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Acta Archaeologica Lodziensia nr 50/1, 27-31

2004

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Late Roman Textiles in the North of Spain ("Las Ermitas", Vitoria)*

Las Ermitas (Vitoria) is a late-Roman site, important neither for its size nor for the grandeur of the structures preserved there. It can, however, help us understand something more about how the northern part of Hispania was romanized. The site is located in a strategic area that controls communication between the Cantabrian coast and Flaviobriga (Castro Urdiales) with the area of the Northern Meseta and its settlements: towards the northeast lie Veleia, Tullonium, Pompaelo, going in the direction of Burdigala; towards the southeast, following the Ebro Valley, lie Deobriga, Tritum, Calagurris, Gracurris in the direction of Caesaraugusta and Tarraco (Fig. 1: 1). This strategic position is enhanced by the fact that the place is just a few kilometres from an important Roman route (the so-called *Iter trigesimus quartus de Hispania in Aquitania ab Asturica Burdigalam*). Close to the site is the indigenous *oppidum* of Castros de Lastra [Filloy Nieva 2000: 129].

According to the archeological data obtained over the course of several excavations, we know that the site began in the Julian-Claudian period (around the middle of the first century A.D.) and remained inhabited until the beginning of the sixth century. The surrounding plain must have made possible active animal husbandry, as evidenced by some of the metal objects found there such as four bells for livestock (probably sheep or goat) and a bridle bit (*frenum*).

In 1955, while excavating what would prove to be a dwelling-place, there appeared 23 different objects (carpenter's tools: a *dolabra* or adze, a skew-chisel, a brush, some gouges with their bone handles still preserved, punches, a nail, two mason's picks; two chisels or *scalpa*; four sheep gongs; a horse's bit and a little bronze bell. The presence of wooden fragments contemporary with the iron tools enabled these to be dated, using the carbon fourteen method, to the second half of the third century A.D. Undoubtedly someone wanted to safeguard the tools of their trade in times of political uncertainty and social change. According to the archaeologist who made the discovery [Filloy Nieva: 2000] they must have placed the metal tools inside a cloth bag, of which some remains have been conserved on the metallic surfaces. Later we shall offer our interpretation.

The importance of this material lies in the fact that it provides us with an inventory of the *instrumenta* of a farmstead on which a variety of tasks were undertaken. As mentioned above, there are tools for carpentry and stonemasonry, as well as horse tack and herding equipment. We are specifically interested in the remnants of textiles that have been preserved at the site, but we will also briefly discuss the leather that has been preserved adhering to some of these tools. Chemical analysis of them is still to be made, and the traces of material are minute, barely perceptible by the human eye.

The material appears (Fig. 1: 2):

a) On two of the four sheep gongs

b) On a ring which formed part of a *frenum* or horse's bit

c) On a stone-mason's pick.

The textiles which have been preserved are completely mineralized by iron salts that replaced the protein in the woollen fibres -studies on mineralized textile have greatly advanced in recent times. A precise description of the process of mineralization of textiles on metal surfaces can be seen in the unpublished thesis by Ch. Moulherat [2001: 32]: *remplacement total ou partiel de la matière organique par un matériau inorganique*. The process has left visible the shape of the yarn, and the warp and weft of the cloth. That is, despite the fact the cloth has lost its original flexibility, details about its shape and method of manufacture have been preserved. Under the electronic microscope (MEB), we can see perfectly that we have woollen fibres with well-defined, closely spaced scales. In some cases the fibres were impregnated by the mineral salts and preserved their entire structure, but in

* This paper has been sponsored by the Ministry of Science and Technology: Project I+D reference BHA 2000-1240. I would like show my gratitude to Vega Bermejo and Prof. Sara Nalle for the translation and revision of the text.

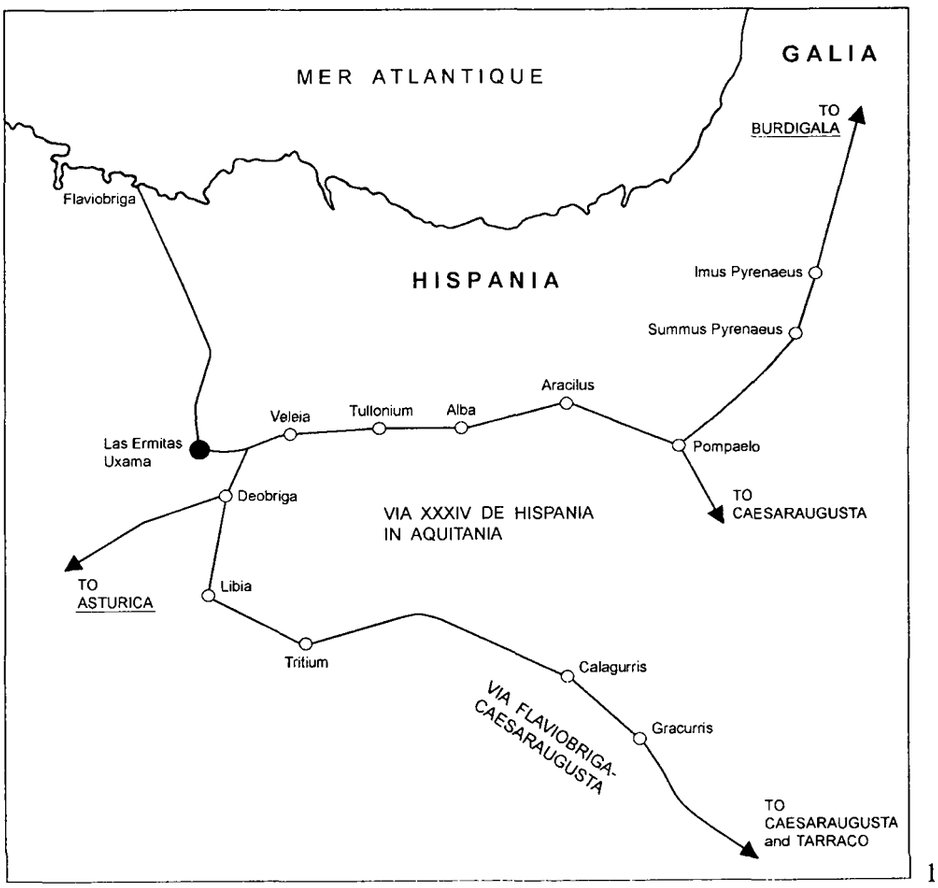

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Fig. 1. 1 – Localisation of "Las Ermitas" related to the "Via XXXIV de Hispania in Aquitania" (According to Filloy Nieva); 2 – The four tools with textiles of "Las Ermitas" (Vitoria, Spain).

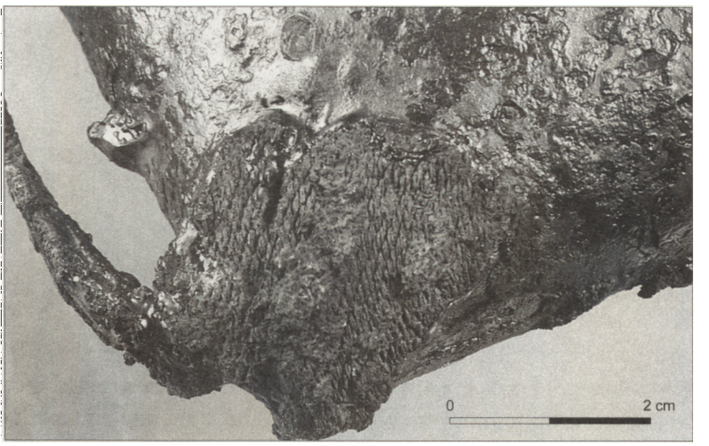

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Fig. 2. 1 – Textile attached to the upper part of sheep gong A; 2 – Textile fragment on sheep gong B; 3 – The ring of the horse bit; 4 – The textile on stone mason's pick.

other cases we are only left with an imprint of their presence -*mineralisation pseudomorphe* [Moulherat 2001: fig. 14].

a) The sheep gongs

These items were made with forged iron which was later given a tin bath [Filloy Nieva 2000: 136]. Without doubt, it was this combination of metals that promoted the process of mineralization of the woollen fibres in the preserved textile. The clear chestnut colour of our cloth is reminiscent of other fibres showing some *mineralisation partiellement creuse* [Moulherat 2001: 132]. Observation with optic microscope and photography of the cross-section of fibres is a particularly specialized task. New studies in this area are opening up fascinating perspectives.

The almost imperceptible leather remains that are found adhering to the inside of the gongs' walls may well have belonged to the collars which were used to attach these sonorous objects to the leading animals of a flock of sheep or goats [Filloy Nieva 2000: 132, 137]. The small size of the preserved bells (13.5 to 14 cm in height) seems to indicate this.

Sheep gong A displays four fragments of a well-preserved woollen textile. The largest fragment, attached to the upper part of one side of the bell (Fig. 2: 1), next to the handle, is almost three square centimetres in size. The other three smaller fragments can be seen on the surface of the handle and halfway down the other side of the gong; they are very close to one another. The weave is 2-over-1 twill, very common in woollen cloth. In all of the fragments the following technical characteristics may be observed: the warp, visible in some of the most worn areas, shows single threads, 0.3-0.4 mm. thick, tightly wound in a Z-twist. The weft is formed by double strands that are overall 0.8 mm. thick, created by twisting together two strands similar to those used in making the warp. There are 8 warp threads and 18 weft per square centimetre.

Sheep gong B displays a few small wool fragment (1.5 x 3.5 cm) on the lower side, close to a fracture in the metal (Fig. 2: 2). The technique employed is the same as described above (2-over-1 twill). Some of these warp-threads have been exposed and permit us to discern their simple structure, in Z-twist and a thickness of 0.3-0.4 mm. There are 8 threads per centimetre. The weft is made up of very slightly S-twisted double threads 0.8 mm thick. There are 18 threads per centimetre. Undoubtedly this is the same cloth that is preserved on Sheep gong A. Some time ago, M. Hoffmann suggested that this kind of weaving was more typical of a two-beam loom than of a warp-weighted loom, the reason being the obligatory distribution of the 2 warp threads underneath the weft and one on top [Hoffmann 1964: 251 ff.; J. P. Wild 1970, 49 f.].

b) The ring of the horse's bit, *frenum* (3.5 cm diameter), preserves a piece of tablet-woven textile on a third of its perimeter and only on one side (Fig. 2: 3). This textile is also mineralized. At a magnification of x50 we can clearly see the cords with their strong S-twist at a 45° angle. These are 1.4 mm. thick; the curved surface of the ring shows the spaces between them. They are made up of four (?) double threads 0.8 mm. thick (Z-twist), possibly composed of two single threads 0.3-0.4 (?) mm. thick in an S-twist. In fact the mineralization and wear on the cords does not allow for precise measurements.

c) The stonemason's pick presents the worst preserved fragment of textile (Fig. 2: 4). The surface of this (5 x 3 cm) is totally degraded. This, however, does not prevent us from observing that we are again dealing with a tablet-woven textile with the same characteristics as in the *frenum* ring.

* * *

All this data allows us to conclude that our four tools were wrapped in a woollen cloth which must have had a 2/1 twill weave, reinforced with edges made by the tablet-weaving system on a two-beam loom. The yarn used in both, the twill and the tablet weaving appears to be the same.

These conclusions leads us away from Filloy's initial impression that we are dealing with a sack. Moreover, it is more than likely that sacks were not made from wool, but from linen or hemp, as is the case today. The mere fact that the fibre employed was wool makes us think of a material that was used in clothing, due to the care taken in making its edges. Possibly it was reused later to wrap tools that were highly valued by their owner when he was forced to hide them. We expect that work presently under way on mineralized textiles, from both recent finds and established collections, will provide us with more archaeological information on the use of wool in textile manufacture, a subject until now documented only by literary and osteological sources [Alfaro Giner 1984: 19-47]. These small fragments of cloth are of special interest to Hispania given the fact that until now we did not have access to such clearly preserved woollen textile fragments woven in twill.

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