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### Loomweights

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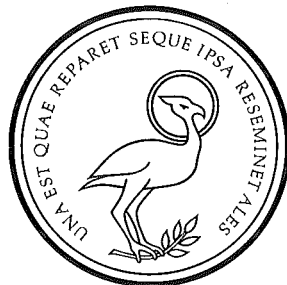
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STYMPHALOS:  
THE ACROPOLIS SANCTUARY

Volume 1

*with contributions by*

Sandra Garvie-Lok  
Christopher Hagerman  
Monica Munaretto  
Deborah Ruscillo  
Gerald P. Schaus  
Peter Stone  
Mary Sturgeon  
Laura Surtees  
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# Loomweights

*Laura Surtees*

Loomweights comprise a large and distinctive group of artifacts found scattered throughout the Sanctuary on the acropolis. The presence of 99 loomweights in a Sanctuary which was dedicated, with some probability, to Athena, goddess of weaving, elicits questions on several levels as to their purpose. On their own, they indicate in a practical way the existence of weaving as an activity at Stymphalos, but because the loomweights were found in a cultic setting, they also require an investigation into possible religious uses or connotations for them. They cannot simply be accepted as tools in a practical manufacturing activity. Based on an analysis of the loomweights, their location and context, it may be argued that their presence in this Sanctuary at Stymphalos is a result of several activities, both ritual and practical. A full discussion follows the Catalogue.

## INTRODUCTION

### Shapes

Figure 12.1a shows a typical conical loomweight. Bases of loomweights are flat unless otherwise mentioned.

- Type A: Conical shape with no space or division between the belly and base. The tip may be either pointed or rounded.
- Type B: Conical shape, the belly protrudes outwards before sloping gradually into the base. The point of maximum diameter of the belly separates the weight into two distinct sections. The tip may be either pointed or rounded.
- Type C: Conical shape with a distinct bevel dividing the belly from the base. The bevel is pronounced and the slope from the bevel to the

base is sharp. The tip may be either pointed or rounded.

Type D: Elongated pyramidal shape with flat sides. The tip is flat.

For a discussion of these shapes see below, pp. 242–3 and figs. 12.4–5.

### Size Groups

- Group 1: Large: height 10–12 cm  
 Group 2: Medium: height 7–9.9 cm  
 Group 3: Small: height 5–6.9 cm  
 Group 4: Miniature: height 3–4.9 cm

### Fabrics

- I: Buff to yellowish green to white clay with fine grey inclusions. A soft fine powdery consistency.
- II: Red to orange clay with grey and white fine to medium inclusions.
- III: Light red powdery clay with grey and white small inclusions
- IV: Pink or pinkish grey to reddish brown or brown clay with medium and large grey and white inclusions.

## CATALOGUE

- MPD Maximum preserved dimension  
 D Maximum diameter  
 B Diameter at the base  
 T.L.P Trench Level.Pail  
 Wt. Weight (in grams)

All measurements are in centimetres, except weight.



**South of Temple**

23	1556	97.12.2.2	8.6	6.7	5.5	136	A.2	I	Fragment. Broken at tip with suspension hole groove visible, part of base extant
24	1579	97.12.2.2	10.2	6.9		140	B.1	III	Fragment. Round tip, elongated slopes of belly, slightly concave base with edge
25	1620	97.12.3.3	5.7			144		IV	Belly fragment
26	2906	00.2.2.2	9.1	7.4	6.4	348	C.2	III	Complete. Sides of belly slightly lopsided, well-defined bevelled ridge, flat base with distinct edge
27	2907	00.2.2.2	9.9	7.0	4.5	352	B or C.2	III	Complete. Rounded tip, warped base, chip in side
28	2908	00.2.2.2	10.8	7.0	6.0	446	C.1	IV	Complete. Pointed tip, surface encrustation, decorated with 2 or 3 incised vertical lines above the bevelled ridge
29	2909	00.2.2.2	11.3	7.7	6.2	464	C.1	I	Complete. Symmetrical belly, small depression in base, decorated with three incised vertical lines and one horizontal line above the bevelled ridge
30	2900	00.2.3.3	5.2	3.1	1.8	28	B	IV	Base fragment
31	3046	00.2.4.4	9.8	6.8	4.8	318	B.1	II	Complete. Pointed tip, slight bump on asymmetrical belly, concave base with edge, chip in side

**East of Altar/Terrace Wall**

32	1060	97.5.1.1	7.6	5.6		176	A.2	II	Complete. Chip fragment in tip, slipped
33	2572	97.5B.2.2	10.1	6.6	5.5	310	B.1	I	Complete. Pointed tip, evidence of wear on sides, surface encrustation
34	2643	97.5B.4.5	8.8	6.5		254	B.2	IV	Complete. Round tip, belly tapers inward, small depression in base, diameter of base is indistinguishable
35	2644	97.5B.4.5	7.2	5.5		84		IV	Fragment. Round tip, surface encrustation
36	3518	97.5B.5.5	10.4	6.9	5.2	310	B.1	I	Complete. Pointed pinched tip, indent on one side of belly
37	3572	97.5B.6.6	9.0	6.9		234	2	II	Fragment. Pointed tip, symmetrical belly, broken at base.
38	2164	99.1.2.2	6.1	5.2	2.7	66	B	II	Belly fragment
39	2180	99.1.2.2	6.5	5.3		132		IV	Neck and belly fragment. Groove of the suspension hole visible
40	SF 99.64	99.1.3.3							Body fragment
41	SF 99.237	99.15.5	7.4	7.4		190		III	Body fragment. Surface encrustation
42	2303	99.15.5	11.0	6.6		228	A.1	III	Fragment. Pointed tip, broken base
43	2340	99.15.5	9.7	5.2		132	1	III	Fragment. Pointed tip, symmetrical belly, partially extant base
44	2341	99.15.5	6.6	6.3		220	C	IV	Base fragment
45	2348	99.1.5.6	8.5	3.0		136		IV	Belly fragment, groove of suspension hole preserved, chips in side
46	2389	99.1.5.7	9.7	7.7	5.9	410	B.1	IV	Fragment. Rounded tip, deep indent on side, partially extant base, dense surface encrustation
47	2532	99.1.5.9	7.0	5.8		164	2	II	Fragment. Rounded tip, partially extant base, surface encrustation
48	2545	99.1.5.10	10.2	7.0	5.5	340	C.1	I	Complete. Pointed tip, asymmetrical belly, small depression in centre of base, dense surface encrustation

49	2546	99.1.5.10	10.6	7.0	5.0	346	C.1	II	Complete. Pointed tip. Slightly asymmetrical belly, small depression in centre of base. Conserved
50	2851	99.1.5.9.10.11.12	4.5	4.2		14		II	Fragment. Part of base extant
51	2674	99.16.12	8.1	6.4		200	I	II	Fragment. Rounded tip, surface encrustation
52	2342	99.8.2.2	8.4	6.6		222	C.2	IV	Fragment. Broken tip, symmetrical slope of belly, part of base preserved
53	2404	99.6.5.5	8.2	5.8		214	A.2	II	Complete. Rounded tip, surface encrustation
54	2610	99.9.4.4	9.9	6.6	4.0	320	C.2	II	Complete. Pointed tip, tapering inwards at base, suspension hole covered with heavy surface encrustation
55	334	96.4.3.5	6.0	4.3		66	A.3	I	Complete. Rounded tip, symmetrical sides, surface encrustation
56	347	96.4.3.5	6.6	3.6	3.3	100	D.3	IV	Complete. Flat tip, slight depression in base, burnt with minimal surface encrustation
57	336	96.4.4.7	10.4	7.7	5.3	358	B.1	III	Complete. Rounded tip, flat sides tapering towards rectangular base
58	1893	96.3.2.2	6.3	3.8		54		I	Fragment
59	338	96.3.3.5	11.1	7.2	4.7	346	B.1	III	Fragment. Rounded tip, uneven base, broken at base, chips in side

**South of Altar**

60	1000	96.13.6.11	5.5	6.2		142	A.1	I	Fragment. Semi-flat base, surface encrustation
61	1255	97.4.6.9	10.8	7.1	5.9	396	B.1	I	Complete. Pointed tip, asymmetrical belly, surface encrustation
62	1256	97.4.6.9	11.3	7.0	5.5	402	B.1	IV	Complete. Pointed tip, steep sloped belly, dense surface encrustation
63	1342	97.4.6.9	11.0	6.9	5.3	376	B.1	II	Complete. Pointed tip, flat base, slightly lopsided at base, minimal surface encrustation, decorated with 2-3 incised vertical lines above the bevelled ridge
64	1433	97.9.4.4	9.6	6.9	5.0	288	B.1	IV	Fragment. Slight depression in middle of the base, only one suspension hole visible, surface encrustation, half of weight extant
65	1536	97.9.5.5	10.0	7.4		304	C.1	I	Complete. Rounded tip, distinct bevelled edge, tapering of the sides towards the base, depression in base, concave base
66	1537	97.9.5.5	11.0	6.1		392	I	IV	Fragment. Pointed tip, partially extant base, black encrustation on the base, possible sign of burning or slip
67	1889	95.13.2.3	4.8	4.4	2.3	28		I	Fragment. Rounded tip
68	587	96.10.3.3	9.2	6.9	4.6	286	C.2	II	Complete. Rounded tip, tapered rectangular base with depression
69	897	96.10.5.1	8.6	7.0	4.2	282	B.1	III	Fragment. One side of weight extant including groove of suspension hole
70	902	96.10.5.1	7.3	7.3	5.7	300	A	IV	Fragment. Concave base with edge, partially extant, heavily pitted surface
71	895	96.5ext.10.1	10.0	6.9	5.8	328	B.1	III	Complete. Broken tip, symmetrical belly, surface encrustation
72	893	96.5ext.10.2	10.1	7.2	6.0	346	A.1	IV	Complete. Rounded tip, symmetrical belly, raised edge at base, surface encrustation
73	894	96.5ext.10.2	10.6	7.1		316	A.1	II	Fragment. Pointed tip, straight sloped sides, partially extant base, surface encrustation



## 240 Loomweights

74	896	96.Sext.10.2	11.7	7.7	6.0	402	B.1	III	Complete. Pointed tip, indent in belly, surface encrustation, cracked surface
75	3055	00.4.4.4	11.2	7.6		362	B.1	I	Complete. Flat tapering side of belly, minimal surface encrustation, possible thumb impression at tip
76	3056	00.4.4.4	9.1	7.4	5.1	354	B.1	I	Complete. Rounded tip, long straight slopes of belly, concave base with edge, heavy surface encrustation, decorated with 3 incised vertical lines above the bevelled ridge. Conserved
77	2981	00.4.4.4	8.7	5.4		122	1	II	Side fragment
78	2985	00.4.4.4	8.5	6.4	5.2	278	B.2	II	Complete. Conserved tip, chip in belly, slightly concave base with edge
79	3148	00.4.7.7	6.2	6.2		178		II	Belly fragment
80	1888	96.14.2.2	10.3	7.1	6.1	344	B.1	IV	Complete. Round tip, symmetrical belly, surface encrustation
81	0082	95.8.2.3	11.1	6.2	4.9	368	C.1	II	Fragment. Indentation on the sides, damaged base, surface encrustation
82	0083	95.8.3.11	7.2	5.6		160	A	IV	Fragment. Round tip, surface encrustation
83	331	95.5.5.6	10.1	7.6	5.5	446	C.1	III	Complete in 7 pieces. Lopsided belly with one flat side, concave base with edge, surface encrustation, suspension hole filled with organic material
84	1904	95.6.5.7	7.9	6.4	4.1	192	B.2	III	Fragment. Rounded tip, damaged belly and base
85	487	—	8.6	6.8	6.8	250	A.2	IV	Fragment. Pointed tip, flat triangular shape, surface damage at base, surface encrustation, evidence of burning
86	0085	95.2.1.1	9.7	5.0		125	1	IV	Fragment. Pointed tip, damaged base.
87	1897	94.4/95.7.1.1	3.5	3.1		14		IV	Tip fragment
88	1278	95.7.5.11	6.0	3.0	4.8	66	A	III	Fragment. Sides of belly lopsided
89	1900	95.9.3.4	3.9	3.9		28		III	Tip fragment. Rounded tip, broken at suspension hole
90	1364	95.9.7.7	6.2	5.9		110	A	III	Fragment. Partially extant base and tip
91	1208	97.6.1.1	6.5	6.4		96	C	III	Fragment. Slightly lopsided belly, small bump on the base, decorated with 2–3 incised vertical lines above the bevelled edge
92	1209	97.6.1.1	5.6	2.8		68	C	III	Fragment. Bump on the preserved base, evidence of burning
93	1354	97.7.1.1	4.9	3.4		40	B	IV	Base fragment
94	2244	99.5.2.2	5.8	4.2		54		III	Tip fragment
95	2247	99.5.2.2	10.5	6.8		302	B.1	III	Complete. Pointed tip, large inclusions in the surface, base conserved
96	2347	99.11.2.2	6.8	5.4		104	A or B	IV	Fragment. Flat base, surface encrustation
97	2359	99.10.2.3	8.5	6.8	5.8	276	A.2	III	Complete. Round tip, surface encrustation
98	3112	00.5.2.2	8.3	4.5		110		IV	Fragment. Groove of suspension hole preserved
99	Uncatalogued						B		Complete. Pointed tip, decorated with 3 incised vertical lines above the bevelled ridge. On display in Lafka Folklore Museum

## DISCUSSION

Three main explanations for the deposition of loomweights in the Sanctuary at Stymphalos can be offered. First, random loss or debris in secondary contexts scattered throughout the Sanctuary. The original function of these objects is not determinable, since their apparently random scattering means they lack a primary context. They may once have been associated with a loom or been deposited as individual votive objects, but this evidence is now largely lost (unless the few inscribed marks have something to tell us).

The remaining loomweights can be divided into two groups: ones dedicated to the deity as votive gifts, and those which served as functional tools for weaving, possibly, though not conclusively, in a ceremonial rite related to the cult of the divinity, in this case perhaps Athena or Eileithyia.<sup>1</sup> Context and location of the loomweights are crucial criteria in determining their use in the Sanctuary.

On other sites, weaving equipment has been attested in both domestic and religious contexts. Items such as looms, loomweights, and spindle whorls have a practical function as tools for the production of cloth. In a domestic context, weaving was done on a daily basis by women of the household, and the appearance of weaving equipment is self-explanatory. On the other hand, loomweights and other weaving equipment at a religious site might have symbolic meaning and allude to the divine protection or patronage which this important daily activity had. It might also have a role to play within the ritual life of a cult – for example, offering a chance for the display of skills by girls and young women, and providing them with both validation of their role in society and an opportunity to be initiated into formal worship of the deity. Weaving was a fundamentally important task, and its value in society, both real and symbolic, perpetuated the notion of womanhood. The inclusion of women in celebrations of the religious sphere by means of weaving reinforced and legitimized the importance of women's role in ancient Greek society.

A relatively simple classification system has been developed in order to examine features of the loomweights from Stymphalos, including form, size, fabric, and markings, from both a qualitative and quantitative perspective. Furthermore, the acropolis Sanctuary at Stymphalos provides some evidence on the basis of distribution patterns that the loomweights were functional and therefore that weaving was part of ritual activity in the Sanctuary. Spatial distribution of loomweights within an architectural setting helps shed light on their

use.<sup>2</sup> The depositional pattern and position of the loomweights help indicate whether the weights were in use at the time of their deposition, were being stored, were on display, or have since been disturbed. Evidence for the presence of looms, such as post holes or the charred remains of wooden beams, is sometimes visible in the soil, which may substantiate their presence, though, one hastens to add, no clear evidence was observed at Stymphalos.<sup>3</sup> The lack of systematic contextual analysis may well detract from an appreciation of the complexities of these objects and lead to assumptions about their function in purely practical domestic activities, despite evidence to the contrary. Therefore, stratigraphy, depositional patterning, and artifact characteristics, taken together, provide evidence for ancient practices and activities.

Excavations in the acropolis Sanctuary at Stymphalos yielded 99 loomweights. No bobbins were found, but two possible needles, one of bone (uncatalogued) and the other bronze (Inv. 238, Schaus, chapter 7 above, cat. 133), have been identified, and two lead bodkins (Inv. 2452, Schaus, chapter 7 above, cat. 219), a spindle hook (Inv. 601, Schaus, chapter 7 above, cat. 137), and two possible spindle whorls (Inv. 687, Schaus, chapter 7 above, cat. 106, and one uncatalogued) were found. Therefore, loomweights comprise by far the greater part of the assemblage of weaving equipment at the site. The lack of spindle whorls on the site may indicate, for example, that spinning of wool was done elsewhere in the town.

The Greeks wove on the warp-weighted loom, which had two upright vertical beams and two horizontal cross beams: one at the top to hold the cloth and one in the middle called the shed bar.<sup>4</sup> The loom either leaned against the wall or was supported at the base by upright wooden beams (fig. 12.1b).<sup>5</sup> The warp threads were hung from the top cross beam and attached to loomweights at the bottom holding the warp threads taut.<sup>6</sup> The tension of the threads needed to be consistent; thus a set of loomweights was required to which the threads were tied with their weight distributed equally among the threads.

Looms varied in size. The number and mass of loomweights required for a particular project varied according to the type and size of cloth being produced. On the basis of the length of preserved rows of loomweights or the distance between the preserved post holes from the loom, the widest recorded warp-weighted loom was 2.4 m and the smallest was 0.4–0.5 m.<sup>7</sup> The average width, however, was 1.2 m to 1.7 m.<sup>8</sup> Looms larger than 2 m would likely have caused difficulties in manoeu-

ving around the loom, even for two women working in unison.

Evidence for the average number of loomweights used on a loom derives both from groups of loomweights themselves and from depictions of looms. It remains unclear how many warp ends were attached to each loomweight. Davidson and Thompson estimated that twelve threads (0.026 m wide) were attached to a single loomweight. This would require 65–70 loomweights per loom for an average-sized cloth (ca. 1.75 m wide).<sup>9</sup> Such a large number of weights would be cumbersome, and crowding would increase the possibilities of tangling. Thus the method of staggering loomweights in parallel rows was adopted; this can be seen on a vase from Chiusi, and with finds from several sites, including Troy IIg.<sup>10</sup> Ethnographic studies have also demonstrated its practicality.<sup>11</sup>

More warp threads attached to a single loomweight increases the interval between loomweights, thus reducing the number, congestion, and possibility of breakage of loomweights. Rows or clusters of 10 to 40 loomweights have been found commonly on sites, indicative of the number required in a set.<sup>12</sup> The suspension hole of a loomweight, however, tends to be small, and, in order to accommodate numerous threads, an intermediary must have been used, as with modern looms. The intermediary, whether a ring, cord, long bar, or rod, was laced through the suspension hole and had the warp threads attached directly to it.<sup>13</sup> Depictions of weaving on the Amasis Painter's lekythos<sup>14</sup> and on a Corinthian aryballos<sup>15</sup> show this technique. Some intermediaries have been preserved, including a clay loomweight with bronze ring,<sup>16</sup> wooden rods in loomweights at Nemea,<sup>17</sup> and representations of loomweights with "sticks" stamped on loomweights at Corinth and the Pnyx in Athens.<sup>18</sup> Two loomweights (12 and 19) from the Sanctuary at Stymphalos had an organic material, perhaps a stick, embedded in the groove of the suspension hole.<sup>19</sup> This may be the remains of wooden rods similar to the loomweights at Nemea. The use of an intermediary reduced the number of weights required, although the weights had to be heavy to keep tension on a greater number of threads. Other aspects of the warp-weighted loom remain problematic, although variations between households and regions over time no doubt existed.

At Stymphalos, all the loomweights are perforated with a single suspension hole and are conical in shape, with the exception of a single pyramidal one.<sup>20</sup> All the loomweights appear to be handmade, which may account for the asymmetrical sides and other inconsistencies such as finger marks or dips and lopsided

suspension holes.<sup>21</sup> Most of the loomweights were well fired, although a few exhibit cracked surfaces and chips indicative of poor firing. Small variations in size and shape occur, but in general the loomweights are similar. There are no traces of paint, decoration, or stamped impressions on any of the loomweights.

The only markings on the Stymphalos loomweights consist of incisions or worn grooves, found on seven loomweights (14, 91, 28, 29, 63, 76, and one uncatalogued) (figs. 12.2–3). These are rather shallow, and surface encrustation renders them barely visible. The markings are all similar, consisting of three vertical lines, relatively symmetrical, on the belly of the loomweight just above or at the bevelled lower edge. 29 (fig. 12.3a) is unique in having a vertical line to the left of three horizontal lines.

The scarcity of marks on these loomweights means that the incisions were unlikely to be either manufacturer's or owner's marks. Their function remains problematic; however, one suggestion is that all seven of them were meant to have the same mark, and that this mark is most clearly seen on 29 but incised at 90° and the joining perpendicular line is missing for the other six.<sup>22</sup> The problem with this idea is that the other six have their three parallel strokes vertical to the loomweight base and do not have the linking perpendicular line. This is most clearly seen on a loomweight now in the Lafka ethnographic museum which was picked up as a surface find in the Sanctuary (see fig. 12.3b). The mark on 29 is an epsilon, even having the vertical line extend below the lowest of the horizontal strokes as with the epsilons on the bronze rim fragment (Inv. 2525, Schaus, chapter 7 above, cat. 22). While this is hardly much to go on, nevertheless, given the consistent pattern of the other three dedication inscriptions on objects from the Sanctuary that name Eileithyia or seem to refer to her, it is possible that the "E" (epsilon) found on 29 again refers to Eileithyia, and that this loomweight at least, and possibly the others, was either a dedication to her, or left in the Sanctuary for the purpose of producing a garment for this goddess.<sup>23</sup>

The shapes of loomweights in the Sanctuary do not allow for chronological distinctions, as have been proposed at other sites, for example, Corinth or Olynthos.<sup>24</sup> Nor could they be compared convincingly to other typologies, since regional preferences and particularities are difficult to account for. In addition, the durability of weights means that a long period of use is possible, though it is difficult to estimate what an average span was. Many loomweights at Stymphalos, especially those from the Sanctuary, were in disturbed or secondary contexts, so dating is even less certain.

Nevertheless, the loomweights can be divided by shape into four main types (A–D, as listed above, p. 236, and see fig. 12.4). Type A is conical with sides sloping straight towards the base (with no outward curve at the belly), perhaps developing from the pyramidal tradition.<sup>25</sup> Otherwise, weights commonly have a low rounded or bevelled belly that tapers gently to a flat resting surface. This rounded or bevelled belly absorbed contact between weights and created a noticeable distinction between upper and lower parts of the weight (Types B and C, fig. 12.5). The bevelled ridge is set higher and becomes more defined in weights of Type C, which also tend to be elongated, with straighter sides. Only one truncated pyramidal loomweight (Type D, figs. 12.4 and 12.5) occurred at the Sanctuary. Most weights have a flat or slightly concave resting surface; all are able to stand upright.

These variations are difficult to explain other than as mere preference or tradition, since they seem to lack functional purpose.<sup>26</sup> Most loomweights at Stymphalos are Types B and C; thirteen belong to Type A, and one to Type D. A distinction between B and C can be made primarily on the basis of the angle of the belly ridge, although differences are not always clear. Finding weights of slightly different shape in the same context argues for the general insignificance of these variations. A suspension hole just below the top of each weight (1.5 cm to 2 cm below the tip) helped to distribute weight and reduced the risk of breakage at the tip itself.

The size, and therefore the mass, of a loomweight is its one essential characteristic. Tension determined the fineness and tightness of the cloth. Loomweights at Stymphalos vary from 4.6 cm to 11.4 cm in height (fig. 12.6). Most range between 8 and 11 cm. One miniature loomweight (4.6 cm) weighs only 24 g, and its usefulness in weaving is questionable. The lightness of this weight also strongly suggests that it may instead have been made specifically as a votive; however, it has also been noted that small loomweights may be paired with heavier ones to improve the weight distribution.<sup>27</sup> Two other small loomweights, both about 6 cm in height and 66–100 g in weight (one is pyramidal, Type D), are barely heavy enough individually to hold the threads taut, especially in comparison with other weights from the site.

Loomweights hung from threads on the same loom should have been closely similar in weight to provide equal tension on the cloth warp threads during weaving.<sup>28</sup> All loomweights at Stymphalos (including the fragments) have been weighed for comparison's sake. Complete ones range from 24 to 464 g; the average is

326 g with 40% of the loomweights weighing between 300 and 400 g. They tend to be heavier, in some cases considerably, than ones at other sites, for example Olynthos, Gravina di Puglia, San Giovanni, Halos, Ilion, and Narce in Etruria, although comparable ones found at the Silaris Heraion range between 325 and 425 g.<sup>29</sup> Uniformity of weight may be an indication of the quality of the workmanship as well as the consistency of the type of weaving practised.

The clay of the loomweights can be divided roughly into four fabrics, identified by colour, texture, and inclusions (see above, p. 236).<sup>30</sup> The weights are fairly consistent and evenly divided among the fabric types; however, fabric I is most distinctive based on colour, which is almost white or light buff with a greenish tinge, as opposed to more red, pink, and brown fabrics. No source of the clay for any of the types has been identified and therefore it is not possible to determine whether any of the clays were local. Fabric I is close in colour to Corinthian clay. No conclusive evidence for a kiln or potter's quarter has yet been found at Stymphalos. The presence of ceramic wasters in other parts of the city (Stym I and Stym X) suggests some local pottery manufacture, at least in the late Hellenistic and Roman period. It seems likely, therefore, that some loomweights were produced locally.

## Distribution

The distribution pattern of loomweights (fig. 12.7) helps suggest their use in the Sanctuary. They were found strewn individually and in clusters with concentrations in certain locations (see, for example, figs. 12.8 and 12.9).

Finding fewer than four loomweights within any given room or defined outside area might well be the result of random loss or scattering during destruction or abandonment of the Sanctuary. Clusters of four or more loomweights are more indicative of sets, depending on the context.<sup>31</sup> Three main areas where the loomweight concentrations were densest are two outside areas: 1) east of the Altar and 2) south of the Temple, and an inside area: 3) within and near the West Annex of Building A (table 12.1). Other smaller clusters, not as concentrated, have been located throughout the Sanctuary; for example, the City Wall: these probably represent the accumulation of debris or the deposition of votives.

The second largest concentration of loomweights, after that of the West Annex, was found east of the Altar beyond the large Terrace Wall which abuts the

Table 12.1. Distribution count of loomweights by area

Areas in the Athena Sanctuary	Total
Building A	5
West Annex of Building A	22
West of Building A	6
East of Building A	1
North of Building A	1
Temple	1
Immediate periphery of Temple	5
South of Temple	9
Altar	5
South of Altar	8
East of Altar/Terrace Wall	23
City Wall	12
Unknown	1
Total	99

rough cobbled courtyard surrounding the Altar. Fourteen loomweights were found in trench 99.1 and another five in trench 97.5 (balk). The mixture of material found in this context suggests that the deposition was at least partly votive in nature.<sup>32</sup>

Distinct strata could not be clearly distinguished in trench 99.1; the changing of levels tended to be at arbitrary depths, so levels generally are not representative of specific occupation phases. Preliminary analyses of the coins, figurines, and pottery provide tentative dates for the material from the fifth to the second century BCE,<sup>33</sup> although most of the pottery is from the fourth and third centuries. An abundance of pottery, including miniature votive vessels, fine, common, and coarse wares, was found here, as well as an assortment of other objects: iron nails and rings, bronze lunate earrings, iron projectile points, bronze coins, terracotta figurines, lamp fragments, perirrhanterion fragments, a silver lid, the rim of a stone vessel, a stone grain grinder, sheets of bronze with repoussé decoration, loomweights, plaster, miscellaneous metal, glass, and bone.

Many of the loomweights in this area were broken before deposition, so the average weight, including the fragments, was under 200 g, well below the average weight of 326 g for the entire site. The Terrace Wall separating this area from the Altar courtyard has not been securely dated; part of the fill beyond the wall is dated as late as the second century BCE.<sup>34</sup> Clearly this area, just below the Altar, offered a suitable and convenient location to dispose of rubbish and unwanted votives from the Sanctuary, which might account for the lack of well-defined strata and the diversity of the material within.

South of the Temple, a large quantity of material found in trenches 00.2 and 97.12 (figs. 12.7 and 12.9)

seems more representative of an area of votive offerings. Perhaps such offerings had been displayed on tables or benches in and around the Temple, the remains of which have not survived.<sup>35</sup>

Finds include miniature votive cups, fine ware pottery, bronze rings, coins, terracotta figurines, loomweights, projectile points,<sup>36</sup> and various miscellaneous metal objects. The loomweights here might be representative of individual offerings or a dedicated set. The lack of architectural remains indicates the unlikelihood of weaving being done, since protection from the sun and elements was important.

On the other hand, the nine loomweights in this area might indicate an earlier or temporary area for weaving activity. In trench 00.2, five whole loomweights and one fragment were found; slightly to the west in trench 97.12, three more loomweight fragments were uncovered. Five of the loomweights are of similar shape and size; the profile group of the fragmentary one is inconclusive. The five complete loomweights in trench 00.2 average 10.2 cm in height, and belong predominantly to Type C, although Type B is also represented. They vary in weight from 318 g to 464 g.<sup>37</sup> Those from trench 97.12 seem smaller, though their fragmentary preservation makes comparisons difficult. The presence of the six loomweights in trench 00.2, on a hard-packed surface, possibly a floor or occupation surface, suggests the possibility of weaving. If so, one may ask how this area relates to the West Annex, where evidence for weaving is clearer. Pottery evidence from the floor of the West Annex suggests that that room had a short life, and if so, then an alternative area for weaving might be here, with temporary shelter provided by makeshift means.<sup>38</sup> This location and the associated materials, however, are ambiguous in suggesting weaving activity.

The primary context for weaving was in the West Annex of Building A,<sup>39</sup> where the largest concentration of loomweights, 19 altogether in several clusters, was found at floor level within and just outside the room, while 9 more occurred in the same vicinity.<sup>40</sup> This small room was built in the last phase of construction of Building A, which pottery evidence suggests was in the late fourth or early third century BCE. A low, narrow fieldstone foundation was laid on the north and west sides with the start of a return wall at the corner of the south side, where a door presumably was situated. The east side of the West Annex is formed by the west wall of Building A and part of its North Annex. The room is isolated from the rest of the building with no connecting door to Building A. The dimensions of the room are 4.8 m × 3.6 m, which would provide sufficient space for

an average-sized loom with ample additional space for women to manoeuvre around it. Above the floor surface was a layer of yellowish decomposed mudbrick, approximately 15 cm deep, filled with roof tile debris. Immediately below the mudbrick deposition was the floor surface on which the loomweights rested.

All the loomweights were roughly the same size (on average 10.4 cm high) and of similar weight (on average 353 g).<sup>41</sup> Their form varies slightly; the group can be divided equally between Types B and C. Types A and D are both absent. They were found in three clusters within the room, not in a single straight line, perhaps as a result of disturbance during destruction of the room. It is worth noting that the two loomweights with organic material in their suspension holes, perhaps the remnants of wooden rods, were found here, suggesting they had been in use at the time of destruction.

Additional material was discovered along with the 19 loomweights. Pottery was not abundant, yet it corresponds with the change towards the use of table ceramics in this period. Within the room, tableware comprises the highest percentage of forms, followed by votive ware, including miniatures. Metal implements, primarily of iron and bronze, some of indistinguishable function, iron and bronze finger rings and earrings, lamp nozzles, two coins, and several projectile points were found in the same stratum as the loomweights. Nothing in the assemblage need argue for an alternate function for the room. These objects may have been used by the women weaving and represent loss or debris within the room. The presence of 19 loomweights within a defined space and on a floor surface with no other distinguishable function strongly suggests that they were part of a functioning loomweight set and that weaving was the primary activity in the room.

No epigraphical evidence has survived at Stymphalos to indicate the motives of the dedicator, if indeed some of these loomweights were dedications, but such weights were not uncommon as votives elsewhere, as seen both by their abundance in Greek sanctuaries and by their appearance in inventory lists and dedicatory inscriptions. Inscriptions sometimes provide evidence for the rational incentive and symbolism of weaving equipment as offerings.<sup>42</sup> Dedicating equipment in particular to the patroness of weaving, Athena, may emphasize the close relationship between the weaver and the goddess, and may symbolize women's life as well as their important economic role in Greek society. Loomweights, however, were inexpensive votives with little or no aesthetic or sentimental value but were token offerings by the dedicator. Other implements such as spindle whorls

were more personal objects and often were decorated or of higher quality and may have been part of a woman's assemblage for a longer time and potentially have more sentimental value. The rarity of spindles, if not a function of the absence of spinning in the Sanctuary, and of other weaving equipment in the Sanctuary may suggest fewer religious dedicatory offerings of this nature and strengthens the hypothesis that the majority of the loomweights present in the Sanctuary were used for cultic weaving.

The discovery of 19 loomweights isolated in or very near a small room gives clear evidence for weaving here. Most likely fallen from a loom set up in the West Annex, these weights illustrate an activity within the Sanctuary that had a strong religious purpose. Documentation of such ritual practice, however, is scarce, especially in the archaeological record. The adornment of cult statues with garments or cloth is familiar from literary sources,<sup>43</sup> but evidence as to where the garment was woven is very unusual. Inventory and dedicatory lists from sanctuaries frequently record clothing among the dedications;<sup>44</sup> however, not all references to the clothing of a cult statue are associated with the ritual of weaving. The dedication of the woven garments often followed a procession to the cult statue, indicating that the clothing of the statue was secondary to the ritual of weaving and presentation of the sacred garment.<sup>45</sup> Homer (*Il.* 6.269–311) mentions a procession of women from the palace at Troy carrying a beautiful robe to be placed on the knees of the cult statue of Athena. In Alkman's *Partheneion* (*l.* 61), there is a description of the dedication of an object which an ancient commentator noted was a plough, but which might also be interpreted as a robe, to Artemis Orthia.<sup>46</sup> Additionally, evidence from Argos refers to the weavers of a garment for Hera at the Argive Heraion and possibly also for Athena at Argos.<sup>47</sup> The dedication of a cloth or robe was a common practice in Greek cult whether for a cult statue or simply to be hung as a dedication, as were the ritual activities of its production and display.

Evidence for the ritual act of weaving within a sanctuary precinct, however, is rare. Pausanias mentions that at Olympia a special robe for Hera was woven by 16 women, one from each of the districts of Elis. The weaving took place in a building in the marketplace built specifically for this purpose.<sup>48</sup> A chiton was woven annually by women at Amyklai for the image of Apollo. A separate room was assigned for this purpose.<sup>49</sup> Furthermore, a larger group of 22 loomweights was found in Room F, in a building across the road from the sanctuary of Athena Poliouchos on the acropolis of Halai.

Here the correlation between loomweights and sacred weaving was supported by a mid-third-century BCE inscription mentioning a group of officials called "petamnyphanterai" (πεταμνοφάντεροι), the weavers of the spreading cloth or weavers of hangings, who carried out weaving as part of the cult rituals.<sup>50</sup>

At Ilion (Troy), 15 terracotta loomweights and 4 spindle whorls were found together in a votive pit located below the sanctuary of Athena Ilias and may be the discarded material from cultic weaving materials from this sanctuary.<sup>51</sup> At Foce del Sele in southern Italy, 266 loomweights were found in a square building, the Edificio Quadrato, in the sanctuary of Hera. Although there is no consensus on the function of the building, the large quantity of weaving equipment within this building and its proximity to the Heraion suggested to Greco and de La Genière that it was used by women in the production of cloth associated with the cult.<sup>52</sup>

Elaborately decorated loomweights, dated by the excavator to the eighth century BCE, have been found in a sanctuary at the indigenous site at Francavilla Marittima in south Italy, which was later colonized by Greeks. Their presence in two rows on the floor of a building which became a temple in a later phase indicates the presence of a loom. It is suggested that women with special positions in the local society were involved in ceremonial weaving, in association with a goddess.<sup>53</sup> This indicates the significant role played by weaving in the lives of local women and in ritual practices prior to Greek colonization. The practice apparently continued after Greek contact. The primary deity presiding over this sanctuary in the Greek period was Athena.<sup>54</sup> A terracotta plaque of a goddess within a naiskos in the Museo Nazionale della Sibaritide has been associated with this same sanctuary at Timpone della Motta, and dated to the second half of the seventh century. The goddess has been identified as Athena, and the object on her lap is identified as a folded peplos.<sup>55</sup> Two other terracottas, from the sixth century, depict women holding what are taken to be cloths in their hands, which they perhaps wove as gifts for the goddess.<sup>56</sup>

In addition, the most detailed account of ritual weaving and the dedication of a garment for the gods is the peplos dedicated annually to Athena as part of the ceremonies of the Panathenaia festival in Athens. The peplos, used to clothe the cult statue, was woven by four specially selected young girls (arrephoroi) and women (ergastinai) from aristocratic families as part of the cult rituals. The ceremonial weaving began when the ergastinai set up a special loom at the Chalkeia festival, celebrated nine months prior to the Panathenaia festival.<sup>57</sup>

The production of the peplos became part of the ritual, culminating in the dedication of the robe to Athena at the end of the Panathenaic procession.

Another peplos was woven every four years for the Greater Panathenaia and was openly displayed as a sail for the sacred ship in the Greater Panathenaia. This peplos was made in addition to one made to clothe the xoanon. The weaving of the sail peplos was done by professional male weavers who competed for the contract and honour of weaving it for Athena.<sup>58</sup> Mansfield emphasizes the distinction between professional weaving sponsored by the state and weaving with direct cult and religious affiliations.

The location of the weaving ritual is unknown. Presumably the professional weavers would have produced their cloth in their own workshops; however, since the arrephoroi and ergastinai held a religious office, it is plausible that the weaving occurred within a sanctuary, perhaps around or on the Acropolis where the arrephoroi resided.<sup>59</sup> It is possible that the ritual, connected with Hephaistos and Athena Ergane in the Chalkeia, occurred within the Agora, as at Olympia. Neither the literary nor the archaeological sources indicate where the loom was set up, so attempting to pinpoint the location of ritual weaving in connection with the Panathenaia is speculative.

It was, of course, common in the Greek world for ritual activity to occur within the precinct of sanctuaries, making it probable that auxiliary buildings within sanctuaries were the location of such cultic activities, including ritual weaving. Thus, the production and dedication of a peplos to clothe the cult statue, as evidenced in the literary and archaeological record, support a connection between ritual weaving and a location within or very close to sanctuaries.

It was clearly an honour for women to be chosen to participate in weaving a garment for a divinity. The task of weaving and the ceremonial presentation of the sacred cloth were important activities incorporated into cult ritual. Dressing the cult statue in elaborate woven garments may be associated with effigies, anthropomorphic statues, and semi-shaped statues as well as shapeless aniconic pillars representing both male and female gods. The garments themselves were visible manifestations of the care devoted to the deity. A strong correlation exists between the presence of weaving and the clothing of the cult statue and is likely connected with the integration and participation of women in sacred activities. Clothing of the cult statue, however, was an ancient tradition and cannot be seen as synonymous with ritual weaving.

The presence of weaving equipment and cloth as votives is found primarily in sanctuaries dedicated to Hera, Artemis, and Athena. At many sites, the deity associated with weaving is Athena, the patroness of handicrafts, particularly weaving. In fact, it is primarily through this activity that Athena was affiliated with the feminine world as manifested in her worship.

The ritual act of weaving garments for cult statues may have been rare. Mansfield suggests that the practice of communal weaving of garments for dedication as part of cult ritual may have been "synoikismic," where places that experienced synoikism may have used the practice to help unify the community – for example, at Athens, Argos, Olympia, and Sparta.<sup>60</sup> Stymphalos may offer another example, since the creation of a new town in the earlier part of the fourth century may have brought together peoples from the older site of Stymphalos, as well as other villages in the valley.

Weaving is also linked with the Athena Polias cult. In the sanctuary of Athena at Halai, the existence of officials specifically named as weavers indicates the importance of this task. Similarly in Athens, the *arrophoroi* are specifically dedicated to the task of weaving a ritual garment for Athena Polias which was then displayed publicly in a ceremonial procession around the city. Following the Athenian tradition, a similar festival and ritual, modelled on the Panathenaia and including the weaving of the peplos, were celebrated at Ilion in honour of the goddess Athena Polias. Such strong affiliations between the cult of Athena Polias and weaving may also exist at Stymphalos; however, it is worth keeping in mind that Eileithyia was also worshipped in the acropolis Sanctuary. When Pausanias (8.21.3) described the nearby city of Kleitor, he noted the temple of Eileithyia there, and added that Olen, a poet from Lycia, composed some hymns for the Delians, including one to Eileithyia, where she is called the fine weaver.<sup>61</sup> It bears noting as well that Pausanias (7.23.6) describes a cult statue of this goddess which he saw at Aigion, not so far from Stymphalos, made of wood (body) and

marble (head, hands, and feet), which he says was covered from head to foot in a finely woven garment. It is possible that the same situation occurred at Stymphalos, and that the "finely woven" garment was made right in the Sanctuary. In either case, Athena or Eileithyia, the association with weaving is important.

It is clear then that evidence for cloth production as part of the cult activities in Stymphalos' Sanctuary on the acropolis is manifested in two ways: through votive offerings and through the ritual weaving of a sacred cloth. Scattered concentrations of loomweights, such as those found south of the Temple or east of the Altar, suggest the common practice of dedicatory offerings, made primarily by women to female deities, including Athena. The individual motives for the dedications are obscure, but the offerings may be viewed as symbolic gestures representing the value of weaving in Greek society and its importance as an economic, social, and religious activity in women's lives, bonding the dedicator to her deity. The loomweight would thus represent a bond between women and the goddess.

On the other hand, on the basis of context and arrangement, the cluster of 19 loomweights in the West Annex indicates the practice of weaving within the Sanctuary precinct itself. This small room was tucked away between the Temple, Building A, and the Pillar Shrine area, just out of sight of the Altar. Within this small room, evidence suggests that a loom was set up and used to weave cloths presumably used in the cult, perhaps as at Athens, as a sacred garment for the cult statue.

The Sanctuary on the acropolis at Stymphalos may have been established, or perhaps simply rejuvenated, by the move of the old town to its site on the ridge overlooking the lake. Stymphalos was allied with Athens in the fourth century, and the close relations of the two may have led to similarities in the worship of Athena Polias, including the well-attested annual ritual of weaving for the goddess.



- 3 For a sanctuary of Demeter and Kore at Mytilene and its lamps, see Bailey and Williams (forthcoming).
- 4 There is a deposit of fragments, mostly of nozzles, bases, and tops, from about fifty lamps that are similar in shape, size, and fabric, from a context that dates to the mid-second-century BCE destruction of the Sanctuary in the North Annex of Building A (see below on late round-bodied lamps).
- 5 We find a similar pattern with the terracotta figurines from the Sanctuary; scarcely a single complete one survives and most are represented only by fragments that usually do not join.
- 6 The proximity of the ancient City Wall along the south side of the acropolis and the presence of several towers make it likely that at least a few lamps had been used for illumination in those structures and thus may not belong to the Sanctuary.
- 7 We have found a small fragment of a mould for the manufacture of such bowls elsewhere on the acropolis but as yet have no evidence for the local manufacture of lamps, although one would expect it.
- 8 Broneer 1930, 56–60 for the initial study; for the most recent discussion that moves their date considerably later than Broneer's, see Slane 1990, 9–10. Very large numbers of such lamps also appeared at the Sanctuary of Poseidon at Isthmia (Broneer 1977), where they were popular dedications in the Palaimonion. Numismatic and ceramic evidence from the fifteen areas that we have excavated at Stymphalos indicates little material later than the first half of the first century CE. Professor Sheila Campbell's team found a Severan coin in the nearby thirteenth-century Cistercian monastery of Zaraka, and we found several fourth-century CE coins in the housing area, but no contemporary pottery or other finds.
- 9 Broneer 1930, 76–8; unfortunately none of the nozzle, handle, or base survives to provide a clear indication of the type.
- 10 Broneer 1930, 90–102 for the first study of the type; for more recent discussions see Perlzweig 1959, Williams 1981, and Slane 1990. For a recent proposal – still debatable – that the type originated and was produced in Patras, see Petropoulos 1999. At Corinth the type of lamp that we have found at Stymphalos stops with the Herulian attack of 267 CE.
- 11 Such lamps have been found by the thousands in western North Africa, especially in Tunisia and Algeria, and in their final form appeared around 400–425 CE; by the end of the century, mediocre copies were appearing in Greece. See Broneer 1930, 118–20 for the initial discussion, Garnett 1975 for a large deposit from the late Roman "Fountain of the Lamps" at Corinth, Williams 1981, 76–80 for a relatively recent treatment of the type in Greece. The single early Christian grave in the pro-naos of the Temple yielded neither pottery nor lamps, although both appeared in other late graves elsewhere at Stymphalos.
- 12 For discussions see Williams 1981, 7–8 and Bailey 1975, 89–92. There is still uncertainty about when the type begins and ends; such lamps are also difficult to date within the broad period that we know for their use. At Delos nearly a quarter of over 5000 published lamps belong to versions of this type, Bruneau 1965. At Athens Rotroff (1997, 511) now dates the deposits from where they occurred to 100 BCE–100 CE.
- 13 Howland 1958, 68.
- 14 For blisterwares see Edwards 1975, 144–50.
- 15 I am greatly obliged to Peter Stone, who has studied the pottery from Building A, for clarification of details about the large number of fragments of lamps from this deposit.
- 16 Howland 1958, 39–40.
- 17 For a good discussion see Scheibler 1976, 44–9.
- 18 Scheibler 1976, 46–7.
- 19 Williams 1981, 4 no. 2; Corinth L69-4 (unpublished).
- 20 Broneer 1930, 50–1; Howland 1958, 91–3.
- 21 For blisterware see Edwards 1975; there is a considerable number of fragmentary blisterware aryballoi, askoi, and a few other shapes at Stymphalos; according to Peter Stone (personal communication), it is possible in fact that the ware originated somewhere other than Corinth (e.g., Sikyon).
- 22 See, e.g., Howland 1958, 128–9.
- 23 Broneer 1930, 56–60; Slane 1990, 9–10.
- 24 Broneer 1977, 26–8.
- 25 For the type see Broneer 1930, 80–3.
- 26 For discussion see Broneer 1930, 90–102; Broneer 1977, 64–72; H. Williams 1981, 35–41; and Slane 1990, 13–17.
- 27 Petropoulos (1999, 80–4) suggests Patras in the reign of Domitian; the case remains unproven.
- 28 Williams et al. 2002, 155–7. Four areas of the ancient site itself have produced graves, several of which had lamps of the fifth century CE in or near them, and a fifth area at the northern end of the modern village (about three km from the ancient site) produced several more graves, one of which had a coin of Justinian II – ca. 535 CE – in it.
- 29 Garnett 1975; Williams 1981, 76–80. Bussiere (2007) collects several thousand examples from Algeria in the most recent study of the type.

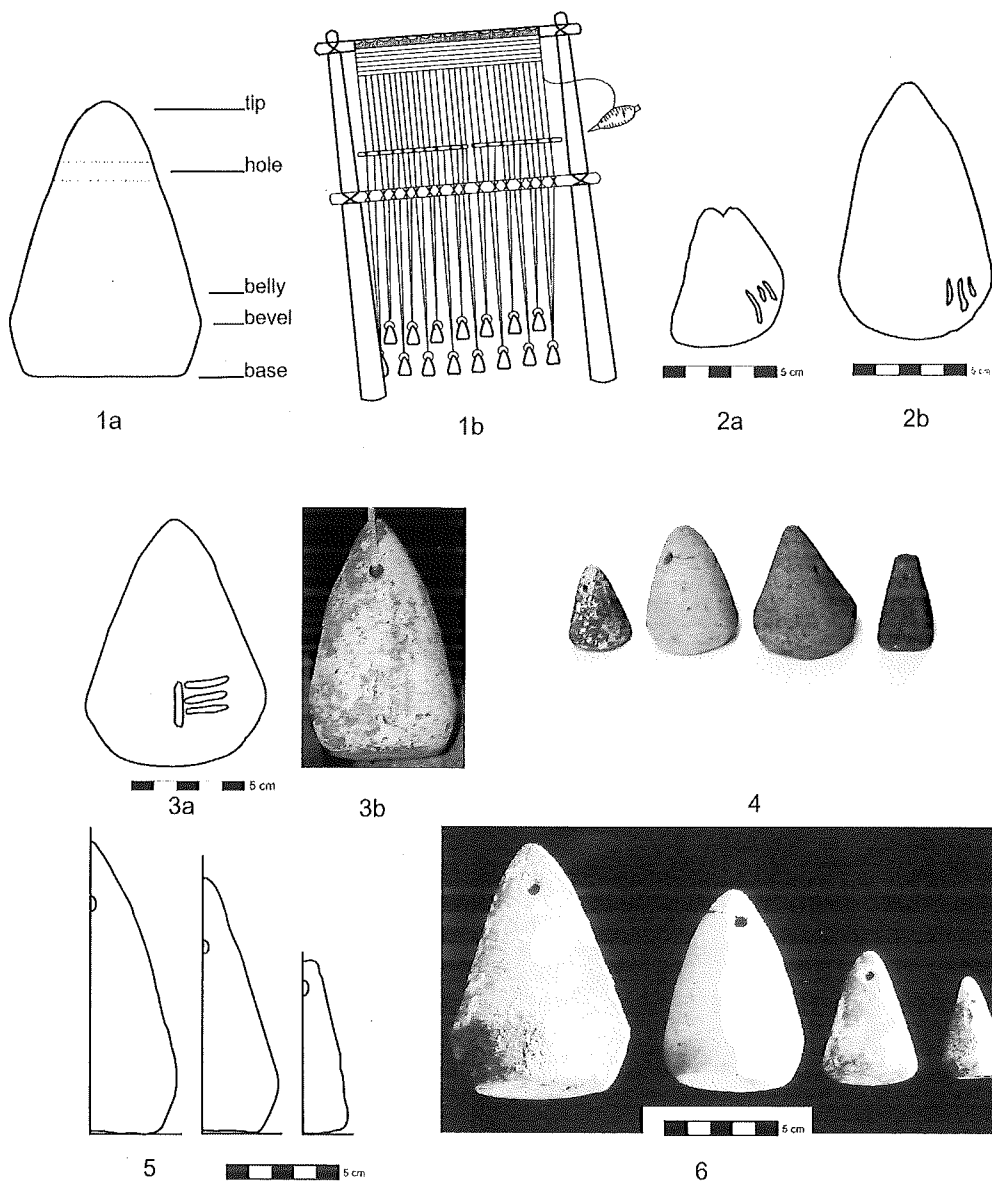
#### Chapter 12: Loomweights

- 1 See below, pp. 242, 245–7.
- 2 Comprehensive studies of artifactual assemblages (Ault

- and Nevett 1999), including those associated with cloth production, have enhanced our knowledge of both domestic and manufacturing contexts. These studies provide comparable material for assemblages found in other kinds of contexts. By examining the location, orientation, and context of weaving equipment, particularly loomweights, we can gain a greater understanding of the textile industry and its significance in Greek society, both from a domestic and religious perspective.
- 3 Barber 1991, 93–4; Blegen (1963, 71–3) describes the preservation of the three or four rows of loomweights between two post holes at Troy, Level IIg. At the Early Bronze Age site of Aphrodisias in Turkey (Kadish 1971, 136), loomweights were found all pointing in the same direction as if they had fallen directly from the loom.
  - 4 For the origins of the warp-weighted loom see Barber 1991; Barber 1994. Barber (1991, 91) argues for the movement of the warp-weighted loom technology into Europe from Anatolia early in the Neolithic period; its use was widespread in the Bronze Age. The first depiction of the warp-weighted loom was in Northern Italy in the fourteenth century BCE, and its use continued down to the early Roman period, being common in both Greece and Italy, perhaps used simultaneously with the vertical two-beam loom in some areas; Hoffmann 1964, 321–3.
  - 5 Hoffmann 1964, 304–11; Barber 1991, 103, fig. 12.3.
  - 6 For discussions of the mechanics of the warp-weighted loom, see Barber 1991, 91–113; Barber 1992, 108–9; Hoffmann 1964; Crowfoot 1940, 41–4. Key aspects are discussed below.
  - 7 Hoffmann (1964, 313–14) refers to a row of fallen loomweights measuring 2.44 m from the Sorte Muld house on Bornholm. Additionally, an extant cloth measuring 2.11 m wide was found, indicating a width for the loom of 2.5–3.0 m. Barber (1991, 387) records the smallest preserved loom width as 0.40–0.50 m from Robenhausen in Switzerland.
  - 8 Barber (1991, 91–113, 387–9) collected the evidence for groups of excavated loomweights, which may represent weaving or the storage of weaving, on Neolithic and Bronze Age sites. This provides an interesting range for the width of looms and the number and mass of the loomweights. Later sites have yielded evidence for weaving, primarily in a domestic context. At Olynthos, Cahill (2002, 171) describes a ground floor room in Villa CC with 43 loomweights in a row 1.1 m in length. At Gordion, 21 loomweights were found in a row measuring 1.59 m, suggesting the width of the loom; DeVries 1980, 39.
  - 9 In the Pnyx publication (Davidson and Thompson 1943, 69–70), mathematical calculations based on the pictorial and archaeological evidence were used to determine approximately the average number of weights per loom. Hoffmann (1964, 297–321) discusses the technology on the basis of the iconography of Greek vases. For discussions of weaving on vases, see Clark 1983; Carroll 1983; Crowfoot 1940.
  - 10 Blegen 1963, 71–3; other sites (see Hoffmann 1964, 310–14; Barber 1991, 102–4) also yielded staggered or multiple rows of loomweights.
  - 11 Much of Hoffmann's (1964) and Barber's (1991, 1994) research consists of ethnographic studies of weavers in Scandinavia.
  - 12 Barber 1991, 104; Cahill 2002, 175. Commonly between 20 and 30 loomweights have been considered to be a "set," so that a group of 23 loomweights, dated to the fifth century BCE, found in a dump in the Tile Works at Corinth may have been such a complete set or close to one; see Merker 2006, 57.
  - 13 Barber 1991, 104–5; Davidson 1952, 147.
  - 14 New York, MMA, 31.11.10.
  - 15 Corinth, Greece, Archaeological Museum, CP 2038.
  - 16 Davidson and Thompson 1943, 68 fig. 30 (British Museum, from Italy).
  - 17 McLauchlin 1981, 79–81.
  - 18 For Corinth, see Davidson 1952, 147, 154, 157, nos. 1145, 1164, 1165, and 1153; for the Pnyx, Davidson and Thompson 1943, 68, 78, 92, W 139, and W 40.
  - 19 The conservator identified it as an organic material which might be a stick or rod based on the shape and fibrous nature of the material; however, conclusive and detailed analysis has not yet been completed.
  - 20 Excavations at Stymphalos have yielded several assemblages of weaving equipment. Loomweights from Stym I (Lower Town site) are from a later period and belong to a domestic context, so direct comparisons are not immediately relevant. A greater variety in the form of the loomweights was observed at Stym I. Discoid, pyramidal, conical, and tapered ones are found. Regarding the suspension hole, all the loomweights, except the discoid ones from Stym I, have one hole. The presence of two suspension holes in the discoid weights might have eliminated the need for an intermediary.
  - 21 At Corinth, the loomweights are thought to be mould-made and wheel-finished, with a fine slip over the surface and even a final polish; see Merker 2006, 59.
  - 22 For further discussion on the use of markings, see Davidson and Thompson 1943, 7–8; Davidson 1952, 153; Tatton-Brown 1992, 220. Merker (2006, 60) suggests that marks helped the maker reassemble sets which were distributed around the kiln during firing.
  - 23 This was a suggestion of G. Schaus.

- 24 Davidson 1952, 146–72; Merker 2006, 57–60; Wilson 1930, 118–28. The period of occupation on these sites is much greater than at Stymphalos, which may allow for further development of form. Regional variations and preferences must be considered as well in comparing these typologies; particular shapes may change accordingly. For a recent discussion of loomweights from a regional survey at Asea, in southeastern Arkadia, see Forsén and Forsén 2003, 236–9.
- 25 This development from the pyramidal to the conical is noted at Olynthos, at the Pnyx in Athens, and at Corinth. The pyramidal style is especially popular at sites in Asia Minor, as well as Olynthos and Halos.
- 26 A progression from A to B to C is proposed here as logical, but it has no foundation in the Sanctuary evidence. It does, however, coincide with variations over time observed at other sites, especially at Corinth. There appears to be a pattern of elongation and sleekness as the weight develops; however, both B and C were in use simultaneously, and the variation may not be the result of a temporal or stylistic development but rather idiosyncrasies of the loomweight maker. See Merker 2006, 58.
- 27 Hoffmann 1964, 42; Wallrodt 2002, 182–3.
- 28 The warp threads needed to remain taut. It is simplest if all the weights are equally heavy, although, as Barber (1991, 95–6) notes, differences in weight can be overcome by the number of threads attached to each loomweight.
- 29 Wilson 1930, 118–28; Burnier and Hijmans 2003, 121; Simpson 1994, 218–19; Wallrodt 2002, 182–3; Tatton-Brown 1992, 218–19.
- 30 Four main clay groups or nine sub-groups are represented at Stymphalos. Colour and composition were examined macroscopically. A Munsell chart was not used. See above, p. 236 for descriptions of the sub-groups.
- 31 Barber 1991, 104; Cahill 2002, 175.
- 32 It was generally regarded as sacrilegious to dispose of votive material as mere refuse or to reuse cult offerings. Large sacred dumps (*bothroi*) were often dug to dispose of votives, Rouse 1902, 342–3, 345–6; Van Straten 1981, 80; Simon 1986, 171, 173–4.
- 33 This date was determined in the preliminary examination of coins by Robert Weir and of terracotta figurines by Kathleen Sherwood.
- 34 Most of the finds are from the fourth and third centuries BCE.
- 35 Rouse 1902, 342–3; Van Straten 1981, 78.
- 36 The projectile points may be the result of a siege, though catapult bolts could also have been dedicated in the Sanctuary. Votive gifts to a particular deity serve as a reflection of the dedicator. Simon (1986, 411–12) argues that the attributes of the divinities may be connected to the offering.
- 37 The fragment is only 4.0 cm high and weighs 28 g, but it may have fitted into the group when whole.
- 38 Schaus (chapter 2, p. 31) has suggested that the floor of the West Annex may have been swept clean and that it had a longer existence than indicated by the pottery found in association with the floor.
- 39 Trench 96.6 extended from the North Annex along the west side of the west wall of Building A. Trench 96.6 was then dug as two parts when the wall of the West Annex was uncovered. A 3 m extension of trench 96.6 to the south was opened as trench 96.8, which extends all the way to the face of Building A. The following season, trench 97.2 was opened west of trench 96.15 to locate the south wall.
- 40 Two of the 9 were found in close proximity to the other 19, but belonged to different levels.
- 41 I have excluded from the sample the miniature loomweight (4.6 cm in height), since it is an anomaly and could not have been used in conjunction with the other weights. 1 is similar in size and weight but was found in a later stratum. The measurements of 22 were not taken *in situ*, since it was discovered in pottery washing. According to the pail form, this was thought to belong to an earlier stratum. Although these loomweights may be connected with the larger group, they have been excluded from the analysis of the entire group because of their location and context within the trench.
- 42 *Anth. Pal.* 6.39, 47, 48, 160, 247.
- 43 See Mansfield 1985, 442–52 for discussion of the care and adornment of cult statues.
- 44 Barber 1992, 106; *Anth. Pal.* vi. 286.
- 45 Mansfield 1985, 443–4.
- 46 Simon 1986, 268; Page 1951, 22 (translation), 78–9 (discussion of the term “φάρος”). There is confusion as to the meaning of this term. Despite Page (1951, 79), it appears to make better sense that the girls in the procession carried a robe to Artemis Orthia rather than a plough. The connection to a robe and weaving may be represented by the large number of loomweights found at the Artemis Orthia sanctuary. Few of these loomweights have been published.
- 47 Mansfield 1985, 445, 465–7.
- 48 Paus. 5.16.2; Paus. 6.24.10.
- 49 Paus. 3.16.2; Mansfield 1985, 467–8; Williams and Schaus 2001, 88.
- 50 Goldman 1915, 448; Goldman 1940, 479. According to Liddell and Scott, *πεταμνοφάντερα* are the weavers of hangings, indicating tapestries or wall hangings rather than garments or cloth for the cult statue.

- 51 Wallrodt 2002, 185–8.
- 52 Greco and de La Genière 1996, 225–6, 231–2 nos. 174.22–49; Zancani Montuoro et al. 1965–6, 61, 73–82 pls. 16–17. The building was constructed by the Lucanians, but Greco and de La Genière (1996, 226) argue that the Lucanians were influenced by Greek customs in weaving a robe for the cult image of Hera.
- 53 Kleibrink 2006; Attema 2008, 80.
- 54 Maaskant-Kleibrink 1993, 20–2 fig. 15; Kleibrink 2006, 123–4, 178 figs. 38c, 49.5–49.11b; Attema 2008, 79–80 fig. 9.14–15, and compare the assemblage of weaving equipment from the Early Iron Age dwelling on Plateau I at the same site, Kleibrink 2006, 104 figs. 33.18 and 33.19.
- 55 Maaskant-Kleibrink 1993, 8–13 figs. 6, 11b; Kleibrink 2006, fig. 2; Attema 2008, 86 fig. 13.
- 56 Attema 2008, 86 fig. 14.
- 57 Mansfield 1985, 260–4, Barber 1992, 112–16; Lefkowitz 1996, 81; Neils 1992, 17–18; Parke 1977, 38–9.
- 58 Aristotle, *Constitution of the Athenians* 49.3, 60.1; Mansfield 1985, 5–7, 51–6, 77–8. For the Greater Panathenaia, it was male weavers who wove the sail peplos for Athena, suggesting that professional male weavers were more skilled for this important religious task. The names of male weavers Akesas (or Akeseus) and Helikon are preserved in the literary sources. See Mansfield for a summary of evidence and the names of male weavers (1985, 5–6, 21–2, 54–5, 84).
- 59 Pausanias (1.27.3) mentions that the arrephoroi lived close to the temple of Athena Polias, perhaps best narrowed to Building III on the Acropolis. It has been suggested that the arrephoroi wove the peplos in this building, in the rear chamber of the Parthenon, or in a building later replaced by the Parthenon. Mansfield 1985, 275–7, 283–5.
- 60 Mansfield 1985, 443–4.
- 61 See above, p. 33 n.86. As Schaus (chapter 2, p. 14 n.12) has noted, besides the loomweight 29, three partial inscriptions have been found on objects from the Sanctuary (a bronze vase rim, inv. 2525; a silver coin, inv. 57; and a Corinthian red-figure sherd, inv. 503) which may be restored as Eileithyia (bronze rim: Ελειθυ[-?]) and Corinthian sherd: [--IΘUAI]), or an abbreviation of the name (silver coin: EA).
- Chapter 13: Faunal Remains**
- 1 I wish to express my gratitude to Dr Gerald Schaus, whose saintly patience allowed me the time to take care of my many other obligations while writing parts of this contribution. I would also like to thank Dr Hector Williams, who invited me to Stymphalos to study the faunal material from all sites excavated in the area, and the Malcolm H. Wiener Laboratory of the American School of Classical Studies at Athens, particularly its former director Dr Sherry Fox, for an associateship and space at the lab to study the archaeological remains. Dr Robert Lamberton, Mr Kostas Papakonstantinou, Dr Giorgios Catsadorakis, and Mr Evangelos Spinthakis offered their records and knowledge of contemporary species in the area.
- 2 “Faunal Remains from the Abbey at Zaraka in Corinthia” by Ruscillo is forthcoming in the publication of the excavations at Zaraka by Dr Sheila Campbell. The site was excavated under the auspices of the Pontifical Institute of Medieval Studies at the University of Toronto.
- 3 David Reese is to be credited with this expedient way of washing animal bone remains. The bones become clean enough to show the surface and other diagnostic characters, while the method reduces the amount of breakage that might occur if the specimens were to be washed individually. The mesh bag also allows many bones to be washed at once, saving the analyst precious time.
- 4 See note 2 above.
- 5 T. Brown, personal communication, 2009.
- 6 Schaus, personal communication, 2010.
- 7 From “The Stymphalia Archaeological Landscape Project” abstract, K. Walsh, T. Brown, and B. Gourley, University of York.
- 8 I am indebted to K. Papakonstantinou for reviewing the list of archaeological fauna and making useful notes and suggestions.
- 9 K. Papakonstantinou, personal communication, 2008.
- 10 Gejvall 1969, 41.
- 11 Ruscillo, unpublished data.
- 12 See bone pathologies presented in Bartosiewicz, Van Neer, and Lentacker 1997.
- 13 See Sturgeon, chapter 3 above.
- 14 A nice example is the lekythos Tampa 86.79.
- 15 Unfortunately, the date of the complete dog burial in the tower is somewhat obscure; a beloved companion could have been buried here even in the past century. The backfill would contain antiquities which may or may not coincide with the date of the burial.
- 16 A fox is seen to the right of the hunter in lekythos Harvard 1925.30.51; a hare is to the left of the hunter.
- 17 See Garvie-Lok, chapter 14, p. 268.
- 18 See Schaus, chapter 7, p. 150, for the glass objects.
- 19 Along the northern side of Temple B at Kommos on Crete, for example; see Shaw and Shaw 2000, 27.
- 20 Most of these unidentifiable mammalian specimens are presumed to be bovid and suid bones.



12.1a. Typical conical loomweight. Fig. 12.1b. Greek warp-weighted loom

12.2a–b. Loomweights with vertical incised lines on the belly above a bevelled edge (63 and 91)

12.3a. Loomweight (29) with incised epsilon mark

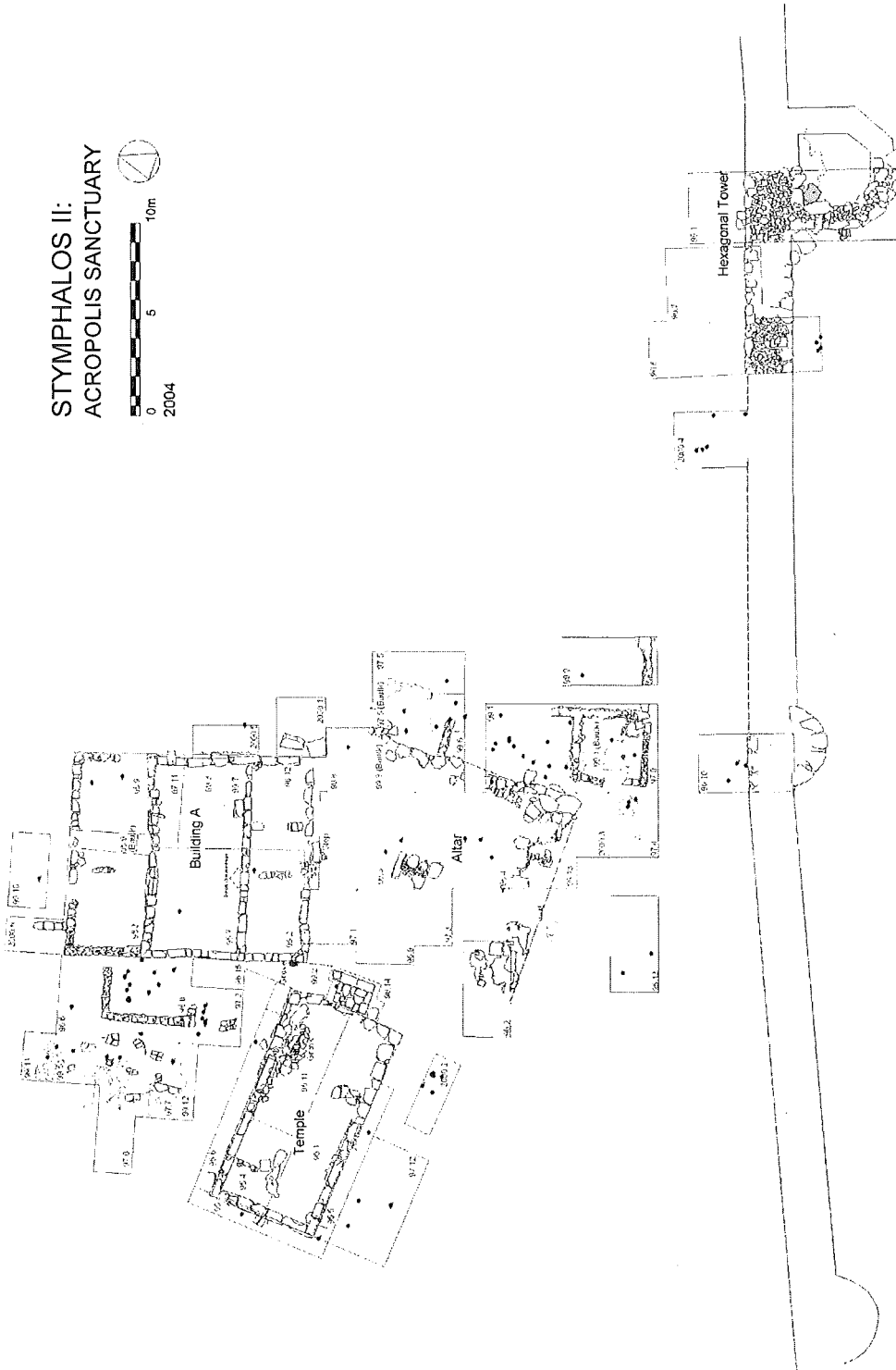
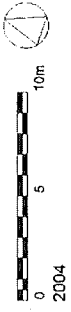
12.3b. Loomweight found in the acropolis Sanctuary, Stymphalos, now in Lafka

12.4. Four main types by shape left to right: A (55) small conical; B (78) convex conical, slightly raised belly; C (26) conical with bevelled belly; and D (56) pyramidal.

12.5. Profiles of types B (28), C (26) and D (56).

12.6. Loomweights from 11.4 cm to 4.6 cm in height. Groups by size: 1 (29), 2 (78), 3 (55) and 4 (3).

STYMPHALOS II:  
ACROPOLIS SANCTUARY



12.7. Distribution of loomweights in the Sanctuary