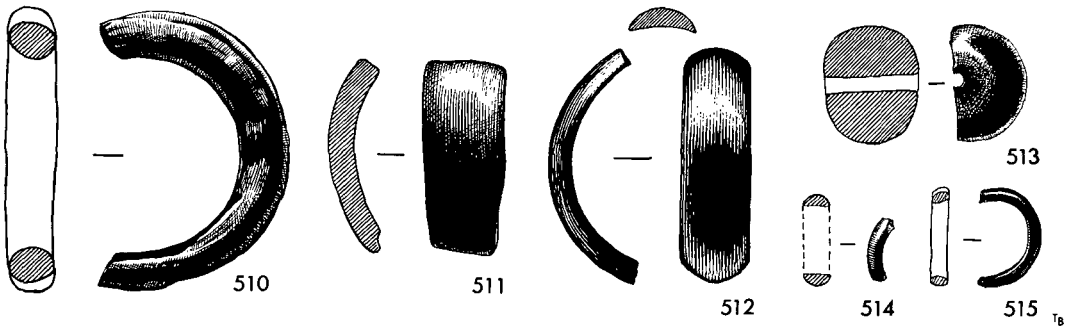
JET

Armlets (Ill 42)

There were two jet armlets, both incomplete: *511* with a wedge-shaped section and inner diameter of 63 mm and *512* with a D-shaped section and inner diameter of 60 mm. Jet armlets were clearly in common use and particularly so in Ireland; at Carraig Aille alone there were thirty-three fragments (O'Ríordaín 1949, 87, fig 17).

Bead (Ill 42)

513 is a large circular jet bead, 20 mm diameter, broken in half and with the perforation off-centre.



ILL 42 : Jet objects. Scale 1/2

Finger and other rings (Ill 42)

Two fragments of finger rings were found, *514*, plano-convex in section, and *515*, oval in section. Both were approximately 20 mm in diameter.

STONE

A large proportion of the circular stone objects came from the lower Norse horizon in Area II. Some are undoubtedly spindle whorls; others because of irregularity of shape and size of perforation are doubtful. Some irregularity occurs in examples from both Jarlshof and Burrian and although accepted as spindle whorls they bear little relation to the carefully finished Norse types; possibly there were different requirements in spinning flax and wool. Other objects must simply be classed as perforated discs of unknown use, possibly weights.

Spindle whorls—truncated cone (Ill 43)

There are only two of this type, *516* and *517* both of steatite and almost the same size, 32 mm and 34 mm in diameter, 22 mm and 19 mm in height; in both the perforation is larger at the base and tapers to a smaller size at the top. This type is common in Norwegian graves (Petersen 1951, 523, fig 164).

Spindle whorls—dome shaped (Ill 43)

522, 50 mm in diameter and 15 mm high, of laminated sandstone, is a larger and flatter type than the truncated cone. The perforation is only slightly larger at the base than the top, narrowing from 11 mm to 9 mm.

Spindle whorls—discoidal (Ill 43)

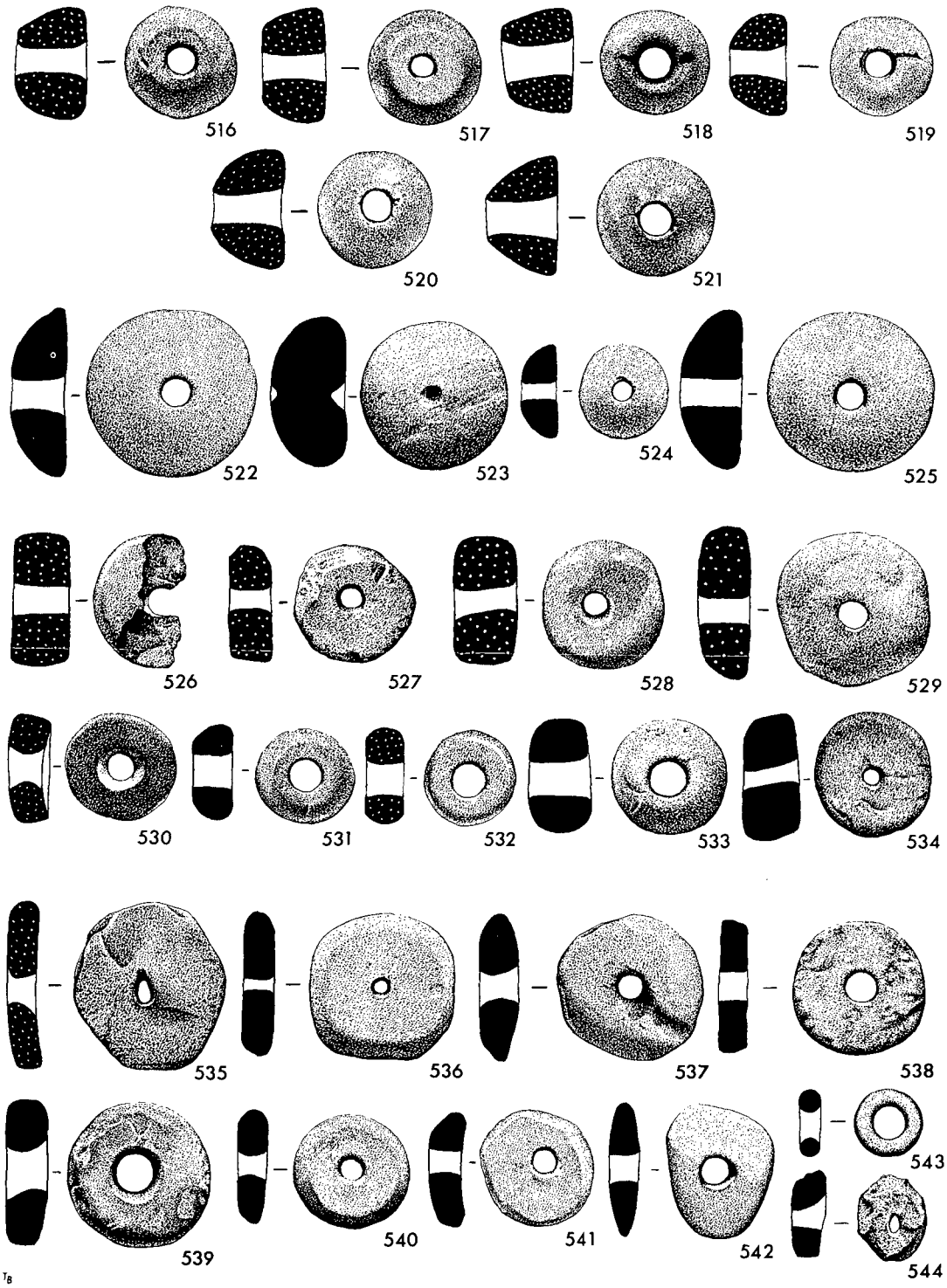
538, of fine grained sandstone, is 41 mm in diameter and 10 mm high, straight-sided. This is a type found in Norse graves (Petersen 1951, 523, fig 166). *540*, of siltstone, is 34 mm in diameter and 7 mm high with curved sides.

Spindle whorls—ring shaped (Ill 43)

532, of steatite, should perhaps be classed as a ring rather than a whorl. The diameter of top and bottom are the same, 27 mm. It is 15 mm high, with curved sides and a large perforation of 11 mm.

Discs of uncertain purpose (Ill 43)

Discs (*528, 537, 539, 527, 546, 591*), variously made of steatite, claystone and sandstone, could not be classified.



ILL 43 : Stone spindle whorls and discs. Scale 1/2.

Whetstones (Ill 44)

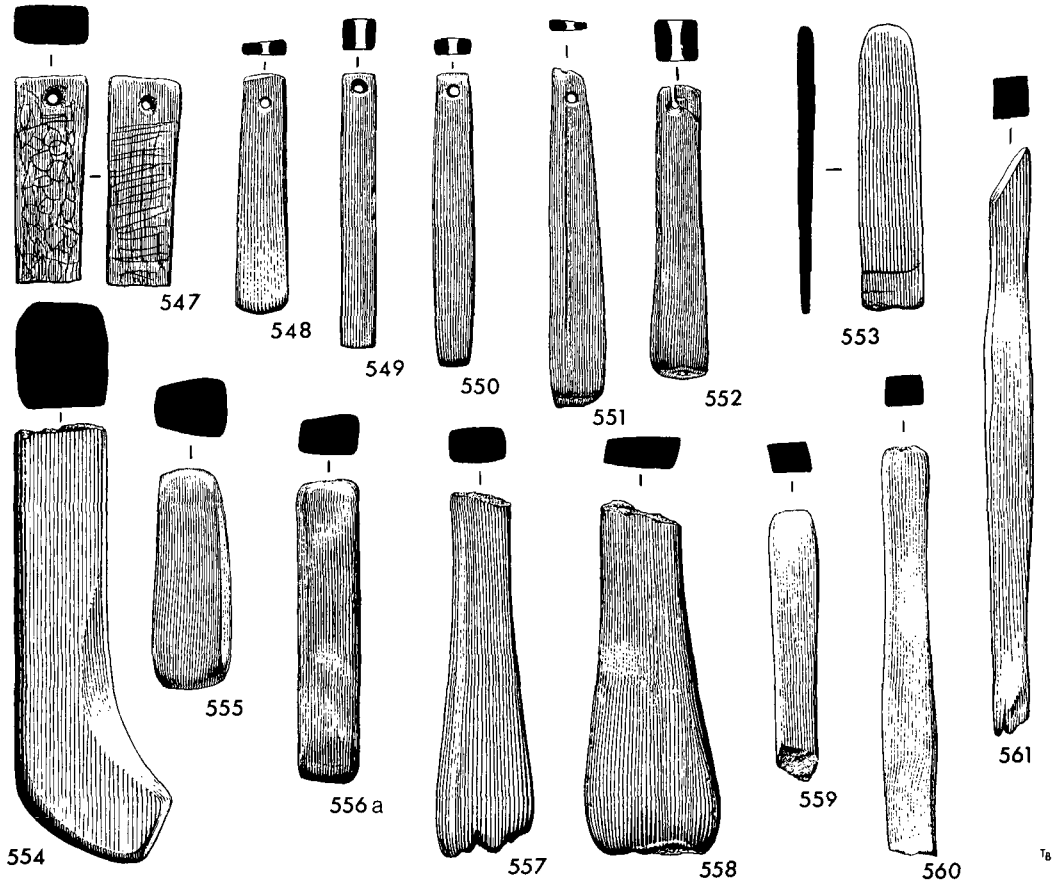
There were five whetstones from the lower Norse horizon and for the most part they are large and heavy with rectangular or square sections. *554* (Ill 44) 115 mm long, is of siltstone, almost square in section with an unusual upturned end. *566* is one of the few examples that are unbroken. It is rectangular in section, 200 mm long, all the edges rounded. *556b* is small in comparison, 112 mm long, the edges rounded and smooth from handling.

There are two exceptionally long whetstones of slate, *568*, from Area II but unstratified, is 246 mm long, and roughly square in section, the edges still distinct except near the centre where they have become smoothed through handling. The ends are squared. *567* from the lower Norse horizon, Room VI, may have been even larger but it is incomplete; its present length is 220 mm. The section is irregular but the edges are still sharp.

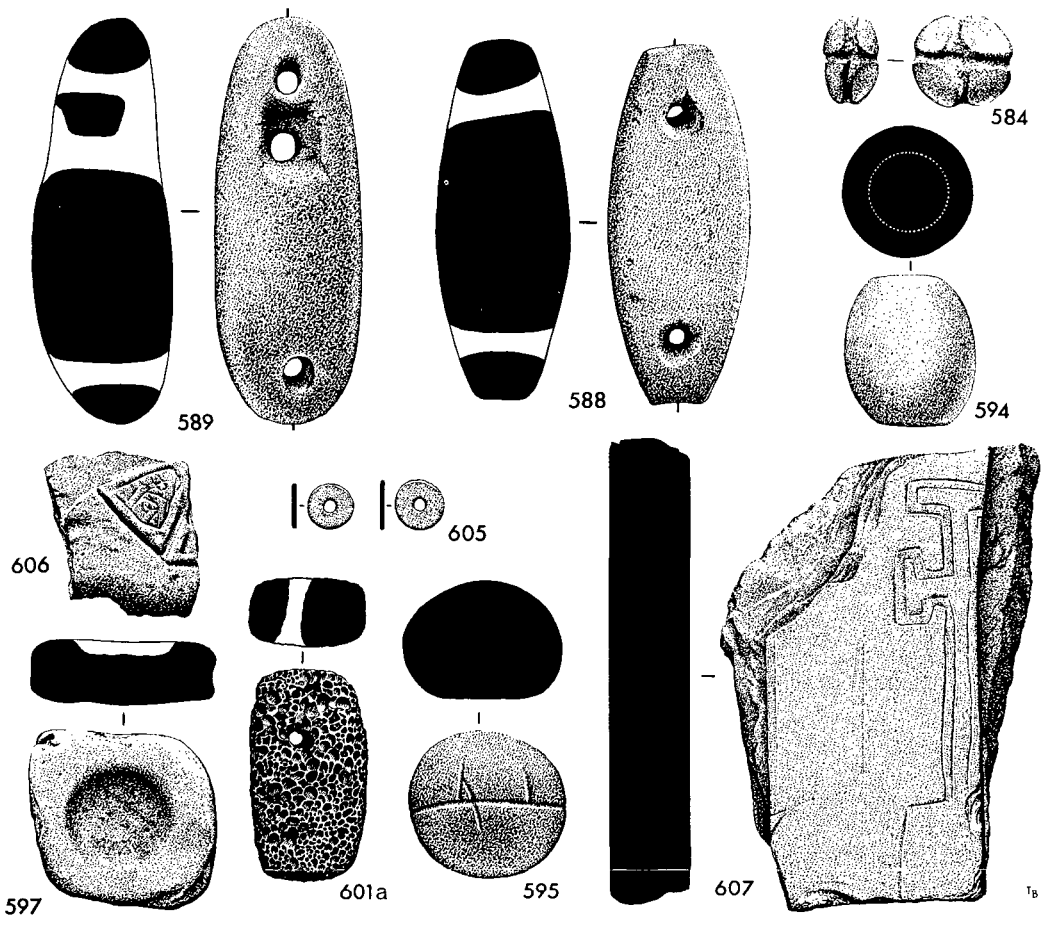
Finally there is a natural piece of fine grained sandstone, *565*, 160 mm long, with signs of use as a whetstone.

Ball

596 is a granite ball, 53 mm in diameter. A similar ball, although larger with a diameter of 60 mm, was found at Cahercommaun (Hencken 1938, fig 37: 90). About 200 smaller stone balls were also found at Birsay in Room VII, scattered over the paved floor. They were not marked by fire and so it is unlikely that they were for heating water. It has been suggested that they may have been used as loom weights. They have not been catalogued.



ILL 44 : Whetstones. Scale 1/2



ILL 45 : Miscellaneous stone objects. Scale 1/2

Barrel shaped object (Ill 45)

594 is a barrel shaped object of sandstone with flat top and base.

Trial piece (Ill 45)

606 is a broken fragment of sandstone showing part of what would have been a circular pattern formed of triangular segments. One segment is complete, a triangle outlined by double incised lines, infilled with random incised markings, a small corner of the base of a second adjoining segment remains.

Worked stone: sandstone (Ill 45)

597 is a rectangular natural sandstone approximately 45 mm square with a natural shallow circular depression at the centre accentuated by pocking.

Pumice Stone (Ill 45)

Two pieces of pumice stone (*601a, 601b*) were found; both were shaped and perforated. MacGregor (1974 92-3) has pointed out the frequency of pumice on coastal sites. It is suggested that pumice could have drifted from Iceland to the N and W beaches of Scotland. The Birsay objects might have been used as abrasives but the pumice shows no sign of wear and use as fishing floats is an alternative possibility.

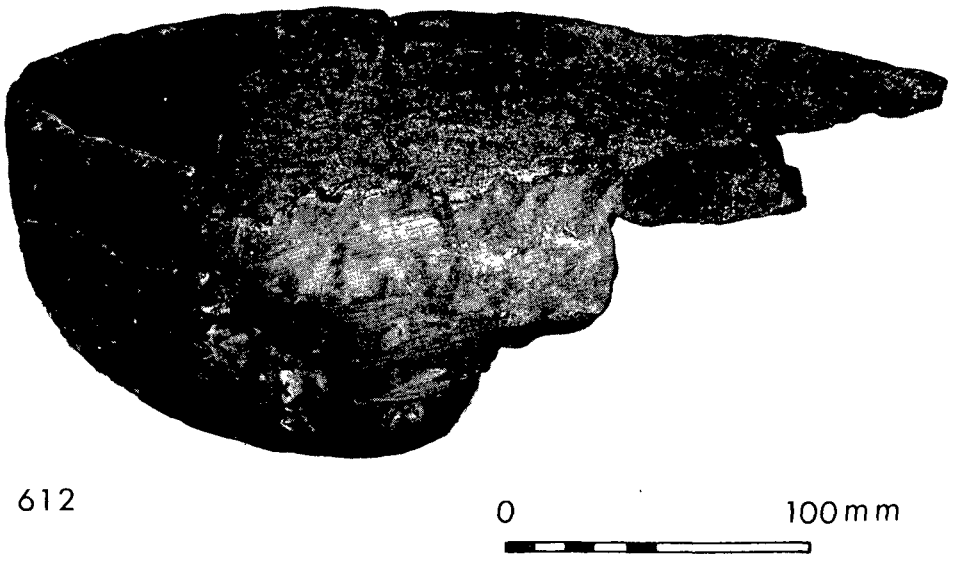
Stone weight (Ill 45)

584 a grooved line sinker, is discussed with those from the middle Norse horizon.

Steatite vessels

Few fragments of vessels were recovered and the majority of these came from Area III. Fragments of three vessels were found in the lower Norse horizon (*619, 620b, c*).

The only nearly complete steatite vessel from the site, *612*, came from the possibly contemporary Area III (Ill 46).



ILL 46 : Steatite vessel

GLASS

Beads (Ill 55)

There were three glass beads (*650, 654, 656*) from the lower Norse horizon. *650* is an opaque white cylindrical bead decorated with a crudely wound trail in red and blue, and *656* is a fragment of an opaque blue circular bead. *654* is also opaque blue with four segments.

THE MIDDLE NORSE HORIZON

The central groups of rooms of the middle Norse horizon, Rooms 1-11 formed a solidly built complex, some of the walls still standing nearly a metre high with the outline showing beneath the turf (Ill 5: 1). Although some of the internal walls were shared, the dwellings were not intercommunicating; their main doorways lead outwards. The builders evidently used a number of dressed stones from the earlier constructions mingled with natural boulders and slabs. They seem to have been unaware of the elaborate system of drains passing beneath some of the floors, although they must have benefited from it. The floors were roughly paved. The hearths of Rooms 1 and 5, which were two of four rectangular central hearths, were almost undamaged, with the base paved and upright slabs along the sides and across one end (Ill 47). Traces of other central hearths survived elsewhere in the complex. The two rooms which extended E to the cliff edge, 9 and 10, had no hearths, and their

ILL 47 : The middle Norse horizon: Room 5

walls, built partly on top of earlier walling, were less well-preserved; the E wall of Room 9 had almost disappeared. Room 12, of which little remained, was completely detached.

Three areas described as Middens a, b and c presented a problem of stratigraphy. They were not built over during the middle Norse horizon and were evidently used as rubbish dumps. These middens lay respectively over the lower Norse horizon Passage 1, Room VII and VIII, the Boat Slip. Middens a and b were filled with loosely packed stones, earth and shells. Twenty-five objects were found in Midden a, some, such as five broken nail-headed pins, had apparently been discarded in groups. Midden b yielded thirty-two artifacts, animal bones, a fragment of a human skull, a human femur and much shell. Midden c, over the Boat Slip, yielded few artifacts and was largely filled with a great mass of peat ash. It had gone out of use perhaps due to a cliff fall or a change in the activities of the inhabitants of the Brough. The finds from these three areas have been classified on the assumption that those found on the paved floors belonged to the lower Norse horizon, and those in the midden fill to the middle Norse horizon, regardless of typology. None of the finds on the paved floors are types distinctive of the middle Norse horizon, but those from the midden fill include some objects which may have been long discarded at the time of deposition.

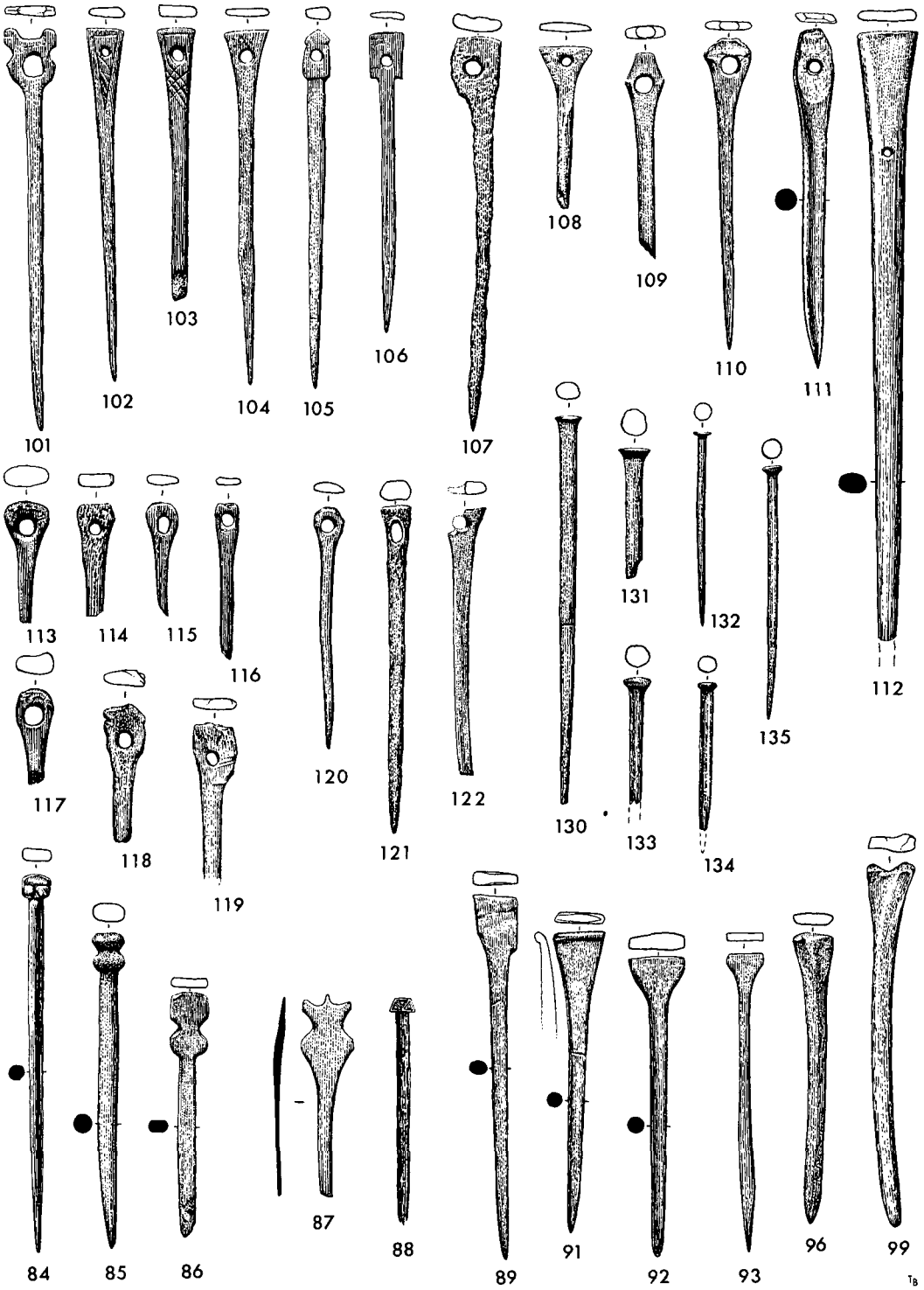
BONE AND ANTLER

Small pins: hipped type (Ill 7)

In contrast to the number of Pictish pins found in the lower Norse horizon, only two, *4, 42*, were found in the middle Norse horizon. *4* had a finely carved animal head, and *42* was a common type with ball head, constricted neck and swelling shank.

Larger pins (Ill 48)

Only six large pins without perforations were found. *83*, is incomplete with a carved, globular head and incomplete shank. Four others (*91, 93, 96, 99*) were skewer types all made from pig fibula with flat expanded straight-topped heads. A fifth of the same type (*100*), was possibly made of whalebone.



ILL 48 : Large bone pins. Scale 1/2

Large pins with perforated heads (Ill 48)

Large pins with decoratively carved perforated heads were not found in the lower Norse horizon, but were typical of the middle Norse horizon at Birsay. Perforated pins have been found on other sites, for example Burrian, and it has been suggested (MacGregor 1974, 71) that the perforation was for attaching a cord which would have been tied round the point to keep the pin in place.

Most of the pins at Birsay were clearly dress pins; there were six distinctive head types. With one exception all the pins were of long bone, all have flat heads.

Two are decorated with incised lines; on *102,* a triangle with zig-zag lines at the point surrounds the unusually small perforation, and on *103*, the top and sides of the head are outlined with a single line with irregular cross-hatching below the perforation, the shank is broken. These have parallels at York (Waterman 1959, figs 12, 14). *104* has a straight expanded top and a large perforation, the shank giving the impression of being hipped. *105* has a rectangular head surmounted by a pediment. *118* is also of this type although very rough and worn. *106* has a plain rectangular head. *119* has an eccentrically placed flat head. Finally *110* has an angular head with a large perforation. All these pins were perhaps the equivalent of the long bronze pins with decorative heads.

There was a separate group of four pins (*113, 115, 117, 120*) with annular heads, roughly made and, with the exception of *120,* all with incomplete shanks. They were indistinguishable from pins from Scandinavian sites (for example: Anderson et al 1971, 110). They may have been needles.

Two other exceptional pins, *111* and *112*, were evidently not dress pins. Both were from the long bones of large animals. *111* has a flat head and a very thick shank ending in a sharp point. *112* is an extremely long pin measuring 160 mm even though the shank is incomplete; its head is straight and flat and the perforation is small and set low.

Nail headed pins (Ill 48)

There are eight nail headed pins, *130-137*, from the middle Norse horizon. The longest is 117 mm, the smallest 58 mm. They are of long bone or antler. Pins of this type, of bone or bronze, have been found on many sites, for example from Burrian (MacGregor 1974, fig 5: 10), from a Norse house in South Uist (MacLaren 1974, pl 2) and from Cahercommaun (Hencken 1938, 38, fig 23: 47).

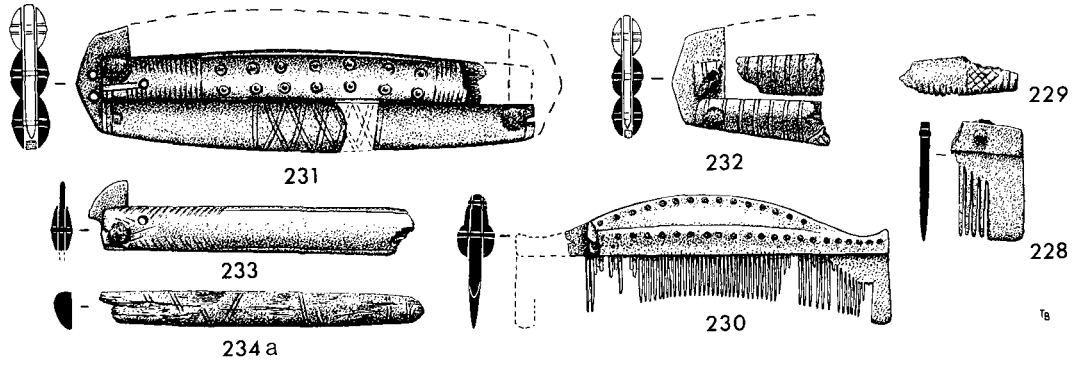
Stevenson (1955, 286) traces their descent from Romano-British pins and mentions moulds from the Mote of Mark and Dunadd with matrices for this type of pin. None of the pin moulds from Birsay are for this type of pin.

Needles (Ill 35)

There are only two (*161, 162*) needles from the middle Norse horizon and they are netting needles.

Combs: single-sided (Ill 49)

The only comb from the middle Norse horizon, *228*, is possibly part of a single-sided comb which could have been used with a comb case. It consists of part of an end tooth segment with a fragment



ILL 49 : Combs and comb cases from the middle Norse horizon. Scale 1/2

of a connecting plate attached to it by an iron rivet. It resembles those from the comb cases from Skaill (Wainwright 1962, pl 16) and from York (Hall 1976, fig 12) and also a single-sided type of comb from Lund (Blomqvist 1942, 143, fig 22).

229 is a small fragment of connecting plate from the possibly contemporary Area III, House Site C. It shows two vertical incised lines at the end, and then a short panel of cross hatching, and bears a resemblance to the comb belonging to the comb case from York previously cited.

Comb cases (Ill 49)

There are three comb cases from the middle Norse horizon, one nearly complete and the other two in fragments. *231* is nearly complete, 120 mm long, and consists of one separator with a pair of holes for suspension, and the major part of both connecting plates, the upper one with a perforation intended for the insertion of a peg to hold a comb in place. Both ends of the upper plate are decorated with vertical incised lines, and the central area with two rows of dot-in-circle; the lower plate has been broken near the centre but it is sufficiently complete to show that the ends were plain and the decoration confined to a central panel filled with oblique cross strokes forming a lozenge pattern. A comb case, complete with comb, was found in Orkney in a grave at Skaill (Wainwright 1962, pl 16) and the lower connecting plate of a comb case from Jarlshof (Hamilton 1956, fig 77: 8) resembles the lower plate of the Birsay case. Examples from Scandinavia are cited by Blomqvist (1942, fig 4), but the closest parallel is from York (MacGregor 1978, 48, fig 29: 11).

Only fragments remain of the other two comb cases (*232, 233*). *232* would have been similar to *231*.

Spindles whorls (Ill 38)

There are three bone spindle whorls, *235, 236* and *237*, all hemispherical in shape and all from the femur heads of ox or deer. An unstratified example, *238*, is similar but badly burned. This type also occurs at Birsay in steatite. It was common in Ireland; for example twenty-one made of ox femurs, came from Cahercommaun alone (Hencken 1938, 43-4, fig 27).

Playing Piece (Ill 38)

271 is a playing piece made of a femur head; it is 25 mm high, the base socketed centrally. A number of similar playing pieces came from Kilmainham in Ireland (Bøe 1940, 54, fig 36) and from Dorestad (Roes 1965, 55, pl 23: 178), and others are illustrated by Rygh (1885, 474a and b).

Pierced bones (Ill 50)

Two bones were found pierced at each end. *280*, 125 mm long, is from the metatarsal of a very young calf; *281*, 66 mm long, is also from the metatarsal of a juvenile animal, either sheep or goat. *282*, a third metatarsal, this time from a young pig, is pierced centrally and may have been a toggle for clothing, or used in some sort of game; it was unstratified. It is a type also found in York, and Waterman (1959, 93, fig 19: 18) suggested its use as a toggle for clothing.

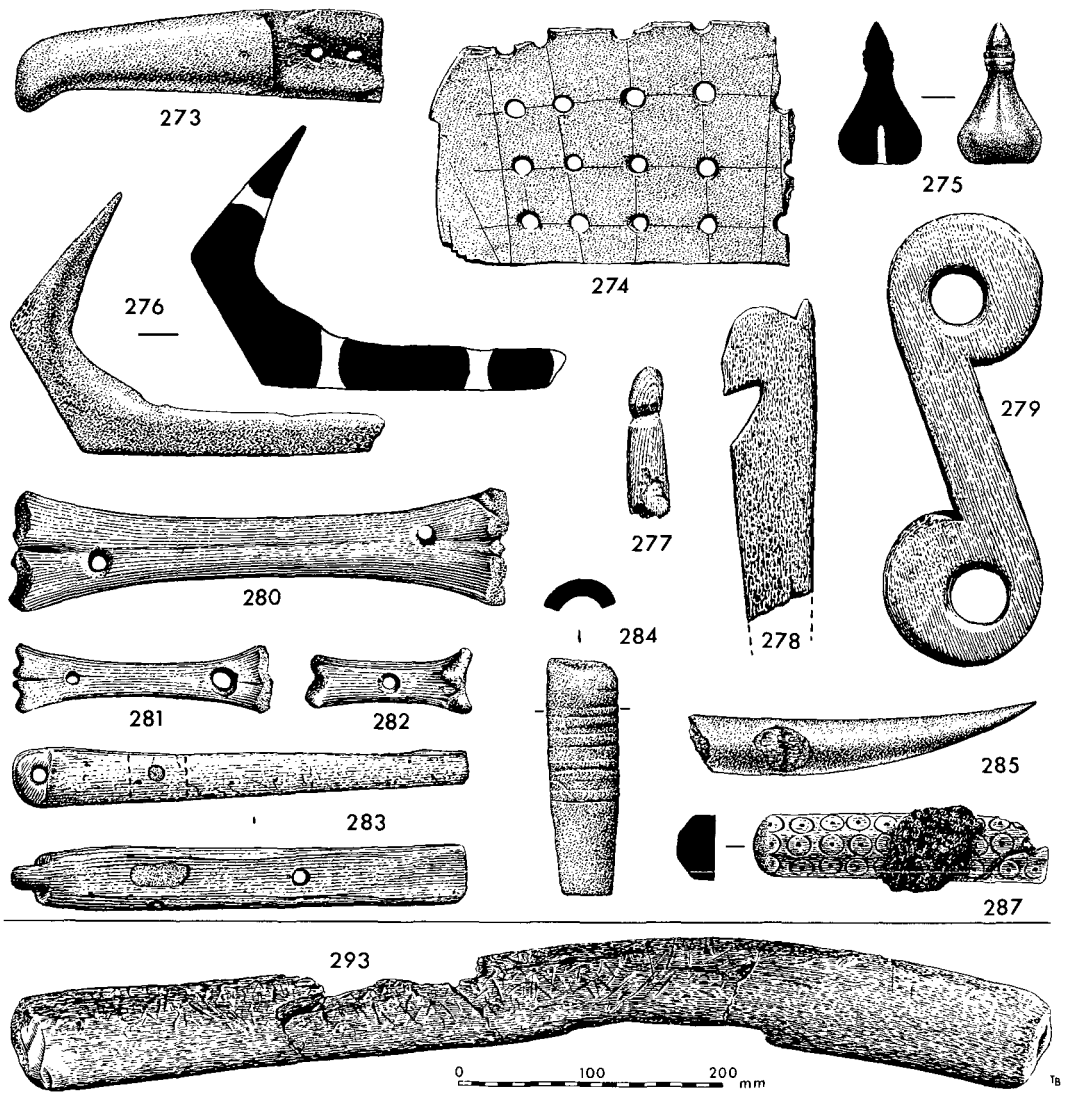
Unidentified tool (Ill 50)

283 is 112 mm long and slightly wedge shaped, with the top cut and perforated to form a ring; it is also pierced laterally lower down the shaft. For a tool of such complexity it is rather roughly shaped. The surface has a slightly oily feel which suggests contact with wool.

Miscellaneous antler

285 (Ill 50) is an antler tine, polished and smoothed with the tip sharpened, broken off near the root, with a wide V-shaped cut on one side.

286 is another antler tine, with transverse cuts around the end and apparently pierced by an iron rivet. It was unstratified.



ILL 50 : Miscellaneous bone and antler objects. Scale 1/2

252 (Ill 38) is a small highly polished, crescent shaped object, 28 mm wide with the points broken off. It is decorated with three large dot-in-circle with three small dot-in-single-circle below. The back is flat with a short round-ended groove cut out at the centre of the inner curve. It is possible that the broken points could have formed prongs, but its original form and purpose are not known.

Handle (Ill 50)

284 is half a circular hollow handle 60 mm long, which has been broken longitudinally and is decorated with wide bands of low relief. It could be from an antler cortex or a large tine.

Panel (Ill 38)

244 is a small rectangular panel, 37 mm × 14 mm, shaped from the plate of an antler cortex; one end is stepped and cut by a large oblong slot with rounded ends. It is decorated on both sides with two small dot-in-circle.

Hook or Bracket (Ill 50)

276 is a hook shaped object of unknown use, possibly a bracket. An incomplete shaft, perforated in two places, meets the base at an oblique angle; another exterior angle separates the base from an upturned sharp point, which is also perforated; the perforations are cut from either side. It has been made from the crown portion of antler, probably red deer, and is 80 mm long by 40 mm across the flat base.

Bird bone

242 (Ill 38) is a hollow cylinder, pierced at the centre, from Midden a. It is similar to *240* and *241* from the lower Norse horizon, Passage 1, immediately below.

Fishbone (Ill 50)

277 is an incomplete toggle or handle, 40 mm long, with a rounded end and constricted neck, made from the bone of a large fish.

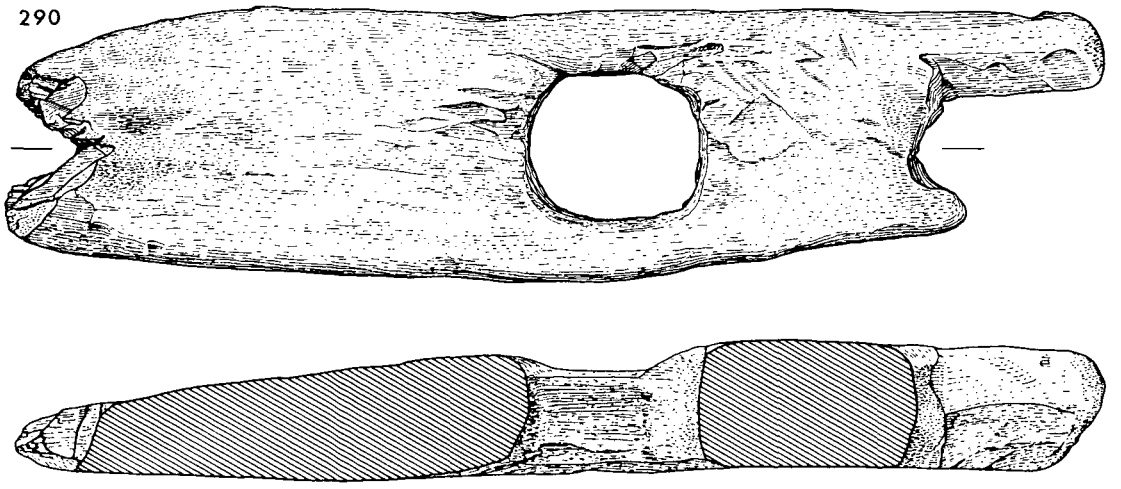
WHALEBONE

Notched peg (Ill 50)

278 is a large wide notched peg with flat section, 80 mm long, the shaft tapering but incomplete.

Line stretcher or Guy (Ill 50)

279 is a 'line-stretcher' in the form of a figure-of-eight, 118 mm long. It is a well known Norwegian type. There are two examples made of whalebone, from Vestfold and Rogaland, and one made of wood from the Oseberg ship (Petersen 1951, 522, fig 153, 154). These are now thought to have been used in connection with tents rather than boats.



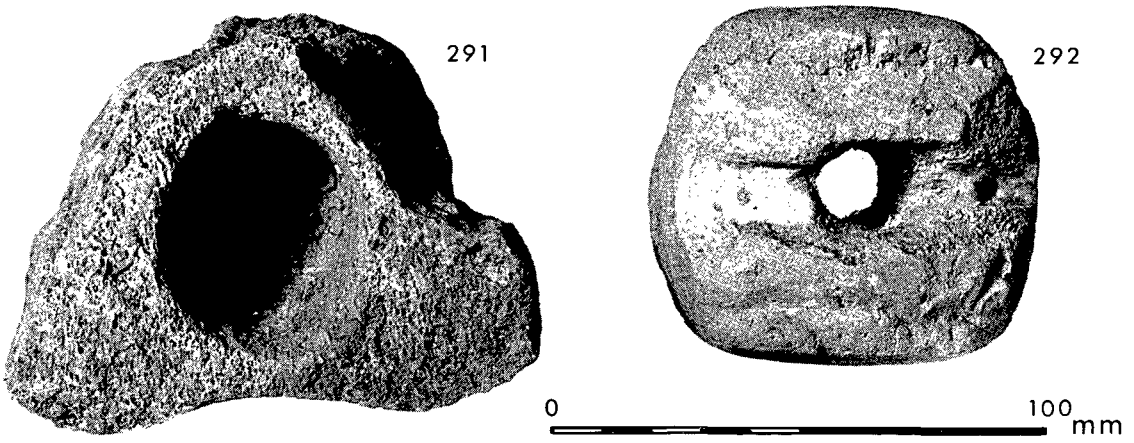
ILL 51 : Perforated whalebone implement. Scale 1/2

Miscellaneous

290 is a large whalebone implement, 290 mm long, with a large circular perforation at the centre; one end has wide V-shaped cut and the other end is a blunted hook showing considerable signs of wear (Ill 51).

288 comprises two roughly cut blocks of whalebone, 85 mm × 60 mm × 6 mm and 90 mm × 63 mm × 8 mm; they were found together on the paving at the edge of the cliff just outside

the sunk hearth of Room VI. It seems probable that they had been washed down with the loose earth from the middle Norse horizon above and are therefore included in this section.



ILL 52 : Whalebone objects

291 and *292* (Ill 52) were objects made from two blocks of whalebone; both have been lost. *291* was roughly triangular in shape with a large cup-shaped hollow approximately 100 mm in diameter in the centre. *292* was roughly square with rounded corners, 100 mm across, with a large perforation in the centre with wide grooves on either side. It may quite possibly have been used in ship's rigging. *293* (Ill 50) is part of a whale's rib, 750 mm long, the many cut-marks showing its probable use as a cutting-block.

BRONZE

Pin (Ill 39)

Pin *427* is 110 mm long but incomplete. The head is baluster shaped with a decoration of sunken dots placed haphazardly; a double raised collar separates it from the shank, and a single raised collar from a fixed ring of which only a part remains. It is a Norse rather than an Irish type. A parallel in the British Museum from Gotland (Curle collection) is attached to a chain 270 mm long. Another is from a grave-find from Bergan in Vestfold. The head is complete showing a small ring through the perforation (Petersen 1955, 26, pl 82).

Rings (Ill 39)

441 is a large heavy ring of cast bronze, 21 mm in diameter and 7 mm high. *444* is also of cast bronze, but plano convex in section. Matrices for similar rings occur on some of the Birsay moulds, such as *319* and *321* (Ill 18).

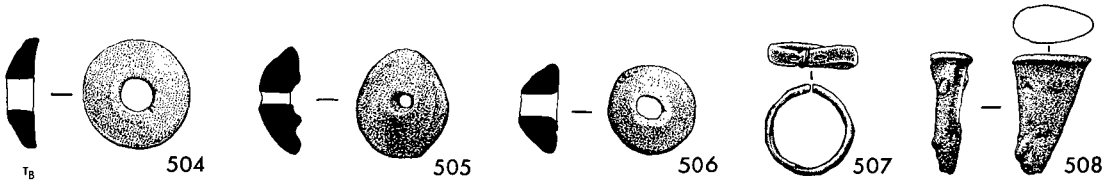
Strap-end (Ill 39)

432 is a strap-end, each end in the form of an animal head with laid back rounded ears. The larger of the two heads has oval protruding eyes and the square end is perforated, while the smaller has a short, rounded snout. The centre is filled with a square panel of angular interlace. A parallel to this strap-end comes from the Wirral in Cheshire (Bu'Lock 1960, 11, fig 4c) and an example from Ireland from Stokestown Crannog is in the National Museum of Ireland.

Mask (Ill 39)

434 is a small heart shaped animal mask in bronze. With its large rounded ears and round flat eyes it is clearly in the Borre style. The back is flat and four triangular nicks, almost certainly secondary,

have been cut round its edge, one between the ears, one on each side of the face and the fourth placed clumsily not quite in the centre of the muzzle. It closely resembles the animal masks found



ILL 53 : Lead objects. Scale 1/2

on many pieces of Borre style jewellery, for example on a small circular brooch from Nordheim (Petersen 1955, pl 48), where the animal mask is shown with the same winged eyebrows, on a tortoise brooch from Trøndelegan (Petersen 1955, pl 24) and also on ornamental horse trappings (Rygh 1885, 595a). The animal masks on the the Trøndelegan tortoise brooch were separate castings, as was usual with tortoise brooches of this period, and were pegged in from the back. The Birsay mask had no perforation at the back for a socket and therefore could not have been attached to such a brooch. Dr Madsen of the Danish Institute of Conservation (pers comm) has put forward as a possible, although not a probable, solution that it could originally have been a pattern die used in the manufacture of a tortoise brooch; one brooch having sometimes as many as seven identical animal heads attached.

Armlet (Ill 39)

429a is part of an iron hoop, 9 mm thick; it is encircled by eight open ended narrow bronze bands, some out of place and others probably missing. *429b* was unstratified but may very well belong to the same object, which may be an armlet. Its estimated diameter is 80 mm.

IRON

Not a great deal of iron survived from the middle and upper Norse horizons. *480* (Ill 41) is incomplete, probably broken in half, 40 mm long; a humped plate fractured at a perforation in the hump, and with a square iron nail through the surviving end. *472* (Ill 41, 41x) is a large socket, 90 mm long, the point broken off and the end split and expanded. *484* is a fragment of strip 90 mm long by 19 mm wide. One end is fractured and slightly expanded, the other cut half way down with a point extending below it. *481* (Ill 41, 41x) is a small rod 30 mm long, one end broken off, the other flattened and expanded.

499 is a furnace bottom from Midden c.

LEAD

Three lead objects survive (Ill 53). Two are small spindle whorls, *504*, 22 mm diameter, and *506*, 24 mm dimeter. *508* is a small object with a flat oval base, 21 mm by 10 mm, tapering to a narrow top which is incomplete. A somewhat similar object from Southampton (Addyman and Hill 1969, 71, fig 28) is referred to as a weight.

JET

510 (Ill 42), the only piece of jet from the middle Norse horizon, is an incomplete armlet, oval in section, with a rough finish.

STONE

Spindle whorls (Ill 43)

There were six spindle whorls from the middle Norse horizon, three of dark green polished steatite, similar to those from the lower Norse horizon, but shaped as a true instead of a truncated form of cone. *520* and *521* are almost identical in size, 35 mm and 36 mm in diameter at the base and 22 mm and 20 mm in height respectively. *519* is a little smaller, 30 mm across the base and 17 mm in height. This form was also found in bone at Birsay (*235, 236, 237, 238:* Ill 38). Other examples of this high conical shape, of a similar size, were found in Norse graves at Birka (Arbman 1937, 178, pl 22). At Cahercommaun (Hencken 1938, 44, fig 27) where it was one of four types, there were twenty-three examples, two made from split shale pebbles, all the others from the femur heads of oxen.

518 from Area III is also conical and made of steatite, but with the addition of two notches at the top, one on either side of the enlarged perforation, which, unlike the others, is larger at the top than the bottom, expanding from 11 mm to 13 mm. It is badly worn. Two of the remaining three spindle whorls from the middle Norse horizon were also of steatite but discoidal in shape (*526, 541*), the third was of siltstone (*542*).

Ring

531 is a small carefully shaped ring of red sandstone.

Whetstones: small perforated (Ill 44)

There are six of this type of whetstone; four made of siltstone (*547, 548, 549, 550*). Two other examples were made of slate, one (*551*) unstratified, the other (*552*) from Area III. All are perforated and, with the exception of *547*, they are all narrow and rectangular, the section varying from narrow to square and the length from 63 mm to 88 mm. They belong to a well known Norse type known as 'hanging whetstones', which have been found in graves of both the Viking and Late Viking periods, (Petersen 1951, 520-1, fig 142). They have also been found at Jarlshof, Viking phases II-III (Hamilton 1956, fig 65), and in Ireland at both Cahercommaun (Hencken 1938, fig 35: 259) and Carraig Aille (O'Ríordaín 1950, 86, fig 16: 83 and 244).

Only one of the Birsay examples, *547* from Midden b, does not conform to the usual type, being, at 20 mm, wider than the average. The length is not known as it has been broken off at 55 mm. Also it is unusual in being decorated with incised markings, on one side with a random arrangement of pointed or oval forms overlapping rather in the manner of fish scales, on the other with irregular vertical and horizontal lines. A whetstone from Cahercommaun (Hencken 1938, fig 35: 393) is also covered with apparently formless incised patterns.

Whetstones: haunched (Ill 44)

There are only two haunched hones; *558* was from the middle Norse horizon, *557* was from Area III. Both are of schist and both are incomplete. This type was common at Jarlshof and a number from Phase III are illustrated by Hamilton (1956, fig 65).

Whetstones: chisel type (Ill 44)

Long narrow whetstones are not uncommon. They characteristically have a rectangular or square section which sometimes has a slight swelling along the shaft and one end is often cut to a chisel point. None are complete and some of the smaller fragments have not been catalogued. *559* and *560* are both made of schist; *559* being unusual in that the chisel point has been cut from both sides. *561* and *562* also from the middle Norse horizon are of slate, as are two other examples (*563* and *564*) from Area III.

Bar moulds (Ill 28)

574 is a steatite mould for a single bar, carefully shaped, the surviving end straight and the sides curved. *576* is made from a fragment of the curved side of a large steatite vessel, and is probably also a mould for a single bar. *575* was unstratified but like *576* is made from a fragment of a heavy steatite vessel. The matrix for one bar is clear and there are indications of the matrix for a second bar with vertical sides.

Stone weights and line sinkers (Ill 45, 54)

A number of stone weights from the site can be identified as line sinkers by comparison with parallels from Norway. The majority of well stratified examples were from the middle Norse horizon, others were from House Sites B, L and D in Area III and one from the lower Norse horizon. Petersen (1951, 263-84, fig 143-149) discusses objects related to fishing, including a number of different types of line sinkers found in graves in the coastal regions, principally from Vestfold and Rogaland. A similar object is referred to by Rygh (1885, 477) as a weight for use with scales.

Two of the types Petersen describes are represented at Birsay. The most common, of which he cites forty-six examples varying in length from 80 to 170 mm, were in use throughout the late Iron Age (Petersen 1951, 267, fig 143). They are oval in shape with grooves scored round the edge and sometimes crossing the stone horizontally and vertically. Four of this type were found at Birsay. *582* is of sandstone, 146 mm long by 115 mm wide with a widely scored groove all round the edge and a short transverse groove across the top. *583* also of sandstone, is incomplete, 75 mm long and with only part of one groove remaining. *584* found in the lower Norse horizon is also of this grooved type. It is of sandstone, very small and nearly a flattened sphere, 15 mm × 24 mm × 28 mm, with a groove all round the edge and additional grooves scored vertically and horizontally. *585*, made of steatite, is also very small, 25 mm long, and roughly shaped with deep triangular cuts at top and bottom linked by shallow grooves. In addition to the parallels from Norway, this type was found at Jarlshof, House 6 (Hamilton 1956, 180, pl 34).

The second type described by Petersen (1951, 270, fig 144) was less common, only ten examples being cited, all from the Late Viking period. They are oval in shape, nearly circular in section and perforated at both ends. There are certainly three, possibly five, sinkers of this type from Birsay. *586* is of sandstone, 130 mm long. Narrow triangular grooves have been scored from each side of the only remaining perforation to the top of the stone, no doubt to hold the line in place. The base has been fractured exposing a section which shows half the horizontal groove from the lower perforation and part of a vertical socket, 45 mm long, possibly intended to replace the perforation and groove with a metal ring. *589* of steatite is 108 mm long and is complete but both perforations show signs of wear and a third perforation has been somewhat clumsily added. *590* is also of steatite. It is 130 mm long, but incomplete; the stone has broken off at one end and the second perforation has been replaced by a socket hole, 45 mm deep, extending up the centre. *588* is of steatite, and at 95 mm long, rather smaller than the three just described. In section it is nearly square at the centre, whilst the other weights are cylindrical, but the perforations show the same signs of wear and there are cord marks across the ends.

587 has been made from a fragment of a steatite vessel, only one end remaining; it measures 95 mm in length by 55 mm across the widest point and 22 mm in section. The perforation shows the usual signs of wear and there is a mark which could have been made by a cord across the top.

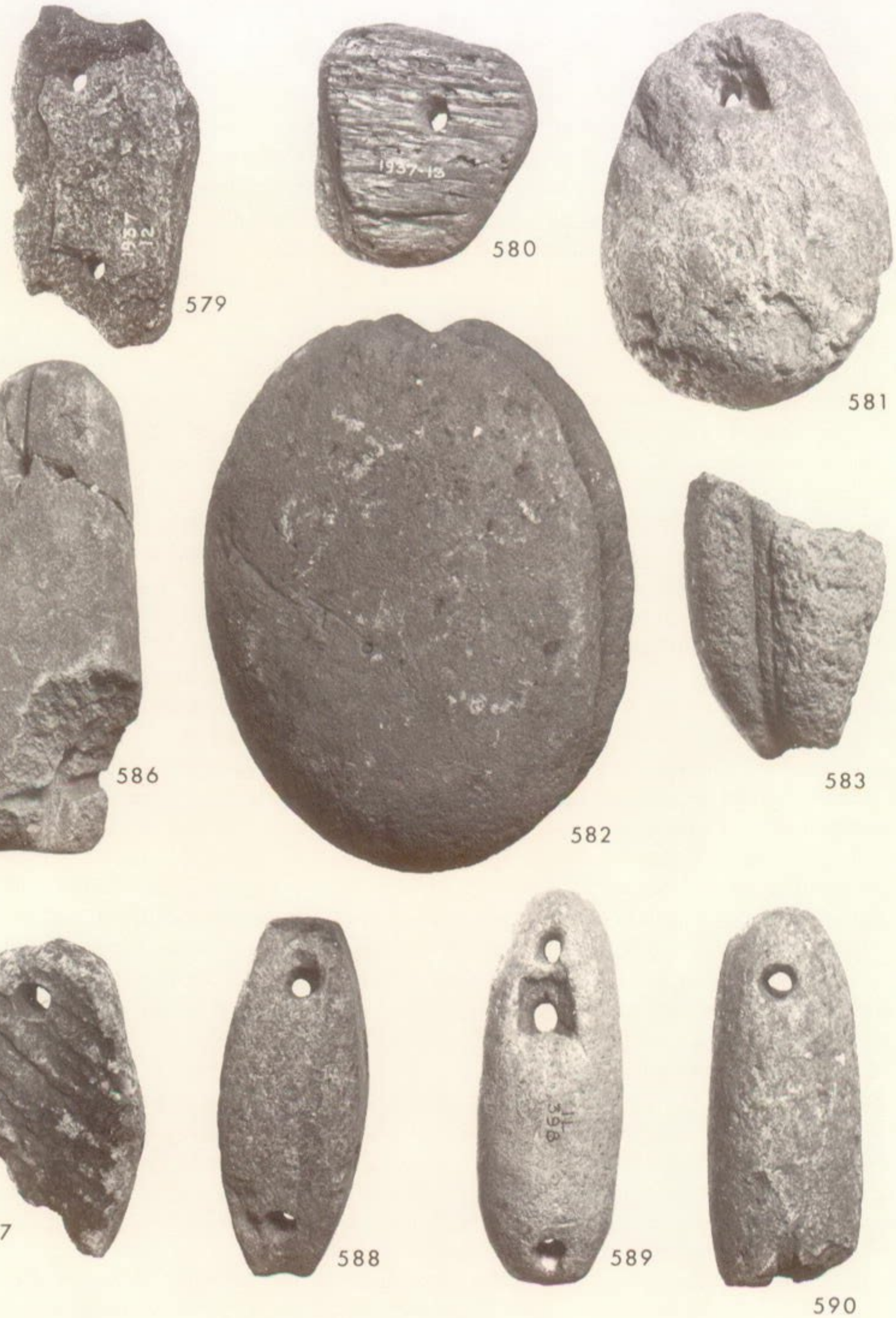
There is no indication as to how these weights were used but, judging by the wear on the perforations and the marks or grooves above or below, the pull seems to have been applied straight up and straight down and not at an angle.

There is what appears to be a parallel to these sinkers from Jarlshof (Hamilton 1956, 183, pl 37: 3). It is referred to as a line sinker or tetherblock, but it could not have been the latter as the perforations are too small to allow a rope to be passed through.

Other weights (Ill 54)

579 is a roughly rectangular flake of steatite, approximately 90 mm × 50 mm × 12 mm thick, with one corner broken off. Each end has a perforation of diameter 8-10 mm. *581* is a pear shaped natural

stone of quartzitic steatite from Midden a, 110 mm long, with a single perforation at the apex. It resembles a loom weight. *604* is a small polished oval pebble.



ILL 54 : Stone weights and line sinkers

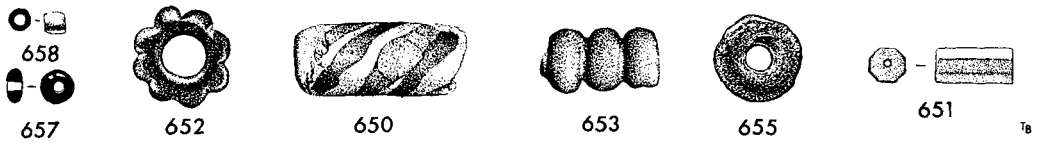
Miscellaneous stone

599 is a natural beach stone, 115 mm long, the rounded end showing use as a hammerstone.

GLASS

Beads (Ill 55)

Two beads were found. *652* is opaque blue, circular, with eight evenly spaced undulations; *653* is also opaque blue, with three segments.



ILL 55 : Glass beads. Scale 1/1

UPPER NORSE HORIZON

In the upper Norse horizon, Rooms 13-19 (Ill 5: 1) had been built on the periphery of the buildings from the middle Norse horizon; the walls were incomplete when excavated and did not include dressed stones. Only the barest outline of the rooms was visible. Rooms 13 and 19, had been constructed on top of buildings of the middle Norse horizon. There were no surviving traces of hearths. But in spite of their ruinous condition the buildings yielded a few valuable finds.

BONE AND ANTLER

Large pins with perforated heads (Ill 48)

101 is an exceptionally large perforated bone pin, 123 mm long, with a winged head.

Needles (Ill 34)

163 is a netting needle with curved shank, 105 mm long.

Picks and pointed implements (Ill 35)

181 and *182*, are picks, pointed at both ends, and both 83 mm long. They are somewhat similar to the pointed objects from Southampton (Addyman and Hill 1969, pl 7) which are classified as thread pickers used in weaving, but the points from Birsay do not seem to be sufficiently sharp for such a purpose. A similar object, *183* came from the lower Norse horizon.

Single-sided combs: Norse types (Ill 49)

230 is a comb which completes the sequence of combs found throughout the earlier phases, both Norse and native. It differs from all the other combs in having bronze instead of iron rivets, not made in the form of a nail, but shaped from fragments of thin sheet bronze curled round into tiny tubes..Another difference is that although it bears a superficial resemblance to the high-backed Pictish combs it is merely a variant of the single-sided Norse combs such as *224* and *225* (Ill 36) from the lower Norse horizon. The connecting plates extend to form an arch covering the upper extensions

of the comb segments and the upper row of rivets follow the curve of the arch. It is a fairly widespread late Viking type. Blomqvist (1942, 144-5, fig 28-34) illustrates a number from Scandinavia and a similar comb came from Danish London (Baldwin Brown 1937, 391, pl 87).

BRONZE

Pins (Ill 39)

426 is a pin 68 mm long with a button head; it might be of any date. Pin *428* is 120 mm long, the lozenge shaped head perforated with a clearly defined collar at the junction with the shank. The perforation, 3 mm in diameter, is surrounded on the front by a double twist of silver inlay enclosed by a band of beading, the back is outlined by incised double lines and the sides by pairs of raised lines set transversely at the points and half way along. There is a near parallel from Birka (Roes 1965, 9, pl 2: 8).

Buckle (Ill 26)

459 is an incomplete rod of gilt bronze, 50 mm long, circular in section with one end curved. It may have formed part of a buckle.

STONE

Open Bar moulds

577 is a mould of smooth steatite from the upper Norse horizon, Room 15. Although the edges are badly worn, it is nearly complete. It is rectangular, 145 mm long by 35 mm wide and approximately 25 mm deep and has matrices for bars of different sizes on each of the four sides, some with rounded and some with squared ends. It clearly belongs to the same group as mould *578* from Area III which has only one end complete and measures 70 mm long, 35 mm across and approximately 20 mm thick. The end is roughly squared and there are matrices for different sizes of bars on each of the four sides.

These moulds are of a very different quality from those found at Birsay in the middle Norse horizon. Another example of this type of mould was found in Ireland at St Michael's hill, Dublin (Bøe 1940, 69, fig 46). Parallels from Norway include examples published by Gustafson (1906, 109, fig 448); some were found in male graves with blacksmith's tools (Petersen 1951, fig 77). They are generally referred to as being for making silver bars.

Steatite Vessel

614 is a rim fragment of a round bowl showing part of a repair hole.