

Archaeological Investigations At Simraongarh, February-March 1991

The first campaign of archaeological exploration of the large urban site of Simraongarh (1), in the Nepali Tarai, was conceived as a preliminary surface survey accompanied by the recording of selected stratigraphical sections, as well as by a general study of the surface ceramic material. In fact, a previous visit to the site by the Italian Mission and the Dept. of Archaeology of H.M.G. of Nepal showed us that agricultural and irrigation works made available several sections cutting through major archaeological features. These sections could provide substantial information with a minimum disturbance of the archaeological deposits in situ.

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and with an Introduction by Giovanni Verardi

Excavating at Simraongarh is a challenging undertaking for anybody interested in the archaeology of the Indian Subcontinent, and is a matter of particular consideration for anybody pursuing a better understanding of the history of medieval Nepal. The relation between the Karnatas of Mithila and the political events taking place in the Valley of Kathmandu is a major point here. Several scholars have dealt at length with this subject, among which Luciano Petech may be recalled (see especially the second, revised edition of his *Medieval History of Nepal*, Rome 1984). However, a number of problems are involved

in such an undertaking. First of all, a detailed study of the medieval settlement is needed, both with regard to the different aspects of the 'material culture' and the ideological, religious and economic issues stemming out from the temple-city system controlling social order. Secondly, the quest for the pre-urban evidences of the site should be pursued with the greatest care to grasp the meaning of the transition from a reality made of minor settlements in a forest area to one involving the establishment of a capital town. The cultic level deserves close examination here. Once the crucial problems are brought into focus,

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results cannot be lacking.

It is a well-known fact that, after Brian H. Hodgson visited and identified the site in the 19th century, only in 1958 a brief expedition led by Thomas O. Ballinger could retrace the extensive ruins of Simraongarh (see T. O. Ballinger, 'Simroangarh Revisited', *Kailash* 1, 1980-84 Kathmandu 1973). On that occasion, the stelae still remaining on the site were photographed and briefly described, and stress was laid upon their importance within the Pala-Sena production. After Hodgson's visit, number of *murtis* were carried for display to museums outside Nepal - a major loss for the Country. As stressed below by M. Vidale and F. Lugli, the site has suffered even greater damages since Ballinger's visit, mainly due to the area being extensively exploited for agricultural purposes.

Still, the potential of the site is very great. Simraongarh stands as the most important settlement of medieval Mithila among a number of sites observed in Bihar (see C.P.N. Sinha, *Mithila under the Karnatas* (c. 1097-1325 A. D.), Patna 1979, p. 143; D. R. Patil, *The Antiquarian Remains in Bihar*, Patna 1963, *passim*) and in the Nepalese Tarai, which are still waiting for a proper recording. The report by M. Vidale and F. Lugli cannot but refer, although very briefly to the fortification system encircling the town, first described by the Tibetan traveller Dharmaswami in 1236 AD. However, it deals mainly with the ceramics found when exposing a section along a modern canal in front of the main mound. The functionalist approach chosen by the excavators has been questioned on general terms and on the basis of a very detailed analysis carried out on the pottery production in present-day India (see D. Miller, *Artefacts as Categories*, Cambridge 1986), but may not avoided at the

first stage of an archaeological research. Future activity will show, among other things, what can be revealed to us of past Simraongarh through the methods of inquiry that have been considered more suitable by the excavators.

(G. V.)

Preliminary Remarks

In the frame of this first phase of work we could accomplish a preliminary exploration of the north and eastern sides of the city's fortification, a cursory survey of the major mounds of the compound, and a somehow more detailed survey of the mound of Raniwas, presently the major elevation of Simraongarh. We then recorded and sampled a long section exposed by a recent irrigation canal on the south-eastern border of the Raniwas mound. This spot was labelled SMG-1, and this operation was the major effort of the campaign.

The mission to Simroangarh used blue prints of a recent topographic mapping of the site, carried out by H. M. G. Nepal Field Survey (Fig. 1). These maps were an invaluable help for our research, and will doubtless represent the basis for any further exploration and archaeological research at Simraongarh.

The site: general remarks

The ruins of the ancient city of Simraongarh (see Fig. 1) are enclosed within an impressive system of earthen walls and filled ditches. On the south side of the fortress, the international boundary between India and Nepal runs along the main inner wall, and part of the earthen walls remains in Indian territory. Nowadays several villages of various size extend building activities and agriculture within and across the great enclosure. The

ground plan of this system of fortifications resembles an irregular trapezium, with the major sides oriented in direction north-south and an oblique side at north. This orientation could suggest that the north side of the fortification followed, in ancient times, a river channel (possibly active). Today the Jamuni river runs along the north side of the fortifications. A branch breaks into the walls on the eastern side. The corners of the trapeze have symmetrical projections in form of huge rectangular ramparts. The main feature of the fortifications is an inner wall, which is still, in some parts, more than 7m high. This wall measures more than 6 km in direction north-south and about 4.5 km in direction west-east. Given the extension of these ruins Simraongarh must be regarded as one of the largest urban archaeological sites in the subcontinent. Recent damages to this imposing structure showed that earthen deposits were piled against an inner supporting wall in fired bricks, that in some robbing trenches appears to be some metre high. The map provided by the Nepalese authorities shows that the main wall has a complex lay-out, being articulated in projecting ramparts. During our survey, we identified, in the south-western corner, the remains of a huge round tower, and possible more defensive architectural features will be identified in the future. Looking at the remains of the walls, it is easy to understand why in later times the city walls were referred to as a "labyrinth". Actually, the four corner ramparts could be the four "fortresses" which were still remembered in the 17th century in the Kathmandu Valley (Cimino 1986). In spite of the destruction by agriculture of large sections of the earth embankments, in the south-eastern corner of the city is still clearly visible a

large, fake entrance after which the attacking army would have found a second, unaccessible defense wall. This setting seems to follow exactly the structure of a labyrinth.

In ancient Tarai, the control of rivers was, exactly like today, a major concern. The contemporary hydrography of the compound is deeply altered by recent works. The Tarai Eastern Canal enters the walls in the north-western corner, and crosses diagonally the whole site. An artificial network of secondary canals brings water to the village and the fields. The city of Simraongarh, most probably, was built on the base of a well planned urban and hydraulic project, and the reconstruction of the original course of the river and its relationships with the walls, the ditches and the needs of the inner gardens and fields is a primary aim of our future investigations. For the present moment, it will be sufficient to remark that the ditches (as reported by the ancient historical sources) had to be provided with a constant flow of water, and that to capture this water from a nearby river course could have been the most immediate solution. Moreover, the enclosed compound, in spite of the recent heavy disturbance, still shows major depressions that are used by contemporary farmers for growing cereals in waterlogged conditions; these depressions (the major running north-south at west of the Raniwas mound, see Fig 1) might be an old feature of the site, or, on the contrary, might be a recent geomorphological evolution. Understanding the urban lay-out of Simraongarh will be, to a great extent, a geomorphological and hydro geological problem.

During the survey, we could visit several parts of the compound. The Raniwas mound, nowadays capped by the imposing and partial

ly ruined temple of Ramjanaki, due to a restructuration by the Rana rulers, is the most important geomorphological feature of the site, and, with every probability, corresponds to the most important political and cultural center of Simraongarh. At east, the Kankali Mandir, equally rebuilt in recent times, covers the ruins of a major Pala-Sena cultural complex. The banks of the huge pokhari of the temple are still easily identified by their well-built, very large bricks and ghats. North and north-east of Raniwas, the fields are studded with dozens of wells, now protruding from the agricultural surface and making the extent of removal undergone by the ancient mounds. The wells show the position and extent of part of the settled areas, extending, in the centre of the enclosure, for at least 60-70 ha. Following this preliminary interpretation, this urban core could be bounded at west at north-east by land potentially exploitable by irrigation agriculture.

A major result of our survey was the discovery of an impressive wall in baked bricks recently damaged by brick robbing activities. The wall, not less than 3 m wide and 2.5m deep, runs in a east-west direction about 600/700 m north of the Ramjanaki Mandir. The wall runs in what is nowadays a slight depression between two major mound complexes, and possibly separates the main cultural areas from other settlement quarters. The presence of this monumental wall suggests the possibility that other well preserved architectural features might be found, and not only in the elevated areas of the compound.

The impact of agriculture and village growth

Besides the excavation of modern channels, destruction of the earthen walls for

levelling the fields and recovering bricks is a major factor of destruction of the city ruins; given the demographic pressure and the growth of the villages, the compound is under the threaten of a fast decay. For example, the inner core in fired bricks of main wall has been systematically mined, apparently in the last years, and the trenches, left opened to the action of the monsoon rains, strongly enhance the erosion of the monument, with disastrous effects.

Another agent of extensive destruction is agriculture. In the low mounds that cover great part of the site, fields are irrigated with hand-pumps, and water is distributed with expedient trickles of water across systems of low artificial terraces and gradients. This technique requires a widespread practice of cutting the borders of the archaeological mounds to create negative terraces. The removed earth is dumped at the foot of the slopes, and sometimes across long distances, in natural depressions. In this process large amounts of ceramics are scattered all over the site, with negative implications for surface analysis. Our preliminary analysis of Raniwas showed that the mound is surrounded by the remnants of dumps extremely rich in ceramics. These deposits are the first to be exposed to removal and displacement. As ceramics, during these processes of excavation and redeposition, are progressively broken, their degree of fragmentation in the agricultural layers is a good indicator of their context of deposition. As far as irrigation is concerned, although in few cases ruins seem to be affected by waterlogging, presently we are not to ascertain its actual impact on the archaeological features of Simraongarh.

Finally, one has to mention that brick

factories are active within the site, and their huge trenches, in some cases, seem to have destroyed other important archaeological deposits.

Surface collection at SMG- 1

Our fieldwork at Raniwas started on February 26th a preliminary surface collection of ceramics from the southeastern border of the mound, in the site labelled SMG-1 (Fig. 2). We collected systematically every rim sherd different spots; this collection formed a preliminary data bank of the study of the Raniwas pottery.

Sample 1 (SMG- 1 S. 1) was collected along the edge of an irrigation canal, whose banks exposed an interesting stratigraphical sequence. Ceramics came from a recent re-excavation of the canal, and therefore did not represent a reliable stratigraphic association; it might include fragments from the lower levels of the sections. As a matter of fact, S. 1 contained distinction categories of pottery such as a highly refined, well fired gray ware and thin-walled, carefully slipped fragments apparently absent from the other groups.

Sample 2 (SMG- 1 S. 2) was a surface collection from the undisturbed surface of the mound, which we could refer to the later occupation phases of the mound, possibly contemporary to the building and use of the large monumental complex in medieval times.

SMG- 1 S. 3 was collected along an artificial scarp, about 0.51 m. deep from the surface level, possibly representing a slightly older cultural horizon than Sample 2.

Cleaning and recording the section in SMG- 1

As a second step, we started the clean-

ing of the SMG- 1 section (Fig. 3), visible on the eastern wall of the irrigation canal. The canal exposes a sequence of archaeological layers not less than 3.5 m. thick, whose upper levels are extremely rich in potsherds, apparently analogous to those sampled on surface (S 2 and S 3). We carried out a preliminary cleaning of the section from the grass and the later disturbances due to the canal deposits, for a total length of 15 m. A major problem was represented by the need of distinguishing clearly the contact interfaces between the archaeological layers in situ and the deposits removed by the mechanical device used in the excavation of the canal itself. The imprints left by the blade of the machine and the dark sediments laid by the canal were carefully isolated and excavated, exposing the undisturbed section. For obvious reasons, we did not attempt to rectify the section, leaving it oblique. S. 4 defined the materials in secondary context of deposition within the fill of the canal, while ceramic samples S. 5 to S. 7 were considered in sub-primary context of deposition, in correspondence with the contact between the canal disturbance and part of the lower layers of the section.

The stratigraphical analysis of the section revealed a complex situation. In all, we recorded and described about 130 stratigraphic units. The archaeological deposits, in the area we observed, were not less than 4 m. deep. For the study of the cultural sequence, we developed a series of 4 chronological blocks that, in this preliminary stage of our research will be referred to as horizons, Horizon 1 being the earliest.

The lower layers, which appeared generically ascribable to pre-medieval times, were labelled as Horizon I, and belong to at least 3 different phases of occupation. The

first settlement of Simraongarh arose along a slight natural elevation (perhaps a sand bar formed by an ancient flood channel) The earlier anthropic deposits are some discontinuous strata with possible remains of a fireplace and dark lenses rich in charcoal, associated to groups of thin-walled bowls, carinated pots and other complete vessels. The section shows, within those anthropic layers, some thin sandy lenses deposited by a limited flood, demonstrating that the ancient channel was still active in this early phase. Our sampling confirmed that the gray ware and the other types of fine wares observed in the debris come from the earlier layers of the sequence, suggesting that Horizon 1 could represent a well defined cultural complex.

In a later moment, these surface were apparently sealed by thick horizontal layers of sandy silt: SU (28), (29), (30). These units contain potsherds and other types of inclusions, and could be the result of a major flood (but this hypothesis needs a proper geoarchaeological testing).

Horizon 2 is represented by a set of pits extremely rich in anthropic remains, including the large jar whose foundation pit is labelled SU (31)-(32). The most interesting features are two rectangular pits filled with lenses of yellowish silty sand (perhaps produced by decay of plaster erode from dwelling units) and thick, dark lenses of charcoal. Two of these latter layers were sampled for C 14 dating. The two pits were re-excavated in ancient times, as we have clear evidence of small pits or post-holes cutting through them. One of the pits contained, in the upper layers of its filling a fireplace in situ. This suggests that these pits, rather than being simple dumping places could be occasionally used as living structures or other features.

Fish bones, most probably referable in many instances to huge specimens of catfish (Siluridae), are scattered in various layers of the inner filling. On the upper part of the filling, we could observe thick lenses of charcoal containing charred seeds (see below), thin-walled bowls, and large amount of fish bones and scales.

The upper levels of Horizon 2 are marked by the evidence of strong processes of erosion, deeply cutting the upper part of the structures of the previous phase. The erosive interfaces are particularly rich in fish bones. The section shows a processes of local abandonment, the only structures being 1 or 2 post-holes installed on sub-horizontal surface created by erosion-redeposition of sandy-silty sediments and some pits. This local abandonment brought to the accumulation of large amounts of loose silty sediments.

The upper sediments of the section, generically considered as belonging to Horizon 3, are extremely rich in highly fragmented ceramics and brick bats. About 0.5-1 m below the present surface, we could identify the poorly preserved remains of some structures erected with broken bricks laid with a silty mortar, subsequently disturbed by a long series of large pits. Some of these pits were clearly brick robbing trenches. The pottery associated with these upper layers appears rather similar to that spread all over the mounds of the settlement, and represented by Samples 2 and 3. It may preliminary be related to the medieval phases of the site. Within the upper pits were found few fragments of greenish-bluish glazed ware.

In the sequence so outlined, Horizon 4 is represented only by the potsherds recovered on the surface of the mound (sample SMG- 1 S 2)

The Pottery (2)

The site of Simraongarh is exceptionally rich in ceramics, often in satisfactory state of conservation. Besides chronology, future study of the ceramic collections will provide valuable information on the manufacture, use, abandonment and discard practices of the ancient inhabitants. Our initial approach was aimed at outlining a preliminary classification of the ceramic classes and morphological-functional categories on record.

In all, we processed about 3000 potsherds, out of which about 450 were selected as particularly diagnostic for a complete graphic documentation and recording. Given the time constraints and the available resources, we decided to concentrate the study of pottery mainly on the deposits in primary context of deposition, i.e. the first two settlement phases corresponding to the anthropic levels (Horizon 1) and the subsequent large pit structures (Horizon 2). Furthermore, we sampled and studied the surface and sub-surface sherds assemblages (respectively Samples 2 and 3). Almost all the potsherds belong to the "Red Ware" ceramics widely reported in the Ganga valley in the historical period. Few fragments of a very distinctive Grey Ware are also on record, and will be discussed after the main category.

The potsherds were subdivided on the field into 3 major morphological-functional groups (truncated-cone shaped bowls, carinated pots, restricted jars). The most complete specimens (450) were drafted directly on the spot using a partially mechanical device the information (dimensions, surface treatment, colour according to Munsell Color Charts was recorded with a laptop computer in DBIII environment.

Within the 3 large groups mentioned above, we defined a preliminary set of morphological categories. Given the fragmentary state of the collection, the high inner variability of the sampled ceramics and the relative scarcity of the pottery collected on surface or from the section, we did not attempt a rigid subdivision in types. The analysis showed that, within each major group, some morphological categories were defined by a given set of attributes, other categories by different features.

In the case of the truncated-cone shaped bowls (hereafter TCB) the first subdivision was based on the mouth diameter, as an important group of vessels was clearly a relatively standardized, small sized bowl (1A1, see below). As a second step, other categories were defined after the characteristics of the terminal part of wall and the rim.

Carinated pots (CP) were subdivided observing the profile of the upper part, with particular attention to the varying articulation of shoulder, neck and rim. In this case, mouth diameter has been considered as a variable only in a second phase of analysis.

Restricted (RJ) were mainly categorized after the morphological attributes of the rim; in this case, too, the mouth diameter was taken into account as a classification parameter only in a second moment of analysis.

The bowls

1A1 (Fig. 4, a-d)

Small truncated-cone shaped bowls with relatively open body with thin, rather fragile walls. The profile of the upper wall part is always straight, without points of inflection. The rim varies from slightly thickened, subrounded to slightly sharpened. The walls show clear

traces of a fast manufacturing on the potter's wheel. The mouth diameter falls in the greatest majority of cases between 11 and 13 cm. This category is equally common in Horizons 1 and 2, is almost completely absent in the other ceramic samples. This type of vessels is fairly common in the pottery assemblages of other sites of Ganga valley. See for example, for Hastinapura, Lal 1954 & 1955: Fig. 26, Ia-IIa; for Sravasti Sinha 1967: Fig. 17, XX; for Kodan, Mitra 1972: Fig. 34 I; for Rajghat, Period VI, Narain and Roy 1977: Fig. 28, I.

1A2 (Fig. 4, e)

This category seems to represent a larger variant of 1A1. The walls are thicker; the vessels' shape and the rim features are very similar to the smaller bowls, but the rim seems more often rounded than sharpened. The mouth diameter ranges from 17 to 20 cm. This ceramic category is found, exactly like 1A1, in the two earlier Horizons (cf. Sinha 1971: Fig. 17, I.)

This category is formed by 3 fragments of bowls having a distinctive, slight inflected thickened rim. The bowls seem to be relatively large (from 17 to 27 cm). These items were collected with Sample 3 (the sub-surface levels labelled Horizon 3).

1B (Fig. 4, f g)

Truncated-cone shaped bowls characterized by a very open, shallow profile and by rounded, slightly outward flected rim. The vessels are carefully thrown and their construction is solid. Few specimens bear below the rim area, on the inner surface, some horizontal incised lines. Mouth diameter values fall around 20-25 cm. The 4 specimens on record were collected from the fill of the pit structures of Horizon 2. This category may be compared with bowls from Hastinapura,

Period V (Lal 1954 & 1955: Fig. 26, IIIa IX).

1C (Fig. 5, a)

Truncated cone shaped bowls with open profile and a thick, round, outward flected rim. Mouth diameter are irregular, ranging from 18 to 29 cm. This category is found in all the samples and apparently does not represent for the moment, a reliable chronological marker.

1D (Fig 5, b)

Truncated-cone shaped bowls with open profile and a slightly flat, strongly outward flected rim. Some specimens like 1B, show, horizontal lines incised on the inner wall. Mouth diameters range from 17 to 25 cm. This category was found only in the early phase and in the later pit structures.

1E (Fig. 5, c)

A small group of truncated-cone shaped bowls distinguished by a flat, projecting rim with horizontal trend. The diameter at the mouth is rather irregular. 1E specimens were found in Sample 3 (Horizon 3). A very similar specimen is reported from the cultural complex of Kodan (Mitra 1972: Fig. 34, VIII).

1F (Fig. 5, d)

Truncated-cone shaped bowls with a thick, round rim underlined by a basal groove. This category is morphologically related to 1D; in this case, too, part of the vessels bear the inner incised lines. Mouth diameters falls between 20 and 24 cm; this category occur in all our samples.

1G (Fig 5, e, f)

Truncated-cone shaped bowls with projecting, downward flected rim. Diameter values are included in most cases between 18 and 22 cm. All the specimens were collected from layers belonging in Horizons 2 and 3. See for comparison the bowls from Sravasti

represented in Sinha 1977: Fig. 17, XXI, and, specimens from Kodan in Mitra 1972: Fig. 34, VI.

1H (Fig. 6, a-d)

Hemispherical (?) bowls with a projecting rim having a ovoidal section, flected downward. Diameter falls between 23 and 28 cm. All 5 specimens on record belong to the surface assemblage of Sample 2 (Horizon 4). The bowls are very similar to specimens found at Hastinapura, Period V (Lall 1954 & 1955: Fig. 16, VIIIa, XI, XIa).

1I (Fig. 6, e-g)

Truncated-cone shaped bowls having a saddle-shaped depression on the upper surface of the rim, as one would expect for vessels used as lids. Part of the fragments show the inner pattern of incised lines. Size is very variable; chronologically, at least part of the specimens may be referred to the pit structures of (Horizon 2). See some bowls from Rajgath published by Narayan and Roy (1977: Fig. 24, 2)

Carinated pots (Handis)

2A (Fig. 7, a)

These vessels are distinguished by a rather straight, sub-vertical upper wall, generally without horizontal groovings on the outer surface. Rim shape and mouth diameter seem to be rather variable. Fragments referable to this category were found in the filling layers of the pit structures (Horizon 2) and in Sample 3 (Horizon 3).

2B (Fig. 7, b, c)

This category includes fragments of carinated pots having a sub-vertical or slightly restricted upper profile; in most cases the rim

is strongly downward flected, the lower projection having an angular profile. In the upper part of the rim often runs a regular groove, in some cases determining a distinctive articulation in correspondence of the horizontal tangency plane.

Almost all the specimens show a regular pattern of horizontal parallel grooves on the outer wall. Mouth diameters are included between 17 and 28 cm, with a clustering around 24-27 cm. These vessels seem to be particularly common in the samples from Horizons 2 and 3. The rim features of the vessels reproduct in Fig. 7, b, c may be compared with a specimen from Karian, Period III (Roy 1965: Fig. 5, V).

2C (Fig. 8, a)

Fragments of carinated pots with restricted upper profile, whose rim is flected outwards, in oblique direction, with a well defined inflection point in the wall. The extremity of the rim is slightly dilated, and some specimens show the upper depression distinguishing 2B. For the size and the outer grooves this group seems to be comparable to 2B. This group could be associated to the filling of the pit structures (Horizon 2).

2D (Fig. 8, b)

Fragments of carinated pots having a very variable rim, but distinguished by a very short neck, substantially unvisible from outside, but rather clear in the inner profile. The upper part of the wall is subvertical. Diameter ranges between 17 and 23 cm. Chronologically, this category seems to be correlated with Horizon 3.

2E (Fig. 8, c; d; Fig. 9, a)

This category includes rim fragments

with a well articulated neck, and an outward flected, oblique rim. Rim features in this group are highly variable, the neck forming with the shoulder a sharp angle, greater than 90° . All the specimens are marked with external horizontal striations. From a chronological point of view, 2E specimens were found only in Horizons 1 and 2. Mouth diameter varies between 17 and 28 cm, with a main trend between 20 and 24 cm.

2F (Fig. 9, b; Fig. 10, a-c)

These specimens, like the former group, show a well defined neck and an outward flected rim with an oblique orientation; but in this case, the angle between neck and shoulder is equal to or lesser than 90° , so that, in some cases, the neck is completely covered, in horizontal projection, by the rim itself. All sherds show the usual horizontal striations, and sometimes series of small notches appear in the lower grooves. In terms of relative chronology, 2F pots belong to Horizons 2 and 3. Mouth diameter ranges from 19 to 21 cm.

2G (Fig. 11, a-e)

Fragments belonging to this category have no neck, and the rim is only slightly modified. Only few of these specimens show the pattern of horizontal striations on the outer wall. Mouth diameter varies from 18 to 33 cm, with a possible cluster between 22 and 29 cm. According to our sequence, 2G pots belong to Horizons 3 and 4 (f. Mitra 1972: Fig. 34, XVII).

The jars

3A (Fig. 12, a-b)

Specimens with tendentially rounded rims and concave, subvertical neck. Mouth diameter varies from 10 to 17 cm. These frag-

ments are scarcely diagnostic, and, as they were found in all four Horizons, seem to be a poor chronological indicator. For similar jars see the specimen illustrated in Mitra 1972: Fig. 35, XXVIb, and Narain and Roy 1977: Fig. 24, 15.

3B (Fig. 12, c)

In this category we grouped only 4 fragments of jars having a rounded rim, thickened on both sides, with a series of upper grooves. Mouth diameter ranges around 12-14 cm. These fragments, at present, cannot be considered in chronological terms. The rim features remind a specimen from Hastinapura, period IV (Lall 1954 and 1955: Fig. 23, 6).

3C (Fig. 12, d)

This category includes a series of jar fragments distinguished by outward flected rims, strongly thickened on both sides, and with a flattened extremity (Fig.). Some rims show horizontal scorings in the inner surface of the rim, and sometimes even in the interior of the neck. The mouth diameter ranges from 12 to 21 cm, but most specimens fall between 14 and 18. Apparently, these jars are associated with Horizons 2 and 3.

3D (Fig. 12, e)

Jars with concave, unrestricted neck, and downward flected rims with a distinctive, subtriangular section. Some items show slight horizontal grooves outside and in the interior surface of the rim. Mouth diameters from 9 to 18 cm, but the typical jars ranged around 13-15 cm. This group, although identified in all the Horizons, is more frequent in the earlier layers (Horizons 1 and 2). A very similar specimen is published by D. Mitra (1972: 35, XXVIb), from the site of Kodan.

3E (Fig. 13, a-d)

This category of jar fragments is similar to the previous one, but shows a concave, unrestricted neck; the rim, moreover, has a subrectangular profile, with grooves running in the upper part of the rim, around the mouth, and in the terminal part of the rim itself. Diameters range from 10 to 19 cm, but most specimens fall between 11 and 15 cm. Chronologically, this category is only found in Horizons 3 and 4. Very similar specimens are reported from Vaisali Period V (Sinha and Roy 1969: Fig. 47, 11) as well as from Karian, Periods I to III (Roy 1965: Fig. 1, XX; Fig. 4a, VI, XV).

3F (Fig. 14, a)

3 fragments with everted, truncated-cone shaped neck and a short inflected rim. Diameters range from 14 to 18 cm. These jar fragments, for the present moment, cannot be considered in chronological terms. Cf. Narain 1967: Fig. XVII, XIIIa; Mitra 1972: Fig. 35, XXIII; Deo 1968: Fig. 6, 73.

3G (Fig. 14, b)

3 fragments with everted neck and downward flexed rim with grooves on the upper surface and a lower horizontal rib. Diameter values vary from 14 to 19 cm. Out of the 3 fragments, 2 belong to Horizon 2. This category could possibly be compared with a specimen illustrated in Sharma 1969: Fig. 28, 69; cf. Narain 1967: Fig. 17, XXVI, XXVIa; see also, at Karian (Periods II and III) the vessels illustrated in Roy 1965: Fig. 4b, XVIII-XX.

3H (Fig. 14, c)

Jar fragments having a very neck, and distinguished by a horizontal projecting rim with a bilateral expansion at the extremity. Mouth diameter: from 14 to 17. Chronologi-

cally, sherds belonging in this category are on record from Horizon 1 to Horizon 3.

3I (Fig. 14, d)

In these specimens, the concave neck supports an everted oblique rim, thickened at the extremity. Diameter values: from 12 to 14 cm. This category has no immediate chronological meaning. Cf. Sharma 1969: Fig. 29, 77.

3J (Fig. 15, a-c)

This last category is characterized by a very short neck, with a thick everted oblique rim with a subrectangular profile, assuming a wide range of different forms due to secondary modifications of the terminal part and outer surface. These jars are often distinguished by a careful making. Mouth diameter averages around 14-18 cm. This category is found mainly in Horizon 2, and may be compared with jars found in Stratum II at Ahichchhatra (Ghosh and Panigrahi 1946: Fig. 6, 63). See also Sharma 1969: Fig. 43, 188; the jar with a sloping profile of Fig. 15, c is comparable with a sherd from Banjarahi (Deo 1968: Fig. 7, 99).

Other pottery shapes (Fig. 16)

The small pot with a subglobular body from SU (21) is distinguished by a complex inflection at the area of maximum expansion (Fig. 16, a). A very similar vessel found at Rajghat in a Period V context (Narain and Roy 1977: Fig. 24, 9): the fragment of Fig. 16, b belongs to a similar restricted subglobular pot. Lamps very similar to Fig. 16, c-h were found at Karian in Period I contexts (Roy 1965: Fig. 4b, XII, XIII), and at Vaisali, from the late Period IV to early Period V layers (Sinha and Roy 1969: Fig. 47, 2 and 48, 2).

Gray Ware (Fig. 17)

This group includes a very limited sample of sherds referable to small sized vessels. This pottery appears to be produced with a particular care: walls are thin and even, the ceramic body is compact and sound, probably due to partial effects of syntherization in a reducing atmosphere. This ware, most probably, comes exclusively from Horizon 1 layers. The specimens illustrated in Fig. show some of the shapes on record: a small bowl identical to 1 A 1 category in Red Ware, and some restricted necked jars. The rim of the jar reproduced in Fig. 17, c may be compared with a Red Ware jar from Sravasti, period III (Narain 197: Fig. 17 XXVI). A gray ware jar with a complex rim is reported at Rajghat, Period V (Narain and Roy 1977: Fig. 24, 14). The small jar in Fig. 17, g is particularly well made and elegant in shape.

Small finds (Figs. 18, 19)

Great part of the small finds on record were found in the anthropic layers of Horizons 1 and 2. The terracotta animal figurines of Fig. 18, a-c (2 possible bulls and 1 horse) are representative of the group of fragments we sampled. The figurines, some of which show a red slip, are decorated with incised lines running obliquely on the back, rows of dots, and applied elements (eyes, tail, other muzzle features, and for the horse hair and garments). Other terracotta small finds include a round broken bead showing a double perforation on one side (Fig. 19, a), a simple ball (Fig. 19, b) and) and a well preserved terracotta dabber decorated with a row of triangular impressions running below the handle part, with no stratigraphic context (Fig. 19, e). Metal finds include a well preserved iron arrow head, having a distinctive square secti-

on in the point and a polygonal section in the haft, and the base of a small subcylindrical vessel, possibly in silver or tin.

Absolute Chronology

A preliminary study of the ceramics recorded at SMG-1 shows that the chronological range of this specific site of Simarongarh ranges approximately between the Islamic destruction of 1316 and post-Gupta (?) times. The Red Ware ceramic collection, in fact, is grossly comparable with the pottery excavated at Karian in Periods II and III (dated to 700-1200 AD and later), Sravasti Period III (later than the VIth century AD), Vaisali Period V (from 600 AD to the Islamic Period), Banjarahahi Period II (from post Gupta to early medieval times).

Nonetheless, some ceramic comparison suggest the possibility of a more detailed chronological assessment. Category 2E, a type of carinated handi, rather common at Simarongarh in Horizons 1 and 2 is almost identical to a specimen from Vaisali Period IV (Deva and Mishra 1961: Fig. 15, 47). Period IV at Vaisali is dated to 300-500 AD, and this evidence (although limited to a single specimen, and therefore doubtful) might imply a relatively early date (within the previously mentioned time range) for Horizon 1.

For Horizon 2 (the pit structures), jars of category 3J are comparable with material from Ahichchhatra Stratum II, dated by Ghosh and Panigrahi (1946) to 750-850 AD. A C14 date available for Kodan Period II ranges 985 +/- 76 AD (Mitra 1972). As ceramics from Horizon 3 at SMG-1 have meaningful comparisons with Kadan II, Horizons 2 and 3 at SMG-1 may well be included in a

period ranging from the 8 to the 10th century AD.

Horizons 3 and 4 seem to show ceramic associations markedly different from those Horizons 1-2. The bowls classified as Category 1H, belonging to Horizon 4, are very similar to specimens from Hastinapura Period V (Lal 1954 & 1955: Fig. 26, VIIIa, XI, XIa). This would place the later levels at SMG-1 between the 11th and 14th century AD, in accordance with the evidence of Islamic glazed sherds in the destruction level of the fired brick architecture exposed in section (Fig. 3).

Plant remains

by H. L. MILLER

8 samples of sediments, which appeared particularly rich in charcoal and fish remains, were collected to investigate the potential preservation of plant remains. The first results indicate that this aspect of research at Simraongarh would be very profitable. The samples (whose size varied to 1/3 liter of soil to 2-3 liters) were processed by a form of hand/bucket flotation (cf. Wagner 1988), in which the floating charred material was collected with a hand sieve (the mesh size was below 1 mm). Other seeds were anyhow collected with the heavy fraction, retained within a sieve having a 2 mm mesh. Some stratigraphic units turned out to be particularly rich in plant remains: for example SU (50), (61) and in general those belonging to the thick layers of charcoal with fish remains sealing the top of the square pits identified in section.

A total of 120 seeds were recovered, and their diversity is striking. There are a proportionally large number of domesticated legumes (almost half of the total number of seeds recovered), and a great variety of types.

At least 6 different species of legumes are present, the majority from the tribe Viciae (i. e., the pea/lentil/vetch tribe). A few grains of what may be rice (obviously present at Simraongarh) are present, but these are very badly distorted from charring and need further investigation before being firmly identified. Also, there are indications of the use of fruit, with more than 5 seeds of what is probably Ber (*Zyzyphus*, also called Jujube) and 2 seeds of *Prunus* fruit (the cherry/plum/almond family).

A number of other seeds, also probably domesticates, should be easy to identify once a comparative collection of modern seeds will be available. The preservation at this site is excellent, so that future samples are likely to include even rare seeds, possibly revealing some aspects of plants exploitation for spices, medicines, and even for rituals. In addition, by combining archaeobotany with architectural mapping and archaeological testing (Moyhinani 1979), we could be able to reconstruct in the future the ancient gardens of Simraongarh.

CAPTIONS TO FIGURES

Fig. 1: general topographic map of the site of Simraongarh (by courtesy of H. M. G. of Nepal Fields Survey, 1991). The squares of the grid are 500X500 m. 1: Raniwas; 2: Kankali Mandir; 3: fake entrance in the city walls.

Fig. 2: Map of the Raniwas mound showing the location of SMG-1 operation (the dashed area) For the scale see Fig. 1.

Fig. 3: The section recorded at SMG-1. 1: sandy silt turned red by direct exposure to fire; 2: concentration of charcoal particles; 3: potsherds and other ceramic material; 4: bones of large catfish specimens (*Siluridae*).

Fig. 4. a-d: Category 1A1. a: SU (22), RO1, 7.5 YR 7/4, diam. 13; b: SU (132), RO1, 7.5 YR 6/8, diam. 11; c: SU (17, RO1, 7.5 YR 8/6, diam. 13; d: S. 3, RO2, 5 YR 7/8, diam. 11. e: Category 1A2, SU (21), RO2, 5 YR 7/8, slip 10 R 4/6, diam. 18; f, g: Category 1 B. f: S. 4., RO1, 5 YR 7/8, slip 7.5 YR 8/8, diam. 25; g: S. 4, RO2, YR 7/6, slip 2.5 YR 3/0 diam. 22.

Fig. 5. a: Category 1C. S. 6, RO2, 5 YR 7/6, slip 10 R 4/8, diam. 23; b: Category 1D. SU (37), RO2, 5 YR 7/6, slip 5 YR 5/4, diam. 25; c: Category 1E. S. 1, RO2, 5 YR 7/6, slip 5 YR 5/8, diam. 16. d: Category 1F. S. 3, RO2, 5 YR 7/6, diam. 21. e. f: Category 1G. e: SU (55), RO2, 5 YR 7/6, slip 10 R 5/8, diam. 19; f: S. 4, RO2, 5 YR 7/6, slip 10 R 4/8, diam. 14.

Fig. 6. a-d: Category 1H. a: S. 2, RO2, 5 YR 7/8, diam. 23; b: S. 2, RO2, 5 YR 7/8, diam. 24; c: S. 2, RO2, 5 YR 7/6, diam. 24; d: S. 2, RO2, 5 YR 7/6, diam. 28. e. g: Category 1I. e: S 6, RO1, 5 YR 7/6, diam. 15; f: SU (47), RO2, 5 YR 7/6, slip 10 R 5/8, diam. 21; g: S 4, RO2, 7.5 YR 8/4, slip 2.5 YR 4/6, diam. 26.

Fig. 7. a: Category 2A, SU (60), RO3, 7.5 YR 7/4, slip 7.5 YR 3/2, diam. 18; b, c: Category 2B. b: S. 6, RO2, 5 YR 7/6, slip 10 R 4/8, diam. 24; c: S. 8, RO2, 5 YR 7/6, slip 10 R 4/8, diam. 21.

Fig. 8. a: Category 2C, SU (63), RO3, 7.5 YR 7/8, slip 2.5 YR 3/0, diam. 18; b: Category 2D, S. 8, RO2, 5 YR 7/8, slip 2.5 YR 5/8 diam. 17; c, d: category 2E. c: SU (37), RO2, 5 YR 7/6, slip 5 YR 7/8, diam. 18. d: SU (21), RO2, 5 YR 7/6, diam. 24.

Fig. 9. a: Category 2E, S. 1, RO3, 5 YR 7/8, slip 2.5 YR 4/8, diam. 27; b: Category

2F, SU (17), RO3, 5 YR 7/4, slip 7.5 YR 3/2 diam. 19.

Fig. 10. a-c: Category 2F, a: SU (17), RO3, 5 YR 8/4, slip 2.5 YR 4/8, diam. 21. b: S. 4, RO2, 7.5 YR 7/8, slip 10 R 5/6, diam. 12.

Fig. 11. a-e: Category 2G. a: S. 2, RO2, 5 YR 7/6, diam. 25; b: S. 2, RO2, 5 YR 7/8, diam. 28; c: S. 2, RO2, 7.5 YR 7/4, diam. 29; d: S. 2, RO3, 5 YR 7/8, diam. 33; e: S. 2, RO2, 7.5 YR 7/4, diam. 28. f: S. 1, RO2, 5 YR 7/6, slip 2.5 YR 6/8, diam. 17.

Fig. 12. a-b: Category 3A. a: S. 6, RO2, 5 YR 7/6, slip 2.5 YR 2/0, diam. 13; b: S. 6, RO2, 5 YR 7/8, slip 2.5 YR 5/8, diam. 14; c: Category 3B, S. 4, RO1, 7.5 YR 8/2, slip 2.5 YR 4/8, diam. 13; d: Category 3C, S. 4, RO2, 5 YR 7/6, slip 10 R 4/8, diam. 17; e: Category 3D, S. 4, RO2, 7.5 YR 8/6, slip 2.5 YR 6/6, diam. 14.

Fig. 13. a-d: Category 3E. a: SU (21), RO2, 5 YR 7/6, slip 10 R 4/6, diam. 13; b: S. 1, RO1, 7.5 YR 7/6, diam. 15; c: S. 4, RO2, 7.5 YR 8/6, slip 2.5 YR 5/8, diam. 11; d: S. 1, RO2, 7.5 YR 7/8, diam. 18.

Fig. 14. a: Category 3F, S. 4, RO3, 5 YR 7/8, slip 2.5 YR 4/8, diam. 18; b: Category 3G, S. 4, RO2, 5 YR 7/6, slip 5 YR 7/8, diam. 19; c: Category 3H, RO2, S. 8, 5 YR 7/6, slip 2.5 YR 4/6, diam. 15; d: Category I, S. 8, RO2, 5 YR 7/6, slip 2.5 YR 4/6, diam. 15.

Fig. 15. a-c: Category 3J. a: S. 4, RO3, 5 YR 7/6, slip 2.5 YR 5/8, diam. 20; b: SU (37), RO2, 7.5 YR 7/6, slip 2.5 YR 5/8, diam. 17; c: SU (47), RO2, 7.5 YR 7/6, diam. 17.

Fig. 16. Other pottery shapes. a: SU (21), RO2, 5 YR 6/4, slip 2.5 YR 5/4, diam. 7.5; b: S. 7, RO1, 5 YR 7/6, slip 2.5 YR 4/8, diam. 4; c: SU (132), RO1, 5 YR 5/6, diam.

3, 5; d: S.7, RO1, 2.5 YR 7/8, diam. 6, 5; e: S.4, RO2, 5 YR 7/6 diam. 7; f: S.4, RO1, 5 YR 5/6, diam. 6.4 g: S.4, RO1, 5 YR 7/8, diam. 4; h: S. 6, RO1, 2.5 YR 7/8, diam. 10.

Fig. 17. Gray Ware. a: SU (21); b: S.1; c: SU (22); d: SU (21).

Fig. 18. Terracotta animal figurines. a: sporadic, probably bovid, length 9, 7; b: S. 4, horse, length 4, 3; c: S. 7, unidentified, length 4, 3.

Fig. 19. Small finds. a: S. 4, terracotta bead with a double perforation, diam. 2; b: S. 4, terracotta ball, diam. 3, 3; c: S.6, iron arrow head, length 6, 5; d: S.6, fragment of a silver or tin small vessel, base diam. 3, 2; e: sporadic, terracotta dabber, height 10, maximum diam. 9, 5.

FOOTNOTES

1) The team spent in Simraongarh about 4 weeks. The mission installed its basic facilities at the temple of Ramjanaki Mandir (Raniwas), where we arranged kitchen, bedrooms and working rooms.

We are very grateful to Mr. Tripathee and Mr. Tiwari, representatives of the Department of Archaeology, H. M. G. of Nepal, for their precious collaboration and friendship. Many thanks are also due to G. Buzzanca of the Istituto Central per il Restauro, Rome, for digitizing the maps of Figs. 1 and 2. Preliminary information on the fish remains was kindly provided by B. Compagnoni and T. Tagliacozzo of the Museo Preistorico etnografico 'L. Pigorini', Rome.

2) The analytical description of the specimens illustrated in Figs. 4-16 is reported in form of caption to the single Figures. The description of each illustrated specimen contains, in first place, a Category definition; the provenience,

expressed in terms of surface Samples or Stratigraphic Units, in parentheses - e.g. SU (21) or S.2; the initials RO indicate the Red-Orange ware class, followed by a number (1 to 3) expressing a scale of texture, RO1 being the finer and RO3 the coarser. Then follows a colour value, coded according to the Munsell Charts: when the sherd is slipped, the first colour refers to the body, the second to the slip; and finally the mount diameter value (or, for the small finds, other meaningful measurements).

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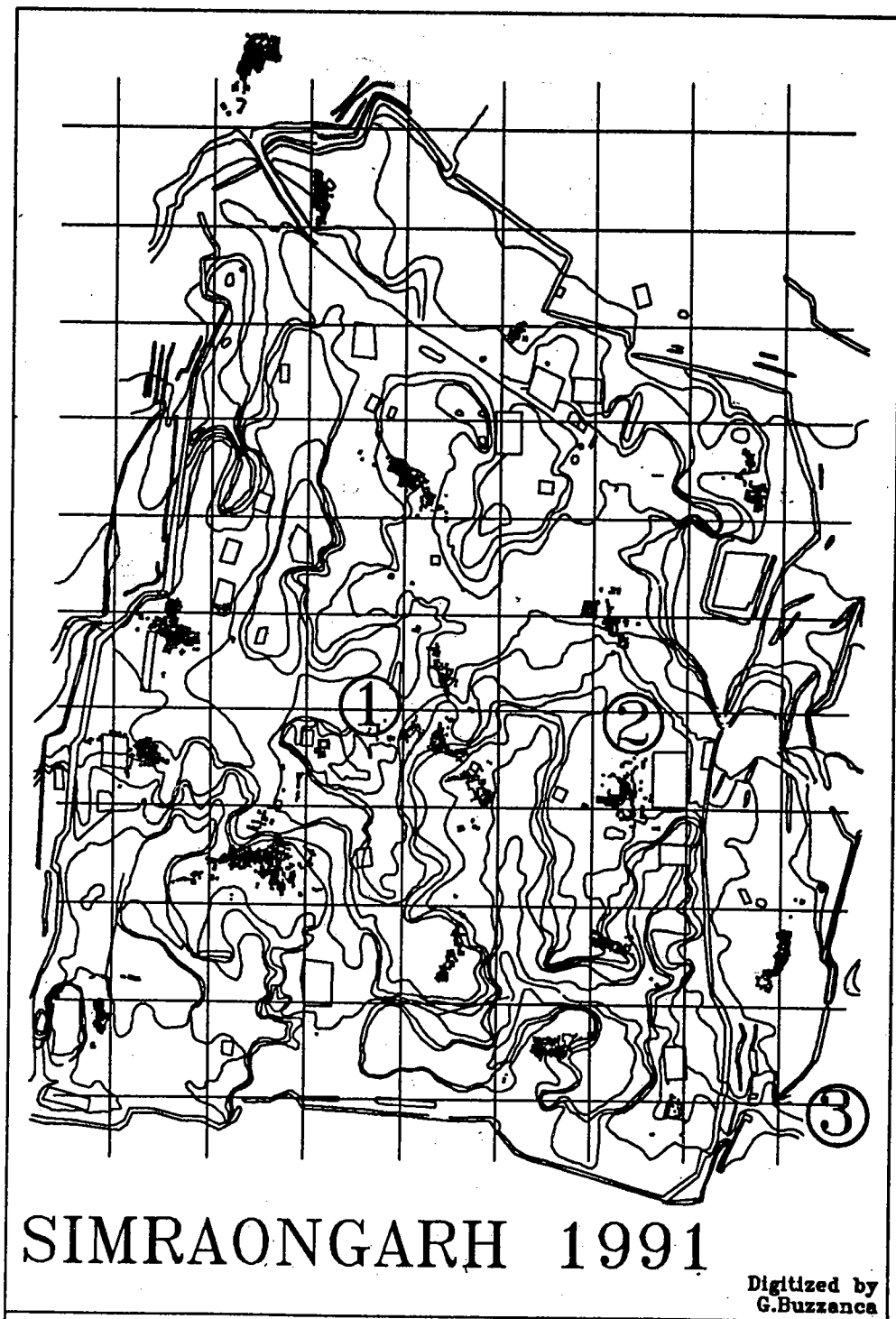


Fig 1

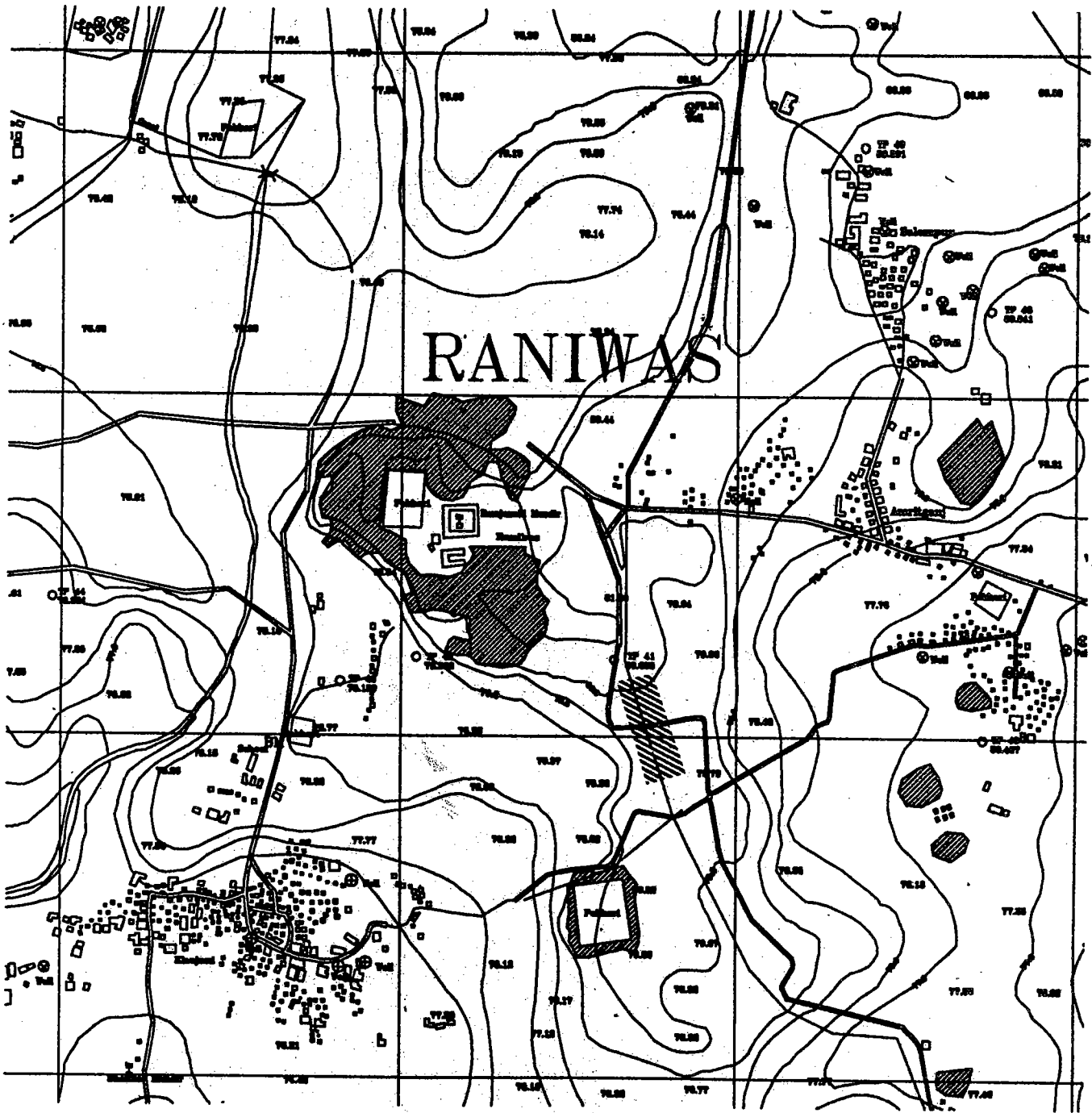


Fig 2

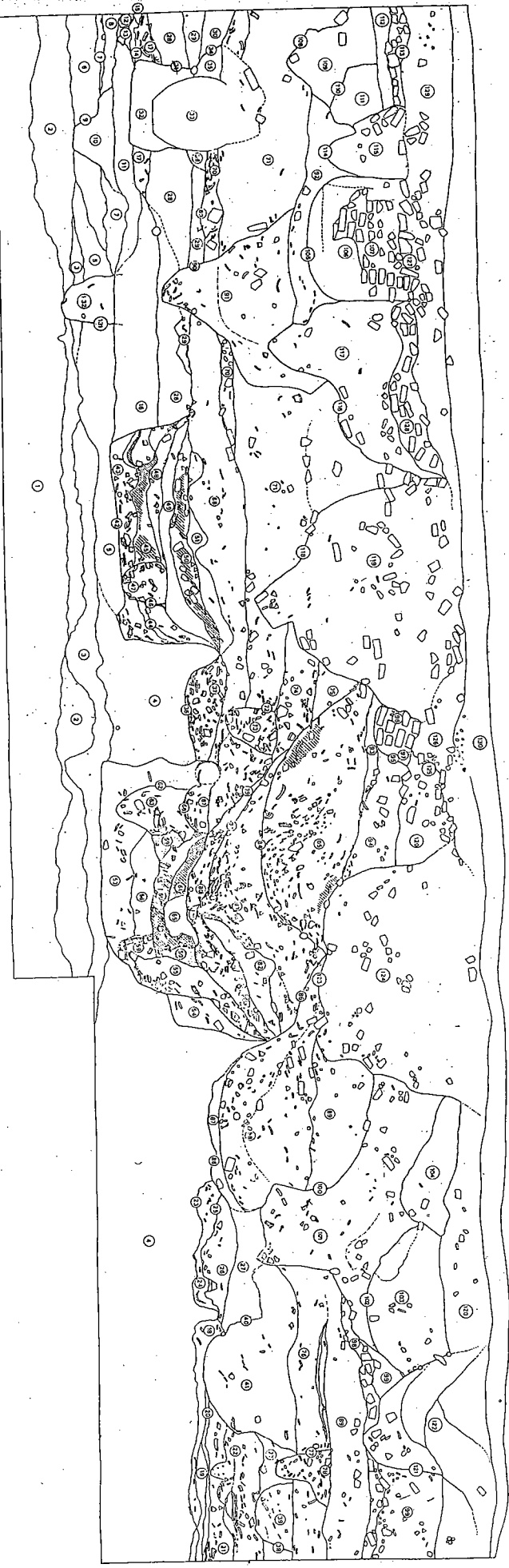
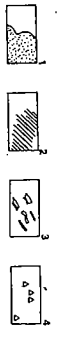
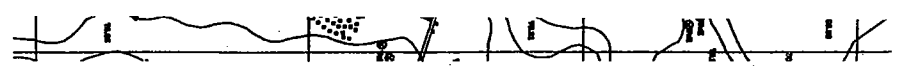


Fig. 3

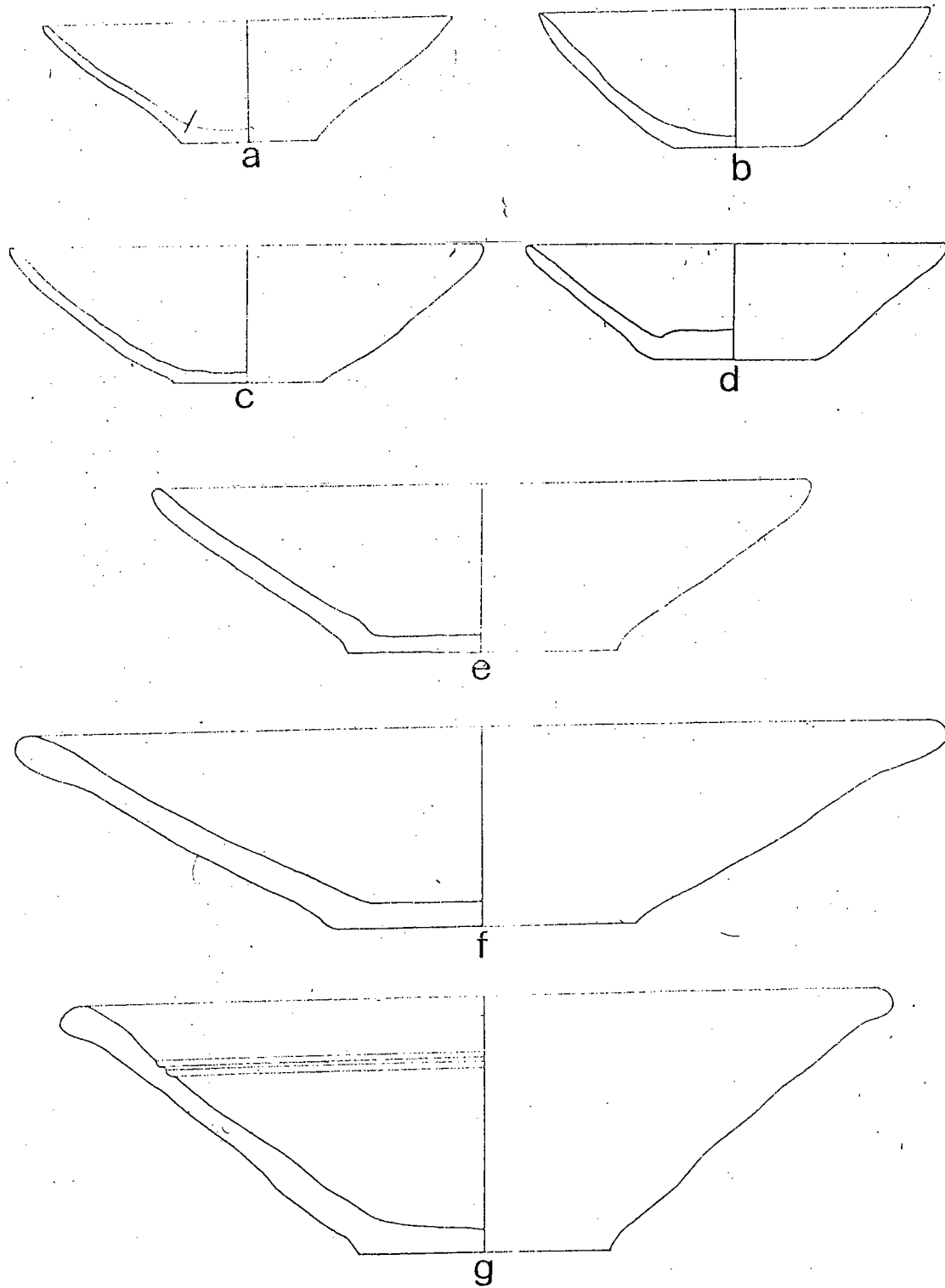


Fig 4

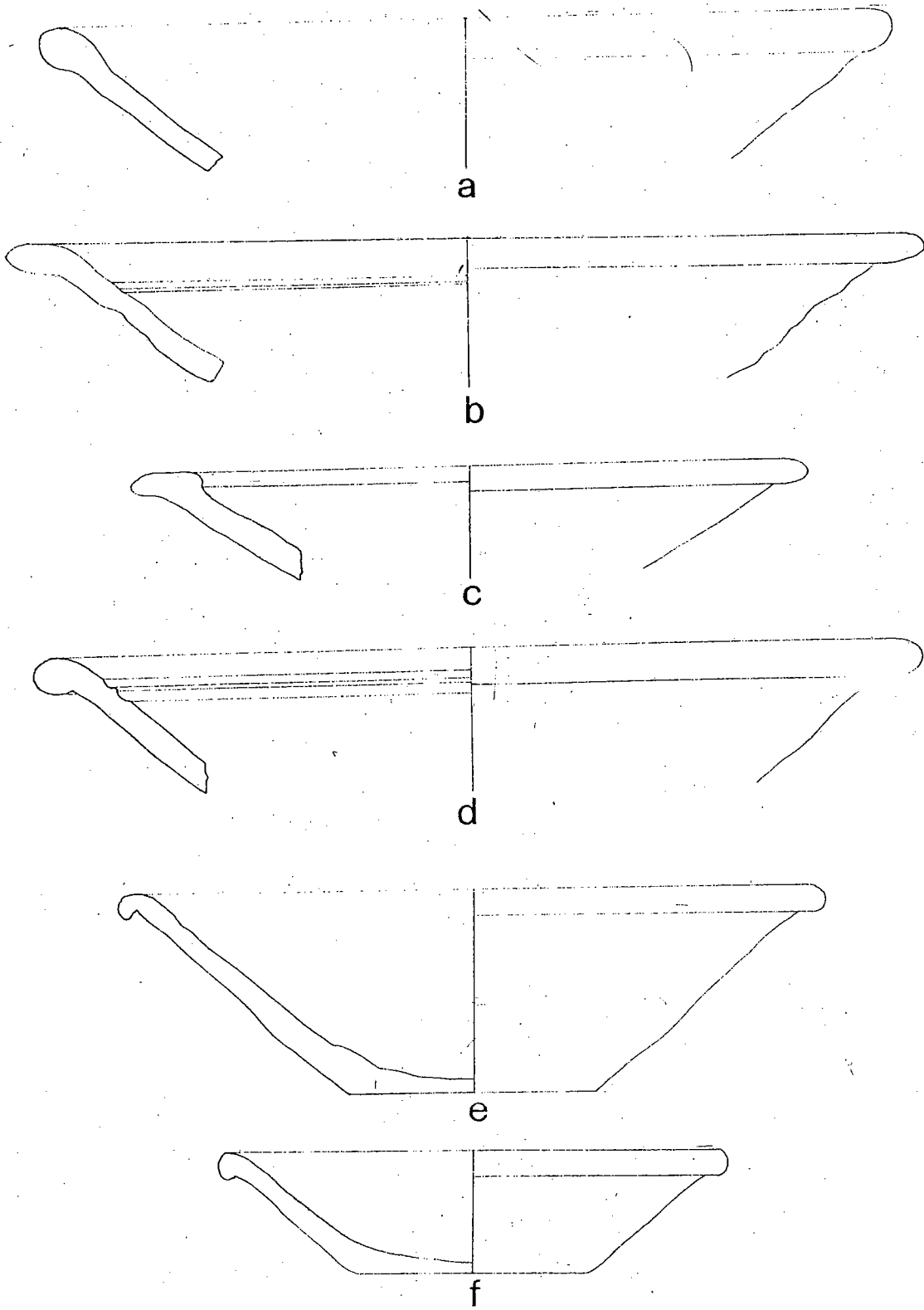


Fig 5

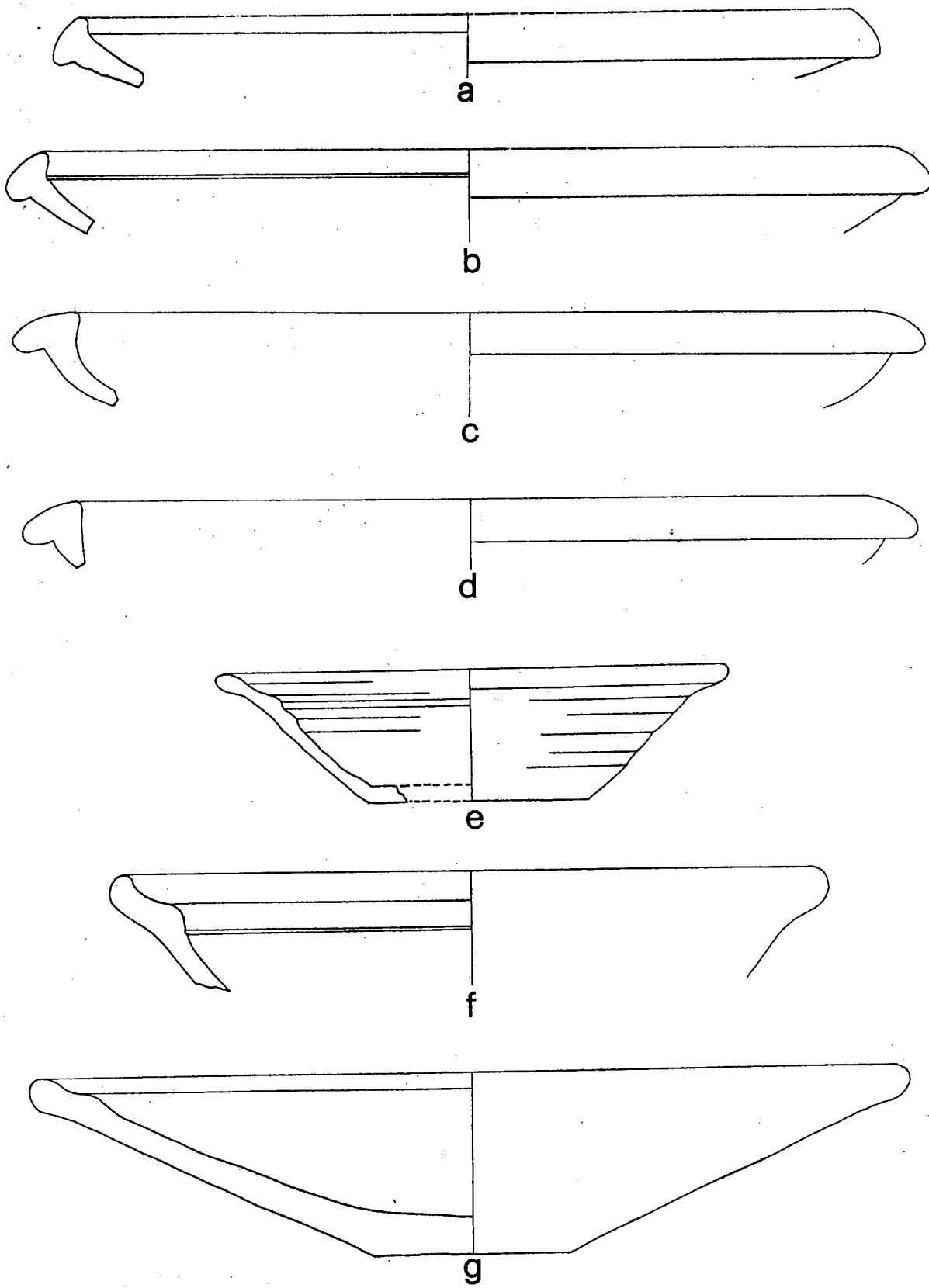


Fig 6

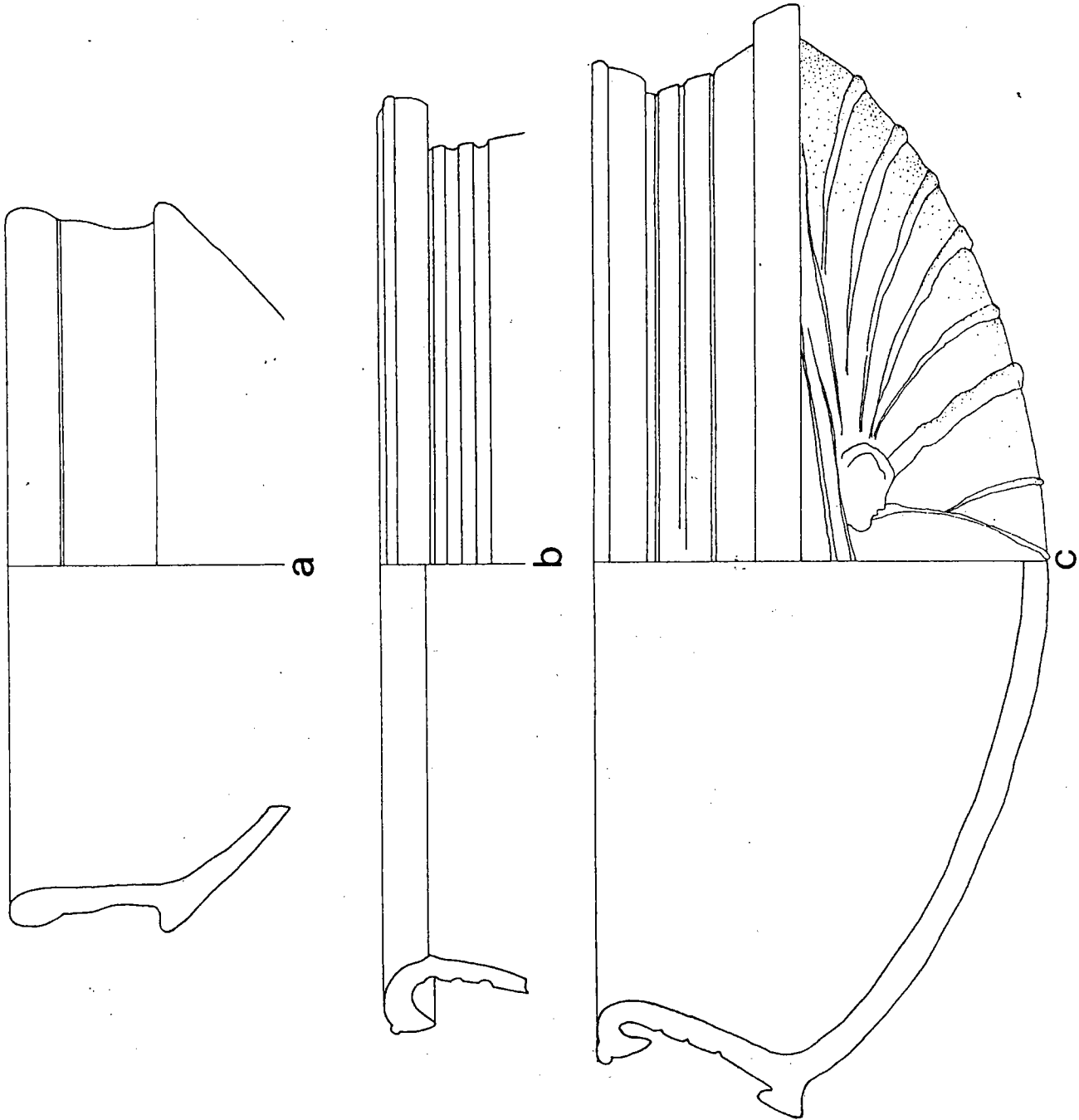
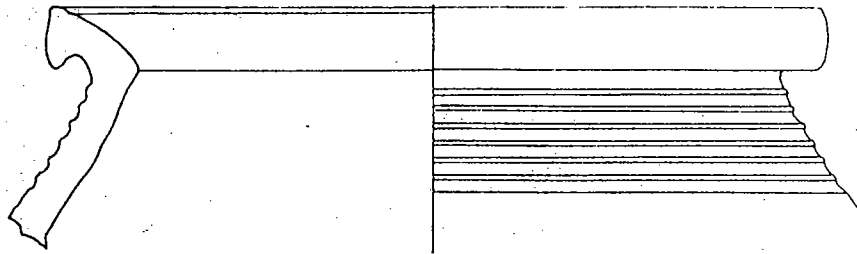
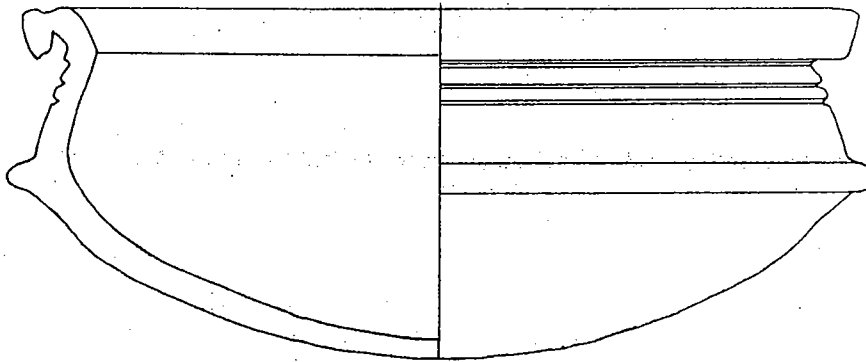


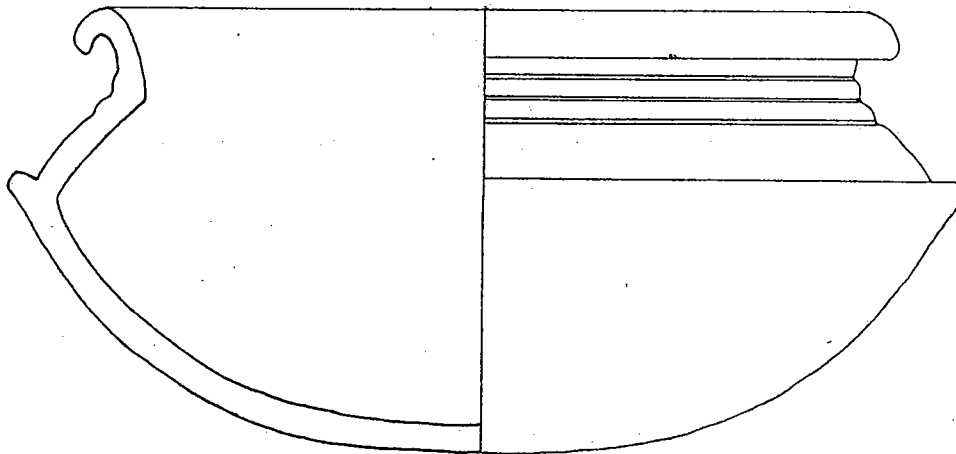
Fig 7



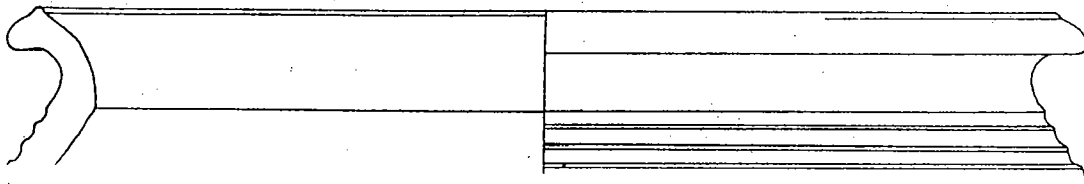
a



b



c



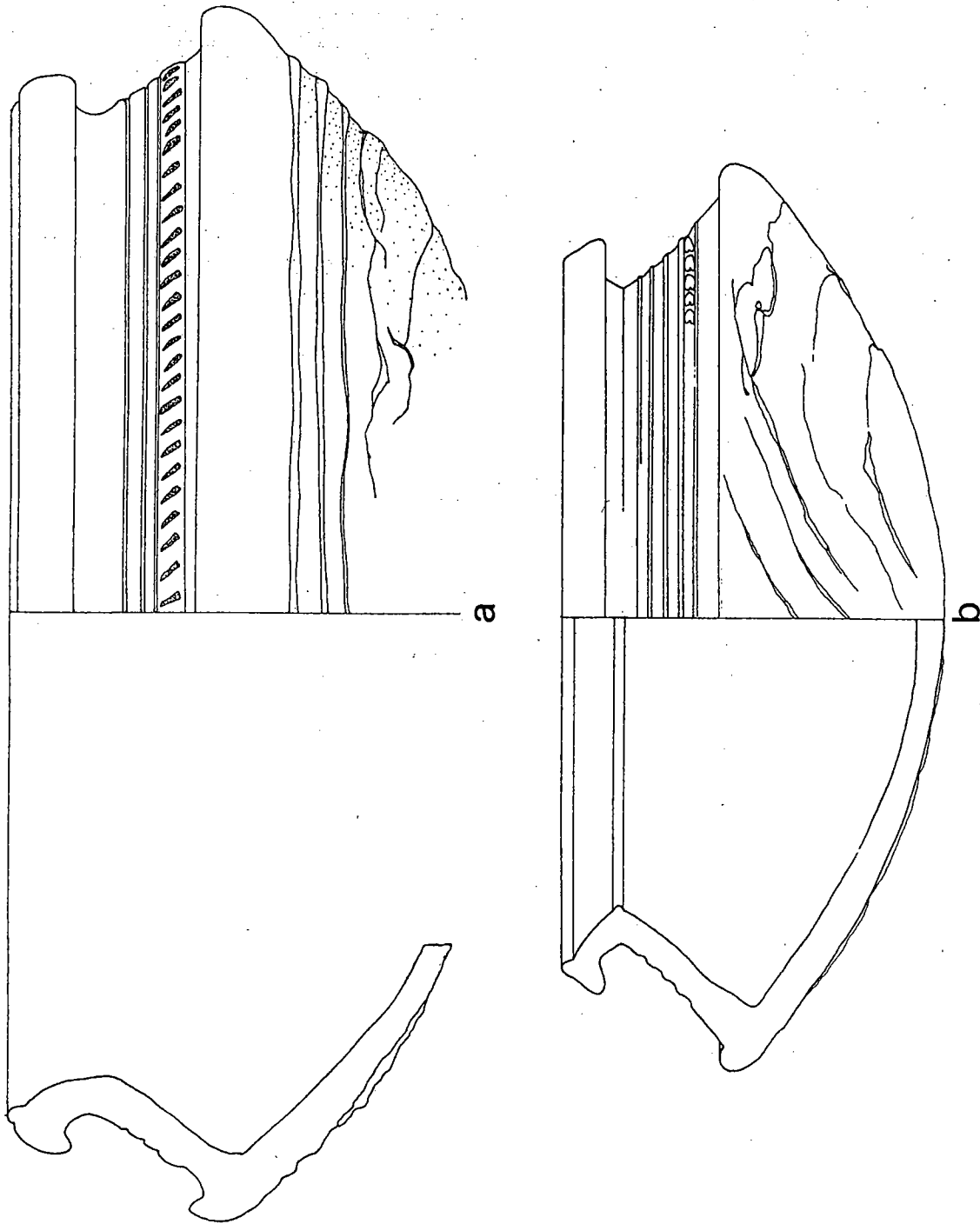


Fig 9

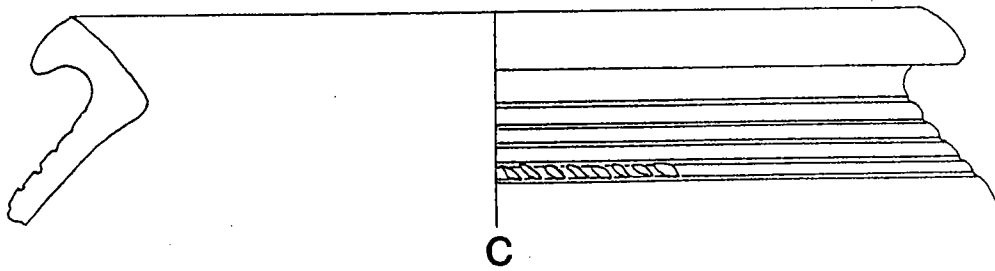
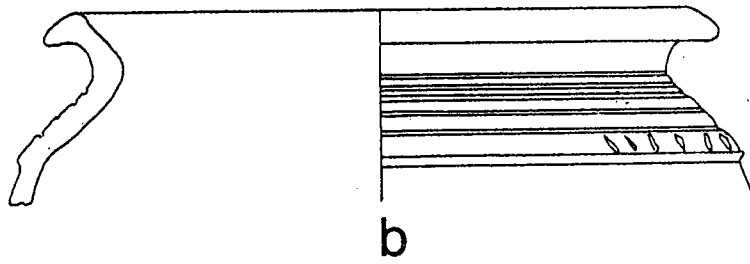
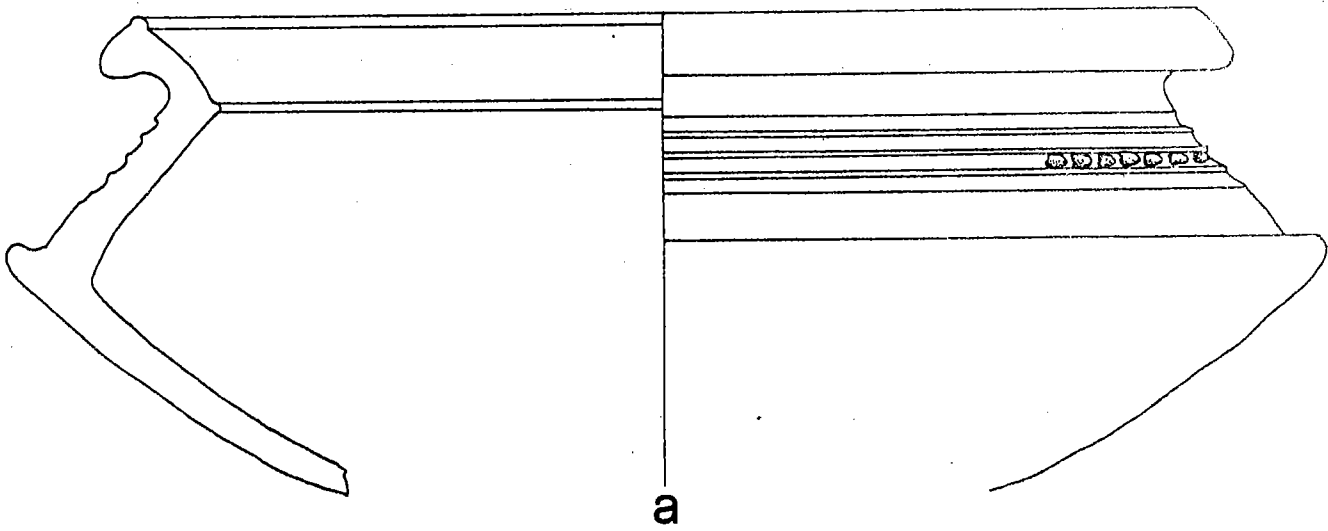


Fig 10

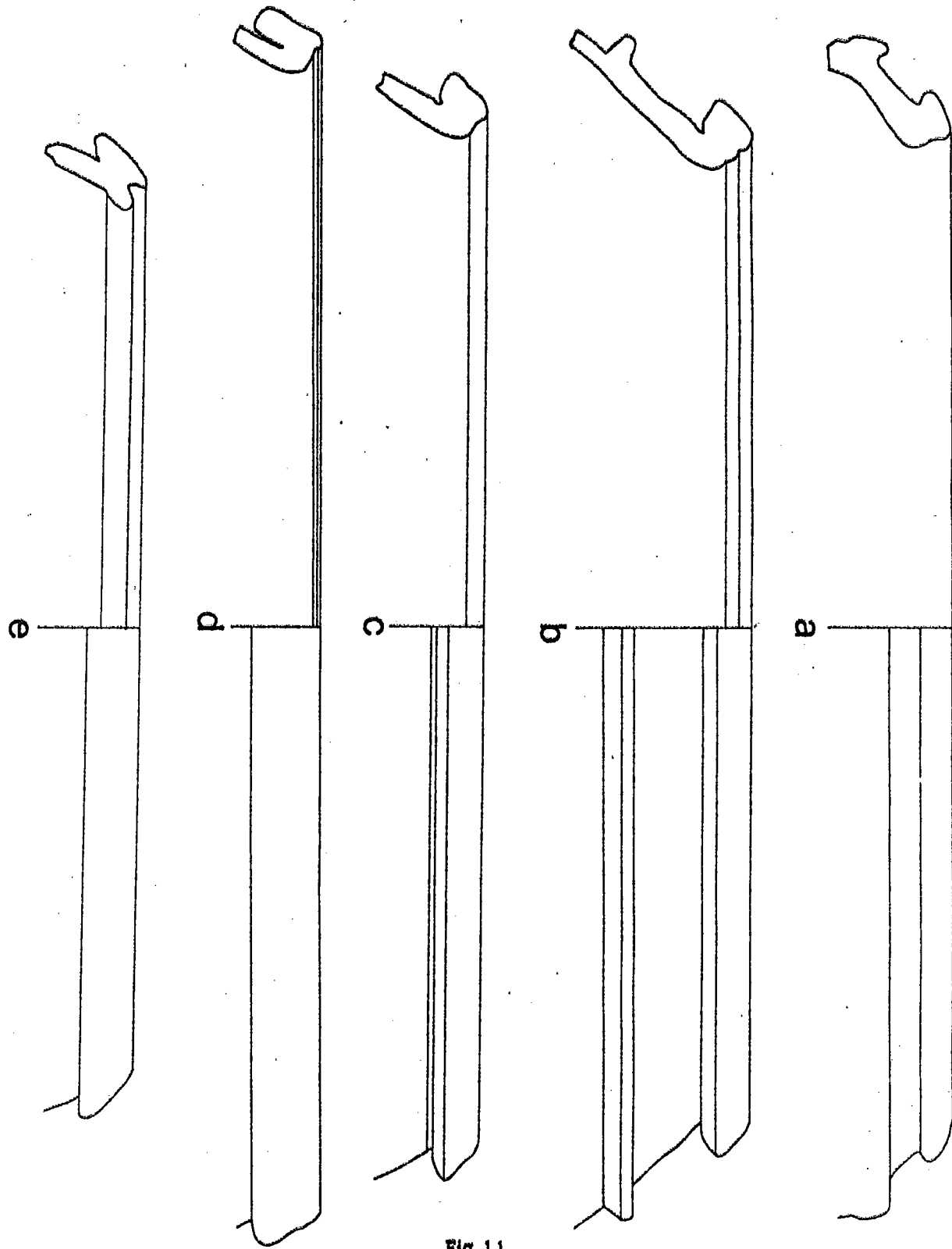


Fig 11

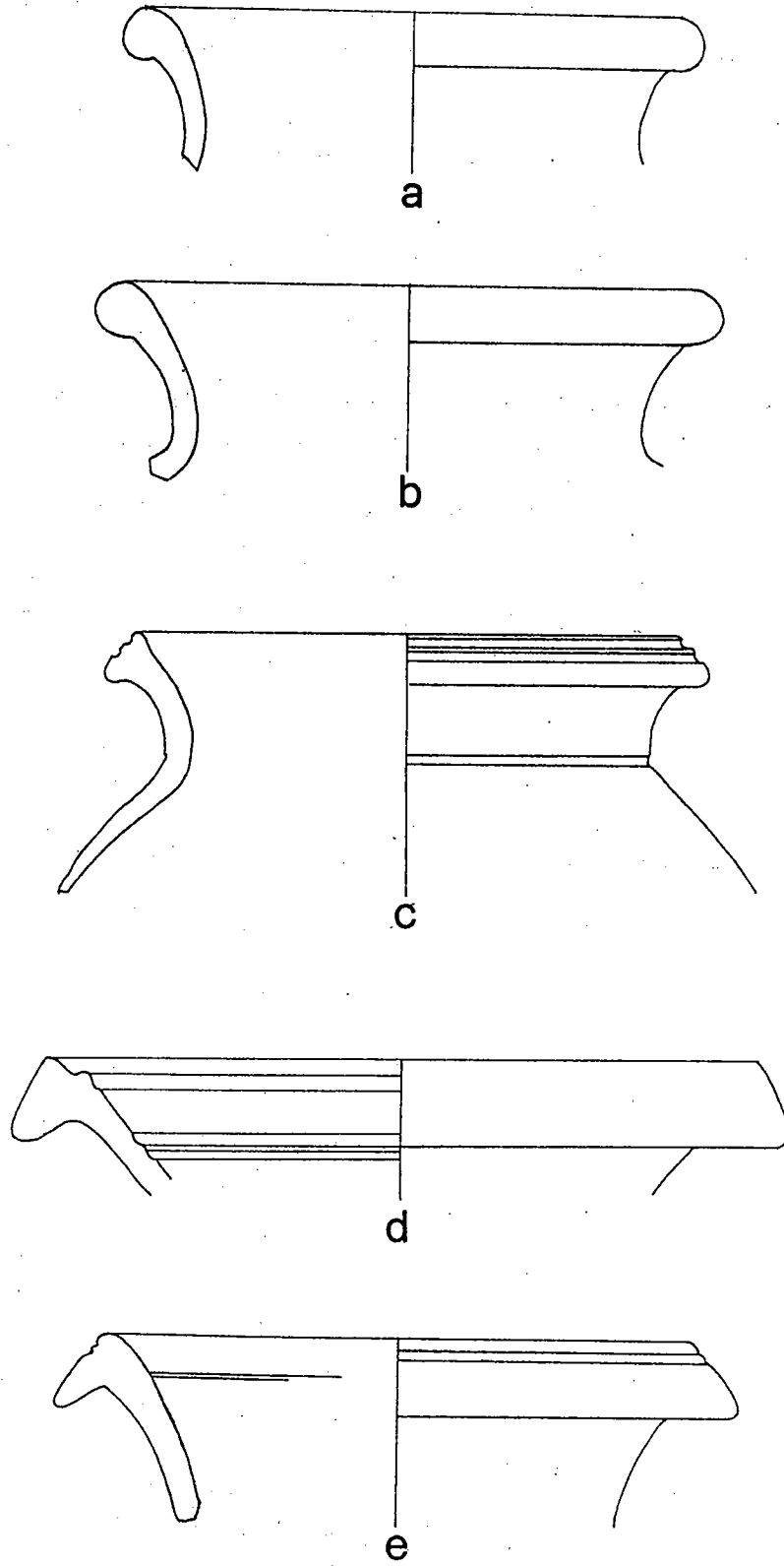


Fig 12

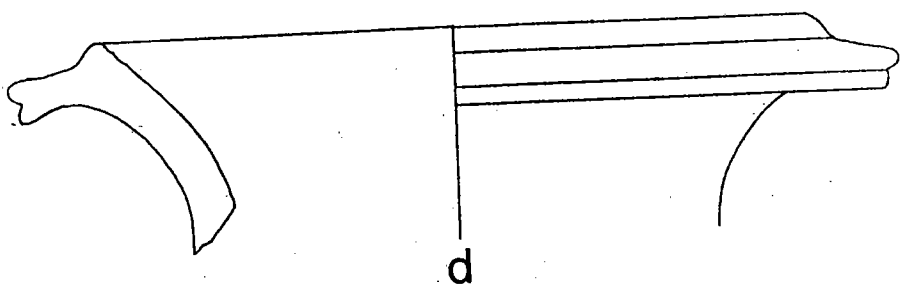
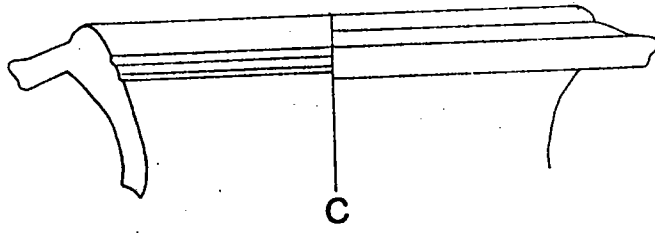
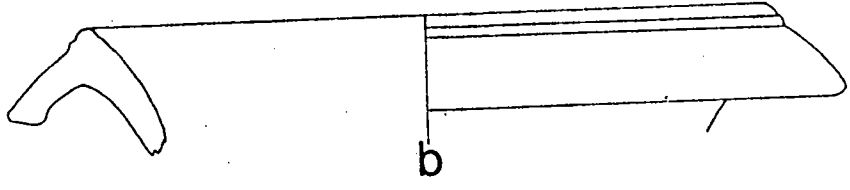
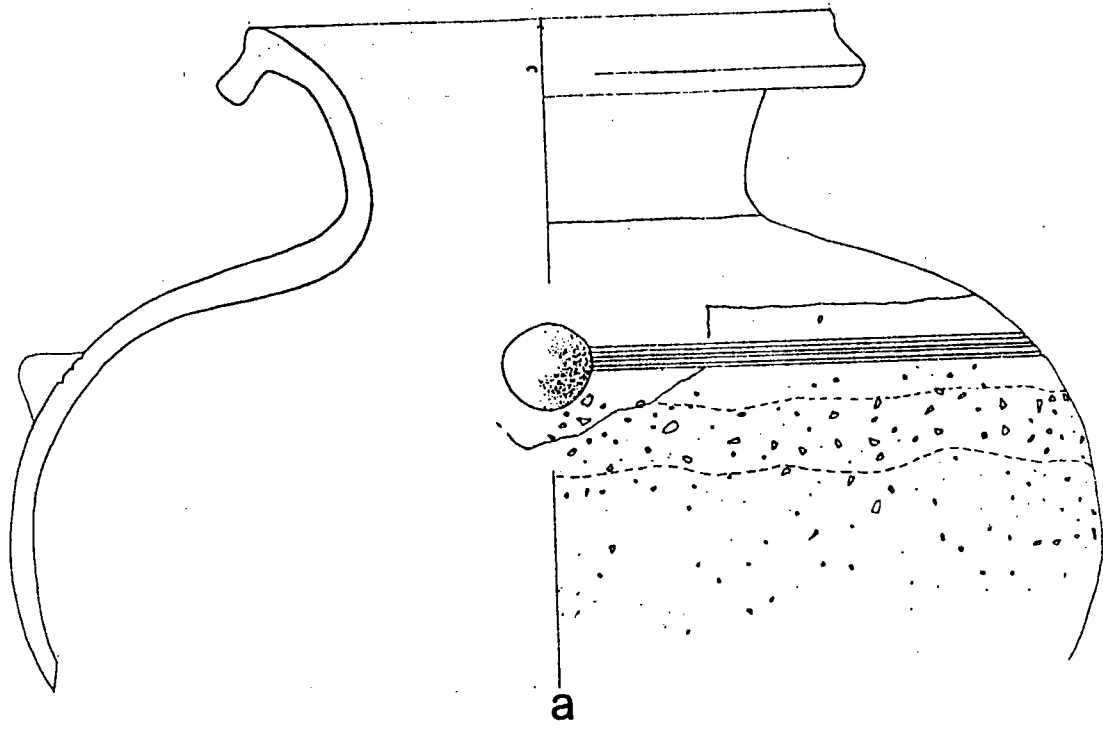


Fig 13

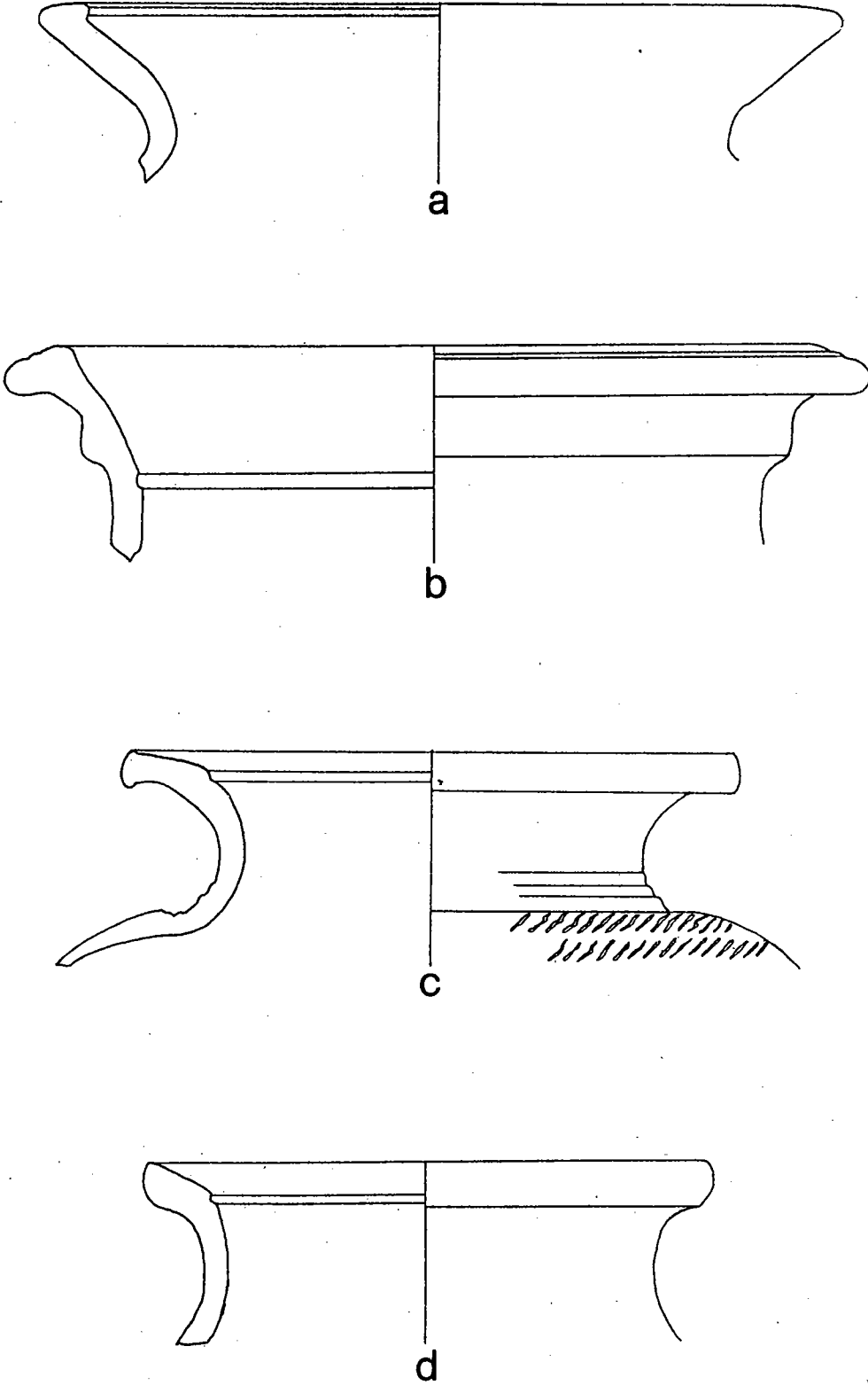


Fig 14

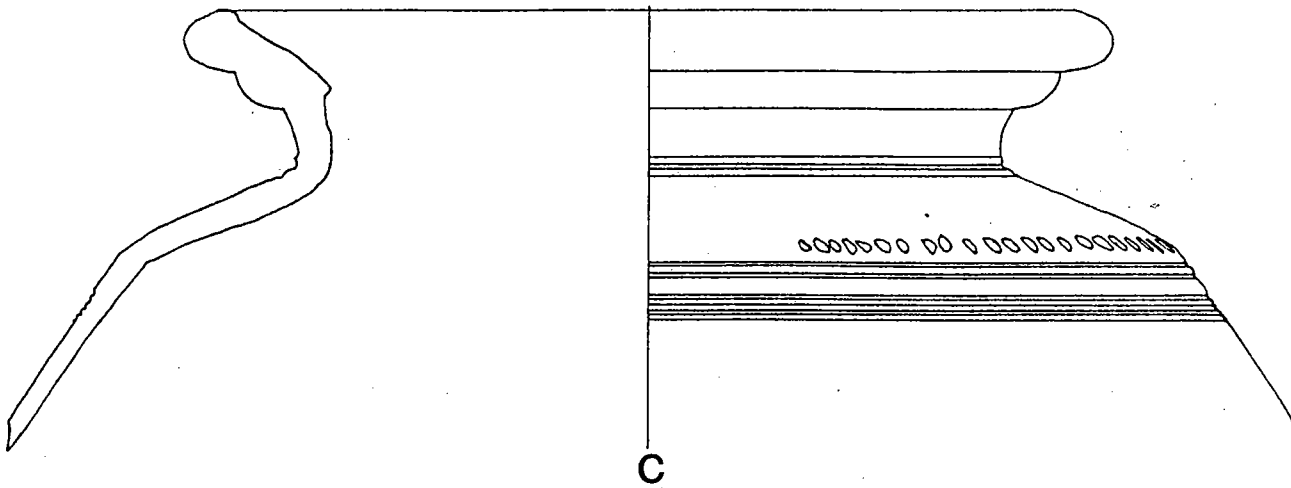
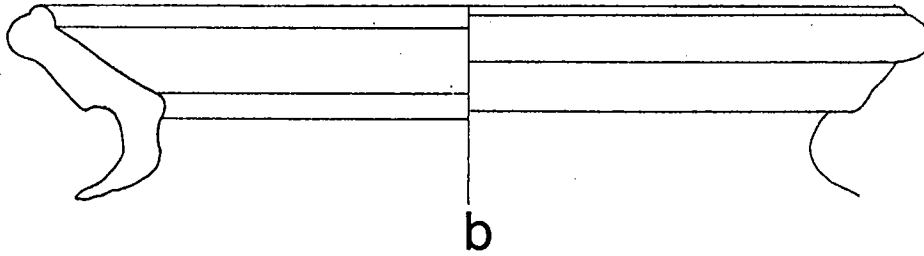
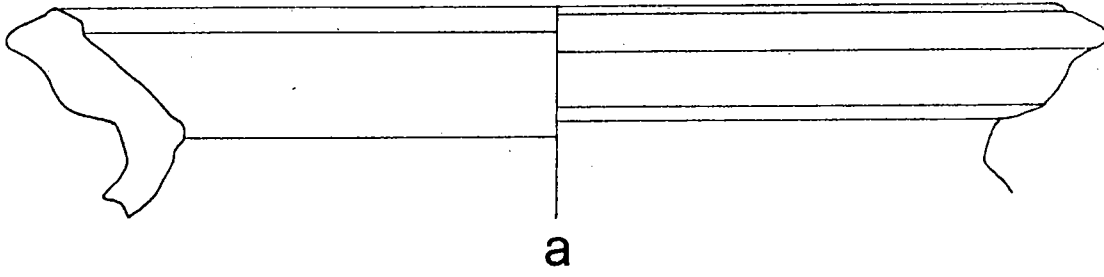


Fig 15

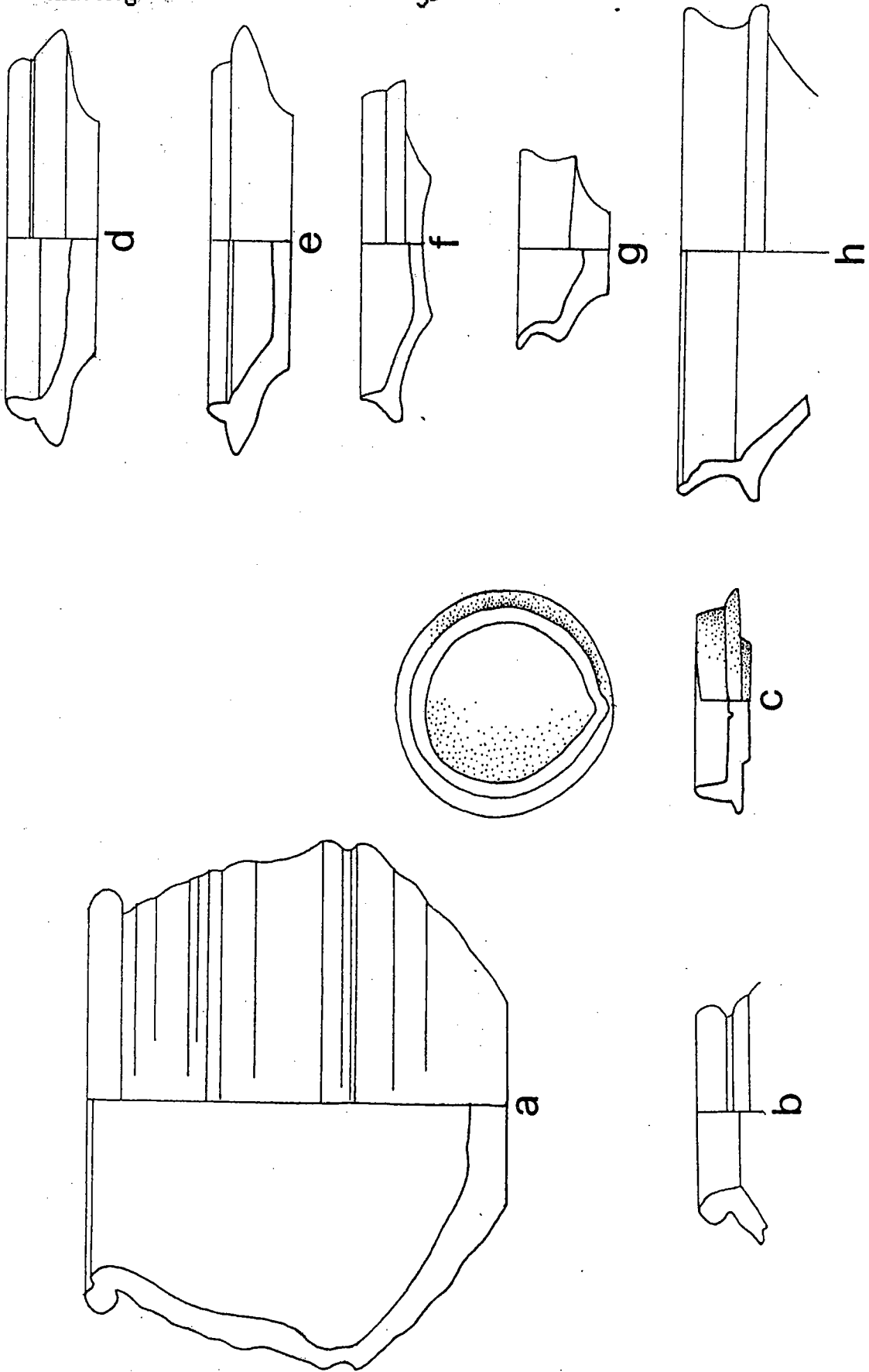


Fig 16

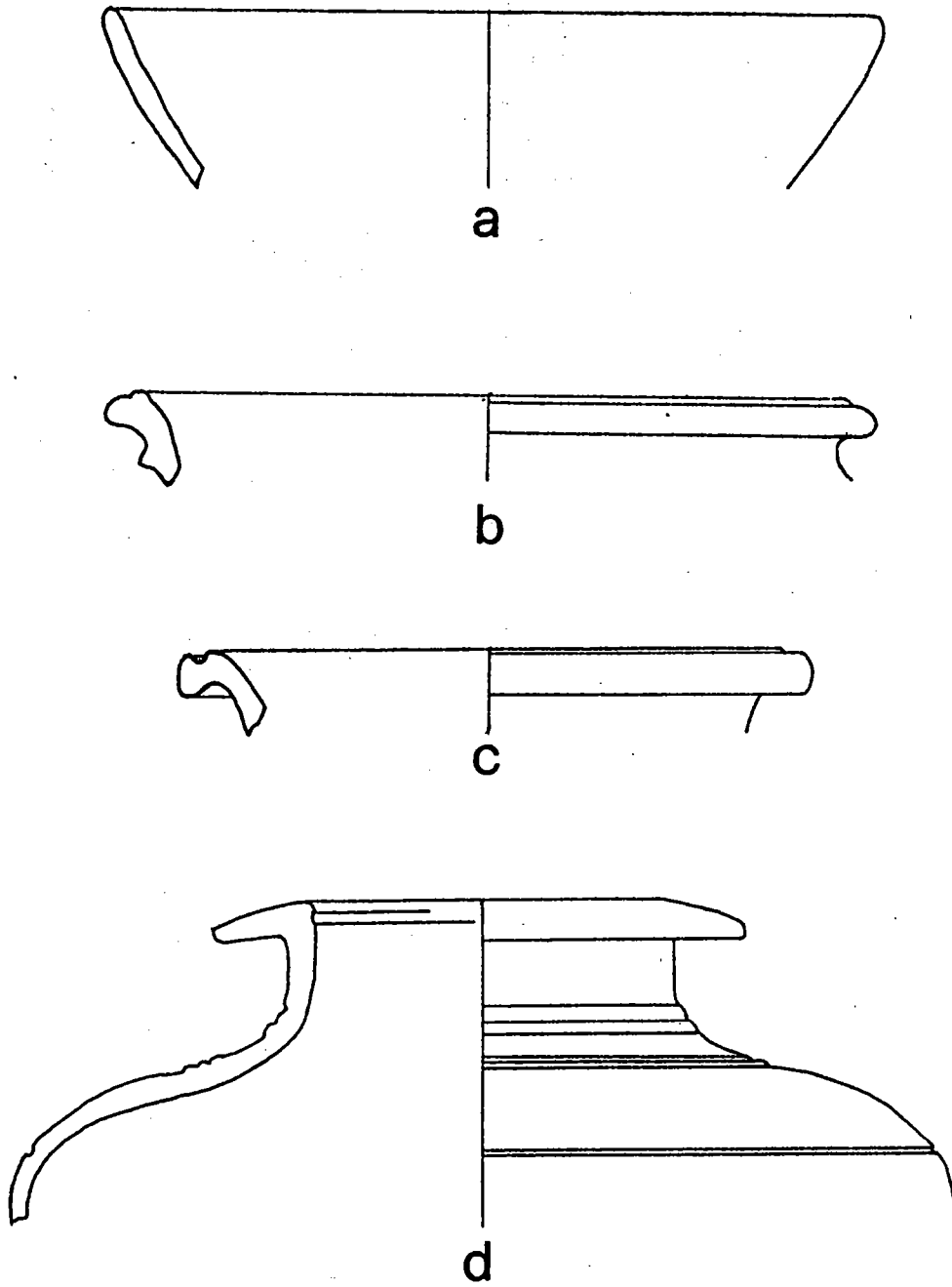


Fig 17

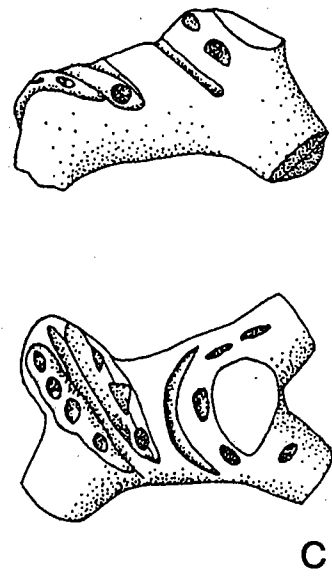
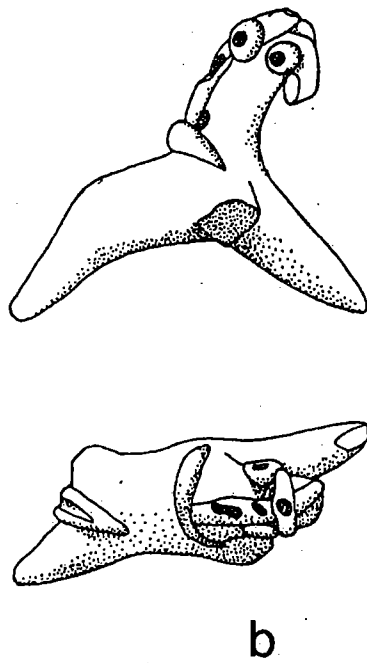
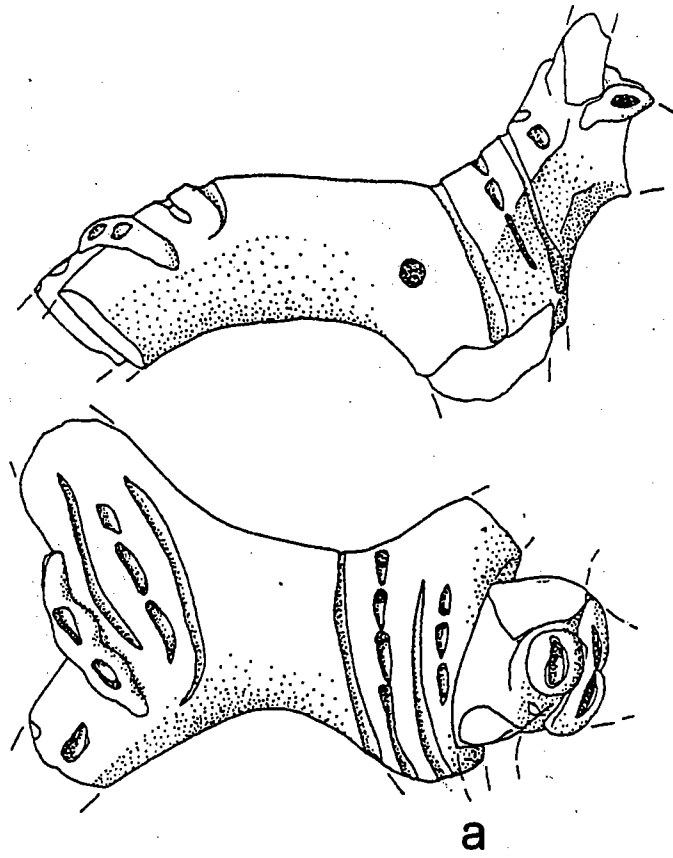


Fig 18

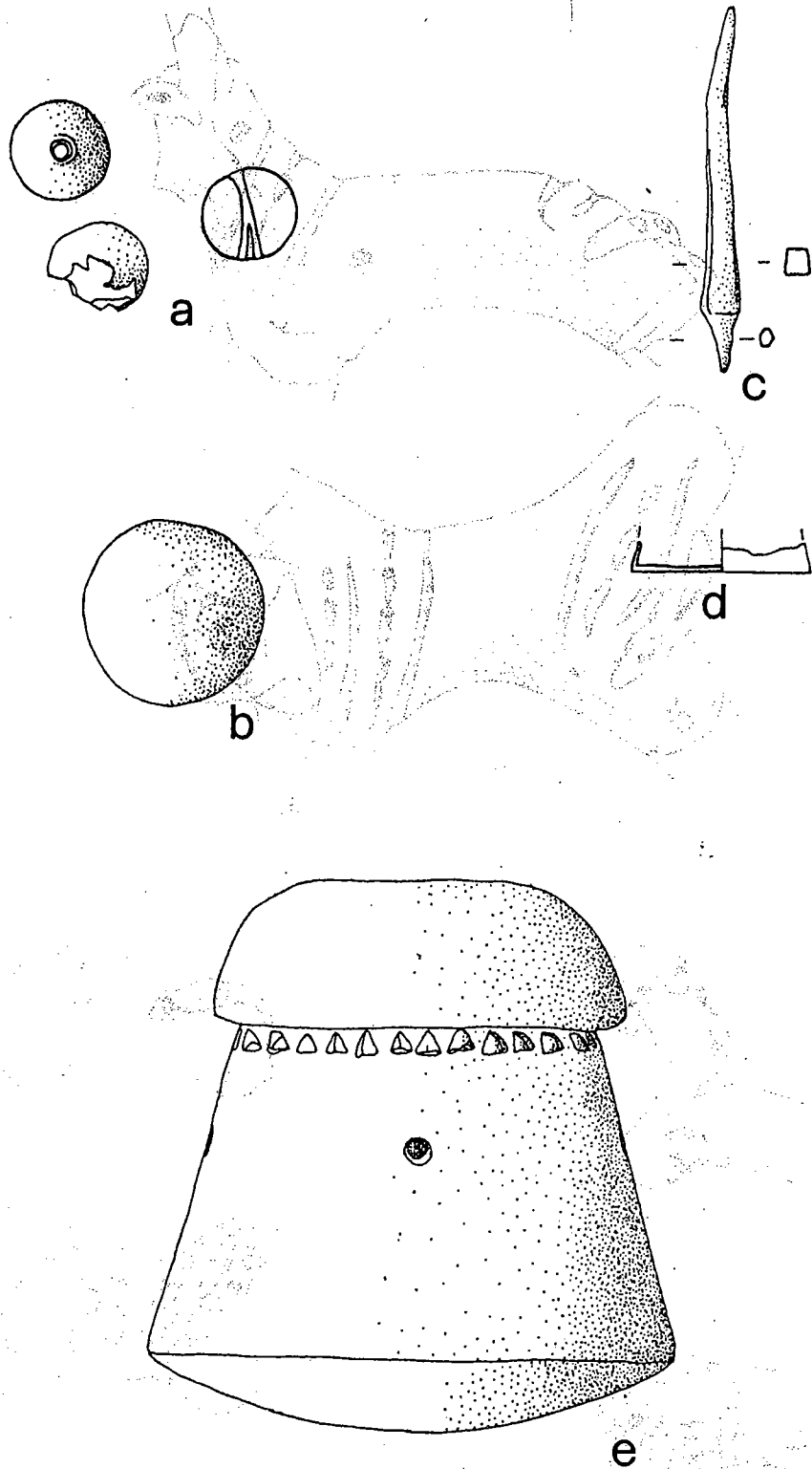


Fig 19