

AUGUSTAN CAMPAIGNS IN THE INITIAL PHASE OF THE CANTABRIAN WAR AND ROMAN ARTILLERY PROJECTILES FROM THE MONTE BERNORIO *OPPIDUM* (VILLARÉN, PROV. PALENCIA)

THE CANTABRIAN AND ASTURIAN WARS OF AUGUSTUS

The *Bellum Cantabricum et Asturicum*, waged by the emperor Octavian Augustus against the communities of the northern fringe of Iberia, is generally not well-known. Nevertheless, it was the only large-scale war of Augustus to succeed. After Varro's disaster in the Teutoburg Forest (Germany, AD 9), Rome only expanded its territory for defensive reasons, hence, the war has historical significance. Implications were not only military, territorial, and economic; there was also a political component, which was important for the consolidation of the imperial regime¹. It has previously passed unnoticed, because the historical record has been lost.

In *Ab urbe condita*, Livy narrated the campaign extensively, starting from Book 135. Nevertheless, they have all been lost, and there is no remaining fragment. Unless new texts are discovered, the main literary sources of Greco-Roman origin are only three:

- L. A. Florus, *Epitoma de Tito Livio*, Book XII, dated to the Antonine period (2nd century AD);
- Cassius Dio, *Historia Romana*, Books LIII and LIV, dated to the 3rd century AD;
- P. Orosius, *Historiarum adversum paganos* (4th-5th century AD), based on the work of Florus and a summary of Livy's account.

The lack of alternative sources is a clear reflection of the detail found in Livy's account. As Augustus' official historian, his work was a reference for all others. This war undoubtedly featured prominently, since it was the only one that Augustus personally fought against foreign enemies. There are, however, other references, such as in *Res Gestae Divi Augusti* and other more anecdotic accounts, spread out through a large variety of works, for instance, *Vita Augusti*, included in Suetonius' *De vita Caesarum*, written sometime in the first half of the 2nd century AD. References may also be found in Appian, Plutarch, or Flavian Joseph, among others; nevertheless, they hardly hold any value for the reconstruction of the military campaigns of this conflict².

The true military significance of these campaigns was uncovered by archaeological research, undertaken by the project »Proyecto Guerras Cántabras«, directed by E. Peralta Labrador and the Instituto de Estudios Prerromanos y de la Antigüedad de Cantabria (IEPAC). The project's results laid a foundation base for the development of knowledge on the conflict in the central Cantabrian Mountains, with the discovery of seasonal camps (*castra aestiva*), hillfort destruction (in the provinces of Cantabria, Palencia, and Burgos), and even spectacular battle scenes, such as the siege to *castrum* La Loma (Santibáñez de la Peña, prov. Palencia). The reconstruction of military operations has only been partially published to date, but already constitutes the most complete archaeological record for the war³. Other studies and discoveries in sub-

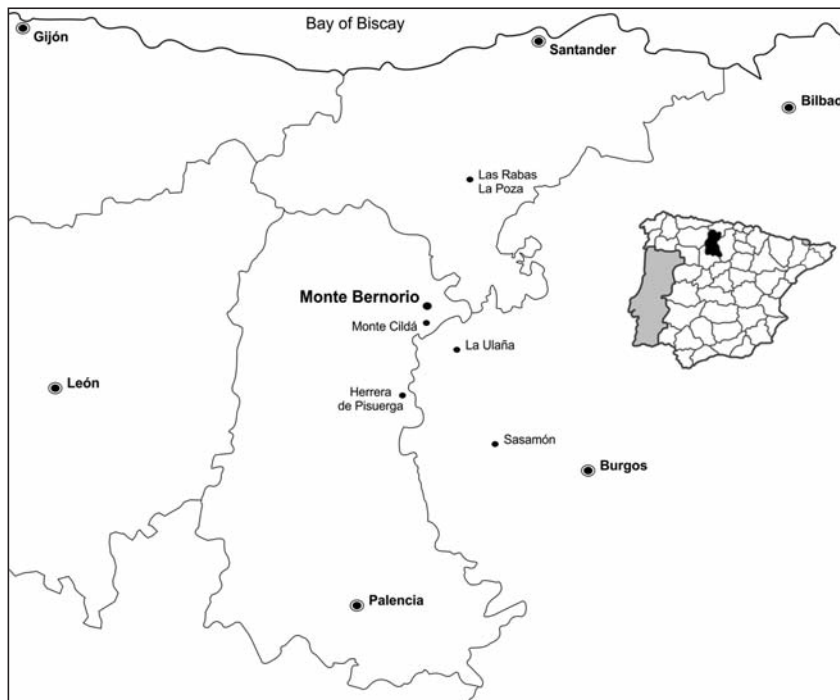


Fig. 1 Monte Bernorio (Villarén, prov. Palencia). Location. – (Map A. Martínez Velasco).

sequent years have also focused on the central Cantabrian region⁴. In addition to these primary references, there also exist summaries and syntheses⁵.

THE LEGIONARY ATTACK ON SOUTHERN CANTABRIA

By combining literary and archaeological sources, it is possible to recreate the beginning of the attack against the southern territories of the *Cantabri*. Florus (II, 33, 48) and Orosius (VI, 21, 1-11) narrate that the offence took off from the Roman base camp at *Segisama*⁶ and that the army was under the personal command of Octavian Augustus. The emperor divided his legions and auxiliaries in three columns, which headed north, attacking in the central territory of the *Cantabri* on three different fronts. They were probably trying to force a direct confrontation on the field, which would quickly decide the outcome of the war and allow the army to attack and destroy the enemy's central defence points, one by one. The general strategy of Celtic communities was to take refuge in fortified places, from where they were able to tire the enemy out, exerting pressure, both from within and without. The numeric superiority of the Roman army (references quote up to seven or eight legions of 50,000) and its ample experience in all kinds of battle, allowed for them to block and then to take fortifications effectively. Several important indigenous centres on the way from *Segisama* towards the natural passes of the Cantabrian Mountains are known to have suffered a violent destruction. The most important of these was presumably the Monte Bernorio *oppidum* (Villarén, prov. Palencia; **fig. 1**)⁷.

Advancing north, the Roman troops very probably came across the Ulaña hillfort (Humada, prov. Burgos). The site is located on a great calcareous platform of 586 ha, of which 285 ha are naturally defended by steep falls and cliffs, reinforced by walls. Despite the size, occupation seems to have been only seasonal, as urbanised spaces (with differentiated built areas) are followed by others with no signs of human activity⁸. Research was conducted by M. Cisneros Cunchillos, although no data was produced able to inform of the

role this centre played during the conflict. There are ¹⁴C dates for destruction by fire in the mid of the 1st century BC, which may be indicating that the site was abandoned before the 26-25 BC campaign⁹. Despite this, authors have generally ascribed its downfall to the arrival of the Romans, although without going into detail¹⁰. As mentioned explicitly by its excavators, the characteristics of the hillfort did not allow for a good defence and its strategic situation does not necessarily imply an effective resistance against the kind of attack deployed by the Romans¹¹. In conclusion, there is no clear evidence for a violent conquest of the hillfort, although it may have indeed been destroyed. There is no evidence either for the reoccupation of the site by Roman troops, as did happen at other places.

The hillfort of Monte Cildá (Olleros de Pisuerga, prov. Palencia) is located on the natural communication route running in north-south direction. This large site occupied the top and sides of a calcareous mountain, which was part of a ridge lining the Pisuerga river. Archaeological data for the pre-Roman occupation of the site was recorded in a confusing manner, resulting in unclear conclusions, although an indigenous phase did exist, evidenced by pottery and metal remains. Even Iron Age wooden implements were recovered. Among the most relevant Roman finds features a denarius minted at *Turiaso* (Tarazona, prov. Zaragoza). *Turiaso* is known for a *tessera* with Celtic text inscribed in Latin alphabet, the *TURIASICA CAR*, which has been translated as the »Hospitality pact of Turiaso«. The inscription is interpreted as representing a pact of hospitality between *Turiaso* and where the inscription was located – or at least with part of its population¹². Monte Cildá was also destroyed in the late 1st century BC¹³. C. Fernández Ibañez reviewed the excavation finds of the 1960s and 1970s and identified Roman military equipment dated to the Early Empire¹⁴. The artefacts belonged to a Roman military base, established on the site, presumably once it was conquered. The attack on Monte Bernorio, a few kilometres north, must have taken place simultaneously or slightly after this one, as will be seen ahead.

Some distance from Monte Bernorio, following the natural north-south communication route, which cuts through the Cantabrian Mountains, lies the hillfort of Las Rabas or Celada Marlantes (Cervatos, Enmedio, prov. Cantabria)¹⁵. Placed midway up the mountain, it is difficult to defend, but visually it commands the mountain route leading into the region of Cantabria. Although its defence works are yet not fully recorded, they included several rows of walls and ditches and perhaps ramparts. The examination of the finds recovered from the excavations indicates that the hillfort was attacked and destroyed by Roman troops¹⁶. This hypothesis is backed by the existence of two Roman camps (*castra aestiva*) in the locality of La Poza, in Peña Cutral (Enmedio, prov. Cantabria)¹⁷. Both camps overlook the Las Rabas hillfort, controlling it at a distance of roughly 800 m. Its overlapping structures have revealed that they belong to two different phases of the Cantabrian War. The attack on the hillfort was probably unleashed from the larger of the camps (7 ha). The smaller one seems to have been used later in time, during pacification operations and for territorial control.

Also related are the archaeological sites of Santa Marina and Monte Hornedo (Camesa-Castrillo del Haya, Valdeolea, prov. Cantabria) and El Pedrón (Cervatos, Campoo de Enmedio, prov. Cantabria)¹⁸. Santa Marina, what seems to have been a hillfort or indigenous village, was destroyed and later reoccupied by a Roman *castra aestiva*. Nearby, lies El Pedrón, a Roman *castellum* constructed during the campaign and only used for a short period of time. It may very well be that these two structures are also associated with the camps of La Poza, in Peña Cutral.

Further archaeological evidence for attacks on hillforts, is found on the natural communication route that runs along the southern base of the Cantabrian Mountains in an east-west direction. La Loma hillfort was excavated by the IEPAC, directed by E. Peralta Labrador. All evidence points at siege, assault, and destruction. The hillfort was surrounded by a series of seasonal camps (*castra aestiva*) and controlled by a larger camp (*castra aestiva principalia*) – defended by connecting earthworks (*brachium*)¹⁹, a fortlet (*castellum*)

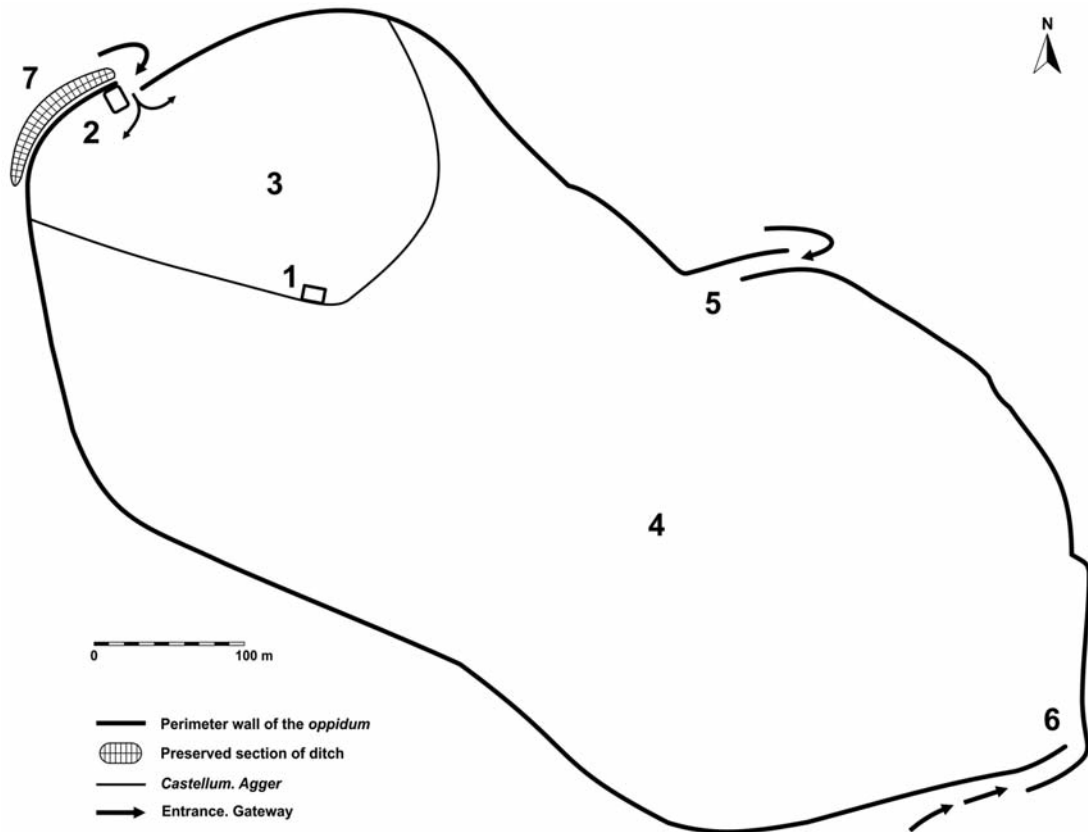


Fig. 2 Monte Bernorio *oppidum* (prov. Palencia). – 1 *castellum* tower. – 2 north-west gate with tower. – 3 Roman *castellum*. – 4 *oppidum*. – 5 north gate. – 6 south gate. – 7 preserved ditch. – (Illustration A. Martínez Velasco / J. F. Torres-Martínez).

that intersected a possible western escape route, and a battering position, supplied with artillery and leaden sling-bullets (*ardentia tela* and *malleoli*)²⁰. The hillfort was ultimately attacked and destroyed²¹.

The abundant military material recovered, some of which is in an excellent state of conservation, is very similar to finds from the Bernorio *oppidum*; the association is more than likely. Furthermore, the collection of arrowheads from La Loma is probably the largest known for the Roman world, showcasing diverse typologies. Also worthy of mention are catapult projectiles of various kinds and calibres, including lead bullets, a *pilum*, *caligae* nails and other dress related finds; as well as tent pegs (found *in situ*), etc.²² There also have been coin finds, dated to the early Principate of Augustus²³.

THE MONTE BERNORIO *OPPIDUM*

The Bernorio mountain is centrally located on the southern side of the Cantabrian Mountains (fig. 2). This archaeologically rich area is revealing itself as one of the hotspots for Iron Age and Late Prehistoric remains in the Iberian Peninsula. The area comprises several sites belonging to this time period, of which the Bernorio *oppidum* is the best known. Spread across a calcareous mountain-top plateau, it rises up to 1173 m at its highest point. The fortified site is located on the kidney-shaped plane, covering an estimated 28 ha (approx. 700 m long and 400 m wide). The *oppidum* stands out from other hillforts in its immediate surroundings because of its size and location.

The fortified site dominated an important crossroads between mountain routes, one of them running south-north, between the northern Central Plateau and the Bay of Biscay, and the other east-west, along the mountain foothills, from the Pyrenees and Mediterranean to the western territories, Asturias and Galicia. Furthermore, it also controlled the junction between the Pisuerga river (a tributary to the Duero) and the upper Ebro river.

Its strategic position was again valued during the Spanish Civil War (1936-1939), when the site was occupied and fortified by the forces comprising the so-called Frente Norte²⁴. Modern defence works, such as trenches and excavated shelters, brought to light the abundant underlying archaeology. Excavations, conducted by J. San Valero Aparisi, ensued after the end of war, first between 1943 and 1944, and later in 1959, although the last campaign was interrupted²⁵. Several test pits and excavation trenches were opened in different areas of the *oppidum* and cemetery²⁶. No intervention took place between 1959 and 2004, when the present research project started²⁷.

The earliest finds on site date back to the Neolithic and Chalcolithic, but the first signs of actual settlement do not appear until the Late Bronze Age, continuing through the Early and Late Iron Age. Hand-made and wheel pottery, bronze and iron metalwork, and glass adornments, all indicate continued occupation through time. The work of J. San Valero Aparisi has been fundamental in tracing the complete perimeter of the wall and the earthworks, including three entrances and the remains of entrenched fields with parapets and ditches in terraced formation²⁸.

In the 1st century BC, the Romans conquered the *oppidum*. The destruction was recorded in levels comprising thick layers of ash and charcoaled remains, as well as Roman and indigenous military artefacts. Shortly after its fall, the victors built a Roman *castellum* on the acropolis of the site, which remained in use for a long period of time, with at least two differentiated phases of occupation.

The site still holds a wealth of evidence to be recorded, and much of the recovered data still await analysis. It is expected that forthcoming results and campaigns will alter some of the initial conclusions, therefore existing data sets must only be considered provisionally. Nevertheless, the evidence presented in this paper is sufficiently explicit and stands for itself.

THE ATTACK ON THE MONTE BERNORIO *OPPIDUM*

The Monte Bernorio *oppidum* was a strategically positioned site, and therefore it became important for the Roman offensive in the initial phase of the *Bellum Cantabricum*²⁹. Once Bernorio was taken, the passes across the Cantabrian Mountains were guaranteed. The winning of the site was only part of a wider plan, aimed at conquering other sites located on the same communication route, and which have been already mentioned above.

South of Bernorio, lies a nearby plateau, known as La Lastra or Castillejo (Pomar de Valdivia, prov. Palencia). Between 2000 and 2002, the research team belonging to the IEPAC, directed by E. Peralta Labrador, surveyed and excavated its environs. To date, the site is probably the largest known Roman camp (*castra maiorem*) in Europe, stretching out for 41 ha (fig. 3)³⁰. The central part was occupied by a seasonal camp (*castra aestiva*), with a rectangular plan of 18.38 ha, surrounded by a *vallum*, made up of *agger* earthworks and stones with *fossa fastigiata*. Other structures were added, which were adapted to the available surface on the plateau. Two sections were excavated into the site's fortifications, one on the central camp's defence line, and another on the *brachium* that joined this enclosure with the outer features. The outer fortifications took advantage of steep slopes and cliffs and reinforced the more vulnerable sides with a stone *agger*, probably also with a palisade (*vallum*), a double ditch (*fossa duplex*), and a *contra agger*. Remains of the

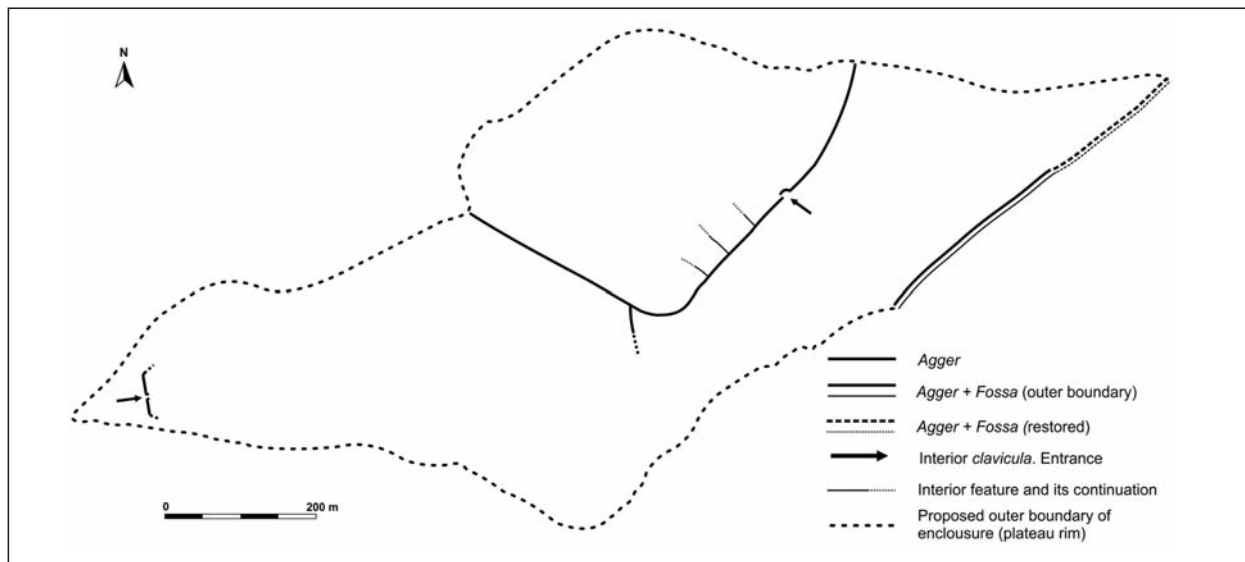


Fig. 3 Roman camp of Castillojo (Pomar de Valdivia, prov. Palencia). – (Illustration A. Martínez Velasco).

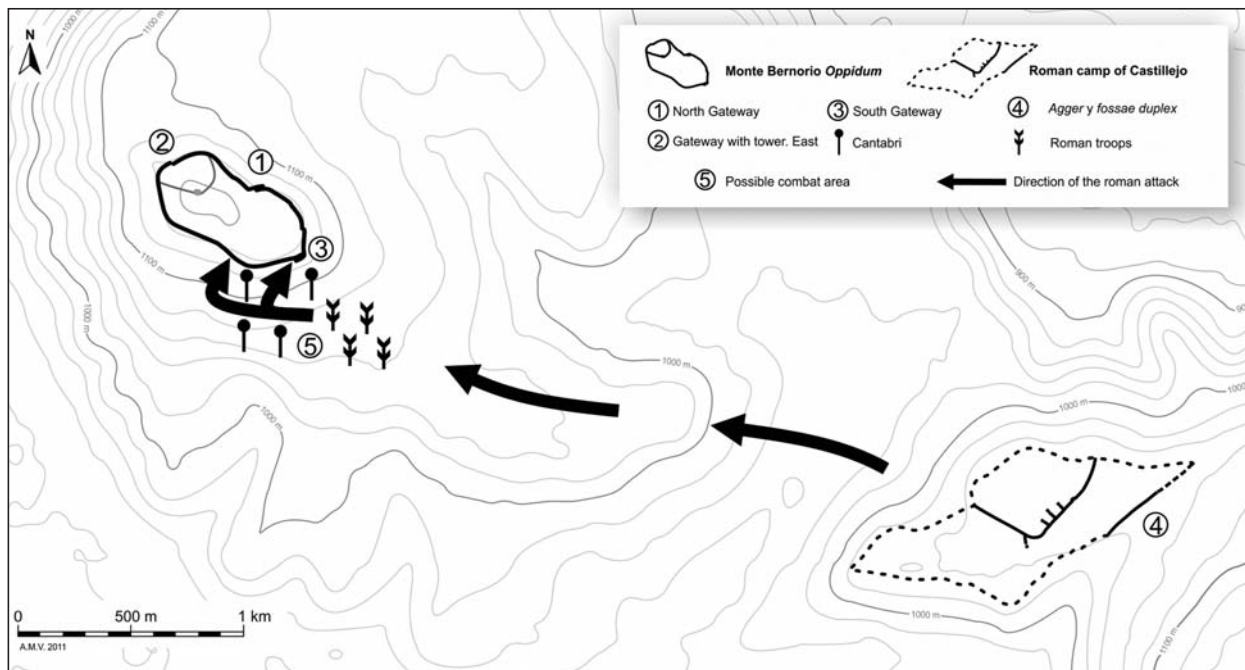


Fig. 4 Roman camp of Castillojo and Monte Bernorio *oppidum*. Proposed outline for the battle scene and the assault. – (Illustration A. Martínez Velasco / J. F. Torres-Martínez).

main entrance to the complex have been discovered on the side that faced Monte Bernorio, protected by what appears to be a series of defence works, which are hardly recognisable. All features were built following the proportions cited in Pseudo-Hyginus (*De munitionibus castrorum* XLIX) and Vegetius (mil. I, 24). These were the standard measures used by the Roman legions, as demonstrated by the excavations of E. Peralta Labrador.

All evidence indicates that La Lastra or Castillojo was the main camp used for the siege of the Monte Bernorio *oppidum* (fig. 4), and that such an event took place at an early stage of Octavian Augustus' Prin-

cipate. The evidence includes military equipment (*caligae* nails, triple-bladed arrowheads, a *pilum*, an *aucissa* type brooch, and other bronze artefacts, related to military dress, work tools and ferrules from the posts of large tents), but also coins (which date the site to the Early Principate). The site could accommodate, at least, two complete legions³¹.

The data that is currently available points to an attack perpetrated on the southern side of Bernorio from La Lastra or Castillejo. The structural entity of the camp and the dimensions of the military operation unleashed on Monte Bernorio suggest that the siege may have been part of the campaign, which according to the sources, Augustus personally led in the region. It seems appropriate that he would be directing operations from a military camp of these characteristics. E. Peralta Labrador thinks that the taking of Bernorio could coincide with the passage describing the taking of *Bergida*, *Vellica*, or *Attica*³², recorded by Cassius Dio (LII, 25, 7), Florus (II, 33, 49) and Orosius (VI, 21, 5). This campaign was under the command of Gaius Antistius Vetus, *legatus* of *Tarraconensis*, who took over operations in the Cantabrian region after Augustus fell ill³³.

As of 2007, a wide area between the Castillejo camp and the southern side of Monte Bernorio has been subject to archaeological survey, returning varied finds of military nature, both Roman and indigenous, which could hypothetically belong to a battle field. Unfortunately, many materials have been lost to illegal metal-detecting, as becomes apparent from the numerous dug holes spread throughout. Surveying in the surroundings of the *oppidum* also revealed remains that could be part of other structures belonging to the Roman attack. A local informant explained that sometime in the first half of the 20th century, ancient materials were found in front of the eastern side of Monte Bernorio. He clearly recognised two *dolabrae* and went on to describe other finds, which were probably Roman and that are lost today.

ARTILLERY AND THE ASSAULT ON BERNORIO

Excavations on Monte Bernorio have clearly established that the site perished as the result of an armed conflict; it was assaulted and destroyed by Roman forces. The *oppidum*'s violent finale is clearly evidenced in the archaeological level, which corresponds with the end of the indigenous occupation. There is abundant ash, charcoal, and burnt or carbonised artefacts. The military objects are similar to those known for the period in Hispania³⁴.

It is important to take into account that Monte Bernorio has suffered significant alterations through time, especially during the Spanish Civil War (1936-1939), when trench shelters, etc., were excavated. Monte Bernorio's archaeology has also suffered from intense illegal metal-detecting, both by »experts« and »amateurs«. These activities have specially affected the southern side of Bernorio due to various factors, although particularly because of the abundant Roman and indigenous military artefacts. Therefore, any archaeological finds have first had to survive decay through time and later to skip the detection of treasure hunters, who use highly advanced technology. Despite everything, Roman metal projectiles have been recorded in the *oppidum*'s destruction levels, associated with indigenous defence structures on the southern side, indicating that fighting did take place in this area. Some of these objects were found broken or deformed, a clear sign of having been used for battle. For instance, projectiles suffered bends and blunt tips from impact, but there also exists other evidence, such as damper elements, torn from a *gladius* sheath by a blow.

Even when much has been lost to treasure hunters, weapon and tool finds are still relatively numerous, especially considering that the excavated surface is still very small in comparison to the entire areal occupied by the *oppidum*. Remains include spear, javelin and ferrule heads, an iron axe, and several fragments

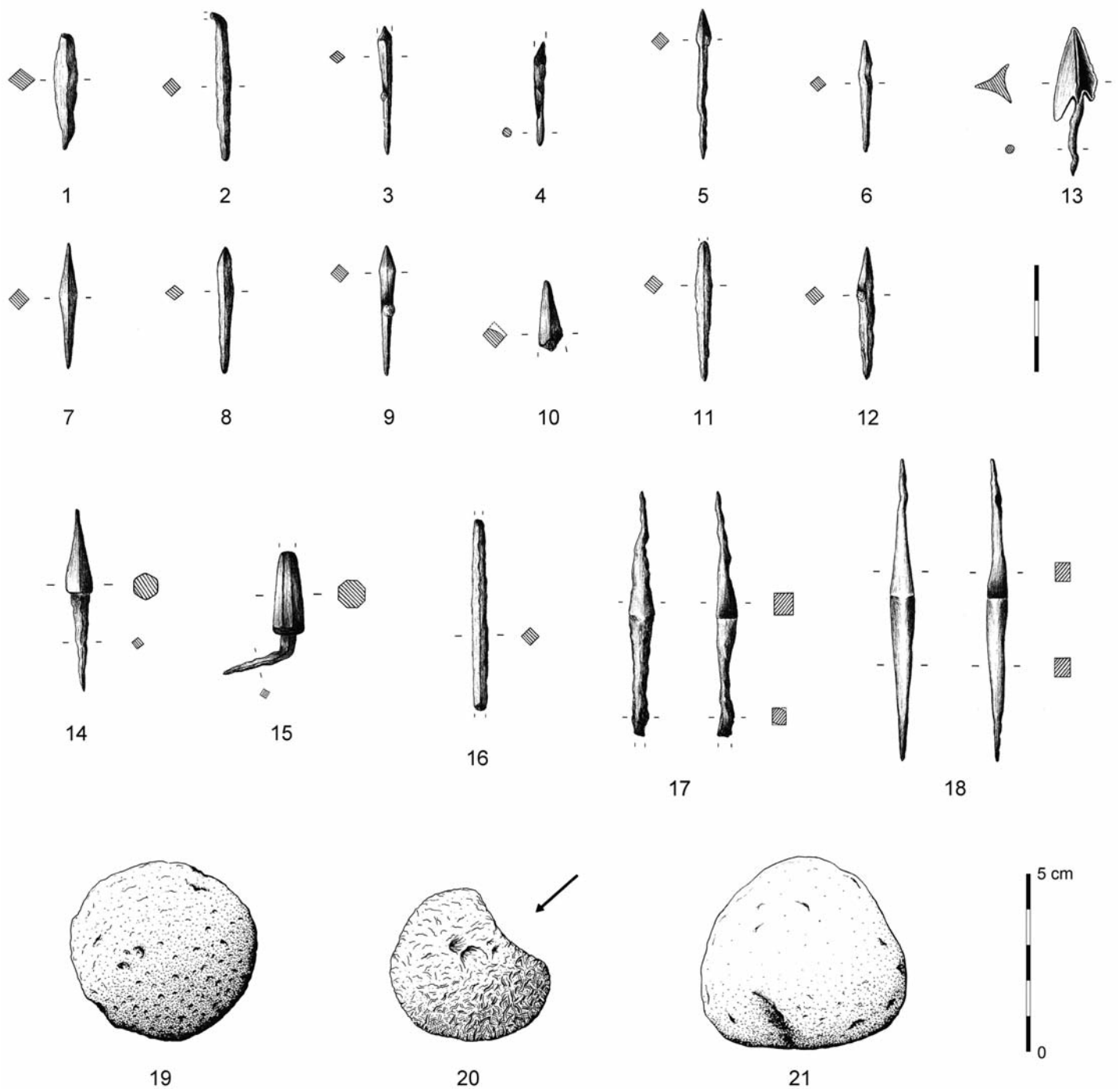


Fig. 5 Monte Bernorio finds: 1-13 *sagittae*. – 14-18 *pila catapultaria*. – 19-21 stone projectiles (*ballistae*). – (Drawings P. Fuentes Melgar).

of axe blades. There are also fragments from various falcate knives, iron blades, and bone hafts, some with geometric motif decorations. Dress accessories and damper elements from weapons are also common, such as pins, rings, and rivets, all of which were used both by Romans and indigenous people alike. Throughout the *oppidum* and its immediate surroundings, numerous *caligae* nails are also to be found, which belonged to the Roman legionaries³⁵.

The evidence uncovered until now, together with other considerations, which will be discussed ahead, clearly suggest that the fall of the *oppidum* took place after a battle on the southern side of Monte Bernorio. It is also plausible to think that the first assaults on the site were conducted in the area between the Castillejo camp and Monte Bernorio. For certain, the southern entrance and wall were attacked with the aid of artillery. The entrance would have been protected by what seems to be some kind of bastion, destroyed during the assault. The largest concentration of Late Iron Age (1st century BC) weaponry is precisely found in this area.

- Arrowheads (*sagittae*): They are relatively abundant among the recovered remains of light artillery projectiles (a total of 13; **fig. 5, 1-13**). Some were found inserted between the stonework of the outer façade of the wall or at its foot. Besides the above-mentioned triple-bladed types, there are also arrowheads with small, tapered points (some probably had the characteristic tang). The whole assemblage may be compared to the finds from Castillejo and from the exceptional site of La Loma hillfort³⁶, but also to the arrowheads with tapered points recovered among the remains of the Roman assault on the village of Altikogaña (Eraul, prov. Navarre)³⁷.
- Stone projectiles (*ballistae*): Heavy artillery projectiles, of greater power and calibre, are also relatively abundant (**fig. 5, 19-21**). Destruction levels have returned small-calibre, stone, *ballistae* projectiles. The stones were worked coarsely and effectively to achieve a spherical shape, with diameters ranging between 4.40 and 5.30 cm, and weights between 102 and 134 g. These are light, small-calibre projectiles. Although spherical projectiles are usually heavier and larger in calibre, the examples from Bernorio are not rare. Most of the projectiles from Numantia (prov. Soria) were also light: 4 balls weighing 10 *minas*, 3 weighing 3 *minas*, and 13 between 1 and 2 *minas*³⁸. A *mina* is equivalent to about 404 g, so the Bernorio projectiles, would approximately weigh between a fourth of a *mina* and less than half a *libra*³⁹.
- *Pila catapultaria*: There are also two iron projectile heads, belonging to a light catapult, probably a *scorpio*. The heads are square in cross section, tapering to a fine, sharpened, point, both with a long rod to be attached to the wooden shaft of the projectile. They measure 8.8 and 7.1 cm in length by 0.7 and 0.8 cm wide, respectively. During the excavations, two objects were recovered, which have been interpreted as projectiles belonging to a type of *cheiromballistra* or *manuballista* (catapults that launched arrows). These projectiles were shorter and smaller than the previous ones, measuring 5.3 and 5.2 cm in length by 0.8 and 0.9 cm wide, although their weights were the same, 8 and 6 g respectively. The heads are multi-sided and hexagonal in cross section, tapering to a fine point. Each had a rod, which was cylindrical-square in cross section, fitted into the projectile shaft. The heads are practically identical, and were carefully worked into a hexagonal section that converged at the top. This shape enhanced the projectile's aerodynamic properties, hardness, and penetration capacity. Both points were blunt by impact, and one of the rods is bent, almost to a 90° angle, perhaps, because somebody tried to remove it from where it had struck.

THE USE OF LIGHT ARTILLERY FOR SIEGE ATTACKS DURING THE AUGUSTAN PERIOD

Iron Age artillery machines were mechanisms that fired projectiles. Academic research on Roman artillery is not particularly abundant. The seminal work of E. W. Marsden⁴⁰ reviews in two volumes the origin and development of Greek and Roman artillery. The books are not only a history of artillery, but also cover the main surviving literary references, as well as a technical study of their function and structure. Other Spanish

and international authors have dealt with the subject, either as an individual topic, or as part of wider studies regarding Greek and Roman military⁴¹.

In general, this kind of weapon has not been studied from an archaeological approach until recently. Surviving remains are scant and difficult to identify properly. One of the most surprising aspects of existing archaeological studies is the emphasis placed on the remains of the machines, rather than on the projectiles they fired, although these necessarily are much more numerous. This may be due to the way research has been focused, looking more at data provided by historical sources, than at what may be gauged from the empirical evidence found on archaeological sites. Projectiles have the potential of increasing the knowledge on what is already known of the machines that fired them, or maybe even offer new evidence on those that are still unknown to us. Although one single machine could have fired several kinds of projectiles, these had to be of certain types and sizes, much like the machines themselves, which varied a lot in size and portability. In broad terms, one may easily identify two different kinds of artillery:

1. Heavy artillery: Machines fired large or heavy projectiles from long distances, behind the area of combat. The first people using these machines were the Persians (4th century BC), later adopted by the Greeks in the Hellenistic period and in the Roman world. *Lithoboloi* and *ballistae* fired stone balls and other large objects, while the *scorpio* fired large, arrow-shaped projectiles.
2. Light artillery: Machines fired at short distances, from the front lines. It appears that they first emerged during the Hellenistic period and continued to be developed by the Romans throughout different Iron Age conflicts. These firing devices could be transported on carriages (*carroballistae*) or by small teams (*manuballistae*), made up of a shooter and one or two helpers. Projectiles were mainly arrow-like in form. Along similar lines, there also existed archery, the domain of specialised *sagittarii*.

The evolution of heavy artillery is first known in the Greek and Hellenistic spheres and later in the Roman military world. The use of light artillery, in the form of arrows is widely attested for Greeks, Romans, and other cultures. The Scythians and other eastern communities achieved a high technical standard in the construction and operation of these weapons, which were adopted by Greeks and Romans⁴². We know that specialised groups of archers were used extensively by Roman legions from the Late Republic onwards into the Imperial period⁴³.

Projectile firing machines were profusely used in siege contexts in the Greek and Hellenistic world⁴⁴. The Romans soon appreciated their effectiveness (the first references in Latin texts date to 390 BC) and were frequently used in their campaigns of expansion throughout the Mediterranean and Western Europe⁴⁵. Scipio's siege on Numantia was carefully designed to allow for a profitable use of artillery, numbering some 300 *scorpiones* and another 300 *ballistae*⁴⁶.

In the warrior ideology of the indigenous communities of the Iberian Peninsula, archery was not held in much esteem, because it was not employed for close combat, which was, in theory, the ultimate aim of any confrontation⁴⁷. This might have changed in the last years of the Iron Age; the archer's bow and other similar weapons were possibly in use throughout Western Europe by that time. *A priori*, one must not assume that »Barbarians« had not acquired the knowledge of how to build these or other machines during their conflicts with the Romans⁴⁸.

The smaller, *scorpio* weapons are not as well known. They were designed to be used from a carriage or even held by a single man. There are Greek precedents for this type of machine, the Hellenistic *gastraphetes*. This device was described by Hero of Alexandria (mid 1st century BC), who based himself on the disappeared works of Ctesibius of Alexandria (mid 3rd century BC). The artefact's impulsion mechanism was very similar to the one later found in crossbows, a wooden strip that curved when drawn, like the bow⁴⁹.

The drawing mechanism that gave impulse to the projectiles changed gradually in the Hellenistic period with the application of torsion springs. It allowed for the development of smaller, more powerful machines,

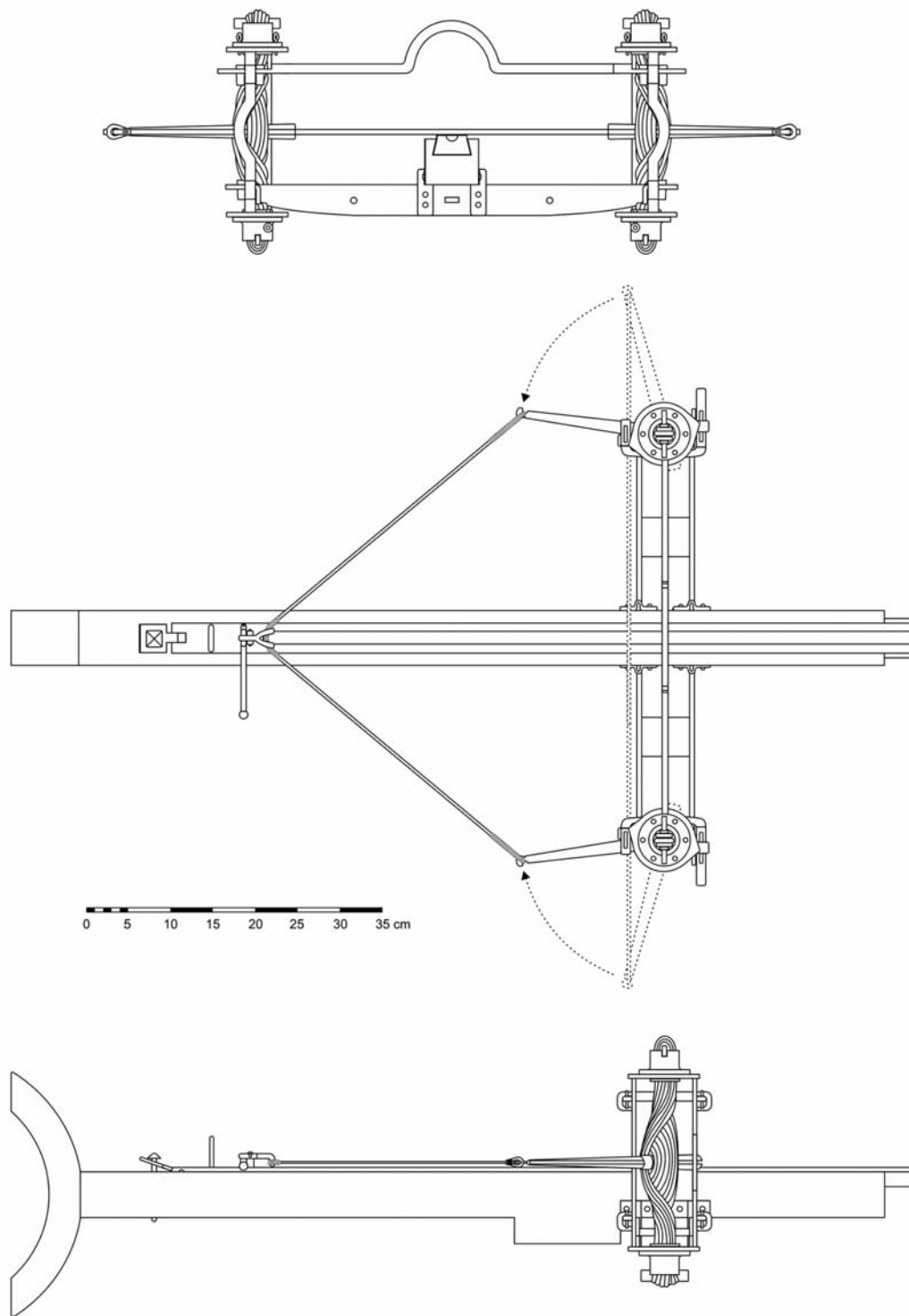


Fig. 6 Hypothetical reconstruction of an Early Imperial *manuballista*. – (After Iriarte 2005, 275; modified by A. Martínez Velasco / J. F. Torres-Martínez).

which were probably also more precise. It is unclear when and how such a mechanism was incorporated to smaller machines that were easily transported, presumably sometime between the Hellenistic period and the Roman Late Republic. The civil wars that branded the end of the Roman Republic must have been fundamental for the development of these weapons. In times of the emperor Trajan, artillery machines were

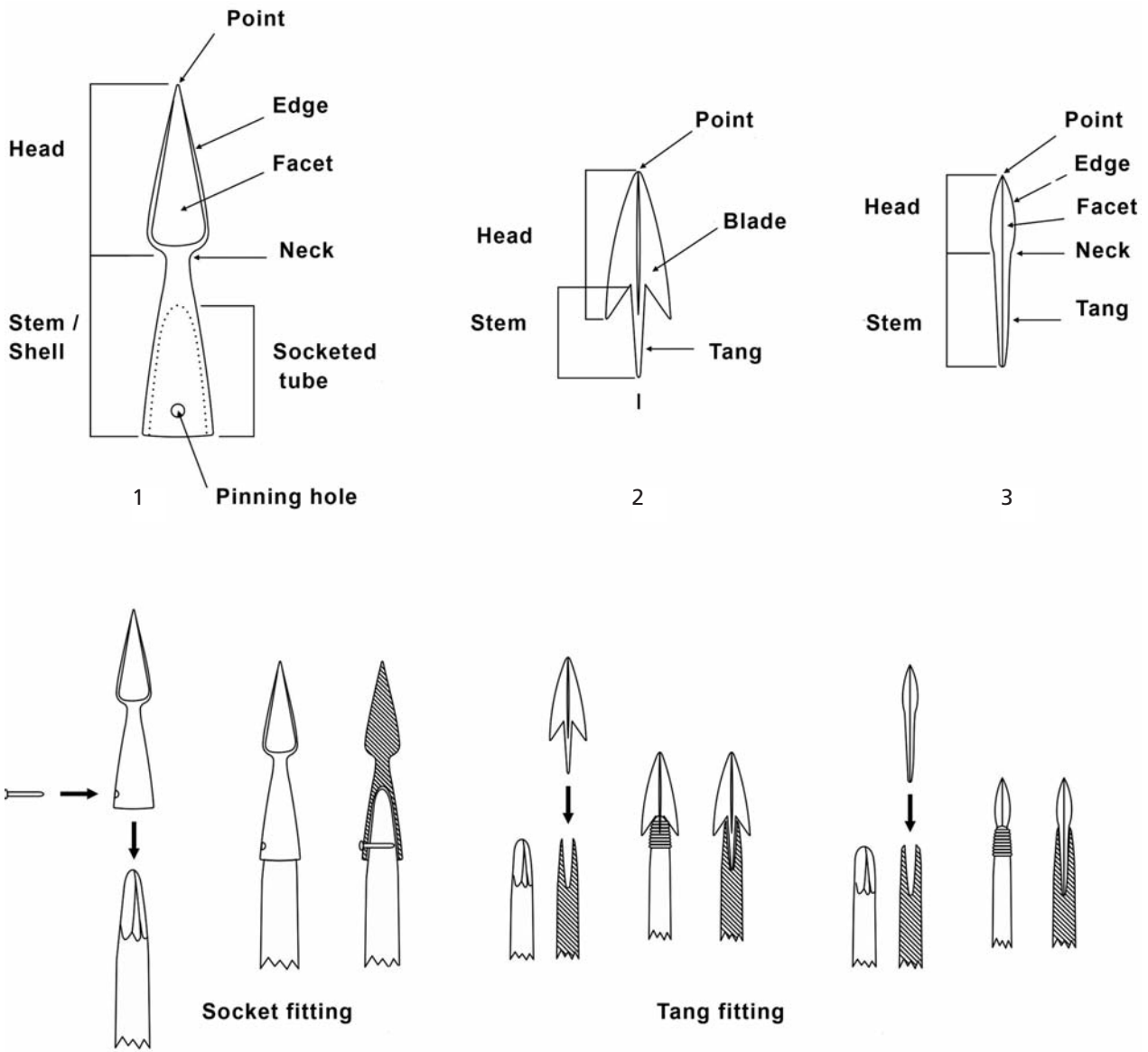


Fig. 7 Parts of a projectile. Terminology and fittings. – 1 scorpio projectile warhead. – 2 triple-bladed arrowhead. – 3 small tapered arrowhead point. – (Drawing A. Martínez Velasco / J. F. Torres-Martínez).

depicted on Trajan's Column (early 2nd century AD). Some of these weapons were transported in carriages called *carroballistae*⁵⁰.

As a result of these technological advances, machines reduced in size, while gaining in strength and precision (fig. 6). Sometime in the turn of era, a portable machine appeared, operated with torsion spring technology, which fired arrows and could be handled by a single man. Vegetius (mil. II, 15; IV, 22) calls it a *manuballista*, and it was used for similar purposes as Hero's *cheiroballistra*⁵¹. The first known remains for this type of machine appeared on the archaeological sites of Orșova (jud. Mehedinți/RO) and Gornea (jud. Caraș-Severin/RO) in Late Imperial contexts, dated to the 4th century AD⁵². The best-preserved remains known for this type of machine were found recently in the surroundings of the Castra Vetera I site, in Xanten-Wardt (Kr. Wesel/D)⁵³. More specifically, the assemblage comprised the central part of the torsion mechanism, measuring 21×28×9cm and wooden fragments. The author describes the machine as a

Handwaffe or »hand weapon«, a portable artillery device, which could be handled by a single man, although probably protected by a few assistants⁵⁴. The remains have been dated to the 1st century AD, a much earlier chronology than had been previously hypothesised. J. Coulston⁵⁵ suggests that the use of this type of weapon was probably much earlier and widespread than what has been thought until now. The projectiles recovered at Monte Bernorio are a clear proof of this.

CONCLUSIONS

The projectiles from the site of Monte Bernorio confirm that the Roman troops that conquered the *oppidum* used machines, which fired stones or *ballistae* and projectiles of the type *pila catapultaria*. All cases are examples of light artillery, such as bows, *scorpiones*, and small-calibre *manuballistae* and *ballistae*. Artefacts of larger calibre may indeed still appear, because the excavated area is still only a small portion of the site (not more than 200 m²). In addition, objects found during the survey of the environs are only a surviving sample of intense illegal treasure hunting activities. Despite the fact that evidence is so clearly fragmentary, available data is sufficiently representative and definitely proves the existence of an attack on the southern side of the site with the use of artillery. Considering the nature of the Bernorio landscape, these projectiles were shot from portable and light devices, which could be brought sufficiently near the *oppidum* defences without great difficulty.

The typologies of the arrowheads are common to other sites near Bernorio, such as the Castillejo camp or the Roman siege of La Loma⁵⁶. Nevertheless, stone projectiles from *ballistae* are extremely light and small in calibre, so new parallels must be found that might indicate what kind of machine may have fired them.

Small-calibre, arrow-shaped projectiles (**fig. 7, 1**) were fired from light artillery, probably carriage *scorpii* (*carroballistae*) or *manuballistae*. The point was wedged into the shaft by a slender rod (**fig. 7, 1** and socket fitting), in contrast to projectiles of larger calibre known for the Late Republic and Early Empire, with tubular fittings⁵⁷. This is also the case with most projectiles known from sites involved in the Cantabrian War, such as Espina del Gallego (Corvera de Toranzo, Anievas and Arenas de Iguña, prov. Cantabria)⁵⁸ or La Carisa (Curriechos, prov. Asturias)⁵⁹. A variation is found among the smaller projectiles published for the siege of La Loma (Santibáñez de la Peña, prov. Palencia), which were wedged into the shaft by a spigot-shaped tang⁶⁰. Similar projectiles are found in other areas conquered by the Romans⁶¹, as well as on the wooden shaft of one of the projectiles from Dura Europos (Salihye, Siria), which still preserves the string that reinforced the place where the iron tip was inserted⁶².

From our point of view, the most significant advancement is found in the design and manufacture of the metal projectile points, a development that achieved greater firing power and penetration. The smallest points apparently do not differ that much from bow projectiles, but they have actually been manufactured very carefully, with hexagonal cross sections, tapering to a fine point (**fig. 5, 14-15**), in order to achieve a great force of penetration and to sustain strong impacts at high velocities. Torsion artillery machines achieved this. Ammianus Marcellinus (XXIII, 4, 5-7) explains it thus: »The arrow, driven by the power within, flies from the *ballista* out of sight, sometimes emitting sparks because of the excessive heat. And it often happens that before the weapon is seen, the pain of a mortal wound makes itself felt«⁶³. For all these reasons, we have decided to consider these points as projectiles fired from small torsion artillery machines. The device that would better fit this kind of projectile is the *manuballista*. These are our conclusions, which we open to scientific debate.

Notes

- 1) González-Echegaray 1999, 152-159; Peralta 2003, 315-319. González-Echegaray is key for this aspect.
- 2) Syme 1989, 418-420. – González-Echegaray 1995. – González-Echegaray 1999, 147-151. – Peralta 2003, 315-318.
- 3) The first publications on the subject: Peralta 1999a; 1999b; 2000a; 2000b; 2001a; 2001b; 2002a; 2002b. – Other studies and references in González-Echegaray 1997; González-Echegaray 1999; Ramírez 1999; Peralta 2003, 299-315; 2004a; 2004b; 2006; Gutiérrez / Hierro 2001.
- 4) Peralta 2003, 307 fig. 153; 2004a, 34-35; 2004b, 116. – Camino / Viniegra / Estrada 2005. – Camino / Viniegra / Estrada 2006. – Cepeda 2006a, 687-688. 690. – Cepeda 2006b, 395-396. – Fernández / Bolado 2010. – Bolado / Fernández 2010a. – Bolado / Fernández 2010b. – Martínez 2010. – Torres-Martínez 2007. – Torres-Martínez / Serna / Domínguez-Solera 2011.
- 5) Morillo 2006a, 85-101 figs 97-100. – Morillo 2009, 240-243. – Morillo / Perea / Ramírez 2008.
- 6) Located in the present municipality of Sasamón (prov. Burgos). – On recent archaeological discoveries relating to military camps in the municipality, see Didierjean 2008, 109-112.
- 7) González-Echegaray 1995. – González-Echegaray 1999, 161-163. 165. – Ramírez 1999, 177. – Peralta 2003, 261-264. 315-319.
- 8) Peralta 2003, 295. – Cisneros / López 2004.
- 9) Cisneros / López 2004, 17-19.
- 10) Peralta 2004a, 33.
- 11) Cisneros / López 2004, 22.
- 12) Peralta 1993; 2000a, 143-145; 2003, 143-145. – Almagro-Gorbea et al. 2004, 316 fig. 617.
- 13) García / González-Echegaray / San Miguel 1966. – García / Iglesias / Caloca 1973.
- 14) Fernández 1999, 254-255. – Fernández 2007, 404. 407 fig. 1.
- 15) García / Rincón 1970. – García 1997.
- 16) Bolado / Fernández 2010a.
- 17) Cepeda 2006a; 2006b; 2007; 2008. – Cepeda / Iglesias / Ruiz 2006. – Martínez 2010.
- 18) Fernández / Bolado 2010. – Bolado / Fernández 2010b.
- 19) The *brachium* probably circled the site and closed the main entrance to the *oppidum*. The only preserved remains, 150 m, are found nearest to the camp. The rest perished to the plough.
- 20) It was probably fortified as a *castellum*, as suggested in the literature – «*castellum A*» for Peralta 2003, 303-306.
- 21) Peralta 2003, 303-306 figs 149-151; 2004b, 113 figs 8-11; 2006; 2008. – Fernández 2007, 404.
- 22) Peralta 2003, 303-306 figs 149-151; 2004b, 113 figs 8-11; 2006; 2008, 24-32. – Fernández 2007, 404.
- 23) Peralta 2008, 24-25. 32.
- 24) Torres-Martínez / Domínguez 2008.
- 25) R. Moro, foreman of the «archaeological excavations» of the Marquis de Comillas, excavated several areas of the *oppidum* and its cemetery in the late 19th century. The finds became part of the collection of the Marquis de Comillas and were studied in the mid-20th century by several scholars – with particular interest in the Monte Bernorio-type dagger – such as J. Cabré Aguiló, P. M. Artiñano, R. Navarro, and W. Schüle and A. Schulten, who visited and studied the site: Moro 1891. – Schüle 1969. – Barril 1995a, 408; 1995b; 1999, 46-51.
- 26) San Valero 1944. – San Valero 1960.
- 27) Torres-Martínez 2007, 80-81. – The project began in 2004, directed by M. Almagro-Gorbea and J. F. Torres-Martínez as fieldwork director. – Field collaborators included the Institut für Archäologische Wissenschaften of the Goethe-Universität Frankfurt am Main. The German team, directed by Felix Teichner, undertook several electromagnetic surveys in 2006 and 2007. The main purpose of the recently founded Instituto Monte Bernorio de Estudios de la Antigüedad del Cantábrico (IMBEAC) is to promote ongoing and future research on the site.
- 28) San Valero 1944; San Valero 1960; Torres-Martínez 2007. Several Iron Age sites of different chronologies have been discovered during these surveys in the immediate surroundings of the site. Wider ranging surveys with similar results are key for the future configuration of the Iron Age landscape and settlement patterns in the central Cantabrian Mountains.
- 29) Syme 1989, 418-420. – González-Echegaray 1995. – González-Echegaray 1999, 147-151. – Peralta 2003, 315.
- 30) Peralta 2003, 301-303. – Peralta 2004a, 33-34.
- 31) Peralta 2002a, 227-228; 2001c, 175-177; 2003, 280-282. 301-303 figs 147-148; 2004a, 33-34; 2004b, 101. 115 fig. 12.
- 32) Literary sources use several names to refer to the same place.
- 33) Peralta 2003, 264-265. 315-319; Peralta 2004b, 93-94. – On Gaius Antistius Vetus, see González-Echegaray 1999, 161; Peralta 2004b, 93-94 no. 65.
- 34) Fernández 1999; 2003; 2007, 407 fig. 1. – Torres-Martínez 2007, 90-97 fig. 10. – Peralta 2007.
- 35) Torres-Martínez 2007, 90-92. 97-98 fig. 10.
- 36) Peralta 2001c, 175-177; 2002a, 227-228; 2003, 280-282. 301-306 figs 147-151; 2004a, 33-34; 2004b, 101. 113. 115 figs 8-12; 2006. – Fernández 2007, 404.
- 37) Martínez 2003, 164-165.
- 38) Menéndez 1962, 175-176 fig. 130.
- 39) A Roman *libra* weighed slightly less than 300 g.
- 40) Marsden 1969. – Marsden 1971.
- 41) Warry 1980, 178. – Vicente / Punter / Ezquerria 1997. – Connolly 1998, 281-288 figs 1-8. – Gracia 1997. – Miks 2001. – Campbell 2003; 2009a, 44-50; 2009b, 24-34. – Iriarte 2005. – Aurrecochea / Amaré 2006. – Sáez 2003, 34-37. – García / Sáez 2007. – Peralta 2007, 497-503. – Quesada 2008, 185-194. – Coulston 2008, 190.
- 42) Warry 1980, 42. 61-62. 154-155. – Connolly 1998, 48-50 figs 1-7; 309 fig. 12 Appendix 3. – Černenko 2005, 11-14. 20. 22.
- 43) Warry 1980, 186. – Bishop / Coulston 1993, 79 fig. 43. – Aurrecochea / Amaré 2006.
- 44) Marsden 1969, 99-163. – Campbell 2003, 3-22. – Campbell 2009a, 44-50.

- 45) Marsden 1969, 83-85. 168-198. – Bishop / Coulston 1993, 55-57 figs 26-27. – Campbell 2003, 22-37. – Campbell 2009b, 24-34.
- 46) Menéndez 1962, 170-171. 175-176 fig. 130. – Marsden 1969, 175. – Bishop / Coulston 1993, 55-57 figs 26-27.
- 47) Quesada 1989. – Quesada 1993.
- 48) Avery 1986.
- 49) Marsden 1969, 5-16. – Warry 1980, 79. – Campbell 2003, 3-5. – Campbell 2009a, 44-46. – Quesada 2008, 191-194.
- 50) Marsden 1969, 65-85. – Warry 1980, 79. 178. – Bishop / Coulston 1993, 79-81 figs 44-45. – Campbell 2003, 8-15. – Campbell 2009a, 46-48. – Goldsworthy 2007, 181. 188-192. – Potter 2008, 128. – Quesada 2008, 185-194.
- 51) Marsden 1969, 65-85. – Bishop / Coulston 1993, 166-167. – Campbell 2003, 38-39; 2008, 190; 2009b, 30-31. – Wilkins / Morgan 2000.
- 52) Bishop / Coulston 1993, 166-167 fig. 120.
- 53) Coulston 2008, 190. – Schalles 2009.
- 54) Schalles 2009, 1356 fig. 3.
- 55) Coulston 2008, 190.
- 56) Peralta 2008, 28. – Peralta 2009, 254 fig. B.
- 57) Bishop / Coulston 1993, 55-57. 80-81 figs 27. 44.
- 58) Poo / Serna / Martínez 2010, 299. 301 fig. 7.
- 59) Camino / Viniegra / Estrada 2005, 99-100.
- 60) Peralta 2004a, 35; 2009, 254 fig. A; 2008, 30-31.
- 61) Campbell 2003, 35. – James 2004, 220 fig. 130 nos. 783-794.
- 62) James 2004, 229 fig. 137 no. 832.
- 63) Camino / Viniegra / Estrada 2005, 100.

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Die augusteischen Feldzüge der Anfangsphase der Kantabrischen Kriege und römische Artillerieprojekte vom Oppidum auf dem Monte Bernorio (Villarén, prov. Palencia)

Die vom Kaiser Octavian Augustus geführten Kantabrischen und Asturischen Kriege bleiben trotz ihrer damaligen großen politischen Bedeutung bisher weitgehend unbekannt. Insbesondere das Oppidum auf dem Monte Bernorio stellt den Ort eines entscheidenden Sieges in diesem Feldzug dar, wie neue archäologische Ausgrabungen belegen. Dieser Aufsatz präsentiert neue Erkenntnisse über den Angriff der römischen Legionen, u. a. Funde von Waffen wie Geschosspitzen aus den Ausgrabungen, die bei der Offensive verwendet worden waren. Kleinkalibrige Artilleriegeschosse belegen den Einsatz derartiger Waffen in der frühen römischen Kaiserzeit.

Augustan campaigns in the initial phase of the Cantabrian War and Roman artillery projectiles from the Monte Bernorio oppidum (Villarén, prov. Palencia)

The Cantabrian and Asturian Wars, led by the emperor Octavian Augustus, remain relatively unknown, despite their great political prominence at the time. The Monte Bernorio oppidum, in particular, staged a crucial victory for the military campaign, as recent archaeological excavations have revealed. This paper presents new data on the assault of the Roman legions, including weapon remains found during excavations, especially artillery projectiles used during the attack. Evidence for small-calibre artillery projectiles could prove the use of this kind of machine in the Early Roman Empire.

Les campagnes augustéennes du début des guerres cantabriques et les projectiles d'artillerie romaine de l'oppidum du Monte Bernorio (Villarén, prov. Palencia)

Les guerres cantabriques et asturiennes de l'empereur Octave Auguste restent peu connues malgré leur grande importance politique à l'époque. L'oppidum de Monte Bernorio en particulier représente une victoire majeure de ces campagnes, comme l'ont montré des fouilles récentes. Cet article présente de nouvelles informations concernant l'assaut des légions romaines incluant des armes mis au jour lors des opérations archéologiques, en particulier les projectiles d'artillerie utilisés pendant l'attaque. La présence de projectiles de petit calibre pourrait attester l'utilisation de ce type de machines de siège dès le Haut Empire. L. B.

Las campañas de Augusto en la fase inicial de las Guerras Cántabras y los proyectiles de artillería romanos del oppidum de Monte Bernorio (Villarén, prov. Palencia)

La guerra contra cántabros y ástures del emperador Augusto es uno de los conflictos más importantes de su reinado y uno de los menos conocidos. Dentro de ese conflicto, la conquista del oppidum de Monte Bernorio resultó esencial, como demuestran las recientes campañas de excavación arqueológicas, durante estas campañas militares. Se presentan en este trabajo nuevas informaciones relacionadas con la conquista del núcleo por parte de las legiones romanas y de los restos de armamento localizados en las excavaciones, en especial de los proyectiles de artillería empleados en el ataque. La presencia de proyectiles de artillería de pequeño calibre indicaría el empleo de este tipo de máquinas en época altoimperial.

Schlüsselwörter / Keywords / Mots clés / Palabras clave

Spanien / späte Eisenzeit / augusteische Epoche / Legion / Artillerie / Belagerung
Spain / Late Iron Age / Augustan period / legion / artillery / siege
Espagne / âge du Fer tardif / période augustéenne / légion / artillerie / siège
España / final de la Edad del Hierro / periodo augusteo / legion / artillería / asedio

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