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Remains of mammals from the Antique settlement of Golubitskaya 2

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ABSTRACT

The article presents the results of the study of osteological material from the Antique settlement of Golubitskaya 2 (Krasnodar Territory, Taman Peninsula, Russia) from the excavations of 2007–2019. Archaeological investigations of the settlement have been directed by PhD D.V. Zhuravlev (State Historical Museum, Moscow). In total, 5996 mammalian bones were identified from cultural layers of the 6th–3rd centuries BC cultural layers. The osteological material that has been accumulating at the Antique settlement for almost three centuries is relatively well preserved. We present here a series of new facts, elaborating our ideas about the economic life, customs and traditions of the local Antique population. Wild game animals are represented by adult individuals of brown hare, wolf, fox, brown bear, wild boar and red deer. These animals still live in Ciscaucasia. Hunting here acted only as an additional source of food and was conducted in the immediate vicinity of the site. As a result of the analysis, it was shown that the inhabitants of Golubitskaya 2 led a settled agricultural lifestyle – herds were most likely grazed in the immediate vicinity. Excavations revealed forty-two full or partial skeletons of dogs, the study of which showed the presence of numerous healed injuries in individual animals. Possible ritual burials of dogs in the settlement were also recorded. Our analyses indicate that the bones of large mammals were often used here as a raw material in the manufacture of artefacts. We also compare here our results with the data of colleagues working at other settlements of Eastern Crimea and the Taman Peninsula.

Keywords: Antique settlements, dog burials, faunal assemblage, Golubitskaya 2, mammals, Taman Peninsula

Остатки млекопитающих с античного поселения Голубицкая 2

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РЕЗЮМЕ

В статье изложены результаты исследования остеологического материала с античного поселения Голубицкая 2 (Краснодарский край, Таманский полуостров, Россия) из раскопок 2007–2019 гг. Археологическое изучение поселения проводилось под руководством кандидата исторических наук Д.В. Журавлева (Государственный исторический музей, Москва). Всего из культурных слоев VI–III века до н. э. удалось определить 5996 костей млекопитающих. Остеологический материал, который накапливался в античном поселении в течение почти трех веков, относительно хорошо сохранился. Мы представляем здесь ряд новых фактов, расширяя наши представления об экономической жизни, обычаях и традициях местного античного населения. Дикие промысловые животные представлены взрослыми особями зайца-русака, волка, лисицы, бурого медведя, кабана и благородного оленя. Эти звери до сих пор обитают в Предкавказье. Очевидно, что охота здесь выступала лишь в качестве дополни-

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тельного источника питания и велась в ближайших окрестностях. В результате анализа показано, что обитатели Голубицкой 2 вели оседло-земледельческий образ жизни – стада, скорее всего, выпасались в ближайших окрестностях. При раскопках обнаружены сорок два полных или частично полных скелета собак, исследование которых показало наличие у отдельных животных многочисленных прижизненных травм. Зафиксированы также возможные ритуальные захоронения собак на поселении. Наш анализ показал, что в качестве сырья для изготовления артефактов часто использовались кости крупных млекопитающих. Здесь мы также сравниваем наши результаты с данными коллег, работающих на других поселениях Восточного Крыма и Таманского полуострова.

Ключевые слова: античные поселения, погребения собак, фаунистический комплекс, Голубицкая 2, млекопитающие, Таманский полуостров

INTRODUCTION

At the end of the 7th century BC (Subatlantic period of the Holocene) the first ancient settlements appeared in the Northern Black Sea region. Golubitskaya 2 (Krasnodar Territory, Russia) is one of the earliest on the Taman Peninsula, since it belongs to the first wave of Greek colonization. The foundation of the settlement dates from the beginning of the second quarter of the 6th century BC. The end of the settlement in a great fire is dated not earlier than the second half of the 3rd century BC (Zhuravlev and Schlotzauer 2014a). Golubitskaya 2 is also one of the most studied “rural” monuments of the Asian Bosphorus. Apparently, the inhabitants of the settlement lived in land-based houses made of mud bricks or in houses with a frame of wooden poles and rods (Zhuravlev and Schlottsauer 2014b).

MATERIAL AND METHODS

The osteological material (excavations 2007–2019) derives from the zone of the defensive ditch and rampart, one of the earliest ancient fortifications in the Northern Black Sea region (Zhuravlev and Schlotzauer 2014b), and also from the numerous archaeological objects in the adjacent part of the settlement. The remains of animals, as well as fragments of ceramics, seem to have been intentionally disposed of by the ancient population in household pits. This is indicated by the fact that a number of whole skeletons were discovered in them. The bones of such skeletal groups were not taken into account in the overall summation of the material, since they could greatly distort the statistical picture.

The calculation of the minimum number of individuals (MNI) was carried out according to the number of right and left elements of the skeleton, taking into

account the age profile of the bones, according to the technique widely used in paleontological and zooarchaeological studies (Shipman 1981; Klein and Cruz-Uribe 1984; Van Wijngaarden-Bakker 2001). Some researchers believe that the number of identifiable bones or, in other words, the number of bone elements in a local sample (NISP) should exceed 300–400 units to minimally reliably reflect the zooarchaeological situation (Antipina 1999; Grayson 1984). Others consider a number of 200–300 specimens to be quite representative for an adequate characterization of osteological material (Kosintsev et al. 1989).

RESULTS

In total, 5996 mammalian bones from five excavations were identified at Golubitskaya 2 (Table 1). The osteological material that has been accumulating at the site for almost three centuries is relatively well preserved (stage 1 according to A. Behrensmeyer (1978)). Indeterminate specimens account for 45.4% of the total number across the settlement, and for the most part these are fragments of mammal ribs and vertebrae. The number of large indeterminate fragments slightly exceeds the number of small ones – 52% and 48%, respectively (Table 1). Only 41 identifiable mammalian bones (0.7%) bear traces of fire exposure; predator gnawing marks (probably from dogs) were found on 211 bones (3.5%); rodent gnawing marks were found on two bones.

We determined 14 species of mammals (Table 1) among the osteological material from Golubitskaya 2. Wild game animals are represented by adult individuals of brown hare, wolf, fox, brown bear, wild boar and red deer. These animals still live in Ciscaucasia. Obviously, hunting here acted only as an additional source of food and was conducted in the immediate vicinity (Sablin 2016a).

Table 1. Remains of mammals from the Antique settlement of Golubitskaya 2.

Species	Common names	NISP	%	MNI
<i>Erinaceus europeus</i> L., 1758	European hedgehog	1	0.01	1
<i>Lepus europaeus</i> Pall., 1778	Brown hare	29	0.5	12
<i>Canis lupus</i> L., 1758	Wolf	3	0.07	2
<i>Vulpes vulpes</i> L., 1758	Fox	2	0.03	1
<i>Ursus arctos</i> L., 1758	Brown bear	3	0.07	1
<i>Sus scrofa</i> L., 1758	Wild boar	16	0.3	8
<i>Cervus elaphus</i> L., 1758	Red deer	6	0.15	2
<i>Canis familiaris</i> L., 1758	Dog	494	8.2	55
<i>Felis catus</i> L., 1758	Domestic cat	9	0.16	5
<i>Equus caballus</i> L., 1758	Horse	812	13.5	59
<i>Equus asinus</i> L., 1758	Donkey	1	0.01	1
<i>Sus domestica</i> L., 1758	Pig	795	13.3	119
<i>Bos taurus</i> L., 1758	Cattle	2215	36.9	197
<i>Ovis aries</i> L., 1758 / <i>Capra hircus</i> L., 1758	Small cattle	1610	26.8	198
Mammals in total		5996	100	661

The main human activity at Golubitskaya 2 was farming, since all the main domestic animals are present in the osteological material, making up 98.9% of the total number of identifiable mammalian bones (Table 1). Traces of dismemberment of carcasses of domestic animals were noted on 38 bones (0.6%). These are mainly cutmarks. The butchering of pigs, goats, sheep and cows took place directly at the settlement, since we found traces of carcass processing – cutmarks on the bones around the articular surfaces, in the places of attachment of large muscles (Binford 1978, 1981). Differences in the anatomical composition of the bones between domestic ungulates have not been identified; the dismemberment of the carcass of a large animal for culinary consumption is, in principle, fairly standard. The tubular bones of the fore and hind limbs are represented in proportionate amounts. Based on the eruption sequence and wear of the teeth from mammals, we were able to clarify the age of their death. The following can be said about the age structure of the herd of domestic animals in Golubitskaya 2: 86.4% of horses, 57.1% of pigs, 80.7% of cattle and 63.1% of small cattle in the herd were represented by the adult individuals (Table 2).

Table 2. Age structure of the herd of domestic animals based on the aged lower jaws from Golubitskaya 2.

Domestic animals	Adult with M ₃ MNI	Semi-adult with M ₁ MNI	Juvenile with dP ₄ MNI
Horse	51	4	4
Pig	68	40	11
Cattle	159	24	14
Small cattle	125	51	22
In total	403	119	51

DISCUSSION

Forty-two complete or partial skeletons of dogs were found on the Golubitskaya 2 settlement. Twenty-six of them were found in the pits. In five cases we identified multiple graves of dogs including two to four individuals. Seven of the skeletons belonged to puppies aged between 1 and 4 months. The average height at the withers in dogs on Golubitskaya 2, calculated by us using 45 measurements of the long limb bones, amounted to 52.1 cm, which corresponds

to 18.4 kg of live weight. This is the same size as the Russo-European Laika. Preserved cranial features of the skulls are also consistent with that breed. The height at the withers of twenty Antique Period dogs from the Northern Black Sea region, calculated using the condylobasal length of the skull (Zalkin 1960a), amounted to an average of 52.1 cm. The height at the withers for dogs from the Nymphaion settlement, calculated by A.K. Kasparov (2009) on 69 humeral measurements, was 51 cm. He believes that “Laika-type dogs were the principal, popular breed of dogs in Eastern Crimea” (Kasparov 2009).

The dog remains at Golubitskaya 2 represent 8.2% of the total number of mammal bones. Traces of consumption of these animals – dismemberment at the joints or skinning – as occasionally practiced in the Late Classical and Hellenistic times at the settlements Geroyevka 2 and Nymphaion (Kasparov 2003a) – have not been identified at Golubitskaya 2 (Sablin 2016a). Two skulls of dogs with injuries suffered during their lifetimes were discovered on the settlement: skeleton No 1 had punched out upper-jaw incisors and right canine, a dent from a blow on the left side of the frontal bone, while skeleton No 19 had punched out upper-jaw incisors. It should be noted that such injuries are quite common in animals and are usually the result of human aggression (Kasparov 2009; Losey et al. 2013, 2014).

The skeletons of two dogs (No 19 and No 20) were found close to each other at the bottom of pit No 27 at its western and eastern walls. This pit was dug into natural clay and had a depth of about 1.2–1.3 m. The first dog lay on the left side of the pit, with its head to the east; the second was on the right, with its head to the south (Fig. 1A–B). Obviously, the animals were intentionally and simultaneously laid in the pit. This double burial dates to the 3rd–2nd centuries BC (Zhuravlev et al. 2016), and its motives are not clear to us, although it is possible that the animals were sacrificed. Both dogs are females around 9–10 years old with severe arthrosis of the lumbar vertebrae, which is extremely unusual (Germonpré et al. 2016), and healed fractures of the left tibia. Something similar was discovered in pit No 50: here, dog No 28 (male) lay on the right side of the pit, its head to the west, and dog No 29 lay nearby on the left side of the pit (Fig. 1C–D). We can attribute the burial of a dog from pit No 32 to an earlier period (6–5th centuries BC): here, the body of dog No 9 was neatly laid on a horizontal surface, its head to the southeast

(Fig. 1E). It is well-known that the dog was a kind of cult creature for many pre-industrial peoples, a mediator between the real and other worlds (Moleva 1998; Berezkin 2005). Ritual burials of dogs were also discovered by A.K. Kasparov at the Nymphaion settlement (sections “M” and “N”) (Kasparov 2003b, 2009).

Domestic cats are represented by 9 bones (Table 1). The lower jaw belonged to a kitten about 5 months of age, and the radius bone with a cut mark indicating butchering belonged to an adult animal. These are one of the oldest remains of *Felis catus* from the Northern Black Sea region; usually domestic cats in this region are recorded in much later contexts (Tsalkin 1960a, Kasparov 2013). A fragment of tibia bone of the donkey *Equus asinus* was found at Golubitskaya 2. The transverse diameter of its proximal end was 80 cm. E.V. Dobrovolskaya (2013) reports the discovery of 5 bones of this animal in the cultural layer of the Fanagoria settlement.

Horses from the settlement of Golubitskaya 2 can be categorized as medium-sized (Witt 1952). Their average height at the withers, calculated based on the length of the metacarpal bones ($n = 12$), is 136 cm (Kiesewalter 1888), which coincides with the results of V.I. Tsalkin (1960a) – 137 cm – for Early Iron Age horses from the Northern Black Sea region. The same parameter was estimated at 145 cm for the Berezan’ settlement (Yanish and Kasparov 2015), and 139 cm for the General’skoye settlement (Kasparov 2010). According to the relative width of the metacarpal bone, five animals from the settlement of Golubitskaya 2 should be assigned to the group of thin-legged horses, three to the group of semi thin-legged horses, and four to the group of middle-legged horses (Brauner 1916). The diaphysis width index averaged 15.2. This indicator also lies within the range indicated by V.I. Tsalkin (1960a) for the Northern Black Sea region. The average horse weight, calculated through the metacarpal bones ($n = 5$) (Eisenmann 2000), was 327 kg. Although we found a talus bone of horse with cutmarks, horses most likely mainly performed a transport function at this settlement (Sablin 2016a). Well-marked traces of wear from iron bits were found by us on maxillary premolar P1 of an adult horse. The use of horses for meat is more characteristic of steppe, nomadic tribes, although traces of butchery have also been noted in 4th–3rd centuries BC layers at the Antique Greek Geroyevka 2 and Nymphaion settlement sites in Eastern Crimea (Kasparov 2003).



Fig. 1. Dog burials from the settlement of Golubitskaya 2 (photo by D.V. Zhuravlev). A – dog No 19, pit No 27; B – dog No 20, pit No 27; C – dog No 28, pit No 50; D – dog No 29, pit No 50; E – dog No 9, pit No 32.

The average height at the withers of a cow from the settlement of Golubitskaya 2, calculated from the length of the metacarpal bones ($n = 7$) following V.I. Tsalkin (1960b), is 113 cm. This is consistent with the average height at the withers of an Early Iron Age cow from the Northern Black Sea region (Tsalkin 1960a). The corresponding results for some nearby Antique settlements are as follows: Berezan' – 116 cm (Yanish and Kasparov, 2015), Geroyevka 2 – 115 cm (Kasparov 2003b), General'skoye – 112 cm, Nymphaion, Zolotoye Vostochnoye, Polyanka and Krutoy Bereg – all 114 cm each, Mirmekiy – 121 cm (Kasparov 2017), Fanagoria – 119 cm (Dobrovol'skaya 2013).

The average height at the withers of sheep from the settlement of Golubitskaya 2, calculated from the length of the metatarsal bone following V.I. Tsalkin (1961), is 62 cm. The same parameter was 68 cm for the Berezan' settlement (Yanish and Kasparov 2015), 61 cm for the General'skoye settlement (Kasparov 2010), 59 cm for the Mirmekiy settlement (Yanish and Kasparov 2015), and 60 cm for Early Iron Age sheep from the Northern Black Sea region (Tsalkin 1960a).

We discovered a series of new results, elaborating our ideas about the economic life, customs and traditions of the local Antique population. For example, in the manufacture of artefacts the bones of large mam-

Table 3. Remains of mammals from the settlements, the Northern Black Sea region.

Settlement	Dog*	Horse*	Pig*	Cattle*	Small cattle*	The rest terrestrial mammals*
Berezan' (Yanish and Kasparov 2015), S-W Ukraine, 6–5th centuries BC	1.1	2.5	5.6	27.8	62.6	0.4
Porfmiy (Kasparov 2006), East Crimea, 6–4th centuries BC	22.4	8	6.7	30.6	31.8	0.5
Mirmekiy (Kasparov 2013), East Crimea, 5th century BC	6.2	8.9	5	32.3	46.8	0.8
Zavetnoye 5 (Kasparov 2006), East Crimea, 5–4th centuries BC	7.3	9.9	3.8	30.7	46.2	2.1
Nymphaion (Kasparov 2003a), East Crimea, 5–4th centuries BC	4.1	7.6	6.5	29.3	51.1	1.4
Golubitskaya 2, Taman, 6th–3rd centuries BC	8.2	13.5	13.3	36.9	26.8	1.3
Germonassa (Tsalkin 1960a), Taman, 4th–3rd centuries BC	2.3	6.6	12.9	35.8	41.6	0.8
Volna 1 (Kasparov 2002), Taman, 4th–3rd centuries BC	16.8	11.7	16.8	27	27	0.7
Fanagoria (Dobrovolskaya 2013), Taman, 4th–3rd centuries BC	3.2	8.5	19.8	35.3	31	2.2
Nymphaion (Kasparov 2003a), East Crimea, 4th–3rd centuries BC	8.6	8.6	6.5	29.7	45.3	1.3
Geroyevka 2 (Kasparov 2003b), East Crimea, 4th–3rd centuries BC	7.3	4.4	8	38.5	41.4	0.4
General'skoye (Kasparov 2010), East Crimea, 4th–3rd centuries BC	6.4	14.3	3.4	39.9	35.9	0.1
Polyanka (Kasparov 2014), East Crimea, 3rd–2nd centuries BC	1.9	15.9	7.1	41.7	33.1	0.3
Zolotoye Vostochnoye (Kasparov 2014), East Crimea, 3rd–2nd centuries BC	1.1	12.3	9.4	39.9	36.4	0.9
Krutoy Bereg (Kasparov 2014), East Crimea, 3rd–2nd centuries BC	3.5	7.8	2.4	35.5	50.4	0.4
Sirenevaya Bukhta (Kasparov and Koval'chuk 2016), East Crimea, 3rd–4th centuries BC	3.3	9.3	9.3	30.1	44.7	3.3

* % of the total number of bones of terrestrial mammals.

mals were often used here as a raw material. Thus, metacarpal and metatarsal bones of the horse served as the basic material for the manufacture of skates (Pankovskiy 2006). Such items at Golubitskaya 2 have been dated back to the 6th–5th centuries

BC by archaeologists (Zhuravlev and Schlotzauer 2014b). We assume that they could have been used as unpaired bone skates without a rigid attachment to the leg for moving on the frozen estuary in winter (Sablin 2016a, 2016b).

CONCLUSIONS

The proportion of bones of domestic animals among the osteological material from the settlement of Golubitskaya 2 clearly indicates the settled agricultural lifestyle of its inhabitants: the total number of mammal bones includes 36.9% of cow, 26.8% of sheep/goat, 13.3% of pig, 13.5% of horse and 8.2% of dog (Table 1, 2). Comparing our results with the data of colleagues working at settlements of Eastern Crimea and the Taman Peninsula, we should note the following:

1. Golubitskaya 2, as well as some of the “rural” Azov settlements of Eastern Crimea (General’skoye, Polyanka, Zolotoye Vostochnoye) and the Volna 1 settlement on the Taman Peninsula, have relatively large numbers of horse bones (on average 13.5%). At some nearby Antique settlements horse is represented in much smaller quantities (an average 9%) (Table 3). Horse breeding requires the presence of good pastures and freshwater sources (Kasparov 2014).

2. Golubitskaya 2, along with some other settlements on the Taman Peninsula (Germonassa, Volna 1, Fanagoria), is characterized by a relatively large number of pig bones (an average of 15.7%), while the settlements of Eastern Crimea are characterized by a small number of pig bones (an average of 5.9%) (Table 3). Humans have usually bred pigs in areas where oaks, beeches, hazels, or wild fruit trees grow (Kosintsev and Varov 1989). This implies the existence of a certain amount of forest land on the Taman Peninsula and around Golubitskaya 2 in particular.

3. At Golubitskaya 2 the number of bones of cows exceeds the number of bones of sheep/goat, indicating local stock raising – the animals were most likely grazed in the immediate vicinity of the houses. This, in turn, implies the presence of sufficiently large areas of fertile soil and meadows near the settlement for grazing. The predominance of cow over small cattle is also noted for Fanagoria, General’skoye, Polyanka, and Zolotoye Vostochnoye (Table 3).

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