

Animal remains of the Late Antiquity settlement near Dyakovo Village (Kyustendil Region (SW Bulgaria))

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Abstract. From a total of 102 highly fragmented animal bone and tooth finds, dated ~250 AD – ~550 AD have been identified 13 taxa (4 wild species - *Bison bonasus*, *Cervus elaphus*, ? *Cervus dama* and *Canis lupus*) and 9 domestic forms – *Bos taurus*, *Capra hircus*, *Ovis aries*, *Equus caballus*, *Equus asinus*, *Sus domesticus* and *Canis familiaris*).

Key-words: Late Antiquity; Animal husbandry; Domestic animals; Bulgaria; Wisent.

Material and Methods

All collected faunal remains originated from the salvage archaeological excavations of the Regional Historical Museum in the town of Kyustendil under the leadership of Assoc. Prof. Rumén Spassov. They have been collected in April 2012 along the Lot 1 of the Struma Highway (km 320+940 to km 321+050) and came from 82 samples. Probably their total number exceeds 150, but the exact number could be difficultly stated, because of the extremely poor preservation of the finds. Thus, at least 102 finds have been recognized (Table 1). The degree of fragmentariness is unusually high and in fact, there is no bone/tooth find of intact state. Even more, only several (>10) of the bone remains have preserved their definitive surfaces on the endings of the long tubular (or other) bones, that have diagnostic value in the osteological analysis. Hence, the archaeozoological data are rarely scant, although the age of the collected material is relatively little, 2nd half of 3rd century AD to 1st half of 5th century AD. (i.e. ~250 AD – ~550 AD).

Obviously, the extremely unfavorable taphonomic conditions (eroded leached cinnamon and leached cinnamon forest soils (Galabov, 1973), high level of soil acidity, burning of some finds before their burial, gnawing of bones by domestic and wild carnivores, etc.) caused their extraordinary bad preservation. All faunal remains represent bone and tooth finds of large mammals. It is notable that almost all finds of teeth (the most resistant, hardest structures of the living body at all), are actually represented by tooth splinters. The teeth namely are split and in most cases they have been gathered in situ in destroyed state. The same is much often in the bones. All of them are represented by bone fragments or bone splinters. Such a lower degree of preservation is very rare phenomenon in the archaeological sites throughout the country.

We follow the names of domestic forms, proposed by Gentrya *et al.* (2004).

Species Composition

Species-diagnostic features could be found only on ~10-15 remains (Table 1). All remains belong to large eutherian mammals, mainly ungulates – both artiodactyls (chiefly) and perissodactyls (rarely). The taxonomic composition in most cases remains undetermined completely.

Table 1. Taxonomic representation of the identifiable bone/teeth remains of large mammals from the Late Antiquity settlement near Dyakovo village (Kyustendil Region).

No	Common name	Scientific name	Number of finds	Representation (%)
Wild mammals				
1	Wisent	<i>Bison bonasus</i> Linnaeus, 1758	7	6.9
2	Red Deer	<i>Cervus elaphus</i> Linnaeus, 1758	~6	5.9
3	?Fallow Deer	? <i>Dama dama</i> Linnaeus, 1758	1	1.0
4	Grey Wolf	<i>Canis lupus</i> Linnaeus, 1758	1	1.0
Subtotal			15	14.7
Domestic mammals				
1	Cattle / Auroch	<i>Bos primigenius</i> (Bojanus, 1827) / <i>Bos taurus</i> Linnaeus, 1758	3	2.9
2	Cattle	<i>Bos taurus</i> Linnaeus, 1758	19	18.6
3	Goat and/or Sheep	<i>Capra hircus</i> Linnaeus, 1758 and/or <i>Ovis aries</i> Linnaeus, 1758	16	15.7
4	Goat	<i>Capra hircus</i> Linnaeus, 1758	1	1.0
5	Sheep	<i>Ovis aries</i> Linnaeus, 1758	1	1.0
6	Horse	<i>Equus caballus</i> Linnaeus, 1758	4	3.9
7	Donkey	<i>Equus asinus</i> Linnaeus, 1758	20	19.6
8	Domestic Pig	<i>Sus domesticus</i> Erxleben, 1777	1	1.0
9	Dog	<i>Canis familiaris</i> Linnaeus, 1758	2	2.0
Subtotal			67	65.7
(10)	Placental Mammals	Eutheria ordo indet.	20	19.6
Subtotal			20	19.6
Total			102	100.0

Wild Mammals

Wisent (*Bison bonasus* (Linnaeus, 1758)): mandible dex., fragment with 2 teeth (building No 6, room No 1, depth 0.20 m); molar tooth M-1 (building No 6, room No 1, depth 0.20 m) (Fig. 1); scapula sin. prox., articular end, damaged (Sq. P8-P9, digging No 2 - KTC, central part); humerus dex. dist., medial part of distal epiphysis (Sq. A23, depth 0.25 m); (last) molar tooth of left mandible (without label). The wisent disappeared from the Bulgarian nature about 12th century A. D., as the latest record (a horn of adult female) is dated 9th-10th century A. D. It originated from the medieval settlement near the Garvan village (Silistra District) (Spasov, Iliev, 1986). The wisent always was a rare game in Bulgaria. It is an indicator of vast forests in the lowlands and foothills of mountains and hilly areas (Spasov, 1992). Except teeth, the material from Dyakovo includes a portion of a mandible and fragments of long bones of the forelimb - scapula and humerus. All skeletal and dental elements suggest one adult individual.



Fig. 1. Wisent (*Bison bonasus*) – molar tooth ad. (Photo: Z. Boev).

Red Deer (*Cervus elaphus* Linnaeus, 1758): femur sin. diaphysal portion (No 3, depth 0.5-0.6 m depth, building 6); molar tooth M-3 of mandible dex. (pitos No 28); ~4 other destroyed teeth of the same mandibular portion (also completely destroyed). The Red Deer was widely spread in the prehistoric times throughout the country, but in the Antiquity it became rarer, as the considerable wooded areas were deforested and also because of the overhunting.

?Fallow Deer (*Dama dama* (Linnaeus, 1758)): metacarpus dex., diaphysal fragment, damaged, total length - 14.5 cm, minimal width of diaphysis - 24,3 mm (depth 0.20 cm, building No 6, room No 4). A gracile artyodactyle, smaller than the Red Deer. The length and proportions exclude a bovid/suid species. The Fallow Deer is the only possible species spread in Europe, which meets these restrictions. The Roe deer (*Capreolus capreolus* Linnaeus, 1758) is much smaller. Ribarov (1983) lists some other authors' records of the species - near Michalich village (Haskovo Region; 2600-2200 BC; Aytos (Burgas Region; Roman period); and Kabile (Yambol Region; Hellenic period). As all they a located in the SE part of the country, he suggests it was the last refuges of *C. dama* in the Antiquity. The author states that the species survived until Neolithic and Hellenic and Roman periods throughout Bulgarian territory.

Grey Wolf (*Canis lupus* Linnaeus, 1758): humerus sin. dist., splinter of lateral side of distal epiphysis (digging 3). After disappearance of the lion (*Panthera leo* (Linnaeus, 1758) in the antiquity (100 A. D.; Boev, 2013) the grey wolf remains the largest open-habitats predator in Bulgarian nature. It was widely spread throughout all the country until recently (Boev, 1997).

Domestic Mammals

Cattle (*Bos taurus* Linnaeus, 1758) / Auroch (*Bos primigenius* (Bojanus, 1827)): pelvis, pars acetabularis, ad. destroyed (Sq. V15, depth 0.30, sector 3); molar tooth/premolar tooth, splinters, destroyed (Sq. V15, depth 0.30, sector 3); ?tibia prox. splinters, destroyed width of proximal epiphysis - ca. 9 cm (Sq. A21 - old A"21). The fragmentation of bones does not allow further identification.

Cattle (*Bos taurus* Linnaeus, 1758): upper molar tooth M-3 sin. (depth 0.45, N - 0.10+0.35, W - 1.80+0.35) (Fig. 2); 2 upper molar teeth sin. ad.; 1 premolar tooth P-2 destroyed (Sq. K6; pitos No 2, depth 0.80); molar tooth M-3 destroyed (Sq K6, pitos No 2, depth 0.80); 2 teeth (molars/ premolars) splinters, destroyed (SW corner of inner yard, depth 0.50); molar tooth/ premolar tooth, splinters, destroyed (Sq. C19, New D 16, depth 0.20 from the fixing level); molar tooth/ premolar tooth, splinters, destroyed (Sq. C20, New D 17, digging No 19); molar tooth/ premolar tooth, splinters, destroyed (pitos No 23); molar tooth/ premolar tooth, splinters, destroyed (unlabeled); metacarpus dex. prox. juv. damaged (building No 6, room No 2, depth 0.20 m); 2 molars/ premolars, splinters, destroyed (Sq. V15, depth 0.15); maxillar fragment completely destroyed (Sq. K15, depth 0.35 m, Sector 3); molar tooth/ premolar tooth, splinters, destroyed (Sq. K15, depth 0.35 m, Sector 3); molar tooth/ premolar tooth, splinters, destroyed (building No 6, room No 1, depth 0.10 m); mandible destroyed fragment (building No 6, room No 1, depth 0.10 m); ?rib fragment, cut mark (Sq. S8, digging No 3); phalanx prox. dex., lateral splinter of distal articular end (digging 3, central part). Cattle is the most common of the large domestic mammals since the late Neolithic on the Balkans.



Fig. 2. Cattle (*Bos taurus*) – molar tooth M-3 sin. ad. (Photo: Z. Boev).

Domestic Donkey (*Equus asinus* Linnaeus, 1758): premolar tooth P-4 sin. ad. (pitos 22) (Fig. 4); scapula sin. - shaft fragment (pitos 22); radius sin. prox. (Sq C20, digging No 20); premolar tooth P-1 destroyed (Sq. K15, depth 0.15); ?metacarpus, diaphysal splinters destroyed; diameter of diaphysis ca. 2.9 cm (Sq. K15, digging No 28, depth 0.60); metatarsus dex. (pitos No 26, depth 0.65); tibia sin. dist. (pitos No 26, depth 0.65); metatarsus dex. prox. (pitos No 26, depth 0.65); metatarsus dex. dist. (pitos No 26, depth 0.65) (Fig. 3); phalanx proximalis dex., distal end damaged (pitos No 26, depth 0.65); phalanx proximalis dex., only part of proximal end preserved (pitos No 26, depth 0.65); phalanx proximalis dex., only distal third preserved (pitos No 26, depth 0.65); radius sin. dist. medial part of distal epiphysis damaged (pitos No 26, depth 0.65); tibia dex. prox., lateral part of proximal epiphysis damaged (pitos No 26, depth 0.65); metatarsus IV dex. prox. splinter (pitos No 26, depth 0.65); radius sin. prox. splinter (pitos No 26, depth 0.65); pelvis, os ishium sin. (pitos No 26, depth 0.65); vertebra lumbalis I (pitos No 26, depth 0.65); astragalus dex. (pitos No 26, depth 0.65); metacarpus dex. (pitos No 26, depth 0.65). All skeletal and dental elements suggest one adult individual. It is worthy to mention, that donkey's remains are most numerous in the collected remains.



Fig. 3. Domestic donkey (*Equus asinus*) – metatarsus sin. dist. ad. (Photo: Z. Boev).



Fig. 4. Domestic donkey (*Equus asinus*) – molar tooth P-4 sin. ad. (Photo: Z. Boev).

Horse (*Equus caballus* Linnaeus, 1758): molar tooth M-1 ad. (building No 6, room No 3, pit 151); molar tooth-premolar tooth, splinters destroyed (Sq. R8, digging No 3, depth 0.30); metacarpus, splinters destroyed (building No 6, room No 2, digging, W part); metacarpus, splinters from diaphysal part (building No 6, room No 2, depth 0.20 m). All skeletal and dental elements suggest one adult individual.

Goat (*Capra hircus* Linnaeus, 1758) and/or Sheep (*Ovis aries* Linnaeus, 1758): metatarsus dex. juv. without proximal epiphysis (Sq J7, depth 0.25-0.30 m building 2); vertebra thoracalis indet. juv. (vertebral body cover; Sq. D22/E18, pit No 156); metatarsus sin. broken diaphysal portion, fragment length 5 cm (pit No 155, digging No 20); phalanx proximalis destroyed (digging No 20, depth 0.43); ?humerus prox. destroyed, splinters, fragment length 7 cm (building No 6, room No 3, depth 0.40-0.50); ? os parietalia, splinters (Sq. B20, digging No 19); premolar tooth/ molar tooth, splinters, destroyed (Sq. S14, depth 0.10); metacarpus ? dex. dist., trochlea - destroyed, fragment length - 12 mm (digging 3, central part, 04.2012); pelvis sin, pars acetabularis (digging 20, Sq. C24, pit No 156); premolar tooth/ molar tooth, splinters, destroyed (Sq. C20, depth 0.55); premolar tooth/

molar tooth, splinters, destroyed (Sq. K23, digging, No 13, depth 0.20); ?phalanx prox. destroyed (digging 3, central part); ?phalanx prox. destroyed (Sq. E15, depth 0.40); ?metacarpus prox. damaged (pitos No 27, depth 0.30 m); ?metacarpus juv. (only cover of articular surface of proximal epiphysis and bone splinters) (building No 6, room No 1, depth 0.10 m); premolar tooth/ molar tooth, splinters, destroyed (digging 3, central part). The fragmentation of bones does not allow further identification.

Goat (*Capra hircus* Linnaeus, 1758): cranium, frontal fragment, dex., destroyed (digging 3, central part). It is very probably some of the remains listed in above paragraph to belong to goat, but their damages make any further identification speculative.

Sheep (*Ovis aries* Linnaeus, 1758): molar tooth M3 split, destroyed (digging No 26, depth 0.40 - 0.50) (Fig. 5). Most of finds are heavily damaged.

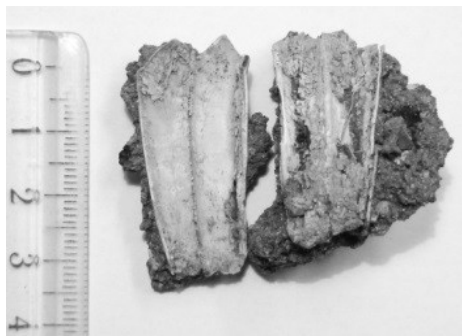


Fig. 5. Sheep (*Ovis aries*) - molar tooth M-3 ad. (Photo: Z. Boev).

Domestic Pig (*Sus domesticus* Erxleben, 1777): Material: canine milk tooth (between Sq. Q6 and Q5, part of R6). One juvenile individual.

Dog (*Canis familiaris* Linnaeus, 1758): tibia dex., broken diaphysal part, fragment length - 92 mm (digging 20, Sq. C24, pit No 156) (medial-sized breed); canine (upper left) mm (digging 20, Sq. C24, pit No 156) (about 3/4 of wolf-size; very old (mature) individual!). Size excludes wolf and jackal (*Canis aureus* Linnaeus, 1758)

Mammalia, Eutheria ordo indet.: Seventeen long limb bones, s. c. "ossa longa tubulosa" have been found broken into many dozens of bone splinters as follows: 7 from the digging No 3 - 1 from Sq. R8 (depth 0.45 m); 3 from the central part (1 ?tibia prox., diaphysal fragment splinters, and 2 fragments cattle/horse-sized), and 1 completely destroyed, 1 ?femur prox., diaphysal fragment; diaphysis diameter ca. 4.5 cm and 1 ?humerus dist. Two remains of long bones originate from long the Sector 3, Sq. T15 - ?metatarsus, diaphysal fragment splinters (depth 0.20), and one of depth 0.15 m. The remaining finds have been found in Sq. E15 (depth 0.40), Sq. C19, new D16, digging No 25, depth 0.40 (fragment; sheep/goat-sized), Sq. S20, pitos No 25 (?metacarpus fragment; sheep/goat-sized), Sq. V15 (depth 0.15, ?metatarsus (fragment; sheep/goat-sized), building 5, room No 2, depth 0.20-0.30 (?metatarsus fragment; sheep/goat-sized), building 6 (room No 2, 1 m from the south wall, depth 0.40) - ?tibia prox. destroyed (fragment; sheep/goat-sized), and Sq. B15 (sector 3, depth 0.35 m) - diaphysal fragment splinters. In addition 3 pelvic fragments of cattle/horse-size have been found in Building No 6, Sq. N16, depth 0.20 m, Sq. K23, digging No 13, depth 0.30 m, and one other (without label). Heavily destroyed bone finds doesn't allow determine even the bone skeletal element.

Traces on Bones

As it is possible to judge from the level of the preservation of the finds, there are no traces of processing on the bones (cut-marks, burning, gnawing, etc), except 3 cases: (1) Long tubular bone (unidentified because of the very little preserved portion). A metal (iron) connecting (nail-like) element. It is worthy to be mentioned that the metal element was mounted on the animal pre-mortem; (2) Longitudinally split corpus vertebrae of a vertebra thoracalis of a juvenile individual of small ruminant (sheep or goat); (3) Fragment of a rib, bearing a cut mark.

Discussion

The correlation "wild: domestic" mammals in the identifiable remains is 14.7 : 65.7, a clear indication of the dominant role of the animal husbandry. The Wisent and the Red Deer are best represented among the wild mammalian finds. Donkey and cattle are best represented among the domestic mammals, each of them covering about 1/5 of the collected identifiable remains.

Best preserved are the bone finds of pits No 26, among them some long bones of legs (of donkey) bearing their articular endings. Contrary, the finds from "digging No 3" and "building No1" are of worst preservation. The identified 13 species and domestic forms are usual in the ancient settlements of Bulgarian and the Balkan Peninsula. Dyakovo provide a new (of the very few) former localities of the disappeared Wisent in the country.

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