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Pleistocene primitive dogs from the Russian Upper Palaeolithic site Eliseevichi 1

Mikhail V. SABLIN

The Upper Palaeolithic site Eliseevichi 1 is situated in the basin of the Dnieper River, on the Sudost River (right tributary of the Desna River) in Russia. The cultural layer is located at the second alluvial terrace in the upper part of Upper Pleistocene eolian-deluvial sediments. A large number of bones of the mammoth *Mammuthus primigenius* Blum. were found among the food debris on the Eliseevichi site. Remains of the Arctic fox *Alopex lagopus* L. and the reindeer *Rangifer tarandus* L. were also common (Kuzmina & Sablin, 1993). The assemblage of animal bones from the Eliseevichi 1 site is typical for a cold tolerant Pleistocene fauna.

Around 694 m^2 of cultural deposits were excavated by Russian scientists Polikarpovich (1930 -1940), Bud'ko (1960) and Grekhova (1970-1980). Cultural deposits include remains of at least eight sod houses and were dated by the radiocarbon method. There are four dates that range from 15,620±200 ^{14}C BP to 17,340±170 ^{14}C BP, five dates that range 14,080±70 ^{14}C BP from 14,590±140 ^{14}C BP, and two dates: 12,630±360 ^{14}C BP and 12,970±140 ^{14}C BP (Velichko *et al.*, 1997). Polikarpovich(1968) supposed the original site may have been as large as 5000 m^2. The high frequency of the burin technique in the stone industry, the large quantities of worked mammoth tusk, and a tradition of bone carving in complicated geometrical designs are very characteristic of the material culture of the Eliseevichi 1 site as well as of other sites of the Desna River area. That site is usually included among the Epigravettian or "Evolved Gravettian" cultures. Nevertheless, Eliseevichi culture is unique and has no direct analogies with other sites of the Desna River area or outside this area. Archaeological inventories are numerous, varied, and impressive. Worked bone found at the site includes a large assortment of bone awls, needles, hoes, digging implements, pendants, and beads. Special objects from this site include mammoth ivory objects (the so-called "churings"), honeycomb-like ornaments, a special type of female figurine carved in a realistic manner (Polikarpovich, 1968), and small figurines of animals made of limestone (Grekhova, 1985; Khlopachev, 1997). The majority of these finds are from the same excavation units as the skulls of the earliest primitive dogs from the area of the site that was excavated in 1935 and 1936.

A complete cranium of the first dog was found near the concentration of mammoth skulls, which was later interpreted as the remains of a sod house (Velichko *et al.*, 1997). The dog cranium lay at a depth of 1.48 m from the surface, in a hearth deposit. The second skull was found outside the hearth deposit 7 m from the first specimen. Detailed analysis of the dog remains are given in Sablin and Khlopachev (in preparation). Both crania are from dogs that were adult when they died. Skulls of the dogs from the Eliseevichi 1 site resemble Siberian husky (Eastern Siberian sled dog) skulls in shape but are larger, with broad noses and broad flat foreheads. Smaller size also cannot be used as a criterion for identification, because the Ice Age dogs had the same size as wolves (Musil, 1984; Nobis, 1986). The wide palate, coupled with the short rostrum have been used as effective criteria for the identification of dogs (Riesenfeld & Siegel, 1970; McLoughlin, 1983; Olsen, 1985; Morey, 1994). The animals from the Eliseevichi 1 site had large crania and teeth almost comparable in size with those of northern wolf, but the extremely wide palate, coupled with the extremely short rostrum, is very unusual. Therefore, the Eliseevichi 1 dogs represent a very strange and dangerous heavy hunting/guarding breed. The reconstructed withers height is about 70 cm. We suppose that the early dogs from Eliseevichi 1 site looked like the present-day woolly Tibetan mastiffs or woolly Caucasian sheep-dogs.

The Upper Palaeolithic central Russian Plain was peopled after 18,000 BP by hierarchically organized groups. That hierarchisation was related to an increase in environmental variability and unpredictability. High-status individuals have been able to partially control labour, exchange, and ritual behaviour (Soffer, 1985). An unequal distribution of resources, social and economic asymmetry would create social conflict. In this context it can be assumed that the large wolf-like dogs were used as guard not only against predators. Their presence on the site can indicate on high-status of the inhabitants.

No doubt during the Upper Pleistocene, dogs also played a part as a meat animals. For the Neolithic and the Bronze Age, dog skulls have often been found whose brain case was opened by removing the occipital (Bokony, 1974). A hole was made on the sides of one skull from Eliseevichi 1 site so that the brain could be removed. The dog brain seems to have been a favourite delicacy for Upper Palaeolithic man.

Some scientists suggest that the first transformation from wolf to dog may have happened more than 100,000 years ago (Vila *et al.*, 1997). Most archaeologists and palaeontologists believe that humans first tamed wolves before the end of the Pleistocene. However, there were only indirect, not obvious evidences of domestication (Benecke, 1987). Fragments of bones of *Canis lupus* L. identified as early Holocene domestic dog have been reported from the Near East (Turnbull & Reed, 1974; Davis & Valla, 1978), central and northern Europe (Musil, 1984; Nobis; 1986; Street & Baales, 1999), and Siberia (Pawlow, 1930). Complete crania of dogs have never been found before in prehistoric archaeological sites dated older than 12,000 ^{14}C BP.

Because of the lack of fossil material it is still impossible to say where the domestication of the dog began. Nevertheless, some researchers suggest that it may have taken place in Middle East (Clutton-Brock, 1995). But genetics cannot pinpoint the location of the ancestral wolf population. For this reason, and based on information from other genetic studies, the idea of a single locus of domestication is not supported (Morell, 1997). It seems probable that man tamed wolf pups in many parts of the world and therefore that several subspecies of wolf have contributed to the ancestry of the dog. We suggest that the specimens of dogs reported here were domesticated *in situ* from local northern wolves.

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Mikhail V. Sablin
Zoological Institute
Russian Academy of Sciences
Universitetskaya nab. 1
199034 St. Petersburg
Russia
MSablin@yandex.ru