

Some Data to the Fossil Herpetofauna of the Lambrecht Kálmán Cave of Varbó, Hungary

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The Paleontological Department of the Hungarian Natural History Museum conducted excavations in the Lambrecht Kálmán Cave of Varbó (Com. Borsod), in 1952. All batrachian and reptilian bones that came to light during excavation work had been given over to me for working out and determination purposes by one of the leaders of the work, D. J á n o s s y.

The remains had been exposed from various layers. According to D. Jánossy, four, more or less well separable, layers could be distinguished at the place of the excavations; this fact allows for chronological differences between the several beds. From the uppermost layer downwards, these are the following:

1. A humus layer¹,
2. A yellow Pleistocene layer.²
3. An upper reddish-brown Pleistocene layer,
4. A Lower dark red Pleistocene layer (with »Hystrix« indications in its lowest portions).

Of the bones excavated, I could identify the skeletal remnants of 4 batrachian and 1 reptile species.

The fossil state of the bones found cannot be doubted; their color vary from a light yellowish tint to greyish brown. Some are completely greyish; indeed, there are also greenish grey and completely black ones too.

The exposition of the fossils

1. *Bufo bufo* L.

The bones of this species could be found in the lower dark red layer only. I found 7 ileum fragments, 4 os antibrachium (radius + ulna) fragments, 10 humerus and 1 os cruris fragments in the material examined.

It could be ascertained by the comparison of the fossil bones with recent ones that the bones exposed during the excavation are considerably larger, thicker, and more robust.

¹ The batrachian bones found in the humus layer are to be relegated to the Holocene and will be identified at a later time.

² The yellow Pleistocene layer had been almost completely void of amphibian or reptile, fossils.

2. *Bufo viridis* Laur.

Of this species also, bones had been found in the fourth layer only. The material for identification consisted of 2 sinistral ileum fragments, 4 humerus, 3 os antibrachium (radius + ulna), and 8 os cruris fragments.

Similarly to the species above, the fossil specimens had been considerably bigger than the recent ones. There is also some difference with regard to the tuber superius of the exposed ilea; it is better developed and more conspicuous than those of animals living in our times. B o l k a y (1913) had already observed similar symptoms on fossil *Bufo viridis* Laur. specimens.

3. *Rana méhelyi* By.

This species, described by B o l k a y as a new form in 1911, had been present in the highest individual numbers in the whole fossil material. I had the privilege to identify the fragments of 3 angulare, 1 scapula, 1 coracoideum, 3 vertebrae, 49 ilea, 9 os coccygis, 41 humera, 12 os antibrachia, some (4) tarsi, and (3) metatarsi, and a big number of femurs (19) and os cruris (100) fragments. All skeletal remnants had been dug out from the fourth layer (Hystrix indications).

Almost none of the bones had been well preserved, whole, or entire specimens (and this holds good for the whole excavated material); mostly broken and worn skeletal parts had been found which made identifications, in some cases at least, difficult.

The bones of *Rana méhelyi* By. stand nearest to *Rana temporaria* L.; and the majority of authors base the differentiating characters primarily on differences in size. So, W e t t s t e i n, in a recent work of his (1938), states, on the ground of his examination of 7 maxilla fragments, 11 praemaxilla, 15 coracoideum, many vertebrae and sacral vertebrae fragments, as well as 254 bones of the extremities (all of which he relegates to *Rana méhelyi* By.), that the differences between the recent *Rana temporaria* L., and *Rana méhelyi* By., besides the essential distinctions of size in some points, is not so significant as given previously by B o l k a y.

The statements of the above author can be accepted in a way, as he made his assertions with reference to bones of which we can hardly establish any morphological distinction apart from differences in size. In my opinion, the differences of the two forms should be sought for in the morphological characters of the ilea rather than in those of mere size³.

The neck of the ileum of *Rana méhelyi* By. is broader than the height of the ileum measured anteriorly to the tuber superius. The tuber superius is powerfully developed, and, as B o l k a y writes, it »protrudes in the shape of a bird's beak«. It is a further character that on the (lower) ileal part towards the spina pelvis anterior, beneath the acetabulum, there is a small »semilunar« bony protuberance and often also three other protuberances, the so-called »bony-ridges« delimited by two grooves on the stalk of the ileum.

Of the differences between the two forms, B o l k a y (1911), and more especially F e j é r v á r y (1915), gave detailed accounts; of these I had convinced also myself when I worked out the fossil material originating from the Istállóskő Cave (Dely, 1955), and the Varbó Cave. With regard to other bones,

³ This view gains in importance if there be not adult species only in the exposed material but semiadult and juvenile ones too.

morphological differences occur but in smaller proportions or not at all (cf. the cited paper of F e j é r v á r y⁴).

4. *Rana esculenta* L.

I found but 1 dextral ileum and 1 humerus fragment among the remnants, originating also from the fourth layer. By the ileum, the species could be well identified.

5. *Rana* sp

I am forced to relegate here some ileal fragments and limb bones of such bad preservation that any specific identification had been impossible. There is every possibility, however, that they belong to a *Rana* species enumerated above. Such fragmentary material had been found both in the third and fourth layers.

6. O p h i d i a

Snakes are represented by 10 vertebrae only, exposed from the fourth layer. In the absence of sufficient comparative material, I found it advisable to denote these bones as merely »ophidia« in the list of species. It is to be noted, however, that with the exception of the single find in Dorog (J á n o s s y, 1953), no snake fossils had been found in the Würm sediments of Hungary; this will thus testify also on the pre-Würm age of our fauna, beside those of the mammalian finds.

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As is evident from the aboves, I had about 300 skeletal remains before me during the course of my work. The presence of the 268 bone specimens in the fourth layer, — disregarding the third layer with its unidentifiable bone fragments, — proves that the Lower Pleistocene, that is, the partially »Hystrix« layer disposed of the richest fossil Herpetofauna in which *Rana méhelyi* By. dominated⁵; and in which the two *Bufo* species attained agreeing yet lower individual numbers. *Rana esculenta* and the snake could have occurred sporadically only.

D. J á n o s s y relegates the fossil fauna of Varbó, by the bones of Mammals, to the Riss/Würm interglacial period. The identification of the period is also supported by the fact that of our fossil herpetofauna exclusively *Rana méhelyi* By. occurs in the typical Würm layers.

The Varbó material gives not only a new locality for *Rana méhelyi* By. in the fossil herpetofauna of the Carpathians' Basin, but takes us a step further toward the interpretation of the origin of this animal.

Bibliography: B o l k a y, I.: On the pleistocenic predecessor of *Rana fusca* Rös. (Mitteil. a. d. Jahrb. d. Kgl. Ung. Geol. Reichsanst., 19, 1911, p. 155—160). — B o l k a y, I.: Additions to the fossil Herpetology of Hungary from the Pannonian and Praeglacial Periode (Mitteil. a. d. Jahrb. d. Kgl. Geol. Reichsanst., 21, 1913, p. 217—230). — B o l k a y, I.: Über die Herkunft und verwandtschaftlichen Beziehungen der südeuropäischen Braunfrösche zu einander und zu den übrigen nördlichen Braunfröschen (Glasnik Zem. Mus. Bosn., 35, 1923, p. 113—122). — D e l y, O. G.: *Rana méhelyi* By. aus der Höhle von Istállóskő (Acta Archeologica, 1955, p. 00—D e l y, O. G.: The Problem of the origin of *Rana méhelyi* By. (Ann. Hist. nat. Mus. Nat. Hung., 6, 1955, p. 00. — F e j é r v á r y, G. J.: Beiträge zur Kenntnis von *Rana méhelyi* By. (Mitteil. a. d. Jahrb. d. Kgl. Ung. Geol. Reichsanst., 23, 1915, p.

⁴ The inferences of B o l k a y, concerning the tarsus, had not been justified. This is also emphasized in the paper of Wettstein.

⁵ The exposed and identified skeletal remains of *Rana méhelyi* By. are 244. For evaluation purposes, however, this figure cannot be taken in its entirety, as almost the half of it (119) embraces femur and os cruris fragments.

133—155). — J á n o s s y, D. : Neueres Vorkommen seltener Säugetiers (Sicista, Apodemus, Asinus) aus dem ungarlandischen Spätpleistozän (Földtani Közleány, 83, 1953, p. 430—436). — K r e t z o i, N. : Quarternary Geology and the Vertebrate Fauna (Acta Geologica, 2, 1953, p. 67—77). — W e t t s t e i n, O. & M ü h l h o f e r, F. : Die Fauna der Höhle von Merkenstein in N.-Ö. (Archiv für Naturgeschichte, 7, 1938, p. 514—558).

Adatok a varbói Lambrecht Kálmán barlang fosszilis herpetofaunájához

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Szerző dolgozatában a varbói »Lambrecht Kálmán barlang« fosszilis herpetofaunáját ismerteti. A vizsgalati anyagból négy kétéltű (*Bufo bufo* L., *Bufo viridis* Laur., *Rana méhelyi* By., *Rana esculenta* L.) és egy hüllő fajt (*Ophidia*) mutat ki. Az előkerült csonttöredékek számából szerző arra következtet, hogy a pleisztocén rétegben a legnagyobb példányszámban a *Rana méhelyi* By. fordulhatott elő, míg a két *Bufo*-faj egyforma, a *Rana esculenta* pedig csak kis egyedszámmal lehetett képviselve.

A fosszilis kétéltű- és hüllőcsontok meghatározása a barlangnak emlőscsontok alapján megállapított korát riss/würm bizonyítja, mert az eddig előkerült *Rana méhelyi* By. leletek barlangjaink würm üledékeiben mindig csak egymagukban fordultak elő.