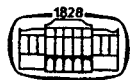


PLEISTOCENE VERTEBRATE FAUNAS OF HUNGARY

by

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AKADÉMIAI KIADÓ, BUDAPEST 1986

The type locality of the Solymár substage is represented by the stratigraphically completely homogeneous red clay filling the shaft of the **Ördöglyuk cave of Solymár**. The site was formed in Triassic (Dachsteinian) limestone at an elevation of 300 m a.s.l. on the eastern slope of the Zsíros Hill; about 1 km west of the village of Solymár in the vicinity of Greater Budapest. The cave itself is a long, complicated system of caverns, with a shaft at the entrance, containing the above-mentioned red clay. Vértes (1950b) collected there from 1939 to 1943 and has given a detailed account of the morphology of the cave.

Besides the typical Upper Pleistocene material, at the end of a passage known as "Kiskörút" (Small Avenue), an almost complete skeleton of a moose (*Alces*) was discovered in red clay, then a microfauna rich in numbers and species was found (the majority of which were destroyed in 1945, the remainder in 1956). In 1943, Vértes and Venkovits discovered rhinoceros and wisent remains about 15 m above the first site. These were recovered from the top of a whole series of horizons (Vértes, personal communication).

Finally, I collected for three weeks at this locality in 1951, but the work had to be terminated because of the danger of the shaft's collapsing. The microfauna contained about the same quantity of material as the one collected by Vértes. Topál carried out collections by singling in subsequent years.

Thus, we have at our disposal two "faunal torsos" and, if only for this reason, it is difficult to form an adequate impression of them. The material is unique not only because of its stratigraphical position, but also because it contains whole series of complete skulls and limb bones quite different from the other Pleistocene localities discussed so far.

The following preliminary impression may be formed by fitting together the mosaic-like fragmentary pieces of this fauna (based on an unpublished manuscript by Kretzoi, who kindly let me use it: the list is different from his only in some nomenclatural changes).

The overlying strata of the shaft at entrance no. 1 of the cave contained *Dicerorhinus kirchbergensis* Jaeger and *Bison (Urus) hungaricus* Kretzoi.

The actual microfauna was retrieved from the part of the shaft situated at the end of the "Kiskörút" passage (based on Kretzoi's unpublished manuscript, avian names according to my own identifications, with numbers of specimens; see also Jánossy, 1969a):

Bufo sp.*

Rana sp.*

Ophidia indet.*
Lyrurus tetrrix L.—2
Pyrrhonorax pyrrhonorax L.—1
Talpa europaea ssp.—22
Crocidura sp. indet.*
Sorex araneus collatus “ssp. n.”—2
Sorex solymárensis “sp. n.”—6
Rhinolophus ferrumequinum antiquus “ssp. n.”—5
Rhinolophus solymárensis “sp. n.”—4
Rhinolophus cf. *hipposideros* (Bechstein)—3
Myotis oxygnathoides “sp. n.”*
Myotis extinctus “sp. n.”*
Myotis (4 different species)*
Plecotus laticeps “sp. n.”*
Ursus sp. indet.*
Vulpes sp.*
Mustela cf. *nivalis* L.—1
Mustela cf. *erminea* L.—1
Putorius furo longicrus ssp. n.—1
Ochotona pusilla veterior “ssp. n.”—12
Lepus praetimidus Kretzoi*
Glis glis L.—2
Spalax méhelyanus “sp. n.”—1
Sicista loriger simplex “ssp. n.”—7
Cricetus cricetus ssp.*
Apodemus sylvaticus (L.)*
Mus (*Budamys*) *solymárensis* “sp. n.”—7
Clethrionomys sp.*
Microtus (3 different species)*
Pitymys sp.*
Lagurus lagurus solymárensis “ssp. n.”—4
Arvicola sp. III* (see below)
Alces brevirostris Kretzoi (almost complete skeleton)
Cervus elaphus ssp.*
Equus sp. indet.*

I include here the remains of the large *Canis lupus* L. brought to the surface in the 1951 excavations; otherwise I collected the same species in that year as did Vértes. The data presented by Kretzoi are approximate only. To supplement the above I have revised the small-vole species of both collections that have not been destroyed by the hostilities of 1945 and 1956: the numbers indicate pooled values of the two collections and are therefore approximate only:

Myodes glareolus (Schreber)—34 M₁
Lagurus lagurus ssp.—4 (1 skull + 3 M₁)
Microtus arvalis (Pallas)—173 M₁
Microtus oeconomus (Pallas)—5 M₁
Microtus gregalis (Pallas)—28 M₁
Pitymys cf. *subterraneus*—*arvalidens*—5 M₁
Pitymys gregaloides Hinton—3 M₁

The bulk of the assemblage is made up of bats (which Kretzoi passed over to Topál for analysis) but rodents are also present in fair numbers.

Rotaridesz (1943) has analysed the older collections of molluscs, whilst Krolopp is presently working on a much richer mollusc material recently collected. Large numbers of pieces of charcoal of unknown origin (a forest fire?) occurred in the red clay which, according to Greguss and Szalay (1950) and Stieber (1952), were distributed among the species *Taxus baccata* L. and the genera *Pinus* and *Larix*, indicating a climate cooler and wetter than that of today.

It is clear nowadays that this fauna is analysable only on a microstratigraphical basis. The fragments recovered so far are also meaningful as regards age. It is decisive stratigraphically that in the top of the strata, *Dicerorhinus kirchbergensis*, time-marker of the younger stages of the Middle Pleistocene, was unearthed (see Plate II, (figs. 2 and 3).

Kretzoi (1953; 1956, p. 59) has repeatedly pointed out that the Solymár fauna is marked by some forms different from those of the Upper Pleistocene, at least sub-specifically, with the implication that it may have been part of a separate faunal wave (substage).

The large subspecies of the red-toothed shrew (*Sorex araneus* ssp.), the second known occurrence of the ancestor to the feral house mouse (*Mus*), the special forms of the mountain hare (*Lepus praetimidus*) and the moose (*Alces brevirostris*) mark the stratigraphical position of Solymár just as well as the absolute predominance of *Microtus* over *Pitymys* among the voles and the presence of *Pitymys gregaloides* and a subspecies of *Lagurus lagurus*.

Additional to this evidence is the recognition of an especially characteristic form (sp. III) of the water vole (*Arvicola*). This species is medium-sized (length of $M_1=3.4-4.1$ mm, $n=54$), and therefore statistically different from both the Temp-lomhegy-Tarkó substages (length of $M_1=2.6-3.6$ mm, $n=15$) and the fauna of the Upper Pleistocene (length of $M_1=3.6-4.6$ mm, $n=120$). Finally, in contrast with the similar-sized form with even and thick enamel of the Castellumian substage, this form has a thin layer, though somewhat thickened anteriorly. Apart from the distribution of the enamel, this form is distinguished by absolute size differences from the Tarkó form, and when compared with forms from Süttő and other younger stages, besides statistical differences in size, the anterior thickening of the enamel of the tooth triangles is characteristic.

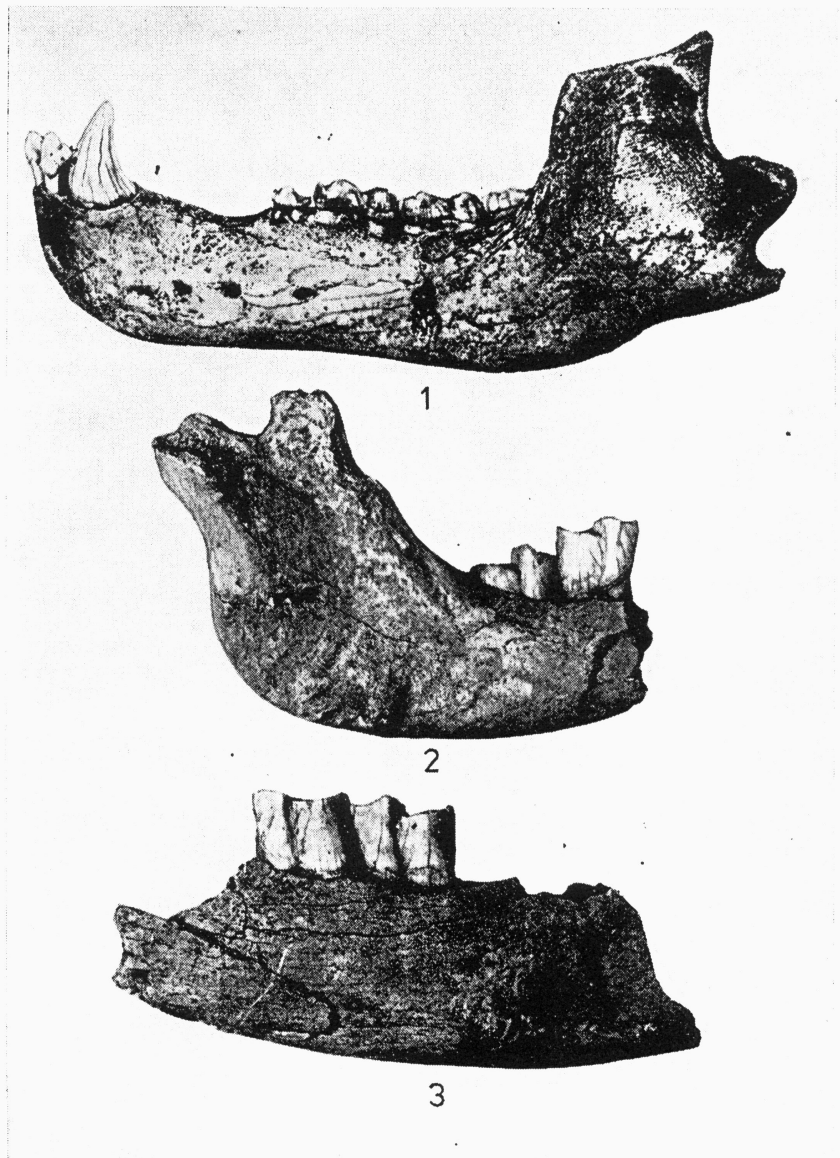


Plate II. Characteristic large mammals of the Middle Pleistocene. (1) *Ursus deningeri* Reichenau, left mandible, rock-shelter of Tarkő; (2-3) mandible fragments of *Dicerorhinus kirchbergensis* Jaeger, Ördöglyuk cave of Solymár.