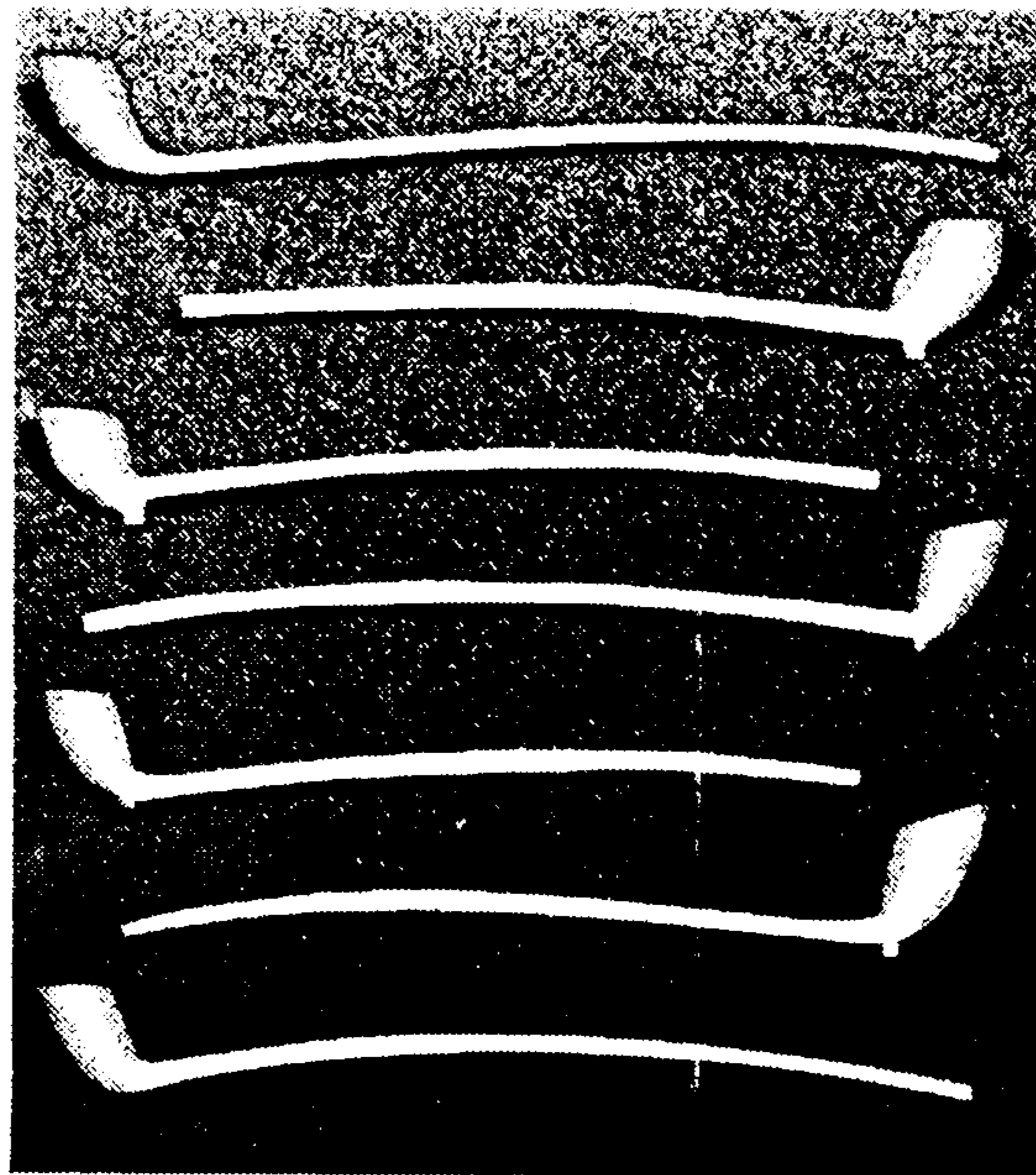


CLAY PIPE RESEARCH

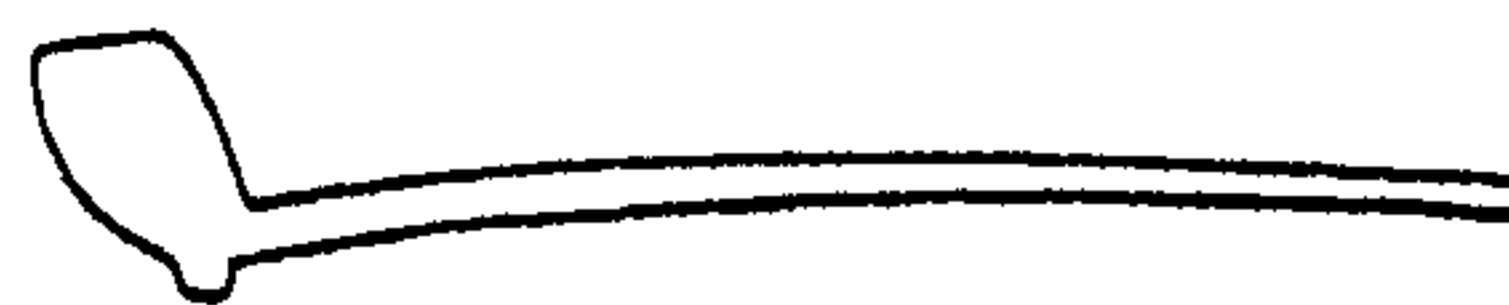
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TWO GROUPS OF NINETEENTH CENTURY PIPE WASTE FROM BRISTOL

by

Reg Jackson, Ian Beckey and Mike Baker

1. TEMPLE WAY

In 1982 workmen found a number of clay pipe bowls during the excavation of a service trench for the South Western Electricity Board in Temple Way, Bristol (NGR ST 59477267; Fig. 1). This discovery was reported in the local newspaper, the 'Bristol Evening Post', and an amateur archaeologist, Paul Harper, visited the site and established that the pipes came from a kiln waste dump. He recovered about 100 pipe bowls before the trench was backfilled.

Construction work started in June 1987 on Phase 2A of the Bristol Inner Circuit Ring Road. This involved the widening of Temple Way and, in the light of the 1982 find of pipe material, the site was monitored and further kiln wasters were recovered from the same kiln dump. In August 1988 the modern pavement overlying the waste dump was removed by the contractors and, with their assistance, members of the Bristol and Avon Archaeological Society carried out a small excavation measuring 6 metres by 2 metres. This excavation showed that a layer of pipe waste up to 75 cms thick had been deposited against a wall made of pennant sandstone and brick. The waste had been sealed by a layer containing broken bricks, stones and ash, which was presumably rubble from a demolished building. It was only possible to excavate part of the waste dump and the remainder now lies under Temple Way.

Using the contractor's plans of the proposed road scheme and their surveying equipment the waste dump was found to be at a height of 8.93 metres above Ordnance Datum, and its position was superimposed on the 1885 Ordnance Survey map showing that it lay beneath a long rectangular building near the end of Little Avon Street (Fig. 2).

THE FINDS

The deposit contained ash, coal, clinker, pieces of kiln muffle and kiln furniture, lumps of unfired pipe clay, large quantities of broken pipe bowls and stems, and some iron work. The pipes show signs of having been damaged during manufacture or have manufacturing faults which would have made them unsaleable. The fabric of some of the bowls had laminated during firing, other bowls had been distorted, cracked or discoloured due to overfiring, debris had adhered to bowls and a common fault was that the wire used for making the stem bore had penetrated through the wall of the bowls. The decoration is blurred and the two halves of the mould have often poorly registered, presumably due to the moulds being worn. The pipes are generally poorly finished and trimmed.

The Pipes

A total of 1513 bowls were recovered on the three occasions when the dump was exposed (1982, 1987 and 1988). 71 different bowl forms were present in the group (Figs. 3 - 73). The following list shows the proportion of the different types of pipe

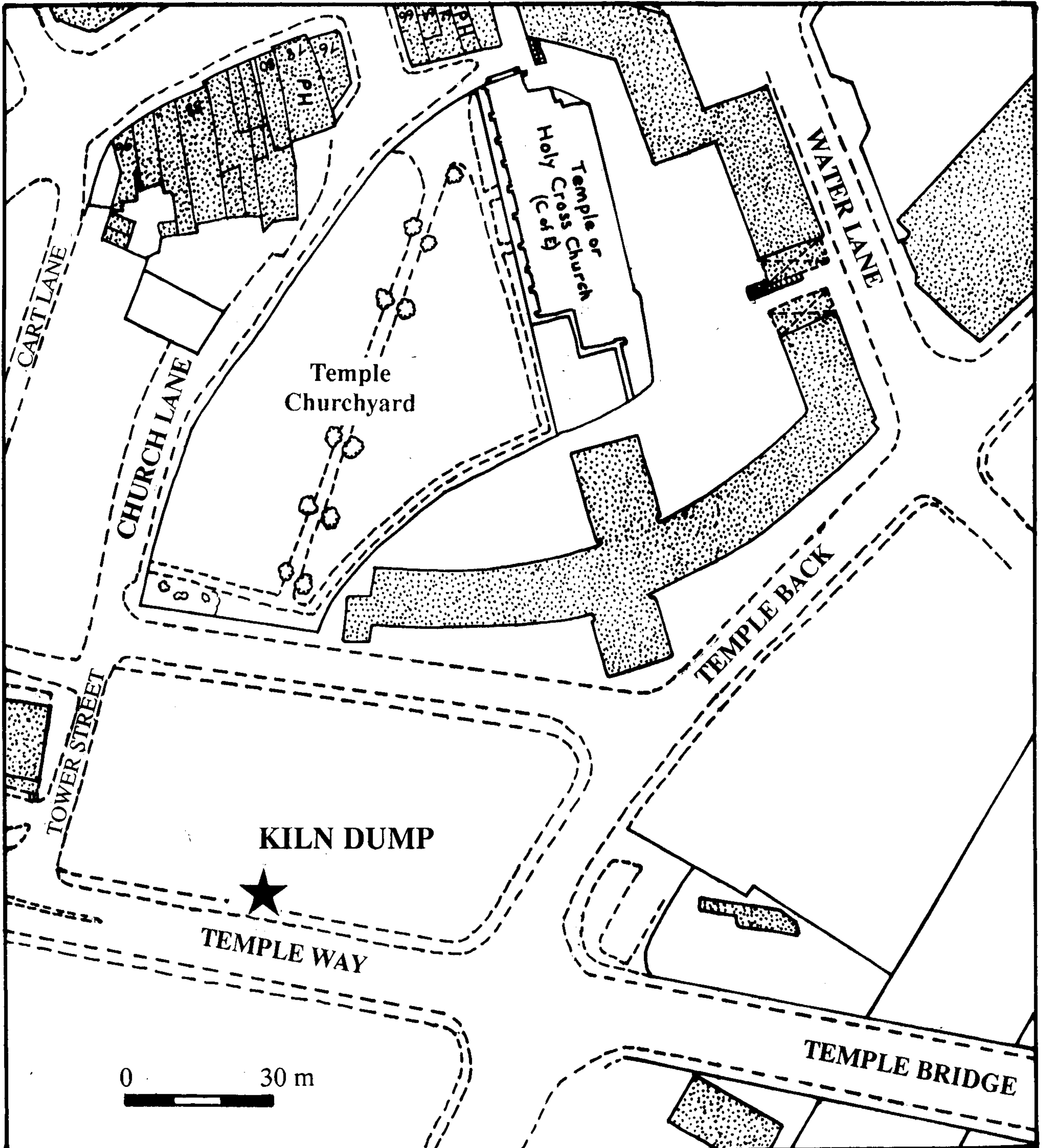


Fig.1 The location of the Temple Way Kiln Dump found in 1982

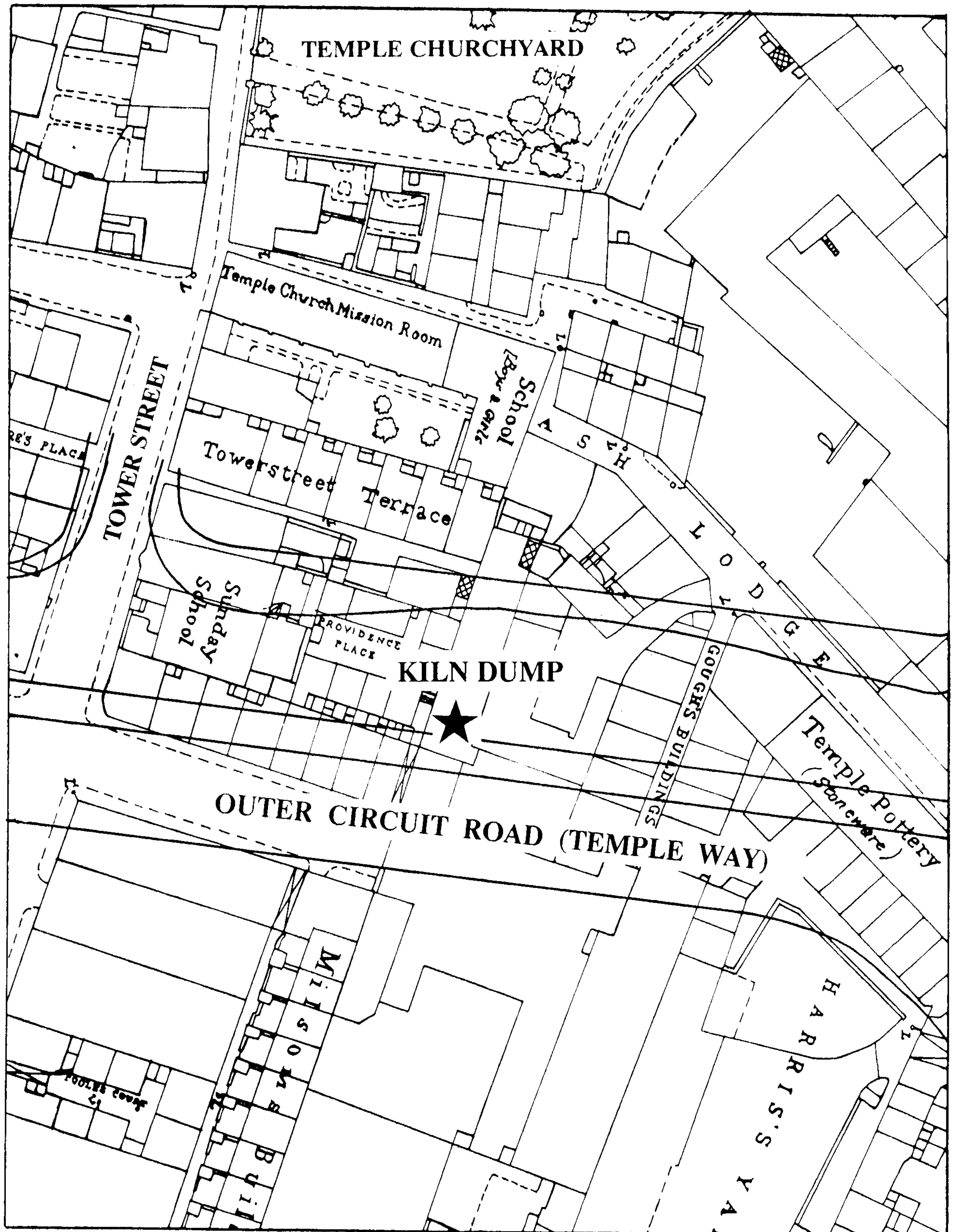


Fig. 2 The location of the Kiln Dump with the Outer Circuit Road constructed in 1987-88 superimposed on the 1885 O.S. Map

bowls that were recovered from the dump.

Fig.	No. of Examples	Fig.	No. of Examples	Fig.	No. of Examples	Fig.	No. of Examples
3	90	21	1	39	1	57	101
4	35	22	7	40	11	58	3
5	30	23	8	41	9	59	70
6	1	24	1	42	4	60	1
7	2	25	4	43	1	61	21
8	2	26	6	44	1	62	111
9	17	27	22	45	92	63	21
10	17	28	20	46	1	64	15
11	4	29	6	47	23	65	44
12	1	30	13	48	62	66	3
13	11	31	2	49	128	67	1
14	9	32	3	50	10	68	16
15	1	33	2	51	61	69	7
16	4	34	37	52	111	70	13
17	1	35	2	53	26	71	14
18	3	36	1	54	63	72	16
19	41	37	4	55	12	73	18
20	1	38	8	56	5	Total	1513

The illustrations of the pipes are all full size and decoration and marks are in relief unless otherwise stated. The types of pipes found are described briefly below:

- Figs. 3 - 5 Plain bowls having no heel or spur. This type of pipe has been found on other waste dumps in Bristol (Jackson & Price 1974, 116-119; Price et al 1984, figs. 77-80) but otherwise are generally not found on archaeological excavations in the city. They are usually regarded as having been made for export.
- Figs. 6 - 21 Plain bowls with spur.
- Fig. 22 Plain bowl with decoration on one side of spur.
- Figs. 23 - 38 Plain and decorated bowls bearing the initials TD either on the spur or on the back of the bowl.
- Fig. 39 Damaged bowl with initials '...D' on side. Possibly TD.
- Fig. 40 Plain bowl with initials SR on spur.
- Fig. 41 Decorated bowl with initials IE on side.
- Fig. 42 Plain bowl with initials ER on spur.
- Figs. 43 - 45 Decorated bowls.
- Fig. 46 Bowl in the shape of a human head. Similar types of bowls were found in the kiln dump of R.F. Ring & Company (Price et al 1984, figs. 46-49, 96, 137-140).
- Figs. 47 - 51 Bowls decorated with ribbing and (49 - 51) with (?)oak leaves up the front and back mould lines.
- Figs. 52 - 55 Decorated bowls bearing masonic symbols (see below).
- Figs. 56 - 73 Bowls with various forms of decoration.

The symbolism on the masonic pipes (Figs. 52-55) requires some explanation. The letter G stands for the Great Architect of the Universe or Grand Geometrician of the Universe. The sun represents the glory of God, the moon is the messenger of his will, the seven stars indicate the virtue of charity, the set-square regulates the mason's actions and the compass keeps the mason bound with mankind (Dewar

1966). The large bird on one side of the pipes (Figs. 52 & 53) may represent an eagle, the emblem of the United States.

The Kiln Furniture and other Kiln Material

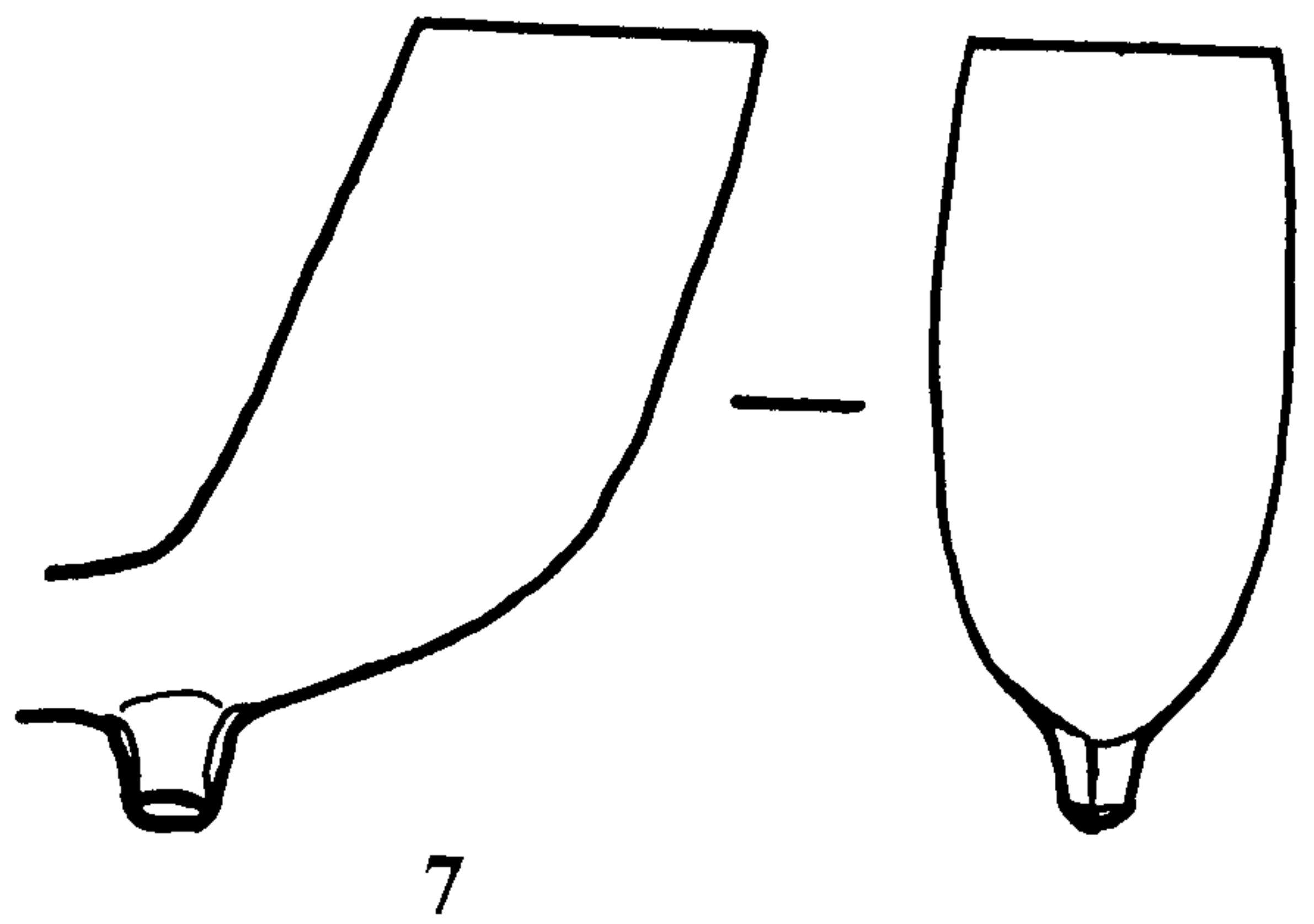
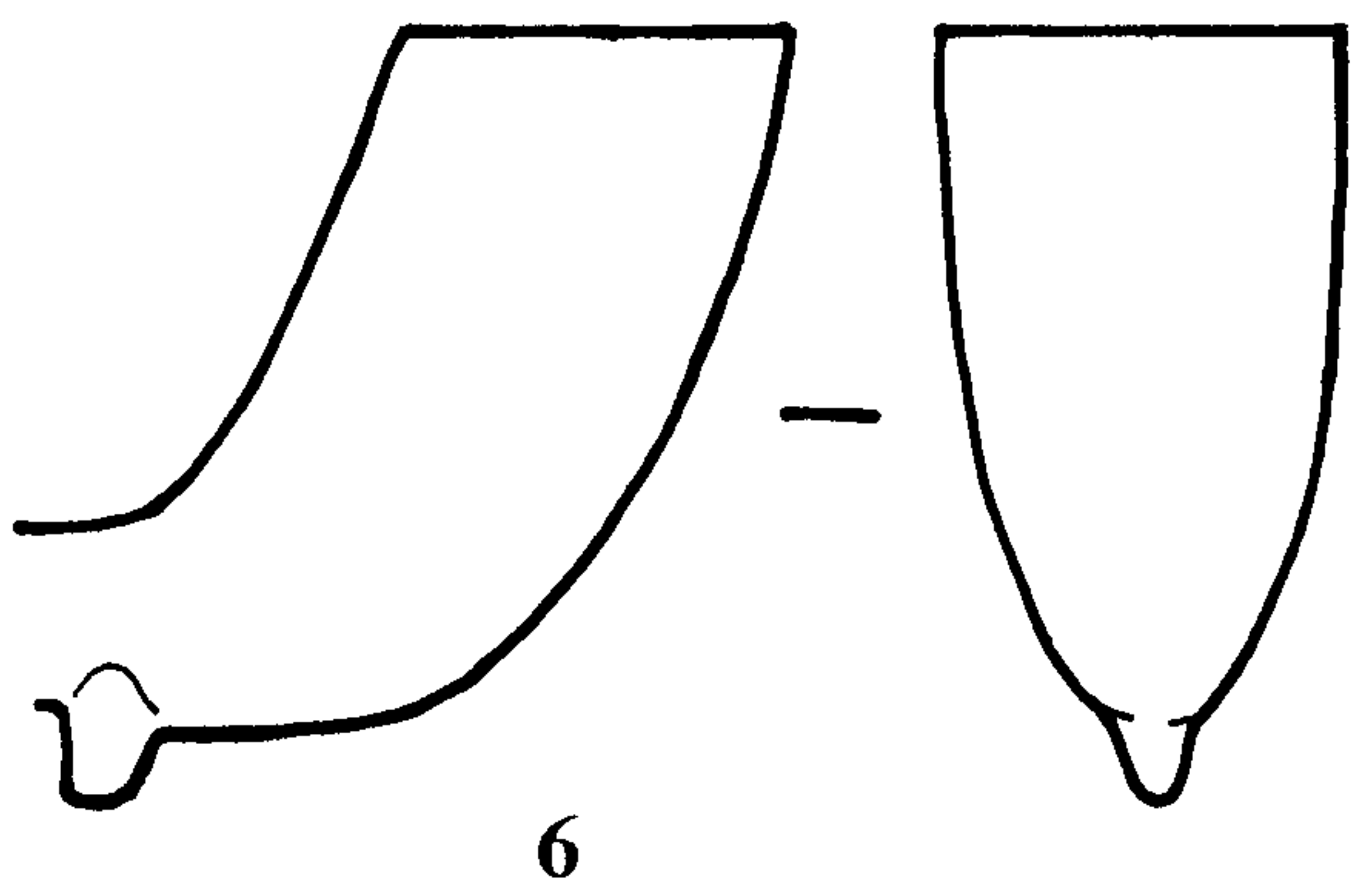
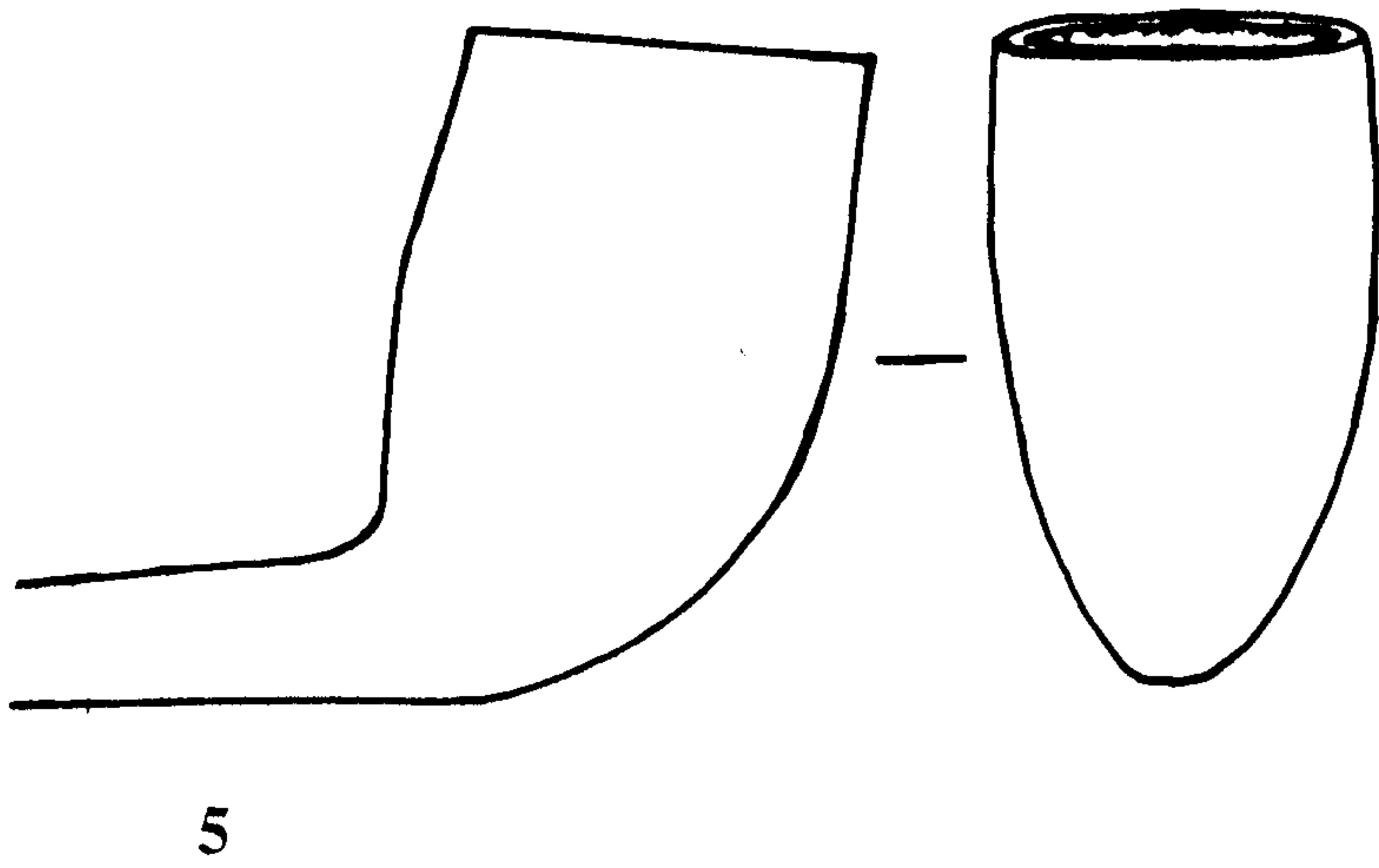
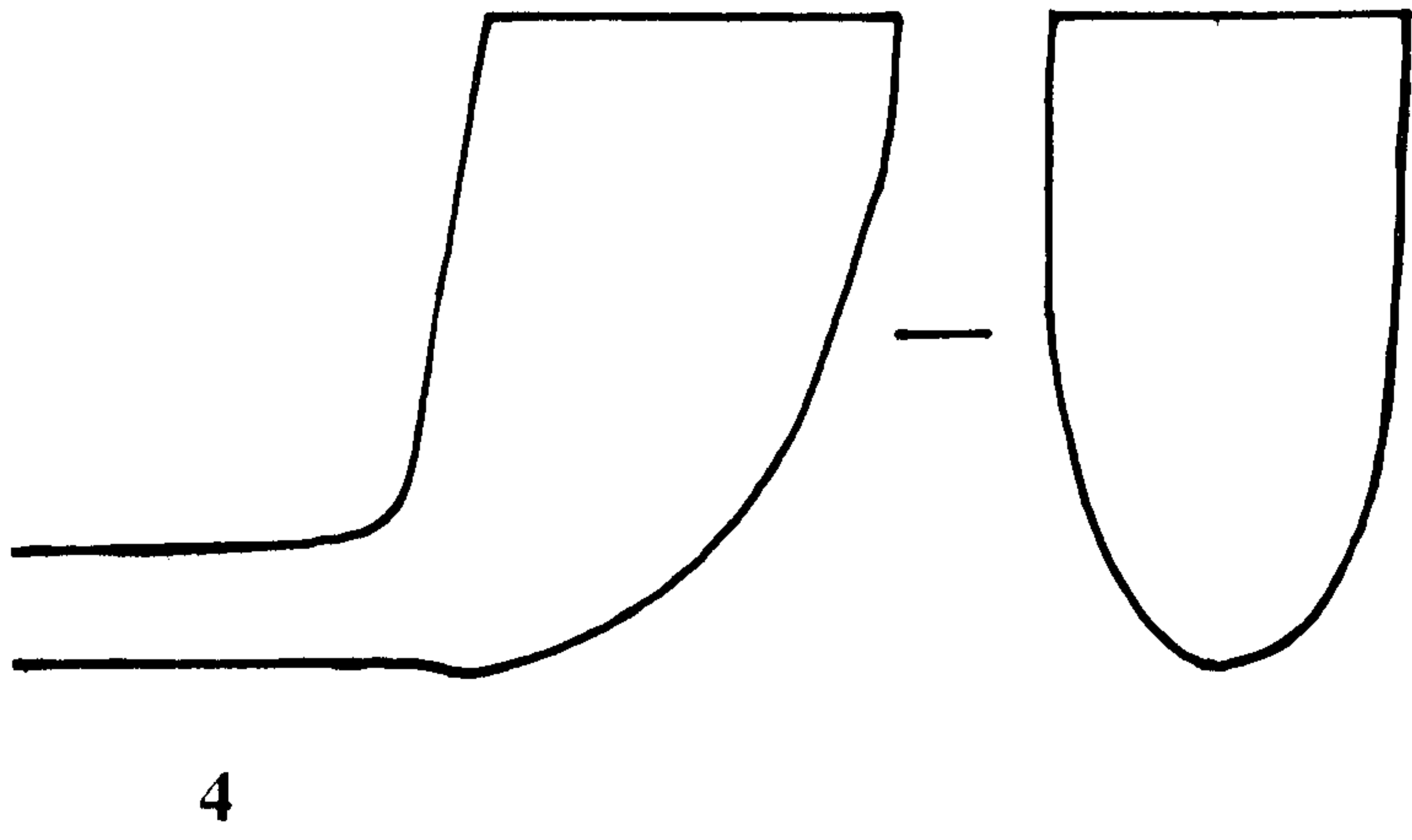
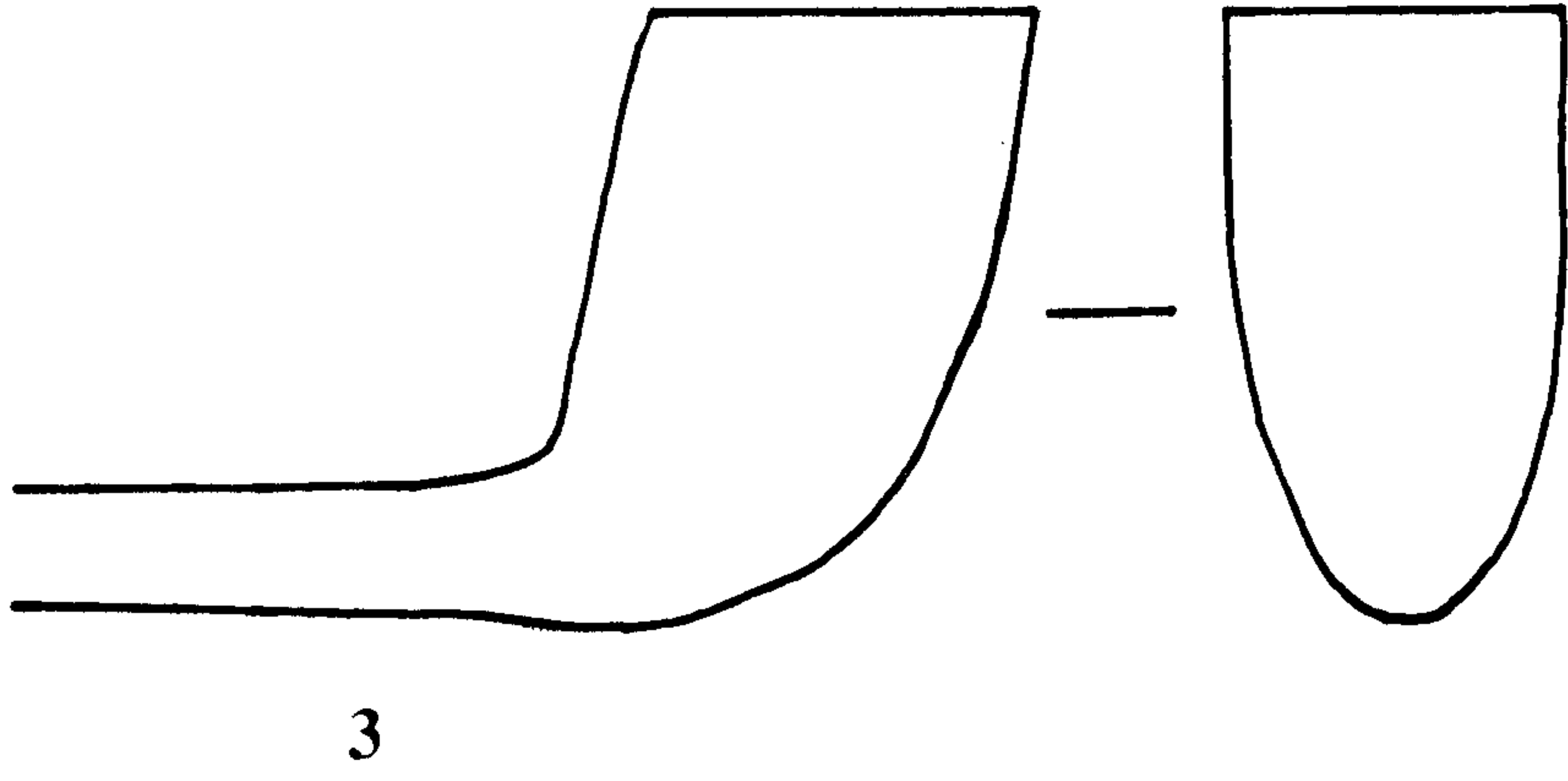
The objects recovered from the waste dump included debris which may be kiln furniture or parts of the kiln.

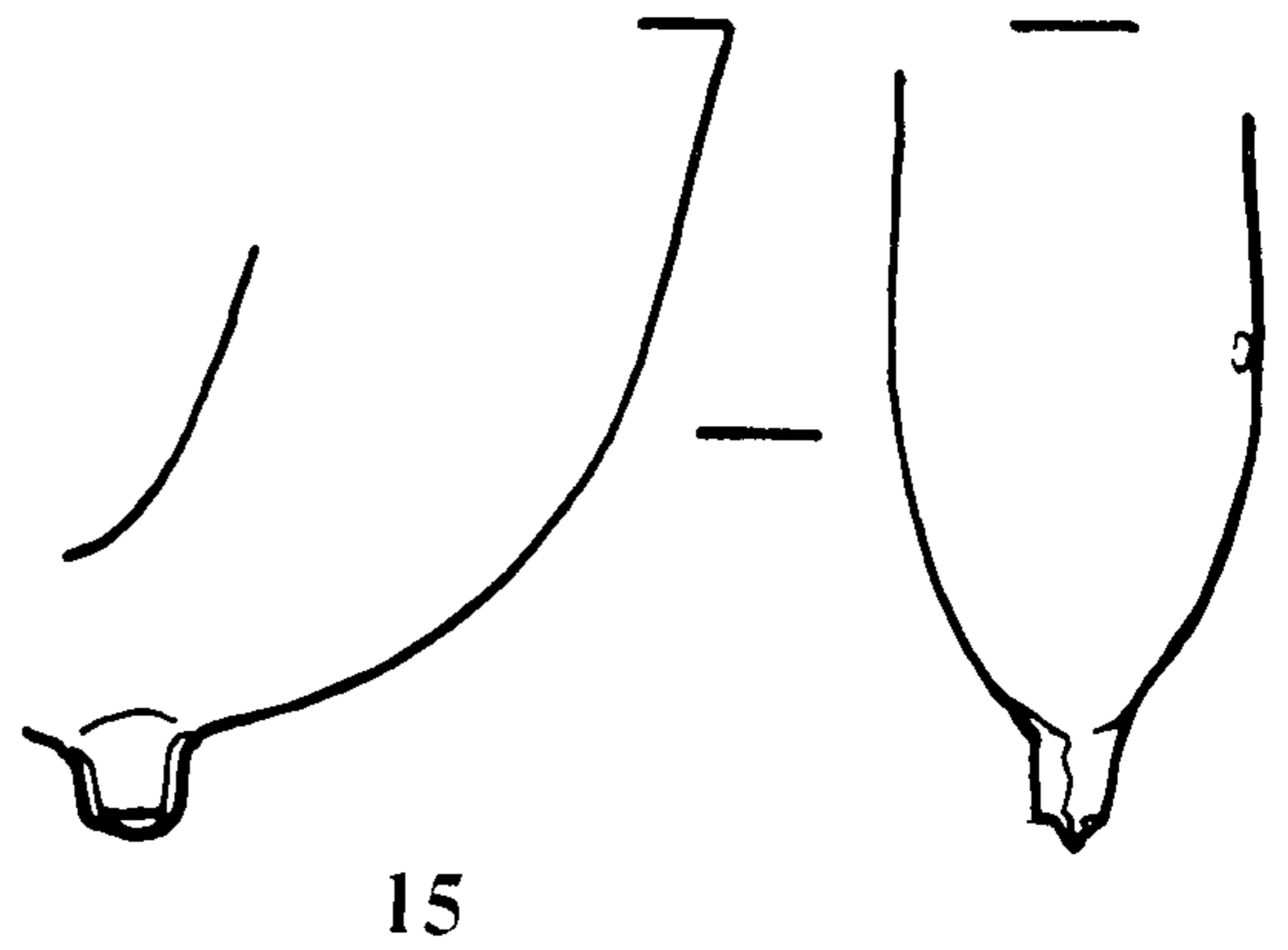
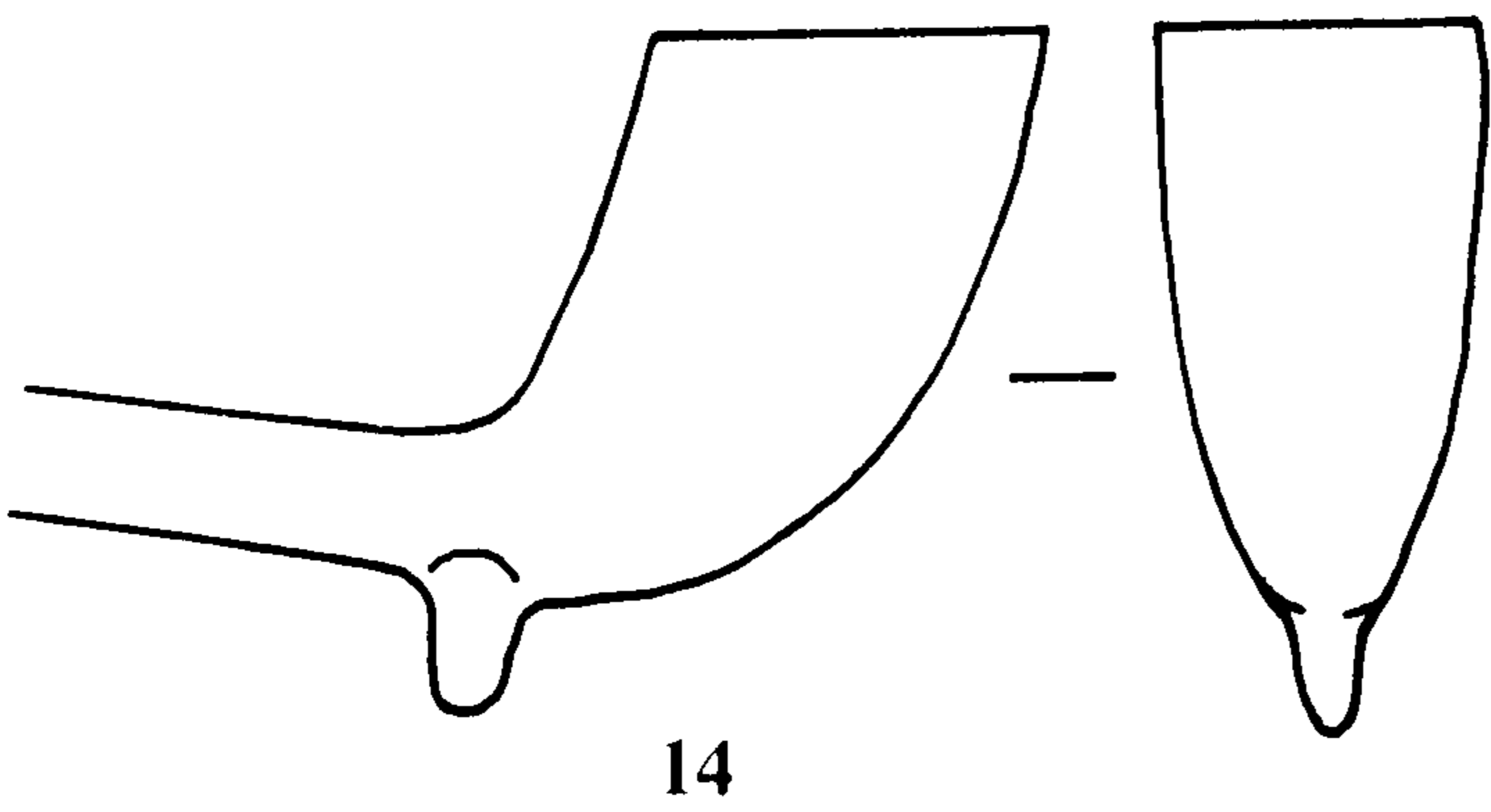
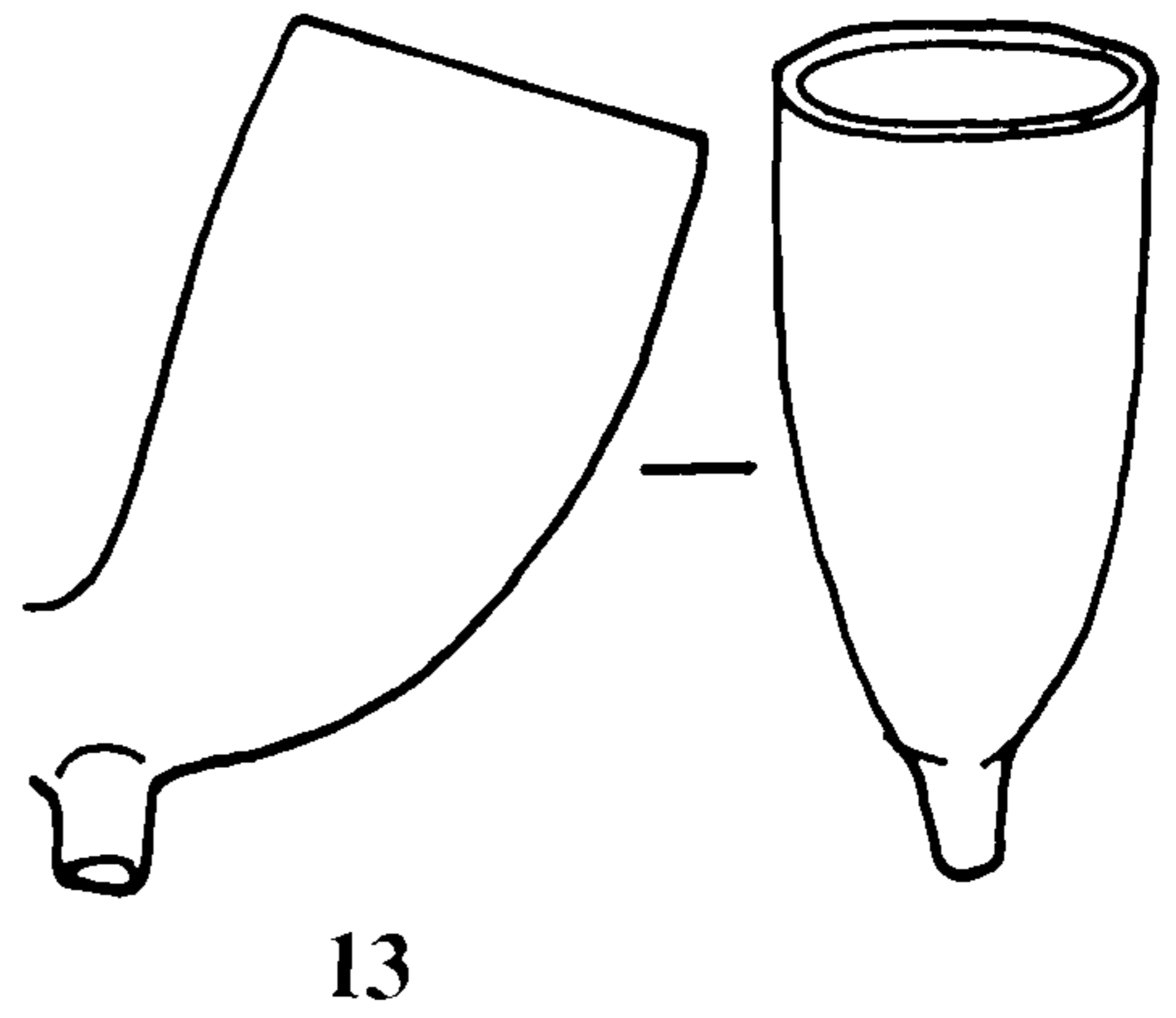
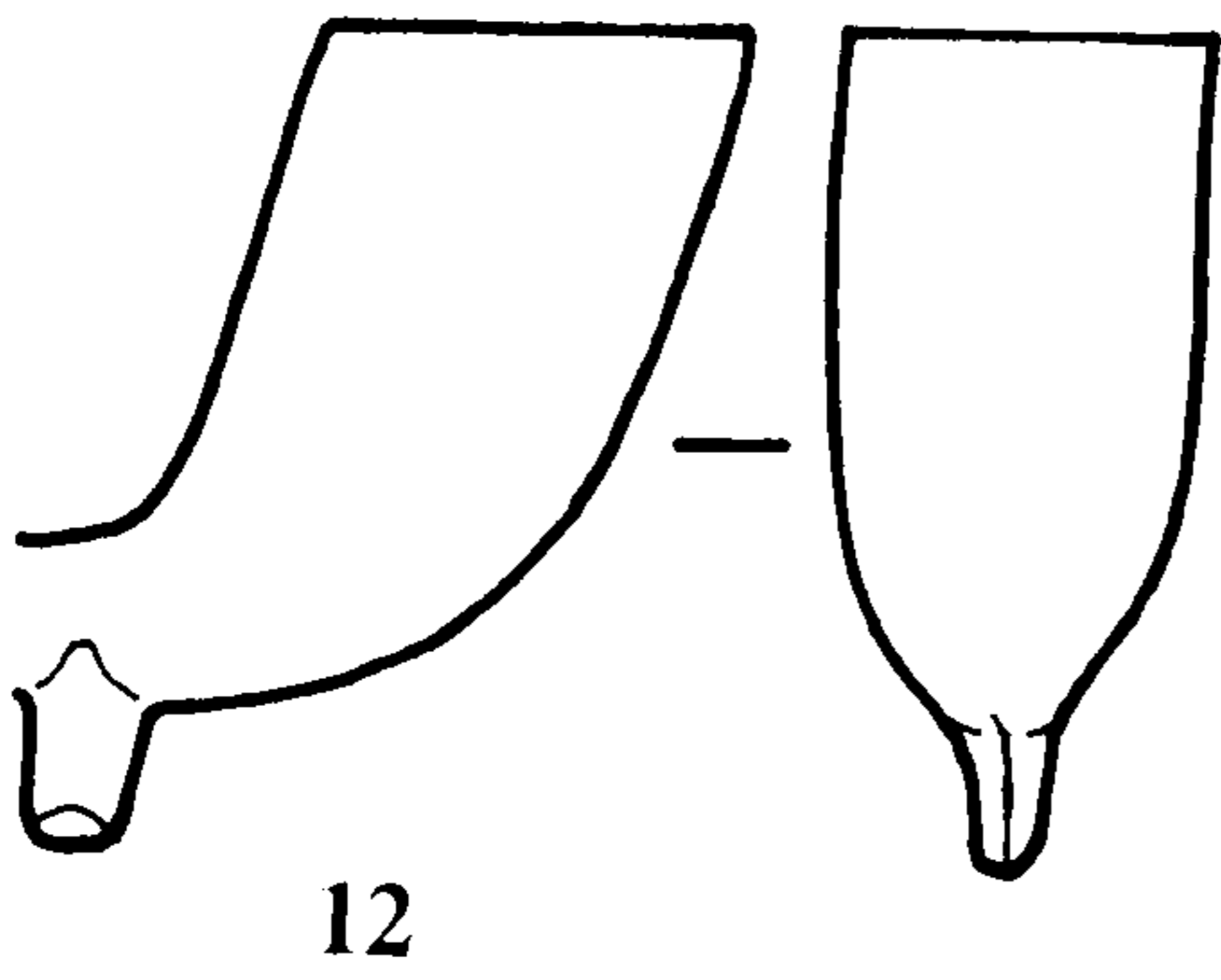
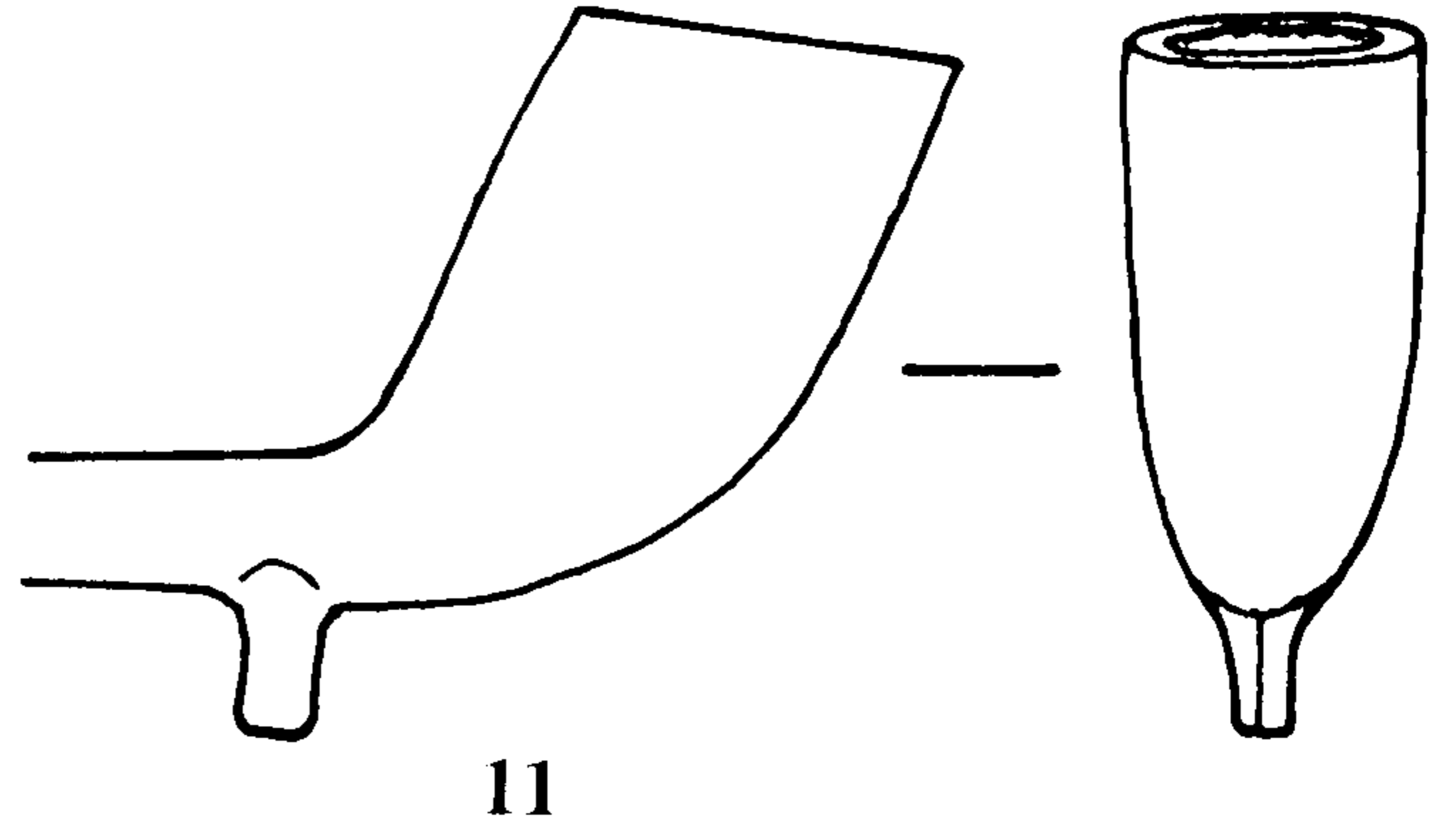
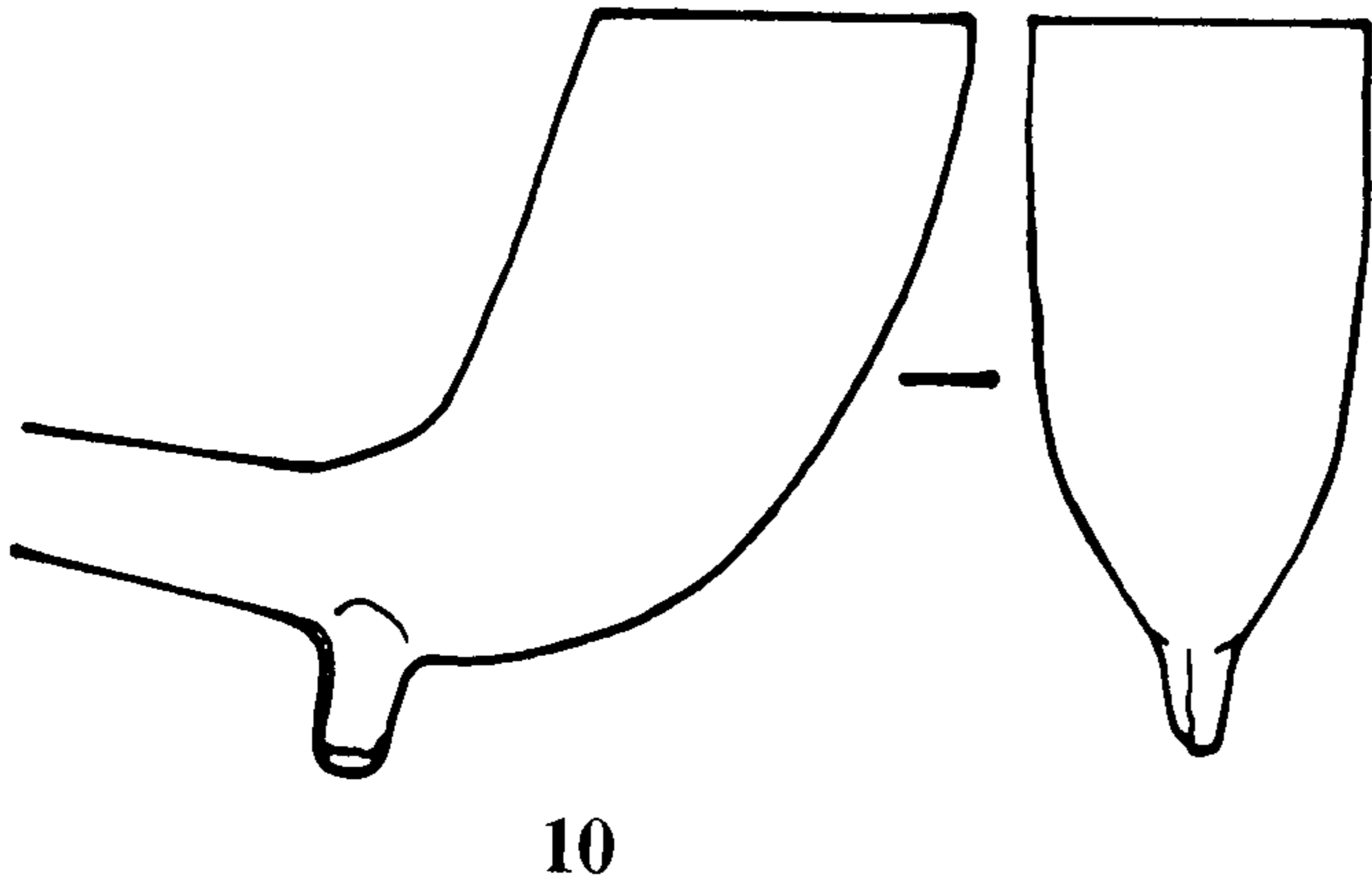
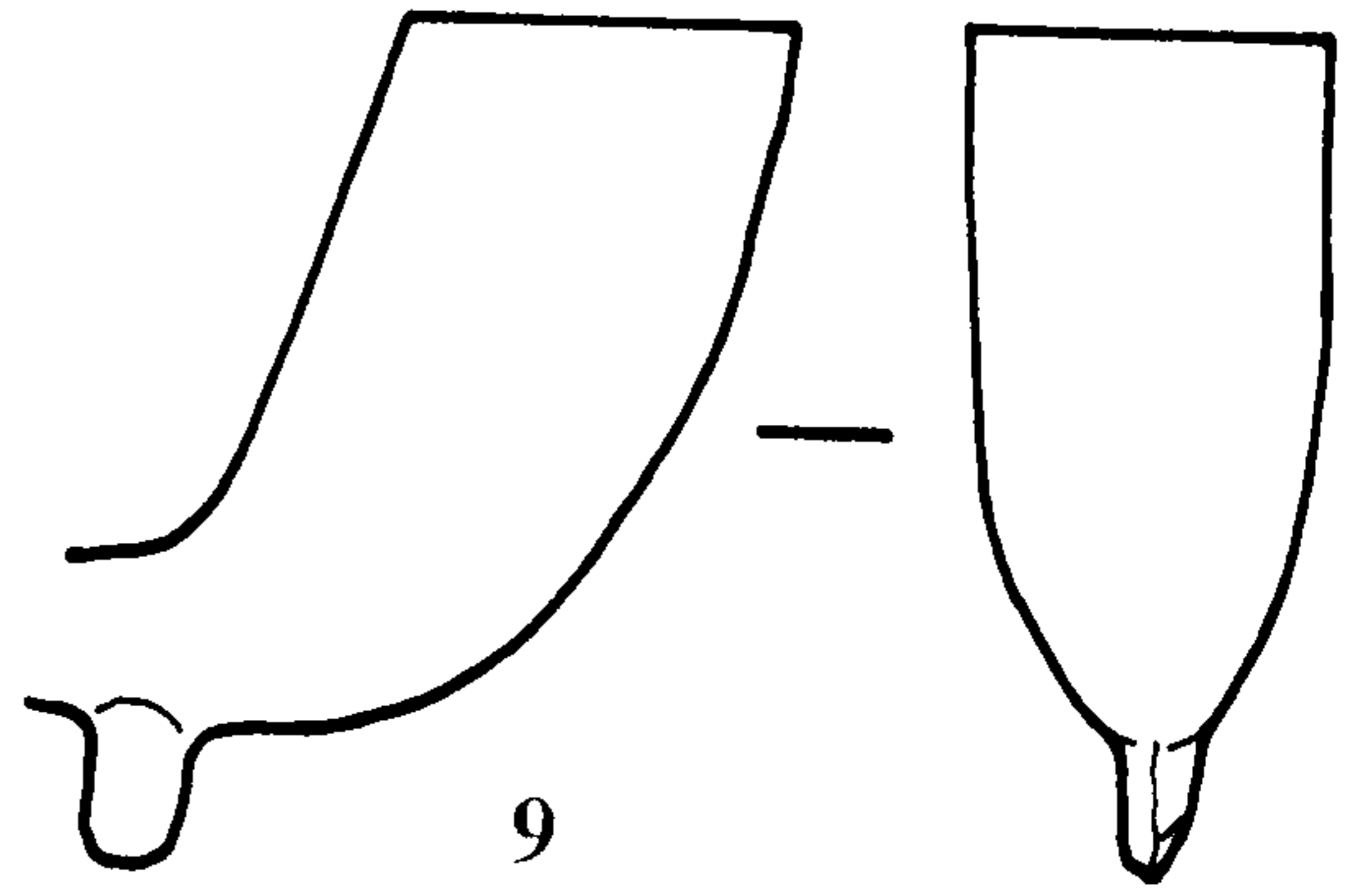
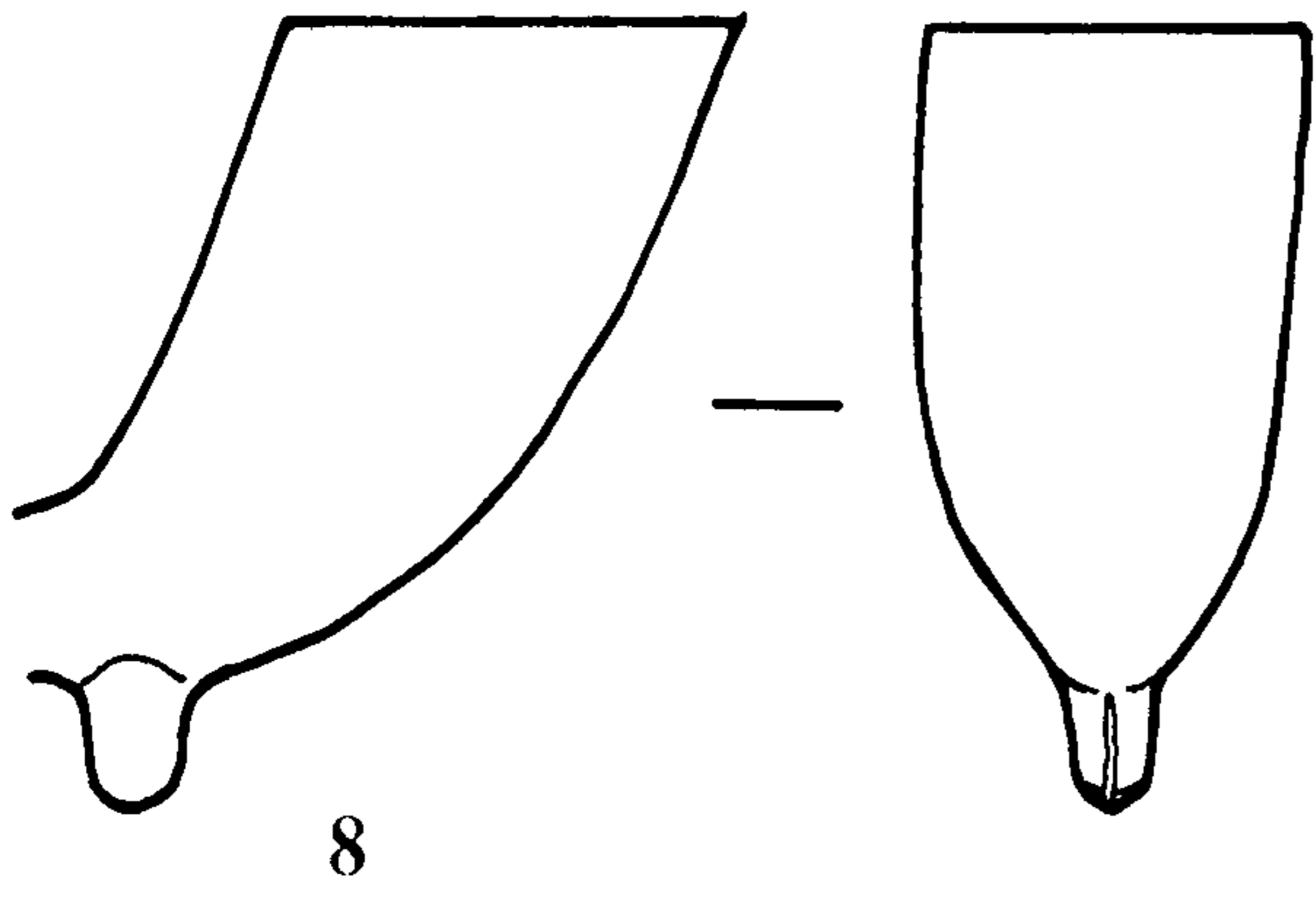
The kiln furniture (Figs. 74 - 82) consists of pieces of fired pipe clay some of which are reinforced with pipe stems or have pipe stems stuck into them which protrude from the surface. These irregular pieces of fired pipe clay are common on kiln sites but their precise purpose is unknown (Price et al 1984, figs. 89-94).

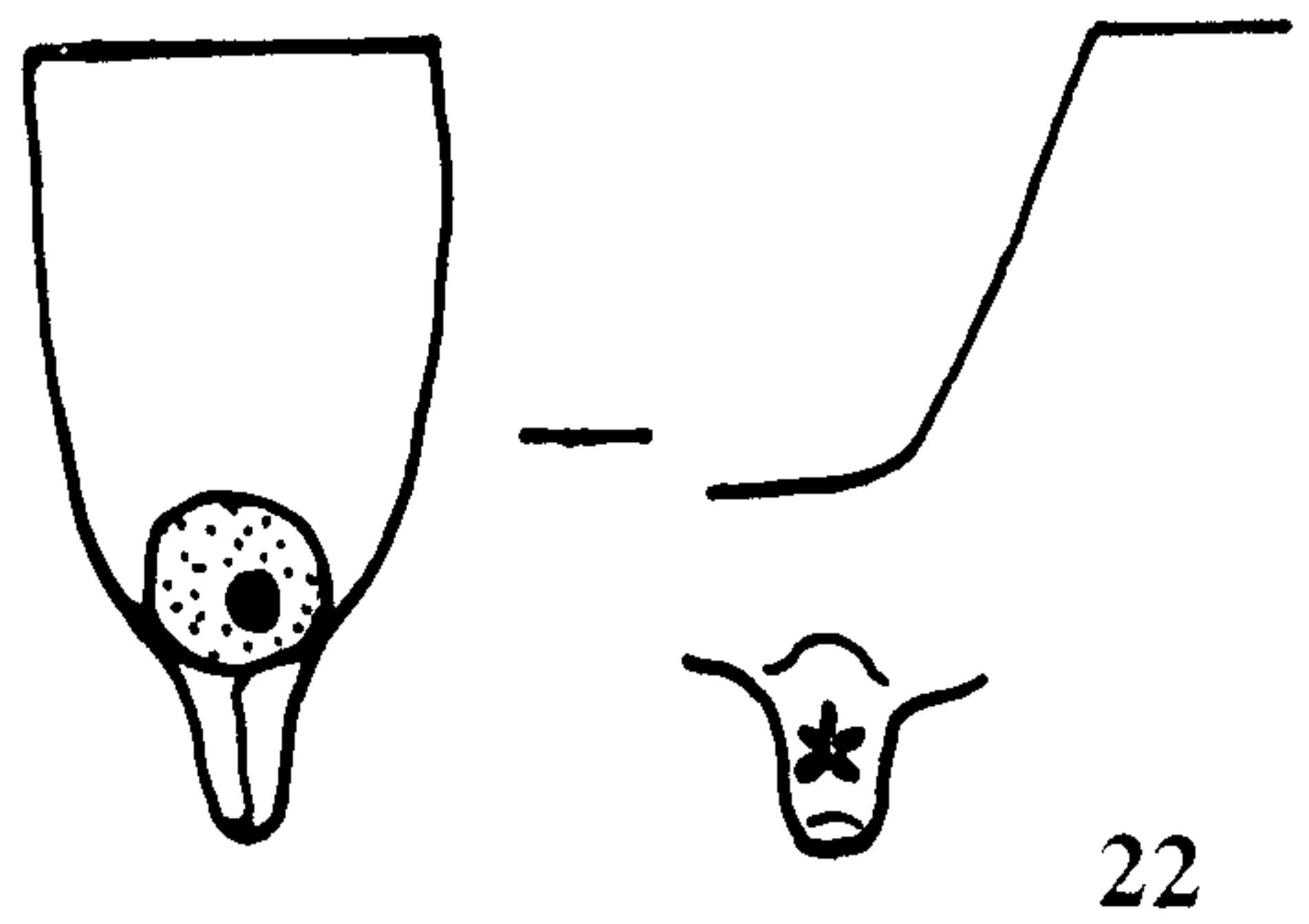
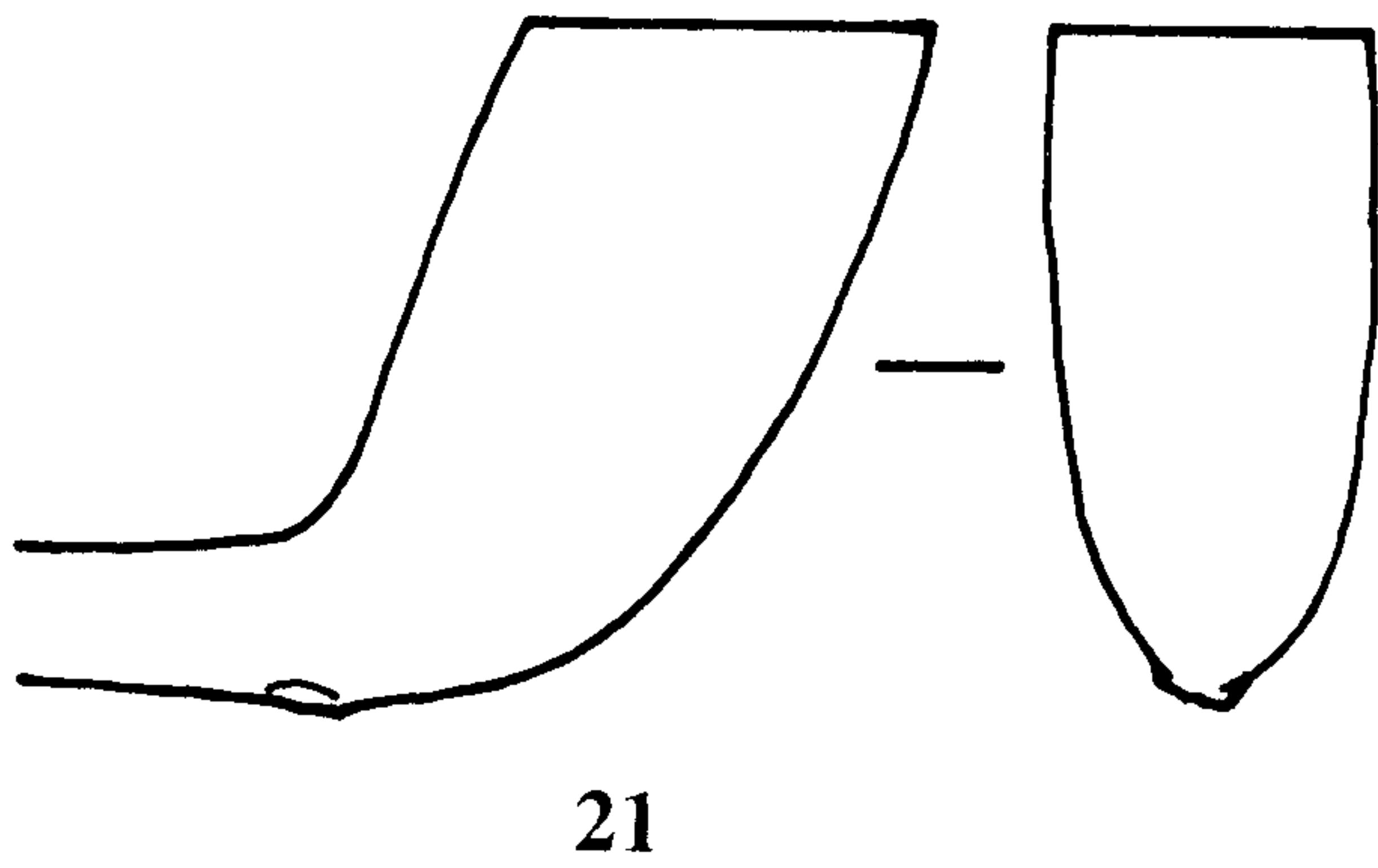
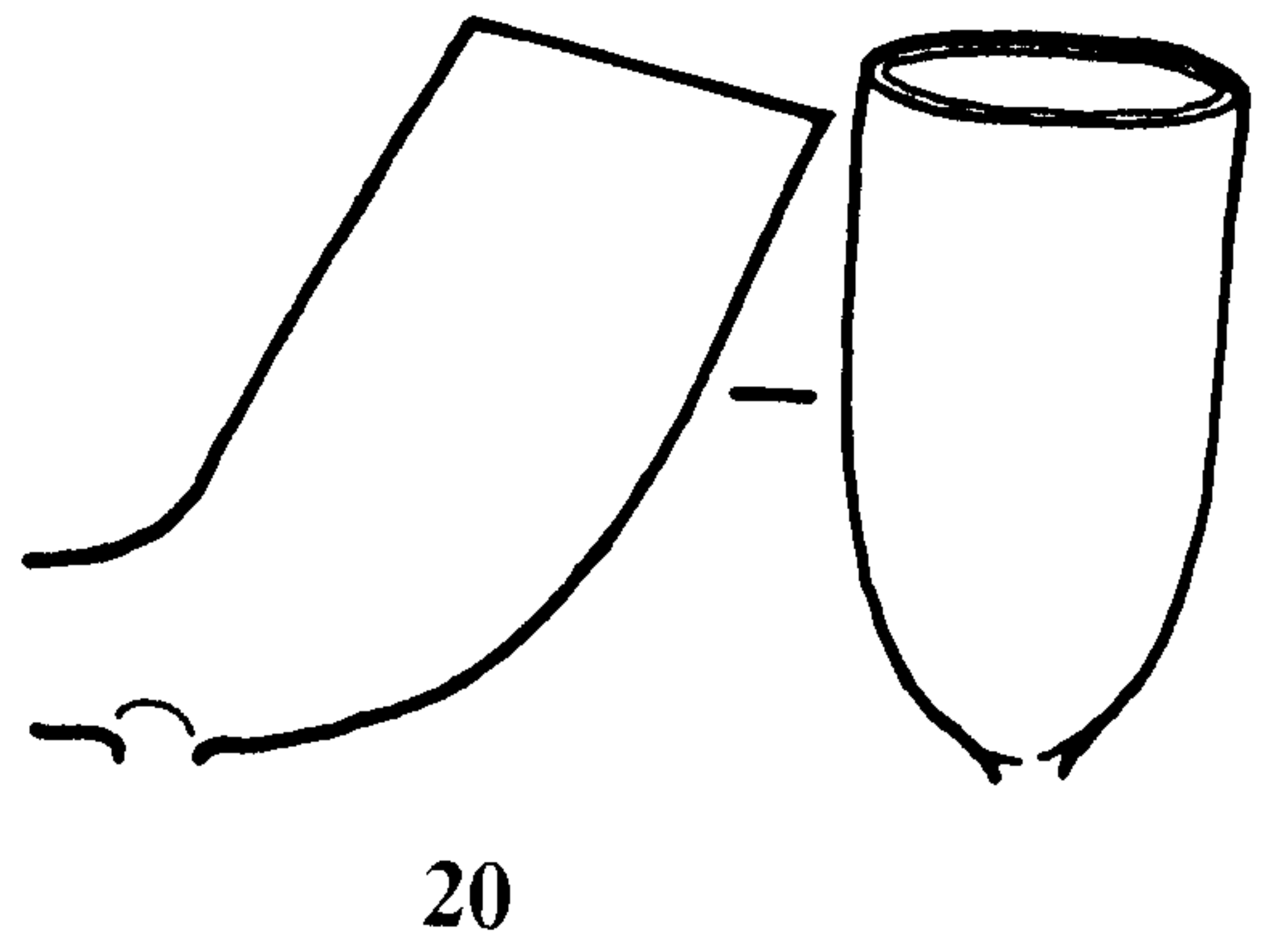
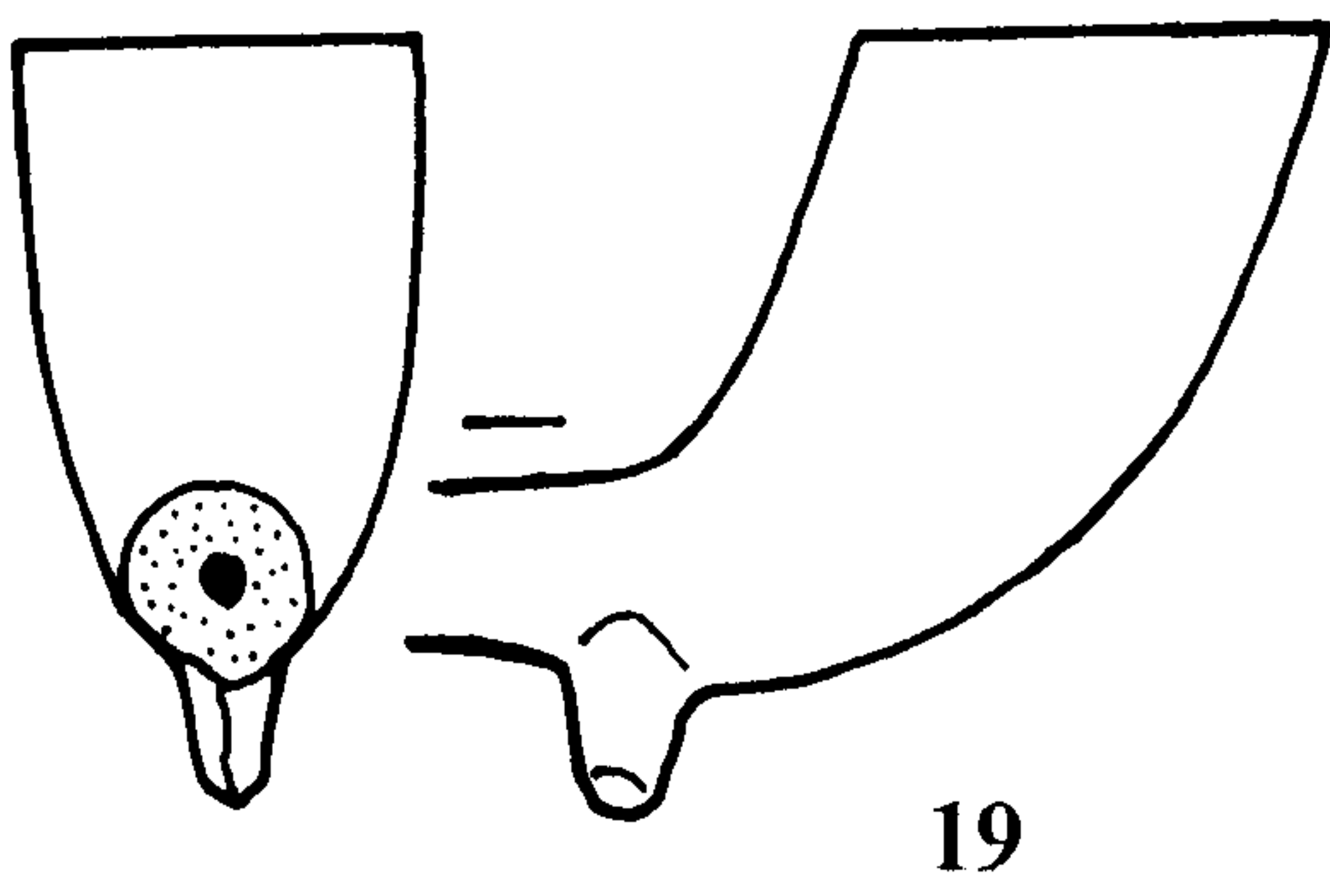
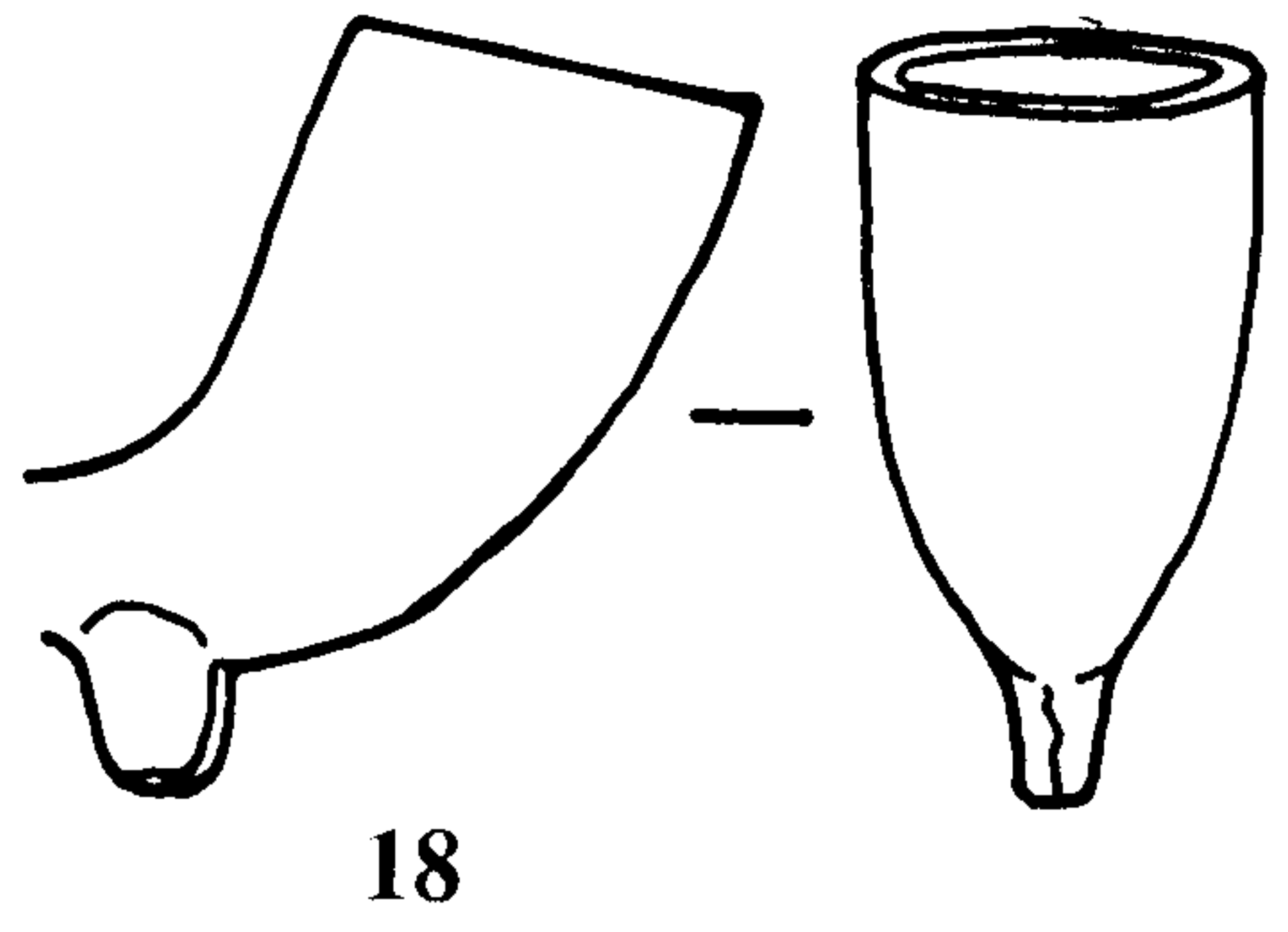
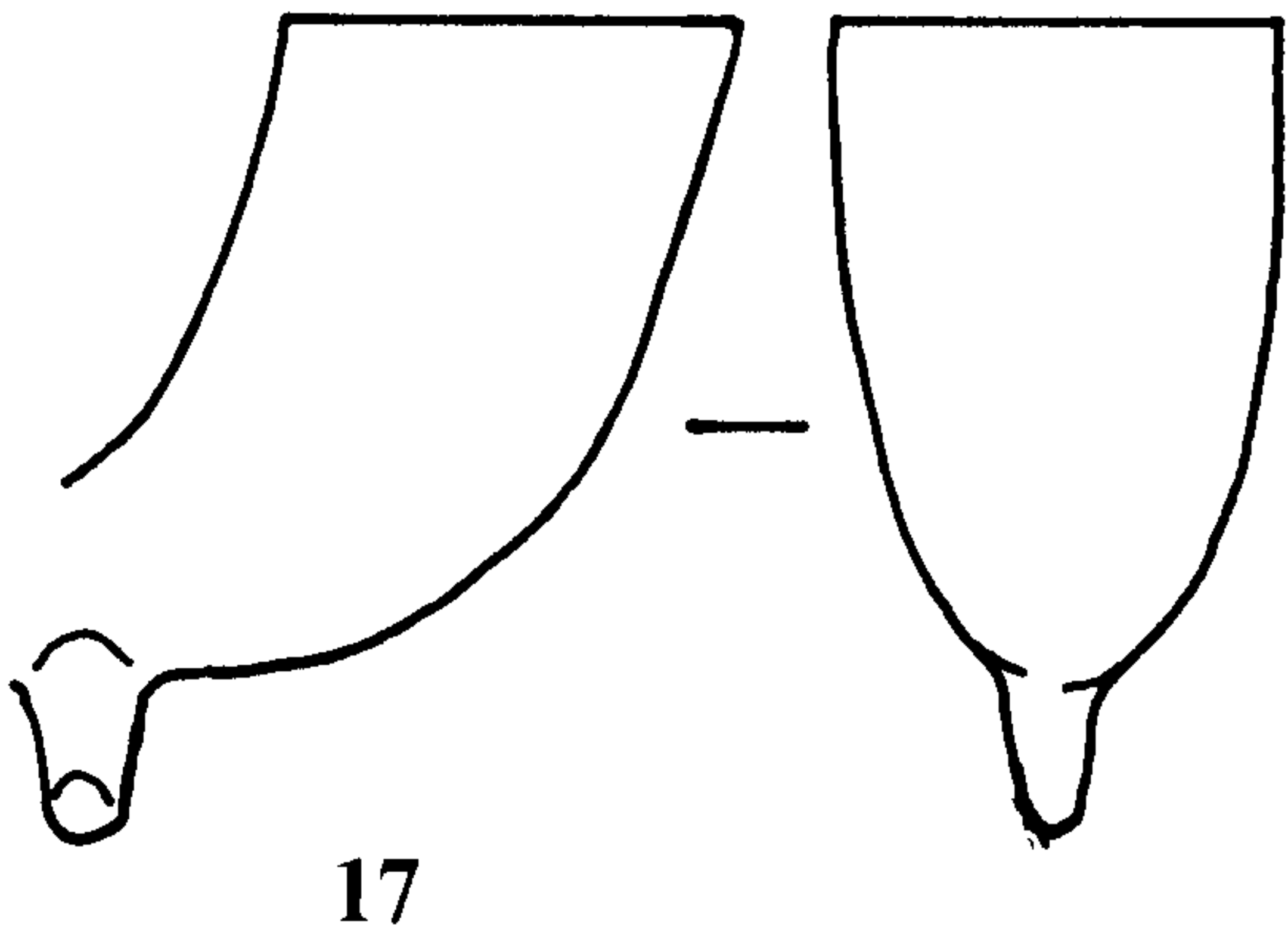
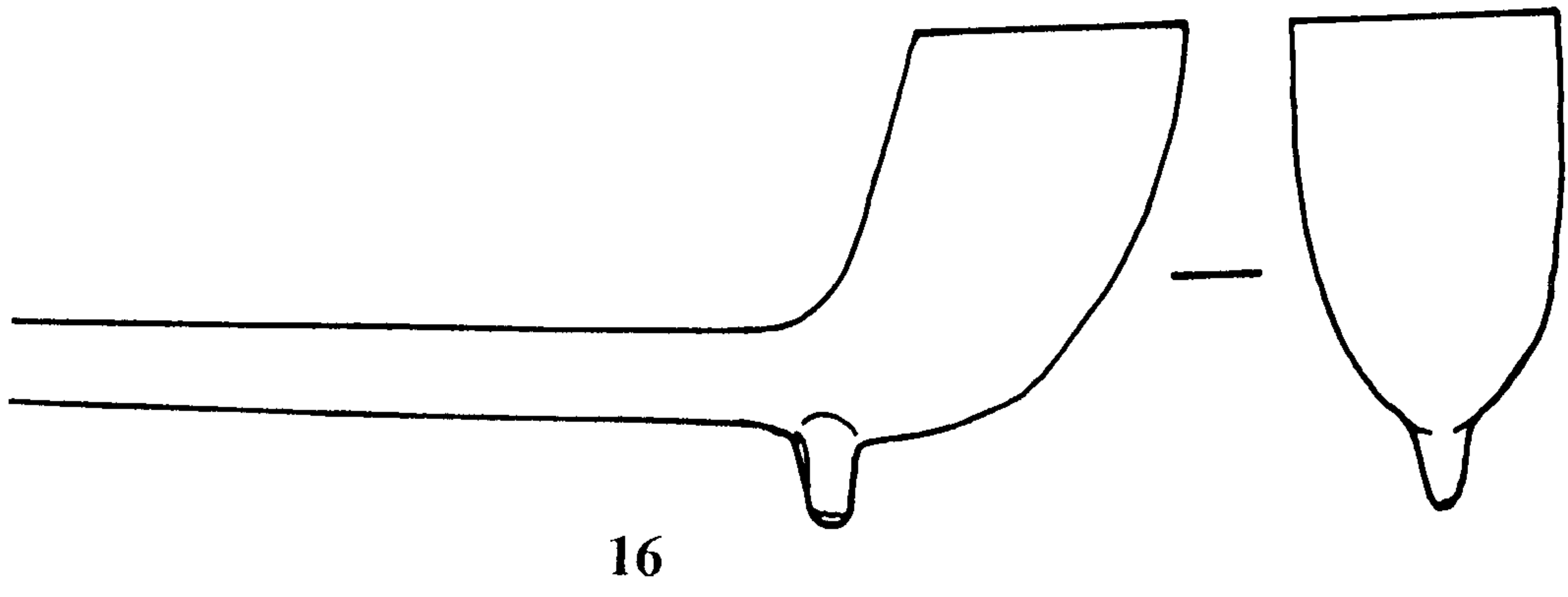
Fragments of the pipe kiln included parts of the muffle which was made of coarse clay reinforced with pipe stems (Fig. 83 - scale 1:2) and kiln bricks (Figs. 84 - 85 - scale 1:2). These items have been exposed to high temperatures and one or more surfaces have melted and vitrified.

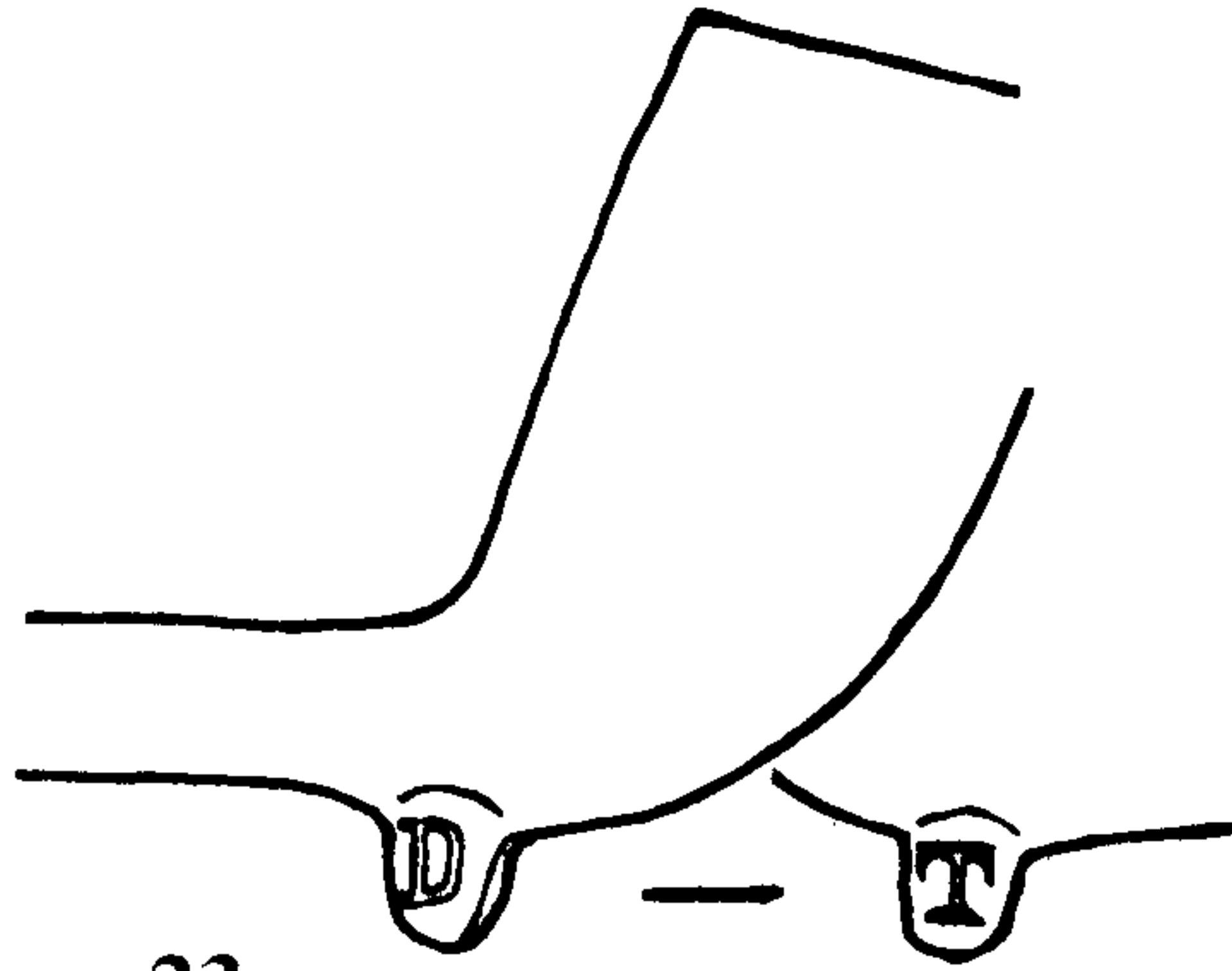
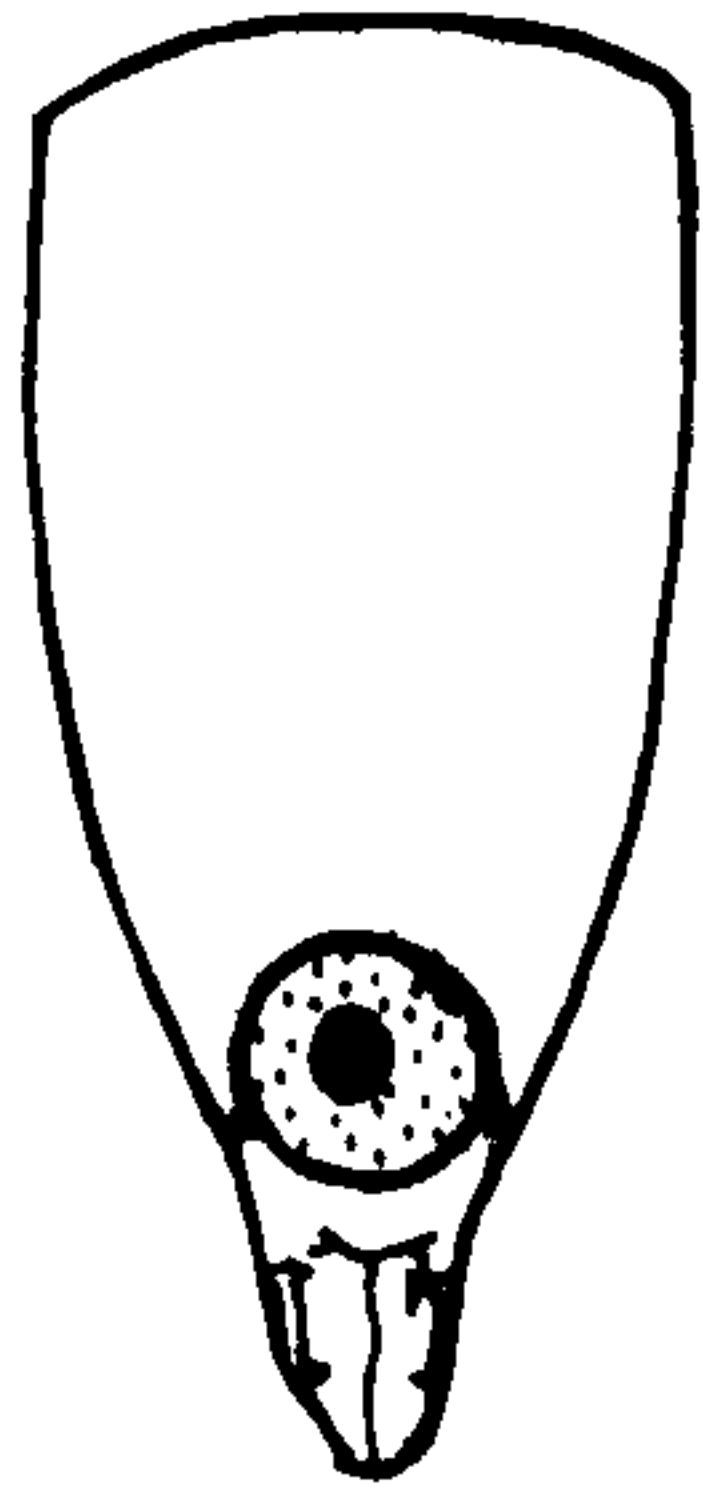
There was also a crucible which had presumably been used to frit the glaze used on the tips of the pipe stems (Fig. 87 - scale 1:2). It measures 36 cms in length and has a diameter of 15 cms at its widest point. The crucible is made of fireclay and the exterior has been subjected to intense heat. It has heavy slag adhering to it at the bottom which gradually decreases towards the top. The top 5 cms have not been subjected to heat and must have protruded from the furnace. Green glaze containing broken pipe stems has accumulated on the inside of the crucible at the bottom and the glaze spreads upwards almost to the mouth in one place where glaze has dripped from the stems when being withdrawn. The crucible has cracked in a number of places and there is a hole right through the wall of the crucible near the bottom where the glaze has leaked out. This hole must have made the crucible useless and led to it being discarded. Fragments of similar crucibles have been found on other kiln dumps in Bristol, but this is the best example so far recovered (Price et al 1984, fig. 86).

Some iron objects were found in the kiln dump. Most were nails but one, a shank and ring (Fig. 86 - scale 1:2), is illustrated as it might have been used in connection with the pipemaking process.

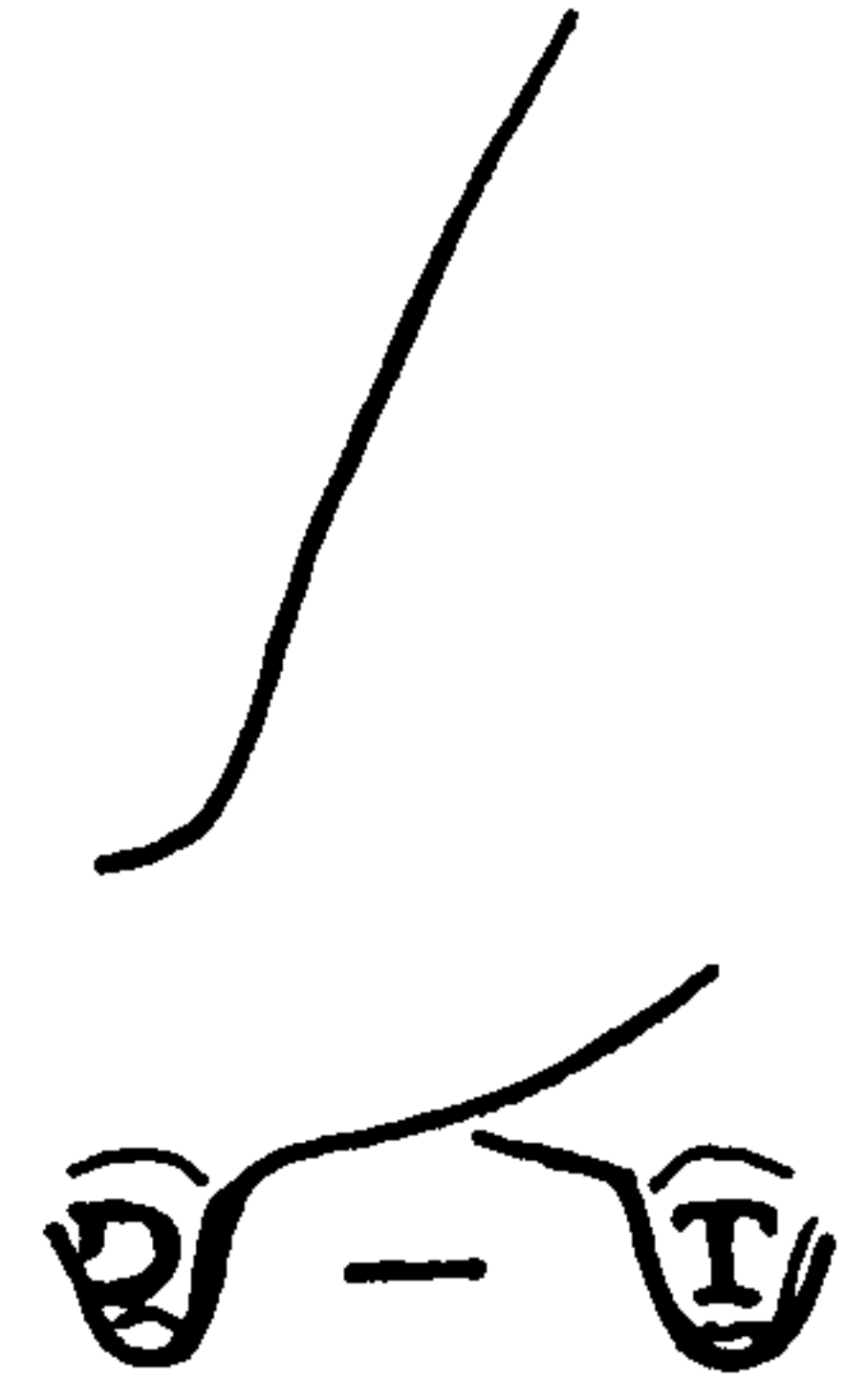




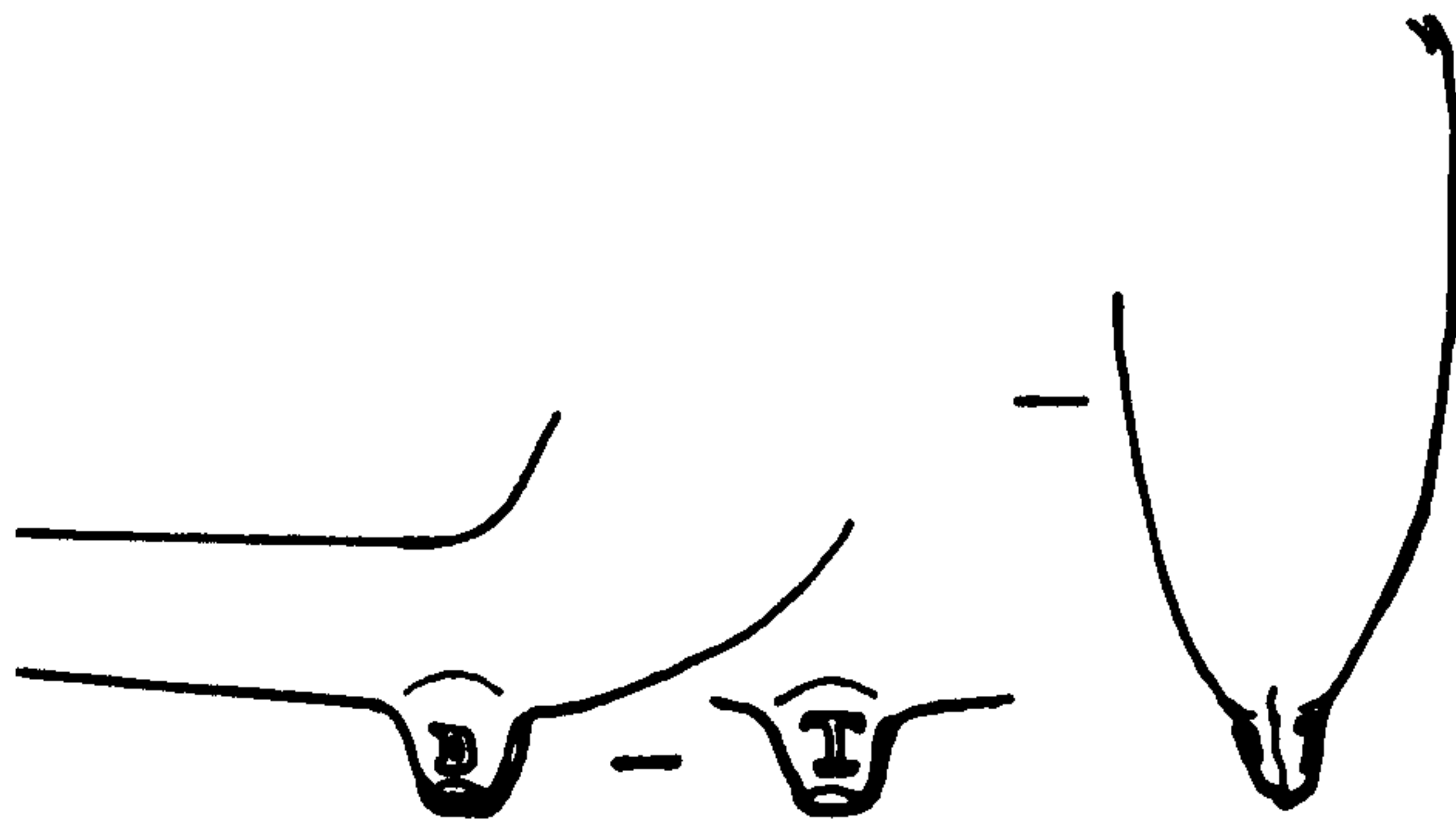




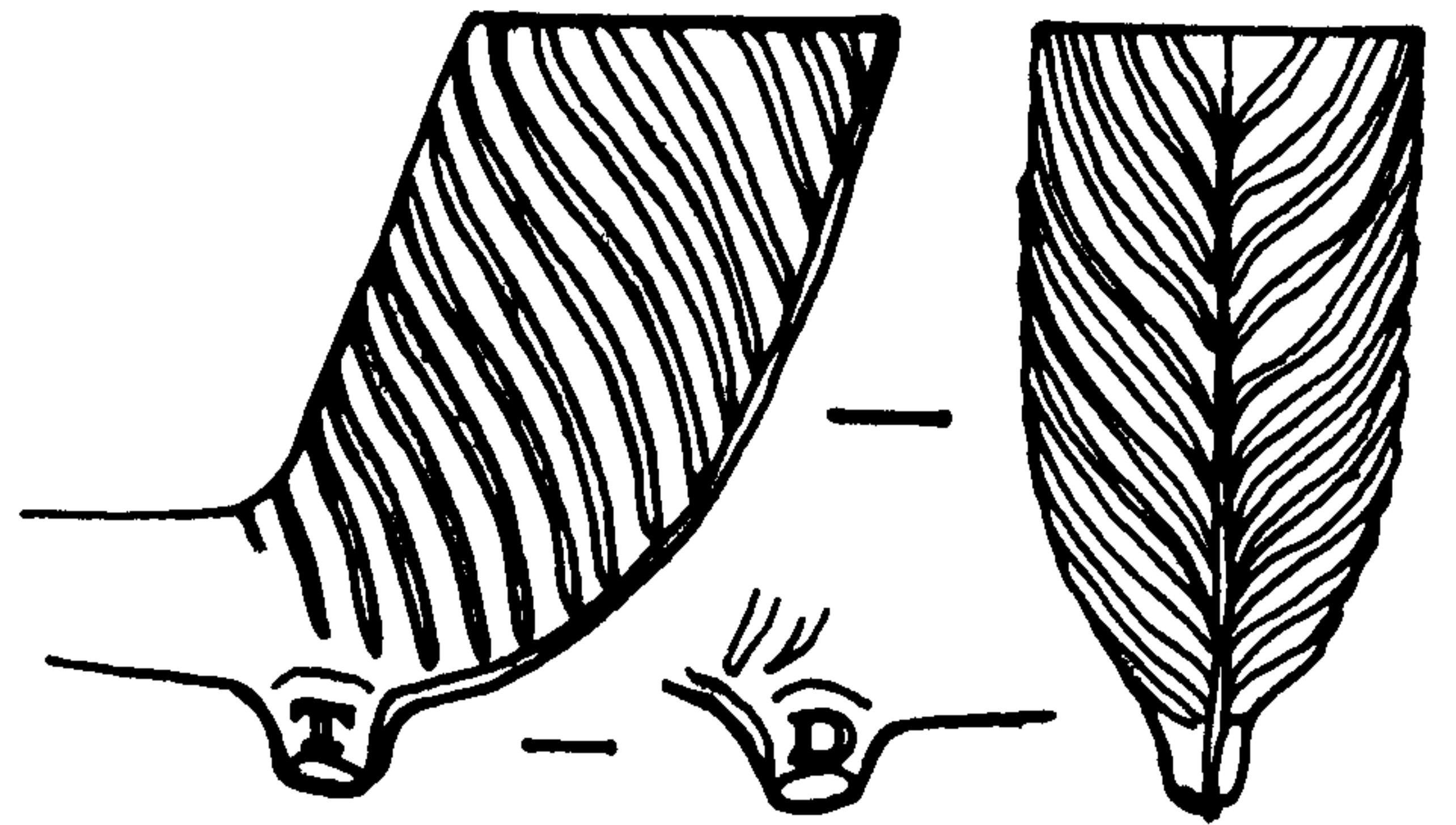
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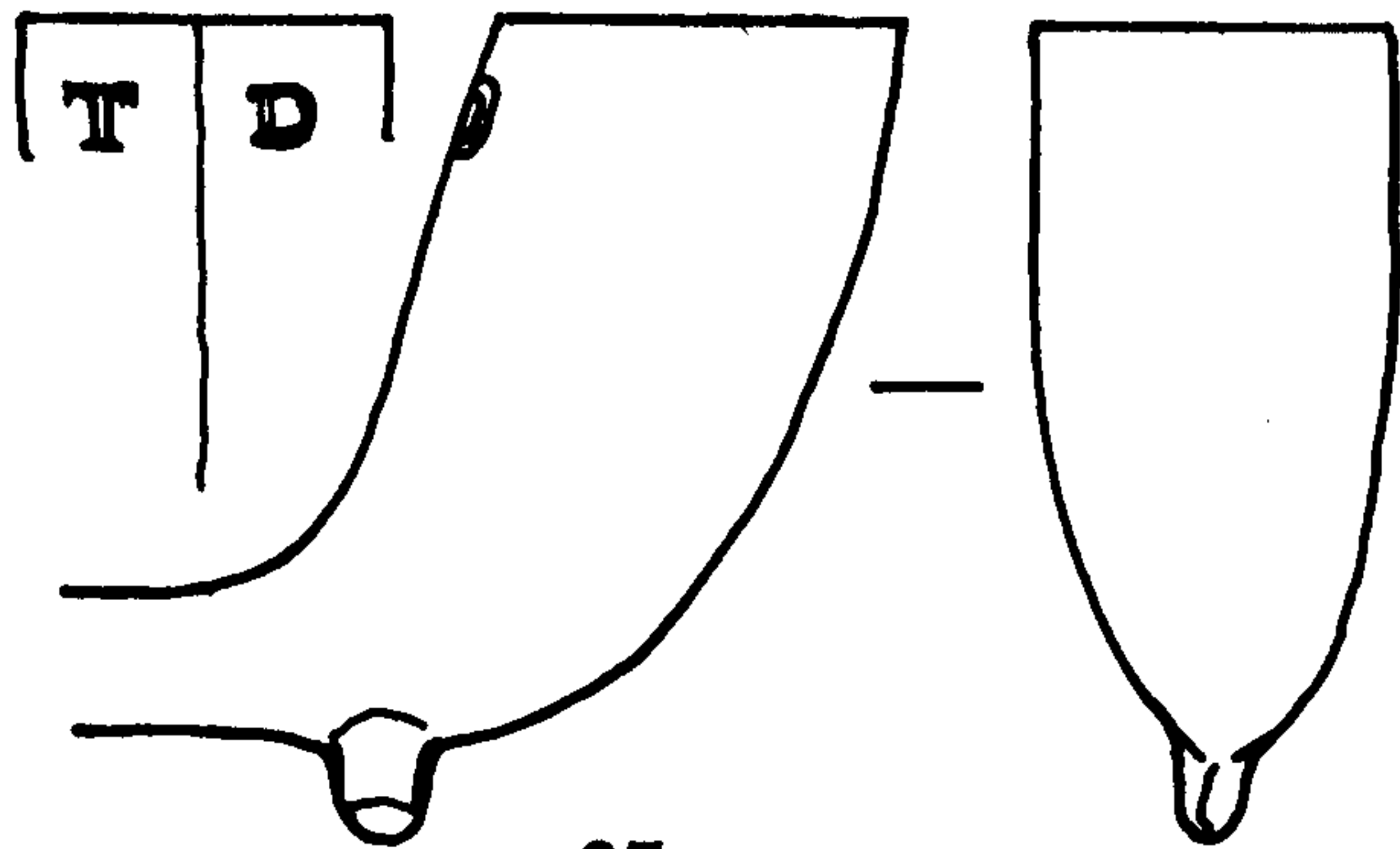
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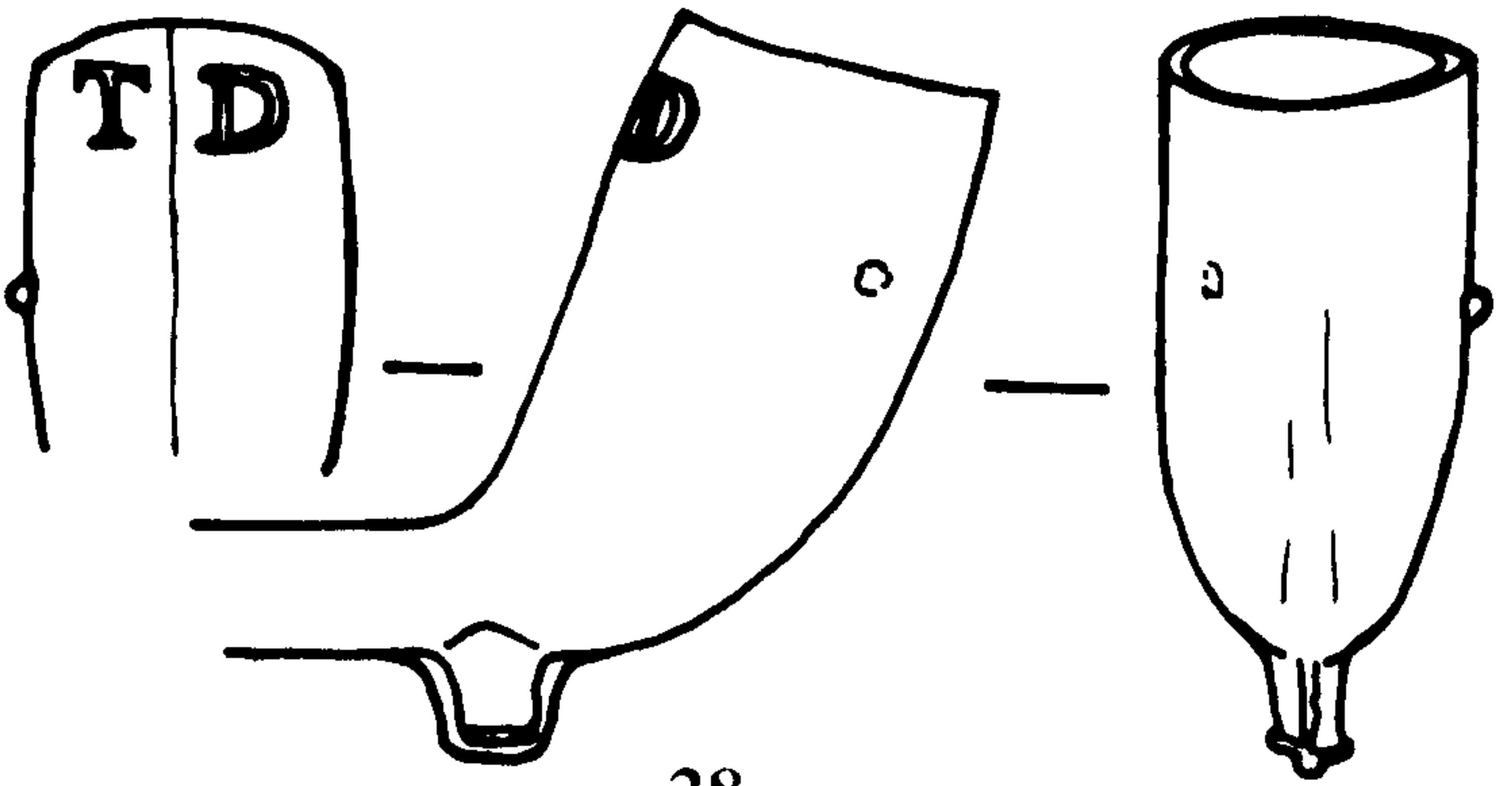
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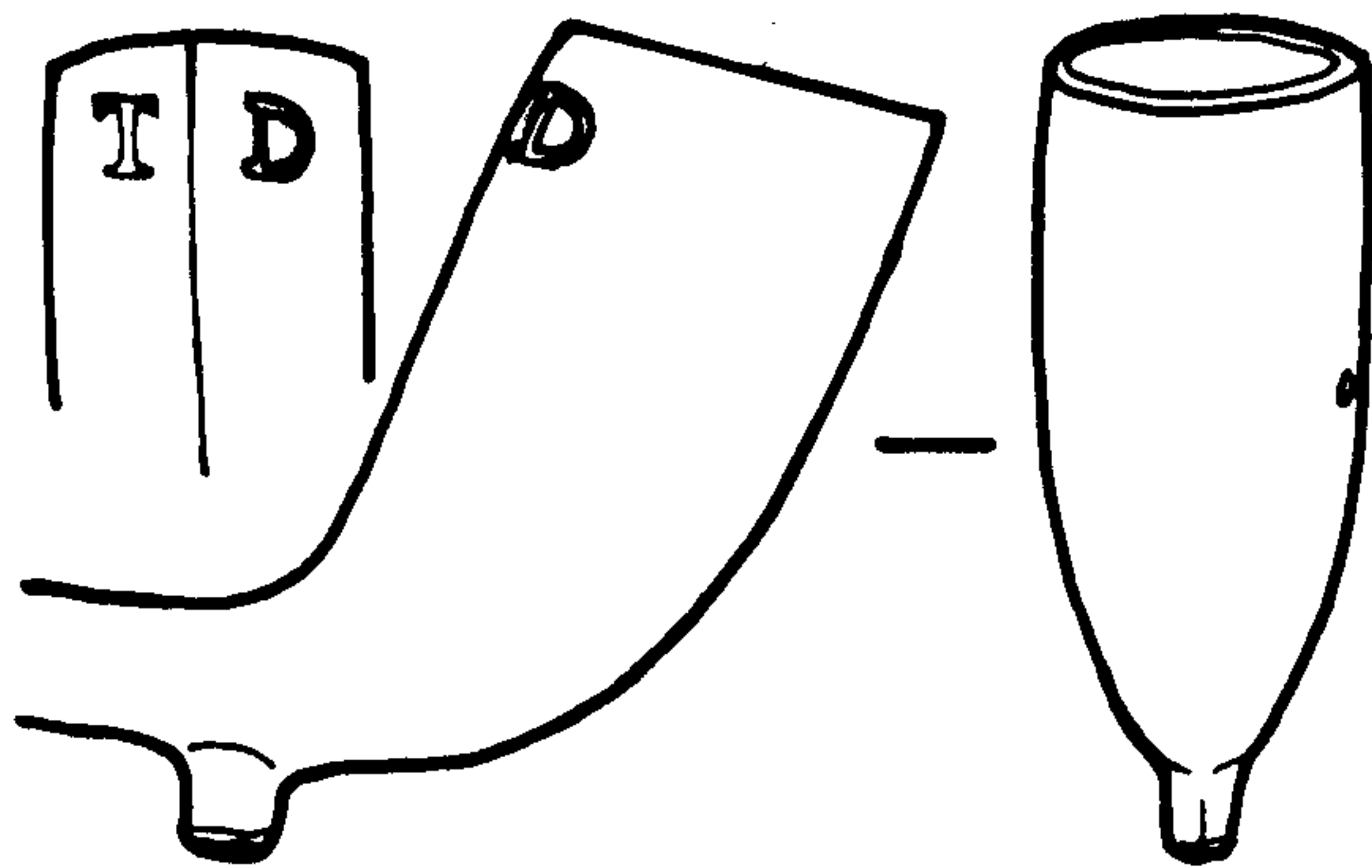
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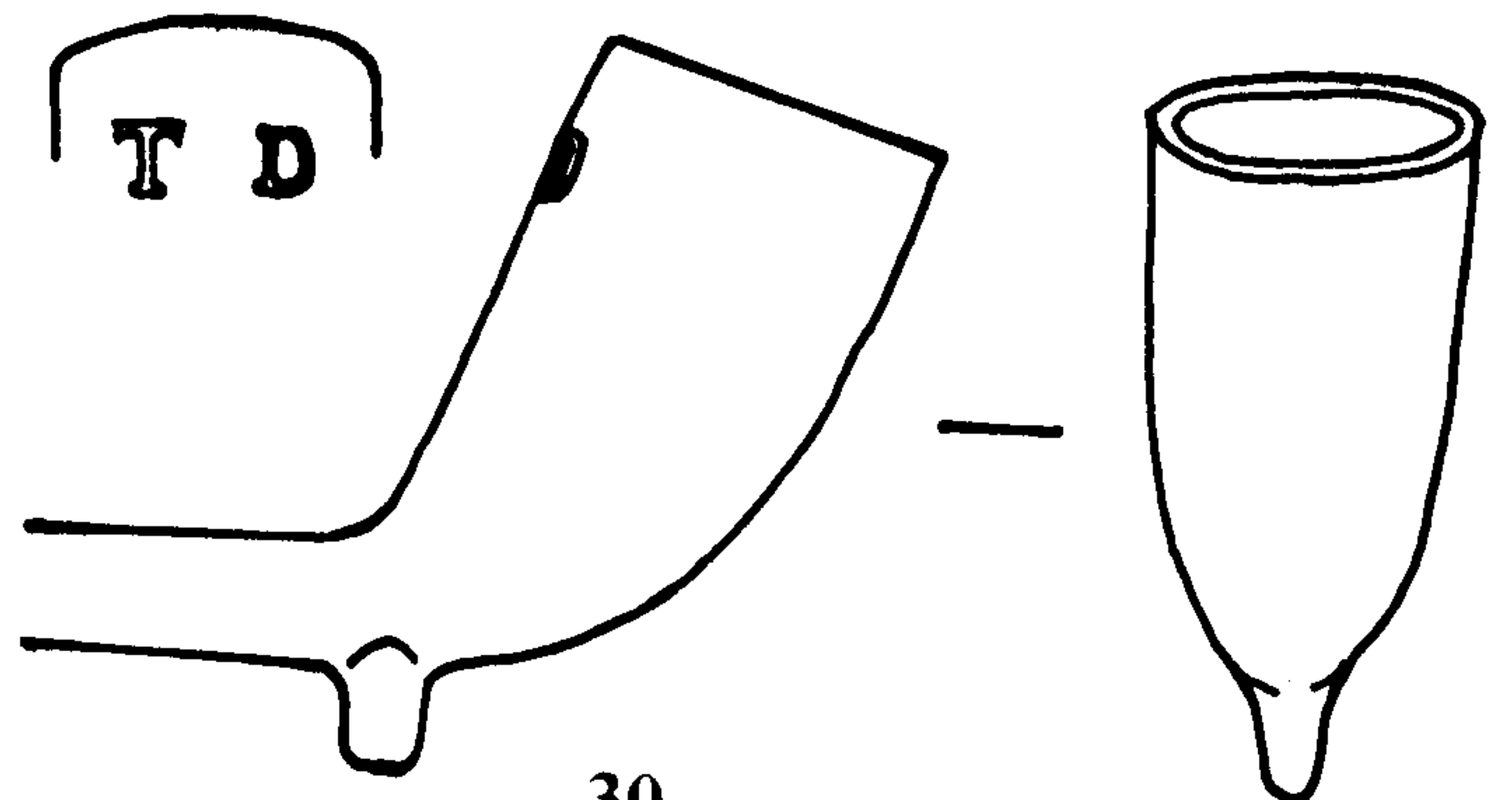
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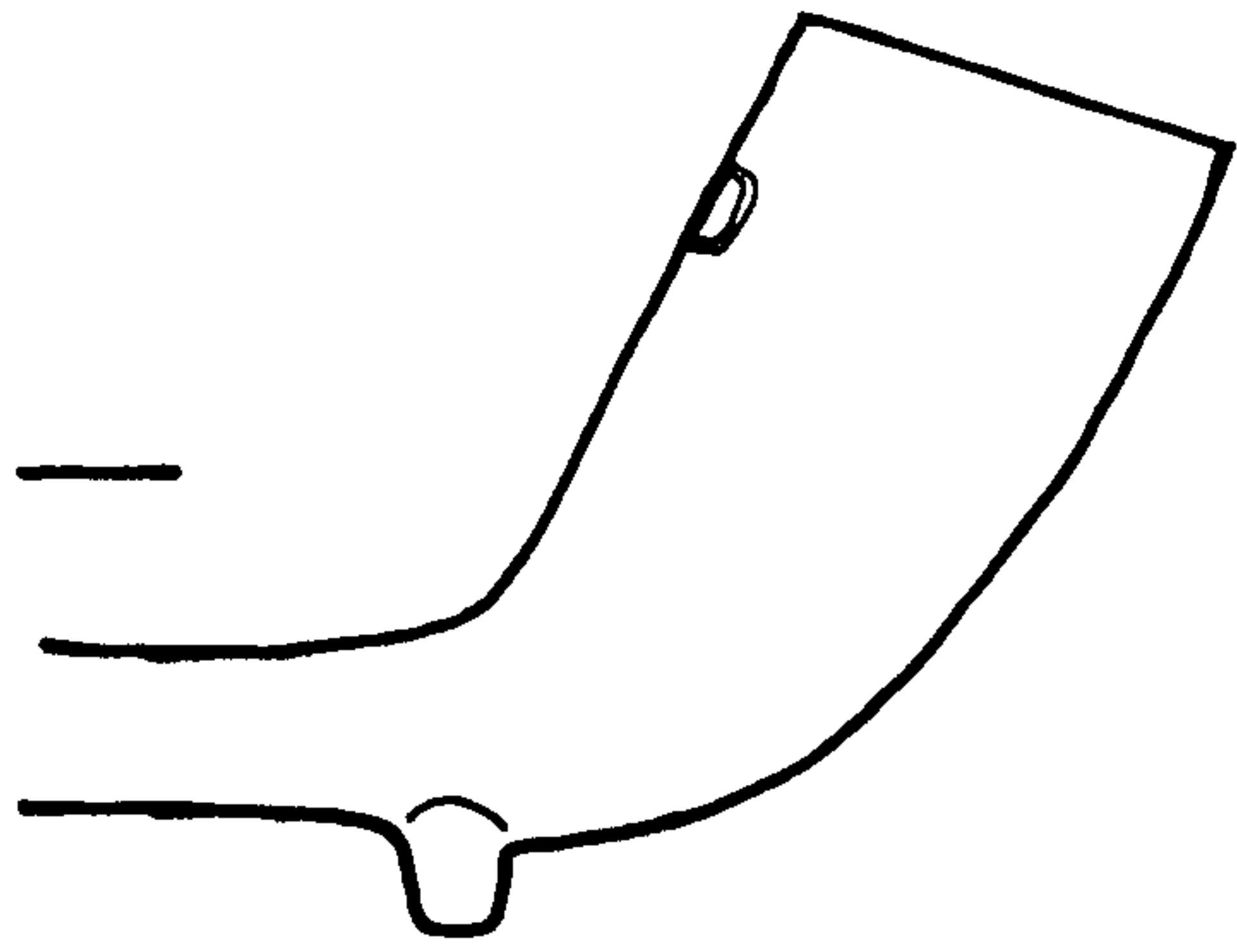
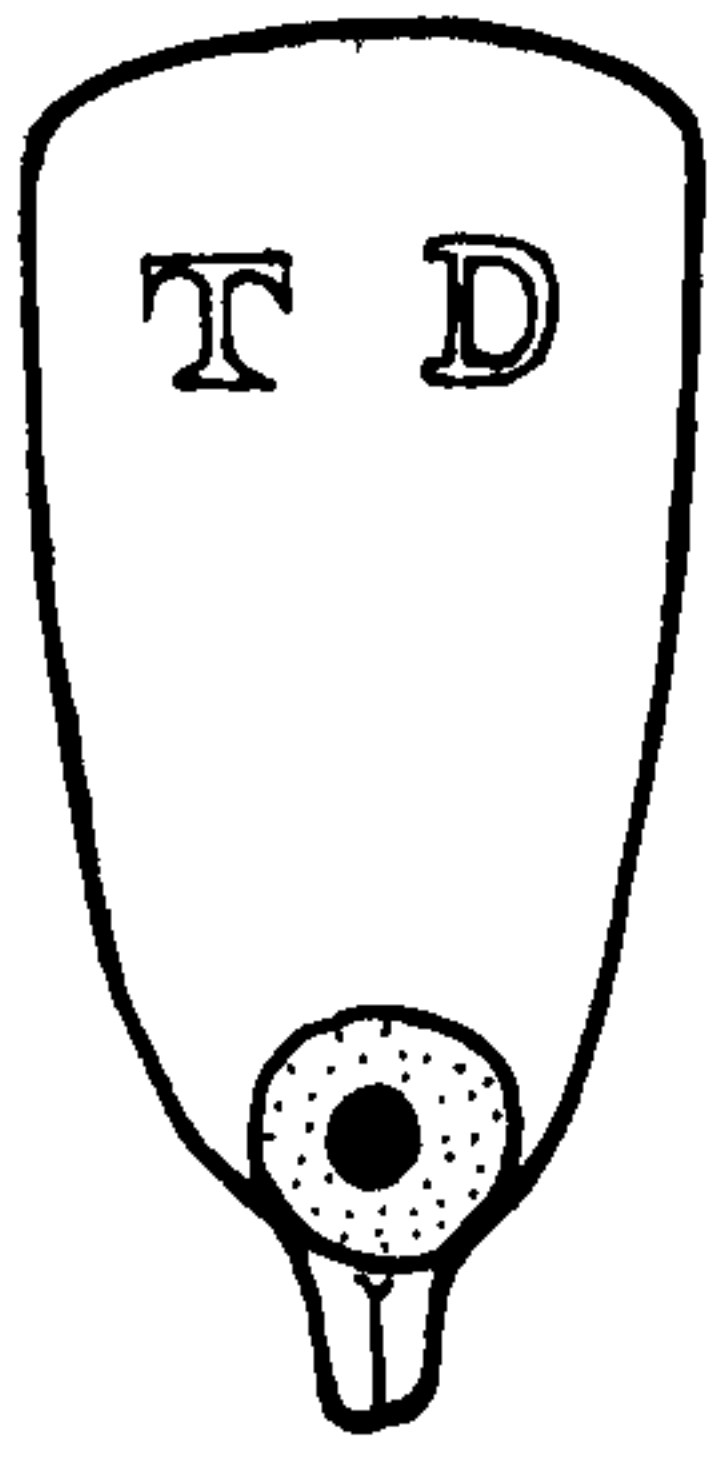
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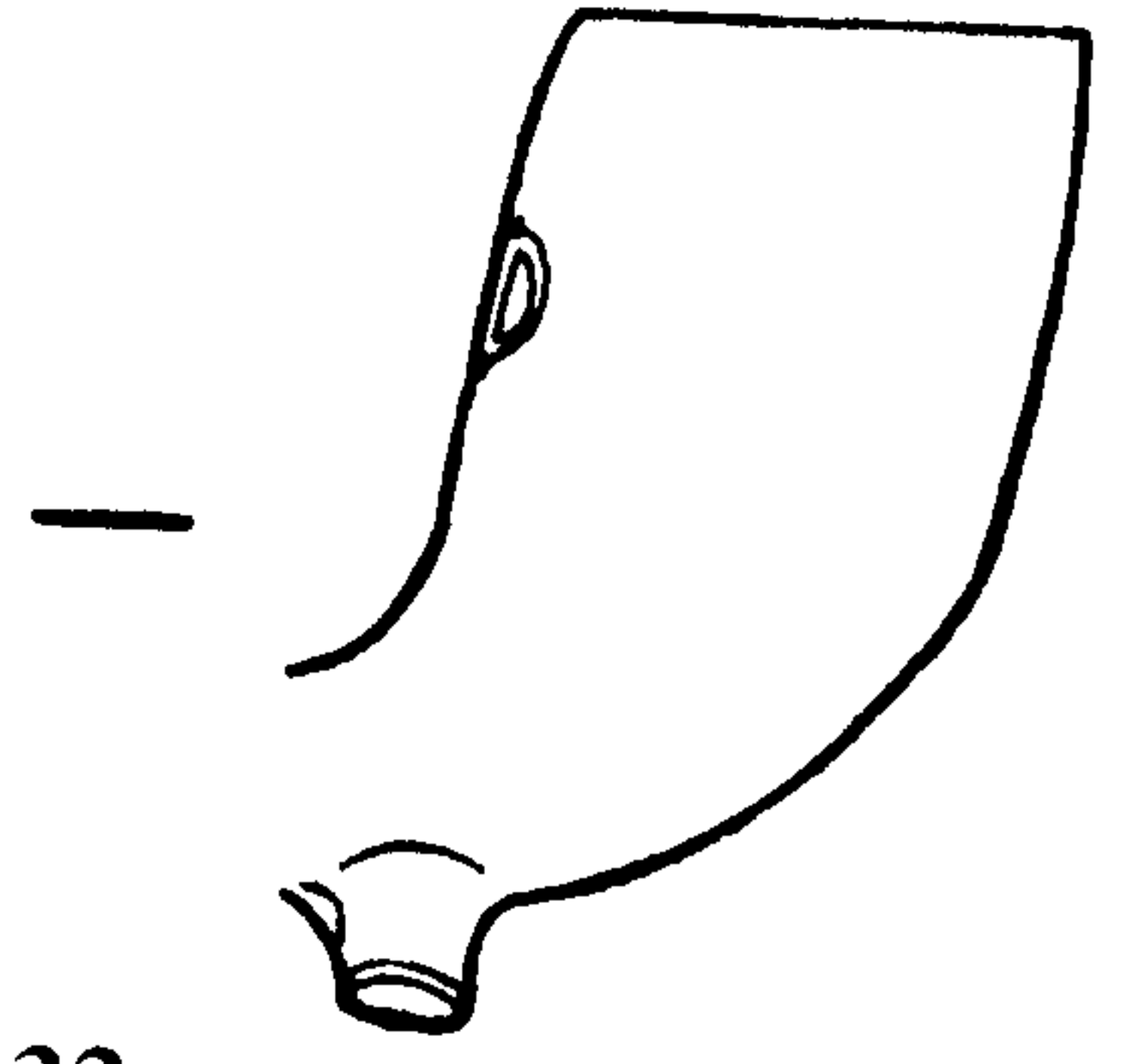
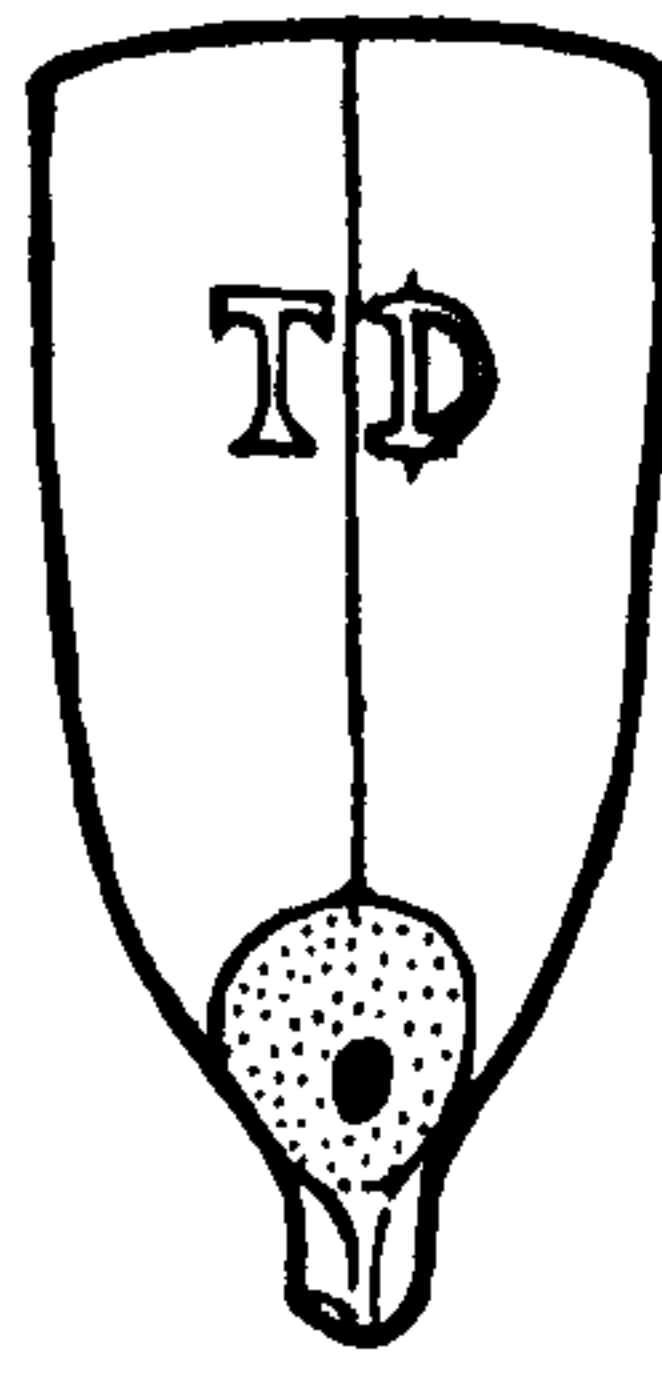
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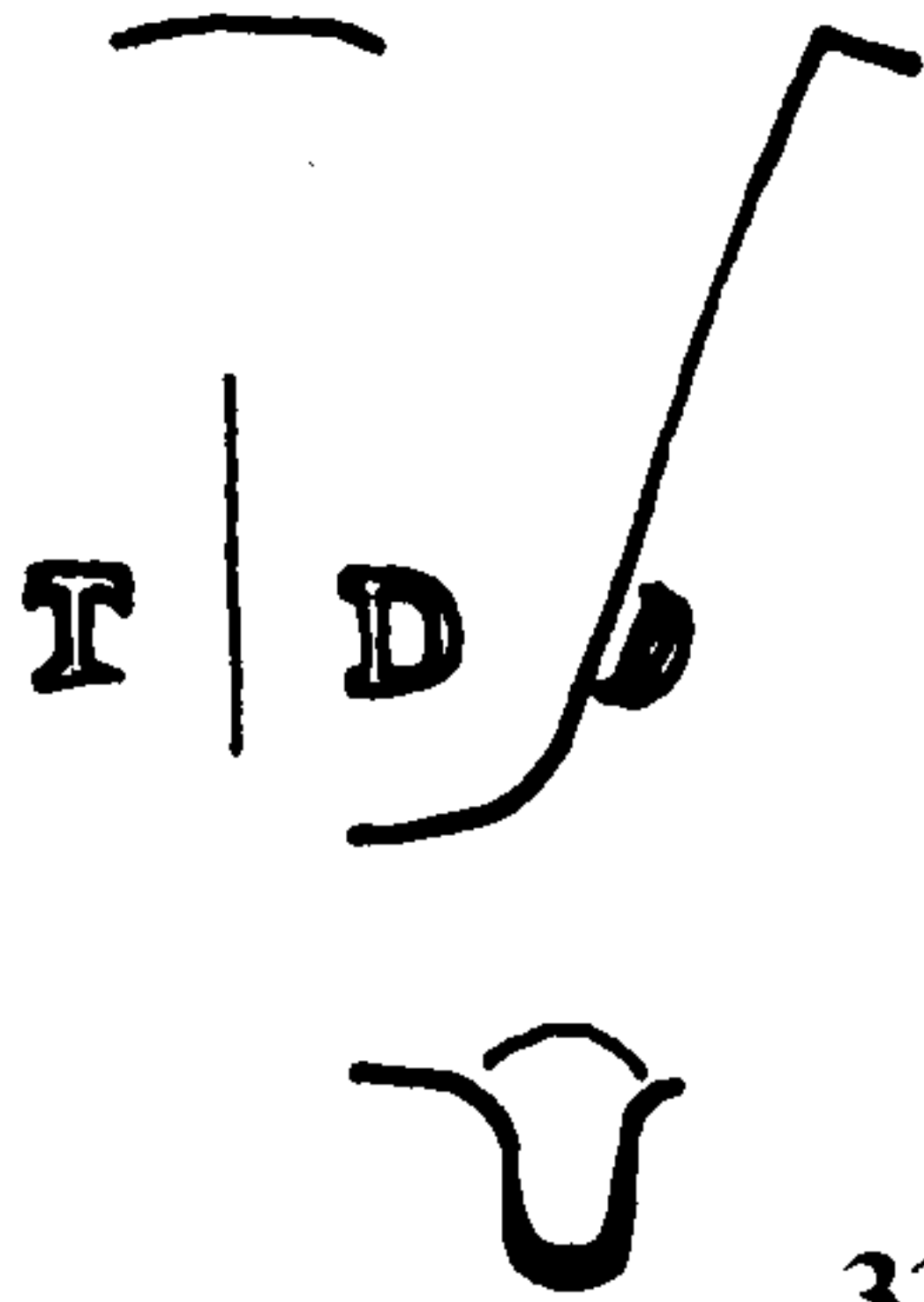
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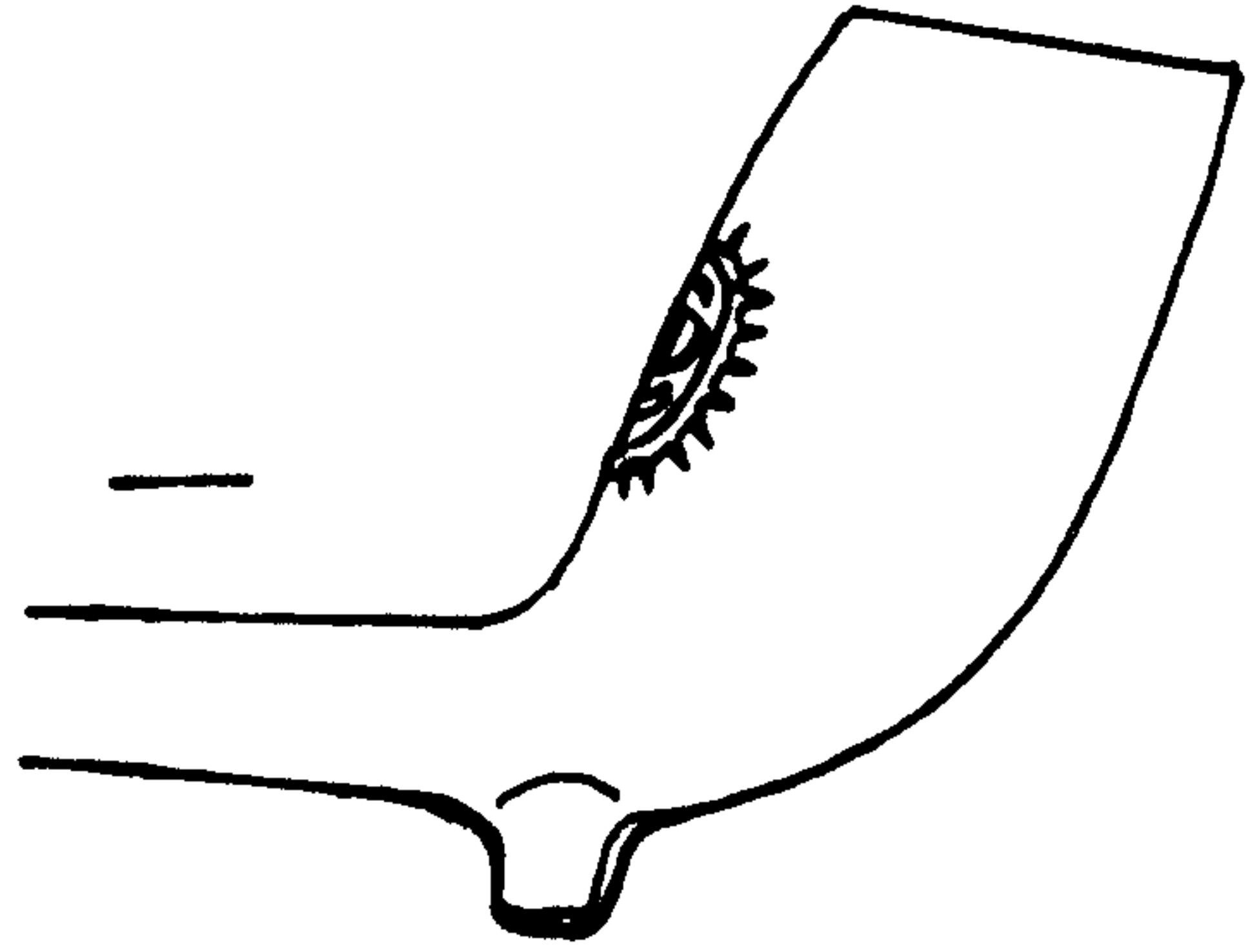
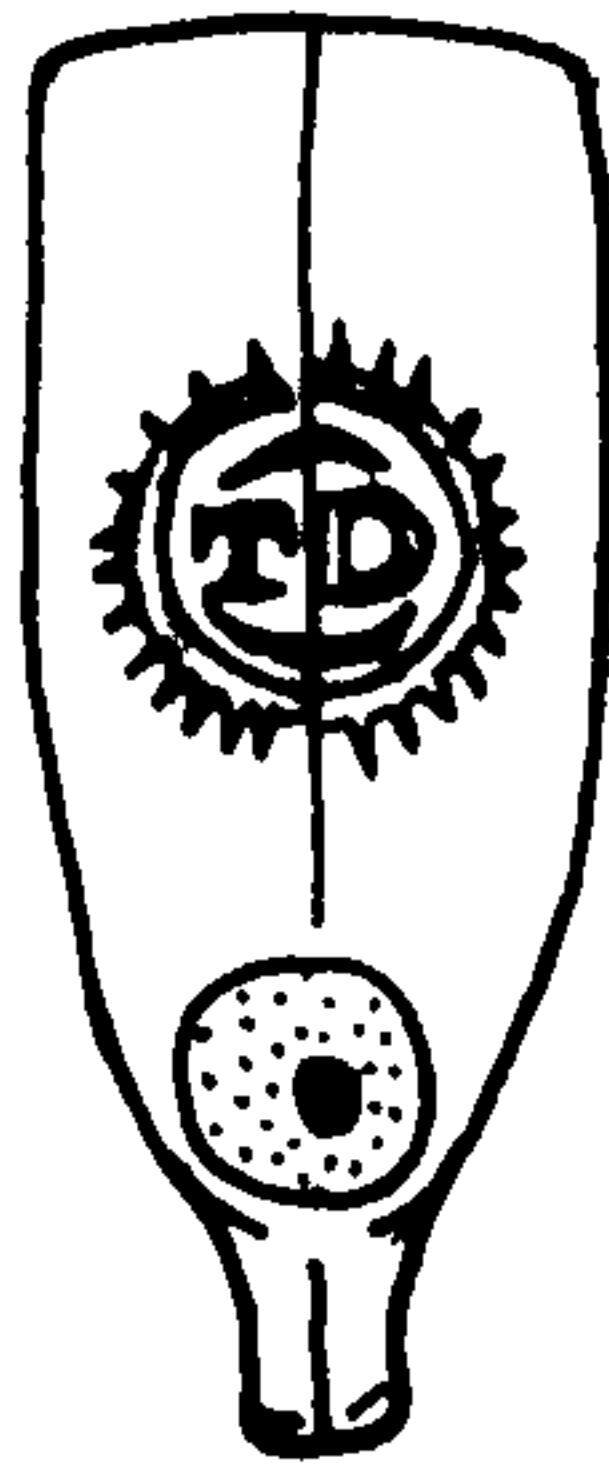
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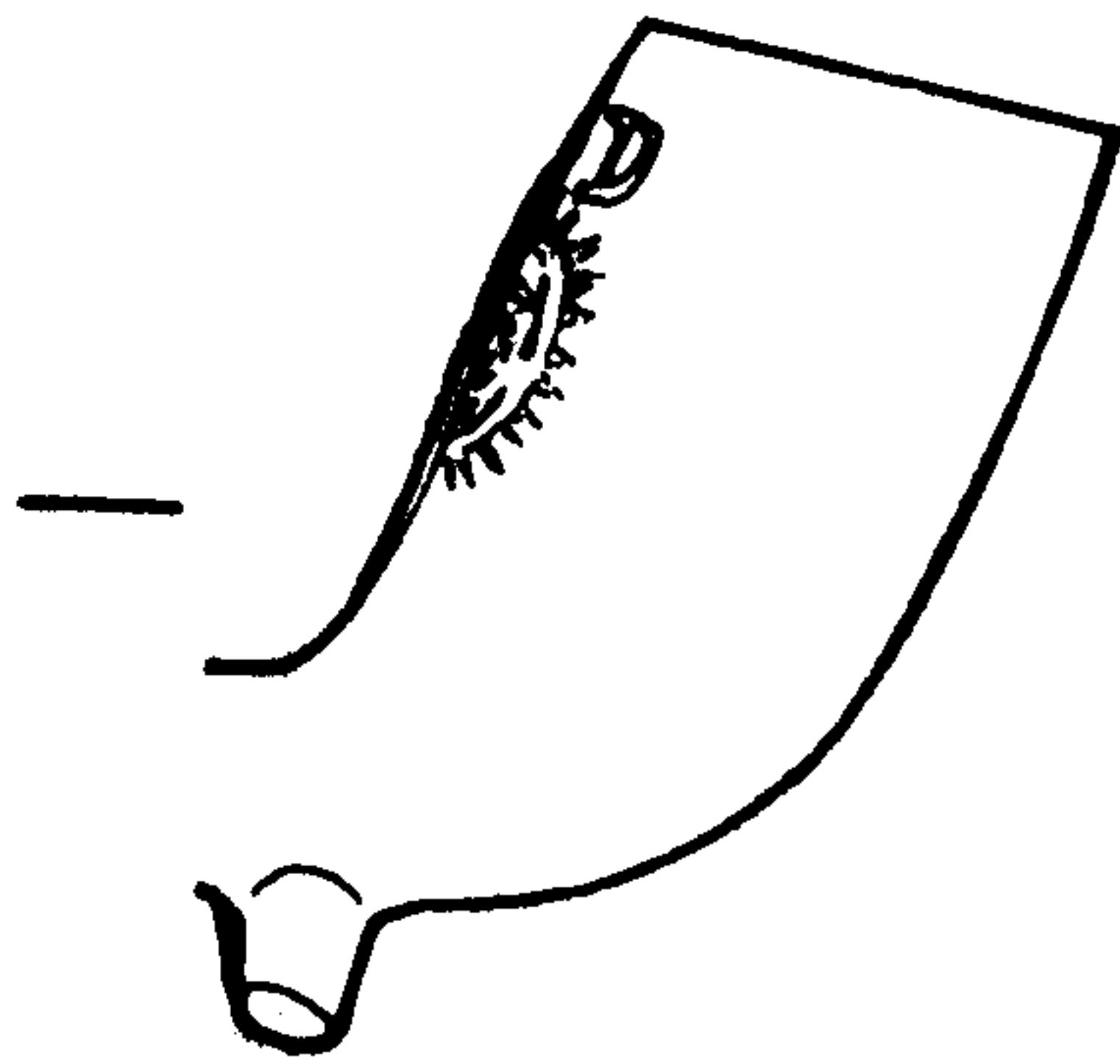
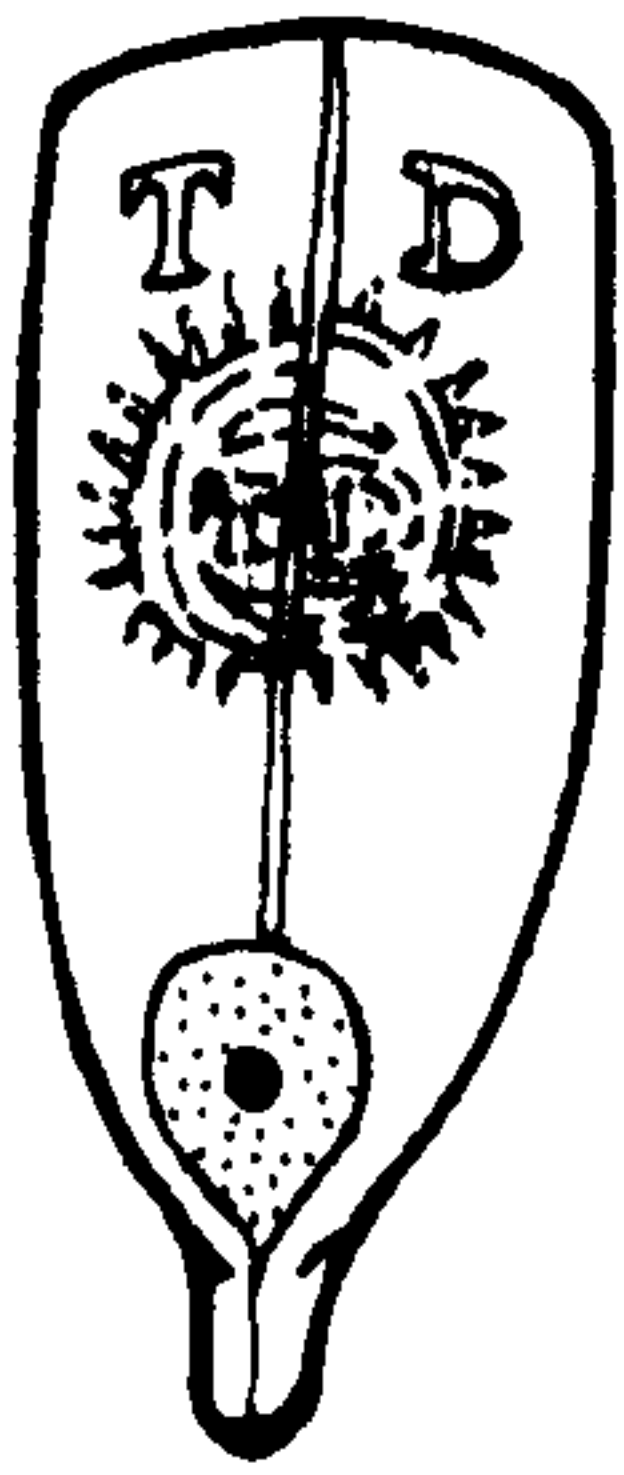
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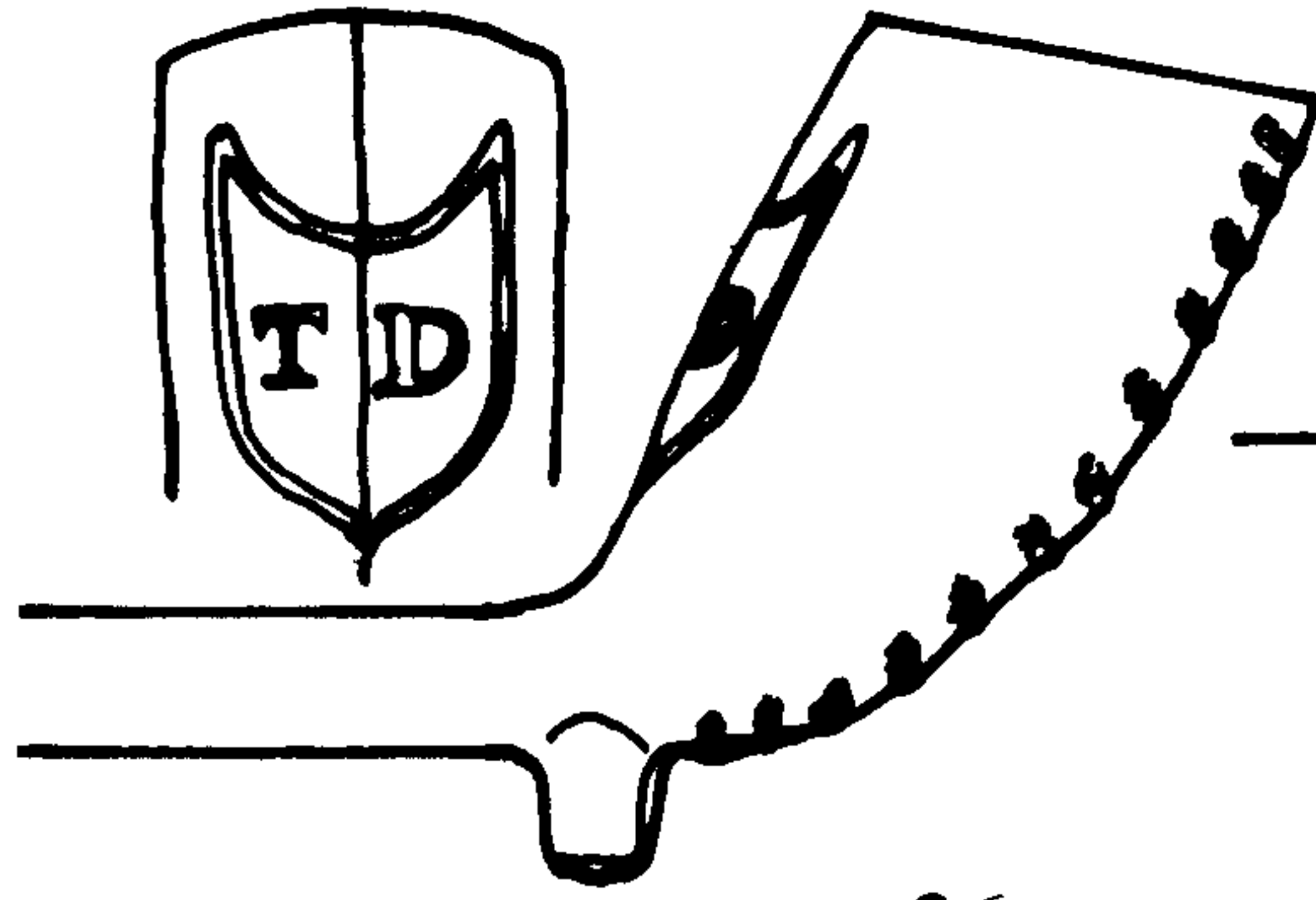
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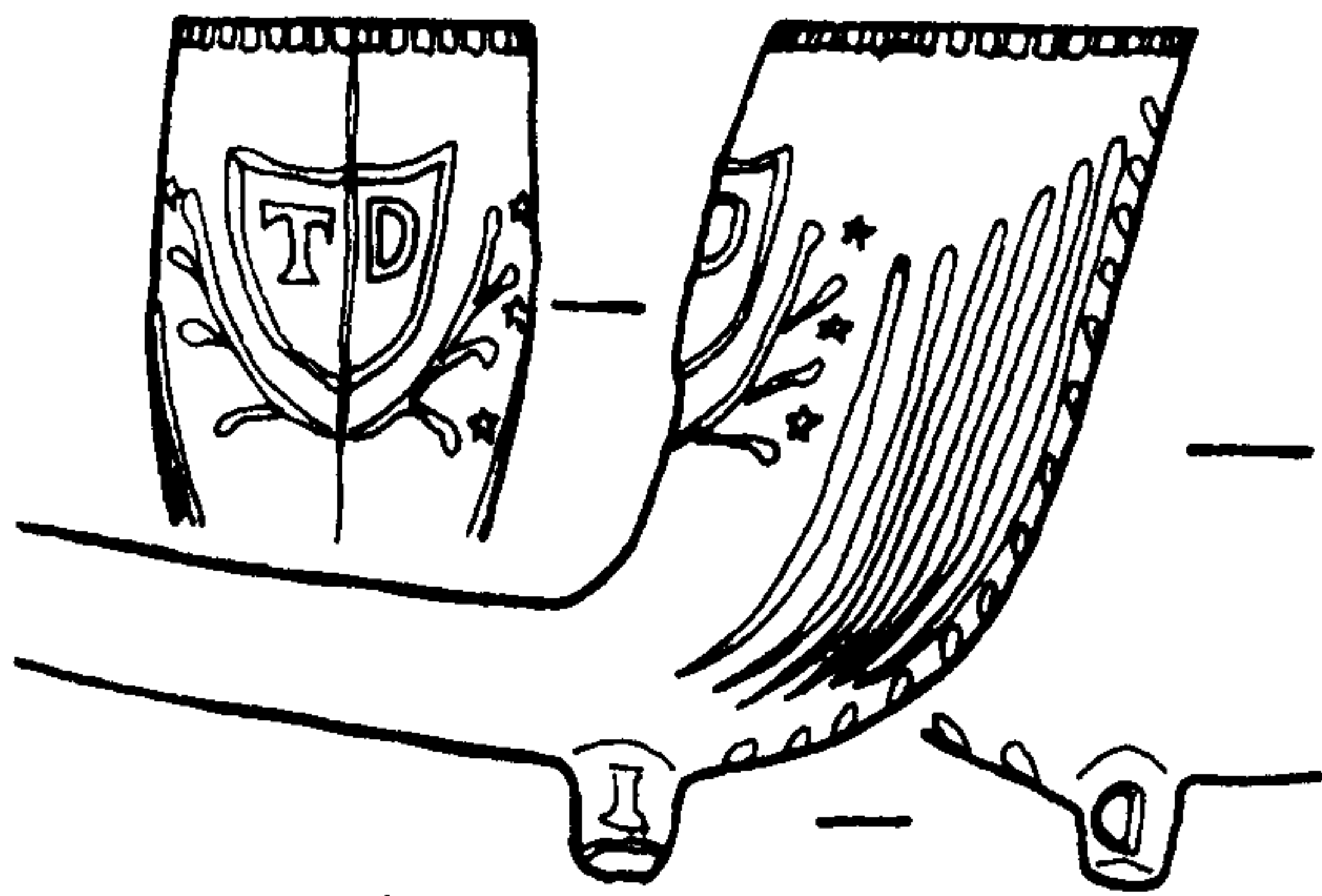
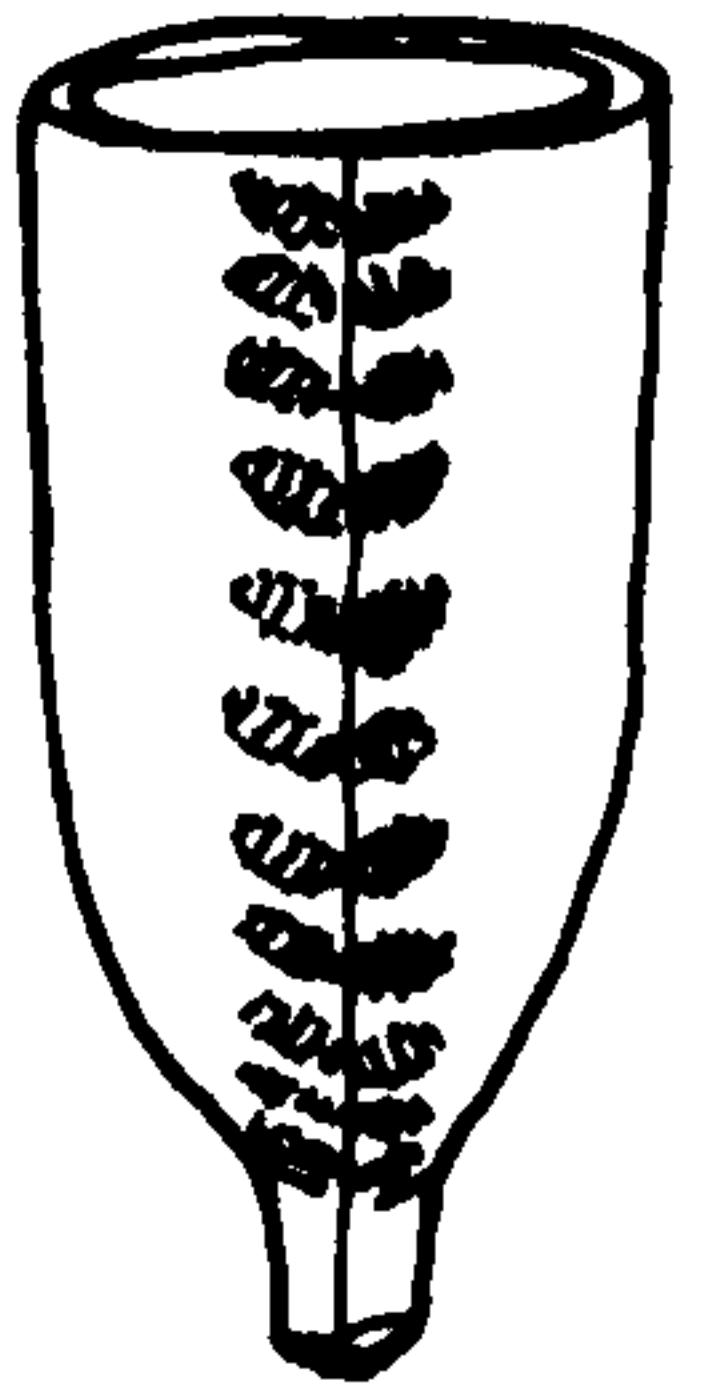
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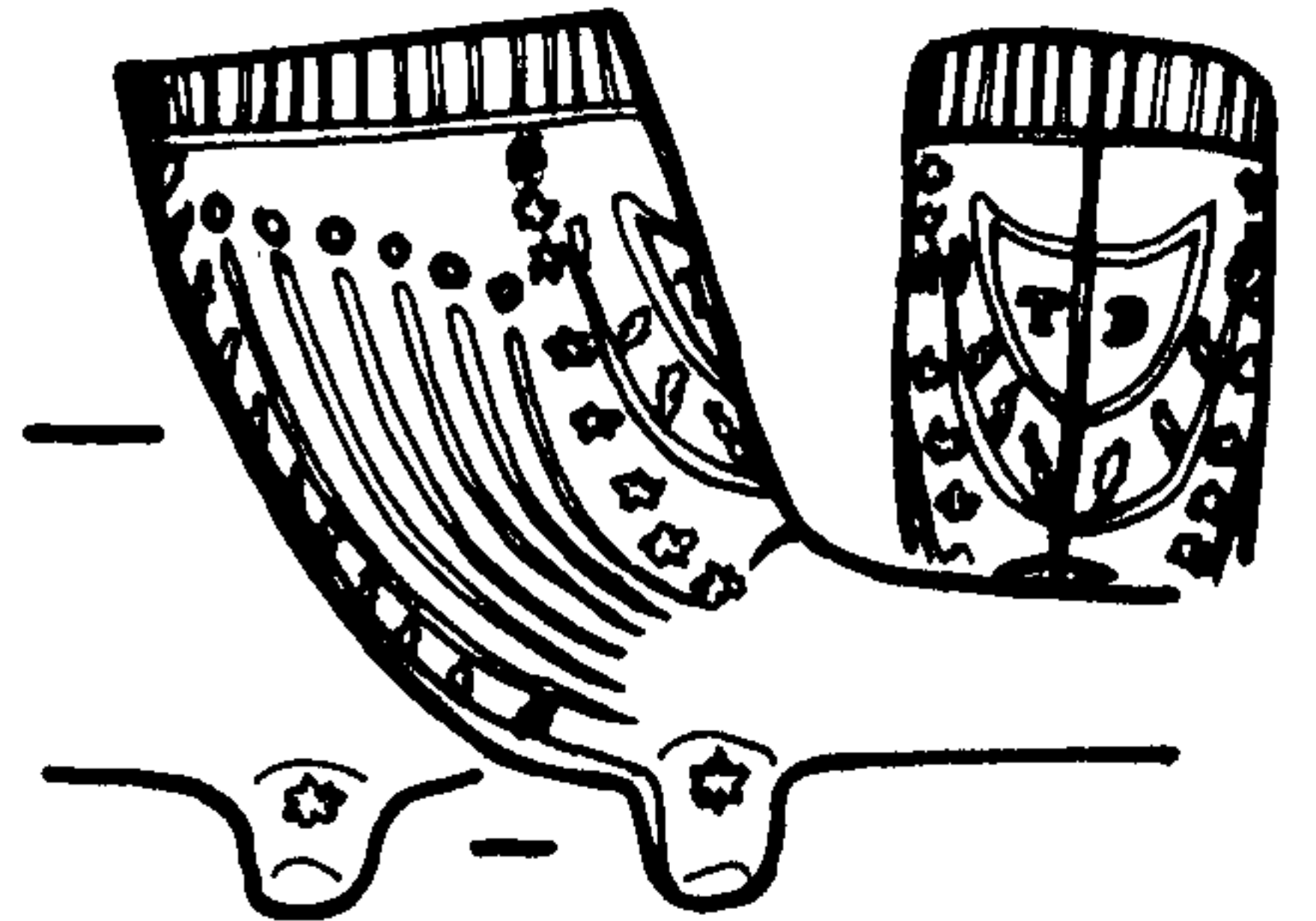
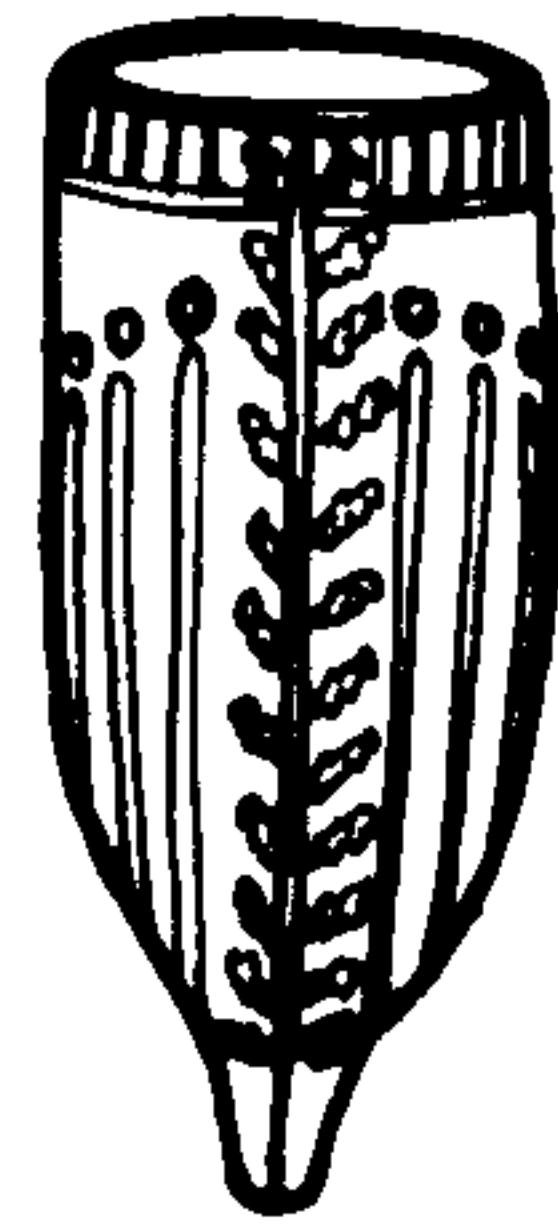
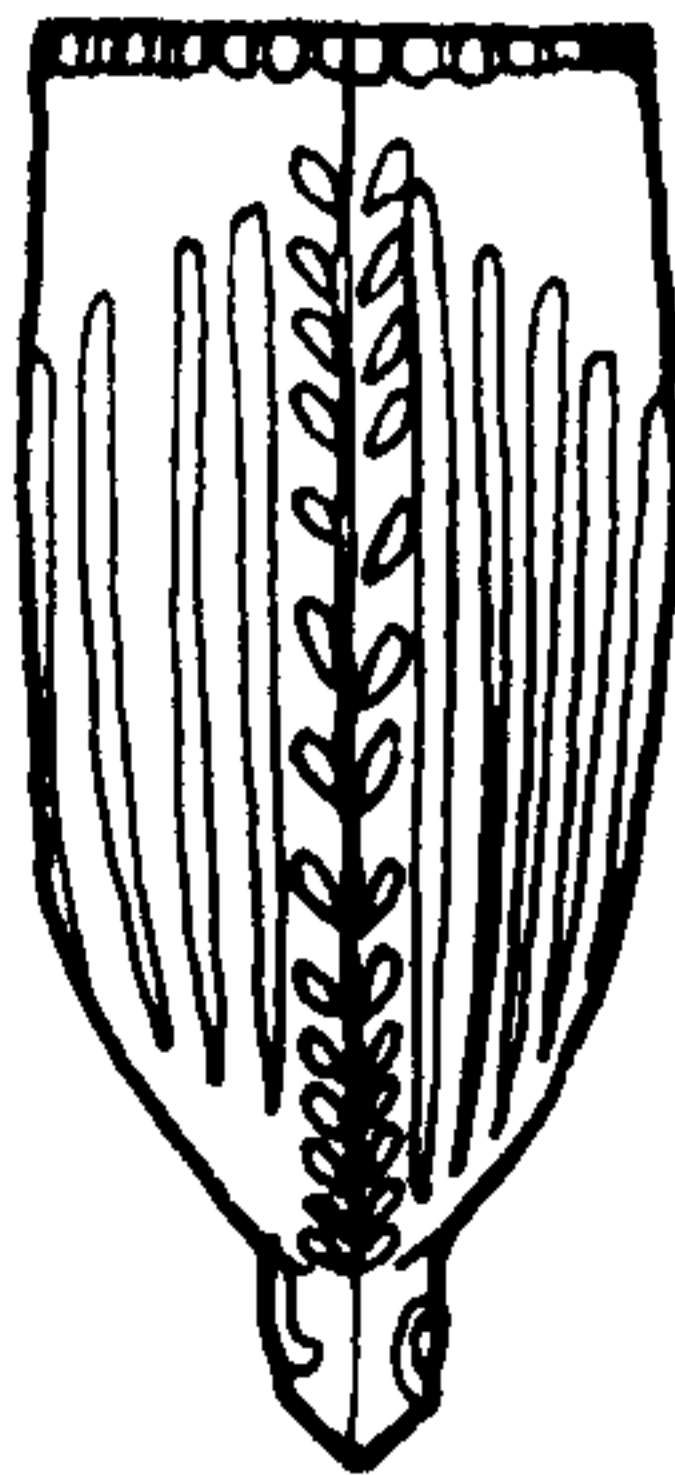
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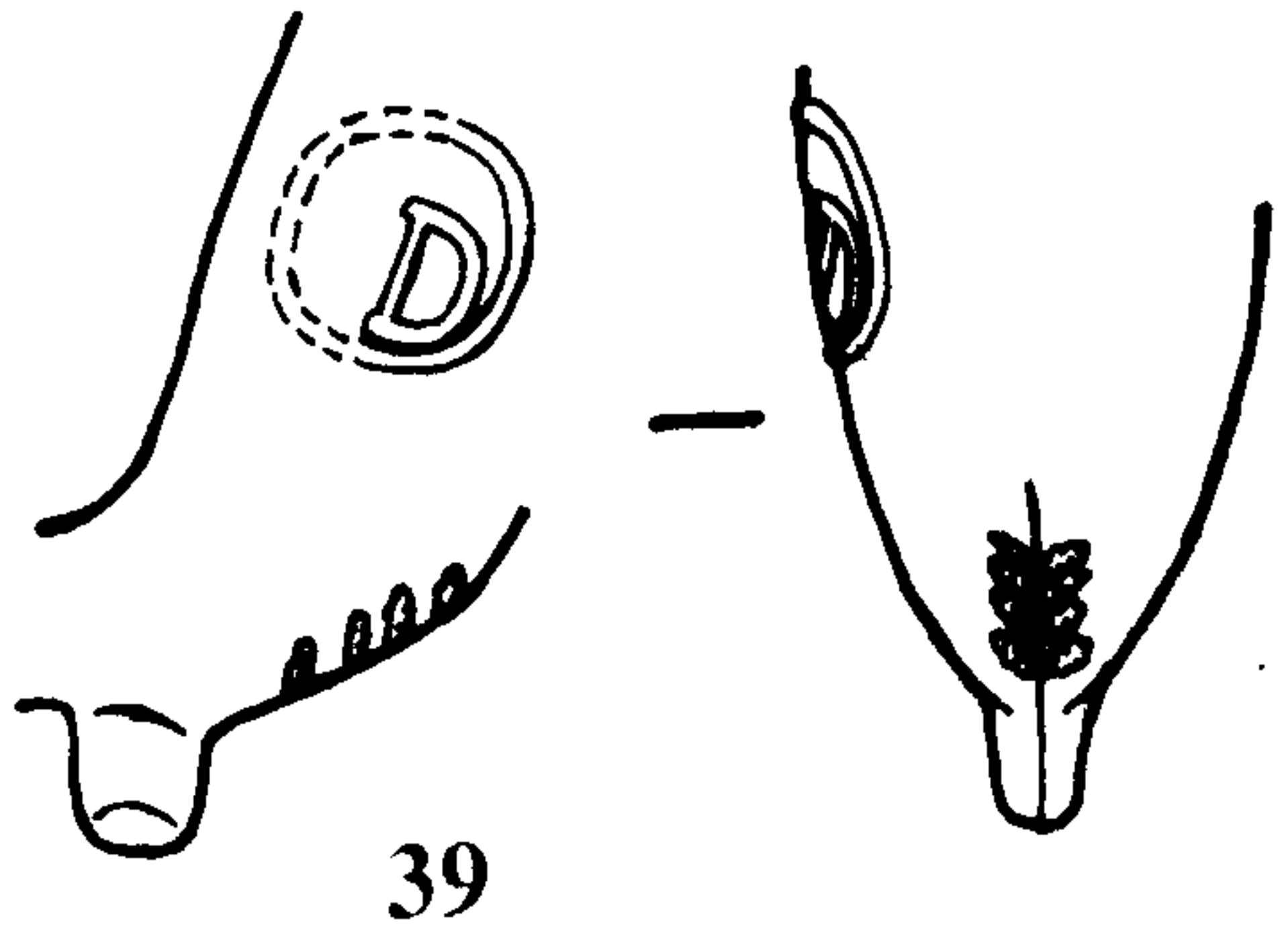
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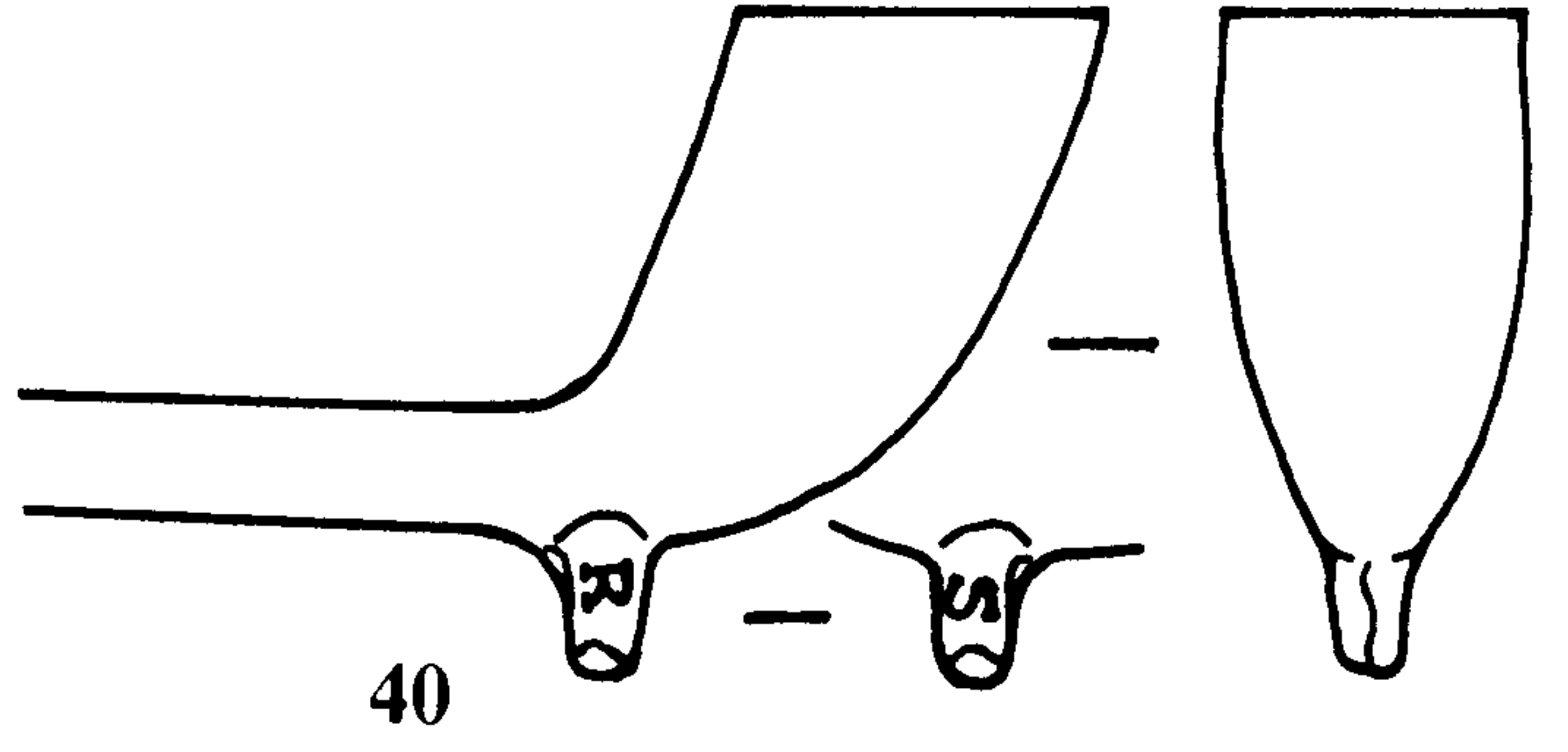
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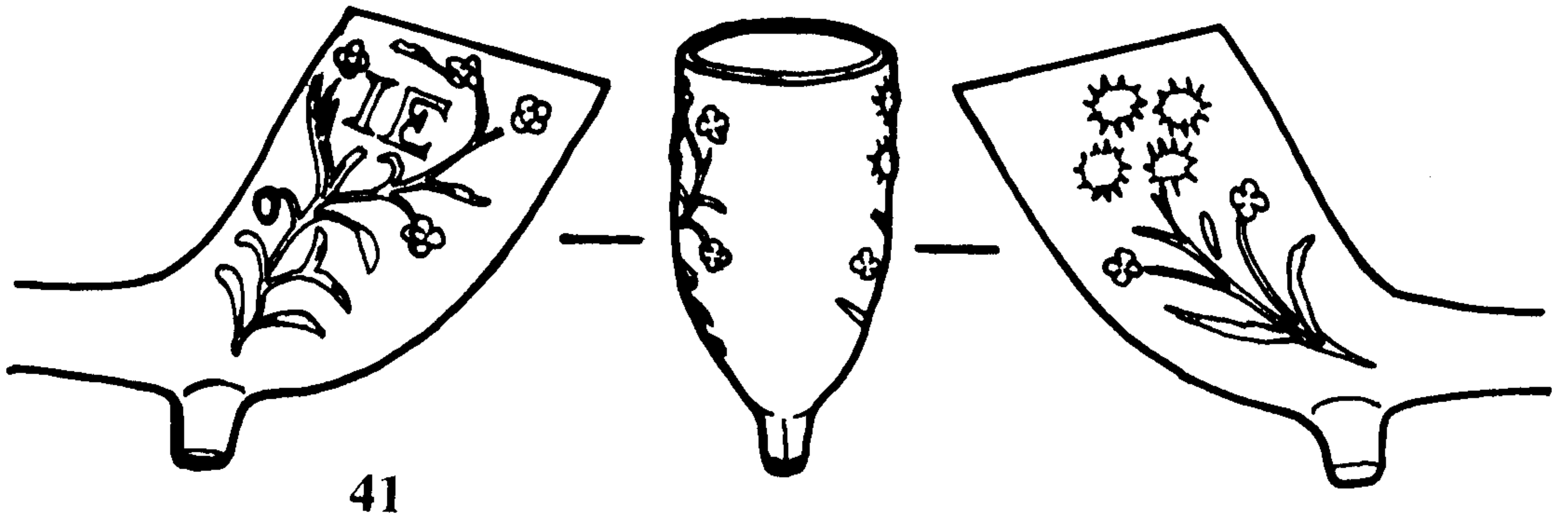
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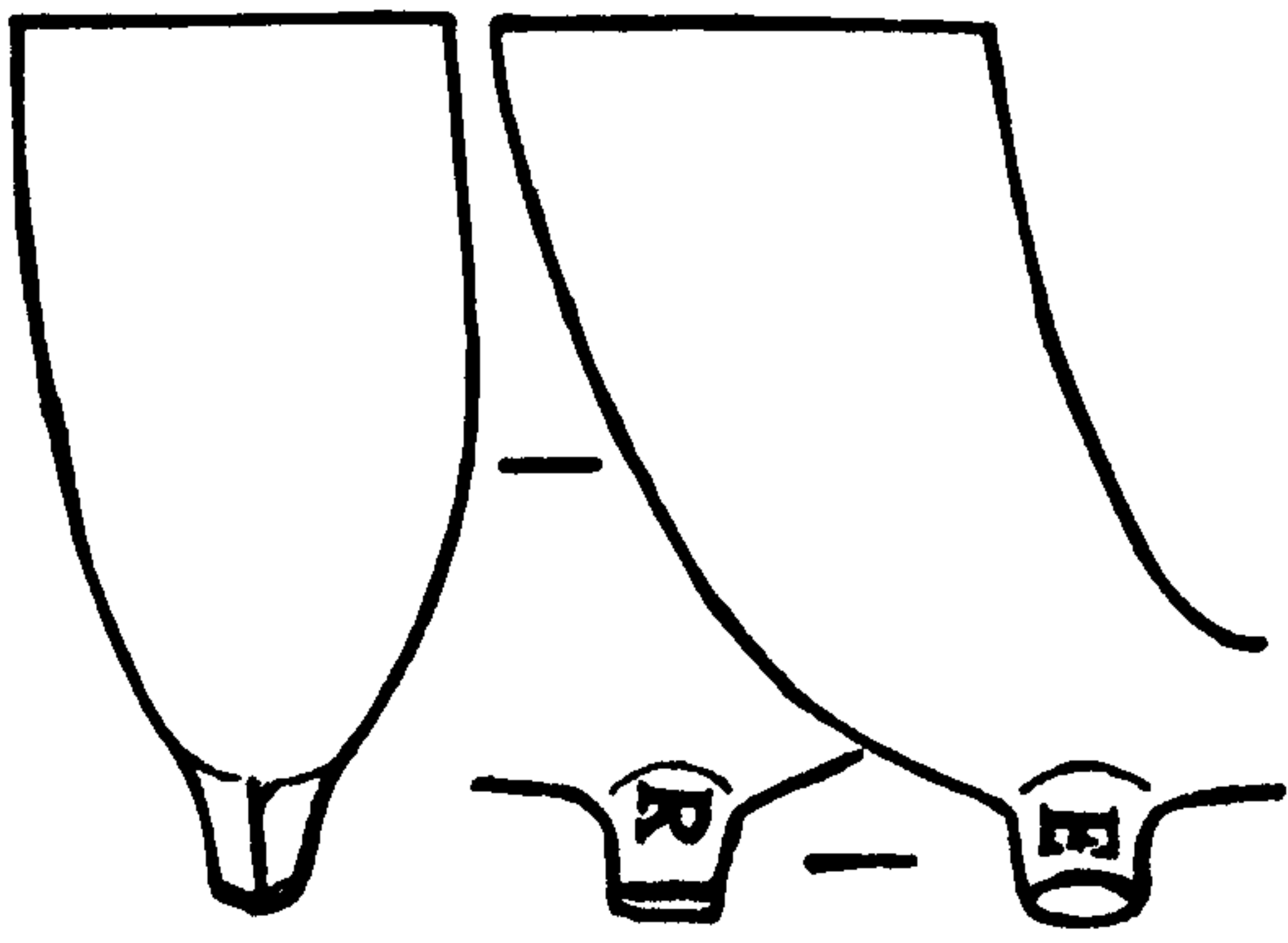
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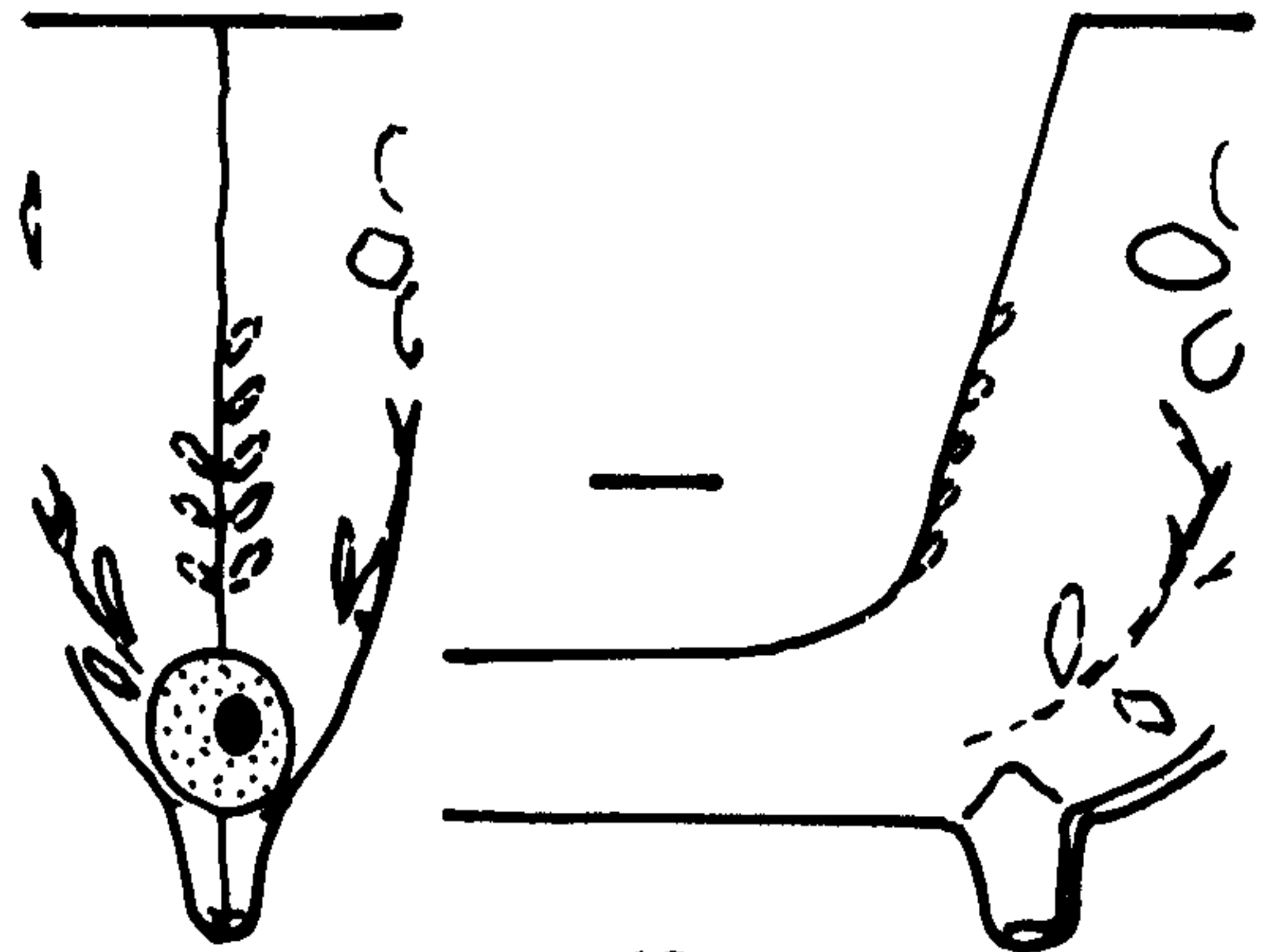
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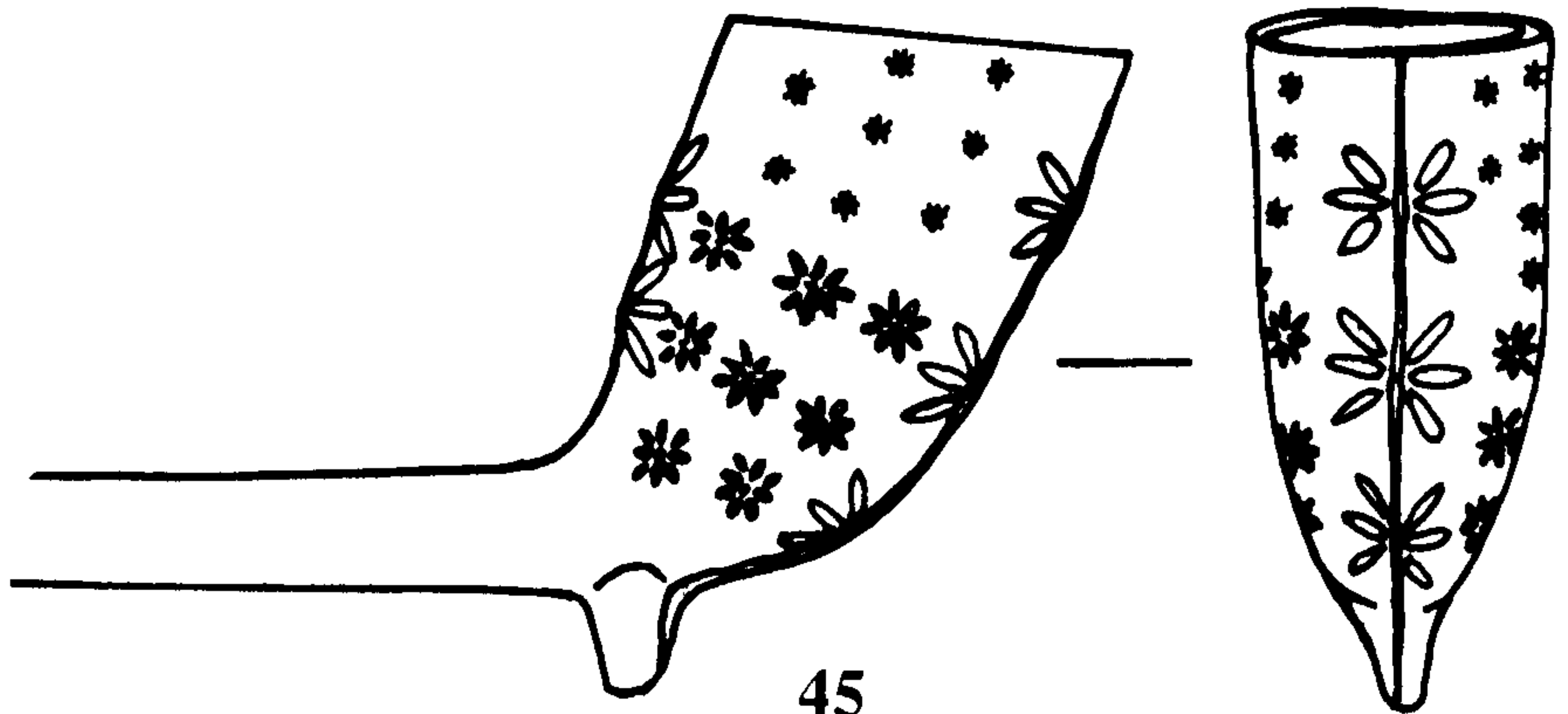
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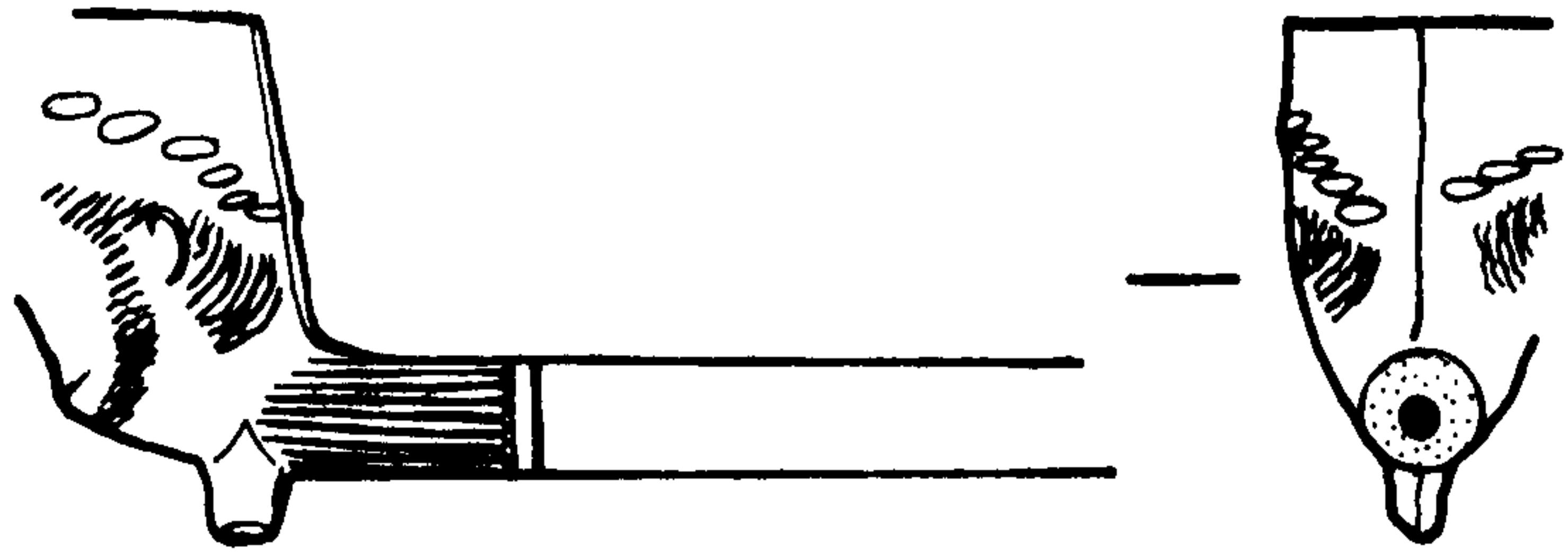
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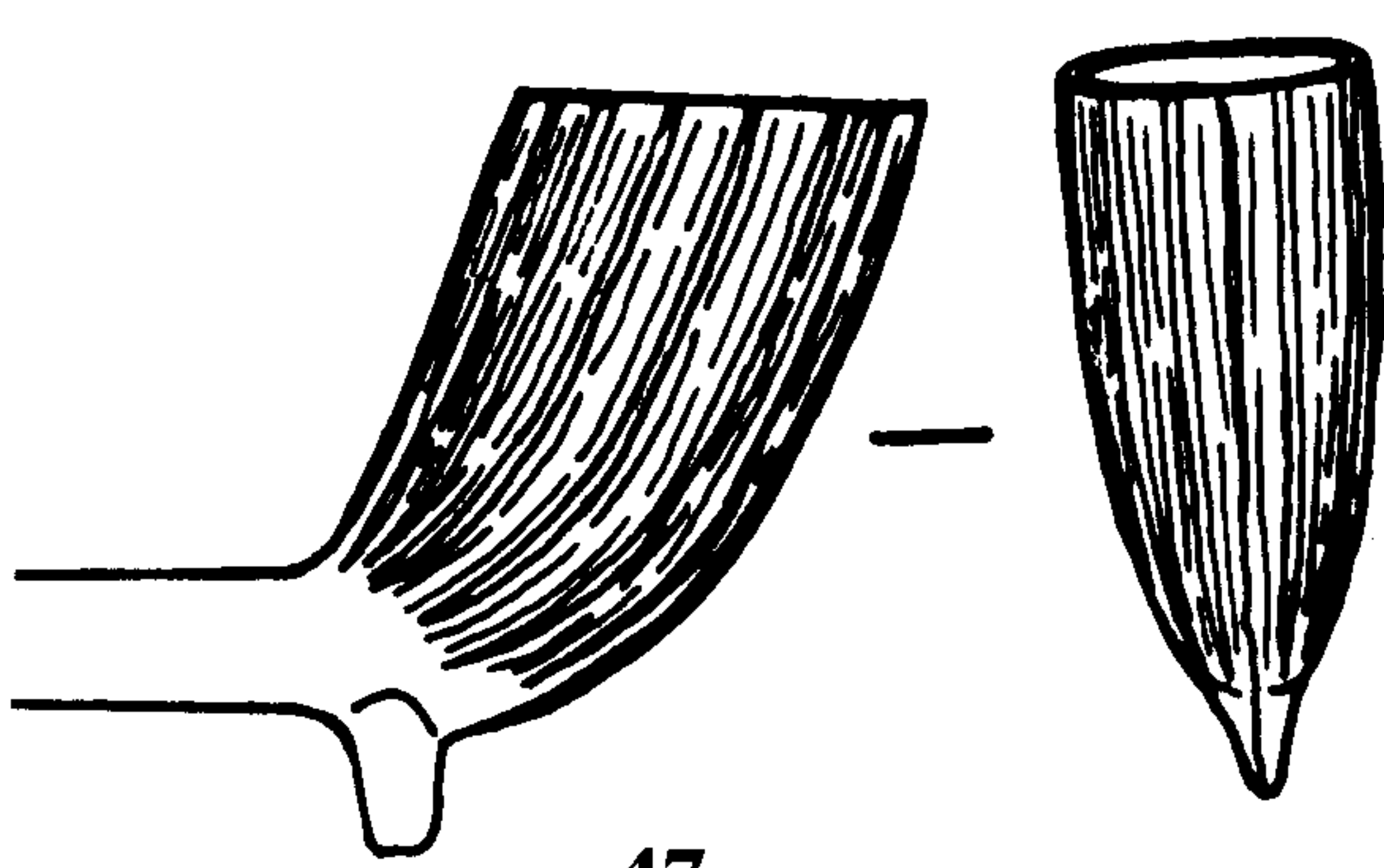
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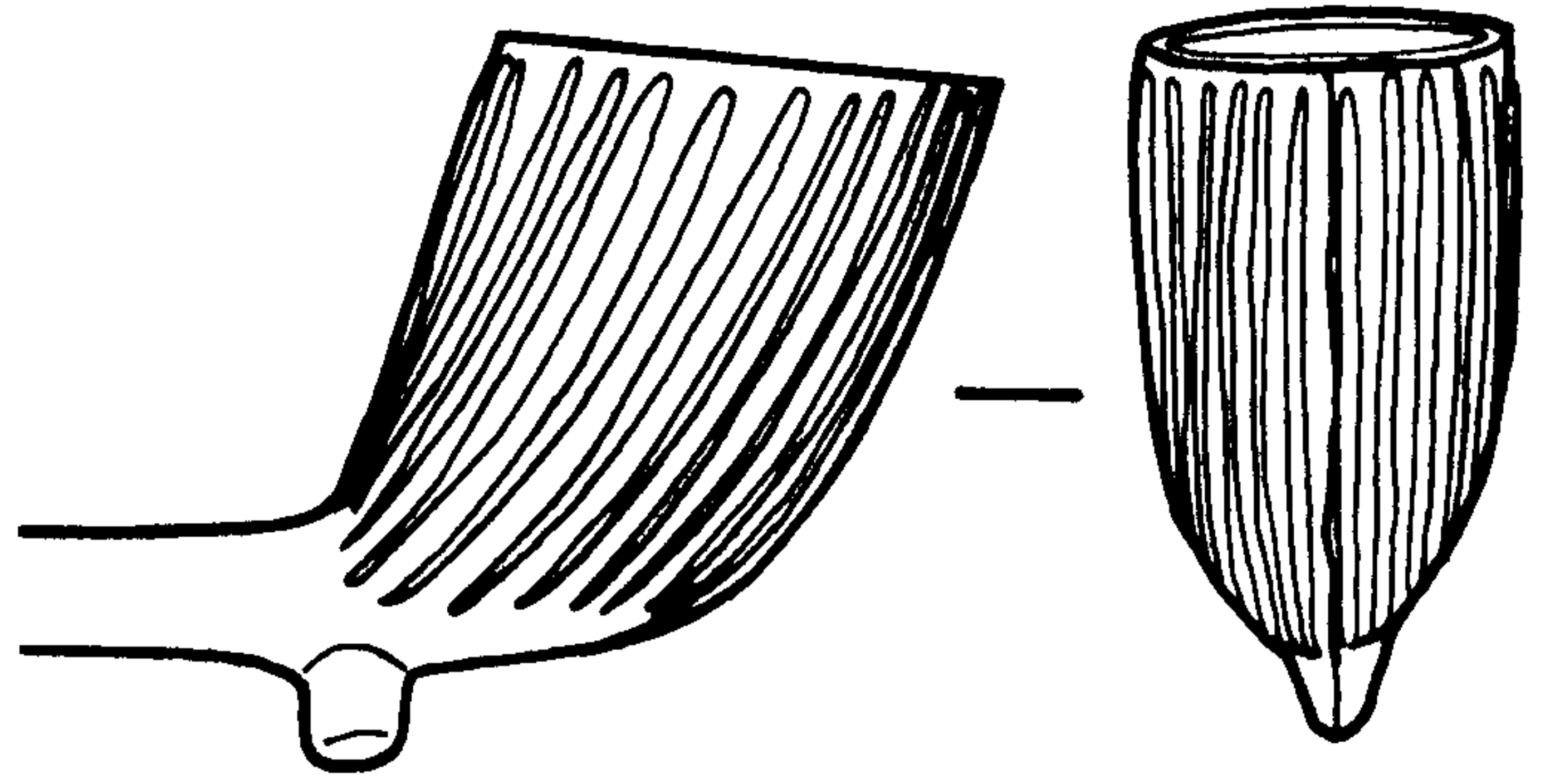
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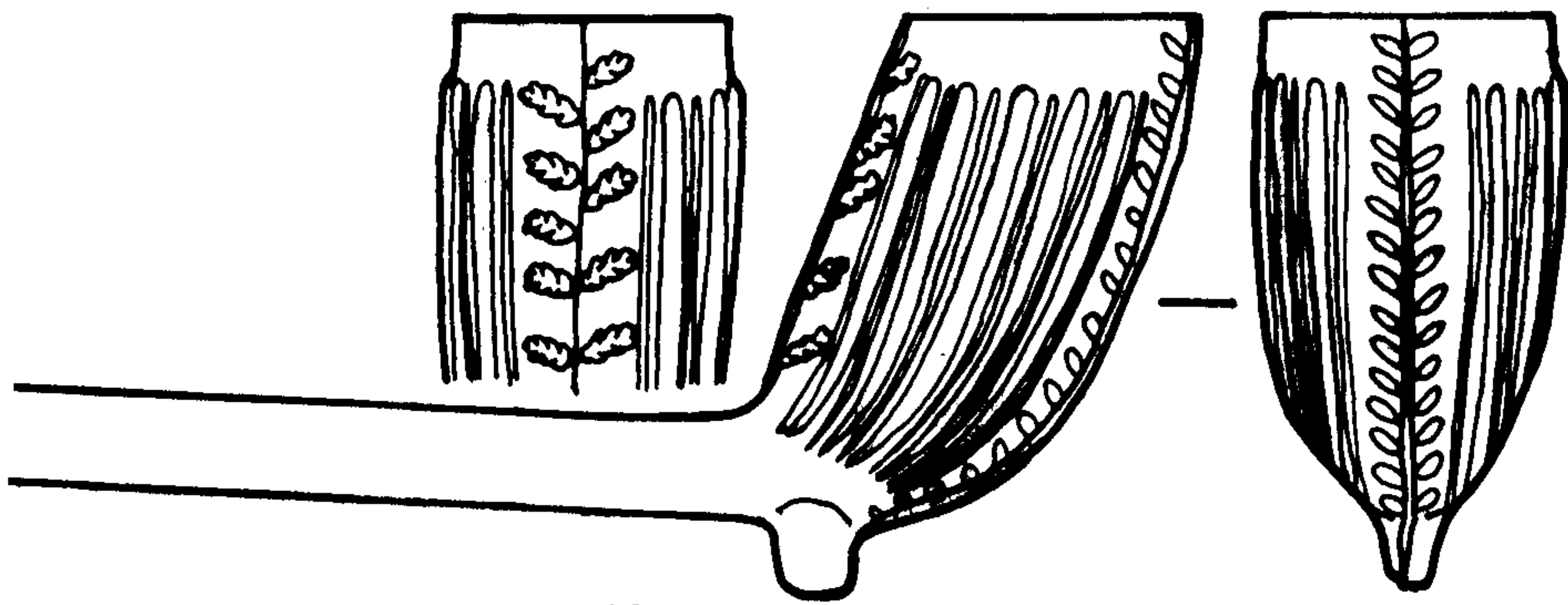
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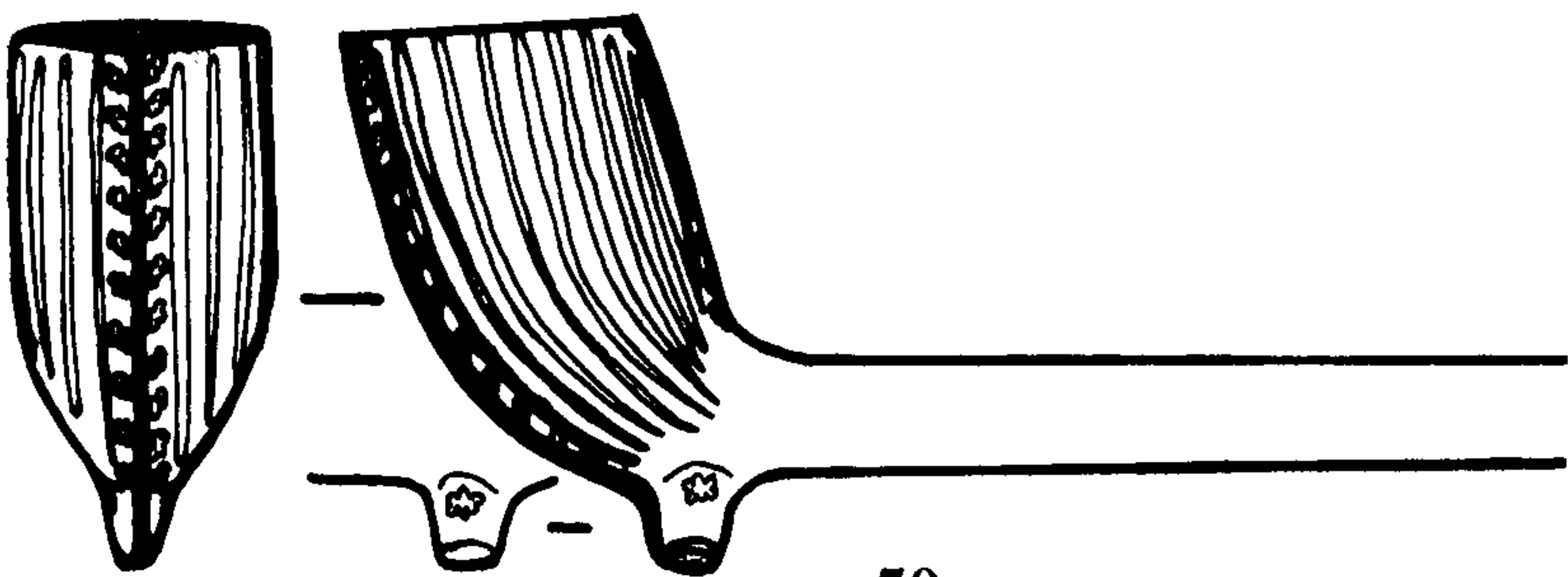
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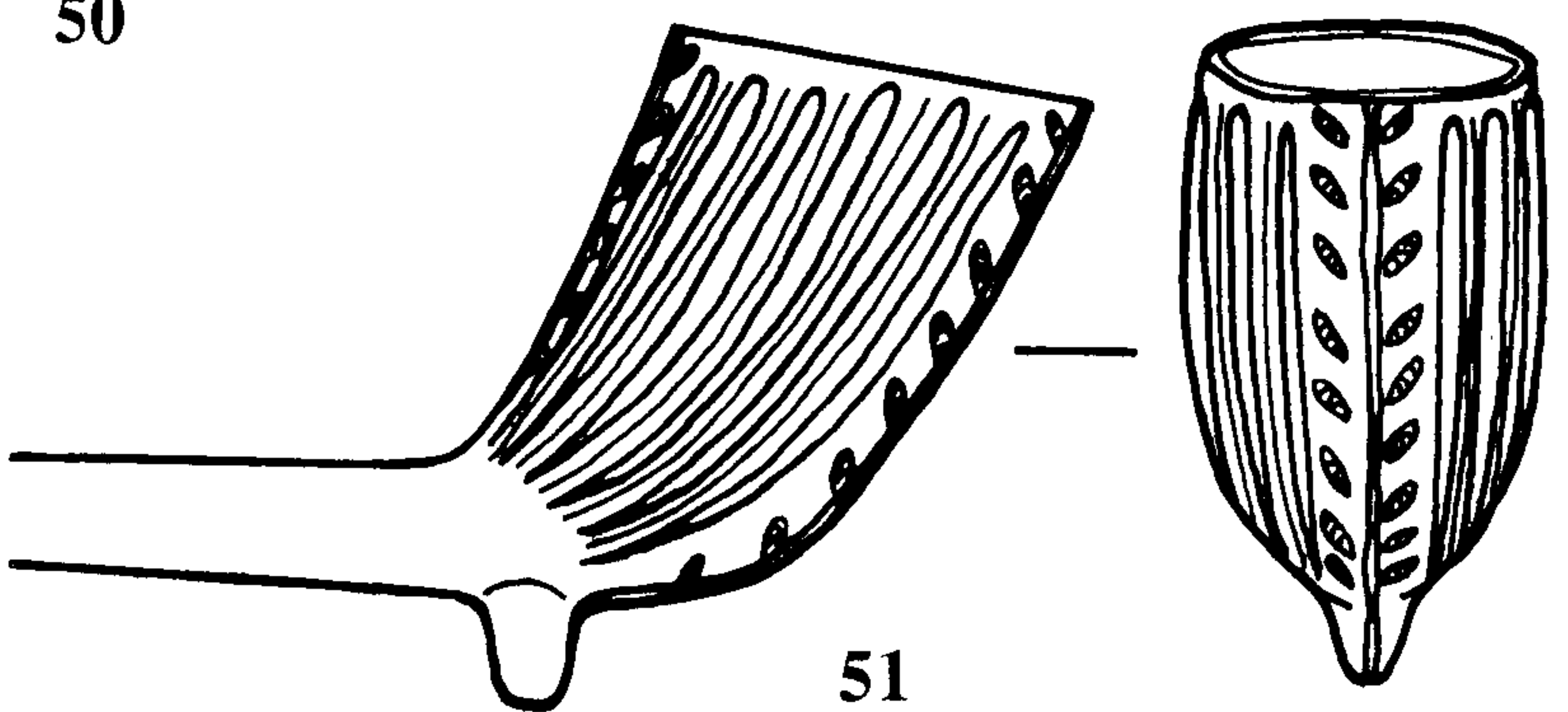
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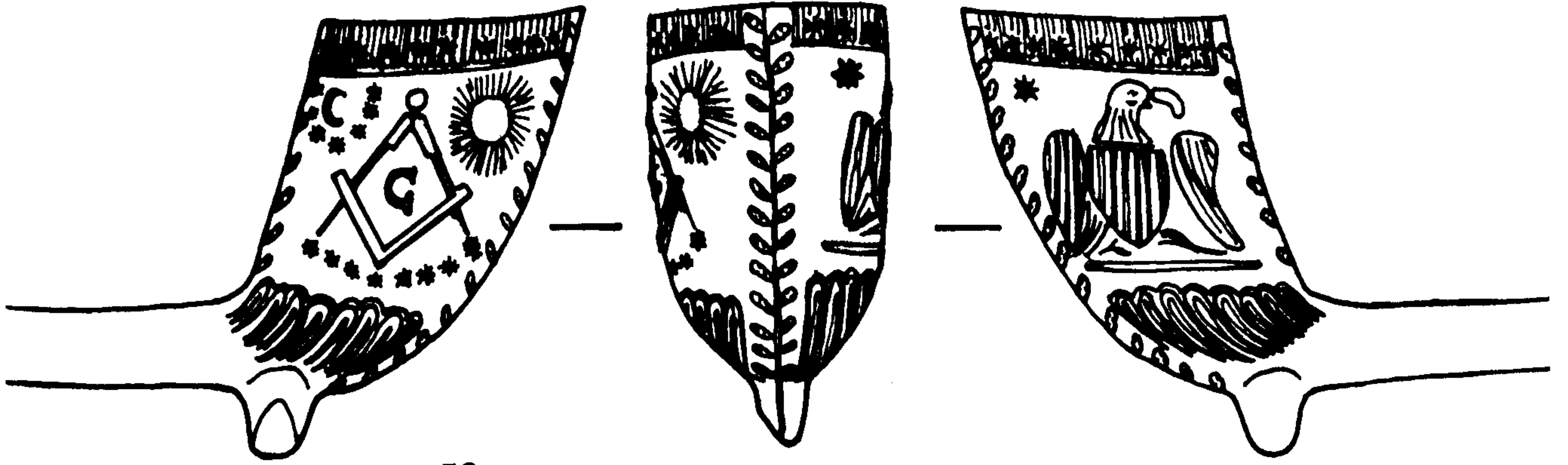
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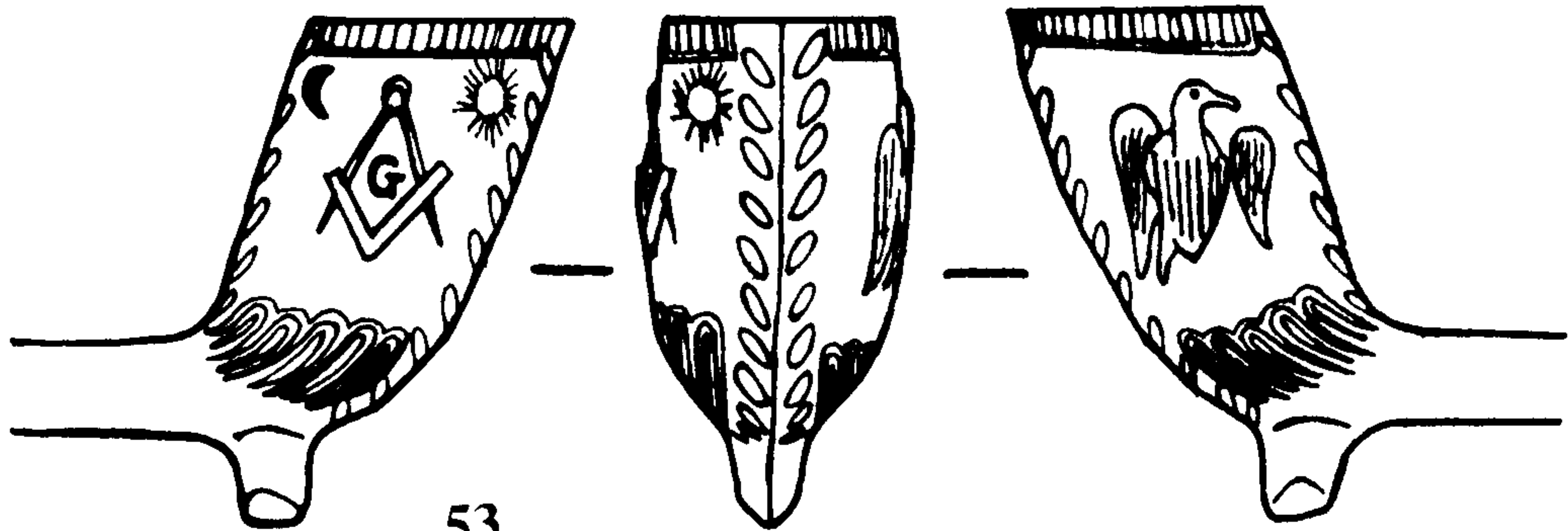
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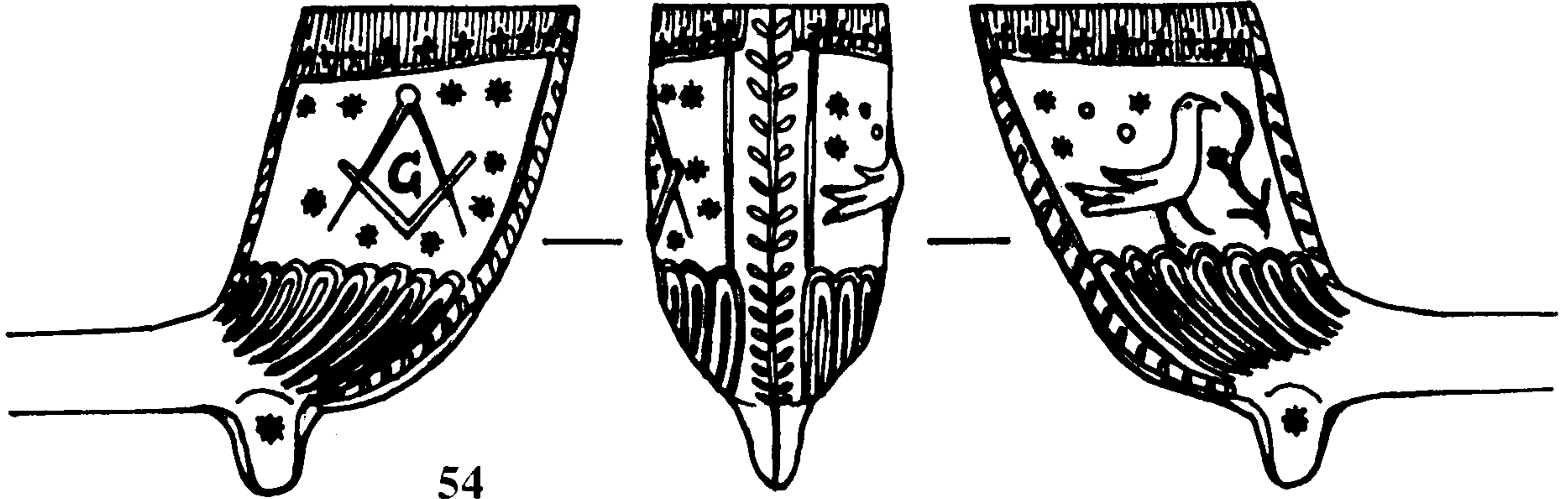
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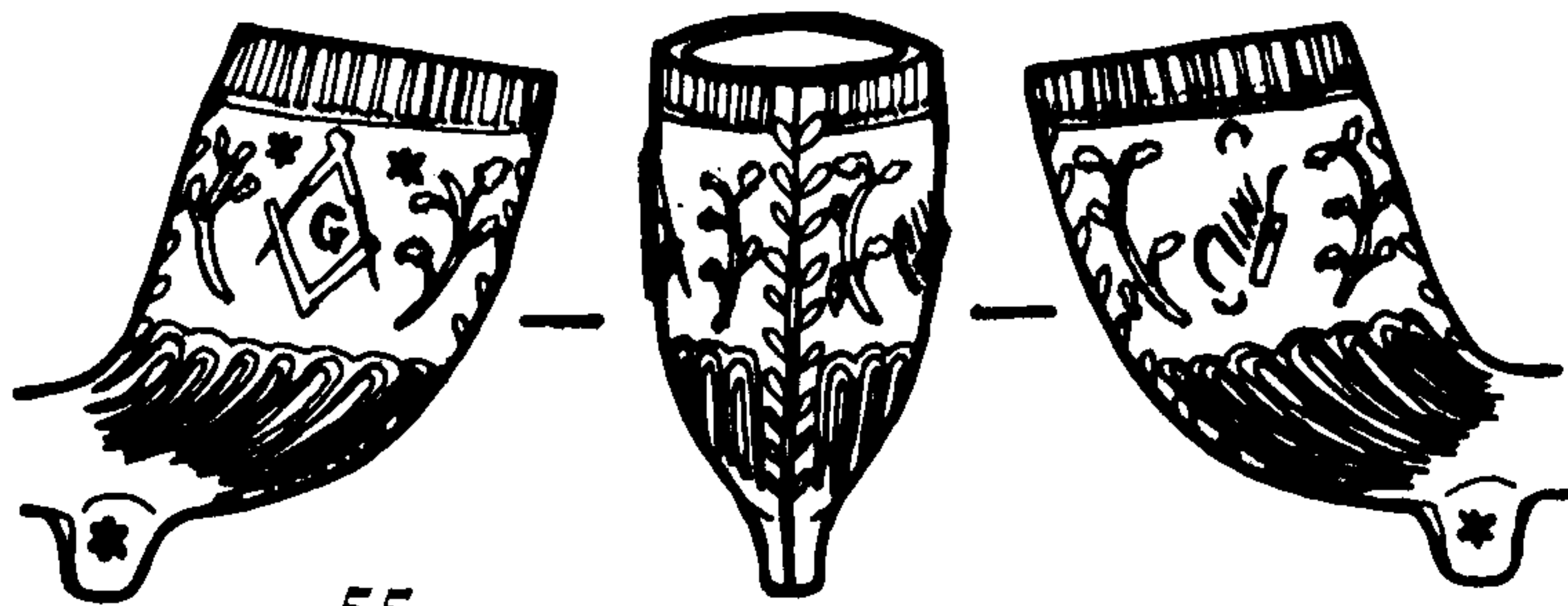
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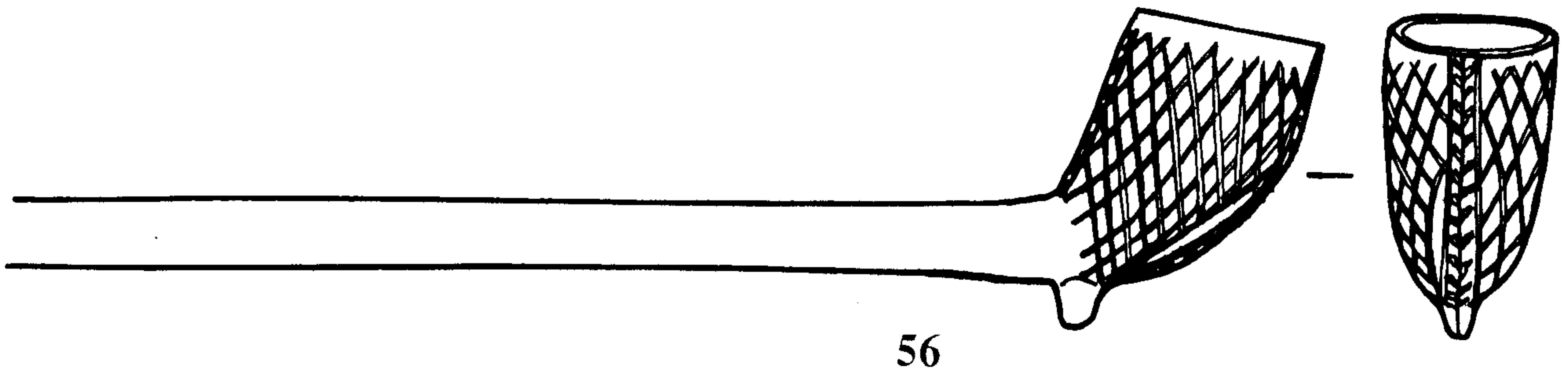
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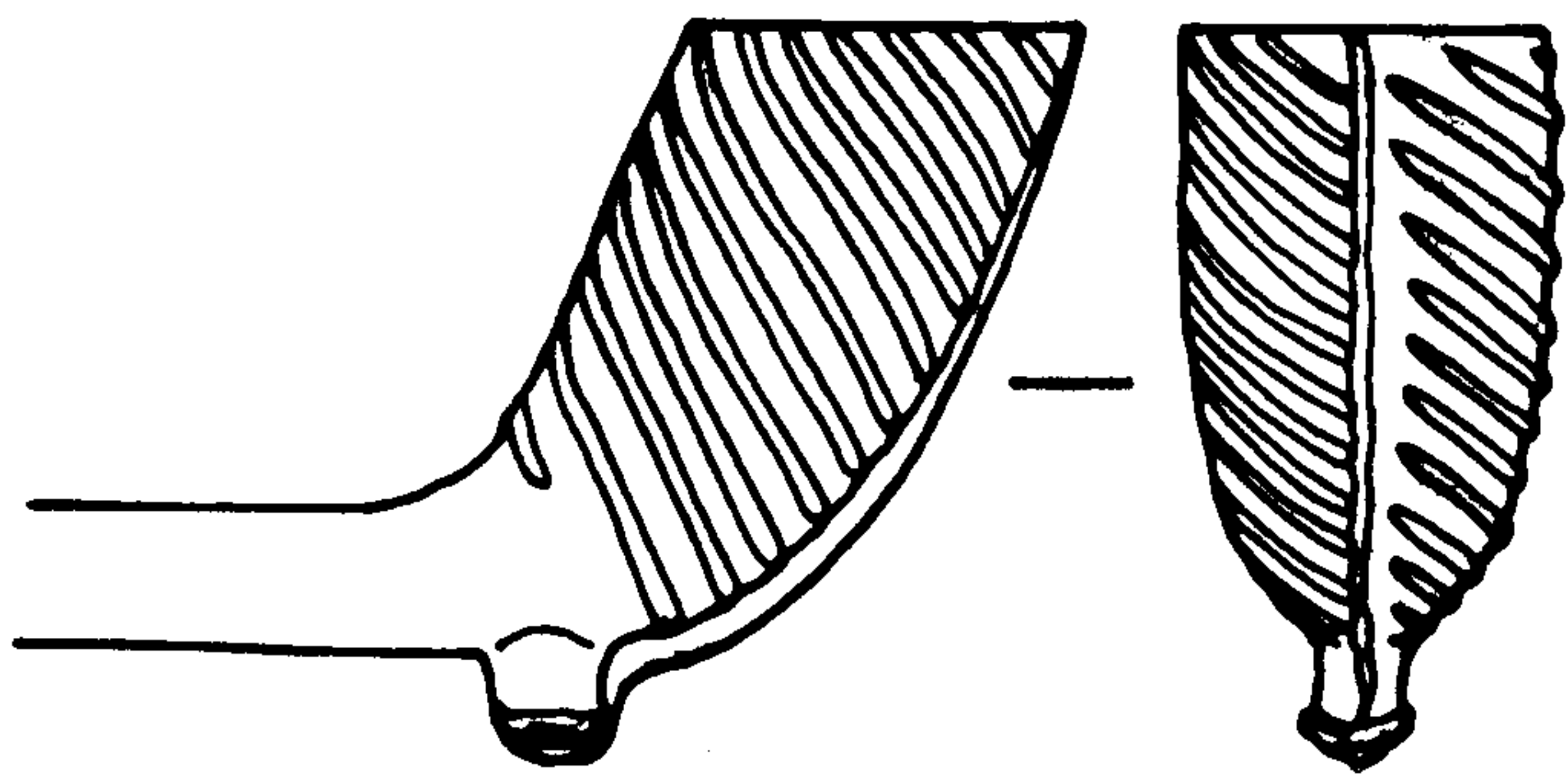
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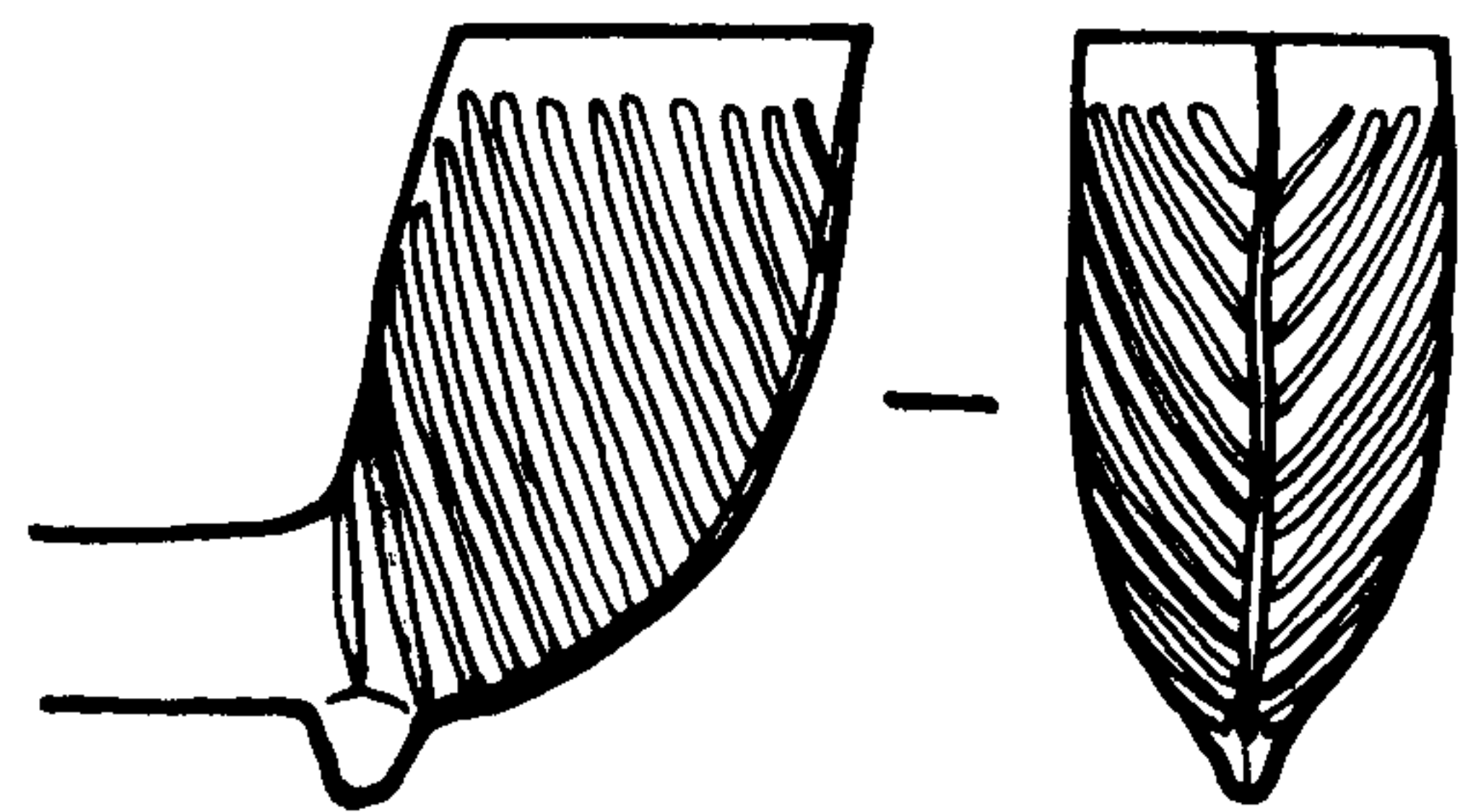
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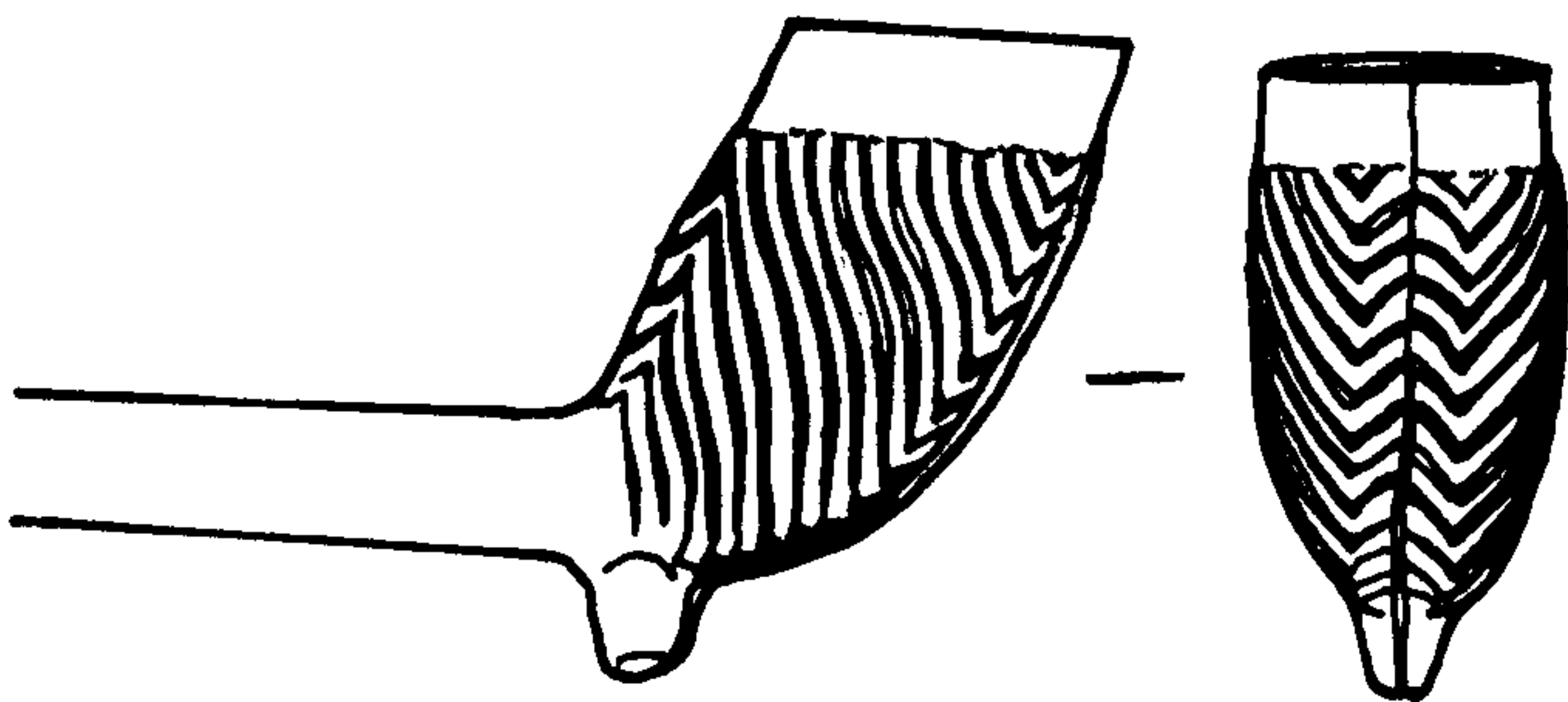
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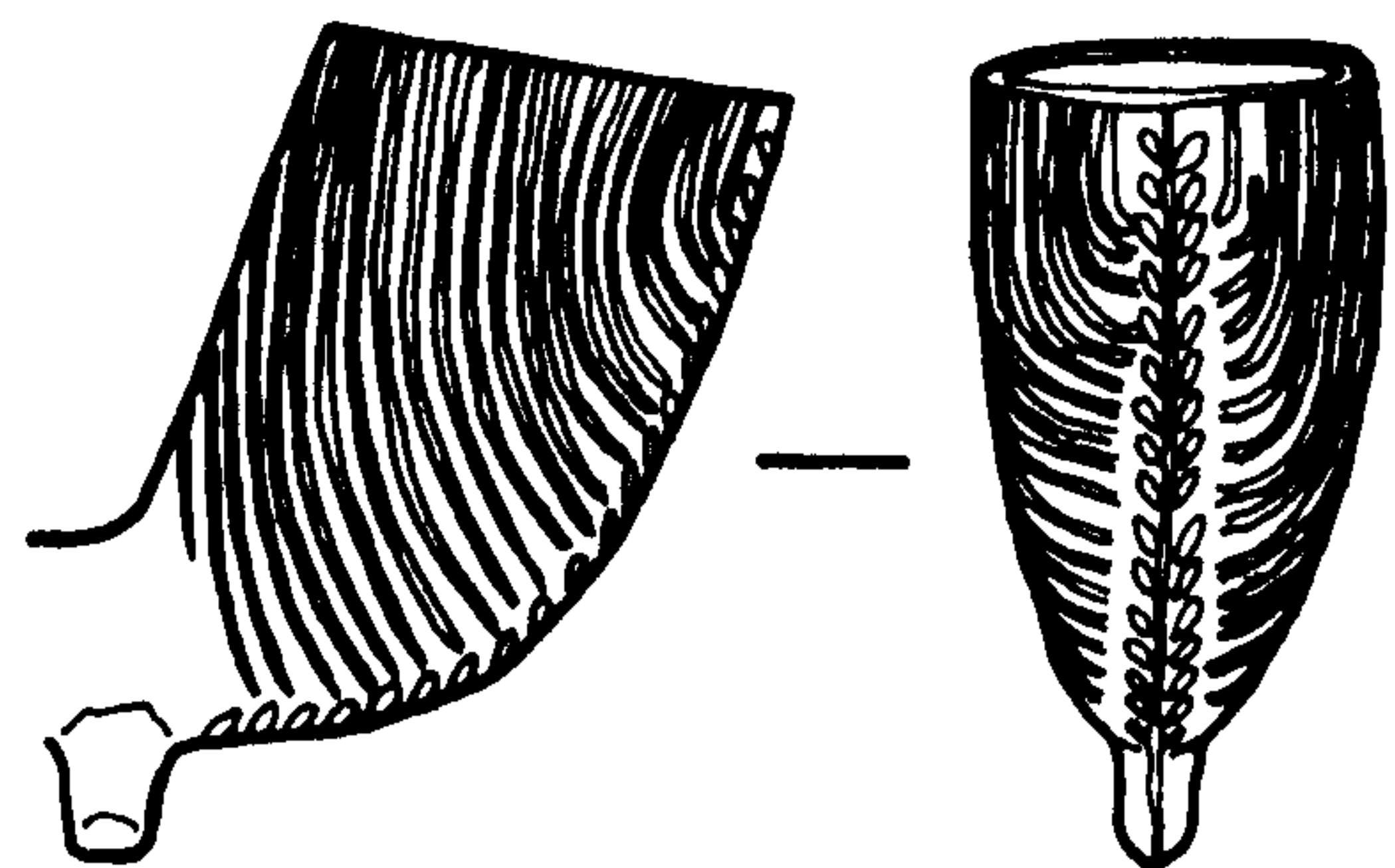
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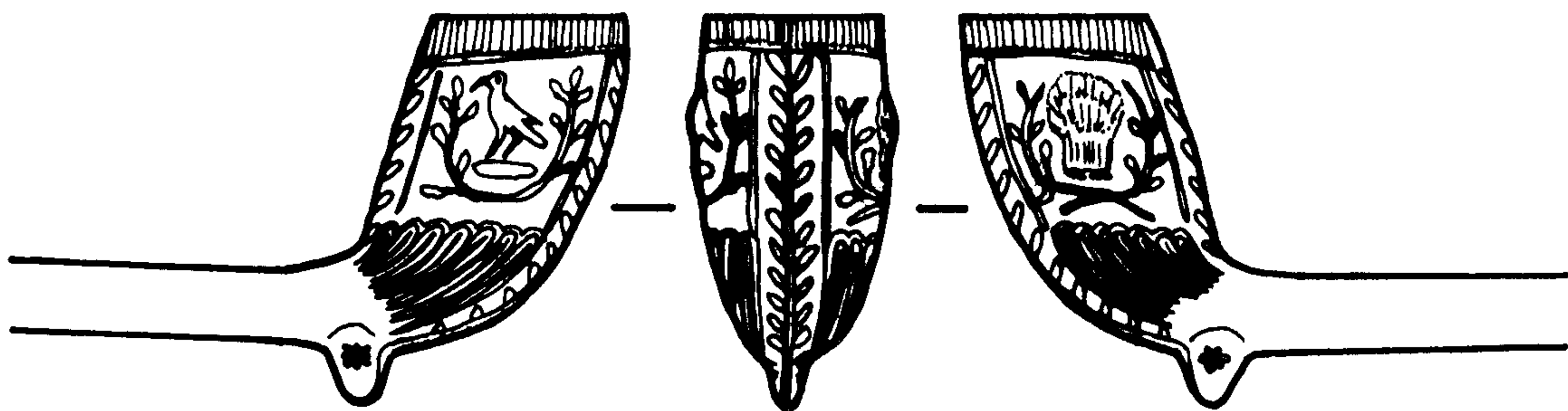
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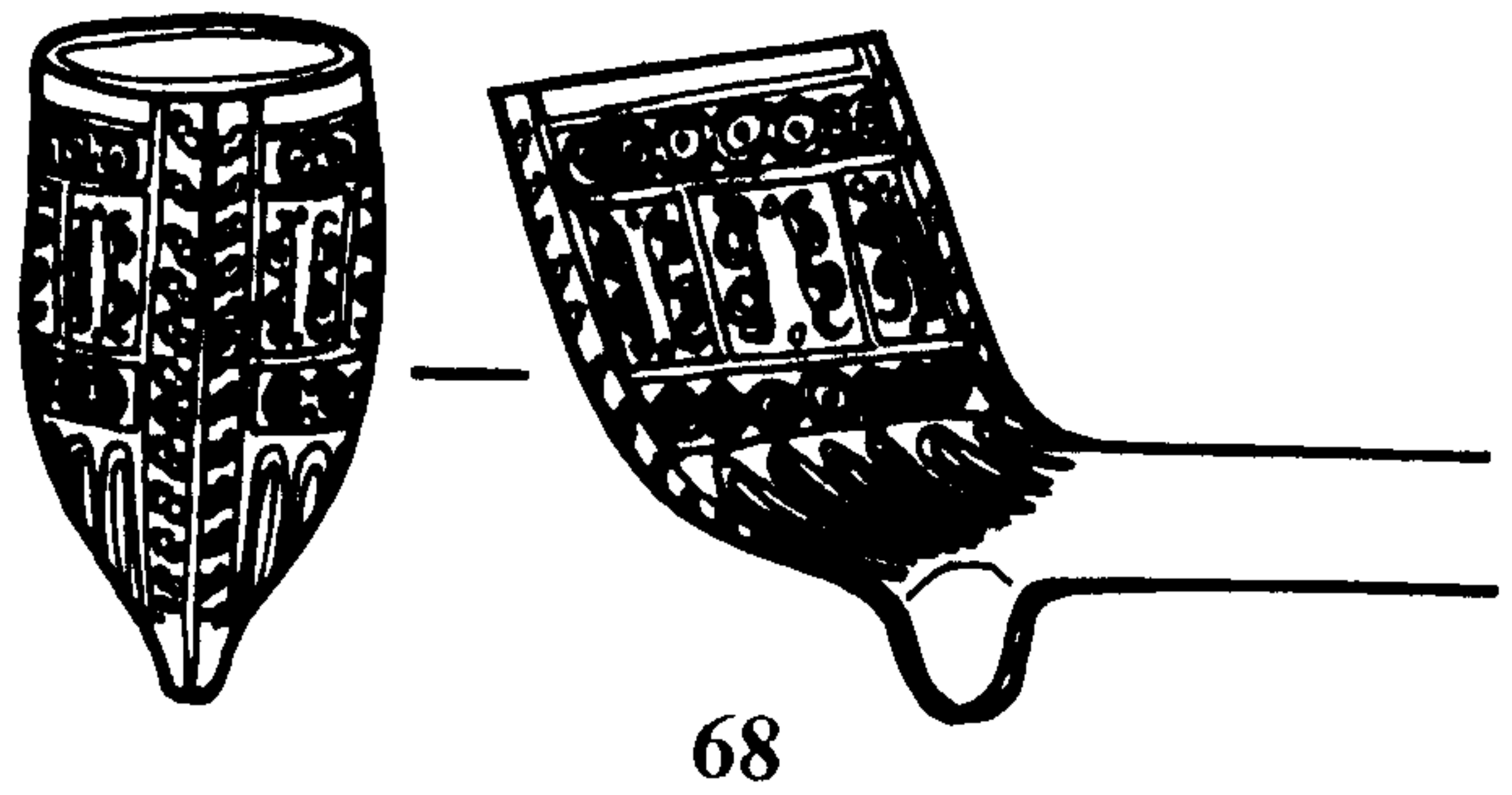
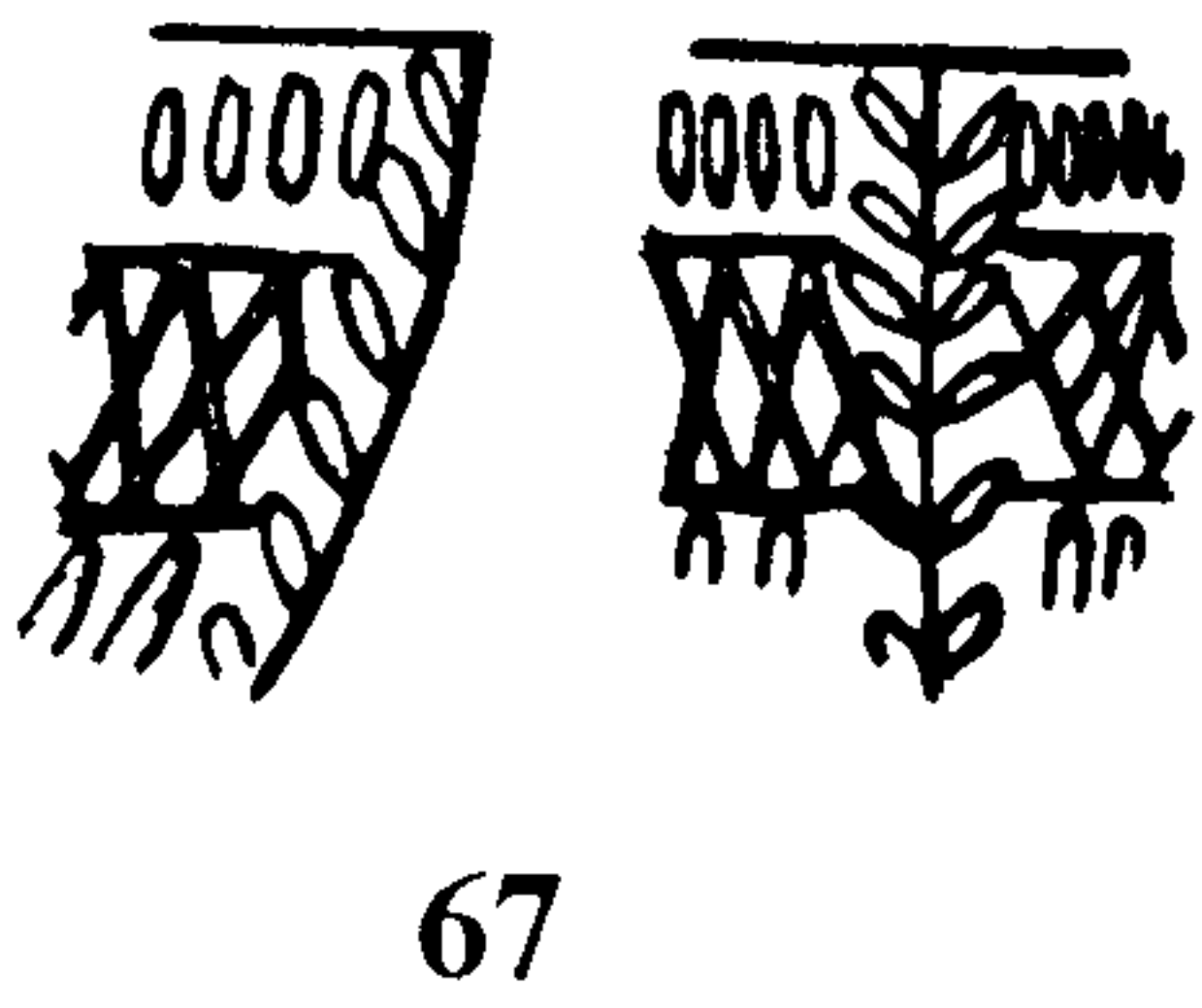
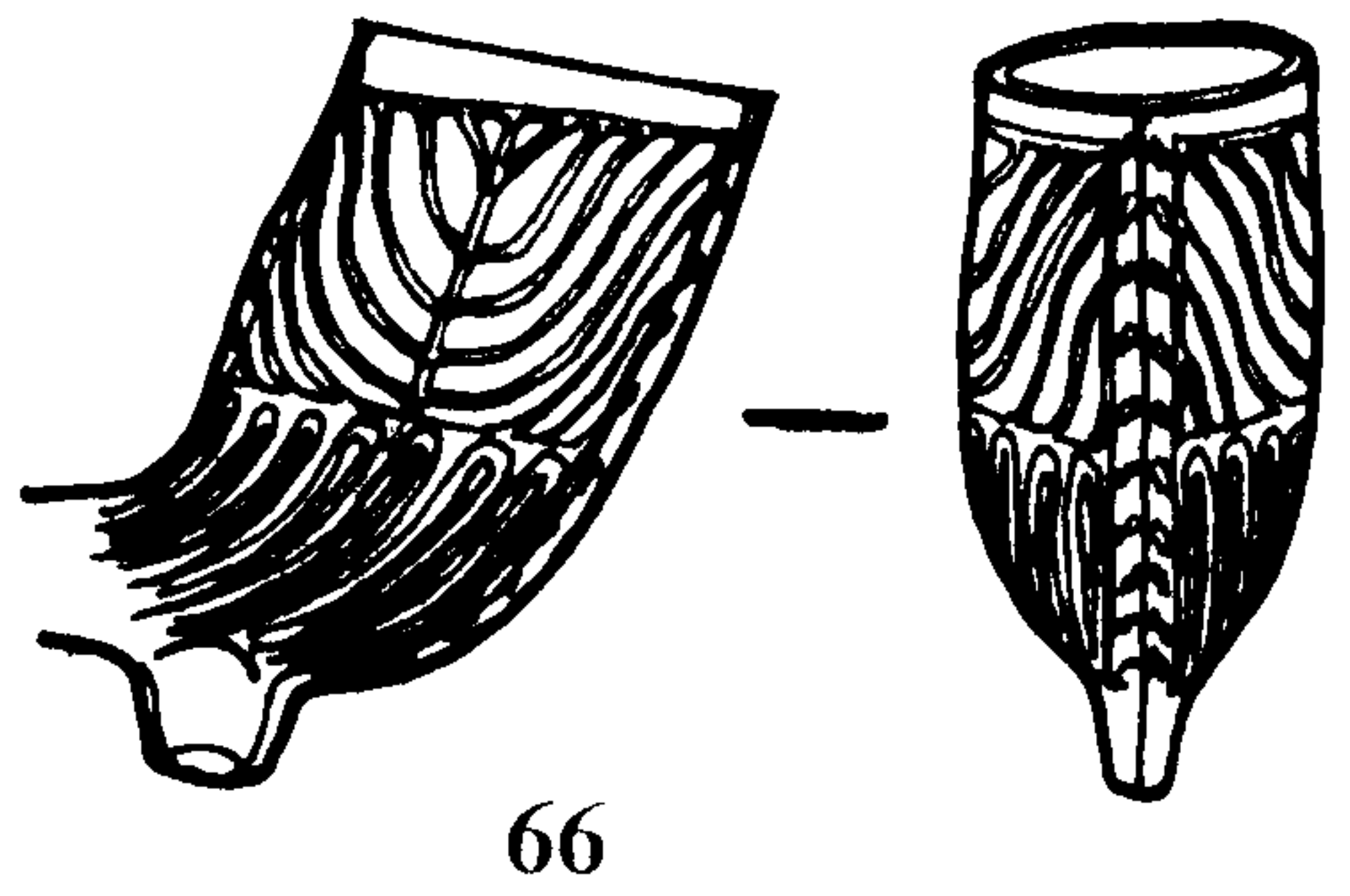
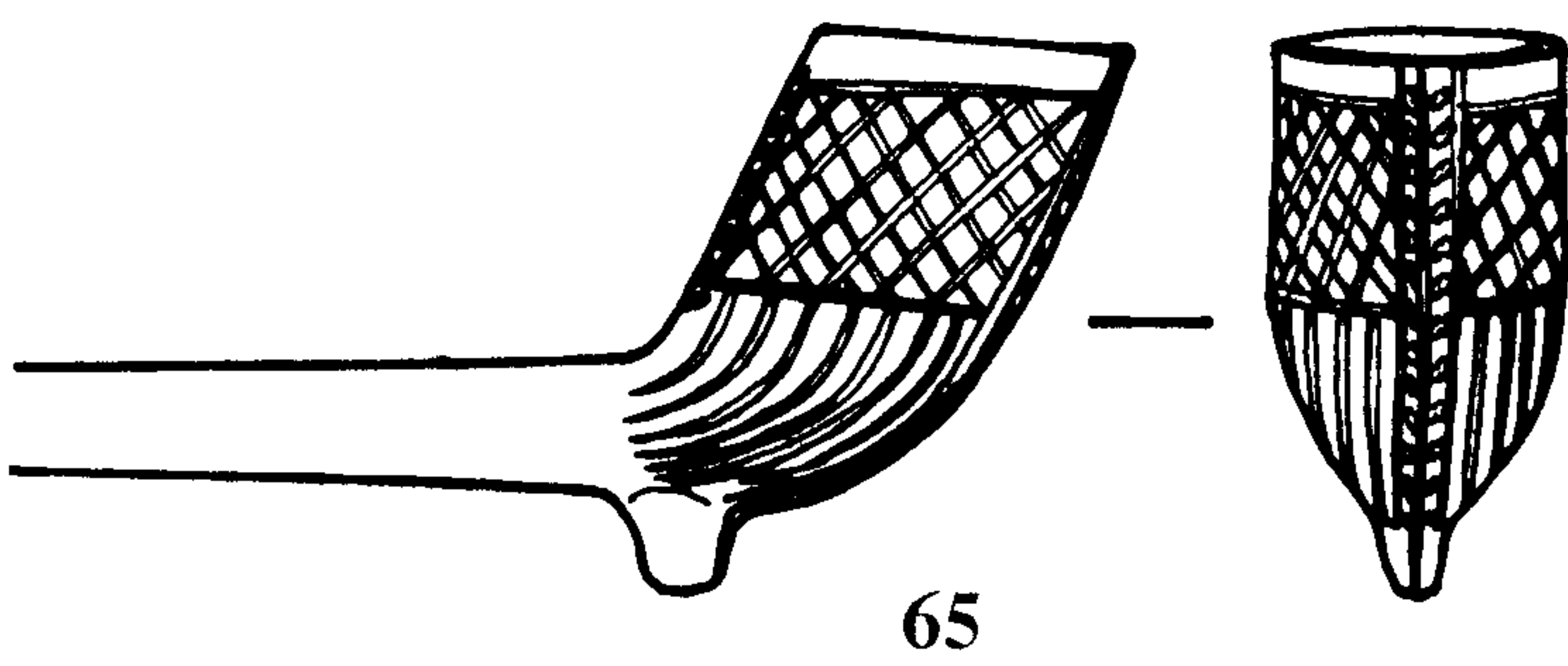
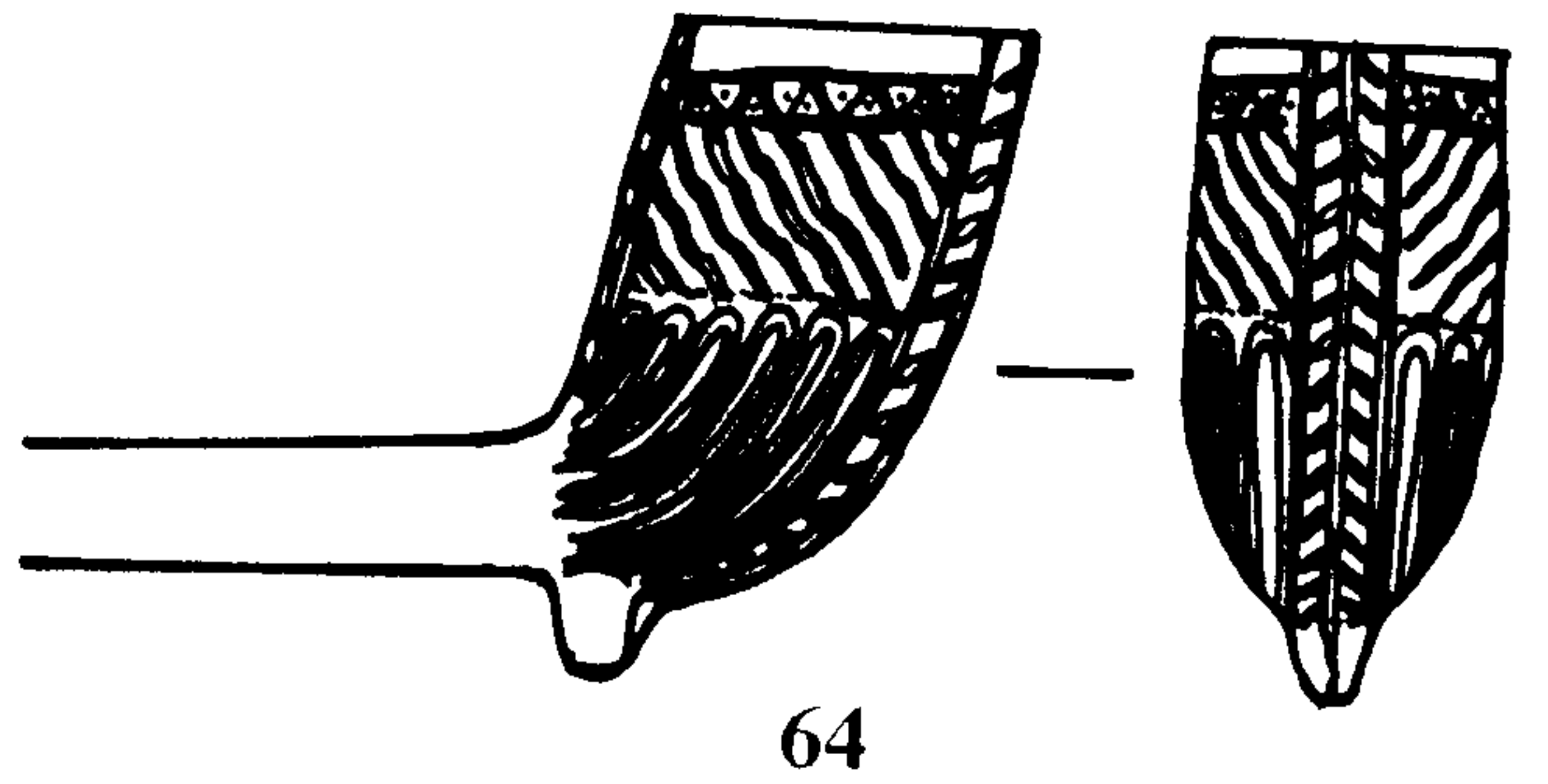
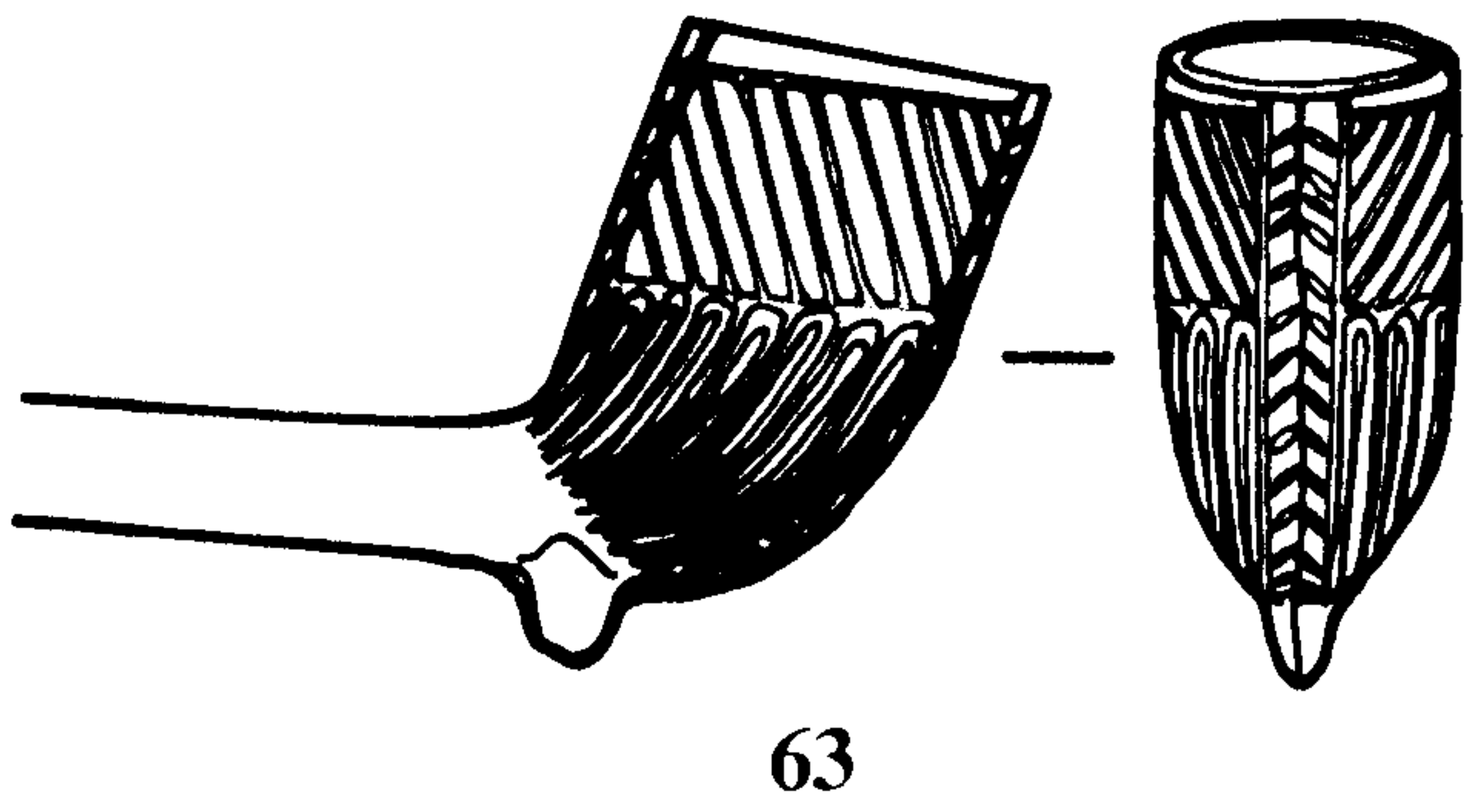
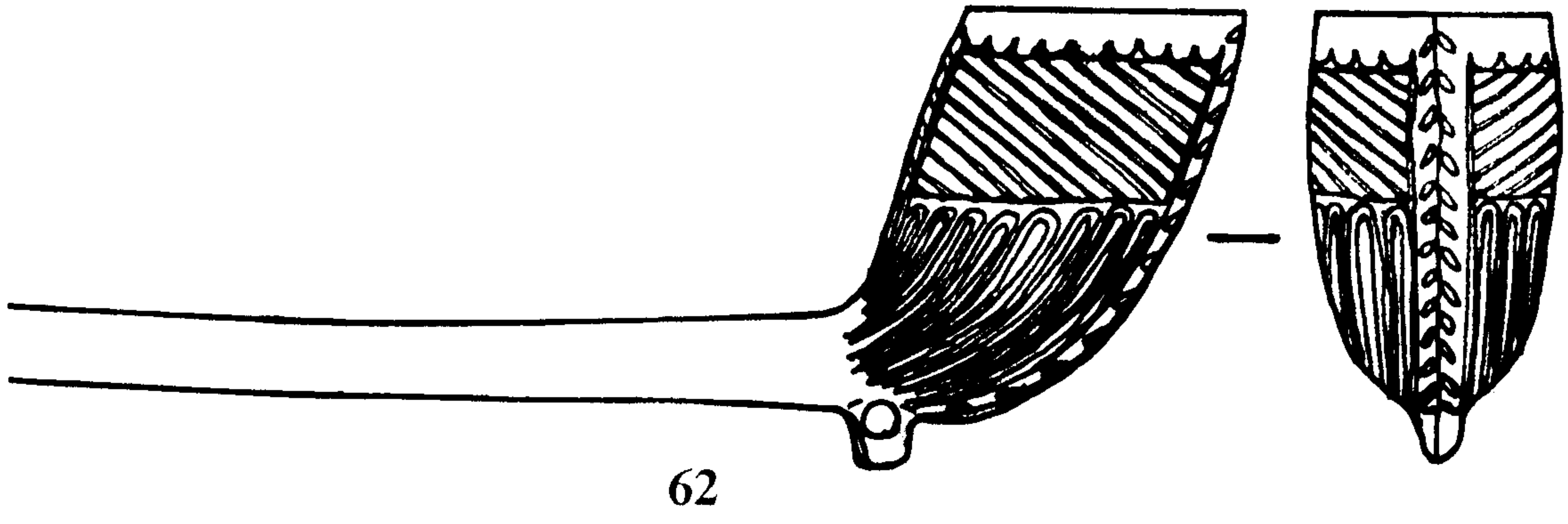
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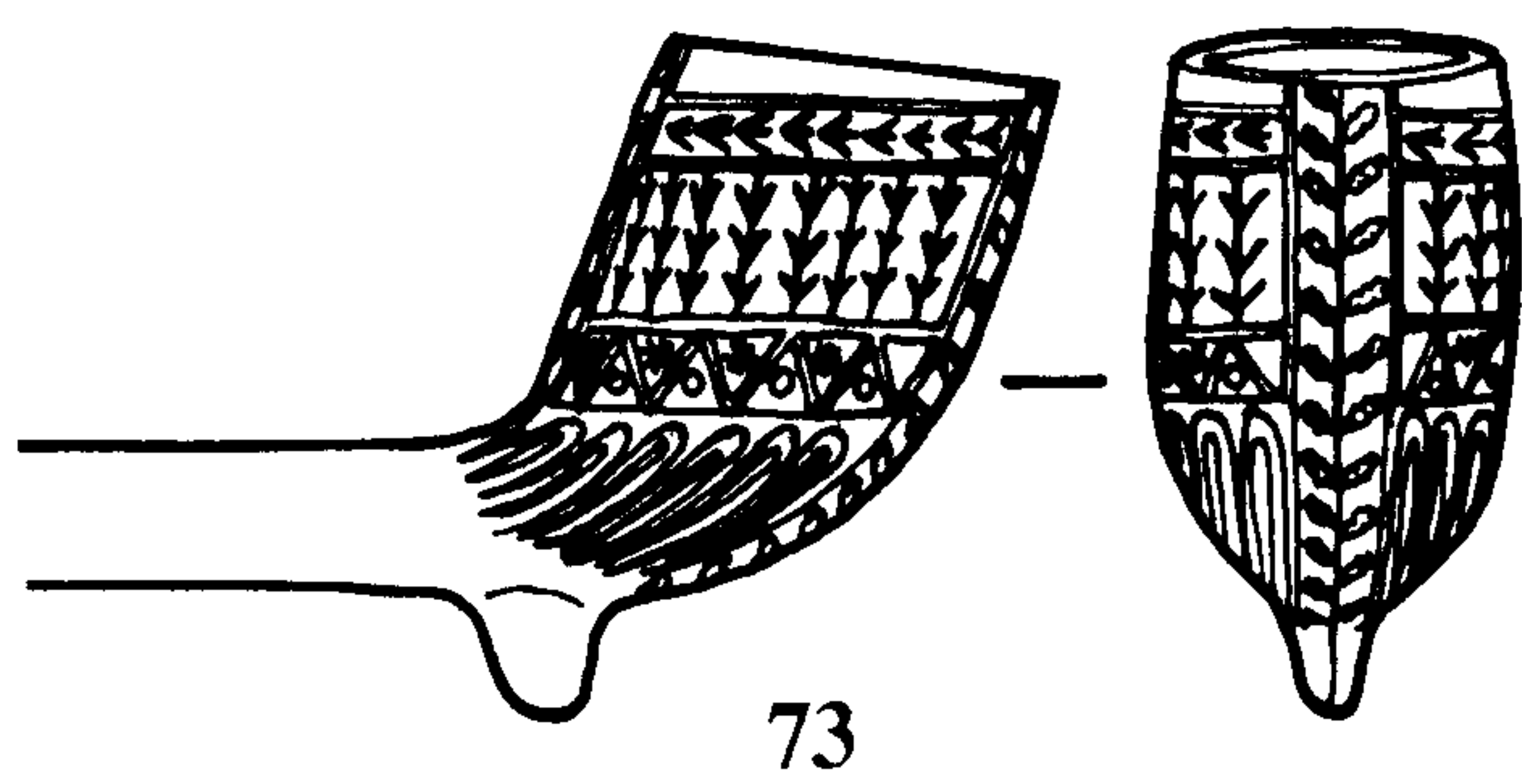
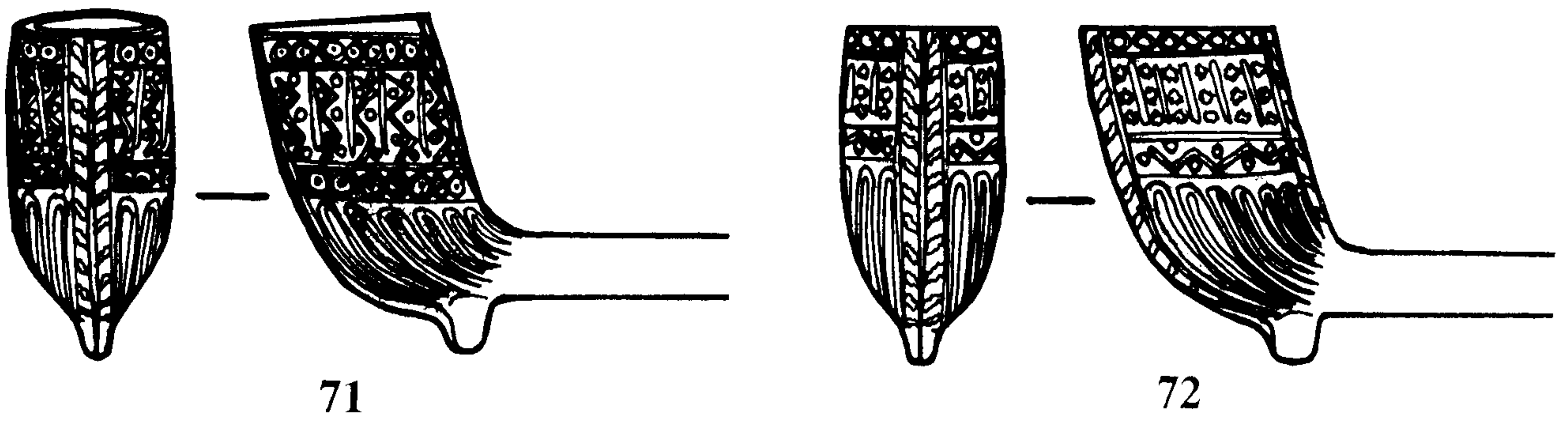
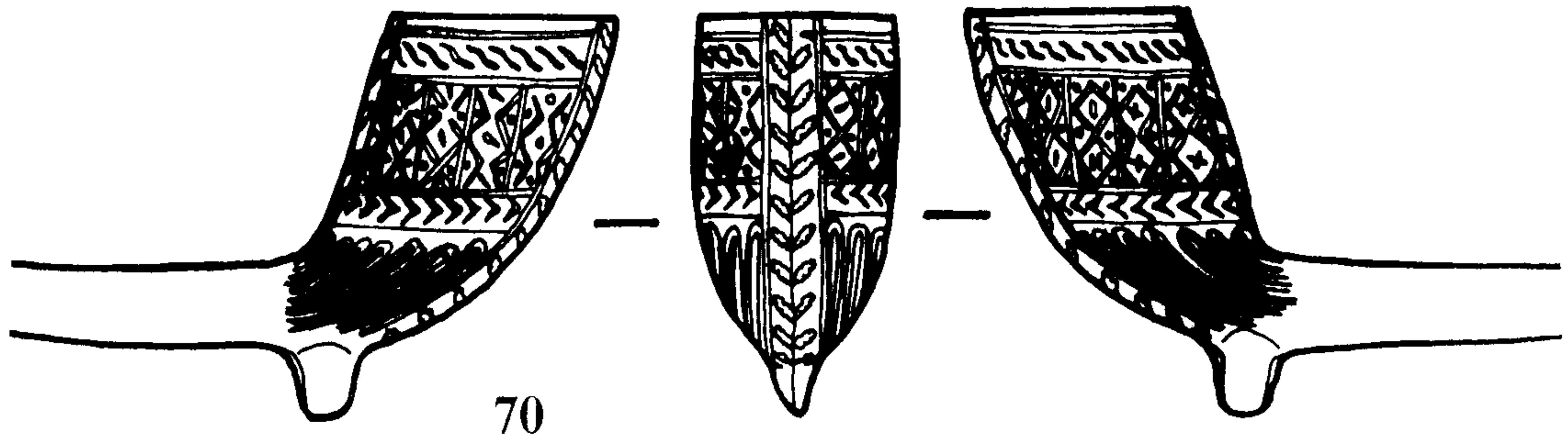
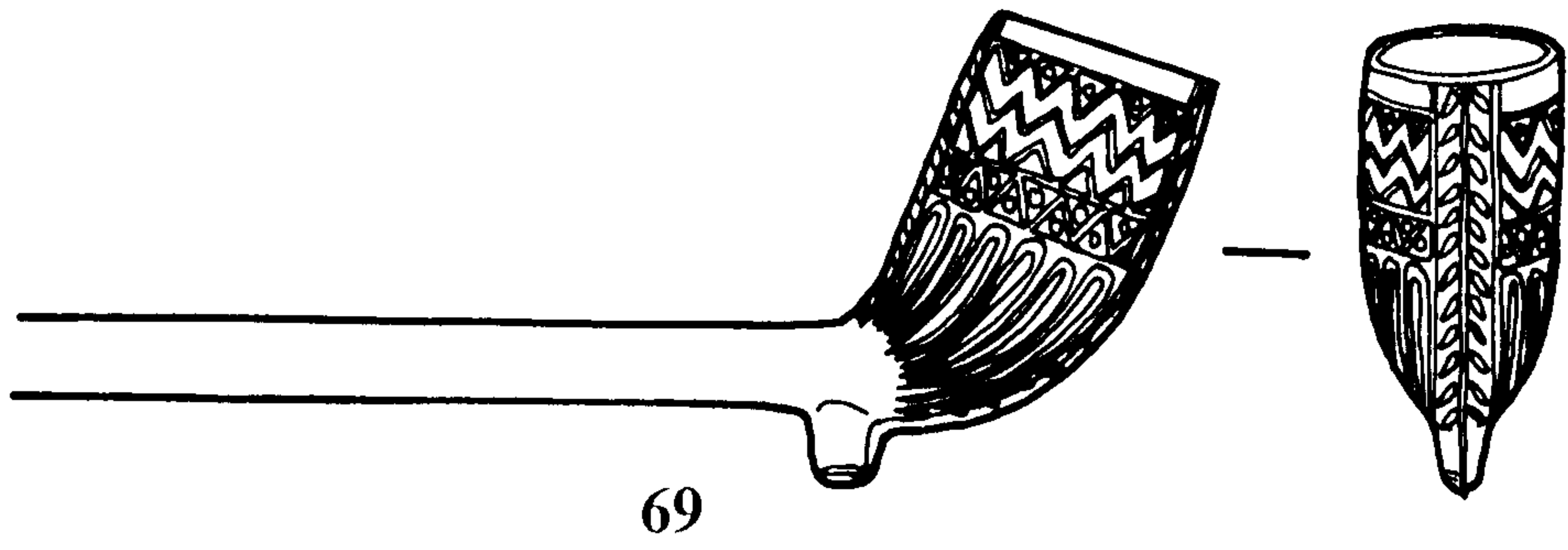


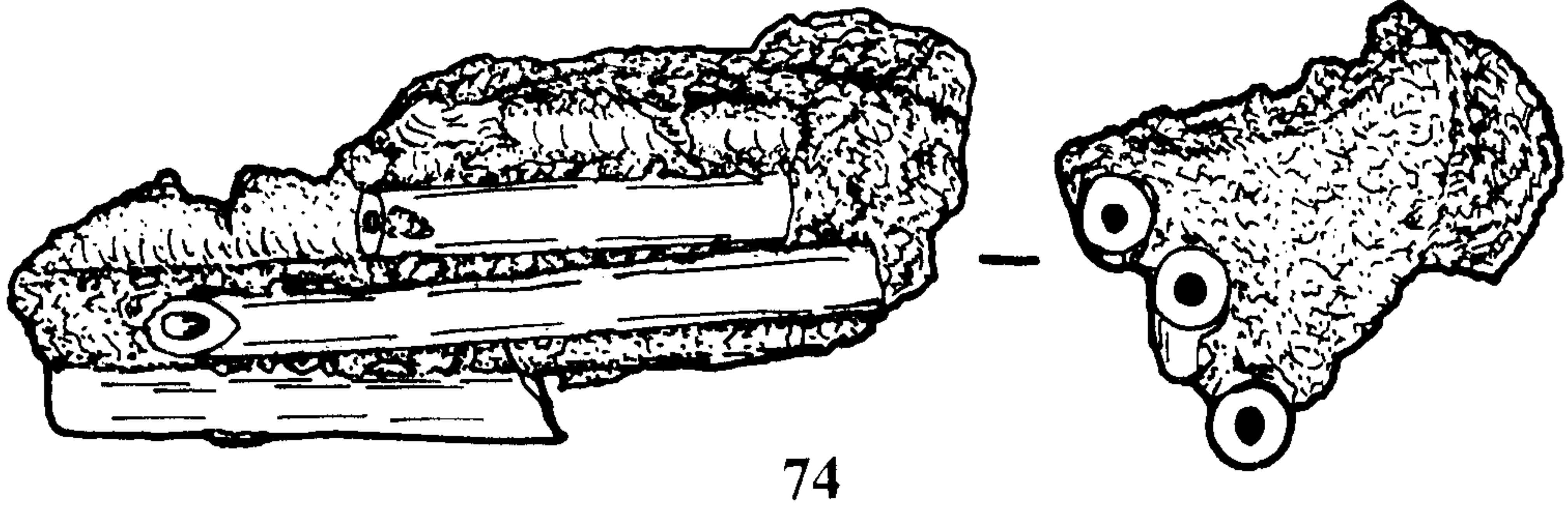
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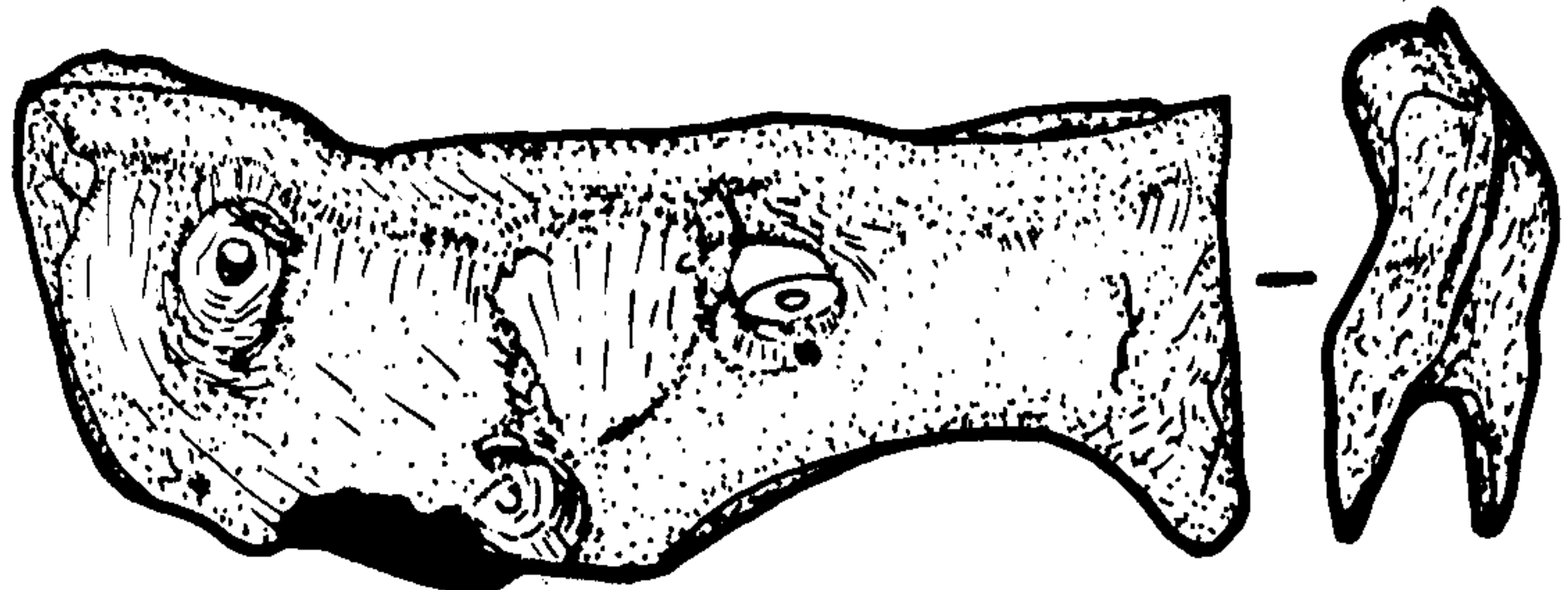
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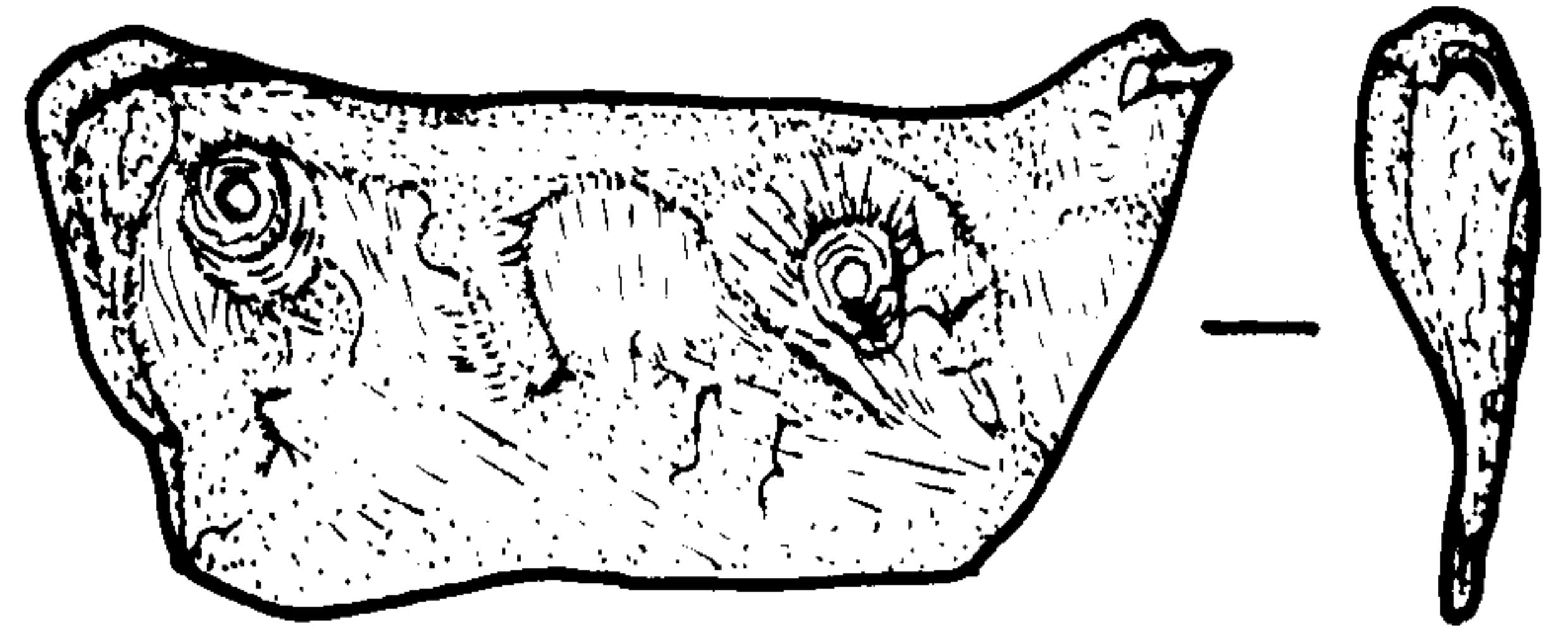




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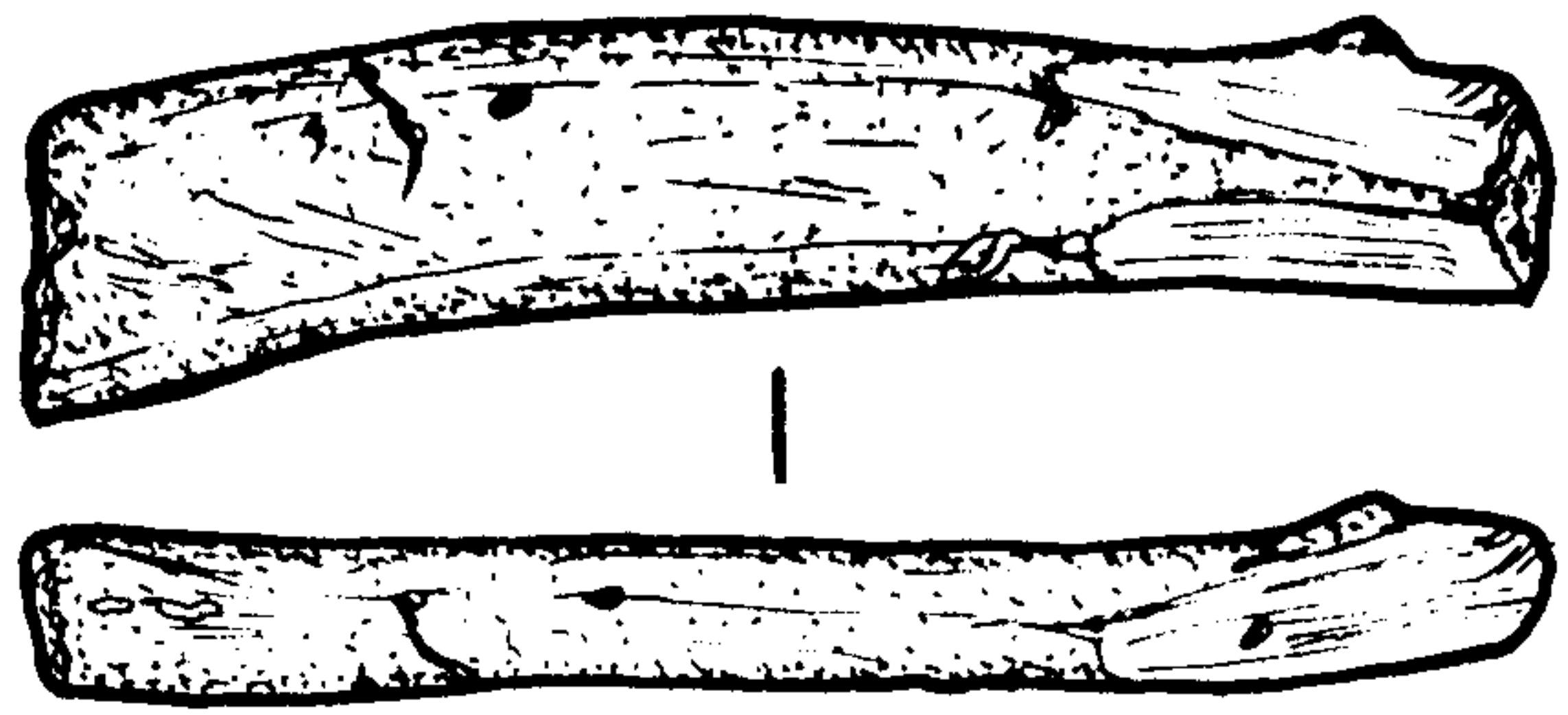
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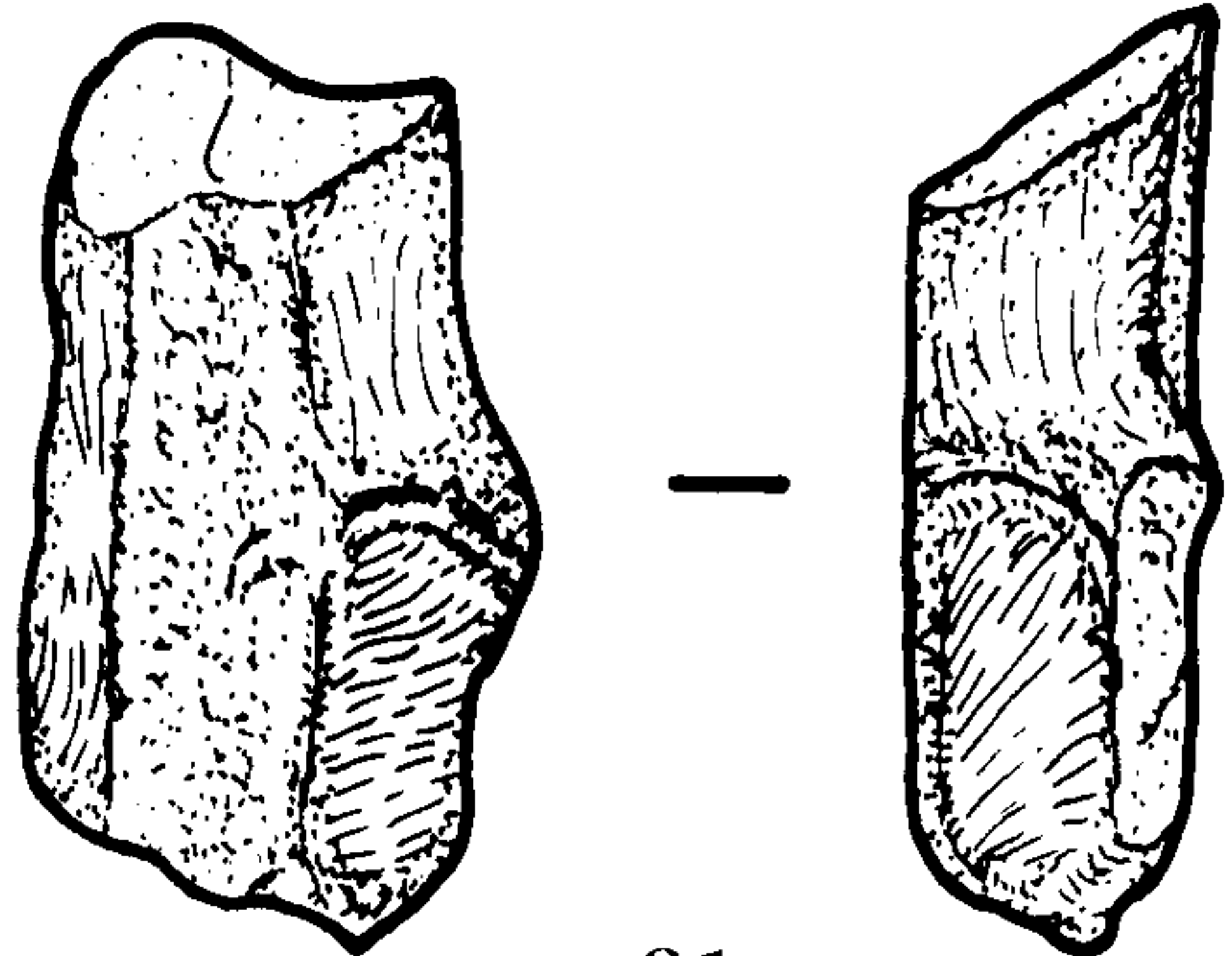
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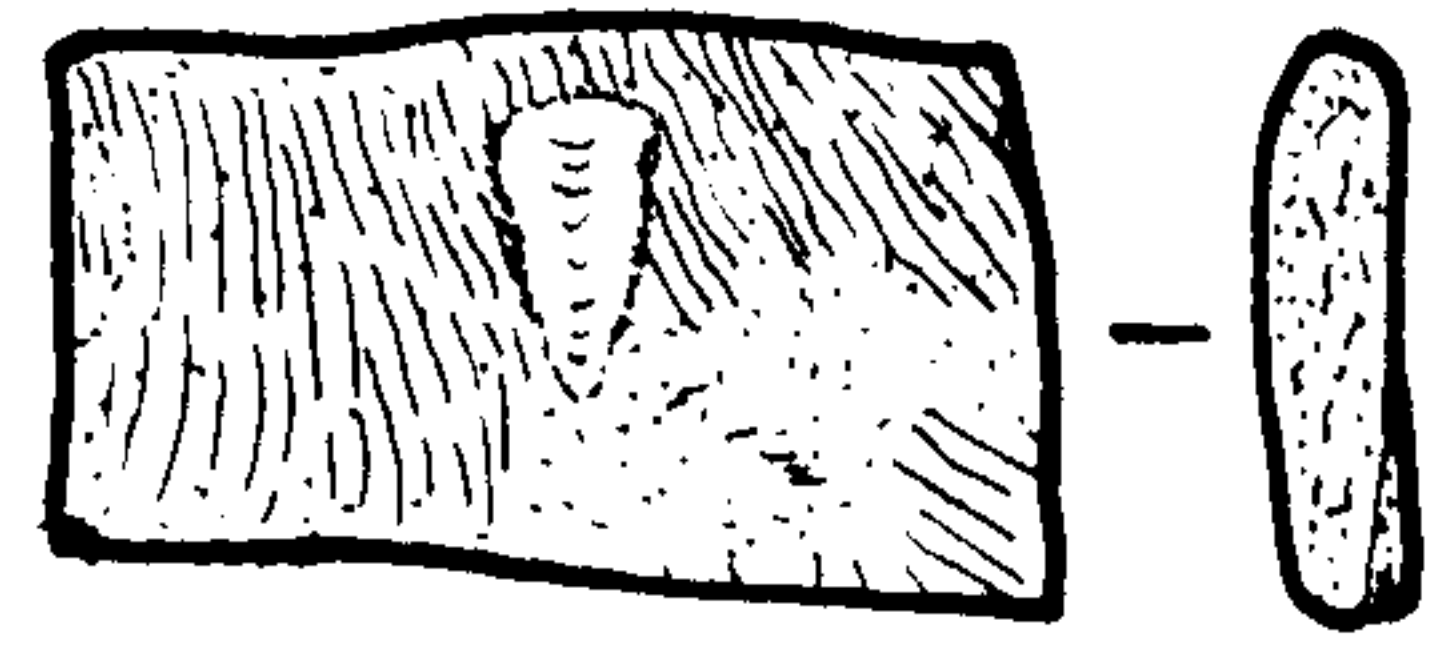
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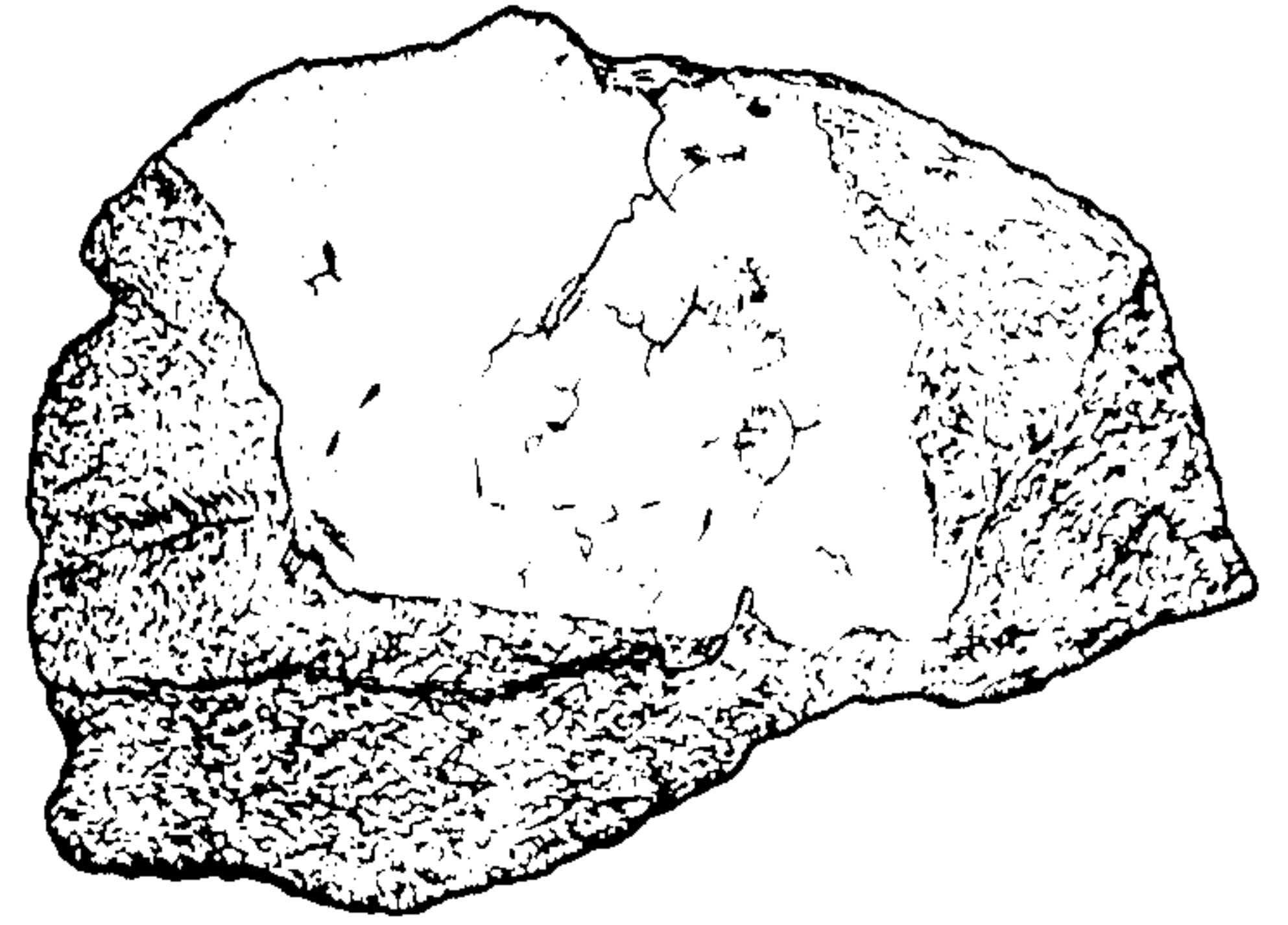
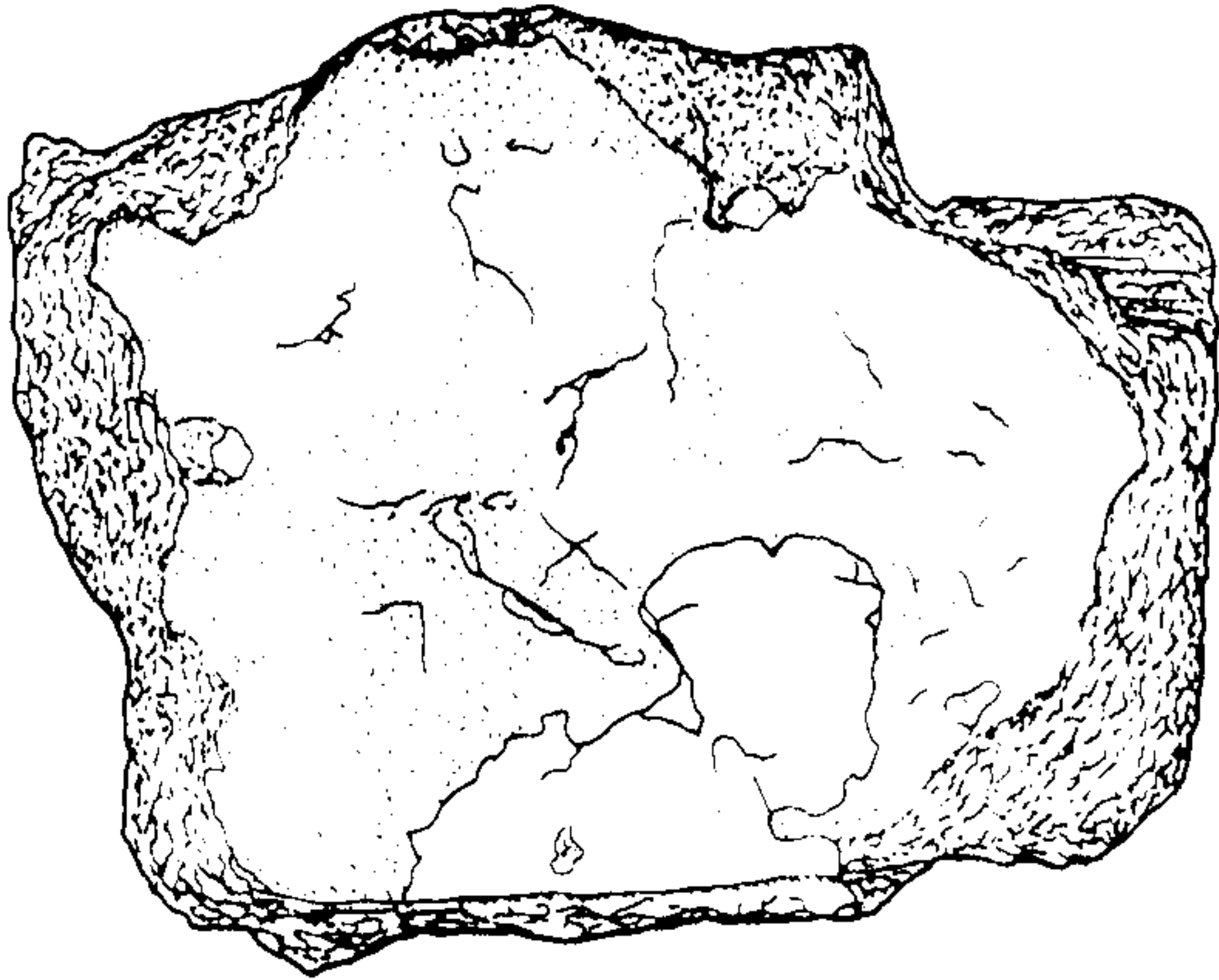
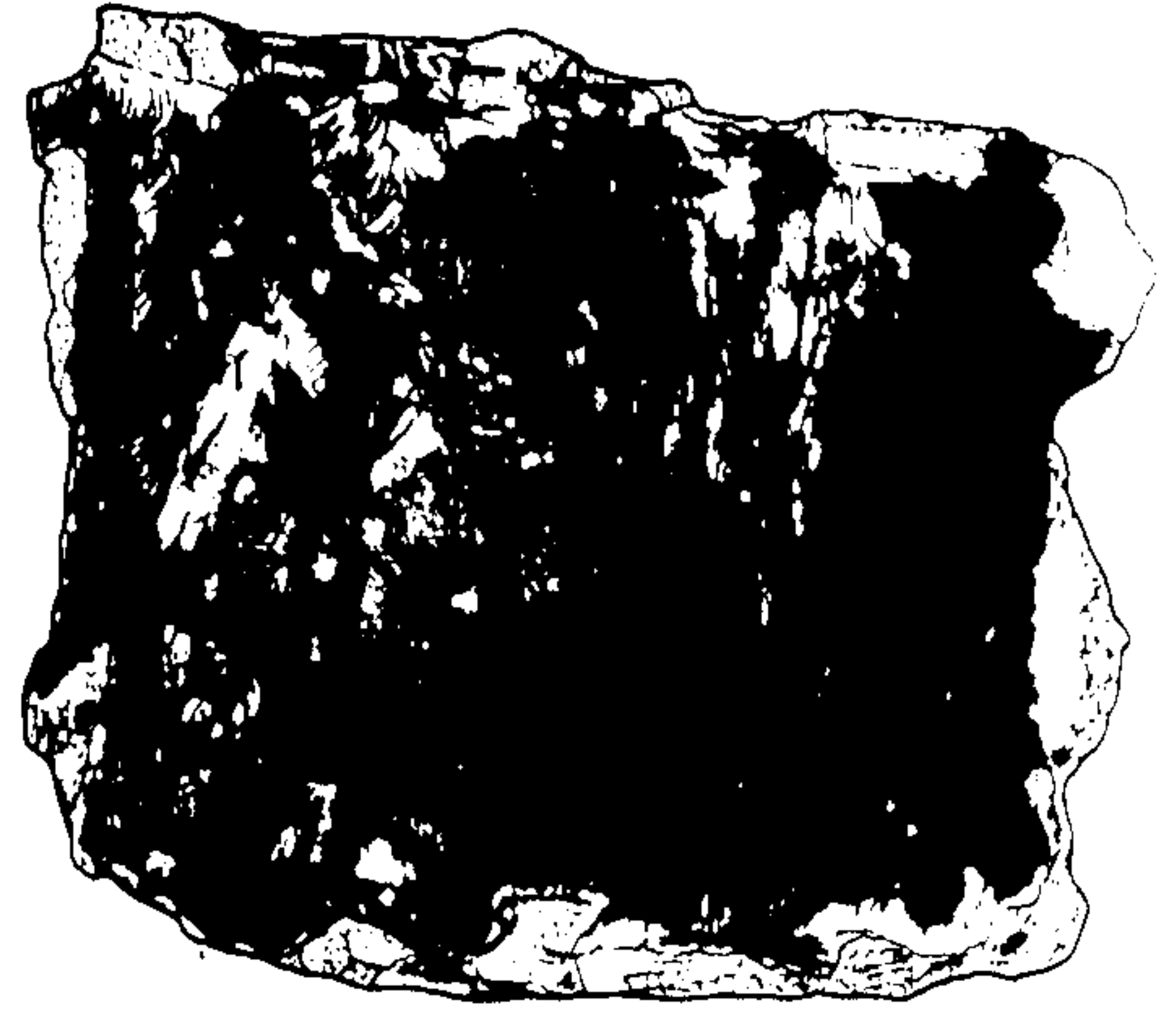
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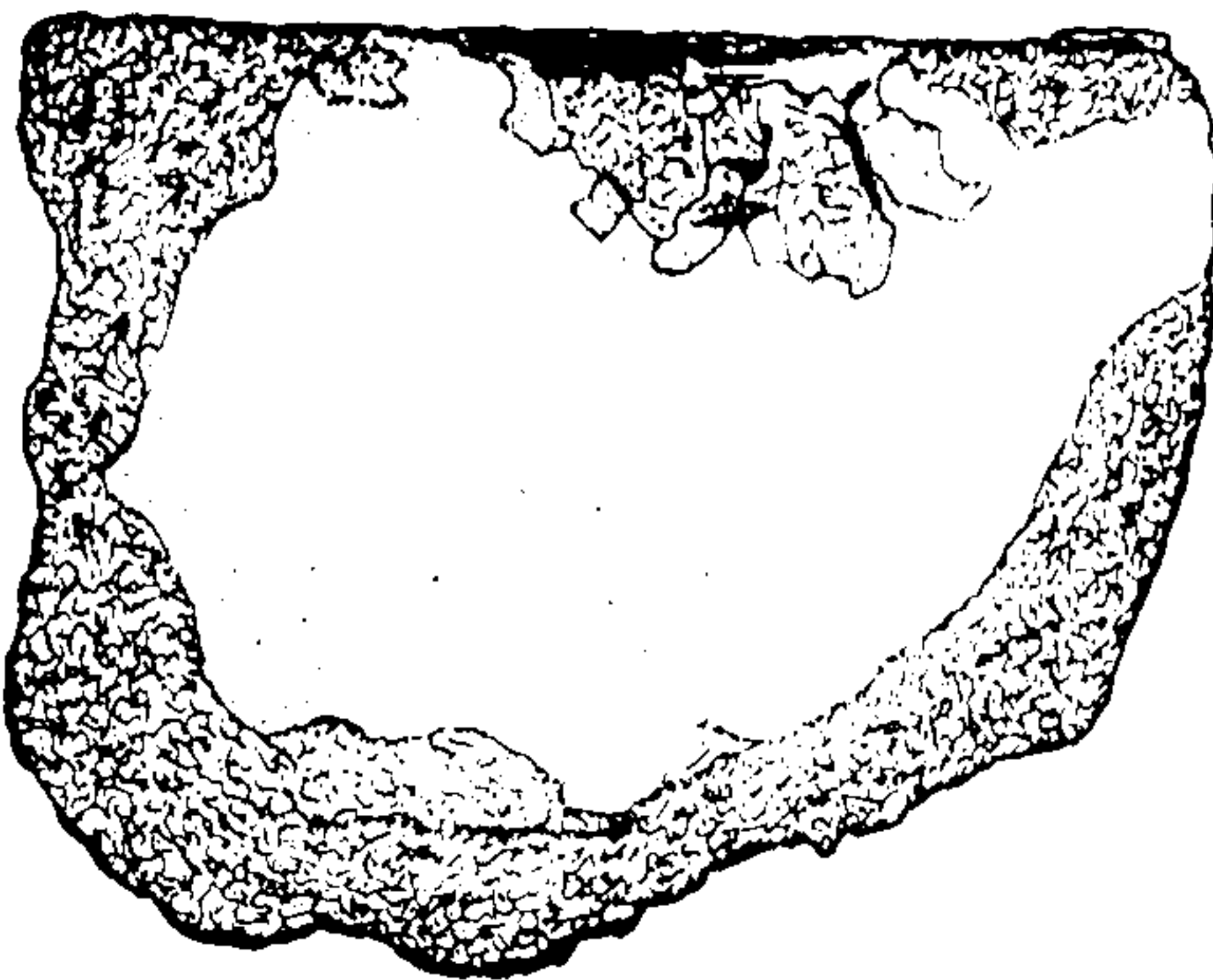
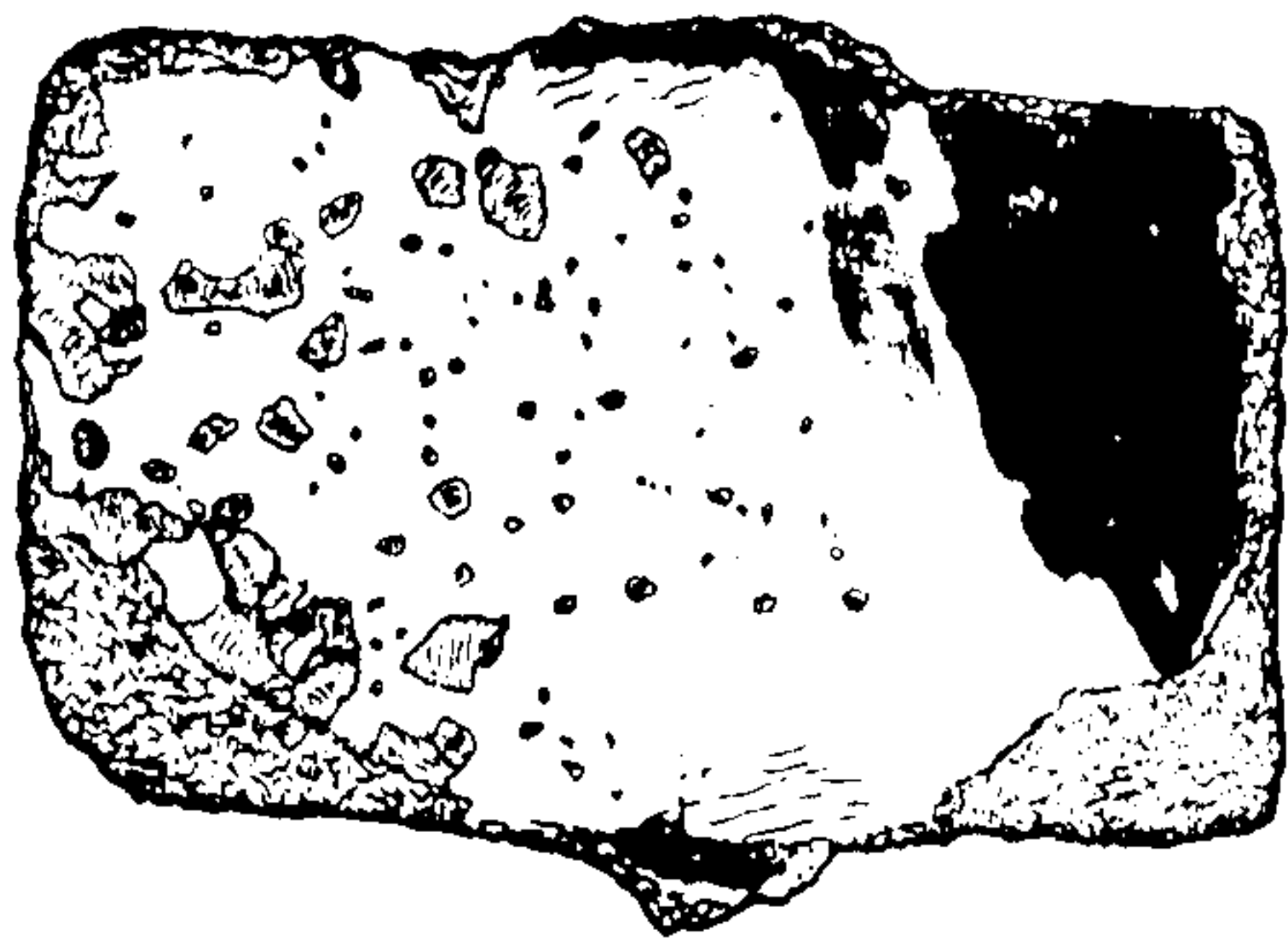


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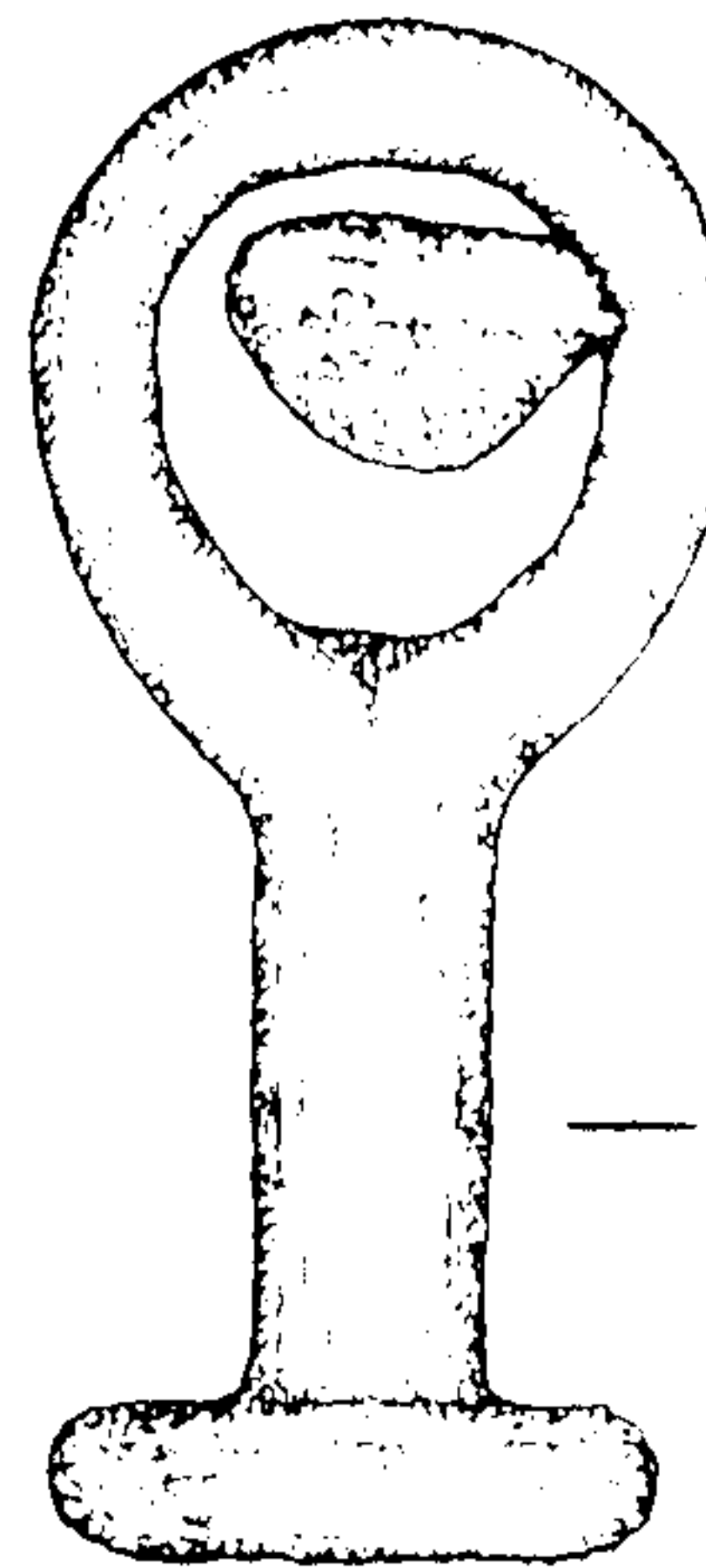
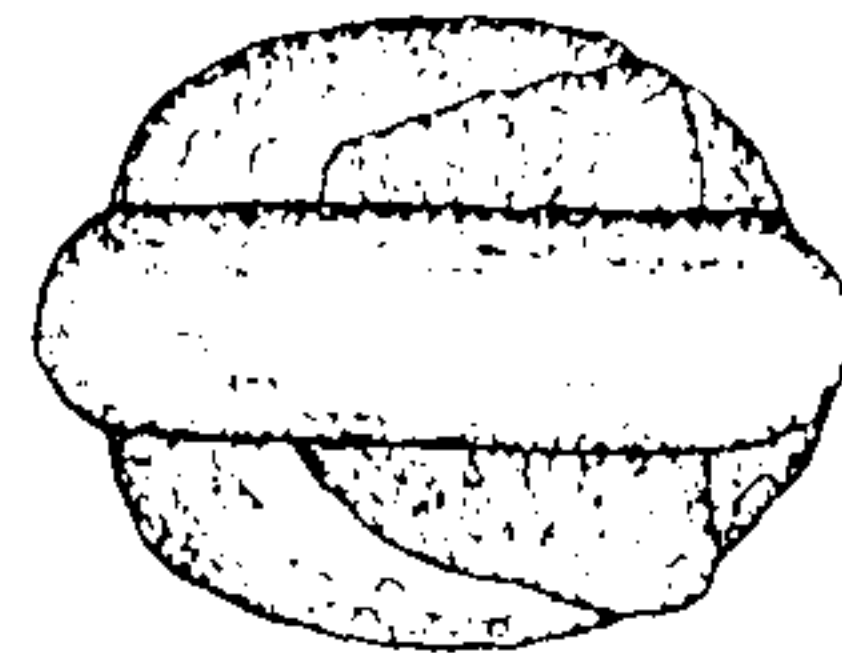


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Scale 1:2

Scale 1:2



VIEW ON A-A

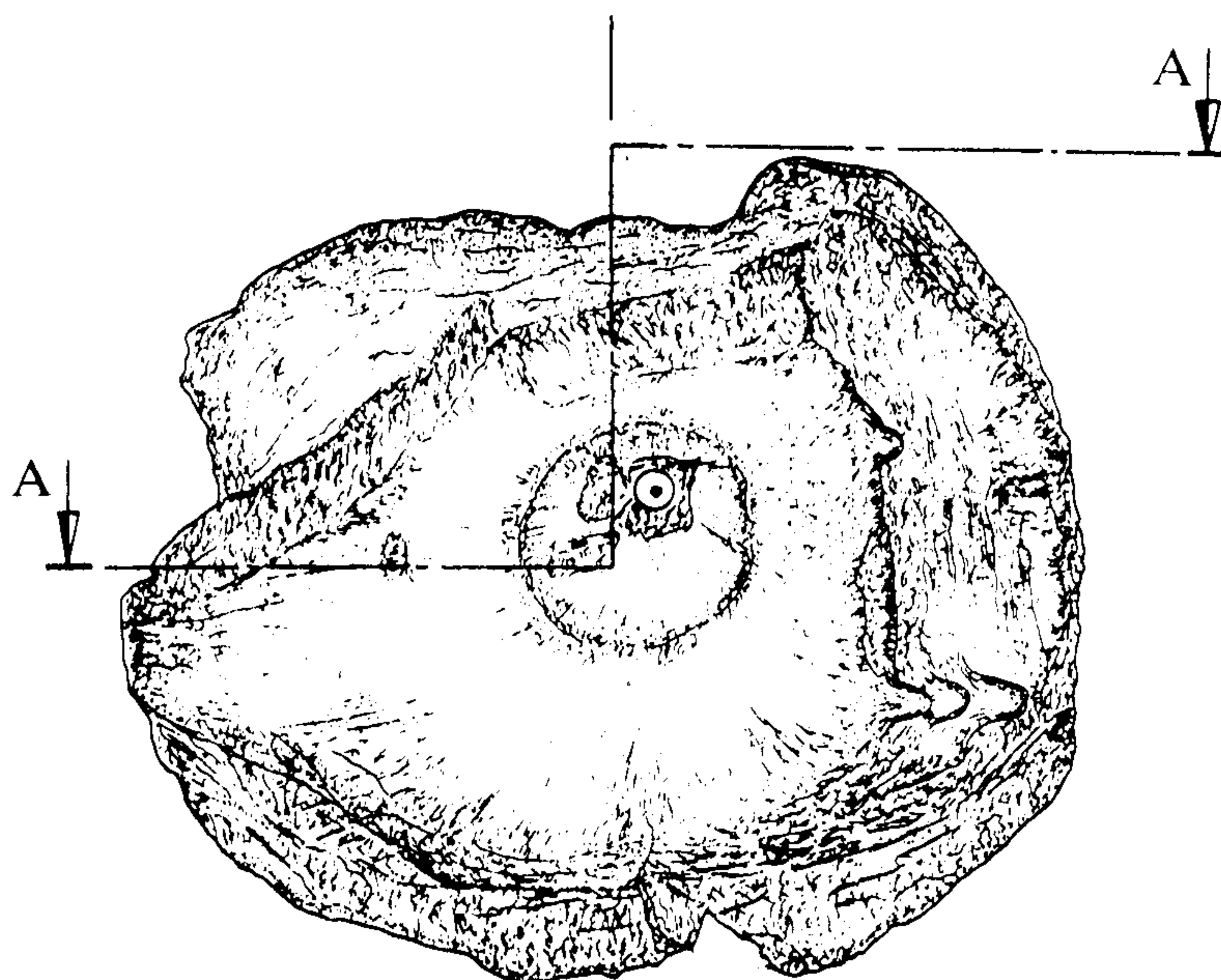


Figure 87

THE DATE OF THE PIPES

The bowl forms recovered and their style of decoration indicate that they were made in the first half of the nineteenth century. It is possible to be more precise about the date of the pipes by the use of documentary evidence and by comparing the pipes with those found in an archaeological context in North America. The kiln waste dump is not on the site of a known pipe factory so the material must have been brought from a pipe factory or factories which were operating in the locality.

The pipes bear the initials TD, ER, SR and IE.

The initials TD do not assist in the dating of the pipes as they commonly occur on pipes made by a number of Bristol manufacturers during the nineteenth century (Jackson 1984, figs. 4-7; Price et al 1984, figs. 143-145; Beckey & Jackson 1986, fig. 29) and by other makers throughout Britain. Although not attributable to a particular maker the initials may indicate the quality of the pipes. The initials ER cannot be attributed to any known nineteenth century Bristol maker.

The initials SR and IE are more helpful as they may refer to the Bristol pipemakers Samuel Richards and Joseph Edwards who are already well documented (Price & Jackson 1979).

Samuel Richards

There were three Bristol pipemakers with the name Samuel Richards - grandfather, father and son. Samuel Richards I was apprenticed as a pipemaker in 1740 and obtained his freedom in 1747. It is possible that he was still alive in the early nineteenth century although by that time he would have been over 64 years old. Samuel Richards II obtained his freedom as a pipemaker in 1774 and in the 1780s he was working in St. Thomas Street, St. Thomas parish, which was located some 400 metres from the kiln dump. Samuel Richards III was free as a pipemaker in 1812. It seems likely that Samuel Richards II and III (father and son) were working together in St. Thomas Street during the early 19th century, the address being variously described as 31 or 34 St. Thomas Street. In August 1799 they joined with Anna Viner (Jackson 1988), John Cary and Joseph Edwards in advertising their pipes for sale. The advertisement has already been reproduced in full elsewhere (Jackson & Price 1974, 84) but refers to pipes for different markets: *Long Tobacco Pipes ... Short Tobacco Pipes suitable for the different West-India Markets ... Short Tobacco pipes for the Different American Markets ... Short Tobacco Pipes suitable for the Irish and Spanish Markets ... Tobacco Pipes made exactly to Patterns for Africa or any other Market.*

Samuel Richards II and III do not appear in the Bristol trade directories after 1817 and Samuel Richards III was living in Swansea in South Wales c1820 when his son Henry was born (Evans 1981, 56). It was presumably the same Samuel Richards who was working in Swansea in 1830.

Joseph Edwards

There were two Bristol pipemakers with the name Joseph Edwards - father and son. Joseph Edwards I was free in 1747 and Joseph Edwards II was free in 1771. By 1775 they were working together as 'Joseph Edwards & Son' at 70 Temple Street. Joseph Edwards I was probably dead by 1794 when his son was working alone in Temple Street. The Temple Rate Books show that Joseph Edwards II had three properties in Temple Street from at least 1800, although this had been reduced to two

properties by 1807. An 1823 survey shows that Joseph Edwards II had properties in Temple Street on the east side just north of Weavers Arms Court. They comprised two dwelling houses used as warehouses, and a '*burning house for pipes in the Garden*'. These properties were located about 150 metres from the kiln dump. Joseph Edwards II was dead by 15 March 1823 when the pipemakers Richard Frank Ring and Company bought part of his estate, including pipes and moulds.

Pipe Exports

The Bristol export books have now been studied for the periods 1590 to 1700 and 1773 to 1900, and the references to pipe and pipe clay exports extracted. The exports of the Ring family have already been published in detail (Price et al 1984, 270-278) and it is hoped that a complete list of Bristol pipe exports will be published when all the Port Books have been examined.

Pipes were certainly being exported from Bristol under the names of Samuel Richards and Joseph Edwards although pipes shipped under a pipemaker's own name probably represented only a fraction of their exports, which were mainly shipped under the names of the merchants who assembled a cargo.

Samuel Richards was exporting pipes under his own name between 1790 and 1815 and Joseph Edwards between 1778 and 1817. These were mainly to the ports of Cork, Waterford, Limerick, Galway, Newry, Coleraine, Dublin and Belfast in Ireland. However, they were sending occasional shipments elsewhere. In 1815 Samuel Richards exported 70 boxes of pipes to Boston in North America. In 1803 and 1804 Joseph Edwards exported pipes to Jamaica, in 1811 and 1812 to Nevis and in 1817 to Lisbon.

Both these pipemakers were apparently exporting on a relatively small scale compared with other contemporary Bristol manufacturers, such as the Ring family.

Pipes from the Bellevue Trading Post, Nebraska

Pipes which are very similar in form and decoration to some of those from the dump (figs. 34, 36, 52 and 54) have been excavated at The Bellevue Trading Post, Nebraska, USA (Pfeiffer 1982). The Bellevue Trading Post was founded by the Missouri Fur Company in 1822 or 1823 and was abandoned in 1839 or 1840 when a new post was built three-quarters of a mile to the south. It seems likely that these pipes are Bristol products and probably produced towards the very end of Richard's and Edwards' period of production.

Discussion

This kiln dump contains pipes from the moulds of at least two firms of Bristol pipemakers although the reason for both manufacturers being represented in the dump is unknown. Archaeological work carried out elsewhere in Bristol has revealed that waste from pipe and pottery kilns was used as hard-core to fill-in and level-up sites prior to building work or road construction (Price et al 1984). Thus any Bristol pipemaker might have used the same dumping ground as his contemporaries. However, there is no evidence from the material excavated in Temple Way of there being distinct cart or barrow loads of wasters brought from the separate factories - the pipes marked SR and JE were mixed throughout the deposit. It seems likely that the waste found in Temple Way was collected and dumped by mutual arrangement with the firms of Richards and Edwards.

Unfortunately there was no other material from the dump, such as pottery, which

might help to date its deposition. Nor do pipes of the designs found occur in other stratified or well-dated archaeological deposits in Bristol examined by the authors. This may be because they were specifically produced for export only. Pottery from the layer above, and sealing, the dump consists of sherds of nineteenth century creamware, stoneware and transfer printed earthenware, although a more precise date cannot be given.

The Poor Rate Books for Temple parish show that tenements were being built in the general area of the kiln dump in the second decade of the nineteenth century. Ash Lodge to the north of the dump existed by 1817 while Gough's tenements to the north-east are referred to in 1820. It seems likely that the kiln dump had been sealed beneath buildings by about 1820 and Ashmead's map of Bristol (southern section) shows a warehouse on the site in 1828.

The form of the pipe bowls and their style of decoration is characteristic of pipes made in Bristol in the first half of the nineteenth century. Therefore the initials SR almost certainly refer to the pipemakers Samuel Richards II or III, while the initials JE most probably refer to Joseph Edwards II. It seems that both Samuel Richards had ceased pipemaking in Bristol by 1817 and Joseph Edwards II was dead by 1823. Thus the latest date for the manufacturing of these pipes, when Samuel Richards and Joseph Edwards were both known to have been making pipes in the city, is 1817.

Another possibility which should be considered is that Joseph Edwards II was using moulds previously owned by the Richards family after they left Bristol or that a separate pipemaker altogether was using moulds previously owned by the Richards and Edwards families. It is known that Ring purchased some moulds from Joseph Edwards which presumably may still have borne Edwards' mark. If that were the case then it would affect the suggested terminal date of 1817 for the manufacture of the pipes.

2. PENNYWELL ROAD

During July and August 1986 work was carried out to level and consolidate ground adjoining the St. Nicholas of Tolentine Catholic Social Club in Pennywell Road, St. Philip and Jacob parish (NGR ST 60027360 - Fig. 88) to make a childrens' playground. The contractors uncovered a layer of clay pipe kiln waste at a depth of 0.75 metres below the modern ground surface. It was possible to carry out a small excavation which showed that the kiln waste covered an area of about 17 metres by at least 1 metre. The kiln waste had been deposited on dark brown soil, presumably the original ground surface, and it was sealed by a layer of orange clay containing pennant stones and lime mortar.

At the rear of the Social Club another area of waste, containing identical pipe bowls, was found. However, this waste had been mixed with other debris and appeared to have been redeposited from the main kiln dump at some date, possibly when the St. Nicholas Infants School was built in 1973.

THE FINDS

The deposit contained large quantities of broken pipe bowls and stems, kiln

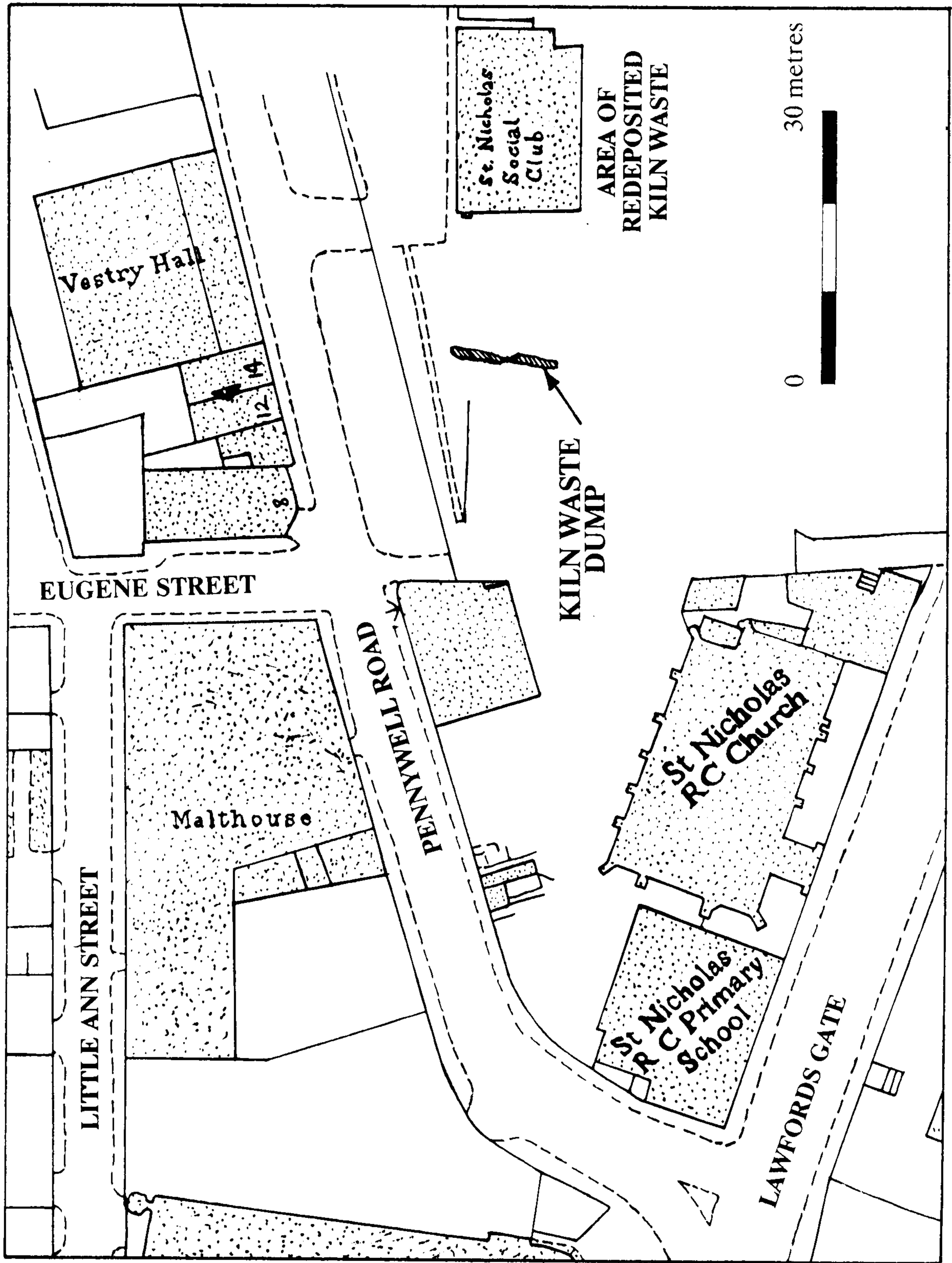


Fig. 88 Location of the Kiln Waste Dump in Pennywell Road.

furniture, unfired pipe clay, clinker and ash.

The Pipes

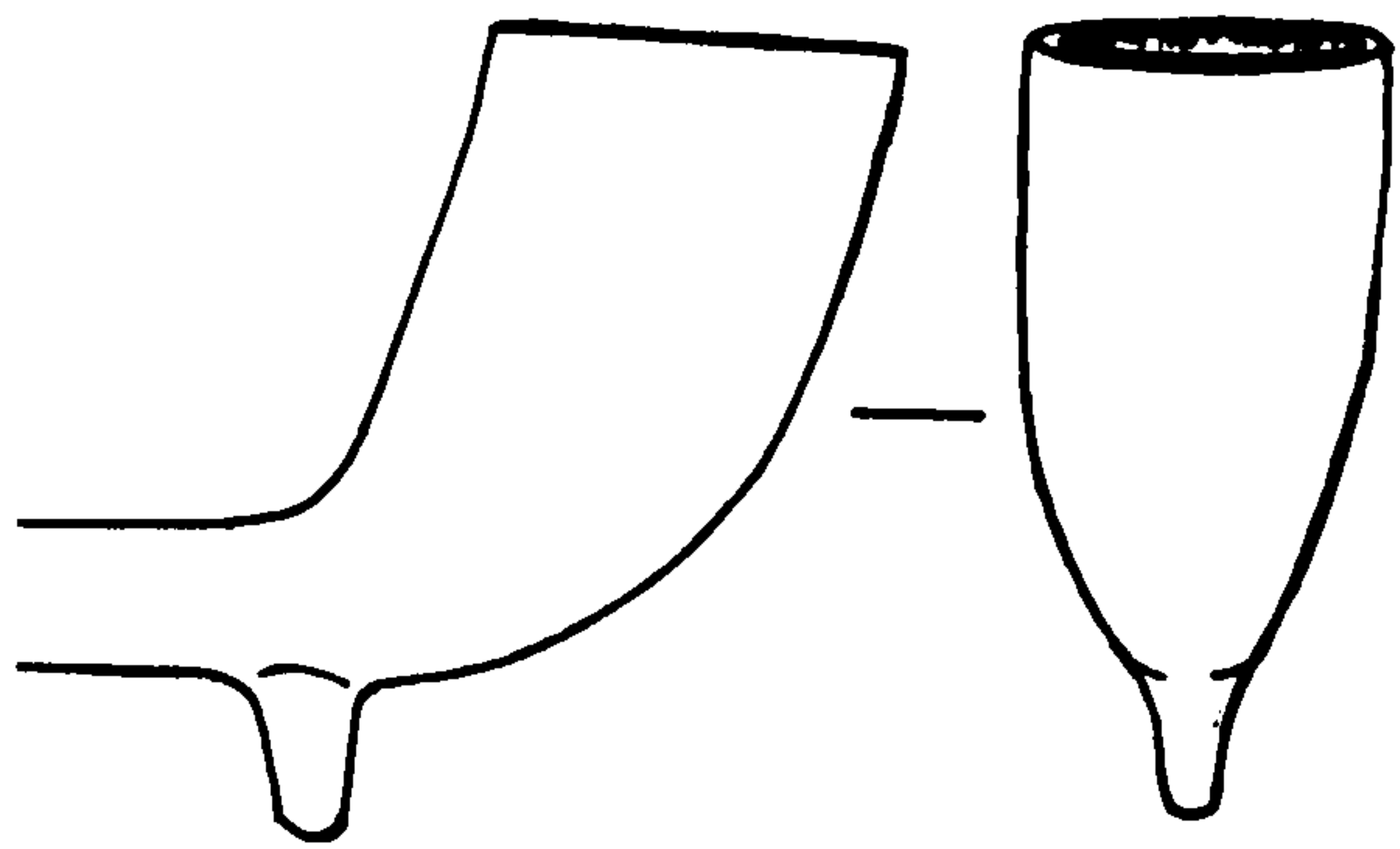
The pipes are generally of a very poor quality, the decoration being indistinct and blurred. There is often a considerable overlap between the two halves of the pipes showing that the moulds were ill-fitting. A total of 773 pipe bowls were recovered, consisting of 17 different bowl forms. The following list shows the proportions of the different types of pipe bowls recovered:

Fig.	No. of Examples	Fig.	No. of Examples	Fig.	No. of Examples	Fig.	No. of Examples
89	121	94	53	98	2	102	1
90	40	95	24	99	2	103	1
91	46	96	100	100	1	104	13
92	136	97	82	101	1	105	21
93	129					Total	773

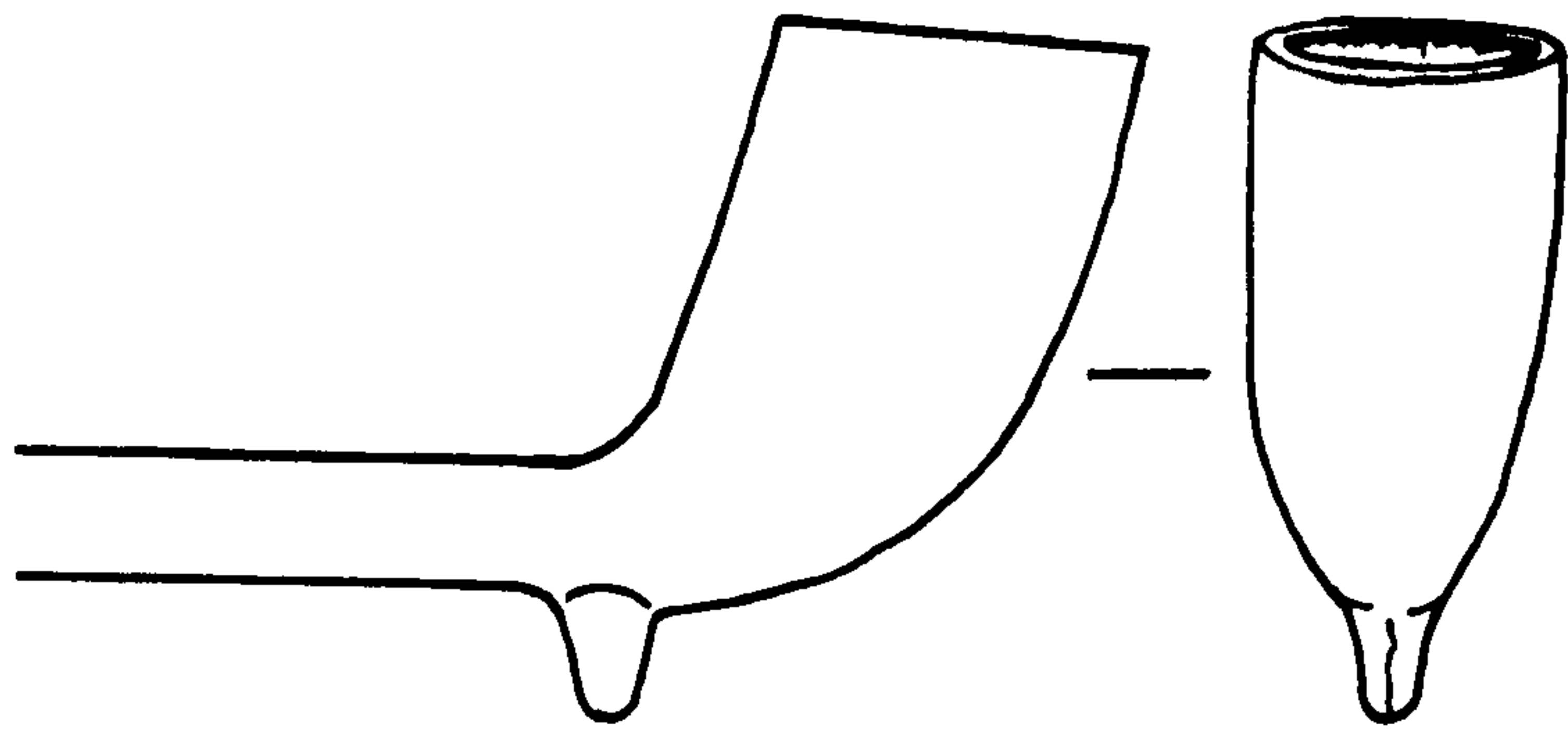
The pipes are illustrated full size and all decoration is in relief.

The Kiln Furniture

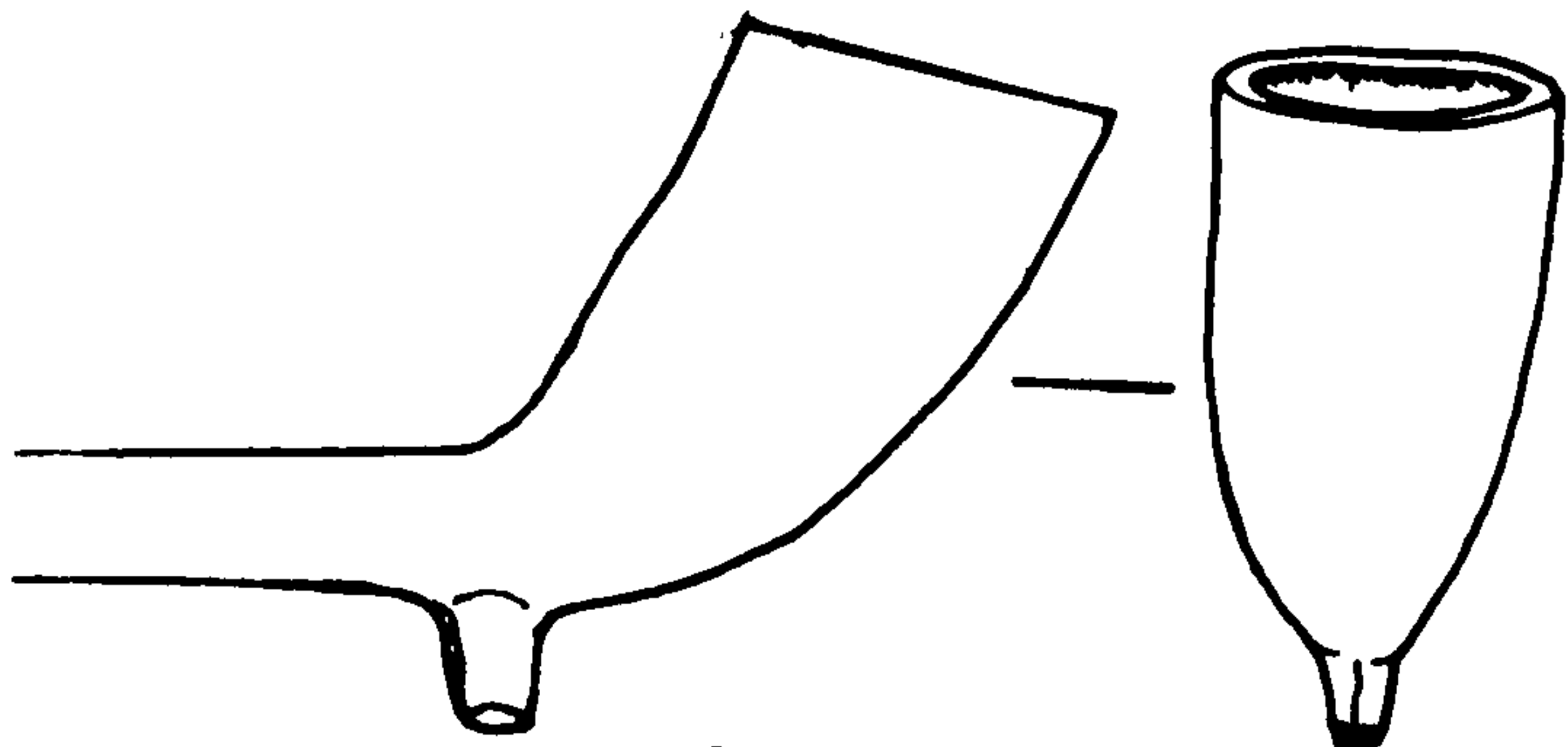
A number of pieces of kiln furniture were found in the dump. These mainly comprise pieces of roughly shaped pipe clay (Figs. 106-109), one of which (Fig. 109) has impressions left by pipe stems on its surface. There were a considerable number of thin pieces of pipe clay, some of which had the impression of a coarse woven material, such as hessian, on one surface (Fig. 110). Similar thin slivers of pipe clay with the impression left by a paper backing occur on many pipe kiln sites, mainly dating from the nineteenth century (Peacey 1990). We do not know how any of these pieces of kiln furniture had been used during the firing process. It seems likely that the thin pieces of pipe clay had originally formed larger sheets reinforced with sacking or other material. It is recorded that this technique had been used to construct parts of the kiln at the Offer pipe factory in Bristol (Jackson 1990).



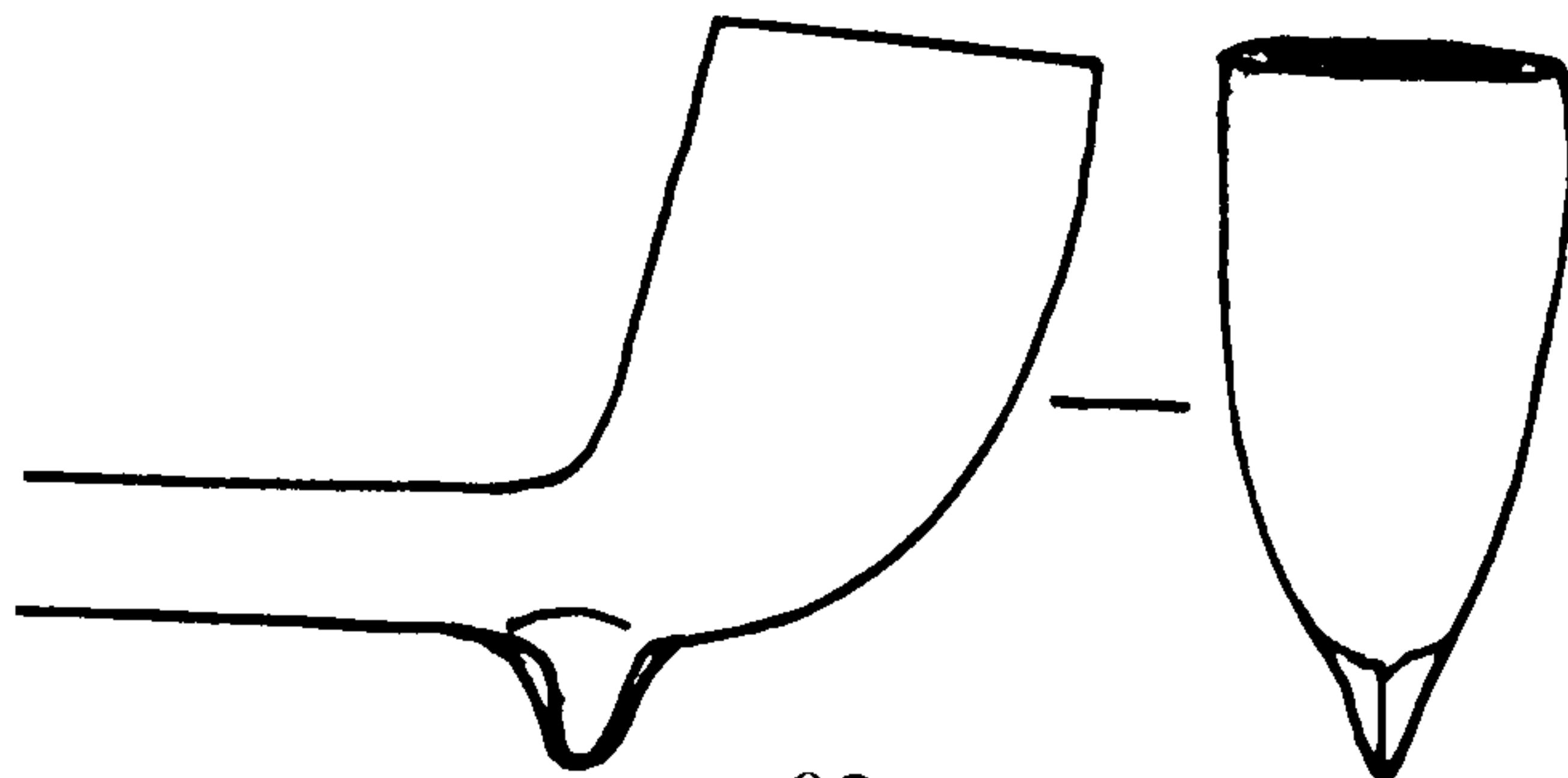
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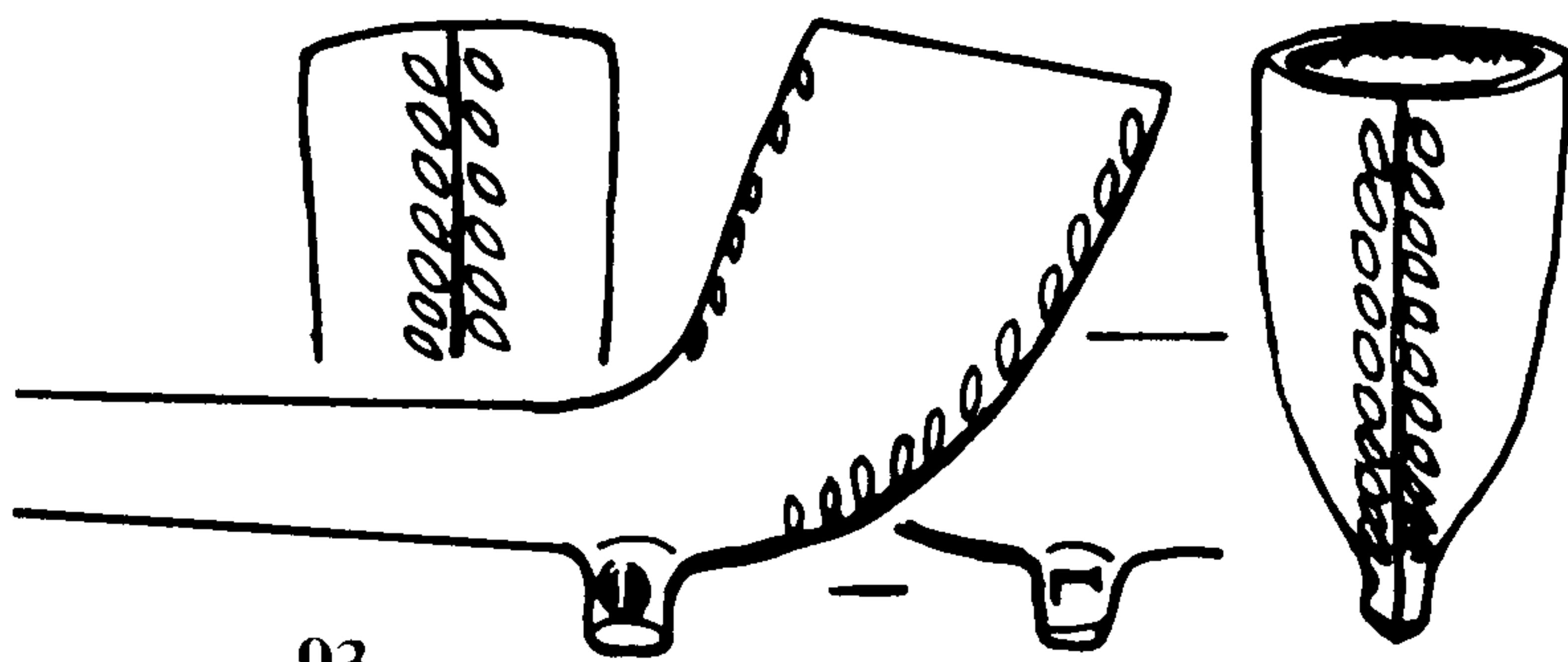
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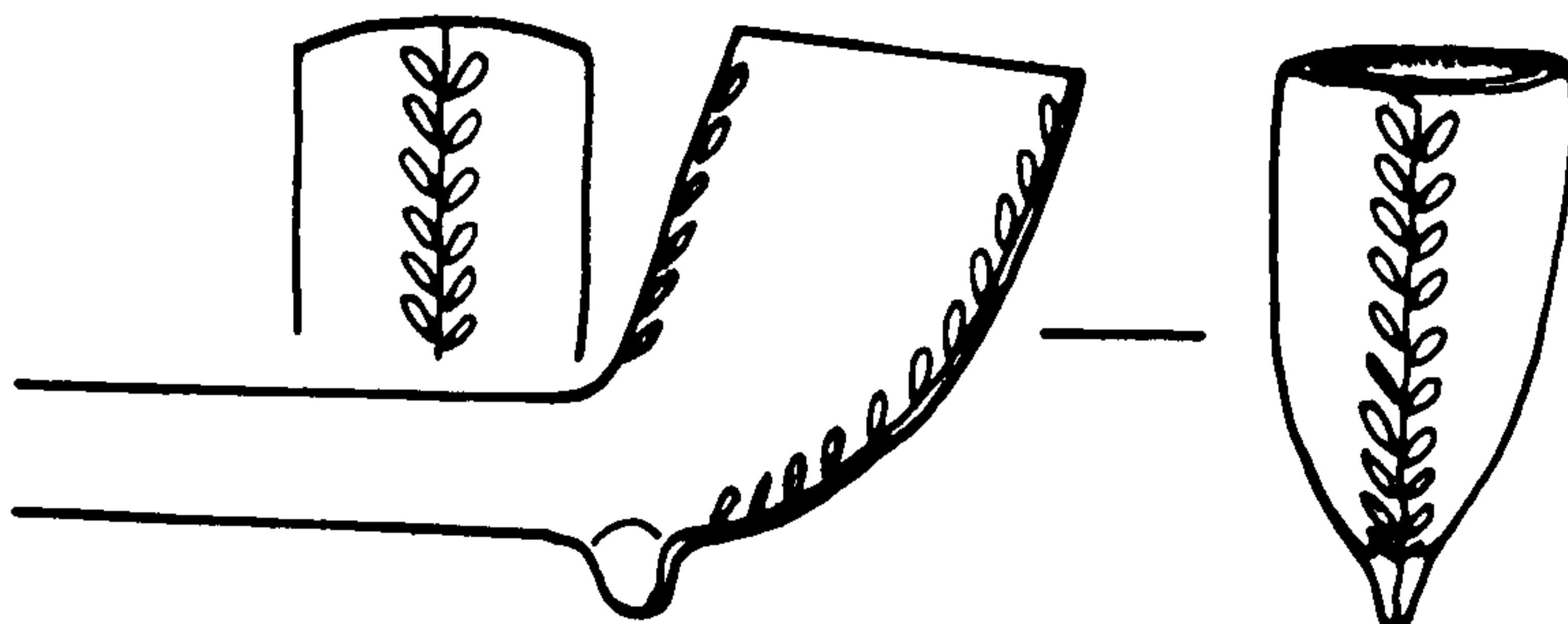
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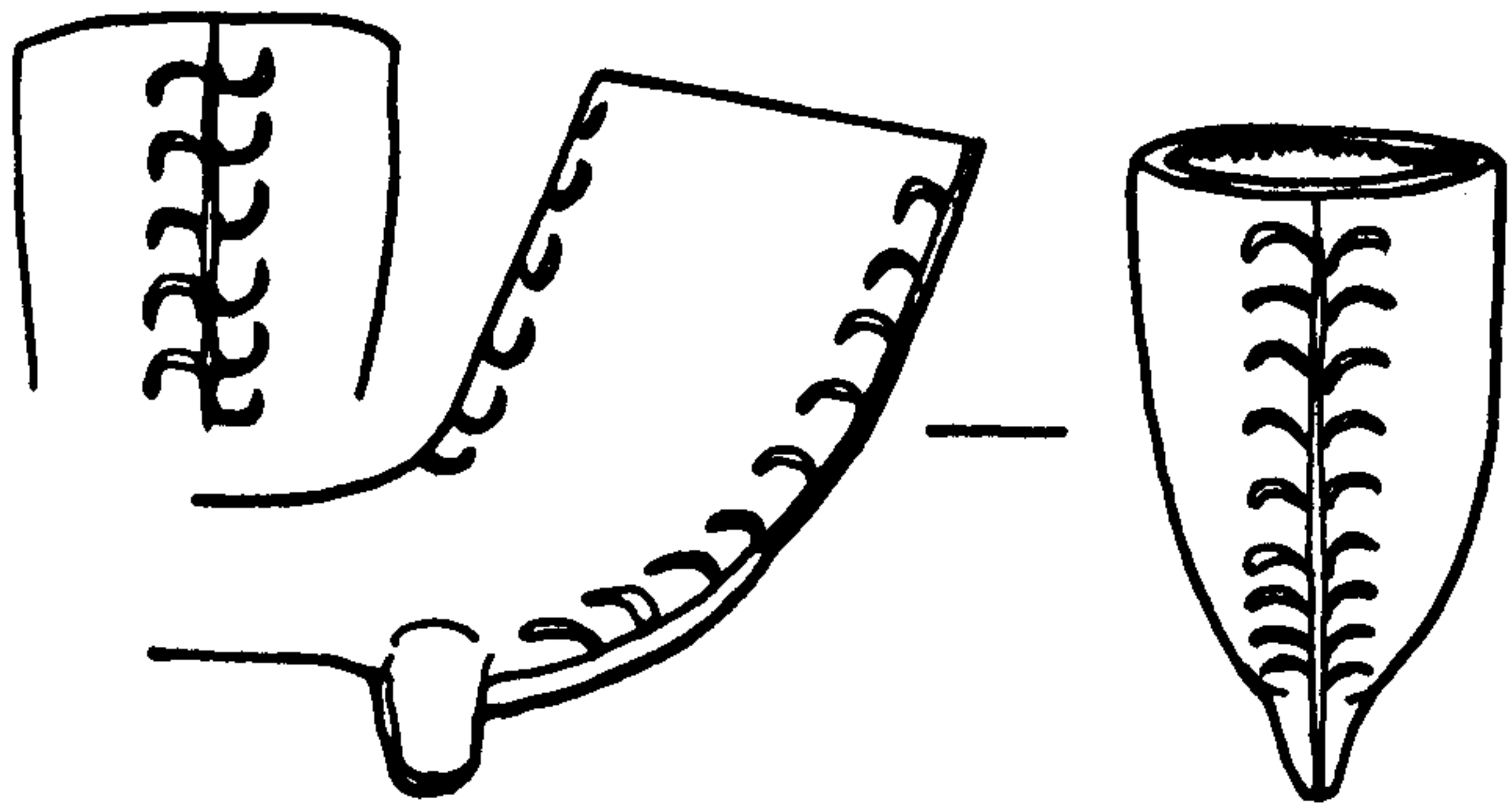
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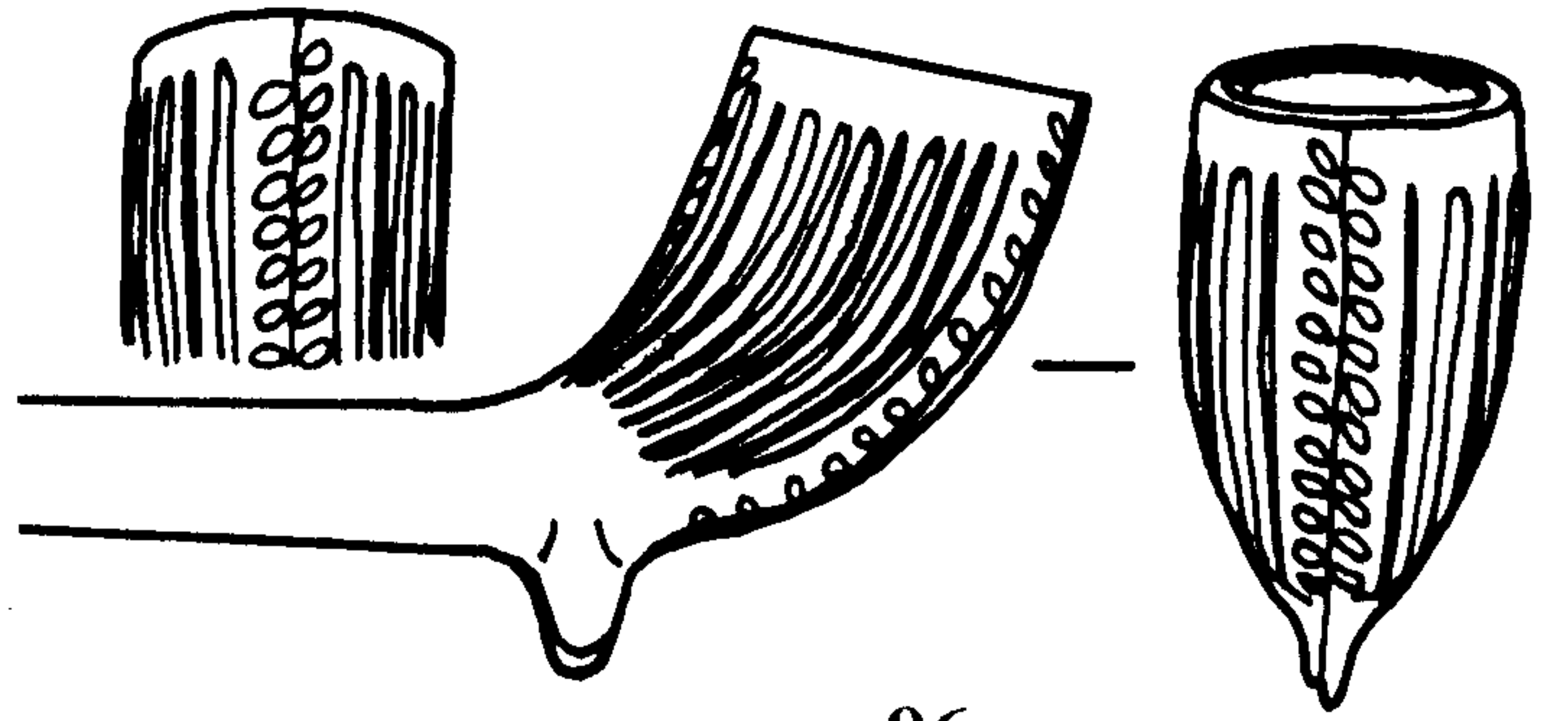
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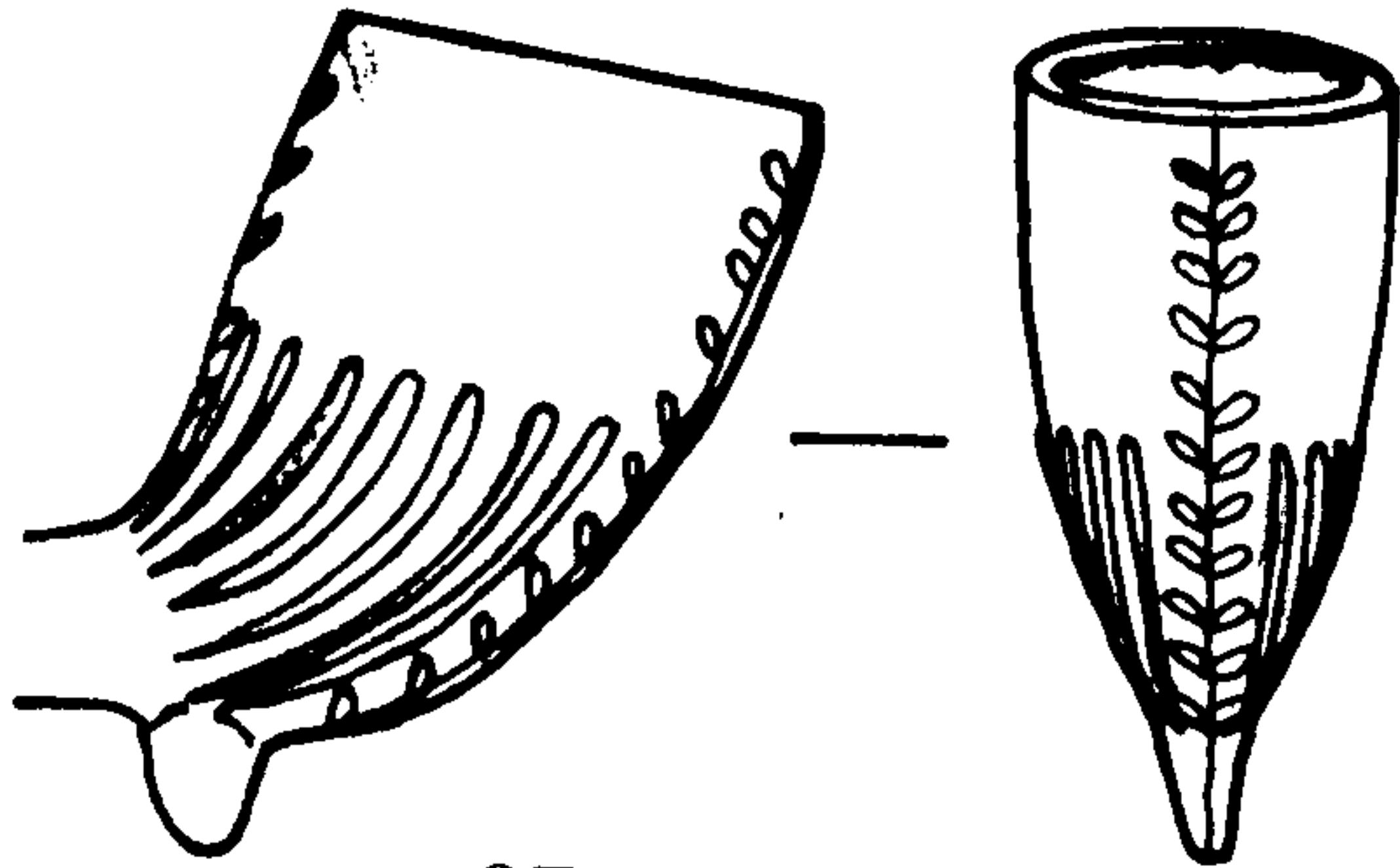
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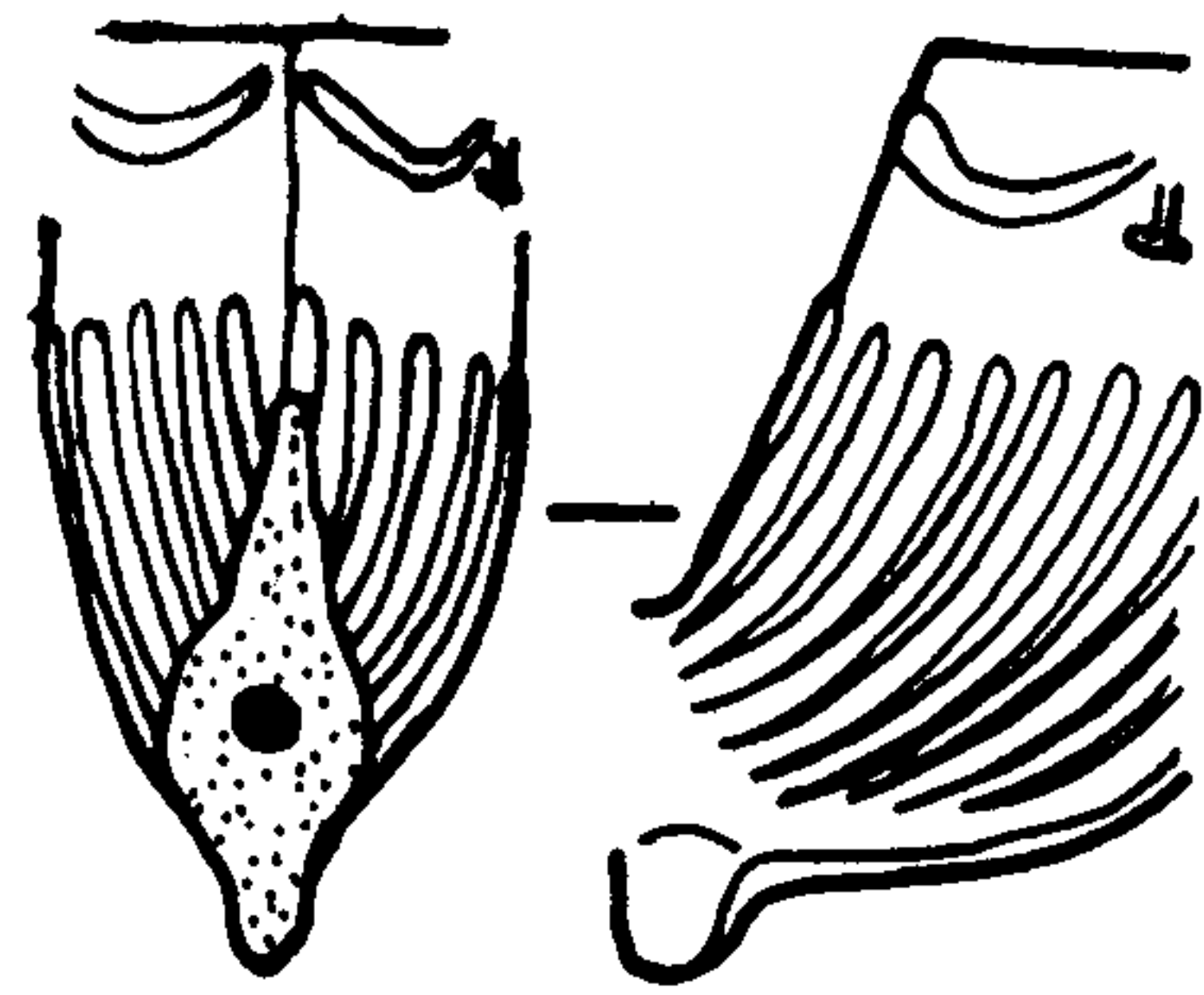
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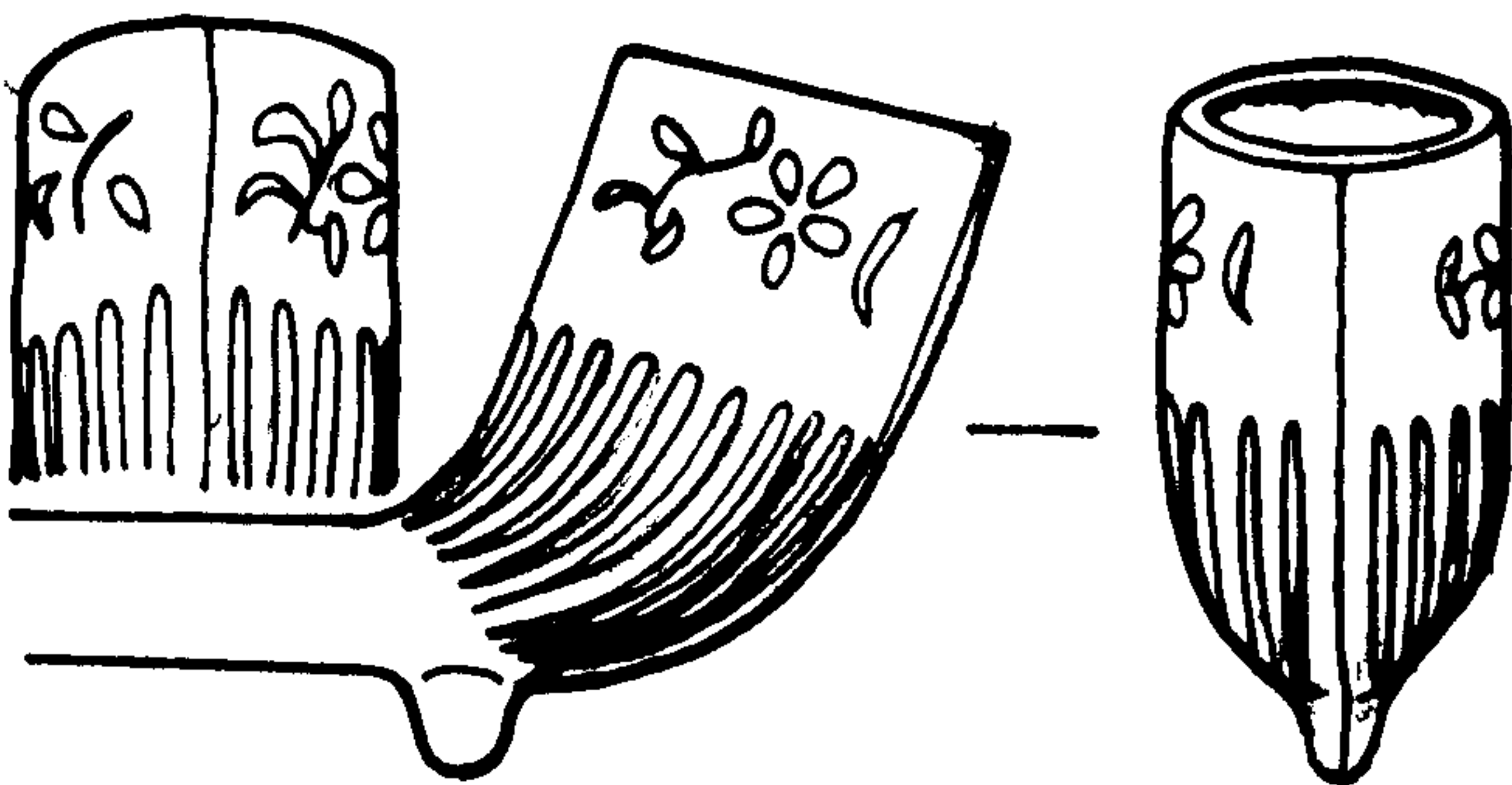
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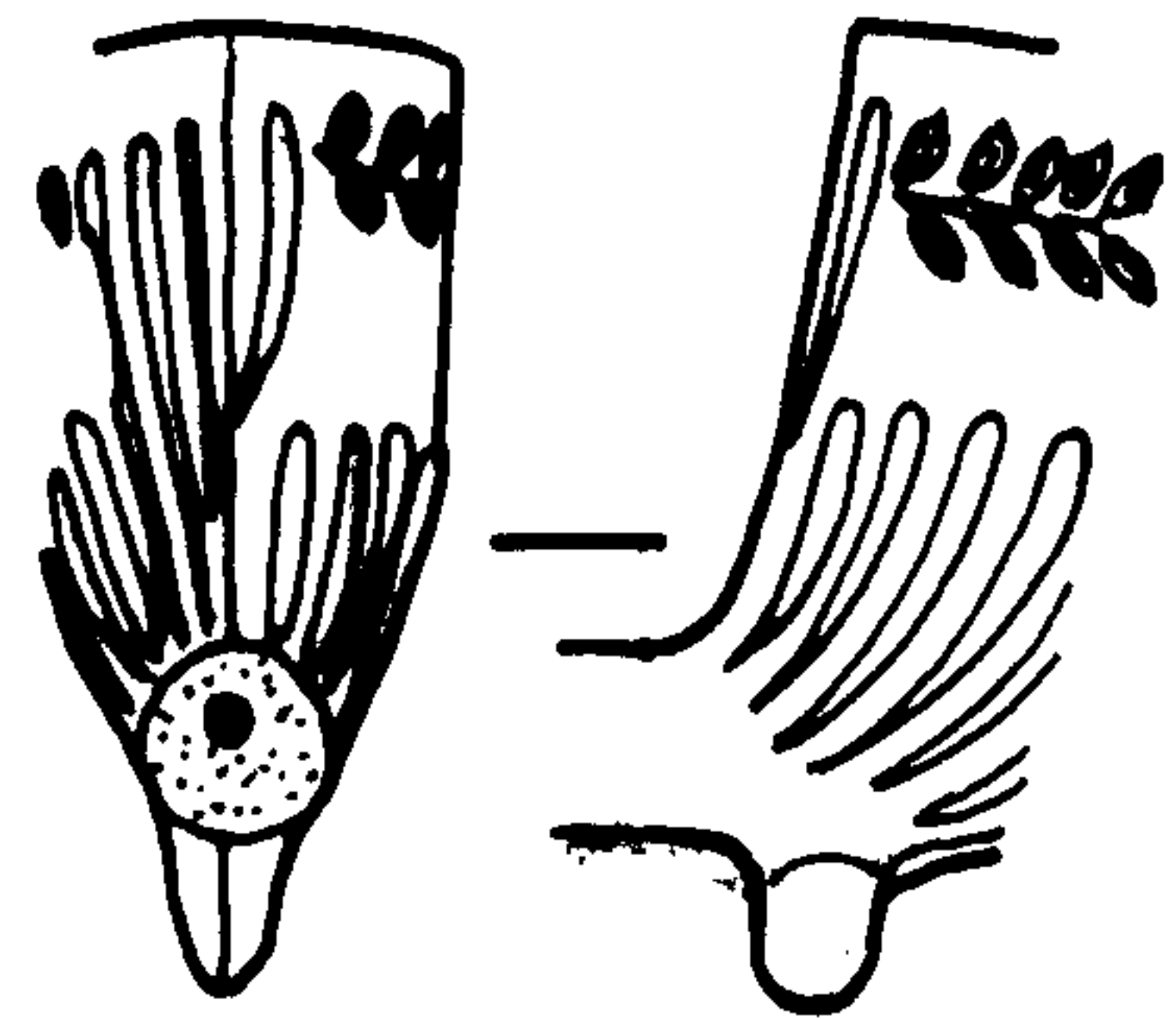
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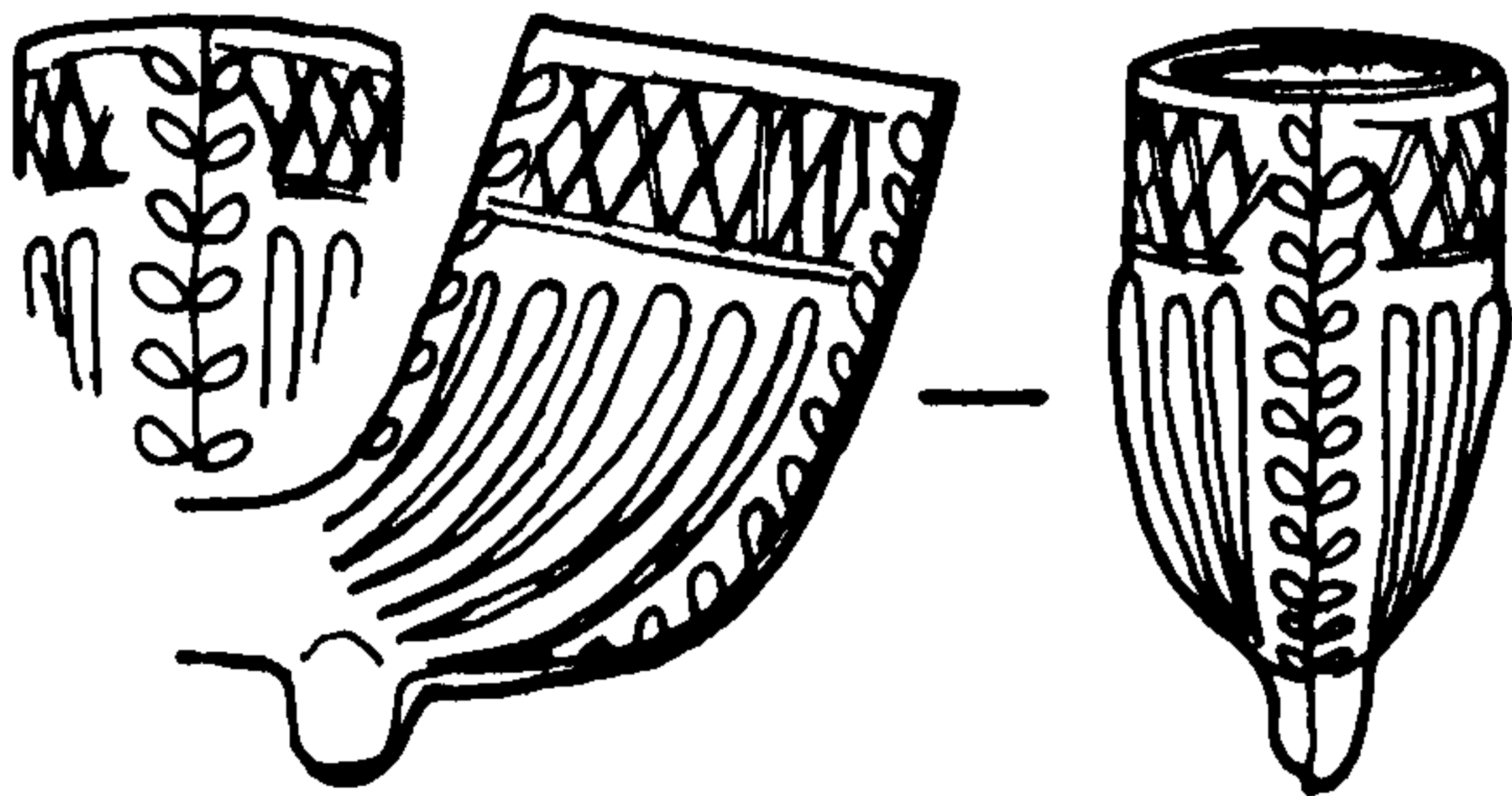
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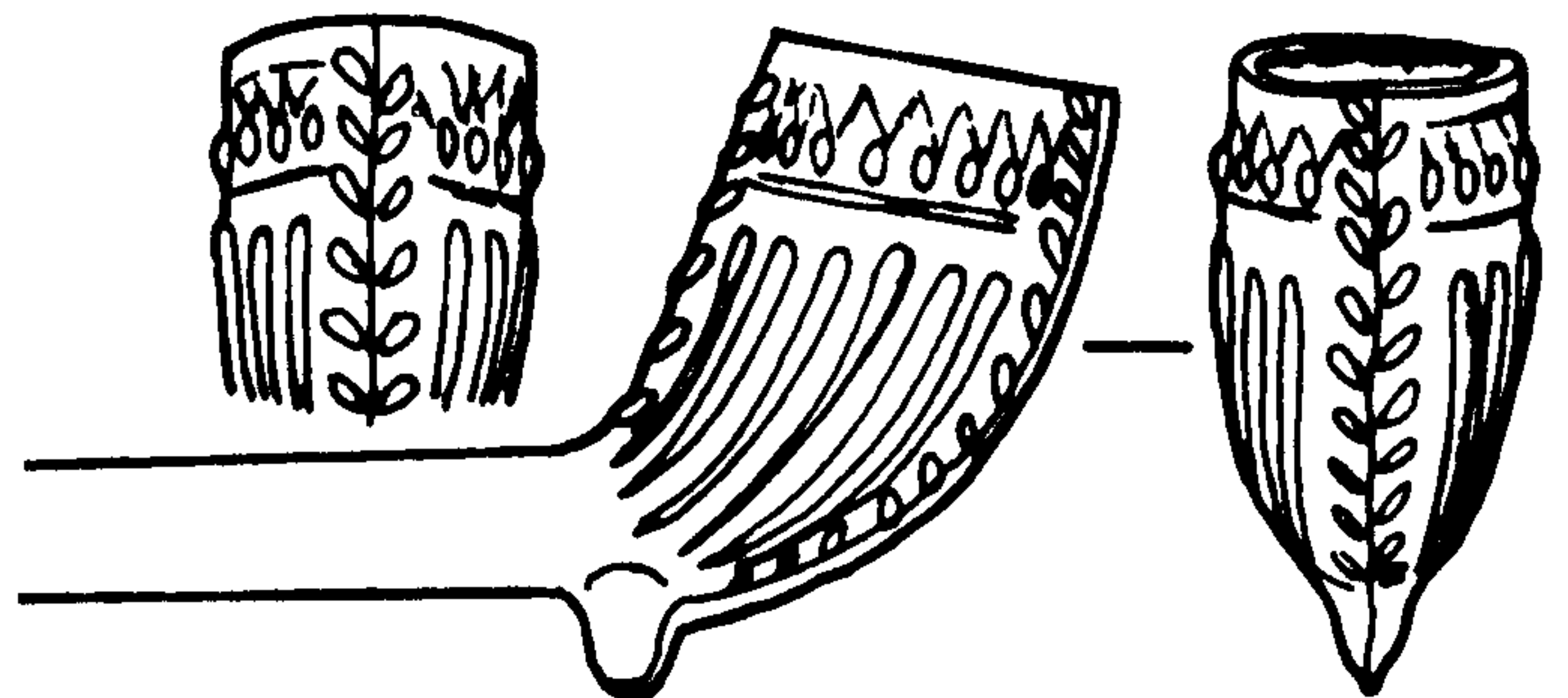
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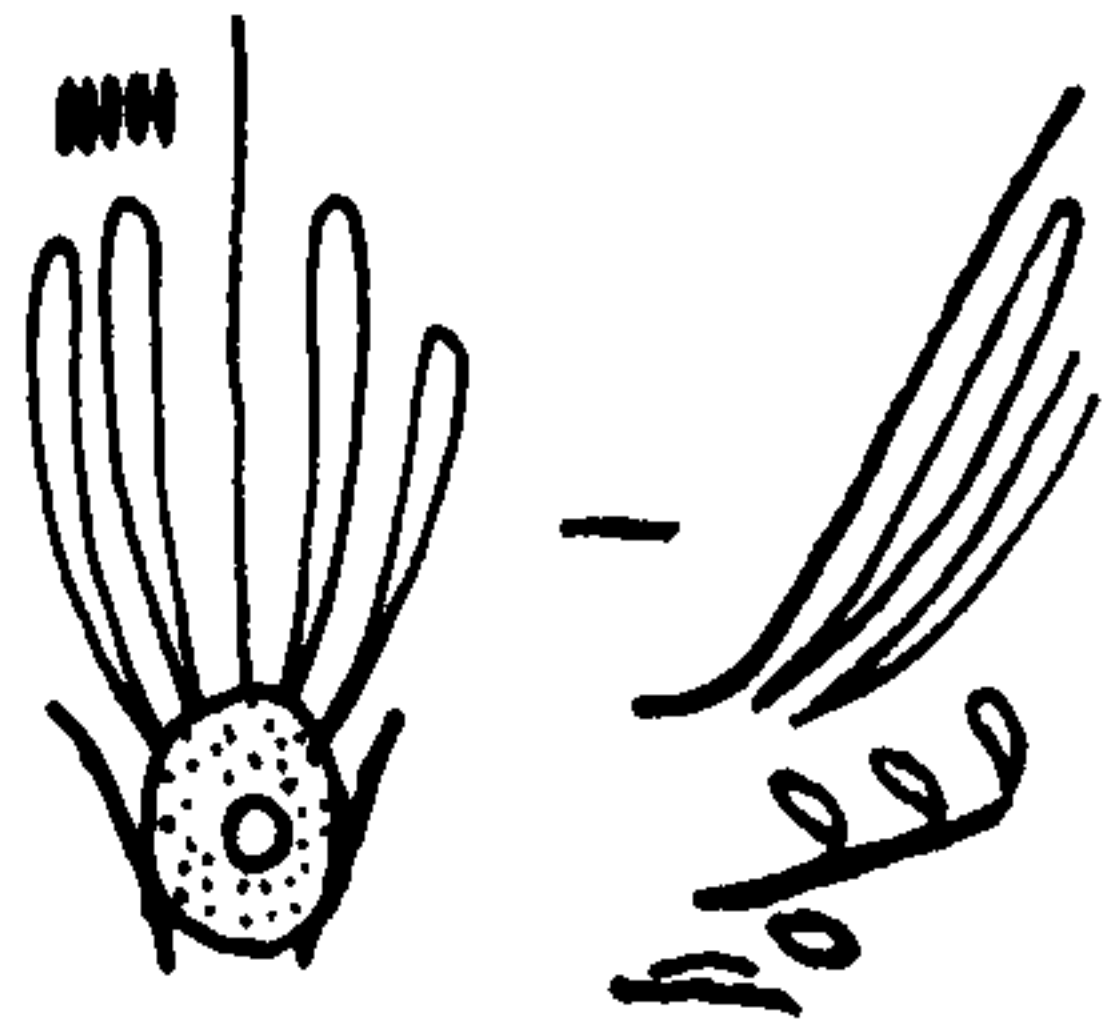
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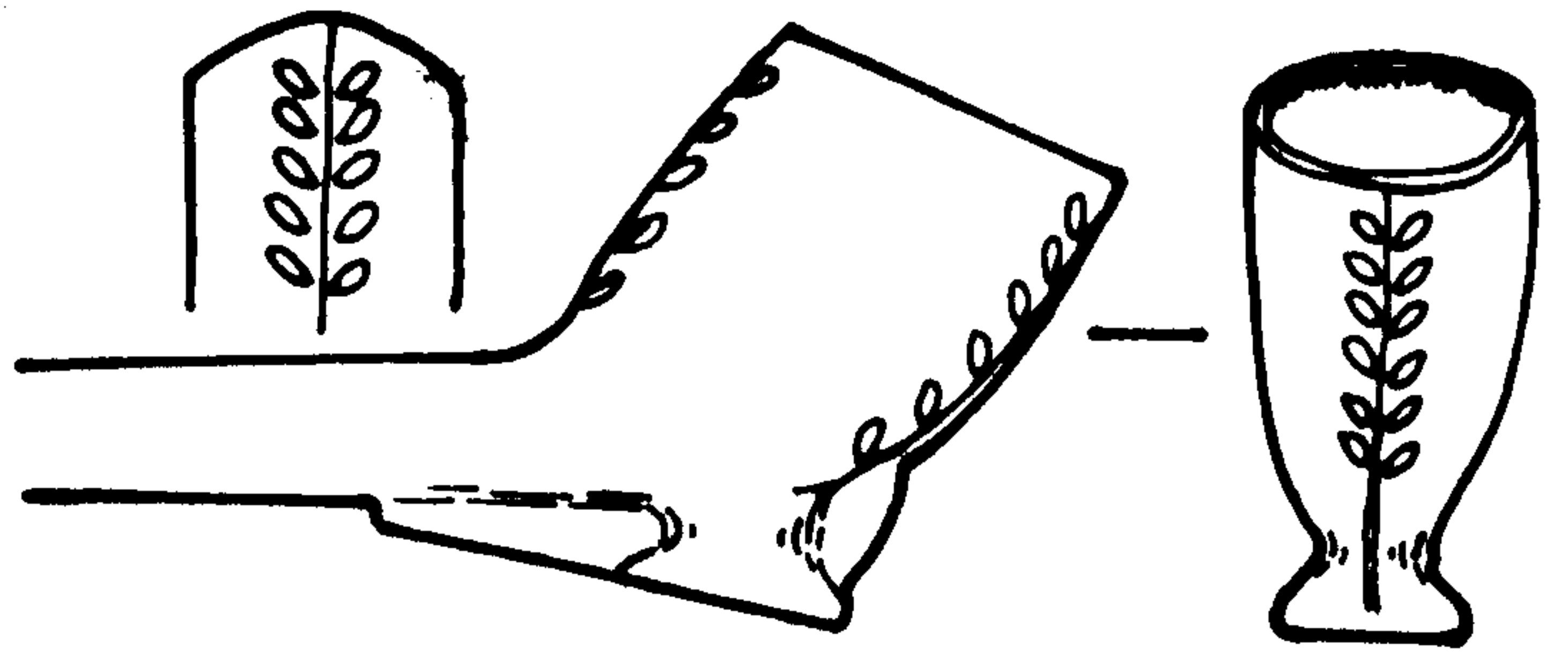
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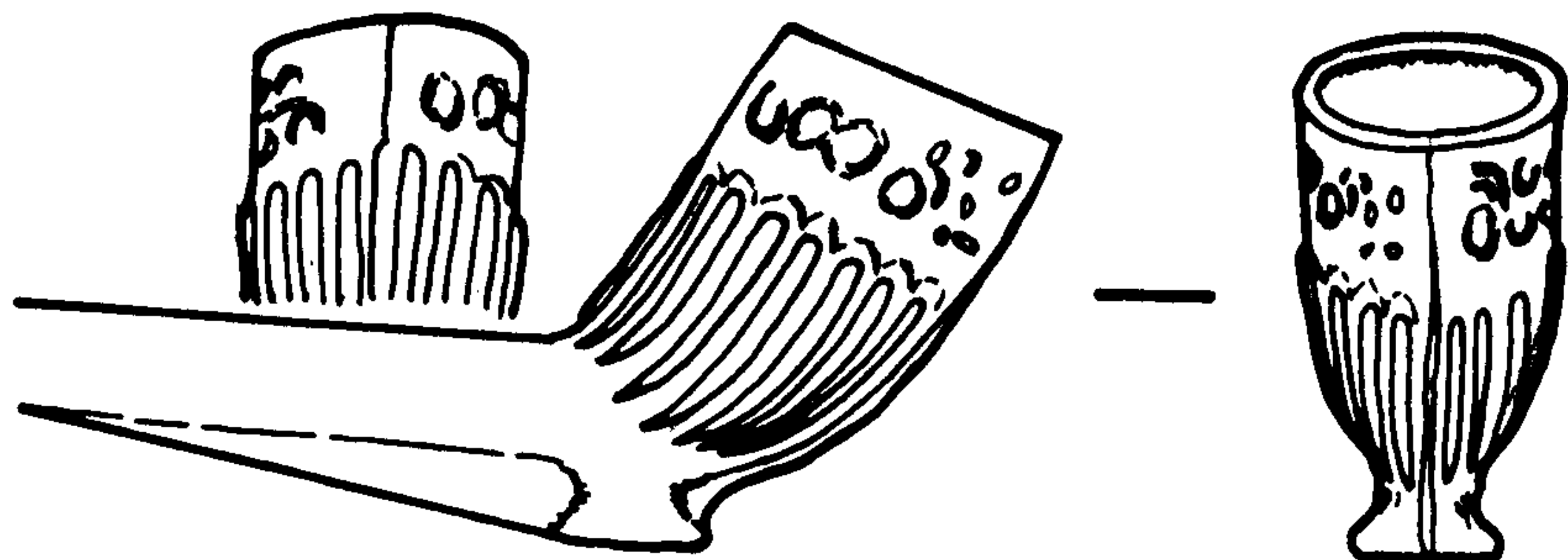
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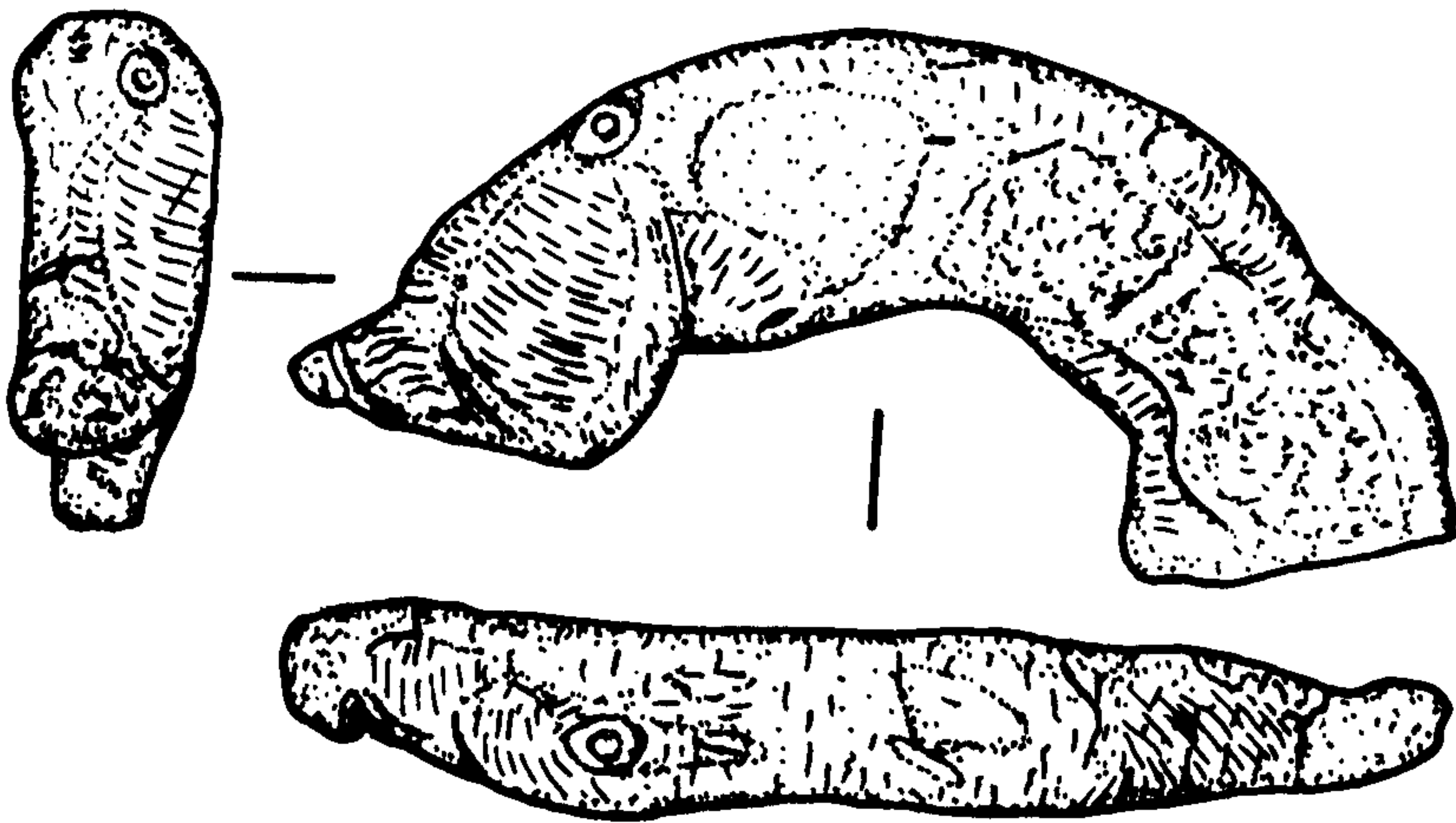
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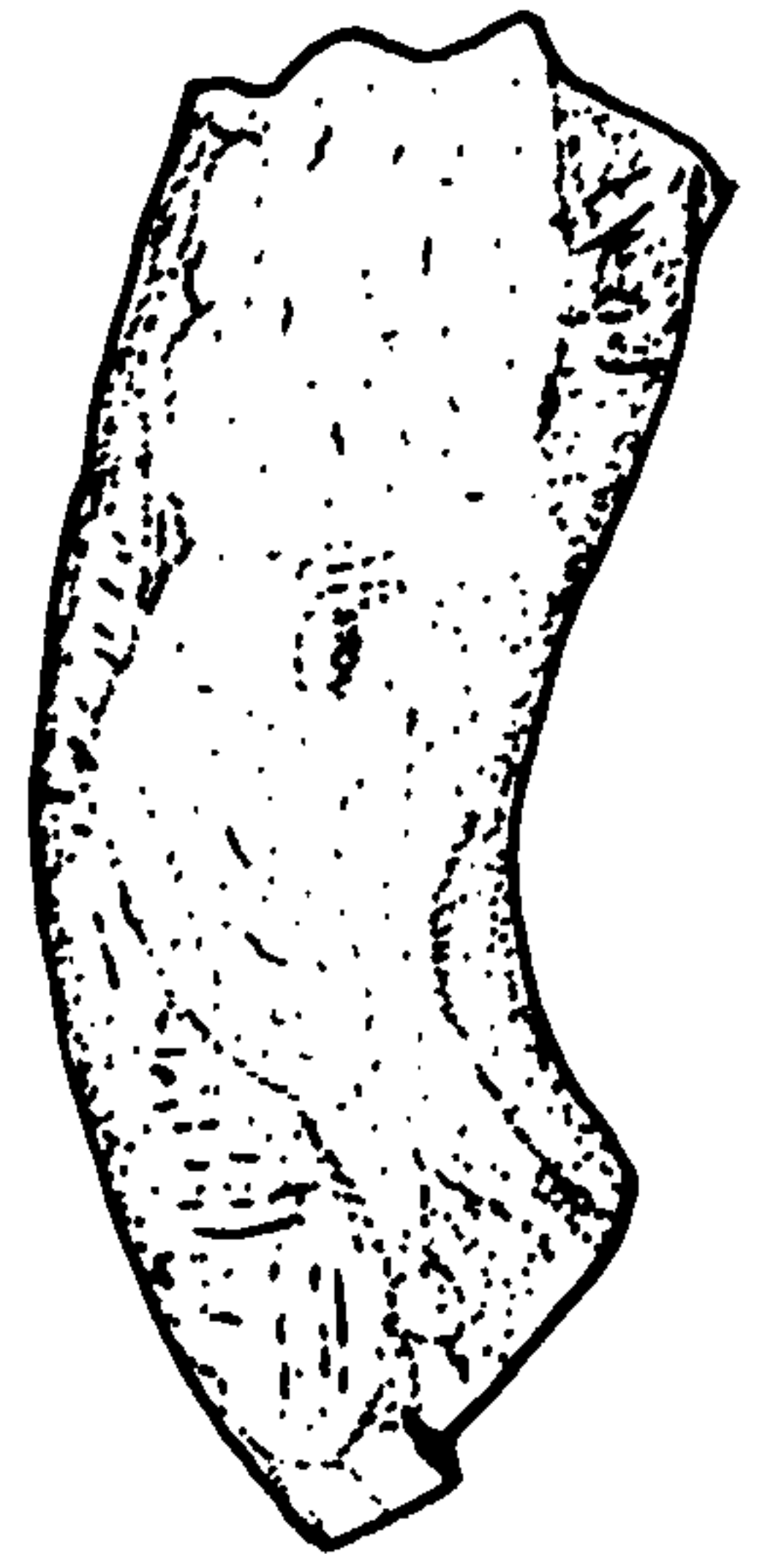
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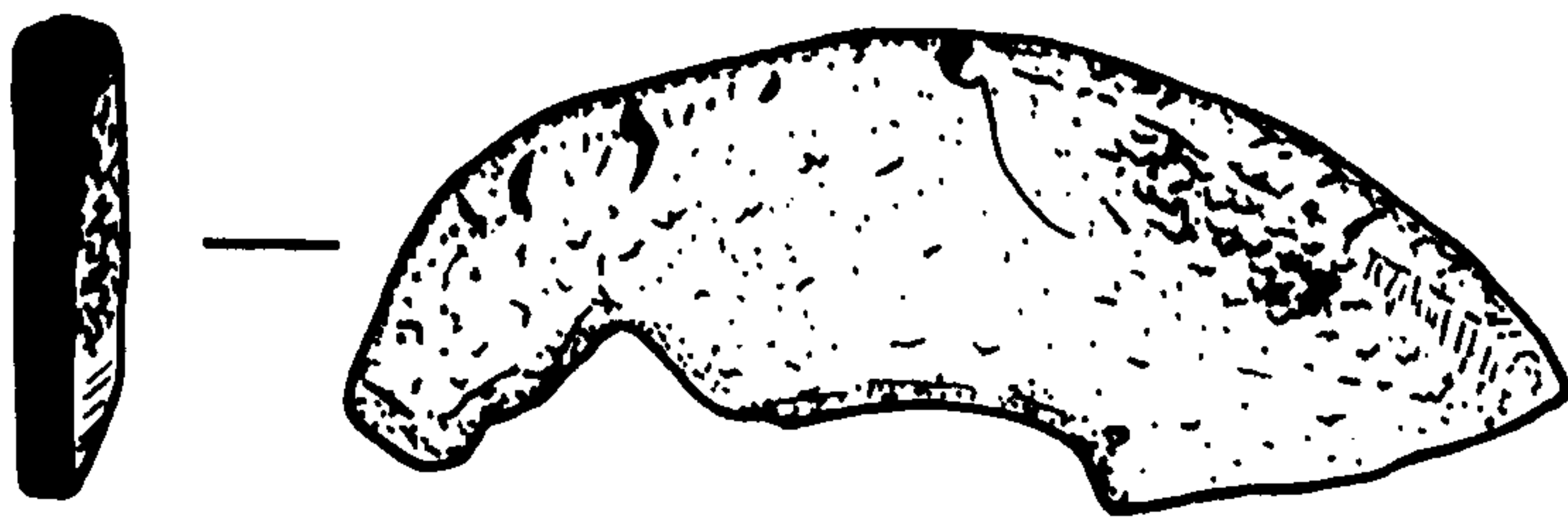
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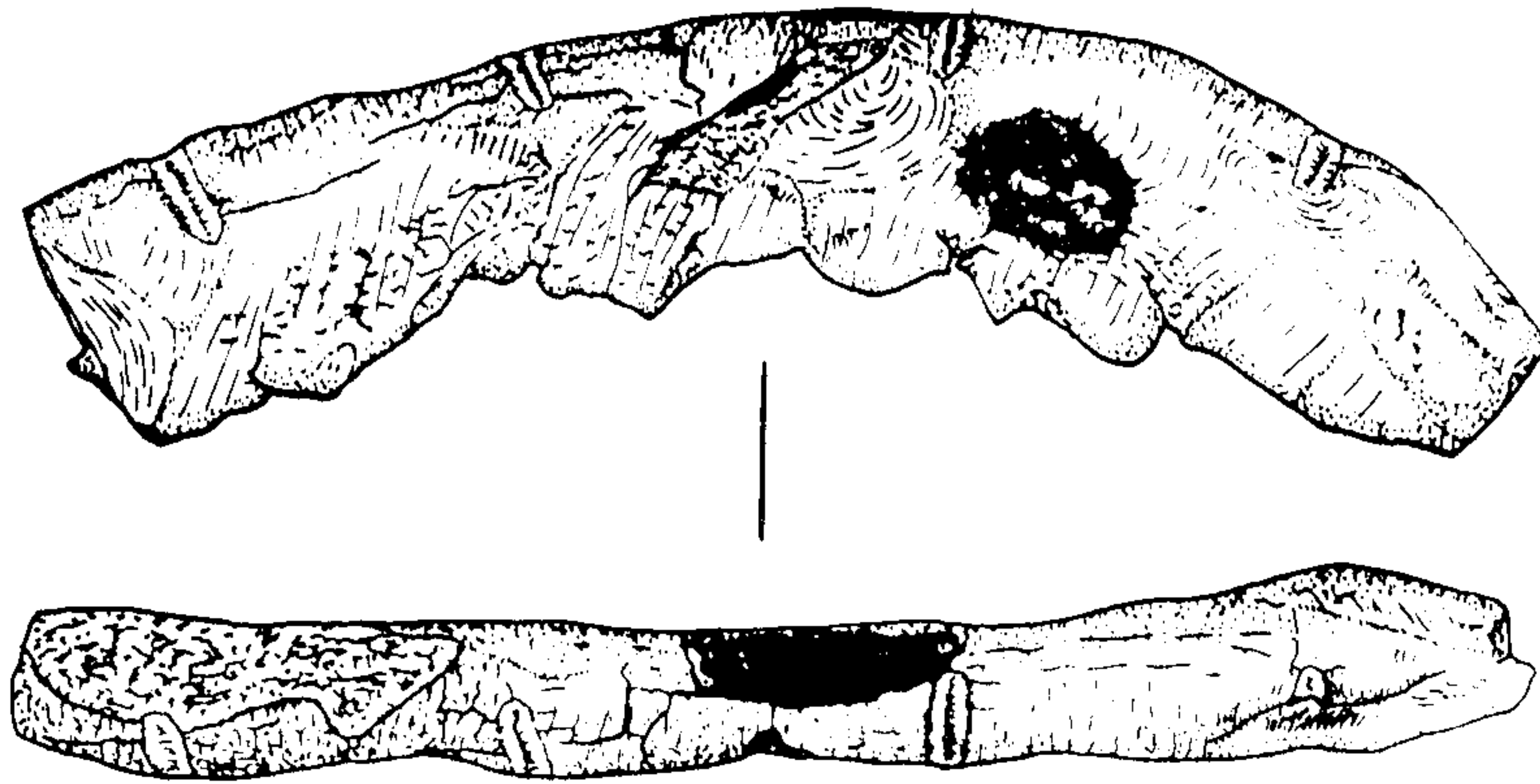
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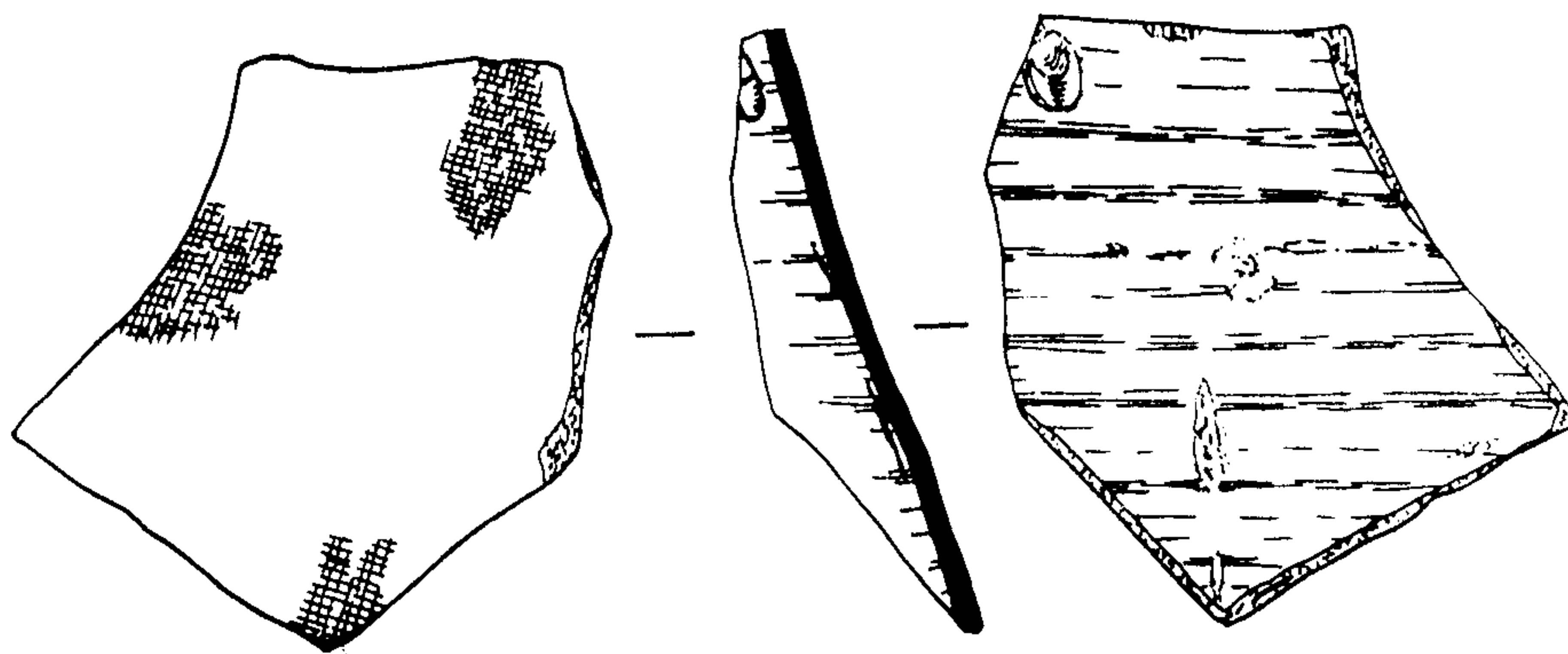
107



108



109



Scale 1:2

110

THE DATE OF THE PIPES

Pennywell Road is on the south-eastern edge of St. Jude's where a number of pipemaking firms are known to have been working in the nineteenth century, including those of the George family, the White family, James Winchester, Thomas Edgar and Samuel Roberts. As none of the pipes bear a name or initials it is not possible to ascribe them to any particular maker. No pipemaker was working on the site of the kiln dump so the waste must have been brought from elsewhere, perhaps to level up the site prior to the construction of terraced houses. Ashmead's map of Bristol shows this area as being open fields in 1828 but Matthew's Street Directory records that houses had been built there by 1845.

There were no other finds in the kiln dump which might help to date its deposition. However, the layer sealing the kiln waste contained sherds of nineteenth century pottery including a piece of transfer-printed earthenware with the maker's mark 'POUNTNEY & ALLIES'. The firm of Pountney and Allies operated in Bristol between 1817 and 1835.

The pipes themselves are typical in form and decoration of those produced in Bristol during the mid nineteenth century. Pipes with the distinctive 'tailed' heels (Figs. 104 and 105) have been found elsewhere in the city in kilns dumps of the Ring pipemaking family which have been dated to c1850-55 (Price et al 1984, Figs. 84 & 97).

It is not possible to ascribe these pipes to a particular maker or date them precisely. They cannot have been deposited after 1845 when the site was sealed by housing and on stylistic grounds they may be dated to the second quarter of the nineteenth century.

The finds from both sites will be deposited in Bristol City Museum.

ACKNOWLEDGEMENTS

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Paul A. Thomas of Mowlem Regional Construction Limited (Civil Engineering Division) for allowing access to the Temple Way site and for generously providing site plans and assistance.

Eileen Senior alerted us to the site at Pennywell Road and the St. Nicholas of Tolentine Catholic Church allowed access to the site.

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Information on the pipemakers is taken from *Bristol clay pipe makers - a revised and enlarged edition* published in 1979, where full documentary references are given. Additional material in this article has come from:

The Bristol Presentment Books. Bristol Reference Library.

Temple Parish Harbour Rate, Poor Rate, Window Tax and Watch Rate. Bristol Record Office.