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ALESSANDRO NASO, MATTEO MILLETTI

IRON AGE HOARDS IN THE ITALIAN PENINSULA AND SARDINIA: A REVIEW

A Marco, nostro amico

It is definitely key and appropriate to achieve a focus on the interconnecting functions of the hoards and the single depositions of metal objects. In this general framework, this paper aims to offer an overview of the Iron Age finds in continental Italy, apart from Sicily¹: attention is concentrated on the central regions of the country, including Sardinia². In this perspective, Central Italy has more similarities with the northern than with the southern regions of the country. The metal depositions in the southern regions offer an almost homogeneous picture and several are commonly dated to 8th century BC. On the contrary, with the exceptions of a new find in Piedmont and of the huge hoard of San Francesco in Bologna, metal deposits in northern Italy belong mostly to 5th century BC³. As usual, it is very important to connect each find to the general knowledge about the findplace and so gain exhaustive interpretations of both (*Fig. 1*).

HISTORY OF THE RESEARCHES

The literature about the topic is not particularly recent: one can mention the overviews of Anna Maria Bietti Sestieri, Maria Antonietta Fugazzola Delpino and Gianluigi Carancini in the Seventies⁴, which were devoted essentially to the finds of the Bronze Age. It is

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It is our pleasure to thank Josyp V. Kobal' (Užgorod) and Gerhard Tomedi (Innsbruck), which shared information about recent finds of Kapelna belts, and Simon Stoddart, which was kind enough to improve our basic English. A draft of this essay has been presented to the conference *Connecting Worlds. Bronze and Iron Age Depositions in Europe*, Berlin 19th-21st April 2018.

¹ The hoards from Sicily have been investigated in ALBANESE PROCELLI 1993 and ALBANESE PROCELLI 2003.

² LO SCHIAVO *ET AL.* 2009; LO SCHIAVO, FALCHI, MILLETTI 2013. For a different chronology of some hoards, IALONGO 2010.

³ See the literature below, footnote 22.

⁴ See respectively BIETTI SESTIERI 1973, FUGAZZOLA DELPINO 1975 and CARANCINI 1979.

well known that in several Italian hoards the largest part of the finds is dated to the Bronze Age, but some objects buried in the same contexts belong to the Early Iron Age (EIA) and take the date of deposit of the related hoards into the 9th and 8th cent. BC.

In the handbook about Bronze and Iron Age Italy, edited in 1996, Renato Peroni wrote important pages also about the subject of this article, thanks to his invaluable experience and the direct knowledge of the most important finds⁵. In the chronological sequence of the Italian Protohistory, Peroni, following an early suggestion of Massimo Pallottino⁶, distinguished a phase, the *Final Bronze Age* (It. *età del Bronzo finale*), which marked the shift between Bronze and Iron Age, dating from 12th to 10th cent. BC, as one can see in the chronological table recently developed by Marco Pacciarelli (*Fig. 2*)⁷. The suggestion of Peroni has been largely accepted and instead of Late (or Later) Bronze Age the terms *Recent Bronze Age* (RBA) and *Final Bronze Age* (FBA) have been adopted.

In 1998, Martin Schindler published the hoard of Arbedo in Switzerland and included also a useful overview of the hoards belonging to the Late Iron Age in the Alpine region⁸. In 1999, a synthetic sequence of Early Iron Age hoards was offered in the general work otherwise focused on metallurgical production of the Bronze Age by Peroni and Carancini⁹. In 2007, Anne Lehoërf published her dissertation, devoted to technical studies on the bronze objects in Central Italy from the Late Bronze to the EIA, including finds from both graves and hoards: in her text one can find various mentions of this subject, which is marginally treated in comparison to the central theme of the work¹⁰. In addition, the fragmentation of metal objects in Bronze age hoards recently gained specific attention¹¹.

A global reflection on the nature of these contexts, particularly on the varied purposes of hoarding and deposition, which could be comparable to that conducted by Richard Bradley on metallurgical hoards in Continental Europe and British islands¹² has generally not been attempted, even though there are a remarkable number of hoards in the Peninsula and Sardinia dated to the Final Bronze Age and the Early Iron Age. This is in spite of the fact that in recent decades detailed studies have increased in number, often dedicated to more ancient contexts.

In 2008, a rich overview of the principal forms of hoarding (not only metal products) and of several purposes of accumulation, was offered in the conference *Du matériel au spirituel. Réalités archéologiques et historiques des « dépôts » de la Préhistoire à nos jours*, organized by Sandrine Bonnardin, Caroline Hamon, Michel Lawers and Benedicte Quilliec¹³. The contribution of Bastiene Toune on the hoard of Rimessone di Aprilia (province Latina, central Italy)¹⁴, beyond the evident uncertainties about the accuracy of the context associations, constituted the first occasion for a reflection on the manipulation

⁵ See the editions of the single hoards in PERONI 1961a, 1961b, 1963, 1967; PERONI 1996, pp. 313-314, 333-335, 362-364 (FBA), 421-423, 449, 525-527 (EIA).

⁶ PALLOTTINO 1965, pp. 399-401.

⁷ PACCIARELLI 2017, Table 1.

⁸ SCHINDLER 1998, to refresh at least with the edition of the hoard from Vadena (province Bolzano) offered by ALBERTI 2015 (the site is out of the distribution map, *Fig. 1*).

⁹ CARANCINI, PERONI 1999.

¹⁰ LEHOËRFF 2007.

¹¹ See footnote 17.

¹² BRADLEY 1998², 2013 and 2017 with bibliography.

¹³ BONNARDIN ET AL. 2009.

¹⁴ TOUNE 2009.



Fig. 1. Iron Age hoards from the Italian peninsula.

of metallic finds deposited in hoards (Fig. 3). This topic culminated in 2012 in a conference which was organised at Rome by B. Toune and Eugène Warmenbol on *Choise pieces. The destruction and manipulation of goods in the Later Bronze Age: from reuse to sacrifice*. Unfortunately, although the abstracts are online¹⁵, the conference as whole remains

¹⁵ https://it.scribd.com/document/87939651/Convegno-Pezzi-Scelti-Abstracts_Proceedings (accessed on 19.12.2024).

Greece and Aegean	Absolute Chronology BCE	Campania	Latium	Etruria
LHIIIB	1325/1300	Subapennine	Subapennine	Subapennine
LHIIIC	1150/1125			
SM	FBA	Protovillanovan	Protovillanovan	Protovillanovan
PG	ca. 925	Latium I		
EG	EIA1	Pontecagnano IA	Osa IIA1	Tarquinia IA
			Osa IIA2	
MGI	Late	P.no IB Early	Osa IIB1	Tarquinia IB1 Veii IB
		P.no IB Late	Osa IIB2	Tarquinia IB2 Veii IC
MGII	EIA2 Late	P.no IIA	IIIA	Veii IIA
		P.no IIB		Veii IIB
LGI	Final ca. 730		IIIB	Veii IIC

Fig. 2. Chronological table (after PACCIARELLI 2017, revised).

unpublished. The conference was devoted not only to Italy and information about ongoing researches on old and new finds was offered. The focus of the conference is clearly stated in the foreword of E. Warmenbol. "There is no doubt anymore that hoards and other

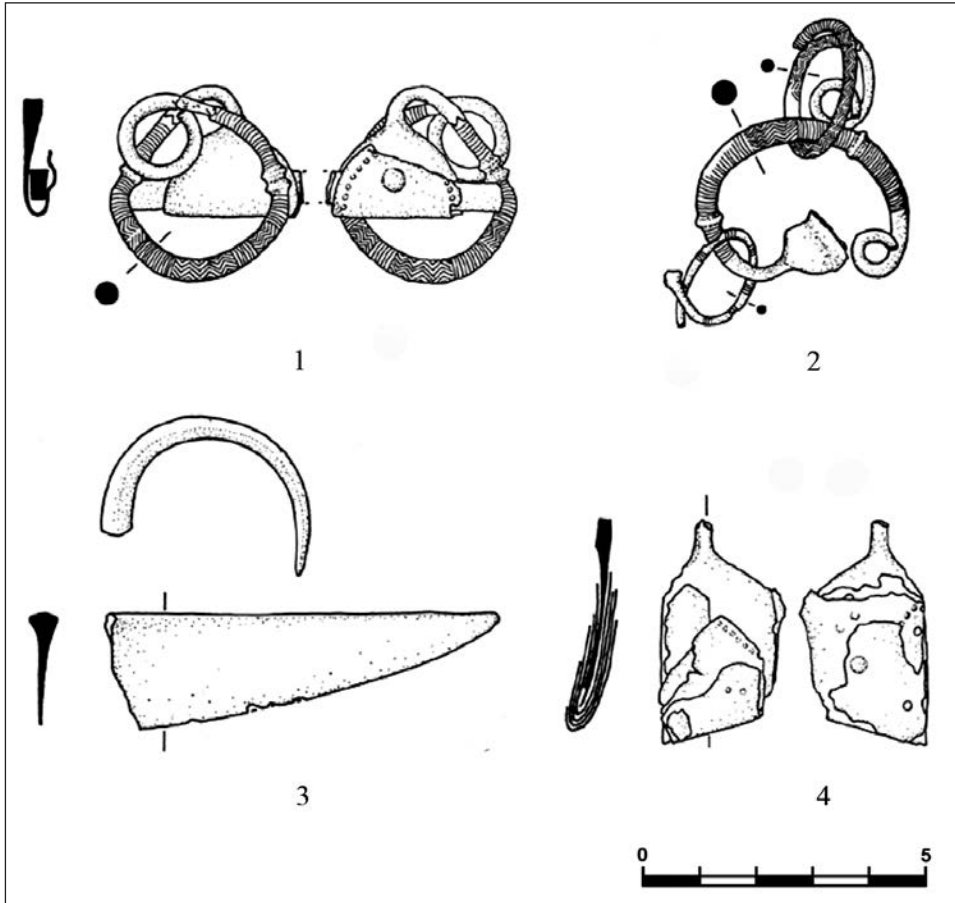


Fig. 3. APRILIA (province Latina). Rimessone hoard, manipulated bronzes: 1.-2., 4 Fibulae; 3. Knife (after TOUNE 2009).

assemblages of bronze artefacts of the Bronze Age have been buried for very different reasons, that these assemblages are extremely varied, and obviously deposited by men and women with very different backgrounds. There is no doubt anymore that there are a lot more ‘realities’ behind the deposits than previous generations recognized, especially because their reasoning was quite black and white, such as the profane being wrongly considered as the opposite of the sacred. Our task is now to recognize the steps that brought metallic objects into their find-contexts, hoards and others, because it is only through following these up that we will be able to hypothesize their motivation. Those steps that led to the deliberate destruction of an object will be particularly interesting to us because they very often lead to the mutilation of a particularly precious object. A single blow, or a frenetic succession of blows, thus leads to the annihilation of a precious thing, made with care, taking time. This is for the bourgeois westerners that we are, something profoundly disturbing, that we can only accept after understanding the question why”.

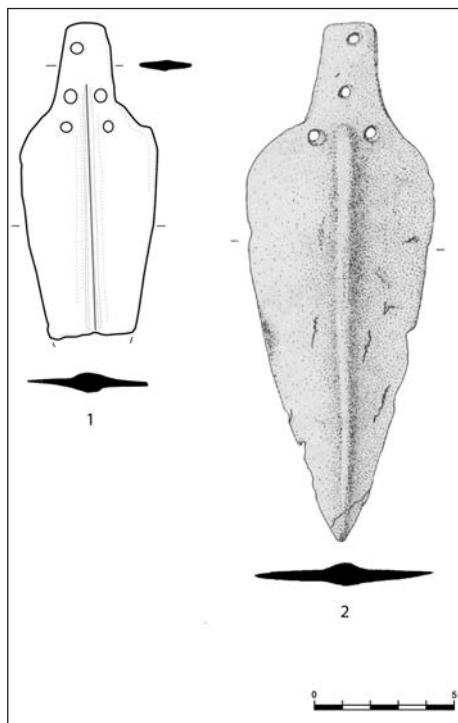


Fig. 4. Type Máre Lévore daggers: 1. Bologna, San Francesco hoard (after MILLETTI 2012); 2. Máre Lévore hoard (after ZIMMERMANN 2007).

widespread in the Czech Republic and in Slovakia in the Copper Age and is dated around the middle of the fourth millennium BC. Previously the dagger was classified as Nuragic and was dated to the LBA. The timescale of the collection of the objects is impressive: the deposition of San Francesco was closed around 680 BC, when the chalcolithic dagger was already scrap metal¹⁸.

A chalcolithic tool belongs also to the Iron Age hoard of Arbedo in Switzerland. In the publication of the fragments found in the Arbedo hoard, M. Schindler was able to define four categories of items occurring in a series of deposits, consisting in: 1. Scrap metal; 2. Objects related to bronze casting; 3. Unfinished, half-finished and workshop waste; 4. Ingots¹⁹.

Later B. Toune once again addressed the topic, with a brief overview of the few published contributions¹⁶. However, although manipulation of objects is an important element for the definition of the purpose of deposits, it cannot be interpreted in a univocal way. So, the loss of indication (even generic) about the discovery often becomes an insurmountable obstacle for a fully reliable interpretation of the context¹⁷. The map produced by Toune in the abstracts is devoted to Central Italy and includes hoards dated to the Late Bronze Age and the Early Iron Age as well, closely connected to the topic of the conference held at Rome in 2012. On the contrary in this paper, the contexts of the Bronze Age have been excluded and only the hoards closed in the Early Iron Age have been considered, which often include also older objects.

In this perspective, a recently identified case is worth mentioning. In 2007, Thomas Zimmermann suggested the identification of a bronze dagger of the Malé Leváre type (Fig. 4), amongst the more than 14,000 objects of the huge hoard of San Francesco at Bologna. This type is

¹⁶ TOUNE 2014.

¹⁷ About the practice of fragmentation in metal hoards and its meaning, see CHAPMAN 2000; BRANDHERM 2018; WISEMAN 2018; LAGO 2020; BEDIANASHVILI, ROBINSON 2024; LAGO, ARENA, IALONGO 2024, pp. 665-670.

¹⁸ On the hoard of San Francesco see ZANNONI 1888; BENTINI, MAZZEO 1993; BENTINI 1995; 2005; MANFRONI 2005. Some fragments of Nuragic bronze objects belong to the hoard (MILLETTI 2012, p. 106 and n. 1, pp. 107-108 with bibliography). For the Copper Age dagger see ZIMMERMANN 2007. It could be useful confirm the new identification by archaeometrical analysis on the metal composition of the dagger.

¹⁹ SCHINDLER 1998, pp. 249-257.

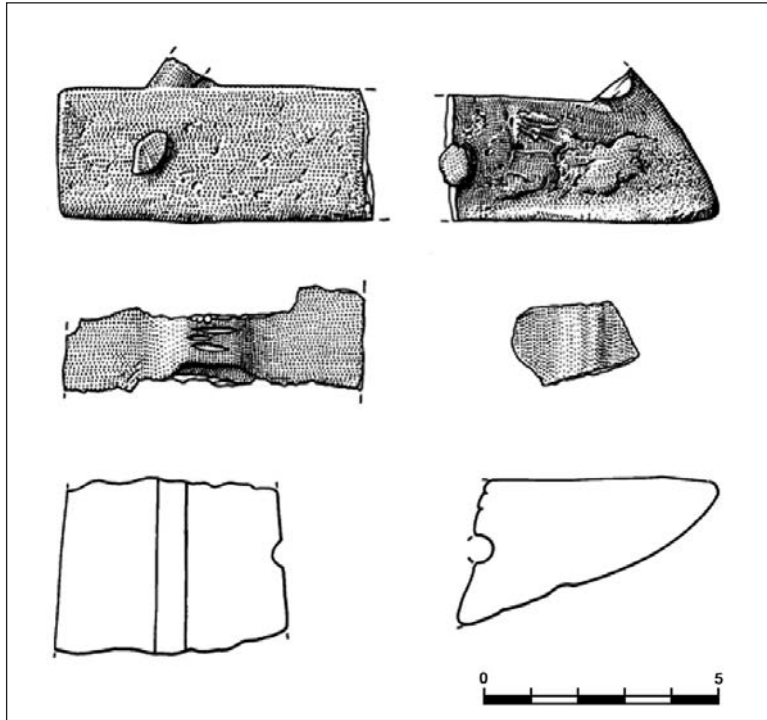


Fig. 5. BELLINZONA, Arbedo hoard, metal scraps from Sicily (after VERGER 2004).

Using the systematic publication of the finds of the Arbedo hoard by M. Schindler, Stéphane Verger introduced a new approach to the study of this hoard, addressing the composition of the scrap metal. The French scholar was able to isolate groups of fragments related to objects used in a particular region, such as Provence or Sicily, in a particular time, more precisely from the Copper Age onwards (*Fig. 5*). The scraps of the Arbedo hoard are not a random or simple pile of metal to remelt, but they could reflect the complex contacts of their findplace with the regions of provenance of the metal over time. The strategic position of Arbedo along a trade route permits an understanding of the presence of bronze fragments derived from Greek and Etruscan tools or the movement of vases into the heart of the Alps. Starting always from the rigorous identification of the broken metal pieces with the shapes they originally belonged, Verger developed his ideas in a series of further contributions, devoted to Greek sanctuaries in Greece as Perachora, in Sicily as Gela, and to the general distribution of Gallic female metal ornaments all around the Mediterranean. In this way, he was able to reconstruct the contacts among people of various origins in the Mediterranean basin especially during 8th and 7th cent. BC²⁰.

²⁰ Among several papers of S. Verger devoted to the subject one can quote VERGER 2004 (Arbedo); VERGER 2011a (Perachora); VERGER 2011b (Gela); VERGER, PERNET 2013 (Gaulish ornaments).

A further step along this way has been achieved during the conference held 2014 in Mainz and edited by Holger Baitinger, which explored the possibility of connecting the forms of personal ornaments to the identity of their owners, in other words to verify the relationship between material culture and cultural identity²¹.

ITALIAN PENINSULA: NEW DATA

After an overview of publications, it is time for us to enter the heart of the matter. In Italy, new contexts have been found in Northern (Chiusa Pesio in Piedmont and Forlimpopoli in Romagna)²² and central Italy (probably Valentano²³ and certainly Selvicciola²⁴ in southern Etruria). In Central Italy, the general studies and publication of finds that have been recently published on already known hoards permit a more appropriate approach to the topic. I cite: Colle Le Banche (Lido di Camaione, province Lucca)²⁵, San Martino (*Fig. 6*)²⁶ and other contexts from Elba Island, like the one from Valle Gneccarina, often unfortunately of uncertain composition²⁷, Falda della Guardiola (Populonia, province Livorno) (*Fig. 7*)²⁸, Bambolo²⁹ and Donoratico (Castagneto Carducci, province Livorno) (*Fig. 8*)³⁰, Goluzzo (Chiusi, province Siena)³¹. Thanks to the actual state of the research and the studies summarized above, it is now possible to identify some common features among the Italian Iron Age hoards.

For its cultural implications, a new find is particularly worth mentioning, although it still belongs to the Final Bronze Age³². In 2003, a hoard composed by more than 230, mostly broken, objects has been found at Forlimpopoli near Forlì in Romagna³³. In the preliminary report about this context, which has been dated to the end of the 10th cent. BC, a bronze belt has been published of the Kapelna type, defined by Imma Kilian-Dirlmeier, who collected belts from the Czech Republic and Croatia³⁴. Belts of this shape are now documented also in Pinzgau (Austria) and probably in Transcarpathia (Ukraine), whereas the exemplar from Forlimpopoli is the first from Italy³⁵. This find is a real missing link, because the belts of this shape were considered by Kilian–Dirlmeier the prototype for the

²¹ BAITINGER 2016.

²² For Chiusa Pesio see VENTURINO GAMBARI 2009, for Forlimpopoli see MALNATI, POZZI 2011.

²³ PELLEGRINI 1992, 1993.

²⁴ ROSSI 2008.

²⁵ COCCHI GENICK 2004.

²⁶ ACCONCIA, MILLETTI 2015.

²⁷ LO SCHIAVO, MILLETTI 2011, pp. 335-336 with previous bibliography about each context.

²⁸ LO SCHIAVO, MILLETTI 2011.

²⁹ SETTI 1997.

³⁰ LO SCHIAVO, FALCHI, MILLETTI 2008, pp. 78-79.

³¹ See FUGAZZOLA DELPINO, PELLEGRINI 2009-2010, also for the Santa Marinella's hoard, now dated at the end of FBA, although R. Peroni suggested a chronology in the EIA (PERONI 1996, p. 422).

³² BORGNA 2024.

³³ MALNATI, POZZI 2011, p. 8, fig. 5; MALNATI *ET AL.* 2024, pp. 718-719.

³⁴ For the Kapelna belts see KILIAN-DIRLMEIER 1975, pp. 96-98, nos. 387-392, pls. 32-34; NASO 2019, pp. 125-126 fig. 6.

³⁵ For the find from Pinzgau in Austria see MOOSLEITNER 1991, p. 63, no. 25, fig. 50, pl. 20. A fragment of a belt probably belonging to the type Kapelna has been identified in the hoard of Velikaja Began' or Zmeevka in Transcarpathia (Ukraine): see KOBAL' 2000, pp. 23-24, 67 and 98 no. 144 pl. 93, no. 56 (phase Suskovo I, Ha



Fig. 6. Elba island (province Livorno), San Martino hoard: 1. Knife; 2. Bracelet; 3.4. Fibulae; 5. Axe (after ACCONCIA, MILLETTI 2015).

lozenge belts adopted in the female dress of Etruria, which were developed in the first half of the 8th cent. BC, some time later than the distribution of the Kapelna type³⁶. The hoard of Forlimpopoli, a site completely unknown in prehistory before this find, demonstrates the presence of Kapelna belts in Italy and confirms the hypothesis of the German scholar³⁷. At the same time, the findplace gains a super-regional importance, because the

A2, 11th cent. BC). I know the two finds respectively thank the kind information of G. Tomedi and J.V. Kobal', which I wish thank.

³⁶ On the lozenge bronze belts from Central Italy see ZIPF 2006; LUCENTINI 2009; MAGGIANI 2009; LIPKIN 2014; NASO 2020, with previous literature.

³⁷ The belt from Forlimpopoli belong to the series of finds connecting Central Europe and Central Italy, and this subject gains relevant value in the frame of the distribution of metal ores of the area northern of the Alps in the Italian peninsula with particular reference to the copper resources of the modern-day Austria. Recent researches discovered mining sites in Nordtirol in the Kitzbühel Alps dated to the Middle and Late Bronze Age, which "represent a chronological link between the Salzburg chalcopyrite districts in the east and the fahllore



Fig. 7. PIOMBINO (province Livorno), Populonia, Falda della Guardiola hoard.

birthplace of the lozenge belts is normally localized in Central Italy in Southern Etruria. Following this perspective, in the future, one has to research further connections between Romagna and Southern Etruria, which included also the mobility of persons³⁸.

Generally speaking, one can say that the deposit of single items in the inland waters such as rivers and lakes during the Early Iron Age was confined to northern Italy, as shown by two south Etruscan helmets from two rivers in Piedmont, dated respectively to the first half of 8th cent BC from Asti and to the 6th cent. BC from Turin (*Fig. 9*)³⁹. In our opinion, both finds may be connected to Etruscan prospectors on the route to the Alps searching

districts in the Lower Inn Valley (Schwaz-Brixlegg) in the west" (STAUDT *ET AL.* 2024, p. 140, with literature about other mining areas in modern-day Austria.

³⁸ New data about Iron Age Romagna are in the proceedings of the conferences held in 2010 at Modena (BERNABÒ BREA 2018) and in 2022 at Bologna (*Atti Bologna* 2024). A bronze lozenge belt from Southern Etruria dated to the 8th cent. BC has been found in a grave in the valley of the river Uso and testifies the local burial of a woman from Southern Etruria (NASO 2020, pp. 18-22, Abb. 2).

³⁹ GAMBARI 2000.



Fig. 8. DONORATICO (province Livorno), Castagneto Carducci hoard: 1.3. Wheel-shaped pendants; 4. Bell pendant; 5. Buckle; 6.7. So-called “faretrine” pendants; 8.10. Fibulae.

for the local mineral resources, which include also gold⁴⁰. Only a few water deposits of weapons are known in Central Italy during the FBA and the EIA as well⁴¹. This type of practice is completely absent in Southern Italy.

Northern and Central Italy are clearly distinguished from Southern Italy also in terms of the composition of the hoards. In the northern and central regions, broken objects belonging to several categories as weapons, tools and ornaments were buried in the hoards. On the contrary, in Southern Italy, the hoards contain entire items, preferably axes⁴². In any cases, from the dimensions of the axes’ sockets, one can clarify whether they were real tools or just metal ingots unsuitable for a functional use. For instance, in the axes of

⁴⁰ An overview on the mineral resources in Piedmont is offered by GIANOTTI 1998. A raw lump of gold has been found in a pre-Roman grave at Emàrese (Province Aosta): MEZZENA 1981 and MOLLO MEZZENA 1997, pp. 190-196.

⁴¹ BIANCO PERONI 1980.

⁴² The hoard of Manduria I contained more than 100 axes of various shapes, including a two-valve mould for axes: CARANCINI 1984, no. 2042 with further references.



Fig. 9. Iron Age helmet from Asti (after GAMBARI 2000).

Roman Bononia and modern-day Bologna, thanks to the preliminary publication of the excavations carried out during the construction of underground parking led by Jacopo Ortalli in the centre of the modern town in the area of Piazza VIII Agosto. Over a surface of more than 3000 square metres, the remains of three impressive foundations have been found. Each foundation is formed by hundreds of post holes regularly placed in four rows over a total length of about 120 metres. Along the north-eastern side, the remains of a rectangular building, also defined by post holes, have been identified (*Fig. 11*). The small amount of pottery found in the excavations allowed a dating of the impressive structures that continued into the EIA: the structures were built around the middle of the 8th cent. BC and dismantled around 100 years later, in the middle of the 7th cent. BC. Still in the 7th cent. BC, new structures were built on the site, including a gravel road and some tombs. The site lies outside the ancient urban area, which was already defended by city walls in the 8th cent. BC, as further excavations show⁴⁷. Jacopo Ortalli interpreted the three structures as the foundations of a huge square, used as meeting space by the community of Felsina. Although it is not possible here to develop the comparisons and the detailed inter-

the type Cirò, the sockets are too small to contain a handle of resilient hardwood, as the comparisons with the axes of the San Francesco type show⁴³.

Axes are the most common objects also in the Italian Iron Age hoards: among the 14138 items of the huge hoard of San Francesco, axes are the largest group with 4044 pieces of several shapes, followed by the fibulae which are more than 3000⁴⁴. The San Francesco type is the commonest among the axes of that hoard with more than 400 pieces, dating to the late 8th cent. BC (*Fig. 10*)⁴⁵. The San Francesco shape characterizes also other complexes, as the recently identified hoard in Southern Etruria at Selvicciola near Canino (Ischia di Castro, province Viterbo) shows⁴⁶.

The exceptional number of items buried in the San Francesco hoard at Bologna has no comparisons in Italy and needs special attention. New information is now available on Felsina, the Etruscan name of

⁴³ PERONI 1996, pp. 476-477, 562 (Early Iron Age).

⁴⁴ CARANCINI 1984, p. 2 ad no. 1972 lists the axes from the hoard; BENTINI 1995, p. 40 gives the total amount of 4044 objects.

⁴⁵ CARANCINI 1984, pp. 88 nos. 3055-3355 and 3501-3518.

⁴⁶ See the preliminary report by ROSSI 2008.

⁴⁷ Preliminary report in ORTALLI 2008.

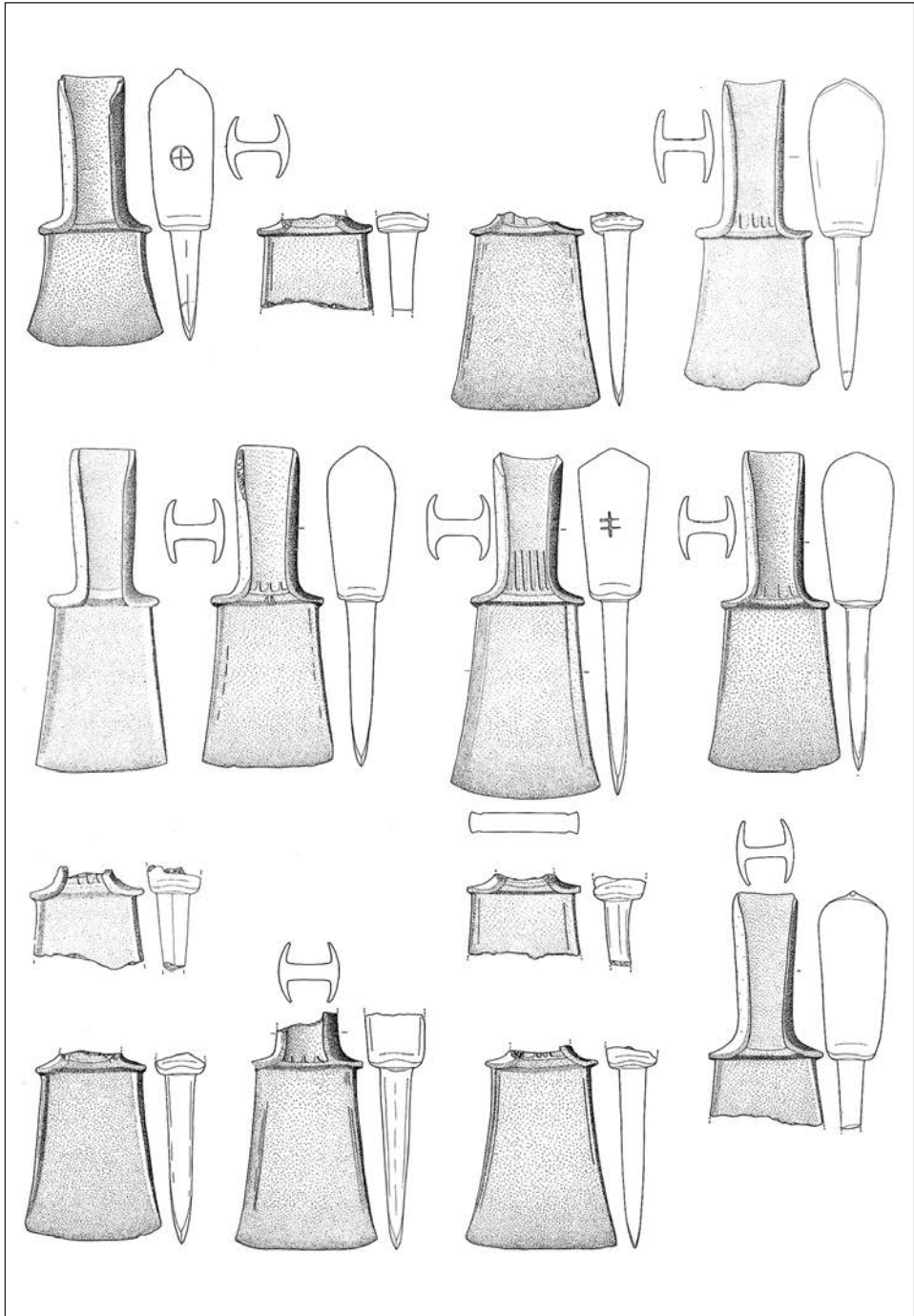


Fig. 10. Type San Francesco axes (after CARANCINI 1984).

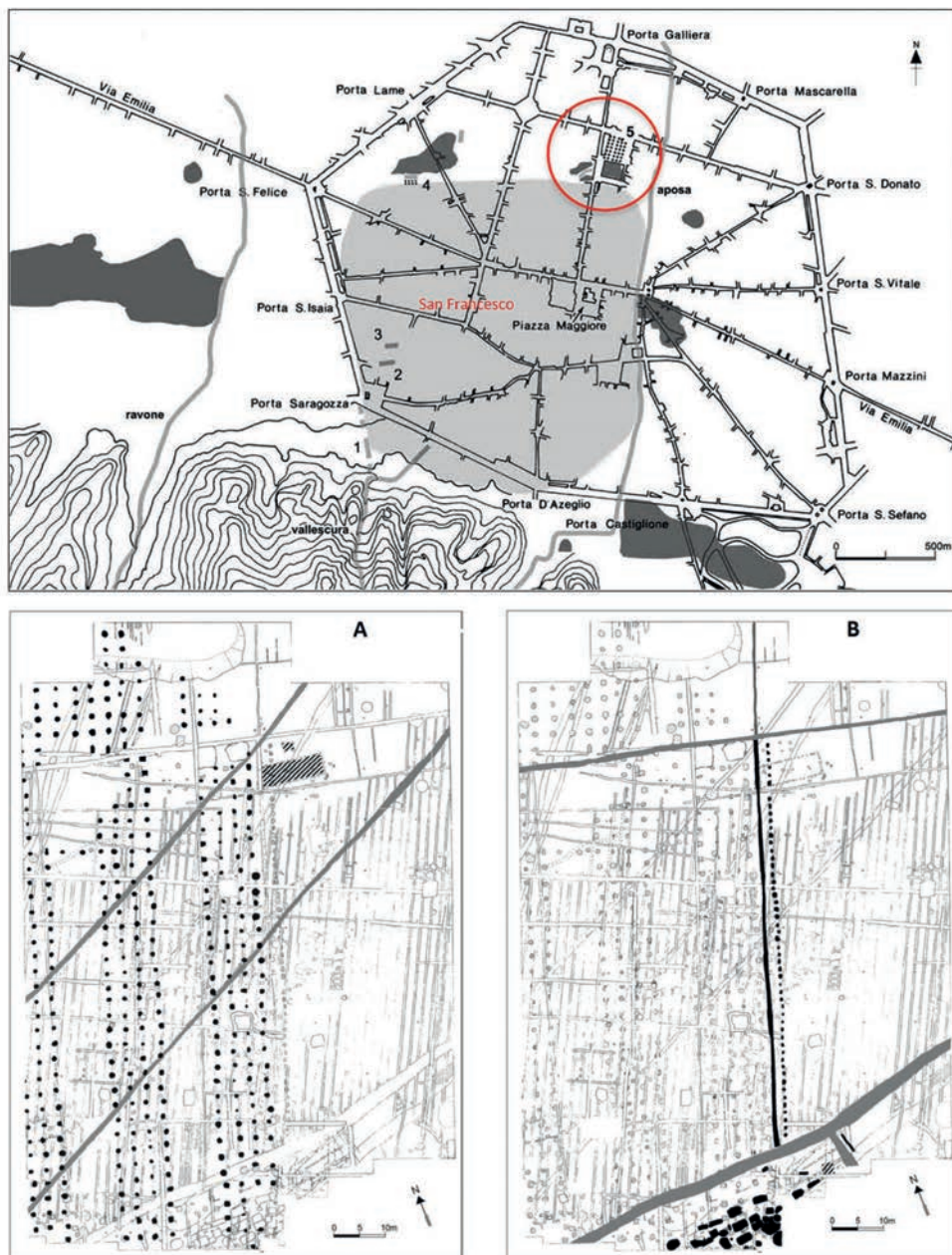


Fig. 11. Villanovan Felsina. Up: in the clear net, the hypothetical extension of the inhabited area with the location of buildings of Piazza VIII Agosto and the San Francesco hoard (in red); in the dark net, the main burial grounds. 1. Paleo river bed of the Rio Vallescura; 4. Defensive walls of Piazza Azzarita; 5. "Campo Marzio" (?) in Piazza VIII Agosto (after ORTALLI 2013). Down: The buildings of Piazza VIII Agosto: structural phases (A.B) (after ORTALLI 2016).

pretation suggested by Ortalli and the intense debate they caused⁴⁸, I would like to compare the impressive structures of Piazza VIII Agosto with the impressive amount of finds of the San Francesco hoard, which had been collected over many centuries: both are signs of a powerful community, which can perhaps be connected to the definition of Pliny the Elder: *Bononia, formerly called Felsina, when it was the chief place of Etruria*⁴⁹. Could the echo of this powerful past have reached Pliny the Elder a number of centuries later?

Turning back to the Italian Iron Age hoards, their general localization is closely connected to their contemporary settlements, which used the mineral districts of the surrounding regions: Monte Cavanero in the lower Piedmont lies near relevant copper resources⁵⁰. In Central Italy, some hoards have been found in Northern Etruria on the island of Elba, famous for its rich iron resources, on the mainland at Goluzzo and at Populonia, a site with an early mining activity⁵¹. Southern Etruria yielded relevant hoards at Valentano, Selvicciola, Santa Marinella and in a mining district as Tolfa⁵².

Moreover, the contexts of Northern and Southern Etruria show several finds from overseas, which help to clarify the connections between Etruria and the regions of provenance: here it is important to stress the relationship with Spain, Cyprus and Sardinia. The latter has conspicuous metal resources, which were used from the Bronze Age onwards. In terms of copper metallurgy, the direct support of skilled workers from Cyprus in the RBA (It. *età del Bronzo recente*) has been postulated in addition to the good similarities between the two islands⁵³. Oxhide copper ingots from Cyprus have been identified in Sardinian hoards dating to the RBA, while oxhide copper ingots of Sardinian production are documented from the FBA on this island⁵⁴. Generally speaking, Cypriote shapes were adopted mostly from the RBA until the FBA 2 and Iberian prototypes have been followed mostly in FBA 3. Several analyses show that the objects were produced with Sardinian copper. The Iberian shapes are concentrated in southern Sardinia, as the hoard from Monte Sa Idda at Decimoputzu (Province Cagliari) clearly shows: according to Fulvia Lo Schiavo, Sardinian copper has been used in those objects (*Fig. 12*)⁵⁵.

The communities of central continental Italy, which in the FBA and EIA developed an urban model, profited from the relationship between Sardinia with both Cyprus and the Iberian Peninsula, because Sardinian bronzes are widely documented in continental Italy. The few imports from Cyprus and Spain found in central Italy may be a Sardinian redistribution. Several objects from the Iberian Peninsula have been identified in the

⁴⁸ See the data presentation by ORTALLI 2013, the criticism by SASSATELLI 2015 (see also SANTOCCHINI GERG 2015, pp. 38-40), and the answer by ORTALLI 2016. Another paper has been edited in volume whose publication was delayed (ORTALLI 2018). Further contributions on the topic are VANZINI 2023, pp. 11-12; VANZINI 2024, pp. 3-4; ORTALLI, TASSINARI, CURINA 2024; SASSATELLI 2024, pp. 21-43. See now ORTALLI, CURINA, TROCCHI 2024.

⁴⁹ About the passage by Plinius the Elder (PLIN. *NH* 3.15.115) see COLONNA 1999.

⁵⁰ GIANOTTI 1998; VENTURINO GAMBARI 2009.

⁵¹ See CAMBI, CAVARI, MASCIONE 2009 and several contributions in *Atti Bastia* 2015.

⁵² For the mineral resources in continental Etruria see ZIFFERERO 2017a with bibliography; CORRETTI 2017 for the Island of Elba. Literature for the hoards in FUGAZZOLA DELPINO, PELLEGRINI 2010, 75 ff.

⁵³ Alternative view of the phenomenon has been suggested: RUSSELL, KNAPP 2017 and DEPALMAS, BULLA, FUNDONI 2017.

⁵⁴ About the oxhide ingots in Sardinia see LO SCHIAVO *ET AL.* 2009, pp. 225-409, to be integrated with LO SCHIAVO 2018a and LO SCHIAVO, D'ORIANO 2018, pp. 119-125.

⁵⁵ LO SCHIAVO 2008, pp. 426-428; LO SCHIAVO 2012, pp. 121-122.

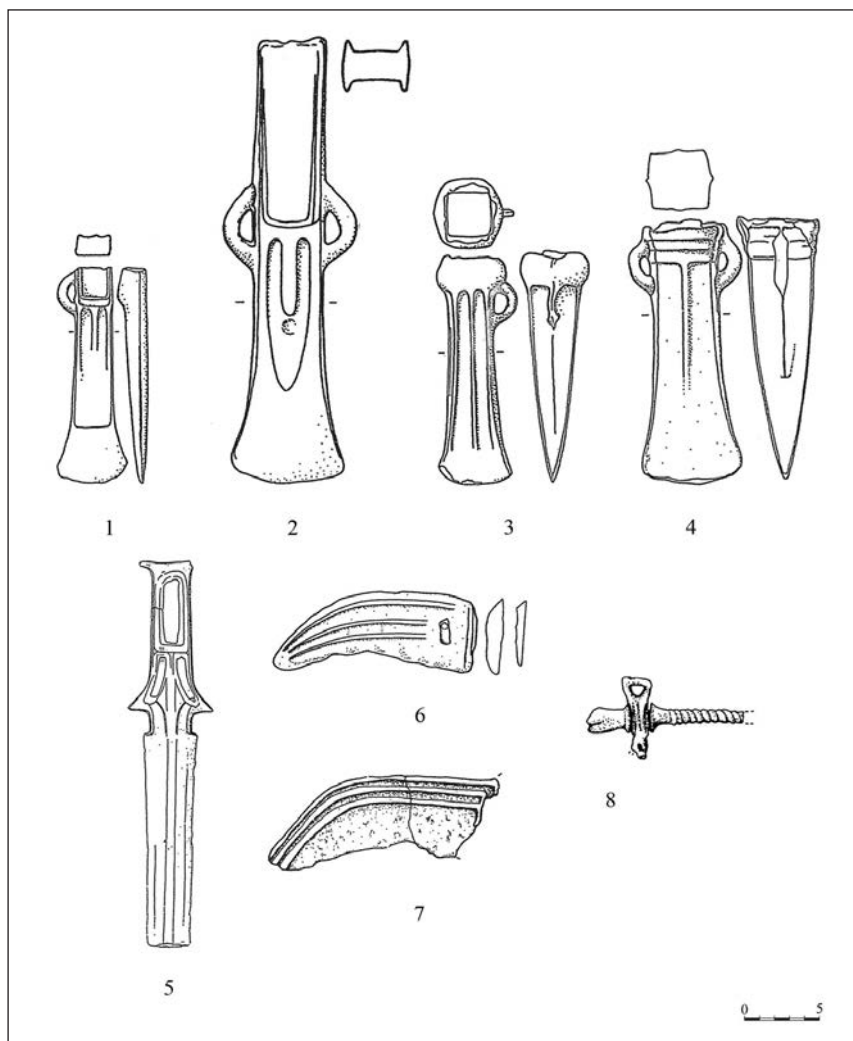


Fig. 12. The Iberian bronzes shapes from Sardinia (after LO SCHIAVO ET AL. 2009).

hoards mentioned above belonging to the FBA found in Southern Etruria in the mineral district of the Tolfa Hills. One can mention three axes of two different shapes respectively from Monte Rovello and Tolfa⁵⁶ and a sword Huelva type from Santa Marinella (Fig. 13.1)⁵⁷. The Sardinian items which have been identified in Northern Etruscan

⁵⁶ FUGAZZOLA DELPINO, PELLEGRINI 2010, p. 27, no. 1, pp. 69-72 for the sword; LO SCHIAVO 2008 for the axes.

⁵⁷ About the type Huelva related to the carp's tongue swords: BRANDHERM 2007; BURGESS, O'CONNOR 2008; BRANDHERM, MOSKAL-DEL HOYO 2010 and 2014.

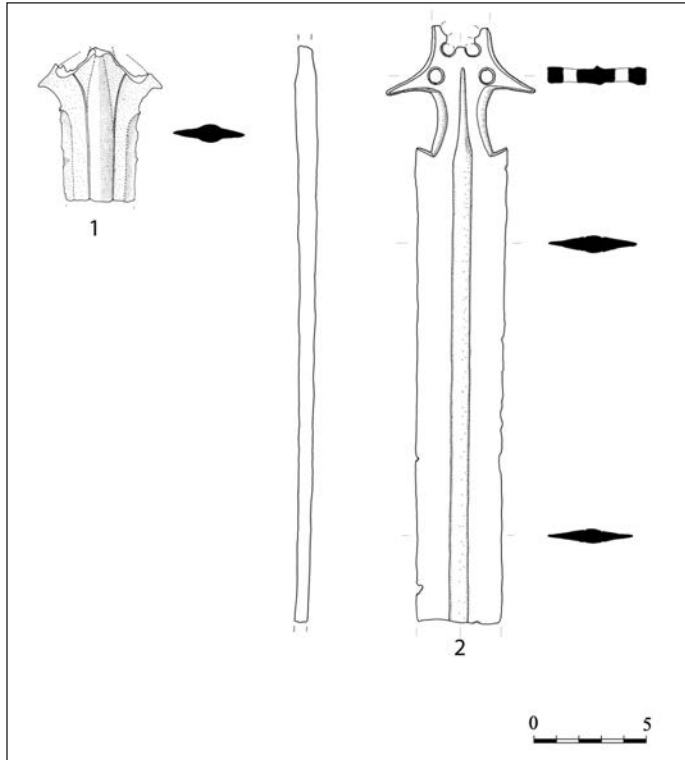


Fig. 13. 1. Huelva type sword from Santa Marinella's hoard (after FUGAZZOLA DELPINO, PELLEGRINI 2010); 2. Sa Idda type sword from Falda della Guardiola's hoard (after LO SCHIAVO, MILLETTI 2011).

hoards are more numerous; a Nuragic boat and a fragment of a sword type Monte Sa' Idda, a shape inspired by the Huelva type Iberian swords are imports from Sardinia to Populonia (*Fig. 13.2*)⁵⁸.

Nuragic bronzes have been found in several tomb groups not only in Etruria, but also in other Tyrrhenian regions, including Latium and Campania. A series of Etruscan objects found in Sardinia corresponds to the Nuragic finds in continental Italy, which point to the intensity of the relationship between Etruria and Sardinia in both directions from the FBA onwards⁵⁹.

Nevertheless, it appears indisputable that the peak of relations between Sardinia and Etruria should be placed in the Early Iron Age, certainly on the basis of the contact network

⁵⁸ On these items see LO SCHIAVO, MILLETTI 2011, fig. 3 nos. 6 (sword) and 7 (boat). The Nuragic bronze boats have been collected by DEPALMAS 2005; see later DEPALMAS, BRUNETTI, BULLA 2015; LO SCHIAVO 2021 and DEPALMAS, DI GENNARO, SANCIU 2021 with further bibliography.

⁵⁹ The relationships between continental Italy, particularly Etruria, and Sardinia have been recently studied by MILLETTI 2012; see also LO SCHIAVO, FALCHI, MILLETTI 2013.



Fig. 14. VULCI, Cavalupo (Canino, province Viterbo), Tomba dei Bronzetti Sardi, nuragic bronzes: 1. *Tintinnabulum*; 2. Male statuette; 3. Miniaturistic basket (after MILLETTI 2012).

established over previous centuries⁶⁰. This relationship comprised not only exchange of objects, but principally exchange of technological knowledge on metallurgy and not least mobility of people. In this perspective, a cremation burial dating to the late 9th cent. BC found at Vulci in Southern Etruria is worth mentioning; it contained not only a rich series of local female ornaments, but also three little bronze objects imported from Sardinia, reproducing respectively a *tintinnabulum*, a terminal probably belonging to a sceptre and a male statuette (Fig. 14)⁶¹. In all likelihood, the three objects were personal belongings of a Sardinian woman, who, in the framework of the intense Etruscan–Nuragic relationship, probably emigrated as wife to Southern Etruria. In this way, she followed the custom documented for the almost contemporary societies of the Homeric world in Greece, synthesized by the late Moses Finley in the model of *Marriage, Sale and Gift*⁶². On the topic of the relationship between Sardinia and Etruria during the Early Iron Age, an important find was detected recently: on the island of Tavolara, which lies along the northern coast

⁶⁰ LO SCHIAVO, FALCHI, MILLETTI 2013; LO SCHIAVO, D'ORIANO 2018.

⁶¹ An up to date study on this grave is ARANCIO, MORETTI SGUBINI, PELLEGRINI 2010.

⁶² FINLEY 1955.

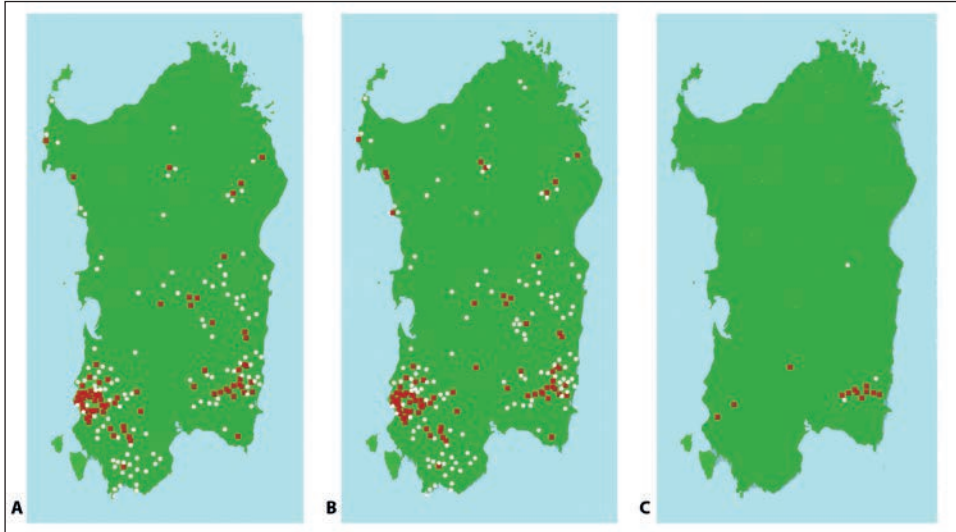


Fig. 15. Sardinia: main lead (A), copper (B) and silver (C) mineralisations (known deposits in white, supposed in red) (after VALERA, PRETTI, SANNA 2018).

of Sardinia in front of the Gulf of Olbia⁶³, Francesco di Gennaro identified a new settlement and assigned it to the Iron Age culture of Etruria. The excavation is localized not on the actual island of Tavolara, which was occupied by a Sardinian community, but on the straight spit of land (It. *Spalmatore di Terra*) directly adjacent to the sea, a site which actually is suitable only for boats, so that one can think of a seasonal settlement. The pottery is not locally made, and it finds close parallels with South Etruscan pottery of the 9th cent. BC⁶⁴. The find of Tavolara, the first about an Iron Age Etruscan settlement outside continental Italy, can really cast new light on the Etruscan–Nuragic relationship and also on the general topic of the Iron Age hoards.

A.N.

SARDINIA

The Sardinian Bronze Age hoards constitute the largest and most complex regional sequence of metal hoarding in the western Mediterranean, both for their volume and for the variety of the finds. They reflect the wide range of contacts and relationships of the island with other cultures in the second half of the second millennium BC, when, thanks to its copious mineral resources, Sardinia became an important magnet (*Fig. 15*). The Nuragic bronzework is well defined within the contemporary Mediterranean metallurgies, both

⁶³ Archaeological data about ancient Olbia have been collected by D’ORIANO 2022.

⁶⁴ See DI GENNARO *ET AL.* 2023; DI GENNARO, AMICONE, D’ORIANO 2023.



Fig. 16. Sardinian Iron Age hoards cited in the text.

in terms of technology, and formal heritage represented by a significant number of exclusive shapes. The small votive anthropomorphic and zoomorphic figures⁶⁵ represent perhaps the most typical production, while weapons, tools and ornaments show a remarkable variety of shapes⁶⁶. The volume of votive bronzes offered in sanctuaries and temples also demonstrates widespread devotional practices; it is central to the equilibrium of Nuragic society, connected to the deposit of metals, also found in *nuraghe* and villages⁶⁷.

Metal hoarding practices persist on the island during the entire EIA (Fig. 16). The late sequence is the subject of contrasting interpretations, but it shows some peculiarities compared with the earliest practices⁶⁸. One of the most interesting cases is the hoard of S'Adde 'e S'Ulumu (Usini, province Sassari), deposited during EIA 1A in a clay mug (It. *boccale*) covered with a carinated bowl⁶⁹. The assemblage consists exclusively of bronze ornaments, such as beads, fibulae, bracelets, buttons, appliqués, small chains, and also includes some tiny ingots and a fragment of an anthropomorphic statuette (Fig. 17). Two

serpentine fibulae stand out, and they are both imported from the Italian peninsula, respectively from northern Etruria⁷⁰ and from Southern Italy⁷¹. They confirm their widespread adoption in the local material practice, while originally unknown in the island⁷². The context has no other comparisons in Nuragic Sardinia and seems to be a small personal treasure, carefully hidden to be later recovered. The hoard, moreover, represents one of the few reliable associations of jewellery in Nuragic Sardinia, where the funerary contexts offer little information in this perspective thanks to the egalitarian funeral ideology and the chronic lack of contextualised data. In Sardinia, the earliest individual inhumations, rarely

⁶⁵ See respectively LILLIU 1966, CANINO 2014, ALBA 2014 and FODDAI 2014 with previous bibliography.

⁶⁶ LO SCHIAVO *ET AL.* 2005.

⁶⁷ LO SCHIAVO 1991, 2003, 2015.

⁶⁸ IALONGO 2010 suggested a low chronology of many contexts, previously dated to Late Bronze Age.

⁶⁹ LO SCHIAVO 2009 with previous bibliography. On the site and the context of discovery, MERELLA 2012; *contra* MELIS 2023, p 179.

⁷⁰ CYGIELMAN *ET AL.* 2015.

⁷¹ M. PACCARELLI in LO SCHIAVO 2009, pp. 519-520.

⁷² LO SCHIAVO 1978.



Fig. 17. USINI (province Sassari), S'Adde 'S Ulumu hoard: 1. Bead; 2. Button; 3. Fibula; 4. Small Chain; 5. Bracelet (after LO SCHIAVO 2009).

equipped with accompanying finds, are documented only in a late phase of the FBA⁷³. In the early first millennium BC, the proportion of the island population involved in a formal burial was reduced in any case⁷⁴, although archaeological visibility plays an important

⁷³ BERNARDINI 2011, to be integrated by FONZO, PACCIANI 2017 for the new graves from Mont'e Prama.

⁷⁴ DEPALMAS 2020. See also, MILLETTI forthcoming.

role⁷⁵. The *a corridoio* tombs of the LBA would not appear to continue in use and collective burials in caves, as in Corsica, are known, it is thought, only in Gallura⁷⁶. Beyond single and often controversial reports, the only EIA necropolises are in the south-western part of the island at Mont'e Prama in Cabras (province Oristano)⁷⁷, at Antas in Fluminimaggiore (province Sud Sardegna)⁷⁸ and probably at Su Barduni/Is Arutas-Muras (province Sud Sardegna)⁷⁹. The ritual adopted was inhumation, and the deceased was placed in a crouched position in a pit, generally without grave goods or with few ornaments; more elaborate gravegoods were only found in tomb 25/1979 of Mont'e Prama⁸⁰, belonging to a young adult male buried with a necklace of bronze beads, a steatite scaraboid⁸¹, a rock crystal pearl and a fragment of a pierced votive sword. An adult male was buried in tomb 3 of Antas, with a similar necklace and a bronze figurine of a praying man with a spear in his right hand⁸² (*Fig. 18*). The necropolises of Mont'e Prama and Antas are distinctive contexts, difficult to consider as actually representative of the island's funerary costume, both for their intrinsic characteristics and for their location: in the first case, the relationship with the monumental complex of the homonymous *Giants* statues remains to be clarified, in the second the nearby shrine of the god Sid-Sardus Pater played a still unclear role⁸³.

In contrast to the relatively low key funerary arrangements, there was a substantial development of the federal sanctuaries and an extraordinary wealth of the related offerings⁸⁴. The intention seems to have been to produce an egalitarian island society, promoting social cohesion and stability through a strong ritual identity and not by emphasis on individual and family funerary display.

Bronze hoards were relatively frequent inside settlement areas, even if their interpretation (forms of hoarding or results of ritualized actions) is not always clear. A very fortunate example is represented by the discoveries in northern Sardinia of the village of Sant'Imbenia, in the Porto Conte bay near Alghero (province Sassari)⁸⁵. During the excavations of 1982-1997 two hoards (Sant'Imbenia 1 and 2) were found in the Hut 23 (or L-M, or *dei Ripostigli*). Both were deposited in two trade amphorae and belonged to two different phases of the structure: the Sant'Imbenia 1 was covered by a later pavement, which is contemporary to the Sant'Imbenia 2⁸⁶.

⁷⁵ For example, a ritualized dispersion of the remains can be presumed.

⁷⁶ MILLETTI 2013 con bibl.

⁷⁷ On the new excavation campaigns, USAI 2015 and USAI *ET AL.* 2018. MINOJA, USAI 2014 with previous bibliography and RANIERI, ZUCCA 2015 (about it, see USAI 2019) are recent works focused on the burial contexts with the related monumental complex; on the development of the necropolis, see in particular USAI 2020a and on the oldest burial nucleus, USAI 2020b with bibliography. Some neighboring structures (Buildings A and B) explain a multi-layered site and the related complexity of reading the evidence (USAI, VIDILI 2016 and USAI, VIDILI, DEL VAIS 2017).

⁷⁸ BERNARDINI 2019 with bibliography.

⁷⁹ SANTONI 1977. A shaft tomb was later excavated nearby, it was violated but the filling yielded pottery of LBA-EIA (USAI 2014 with further bibliography).

⁸⁰ MINOJA 2014.

⁸¹ STIGLITZ 2014.

⁸² BERNARDINI 2019, pp. 8-9.

⁸³ ZUCCA 2019 with literature.

⁸⁴ DEPALMAS 2014 with bibliography.

⁸⁵ RENDELI 2015 with further bibliography; RENDELI 2018; BERNARDINI, RENDELI 2020.

⁸⁶ GIARDINO, LO SCHIAVO 2007 with previous bibliography.



Fig. 18. FLUMINIMAGGIORE (province Sud Sardegna), Antas, pit grave 3, funerary equipment (after *Napoli* 2007).

In 2008, further assemblages of bronzes were discovered in the neighbouring Hut 24 (Ripostigli 2/24 and 3/24 or Sant’Imbenia 3), in addition to a third hoard that was robbed in ancient times (Ripostiglio 1/24). This is the earliest one, whereas the Sant’Imbenia 3/24 e 2/24 were probably contemporary⁸⁷.

⁸⁷ DEPALMAS, FUNDONI, LUONGO 2011, 2012; RENDELI 2015, pp. 359-360, figg. 3-4; GARAU *ET AL.* 2015, pp. 2241-2248.

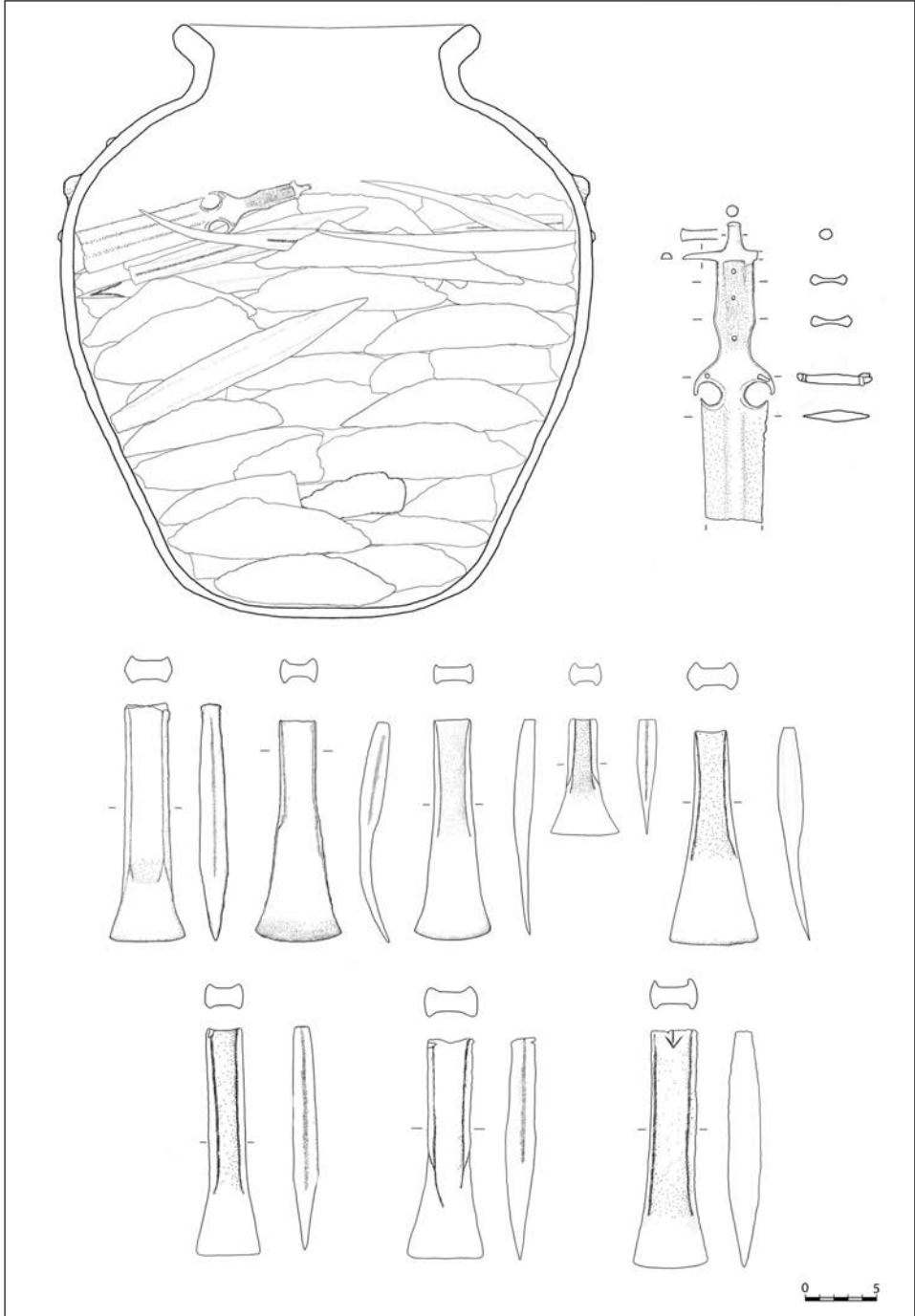


Fig. 19. ALGHERO (province Sassari), Sant'Imbenia, hut 24, hoard 2/24 (after DEPALMAS, FUNDONI, LONGO 2012).

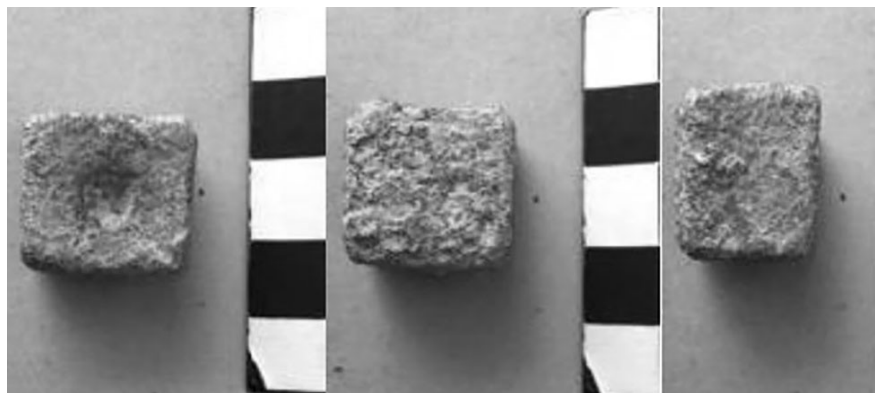


Fig. 20. ALGHERO (province Sassari), Sant'Imbenia, hut 48, lead weight (after CLEMENZA *ET AL.* 2021).

These hoards are accumulations of whole or fragmentary copper plano-convex or simple ingots: only Sant'Imbenia 2/24, deposited inside a large dolium with X-shaped lugs and covered by a circular stone slab, also contained eight flanged axes and a deliberately broken Monte Sa Idda type sword (*Fig. 19*). The total weight of the Sant'Imbenia 2/24 hoard (41.239 kg) is comparable to that of the two hoards of Hut 23 (Sant'Imbenia 1/23 = 43.775 kg, Sant'Imbenia 2/23 = 44.560 kg) and it is compatible with some of the protohistoric weight units identified by Renato Peroni⁸⁸, as suggested by the first publishers of the hoards⁸⁹. A small cubic lead weight (*Fig. 20*), with a quite interesting mark of value or a letter (^c *ayin*), was discovered⁹⁰. The weight was used in trade transactions between the Sardinian people and foreign merchants⁹¹. On the contrary, the Sant'Imbenia 3/24 weighs only 10 kg and it was deposited in a jug covered by a carinated bowl, of the same shape as the vases in the hoard of S'Adde 'e S'Ulumu⁹².

The burial of the four hoards at Sant'Imbenia should be dated, on the basis of stratigraphy, in a brief period in the second half of the 8th cent. BC. This phase coincides with a complete reorganization of the layout of the living space. At the end of 9th cent. BC, an already existent large open space (It. *Ambiente 30*) became the focal point of the settlement and was paved. According to the excavators, the open space was a kind of public and market area, flanked by some workshops, like the Huts 23 and 24. The hoards could have constituted metal stocks ready for use and employment in exchange and trade transactions, in a very dynamic economic framework within which the hoarding was only a temporary

⁸⁸ PERONI 2004, pp. 411-419.

⁸⁹ DEPALMAS, FUNDONI, LONGO 2012, pp. 1812-1813.

⁹⁰ MARINO 2014. The weight is the multiple of a series of oriental weight units, i.e. the Microasiatic (4×11.75 g), the Bronze Age Syrian (5×9.4 g) and the Karkemish shekels (6×7.83 g), finally the Aegean unit (7×6.5-6.8 g): CLEMENZA *ET AL.* 2021, p. 181.

⁹¹ On the weight systems in use in Nuragic Sardinia, see ZACCAGNINI 1991 and LO SCHIAVO 2006 with further bibliography.

⁹² Among the types Campus, Leonelli 645 Boc 16 and 646 Boc 17 (CAMPUS, LEONELLI 2000, pp. 379-380, tav. 221).

condition⁹³. The identification of Greek and Phoenician ceramics suggests a wide spectrum of contacts by the Sant'Imbenia *emporium*, ranging from the Iberian Peninsula to the Levant, and this has also been confirmed by studies dedicated to transport amphorae⁹⁴ and lead products⁹⁵.

The interpretation of the Forraxi Nioi hoard at Nuragus (province Nuoro) remains more controversial, often mentioned, but still incompletely unpublished: with nearly 100 kg of complete and fragmentary bronzes, it is one of the largest assemblages in nuragic Sardinia. The details of the discovery are unknown and the nature of the context remains uncertain, since it was explored in a brief one-week campaign by Filippo Nissardi in 1881⁹⁶. The complex also includes the main Sardinian bronze shapes between FBA and EIA, with weapons, tools, ornaments, bronze figurines and ingots. Although some doubts remain about its composition⁹⁷, the latest elements allow a date of deposit in the third quarter of the 8th cent. BC. The bronze items were hidden in a clay *dolium*, deposited in a circular building of more than 50 m in diameter with wide internal stairs. Similar monumental structures, some with an almost elliptical plan, are also known in central-northern Sardinia at Su Romazesu Bitti, S'Arcu 'e Is Forros (Villagrande Strisaili, province Nuoro). Although still of uncertain nature, the complexes certainly had public function, often connected to cult buildings, and they have been interpreted as places reserved for games or sacred ceremonies, a kind of *odeia*⁹⁸.

The hoard of Forraxi Nioi is well-known in literature as the deposit of a metal founder: it appears to contrast with the nature of the deposition site, which would rather suggest the presence of a votive offering. Actually, the comparison with the context of S'Arcu 'e Is Forros at Villagrande Strisaili (province Nuoro) supports this view, suggesting a change in the previous use for the area⁹⁹. In this site, situated in the hillside of Gennargentu (1300 m above sea level), three *megaron* temples and two circular *insulae*, which were workshops, have been identified, belonging to the very early FBA. Later, probably in the advanced EIA, many bronze, lead and iron casting furnaces indicate an intense metallurgic activity in the area. The metal workshop is situated on an older place of worship: the new purpose of this workshop could suggest a radical change in use¹⁰⁰. The bronze votive offerings deposited for a long time in the places of worships (sanctuaries?) were an almost limitless source of metal for the blacksmiths, who were later active in the area. Two hoards (Hoards 1-2) contain a large amount of votive bronze figurines: they are associated with vases, ornaments and tools both in bronze and iron. Particularly, the earliest one (Hoard 2) weighed about 400 kg in total and included iron spearheads, axes, picks, spits, fire tools, in association with both locally made and imported bronze items. The publishers dated the hoard to the first half of the 8th century BC, although some fragments of votive swords could belong to the 13th cent. BC. The finds of Hoard 3 show that the handicraft installations were active until the 6th cent. BC¹⁰¹.

⁹³ GARAU *ET AL.* 2015.

⁹⁴ RENDELI, GARAU, DE ROSA 2022 with previous bibliography.

⁹⁵ CLEMENZA *ET AL.* 2021.

⁹⁶ NISSARDI 1882, 1884; PINZA 1901, pp. 156-162; LO SCHIAVO 2018b, pp. 73-74 with further bibliography.

⁹⁷ Some doubts were already expressed by G. Pinza (PINZA 1901, p. 156, note 3).

⁹⁸ UGAS 2014, p. 32.

⁹⁹ SALIS 2017, pp. 233-238 with previous bibliography. See also SALIS, TATTI 2021.

¹⁰⁰ FADDA 2013, p. 197.

¹⁰¹ SALIS 2017, pp. 234-235.

The second half of the 8th cent. BC was in Sardinia a period of strong social change, in a general framework characterized by a very distinctive island culture: as an accurate mirror of times, the metal hoards underline this rich cultural and economic activity.

M.M.

CONCLUSIONS

Generally speaking, it can be said that from the 7th cent. BC onwards the custom of the hoards in Central and Southern Italy was substituted by votive offerings in sanctuaries; on the contrary, in Northern Italy this established practice goes further into the Second Iron Age.

As an illustration of the decline of the hoard in Central Italy, the discovery of a foundation deposit in Building Beta at Tarquinia in Southern Etruria is emblematic. On the urban plateau in the neighbourhood of a natural cavity, where religious practices were evident since the 10th cent. BC, in the early 7th cent. BC a new building (*Building Beta*) was built with a different orientation in comparison with the earlier constructions. At the entrance of the Building Beta two pits were found, containing three bronze objects, i.e. a shield, a trumpet–*lituus*, both deliberately folded, and an axe, and the sherds of some clay vases of various eating and drinking shapes. The difference between the three bronzes and the clay vessels was marked by burying them in two pits: the bronzes were symbols of power, probably ritually destroyed, whereas the vases would have been used during the ceremony for the symposium and banquet that accompanied the ritual destruction¹⁰². We have moved far from the forms of rituality based on the deposit of determined quantities of metal: this practice seems to have characterized the centuries around the turn of the first millennium BC.

The metal hoarding practices were abandoned in Central Italy at the beginning of the 7th cent. BC. The decline of the well-established ritual coincides with the emerging of Etruscan and Italic social élites and reflects on the the political and social need for different forms of preservation and investment of wealth: from the early 7th cent. BC, the ownership of land, livestock, and mostly of luxury and exotic goods, became the pillars of aristocratic being.

A.N., M.M.

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¹⁰² ZIFFERERO 2017b, p. 1269 with previous bibliography. Both pits have been closed in the second quarter of the 7th cent. BC (BONGHI JOVINO 2018).

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RIASSUNTO

Dall'età del Bronzo in avanti ripostigli di oggetti metallici sono largamente documentati nella penisola italiana e comprendono accumuli di variegata consistenza, estesa da pochi oggetti sino ai 14838 manufatti del peso di 1418 kg del ripostiglio di San Francesco a Bologna. Per i ripostigli di metalli sono state proposte diverse interpretazioni, che con varie sfumature prevedono il deposito di rottami per il riuso in fonderia sino all'occultamento di beni di prestigio, appartenenti a singoli individui o a intere comunità. Per interpretare in modo soddisfacente ogni ripostiglio, è opportuno

calarlo nel quadro delle cognizioni generali sul luogo di provenienza. Le mutate condizioni socio-economiche e l'emersione definitiva delle élites concorsero a esaurire la pratica in Italia centrale e meridionale agli inizi del VII sec. a.C., nelle regioni settentrionali fino alla seconda età del Ferro: i beni sontuari, pilastri dell'ideologia aristocratica, vengono accumulati nelle sepolture.

Parole chiave: ripostigli metallici; età del Ferro; Italia; Sardegna; interconnessioni.