A PROBLEM OF THE EARLIEST HORSE DOMESTICATION. DATA FROM THE NEOLITHIC CAMP AYAKAGYTMA 'THE SITE', UZBEKISTAN, CENTRAL ASIA[1]

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Abstract

The authors discuss the archaeozoological indicators for horse domestication, and come to a conclusion that a considerable increase of horse remains, accompanied by a presence of other certainly domesticated species could be one of them. With such a situation we have to do in Ayakagytma 'The Site', Uzbekistan, where in the Early Neolithic layers dated to 8000–7400 cal. BP, a share of horse remains reach 30–40%. It would suggest the earliest horse domestication known today.

Key words: Central Asia, Neolithic, Kyzyl-kums, Ayakagytma 'The Site', horse domestication.

Ayakagytma 'The Site' and the *Equidae* remains

Today Ayakagytma 'The Site' became one of the most important Neolithic sites of Central Asia. Discovered in 1995 during a systematic survey carried on by Polish-Uzbek Archaeological Expedition, it is situated some 130 km North of Bukhara city, in the south-eastern part of a steppe-desert area, called the Kyzyl-kums (Fig. 1.1). Its geographic coordinates are: 40°39'05''N; 64°37'06''E (Szymczak, Khudzhanazarov 2006, p.11).

Ayakagytma 'The Site' is located in a distance of about 300 m from an edge of a vast (ca 20 sq. km) Ayakagytma Depression, partly filled up by an artificial, brackish lake. A neolithic camp covers a fragment of a relatively plain promontory, closed from the East by a limestone island hill, and from the remaining three sides – by the steep gorges (Szymczak, Khudzhanazarov 2006, pp.9-16).

A regular excavation in Ayakagytma 'The Site' started in 1996, and was continued, with some breaks, till 2004 – altogether 7 seasons of stationary field research. By that time more than 125 m2 were carefully explored, yielding an extremely rich and valuable collection of artifacts: more than 60000 flint, stone and pottery mobile items were documented, together with other features, such as an oven, hearths and pits (Szymczak, Khudzhanazarov 2006, pp.37-60 and 196-201). Since 2004 an excavation in Ayakagytma 'The Site' is continued by French-Polish-Uzbek Archaeological Mission, directed by Dr Frederique Brunet from Maison Rene Ginouves de l'Archeologie et de l'Ethnologie, CNRS, Nanterre, France.

The stratigraphical observations allowed us to establish that the Neolithic settlement in Ayakagytma 'The Site' had two clearly separated phases: an Early Neolithic, 14C dated to ca 8000–7400 cal. BP, and a middle neolith one, 14C dated to ca 6000–5000 cal. BP. Almost one and a half millennium lasting settlement gap between those two phases, according to our data, was caused by the deluging of the area of the camp by raising waters of an adjacent great water reservoir, called by us the Io Sea (Szymczak, Khudzhanazarov 2006). Additionally, we found it possible to divide an early neolithic phase into three sub-phases, marked (starting from the youngest as: a – ca 7500–7400 cal. BP, b – ca 7700–7500 cal. BP, and c – ca 8000–7700 cal. BP) (Szymczak *et al.* 2004).

One of the most interesting groups of finds discovered during an excavation was a rich collection of animal remains, connected directly with the Neolithic settle-

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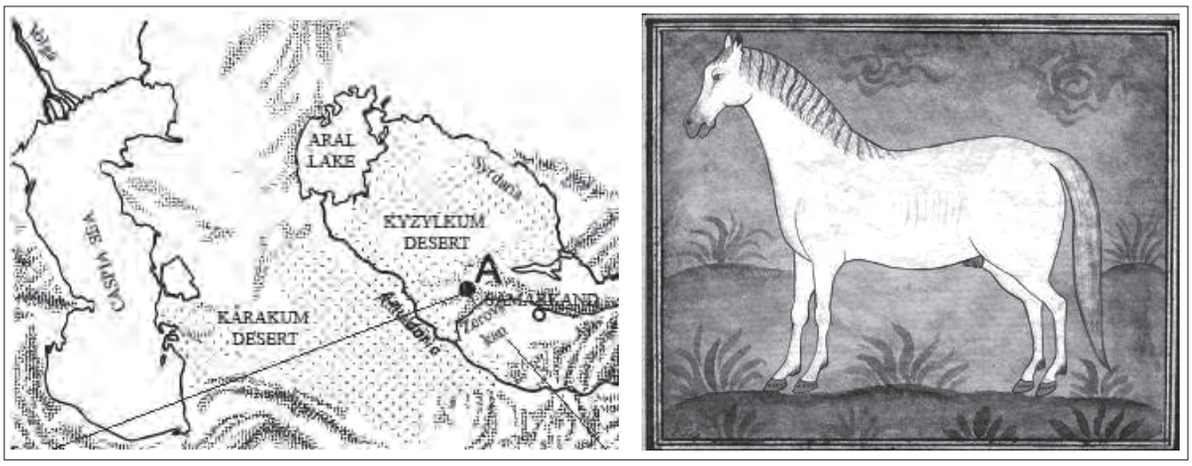

Fig. 1. Location of Ayakagytma 'The Site' in Central Asia where the earliest known today probably domesticated horse remains come from (Drawing by M. Różycka. To the right: a copy of an old Persian miniature showing a white horse in Central Asian steppe (painted by Toshev Davlat from Bukhara, 2004).

ment. Among the bone and tooth fragments, the horse remains played a very important role. Already in the earliest horizons a share of the pieces identified as belonging to the *Equidae* family reached 30.0–40.0% (Table 1). In comparison with other Eurasian Neolithic sites such numbers are rather unique. Could it evidence, or suggest at least, an earliest domestication of horse? Let us try to have a closer look on this problem.

Some remarks on horse domestication and its indicators

A general process of horse domestication is not recognized in detail yet. If we set the basic questions: what progenitor, where, and when was domesticated, it would appear that we are only able to give some suggestions, but not the valid answers. It seems that relatively the least complicated is to point out the progenitor, which was probably a wild horse, *Equus ferus*, occurring in the Early Holocene over the vast territories of Europe and Asia from Portugal, all the way through France, Middle and Eastern Europe, Central Asia, down to western China (Benecke 1998). On such a large area it could develop various local forms, among which described are two main subspecies: tarpan, and Przewalski horse. In theory both those subspecies could be considered as the progenitors of the contemporary domesticated horses, which domestication most probably had a polytopic character. Polytopy concerns all the animals of a wide range of occurrence, because their domestication could be realized by different human groups independ-

Table I. Shares of the remains of particular animal species in an archaeozoological assemblage from Ayakagytma 'The Site' (percents counted in relation to a total number of identified bone and tooth remains in particular stratigraphical units)

specie	lower settlement layer						upper settlement layer	
	8000–7700 BP		7700–7500 BP		7500–7400 BP		6000–5000 BP	
	n	%	n	%	n	%	n	%
cattle	170	31.5	30	21.4	25	29.8	17	5.6
camel	118	21.9	18	12.9	42	50.0	257	84.5
Equidae	190	35.3	61	43.6	9	10.7	18	5.9
sheep/goat	15	2.8	6	4.3	4	4.7	1	0.3
pig	3	0.6	3	2.1	2	2.4	5	1.7
dog	2	0.4	1	0.7	-	-	-	-
buffalo	5	0.9	7	5.0	-	-	-	-
aurochs/bison	25	4.6	-	-	-	-	1	0.3
gazelle	5	0.9	7	5.0	2	2.4	4	1.4
roe deer/fallow deer	1	0.2	1	0.7	-	-	-	-
Cervidae	5	0.9	5	3.6	-	-	1	0.3
wild sheep	-	-	1	0.7	-	-	-	-
TOTAL:	539		140		84		304	

ently in many places and in various times. Nevertheless, it seem unlikely that Przewalski horse was a direct progenitor of domesticated horse for one fundamental reason – it has a different number of chromosomes. In such a situation we are left with tarpan; although we do not know yet its exact genotype, but polish horse, which is a direct continuation of tarpan, has the same number of chromosomes as all the contemporary domesticated horses (2n = 64).

A process of domestication could start nearly everywhere, where only tarpan occurred – in Europe, as well as in western Asia. The most difficult quest would be to indicate where and when exactly that process took place for the earliest. Usually a chronology of domestication of a certain species is being set up on the bases of the dates obtained for the animal remains on which the morphological changes characteristic of domestication could be observed. Unfortunately, in case of horse such changes could not be easily demonstrated, most probably because for a very long time the ways of life of wild and domesticated horse were quite similar (Fig. 1.2). In a situation when we do not have at our disposal the unequivocal morphological determinants, we should seek for other features, which could at least suggest domestication. Today we accept several such features.

One of them is an appearance in archaeological material of the artifacts directly indicating the use of horse, e. g. the parts of horse harness. We should mention that one of the oldest in Europe horse bits was found in Biskupin (Great Poland), in the Early Iron Age, Lutisian culture deposits (Drzewicz 2004). It was produced of a deer's antler.

Many researchers consider that in prehistoric times horse could be used as a sacrificial beast, buried, together with other household beasts, in separate or human/animal graves. In Poland many of such burials are found in the late Neolithic sites attributed to Globular Amphorae and Corded Ware cultures (Kaczorowska 1999). However, we should not forget that in Polish Neolithic we have numerous intentional burials of wild animals as well.

For the third, analyzed are also the changes and an increase of differentiation of the average sizes of animal bones, because it is widely accepted that process of domestication causes a considerable variability in animals' constitution and dimensions. Benecke (1998) observed the significant increase of variability of longitude of the third phalang of the Bronze and Iron Age horses in relation to the Early Holocene individuals. Such a phenomenon is confirmed in numerous bone collections from Spain, France, Germany, Poland, Ukraine, and western Asia.

At last, an often used indicator for horse domestication is an increase of share of its bone remains in osteological material. This feature seems to be quite reliable, because it shows the growth of interest in a certain species among the prehistoric peoples. Even if it does not prove that such a species was fully domesticated, it is more than probable that at least it could be already tamed. One should only remember that in case of horse, its share should be necessarily confronted with a share of the remains of the beasts of chase, in order to exclude an intensive wild horse hunting.

The similar premises are being used to confirm not only horse domestication, but also domestication of the other species which domesticated forms do not show the univocal morphological features, e.g. llamas and alpacas in South America (Lavallée 1990), or geese in Egypt (Boessneck 1988). A group of features mentioned above was used by Benecke (1998), who came to a conclusion that the earliest horse domestication could take place in an environment of the Neolithic Tripole culture on Dniepr River, Ukraine. In an osteological material from that region, dated for the first half of the sixth millennium BC, a large number of horse remains of highly differentiated sizes was described, together with a presence of horse, and other domesticated animal bones, in human burials. O. Zhuravlev (2004), who is of an opinion that horse domestication started in another Ukrainian Neolithic unit – the Bug-Dniestr culture, mentions a similar possible date: the fourth millennium BC. Additionally, the same author records that by that time the differentiation of the sizes of horses visibly increased, which is demonstrated on an example of their phalangs. In relation to southwestern Europe, Benecke (1994), citing H.P. Uerpman, suggests that local horse domestication could occur in the first half of the third millennium BC, among the tribes representing the late Neolithic Globular Amphorae culture. Also in other European animal bone collections dated for the third millennium BC, Benecke (1994) himself noted a conspicuous increase of the horse remains. Even though on certain areas their shares were not identical, a general tendency could be clearly observed in many series from Slovakia, Germany, Central Poland, and Hungary. In the latter country, a share of horse remains was the highest and reached 18.0%.

Horse domestication in Polish Neolithic

Quite interesting is a position of horse in Polish Neolithic, where its general representation among the remains of domesticated animals is rather low (Laprus-Madej 1998). In the Banded Pottery culture the horse remains

appear only in 8 out of 18 studied assemblages, with the shares closing in a range between 0.05–5.43%; in the Lengyel culture they appear in 9 out of 20 studied assemblages with shares between 0.32–2.05%; in the Funnel Beaker Culture – in 21 out of 37 studied assemblages, with shares between 0.30–5.37%, although a single site yielded as much as 33.3% of such remains. Only rarely, but in various forms, the horses occur in burials: as the complete, individual sepulchers, as well as added to human graves (Kaczorowska 1999). As the detail analysis showed, the dimensions of the Neolithic horse long bones are slightly smaller in average than the Paleolithic and Mesolithic ones. The maximum of the process of decreasing of horse dimensions is noted in Polish Bronze Age (Kobryń 1984). It is believed that in course of domestication, increasing, as well as decreasing of the dimensions of horse skeleton is possible, but once such a process starts, it is always unidirectional and continuous. Its direction depends on a way a species was exploited, and on a way it was bred. The size increasing is usually connected with breeding selection (Lasota-Moskalewska 2008).

Recapitulating the remarks made above, we may accept that a process of horse domestication in the Polish Neolithic is marked by a start of decreasing of the dimensions of the discussed animals, and of using them as sacrificial beasts. On the other hand, the low shares of horse remains, in relation to the shares of the remains of other positively domesticated species would suggest that so early start of larger scale horse domestication is doubtful, although we could point out the single sites with quite high shares of horse remains. It all could indicate a possibility of rather local, tentative domestication.

A problem of horse domestication in Ayakagytma 'The Site'

A presented review of the clues for horse domestication in various areas shows that rendering a moment of the beginnings of that process is quite a difficult task. After all, the horse remains found in burials could represent wild animals, and increasing / decreasing of the dimensions could be a result of a natural, secular trend, but not of domestication. Thus, it seems that among the non morphological features the best indicator is a general considerable increase of horse remains in the osteological assemblages, especially when at the same time the shares of bone remains of wild animals stay at the same, relatively low level. In such a case, even if we cannot prove beyond doubt horse breeding, we should seriously take into account at least a possibility of large scale taming which always, sooner or later, ends up as domestication. From a man's point of view, taming was a period of adapting of a certain species for human needs. The more extensive those needs grew, the more limited was an independence of such a species. Consequently, a situation like that created the unavoidable conditions for natural, as well as for husbandry selection.

A model sketched above refers mainly to the settled farming societies. In case of the nomads, the horses were most probably chiefly used as a mean of locomotion and transport, so their life could be not that strictly controlled. A period of adaptation of such animals could last for a very long time (some generations), but even in that case more probable was a husbandry rather than a natural selection. Such a selection generally leads to the formation of the morphological types useful for riding, and easily standing the particular ecological conditions.

The horse bone and tooth finds from Ayakagytma 'The Site' take, from an archaeozoological point of view, a special position (Lasota-Moskalewska *et al.* 2006, p.206ff). In osteological material belonging to the earliest sub-phase 'c' (8000–7700 cal. BP) a share of the identified as horse family remains reaches 35.2%. In subsequent layer 'b' (7700–7500 cal. BP) it increases even to 43.6% (Table 1). The remaining finds in majority belong to domesticated cattle and camel. Wild animals are represented only by a few species occurring in a scarce number of bone fragments. E.g. a share of aurochs remains totaled 5.2%, which is understandable in a context of an intensive cattle breeding, and a need of herd extension. A conspicuous disproportion between the shares of the remains of the beasts of chase and the remains of horse family allows us to suggest that in Ayakagytma 'The Site' horse could be bred and used by the Neolithic people. With their economy based on cattle breeding, they could ride horses and camels, and use them as a mean of transport. Such a picture is well supplemented by a presence of domesticated dog (Table 1).

In a following sub-phase 'a' (7500–7400 cal. BP), horse started to be supplanted by camel, which could mark a possible change in a way of locomotion. In the youngest layer (6000–5000 cal. BP), after a long settlement gap, camel took a leading role (84.5% of all the identified animal remains), with a position of cattle and horse family considerably decreased. It may seem that by that time the whole type of the Neolithic economy had changed, possibly in a direction of an exclusive camel breeding.

Cattle bred in Ayakagytma 'The Site' shows the features of a long time domestication because its bones are of not too large sizes. According to the European classification, it was cattle of a short horn type – *Bos*

taurus brachyceros. A height in withers of those animals, calculated on a base of the measurements of their long bones, reached 125–130 cm, which is characteristic of medium tall cattle. It shows that in Ayakagytma 'The Site' horse was bred by a society well acquainted with other large mammals' husbandry, who probably constantly needed horse in everyday life, and who at the same time was not forced to hunt too intensively.

In such circumstances one should not have serious doubts that in Ayakagytma 'The Site' we have to do with a large scale horse domestication. The possible morphological consequences of that process are additionally indicated by the metrical features of the bones. Unfortunately, the studied material was in such a poor state of preservation that we have managed to measure only one radius bone. Its length would indicate that an individual reached 145 cm in withers, which is considerably more than the same measurement for wild horses. An average height of Przewalski horse is 135 cm, and of tarpan – 136 cm, with a maximum of a whole range never exceeding 140 cm. Thus, an individual from Ayakagytma 'The Site' would belong to a medium tall group of domesticated horses (Kobryń 1984).

Of course, basing on one individual represented by a single long bone we are not able to describe a whole population, but at least we can state that this particular horse was most probably domesticated and bred since long ago. It could represent an already graded up race which differed from the wild forms not only in height, but also in shape. The graded up races usually have longer and more slender limbs, longer necks, relatively smaller heads, and bent up bellies. The similar features could be observed e.g. among the Arabian horses – a race developed long ago and spread all over Europe already since the Roman period. Among others, the horses of such silhouettes are also represented on the prehistoric petroglyphs from Uzbekistan (Lasota-Moskalewska, Hudjanazarov 2000). It could strongly suggest an existence of an early graded up race or races developed locally on a territory of Central Asia. The most ancient, and existing till today, race coming from that area is the Akhaltekin race (Plate I.1). Its herds live in Turkmenistan in a steppe/desert environment, usually in a vicinity of oases. The heights in withers of the contemporary Akhaltekins close in a range of 150–157 cm. The Polish edition of the Great Encyclopedia of Horses (Edwards 2002) mentions that the origins of a discussed race are connected with racing horse breeding in Ashkhabad, the capital of the Republic of Turkmenistan, some 1000 years BC. It is said that the animals of that race were rode by the members of the Bactrian Guard of the Persian king Darius. The Akhaltekins were related to the Yomudian and Turkmenian horses whose remains, among others, were found in the Pazirisk grave mounds. The horses of all the mentioned races can stand the heat, lack of water, and are able to run without rest for long distances.

Obviously, we do not have any direct proves that the origins of the Akhaltekin horses should be dated as early as the Neolithic times. What we only wanted to show here, are the possible results of horse breeding gained on an arid territories of Central Asian lowlands. However, according to what we presented above, it seems that there are some proves, or reasons at least, to claim that already at the very beginning of the local Neolithic (a turn of the ninth and the eight cal. millennium BP) on a territory of the Central Asian lowlands horse could be domesticated and bred. At the same time the data regarding horse domestication on other areas of Eurasia which we gained so far allow us to point out that the dates from Ayakagytma 'The Site' are positively the earliest. It is also quite probable that since those times we should count not only a domestication itself, but also the constant grading up of the certain races, adopted better than wild horses for hard, arid conditions, and more useful for human nomadic mode of life.

Horse hoof prints as a determinant of domestication?

At the end we would like to present one more premise which, as we are convinced, also has some value in proving the horse domestication in Ayakagytma 'The Site'. In the youngest layer (6000–5000 cal. BP), in the soft, muddy at first, and then hardened ground of a costal zone of a great reservoir of the Io Sea, a regular row of seven round hoof prints was recovered, identified as horse traces (Fig. 2.1-2). An unchanging distance between the individual prints was 55 cm (Szymczak, Khudzhanazarov 2006a with fig.3). We tried to explain, if those traces were left rather by a wild or a domesticated animal. It seemed that a certain clue could be given by a size of a sole surface, calculated on a basis of a maximum width of a hoof print. In our case the measurements closed in a range 15.0–17.0 cm. The same measurements for the feral horses living in the western part of North America reach from 9.5 to 15.9 cm for the fore legs, and from 8.9 to 14.6 cm for the hind legs, with a standard variation s = +/- 2 cm (Jackson 2003). Additionally, Henryk Kobryń kindly measured the dimensions of the hoofs of 10 contemporary mixed race domesticated horses from the villages near Warsaw, Poland, and obtained the following average results: 12.5 cm for pectoral /chest/ limbs, and 10.0 cm for the pelvis ones. The measured horses were ca 155–160 cm high in withers. To complete the series,

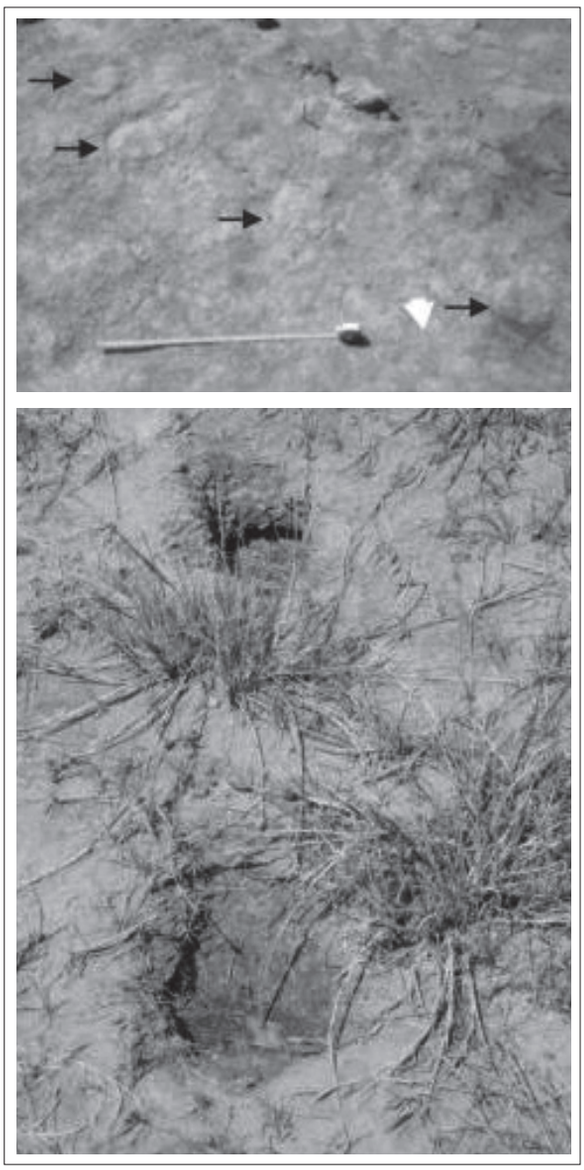

Fig. 2. Above: the fossil hoof marks of a horse from before 5000 years in Ayakagytma 'The Site' (photograph by A. Dzbyński). Below: the contemporary horse hoof prints in a coastal zone of a modern lake (photograph by M. Przeździecki).

Zygmunt Giżejewski kindly measured the maximum diameters of the hoof marks of half wild polish horses in the Research Station of Polish Academy of Sciences in Popielno, northern Poland. Two and three years old individuals left the traces 9.0 cm (8.0–10.5 cm) wide, while the fully grown up animals, 4–25 years old, left the traces 11.0 cm (10.0–11.5 cm) wide. Two living polish horses had their hoofs 12.0 and 12.5 cm wide.

The above data show that a horse from Ayakagytma 'The Site' had the relatively large sole surfaces of hoofs, even if we took into account that a mark left in the sticky mud could be somewhat wider than a hoof itself. So, the sizes of the Ayakagytma horse hoofs seem to be comparable with the maximum sizes of the feral animals living in the western part of North America, deriving from various races of European domesticated horses. A correlation of the metrical features, and an optimum indicator of body weight falling on one square centimeter of a sole surface, would lead us to a quite probable conclusion that a horse which left its hoof marks in Ayakagytma 'The Site' was relatively large, much larger than polish horses. A height in withers of the latter reaches only 136 cm, and could be compared with the heights of the wild races: tarpan and Przewalski horse. Even though an individual from Ayakagytma 'The Site' is dated as early as the sixth millennium cal. BP, it was already quite tall and graded up, which would again indicate a long lasting horse breeding on a territory of the present day Republic of Uzbekistan. In such circumstances our hypothesis that the horses from Ayakagytma 'The Site' were domesticated as early as a turn of the ninth and eight millennium cal. BP, i. e. the very beginnings of the local Neolithic, seems to be based on reliable data.

Conclusions

Although we do not have the direct proves for the Neolithic horse domestication in the Central Asian lowlands, we have tried to show the premises which let us build up such a hypothesis. The first is an extremely high share of the *Equidae* remains, sometimes exceeding 40%. We are well aware that not all of those remains represent horse itself, but also other species belonging to the same family, nevertheless, the indices like that show a great interest in horse among the Neolithic inhabitants of Ayakagytma 'The Site'.

The second is the height in withers. We managed to reconstruct the dimensions of only one individual, which was much taller than the wild horses. It could mean that at least this particular animal was domesticated for a long time, with grading up not excluded.

The third premise is the width of the sole surfaces measured on the bases of the hoof prints preserved in Ayakagytma 'The Site'. They also indicate that an animal who left them was much larger than an average wild individual, but fit well to the sizes of horses domesticated for a long time.

The fourth, indirect premise is a presence in an osteological material from Ayakagytma 'The Site' of the remains of the other fully domesticated species of mammals: cattle, sheep/goat, pig and dog, not excluding a possibility of domestication of camel. It would mean that the Neolithic societies from the Kyzyl-kums were acquainted with animal breeding, and in their case horse would not be an exception. All that leads us to a more than probable conclusion that the horses were domesticated since the very beginnings of the Central

Asian lowlands Neolithic, which is dated to a turn of the ninth and eight millennium cal. BP. At the same time, it would be the earliest date for horse domestication that we have today.

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ANKSTYVIAUSIO ARKLIŲ PRIJAUKINIMO PROBLEMA. AYAKAGYTMA NEOLITO GYVENVIETĖS (CENTRINĖ AZIJA) DUOMENYS

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Santrauka

Ayakagytma yra viena svarbiausių neolito gyvenviečių Centrinėje Azijoje. Ji įkurta pietrytinėje Kyzylkumo stepės / dykumos dalyje (1 pav.). Keleto kasinėjimo sezonų metu aptikta gausi archeologinė medžiaga: titnaginių ir akmeninių dirbinių bei keramikos. Neolito Ayakagytma gyvenvietė egzistavo dviem aiškiai išsiskiriančiais laikotarpiais: pirmoji, ankstyvoji, jos fazė datuojama 8000–7400 cal. BP, antroji, vėlyvoji, – 6000–5000 cal. BP. Negyvenamas laikotarpis tarp šių fazių susijęs su teritorijos užtvindymu, pakilus gretimų telkinių vandens lygiui (pavadinome jį Io jūra). Ankstyvoji fazė padalinta į tris subfazes: a – 7500–7400 cal. BP, b – 7500–7700 cal. BP ir c – 8000–7700 cal. BP. Kasinėjimų metu surinkta ir didelė osteologinė kolekcija (1 lentelė), kurioje svarbią vietą užėmė arklių kaulai. Jau ankstyviausiuose horizontuose arklių kaulų ir dantų kiekis viršijo 40 proc. – tai unikalus skaičius palyginti su bet kuria kita Eurazijos neolito kolekcija.

Apie arklių prijaukinimą vis dar turime mažai informacijos. Proceso pradžia galėjo būti bet kurioje laukinių arklių (*Equus ferus*) apgyventoje teritorijoje – tiek Europoje, tiek Vakarų Azijoje (1–2 pav.). Nėra ir tiesioginių morfologinių arklių prijaukinimą rodančių veiksnių. Kitos arklių prijaukinimo prielaidą patvirtinančios detalės yra randamos pakinktų dalys, paaukotų arklių liekanos, įvairūs jų dydžiai (aukštis), arklių kaulų gausėjimas archeozoologinėje medžiagoje.

Lenkijoje neolito laikotarpiu naminių arklių kaulų aptinkama santykinai retai, jų skaičius neviršija 6%. Individai vidutiniškai yra mažesni nei laukiniai arkliai – tai aiškinama veisimo atranka (I: 1 iliustr.).

Ayakagytma neolito gyvenvietėje nuo jos egzistavimo pradžios Equidae radinių skaičius yra ypač didelis: 35,3% c subfazėje, 43,6% b subfazėje ir 10,7% a subfazėje (1 lent.). Neabejotinai naminės rūšys: galvijai, avys / ožkos, kiaulės, šunys ir galimai kupranugariai. Vieno arklio, kurį pavyko išmatuoti, ūgis ties ketera siekė 145 cm. Tai gali reikšti prijaukinimą ir net veislės gerinimą.

Ayakagytma gyvenvietėje aptikti ir išmatuoti neolito laikotarpio arklio kanopų įspaudai (2: 1–2 pav.). Jų plotis (15,0–17,0 cm) yra daug didesnis nei laukiniams arkliams būdingas kanopų plotis. Tai leidžia manyti, kad šis gyvūnas buvo prijaukintas ir galimai veisiamas.

Negalime teigti, kad turime tiesioginių arklio prijaukinimo Centrinėje Azijoje įrodymų, tačiau didelis Equidae radinių paplitimas ir vieno individo didelis ūgis ties ketera ir pado paviršiaus pločio matmenys bei kitų neabejotinai naminių rūšių egzistavimas leidžia daryti išvadą, kad Centrinės Azijos žemumose arklys galėjo būti prijaukintas jau IX–VIII tūkstantmečio (cal. BP) sandūroje, ir tai yra ankstyviausia šiuo metu turima data.

Vertė Jurgita Žukauskaitė