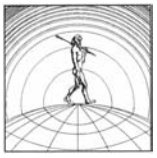

Institute for the Material Culture History RAS
Institute of Archaeology RAS
Southern Scientific Centre RAS
Institute of Archaeology and Ethnography,
Siberian Branch of the RAS
Department of Historical and Cultural
Heritage Protection, Restoration,
and Exploitation, Krasnodar Region

EARLY PALEOLITHIC OF EURASIA: NEW DISCOVERIES

International Conference Program and Abstracts
Krasnodar – Temriuk,
1–6 September 2008

Rostov-on-Don
2008

THE MOST PROBABLE AGE OF THE SINYAYA BALKA (BOGATYRI) LOCALITY

M. V. Sablin

Zoological institute, Russian Academy of Sciences, St. Petersburg

The Sinyaya Balka (Bogatyri) locality in the Taman Peninsula, Azov Sea, is the type locality of the Taman Faunal Complex: hundreds of mammal bones have been collected here since beginning of 20th century. It is notable that Taman complex largely reflects savannah-steppe conditions, where the remains of the following open landscape herbivores are predominated: elephant *Archidiskodon meridionalis*, rhinoceros *Elasmotherum* sp., horse *Equus* sp., gazelle *Gasella* sp., bulls *Bovini* gen. The absence of small canine *Nyctereutes megamastoides* and presence of felid *Panthera gombaszoegensis*, both sensitive time indicators, provides further temporal correlation Taman Faunal Complex with the Late Villafranchian after Olduvai epoch (Torre et al., 1992). Currently, it is widely accepted that Taman Faunal Complex close to the bottom of the Jaramillo Subchron at c. 1.1 Ma (Vangengeim et al., 1991), but, unfortunately, the fossil material from Taman' Peninsula evidently is heterogeneous, possibly stratigraphically as well as taxonomically (Vereshchagin, 1957; Forsten, 1999; Sher, 1999) and couldn't be used for the whole assemblage correct age recon-

struction. Here we report the investigation shows an age of approximately 1.6 Ma for Sinyaya Balka (Bogatyri) according to *Archidiskodon meridionalis* last upper molars published data.

Global change during the Villafranchian was manifested in declining temperatures and increased amplitude of climate cycles. Linking these changes to the evolution of continental faunas requires well-documented fossil/palaeomagnetic evidence that can be examined through substantial periods of time. A few sequences of southern Europe and the Khapry sequence of southern Russia provide such a database. The Khapry Faunal Complex of Russian stratigraphy is midway in stratigraphic sequence between the top of the Reunion palaeomagnetic event at c. 2.11 Ma and the bottom of the Olduvai Subchron at c. 1.97 Ma (Tesakov et al., 2003); new work places all of the classic Italian Upper Valdarno faunas in positively-magnetised deposits in the later part of the Olduvai Subchron (i.e. c. 1.8 Ma) (Lister et al., 2001); the Pietrafitta Late Villafranchian fauna is regarded as c. 1.4 Ma in age (Sardella et al., 1998). Fossil elephants are important elements in each of the successive faunal units; their remains are common in the vertebrate-bearing strata and they are good biostratigraphic indicators. Detailed history of *Archidiskodon* lineage development – from ancient to the latest forms – is well reconstructed for the Europe.

Systematic identification of elephants is commonly established by morphological composition characters of last upper molars. Traditionally, lamellar frequency index (LFI), hypsodonty index (HI), and enamel thickness (ET) are regarded as the most informative features: periodic changes of landscape and vegetation during the Villafranchian – Pleistocene have caused an increase of LFI, HI, and decrease of ET. The primitive subspecies of *A. meridionalis* from Khapry Faunal Unit corresponds with the group of European *A. meridionalis* "St Vallier stage"; it's the last upper molars are low and wide (HI = 1.23) (Titov, 2001) with wide enamel thickness – 3.25 mm (Dubrovo, 1964), and have low lamellar frequency – 4.5 (Pevzner & Vangengeim, 2001). The environment of the Khapry elephant was probably the same as modern African elephant. According to the most common view, Sinyaya Balka (Bogatyri) *A. meridionalis* is an intermediate between classic elephant at Upper Valdarno: LFI = 5.3; HI = 1.25 (Lister et al., 2001); ET = 3.2 mm (Ferretti, 1999) and *M. trogontherii,* existed in the Europe in the end of Matuyama epoch: c. 0.8 Ma; LFI = 7.0; HI = 1.75 (Lister et al., 2001); ET = 2.56 mm (Dubrovo, 1971). However, from teeth of *M. trogontherii*, fossils from Sinyaya Balka (Bogatyri) (LFI = 5.5 (Pevzner & Vangengeim, 2001); HI = 1.35; ET = 3.0 mm (Dubrovo, 1963)) noticeably differed; in HI morphological distance between these two forms is incomparably more than, for example, between *M. trogontherii* and woolly mammoth: c. 0.025 Ma; LFI = 9.4; HI = 1.84; ET = 1.39 mm (Averianov et al., 1995). Actually, compared with the Upper Valdarno form, the Sinyaya Balka (Bogatyri) *A. meridionalis* M^3 looks only slightly advanced. Obtained diagrams (fig. 1) show this Sinyaya Balka (Bogatyri) elephant stage close corresponds to pa-

rameters of Pietrafitta *A. meridionalis*: 1.4 Ma; LFI = 6.0 (Lister A. M. et al., 2001); HI = 1.35; ET = 2.9 mm (Ferretti, 1999), or even more primitive. I.e., the age of the Sinyaya Balka (Bogatyri) locality may be formerly adopted as equal to 1.6 Ma – an intermediate between the Upper Valdarno and the Pietrafitta.

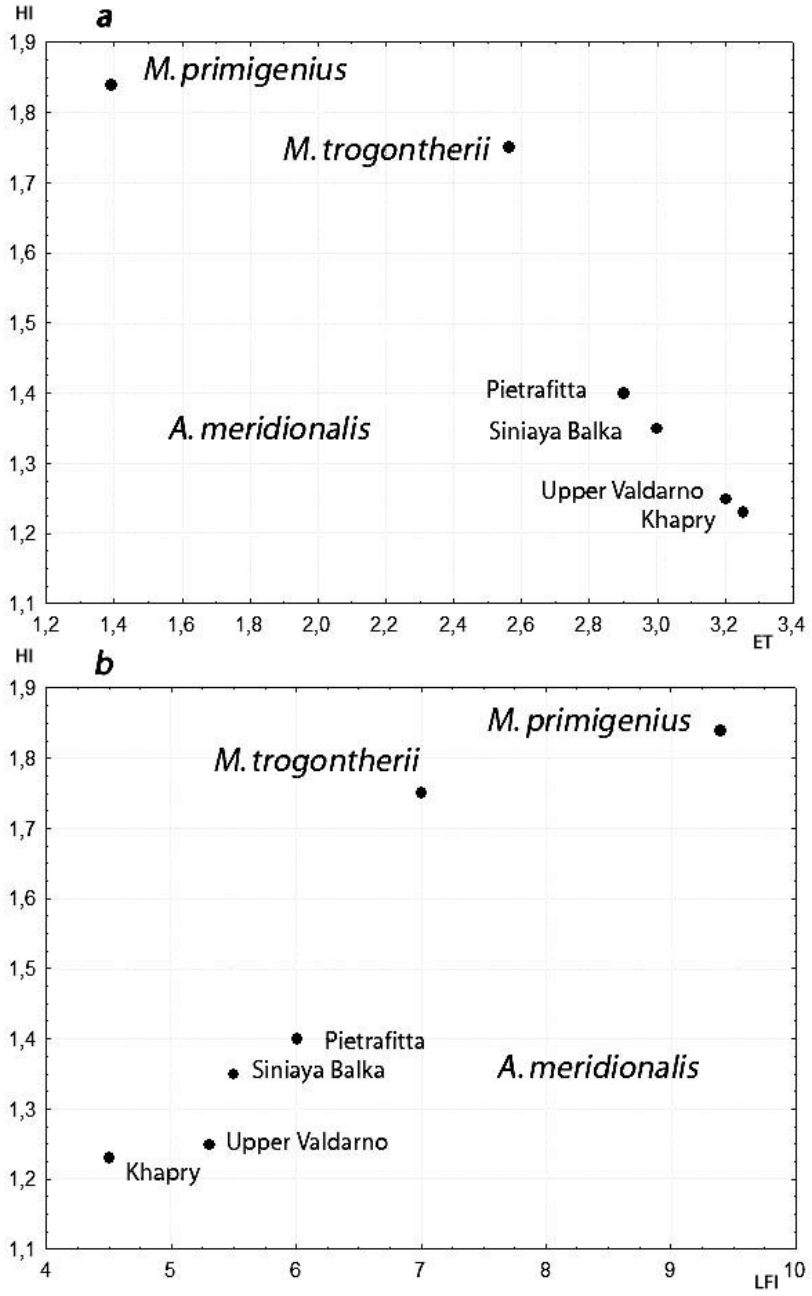

Fig. 1. HI plotted to ET (a); HI plotted to LFI (b) in *Archidiskodon* and *Mammuthus* M^3 from the Europe