

KAZIMIERZ KOWALSKI

BARANOGALE HELBINGI KORMOS AND OTHER MUSTELIDAE
FROM THE BONE BRECCIA IN PODLESICE NEAR KROCZYCE
(POLAND)

Abstract. — Description is given of the mandible of *Baranogale helbingi* Kormos and some meagre fossil remains of other Mustelidae: cf. *Vormela petényii* Kretzoi and *Mustela* sp. from the Podlesice bone breccia. They are probably of the early Pleistocene (Villafranchian) age. Data available on the occurrence of *Baranogale helbingi* Kormos have been specified.

INTRODUCTION

In 1956, a paper by the present writer described fossil remains of insectivores, bats and rodents from the bone breccia at Podlesice near Kroczyce, district of Olkusz, Poland. In 1958, this description was supplemented by the diagnosis of a new rodent species from that locality: *Promimomys insuliferus* Kowalski. The earlier paper mentions fossil remains of Mustelidae from the Podlesice breccia whose exact systematic position had not then been defined.

Further preparation of material from the Podlesice breccia supplied more complete remains of Mustelidae, while the writer's studies in the Naturhistorisches Museum in Basel enabled him to correlate them with specimens from other early Pleistocene European faunas. These studies have led to the identification of so rare and interesting a species as *Baranogale helbingi* Kormos, and yielded suggestions regarding the position of two other forms, namely of cf. *Vormela petényii* Kretzoi and *Mustela* sp.

In 1956, the present writer referred the Podlesice fauna to the Günz-Mindel Interglacial. The mustelid forms now discovered in the breccia material are known from older early Pleistocene sites of Hungary, by M. Kretzoi referred (1956) to the Villányium. Moreover, *Baranogale helbingi* Kormos is known from two Villafranchian sites of western Europe. The presence of these Mustelidae in Podlesice thus confirms their early Pleistocene age. Nevertheless, for the present it seems reasonable to postpone the more exact dating of this rich fauna. In many cases, chronology based on faunas of small mammals differs from that suggested by the

occurrence of larger mammalian forms so that their correlation requires additional comprehensive studies.

Sincere thanks are due to Dr. J. Hürzeler, Director of the Osteological Department of the Naturhistorisches Museum in Basel, for the friendly assistance extended to the writer during his studies at the Museum, also to Mr. L. Sych who kindly did the photography, and to Mrs. J. Humnicka for the English translation of this paper.

DESCRIPTION

Baranogale helbingi Kormos, 1934

(pl. I)

- ?1853. *Rhabdogale antiqua*, nob(is); A. Pomel, Catalogue méthodique..., p. 47.
 ?1864. *Mustela beremendensis* Petényi; S. J. Petényi, Hátrahagyott munkái, p. 48-49, pl. 1, fig. 2.
 1934. *Baranogale Helbingi* n. gen. n. sp.; T. Kormos, Neue und wenig bekannte Musteliden..., p. 145-148, pl. 2, fig. 6-7.
 1942. *Baranogale beremendensis* (Petényi); M. Kretzoi, Tigeriltis..., p. 327, 343.
 ?1950. *Baranogale* cfr. *Helbingi* Kormos; S. Schaub, Revision..., p. 503-505, fig. 7-8.
 1954. *Baranogale helbingi* Kormos; J. Viret, Le loess à bancs durcis..., p. 78-83, fig. 7-10; pl. 4, fig. 3-4.
 1956. *Baranogale beremendensis* (Petényi); M. Kretzoi, Die altpleistozänen Wirbeltierfaunen..., p. 148, 160, 169, 171, 172, 185, 188, 209, 210, 263.

Material. — Nearly complete right half of mandible with P₂-P₃ slightly damaged, and M₁ more damaged.

Description. — Ramus of mandible slender and elongate, not swollen in the symphyseal area. Lower margin of mandible gently arcuately curved. Fossa masseterica extending to anterior margin of the M₂ alveolus. Two foramina mentalia present: larger between the roots of P₁, smaller between those of P₃. Moreover, a fairly large elongate foramen is seen quite close to the lower margin of mandible, under the incisors.

On evidence of fragmentary preserved alveoli the incisors seem very small, I₂ and I₃ are displaced out of the tooth-row. The canine alveolus indicates that this tooth was rather small and laterally crushed. P₁ is the smallest premolar, somewhat obliquely placed, the alveolus of the posterior root larger than that of the anterior.

P₂ high, one-cusped (apex of studied specimen damaged), cingulum poorly developed anteriorly and posteriorly.

P₃ narrow and high, with a well marked accessory tubercle, somewhat labially placed, posterior to the slender protoconid. Here too, cingulum poorly developed.

M₁ badly damaged in the studied mandible. Only the roots, and a fragmentary outer margin of the crown with distinct cingulum, have been

preserved. Alveolus of M_2 rather small, subcircular. Mandible dimensions given in table 1.

Systematic position. — In 1934, T. Kormos described a new genus and species of Mustelidae from the „Preglacial“ of Villány in southern Hungary, which he named *Baranogale helbingi* Kormos. Type specimen: left half of mandible.

Table 1
Dimensions of certain mandibular teeth in specimens
of *Baranogale helbingi* Kormos (in mm)

Measurements	Podlesice	Villány (Hungary) holotype (Kormos, 1934)	Perrier-Etouaires (France) (Schaub, 1950)	Saint-Vallier (France) (after figure in Viret, 1954)
Length of alveolus in P_1	2.8	2.7	2.8	—
Length of crown in P_2	3.3	3.6	3.76	4.5
Length of crown in P_3	4.4	4.45	4.6	5.4
Length of crown in M_1	7.0	7.4	7.76	8.5
Width of crown in M_1	2.4 approx.	2.75	3.1	—
Length of $P_1 - M_2$	18.5	20.0	21.5 approx.	25.0

In 1942, this form was again described by M. Kretzoi who identified it with *Mustela beremendensis* Petényi, a species published in S. J. Petényi's posthumous works (1864). Since Kretzoi accepts the generic distinctness of the studied form, he therefore uses the name of *Baranogale beremendensis* (Petényi). It must be here mentioned that Kormos (1934) supposed Petényi's description and figure to apply to another fossil form which he named *Pliovormela beremendensis* (Petényi). Unfortunately, it has not been possible to recover Petényi's original specimen. Hence, in view of such contradictory opinions, the present writer thinks it fairly reasonable to regard Petényi's description as unidentifiable and to retain the name of *Baranogale helbingi* Kormos, 1934, which is accompanied by a holotype and a detailed description, and which has been accepted in literature. The specific position of Petényi's form is a problem concerning the history of taxonomy only, since both the discussed forms: *Baranogale helbingi* Kormos and *Vormela petényii* Kretzoi

have been recorded later from the locality studied by that author. The former of these species will be discussed here below.

In 1954, beautifully preserved skulls and mandibles were collected by J. Viret from a Villafranchian fauna in Saint-Vallier, belonging to a species which he identifies with *Baranogale helbingi* Kormos. That author also describes and figures skulls and mandibles giving a supplementary diagnosis of genus *Baranogale* Kormos.

In 1956, Kretzoi specifies the distribution of *Baranogale helbingi* Kormos in early Pleistocene localities of Hungary. He mentions it as follows: Beremend 1-3; Csarnota 1-3, 2 and 4; Villány 3 and 5. All these localities represent the older period of small mammalian faunas in Hungary, which he names Villányium.

The locality of Perrier-Étouaires in France, though doubtful, may be added to the list of sites with *Baranogale helbingi* Kormos. A. Pomel (1853) reported from that site the new species *Rhabdogale antiqua* Pomel, with a brief description in which it is correlated to the recent genus *Zorilla* Oken. The description is based on a mandible now in the Muséum d'Histoire naturelle in Paris. It was again described by S. Schaub (1950) who pointed out the marked resemblance of that form with *Baranogale helbingi* Kormos, and called it „*Baranogale* cf. *helbingi* Kormos“.

At the Naturhistorisches Museum in Basel, the present writer was able to compare the Podlesice specimen with specific type figures as well as with the co-type from Csarnota, identified by Kormos. This comparison proved the perfect agreement of all the essential features of morphology and showed that the Podlesice specimen is somewhat smaller than the type. The problem of the identity with the west-European specimens from Saint-Vallier and Perrier-Étouaires is less simple. The present writer had the opportunity of inspecting at the Basel Museum plaster casts of specimens on which Pomel (1853) established his species *Rhabdogale antiqua* Pomel, later again described by Schaub (1950), as well as one of the Saint-Vallier skulls. He supposes that the two sites, Perrier-Étouaires and Saint-Vallier, have yielded the same form, with morphology closely allied to that of the Polish and Hungarian specimens, but with somewhat larger dimensions. Until more copious material has been investigated, it cannot be established what variability has been here in action: individual (markedly strong in Mustelidae), geographical or chronological. Should both these forms be proved as synonymous or conspecific, Pomel's specific name ought to have the priority. Should they, however, be specifically separated, Pomel's name may be retained for the west-European form.

Pomel (1853) considers his species as closely allied to the recent *Zorilla* Oken from South Africa. Kormos (1934) does not advance any de-

finite views concerning the relationships of genus *Baranogale* Kormos. Schaub (1950) points out the differences between *Zorilla* Oken and Pomel's species from Perrier-Étouaires. Viret (1954) stresses further differences between the skull of *Baranogale helbingi* Kormos and that of *Zorilla* Oken. At the same time, however, he detects some mutual affinities and regards the fossil form as a representative of the African element in the early Pleistocene fauna of Europe. A comparative study of the above mentioned specimens of *Baranogale helbingi* Kormos with several skulls belonging to representatives of genus *Zorilla* Oken from Africa, made by the writer at the Naturhistorisches Museum in Basel, enabled him to ascertain marked resemblances of these forms.

On the basis of material, so far available, it may be ascertained that the fossil mustelid species *Baranogale helbingi* Kormos, related to the recent *Zorilla* Oken from South Africa, lived during the early Pleistocene in Central-East Europe (Poland and Hungary). The same genus is represented in Villafranchian faunas of western Europe (France), where it most likely developed as a modified, somewhat larger form. *Baranogale* Kormos disappeared, without descendants, during the younger Pleistocene of Europe, probably driven out by more specialized mustelid forms.

cf. *Vormela petényii* Kretzoi

Material. — I³, C, P², M¹, also three detached bullae osseae, probably belonging here.

Description. — On the basis of similar size and some morphological features mentioned here below these specimens are supposed conspecific though referable to at least two individuals.

In I³ the root is laterally compressed, the cingulum distinctly developed at the posterior margin, the apex strongly bent backwards. Length at base of crown 2.6 mm, width 1.5 mm. The canine tooth strongly worn out, slightly elongate in section, length at base of crown 2.9 mm, width 2.3 mm.

P² has two roots, the posterior markedly stronger than the anterior. The crown distinctly swollen out posteriorly, the cingulum fairly strong. Length of crown 4.7 mm, width 3.0 mm.

M¹ is very characteristic. The crown here is practically without the median compression so characteristic of all the European Mustelidae, *Vormela* Blasius excepted. Maximum length of this tooth is 5.2 mm, width 2.4 mm.

All the three specimens of bullae osseae are damaged, hence it cannot be ascertained whether they were anteriorly fused with hamulus, this

being a feature characteristic of *Vormela Blasius*. They are, however, distinctly arched, anteriorly strongly elongate, and pointed. The most complete specimen is 14.6 mm long, 8.2 mm wide.

Systematic position. — The characteristic shape of M^1 and the anterior attenuation of bullae osseae suggest assignment to genus *Vormela* Blasius. The other remains, though less characteristic, are most likely referable to this genus too.

„Preglacial“ remains of a weasel displaying considerable structural similarities with *Vormela peregusna* Gueldenstaedt were collected at Beremend and Villány in southern Hungary by Kormos (1934). He identifies them with those described by Petényi (1864) as „*Mustela beremendensis* Petényi“. At the same time, however, inferring solely from the age of this find, he is in favour of establishing for it a new generic name — *Pliovormela* Kormos. Hence, this form is by him described as *Pliovormela beremendensis* (Petényi). As has been mentioned here above, Kretzoi (1942) supposes that Petényi's description applies to another species, i. e. to *Baranogale helbingi* Kormos. Moreover, Kretzoi does not recommend the separation of the form found by Kormos into a genus distinct from *Vormela* Blasius. Since this would leave Kormos' species (1934) without a name, it has by him been called *Vormela petényii* Kretzoi.

A direct comparison of the Podlesice remains with previously described specimens presents some difficulties. The only diagnostic measurements specified by Kormos (1934) are the length (16.9 mm) and width (9.1 mm) of bulla ossea. These agree fairly well with the dimensions of Polish specimens. He also stresses that P^2 has two roots, while in *Vormela peregusna* Gueldenstaedt there is only one.

According to Kretzoi (1956), *Vormela petényii* Kretzoi has been recorded from Beremend 4, Nagyharsanyhegy 5, Villány 3 and 5, in southern Hungary. In two of these localities it occurs together with *Baranogale helbingi* Kormos. Similarly as the last named species, *Vormela petényii* Kretzoi is recorded in Villányium faunas of older Pleistocene age.

Mustela sp.

Material. — Two fragments of mandible without dentition: one with alveoli of M_1 — M_2 , the other with alveoli of P_2 — M_2 ; also one maxillar canine.

Description. — Ramus of mandible small, rather strongly arcuate, height on M_1 alveolus 4.1 and 4.2 mm, respective thickness 2.1 and 2.3 mm. The canine tooth slender, slightly flattened, gently hooked, lingually with distinct cingulum. Length of the canine below base of crown 2.0 mm. width 1.6 mm.

Systematic position. — The assignment of the collected remains to *Mustela* Linnaeus is beyond doubt. Owing however to their fragmentary condition, the exact systematic position cannot be established. In view of dimensions, only two older Pleistocene species may be taken into account, namely *Mustela praeivalis* Kormos and *Mustela palerminea* (Petényi). Since the individual variability of Mustelidae, as regards dimensions, is markedly strong, a definite distinction between these species, based solely on dimensions, is not possible.

Zoological Institute
of the Polish Academy of Sciences
Cracow Branch
Kraków, July 1958

REFERENCES

- KORMOS, T. 1934. Neue und wenig bekannte Musteliden aus dem ungarischen Oberpliozän. — *Folia Zool. Hydrobiol.*, 5, 129-158, Riga.
- KOWALSKI, K. 1956. Insectivores, Bats and Rodents from the early Pleistocene bone breccia of Podlesice near Kroczyce (Poland). — *Acta Palaeont. Pol.*, 1, 4, 331-394, Warszawa.
- 1958. An early Pleistocene fauna of small mammals from the Kadzielnia Hill in Kielce (Poland). — *Ibidem*, 3, 1, 1-47.
- KRETZOI, M. 1942. Tigeriltis, Iltis und Nerz im ungarischen Pleistozän. — *Földt. Közl.*, 72, 323-344, Budapest.
- 1956. Die altpleistozänen Wirbeltierfaunen des Villányer Gebirges. — *Geol. Hungar.*, S. Pal., 27, 1-264, Budapest.
- PETÉNYI, S. J. 1864. Hátrahagyott munkái, I. 1-130, Pest.
- POMEL, A. 1853. Catalogue méthodique et descriptif des Vertébrés fossiles découverts dans le bassin hydrographique supérieur de la Loire. 1-193, Paris.
- SCHAUB, S. 1950. Revision de quelques carnassiers villafranchiens du niveau des Étouaires. — *Eclogae Geol. Helv.*, 42, 492-506, Bâle.
- VIRET, J. 1954. Le loess à bancs durcis de Saint-Vallier (Drôme) et sa faune de mammifères villafranchiens. — *N. Arch. Mus. Hist. Nat.*, 4, 1-200, Lyon.

KAZIMIERZ KOWALSKI

BARANOGALE HELBINGI KORMOS I INNE MUSTELIDAE
Z BREKCJI KOSTNEJ W PODLESICACH KOŁO KROCZYC

Streszczenie

W poprzednich pracach (1956, 1958), autor opisał szczątki wczesnoplejstocennych owadożernych, nietoperzy i gryzoni, znalezione w brekcji kostnej w Podlesicach koło Kroczyca, w powiecie Olkusz. Obecnie podaje on opis znalezionych w tej brekcji nielicznych szczątków trzech gatunków Mustelidae: *Baranogale helbingi* Kormos, cf. *Vormela petényii* Kretzoi i *Mustela* sp. Wszystkie te formy spotykane już były w faunach wczesnego plejstocenu Europy.

Gatunek *Baranogale helbingi* Kormos reprezentowany był w Podlesicach przez dobrze zachowaną żuchwę. Jest ona podobna do holotypu tego gatunku, znalezionego we wczesnym plejstocenie Węgier. Zaliczane do tego samego gatunku okazy z Villafranchien Francji (Perrier-Étouaires i Saint-Vallier) są morfologicznie zbliżone do formy wschodnio-europejskiej, ale odznaczają się większymi rozmiarami. *Baranogale helbingi* Kormos wykazuje znaczne podobieństwo do południowo-afrykańskiego rodzaju *Zorilla* Oken.

Cf. *Vormela petényii* Kretzoi reprezentowana była przez luźne zęby szczęki i bullae osseae. Charakterystyczny kształt M^1 i bullae pozwalają zaliczyć te szczątki do rodzaju *Vormela* Blasius, reprezentowanego we wczesnym plejstocenie Węgier właśnie przez ten gatunek.

Dwa bezzębne fragmenty żuchwy i kiel pozwalają jedynie na stwierdzenie w Podlesicach obecności rodzaju *Mustela* Linnaeus, reprezentowanego we wczesnym plejstocenie Europy wschodniej przez dwa gatunki o rozmiarach zbliżonych do najszych okazów: *Mustela praenivalis* Kormos i *Mustela palerminea* (Petényi).

OBJAŚNIENIA DO ILUSTRACJI

PL. I

Baranogale helbingi Kormos: żuchwa, 1 z zewnątrz, 2 od wewnątrz

КАЗИМЕРЖ КОВАЛЬСКИ

BARANOGALE HELBINGI KORMOS I DRUGIE MUSTELIDAE ИЗ КОСТНОЙ БРЕКЧИИ ПОДЛЕСИЦ БЛИЗЬ КРОЧИЦ (ПОЛЬША)

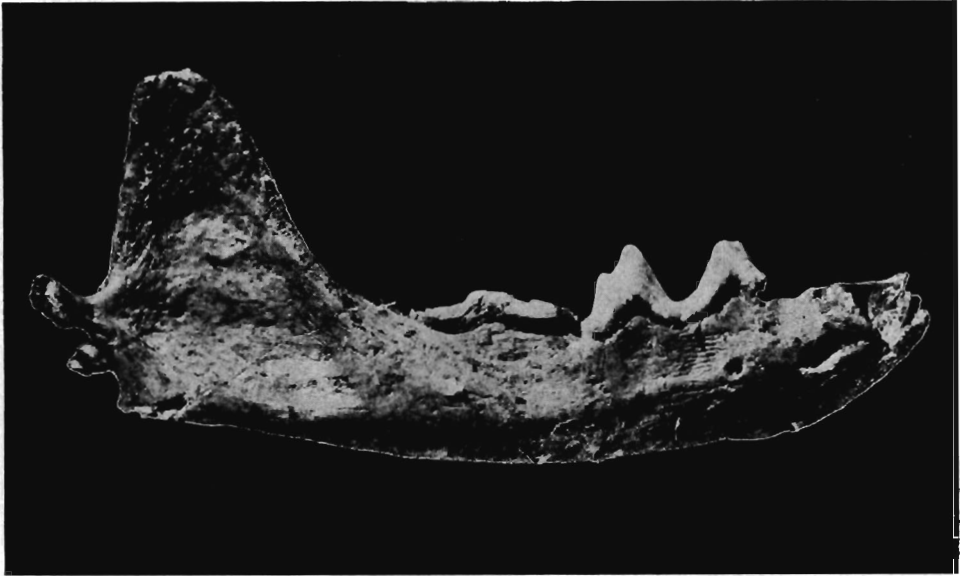
Резюме

В предыдущих работах (1956, 1958) автором были описаны остатки насекомоядных, летучих мышей и грызунов раннего плейстоцена, обнаруженных в костной брекчии из Подлесиц близь Крочиц, в Олькушском уезде (Польша). В настоящей работе приводится описание скудных остатков, найденных им в этой брекчии, трех видов Mustelidae: *Baranogale helbingi* Kormos, cf. *Vormela petényii* Kretzoi и *Mustela* sp. Все эти формы уже встречались среди фауны раннего плейстоцена Европы.

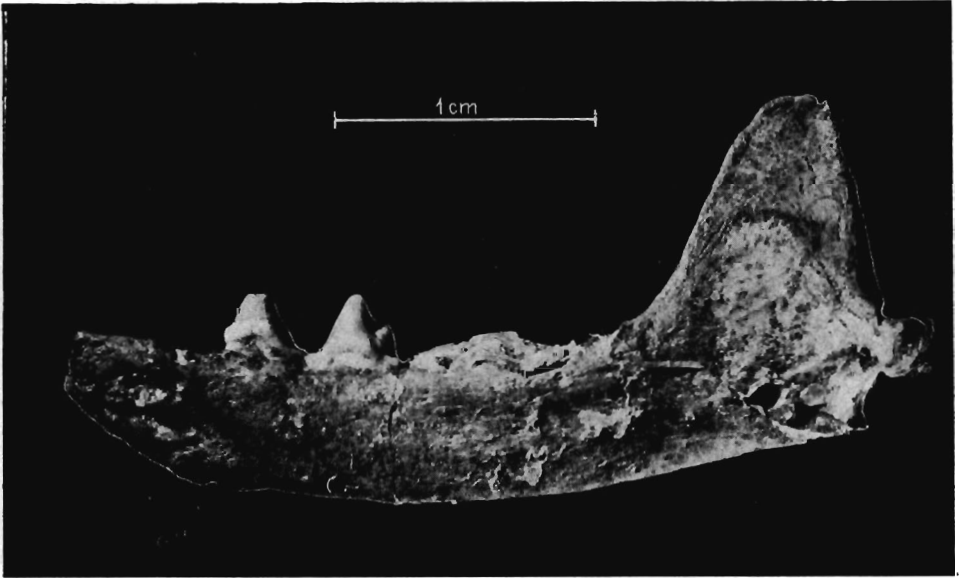
Вид *Baranogale helbingi* Kormos представлен в Подлесицах нижней челюстью хорошей сохранности. Похожа она на голотип того же вида, найденный в раннем плейстоцене Венгрии. Образцы, отнесенные к тому же виду, из виллафранского яруса Франции (Perrier-Étouaires и Saint-Vallier), морфологически близки восточно-европейским формам, но отличаются большей величиной. *Baranogale helbingi* Kormos проявляет значительное сходство с южно-африканским родом *Zorilla* Oken.

Cf. *Vormela petényii* Kretzoi представлена отдельными зубами челюсти и bullae osseae. Характерная форма M^1 и bullae допускают возможность отнести эти остатки к роду *Vormela* Blasius, представленному именно этим видом в раннем плейстоцене Венгрии.

Две беззубые части нижней челюсти и клык позволяют только констатировать присутствие в Подлесьях *Mustela* Linnaeus, представленной в раннем плейстоцене восточной Европы двумя видами, по величине близким нашим образцам: *Mustela praenivalis* Kormos и *Mustela palerminea* (Petényii).



1



2

Baranogale helbingi Kormos; mandible, 1 inner view, 2 outer view.