Exploitation of Resources and Trading Networks in the Archaic Western Mediterranean – the Evidence of the Metal Objects

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The access to important and sought-after resources plays a central role in today's globalised world and sometimes involves remote regions as important nodes in large-scale communication networks. However, the uneven distribution of mineral resources already facilitated wide-ranging connections in the Archaic period, which often crossed cultural boundaries and networked unequal partners. A particularly important example is the access to metallic resources, which were mined and smelted in only a few regions.

In many pre-historical and historical periods the island of Sicily formed an important hub in the western Mediterranean.[1] Foreign persons and peoples consistently came to Sicily and settled there, not only Greeks, Phoenicians and Romans in Antiquity, but afterwards Normans, Spaniards and others, too. Sicily has a mild climate and is extremely fertile, but owns only a few inferior mineral deposits in the Monti Peloritani in the extreme northeast of the island, southwest of the town of Messina.[2] Therefore, at all times, a supply of raw metal from outside was required and people had to deal with the available resources economically.

We can observe foreign influences in the archaeological evidence of Sicily already by the end of the Bronze Age and in the early Iron Age,[3] but they intensified considerably from the 8th century BC onwards, after the arrival of Greek colonists about 735 BC, according to the literary sources. While the 'initial phase' of the Greek colonisation in Sicily in the late 8th century and in the first half of the 7th century BC – the so-called Finocchito horizon – remains still quite poor in 'imports', the situation explodes in the second half of the 7th and in the first half of the 6th century BC.

Several archaeological sites in the southern and southeastern parts of Sicily have provided more or less extensive complexes of bronze objects whose composition and 'internationality' is surprising. The most important and largest of these complexes were discovered in the Agora of Selinunte (prov. Trapani) (fig. 1), a Greek colony in southwestern Sicily founded by people from Megara Hyblaea in 628 BC,[4] and in the sanctuary of Demeter in Bitalemi, a quite small suburban cult place east of the Greek colony of Gela (prov. Caltanissetta).[5] Certainly, this sanctuary was not as prominent as one might think because of the huge catchment area of the bronze objects discovered there.[6] Remarkably, the bronze finds from Selinunte and Bitalemi originated from exactly the same regions: they reached Sicily from a vast area extending from southern and central France in the west to the eastern Mediterranean and the Black Sea area in the east (fig. 2).

Most of the bronze objects from Selinunte and Bitalemi are in a very poor state of condition and have survived only as small fragments. Frequently, we can observe traces of deliberate damage like cutting blows or bending. Hence, these bronze objects have

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Fig. 1: The eastern part of the agora of Selinunte with temple C in the background.

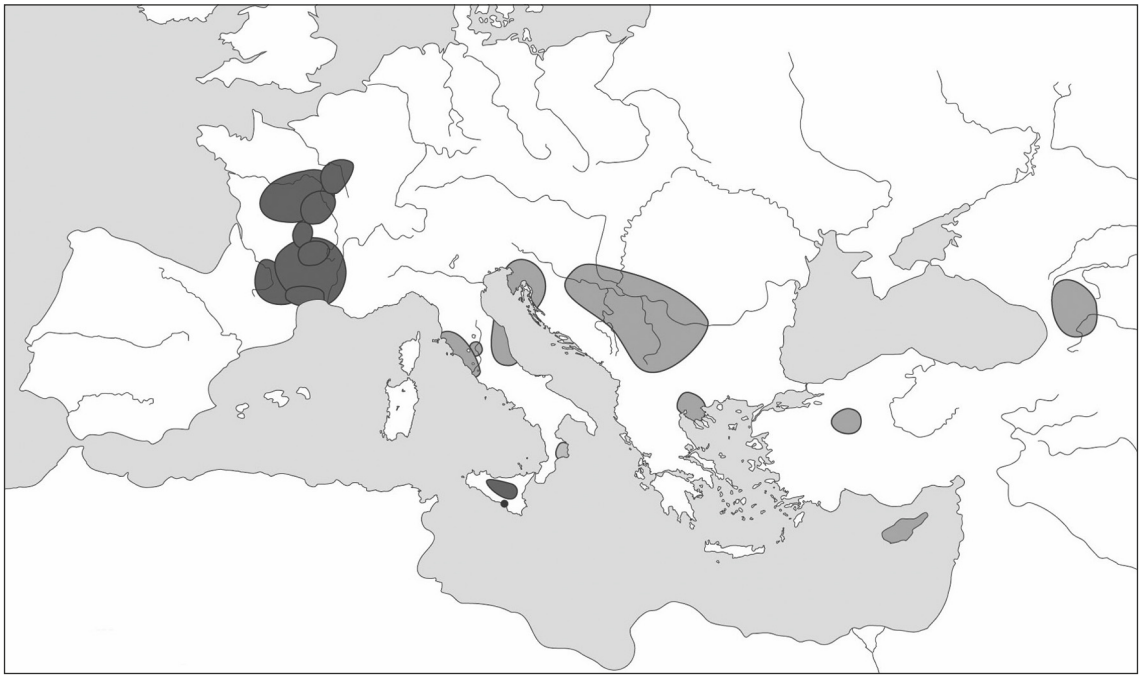

Fig. 2: Areas of origin of objects from the agora of Selinunte and the sanctuary of Bitalemi (Gela).

Fig. 3: Bent bronze ring from Selinunte.

been destroyed and crushed intentionally. Bracelets and anklets, for example, were bent over until they broke into pieces. Therefore, the fragments show a slight S-shape or hook shape (fig. 3). Interestingly, these damaging features can be observed in a quite similar manner in different complexes, although the Agora of Selinunte was the political and administrative centre of a Greek city, whereas Bitalemi was a sanctuary, like other small cult places in southern Sicily, for example S. Anna near Agrigento (prov. Agrigento)[7] or two suburban sanctuaries near Licata (prov. Agrigento).[8] Therefore, concerning the bronze objects, it seems insignificant if a site was used for profane or sacral purposes – the areas of origin of the bronze objects, their spectrum and their poor state of preservation do not differ significantly in these complexes in southern and south-eastern Sicily.

In Bitalemi numerous fragmented bronze objects were deposited separately in the natural sand, but in 31 cases they were associated with veritable scrap hoards weighing from 350 g to 11.7 kg.[9] They contained fragments of different origin: jewellery, bronze vessels, axes, weapons and ingots. At the eastern edge of the Agora in Selinunte, a scrap hoard with a weight of 2.2 kg was discovered in a small sanctuary (fig. 4).[10] It consisted mainly of disintegrated and bent sheets of bronze vessels, e.g. a crushed bronze situla with the characteristic row of rivets, most probably an import from central or northern Italy (fig. 5).[11] Obviously, this bronze scrap was accumulated because of its material value – and therefore it had been dedicated to the gods in a sanctuary.

Fig. 4: Bronze scrap hoard in a small sanctuary in the eastern part of the agora of Selinunte.

Fig. 5: Fragmented bronze situla from the scrap hoard in Selinunte.

Particularly numerous bronze objects were imported from the area of present-day southern and central France to Sicily between 650 and 540 BC.[12] Exact counterparts to these objects can be found in several bronze hoards in the Languedoc. French colleagues call them "hoards of the Launac-type", or simply the "Launacien", according to the eponymous complex of Launac at Fabrègues (dép. Hérault).[13] In these hoards, the almost consistently fragmentary state of preservation of the objects is striking, exactly like in Selinunte, Bitalemi and on other Sicilian sites (fig. 6). Thus, the Launac hoards actually form an anachronism, because scrap hoards are particularly characteristic for the European late Bronze Age but disappear in the early Iron Age.[14] The distribution area of the Launac hoards is restricted to a limited area in the Languedoc. The famous 'shipwreck'[15] or 'dépot sous-marin'[16] of Rochelongue near the mouth of the

River Hérault, which connected the Mediterranean Sea with the hinterland, belongs to the group of the Launac hoards, too.

These hoards contain different types of objects such as jewellery, weapons or socketed axes whose casting quality is often very poor.[17] Frequently, they contain ribbed bracelets or anklets comparable with those found in the Agora of Selinunte (fig. 6). How can we explain the occurrence of so many 'objets gaulois' in Sicily in the 7th and 6th centuries BC? Most probably, the reason is not the fascination of Greek women for the French fashion in Paris in Archaic times! Instead, the fragmentary state of preservation of the 'objets gaulois' in Sicily leads to a different track, because it coincides exactly with the state of the objects in the Launac hoards. This cannot be a coincidence, but suggests a direct link between these hoards and the 'objets gaulois' discovered in Sicily. However, if the artefacts were already broken and fragmented before being transported to the island, they cannot have been used in their original function as jewellery, tools or weapons. Instead, we suggest that the objects had already lost their original function and significance and that the scrap metal arrived in Sicily because of its value as raw material.

This seems plausible, because in the hinterland of the Languedoc rich mineral deposits of copper, tin, gold and silver were exploited already in antiquity.[18] The shipwreck of Rochelongue near Cap d'Agde contained more than 800 kg of ingots of copper, lead and tin, as well as more than 1,700 bronze objects, especially fragments of jewellery with counterparts in the Launac hoards.[19] A connection between bronze scrap and ingots is particularly evident in this case, but copper ingots ('Gusskuchen' in German) and *aes rude* were discovered in other hoards, too. Therefore, a connection to raw metal seems obvious.

Did the wealthy Greek colonies of Sicily cover their metal demand mainly with imports from southern France? Definitely, the considerable quantity of fragmented Launac bronzes in Sicily proves a close and not only casual connection between these two regions in the 7th and 6th centuries BC.[20] In contrast, the heavy and valuable ingots have not survived to today because they were melted down in Antiquity. Of course, this remains hypothesis without extensive archaeometallurgical analyses, although the material evidence points in this direction. As mentioned before, Sicily depended mainly on an external metal supply.

In Archaic Sicily, other objects from regions with rich mineral deposits have been found. A bronze fragment from Selinunte with a non-Greek decoration belonged to a widely travelled bell from the Caucasus region (fig. 7).[21] Here, such bells were used as parts of horse harnesses. This find proves connections between Selinunte and the extreme northeast of the ancient world. It is difficult to judge if direct connections existed between Sicily and the eastern shores of the Black Sea or if we have to think about intermediate stations in the Aegean. Probably the second assumption holds true because such bells have been found in small quantities in Ionia, e.g. in the western necropolis of Samos.[22] As is generally known, the important commercial town of Miletus played a

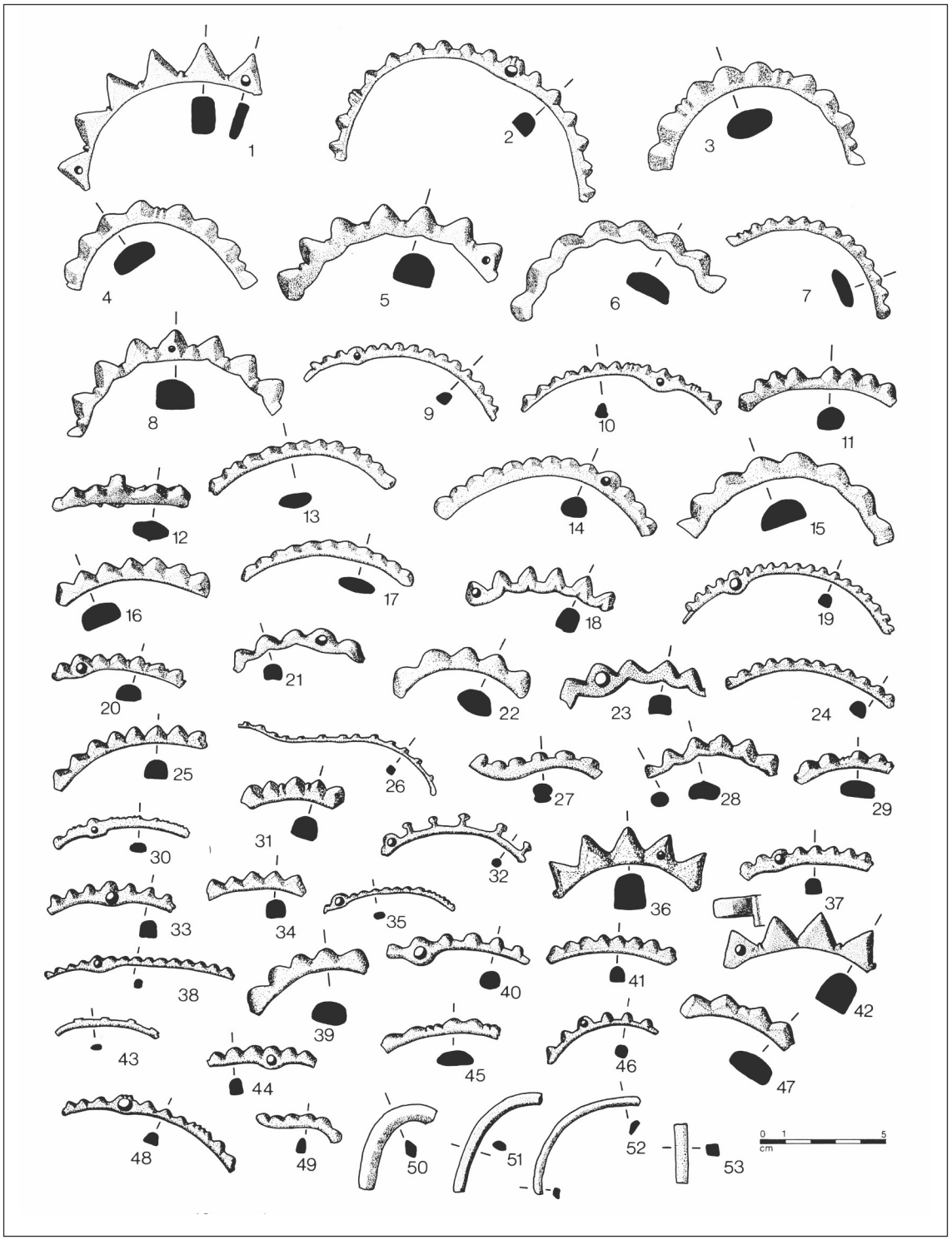

Fig. 6: Fragments of bronze rings from the Launac hoard of Saint-Saturnin (dép. Hérault).

Fig. 7: Fragment of a Caucasian bell from Selinunte.

central role in the Greek colonisation of the Black Sea area. The Georgian archaeologist Otar Lordkipanidse has already considered whether the Ionian Greeks were especially interested in the mineral deposits to the east of the Black Sea.[23] Indeed, the concentration of Caucasian metal objects in Ionia seems to indicate this.

The bronze bell from Selinunte is not an isolated object in Sicily. Stéphane Verger identified an 'animal-ear handle' of Caucasian origin in the material from the sanctuary of Bitalemi (fig. 8).[24] By courtesy of Helga Eiwanger, another handle of this type excavated in a sanctuary of Aphrodite near Miletus can be added. So, we can note an almost identical distribution as in the case of the Caucasian bells. In the important sanctuaries of the Greek mainland like Olympia or Delphi, which have produced so many metal objects, such pieces are lacking.

Hence, a currently still small number of objects prove connections between Sicily and the eastern Black Sea area. These connections were probably not direct, but used an intermediate station in Ionia on the eastern shores of the Aegean Sea. The existence of Caucasian bronze artefacts in Sicily may indicate that Ionian Greeks from the eastern

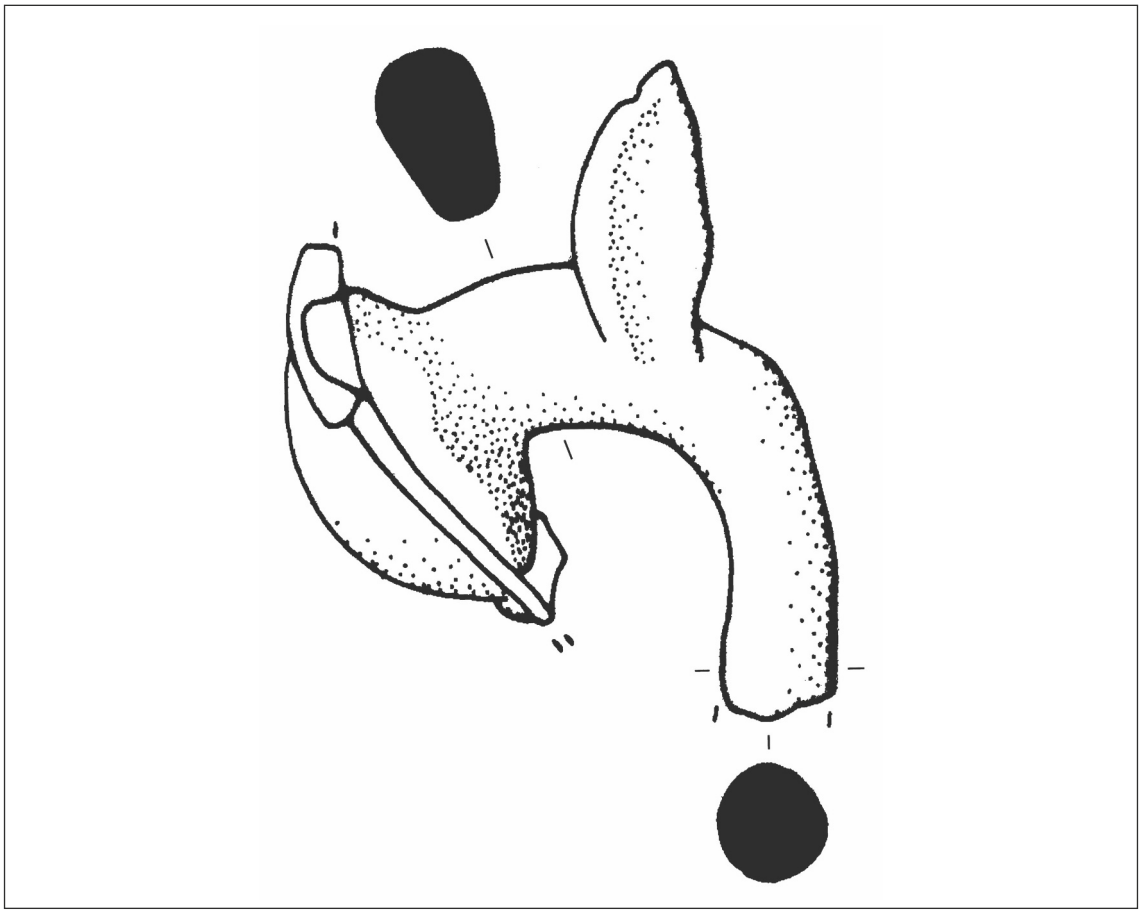

Fig. 8: Caucasian 'animal-ear handle' discovered in the sanctuary of Bitalemi.

Black Sea area supplied the island at least partially with raw metal. The Greek colony of Phasis at the mouth of the homonymous river in Georgia was probably founded in the early 6th century BC,[25] thus within the relevant timespan.

The huge number of foreign bronze objects, which arrived in Sicily between about 650 and 540 BC is surprising. Almost all these 'imports' date back to this century or so, while older objects are an exception. By contrast, the evidence is different if we analyse indigenous Sicilian bronze finds discovered in huge numbers in Selinunte and Bitalemi, too.[26] At first glance they seem to prove the presence of indigenous people in the Greek colonies of Selinunte and Gela. However, it is noticeable that in both complexes several fragmented 'antiques' ('Altstücke' in German) dating back to the early Iron Age or even to the late Bronze Age are included, too.[27] These objects are definitely too old for the colony of Gela founded about 688 BC and Selinunte founded 60 years later in 628 BC. As we currently do not have sufficient archaeological evidence for a preceding indigenous settlement at these sites, it seems reasonable to think about accumulated scrap metal introduced into the metal circulation of the Greek colonies from the Sicilian hinterland.

It remains doubtful how these objects reached the cities, whether in a peaceful or in a violent manner. This evidence fits very well in our hypothesis of metal-hungry 'boom towns' with 'international' contacts on the Sicilian coast interacting all over the Mediterranean Sea and attracting all the metal supply they could get.

Finally, lead isotope analysis of silver ingots from a late Archaic coin hoard supposedly discovered in Selinunte points in a completely different direction. In addition to 165 silver coins of various origins, this hoard contained four silver ingots showing different signatures.[28] Two ingots seem to contain silver from various deposits; ingot E points to Laurion in Attica in mainland Greece, while ingot B probably contains silver from a deposit in the Rio Tinto area in Andalusia.[29] Hence, the silver ingots show a completely different network to the bronze finds previously discussed, because we can hardly identify any pieces from the Iberian Peninsula in Sicily. We can suppose that the Punic settlements in western Sicily, like Mozia or Panormos, made contacts to the Iberian Peninsula and attracted metals from the far west of the Mediterranean Sea. Considering the small number of archaeometallurgical investigations in Sicily, this idea is still hypothetical. In addition, ingots are – as mentioned before – only occasionally included in the archaeological evidence, and the discovery of silver coins in excavations is exceptional, too. Therefore, the network behind these objects can be recognised only sketchily. However, maybe it is not a coincidence that the coin hoard dates to the early 5th century BC while the foreign bronze objects belong to an earlier period (second half of the 7th and the first half of the 6th century BC). Maybe the trading routes and the exchange networks had changed in the course of the late Archaic period.

Recent research has increasingly shown to which extent scrap metal was exchanged and traded in the Archaic western Mediterranean, especially on the island of Sicily. Frequently, fragmented bronze artefacts are proving wide-ranging contacts, which on the one hand connected the Greek colonies of the coast with far-off regions, such as southern France, but which on the other hand stimulated dealings between Greek settlers and the indigenous Sicilian hinterland. If we try to understand the far-reaching economic relationships and networks of the Archaic period, we have to take all existing materials seriously, we have to analyse them and we have to relate them to each other. It is a commonplace fact that our archaeological material is only fragmentary and incomplete because, for example, objects made of organic materials have not survived to today. However, any detectable material category – even if it seems inconspicuous – forms an important piece of the puzzle in obtaining a stable overall picture of an archaeological site; none may be excluded or displaced to others. In this way, hopefully – and with the help of modern tools like network analysis – the connections and relationships between different regions and their backgrounds can be studied more deeply in the future. The frequently fragmented and underestimated bronze objects provide an important contribution and they can be interpreted as the witness of a long-ranging exchange in the western Mediterranean largely based on economic interests.

Notes

[1] Overviews are given e.g. by Bernabò Brea 1958 and Finley 1979.
[2] Giardino 1995, 134–139. 307 f.
[3] E.g. Albanese Procelli 2003, 28–34; Bietti Sestieri 2013 (with further literature).
[4] Baitinger 2015; Baitinger 2016a; Baitinger 2016b.
[5] Orlandini 1965–1967; Verger 2003; Verger 2011; Tarditi 2016.
[6] Verger 2011, 56 fig. 36.
[7] Fiorentini 1969; Baitinger 2017.
[8] Hinz 1998, 93 f.
[9] Orlandini 1965–1967.
[10] Hoesch 2003.
[11] Baitinger 2016a, 100 f. no. 511 pls. 26. 63.
[12] See especially the contributions in Verger – Pernet 2013.
[13] Most recently Guilaine et al. 2017 (with further literature).
[14] Baitinger 2016a, 171–174 (with further literature).
[15] Bouscaras – Hugues 1967; Garcia 2013.
[16] Gascó et al. 2012.
[17] Guilaine et al. 2017 (with further literature).
[18] Cauuet 2013 (with further literature).
[19] Bouscaras – Hugues 1967; Garcia 2013.
[20] See the contributions in Verger – Pernet 2013 (with further literature).
[21] Baitinger 2016a, 132–134 no. 744 pls. 41. 73.
[22] E.g. Boehlau 1898, 25. 49. 162 pl. 15, 9.
[23] Lordkipanidse 2007, 600–602 fig. 6.
[24] Verger 2003, 549 fig. 10.
[25] See Lordkipanidze 2000, esp. 53–61.
[26] Verger 2003; Verger 2011; Tarditi 2016; Baitinger 2016a.
[27] Pace – Verger 2012, esp. 14–25; Baitinger 2015, 142–144; Baitinger 2016b, 34–36.
[28] Arnold-Biucchi et al. 1988; Beer-Tobey et al. 1998.
[29] Beer-Tobey et al. 1998.

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Fig. 1: Photo: H. Baitinger. – Fig. 2: after Verger 2011, 56 fig. 36. – Fig. 3: Photo: H. Bieräugel, Rome Department of the German Archaeological Institute, excavations Selinunte. – Fig. 4: Photo: Rome Department of the German Archaeological Institute, excavations Selinunte. – Fig. 5: Photo: D. Schmehle, Rome Department of the German Archaeological Institute, excavations Selinunte. – Fig. 6: after Garcia 1988, 21 fig. 12. – Fig. 7: Photo: H. Bieräugel, Rome Department of the German Archaeological Institute, excavations Selinunte. – Fig. 8: after Verger 2003, 549 fig. 10, 1.

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