A TECHNOLOGICAL STUDY OF A SET OF ITALIC BRONZE DISCS FROM THE *MUSEO NACIONAL DE ARTES DECORATIVAS* (MNAD) IN MADRID

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Introduction

The *Museo Nacional de Artes Decoratyivas* (*MNAD* - National Museum of Decorative Arts) holds in its collection several embossed disks made of Cu-based material. The disks are partially fragmented, but all the fragments belong to the same set, composed by 5 disks, four circular and a fifth slightly oval (Fig. 1).

The two bigger circular disks (ϕ ≅ 35 – 35.5 cm) have two smaller circular ones (ϕ ≅ 8 cm) concentric with them, and are joined by a oval piece (~ 20 x 22 cm). They joined the *MNAD* collection as a deposit from the *Museo Arqueológico Nacional* (*MAN* - National Archaeological Museum) in 1942, together with the rest of the *MAN*'s Oriental Collection. Their arrival to the *MNAD* was due to the fact that they were classified as "elements of a Persian armour" (Inv. # 3300) in the *MAN*'s inventory. The objects from that deposit belonged the *MAN*'s Ethnographic Section, dedicated to objects of exotic origin (America, the Orient, etc…).

There is still no solid evidence about the exact provenance and the year of deposit of the disks in the *MAN*, although the fact that they are Italian pieces could indicate a relationship with the collection of the Marquis of Salamanca, but this point is still research in progress.

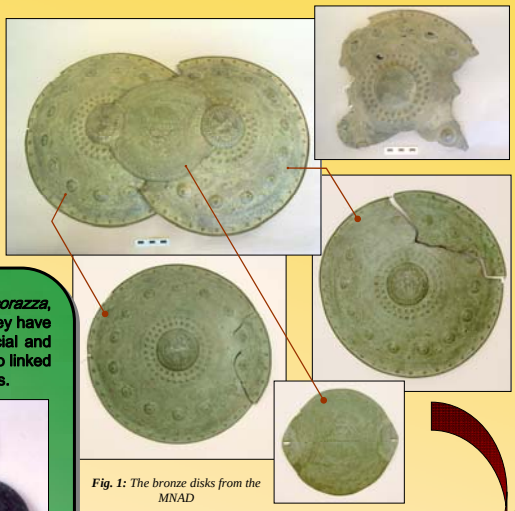


Fig. 1: The bronze disks from the MNAD

Context

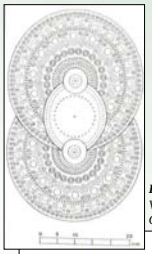
The *MNAD* disks, composed to form an 8-shaped shield, belong to the Italic metalworking tradition of *kardiophylakes* or *dischi-corazza*, bronze or bronze/iron discs, largely in use by the most of the italic cultures from the Protohistory to the Roman Archaic Period. They have for a long time been interpreted as components of armour, but currently they are more widely linked to the expression of social and cultural belongings and associated with both genders. The 8-shaped shields are considered of Mycenaean origin and they are also linked to the Roman *ancilia* of the foundation myth, but 8-shaped shields formed by *kardiophylakes*, as in our case, are very unusual finds.

The double shield preserved in the *MNAD* has clear connections with similar finds from central Tyrrhenian Italy, the one and only Italian region where were found those objects.

The earliest double shields were discovered in burials belonging to the first phase of the Latial Culture (end of Italian Final Bronze Age,11th-10th century BC), ranged approximately over ancient Latium.

Many examples were found in the early Latial cremation graves, at Rome-*Santa Palomba* (Fig.2), Rome-*Quadrato di Torre Spaccata*; Rome-Trigoria; Rome-*Foro di Cesare*; Rome-*Tor Pagnotta-Torre della Chiesaccia*; sporadic finds come from the Alban Hills. They were always miniature shields, made from thin bronze sheet, sometimes with a schematized decoration. The miniaturisation was in accordance with the funerary ideology of the early Latial Culture, that forbade to insert real weapons in the burials.

Fig. 2: Santa Palomba (Rome) loc. Palazzo, tomb 1, "dischi corazza" and double shields (Latial Culture, phase IIA1, ca. 10th cent. BC).



Actual double shields were found in two Villanovan graves in Southern Etruria, at Veii (Rome, grave 1036 at *Casale del Fosso*, Fig. 3 - an inhumation), and at Norchia (Viterbo, Fig. 4 - a recovery). They could be dated at the Italian Early Iron Age (about the end of 8th century BC). Both these shields have a geometrical decoration, like that one in Madrid.

Fig. 3: Double shield from Veii (Rome), grave 1036 at Casale del Fosso.

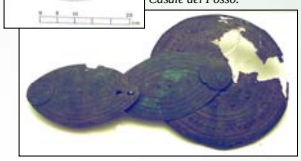


Fig. 4: Double shield from Norchia (Viterbo).

The "*ancilia*" shields of the archaic Rome derive from these double shields: they are well known from the ancient literature (Varro, Plutarch). According to the ancient authors, the *ancilia* were made of bronze with oval form, but with the two sides receding inward with an even curvature. The original *ancile* was said to have fallen from the skies in the time of Numa. To secure its preservation, Numa ordered eleven other shields to be made exactly like it. These twelve *ancilia* were kept in the temple of Mars Gradivus by the twelve *Salii* (priests of Mars); on the Ides of March they carried the sacred shields about the city, singing songs in praise of Mars. *Ancilia* were represented in Roman monuments and coins, like an Antoninus Pius' bronze *aes* (Fig. 5).

Fig. 5: Antoninus Pius' bronze aes with the representation of the ancilia.

Because double shields are peculiar of Latium and Southern Etruria, it is most probable that the Madrid item come from that area, possibly as an old bequest.

ED – XRF analysis of the MNAD disks.

The analyses were carried out using the METOREX X-MET 920MP spectrometer at the *MAN* [Detector: Si (Li), Source: ^{241}Am, Collecting time: 300 s., quantitative values calculated through certified standards]. The results are in % weight. The detection limits in these conditions of analysis indicate that quantities below 0.1% for Ni, Zn, As and Bi could actually exist.

Measurement	Fe	Ni	Cu	Zn	As	Ag	Sn	Sb	Pb	Bi
Big Disk (Frag.)	0,09	*nd*	89,7	*nd*	*nd*	0,19	8,56	0,42	1,04	*nd*
Big Disk (Frag.) (Patina)	0,09	*nd*	90,5	*nd*	*nd*	0,14	8,15	0,39	0,74	*nd*
Oval Disk	0,19	*nd*	87,6	*nd*	*nd*	0,17	10,3	0,47	1,26	*nd*
Small Disk	0,22	*nd*	88,9	*nd*	*nd*	0,19	9,13	0,43	1,08	*nd*
Small Disk 2	0,16	*nd*	87,8	*nd*	*nd*	0,19	10,2	0,50	1,14	*nd*
Broken big disk	0,12	*nd*	90,9	*nd*	*nd*	0,13	7,87	0,40	0,59	*nd*

nd: not detected

Discussion

A number of *dischi-corazza* ("*kardiophylakes*") from the *Museo Pigorini* (Rome) (Fig. 6) have also been analysed via XRF, and the results are compared to those from the disks at the *MNAD*.

- *Dischi-corazza* from *Museo Pigorini*

Case Summary	Cu	Sn	Pb	Fe	Ag	Sb	As
Number of cases	28	28	27	12	7	10	9
Mean	86,98	9,84	2,50	0,77	0,14	0,74	0,48
Median	87,70	9,75	2,20	0,60	0,10	0,75	0,50
Std. Deviation	4,46	4,11	1,43	0,60	0,05	0,12	0,151
Variance	19,91	16,93	2,05	0,36	0,003	0,01	0,02
Minimum	76,6	0,9	0,6	0,1	0,1	0,6	0,2
Maximum	99,1	21,1	5,9	2,2	0,2	0,9	0,7

- *MNAD* disks

Case Summary	Cu	Sn	Pb	Fe	Ag	Sb
Number of cases	6	6	6	6	6	6
Mean	89,23	9,04	0,98	0,15	0,17	0,44
Median	89,30	8,85	1,06	0,14	0,18	0,43
Std. Deviation	1,37	1,03	0,26	0,05	0,03	0,043
Variance	1,89	1,07	0,07	0,003	0,001	0,002
Minimum	87,6	7,87	0,59	0,09	0,13	0,39
Maximum	90,9	10,30	1,28	0,22	0,19	0,50

Fig. 6: "Dischi-corazza" ("kardiophylakes") from the Museo Pigorini

The Pigorini discs are all out of context but both the time and the specifics of their purchases by the museum suggest that they come from the Abruzzo region and particularly from the Fucino area. Recent contextual examples of the same type come in general from the central Appennino montains involving three regions: Umbria, Marche and Abruzzo, and particularly from the Fucino area.

The compositions of the *MNAD* disks are very homogeneous and present the same elements than the most of the 26 d*ischi corazza* of *Museo Pigorini*, except for the Arsenic that is present in 9 of the Pigorini discs in low quantities. Moreover, lead in the *MNAD* discs is generally found in lower amounts than in the Pigorini discs, and, in fact, none of these substantially matches the composition structure of the *MNAD* discs.

Fig. 7: Hypothetical Reconstruction of how some "dischi-corazza" from the Alba Fucens group could have were worn (after S. Barberini, taken from COLONNA: 2007)

Additionally, the *MNAD* discs could be contemporary only with the earliest samples of the *dischi corazza*, because recent studies tend to lower the dating of the *dischi corazza* from the 8th – 6th centuries BC to the 7th – 6th centuries BC. In fact, geometrical decorated discs come mostly from feminine burials dated to 7th c. BC, belonging to sites of Italic cultures dated from the first Iron Age to the Archaic Age (6th c. BC). The discs were probably dressed as in the Fig. 7, and were linked to the sun cult, possibly of northern origin (Denmark) (COLONNA:2007). Earlier iron samples dated to the end of the 9th c. BC coming from the Fossa necropolis in Abruzzo as formative discs for the bronze ones (also in the necropolis, but in burials dated to the 7th c. BC) have been recorded (COLONNA:2007). Decorations and sizes of all of them are different from those of the *MNAD* discs, which adds support to the impression that *kardiophylakes* and double shields have completely different traditions, both historically and metallurgically .

Conclusions

- Findings of double disks typologically similar to the *MNAD* exemplars allow us to assign them a date around the end of the 8th c. BC and a provenance in the Lazio region.
- Morphology, decoration and metallurgical technology indicate that the *dischi-corazza* (*kardiophylakes*) and the double shields, as these from the *MNAD*, come from different traditions.

- BIBLIOGRAPHY
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