

JAN STACH

## ON TWO CARNIVORES FROM THE PLIOCENE BRECCIA OF WĘŻE

Study on the Tertiary bone breccia fauna  
from Węże near Działoszyn in Poland

PART XVI\*

*Abstract.* — The remains of mandibles and teeth of two species: *Felis wenzensis* n.sp. and *Baranogale helbingi* Kormos are discussed. By their characteristic features the species described here come near to the Pleistocene representatives known from some deposits of Europe.

## INTRODUCTION

Further preparation of material from the bone breccia of Węże supplied fragments of carnivores among which there are some small representatives of the genera *Felis* L. and *Baranogale* Kormos.

## DESCRIPTION

*Felis wenzensis* n.sp.

(pl. I, fig. 1)

*Derivation of name:* *wenzensis* — from the locality Węże near Działoszyn.

*Material.* — Anterior part of left ramus of mandible with well preserved premolars  $P_3$  and  $P_4$  of milk dentition. The incisors and the canine are lacking.

*Description.* — As remarked above, the canine is absent, but the upper part of alveole is preserved. This permits the length of the distance between the canine and the first  $P_3$  to be measured and to state that the diastema here is short (4 mm) and distinctly deepened.

The first tooth,  $P_3$ , at the front has a distinct ectoparastyloid, farther a high, sharply pointed protoconid, well developed accessory posterior tubercle, and at the base a relatively long, horizontal protuberance of

\* Parts I-V — see *Acta Geol. Pol.*, vol. II-V/1952-55; parts VI-XV — *Acta Palaeont. Pol.*, vol. I-VI/1956-61.

cingulum. The length of the crown, measured from anterior edge of ectoparastylid to the end of posterior protuberance, is 6.87 mm. The maximum breadth (in the middle of the protoconid) is 2.75 mm and the height of protoconid (measured from the base of the crown) is 4.0 mm.

The other tooth, premolar  $P_4$ , which replaces here the permanent  $M_1$  in the milk dentition, has partly the shape of the carnassial tooth. Its crown consists of a well developed paraconid, separated by a deep notch from the next high protoconid. A weak metaconid and a slightly widened posterior part of the cingulum imitating a small talonid, are present, too. The latter elements of the crown do not occur in the permanent lower carnassial tooth in representatives of the genus *Felis* L. The length of the crown, measured basally from the anterior edge of paraconid to the posterior of cingulum, is 9.3 mm, the maximum breadth at protoconid 3.2 mm, the height of the paraconid—5.5 mm, that of the protoconid—7.5 mm.

The remaining part of mandibular ramus is labially convex, lingually flat, its lower edge being very narrow. Two foramina mentalia are present, both placed below  $P_3$ , the first larger below the anterior edge of the crown, the second below the middle of the tooth. The height of the mandibular ramus is 10.2 mm, the midbreadth—5 mm.

*Systematic position.* — The examined fragment can be identified as belonging to a representative of the genus *Felis* L., the specific determination is however very difficult. It is evident that this was a cat of a small size, approximately as large as recent *Felis silvestris* Schreber.

The small sized cats appear pretty early in Europe, their remains are found already in the Miocene deposits of some localities, as Sansan, Eppelsheim, Samos, and elsewhere. These remains were mostly scarce and fragmentary, but in some cases they were identified specifically, as e.g. *Felis media* and *Felis pygmaea* Gervais (Gervais, 1846) from Sansan, *Felis prisca* and *Felis antediluviana* Kaup (Kaup, 1833) from Eppelsheim. The best preserved fragments (anterior part of the skull with mandible) of a cat were found in Pikermi and described by Wagner (1857) as *Felis attica*. Under the name *Felis* cf. *attica*, Arambourg and Piveteau (1929) described a skull from Salonica, and Mecquenem (1925)—from Maragha. The mandibular teeth of this species show a stronger structure than those in the recent *Felis silvestris* Schreber.

Large as well as small representatives of the family Felidae are also known from the Pliocene deposits of Eurasia. The remains of these small cats were, however, also scarce and fragmentary, restricted mostly to some parts of the skull, often only mandibles or detached teeth. In most cases these remains have been referred to a cat similar to *Felis silvestris* Schreber or to one of the recent species. These small Pliocene

cats were often merely determined as *Felis* sp., and only rarely identified at the specific level as *Felis* cf. *maniculata* Depéret, 1890—a cat from Rousillon (France), or as *Felis lunensis* Martelli—from Olivola (Toscana).

More detailed data on the dimensions of small Pliocene cats are lacking. The only exact measurements of the mandible and teeth are those given by Martelli (1906) for *Felis lunensis* Mart. (see table 1).

Table 1  
Comparison of the dimensions of mandibles and teeth  
(in mm)

Measurements		Mandible from Weże (Poland)	Mandible from Olivola (Toscana)	<i>F. silvestris</i> from Mt. Babia (Poland)
Mandible:				
Length of diastema		4.0	4.0	7.5
Height below P <sub>3</sub>		10.5	10.0	9.5
Breadth at diastema		4.5	5.0	4.0
Breadth below P <sub>3</sub>		4.5	4.7	4.6
P <sub>3</sub>	Length	6.87	5.5	4.85
	Breadth	2.75	2.7	2.3
	Height	4.0	3.7	3.5
P <sub>4</sub>	Length	9.3	7.0	6.0
	Breadth	3.2	2.9	2.5
	Height of protoconid	7.5	5.3	4.8
M <sub>1</sub>	Length	—	7.8	6.75
	Breadth	—	3.4	2.6
	Height of paraconid	—	5.1	4.4
	Height of protoconid	—	5.3	5.0

The dimensions of the mandible of the cat found in Weże are similar to those of *Felis lunensis* Martelli, however, in the latter species the teeth are distinctly smaller. The mandibular premolars and molars of these cats become gradually longer. In the mandible of *Felis lunensis* Martelli they are: P<sub>3</sub>—5.5 mm, P<sub>4</sub>—7.0 mm, and M<sub>1</sub>—7.8 mm long, and since in the cat from Weże P<sub>3</sub> is 6.87 mm, P<sub>4</sub>—9.3 mm long, the here lacking M<sub>1</sub> was probably about 11 mm long.

Since the examination of *Felis lunensis* Martelli, as well as that from Weże, is now based only on single specimens of the mandibles, there are no data concerning the individual variation of the dimensions of teeth in the two species. Since, however, the cat from Weże was very probably larger than that from Olivola, the writer regards it as belonging to a separate species—*Felis wenzensis* n.sp. This species doubtless

approaches *Felis lunensis* Martelli, or may be only a northern variety of that species.

Both species differ distinctly from the recent *Felis silvestris* Schreber in the short diastema between the canine and the first premolar.

*Baranogale helbingi* Kormos, 1934

(pl. I, fig. 2—5)

1942. *Baranogale beremendensis* (Petényi); M. Kretzoi, *Tigeriltis...*, p. 327, 343.

1949. *Baranogale* cfr. *Helbingi* Korm.; S. Schaub, *Revision...*, p. 503—505 fig. 7.8.

*Material.* — 1) Right mandibular ramus of young animal; 2) median part of right mandibular ramus with  $P_4$  and  $M_1$ ; 3) isolated  $M_1$  from the left mandible of another specimen; 4) median part of right mandibular ramus with  $P_4$ ; 5) median part of right mandibular ramus with  $P_4$  of another specimen.

*Description.* — In relation to the small size of the animal the mandibular ramus (No. 1) is rather robust, thick and high. Anteriorly the ramus grows gradually higher, below  $M_1$  and  $P_4$  — 5.75 mm high, below  $P_3$  — 6.5 mm, and  $P_2$  — 7.2 mm. Its inner side, almost flat, is also thickest near the symphyseal area (4.0 mm). The outer, labial side of the mandible is distinctly convex. The lower margin below  $P_2$  and the canine are strongly upcurved. Two foramina mentalia are present; the first, placed below  $P_2$ , is distinctly larger than that below  $P_3$ . Fossa masseterica is triangular in the anterior part, restricted from above and below by relatively strongly thickened upper and lower edge of the ramus; it extends up to the hind margin of  $M_1$ .

The incisors are lacking.

The canine relatively long, strongly arcuately curved. Its crown is basally provided with a narrow cingulum, a little higher on the anterior edge of the tooth. On the lingual side of the crown, from the cingulum almost up to tip of the tooth, a relatively deep furrow occurs. At the labial side of the tooth there is only a small, longitudinal notch. The height of the canine measured directly along the labial side, from the basis of the cingulum to the tip of the canine, is 7.2 mm, the length — 3.0 mm, and the breadth — 2.0 mm.

The crown of the first premolar,  $P_2$ , is broken off, but the preserved roots show that the tooth was somewhat obliquely placed in the mandible.

$P_3$  well preserved, 3.2 mm high and 3.87 mm long. Its crown has a narrow cutting ridge, shorter anteriorly and ending basally as a very minute process of the cingulum. The posterior part of the ridge is longer, wide, surrounded at the base by a narrow, but distinct cingulum. The breadth of  $P_3$  is 1.75 mm, the posterior — 2.0 mm.

In the examined mandible  $P_4$  is in the last stage of development

and its basal part of the crown is still concealed in the mandible. The well preserved premolars  $P_4$  in fragments Nos. 3 and 4 permit accurately to examine the shape of this tooth. The anterior part of the crown in this premolar also begins basally with a minute process of the cingulum, followed by a high protoconid and behind it by a well developed accessory cusp, posteriorly and lingually surrounded at the basis by the cingulum. A relatively high, sharp rib runs down lingually to this cingulum from the tip of the protoconid. Hence, in the posterior view the protoconid seems to be of a triangular shape. At midlength of the hind wall of the protoconid occurs the basis of the conical accessory cusp which, on the labial side of the crown, is only indistinctly separated from the protoconid. The length of  $P_4$  is 4.52—4.75 mm, the breadth at midlength of the tooth — 2 mm, the height of the protoconid measured from the basis of the cingulum — 3.1—3.6 mm.

$M_1$  has all cusps of the trigonid and talonid well developed, and a cingulum on the labial and lingual sides of the trigonid and the talonid. The labial wall of both first cones is smooth and the ridge of the crown sharp. The metaconid conical, sharply pointed. The talonid on the labial side pretty high with small hypoconid and minute accessory cusp, lingually low, limited only by the cingulum. The length of  $M_1$  is 7.2—7.8 mm, of the trigonid — 5.2 mm, that of the talonid — 2.1—2.6 mm. The height of the paraconid, measured from the basis of cingulum, is 2.67 mm, of the protoconid — 3.3 mm, that of the metaconid — 2.0 mm, of the hypoconid — 1.75 mm. The greatest breadth at midlength of the tooth is 2.7 mm.

The length of the tooth-row from the anterior edge of  $P_2$  to the posterior edge of  $M_2$  is 19.8 mm.

*Remarks.* — The here described fragments are beyond doubt identified as *Baranogale helbingi* Kormos. This species, established by Kormos in 1934, on the ground of a fragmentary mandible found in Villány (Hungary), is recorded by Kretzoi (1956) also from other localities in Hungary, namely Beremend and Csarnóta. All these remains, however, were scanty, in most cases more or less fragmentary parts of mandibles. Remains of this species, also representing mandibles only, were found earlier in France (Perrier Mts.) and insufficiently described by Pomel (1853) as *Rhabdogale* (= *Zorilla*) *antiqua* Pomel. In 1950 these fragments were accurately described and figured by Schaub. Other well preserved, almost complete skulls of *Baranogale helbingi* Kormos were excavated in 1951/52 in the vicinity of Saint-Vallier, and in 1954 they were fully described and figured by Viret.

In 1959 the remains of *Baranogale helbingi* were found in Poland, in the bone breccia at Podlesice (distr. Olkusz). They consist of one mandible only, described by Kowalski (1959) and identified by him with

Table 2

Comparison of the dimensions of mandibles and teeth of *Baranogale helbingi* Kormos (in mm)

Measurements		W e z e					Podlesice Kowalski (1959)	Villany, Kormos (1934)	Perrier, Schaub (1949)
		1	2	3	4	5			
Mandible:									
	Height below P <sub>3</sub>	6.5	—	—	—	—	5.5	—	—
	Height below M <sub>1</sub>	5.75	5.3	—	—	—	5.0	—	—
	Breadth below P <sub>3</sub>	4.0	—	—	—	—	2.6	—	—
	Breadth below M <sub>1</sub>	3.5	2.7	—	—	—	2.75	—	—
P <sub>2</sub>	Length of alveola	2.5	—	—	—	—	2.5	2.7	2.58
	Breadth of alveola	—	—	—	—	—	—	—	—
	Height of alveola	—	—	—	—	—	—	—	—
P <sub>3</sub>	Length	3.87	—	—	—	—	3.3	3.6	3.76
	Breadth, maximum	2.0	—	—	—	—	1.8	—	—
	Height	3.2	—	—	—	—	2.6	—	—
P <sub>4</sub>	Length	—	4.52	—	4.5	4.75	4.0	4.45	4.6
	Breadth	—	2.0	—	2.0	2.0	2.0	2.0	2.25
	Height	—	—	—	3.1	3.6	2.8	—	—
M <sub>1</sub>	Length	7.72	7.2	7.8	—	—	—	7.4	7.76
	Breadth, maximum	3.0	2.6	3.0	—	—	—	2.75	3.1
	Height of paraconid	3.0	2.5	3.0	—	—	—	2.75	—
	Height of protoconid	3.6	3.3	4.0	—	—	—	3.4	—
	Length of trigonid	5.2	4.2	5.2	—	—	—	4.95	5.1
	Length of talonid	2.52	3.0	2.6	—	—	—	2.45	—
M <sub>2</sub>	Alveola	1.3	—	—	—	—	—	1.5	—
P <sub>2</sub> -M <sub>2</sub>	From anterior margin of P <sub>2</sub> up to posterior margin of M <sub>2</sub>	19.8	—	—	—	—	18.5	20.0	21.5

the co-type of this species from Csarnóta. The author noted that the specimen from Podlesice is somewhat smaller than the co-type.

The comparison of the dimensions of mandible and teeth of *Baranogale helbingi* Kormos is given in table 2.

On the ground of the measurements here given it may be stated that differences in the shape of the mandible of *Baranogale helbingi* Kormos from various localities in Hungary, France and Poland are not important and seem to lie within the individual variation of one species. The height and breadth of the ramus of mandible of *Baranogale helbingi* Kormos from Węże are indeed greater than of that from Podlesice, but the latter specimen probably comes from the end of the Pliocene or the early Pleistocene, i.e. from the period of the degeneration and extinction of *Baranogale* Kormos, which no longer occurs in the later Pleistocene.

Zoological Institute  
of the Polish Academy of Sciences  
Cracow Branch  
Kraków, May 1961

#### REFERENCES

- ARAMBOURG, C. & PIVETEAU, J. 1929. Les Vertébrés du Pontien de Salonique. — *Ann. Paléont.*, **18**, 59—139, Paris.
- DEPERET, C. 1890. Les animaux pliocènes du Rousillon. — *Mém. Soc. Géol. France*, **3**, 1—194, Paris.
- KORMOS, T. 1934. Neue und wenig bekannte Musteliden aus ungarischen Oberpliozän. — *Folia Zool. Hydrobiol.*, **5**, 129—158, Riga.
- KOWALSKI, K. 1959. *Baranogale helbingi* Kormos and other Mustelidae from the bone breccia in Podlesice near Kroczyce, Poland (*Baranogale helbingi* Kormos i inne Mustelidae z brekcji kostnej w Podlesicach koło Kroczyce). — *Acta Palaeont. Pol.*, **4**, 1, 61—69, Warszawa.
- KRETZOI, M. 1942. Tigeriltis, Iltis und Nerz im ungarischen Pleistozän. — *Földt. Közl.*, **72**, 323—344, Budapest.
- 1956. Die altpleistozänen Wirbeltierfaunen des Villanyer Gebirges. — *Geol. Hungar., S. Pal.*, **27**, 1—264, Budapest.
- MARTELLI, A. 1906. Su due Mustelide e un Felide del Pliocene Toscano. — *Boll. Soc. Geol. Ital.*, **25**, 595—612, Roma.
- POMEL, A. 1853. Catalogue méthodique et descriptif des Vertébrés fossiles découverts dans le bassin hydrographique supérieur de la Loire. 1—193, Paris.
- SCHAUB, S. 1949. Revision de quelques Carnassiers villafranchiens du Niveau des Étouaires (Montagne de Perrier, Puy-de-Dôme). — *Ecl. Geol. Helv.*, **42**, 2, 492—506, Basel, 1950.
- 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.
- WAGNER, A. 1857. Neue Beiträge zur Kenntnis der fossilen Säugethier-Überreste von Pikermi. — *Abh. bayer. Akad. Wiss.*, **3**, 153—170, München.

JAN STACH

DWA GATUNKI DRAPIEŻNYCH Z PLIOCEŃSKIEJ BREKCIJ Z WĘŻÓW  
KOŁO DZIAŁOSZYNA

*Streszczenie*

Autor opisuje, na podstawie drobnych szczątków (żuchw) wypreparowanych ostatnio z brekcji kostnej z Wężów, dwa gatunki plioceńskich drapieżnych.

Pierwszy z nich, z rodzaju *Felis* L., zbliżał się rozmiarami ciała do żyjącego dziś dzikiego kota *Felis silvestris* Schreb. W budowie żuchwy okaz z Wężów podobny był do plioceńskiego *Felis lunensis* Mart., opisanego przez Martelli'ego (1906) z pliocenu Olivoli (Toskania). Różnił się jednak od niego znacznie większymi rozmiarami zębów. Autor nadał mu nazwę *Felis wenzensis* n. sp.

Drugi gatunek — *Baranogale helbingi* Kormos — opisany już z Polski (z brekcji kostnej z Podlesic) przez Kowalskiego (1959), rozprzestrzeniony był szeroko w Europie w pliocenie i wczesnym plejstocenie, a jego szczątki opisywali różni autorzy z Węgier i Francji.

OBJAŚNIENIA DO PL. I

Fig. 1. *Felis wenzensis* n.sp., fragment żuchwy z zachowanymi mlecznymi P<sub>3</sub> i P<sub>4</sub>, od strony labialnej; × 3.

Fig. 2. *Baranogale helbingi* Kormos, prawy ramię żuchwy, od strony labialnej; × 3.

Fig. 3. *B. helbingi* Kormos, M<sub>1</sub> od strony labialnej; × 3.

Fig. 4. *B. helbingi* Kormos, P<sub>4</sub> od strony labialnej; × 3.

Fig. 5. *B. helbingi* Kormos, P<sub>4</sub> — inny okaz, od strony lingwalnej; × 3.

---

ЯН СТАХ

ДВА ВИДА ХИЩНЫХ ИЗ ПЛИОЦЕНОВОЙ БРЕКЦИИ ИЗ  
МЕСТНОСТИ ВЕНЖЕ (ПОЛЬША)

*Резюме*

На основании мелких остатков (челюстей) отпрепарированных в последнее время из костной брекции из местности Венже, автор описывает два вида плиоценовых хищных.

Первый из них принадлежащий к роду *Felis* L. по размерам близок современной кошке *Felis silvestris* Schreb. По строению челюсти образец из Венжев

сходен с плиоценовой *Felis lunensis* Martelli, описанной Мартеллим (1906) из плиоцена Оливели (Тоскана). Отличается однако от нее значительно большими размерами зубов. Автор дает ей название *Felis wenzensis* n. sp.

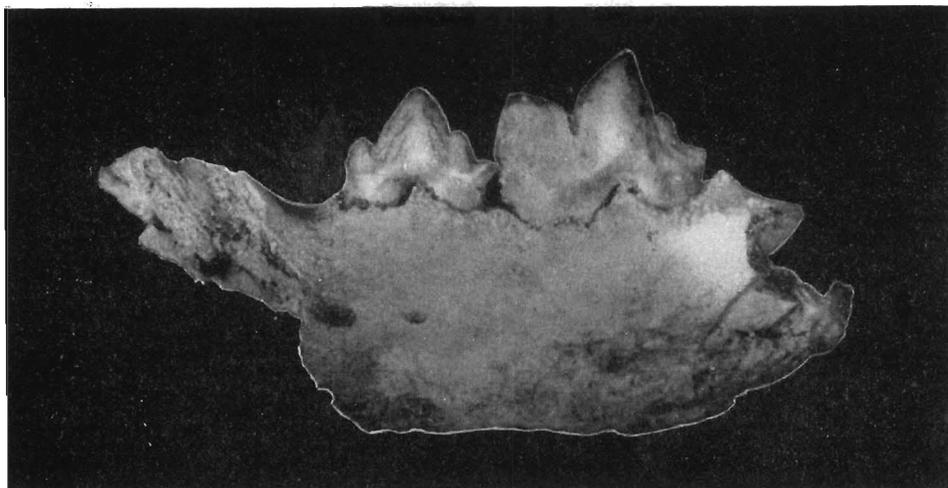
Второй вид — *Baranogale helbingi* Kormos, описанный уже из Польши (из костной брекчи Подлесья) Ковальским (1959), был широко распространен в Европе в плиоцене и ранним плейстоцене, а его остатки описывали разные авторы из Венгрии и Франции.

---

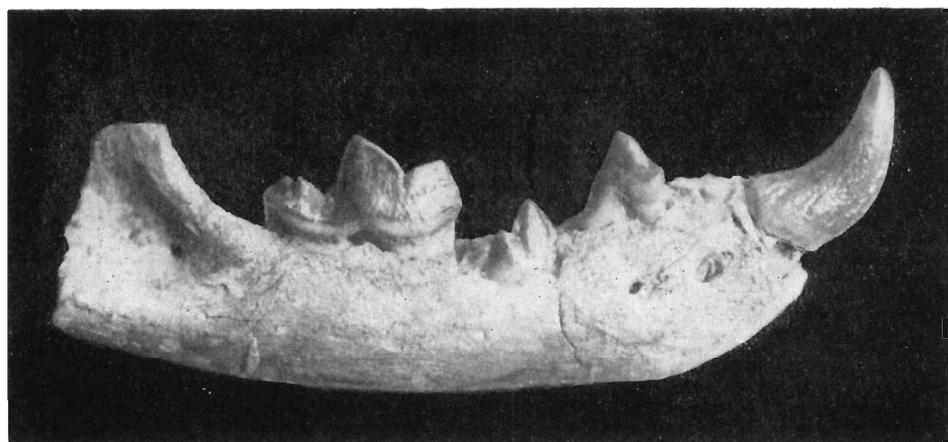
EXPLANATION OF PL. I

- Fig. 1. *Felis wenzensis* n.sp., fragment of mandible with P<sub>3</sub> and P<sub>4</sub> of the milk dentition, labial side; × 3.
- Fig. 2. *Baranogale helbingi* Kormos, right mandibular ramus, labial side; × 3.
- Fig. 3. *B. helbingi* Kormos, M<sub>3</sub>, labial side; × 3.
- Fig. 4. *B. helbingi* Kormos, P<sub>4</sub>, labial side; × 3.
- Fig. 5. *B. helbingi* Kormos, P<sub>4</sub> — another specimen, lingual side; × 3.

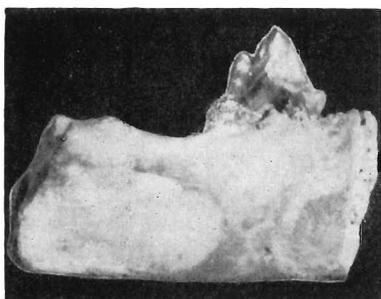
Phot. Z. Sych



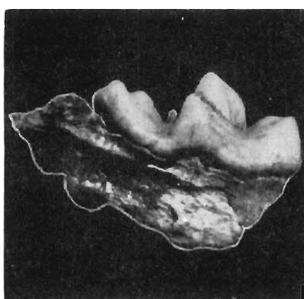
1



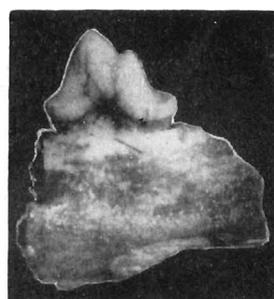
2



3



4



5