A NEW INHUMATION GRAVE WITH RITUAL OFFERING FROM THE LAST PERIOD OF HISTRIA'S EXISTENCE

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Rezumat: *În anul 2009, la SE de zidul de incintă roman timpuriu de la Histria, a fost identificat mormântul M1/2009, care conține scheletul unei femei și părți din scheletul unei iepe (craniu și părți din membre), care păstra în gură o zăbală de fier. Datarea complexului, bazată pe analogiile de la Histria și din zonă, precum și pe indiciile stratigrafice, nu este sigură, putând fi luată în considerare atât o datare în sec. VI-VII p.Chr., cât și una în sec. X-XI p.Chr.*

Summary: *In 2009, it was discovered SE of the Early Roman defense wall at Histria, a grave (M1/2009) that contains the skeleton of a woman and parts of the skeleton of a mare (the skull –with the bridle bit– and lower part of the legs). The complex' dating could not be established with certainty, based on local and regional analogies and stratigraphic data, as the grave can be dated to either the 6th – 7th c. or 10th – 11th c. AD.*

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During the 2009 archaeological campaign at Histria, in *Sector South* (*Sectorul Sud*), near the Early Roman defence wall **(Fig. 1)** a joint excavation[1] led to the discovery of a very interesting inhumation grave with a ritual offering that we are going to analyse in the following pages.

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Archaeological context

In 2009, the main objectives of the excavation in *Sector South*, at the Early Roman defence wall[2], were to verify if the defence wall (2nd c. AD) continued southwards or stops where its S extremity is now visible ("disappears" in the sand, as mentioned in the *Histria I* monograph[3]), and to investigate the Late Roman building that appears on the area's plan in the same volume[4], a structure that could bring new data on the dating of the massive sand layer present in the area (on which the above-mentioned building was raised).

In order to achieve these two objectives we started two excavation trenches, S2 and S3, the latter transformed later on in surface S3. Trench S2 **(Fig. 2-4)** (1.5 x 10 m), with a NE-SW orientation, was started 10 m S of the visible end of the Early Roman defence wall. The layers identified are the following: under the vegetal layer we identified a modern layer (+ 0.18 / - 0.29 – - 0.50 m [5]; the terrain is uneven), under which we identified a massive layer of debris (- 0.50 m – - 1.29 m) in the W part of the trench and a sand layer in its E part. The debris also contains large fashioned stones (0.93 × 0.40 × 0.21 m) and superposes the same layer of sand we identified in the E part of the trench. The excavation was stopped at – 1.73 m, where we reached the groundwater level. The pottery we discovered is mixed, varying from Hellenistic to Late Roman fragments. In the SE of the trench we uncovered what seems to be another modern intervention (possibly an excavation by S. Lambrino in the period between the two World Wars, when he researched the Early Roman defence wall), that was followed down to – 1.43 m.

Trench S3 **(Fig. 5, 6)** (1.5 ×10 m) was started 1 m S of S2 and parallel to the latter. The same stratigraphic layers as in S2 were discovered here (modern layer + 0.01 / - 0.34 m— - 0.50 m; massive debris layer starting at – 0.50 m in the W part of the trench; sand layer starting at – 0.50 m in the E part of the trench). In the E part of the trench, in squares 2-3, we identified and excavated an **inhumation grave (Fig. 7-10)** (M1/2009; - 0.68 / - 0.98 m), whose pit could not be clearly determined. Following this discovery and in order to verify if there were other graves, as well as to investigate the above-mentioned Late Roman building, trench S3 was transformed in surface S3 (10 x 10 m), which kept the trench's N limit; in the surface's centre, after removing the vegetation, we identified a building, more precisely its corner, whose walls are poorly preserved on a length of approximately 1 m.

As far as the skeleton is concerned, it has an E-W orientation, in a dorsal position, arms along the body, skull towards the right (maybe fallen). Left of the skull we discovered a horse's head with an iron bridle bit in his mouth, and near the skeleton's legs we discovered the horses lower leg bones. An analogy at Histria for this type of ritual offering (parts of a horse's body) in a funerary complex is given by a grave discovered nearby, more exactly in the Roman baths complex conventionally called Terme II. There, in grave no. 2, the deceased was

[2] DABÎCA 2009, p. 132-133; DABÎCA 2010, p. 82-84; DABÎCA 2013, p. 157-187.

[3] CONDURACHI *et alii*, 1954, p. 286; in Romanian "se pierde".

[4] CONDURACHI *et alii*, 1954, pl. XXXI.

[5] All heights were measured from a fixed point on the base of an electric line pole that was measured and introduced on the general topographic map of Histria.

buried with the head and lower part of his horse's legs[6] but, unfortunately, the grave was not further researched from an anthropological and zooarchaeological perspective.

The iron bridle bit[7] is the only non-animal inventory item in this funerary complex and was discovered in a very bad state of preservation **(Fig. 11)**, as it was covered by significant earth deposits and suffered general corrosion (corrosion products typical for iron). After it was recovered it underwent a conservation treatment[8] **(Fig. 12)**.

The most difficult problem concerning this discovery is its chronology. From a stratigraphic point of view, the grave seems to belong to the last living surface identified at Histria. The last construction level in the city is dated to the end of the 6th – beginning of the 7th c. AD, contemporary to the Late Roman necropolis that stretched W up to Terme II[9] and to which this grave might pertain (and where it has the above-mentioned analogy). The presence of the horse skull and the leg bones reminds us of much later burials, dated to the 11th c. and well attested in the area between the Danube, the Carpathians and the River Dniester[10]. The only object in the offering, the single-bar bridle bit with mobile rings at the endings **(Fig. 13)**, has analogies at the end of the 10th c. at Orăștie "Dealul Pernilor"[11], that is in approximately the same period as an 11th c. grave discovered at Terme II[12]. In these conditions both dates (6th-7th c. and 10th-11th c.) are possible.

Anthropologic analysis

Materials and methods

The skeleton under scrutiny is almost complete and well preserved; we identified the bones using an osteology manual[13].

In order to determine the sex we used the morphological features of the skull and coxae[14]. Age estimation was made using the degree of fusion of the skull's sutures and of the evolution of the pubic symphysis face and of the auricular surface[15].

The height was calculated using Pearson's method, based on the maximal length of the left femur[16].

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[6] SUCEVEANU 1982, p. 36 dates the grave to the 4th-6th c. AD; in SUCEVEANU 1973, p. 496, n. 8 it is mentioned that the amphora discovered in M2 is dated to the end of the 5th c. AD.

[7] The authors would like to thank Ms Georgiana Mureşan for cleaning and conserving this artefact.

[8] The treatment consisted of: de-chlorination in distilled water and ethylic alcohol; cleaning with plastic brushes alternated with washing by water jet in order to remove the earth deposits; mechanical cleaning (steel brushes, diamond mills); chemical cleaning in citric acid 5%; drying in oven and brushing with a tannin solution for conservation.

[9] NUBAR 1971.

[10] IONIȚĂ 2013, p. 123-124, group II.

[11] GALL 2002, p. 298-299, pl. V, nos. 1-2.

[12] SUCEVEANU 1973.

[13] WHITE & FOLKENS 2005.

[14] BUIKSTRA & UBELAKER 1994, p. 16 – 21.

[15] BUIKSTRA & UBELAKER 1994, p. 22 – 38.

[16] RÖSING 1988, p. 586 – 599.

Analysis

Bone inventory:

The skull is complete and there are only small erosions in the area of the nasal bones and orbital surfaces **(Fig. 14)**; the mandible was completely preserved **(Fig. 15)**.

Dentition: positions of permanent teeth = 30; preserved permanent teeth = 10; permanent teeth with cavities = 0; permanent teeth lost *ante mortem* = 1; abscesses = 1; light deposits of calculus.

From the spine only one cervical, 11 thoracic and five lumbar vertebrae were preserved.

11 right ribs (rib 1 entirely preserved) and nine left ribs were identified; other eight fragments are difficult to identify; a fragment of the upper sternum was also identified.

From the left scapula the acromion, glenoid cavity and the coracoid process were preserved, the right one is complete, the left collar bone is missing and the right one is complete.

The humeri and radii were entirely preserved; only the right cubitus was discovered, entirely preserved.

The hand bones = left metacarpus 1 and 2; right metacarpus 2, 3 and proximal phalanx 3.

From the pelvis the sacral bone was entirely preserved, as well as both coxae (the left one is missing the pubic symphysis).

The femurs, tibiae and the peronei are complete.

The leg bones = left calcaneus, metatarsus 3, 4, proximal phalanx 2 and 3; right calcaneus, talus, cuneiform medial and proximal phalanx 1.

Sex identification:

The skull's characteristics (low glabella, sharp orbital margins, small mastoids and slightly prominent nuchal line) indicate that it belonged to a female.

At the level of the coxae the greater sciatic notch is open and we noticed sulcus preauricularis, which indicates that the deceased gave multiple births.

Age estimation:

The surface of the pubic symphysis indicates an age around 30, the auricular surface approx. 35 and the skull's sutures also 35 years; therefore the age of death can be estimated at between 30 – 35 years.

Height:

156.23 cm (maximal length of the left femur = 43.4 cm).

Pathology and trauma:

There is osteoarthritis on the vertebrae, on the humeri in the distal area, on the coxae's acetabular fossa, on the femurs in the distal area and on the proximal on the tibiae, as well as on the calcanei.

On a right rib fragment we noticed, on both faces towards the sternal ending, several parallel marks; on the external face there are four parallel marks of between

4.56 – 6.87 mm **(Fig. 16)**; on the internal face there are just two of between 3.15 – 4.47 mm **(Fig. 17)**; using 3x to 10x magnifying lenses we noticed that these marks seem to have been made using a sharp object that only touched the surface of the bone.

We identified a mark (7.70 mm long) from the left coxa to the anterior superior iliac spine that could have been made by a sharp object; there is another one (7.27 mm long) on the iliac crest, 26 mm behind the first cut; near the latter another could have existed, but the bone's surface is not well preserved and therefore we cannot be sure of it **(Fig. 18)**.

We noticed a groove 10.65 mm long and 4.84 mm wide **(Fig. 19)** on the right coxa, also under the anterior superior iliac spine.

Discussion

The skeleton analysed in the present paper belonged to a woman that died at an age of approx. 30 – 35 years. During her life she gave multiple births and suffered degeneration on several articulations, probably due to prolonged physical activities. This is also supported by the well-developed muscular insertions on the upper and lower limbs.

The cuts on the rib fragment and the coxae have sand deposits (from the soil the body was laid in) and were not healed, which indicates that they are ancient and were made around the time of death. They could even be connected to the cause of death. According to their characteristics (V-shaped section, medium width, they did not penetrate the bones, the cut is clean), both the marks on the ribs and those on the coxae were made using a sharp object, but in the latter case a long and heavy blade weapon could have been used[17].

The calculated height is of 156.23 cm, which is bigger than the medium height of the Histria – *Basilica exstra muros* sample, which is 151.01 cm (27 cases of women's skeletons)[18].

Archaeozoological Analysis

The material

A selection of horse body parts accompanied the human sepulchre. The elements identified and recovered during the excavation consist in the head (skull and mandible), the left metatarsal and the feet (first, second and third phalanges, except one third phalanx from the right front leg) **(Fig 20)**.

The skull, mandible and metatarsal exhibit a cracked and exfoliated surface, while the phalanges are in a significantly better state of preservation. The refitting of the metatarsal and the corresponding first phalanx is not certain. In addition, the taphonomic aspect of the bones is different. This fact could be caused by several reasons: 1 – all the bones come from the same individual, but post depositional conditions resulted in differential preservation; 2 – some of the elements come from different individuals, of different ages (i.e. different bone properties).

The cranium and mandible were found in anatomical connection, so they clearly belong to the same individual. The phalanges are obviously connected.

[17] BYERS 2005, p. 340 – 346, pl. 14.1 and 14.2.
[18] SOFICARU 2009, p. 131.

The metatarsal stands alone, though it has a taphonomic stage comparable to the skull and lower jaw. Therefore, even if we are tempted to assume that only elements from one horse were deposited in the tomb, no anatomical association can be made between these elements. The archaeological context is considered to be created in a single event, so no post depositional intervention can be suspected.

Bone modifications and pathology

The first phalanx of the right front leg and the first phalanges from both rear legs show cut marks located in the proximo-palmar region, produced while disarticulating the feet of the metapodials **(Fig. 20, 21** and **22)**.

The horse was discovered with an iron bit in the mouth, which left traces of rust on the mandible and maxillary **(Fig. 23** and **24)**.

A strange round greenish spot with the diameter of about 30 mm is present on the left maxilla, just above the third molar and under the orbit. It looks like the bone was in contact with an object containing copper and the oxides impregnated in the bone structure **(Fig. 25)**.

The left posterior digit shows evidence of bone pathology on the anterior faces of the first and middle phalanges. The bone surface is deformed by exostosis, maybe caused by an injury that led to periostitis **(Fig. 26)**.

Age and sex of the horse

At the age of five, all permanent teeth are erupted. After this age, the only method of estimating the age is the wear of the incisors. At the age of six, the cups of the lower central incisors disappear. In our case, the cups of the central incisors are worn, but not completely, therefore we estimate an age comprised between five and six years **(Fig. 27)**.

Canine teeth erupt at four to five years of age in male horses. Occasionally, with a prevalence of about 30%, mares have canines, but they are considerably smaller than that of males. The canines of the horse deposed in the tomb are present but very small compared with male specimens of comparable age, thus we consider it to be a female **(Fig. 27** and **28)**.

Withers height

Using the system of Kiesewalter[19], we obtained a withers height of 1416 mm according to the basilar length of the skull, and 1455 mm according to the lateral length of the metatarsus. By the classifications of Vitt[20], both values correspond to average stature horses.

Biometry

The measurements were taken according to von den Driesch[21] and are expressed in millimetres.

[19] KIESEWALTER 1888.
[20] VITT 1952.
[21] DRIESCH 1976.

Cranium		]
1. Total length: Akrokranion – Prosthion		524.47
2. Condylobasal length: Aboral border of occiptal conyles - Prosthion		510.92
3. Basal length: Basion - Prosthion		479.09
3a. Basilar length: Basion – The point betwen the two I^1		473.12
4. Short skull length: Basion - Premolare		354.47
5. Basicranial axis: Basion - Hormion		120.34
6. Basifacial axis: Hormion - Prosthion		359.87
8. Viscerocranium length: Nasion - Prosthion		295.61
9. Upper neurocranium length: Akrokranion - Supraorbitale		174.00
10. Facial length: Supraorbitale - Prosthion		361.73
11. Basion – Most oral point of the facial crest on one side		276.27
12. Most oral point of the facial crest on one side - Prosthion		223.57
13. Short lateral facial length: Entorbitale - Prosthion		303.84
14. Length of braincase: Opisthion - Ectorbitale		202.81
15. Lateral facial length: Ectorbitale - Prosthion		356.21
16. Greatest length of the nasals		199.53
17. Basion – Staphylion		227.08
19. Dental length: Postdentale – Prosthion		294.55
20. Lateral length of the premaxilla: Nasointermaxillare - Prosthion		194.80
21. Length of the diastema (P^2 – I^3)		88.88
22. Length of the cheektooth row (measured along the alveoli)		169.59
22a. Length of the cheektooth row (measured near the biting surface)		165.71
23. Length of the molar row (measured along the alveoli on the buccal side)		78.84
23a. Length of the molar row (measured near the biting surface)		76.15
24. Length of the premolar row (measured along the alveoli on the buccal side)		92.67
24a. Length of the premolar row (measured near the biting surface)		92.15
25.	Length of P^2	36.70
	Breadth of P^2	25.32
26.	Length of P^3	30.64
	Breadth of P^3	28.71
27.	Length of P^4	29.09
	Breadth of P^4	29.38
28.	Length of M^1	25.30
	Breadth of M^1	27.46
29.	Length of M^2	25.05
	Breadth of M^2	26.22

30.	Length of M^3	26.53
	Breadth of M^3	22.30
31. Greatest inner length of the orbit: Ectorbitale - Entorbitale		63.68
32. Greatest inner height of the orbit		55.14
33. Greatest mastoid breadth: Otion - Otion		118.07
34. Greatest breadth of the occipital condyles		88.88
35. Greatest breadth at the bases of the paraoccipital processes		112.14
36. Greatest breadth of the foramen magnum		42.97
37. Height of the foramen magnum: Basion - Opisthion		43.10
38. Greatest neurocranium breadth: Euryon - Euryon		111.41
39. Least frontal breadth		86.90
40. Least breadth between the supraorbital foramina		143.83
41. Greatest breadth of skull: Ectorbitale - Ectorbitale		174.40
42. Least breadth between the orbits: Entorbitale - Entorbitale		150.07
43. Facial breadth between the outermost points of the facial crest at the point of intersection of the maxillo-jugal suture with the facial ridge		171.75
44. Facial breadth between the infraorbital foramina		81.27
45. Greatest breadth of 'snout': measured across the outer borders of the alveoli of I^3		68.00
46. Greatest breadth on the curvature of the premaxillae		68.12
47. Least breadth in the region of the diastema		63.42
48. Greatest palatal breadth: measured across the outer borders of the alveoli		125.28
49. Greatest skull height inclusive of the lower jaws		306.76
50. Basion height: Basion – the highest point of the skull in projection		116.90

Mandible	
1. Length from the angle: Gonion caudale – Infradentale	397.60
2. Length from the condyle: Aboral border of the condyle process – Infradentale	424.35
3. Length: Gonion caudale – Aboral border of the alveolus of M_3	123.40
4. Length of the horizontal ramus: Aboral border of the alveolus of M_3 - Infradentale	277.93
5. Length: Gonion caudale – Oral border of the alveolus of P_2	296.95
6. Length of the cheektooth row. measured along the alveoli on the buccal side	172.23
6a. Length of the cheektooth row. measured near the biting surface	165.91
7. Length of the molar row. measured along the alveoli on the buccal side	82.08
7a. Length of the molar row. measured near the biting surface	77.72

8. Length of the premolar row. measured along the alveoli on the buccal side		91.46
8a. Length of the premolar row. measured near the biting surface		88.67
9.	Length of P_2	31.20
	Breadth of P_2	15.16
10.	Length of P_3	28.89
	Breadth of P_3	17.49
11.	Length of P_4	28.56
	Breadth of P_4	18.24
12.	Length of M_1	25.60
	Breadth of M_1	16.42
13.	Length of M_2	26.19
	Breadth of M_2	14.65
14.	Length of M_3	30.42
	Breadth of M_3	14.15
15. Length of the diastema: oral border of the alveolus of P_2 – aboral border of the alveolus of I_3		81.04
16. Greatest breadth across the curvature of incisors. measured at the outer borders of the alveoli of I_3		63.21
17. Greatest breadth across the curvature of incisors. measured near the biting surface of I_3		65.53
18. Smallest breadth of the two halves in the region of the diastema		44.80
19. Aboral height of the vertical ramus: Gonion ventrale – highest point of the condyle process		234.88
20. Middle height of the vertical ramus: Gonion ventrale – deepest point of the mandibular notch		221.82
21. Oral height of the vertical ramus: Gonion ventrale - Coronion		270.04
22a. Height of the mandible behind M_3. from the most aboral point of the alveolus		109.81
22b. Height of the mandible in front of M_1		81.87
22c. Height of the mandible in front of P_2		56.80
23. Breadth of the two halves between the most lateral points of the angles: Gonion laterale – Gonion laterale		124.40
24. Breadth of the two halves between the condyle processes		186.85
25. Breadth of the two halves between the coronoid processes		128.19

Metatarsus III	
GL – Greatest length	274
GL1 - Greatest length of the lateral side	273.02
Ll – Lateral length on the outer side	268.36

Bp – Greatest breadth of the proximal end	52.25
SD – Smallest breadth of the diaphysis	32.02
CD – Smallest circumference of the diaphysis	101.70
DD - Smallest depth of the diaphysis	26.65
Bd – Greatest breadth of the distal end	50.70
Dd - Greatest depth of the distal end	38.50

Phalanx I	**Phalanx I ant. sin.**	**Phalanx I ant. dex.**	**Phalanx I post. sin.**	**Phalanx I post. dex.**
GL - Greatest length	83.73	83.82	87.05	87.20
Bp - Greatest breadth of the proximal end	53.67	54.26	55.27	55.23
BFp - Breadth of the Facies articularis proximalis	49.75	49.58	48.73	50.34
Dp – Depth of the proximal end	38.76	39.81	36.37	37.07
SD - Smallest breadth of the diaphysis	33.30	34.08	39.25	34.95
Bd - Greatest breadth of the distal end	41.08	41.92	48.48	45.68
BFd – Breadth of the Facies articularis distalis	41.60	41.96	45.69	44.96

Phalanx II	**Phalanx II ant. sin.**	**Phalanx II ant. dex.**	**Phalanx II post. sin.**	**Phalanx II post. dex.**
GL - Greatest length	47.24	47.36	45.36	44.81
Bp - Greatest breadth of the proximal end	50.32	50.29	51.54	50.62
BFp - Breadth of the Facies articularis proximalis	43.70	44.24	46.98	46.74
Dp - Depth of the proximal end	32.54	32.38	34.94	31.80
SD - Smallest breadth of the diaphysis	42.35	42.62	46.16	46.22
Bd - Greatest breadth of the distal end	46.69	47.24	49.48	50.29

Phalanx III	Phalanx III ant. sin.	Phalanx III post. sin.	Phalanx III post. dex.
GL - Greatest length	68.32	73.65	73.13
GB - Greatest breadth	75.77	81.77	82.00
LF – Length of the Facies articularis	25.18	23.68	24.24
BF - Breadth of the Facies articularis	48.83	49.75	51.24
Ld – Length of the dorsal surface	56.70	53.87	53.71
HP – Height in the region of the extensor process	38.80	39.39	39.65

Other bones recovered from the grave

A number of 20 animal bone fragments were also recovered, with no apparent relation to the human-horse association. The taphonomic stage of these fragments is considerably different from that of the horse bones. Part of the remains is abraded (by water and/or gravels), others have the specific aspect of food waste (fresh bone breaks, impact marks and some of them gnawing marks, most likely left by dogs). The remains consist in 13 cattle bones (fragments from the skull, mandible, long bones and vertebrae from at least two individuals), four bones from smaller mammals, of the goat/sheep size class (long bone diaphysis fragments) and three remnants from a tortoise (*Testudo* sp.) (one complete humerus ant two shell fragments).

The mammal remains might have been part of the soil when the grave was created. We consider that they could originate in previous accumulations, considering the successive human occupations of the site. The tortoise bones, taphonomically different in appearance from all the others (in better state), can be explained by natural accumulation, the species being a common presence in the area.

Species	NR	MNI
Bos taurus	13	2
Ovis/Capra	4	1
Testudo sp.	3	1
Total	20	4

The animal remains other than horse. NR=Number of Remains;
MNI=Minimum Number of Individuals

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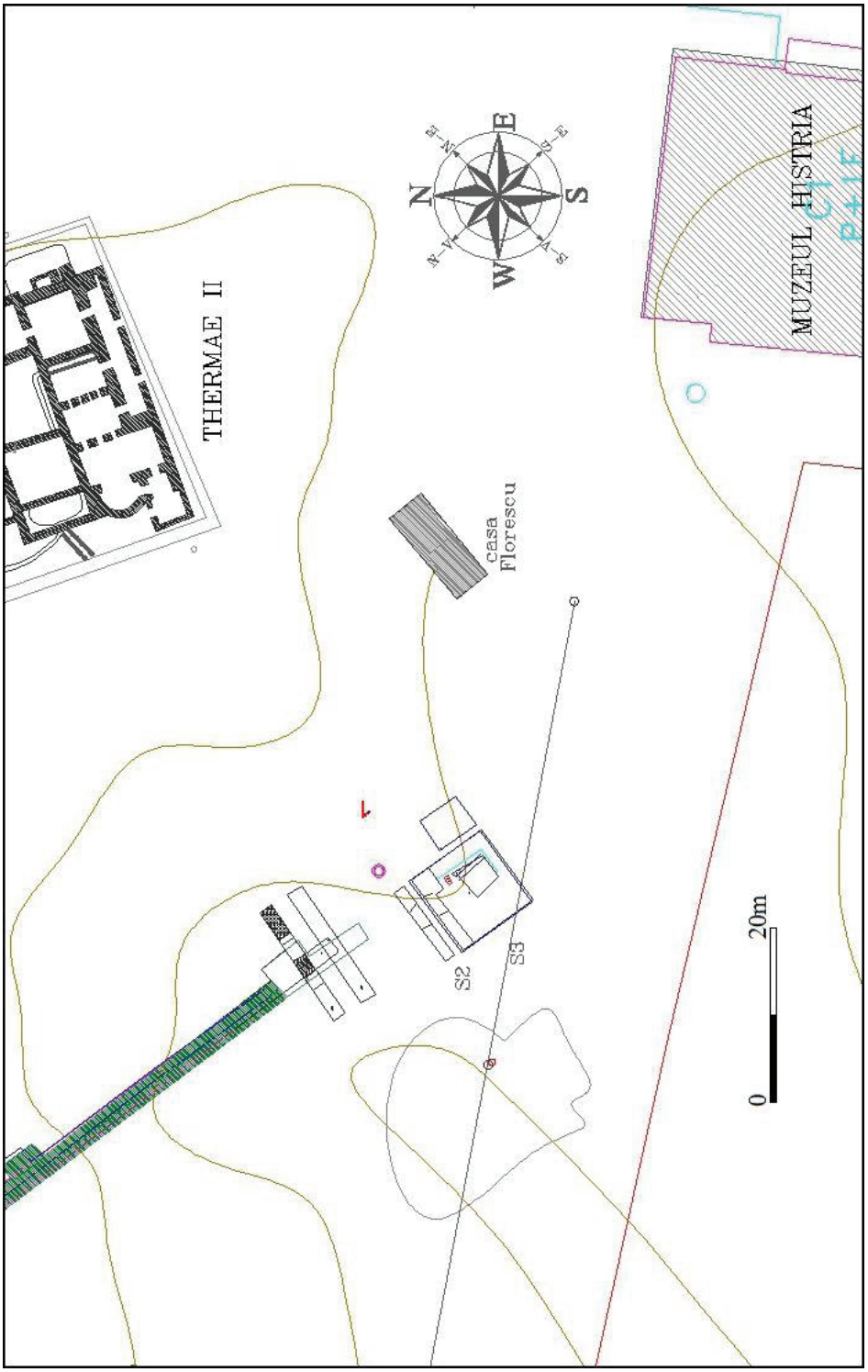

Fig. 1 - Plan of Sector South, near the Early Roman defence wall.

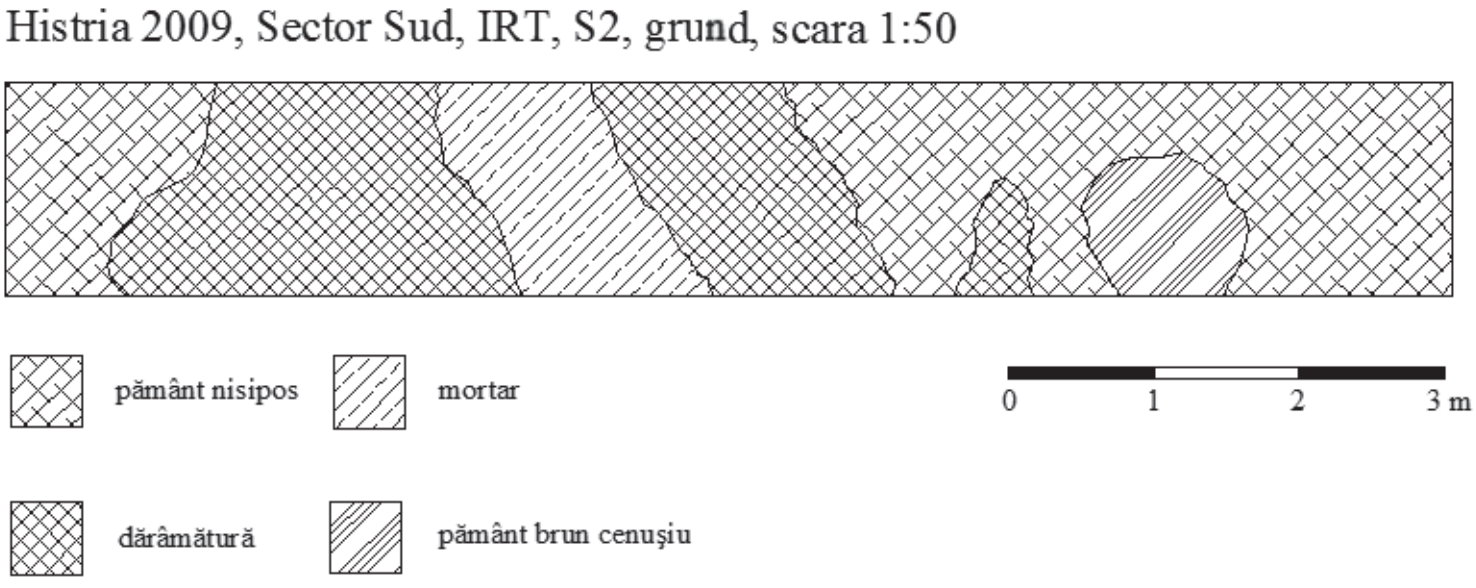

Fig. 2 - Sector South, IRT, plan no. 1 of S2.

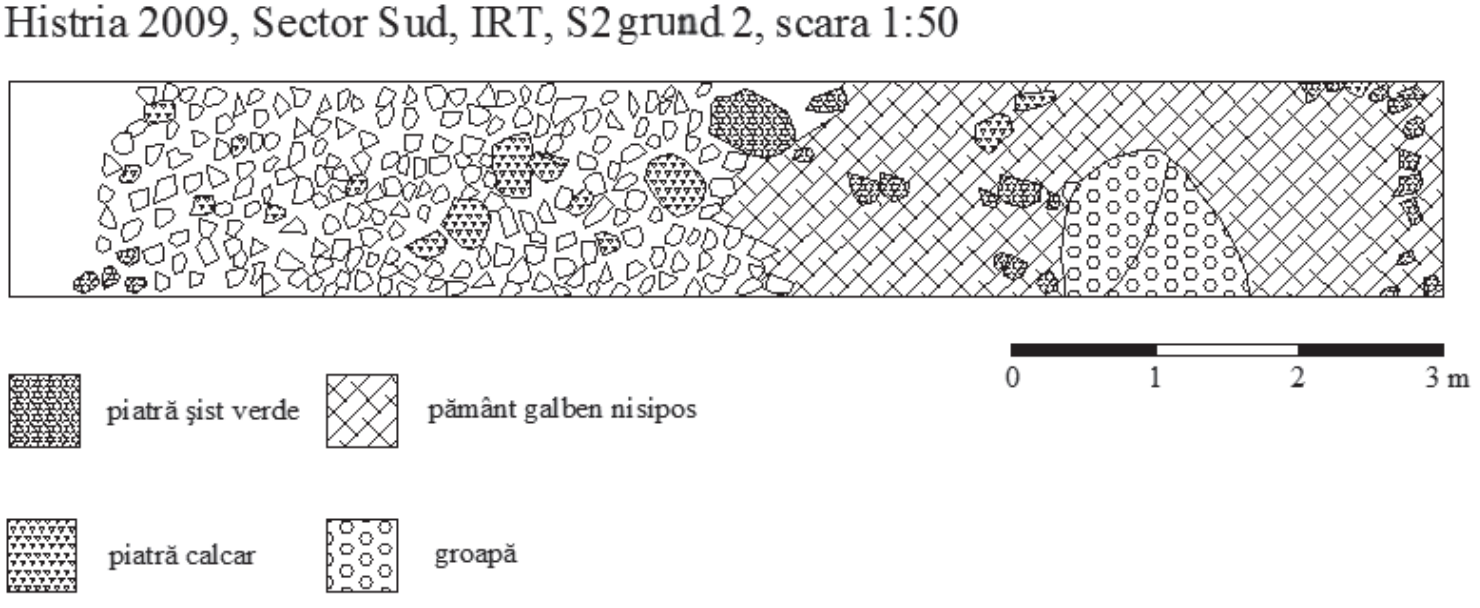

Fig. 3 - Sector South, IRT, plan no. 2 of S2.

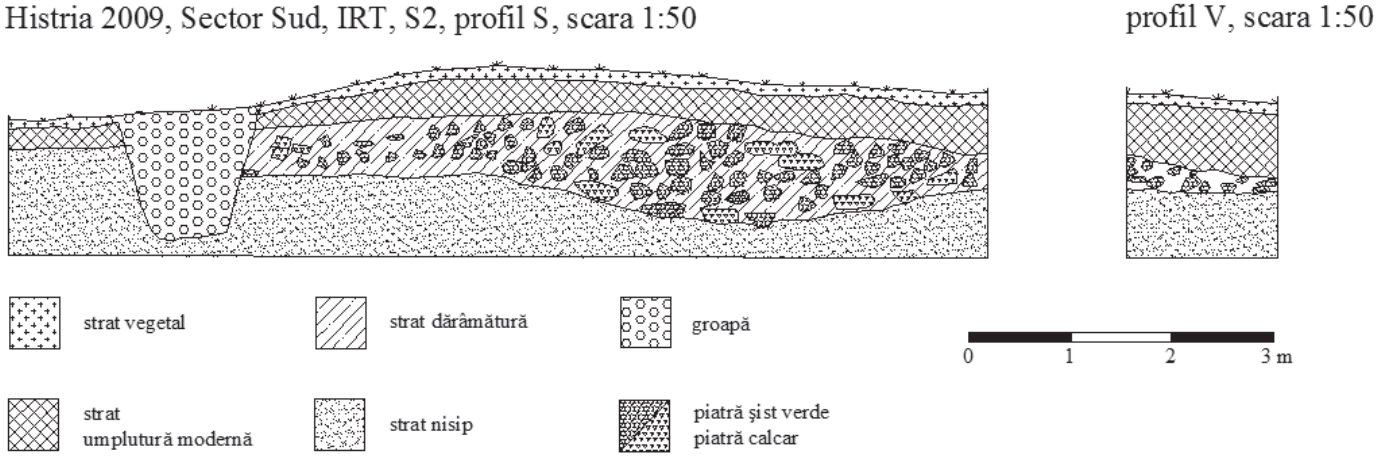

Fig. 4 - Sector South, IRT, S2 profiles S and W.

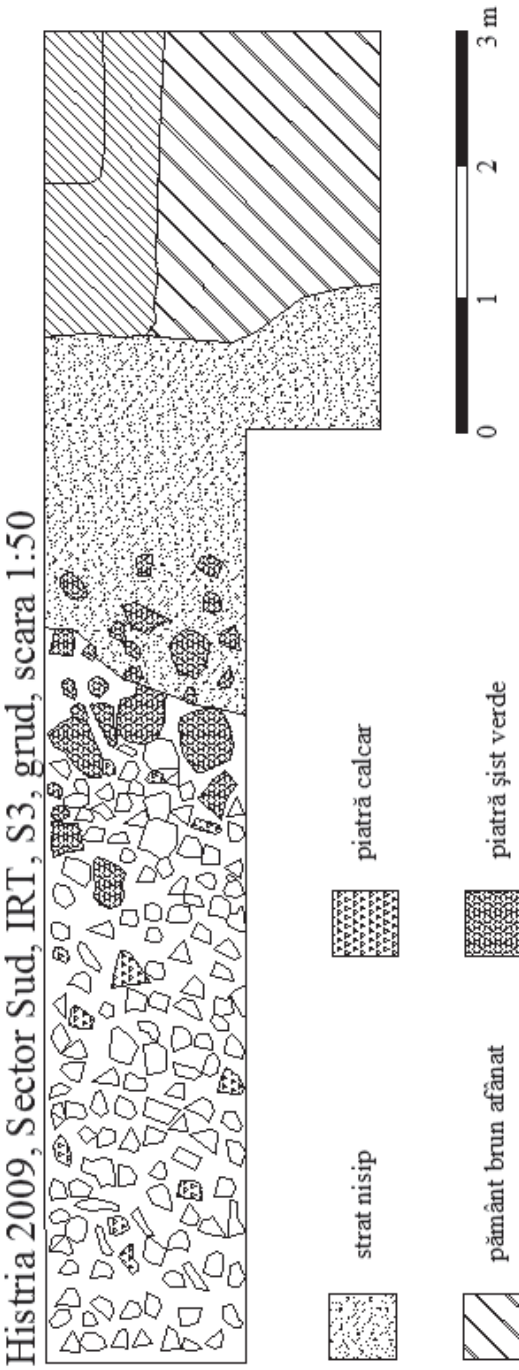

Fig. 5 - Sector South, IRT, plan of S3.

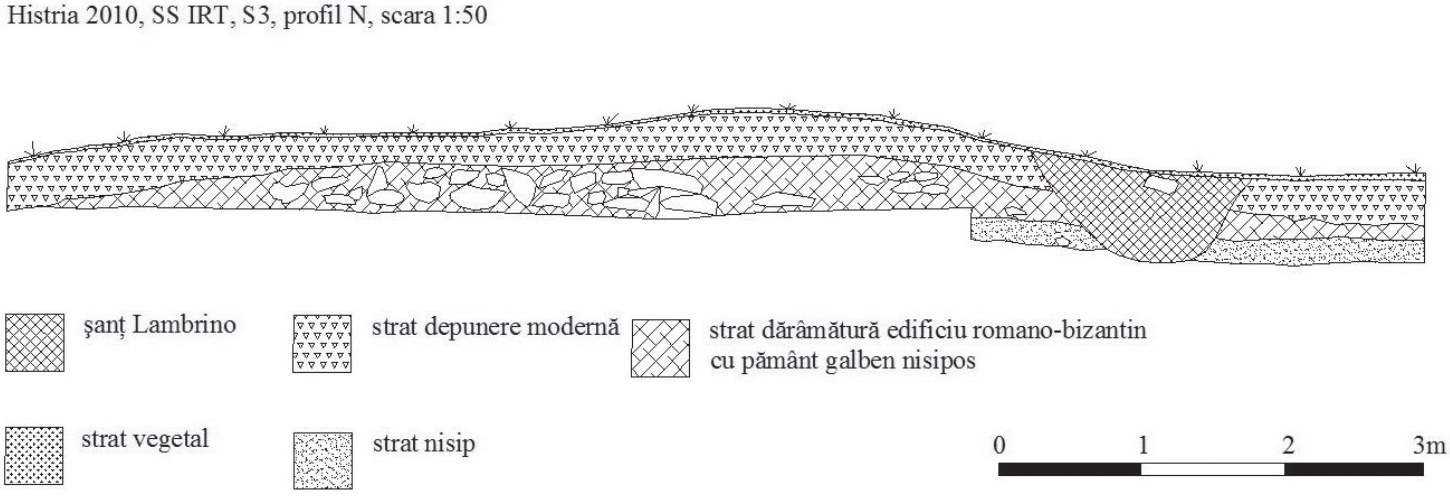

Fig. 6 - Sector South IRT, S3 profile N.

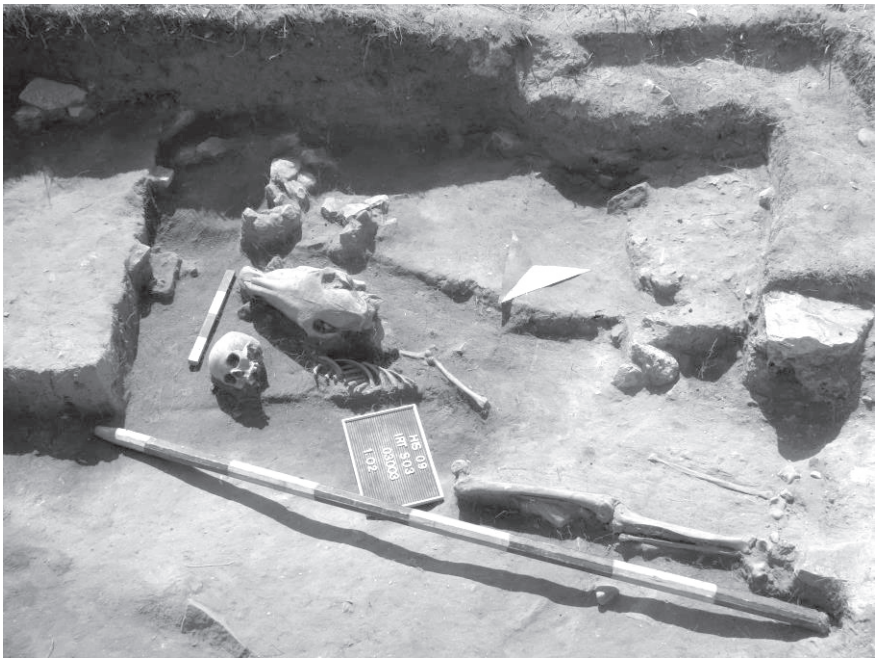

Fig. 7 - Sector South, IRT, S3, M1/2009.

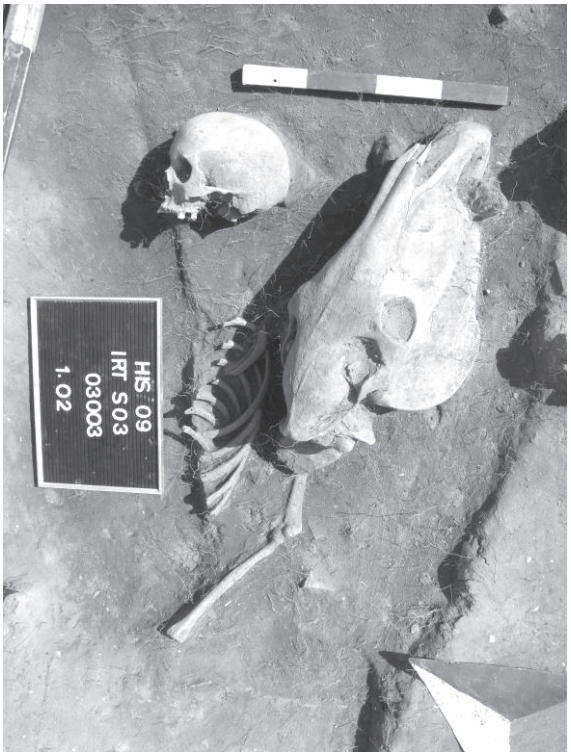

Fig. 8 - Sector South, IRT, S3, M1/2009, detail.

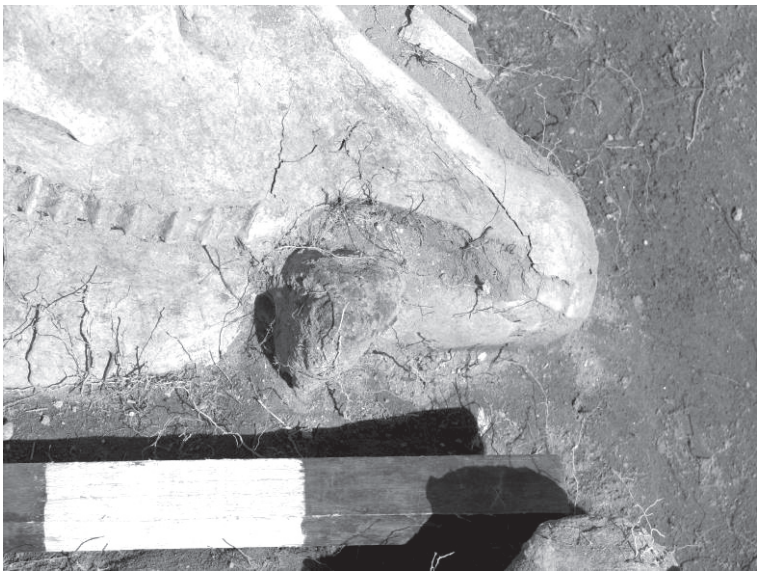

Fig. 9 - Sector South, IRT, S3, M1/2009, detail.

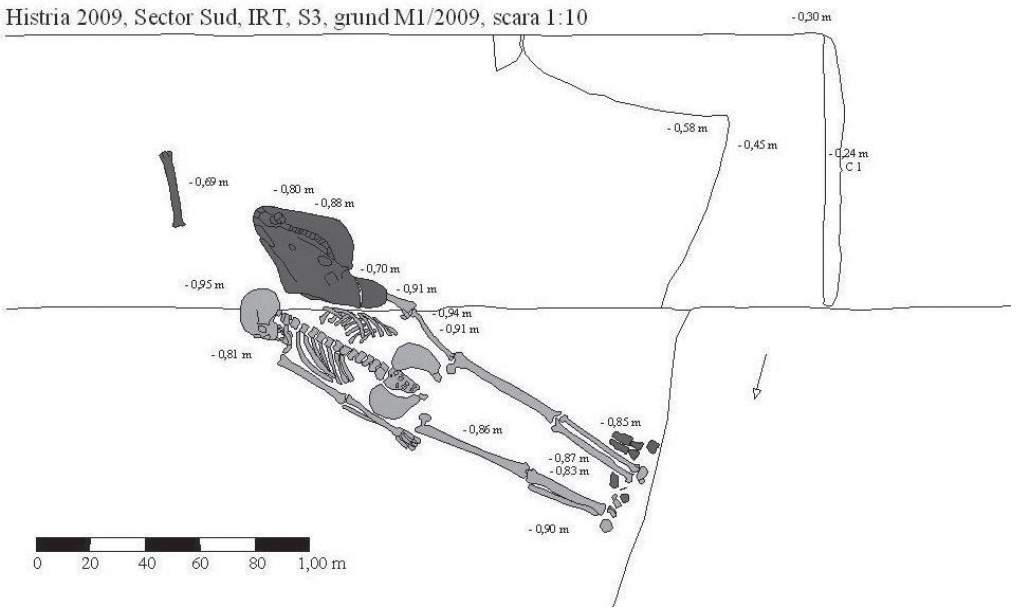

Fig. 10 - Sector South, IRT, S3, plan of M1/2009.

Fig. 11 - Bridle bit after discovery.

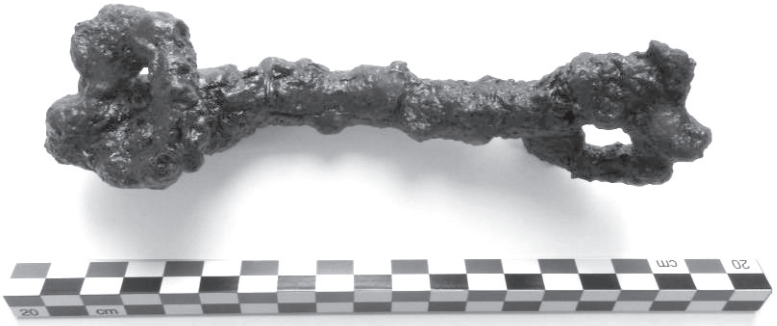

Fig. 12 - Bridle bit after cleaning.

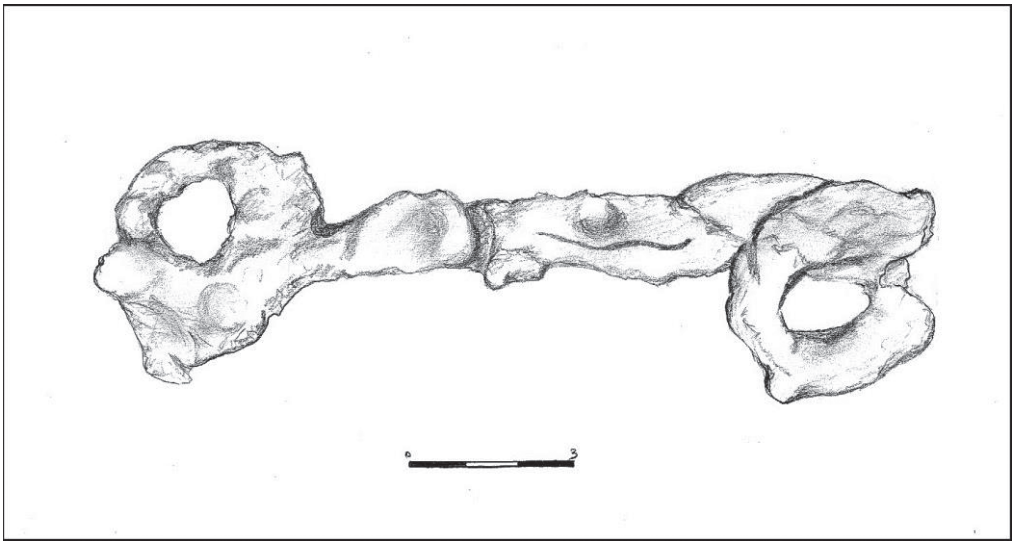

Fig. 13 - Bridle bit, drawing.

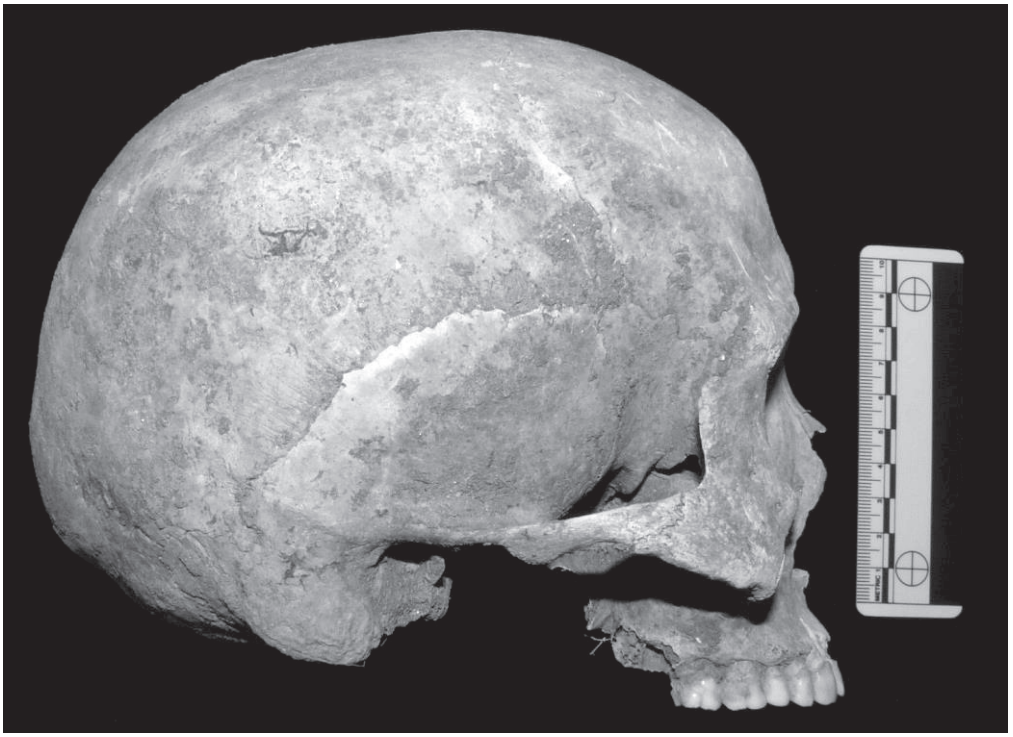

Fig. 14 - M1/2009, lateral right view of the skull.

Fig. 15 - M1/2009, mandible, upper view.

Fig. 16 - M1/2009, external view of the rib with cut marks.

Fig. 17 - M1/2009, internal view of the rib with cut marks.

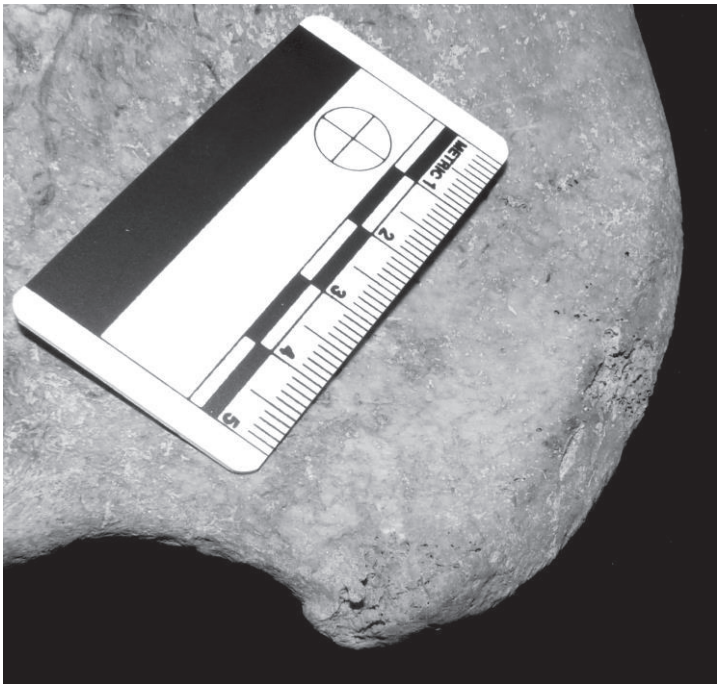

Fig. 18 - M1/2009, upper view of the iliac crest on the left coxa with cut marks.

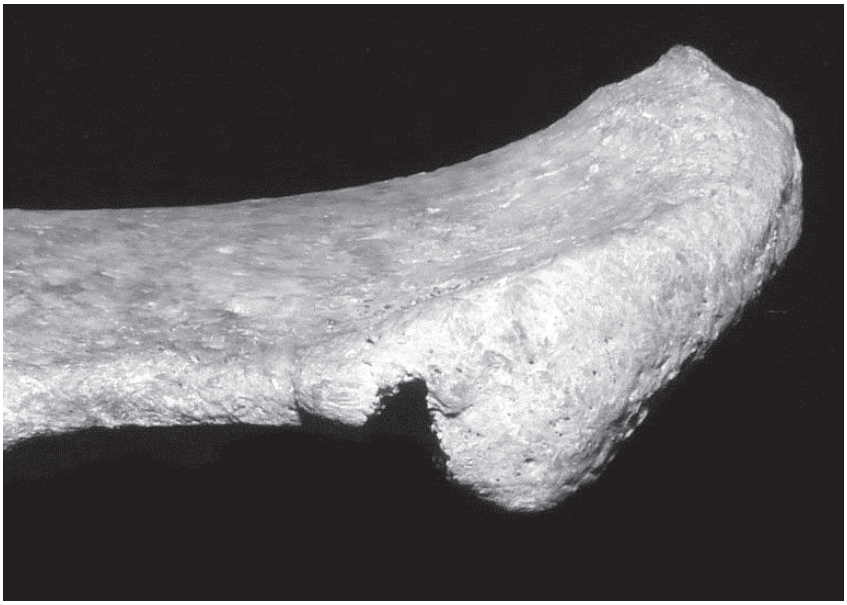

Fig. 19 - M1/2009, anterior view of the trace of a blow under the anterior superior iliac spine on the right coxa.

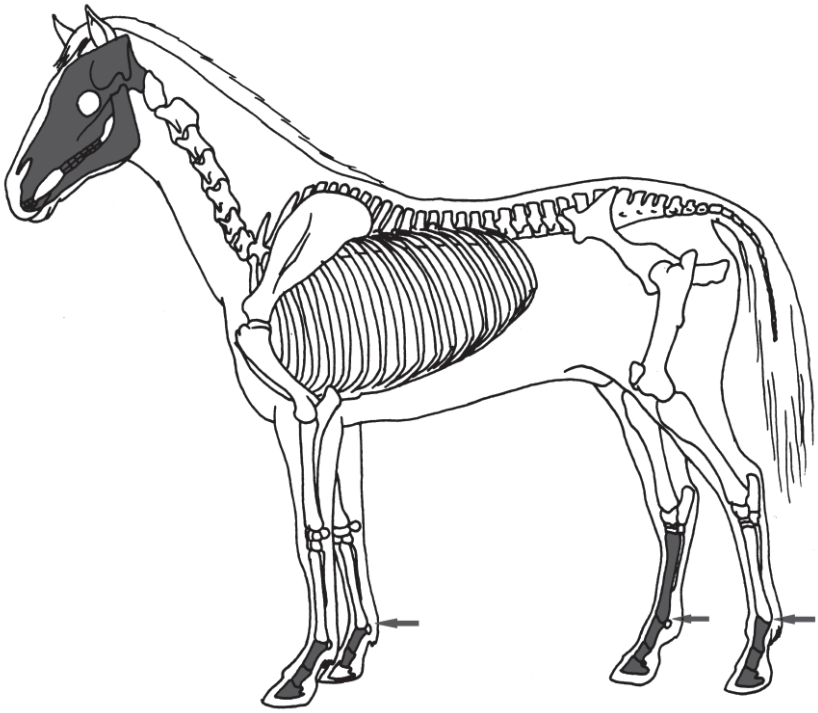

Fig. 20 - The skeletal elements discovered in the grave. The arrows indicate cut marks on the phalanges.

Fig. 21. First phalanges of the rear legs, showing cut marks near the proximal epiphysis. Posterior view.

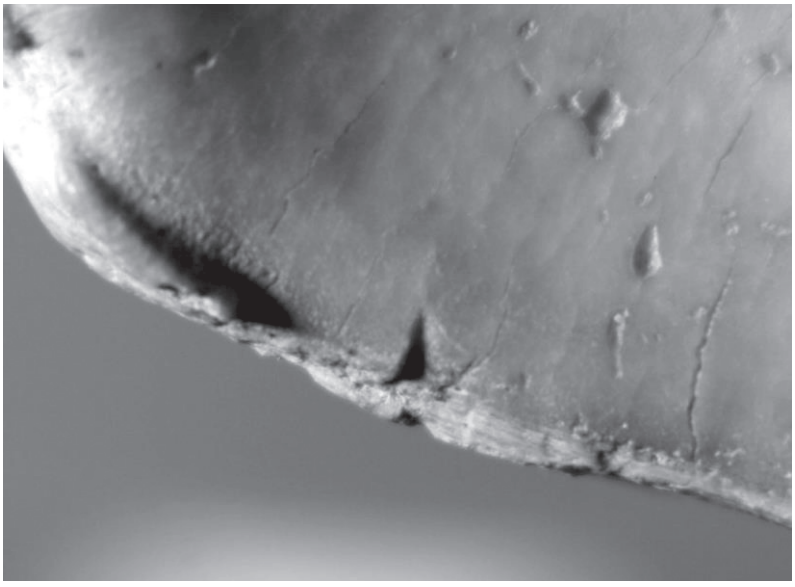

Fig. 22 - First phalanx of the right front leg displaying a cut mark. Upper view of the lateral margin.

Fig. 23 - The "snout" of the horse, exhibiting rust impregnation resulted from the contact with the iron bit. Left view.

Fig. 24 - The mandible, showing signs of rust impregnation resulted from the contact with the iron bit. Right view.

Fig. 25 - The skull of the horse illustrating a circular stain, probably produced by the contact with a copper containing object. Left view.

Fig. 26 - The left rear leg with pathological aspect of the first and middle phalanges. Anterior view.

Fig. 27 - The mandible, displaying the incisors and the small canines. Upper view.

Fig. 28 - Inferior view of the cranium.