NEOLITHIC *TANGAS* FROM LERNA

(PLATES 74-76)

AS the study of the small objects from the Neolithic settlement at Lerna has progressed,[1] one group of triangular terracotta plaques has proved to be of special interest. Without known parallels of comparable date, the plaques strongly resemble terracotta triangles, called *tangas*,[2] found in the graves and settlements of the pre-Columbian Marajoara Indians of the Amazonian Delta. The only relationship between artifacts so widely separated in time and place implied by their juxtaposition here is that of function: the use ascribed to the Amazonian triangles as pubic shields reinforced the interpretation of the Lerna plaques which I had reached independently. Since fragments of the Neolithic triangles are easily mistaken for corners of other objects—we at first called them sherds with mending holes, spoon handles and "enigmas"—it seems useful to present this unique group from Lerna ahead of the full publication of the material from the site in order to alert others to both the existence and the distinctive characteristics of the objects.[3]

Fragments of 29 triangles have been identified in Neolithic contexts at Lerna; all but two are in the *urfirnis* fabric characteristic of the Middle Neolithic period in the Peloponnesos.[4]

In all cases where a reasonably full restoration has been possible, the plaques have the form of an isosceles triangle. The smallest of the triangles whose dimensions can be fairly accurately estimated measures 0.07 m. W. by 0.45 m. H., the largest 0.16 × 0.10 m.; the median is *ca.* 0.11 × 0.85 m. Most of the plaques exhibit both lateral and longitudinal curvature, the latter sometimes strongly accentuated at the apex which I take to be the lower point of the plaque as worn (Fig. 1: 15, 20, 23). All three edges of the plaques were neatly finished before firing; the finishing is a clear indication that the triangles were designed for a specific primary

[1] For the preliminary reports of the excavation, *v. Hesperia* 23, 1954, pp. 3-30; 24, 1955, pp. 25-49; 25, 1956, pp. 147-173; 26, 1957, pp. 142-162; 27, 1958, pp. 125-144; 28, 1959, pp. 202-207.

[2] Professor Jon Vincent of the Department of Spanish and Portuguese at the University of Kansas has kindly informed me that *tanga* is a Quimbundo (or, Kimbundo) word meaning "cloth," which is currently used in Brazil as the colloquial term for string bikini.

[3] My thanks are due to John L. Caskey, director of the Lerna excavations, for permission and encouragement to publish the objects here. The catalogue and search for parallels were done while I was on leave from the University of Kansas in 1973/74 with the assistance of the Classics Fund of the University of Cincinnati, which also provided the support for the drawings made by Iro Athanassiades; the photographs are by the author.

[4] For descriptions of the fabric, *v.* S. S. Weinberg, *Hesperia* 6, 1937, pp. 500-503 and *Cambridge Ancient History* I, i, 3rd ed., pp. 594-596.

function and that they cannot be dismissed as, for example, potsherds re-used as polishers. A few millimeters below the top edge of each plaque three perforations were made before firing, one at the center, one close to each tip; the diameter of the perforations is generally about 4 mm.

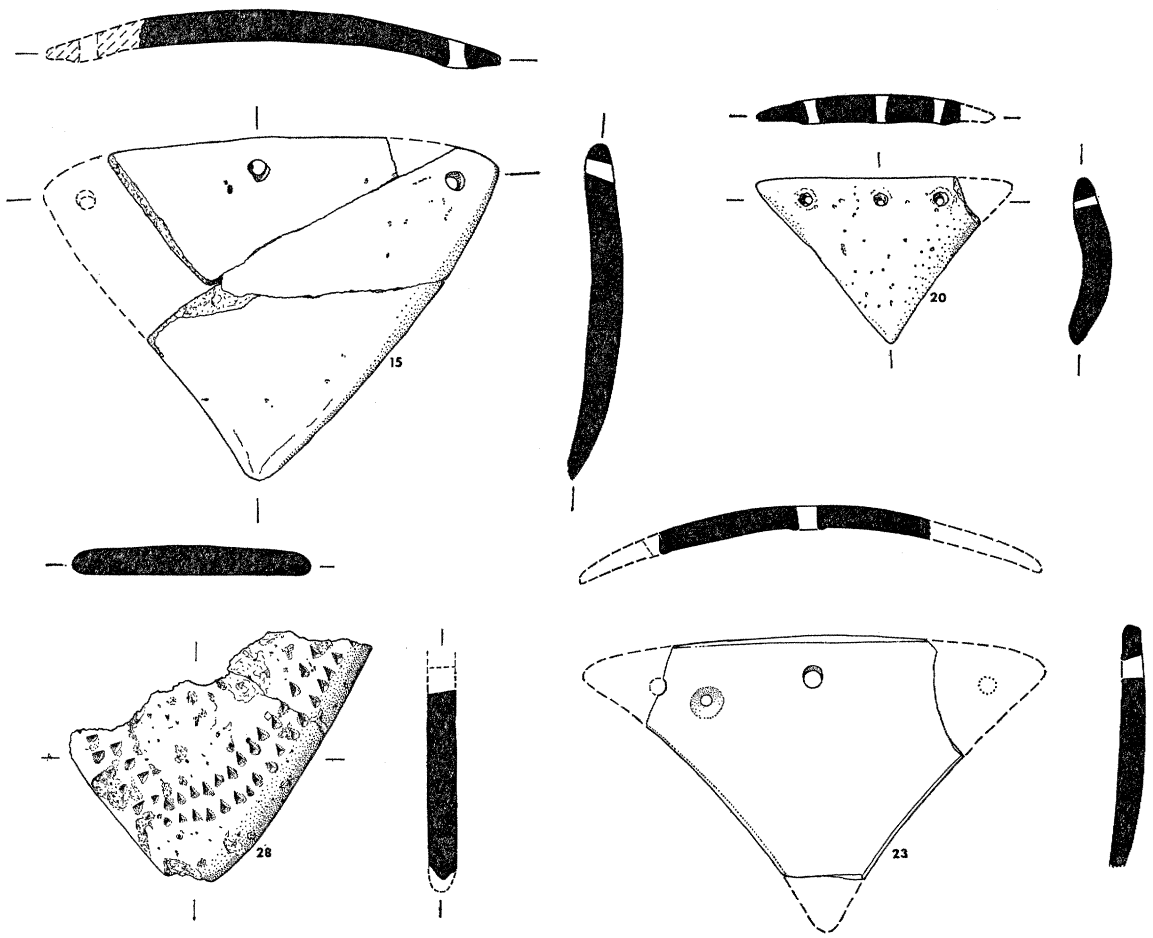


FIG. 1. Scale 1:2

The color which is dominant throughout the main group of 27 plaques is red. The triangles of one subgroup are solidly coated on both faces with a polished or burnished slip or glaze.[5] On these decoration is confined to dark mottling, which

[5] I follow Caskey in my use of the terms " glaze " and " slip ", which, while not totally satisfactory, as he observes, will serve until scientific analyses enable us to define differences and similarities more specifically, *v. Hesperia* 27, 1958, p. 137, note 22; for a discussion of some of the problems and possible solutions connected with the nature of *urfirnis* coatings, *v.* K. D. Vitelli, " The Greek Neolithic Patterned Urfirnis Ware from Franchthi Cave and Lerna," (unpublished dissertation, University of Pennsylvania, 1974), pp. 13-22.

sometimes appears to have been localized deliberately in the center of a plaque (Pl. 76:23), and to an irregular pattern of streaky lines which follow and emphasize the triangular outline of the plaque and were produced in the course of slipping and/or burnishing (Pl. 76: 26, 27). In the other subgroup the biconvex obverse of the plaques is decorated with multiple chevrons, sometimes enriched with additional elements (Pl. 74). The decorative elements were applied in glaze directly on the polished surface of the plaque; once they were put over a solidly coated surface (Pl. 74: 3). The biconcave reverse of both monochrome and decorated triangles is clearly the side of lesser importance and exhibits paring marks, finger impressions and other surface irregularities (Pl. 76: 20 [reverse]); although it is almost always completely coated, the slip or glaze wash on this side is often streaky from uneven application.

With few exceptions the items in the inventory are corner fragments, broken from plaques not otherwise preserved, and body fragments with corners missing. Although the sample is admittedly biased, since tips and fragments with perforations are the most easily identifiable among the sherds, the breakage rate of the plaques was probably fairly high because of the vulnerability of the tips which often have thin, sharp edges and which appear to have been subjected to heavy wear since they are often chipped on the edges and on the reverse surfaces. The two best-preserved plaques probably show a typical pattern of breakage—first one tip, ultimately all three (Pls. 75: 20, 76: 23).

Damage did not require discarding, however, and several of the triangles exhibit secondary perforations and/or the reworking of a broken edge. Most commonly, after a lateral tip snapped off across a primary perforation, a secondary perforation was bored near the broken edge, which was itself ground down to a relatively smooth surface (Pl. 76: 23). A further stage of use of a heavily worn triangle is indicated by the ground surface of a break across a secondary perforation (Pl. 74: 7); another triangle, though badly damaged, still retained a roughly triangular shape and appears to have continued to be used, since not only was the edge broken across the lateral perforation ground down, but also that broken across the central perforation (Pl. 75: 22). Chipped side edges were also ground smooth (Pls. 74: 11, 76: 27).

The secondary perforations are easily distinguishable from the primary. The latter are usually cylindrical or slightly tapering with relatively smooth surfaces and often a low collar of clay at one end which accumulated in the process of perforation while the clay was still moist (Pl. 74: 8); sometimes traces of color can be seen on the surface of these perforations; no doubt it dripped down while the slip or glaze was being applied. The secondary perforations, on the contrary, are generally biconical, with horizontal striations from the drill, probably of obsidian or chert, still prominent on the freshly broken surfaces. Halo-like scratches which sometimes appear outside the circumference of a secondary perforation may have been produced by accidental abrasion from the edge of the haft into which the drill bit was set. The surface of a secondary perforation is sometimes smooth and the ridge

between the two halves of the bicone rounded, features which suggest the hole was made by a combination of boring and reaming.[6]

The triangular shape of the objects, the prominence of red in the decoration, and the row of holes first suggested to me that the plaques probably had some association with fertility and were designed to be suspended from the neck. Emphatic delineation of the pubic area on figurines of Neolithic date is well documented,[7] and objects with suspension holes have been found which probably served as pendants in the traditional sense.[8] For the association of red with fertility, one may refer to the Elateia tetrapod.[9]

A troubling impediment to the interpretation of the plaques as amulets for suspension around the neck was their curvature, and, to a lesser extent, the large size of some of the pieces. Why promote breakage by curving the surface of the plaque both laterally and longitudinally? It was this consideration which led me to look for another part of the body where the curving shape would make more sense, and the pubic area was the obvious position. The shape, the red color, and the dark mottling in the central section of some of the solidly coated pieces, which may possibily be interpreted as a representation of the pubic hair, can all be explained by this interpretation. So too the size. The larger triangles fit mature women comfortably; the smaller ones are appropriate for girls.

Welcome support for this interpretation first came in the article on " Ceramics " in the *Encyclopedia of World Art* to which I was referred by Karen D. Vitelli, University of Maryland, Baltimore County, with whom I had earlier discussed my interpretation of the plaques as pubic shields; here was a note that terracotta had been employed by the Marajoara Indians in South America not only for pots, but for pubic shields as well.[10]

[6] This technique of boring and reaming is well documented for the perforation of shell beads, stone pendants and similar objects with suspension holes; *v.* S. A. Semenov, *Prehistoric Technology*, trans. M. W. Thompson, Bath 1973, pp. 78-80.

[7] An examination of the plates of two recent books on the Neolithic figurines of Greece and the Balkans reveals how common a feature this was: G. Hourmouziades, Τὰ Νεολιθικὰ Εἰδώλια τῆς Θεσσαλίας, Athens/Volos 1973/1974 and M. Gimbutas, *The Gods and Goddesses of Old Europe 7000-3500 B.C.*, Berkeley and Los Angeles 1974; in the latter publication, particularly interesting is the stone figurine from Neolithic Bulgaria illustrated in text figure 102 which shows an emphatically defined pubic triangle with three incised dots above it. A. Marshack points out the importance of the vulvar image even earlier, in the Palaeolithic period, and describes it as ". . . early, storied, and widespread." (*Roots of Civilization*, New York 1972, p. 297).

[8] Triangular pendants of Neolithic date are not common in Greece (there is an unpublished example from Lerna), but circular and ovoid discs with perforations for suspension occur frequently; *v.* C. W. Blegen, " Neolithic Remains at Nemea," *Hesperia* 44, 1975, pl. 69:4, for one of the most familiar types.

[9] *V.* S. S. Weinberg, " Excavations at Prehistoric Elateia, 1959," *Hesperia* 31, 1962, pp. 190-195. It may be objected that, since red is the predominant color represented in the *urfirnis* repertory, it would convey no special symbolic significance. On the other hand, one may argue that the suggestiveness of the color led to the employment of the ceramic medium for an unusual purpose.

[10] H. J. Braunholtz, " Ceramics. 3. South America," *Encyclopedia of World Art* III, New York 1960, p. 219.

The Marajoara lived on Marajó Island in the Amazonian Delta shortly before the arrival of the first Europeans in Brazil in A.D. 1500. Their burials and distinctive pottery have been known since the late 19th century, and the triangles have often been singled out for illustration.[11] Both name and function as pubic shields were suggested to investigators by the non-ceramic pubic coverings of similar form worn by contemporary natives of the tropical forests. Scientific excavation of both the burial mounds and habitation sites of the Marajoara was conducted by Betty Meggers and Clifford Evans.[12] Since this report gives the only comprehensive account of Marajoara remains, its data on the Amazonian triangles will provide the basis for the comparison with those from Lerna; the excavators record 101 tips and 12 complete pieces from the excavations.

The larger shields from Lerna are comparable in dimensions to the typical Marajoara triangles which range in width at the top edge from 0.12 to 0.165 m., with a height from 0.095 to 0.12 m. There are slight differences in contour between the two groups: on the Lerna plaques the edges, both top and side, vary from slightly concave to slightly convex in no apparent pattern, while the others are more uniform and regularly have straight top edge and concave sides. The three perforations of the New World *tangas* are located one in each apex and in this feature differ from ours. Meggers and Evans observed notches and deep grooves worn on the obverse at the perforations on the majority of the plaques from the friction of the cord which held them in place. Although the Lerna triangles exhibit no such consistent pattern of heavy wear, the edges of the perforations are almost always noticeably abraded, sometimes with enlargement of diameter and wear of the adjacent surface from the rubbing of the supporting thong or string; the absence of deep gouging may be explained by the fact that the Lerna shields were not fastened at the bottom and so moved more freely with the movement of the body than their Amazonian counterparts, and that therefore the surfaces were not subjected to such constant pressure and consequent wear.

The most significant difference between the two groups of triangles occurs in the bilateral curvature. In the Marajoara group the curve at the top edge is as much as 0.03 m.; in the Lerna group this curvature rarely exceeds 0.015 m. Similarly the vertical curvatures of the Indian plaques is much stronger than that of ours: it ranges between 0.03 and 0.047 m., while that of the Lerna shields appears never to have surpassed 0.02 m., and some of them are only slightly curved.

In color and decoration, however, the two groups are remarkably similar; both contain monochrome and decorated classes in which the dominant color is red. The red monochrome examples from the Amazon are generally slipped on both surfaces; those with linear decoration have variants of the typical linear designs in red and

[11] E. g., Algot Lange, *The Lower Amazon,* New York 1914, p. 314.

[12] Betty J. Meggers and Clifford Evans, *Archeology at the Mouth of the Amazon,* Bulletin of the Bureau of American Ethnography 167, Washington 1957, esp. pp. 382-385, 416 and pl. 82.

orange used on the pottery, which appear to have been adapted for use on this specialized class of object and which the excavators suggest may have ". . . had some symbolic significance of a social or religious nature, wearers of the same pattern belonging to the same group." [13] Although it is of no significance for our study, it is interesting to observe that chronologically the red-slipped class appears with greater frequency at the later Marajoara sites than at the earlier and shares in the general trend toward simplification of the tradition of ceramic decoration in the area; the plain triangles also dominate in the later strata at Lerna.

Since secondary burial and cremation were the only methods of disposing of the dead among the Marajoara, no *tanga* has ever been found in a position on a skeleton which would establish unequivocally its use as a pubic covering. Where the sex of the deceased could be determined, however, the triangles were almost always associated with the remains of females. The ethnographic parallels and evidence of wear at the perforations are cited by Meggers and Evans as the major support for the traditional interpretation of the function of the triangles. Since they occur infrequently in the Marajoara settlements contemporary with the cemeteries, it has been suggested that they had a ceremonial significance and might even have been associated with a fertility cult.[14]

Burials are not plentiful in the areas of the Neolithic settlements we excavated at Lerna, and hence we have no comparable evidence for possible funerary use of the triangles. All our pieces come from ordinary habitation debris.[15] The one modern use of a ceramic pubic shield reported by Meggers and Evans is of particular interest: in a puberty ritual, a girl of the Peruvian Panoan tribe was reported to have been kept for a month in her hut wearing an egg-shaped piece of pottery.[16]

Additional support for the interpretation of the Lerna triangles as pubic coverings recently appeared in an article by Elizabeth Platt who challenges the common designation of metal triangular plaques from Bronze and Iron Age Palestine as pendants and reinterprets them as pubic coverings suspended from a pubic band or attached to a pubic cloth.[17] Platt takes as her point of departure two bronze triangles, linked by a chain, from Tell el-Far'ah, and includes in her discussion other metal triangles, some with a decoration of repoussé dots, others with representations of highly stylized females which show, among the features depicted, a prominent pubic triangle. The latter are related to similar ones of terracotta which are generally considered to represent, or at least suggest, the concept of female divinity and to have prototypes which can be traced back to the Early Bronze Age Jemdet Nasr period

[13] *Ibid.*, p. 384.

[14] *Ibid.*, p. 384.

[15] For the nature of the Neolithic deposits at Lerna, *v. Hesperia* 26, 1957, pp. 156-157.

[16] J. Steward and A. Métraux, "The Tribes of the Peruvian and Ecuadorian Montaña," *Handbook of South American Indians*, Bulletin of the American Bureau of Ethnography 143, fasc. 3, Washington 1948, p. 585, as quoted by Meggers and Evans, *op. cit.* (footnote 12 above), p. 416.

[17] Elizabeth Ellen Platt, "Triangular Jewelry Plaques," *Bulletin of the American Schools of Oriental Research* 221, 1976, pp. 103-111.

in Mesopotamia. The author associates these not only with figures which appear to be wearing a pelvic garment, but also with references in the Old Testament, especially Ezekiel 16: 36. If Platt's interpretation is correct, a triangular plaque or garment is actually mentioned and its associations appear to be with ". . . the fertility cult, the sexual act, and particularly the menstrual period. . . ." [18]

The cumulative weight of the evidence I believe supports the interpretation of the Lerna triangles as pubic shields which probably had some part in a practice which focused on the fertility of Neolithic womanhood. These are, remarkably, the only such triangles ever identified in Neolithic contexts in Greece. Considerable effort has been made to locate others. I personally examined the Middle Neolithic material available from Hagiorgitika in Tegea and from Orchomenos at Chaironeia. Karen Vitelli has as yet found no unequivocal example in the material she has thus far examined from the excavations at the Franchthi Cave, and John Lavezzi, who is studying the prehistoric material from Corinth, including that from the Kosmopoulos excavations, also gave me a negative report. William Phelps of the British School of Archaeology at Athens examined much unpublished material in the course of his research on the Neolithic period in the Peloponnesos and has assured me that he found no parallels. For the moment, then, the Lerna triangles are unique among the artifacts of Neolithic Greece.[19]

CATALOGUE

1 (L6.1603).[20] Pls. 74, 76 (reverse)

Ca. 1/3 preserved, from upper right [21] of plaque, including central perforation and segment of circumference of lateral perforation; [22] mended from two fragments. W. of top edge 0.075. H. 0.0536, Th. 0.005 m.

Biscuit 7.5YR 5/4 (brown), core 7.5YR 6/4 (light brown); surfaces reddish yellow, obverse 7.5YR 7/6. reverse 5YR 7/6.[23] Unevenly applied glaze, at darkest 2.5Y 5/2 (grayish brown), used for narrow wavering lines of stacked chevrons and stripe at top edge on obverse, and for broad, thinly smeared band and two adjacent dots at side edge of reverse. Uniform wear on circumference of central perforation on both faces, rather ragged on reverse.

[18] *Ibid.*, p. 110. Triangular plaques of bronze found in Macedonian Iron Age contexts are regularly called "pectorals" in the literature; *v.* Jan Bouzek, *Graeco-Macedonian Bronzes,* Prague 1974, p. 96, fig. 28. Wherever they were worn, these plaques, flat, decorated with designs in incision and repoussé, and fastened by means of hooks at the upper angles and a perforation at the bottom, may have had a significance comparable to that of the triangles from Palestine and Neolithic Greece. My thanks are due to Ms. Athanassiades for calling the Macedonian group to my attention; two are on display in the newly opened Kanellopoulos Museum in Athens.

[19] The small triangular objects found in quantity in the Neolithic "shrine" at Nea Nikomedeia may have had some association with fertility, as dedicatory vulvar images, but they were obviously used in a way quite different from the Lerna triangles (*ILN,* April 18, 1964, pp. 604-605, fig. 12).

[20] Lerna small-object inventory number.

[21] Designations "right" and "left" are made from the point of view of the wearer.

[22] Perforations are primary except where otherwise qualified; all secondary perforations are lateral.

[23] Colors are identified by the numbers and corresponding names of the Munsell system: *Munsell Soil Color Charts,* Baltimore 1973; all readings were taken indoors by natural light.

2 (L6.1604). Pl. 74

Ca. 1/4 preserved, from upper left, including central perforation, segment of circumference of lateral perforation and secondary perforation. W. of top edge 0.045, H. 0.0365, Th. 0.006 m.

Biscuit a fairly uniform 7.5YR 6/4 (light brown); glaze, *ca.* 10YR 4/2 (dark grayish brown), used for neat, fine-lined stacked chevrons on obverse and wash on reverse and edges; obverse polished after painting. Reverse uneven with prominent paring marks and thick collars of clay around perforations. On obverse heavy wear around all of circumference of central perforation, more intensive in upper half, with chipping of adjacent surface from juncture of first and second quadrants into second quadrant; on reverse fairly uniform wear all around. Asymmetrical secondary perforation bored more deeply from obverse and with smooth surfaces; wear on obverse concentrated in third quadrant; on reverse, perforation enlarged at juncture of first and second quadrants with associated chipping of adjacent surface and scratches forming a halo around it. Top edge nicked about mid-way between perforations; broken edge at lateral perforation ground smooth.

3 (L6.1600). Pl. 74

Ca. 1/3 preserved, from right center, with central perforation. W. of top edge 0.038, H. 0.048, Th. 0.008 m.

Biscuit 2.5YR 6/8 (light red), core 2.5YR 5/8 (red); slip, 2.5YR 5/8 (red), used for solid coating of both faces and for fine-lined chevrons on obverse which was burnished after painting, so that chevrons appear only as slightly raised, slightly darker (2.5YR 4/8 [red]) projections from the surface. On obverse, wear all around circumference of perforation, with some enlargement in second and third quadrants; slip worn off in first three quadrants, with slight enlargement in upper third quadrant; slip badly worn at obverse center and on edges of reverse.

4 (L6.1601). Pl. 74

Lower tip preserved, badly chipped and worn. H. on axis of apex 0.036, L. along break 0.0695, Th. 0.002 m.

Biscuit 7.5YR 4/0 (dark gray) with surfaces varying from 7.5YR 6/6 (reddish yellow) to 7.5YR 5/6 (strong brown); glaze, 10YR 4/2 (dark grayish brown), used for fine-lined stacked chevrons on obverse, probably polished after painting, and thin wash on reverse. Prominent paring marks parallel with edges on reverse.

5 (L6.1602). Pl. 74

Small fragment of top right edge preserved, with segments of circumference of central and secondary lateral perforations. W. of top edge 0.033, H. 0.016, Th. 0.005 m.

Biscuit *ca.* 5YR 7/6 (reddish yellow); glaze, 2.5YR 5/8 (red), used for stacked chevrons pendent from stripe at top edge on obverse and for solid coating of reverse; elements of chevrons narrow, wavering and unevenly spaced. Asymmetrical secondary perforation bored more deeply from obverse with prominent striations parallel with the surfaces. Fairly uniform wear on all edges of perforations, with slight enlargement of central perforation in the middle of the first quadrant on the obverse.

6 (L6.1605). Pl. 74

Right tip with perforation. W. of top edge 0.0291, H. 0.0242, Th. 0.0037 m.

Biscuit *ca.* 5YR 7/6 (reddish yellow); glaze, now somewhat crazed, 2.5YR 5/6 (red), used for stacked chevrons and single dot on obverse and solid but streaky coating of edges and reverse. Atypical: no apparent curvature and very small perforation, Diam. 2.5 mm. Fairly uniform wear on circumference of perforation on both faces with extension at juncture of first and fourth quadrants on obverse and at center of both first and second quadrants on reverse where paint is worn off from circumference of perforation to top edge.

7 (L7.529). Pl. 74

Ca. 1/4 preserved, from upper right, with segments of circumference of central and secondary lateral perforations. W. of top edge 0.018, H. 0.045, Th. 0.0071 m.

Biscuit 7.5YR 6/4 (light brown), surfaces 7.5YR 7/6 (reddish yellow); glaze, 5YR 6/8 (reddish yellow) to 5YR 4/4 (reddish brown),

used for wash on reverse and on obverse for stacked chevrons which are pendent from stripe at top edge and bisected by central stripe. Irregular reverse surface with parallel paring marks running diagonally across surface and unevenly applied glaze with brush marks following the triangular outline of the plaque. Symmetrically biconical lateral perforation, with general wear of all edges and halo-like incision just outside circumference on obverse; broken edge here slightly ground down. Very heavy or prolonged use indicated: almost all of paint worn off obverse below central perforation.

8 (L6.1606). Pl. 74

Almost 1/2 preserved, from upper left, with central perforation and segment of circumference of lateral perforation. W. of top edge 0.062, H. on axis of central perforation 0.036, Th. 0.006 m.

Layered fabric: 7.5YR 7/8-7/6 (reddish yellow) at surfaces, 7.5YR 6/2 (pinkish gray) at core, 2.5YR 6/8 (light red) between; dull glaze, 10R 5/8 (red), now crazed where thickly applied, used for chevrons closely stacked around solid triangle at center of top edge on obverse, and for streaky coating of edges and reverse where prominent brush strokes follow the triangular outline of the plaque. Low bump on obverse near left edge possibly patch over irregularity in surface. Absence of significant traces of wear suggests plaque broken soon after manufacture.

9 (L7.527). Pl. 74

Small fragment from upper right corner with segment of circumference of perforation. W. of top edge 0.024, H. 0.034, Th. 0.005 m.

Biscuit 5YR 7/6 (reddish yellow); glaze, with polychromatic range from 2.5YR 6/8 (light red) to 5YR 4/2 (dark reddish gray), used for narrow, wavering lines of stacked chevrons on obverse, and wash on reverse which is indented irregularly with what appear to be finger depressions probably made when the curvature of the plaque was being established. Very small perforation, Diam. 2 mm., with uniform wear on all edges.

10 (L7.524). Pl. 74

Lower tip. W. 0.045, H. on axis of apex 0.044, Th. 0.008 m.

Biscuit 5YR 6/6 (reddish yellow), surfaces 7.5YR 7/6 (reddish yellow); dull glaze, now crazed, 2.5YR 4/6 (red), used for stacked chevrons bisected by central vertical stripe on obverse, with polychromatic effect produced by uneven application, and for wash on edges and reverse.

11 (L6.1611). Pl. 74

Lower tip. W. 0.0385, H. on axis of apex 0.043, Th. 0.0078 m.

Biscuit 7.5YR 6/4 (light brown), core 7.5YR 6/0 (gray); glaze, 5YR 4/3 (reddish brown), now somewhat crazed, used for fine-lined stacked chevrons and contiguous border of solid triangles on obverse, and wash with two darker dots on axis of apex on reverse. Right edge apparently chipped in use and neatly ground down with bevel towards obverse.

12 (L7.528). Pl. 74

Small segment from upper right corner, with secondary perforation and traces of primary. W. of top edge, 0.035, H. 0.034, Th. 0.0063 m.

Biscuit 5YR 7/6 (reddish yellow); glaze, with polychromatic range from 5YR 7/8 (reddish yellow) to 5YR 3/2 (dark reddish brown), used for narrow, unevenly spaced stripes of stacked chevrons on obverse, and wash on edges and reverse where glaze is more thickly applied along edges, emphasizing the triangular outline. On obverse of perforation wear heavier in upper half, with adjacent surface in center of first quadrant gouged; on reverse, wear appears to have been concentrated on lower half; broken edge across perforation slightly smoothed by grinding. Symmetrical secondary perforation with prominent boring striations; slight wear around circumference on obverse, somewhat heavier on reverse.

13 (L7.525). Pl. 74

Lower tip. W. 0.036, H. on axis of apex 0.0295, Th. 0.004 m.

Biscuit 2.5YR 5/8 (red); glaze, 2.5YR 4/8 (red), used for neat stacked chevrons on obverse, which was probably polished after painting, and for thin wash on edges and reverse. Very delicate and carefully finished.

14 (L7.526). Pl. 74

Lower tip, badly chipped along right edge. W. 0.032, H. on axis of apex 0.029, Th. 0.046 m.

Biscuit 2.5YR 6/8 (light red), with surfaces 5YR 6/8 (reddish yellow); rather dull, now crazed glaze, 2.5YR 4/8 (red), used for stacked chevrons on obverse and wash on reverse. Left edge secondary, neatly ground down with diagonal and longitudinal striations clearly visible.

15 (L6.1610). Fig. 1; Pl. 75

Right tip with perforation and small fragment of top edge near left tip missing; mended from three fragments. W. of top edge 0.1045, H. 0.0917, Th. 0.0095 m.

Biscuit 5YR 6/6 (reddish yellow), core 7.5YR 6/0 (gray); completely coated with glaze, 2.5YR 5/8 (red) with slight, non-localized darker mottling. Thick, heavy plaque with reverse irregularly indented with finger impressions; raised edge around lower tip on obverse produced by depressions of central surface. General wear on circumference of both perforations on both faces. On obverse, central perforation somewhat irregular, but with some enlargement at juncture of first and second, and third and fourth quadrants and also at middle of third quadrant; on reverse, enlargement at junctures of second and third, third and fourth, and fourth and first quadrants. Lateral perforation on obverse more heavily worn over most of first and second quadrants with enlargement in lower second quadrant and at juncture of third and fourth quadrants; on reverse chipping concentrated at juncture of second and third quadrants. Both surfaces badly worn, reverses of tips battered.

16 (L6.1609). Pl. 75

Small fragment from right corner with perforation. W. of top edge 0.022, H. 0.0293, Th. 0.005 m.

Biscuit 7.5YR 6/4 (light brown), core 7.5 YR 6/0 (gray); burnished slip on both faces 5YR 6/8 (reddish yellow). Wear on all edges of perforation; on obverse chipping in fourth quadrant extending into the first; on reverse enlargement of perforation at juncture of first and second quadrants associated with heavy wear of the slipped surface which diminishes in triangular pattern from perforation to broken edge which shows evidence of some grinding.

17 (L6.1608). Pl. 75

Small fragment from right corner with secondary perforation and segment of circumference of primary. W. of top edge 0.0285, H. 0.0292, Th. 0.006 m.

Biscuit 2.5YR 6/8 (light red), core 7.5YR 6/2 (pinkish gray); well-burnished slip on both surfaces, 2.5YR 5/8 (red), with mottling, 7.5 YR 6/6 (reddish yellow), along side edge on both faces. Uniform wear on segment of circumference more evident in third and fourth quadrants, on reverse in first and second; on both faces slip worn noticeably in line from perforation to indentation on top edge just above perforation to the right.

18 (L6.1607). Pl. 75

Segment from right corner with traces of perforation. W. of top edge 0.0395, H. 0.0423, Th. 0.006 m.

Biscuit 2.5YR 6/8 (light red), core 7.5YR 6/2 (pinkish gray); both faces slipped and burnished, 2.5YR 5/8 (red) with 5YR 5/2 (reddish gray) mottling along top edge of both faces. Wear on circumference of perforation concentrated in first and fourth quadrants on both faces, with additional wear at juncture of second and third quadrants on obverse, below which the surface is chipped; broken edge at perforation ground down in lower section.

19 (L4.798). Pl. 75

Right tip with segment of circumference of perforation. W. of top edge 0.035, H. 0.027, Th. 0.004 m.

Fabric like **21**. Wear on both circumference of perforation and surface heavier on reverse.

20 (L6.743). Fig. 1; Pls. 75, 76 (reverse)

Left tip missing, lower tip chipped. W. of top edge 0.056, H. 0.045, Th. 0.008 m.

Biscuit and thinly slipped and burnished surfaces 10YR 6/2 (ligt brownish gray), core 5Y 6/1 (gray); thin incrustation, 5YR 7/8 (reddish yellow), appears sporadically on surfaces and over breaks. Thick plaque, with uneven, lumpy reverse. On obverse, circumference of perforations worn all around, with enlargement of perforation at left side at juncture of third and fourth quadrants, and heavier wear around upper half of central perforation with slight enlargement in lower fourth quadrant; on reverse, slight enlargement of perforation at left side in lower fourth quadrant. Considerable wear of obverse surface below central perforation.

21 (L6.1599). Pl. 75

Ca. 1/3 preserved, from upper right, with segment of circumference of central perforation and of secondary lateral perforation. W. of top edge 0.05, H. 0.0441, Th. 0.005 m.

Biscuit 2.5Y 5/2 (grayish brown); burnished glaze thinly and unevenly applied on both faces with polychromatic range from 10 YR 5/3 (brown) to 2.5YR 6/8 (light red) and 5YR 6/8 (reddish yellow); along right edge of obverse broad curving band with contiguous dot toward upper end 10YR 5/1-4/1 (dark gray). Wear fairly uniform around circumference of central perforation on obverse, with slight enlargement at juncture of third and fourth quadrants; on reverse, wear concentrated in second and third quadrants. Fairly symmetrical biconical secondary perforation with horizontal striations on surfaces and diagonal striations across central ridge; wear heavier on reverse with concentration in lower second and third quadrants.

22 (L6.1612). Pl. 75

Ca. 1/4 preserved, from upper left, with segment of circumference of central perforation and of lateral perforation. W. of top edge 0.0425, H. 0.0475, Th. 0.004 m.

Biscuit 5YR 7/6 (reddish yellow) to 5YR 7/4 (pink), with very slightly darkened core; brilliantly polychromatic glaze with range from 2.5YR 6/8 (light red) to 2.5YR 2.5/0 (black): on obverse, paint thickest and darkest near side edge, where two broad brush strokes with large round dot between and smaller ovoid one below are clearly distinguishable; on reverse, paint streakily applied with portion of darker dot preserved just below central perforation. Lateral perforation worn all around circumference on both faces with slight enlargement in upper third quadrant on obverse and some chipping in lower second and third quadrants and at juncture of fourth and first quadrants on reverse. Broken edge at lateral perforation ground smooth; slight grinding of broken edge at central perforation.

23 (L7.63). Fig. 1; Pl. 76

All tips missing; central perforation and, at right, secondary perforation and segment of circumference of primary preserved. W. of top edge 0.0725, H. 0.0655, Th. 0.007 m.

Biscuit 5YR 6/6 (reddish yellow), core 7.5 YR 7/1 (light gray); polished glaze on both faces, 2.5YR 5/8 (red), slightly darkened in crescent-shaped band on obverse below central perforation. In addition to general wear around primary perforations on both faces, on obverse, heavier wear on lower half of central perforation and in upper first quadrant of lateral perforation with associated wear of adjacent surface; broken edge here ground smooth. Symmetrical secondary perforation with general wear on edges, heavier on obverse, with slight enlargement in upper first quadrant where paint on adjacent surface is worn off in halo-like fashion; on reverse, wear concentrated in first quadrant.

24 (L7.531). Pl. 76

Right tip with secondary perforation. W. of top edge 0.034, H. 0.02, Th. 0.004 m.

Biscuit 2.5YR 6/8-5/8 (light red to red); well-burnished slip on both faces, 2.5YR 5/8-

4/8 (red), with some streaky darker mottling. Asymmetrical perforation, sunk more deeply from reverse where horizontal striations are prominent. Perforation unusually close to edge for secondary use; possibly primary perforation was defective and this is a replacement while the plaque was still intact; almost pristine surfaces of boring suggest limited use.

25 (L7.530). Pl. 76

Right(?) tip with segment of circumference of perforation. W. of top edge 0.029, H. 0.026, Th. 0.005 m.

Biscuit 2.5YR 6/8 (light red); burnished slip on both faces 2.5YR 5/8 (red). General wear on edges of perforation, with enlargement on reverse extending on either side of juncture of first and second quadrants and associated with surface wear of paint which diminishes in triangular pattern to point of tip.

26 (L6.1614). Pl. 76

Ca. 1/4 preserved from upper left, with segments of circumference of central and lateral perforations and secondary perforation. W. of top edge 0.049, H. 0.033, Th. 0.0052 m.

Biscuit 2.5YR 5/8 (red), core 10YR 6/2 (light brownish gray); highly burnished slip on both faces 2.5YR 4/8 (red) with mottling, 2.5YR 3/4 (dark reddish brown), concentrated in triangular area in center of each face; prominent burnishing strokes on obverse follow triangular outline. Fairly uniform wear on edges of perforations, with slight enlargement of center perforation on reverse at juncture of third and fourth quadrants. Asymmetrical secondary perforation sunk more deeply from obverse, with prominent horizontal drill striations; on obverse, incomplete circle scratched around, but not coincident with, circumference from upper second to lower fourth quadrant, slip worn off surface between primary and secondary perforations; heavy wear on reverse, with chipping at juncture of first and second quadrants and gouging of surface in center of third quadrant. Grinding of edge broken across lateral perforation concentrated on lower half where striations are visible.

27 (L7.523). Pl. 76

Ca. 1/3 preserved, from lower center with small segment of top edge with central perforation. W. of top edge 0.0135, max. W. 0.0623, H. 0.053, Th. 0.008 m.

Biscuit 7.5YR 6/4 (light brown) with faint graying at core; burnished slip on both faces mottled 2.5YR 6/8 (light red) to 5YR 4/2 (dark reddish gray) with the darker mottling concentrated in the central section of both faces; fine but strong burnishing striations follow triangular outline. Segment of preserved left edge secondary, produced by incomplete grinding down of original edge which was probably badly chipped, as is the preserved segment of the right edge. On obverse slip worn off in halo fashion around all of perforation except upper first quadrant, with slight enlargement in first quadrant and at juncture of third and fourth quadrants; wear over whole circumference on reverse, with enlargement at junctures of second and third, and fourth and first quadrants which extends to broken edge. Slip badly worn, especially on obverse below perforation and at edges.

The final items in the inventory are two fragments, each with two finished edges meeting at an angle, which may be parts of triangular objects, but which differ in significant respects from the main group of plaques. **29** has only slight claim to be included here; it is of a thick, coarse fabric and may well be a projection from a pot rim like those known, for example, in the Dimini culture.[24] **28**, on the other hand, although it appears inappropriate for use as a shield because of its

[24] E. g., Ch. Tsountas, Αἱ προϊστορικαὶ ἀκροπόλεις Διμηνίου καὶ Σέσκλου, Athens 1908, pl. 23, nos. 2, 3, 4.

flatness and method of attachment through a single perforation at the center of the plaque, may well have had a significance similar to that of the other triangles. Particularly noteworthy are the punctations which emphasize the triangular outline and may be stylized representations of pubic hair. It may have been pegged to a flat surface.

28 (L4.667). Fig. 1; Pl. 76

Lower half(?) preserved, with segment of circumference of perforation at what was probably the center of the plaque. W. 0.067, H. on axis of apex 0.0525, Th. 0.008 m.

Coarse laminated biscuit, 2.5YR 6/8 (light red), heavily tempered with red, gray and white non-plastics, including bits of schist up to 3 mm.; surfaces 5YR 6/4 (light reddish brown), unburnished but smoothed, with prominent striations from fingers or other implement used for finishing while clay was still plastic. No curvature; reverse very even with sharp edge, as if laid against a smooth surface for drying; obverse slightly more uneven with rounded edge, decorated with two close-set rows of triangular punctations placed at *ca.* 0.007 m. from edge at side, 0.017 m. from edge of tip. Large perforation, Diam. *ca.* 9 mm.

29 (L6.1613). Pl. 76

Lower tip. W. 0.0522, H. on axis of tip 0.044, Th. 0.015 m.

Coarse biscuit heavily tempered with white non-plastics, a few to 3 mm.; thick core 7.5YR 4/0 (dark gray), with obverse mottled 2.5YR 6/8 (light red) to 5YR 7/6 (reddish yellow) and reverse 5YR 7/6 (reddish yellow). Traces of uneven burnish on both surfaces; worn particularly on edge of tip on obverse.

Fabrication

The triangles were probably cut from slabs of clay which had been rolled or pounded flat to a fairly uniform thickness; a blade of obsidian or chert, a point or knife of bone could have served as the cutting instrument. The clay was dry enough at this stage to hold an edge well, since some of the triangles show a fairly sharply squared profile at the edge with a small lip of clay at one side which is probably a by-product of the cutting process; on others the edges were neatly tapered after cutting. The thinning of the tips and a general evening of the surfaces, especially the obverse, were probably accomplished at the same stage of the manufacturing process as the finishing of the edges.

While the plaque was still malleable, the curvature was established, enhanced in some cases by the paring of the reverse surface, and the perforations were made. What determined the degree of curvature of the plaques we cannot say for certain; for the Amazonian triangles Meggers and Evans suggest that ". . . there is a range of variation that is probably correlated with the differences in the anatomy of the wearers." [25] For the perforation a fairly regular cylindrical object was used, possibly a reed from the nearby Lernaian swamp. The holes appear to have been made randomly from obverse or reverse. Where a collar of clay was pushed up around the perforations on the obverse, some effort was generally made to smooth it down; less care was expended on the reverse. The perforations are not always perpendicular

[25] Meggers and Evans, *op. cit.* (footnote 12 above), p. 382.

to the surface, nor are they always regularly aligned with one another, even when the top edge is quite straight. The triangles were probably at this point allowed to dry thoroughly so that the shape might "set" before the application of the slip or glaze decoration.

Although some of the monochrome examples may have been dipped in slip or glaze, most show the marks of application with a brush-like instrument. When a triangle was to be decorated with chevrons, the obverse surface was probably first moistened and polished with a bone or pebble to provide a smooth and lustrous surface for the application of the glaze.[26] The lines of the multiple chevrons appear to have been drawn freehand with a single brush; the stripes vary in width from *ca.* 1 to 3 mm., and the brush was presumably a bit narrower. A wider brush was used for the application of the solid coatings if the brush stroke *ca.* 8 mm. wide on **22** (Pl. 75) is an indicator of common practice. Since the lines were drawn after the perforations were made (on **5** [Pl. 74] a stripe carefully skirts the circumference of a perforation) and yet regularly miss being aligned with the center hole (e. g., **1**, **8** [Pl. 74]), the chevrons were certainly drawn from the outer edge toward the center. The two lines forming each chevron appear to have been drawn one immediately after the other. Sometimes the lines meet precisely in an apex, sometimes one line projects slightly beyond the other. There is no evidence that the designs were marked out by guide dots, preliminary incision or any similar device; since the space to be filled was small and the pattern simple, a good eye and steady hand would have sufficed for the execution of the design. The occasional dots which do appear, as on **20**, reverse (Pl. 76), may be the mark of the maker or the wearer. The final step in the pre-firing finishing process was the polishing or burnishing which is evident on most of the monochrome and a few of the decorated shields.

It is reasonable to assume that a potter made and fired more than one triangle at a time. At least two pairs of shields are very likely by the same hand. **17** and **18** are of essentially the same fabric and surface treatment and come from the same general area of the site; related to them is **25**. Though less closely related by context than the first pair, **19** and **21** are of very similar fabrics. Other related, but by no means identical, pairs are: **1** and **12**; **8** and **11**; **7** and **10**. The stacking of the triangles in the kiln during firing is suggested by the dark band and dot at the edge of **21** (Pl. 75), which may be compared to the firing clouds which sometimes appear on pots.[27] In this case exposure of the edge of the triangle, and the circular space of a perforation of a triangle resting above it, to a reducing situation might be responsible for this disposition of the mottling.

Method of Attachment

It has not been possible to establish any single mode of attachment of the triangles from the traces of wear visible at the perforations; indeed, we cannot even

[26] Anna O. Shepard, *Ceramics for the Archaeologist,* Washington 1976, pp. 66-67.
[27] *Ibid.,* p. 92.

be certain if the shields were suspended from a pelvic girdle, as is the common practice with the modern *tangas,* or were attached to a pelvic garment in the manner suggested for some of the Palestinian triangles.

Only **20** (Pl. 75) preserves a full set of primary perforations. Here the wear around the circumference of the holes is fairly uniform, with some suggestion of strain from suspension strings toward the top of the plaque at the central perforation, and toward both the central perforation and the side edges from the lateral perforations. This pattern of wear might indicate a pair of strings coming down from a belt to the central perforation through which they were threaded, and from which one was pulled across the surface to each lateral perforation, through which it was drawn and then stretched up to the belt. **15** (Pl. 76) exhibits a more complex wear pattern which suggests not only strings coming down from a belt to the central and side perforations, but also a string stretching down from the central perforation and passing through the legs to be attached to the belt at the center back. Levi-Strauss observed the use of such a perineal band by the women of the upper Xingu River in Brazil who were wearing *tangas* of straw.[28] Many methods of attachment to a belt, employing one, two, or three strings, were possible, and the confusing wear patterns preserved may well indicate that a triangle was fastened in different ways at different times, each method of attachment leaving a different set of marks.

Where the circumference of the perforations is worn fairly uniformly all around, the plaque may have been attached to a pelvic garment with short strings knotted on either side of the joined pieces. If the knot was very large it might have worn off the paint on the underlying surface in the manner which appears, for example, on **26** (Pl. 76). But the sample available to us is too small and fragmentary to allow any clear patterns of use to emerge.

Provenience

Examination of the contexts in which the individual shields were found offers little information which might aid us in elucidating specific practices related to the use of the shields. Almost all were found in general contexts: dark layers of habitation deposit alternating with layers of dissolved mud brick.[29] Only the larger fragment of **1** was found in a floor deposit of a house which may be dated early in the Middle Neolithic period; the smaller joining fragment came from a general habitation deposit of slightly later date. On the floor with **1** were objects associated with the commonest of domestic activities: a quern and two stone spheres which were no doubt used for the grinding of grain. The fairly well preserved **23** came from a street adjacent to a house; with it were a terracotta sling bullet and a bone tool. A clay-lined bothros, a feature of the later Middle Neolithic settlement at

[28] Claude Levi-Strauss, "Tribes of the Upper Xingu River," *Handbook of South American Indians,* Bulletin of the American Bureau of Ethnography, 143, fasc. 3, Washington 1948, p. 328.

[29] See above footnote 15.

Lerna, yielded the small but almost intact **20**; a few potsherds were the only related finds. The associations of the triangles are not illuminating, and nothing in the evidence presently available allows us to infer any specialized use of them.

Chronology

Any comments made here on the stratigraphic sequence of the triangles must be considered provisional since the study of the architecture and pottery is still in progress. There are, however, some general trends which may be noted with profit even at this stage of the work.

Eighteen of the plaques come from Area J, nine from BD Pit.[30] In Area J, from which the bulk of the Neolithic material at Lerna comes, the triangles occurred in the earliest Middle Neolithic deposits and were concentrated in the first half of the period; indeed, only **22** was found in a context which is securely datable to the later part of the period. Patterned triangles dominate in the early phases (**1-6**); monochrome pieces begin to take precedence in the middle of the period (**15, 16, 18**), after which the use of the plaques appears to have declined. It may appear anomalous that the use of the patterned triangles drops off just as the decorative repertory of the pottery is exhibiting enrichment;[31] on the other hand, the two patterned triangles which come from the middle of the period (**8, 11**) do have a slight elaboration of the basic chevron pattern and indicate that the triangles were sharing in the general progress of the ceramic tradition.

A somewhat similar distribution of patterned and plain triangles may be seen in the group of nine plaques found in BD Pit; the strata of this deep sounding nearer the center of the mound may be correlated with those of Area J in a general way, although Vitelli's study of the pottery suggests that the latest material from BD is slightly later than in the latest material from J.[32] Six patterned BD triangles were found in early to middle Middle Neolithic deposits (**7, 9, 10, 12-14**); the monochrome examples come from the later part of the period (**23-25**).

In view of the smallness of the sample and the impossibility of arranging the triangles from both areas into a single sequence, the most one can say at present is that the triangles are a significant feature of the early and middle phases of the Middle Neolithic settlement at Lerna, with a continuation to its end at a reduced scale. Patterned triangles dominate in the earlier phases, monochrome in the later.

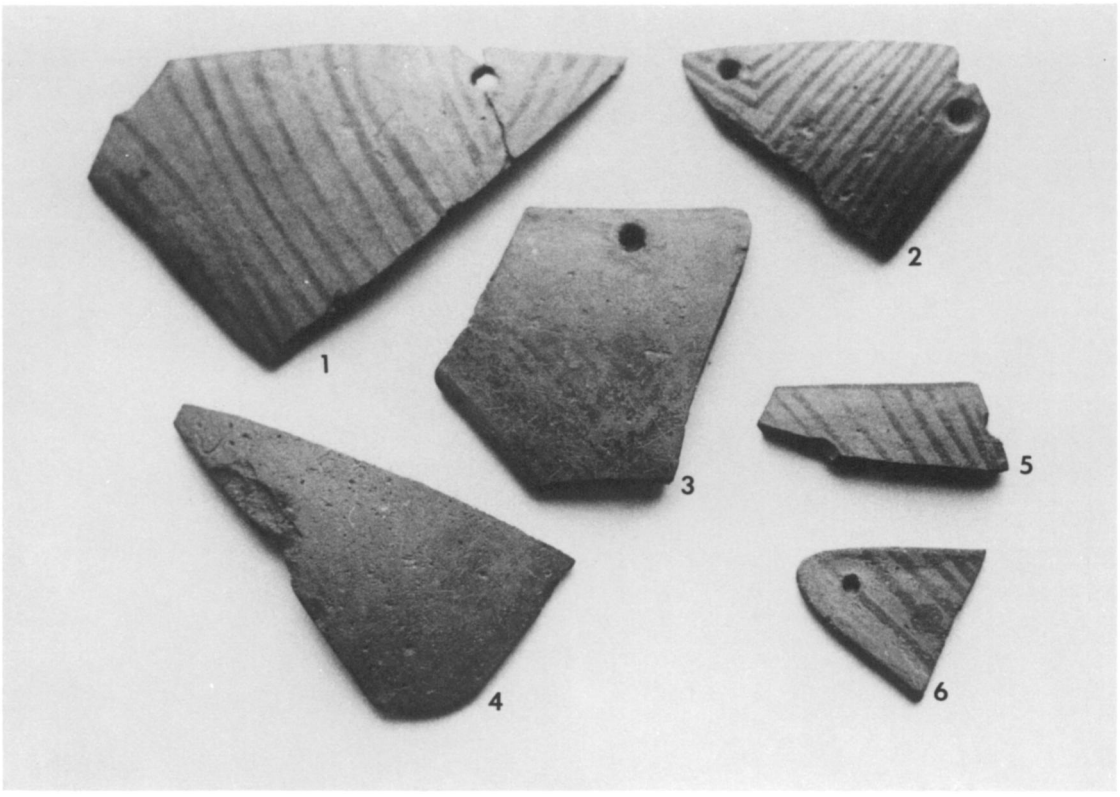
Elizabeth C. Banks

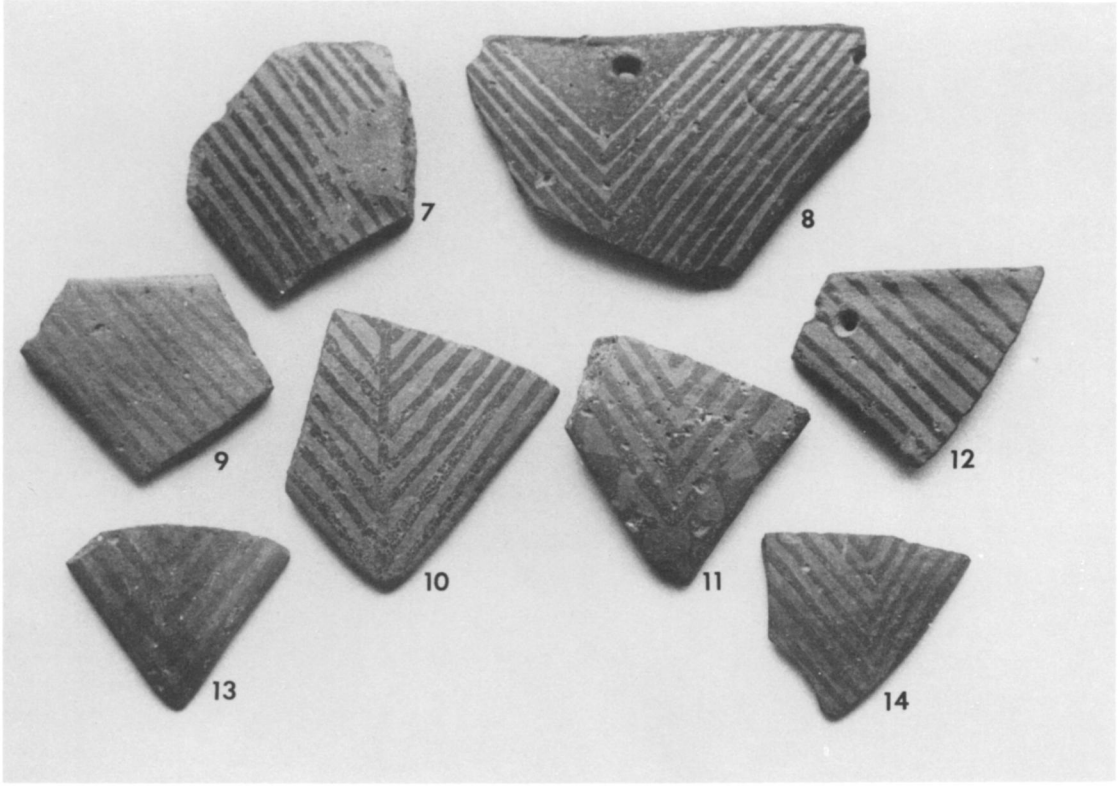
The University of Kansas

[30] For a description of the Middle Neolithic deposit in Area J, *v. Hesperia* 25, 1956, pp. 170-171 and 26, 1957, pp. 154-159; for that in BD Pit, *v. Hesperia* 27, 1958, pp. 136-138.

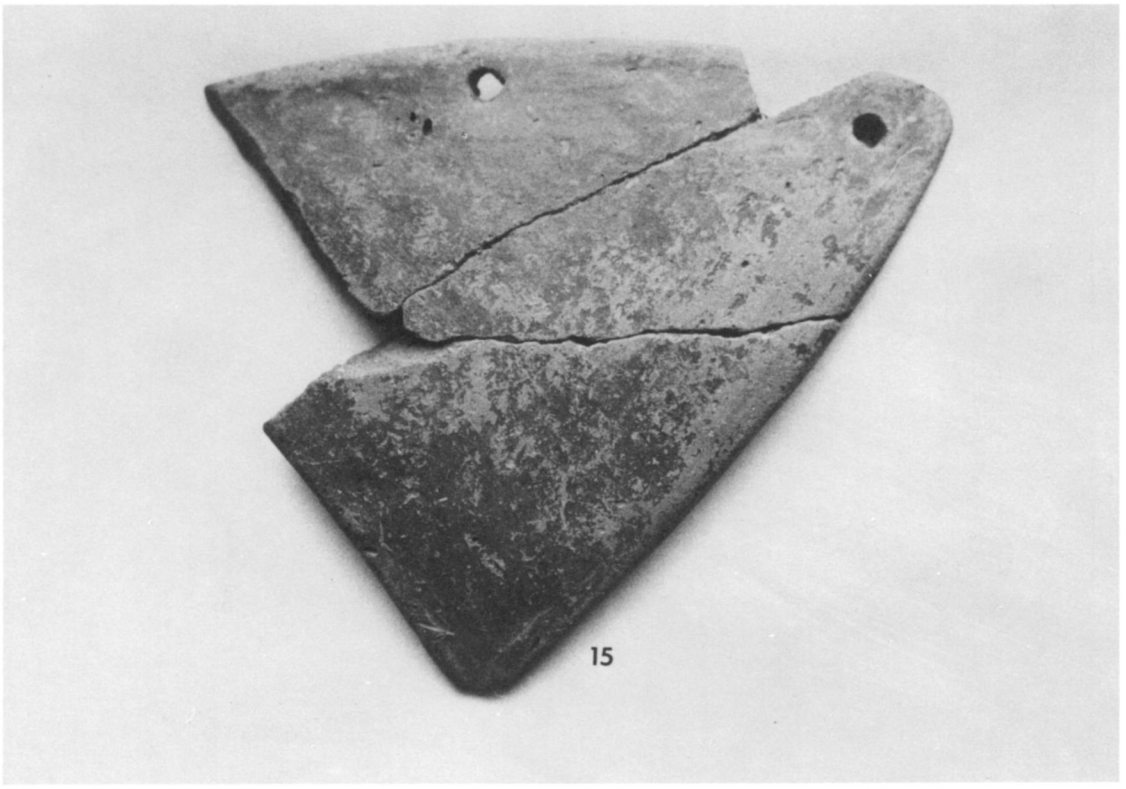
[31] *V. Hesperia* 27, 1958, p. 137 and pl. 36:f-h; also Vitelli, *op. cit.* (footnote 5 above), pp. 116-117.

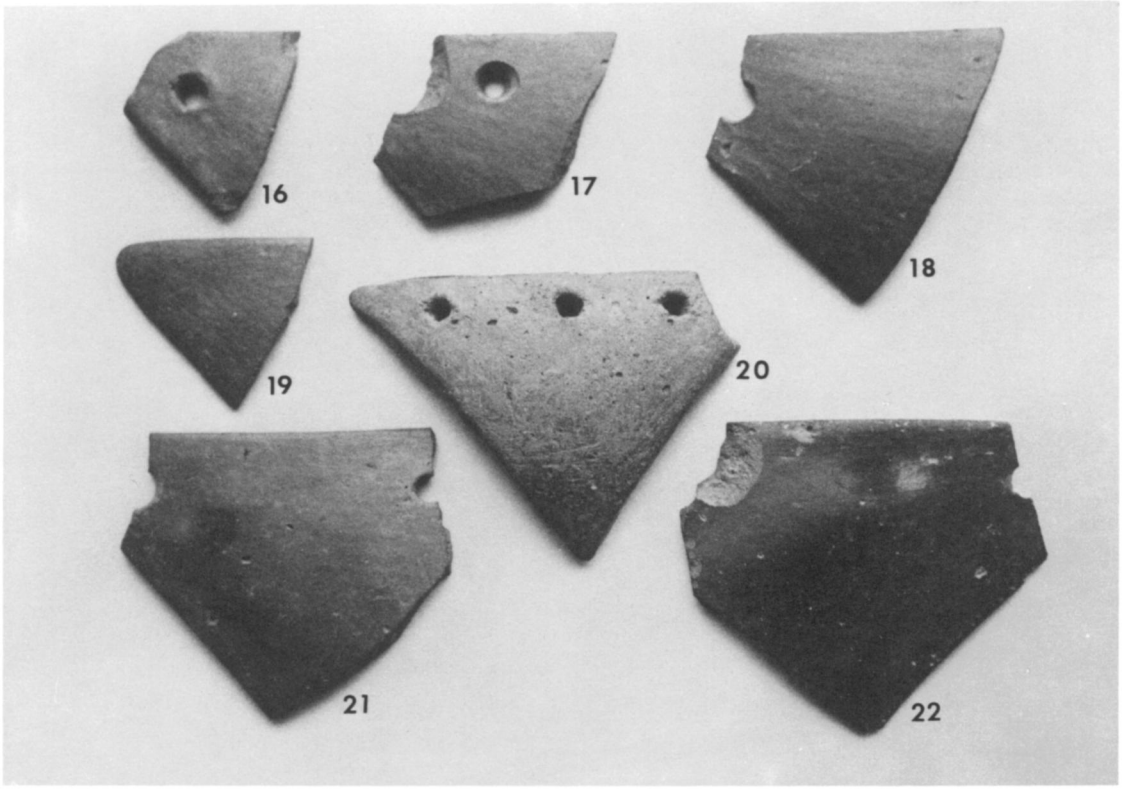
[32] *Ibid.*, pp. 35-36.



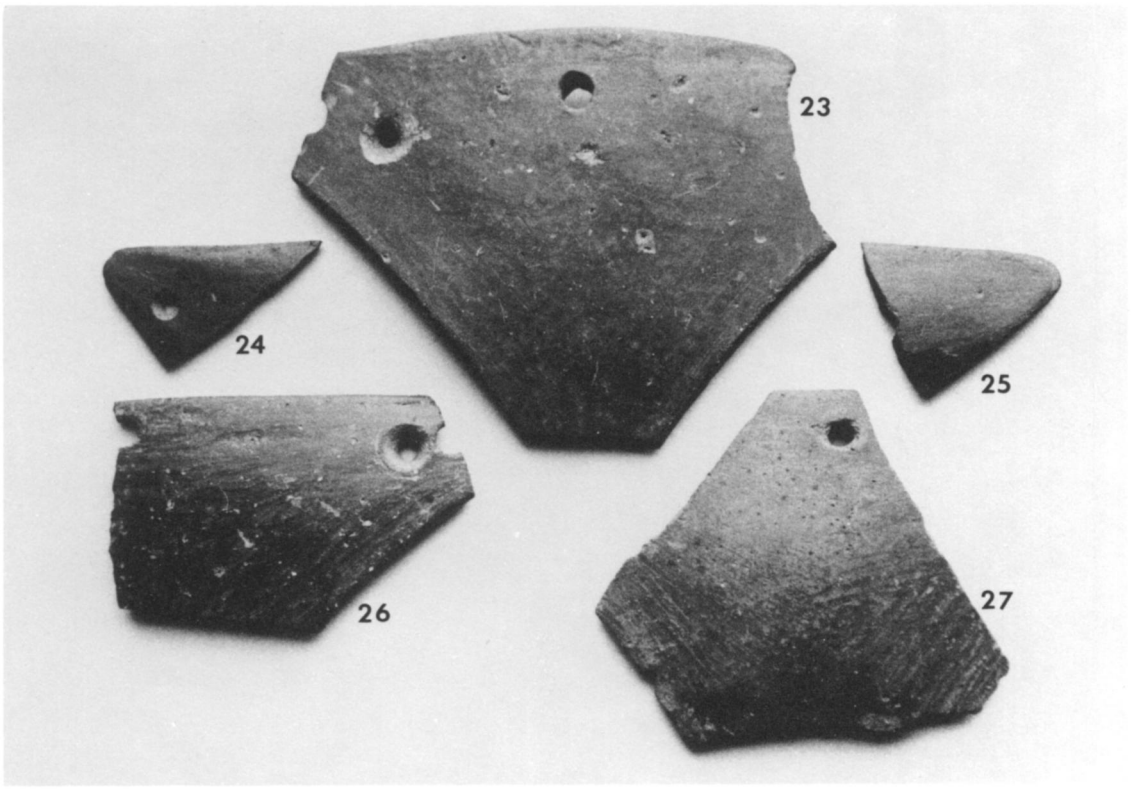


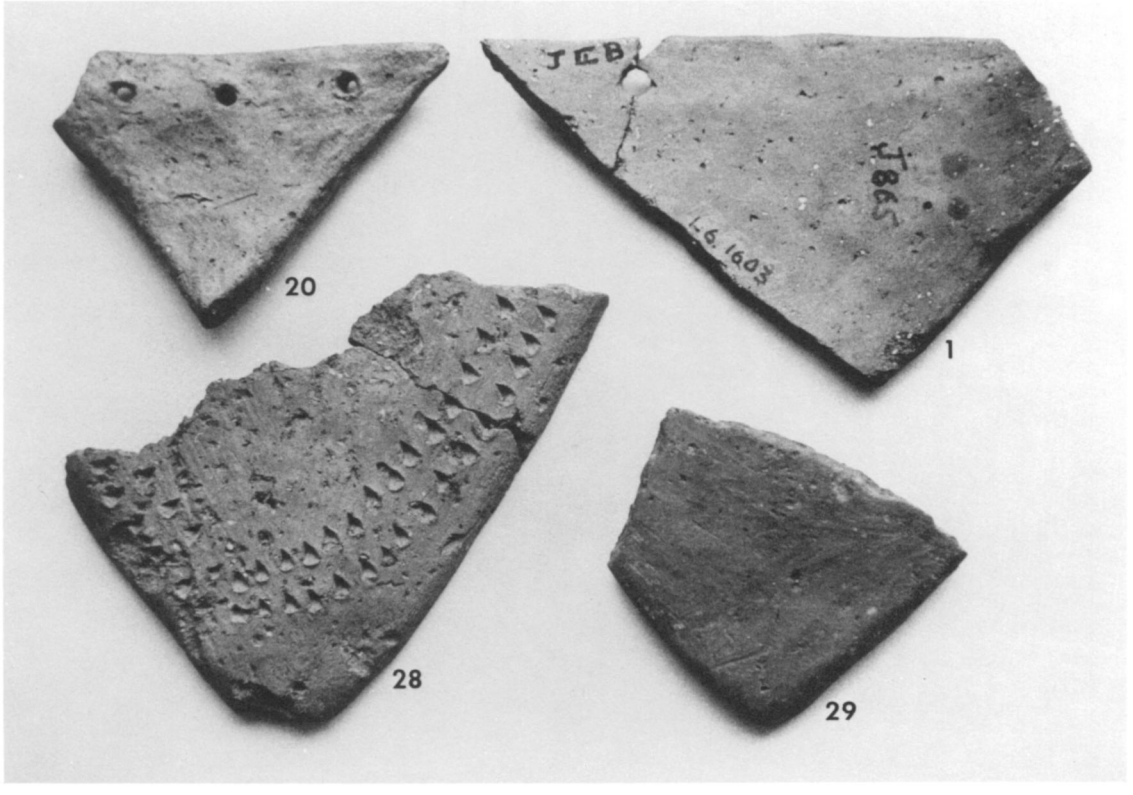
ELIZABETH C. BANKS: NEOLITHIC TANGAS FROM LERNA





ELIZABETH C. BANKS: NEOLITHIC TANGAS FROM LERNA





ELIZABETH C. BANKS: NEOLITHIC TANGAS FROM LERNA