

## A WARRIOR'S SKIRT MADE FROM RINGS: EARLY MAIL ARMOUR OR A COLLECTOR'S VISION?

UN FALDELLÍN DE GUERRERO HECHO DE ANILLAS: ¿UNA EVIDENCIA TEMPRANA  
DE COTA DE MALLA O LA VISIÓN DE UN COLECCIONISTA?

POR

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### ABSTRACT - RESUMEN

An Italic bronze belt in the collection of the Louvre Museum contains an unusual feature: a mesh of bronze rings hangs from it, forming a mail skirt. The belt itself dates to the 4th century BC. As for the skirt, it has been suggested that it may be one of the earliest occurrences of mail, or possibly an ancestor of mail armour. However, closer examination demonstrates that the belt and skirt do not belong together and were married in the 19th century. The skirt does not concern mail armour, nor an ancestor. Analysis of similar finds shows that the skirt is an 8th - 7th century BC hip ornament from a female burial in southern Italy.

Un cinturón itálico de bronce en la colección del Museo de Louvre muestra una característica única: de él cuelga una malla de anillas formando un faldellín. El cinturón mismo se ha fechado en el siglo IV a. C. En cuanto al faldellín, se ha sugerido que podría ser una de las primeras manifestaciones de cota de malla, o posiblemente un antecesor de este tipo de armadura. No obstante, un análisis detallado ha demostrado que el cinturón y el faldellín no formaban una sola pieza originalmente y que fueron unidos en el siglo XIX. Resulta que el faldellín no tiene que ver con la cota de malla, ni con un antecesor. El análisis de hallazgos similares muestra que es probablemente un adorno de cadera del siglo VIII-VII a. C. que proviene de un entierro femenino del sur de Italia.

### KEYWORDS - PALABRAS CLAVE

Italic bronze belt; origin of mail armour; Iron Age in south Italy; Female burials; armour or ornamentation.

Cinturón Itálico de bronce; origen de la cota de malla; Edad de Hierro en el sur de Italia; entierros de mujeres; armadura u ornamentación.

### CITATION / CÓMO CITAR ESTE ARTÍCULO

Wijnhoven, M. A. (2019): «A warrior's skirt made from rings: early mail armour or a collector's vision?». *Gladius*, XXXIX: 45-70. <https://doi.org/10.3989/gladius.2019.03>

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## AN ENIGMATIC OBJECT

The south of Italy is known for its collection of archaeological bronze belts, frequently found in adult male graves dating between the 5<sup>th</sup> and the 3<sup>rd</sup> centuries BC.<sup>1</sup> Such belts are also represented on various media, for example in statuettes and painted on vases and inside tombs (Figs. 1 and 2). The bronze belts played an important role in the panoply of the Italic warrior and they are often shown worn together with armour, such as the triple-disc cuirass protecting the upper chest, greaves for the lower legs, a helmet and a shield.

Tomb and vase paintings also depict men wearing such belts without any military equipment at all, but simply on top of regular clothing. This observation and the fact that the bronze sheet from some of the surviving belts is relatively thin, have led to question whether they should be considered as a piece of defensive armament.<sup>2</sup> Especially the last decades the discussion on their function has resulted in the notion that they cannot be considered exclusively military,<sup>3</sup> but also function as a mark of social status of an individual. Their meaning should then be sought as an identifier for a person to belong to a group, or a mark of citizenship.<sup>4</sup>

The Louvre Museum houses a specimen of a bronze belt unlike any other (Fig. 3).<sup>5</sup> Its exact provenance or how it entered the collection is unfortunately unknown, but it was

*Figure 1.* Statuette of an Italic warrior from the 2nd half of the 4th century BC. The figure is clad in full armour, including a triple-disc cuirass, helmet and greaves. Originally he would have had a shield in his hand. The armour is worn together with a bronze belt that is closed with two clasps. Louvre Museum, Br. 124 (photograph M.A. Wijnhoven).



<sup>1</sup> Burns, 2005: 131-146; Cahn, 1989; Naso, 2003: 193-205; Rebuffat-Emanuel, 1962; Romito, 1995, 2000; Sannibale, 1995, 1998: 135-202; Suano, 1986, 1991; 2000.

<sup>2</sup> E.g. Robinson, 1995: 155; Suano, 1991: 138.

<sup>3</sup> Burns, 2005: 139-142; Sannibale, 1998: 140.

<sup>4</sup> D'Antonio, 2017: 122-123; Graells i Fabregat, 2013: 83-84.

<sup>5</sup> Inv. Br 4757. Regrettably, the archives of the Louvre Museum do not contain any information on how it became part of the collection, where it is from, or its condition at the time.



*Figure 2.* Section of the east slab of Tomb 12 (375-370 BC) at Paestum. The mounted warrior is donned in a triple-disc cuirass and helmet. He wears a bronze belt together with his armour. Museo Archeologico Nazionale di Paestum (photograph M.A. Wijnhoven).

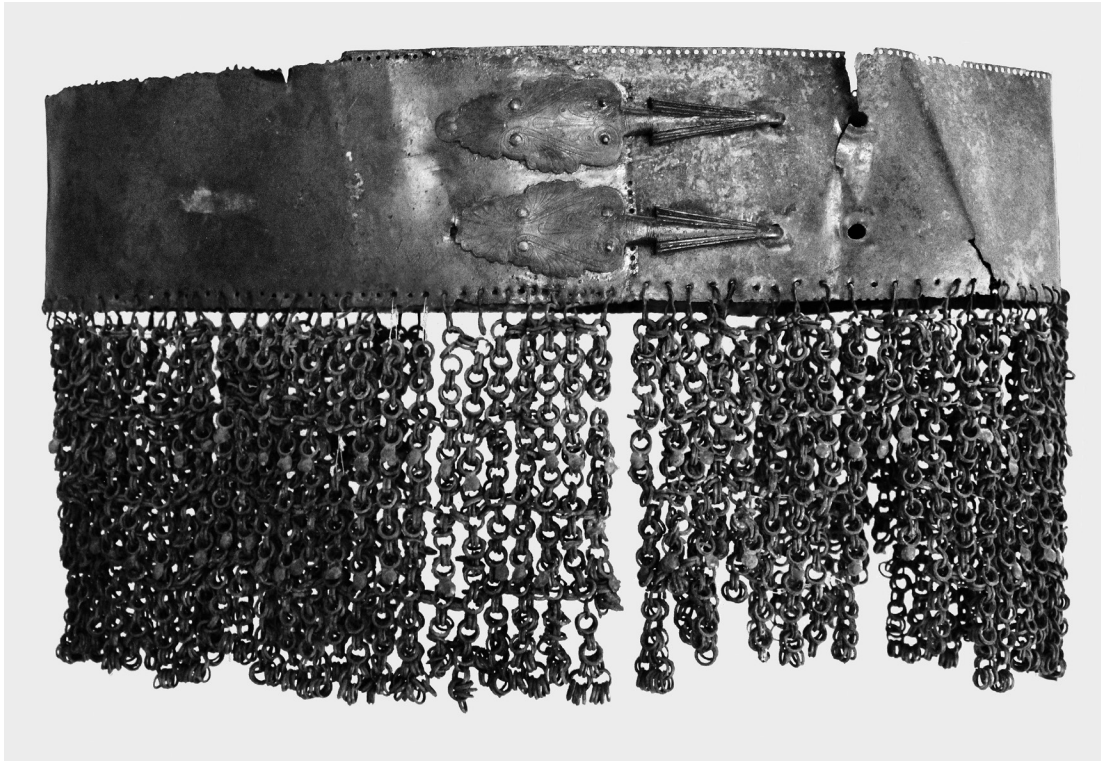


Figure 3. Italic bronze belt with a ringed skirt at the Louvre Museum (photograph M.A. Wijnhoven).

probably excavated in the 19<sup>th</sup> century. Its style points to southern half of Italy as the region of origin. What sets this belt apart from the hundreds of other examples is that a mesh of interconnecting bronze rings dangles from it, like a skirt, covering the pelvic area. The combination of the belt with the ringed skirt is interesting because it suggests the possibility of it being a piece of defensive equipment, with the mesh of rings protecting the upper legs and groin.

Another interesting point is that the skirt looks like mail, but that its date precedes the conceded origin of mail armour. In popular culture, mail is mostly associated with the Middle Ages, but it has actually been around since the Iron Age. Most scholars nowadays agree that the origin of mail armour lies with the La Tène culture,<sup>6</sup> where it first appeared around the turn of the 4<sup>th</sup> to the 3<sup>rd</sup> century BC.<sup>7</sup> The Louvre belt-and-skirt is clearly unrelated to the La Tène culture, and although it might be of a similar date, it more likely predates the earliest mail armour from a La Tène context. For this reason some authors have suggested the Louvre belt, or similar items,<sup>8</sup> should be understood as the earliest evidence for mail, or at least as some sort of forerunner.<sup>9</sup>

<sup>6</sup> E.g. Bishop & Coulston, 2006: 63; Feugère, 2002: 89; Gilmour, 1997: 26; Hansen, 2003: 122; Sim, 1997: 359; Stead, 1991: 54-56.

<sup>7</sup> Wijnhoven, 2015: 78, 2017: 183. The origin and development of early mail armour is part of my PhD research. The date presented here is based upon that research. Hansen (2003) situated its origin slightly earlier during the 4<sup>th</sup> century BC.

<sup>8</sup> As will be discussed later on, similar meshes are present in the archaeological record, although never associated to a bronze belt.

<sup>9</sup> Barril Vicente *et alii*, 1998: 76-77; De Cosson & Burges, 1880: 556; Hrubý, 1959; Robinson, 1967: 11; Roux & Coffyn, 1987: 38; Rusu, 1969: 289; Stone, 1961: 427-428.

So, how does the Louvre belt-and-skirt fit in our view of the origin and early development of mail armour? To assess that, we have to take a closer look at the characteristics of the item's pieces.

## THE BELT

The belt consists of a single continuous strip of bronze sheet, 104.5 cm long and 9.9 cm wide. Originally, it would have been several millimetres wider but the bottom outline has been damaged all along its circumference. The sheet is fairly thin, measuring some 0.7 mm.

The most prominent feature of the belt is the two clasps at the front (Fig. 4), which serve to close it. In general, the typology of Italic bronze belts is most elaborated for its clasps. The Louvre belt matches type 1b of Suano,<sup>10</sup> and type I.1a of Sannibale,<sup>11</sup> which means that the hook-part consists of an elongated arrowhead with grooves and incised dots, and the body is relatively triangular, decorated with two incised palmettes and two volutes. The clasps are permanently fixed to the belt by (originally) 5 semi-domed rivets each. Clasps of this type are found on Italic belts dated to the 4<sup>th</sup> century BC,<sup>12</sup> which must be the age of the Louvre belt.

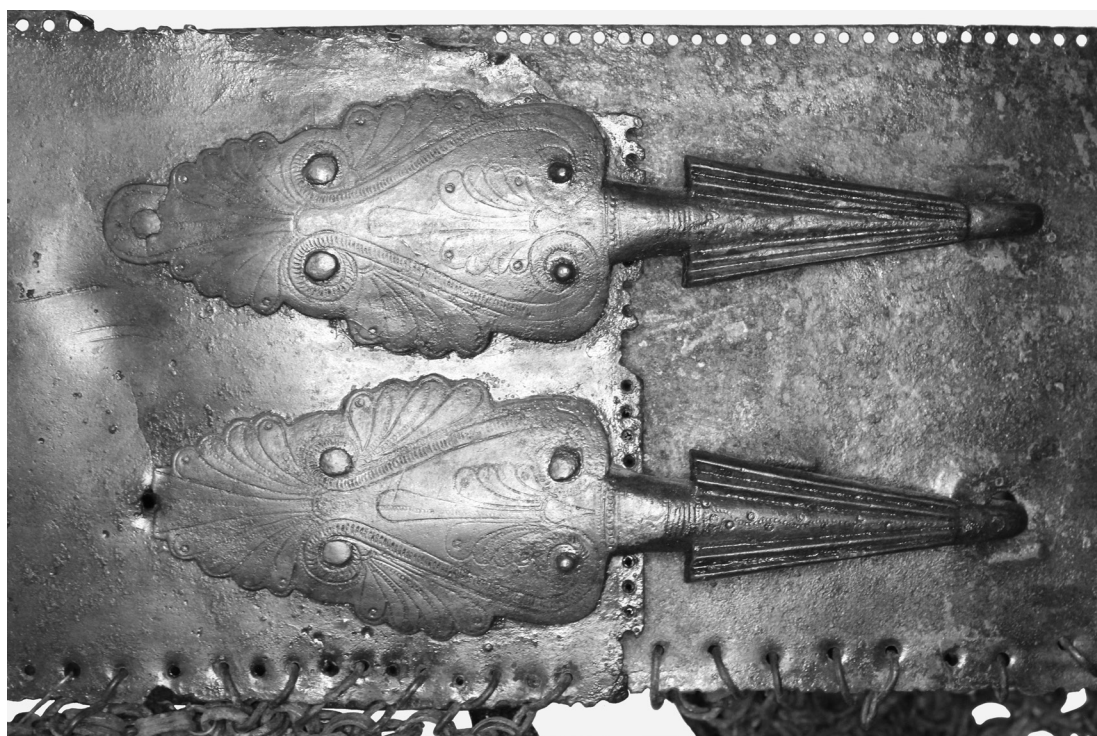


Figure 4. Close-up of the Louvre belt illustrating the shape and decoration of the clasps (photograph M.A. Wijnhoven).

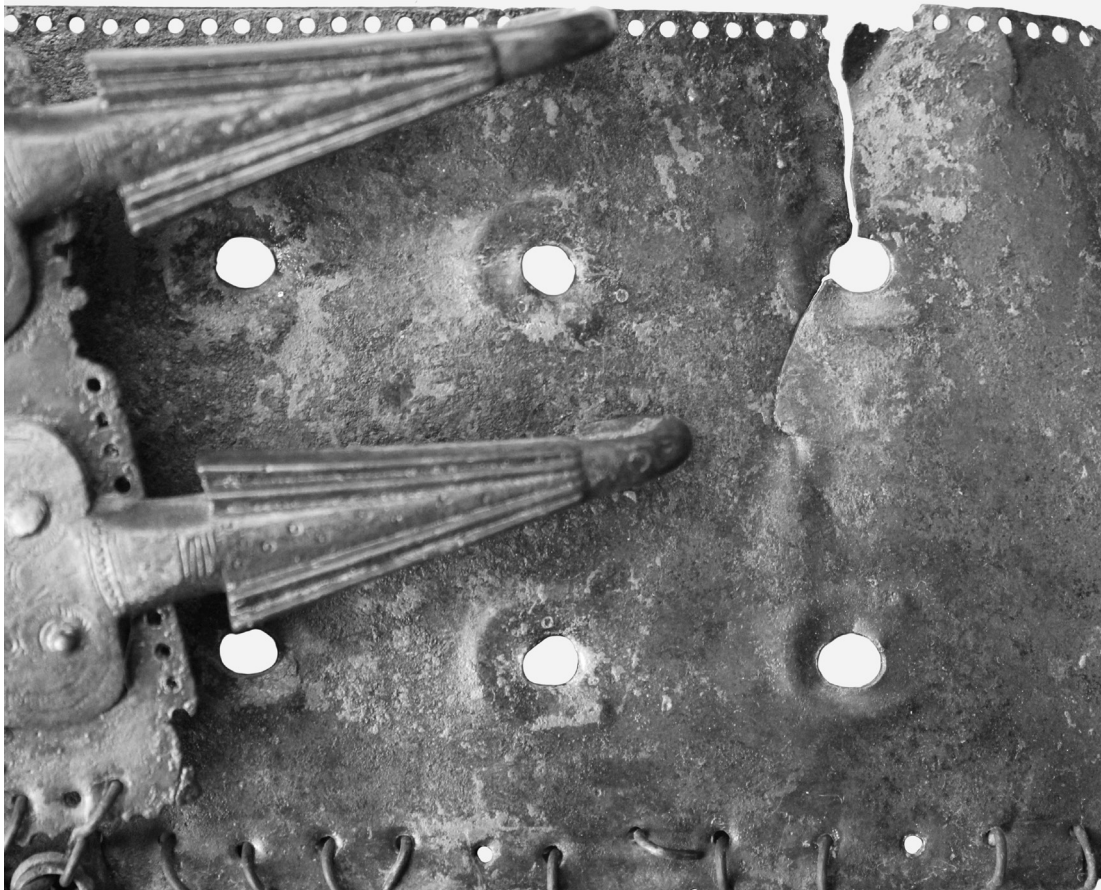
<sup>10</sup> Suano, 1986: 2; Schreck, 2011.

<sup>11</sup> Sannibale, 1995: 943-946, 1998: 142-145.

<sup>12</sup> Sannibale, 1995: 946, 1998: 151-153; Suano, 2000: 184.

The clasps work with 3 pairs of semi-round eyelets that allow the wearer to adjust the belt to size (Fig. 5). Each eyelet is surrounded by an embossed horseshoe shape, which probably helps the hook of the clasp to engage the hole.

The edges of the bronze sheet have perforations, of approximately 1.3 mm in diameter each, spaced at very regular intervals (every 3.1 mm) aligned equally with the edge (Figs. 4 & 5), giving the impression that they were made carefully. Many of the perforations at the top



*Figure 5.* Three pairs of eyelets, surrounded by embossed horse-shoe shapes, to allow the belt to be adjusted to the size of the wearer (photograph M.A. Wijnhoven).

are intact, but the bottom of the belt is damaged and only the upper arch of the perforations is preserved (Fig. 6). In some places it seems that the bottom edge was clipped post-excavation to form a straight line, possibly to ‘improve’ the belt’s appearance. The original function of these perforations was to accommodate a lining and backing to the belt which was sewn into place or fixed with rivets.<sup>13</sup>

There is a second row of perforations around the belt’s bottom circumference (Fig. 6), which look very different from the ones found at the rims. These secondary holes are less precise, varying from 1.4 to 1.8 mm in diameter, unevenly spaced from each other (on average,

<sup>13</sup> Burns, 2005: 132; Suano, 1986: 1, 38.

5.6 mm between perforations) and crookedly placed on the horizontal plane. The perforations have been made by punching from the outside into the metal sheet, which caused the belt to flare lightly outwards at the bottom in some places. The metal burrs on the inner surface of the belt have been removed with a file. The metal surface lacks patination on these spots, which leads to conclude that these holes were made post-excavation. We can only guess the reason for this intervention, but it stands to reason that it was done to accommodate the mesh of rings.



*Figure 6.* The bottom edge of the belt has been damaged and now only the upper arch of the original row of perforations is visible. Another row of holes has been placed above it, which through S-shaped hooks connect the belt to the ringed skirt (photograph M.A. Wijnhoven).

## THE RINGED SKIRT

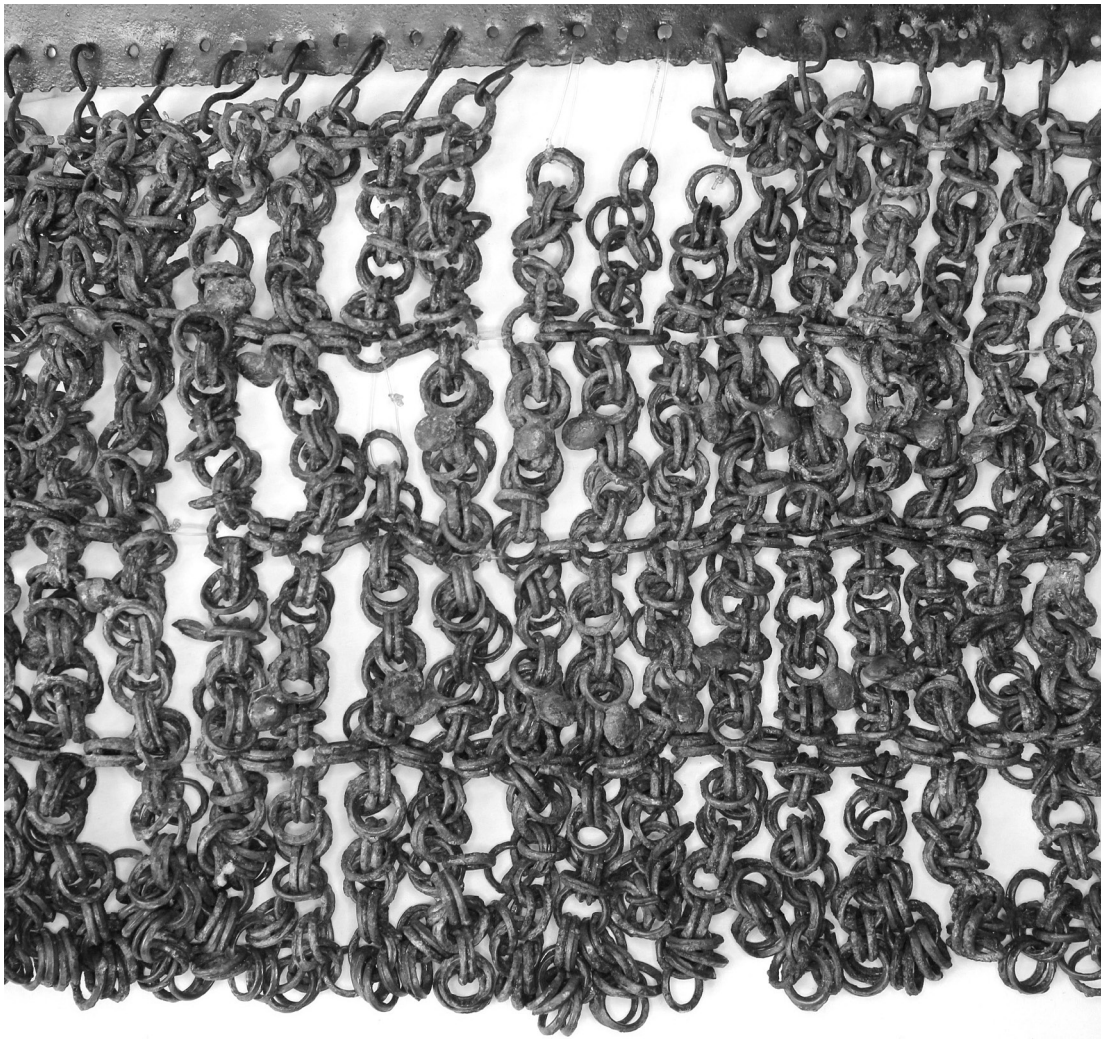
A series of S-shaped metal hooks connects the skirt to the belt (Fig. 6). There are a total of 121 holes for the S-shaped hooks, which surpasses the number of surviving ring rows, which means that not every hole has a hook. The amount of (surviving) rings is not enough to cover the entire circumference of the belt so that part of the back does not have any suspended rings.

In 1995, the Louvre belt and mesh underwent conservation and restoration.<sup>14</sup> Prior to this treatment, many of the fragments and rings had been placed arbitrarily without regard for the original weave. In particular a large fragment had been placed upside down and with the decorative pendants turned inwards. The restoration involved fitting loose fragments with nylon wire, following the original weave of the mesh. Also, many of the rings had been corroded

<sup>14</sup> Di Mantova, 1995.

into a solid mass, but the treatment allowed them to move independently again, like they were intended.

The weave pattern consists of individual chains of rings which run vertically through the mesh, like columns (Figs. 7 & 8 left). Each link in the chain is made of two rings, and the intact chains suggest these were 26 links long. Among the surviving large fragments, there are 54 chains connected horizontally to each other by a double ring at the 1<sup>st</sup>, 7<sup>th</sup>, 13<sup>th</sup>, and 19<sup>th</sup> link from the top. This grid of double-ringed vertical chains connected horizontally forms the structure of the weaving pattern; all the other rings found in the mesh (see below) serve no structural purpose.



*Figure 7.* The weaving pattern of the ringed skirt consists of chains that run vertically and are connected horizontally to each other by a double ring at the 1<sup>st</sup>, 7<sup>th</sup>, 13<sup>th</sup> and 19<sup>th</sup> link from the top (photograph M.A. Wijnhoven).



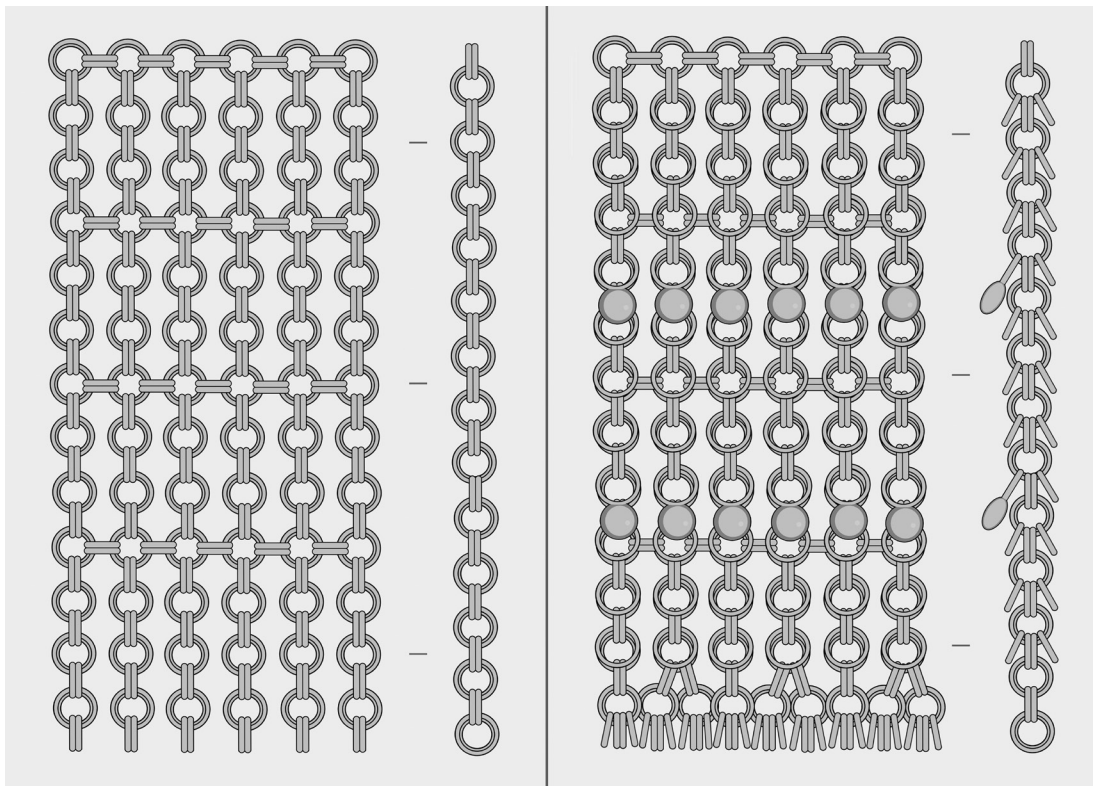


Figure 8. Left: front and side view of the structure of the weaving pattern omitting all decorative rings. Right: front and side view of the entire weaving pattern including decorative rings (drawing M.A. Wijnhoven).

This basic weaving pattern is similar, although unrelated, to that of Japanese mail dating to the (early) modern period, known as *seirō-gusari*.<sup>15</sup> Just as in the Louvre piece, this weave consists of rings that lay flat on the body and rings that are at an angle. A flat-laid ring connects to four pairs of angle-laid ones (at the top, bottom, right and left). The Louvre weave differs in that not all flat-laying rings have four pairs, but many only connect to one pair at the top and bottom.

The pattern contains more rings than structurally needed (Fig. 8 right). Each flat-laid pair of rings has two extra rings hanging from the upper pair: one facing the outside and one facing the inside (Fig. 9). The free hanging rings on the outside of the weave in rows 9 and 17 are different and much more ornate. These have an additional lentil-shaped pendant (Fig. 10) whose purpose appears to be merely decorative.

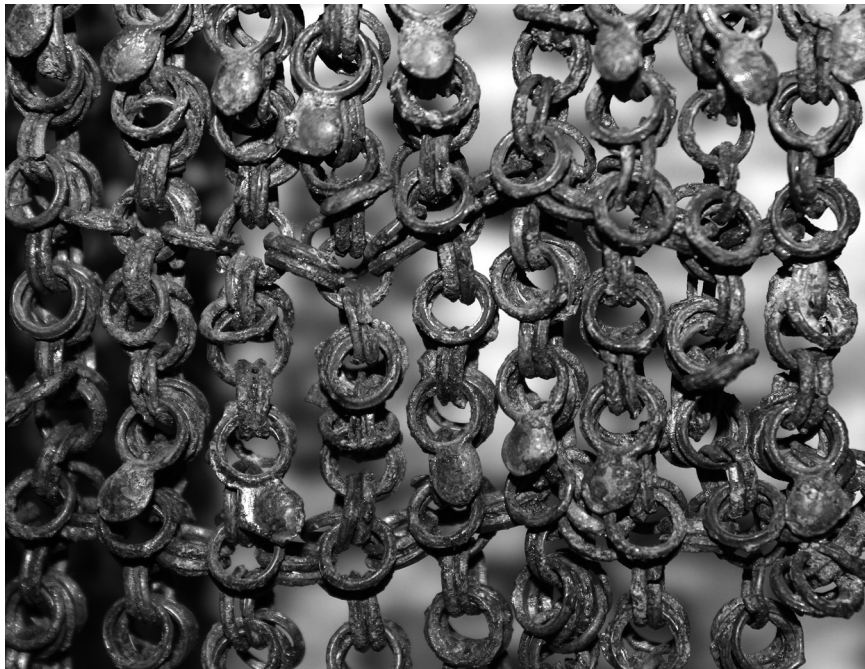
The ends of the vertical chains also have ornamental tassels (Fig. 11) of two types, which probably alternated. In the first, simple type, the 25<sup>th</sup> link suspends four instead of the usual two rings. The second type of tassel is more elaborate, formed by splitting the 24<sup>th</sup> row into two pairs of rings, each connecting to two other rings in the 25<sup>th</sup> row and ending with four more rings in the 26<sup>th</sup> row.

The skirt contains several fragments that seem additions. It is hard to say whether these are ancient repairs, or a modern assemblage of ancient ring meshes of a similar kind. One

<sup>15</sup> Absolon, 2017: 293.



*Figure 9.* Each link in the pattern consists of two rings. Every set of flat lying rings has an additional two rings hanging from the upper pair; one facing the inside and one facing the outside of the skirt (photograph M.A. Wijnhoven).



*Figure 10.* The weave contains two rows of loose hanging rings that have a pendant shaped like a lentil (photograph M.A. Wijnhoven).



*Figure 11.* Each chain in the mesh ends in a tassel of which there are two types (photograph M.A. Wijnhoven).

fragment is 25 links long and almost the same as the rest of the skirt, except that the chains in it connect horizontally at the 15<sup>th</sup> and 21<sup>st</sup> links. Moreover, this fragment lacks the decorative lentil-shaped pendant rings. There also are several fragments with rings of a smaller diameter that have a different surface appearance. During the restoration, these were placed at the back.

All the rings, including the lentil-shaped ones, were made by bronze casting done in a bivalve mould, as attested by a casting seam on the outside of many of the rings (Fig. 12). Some rings also preserve traces of flash or the remnants of the sprue. The rings are all very close in size measuring 7.8 mm of outer diameter and 5.6 mm of inner diameter. The lentil-shaped pendant rings have the same size, while the lentil itself is approximately 6.5 mm in length.

Weaving the casted rings together required half of them to be cut open (Fig. 13). The rings that lay at an angle to the body are the ones which were cut and, probably with the help of pliers, were bent open and woven together. Finally, they were bent back into their original shape.



*Figure 12.* The rings were made by bronze casting in a bivalve mould. The casting seam can still be observed on the outside of the rings (photograph M.A. Wijnhoven).



*Figure 13.* The rings that are at an angle have been cut open in order to weave them into a mesh (photograph M.A. Wijnhoven).

## A VICTORIAN PASTICHE

Close examination of the belt and skirt has made it possible to draw the conclusion that although both elements are authentic archaeological artefacts, they did not belong together originally and were probably put together in the 19<sup>th</sup> century. The first clue is that among all the known Italic bronze belts, which include hundreds of specimens,<sup>16</sup> no other has a ringed skirt. A second clue comes from the iconography, where from the abundant images of warriors wearing a bronze belt, there is not a single depiction of a ring skirt attached to it. But the most telling evidence that the two pieces do not go together is found on the belt itself.

The material examination has revealed that the belt had a continuous row of perforations neatly aligned to its circumference, which was originally used for lining and covering the inside of the belt, and is a feature commonly observed in other specimens. As mentioned above, the bottom edge of the belt is not intact and only the top part of the original holes can still be seen. It is apparent that after the pieces had been excavated, four different modifications were made to the belt in order to attach the skirt. First, the damaged bottom edge was clipped to form a straight line. Then, 121 new holes were punched carelessly along the rim, from the outside in, which caused the metal sheet to warp slightly at places. Third, the burrs left by punching these holes were smoothed with a file on the inside. Finally, S-shaped hooks were added to connect the belt and the ring mesh.

A further observation in support of this conclusion is that some mesh fragments have varying ring sizes or weave arrangements than the main fabric. Although these could represent ancient repairs, in light of the above, it is possible that several archaeological pieces of similar appearance but different provenance were fit together in recent times to improve the object's aspect.

It remains difficult to say exactly when or for what reason these drastic alterations were made. However, given the manner of execution and the *zeitgeist* of museology, it is improbable that they occurred in the 20<sup>th</sup> century but more likely they were done during the Victorian era, perhaps under the impression that they were a match, or perhaps to create more interesting artefact.

Making drastic alterations on archaeological artefacts by over-restoring, beautifying or creating a pastiche was unfortunately not uncommon,<sup>17</sup> especially before the 20<sup>th</sup> century. A relatively close parallel to the Louvre example concerns a necklace from Montegiorgio in Italy and that consists of a ring mesh similar to the Louvre skirt. Decorative pendants hang from the rings, making the necklace an impressive sight to behold. And although the pendants and ring mesh were probably from the same burial, the two were not connected originally.<sup>18</sup> The Louvre object is certainly no exception and should be seen as part of the development of archaeology as a science and the history of collecting ancient artefacts.

## THE FUNCTION OF THE SKIRT

Whereas the function and age of the belt have already been identified, these aspects remain undetermined for the skirt. From the end of the Bronze Age to approximately the 5<sup>th</sup> century

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<sup>16</sup> Burns, 2005: 133.

<sup>17</sup> E.g. Guerra, 2008a, 2008b; La Niece, 2005; Simpson, 2005.

<sup>18</sup> Seidel, 2006: 122-123. Possibly another pastiche involving a ringed mesh is discussed in Von Eles, 2007b: 221-222.

BC, there is evidence of objects made of ring meshes in many parts of Europe.<sup>19</sup> A good example comes from Brno-Židenice in the Czech Republic, where a single grave of the Horákov Culture, dated to 800-650 BC, contained nearly 15,000 small bronze rings.<sup>20</sup> These rings did not interconnect but were woven onto a textile, with the threads of the warp and weft passing through them (Fig. 14). Meshes of interconnected bronze rings with no textile support are also

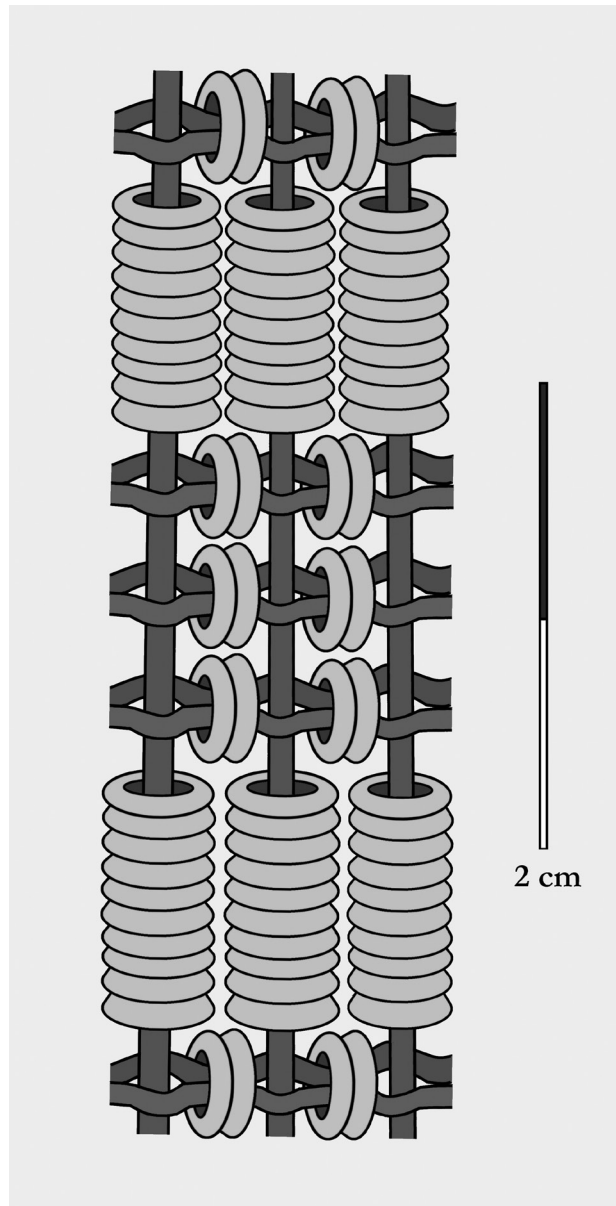


Figure 14. Schematic representation of the bronze rings woven into a textile fabric from Brno-Židenice (drawing M.A. Wijnhoven after Hrubý, 1959: Pl. 7).

<sup>19</sup> There are too many examples to list. The following sources give an indication: Bartolini *et alii*, 1980; D'Andrea, 2014; Frey, 1991; Grömer, 2010; Haynes, 2000; Iaia, 2007; Müller-Karpe, 1959; Nizzo, 2007; Ruby, 1995.

<sup>20</sup> Hrubý, 1959.

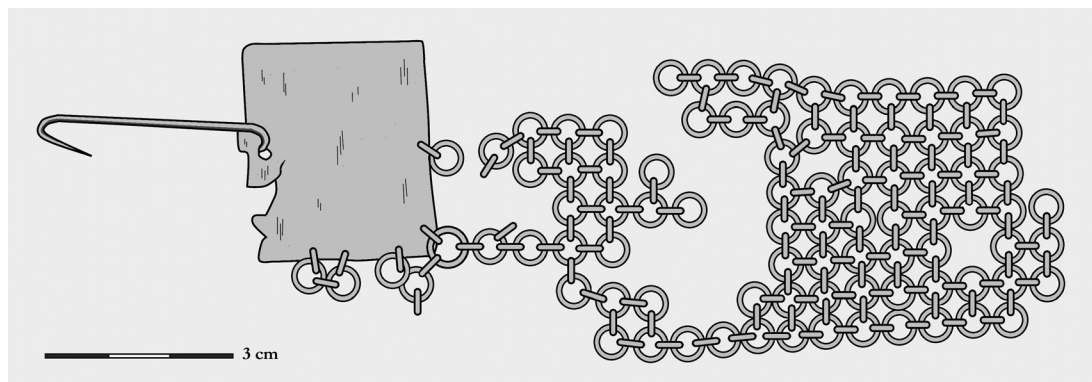


Figure 15. A detail of the ringed mesh from Almaluez in Spain (drawing M.A. Wijnhoven after Barril Vicente et al., 1998: Fig. 3).

known, such as from the Spanish necropolis of Almaluez and Clares, dated to the turn of the 5<sup>th</sup> century BC, where ten fragments of interconnected bronze rings were found.<sup>21</sup> These consist of larger horizontal rings, each connected to four smaller rings vertically positioned (Fig. 15). The links are made of bronze wire with the ends butted together to form a circle.

The areas and periods in which metal ring meshes were produced and used are too vast to specify the provenance of the Louvre skirt. More information about its time and place of origin may be drawn from some of its key features, like structural and decorative characteristics. The main structural properties are:

- Interconnected bronze rings made by casting.
- Each link in the mesh consists of two rings.
- The weave pattern combines one flat lying link with four links at an angle (i.e. above, below, right and left). In the chains, the right and left links are omitted and the pattern involves one flat lying with two links at an angle (i.e. above and below).

The decorative characteristics are:

- The mesh contains loose hanging rings that serve no structural purpose.
- The presence of lentil-shaped pendant rings.
- The presence of tassels, formed by groups of rings.

Table 1 sums up the evidence for ring meshes that share similar characteristics. All the examples match the list of structural properties and the majority also present every decorative element, although some include only two out of three. The lentil-shaped pendant rings can vary slightly in shape and some look rather like a lentil on a stick connected to the ring. Due to their shape, the latter have sometimes been called ‘door knockers’.<sup>22</sup> The table also includes some possible cases of which the literature does not provide enough detail, but that have the same function and context as the typical examples.

Ring meshes of such characteristics are almost exclusively found in Italy, although there are also two finds from Croatia (Fig. 16 and Table 1).<sup>23</sup> The majority of the finds come from the most southern part of Italy, that is, Basilicata and northern Calabria.

<sup>21</sup> Barril Vicente *et alii*, 1998.

<sup>22</sup> Babbi & Peltz, 2013: 322.

<sup>23</sup> Alianello – burial 316: Bianco *et alii*, 1998: 222, pl. 27-28; D’Agostino, 1998: fig. 10, 36; Negroni Catacchio, 2007: 538, fig. 8; Nizzo, 2007: fig. 3e. Alianello – burial 324: Bianco, 1996: fig. 28; Bianco *et alii*, 1998: 222, pl. 3;

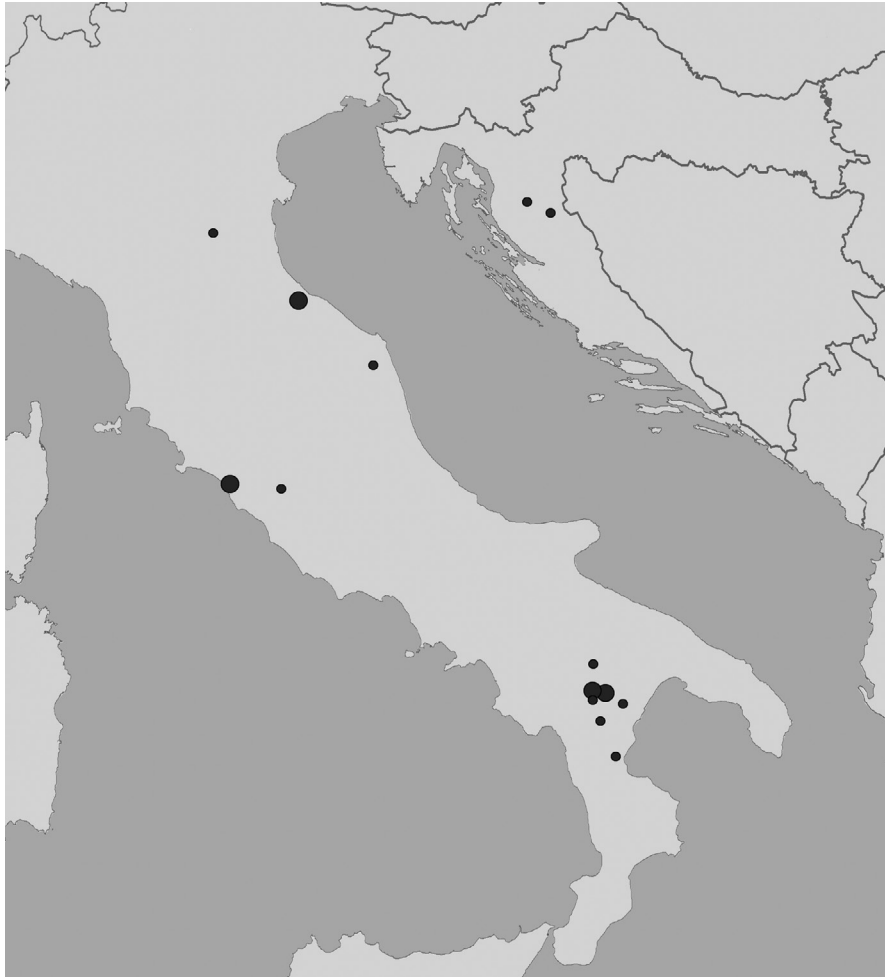


Figure 16. Distribution of ring meshes that match the key characteristics of the Louvre skirt (map M.A. Wijnhoven).

D'Agostino, 1998: 36, fig. 9; Montanaro, 2016: 509, fig. 8. Alianello – burial 328: Bianco *et alii*, 1998: 222. Chiaromonte – burial 129: Bianco *et alii*, 1998: 220, pl. 19. Guardia Perticara – burial 9: Bianco, 2011: 27, 38, 41, 71. Guardia Perticara – burial 69: Bianco, 2011: 31-32, 65; Montanaro, 2016: 509, fig. 1. Guardia Perticara – burial 199: Bianco, 2011: 33, 65. Guardia Perticara – burial 392: Bianco, 2011: 66. Guardia Perticara – burial 443: Bianco, 2011: 20, 65. Guardia Perticara – burial 514: Bianco, 2011: 42, 50-51, 71. Francavilla Marittima – burial 40: Zancani Montuoro, 1983: 107-111, fig. 38-39, 49, pl. 69-70, 96. Armento – princess' burial: De la Geniere, 1972: 248, pl. 7. Tursi – burial 97: Frey, 1991: 21, pl. 5.9. Kingdom of Naples: De Cosson & Burges, 1880: 566, fig. 152; De Saulcy, 1855: 1-2; L'Haridon, 1862: 87; Robert, 1889: 135-136; Stone, 1961: 427-428. Tarquinia – warrior's tomb: Babbi & Peltz, 2013: 30, 112-116, 322-325, pl. 50.1. Narce – burial 23M: MacIntosh Turfa, 2005: 20, 63-64, 104-105. Impiccato – burial 73: Hencken, 1968: 329, fig. 326. Impiccato – burial 82: Hencken, 1968: 125, fig. 113. Selciatello Sopra – burial 62: Hencken, 1968: 131-134, fig. 119. Selciatello Sopra – burial 140: Hencken, 1968: 138-139, fig. 127. Montegiorgio – burial 21: Ettel & Naso, 2006: 122, pl. 18. Montegiorgio – burial 38: Ettel & Naso, 2006: 208, pl. 46. Montegiorgio – burial 49: Ettel & Naso, 2006: 220, pl. 64. Picenum region: Naso, 2003: 178-179, pl. 85. Melenzani – burial 64: Locatelli & Malnati, 2007: 56, fig. 2. Verucchio – burial 11: Von Eles, 2007a: 82, fig. 13. Verucchio – burial 25: Von Eles, 2007b: 221-222. Prozor (Croatia): Bakarić, 2018: cat. no. 12; Larese, 1991: 20, 104. Krbavica (Croatia): Bakarić, 2018: cat. no. 11. San Chirico Nuovo: De la Geniere, 1968: pl. 66.2; Nizzo, 2007: fig. 3c. Alianello – grave 286: Bianco, 1996: 34, fig. 26; Blečić Kavur, 2012: fig. 9; Bottini & Tagliente, 1984: 112, pl. 8a-b; Negroni Catacchio, 2007: 538, fig. 7. Alianello – burial 594: Bianco *et alii*, 1998: 222. Chiaromonte – burial 109: Bianco, 1996: fig. 29. Selciatello Sopra – burial 53: Hencken, 1968: 92-93, fig. 80. Gallinaro, Fossa 8 - burial: Hencken, 1968: 345-353, fig. 347.



Table 1. Ring meshes that match the key characteristics of the Louvre specimen.

SITE	DATE	GENDER	SHORT DESCRIPTION
Alianello – burial 316	700-600 BC	♀	- hip ornament - plaque pendant with bird heads
Alianello – burial 324	700-600 BC	♀	- hip ornament
Alianello – burial 328	BC	♀	- hip ornament - plaque pendant with bird heads
Chiaromonte – burial 129	620-600 BC	♀	- hip ornament - plaque pendant with bird heads
Guardia Perticara – burial 9	700-600 BC	♂	- baldric for sword
Guardia Perticara – burial 69	750-700 BC	♀	- hip ornament
Guardia Perticara – burial 199	750-700 BC	♀	- hip ornament
Guardia Perticara – burial 392	760-740 BC	♀	- section of interconnected rings
Guardia Perticara – burial 443	760-740 BC	♀	- plaque pendant with bird heads
Guardia Perticara – burial 514	700-650 BC	♀	- plaque pendant with bird heads
Francavilla Marittima – burial 40	700-600 BC	♀	- hip ornament?
Armento – princess' burial	660-640 BC	♀	- hip ornament?
Tursi – burial 97	800-600 BC	♀	- section of interconnected rings
Kingdom of Naples			- plaque pendant with bird heads?
Tarquinia – warrior's tomb	750-700 BC	♂	- decorative chain
Narce – burial 23M	700-680 BC	♀	- decorative chain
Impiccato – burial 73	780-730 BC	♀	- decorative chain
Impiccato – burial 82	810-780 BC		- decorative chain
Selciatello Sopra – burial 62	780-750 BC		- decorative chain
Selciatello Sopra – burial 140	780-750 BC		- decorative chain
Montegiorgio – burial 21	900-700 BC	♀	- necklace?
Montegiorgio – burial 38	900-700 BC	♀	- necklace?
Montegiorgio – burial 49	900-700 BC	♀	- plaque pendant with bird heads
Picenum region			- plaque pendant
Melenzani – burial 64	750-650 BC	♀	- 2 brooches with ring mesh
Verucchio – burial 11	750-600 BC	♀	- 2 rattles
Verucchio – burial 25	720-680 BC	♀	- bracelet?
Prozor (Croatia)	700-600 BC	♀	- headdress
Krbavica (Croatia)	800-600 BC	♀	- headdress
POSSIBLE EVIDENCE			
San Chirico Nuovo	750-600 BC		- plaque pendant with bird heads
Alianello – burial 286	700-600 BC	♀	- hip ornament
Alianello – burial 594		♀	- hip ornament - plaque pendant with bird heads
Chiaromonte – burial 109		♀	- hip ornament - plaque pendant with bird heads
Selciatello Sopra – burial 53	810-780 BC		- decorative chain
Gallinaro, Fossa 8 - burial	700-650 BC		- hip ornament?

Regarding the time frame, it seems that the finds can be dated to the 8<sup>th</sup> and 7<sup>th</sup> centuries BC. Evidently, this date does not fit the age of the Louvre bronze belt (4<sup>th</sup> century BC), which reinforces the conclusion that the belt and skirt did not belong together originally.

The context of these finds, when given, is funerary. More interestingly, almost all come from female burials, with the exception of burial 9 in Guardia Perticara and the so-called warrior's tomb from Tarquinia. Such predominantly female context is also in opposition to the Louvre belt, which is considered an item of male paraphernalia.

Nearly all finds with similar characteristics as the Louvre skirt constitute ornamental items. Among them are necklaces, a bracelet, a brooch, and rattles. The two examples from Croatia concern elaborate headdresses. A large part of the finds originates from 8<sup>th</sup>-7<sup>th</sup> century BC female burials located in Basilicata. These burials stand out for their sumptuousness and diversity of materials.<sup>24</sup> The burials include opulently decorated clothing made of costly textiles embroidered or woven in decorative patterns, and sometimes covered by numerous beads made of amber, glass, bone or bronze. They also contain necklaces of amber or glass beads, and have one or more brooches, bronze pendants, earrings, bangles and finger rings.<sup>25</sup> Often these burials include a belt made from a circular decorative bronze disc and a wide textile band covered entirely with beads of amber, glass and bronze.<sup>26</sup> Below some of these belts there is an intricate 'hip ornament' made from interconnected bronze rings, highly similar to Louvre ring skirt (Fig. 17), that hung at the hips and may have been connected to the textile belt.

Other decorative objects often found in the female burials are plaques worn as pendants around the waist, possibly attached to the belt or the hip ornament. These plaques are made of bronze and regularly shaped as two stylized bird heads. They include a row of holes at their bottom from which chains hang (Fig. 18). The origin of this type of pendant can be traced to the western Balkans,<sup>27</sup> but it was adopted and developed in the region of Basilicata where the chains acquired the characteristics observed in the Louvre skirt.

The two male burials also contain meshes but of a different function than the objects described above. Burial 9 from Guardia Perticara has been interpreted as a male grave because it contained an iron sword with a bronze scabbard. It also included a ring mesh thought to be a baldric for the sword,<sup>28</sup> that closely resembles the hip ornaments from the female graves and may have been worn in a similar manner.

In the Tarquinia warrior's tomb, there are two sets of interconnected pieces of chain with the same structural and decorative features as the Louvre mesh (Fig. 19). Their function remains undetermined, although it has been suggested that they may be a body ornament, or part of the decoration of the mortuary shroud, or possibly the urn.<sup>29</sup> It has even been speculated, due to the intimate association of ring meshes with female ornamentation, that the object may have belonged to a female member of the deceased's family and was offered as a burial gift.

From the overview of objects that share characteristics with the Louvre skirt it is now possible to determine its age, which must be around the 8<sup>th</sup> or 7<sup>th</sup> century BC. Within this set of objects the closest match to the skirt, especially regarding its size and appearance, is the hip ornaments found in the female graves from Basilicata. Therefore, the Louvre mesh is most likely a hip ornament from the 8<sup>th</sup>-7<sup>th</sup> century BC that came from a female burial in Basilicata, Italy.

<sup>24</sup> Negroni Cattachio, 2007.

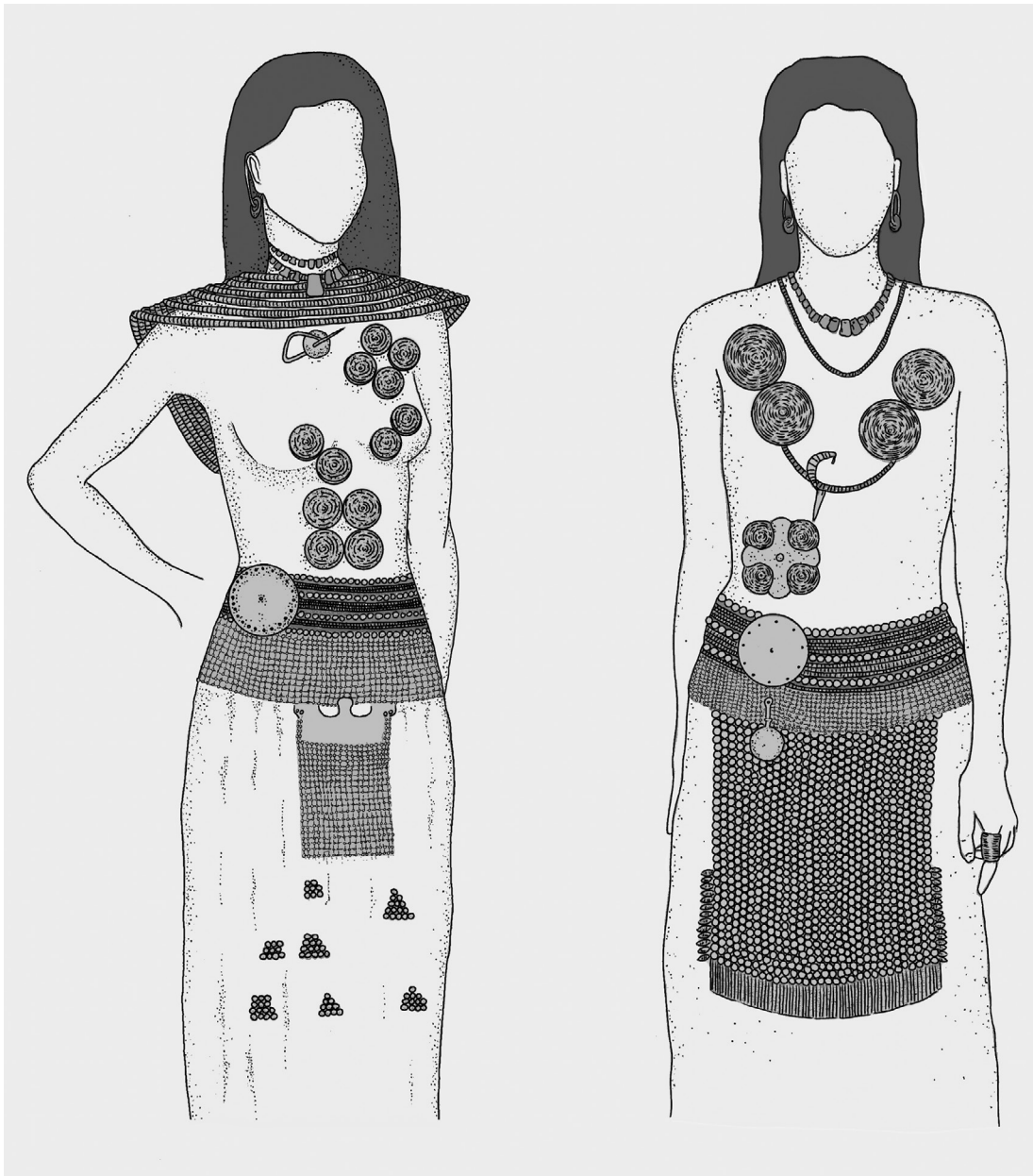
<sup>25</sup> Bianco *et alii*, 1998: 215-223; Iaia, 2007.

<sup>26</sup> Montanaro, 2016: 509.

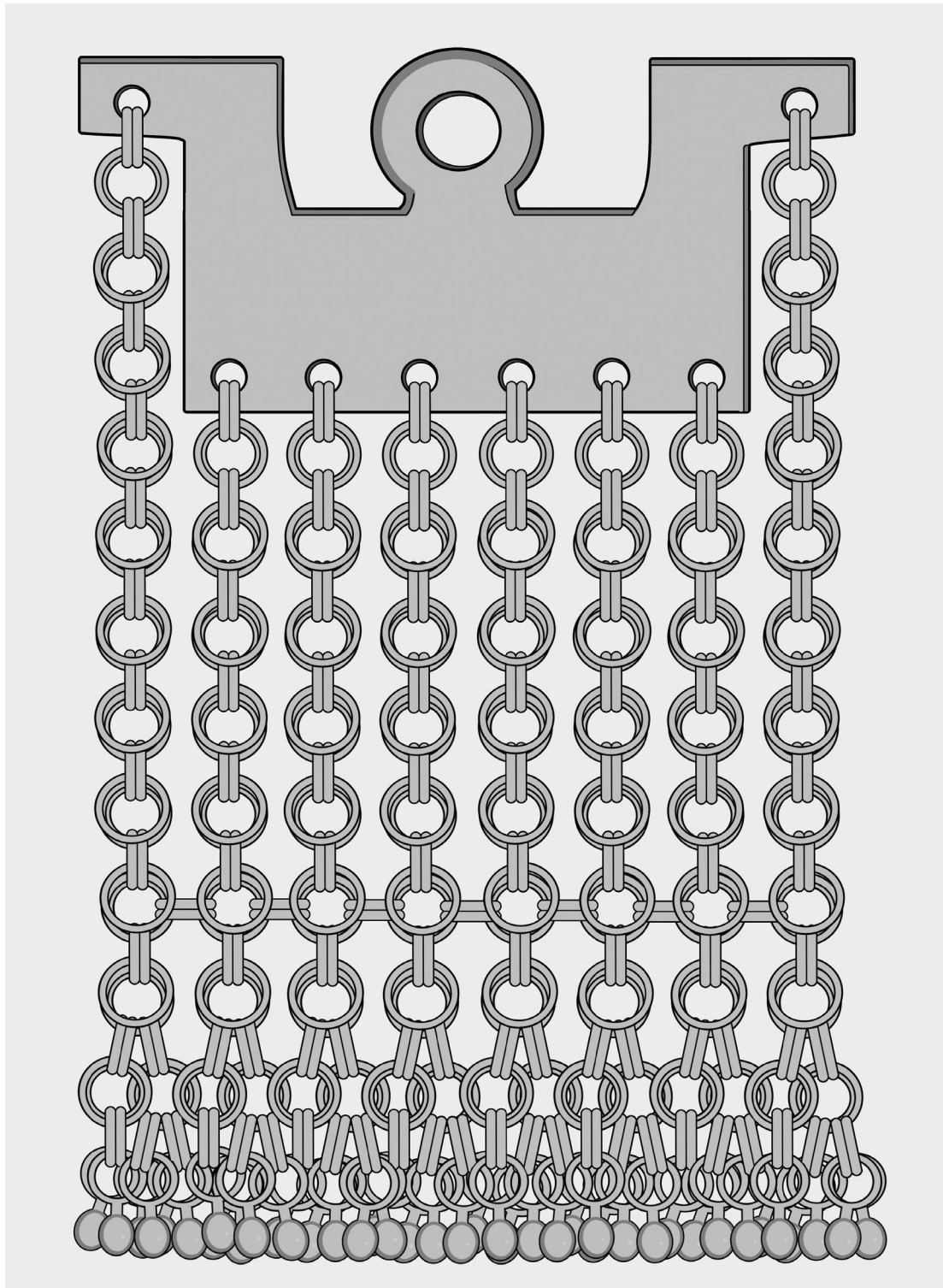
<sup>27</sup> Blečić Kavur, 2012; Bianco *et alii*, 1998: 222; Nizzo, 2007.

<sup>28</sup> Bianco, 2011: 27, 38, 41, 71.

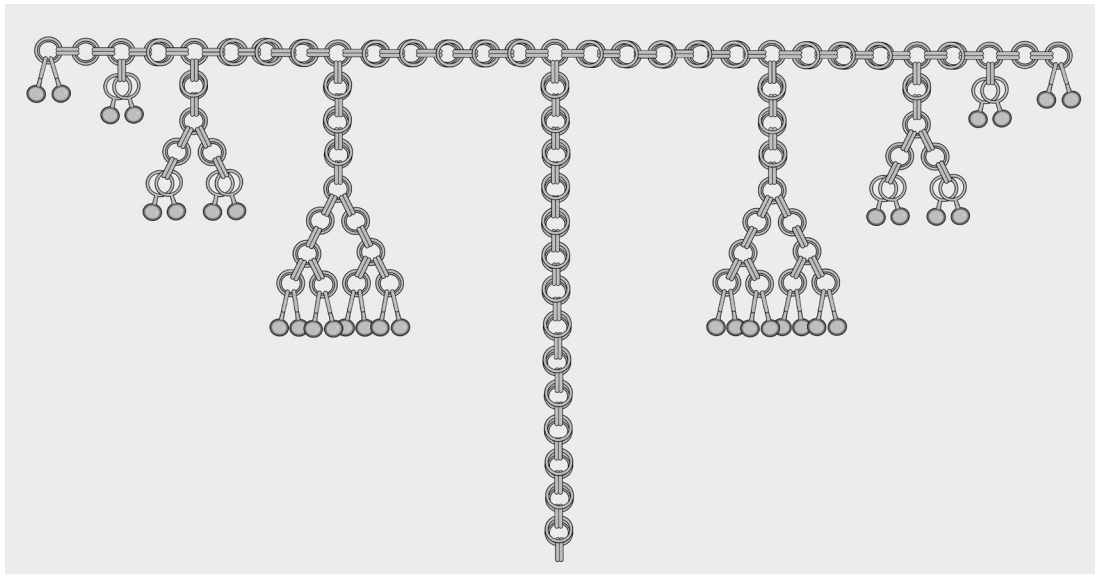
<sup>29</sup> Babbi & Peltz, 2013: 322-325; MacIntosh Turfa, 2005: 105.



*Figure 17.* Reconstruction of the many ornaments deposited in the female burials 316 (left) and 324 (right) at Alianello. The dress of the women has many ornaments including a wide textile belt decorated with many beads. Directly under this belt there is the hip ornament made from a ring mesh similar to the Louvre skirt. Burial 316 also contains a plaque pendant with bird heads and a ring mesh (drawing M.A. Wijnhoven after D'Agostino, 1998: Figs. 9-10).



*Figure 18.* Plaque pendant with stylised bird heads from burial 443 at Guardia Perticara. The metal plate has holes from which the ringed mesh suspends that has the same structural and decorative characteristics as the Louvre skirt (drawing M.A. Wijnhoven).



*Figure 19.* One of two pieces of interconnected chains from the warrior's tomb at Tarquinia. Although this object of unknown function is not woven into a mesh, it contains all the key characteristics of the Louvre skirt (drawing M.A. Wijnhoven).

### AN EARLY ANCESTOR OF MAIL ARMOUR?

The skirt of the Louvre belt, together with similar objects containing meshes of bronze rings, have in the past been defined by several scholars as mail armour, or at least as probable predecessors of this armour type.<sup>30</sup> The examination of the skirt and its key characteristics allow us now to determine whether it can indeed be related to the origin and early development of mail.

A complexing factor in the discussion on the origin of mail has been its terminology, in which 'mail' has been equated to 'mail *armour*'. The former simply refers to a mesh made of rings that could have had any purpose,<sup>31</sup> while the latter has the explicit function to protect the body against combat trauma. The two are obviously not the same.

Just as the Louvre skirt, mail that certainly functioned as *armour* has several key characteristics. If we compare the two, then the Louvre skirt differs in four essential aspects. The first is the raw material of the rings. In mail armour the rings are made of iron, and copper alloy rings, when present, are only added for decorative purposes.<sup>32</sup>

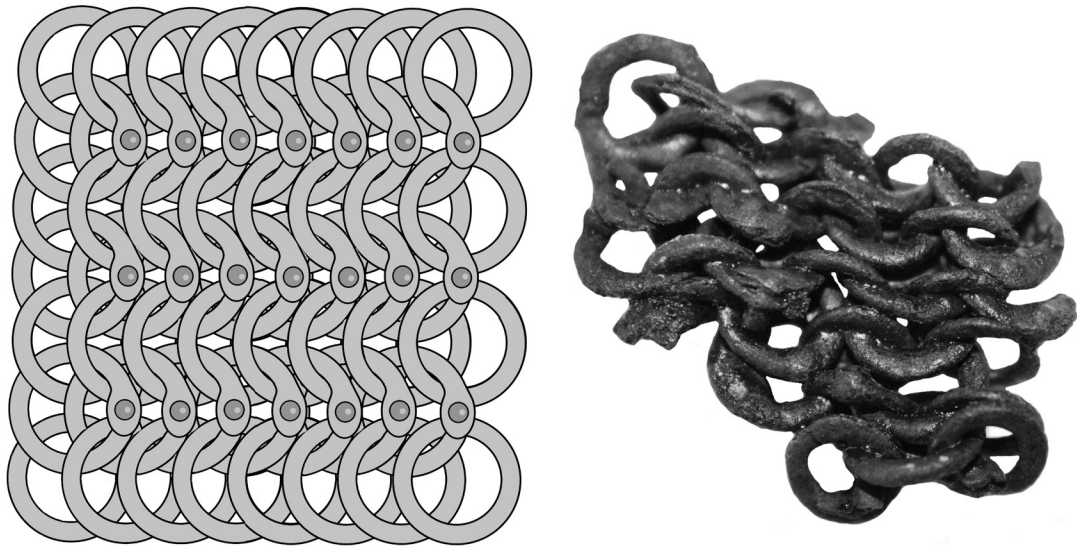
The second difference is the ring manufacture technique. Mail armour is either constructed out of riveted rings or a combination of riveted and solid rings.<sup>33</sup> The riveted rings are made by shaping metal wire into a circle with the ends overlapping a few millimetres through which the rings are pierced closed by a small rivet (Fig. 20). For their part, the solid rings are punched out of sheet metal, and in some regions or periods made by welding shut a wire ring. The mix

<sup>30</sup> Barril Vicente *et alii*, 1998: 76-77; De Cosson & Burges, 1880: 556; Hrubý 1959; Robinson, 1967: 11; Roux & Coffyn, 1987: 38; Rusu, 1969: 289; Stone, 1961: 427-428.

<sup>31</sup> The word 'mail' comes from Old French *maille*, which means 'a mesh (of a net)'.

<sup>32</sup> Wijnhoven, 2017.

<sup>33</sup> Burgess 1953a; Sim 1997; Wijnhoven, 2015: 84-85.



*Figure 20.* Left: mail armour is woven together in a 4-in-1 pattern in which the rings are put into rows. The rings of the same row do not connect to each other, instead each ring connects to two rings in the row above and below. The rings are a combination of solid and riveted rings. Right: a small fragment of mail from Fluitenberg dating to the 3rd or 2nd century BC. In relation to the drawing it is presented at a 90 degree angle; the weaving pattern and types of rings are entirely the same. Drents Museum, 1941/V-6 (drawing & photograph M.A. Wijnhoven).

of riveted and solid rings ensures the structural integrity of the armour, offering maximum protection against the rigors of battle. In contrast, the Louvre skirt is made solely from cast rings, half of which were clipped open to enter the weave, yielding a fairly weak structure that would give in with relatively little force and could not withstand the impact of a weapon.

The third aspect is in the weave pattern. Throughout the centuries, mail armour in Europe is consistently woven according to a 4-in-1 pattern (Fig. 20), apart from a handful of exceptions. In this pattern the rings are placed in rows and each ring is connected to four others, that is, two rings in the row above and two in the row below.<sup>34</sup> The Louvre mesh has another weave pattern that consists of flat laying links that connect with two or four links at an angle. The difference is obvious when figure 8 is compared to figure 20.

The fourth and last difference is in the weight of its components. Functional armour always shows a balanced trade-off between weight, protective power, and mobility.<sup>35</sup> Ideally, armour should offer significant protection, while keeping its weight to a minimum and giving its wearer a wide range of movement. The Louvre skirt, being a hip ornament, does not need to heed this balance. It contains several elements (the tassels, the lentil-shaped pendant rings, and the loose hanging rings) that make the mesh much heavier without adding to its structural integrity.

The context of similar finds to the Louvre skirt, discussed above, already confirmed that it is a non-military object. A comparison of its characteristics with mail armour only reaffirms this conclusion. The Louvre mesh is certainly not mail armour. This fits within the general un-

<sup>34</sup> Burgess, 1953b; Wijnhoven, 2015: 81.

<sup>35</sup> Askew *et alii*, 2012; Wijnhoven, 2015: 81.

derstanding of the origin of mail armour, which is thought to date back to the La Tène culture around the turn of the 4<sup>th</sup> to 3<sup>rd</sup> century BC.<sup>36</sup>

The question of whether the skirt might constitute an early ancestor of mail armour remains. This is however highly unlikely. The main similarity with mail armour is it is made of interconnected rings, but it differs in many aspects, such as the material used for the rings, the manufacturing process of the rings, the weave pattern, and its overall function. Most importantly, there is no chronological or geo-cultural connection between the Louvre mesh, or for that matter of other similar bronze ring meshes, and the La Tène origin of mail armour. Instead of diffusion and continuation, there is a gap between the two phenomena and they must be considered a case of convergent evolution.

### A COLLECTOR'S VISION UNDONE

The Louvre belt and skirt have turned out to be two separate artefacts, and although both seem to come from the southern half of Italy, they differ significantly in age and context. It remains unclear why the two were united in the recent past, but the following considerations may have played a part. It is interesting that the skirt probably was a hip garment that, as in its modern configuration, would have hung from or been placed directly underneath a textile and beaded belt. Its modern placement thus appears to correspond with its original positioning on the body. Familiarity with the Italian bird-headed plaque pendants, such as in figure 18, with dangling ring meshes may have inspired early collectors to fit the belt and skirt together. Especially since Italic belts, like the pendants, consist of a piece of metal plate with holes around the border, whose purpose could be mistaken.

Speculation aside, the biography of this enigmatic object has turned out to be very different from what was assumed or pretended by the person who put the components together. Its biography now tells three different stories. The first narrates about the splendour and richness of the female graves in southern Italy during the 8<sup>th</sup> and 7<sup>th</sup> century BC. The second is of a 4<sup>th</sup> century BC belt worn as a mark of social status, and possibly used together with armour, such as the triple-disc cuirass, greaves and a helmet. And the last tale is about the development of archaeology and museology as scientific disciplines from the 19<sup>th</sup> century to modernity. In sum, in spite of being a forged composite item, the Louvre belt-and-skirt can still inform us not only about the remote archaeological cultures but also of early collector's visions of the past and the history of museum collections.

### ACKNOWLEDGEMENTS

I would like to thank the Louvre Museum in Paris for granting me the opportunity to examine this artefact. I would especially like to express my gratitude to Sophie Descamps and Catherine Bastien for their kind assistance.

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<sup>36</sup> E.g. Gilmour, 1997: 26; Hansen, 2003, 122; Stead, 1991: 54-56; Wijnhoven, 2015: 78, 2017: 183.

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Recibido: 16-04-2018  
 Aceptado: 24-05-2019