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Aspects of Early Bronze Age Jewellery in the Aegean

Robert LAFFINEUR

Finds of precious metal objects are very numerous in Early Bronze Age Aegean contexts and the present paper certainly does not intend to provide a complete catalogue of them. The purpose is rather to emphasize the main features of the production in the different regions, the Cyclades, prepalatial Crete, the Greek mainland and Asia minor. Most characteristic are the close affinities that can be observed in the finds from the whole area and that give evidence of the existence of an early -koine-. If influences from Near Eastern workshops are not absent, they appear rather isolated when compared with the Aegean and Balkanic traditions to which many types are clearly related, and some of which can be traced back as far as the Final Neolithic period.

Such a homogeneity seems to favour an essentially local development that has its ultimate roots in southeastern Europe. That the crucial question of the availability of gold sources could possibly find a positive answer in those northern areas -as suggested for later periods by E.N. Davis and her -transylvanian connection-- is probably not irrelevant. That most of the objects in the Troy treasures appear to belong to the same Balkanic and -circumpontic- traditions, as well as some Western Anatolian finds, makes another important evidence when it comes to a general appraisal of precious metal productions in Eastern Mediterranean Early Bronze Age.

The “rediscovery” of the Troy treasures has resulted in a renewed interest for Early Bronze Age goldwork and jewellery that has culminated in the 1996 exhibition and conference in the Pushkin Museum in Moscow¹. The catalogue of the former gives the opportunity for a reappraisal of the evidence that had been considerably enlarged in the last decades by extensive archaeological research. The contribution by M. Trejster at the end of that catalogue is in this respect especially welcome. It provides the best synthesis on Trojan and Anatolian goldwork to date², as well as the best opportunity for a reconsideration of Early Bronze Age goldwork and jewellery in the whole Aegean. This will be the purpose of the present paper.

Looking at the main features of the finds from the different regions, the Cyclades,

prepalatial Crete, the Greek mainland and Asia Minor allows to emphasize close affinities between them and provides evidence of the existence of an early “koine”. Starting with the Troy treasures, the most striking feature is undoubtedly their homogeneity, whether typology is concerned, of techniques of manufacture, or techniques of ornamentation.

The most evident sign of such a homogeneity is of course the close similarity between the small filigree double spirals on the gold bracelet **123** (Treasure F), on the companion piece in the Istanbul³, and on the gold pin **239** (Treasure O), as well as between the small ornamental gold caps with a strip border on the same bracelet **123** and on the gold ring with five stems **157** (Treasure J).

Typological similarities are also noticeable between the different treasures; gold and silver goblets **6-7** (Treasure A) and **103** (Treasure B); gold triple rings **19-28** (A), **104** (D) and **150** (J); gold rings made of five or six stems **105-108** (A) and **151-152** (J); similar rings made of six stems **109-113** (D) **231** (N) and **241** (R); perforated gold strips **101** (A) and **124** (F); pendants in the shape of human figure on earrings **13-14** (A) and **135-143** (H-a); gold quadruple spirals **116** (D) and **161** (J). Those

¹ On the story of the Schliemann's treasures, see Easton 1994, 221-243 and, most recently, Cervetti & Godart 1996.

² I'll quote the original edition in German: Tolstikow & Trejster 1996 with an additional “Konkordanz der Standorte Berlin, Moskau, St. Petersburg” (abbreviated henceforth as *Schatz*). Under the title “Die trojanischen Schätze”, Trejster's synthesis examines successively the typological and chronological aspects, the questions of workshops and production centers, and position of Troy in the exchange system of the Early Bronze Age. References to the specific items will be given in the text with the catalogue numbers in bold.

³ *The Anatolian Civilisations I*, 1983, No A 349.

cases apparently offer valuable synchronisms between the hoards, but the link are in fact too numerous and the impression in finally that Treasure A has close relationship with nearly all the other treasures! They really invite at the same time to consider the groupings themselves as far from certain, if not, in some instances at least, as highly hypothetical. This point won't be the concern here, even if it is a central question to be addressed. It would require a much longer investigation than is possible in the limit of the present paper. Suffice to say that the problem is not only a matter of trusting the homogeneity of the hoards presented by Schliemann⁴, but also, assuming that those groupings correspond to specific concentrations of finds actually revealed in the excavations, the problem determining whether those ancient groupings necessarily consist of contemporaneous items⁵ and whether they are intentional groupings⁶. The identification of objects possibly made in the same workshop or even by same craftsman is still another matter – and this will be investigated later.

The close relationship is also evident when comparing the finds from neighbouring sites in the Troad, such as Beşik Tepe, and on the islands close to its shores, particularly Poliochni on Lemnos and Thermi on Lesbos, or item supposed to have been found in the Troad. There is no need to give a complete list of those well-known similarities⁷. Most relevant among them are the silver and electrum vessels in the Norbert Schimmel Collection⁸ (comparable with vases **1–3, 110**) and the gold objects in the University of Pennsylvania Museum in

Philadelphia (c.f. diadems **10** and **12**⁹, basket earrings **13–16, 125–126, 155** sheet gold pendants **135–143**, gold multiple rings **105–113, 150–153, 157, 231, 233–235, 241**, gold torques **75–76, 163** gold necklace beads in quadruple spiral **116** and **161**, gold pin **239**) and a basket earring reportedly recovered near Troy that has recently appeared on the art market¹⁰. Mention should be made also of finds from İkiztepe in Southern Anatolian, particularly crescent-shaped earrings similar to no **154, 156** and **158–160**, as well as a pin close to no **245**.

Similar objects have been found farther inland in Anatolia, particularly in Eskiyaşar (Electrum pan cf. Silver example **1** silver cups cf. **6–7** and **103** basket earrings, multiple rings cf. **29–63** and **157** torques cf. **75–76** and **163**), Kültepe (cf. Gold goblet **8**, crescent earrings **64–67**), Horoztepe (cf. silver vase **102**, flutings on silver vase cf. **6–7**), DemirciHüyük and Küçükhöyük (lead vessels cf. gold specimen **4**, spirals cf. **133–134**, bronze bracelets cf. gold specimens **72–73** and **236**, pins cf. **245** and **247** from the first site), Korucutepe and Alaca Höyük (spirals cf. **133–134**, as well as gold studs cf. **68–71** in the last mentioned site; head bands cf. **12** from the last site), Boğazköy (pin cf. **245**). In addition similar beads to those of necklaces **78–101** and **117–118** are known from most of the above sites.

Relations with jewellery from the Aegean can be observed, especially in the case of the gold beads with quadruple spirals, but this may be misleading, since the type has a particularly wide chronological and geographical extension. A necklace with quadruple spiral beads from Ur¹¹ is a type very close to the Trojan examples **116** and **161**

⁴ Though this can be doubted, as shown by Treasure O. See *Schatz*, 228: “So besteht beispielsweise der Schatz O aus zwei goldenen Prunknadeln, die in einer Entfernung von ca. 1 m voneinander gefunden wurden”.

⁵ This seems to be the case with the “Tod treasure”, as I have pointed out recently: Laffineur 1988, 17–30.

⁶ *Schatz*, 228: “... Auch wenn man annimmt, daß einige von ihnen (the treasures) keine Schätze im eigentlichen Sinne sind, sondern mehr oder weniger zufällige Gruppen von Gegenständen aus einem während einer Feuersbrunst zerstörten Raum, d.h. mehr oder weniger geschlossene Komplexe...”

⁷ For references, see *Schatz*, 198–225.

⁸ Muscarella 1974, no 1–4.

⁹ That those pieces, especially no **10** and **11**, respectively the “great diadem” and the “small diadem”, were used as diadems is the conventional interpretation, illustrated by the famous picture showing Sophia Schliemann wearing no **10**. The use as ornaments worn on the chest (Brustschmuck) appears equally plausible, as suggested recently by Kuckenburg 1992, 209–210. The dimensions of the objects (length of chain or band: 50,8 and 53,6 cm; height of the chains pendants: 27,3 and 25 cm) would be more appropriate in my opinion, to the latter use.

¹⁰ *Taisei Gallery* 1992, no 26.

¹¹ Hrouda 1991, Fig. P.362.

similar to specimens in Philadelphia¹². The other items of the same shape have been listed by K.R. Maxwell-Hyslop and they are not limited to Sumerian jewellery¹³, even if the quadruple design appears also in the same area as a central motif on openwork circular pendants¹⁴. The closest parallels come in fact from other regions, particularly Assyria, with a necklace from Grave 20 at Assur¹⁵, Syria and Anatolia, with examples from Eskiyapar, Alaca Höyük and Arslantepe, as well as Tharace, especially İkiztepe¹⁶. The chronologica extension of the type is greater than is geographical extension, since gold quadruple spirals are attested in the Shaft Graves at Mycenae¹⁷, at Pylos Agios Ilias and on Cephallenia, as well as, for the Early Iron Age in Crete, in Attica, at Lefkandi in Euboea and on Skyros¹⁸. The parallels from Mycenae have led to doubts on the early date of the Troy quadruple spirals, an opinion that is clearly confirmed by the gold disk with repoussé rosette from Treasure H-b (no **149**), with its parallels in Shaft Grave III at Mycenae¹⁹ and its unique technique of repoussé by hammering the metal sheet into the cavities of a mould. The case of the beads with quadruple spirals should have led G. Bass to a more shaded conclusion than adopted, when publishing the jewellery collection in Philadelphia: "There can be little doubt that all these pendants came from the same source ... its seems that Mesopotamia was the the source"²⁰, and in relation to the possible modern composition of the hoard, "The four

quadruple-spiral pendants of Sumerian type might have been added to an otherwise authentic hoard from Troy or Poliochni in order to increase its interest and, therefore, enhance its value"²¹. A more shaded conclusion would also have brought a less assertive title: "A hoard of Trojan and Sumerian Jewelry" (my italics).

Additional affinities between Anatolia and the Aegean have to be mentioned here: pins with head in shape of a vase known from finds in Troy and in the Cyclades²², silver torques from Levkas²³ to be comperad with specimens no **75-76** and **163**, bracelet and studs from Mochlos²⁴, similar to bracelet no **74** and studs (ear-studs?) **68-71** and especially the beads in the shape of three concentric rings soldered together, that appear on an Early Bronze Age necklace from the Thyreatis in Berlin²⁵ and on an Early Minoan III necklace from Tholos C in Archanes on Crete²⁶, and that have exact parallels on the necklaces **78, 81, 86, 94** and **101**. Similarities within the Aegean should be added, especially the small sheet gold triangular and drop-shaped pendants that are common in Cretan, Peloponnesian and Trojan goldwork of Early Bronze Age date²⁷.

The observation of those links between Anatolian and Aegean jewellery fits well into the picture of a *koine* in which centers of production located in different regions within a broad East Mediterranean context have mutual influences on each other, without any of them being a dominant one that exports the products of its manufacture in such a way as to exercise a monopoly. This implies the existance of a local craftsmanship at those different locations. In the particular case of Troy the manufacture of precious metal objects in local workshops appears highly probable. The above-mentioned homogeneity of the finds is the first important sign in this respect. The similarities between the

¹² Bass 1970, 337-338, no 20-23 and pl. 86, 20-23.

¹³ Maxwell-Hyslop 1989, 215-223.

¹⁴ *Ancient Jewellery* 1993, no 18.

¹⁵ Quadruple gold spiral beads associated with carnelian lapis lazuli and agate beads: *Discoveries at Ashur on the Tigris* 1995, no 27 and pl. 5 (late 3rd –beginning 2nd millenium).

¹⁶ See i.a. the specimens in the Eskiyapar Treasures: Özgüç & Temizer 1993, 619-621 and pl. 120.

¹⁷ Karo 1930-1933, pl. 21 (Shaft grave III); Mylonas 1972-1973, pl. 179γ (Grave Omikron in Circle B).

¹⁸ For complete references, Reinholdt 1993, 23-26. A necklace of quadruple gold spirals bead in the Fogg Art Museum should be added (Hrouda 1991, fig. p. 210).

¹⁹ Karo 1930-1933, pl. XXVII, no 21 (similar rosettes appear on gold diadems).

²⁰ Bass 1970, 338. See also the conclusion in an earlier preliminary report on the Philedelphia hoard: "The hoard indicates, for the first time, that Troy received part of its jewelry directly from Ur, or from the source of Ur's jewellery..." (Bass 1966, 4, 28).

²¹ Bass 1970, 339.

²² Reinholdt 1993, 22-23.

²³ Branigan 1974, No 2550, 2572 and 2574-2575 on pl. 33.

²⁴ *Ibid.*, no 2588-2590 on pl. 22 (bracelet) and no 2510-2512 on pl. 21 (studs.)

²⁵ Reinholdt 1993, 5 no 1 and fig. 4-8.

²⁶ *Ibid.*, 15 no 1 and fig. 18.

²⁷ *Ibid.*, 18-22.

decorative ornaments on the gold bracelet **123**, the companion piece in İstanbul, the gold pin **239** and gold ring with five stems **157** are so close that there is apparently no other possibility than to admit that all those items have been made in the same workshop, probably by the same craftsman, and this, again, strongly favours a local manufacture²⁸.

²⁸ Concerning those objects, however, a very convincing suggestion has been proposed by M. Treister. It is particularly significant here as an illustration of the results that can be obtained from a very careful comparison between the different items in the treasures, especially as far as the identification of individual craftsmen is concerned. A close observation of slight differences in details of ornamentation on the above-mentioned items, as well as on a quadruple gold ring in İstanbul (*The Anatolian Civilisations I* 1983, no A 346) and two pieces in the Treasure in Philadelphia, as shell earring and the pin (Bass 1970, no 1 and 18), allows the identification of two different craftsmen: a "Master of the S-shaped double spirals" who has made the ring in İstanbul and the two items in Philadelphia, and a "Master of the eye-shaped double spirals" who has made the ring **157**, the bracelet **123** and the pin **239**. Interesting is further that very similar objects from Poliochni show minor differences in ornamentation and consequently can not be attributed to one of the two mentioned craftsmen. The similarities just discussed certainly make an example that gives the best conditions for highly probable attributions. But others could be worth a closer investigation, as e.g. the sheet pendants of the two gold diadems **10** and **11** and sheet pendants of the basket earrings **13-16** and **155** and the similar independent gold pendants **135-143**. *Schatz*, 205-206: "Eine seltene Form des Dekors wurde bei einem Lockenring mit vier Stäbchen aus Schatz D verwendet, der im Archäologischen Museum İstanbul unter der Inventarnummer 681 aufbewahrt wird. Er ist mit einem Filigranornament aus S-förmigen Spiralen geschmückt. Eine entsprechende Verzierung wurde auch für einen goldenen Lockenring mit sieben Stäbchen aus der Troas verwendet, der in Philadelphia aufbewahrt wird. Sie hat ihrerseits eine Parallele im Dekor einer Nadel aus demselben Komplex. Wenn man annimmt, daß alle angeführten Erzeugnisse von demselben Urheber stammen, dann haben wir es mit einem Meister mit hohem Niveau zu tun, der in seinem Können demjenigen Meister nahekommt, der den Lockenring Kat. 157 das Armband Kat 123 und, wie wir unten zeigen werden, die Nadel Kat. 239 hergestellt hat. Das Lieblingsmotiv dieses Meisters war neben den oben beschriebenen Rosetten mit charakteristischer Form die brillenförmige Doppelspirale. Dies gibt uns die Grundlage, als Hypothese den einen der Goldschmiede als "Meister der S-förmigen Spirale" und den anderen als "Meister der brillenförmigen Doppelspirale" zu bezeichnen". A significant difference, however, has to be emphasized: the filigree is far thinner on pin **239** than on bracelet **123** due to the much smaller dimensions of the former. This should not be

Further evidence of local manufacture is available. The vessels in precious metal are especially interesting, because they show similarities with clay vases, which clearly emphasize local manufacture –in addition to precious chronological indications. Examples are e.g. hydriae with vertical tubular handles and lid from Troy II-V²⁹ and similar jugs from Demirci Hüyük, the equivalent of the silver vessels **2-3** and **259**, vases from Troy, Thermi, Ahlatlıbel, Arslantepe VIB, closely related to gold and silver goblets **6-7** and **103**³⁰, vases from Troy, Thermi, Yortan and Samos, comparable with the silver example **102**, vessels from Troy I and III, Poliochni and Thermi V, similar to the gold saucer **5**... Similar affinities are well known from examples of gold plate from the islands and from the Greek mainland, respectively the gold and silver vessels of probably Euboean provenance in the Benaki Museum in the Athens³¹ and the gold saucer from Arcadia in the Louvre³², with counterparts in Early Cycladic and Early Helladic pottery.

Additional evidence of local craftsmanship is finally provided by some particular types of finds in the Troy treasures that might be jeweller's tools: gold narrow strips with holes **101** (part of a necklace) and **124** in the Treasure A and F that have been interpreted as elements used in the process of manufacture of necklace beads³³; gold rods

overlooked when dealing with possible attributions to a same craftsman.

²⁹ Dimakopoulou 1990, no 78.

³⁰ Ibid., no 20.

³¹ Segall 1938, 11-14 and pl. 1-3, 211 and pl. 67-68, 212 and pl. 69.

³² Thimme 1976, no 428, p. 532 and pl. p 202. A similar piece published in: Weinberg 1969, 3-8.

³³ *Schatz*, 216. This interpretation remains highly hypothetical and quite unclear to me. An alternative explanation as draw-plates has to be rejected, since the material used for making the strips is not resistant enough for drawing wire, since the holes are not of decreasing diameter, as is usual on draw-plates, and since real draw-plates are not attested before the end of the 1st millennium the strips are not resistant enough for drawing wire, since the holes are not of decreasing diameter, as is usual on draw-plates, and since real draw-plates are not attested before the end of the 1st millennium (Carroll 1970, 401; Carroll 1972, 321-323). Branigan's interpretation as hair-pendant bars is not very clear (Branigan 1974, 192, no 3005-3010 and pl. 22).

128-132 (Treasure F) on which small transverse incisions seems to indicate that the rods were in fact ingots of a kind reserved for the manufacture of a numerous small identical decorative elements, beads of the like³⁴; assemblage of items no **217** (Treasure L), a real “goldsmith’s hoard” consisting of bronze objects, gold and silver nails, gold caps, faience and glass beads fragments of sheet gold, small globular and irregular gold nugget³⁵; simple gold spirals (**242-244**) sometimes identified as intermediary elements in the production of chains³⁶. The rock crystal lenses **176-216**, **222-224** and **229-230** from Treasure L –though of probably later date, judging from the other elements in the same treasure, the axes and rock crystal pommels especially- should not be

included here, since they are more likely to have been used as decorative elements rather than as magnifying glasses³⁷.

Differences are attested as well between Anatolian, particularly Trojan jewellery, and productions from the Aegean. The most significant is the funerary character of many Early Minion finds, a feature that finds its expression in an extremely thin fabric and in shapes made especially and exclusively for the adornment of the deceased, mainly bands and sheets in the shape of leaves or flowers. Those are very common among the finds from the tombs at Mochlos in East Crete, and from the circular tombs of Mesara, in the Southern part of the island³⁸. They are missing, on the contrary in the Treasures from Troy –with the exception of the thin and narrow gold band **12** that has possibly to be interpreted as the preserved part of a diadem originally to no **11**.

Links with Near Eastern jewellery are not absent in the Troy treasures. These have been emphasized by G. Bass in the detailed publication of the collection of precious objects in the University Museum of the University of Pennsylvania, an assemblage reputedly originating from the Troad³⁹. Some of the objects of that collection have parallels in the Early Dynastic Royal Cemetery at Ur and least one of them a “boat-shaped” earring with pendants suspended from chains⁴⁰, has its only

³⁴ The regular spacing of the incisions would have allowed the use of a rather identical of metal for each element – and the edge at the ends indicates that the original length was probably greater and that a small number of ‘parts’ have been cut from the rods. An objection could be that those rods and similar ones in Istanbul have a weight comprised between 9,87 and 10,48 gr and 9,90 and 10,67 gr respectively (*Schatz*, 215-216) for 53-59 incisions and 52-60 incisions respectively, which means 54-60 parts and 53-61 parts respectively and that those figures don’t favour a unique weight unit, nor an exact correspondence with whatever metrological system. But the suggested interpretation doesn’t necessarily imply such a precise spacing as to allow an identical amount of metal for each part of the ingot. The incisions could have been markers that make an approximately equal weight easy without the necessity of controlling the weight on the scales and eventually recutting each element in order to approach the desired quantity as close as possible. The incised rods would represent a stage immediately preceding the cutting of the small nugget of which later finds from Amathus on Cyprus provide good examples (Marshall 1911, no 822-824 (Tomb A 198); Laffineur 1986, 111-118).

³⁵ Comparison has to be made here again with the “goldsmith’s hoard” excavated in a tomb at Amathus on Cyprus, to which the above-mentioned nugget belong. The date of the Cypriot “hoard”, probably the seventh century BC., is much later than the Troy assemblage, but the interpretation must be essentially the same and it is confirmed by a much similar “hoard” found in an eighth century context at Eretria in Euboea (Themelis 1983, 157-165): a stock of raw materials, half-manufactured products and accessory decorative and probably finished elements belonging to a craftsman and found in what must have been, if not an individual workshop, at least a specific place used for the manufacture of objects in the precious metal.

³⁶ *Schatz*, 216. There are parallels for those pieces in the above mentioned workshop of Geometric date at Eretria (Themelis 1983, 164, fig. 16-20).

³⁷ The magnifying properties of those pieces – undoubtedly a necessity when working with such small elements as granulations and filigrees – comes from their convex upper surface, a characteristic that is common to all similar rock crystal lenses known from later periods- among them a specimen of early Roman Imperial date offered as ex-voto in the Sanctuary of Aphrodite in Amathus on Cyprus (on those lenses see, Laffineur 1986, 118-120, with bibliography). An objection against the use as magnifying glass could be the very high number of such finds in Treasure L, that appears quite excessive for an *a priori* limited production in the Early Bronze Age, unless only the large lens has been used as magnifying glass and the smaller ones as decorative elements, as suggested by M. Treister (*Schatz*, 224), or even as game pieces, as proposed by Blegen and Korfmann. On the Troy lenses see also Sines 1996 (forthcoming).

³⁸ Seager 1912, *passim* and Xanthoudides 1924, *passim*. Examples of similar date and origin are known also in the Marangou 1992, no 219-225.

³⁹ Bass 1970, 335-341 and pl. 85-86.

⁴⁰ Bass 1970, 337, no 19 and pl. 86, 19.

known parallel there. Those observations are confirmed by the presence at Ur of quadruple spiral beads, a pointed out above. A major difference, however, between Trojan and Mesopotamian material is certainly the extremely rare appearance of precious stones and the like, i.e. non metallic materials, in the former. The only examples are carnelian beads **121-122** and **218-221** and amber beads **227-228**. That such material are so scarce offers a sharp contrast with Near Eastern finds, particularly those from the Royal Cemetery at Ur⁴¹ and from early Assyrian graves⁴². It fits well, on the contrary, with what we know of the earliest productions of the Balkan areas, where gold is the dominant and quasi exclusive material used. This is well emphasized from the very beginning, in the finds of Chalcolithic date from Varna. One of the types typical of those early series is quite revealing as far as genesis of Northwestern Anatolian jewellery is concerned. This is the so-called anthropomorphic gold sheet pendant in the shape of a flat ring with a small perforated appendix, a type that is attested in the Varna hoards⁴³, in other Bulgarian and Rumanian sites⁴⁴, and, further Northwest, as far as Hungary⁴⁵. Interesting is that this type of gold “ring-idol” is found in Late Neolithic sites in Greece⁴⁶, where equivalents in clay or stone are also known⁴⁷. No less significant is that very similar examples frequently appear in Western Asiatic jeweler, particularly Anatolian jeweler: on a necklace from Alaca Höyük⁴⁸, in a group of gold pendants recently on a sale Geneva⁴⁹, in two assemblages in the Indiana University Art Museum, Bloomington⁵⁰. One of the two last-

mentioned hoards⁵¹ shows additional similarities with both the finds from Varna and from Troy: small hemispherical cups with holes, attested at Varna⁵², and a crescent-shaped pectoral with rows of repoussé dots⁵³, that has counterparts in Varna and in the crescent-shaped ornaments **154**, **156** and **158-160** and equivalents in the ornamentation of anthropomorphic sheet gold pendants of Trojan jewels, necklace of small spherical hollow beads that reminds necklace no **117**.

That Aegean and Western Anatolian jewellery seems to have its ultimate roots in Southern Europe has probably to be related in some way to the crucial question of the location of sources of raw material. The evidence is rather favourable in the case of Troy and Northwestern Anatolia: sources of gold, silver and copper were available in the Troad, especially gold at Astrya, a source mentioned by Strabo (XIII 23)⁵⁴, and the presence of ingots confirms at least some local manufacture –the six silver ingots from Treasure A in the Ermitage, gold ingots from Treasure C and one electrum ingot Treasure E, now in İstanbul⁵⁵. But what about the Aegean?

Silver does not make much problem in that respect, since the Laurion mines in Attica have certainly been exploited as early as the Early Bronze Age⁵⁶ and since cupellation, the method for separating lead and silver from the local argentiferous lead ore, has proved to have been known and practiced as early as the Early

reddish colour of the gold, a feature that Calinescu relates to the fact that “Silver-rich gold from Anatolia, which is the reported origin of these ornaments, sometimes develops a reddish patina due to the corrosion of the gold’s silver component” (ibid., 6).

⁵¹ Ibid., fig. 1.

⁵² Cf. *Gold der Thraker* 1980, no 31 and 52-53.

⁵³ Ibid., no 33 for the shape and no 68-69 for the dotted decoration.

⁵⁴ *Schatz*, 232-233. See also Pernicka et al. 1984, 569-573 and 536 fig.1. Cf. *Gold der Thraker* 1980.

⁵⁵ *Schatz*, 231-232. See also Branigan 1974, 198.

⁵⁶ See the Early Helladic finds from Mine 3 (Theater sector) in Thorikos, Attica: Spitaels 1984, 151-174 (exploitation going back at least to the end of EH II). Traces of stone hammers dating from the same period have also been recognized in Mine 3: Waelkens 1990, 115-143 (some traces covered by a reddish filling containing EH II ceramic material). On the distribution of Lavrion or in Cyclades, see Stos-Gale & Gale 1990, 72-92.

⁴¹ Maxwell-Hyslop 1971, 5-7 and pl. 1-13.

⁴² *Discoveries at Ashur on the Tigris* 1995, 50-54.

⁴³ *Gold der Thraker* 1980, no 66, at top; Lichardus 1988, fig. 219, p. 277.

⁴⁴ Comşa 1991, 92, fig. 2-5 (Gumelnița, Vidra, Moigrad, Oradea, Traian, Tirgu Mureş).

⁴⁵ Makkay 1991, 126, fig. 1 (Marosvasarhely) and 128, fig.1-14 (various sites). Similar pendants in bone are also known (126, fig. 2).

⁴⁶ Theochares 1973, 339, fig. 287 (Sesklo); Reiholdt 1993, fig. 40b-d; Papathanassopoulos 1996, no 299 and 302.

⁴⁷ Papathanassopoulos 1996, no 290 and 298.

⁴⁸ *The Anatolian Civilisations I* 1983, no A 214.

⁴⁹ *Gold* 1990, no 235.

⁵⁰ Calinescu 1994, 7-8, fig. 1-2. The Anatolian origin of at least one of the two assemblages is indicated by the

Helladic period, during the 3rd millennium⁵⁷. The Laurion ore was the dominant source of Aegean lead and silver⁵⁸ and possibility has to be considered that silver was perhaps a very useful commodity in the trade for other materials, especially tin, as suggested by the Gales⁵⁹ and as seems to be confirmed by references to silver and gold used as exchange for the purchase of tin in the Mari archives⁶⁰. There is no such evidence, however, that gold sources situated in the Aegean have been exploited before historical times. Lead from Siphnos has been manufactured in the Early Cycladic period⁶¹, as well as silver⁶², but the exploitation and use of Siphnian gold is not attested before historical times, nor of Thasian gold.

This lack of evidence has led most scholars to search for sources of gold supply outside the Aegean and question has especially been addressed for the prolific production of the beginning of the Mycenaean age, in the early 6th century BC. According to the classical view which has long been accepted, the kings buried in the shaft graves at Mycenae would have purchased the precious metal in Egypt as a reward for the help they had given the Pharaoh for driving the Hyksos out of the Nile valley⁶³. But the fact that the enrichment had begun at Mycenae before the LH I phase, in the late MH and transitional grave circle B, though in a more limited scale, and consequently that it predates the end of the Hyksos dynasty in Egypt

has soon been considered as a major obstacle to the Egyptian theory⁶⁴.

Scientific analyses of metal samples are unfortunately very few and in addition not very helpful in this respect, since their results do not appear unequivocal as has been pointed out by J. Muhly: "... there is even no consensus as to whether Bronze Age gold was alluvial gold or mine gold, no certainty about the inclusions – analyzed objects from the Shaft graves at Mycenae have proved to be made of both platinum – bearing and platinum – free gold and this most probably implies different sources of supply – and about the probable impact of smelting and reuse of metal on its composition ..."⁶⁵.

Instead of restricting the possible sources to the Eastern Mediterranean, which are traditionally considered as the most probable ones, it is perhaps worth trying an alternative direction towards to north. E.N. Davis has recently emphasized the connections between the Mycenae shaft graves and Central Rumania and suggested that the basic reason for such a trade and contacts with the north – what she calls the "Transylvanian Connection" – was a mutual and complementary need for metal, Rumania having much gold but no bronze, where as early Mycenaean Greece was in a quite opposite situation⁶⁶. That the gold sources for Aegean jewellery were located in the southwestern areas Europe already in Early Bronze Age times – and probably even earlier – is not improbable. It seems even to me that such a location is the most likely, when considering the Balkanic roots of Aegean and Western Anatolian goldwork.

Close relations with the Black Sea shores, recently investigated by S. Hiller⁶⁷, could also lead to consider the possibility of an

⁵⁷ Fragments of litharge – the residue of process of cupellation – discovered on a late MH level in Thorikos: Servais 1967, 22-24 and fig. 16; Gale & Stos-Gale 1982, 99-100. Since then, fragments of litharge have been found in an EB house at Provatsa on Makronisos (excavations not yet published, the find is mentioned in Spitaels 1984, 171) and in EH II context at Koropi, Attica, (Kakavoyanni 1986, 37-39). On the importance of litharge as evidence of cupellation of argentiferous lead for silver production, see Gale & Gale 1982, 99. n. 2.

⁵⁸ Gale et al. 1984, 389-406.

⁵⁹ Stos-Gale & Gale 1990, 88-89.

⁶⁰ Heltzer 1989, 17-23 (the ratios of gold-tin and silver-tin are indicated).

⁶¹ Gale & Gale 1982, 99 n.3; Gale 1979, 36 (the composition of the Naxos lead boat models overlaps with the Siphnian field).

⁶² Stos-Gale & Gale 1990; Matthaues 1985, 30.

⁶³ On this Egyptian theory, originally proposed by Persson, see Hooker 1976, 49-54.

⁶⁴ See especially Korres 1976, 501-504. Recent adjustments in the absolute dates of the transition between Middle and Late Bronze Age give a confirmation of the anteriority of the Mycenae shaft graves (Warren & 1989, 66, 97-98 and pl. 138-144: beginning of LH I about 1600 and end of XVth dynasty about 1550), even without accepting Betancourt's high dates.

⁶⁵ Muhly 1983, 1-14.

⁶⁶ Davis 1983, 32-38.

⁶⁷ Hiller 1991, 207-216.

additional “Pontic Connection”, since the area, particularly Colchis, is well-known to be rich in gold, as echoed in the classical traditions of the expedition of the Argonauts and the Golden Fleece, and again, this appears to find some confirmation in the extension of the “ring-idols” to the “circumpontic” area as a whole⁶⁸.

Important is finally the convergence of data concerning both the types of jewellery and the sources of supply of precious metals. That the types of stylized human figures discussed above are clearly typical of the Balkans, the Aegean, Anatolia, and the “circumpontic” regions in the periods preceding the Early Bronze Age, Final Neolithic and Chalcolithic, whereas they are missing from the Near East, doesn’t seem to be irrelevant. That their derivatives of 3rd millennium date – the stylized Cycladic and Anatolian figurines – are restricted to the same areas appears as a confirmation of the existence of such a community of economic, technological and artistic features down to the end of the Early Bronze Age, a community that includes the Balkans, the Aegean, Western Anatolia and the “circumpontic” areas, a community that provides the necessary conditions for the development of the “koine” referred to above.

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⁶⁸ On the “circumpontic koine”, see the papers by Piotrovskij 1996 and Chernykh & Avilova 1996.

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