



## WEAPONS AND WARFARE IN EARLY IRON AGE THESSALY

IOANNIS GEORGANAS

*The Canadian Institute in Greece  
 Dionysiou Aiginitou 7  
 GR 115 28 Athens, Greece*

Received: 4-11-2004

Accepted: 15-3-2005

E-mail: info@aiathens.gr

---

### ABSTRACT

The aim of this paper is to examine all the archaeological evidence regarding weapons in Early Iron Age Thessaly. This involves the study of both offensive (swords, knives, spearheads, arrowheads, and sling bullets) and defensive (shields) equipment. This analysis shall serve as the basis for an attempt to throw some light on the nature of warfare in Thessaly during this crucial period of Greek history.

---

**KEYWORDS:** Naue II swords, knives, spearheads, Protogeometric, Geometric

---

### INTRODUCTION

Since the works of Snodgrass in the 1960s (1964; 1967), very little has been written on Early Iron Age (EIA) weapons and warfare. With the exception of Kilian-Dirlmeier's (1993) fundamental study on swords, most of the material is published as part of excavation reports, which understandably do not go into much detail. Recently, Irene Lemos (2002) has successfully attempted to bring together most of the weapons evidence from the

Aegean, but only for the Protogeometric period. In addition, the lack of any representational art and written sources still inhibit us from establishing a clearer picture for EIA warfare, in contrast with the ample evidence from the Late Geometric period onwards. In this paper, we are first going to present all the archaeological record regarding weapons in EIA Thessaly (fig.1). This shall be followed by a discussion summarising the evidence and putting it into a greater context.

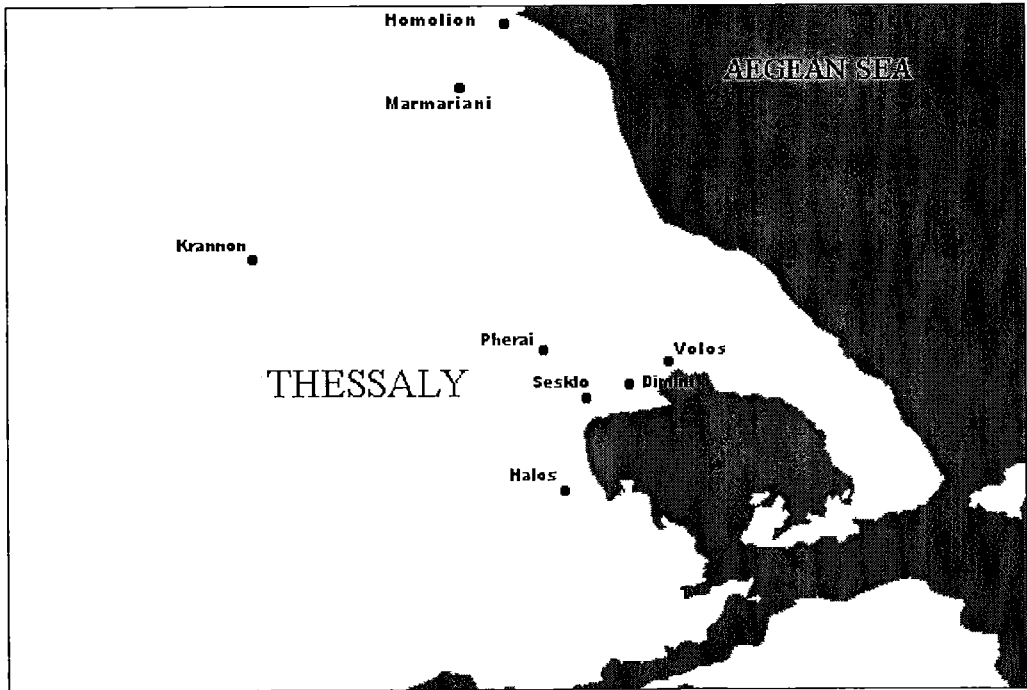


Fig. 1: Map of Thessaly showing main sites discussed in text.

## SWORDS

During the EIA the dominant type of sword used was an iron cut-and-thrust weapon widely known today as "Naue II". This form, which derived from the similar, but bronze sword found in Late Bronze Age Greece, is thought to have been introduced to the Eastern Mediterranean from Central Europe (Snodgrass 1964, 93; Catling and Catling 1980, 253; Kilian-Dirlmeier, 1993, 94-105). Various scholars have offered detailed classifications of the bronze examples (e.g. Catling 1961; Sandars 1961), although very little has been written for their iron successors (Snodgrass 1964, 93-113; Kilian-Dirlmeier 1993). Generally speaking, this type of sword is flange-hilted with the blade having parallel edges for the greater part of its length before tapering to a sharp point. The hilt usually takes the form of two or more successive swellings alternating with

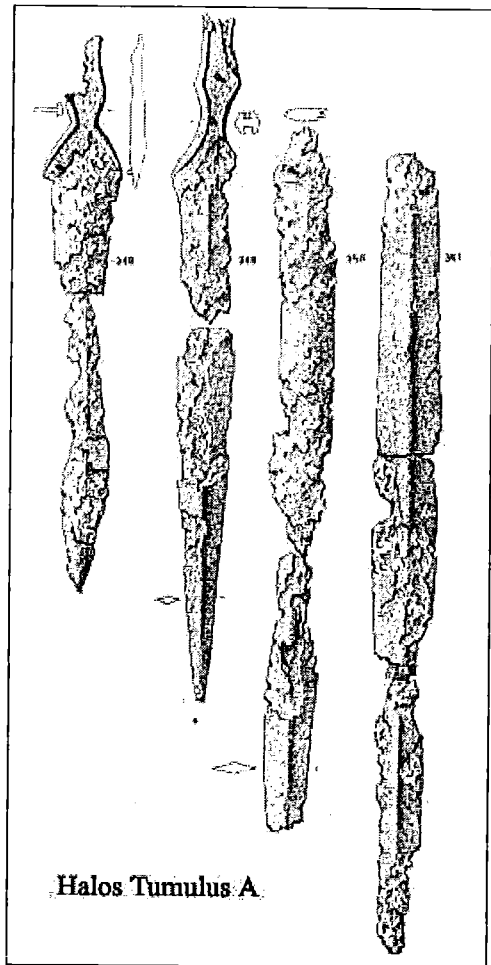
intervening "necks". In some cases, there are two "pommel-ears" projecting outwards, with or without a spur between them. The handgrip may have a swelling to prevent the hand from slipping. At its base, the hilt widens into the shoulder of the blade (Snodgrass 1964, 93-94).

In Thessaly iron swords have been recovered from the sites of Marmariani, Homolion, Halos, Volos-Kapakli, Krannon, Sarantaporo and Pythio. In addition to these find spots, we might also include the tholos tombs at Nea Anchialos and Agioi Theodoroi, where the reports mention several iron weapons but without giving any information about them (*A. Delt.* 42, 255; *A. Delt.* 45, 204-205).

Tholos tomb VI at Marmariani yielded a sword with a preserved length of 0.27 m and width of ca. 0.036 m (Heurtley and Skeat 1930-31, 36, fig. 15.22). The end of the hilt

and the end of the blade are missing. One rivet is preserved at the end of the hilt with bronze head. The impress of the wooden sidepieces is still preserved in some places of the hilt. The date of this sword is problematic as the tomb was in use for some 150 years (Late Protogeometric-Middle Geometric).

Chamber tomb I at Homolion contained a specimen 0.672 m long, dated to the PG period (*A. Delt.* 17, 175). A number of swords comes from the Halos tumuli, although adequate information is available only for the 11 pieces found at Tumulus A and for two swords coming from Tumuli B and G. Nine out of the 16 pyres of Tumulus A contained one sword each, while Pyre XIV yielded two examples (fig. 2). All the swords are typologically similar, although four of them have a slightly broader blade (Wace and Thompson 1911-12, 26). The preserved length of the blades ranges between 0.62 and 0.91 m (average 0.75 m), with that of the hilt usually measuring 0.12 m. The hilts are of the same type in all the examples and they are made in one piece with the blade. Originally, they seem to have been completed by hilt-plates of wood, bone or ivory, inlaid and attached by iron rivets (some of these still survive in the pieces from Pyres V and VII). In the broad-bladed examples, the blade has a width of 0.05 m at the hilt and for some distance below the edges runs almost parallel but afterwards increases to a width of 0.06 m (Wace and Thompson 1911-12, 26, fig. 15.1). To this group, we may also allocate the example from Tumulus B (blade's preserved length 0.40 m, width 0.045-0.05 m) (Wace and Thompson 1911-12, 19). In the narrow-bladed pieces, the blade has again a width of 0.05 m at the hilt but afterwards decreases to 0.04 m. It increases again to 0.05 m before tapering to a point. In section, the blade is cusped rhomboid and the midrib is quite prominent, in contrast with the broad bladed swords where the midrib is very slight (Wace



Halos Tumulus A.

Fig. 2: Swords from Halos Tumulus A (after Kilian-Dirlmeier 1993, taf. 47).

and Thompson 1911-12, 28, fig. 15.3). To this category seems to belong the sword from Tumulus G (blade's preserved length 0.68 m, width 0.035-0.04 m) (Wace and Thompson 1911-12, 20).

Three pieces from Pyres IX, XIV and XV, though described as knives by the excavators, could be classified as hacking-swords (length 0.45-0.49 m, including the hilt) (Wace and Thompson 1911-12, 14, 17-18, 26, fig. 15.6-7). All three of them have single-edged blades, with a convex cutting edge and a very

slightly recurved back. Snodgrass, who classifies them as Type II swords, points out that "it is not clear that these are in fact weapons of war..." (Snodgrass 1964, 100). Parallels are known from Chauchitza, Vergina and Crete, while a smaller specimen from the PG Kerameikos Grave 28, seems to be the likely ancestor for this type (Snodgrass 1964, 100; 1971, 274).

From the other three excavated tumuli, several swords have also been reported but the excavators do not provide us with a detailed description, except that some of them are of the Naue II type with "fish-tail"-shaped hilts (Malakasioti 1997, 192-93).

For the tholos tombs at Volos-Kapakli the reports only mention that numerous iron swords were found among other weapons, without giving any description of them (Arvanitopoulos 1914, 141; Kilian-Dirlmeier 1993, 113). Finally, cist graves 37 and 40 at Krannon yielded one sword each (*A. Delt.* 38, 206-207), while two stray finds are reported from Sarantaporo (preserved length 0.45 m, width 0.04 m) and Pythio (*A. Delt.* 42, 281).

With the exception of the three single-edged examples from Halos, all the Thessalian swords fall into Snodgrass' Type I, with parallels coming from mainland Greece, Crete, Euboea, Samos, Rhodes, Cyprus and the Near East (Snodgrass 1964, 93-98; Catling and Catling 1980, 253-254).

## KNIVES

Under this heading we include all specimens measuring 0.355 m or less, loosely following the classification proposed by Gordon (1953, 67). A differentiation between knives, daggers and dirks is not pursued for two reasons: first, both daggers and dirks imply weapons with two-edged blades that mainly differ from swords in terms of size. As we are going to see, almost all of the Thessalian examples (for which we have sufficient information) are single-edged.

Second, most of the material is either unpublished or inadequately described, making such a distinction unfeasible.

Of the 43 knives recovered in Thessaly, only three are of bronze. The latter were found in a Geometric grave at Dimini (two examples) and in the PG tholos tomb 5 at Sesklo (Arvanitopoulos 1915, 155-156; 1911: 299). Bronze swords and knives are not unknown in the EIA, as the evidence from places like Vergina, Orchomenos, Samos and Vrokastro indicates (Snodgrass 1964, 94, 96-97, 103 with references). Iron knives come from the sites of Homolion, Pharsala, Kastri Agias, Krannon, Theotokou, Argyropouli, Marmariani, Velestino-Chloe and Halos. Sufficient information is, however, available only for those coming from a tholos tomb at Chloe, tholos tombs VI and I at Marmariani and Tumulus A at Halos.

From the only published tholos tomb at Chloe two knives are reported (BE 8778, 8776) (Arachoviti 1994, 133-134). BE 8778, which was found complete, has a length of 0.242 m and greatest width of 0.031 m. Its blade is triangular in section and at the hilt there are traces of the wooden hilt-plates. BE 8776 is similar, although smaller, with a preserved length of 0.103 m and greatest width of 0.021 m. Traces of wood and cloth are preserved at the hilt. Similar knives are reported from Vergina (Andronikos 1969, 268-269, figs. 104.AAI and 105.TX).

Tholos VI at Marmariani contained a knife with a present length of 0.14 m and greatest width of ca. 0.02m. The handle and the tip of the blade are missing. The single edge of the blade is convex (Heurtley and Skeat 1930-31, 36, fig. 15.23). Fragments of three similar knives have also been found. From tholos I come the fragment of a curved knife with wooden hilt (width ca. 0.015 m) and the tip of a straight knife (Heurtley and Skeat 1930-31, 38).

Tumulus A at Halos has yielded 20 iron

knives. All of them are typologically similar, with their length ranging between 0.15 and 0.33 m. All are single-edged and were fastened into handles of wood by tangs and iron rivets. The edge of the blade is almost straight, except for the curve near the tip. The incurved profile that is observed in some of them, is probably due to long use and repeated sharpening (Wace and Thompson 1911-12, 26). Similar examples come from Athens and Vergina (Andronikos 1969, 268, fig. 104.Ζπ5β). The three smaller knives (0.15 m long) were found in female pyres, while the rest come from the men's pyres.

For the other sites, the reports only provide us with the number of specimens: Homolion chamber tomb II (one single-edged), Homolion tholos tomb (a fragment) (*A. Delt.* 17, 175-176), cist grave at Pharsala (one) (*A. Delt.* 19, 261), peribolos at Kastri Agias (one) (*A. Delt.* 34, 222), cist grave B at Theotokou (one in fragments) (Wace and Droop 1906-07, 326), a tholos tomb at Argyropouli (one) (*A. Delt.* 51, 373), Krannon cist graves 1 and 37 (two each) and 28, 61 (one each) (*A. Delt.* 38, 204, 206, 208).

## SPEARHEADS

Iron spearheads have been found at Homolion, Sesklo, Kastri Agias, Platykambos, Marmariani, Velestino and Halos. It is very possible that spearheads have also been found in the tholos tombs of Nea Anchialos, Agioi Theodoroi and Kapakli, where the reports mention several iron weapons among the offerings (*A. Delt.* 42, 255; *A. Delt.* 45, 204-205; *A. Delt.* 48, 233). Chamber tomb III at Homolion, a cist grave at Sesklo, the peribolos at Kastri, a cist grave at Platykambos and tholos VI at Marmariani have all yielded a spearhead each (only a fragment from the last three), while the settlement at Velestino and the Halos tumuli provided us with several examples (*A. Delt.* 17, 175; Syriopoulos

1984, 631; *A. Delt.* 34, 222; Theochari 1964-66, 46, fig. 11.1; Heurtley and Skeat 1930-31, 36). Sufficient information is available only for the ten spearheads from Halos Tumulus A and the four specimens found at the settlement of Velestino.

All of the Halos specimens are socketed and eight of them are almost identical in shape and size (Wace and Thompson 1911-12, 26, fig. 15.5). The socket first tapers and then widens into a flat, leaf-shaped blade, in one continuous curve. There is no midrib present. The best-preserved example, which is 0.34 m long and 0.04 m wide, comes from Pyre XV. This type, Snodgrass' Type Q, is rare and the only known parallels are those from Bassae and Delphi (Snodgrass 1964, 130). Of the remaining two spearheads, one has a slightly broader blade while the other is so damaged that it cannot be classified. For tumuli Alpha, Beta and Gamma, the preliminary reports just mention the presence of numerous Type J spearheads (Malakasioti 1997, 194). This type, which is similar to Type E but with longer socket, narrower blade and sloping instead of rounded "shoulders", has been characterized by Snodgrass as the "long spear *par excellence*" (Snodgrass 1964, 123-126).

Rescue excavations at the settlement of Velestino have brought to light four iron spearheads (BE 445, 201, 2652, 481) (Apostolopoulou-Kakavoyanni 1992, 318-319). BE 445 (length 0.163 m, width 0.025 m, socket diameter 0.02 m) is leaf-shaped with a very prominent midrib running across its length. This specimen falls into Snodgrass' Type D, with parallels coming from Kerameikos, Nauplion, Delphi, Vitsa and Cyprus (Snodgrass 1964, 120-121, fig. 7d). BE 201 (length 0.145 m, width 0.018 m) is also leaf-shaped with a pointed tip and a midrib. It belongs to Type J (Snodgrass 1964, 124, fig. 7h). BE 2652 (length 0.165 m, width 0.022 m) and BE 481 (preserved

length 0.092 m, width 0.026 m) fall into Type P, having flat blades with no midribs (Snodgrass 1964, 129-130).

### ARROWHEADS

Only two graves have yielded arrowheads; the published tholos tomb at Velestino-Chloe and a cist grave in the sanctuary of Enodia at Velestino. The former contained four iron examples, with one of them complete (BE 8792). It has a length of 0.026 m, width of 0.014 m and it is 0.002 m thick. Traces of the wooden shaft are still preserved (Arachoviti 1994, 134). This form, which falls into Snodgrass' Type 2 (barbed and tanged arrowhead without boss), has a long history stretching back to the Late Helladic period (Snodgrass 1964, 148). Parallels come from Lefkandi, Kerameikos and Vergina (Catling and Catling 1980, 256-257 with references; Andronikos 1969, 272-273, fig.108). Finally, cist grave 85-86 at the sanctuary of Enodia contained six arrowheads, with one of them still embedded in the spine of the deceased (Béquignon 1937, 52).

### SHIELD-BOSSSES

Bronze shield bosses are reported from the two major Thessalian sanctuaries; of Artemis Enodia at Pherai and Athena Itonia at Philia. However, only the finial of one specimen from Philia has been published (Pilali-Papasteriou and Papaeuthumiou-Papanthimou 1983, 57, fig. 4). It is pyramid-shaped, with a disk at its one end. Almost identical examples have been found at Olympia (Jacobsthal 1956, 43, figs. 187-191).

Although the precise function of these objects is still a matter of heated debate (Snodgrass 1973; Catling 1996, 522-524), their connection with shields is well proved, especially by the finds in grave T.40 at Kaloriziki in Cyprus (Catling 1996, 524 with reference). Among the various offerings, three bronze bosses (one large between two smaller

ones) with fragments of a bronze rim running round them were found. This assemblage has been restored as a broad shield with a W-shaped lower outline, not very different from those depicted on the Warrior Vase from Mycenae.

### SLING BULLETS

Three sling bullets were found in Marmariani Tholos V. The first, which is made of stone, is 0.065 m long and its shape is ovoid with pointed ends. The other two are made of clay and are of the same shape as the stone one (Heurtley and Skeat 1930-31, 38, 41, fig. 16.25).

### WEAPONS AND WARFARE: A DISCUSSION

The most striking innovation of the EIA in terms of arms is the introduction and subsequent widespread adoption of the iron cut-and-thrust sword, although such weapons, but in bronze, were not unknown in the latest Mycenaean period (Snodgrass 1964, 190; Lorimer 1950, 263). As far as its place of origin is concerned, various scholars have come up with different theories, with the vast majority now accepting a Central European origin (for a review of the proposed theories, see Snodgrass 1964, 204-212; Kilian-Dirlmeier 1993, 94-105).

Regardless the origin, what is really important is the profound effect that this type of weapon had in EIA Greece. The iron "Naue II" sword, with its robust blade and very efficient flanged hilt, becomes the main - if not the only - type of sword used, with examples found all over the Greek world. Typologically, it follows its late Mycenaean predecessor, though the suggestion of a fully continuous series is invalid, mainly due to the change in material (Snodgrass 1964, 190-191. For a different view, see Kilian-Dirlmeier 1993, 154, 170-171). Iron-working, as well as the metal itself, seems to have been introduced to

Greece from the Eastern Mediterranean, and Cyprus in particular. This is clearly reflected in the earliest iron sword from the mainland (Kerameikos PG Grave 2), which shows more affinities with bronze specimens from Cyprus and the Levant, rather than with any Mycenaean pieces (Snodgrass 1971, 217-231, especially 229; Desborough 1972, 311, 315-318). It should be noted, however, that after a short period of time iron swords were again being manufactured in a form close to the Mycenaean bronze types. This form dominated on the Greek mainland for some 300 years, well into the Archaic period (Snodgrass 1964, 112). A notable instance of the continuing use of the Naue II sword in Thessaly is given by the several specimens found in the tumuli at Agios Georgios, the latest dated to the mid-6<sup>th</sup> century BC (Tziafalias 1978, 180).

The sword evidence from Thessaly harmonises with what is known from the other regions of Greece, and especially Attica, where sword burials are almost unknown in the Submycenaean period and become more common from the Late Protogeometric period onwards. From the seven sites that produced iron swords, none can be securely dated before Late Protogeometric. In terms of typology, the vast majority (17 out of 20) of the Thessalian swords fall into Snodgrass' Type I, while only three specimens fall into Type II. If we attempt to apply Catling's bronze-sword classification to our iron specimens, we can see that those from Marmariani and Halos could probably fall into his Group II. However, as Snodgrass has correctly pointed out, trying to apply such a typology to iron swords is not an easy task, as the severe corrosion observed in iron blades denies us of any characteristics such as "blood channels" and other ridges (Snodgrass 1964, 106).

In terms of use, there is no doubt that all our Type I specimens were implements of war, used for both cutting and thrusting. This can

be clearly seen after employing the criteria proposed by Gordon (1953, 67-78). According to his study, in order for a sword to qualify as cut-and-thrust, it should be at least 0.508 m long, 0.0225 m wide and have a prominent midrib.

Of all the published swords, namely those from Halos, Homolion and Marmariani, only the latter does not meet the length criterion (0.27 m), although note its fragmentary condition. The Halos specimens measure between 0.62 and 0.91 m and that from Homolion is 0.672 m long. On the question of the width of the blade, all the examples meet the criterion, having a width of at least 0.04 m. As far as the presence of a midrib is concerned, we have seen that from the Halos specimens, those with a narrow blade had more prominent midribs compared to the broad-bladed ones. This is expected, as some form of strengthening was necessary for narrow blades. In addition, midribs took the strain of blows with the flat of the sword, which were very likely to occur with a cut-and-thrust sword (Snodgrass 1964, 105). The above criteria, of course, do not apply to the three single-edged pieces from Halos, which were obviously used only for hacking.

The limited distribution of iron swords observed in Thessaly in combination with the fact that almost all graves contained a single sword, allows us to assume that swords were highly prized. It is therefore very probable that only very few warriors could afford such a weapon and the majority would have to stick with a less impressive knife and a spear. This assumption seems to fit well with the model proposed by Morris (1989, 502-519). According to him, the circulation of iron objects was heavily controlled by the élite, making it at the same time the only appropriate metal for grave goods in formal burials. In this way, the leading families of EIA Greece "could solidify their powers, creating a ritual gap between themselves and

those excluded from iron and the formal cemetery" (Morris 1989, 507). This must have been particularly true for swords, as their utilitarian aspect must have given the élite a decisive military advantage. Therefore, it is not a coincidence that all swords are associated with rich burials in tholos tombs and tumuli (with the exception of only two examples coming from cist graves). The importance of swords is also exhibited by the cases of their ritual "killing" (e.g. Halos Tumulus A, Pyre VII). Some scholars argue that the practice of bending swords in a circular or U-shape fashion when deposited in graves, had a practical use only, namely to fit into the small cremation graves (Snodgrass 1967, 37; Grinsell 1973, 111). Others, however, emphasise the ritual aspect of that action. According to them, swords were thought to have a life of their own, which was to be terminated when their owners died (Desborough 1972, 312). In that way, the sword's spirit could follow the spirit of his master on the other side, but also (and in a more practical way) it could never be used by another man (for the phenomenon of the intentional destruction of grave goods in general, see Grinsell 1961 and Aström 1987).

To return to the tight control of iron by the élite, we must point out that it came to an end during the last phase of the Protogeometric period (Morris 1989, 508). This may have some implications for our argument, as most of the Thessalian evidence for weapons dates to the Geometric and even to the Archaic period. This problem could be tackled by arguing that in Thessaly, like in some other "peripheral" areas of Greece (e.g. Macedonia and Epirus), the need to designate someone as a "warrior" continued to exist until after Late Geometric, in contrast to Attica where the custom of depositing weapons ends in Middle Geometric II/Late Geometric I (Bräuning 1995, 139).

Knives are more widespread than swords,

with 43 examples coming from 11 sites. From the 23 graves that yielded knives, 12 of them contained a single specimen, while the rest two or more. At least in nine graves, knives were found with weapons (either swords or swords and spears). With the exception of the three bronze knives, for which we have no information at all, the iron examples seem to be typologically similar. Their single-edged convex blades and their relatively short lengths (0.15-0.33 m) suggest a non-military use, although in case of an emergency they could have also been used as weapons. Instead of that, they look ideal for general use such as cutting food, cleaning game, whittling and pruning. Such functions have been proposed by Catling and Catling (1980, 257) for similar knives from Lefkandi. On the one hand, their presence in female burials (Halos Tumulus A, Pyres III, X, XII) may support such an assumption; these women could have used the knives in a domestic context during their lifetimes. On the other hand, their occurrence in these burials may be indicative of the high status of the deceased (socio-economic, religious or both).

The 19 identified spearheads are distributed in six sites, with the vast majority (10) coming from Tumulus A at Halos. In all but one grave (Halos Tumulus A, Pyre XIV), single spearheads are found. This allows us to assume that these spearheads belonged to thrusting spears and not to javelins, as warriors would normally not throw their spear if they had only one. Their shape and large size (ca. 0.34 m) are also indicative of such a use. This pattern is also observed in Vergina (Andronikos 1969, 270) but is in complete contrast (at least for the Geometric period) with the evidence from Attica, the North-Eastern Peloponnese and Crete, where warriors were equipped with both a thrusting and a throwing spear (Snodgrass 1964, 136-139). It is noteworthy, however, that at Vergina spearheads are never found together



with swords in any interment but only with daggers (Andronikos 1969, 270-271). Finally, at Vitsa in Epirus, the EIA cemetery yielded 108 spearheads (nearly half in pairs) and only 19 swords (Vokotopoulou 1986). This means that both the warriors buried at Vergina and Vitsa viewed spears as primary weapons, unlike the occupants of the Halos tumuli.

Typologically, with the exception of the rare Type Q spearheads from Halos Tumulus A, the Thessalian corpus is in accordance with the evidence from the other areas of the Greek world, showing a slight preference for the large Type J spearheads. We should also note that as at Lefkandi no bronze spearheads are present in Thessaly, in contrast to Athens where bronze specimens continued to be used well into the Early Protogeometric period (Catling and Catling 1980, 255-256).

The meagre number of arrowheads observed in Thessaly, ten examples from two graves, corresponds with the scanty evidence from the rest of Greece (Snodgrass 1964, 141-156). Although excavations at sites like Lefkandi (Catling and Catling 1980, 256-257) and the North Cemetery at Knossos (Snodgrass 1996, 584-585) have provided us with new material, both physical, and in the case of Lefkandi representational also, it is still safe to believe that archery played a relatively minor role during the earlier phases of the Iron Age. We should however keep in mind, as Hector and Elizabeth Catling have pointed out, that the rarity of arrowheads during the EIA "may partly be the result of almost exclusive reliance upon grave evidence, where much of the BA material comes from occupation sites" (Catling and Catling 1980, 257). It is only after ca. 750 BC that we have more evidence for the role of archery in warfare, as it can be seen on the numerous representations of the bow in battle-scenes on Late Geometric vases (Snodgrass 1971, 275). The same also seems to apply for slings.

The lack of any physical evidence for defensive armour must not be taken in its own merit. As is well known, helmets, shields and armours could all have been made of perishable materials, like leather, which would leave no traces in the archaeological record. The bronze helmet from Tiryns, dated to the middle of the 11<sup>th</sup> century, is so far unique in the EIA Greek world, reinforcing our theories about the use of perishable materials (Hencken 1971, 23-26, fig. 8; Desborough 1972, 306, pl. 11). Metal helmets are to make again their appearance in the Late Geometric period (e.g. the helmet from the "Panoply Grave" at Argos), showing an influence from Oriental types (Courbin 1957, 356-367, pl. IV; Snodgrass 1964, 194-195).

The evidence for shields in Thessaly is mainly representational, in the form of the Late Geometric and Archaic figurines (fig. 3). Most of them carry a type which is widely known today as "Dipylon". This curious shield is something less than a body-shield, extremely wide at the top and bottom and with the sides curving sharply inwards to a narrow waist at the middle (Snodgrass 1967, 44, fig. 16). Whether it can be considered as a descendant of the Mycenaean figure-of-eight shield or as an innovation of the EIA is still under debate. Recent archaeological evidence from Kynos in Lokris suggests that an intermediate type of shield was used in Late Helladic IIIC. More specifically, in two krater fragments depicting sea-battles, warriors carry "Dipylon"-like shields, although smaller than the EIA ones (Dakoronia 1999, figs. 1, 3; 2002, 44, fig. 4). These representations seem to reinforce the Mycenaean origin of this type of shield.

The only area where this lack of evidence could probably reflect the truth is that for metal armour. The earliest known metal example in the Greek world, after the Bronze Age, is the Late Geometric bronze plate-corslet found at Argos (Courbin 1957, 340-

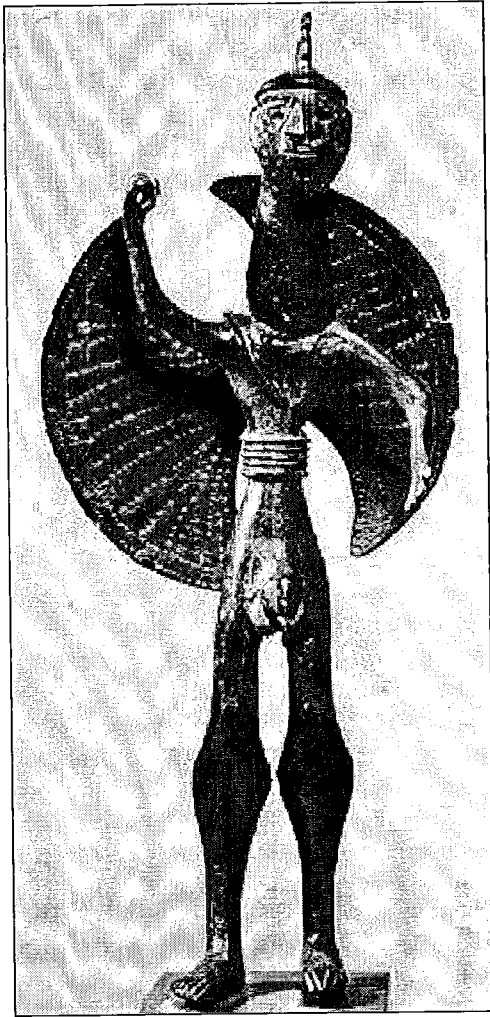


Fig. 3: Warrior figurine from Karditsa (ca. 700-650 BC) (Athens National Archaeological Museum 12831).

356, pls. II-III). Although it is tempting to compare this bell-shaped corset with the Mycenaean cuirass from Dendra, and consider the latter as its remote ancestor, the big time span between them and the lack of any intervening pieces makes such a hypothesis improbable. The more plausible explanation is that this type of armour was introduced to Greece from Central Europe, possibly through

Italy, where the corslets of the Urnfield Culture offer precedents for both the bell shape and the semicircular marking of the breasts, common features of the later Greek corslets (Coldstream 1977, 148).

It is now time to summarise the evidence from weapons. For the early phases of the Protogeometric period the evidence is scarce, making any attempt at interpretation extremely difficult. From Late Protogeometric onwards, however, our data suggest that the more privileged (e.g. the occupants of the Halos tumuli and of some of the tholos tombs) find themselves equipped with a very effective cut-and-thrust sword, a thrusting spear and one or more knives. The less powerful individuals, on the other hand, seem to settle with a spear and a knife. Although direct evidence for any defensive armament is lacking, we should expect some sort of defensive equipment to be used, helmet and shield at least, based on the evidence from the bronze warrior figurines.

On the nature of warfare itself, including the tactics employed, we can only speculate. The mainly accepted theory today is that the conflicts of the EIA were nothing more than small-scale skirmishing between neighbouring settlements (Snodgrass 1967, 189). The main aim of these relatively disorganised operations must have been plundering, although annexation of land is also possible (Thucydides 1.15.2). The popularity of swords, knives and thrusting spears suggests that a man-to-man, close-quarter combat was the common method of fighting (Lemos 2002, 126). We can envisage small bands of men armed with spears, knives and probably non-metal shields led to battle by the leading men of their communities, the latter armed with both a sword and a spear. These relatively heavy-armed warriors were possibly accompanied by some archers and sling throwers.

So EIA battles were indiscriminate affairs,

partly of sword-and-spear fights and partly of missile warfare with archery playing a prominent role, especially from the Late Geometric period onwards. It is during the very end of Late Geometric that land warfare starts to become more organised with the first steps towards the *hoplite phalanx*. This Late Geometric-Early Archaic proto-phalanx, however, was not one encased in bronze like its Classical antecedent, but a group of variously armed warriors (Storch 1998, 7).

For Thessaly specifically, we should expect cavalry to have played a major role in warfare, based on the long tradition of horse breeding in the area (Herodotos VII, 196).

Although archaeologically there is no evidence to support this, later accounts for the involvement of Thessalian cavalry in the "Lelantine War" seem to strengthen this assumption. The "Lelantine War", fought between the Euboean cities of Chalcis and Eretria ca. 700 BC, is thought to be the first historical large-scale conflict attested in the Greek world. From Thucydides (1.15) we learn that the people of Pharsalos, being allies to the Chalcians, sent their cavalry for assistance. In a decisive battle, the Thessalian cavalry crushed that of Eretria, practically offering the final victory to Chalcis.

## ACKNOWLEDGEMENTS

As this paper derives from my PhD thesis *The Archaeology of Early Iron Age Thessaly (ca. 1100-700 BC)* (The University of Nottingham, 2002), I should like to express my gratitude to my supervisor Prof. William Cavanagh and to my examiners Prof. Nicolas Coldstream and Prof. Julian Henderson, for their valuable comments. Of course, I assume full responsibility for any mistakes.

## REFERENCES

- Andronikos, M. (1969) Vergina I: The cemetery of Tymbs, Athens (in Greek).
- Apostolopoulou-Kakavoyanni, O. (1992) Finds of Proto and early Geometric period from Ferrae. In: Acts of the international Congress on Ancient Thessaly in memory of Demetres R. Theochares, Athens, 312-319 (in Greek).
- Arachoviti, P. (1994) Protogeometric tholos tomb in the area of Ferrae. In: Thessaly, Fifteen years of Archaeological research 1975-1990. Results and perspectives, Athens, 125-138 (in Greek).
- Arvanitopoulos, A. (1911) Excavations and research in Thessaly during 1911. PAE 1911, 280-356 (in Greek).
- Arvanitopoulos, A. (1914) Tholos tomb in Kapacle PAE 1914, 141 (in Greek).
- Arvanitopoulos, A. (1915) Excavations and research in Thessaly. PAE 1915, 131-200 (in Greek).
- Aström, P. (1987) Intentional Destruction of Grave Goods. In Laffineur, R., (ed.), *Thanatos. Les Coutumes funéraires en Egee a l'Age du Bronze. Actes du colloque de Liège (21-23 avril 1986)*. Aegaeum 1. Liège, 213-218.
- Béquignon, Y. (1937) *Recherches archéologiques à Phères de Thessalie*, Paris.
- Bräuning, A. (1995) Untersuchungen zur Darstellung und Ausstattung des Kriegers im Grabbrauch Griechenlands zwischen dem 10. und 8. Jahrhundert v. Chr. *Internationale Archäologie*, Band 15, Leidorf.
- Catling, H. W. (1961) A New Bronze Sword from Cyprus. *Antiquity* 35, 115-122.
- Catling, H. W. (1996) The Objects other than Pottery in the Subminoan Tombs. In Coldstream and Catling (1996), 517-537.

- Catling, H. W. and Catling, E. (1980) Objects of Bronze, Iron and Lead. In Popham, M. R., L. H. Sackett and P. G. Themelis (eds.), *Lefkandi I: The Iron Age Settlement. The Cemeteries*, London, 231-264.
- Coldstream, J. N. (1977) *Geometric Greece*, London.
- Coldstream, J. N. and Catling, H. W. (eds.), (1996) *Knossos North Cemetery: Early Greek Tombs*, London.
- Courbin, P. (1957) Une tombe géométrique d'Argos. *BCH* 81, 322-386.
- Dakoronia, Ph. (1999) Representations of Sea-Battles on Mycenaean Sherds from Kynos. In Tzalas, H. (ed.), *Tropis V. 5th International Symposium on Ship Construction in Antiquity*. Nauplia 1993, Athens, 119-128.
- Dakoronia, Ph. (2002) Eastern Locris: Its history through monuments and archaeological research. In: *Locris: History and culture*, Athens, 19-112 (in Greek).
- Desborough, V. R. d' A. (1972) *The Greek Dark Ages*, London.
- Gordon, D. H. (1953) Swords, Rapiers and Horse-riders. *Antiquity* 26, 67-78.
- Grinsell, L. V. (1961) The Breaking of Objects as a Funerary Rite. *Folklore* 72, 475-491.
- Hencken, H. (1971) *The Earliest European Helmets: Bronze Age and Early Iron Age*, Cambridge, Massachusetts.
- Heurtley, W. A. and Skeat, T. C. (1930-31) The Tholos Tombs of Marmariane. *BSA* 31, 1-55.
- Jacobsthal, P. (1956) *Greek Pins and Their Connexions with Europe and Asia*, Oxford.
- Kilian-Dirlmeier, I. (1993) *Die Schwerter in Griechenland (außerhalb der Peloponnes), Bulgarien und Albanien*, Stuttgart.
- Lemos, I. S. (2002) *The Protogeometric Aegean. The Archaeology of the Late Eleventh and Tenth Centuries BC*, Oxford.
- Lorimer, H. L. (1950) *Homer and the Monuments*, London.
- Malakasioti, Z. (1997) Burial tombs in the area of Voulokalyva-Platanos, Almyros: The case of D. Despotopoulos property. In: *Achaeofthiotica B. Acts of the 2nd Congress of Almyros Studies*, 3-4 June 1995, Almyros, 189-196 (in Greek).
- Morris, I. (1989) Circulation, Deposition and the Formation of the Greek Iron Age. *Man* (N.S.) 23, 502-519.
- Pilali-Papasteriou, A. and Papaefthymiou-Papanthimou, K. (1983) New excavational research in the sanctuary of Filia. *Anthropologika* 4, 49-68 (in Greek).
- Sanders, N. K. (1961) The First Aegean Swords and Their Ancestry. *AJA* 65, 17-29.
- Snodgrass, A. M. (1964) *Early Greek Armour and Weapons*, Edinburgh.
- Snodgrass, A. M. (1967) *Arms and Armour of the Greeks*, London.
- Snodgrass, A. M. (1971) *The Dark Age of Greece*, Edinburgh.
- Snodgrass, A. M. (1973) Bronze "Phalara"-A Review. *Hamburger Beiträge zur Archäologie* 3, 41-50.
- Snodgrass, A. M. (1996) Iron. In Coldstream and Catling (1996), 575-597.
- Storch, R. H. (1998) The Archaic Greek "Phalanx", 750-650 BC. *AHB* 12.1-2, 1-7.
- Syriopoulos, K. (1984) *Introduction to Ancient Greek History: The transitional years*, Athens (in Greek).
- Theochari, M. (1964-66) Protogeometrica of Thessaly. In: *Thessalika* 5, 37-53 (in Greek).
- Tziafalias, A. (1978) Excavational research at Ag. Geogios, Larisa. *AAA* 11, 156-182 (in Greek).
- Vokotopoulou, I. (1986) Vitsa: The cemeteries of a Molossian settlement, Athens (in Greek).
- Wace, A. J. B. and Droop, J. P. (1906-07) Excavations at Theotokou, Thessaly. *BSA* 13, 308-327.
- Wace, A. J. B. and Thompson, M. S. (1911-12) Excavations at Halos. *BSA* 18, 1-29.