

Results of the Khapry Faunal Unit revision

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The Khapry Faunal Unit (= Khapry Faunal Complex) is the well-known Eastern European analogue of Middle Villafranchian faunas. Localities representing this faunal unit are connected with alluvial layers that have been excavated in sand pits and exposures along the northeast coast of the Sea of Azov and the right bank of the lower reaches of the Don River. The majority of the bone remains from the Khapry and Liventsovka sand pits (the stratotype and the parastratotype of the Khapry Faunal Complex) were found in the lower parts of the alluvial beds. Analysis of the data indicates that the Khapry megafauna association can be considered as chronologically homogeneous. Khapry strata are reversely polarised and, taking into account the composition of the Khapry fauna, they have been correlated with the pre-Olduvay part of the Matuyama Chron of the magnetic polarity timescale.

The Khapry complex comprises 84 vertebrate taxa, of which 30 are small and 33 are large mammals. The list of the megafauna includes, *Nyctereutes megamastoides*, *Canis* cf. *senezensis*, *Ursus* cf. *etruscus*, *Lutra* sp., *Pannonictis nestii*, *Pliocrocota perrieri*, *Pachycrocota brevirostris*, *Homotherium crenatidens*, *Lynx issiodorensis*, *Acinonyx* cf. *pardinensis*, *Anancus arvernensis alexeevae*, *Archidiskodon meridionalis gromovi*, *Hipparion* cf. *moriturum*, *Equus* (*Allohippus*) *livenzovensis*, *E.* (A.) aff. *stenonis*, *Stephanorhinus* ex gr. *megarhinus-kirchbergensis*, *Elasmotherium* cf. *caucasicum*, *Sus* cf. *strozii*, *Paracamelus alutensis*, *Paracamelus* cf. *gigas*, *Cervus* (*Rusa*) cf. *philisi*, *Eucladoceros* cf. *dicranios*, *Arvernoceros* cf. *verestschagini*, *Libralces* cf. *gallicus*, *Palaeotragus* (*Yuorlovina*) *priasovicus*, *Leptobos* sp., *Gazel-*

lospira cf. *gromovae* and *Gazella* cf. *subgutturosa* (BAJGUSHEVA et al. 2001; TITOV 2000, 2001; NIKOLSKY & TITOV 2002; SOTNIKOVA et al. 2002). The megafauna from the Liventsovka sand pit is accompanied by a small mammal association that includes, *Mimomys praepliocaenicus*, *Borsodia praeungaricus cotlovinensis*, *Mimomys* ex gr. *reidi* and others. The rodent assemblage from the upper layers of the Liventsovka section belongs to the slightly younger, Late Pliocene Psekups complex (TESAKOV 1995).

The Khapry association has some distinctive features when compared with contemporaneous ones from Western Europe. During the Late Pliocene in Eastern Europe, typical Middle Villafranchian animals coexisted with forms characteristic of more ancient European associations (*Hipparion*, *Arvernoceros* and *Palaeotragus*). This probably indicates that conditions in the northern Black Sea region permitted animals typical of earlier ecosystems to survive. On the other hand, *Canis* cf. *senezensis*, *Pachycrocota brevirostris*, *Cervus* (*Rusa*) *philisi philisi* and *Eucladoceros* cf. *dicranios* all appeared earlier here because of the closer relationship of the Khapry association with Asian faunas and also the greater influence of steppe landscapes in this area. In the Middle Villafranchian faunal complexes of Western Europe, these forms did not appear until later, during the terminal Pliocene and in the beginning of the Early Pleistocene.

Taken as a whole, the vertebrate complex from the Khapry alluvium resembles Middle Villafranchian faunas from Western Europe, such as that from Saint Vallier, and can be correlated with mammal zone MN17. Its age may be estimated at 2.6-2.2 Ma B.P.

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