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Rediscovering ancient activities: textile tools in a 3rd - 2nd century B.C. context from Herakleia (Southern Basilicata, Italy)

The following contribution introduces preliminary results of a PhD project in Ancient History started in April 2010 at the University of Salento, Italy, entitled *Breeding and wool industry between III and I century B.C. in Southern Italy through literary sources and archaeological data; Herakleia, its territory and the ionic coast between Taranto and Sinni river*.
This study had its starting point in the hypothesis advanced by L. Giardino (2004), according to which the archaeological data, as well as literary and epigraphic evidence, demonstrate that sheep husbandry in the surrounding territory (*chora*) of Herakleia and wool weaving in its urban areas were among the most important economic activities of the site in the 2nd century B.C. Herakleia was a second generation Greek colony of Southern Italy (*Magna Graecia*). It was founded in 433 B.C. by the Greek colonies of Taranto and Turi along the Ionic arc on a high ground between Agri and Sinni Rivers.
Material in this study has been recovered during the excavations carried out by L. Giardino in the western district of the Castle Hill of Herakleia (Figs. 1-2) in the early 1970s. Specifically, the material comes from blocks (*insulae*) I, II, IV and VI, and several closed contexts (houses individualized inside such *insulae*) have been analyzed (Fig. 3). Furthermore, the material from Herakleia is compared with three sites located in the *chorai* of Metaponto and Herakleia: Masseria Durante, San Biagio and Bosco Andriace (Fig. 1).

In this article, the first morphological and weight typology of the over 500 loom weights found at Herakleia and examined to date is presented, followed by a more detailed examination of finds from two closed contexts. The greatest quantity of loom weights examined to date (468 of 536 samples) are of discoid circular type with few rare variations of convex discoid circular (4 samples) and hemispherical weights (27 samples). Truncated pyramidal loom weights are relatively few (19 samples) as are flat trapezoidal ones (16 samples); the pinched weights are even rarer (just 2 samples).

Discoid circular and hemispherical loom weights
All discoid circular loom weights (here designated Type PD2) have two holes and can be separated in two subtypes: Type PD2a with both faces flat, except in those cases in which a decoration is slightly projecting outward (Fig. 4); and Type PD2b in which both faces are convex (fig. 5).
Type PD2a is the commonest and the thickness, measurable for almost all examples, ranges between 1.8 and 2.2 cm, while the weight, measurable only for a part of the samples, ranges between 100 and 200 g; the diameter ranges between 7 and 9 cm.
Fewer than 13% (63) of Type PD2a loom weights are decorated and over 29% of the total (154) have one or more stamps, while only about 4% (18) of the total have one or more inscriptions consisting of one or more Greek letters. Decoration, usually present

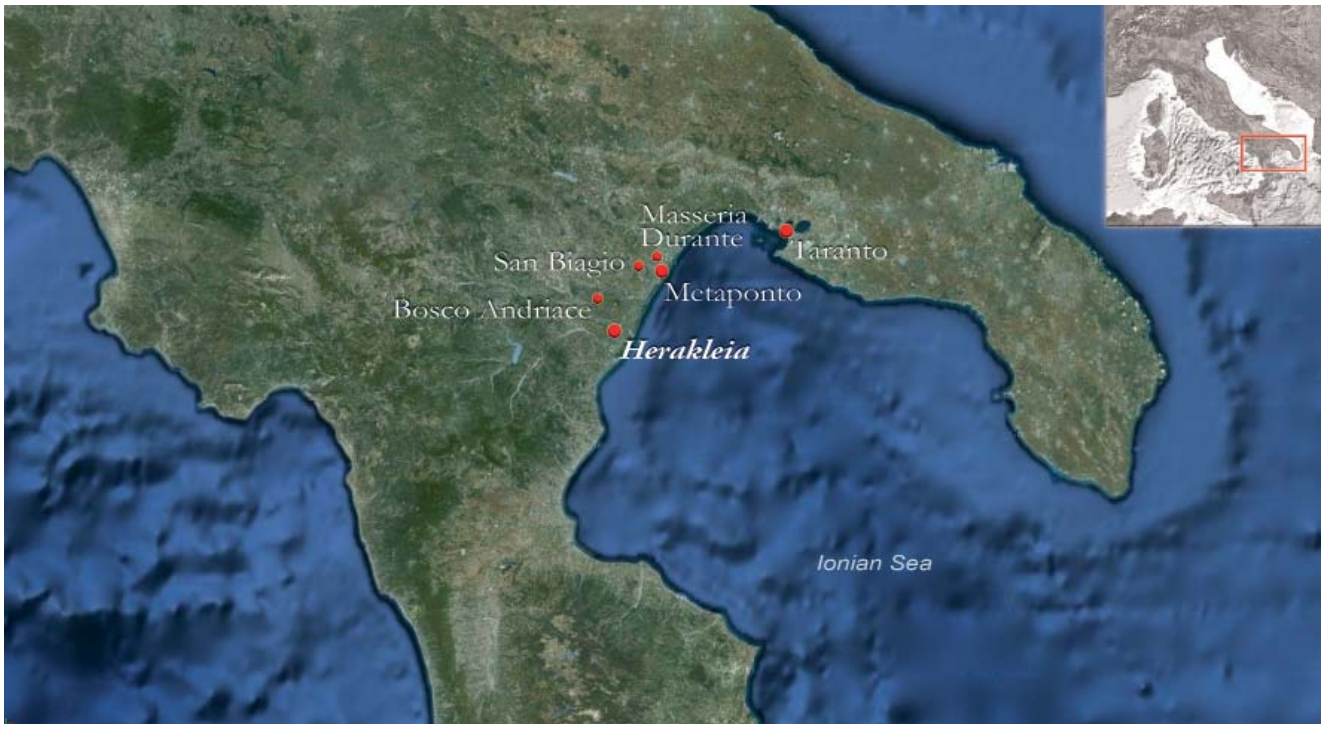

Fig. 1. Southern Italy. Main towns of Ionic arc and the 3 sites in the territory to be analyzed together with Herakleia during the research.

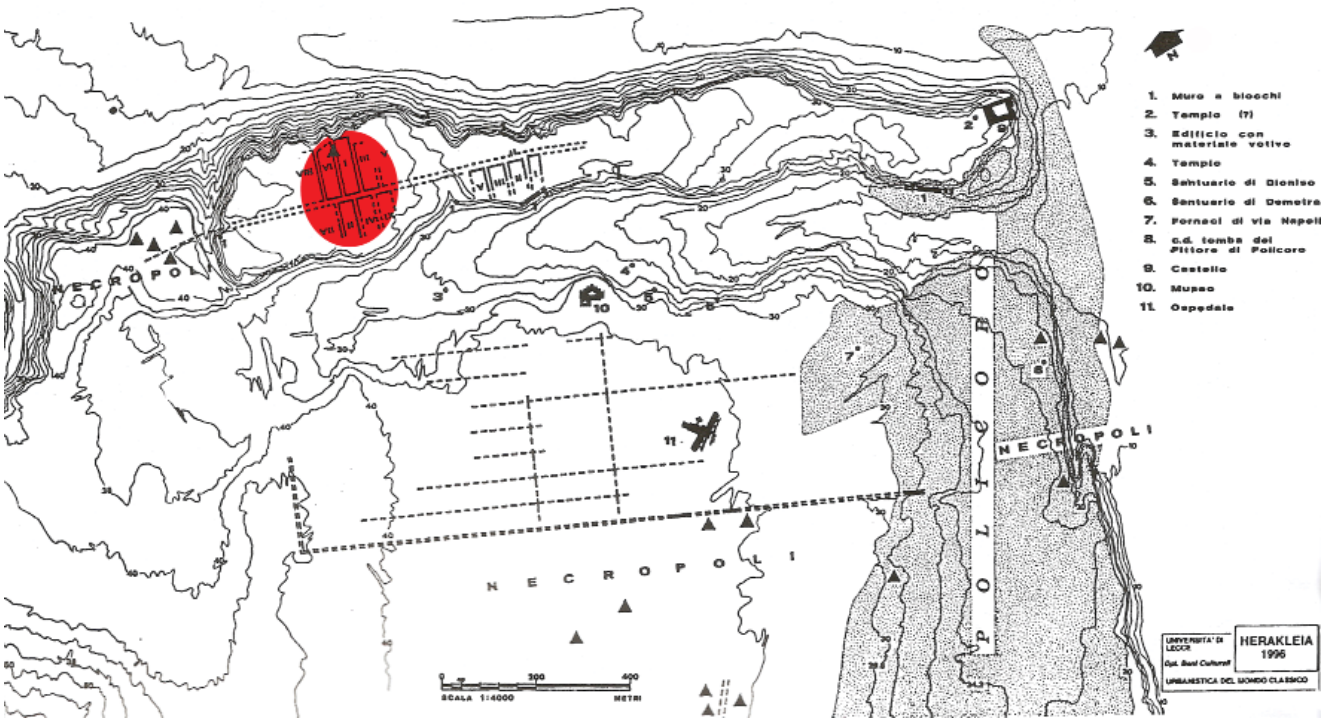

Fig. 2. Herakleia. In the northern part the Castle Hill with the western quarter in red. In the eastern part the modern town of Policoro

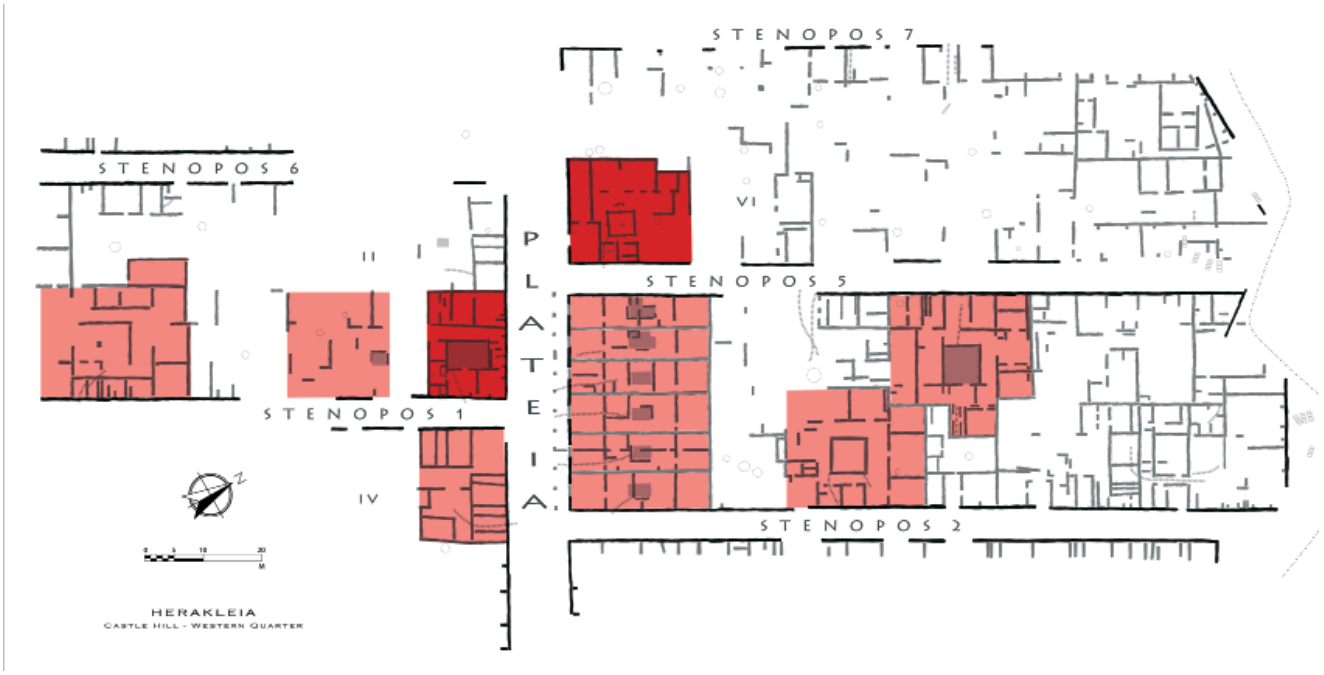

Fig. 3. Detail of the excavated blocks of the Western quarter of the Castle Hill of Herakleia: the two houses presented in the article in red.

just on the face, and stamps are moulded, while inscriptions are both moulded inside a rectangular stamp, or, more frequently, incised before firing.
All discoid circular loom weights of Type PD2b have two holes and differ from the Type PD2a weights in having convex faces and a slightly larger thickness, between 2.7 and 2.8 cm. None of them has inscriptions, stamps or decoration. The presence of a very limited number of examples (4 to date) does not allow further considerations regarding this type of loom weight.
All hemispherical loom weights (Type PF2) also have two holes and are a variation of Type PD2 (Fig. 6): the upper part is discoid or elliptical while the bottom one is cut horizontally to form a flat base. Also in this case, their limited number allows only a partial analysis of the data and it is possible only to establish a range of thickness between 2 and 2.6 cm. The common characteristic of all Type PF2 weights is to have at least one decorated face with moulded and embossed motifs; in five cases the decoration is present on both the faces.

Truncated pyramidal and flat trapezoidal loom weights

The situation is much more complex in the case of truncated pyramidal loom weights. Despite the limited number of examples, three different types are present: 8 truncated pyramidal loom weights with one hole (Type PTP1); and 11 truncated pyramidal loom weights with two holes (Type PTP2), which are further subdivided into Type PTP2a weighing up to 300 g (7 samples) and Type PTP2b weighing between c. 500 and c. 600 g (4 samples).
Of the truncated pyramidal loom weights analyzed to date, 4 have one or more stamps (2 of Type PTP1 and 2 of Type PTP2a); 1 of Type PTP2a has a single incised letter, while no weight is decorated.
All flat trapezoidal loom weights have two holes and are a version of the truncated pyramidal ones (Fig. 7). Their number is limited but we however have two types: Type PTR2a weighing up to 300 g (2 samples); Type PTR2b weighing between c. 750 g and c. 1.7 kg (14 samples). Of the flat pyramidal loom weights analyzed to date, 4 have one or more stamps (2 of Type PTR2a and 2 of Type PTR2b) and 1 of Type PTR2b has a single incised letter.

Pinched loom weights

The last type of loom weight at Herakleia is the pinched weight (Fig. 8); these have an ovoid shape with convex faces, central hollow in the middle of both faces and two lateral pinches placed in the median part. Of the two recovered samples one has one hole (Type PP1) and one has two holes (Type PP2).

House A of Block II

Following this general morphological typology of loom weights used in Herakleia, interesting data was

Fig. 4. Examples of Type PD2a weights.

Fig. 5. Example of Type PD2b weight.

Fig. 6. Example of Type PF2 weight.

Fig. 7. Example of Type PTR2b weight.

Fig. 8. Example of pinched weight (Type PP1).

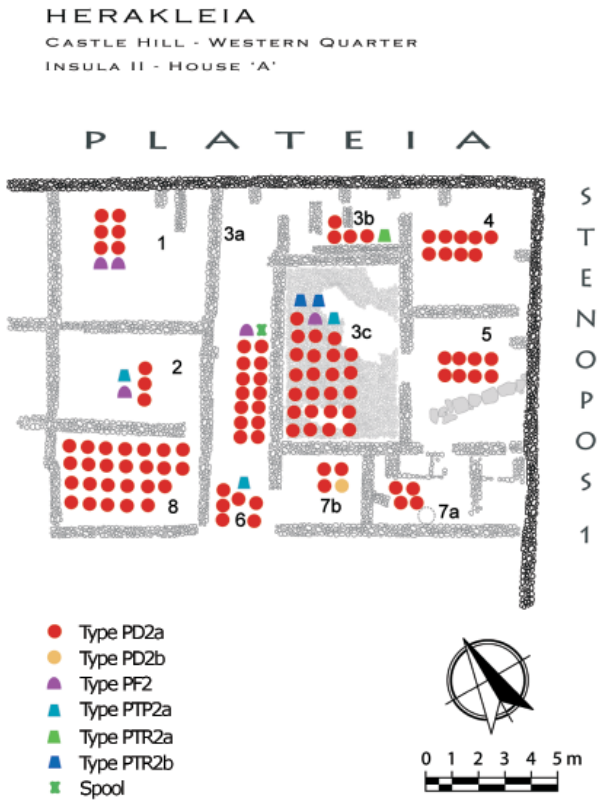

Fig. 9. Distribution of loom weights from the first cut, just without the surface layer.

obtained from two closed contexts in which loom weights have been found. Analysis of the spatial distribution of weights was carried out for these contexts room by room, excluding the surface finds. Since the excavation was not carried out using locus (*unità stratigrafica*) system, more detailed special distribution analysis is not possible.

The first context is House 'A' of Block II (Fig. 3): this is a 'courtyard house' built at the beginning of the 3rd century B.C., and continuously occupied throughout the entire 2nd century B.C., with traces of occupation in the early imperial times (Giardino 1996, 142-150, fig. 7; Giardino 1998, 177-183; De Siena and Giardino 2001, 144-145; Giardino 2004, 402-402, fig. 7). Inside the house, a total of 158 loom weights have been discovered: the vast majority are of Type PD2a (144 samples) while Types PD2b (1 sample) and PF2 (7 samples) are rare; the number of truncated pyramidal (3 of Type PTP2a) and flat trapezoidal (1 of Type PTR2a and 2 of Type PTR2b) loom weights is very limited.

It is possible to individualize two main areas in which loom weights have accumulated: Room 8 and the courtyard (Room 3c), for which there is a notable dispersion material from West toward East (Fig. 9). Morphological analysis of Type PD2a weights shows a presence of two distinct groups of objects: the first group of weights present in Room 8 (23 in total)

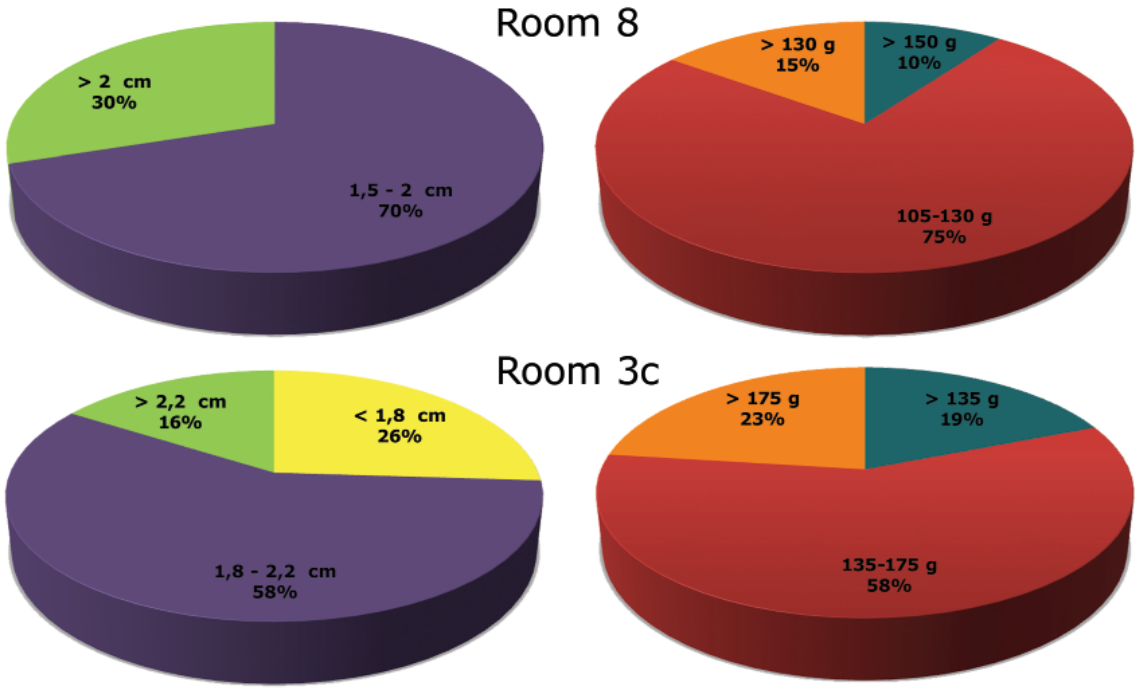

Fig. 10. Herakleia, Block II, House 'A': thicknesses and weights of the two groups of discoid circular loom weights.

has thicknesses between 1.5 and 2 cm and weight between 105 and 130 g; the second group, recovered in the courtyard (38 in total), consists of weights with thicknesses between 1.8 and 2.2 cm and weight between 135 and 175 g (Fig. 10). As warp quality and thickness of a textile depend on weight and thickness of loom weights, these two groups are likely to represent the remains of two looms with which two different warps have been worked: the first one in Room 8 would have been used to weave finer fabrics in comparison to those produced using the second group of weights in Courtyard, Room 3c.
From the latter area 2 Type PTR2b weights were also recovered, weighing over 700 g and over 1.4 kg respectively; unfortunately the fragmentary state of both pieces does not allow to establish their exact weights.
The Courtyard also yielded a spool (Fig. 11) with concave body and flat extremities (Type B1 in Gleba 2008, 143-144, fig. 99), the only such object recovered to date among all the investigated areas. It is about 4.5 cm long and is 3.9 cm wide at the two extremities and 2.1 cm wide at the centre of the body.

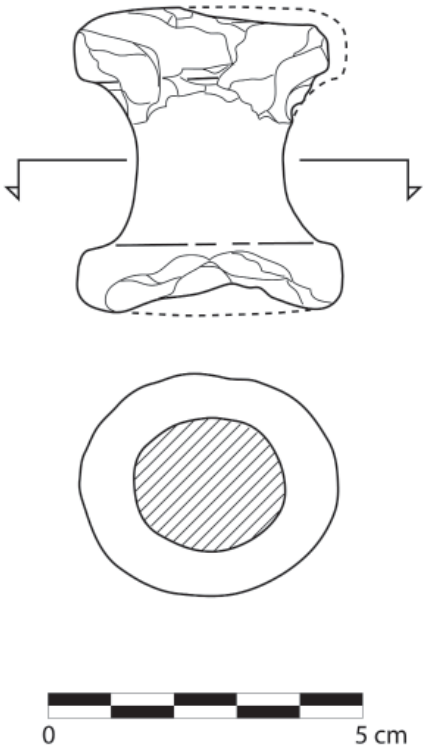

Fig. 11. Spool from House 'A' - Block II. (Drawing: C. Bianco).

Peristyle house of Block VI
The second closed context examined here is a peristyle house of Block VI (Fig. 3), built at the beginning of the 2nd century B.C. and in use between

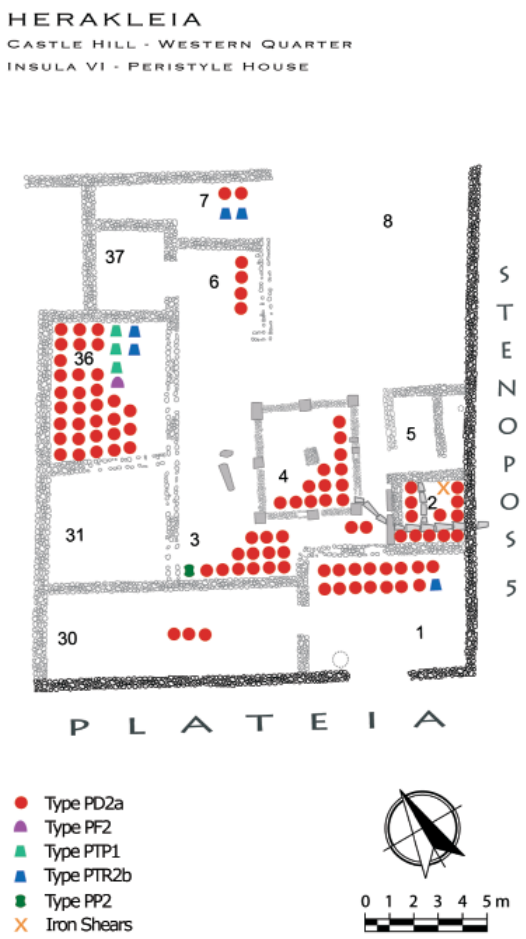

Fig. 12. Distribution of loom weights from the first cut, just without the surface layer.

the 2nd and the 1st century B.C. (Giardino 1996, 152-156, fig. 14; Giardino 1998, 177-183). Inside this house, 126 loom weights have been found. In this case, too, the majority of loom weights are of Type PD2a (114 in total, with two more samples of Type PF2), while the truncated pyramidal and flat trapezoidal loom weights are only 8 (of which 3 of Type PTP1 and 5 of Type PTR2b), and 2 are pinched weights. The spatial distribution of the weights inside each room (Fig. 12) also indicates presence of two separate groups: the first one in Room 36 and the second near the peristyle (in Rooms 1, 2, 3 and 4).
The two groups of weights of Type PD2a have meaningful characteristics (Fig. 13). The weights of the more homogeneous group (of 33 samples) found in Room 36 have a thickness mostly included between 1.9 and 2.2 cm, while it is not possible to identify a precise range for their weight. The weights of the group recovered around the peristyle (55 in total) have instead a wider range of thickness, between 1.8 and 2.3 cm, but a well defined and narrow weight range, between 200 and 220 g. Hence, in this case, too, it is possible to hypothesize the presence of two looms and in the case of the peristyle group it likely that they were used to produce a fabric different from that produced in House A.
The Type PTR2b weights come from the same areas where the two groups of Type PD2a weights have been found (except the 2 samples from the room 7 recovered from the less reliable surface cuts): 2 from Room 36 and 1 from Room 1, near the peristyle. The weights of Room 36 weigh 700 g and 1.3 kg respectively; the weight from the Room 1 weighs 700 g; the weights from Room 7 are 1 and 1.3 kg.

Shears

In addition to loom weights, a pair of iron shears was found in Room 2, near the peristyle (fig. 14). The shape is common to all shears datable between the 5th- 4th and the 1st century B.C. recovered in Italy: two triangular blades (knives) with rectangular tank attached on to simple U-shaped spring (Gleba 2008, 93-97). The blades are about 11 cm long while total length of the shears is about 20 cm. At the moment this is the only example of shears found in Herakleia and the only one along the entire Ionic arc which comes from a house context. Two examples of published to date come from female burials: grave T 76 of Pantanello, in the *chora* of Metaponto, datable hypothetically between the end of the 5th and the beginning of the 4th century B.C. (Carter 1998, 266 no. 51, 817-818 H8s, Fig. 20.19); and grave 6 of Taranto, dated to the second half of the 4th century B.C. (De Juliis 1984, 407 XXXIXs no.4).

Conclusions

Based on the data presented above a series of preliminary conclusions can be drawn:

- In terms of chronology the examined contexts attest the presence of discoid circular loom weights in levels dated to the 3rd- 2nd centuries B.C. and their absence of contexts dated to the second half of the 4th century B.C. in the investigated area. This is in contrast to the generic dating of 4th- 3rd century B.C. for this type in the archaeological literature.

- Contextual and special analysis of the various types of loom weights suggests that Type PD2a weights (with the varying Type PD2b and PF2), replace in Herakleia the truncated pyramidal loom weights. Furthermore, the detailed investigations of the two houses indicate presence of at least four looms.

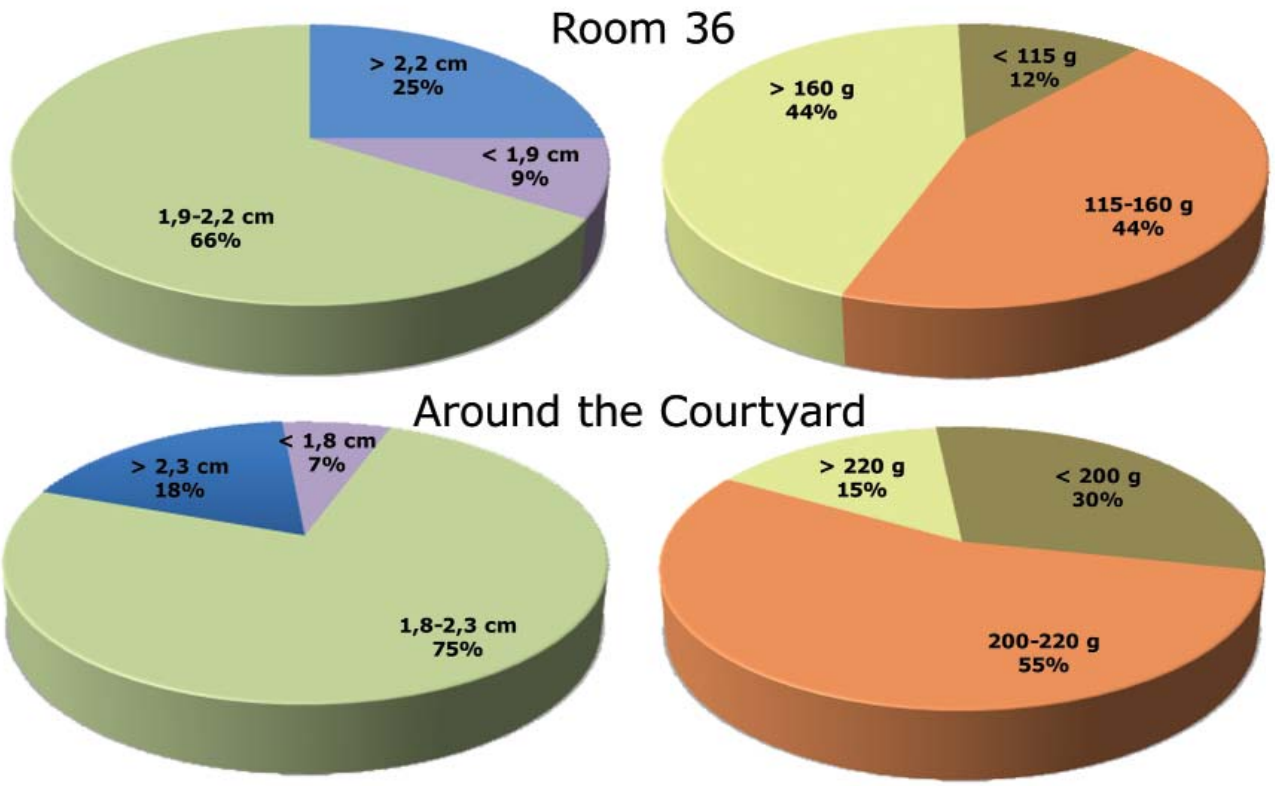

Fig. 13. Herakleia, Block VI, Peristyle House: thicknesses and weights of the two groups of discoid circular loom weights.

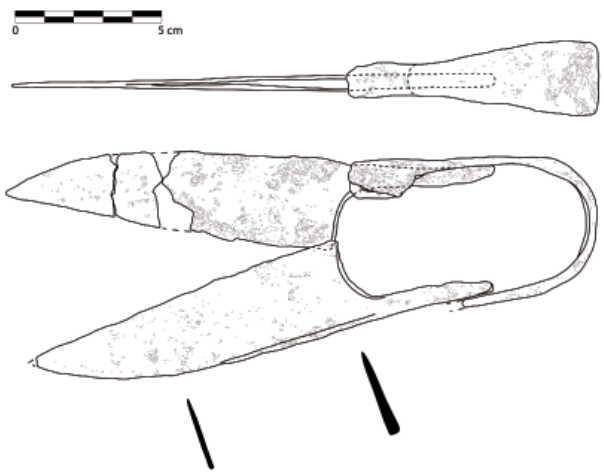

Fig. 14. Iron shears from Peristyle House - Block VI. (Drawing: C. Bianco).

- The contextualization of loom weights inside the houses and, more specifically, inside specific rooms allows also to clarify the organization of wool working: the presence of two looms for each house seems to show that it happened inside the houses and not in special ateliers. It is further possible to hypothesize that wool working was not only a simple domestic activity but a real economic activity. Also, in this case such considerations need further research.

- Type PTR2b weights to date have been usually recovered in pairs in the various rooms; such pairs always consist of pieces with different weights. This situation is common to the other Type PTR2b and Type PTP2b weights found outside the houses too. The presence of paired weights and their very limited number suggest that it is impossible to think them as part of heavy weights looms. However, it is really difficult

to imagine how they could fit with a loom using discoid circular weights. They could have been part of a pit treadle loom (Broudy 1970, 109-111), where just one or two heavy weights were necessary for stretching the warp. But, again, this kind of loom was used in chronologically and geographically distant contexts and its presence has to be demonstrated.
At this moment it is not yet possible to securely understand their use and further investigation of other contexts is needed.

- As far as the iron shears are concerned, their recovery in the room of a house where a loom has been identified and the length of the blades which are too much short to be used for shearing animals (Wild 1970, 22; Alfaro Giner 1984, 41; Gleba 2008, 93), suggests a connection to the weaving process rather than to fibre procurement. However, comparison of the dimensions of the shears recovered in Southern Italy with the dimensions of those recovered in northern Italy (Gleba 2008, 96-97, tabb. 3a-3b) may indicate that in the Southern regions a smaller model and with relatively shorter blades was used.

- A note, finally, about the spool: the presence of a single example and its weight (around 50 g), and much lighter in comparison to the range for the loom weights of the courtyard of House 'A' of block II, allows me to hypothesize that in this case it was used as a spool rather than as small weight (Mårtensson et al. 2007b; Gleba 2008, 140).

Preliminary results of the analysis of the materials presented here confirm that textile production can be considered as one of the main economic activities in Herakleia and in its territory in the 3rd-2nd centuries B.C.
These conclusions are just a part of a series of wider questions the doctoral research aims to ask:
- was sheep husbandry in Herakleia territory and in general along the Ionic arc transhumant, sedentary, or both?
- whether discoid circular and all the other types of loom weights were used during weaving for producing different products (e.g. as demonstrated for other types of loom weights by Mårtensson et al. 2007a; Mårtensson et al. 2009) and were in use in the same historical period?
- whether textile production activities were carried out only on household level or if there is evidence for workshop production?
- whether the presence of such production can be connected with the stipulation of the *prope singulare foedus* with Rome at the beginning of the 3rd century B.C. (Cicero, *Pro Balbo*, 22, 50; Sartori 1967, 81-88; Lombardo 1996, 25; Giardino 2003, 182)? Even if we lacked the text of this treaty of alliance, it had to be on such favorable terms for Herakleia that, when in 89 B.C. *Lex Plautia Papiria* conferred to its inhabitants the right to become Roman citizens, they hesitated long because of the better conditions of the treaty.
- was wool production at Taranto was connected with Herakleia, the colony of Taranto (Morel 1975, 293-300; Morel 1978)?

Textile production is an activity which leaves few traces in the archaeological and documentary records (for a preliminary analysis of the historical sources see Meo in press). In answering these questions my research is unique in the systematic studies of loom weights and other textile tools from sites in Southern Italy and allow us to establish textile production as a key part of economic activity.

Acknowledgements
I would like to thank Prof. L. Giardino for her fundamental support during all the research for this project; Dr. A. De Siena for facilitating the study of materials in the capacities of Director of Metaponto Museum and Soprintendente per i Beni Archeologici della Basilicata; Dr. M. Gleba for her courtesy and availability afforded to me since the 'Roman meeting'; Prof. M.-L. Nosch for the wonderful welcome at CTR; Prof. E. Andersson Strand for her important suggestions in the research development; Dr. C. Bianco for her patient help with drawings and images; Prof. G. Tagliamonte for his continuous important inputs; Dr. A. Quercia for our discussions about loom weights; Prof. M. Lombardo and Prof. F. Frisone for their constant supervising activity in the PhD Course.

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