ANDRZEJ SULIMSKI

ON SOME OLIGOCENE INSECTIVORE REMAINS FROM MONGOLIA

(Plates XVIII—XIX)

Abstract. — Three genera and five species of Oligocene Insectivora from Mongolia are described, among them one new genus and two new species belonging to two superfamilies: from Erinaceoidea — *Ictopidium tatalgolensis* n. sp., *Amphechinus (Palaeoscaptor) acridens* (MATTHEW & GRANGER, 1924), *A. (Palaeoscaptor)* cf. *rectus* (MATTHEW & GRANGER, 1924) and *A. (Palaeoerinaceus)* cf. *minimus* (BOHLIN, 1942), and from Soricoidea — *Gobisorex kingae* n. gen., n. sp. All these species come from deposits of Oligocene age from four localities: Tatal Gol and Loh (Northern Gobi Desert), Khatan Khayrkhan and Nareen Bulak (Western Gobi Desert).

INTRODUCTION

The fossil material described in the present paper comes from the collections assembled during the western reconnaissance of the Polish-Mongolian Palaeontological Expedition to the Gobi Desert in 1964. Part of the material comes from two localities already known in literature — Loh and Tatal Gol (Hsanda Gol Formation) (see MATTHEW & GRANGER, 1924; TROFIMOV, 1960; GROMOVA, 1962, and others), as well as from two new, hitherto unknown localities: Khatan Khayrkhan and Nareen Bulak (see GRADZIŃSKI *et al.*, 1968/69).

The material at the present author's disposal consists of lower jaws in various states of preservation. They are, as a rule, incomplete fragments of jaws with or without teeth. On none of the specimens are the ascending processes preserved. Also missing are the anterior teeth, especially incisors and canines. Most of the remains belong to the primitive hedgehog-like forms of the superfamily Erinaceoidea. A small collection of jaws (six fragments), described as *Ictopidium tatalgolensis* n. sp., has been assigned to the family Adapisoricidae (SCHLOSSER, 1887) in agreement with the suggestions of MCKENNA (1960), D. E. RUSSELL (1964), ROMER (1966) and VAN VALEN (1967). The remaining jaw material, with characteristic structure of dentition, has been assigned to the genus *Amphechinus* AYMARD, 1849 (with two subgenera: *Palaeoscaptor* MATTHEW & GRANGER, 1924 and *Palaeoerinaceus* FILHOL, 1879), and the last two jaws have been recognized here as a primitive shrew-like form of the superfamily Soricoidea. These latter jaws, on the base of comparison with the few Asiatic and European Oligocene and Miocene soricids known from literature, have been assigned to *Gobisorex kingae* n. gen., n. sp.

Measurements of specimens were made by means of a microscope micrometer, accurate to 0.1 mm for all the measured elements. Illustrations and retouching of photographs were carried out by the present author, photographs by Miss M. CZARNOCKA. Terminology of dentition and abbreviations used in the present paper are based on data from the works of BUTLER (1948, 1956*a*, *b*) as well as the previous work of the present author (SULIMSKI, 1968/69).

The described remains of small insectivores from Mongolia are housed in the Palaeo-

zoological Institute of the Polish Academy of Sciences, Warsaw (see KIELAN-JAWOROWSKA & DOVCHIN, 1968/69, p. 12).

Abbreviations used:

Z. Pal. — Palaeozoological Institute, Polish Academy of Sciences, Warsaw.

A. M. N. H. — American Museum of Natural History, New York.

DESCRIPTIONS

Order **INSECTIVORA** BOWDICH, 1821
Superfamily **ERINACEOIDEA** GILL, 1872
Family ADAPISORICIDAE (SCHLOSSER, 1887)
Subfamily CREOTARSINAE (HAY, 1930)
Genus **ICTOPIDIUM** ZDANSKY, 1930

Revised diagnosis. — Three incisors in size arrangement $I_1 > I_2 > I_3$, single-rooted, obliquely situated. C large, single-rooted. P_1 lacking. P_2, single- or double-rooted. P_3 double-rooted with subtrigonid-like crown, bearing high coniform protoconid, upwards directed, weak posterior heel, and small basal paraconid. P_4 double-rooted with trigonid-like crown, and three cusps, posterior heel or transversal crest. Metaconid lower or higher than protoconid. Protoconid high, backwards bent. M_1—M_3 double-rooted, as a rule five-cusped. Hypoconulid weak or lacking. Trigonids higher than talonids, both parts of crowns antero-posteriorly compressed, width and length nearly equal. Protoconid in trigonid and entoconid in talonid are the highest of the cusps. Entoconid wide at base, blunt. Labial cingulum well developed, disappearing below hypoconids. M_1 equal in length of longer than M_2. M_3 equal in length or shorter than M_2. Mental foramen between roots of P_3 or below posterior root of P_3. Horizontal ramus of jaw of even height, slender.

Dental formula: $\frac{?}{3\ 1\ 3\ 3}$

Discussion. — ZDANSKY (1930, pp. 7—9) described a fragment of a right lower jaw of a small insectivore *Ictopidium lechei* from the Early Oligocene deposits of Yuan-Hü-Hsien (province Shansi) in the Chinese People's Republic (in Lok. 1, "River Section" Formation). In defining the genus, he pointed out the presence of at least two incisors, a canine, four premolars and three molars (he was not, however, sure as to the number of incisors, his doubts being reflected in the dental formula, see *l. c.*, p. 7), mentioning at the same time that all the anterior teeth, including P_1, were single-rooted. He considered the canine to be reduced, smaller than the neighbouring teeth and the root of P_1 big, long, laterally compressed and broadened posteriorly. P_2, on the other hand, according to ZDANSKY, was double-rooted, the anterior stronger than the posterior.

The jaw fragment, described by ZDANSKY (*l. c.*, Pl. 1, Figs. 1—2), has in fact three anterior alveoli, although badly damaged, the first being large and deep, the second smaller than the first, and the third, the smallest, with a small slender root. Behind these alveoli there is a well visible, large alveolus, probably filled with matrix, and two smaller alveoli of more or less equal diameters. The flattened posterior wall of the one in front adheres closely to the also flattened anterior wall of the one behind. Both alveoli are, in addition, displaced in relation to each other, so that the posterior one lies somewhat more lingually than the anterior. The re-

maining teeth of the jaw are all double-rooted. From the arrangement of the first three alveoli, it is easy to see that they belong the three incisors. The big alveolus situated after them is most certainly an alveolus of a canine, and not of P_1. The next two, very close to each other, show very clearly that they belong to one double-rooted tooth. So incisors, canine and P_2 are not preserved in this jaw.

The specimens at the present author's disposal have incomplete dentition, but in the place of the missing teeth there are very well visible alveoli. In the type specimen of *Ictopidium tatalgolensis* n. sp. (Z. Pal. No. MgM-III/4; see Pl. XVIII, Fig. 1; Text-fig. 1*A*, *F*) are present: the base of the crown I_1, the two next alveoli decreasing in size posteriorly with roots, the big alveolus C also with root, and lastly P_2 with only one root (this tooth is visible on specimen Z. Pal. No. MgM-III/8 (Pl. XVIII, Fig. 5; Text-fig. 1*C*). On other specimens, the alveolus for P_1, on the anterior part of the jaw, is lacking. In spite of the above mentioned differences, the specimens from Total Gol and Khatan Khayrkhan are considered by the present author as belonging to the genus *Ictopidium* ZDANSKY, 1930. This assignment is based on the presence, in both species, of the characteristic subtrigonal-trigonal structure of the last two premolars, the strong development of I_1, reduction of I_2 and I_3, proportions of teeth and the specific structure of the molars.

Ictopidium tatalgolensis n. sp.

(Pl. XVIII, Figs. 1—6; Text-fig. 1*A-F*)

Type specimen: Z. Pal. No. MgM-III/4; right lower jaw with I_1—I_3, C, and P_2 alveoli or roots, posterior part of P_3 crown and root, and well preserved P_4—M_3.

Referred specimens: Khatan Khayrkhan: Z. Pal. No. MgM-III/4 — right lower jaw with I_1—I_3, C, and P_2 alveoli or roots, posterior part of P_3 crown and root, and well preserved P_4—M_3, type specimen. Z. Pal. No. MgM-III/8 — left lower jaw with P_2, P_4—M_1 and I_1—I_3, C, P_3 and M_2 alveoli, paratype. Z. Pal. No. MgM-III/9 — left lower jaw with M_1—M_3. Tatal Gol: Z. Pal. No. MgM-III/5 — left lower jaw with P_3—M_1. Z. Pal. No. MgM-III/6 — right lower jaw with P_3—M_2. Z. Pal. No. MgM-III/7 right lower jaw with P_3—P_4.

Type horizon and locality: Probably late Lower Oligocene ("River Section" Formation); Khatan Khayrkhan, Western Gobi Desert.

Derivation of the name: *tatalgolensis* — after Tatal Gol, a name of Oligocene locality in Mongolia, from which a part of described specimens come.

Diagnosis. — Incisors obliquely situated. P_2 small, simple, single-rooted. The crown of P_3 moderately compressed; paraconid small; metaconid present, weak; labial cingulum present, delicate. Paraconid of P_4 large, sharp; labial cingulum present, delicate. M_1 larger or equal to M_2. Protoconid of M_1 well developed; metaconid lower than protoconid; hypoconulid often lacking; posterior cingulum well visible; labial cingulum well marked, below hypoconid sometimes lacking. M_3 smaller or equal to M_2, whithout hypoconulid.

Measurements — see Tables 1 and 2.

Description. — I_1 large, alveolus obliquely situated and upwards directed. I_2 smaller than I_1, with the same position of alveolus. I_3 very small, with a thin, vestigial root. All incisors obliquely situated to the longitudinal axis of the jaw.

C large, with a long and laterally compressed root. Judging from alveolus, it was considerably large and high, single-cusped and perhaps higher than neighbouring teeth.

P_2 smaller than C, single-rooted (see Pl. XVIII, Fig. 5; Text-fig. 1*C*), with premolar-like crown, simple in structure, bearing one conical cusp, laterally compressed, small posterior heel and fine pseudocingulum.

P_3 double-rooted, with a crown of subtrigonid type. The crown somewhat laterally com-

pressed, with a very high and upwards directed protoconid. Labial cingulum lacking or occurs only in the postero-labial part of the crown. Metaconidal crest weakly marked, with a small swelling (Text-fig. 1E_2). Paraconid small but well developed. Alveolus of anterior root of P_3 somewhat smaller than posterior one.

Table 1

Ictopidium tatalgolensis n. sp. — measurements of lower jaws and dentition (in mm)

Z. Pal. Nos. MgM-	Type specimen III/4	III/8	III/6	III/9	III/5	III/7
Length of:						
I_1—M_3 **	10.6 *	—	—	—	—	—
C—M_3	9.2 *	—	—	—	—	—
P_3—P_4	2.6 *	3.0 *	2.6	—	2.4	2.6
P_3—M_3	7.6 *	—	7.0 *	—	—	—
P_3—M_1	4.4 *	4.7 *	4.4	—	4.4	—
P_4—M_3	6.1	—	6.0 *	—	—	—
P_4—M_1	3.4	3.4	3.2	—	3.4	—
M_1—M_3	5.2	—	4.8 *	4.6	—	—
M_1—M_2	3.5	3.6 *	3.6	3.6	—	—
M_2—M_3	3.2	—	2.8	2.8	—	—
P_3 length	0.4 *	0.8	—	—	—	—
width	0.4 *	0.6	—	—	—	—
P_3 length	1.2 *	1.4 *	1.2	—	1.2	1.2
width	0.9	0.8 *	0.8	—	0.8	0.8
P_4 length	1.4	1.4	1.4	—	1.3	1.4
width	1.2	1.0	1.0	—	1.0	1.0
M_1 length	2.0	2.0	2.0	2.0	2.0	—
width	1.4	1.4	1.2	1.4	1.4	—
M_2 length	1.8	1.5 *	1.6	1.6	—	—
width	1.4	1.4 *	1.2	1.4	—	—
M_3 length	1.4	—	—	1.2	—	—
width	1.0	—	—	1.1	—	—
Depth below M_1	2.4	2.6	2.4	2.2	2.2	2.2
Thickness below M_1	1.6	1.6	1.2	1.4	1.4	1.0

* Measured along alveoli.

** Measured from posterior border of I_1 to posterior border of M_3.

P_4 double-rooted, with crown of trigonid type. Protoconid very high, with a top, as a rule, backwards directed. Paraconid well developed but small. Metaconid in different stages of development but most often well separated and lower than protoconid. Labial cingulum as a rule fine, well visible, particularly under paraconid and in posterior part of the crown, where

sometimes it forms a transversal crest (see Text-fig. 1*D*), with cuspule or without cuspule. Alveoli arrangement the same as in P_3.

M_1 and M_2 double-rooted, with the trigonids and talonids nearly equal in length and width, and antero-posteriorly compressed. On the trigonid higher than talonid, the paraconid is well developed, not reduced and lower than protoconid. Metaconid only slightly lower than protoconid and joined with it by a high and sharp metalophid. On the talonids the entoconid

Table 2

Comparison of measurements of *Ictopidium lechei* ZDANSKY and *Ictopidium tatalgolensis* n. sp. (in mm)

Dentition	*Ictopidium lechei* ZDANSKY, 1930*	*Ictopidium tatalgolensis* n. sp. (average)
Length of:		
C—M_3 **	ca. 10.5	ca. 9.2
P_3—M_3	ca. 8.4	7.3
P_3—P_4	3.0	2.5
P_4—M_3	ca. 7.2	6.2
M_1—M_3	5.5	4.8
P_3 length	ca. 1.0	0.8
width	ca. 0.8	0.6
P_3 length	1.4	1.2
width	0.9	0.8
P_4 length	1.7	1.4
width	1.2	1.1
M_1 length	ca. 2.2	2.0
width	ca. 1.5	1.3
M_2 length	1.6	1.7
width	1.4	1.3
M_3 length	ca. 1.5	1.3
width	ca. 1.2	1.0
Depth below M_1	3.0	2.4
Thickness below M_1	1.4	1.4

* Partly measured on ZDANSKY's (1930) illustrations (Pl. 1, Fig.s 1—2).
** Designated by ZDANSKY (1930) as P_1—M_3.

is the highest, wide at the base, robust and blunt. Hypoconulid is lacking, but when present, it is only as a weakly developed swelling, lying just by the entoconid. Labial cingulum is distinct, sometimes disappearing under the hypoconid. Below paraconid occurs a small antero-labial cuspule. On the specimen Z. Pal. No. MgM-III/9 (see Pl. XVIII, Fig. 6) first and second molars differ from the above in somewhat shorter and narrower trigonids, in better developed paraconids and posterior cinguli. This specimen belongs to a young individual.

M_3 double-rooted, smaller than M_2, without hypoconulid. Talonid of this tooth is well developed and narrower than trigonid.

The horizontal ramus of the jaw is slender and long, high, without the lower notch and is of even height. The mental foramen is, as a rule, between P_3 roots or below the posterior root of this tooth. The symphysis lies at a small angle to the longitudinal axis of the jaw.

Discussion. — *Ictopidium tatalgolensis* n. sp. differs from *Ictopidium lechei* ZDANSKY, 1930 (see Table 3) in its somewhat smaller dimensions of jaws and teeth and in the structure of the premolars and molars, especially P_2, P_3 and M_3.

One might ask whether the specimens described by the present author as *Ictopidium tatalgolensis* n. sp., should not have been assigned to the genus *Tupaiodon* MATTHEW & GRANGER, described from the Hsanda Gol Formation in Loh (MATTHEW & GRANGER, 1924, pp. 1—2). *Tupaiodon morrisi* MATTHEW & GRANGER, a type species of the genus *Tupaiodon*, is known from an upper jaw with C—M^3 (*l. c.*, A. M. N. H. No. 19134, type specimen, p. 1, Fig. 1) and from a non illustrated lower jaw with M_2—M_3. In the diagnosis of this species, MATTHEW and GRANGER stated that the upper premolars and molars are similar to the corresponding teeth in the genus *Ptilocercus* Gray (Tupaiidae), but with larger and better separated hypocones on M^1 and M^2. The canine, P^1 and P^2 in this species are double-rooted, with short, stout cusps and atrophied heels. On the other hand, P^3 and P^4 are large, with strong exterior cusps; in addition there is a strong metastyle edge on P^4. Molars are subsquared, with high, sharp cusps and metastyle. On M^3 the metastyle and hypocone are lacking.

The type specimen *Tupaiodon morrisi* MATTHEW & GRANGER is not comparable with the specimens of *Ictopidium lechei* ZDANSKY and *Ictopidium tatalgolensis* n. sp., which are represented only by lower jaws. The lower jaw in *Tupaiodon morrisi* MATTHEW & GRANGER (*l. c.*, p. 1) has not been illustrated and its description is very inaccurate and general. From the comparison of a fragment of upper jaw with teeth of *Tupaiodon morrisi* MATTHEW & GRANGER with fragments of lower jaws of both species of *Ictopidium* ZDANSKY, it would seem that the dental formula of the genus *Tupaiodon* MATTHEW & GRANGER differs from that in *Ictopidium* ZDANSKY in the presence of four upper premolars. *Ictopidium* ZDANSKY also differs from *Tupaiodon* MATTHEW & GRANGER, among others, in having a single-rooted canine and in lacking dia-

Fig. 1

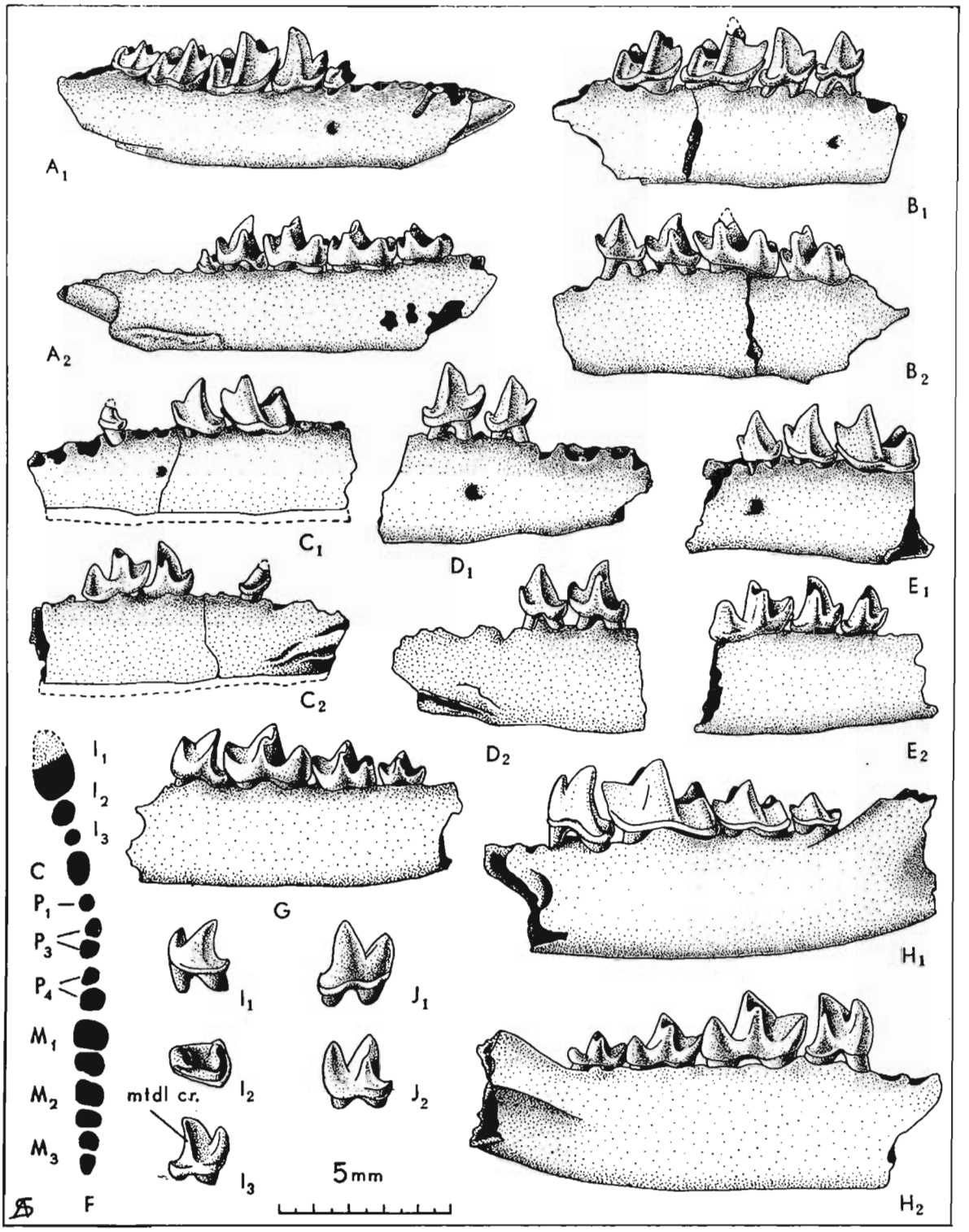
Ictopidium tatalgolensis n. sp.

A Right jaw with P_4—M_3 and part of P_3 crown: *1* outer view, *2* inner view. Type specimen (Z. Pal. No. MgM-III/4)
B Right jaw with P_3—M_3: *1* outer view, *2* inner view (Z. Pal. No. MgM-III/6).
C Left jaw with P_2, P_4—M_1: *1* outer view, *2* inner view. Paratype (Z. Pal. No. MgM-III/8).
D Right jaw with P_3—P_4: *1* outer view, *2* inner view (Z. Pal. No. MgM-III/7).
E Left jaw with P_3—M_1: *1* outer view, *2* inner view (Z. Pal. No. MgM-III/5).
F Arrangement of alveoli, scheme; ca. × 6.

Amphechinus (Palaeoscaptor) acridens (MATTHEW & GRANGER, 1924)

G Right jaw with P_4—M_3, from inner side of young individual (Z. Pal. No. MgM-III/19).
H Left jaw with P_4—M_3: *1* outer view, *2* inner view of adult individual (Z. Pal. No. MgM-III/10).
I Left P_4 of young individual: *1* outer side, *2* occlusal view, *3* inner side, *mtdl cr.* metaconidal crest (Z. Pal. No. MgM-III/12).
J Right P_4: *1* outer view, *2* inner view, adult individual (Z. Pal. No. MgM-III/11).

Figs. *A-E, G-H* — see also Plates XVIII and XIX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C
P1
P3
P4
M1
M2
M3
F
G
H1
H2
I1
J1
I2
J2
mtdl cr.
I3
5mm

Fig. 1

Table 3

Comparison of *Ictopidium lechei* ZDANSKY and *Ictopidium tatalgolensis* n. sp.

Dentition		*Ictopidium lechei* ZDANSKY, 1930	*Ictopidium tatalgolensis* n. sp.
I_1 I_2 I_3		$I_1 > I_2 > I_3$ single-rooted, low situated	$I_1 > I_2 > I_3$ single-rooted, obliquely situated
C		large, single-rooted	large, single-rooted
P_1		lacking	lacking
P_2		large, double-rooted	small, simple, single-rooted
P_3	*crown*	subtrigonid type, strongly laterally compressed	subtrigonid type, moderately laterally compressed
	pad	large, well developed	small
	mtd	lacking	present, weak
	prd	high, directed upwards	high, directed upwards
	post. heel	weak	weak
	lab. cing.	lacking	present, delicate
P_4	*crown*	trigonid type	trigonid type
	pad	small	large, sharp
	mtd	lower than *prd*	lower than *prd*
	prd	high, bending backwards	high, bending backwards
	post. heel	prominent, with cusp and transversal crest	prominent, with transversal crest
	lab. cing.	lacking	present, delicate
M_1, M_2	*crown*	$M_1 > M_2$	$M_1 > M_2$ or $M_1 = M_2$
	tgd/tld	*tgd* higher than *tld*, the same width	*tgd* higher than *tld*, the same width
	pad	low, reduced	well developed
	mtd	higher than *prd*	lower than *prd*
	end	higher than *hyd*, wide at base	higher than *hyd*, wide at base
	hyld	present, weak	weak, often lacking
	post. cing.	weak, visible	visible, well developed
	lab. cing.	marked, below *hyd* lacking	well marked, below *hyd* sometimes lacking
M_3	*crown*	probably $M_2 = M_3$, double-rooted	smaller than M_2 or $M_3 = M_3$, without *hyld*, double-rooted

Legend: *pad* — paraconid; *mtd* — metaconid; *prd* — protoconid; *hyld* — hypoconulid; *hyd* — hypoconid; *end* — entoconid; *post. heel* — posterior heel; *lab. cing.* — labial cingulum; *post. cing.* — posterior cingulum; *tgd/tld* — trigonid/talonid ratio

stemas between the anterior teeth of the jaw. These latter, together with a different dental formula, are in the opinion of the present author sufficient reason for recognizing the difference of the two genera.

MATTHEW and GRANGER (1924, p. 2) have also described another species from Loh: ?*Tupaiodon minutus*. This species is based only on one fragment of lower jaw with P_3—M_1 (A. M. N. H. No. 19135). According to these authors, this species is smaller than *T. morrisi* MATTHEW & GRANGER. ?*T. minutus* also differs from the typical representative of this genus in the presence of a distinct exterior cingulum on M_1 and in the structure of premolars. These latter teeth (it is possible that such premolars could also occur in *T. morrisi* MATTHEW & GRANGER) in ?*T. minutus* are, judging by their description, similar rather to the premolars in both species of *Ictopidium* ZDANSKY. P_3 is double-rooted, its crown consisting of one main cusp and two small basal cusps in the anterior and posterior part of the crown. P_4 is submolariform, with two central, well separated cusps, a small anterior cusp (paraconid?) and posterior cingulum. Lower jaw of ?*T. minutus* MATTHEW & GRANGER differs, however, from both species of *Ictopidium* ZDANSKY in its bigger dimensions of jaw and teeth. If the measurement (9 mm) of P_3—M_2 is correct (MATTHEW and GRANGER described only a fragment of jaw with P_3—M_1!), ?*T. minutus* MATTHEW & GRANGER is not only bigger than both species of *Ictopidium* ZDANSKY, but also bigger than *T. morrisi* MATTHEW & GRANGER.

The above comparisons speak for assigning the lower jaws *Ictopidium tatalgolensis* n. sp. to the genus *Ictopidium* ZDANSKY, and not to *Tupaiodon* MATTHEW & GRANGER. It can not be excluded but that the specimen described as ?*T. minutus* MATTHEW & GRANGER belongs also to the genus *Ictopidium* ZDANSKY.

Family ERINACEIDAE BONAPARTE, 1838
Subfamily ERINACEINAE GILL, 1872
Genus AMPHECHINUS AYMARD, 1849
Amphechinus (Palaeoscaptor) acridens (MATTHEW & GRANGER, 1924)

(Pl. XVIII, Figs. 7—8; Pl. XIX, Figs. 1—3; Text-figs. 1 *G-J*, 2*B*)

1924. *Palaeoscaptor acridens* n. g., n. sp.; W. D. MATTHEW & W. GRANGER, New insectivores..., pp. 2—3, Fig. 2.
1937. ?*Palaeoscaptor* sp.; B. BOHLIN, Oberoligozäne..., pp. 9—10, Figs. 1—3; Pl. 1, Figs. 1, 2?, 9, 10.
1942. *Palaeoerinaceus* cf. *acridens* MATTHEW & GRANGER; B. BOHLIN, The fossil mammals..., pp. 18—19, Fig. 7*c*, *c'*, *c''*, Fig. 8*c*.
1960. *Palaeoscaptor acridens* MATTHEW & GRANGER; B. A. TROFIMOV, Nasekomojadnye..., pp. 37—38, Figs. 1—2.
1962. *Palaeoscaptor acridens* MATTHEW & GRANGER; V. I. GROMOVA, Insectivora..., p. 80, Fig. 38 (after MATTHEW & GRANGER, 1924, Fig. 2).

Material. — Tatal Gol: Z. Pal. No. MgM-III/10 — left lower jaw with P_4—M_3. Z. Pal. No. MgM-III/11 — right lower jaw with P_4—M_1 and M_2 trigonid. Z. Pal. MgM-III/12 — left lower jaw with P_4—M_3. Z. Pal. No. MgM-III/13 — right lower jaw with P_4—M_1. Z. Pal. No. MgM-III/14 — left lower jaw with M_1—M_2. Z. Pal. No. MgM-III/15 — right lower jaw with M_1—M_3, old individual. Z. Pal. No. MgM-III/16 — right lower jaw without teeth. Z. Pal. No. MgM-III/17 — left lower jaw without teeth. Z. Pal. No. MgM-III/19 — right lower jaw with P_4—P_3. Z. Pal. No. MgM-III/20 — right lower jaw with M_2—M_3. Z. Pal. No. MgM-III/21 — left lower jaw with I_2, M_1—M_2. Loh: Z. Pal. No. MgM-III/18 — left lower jaw with P_4—M_1.

Measurements — see Table 4.

Description. — The specimens collected by the Polish-Mongolian Expedition in Tatal Gol and Loh, with the exception of their somewhat smaller size (individual variability), do not differ in the morphology of teeth, arrangement of alveoli (Text-fig. 2*B*) and proportions of premolars, from the type specimen described by MATTHEW and GRANGER (1924) and the specimens from Tatal Gol, described by TROFIMOV (1960).

Table 4

Amphechinus (Palaeoscaptor) acridens (MATTHEW & GRANGER, 1924) — measurements of the jaws and dentition (in mm)

Z. Pal. Nos. MgM-	III/10	III/12	III/19	III/15	III/11	III/18	III/14	III/20	Average
Length of:									
P_4—M_3	7.3	7.0	6.9	—	—	—	—	—	7.0
P_4—M_2	5.9	5.8	5.8	—	—	—	—	—	5.8
P_4—M_1	4.4	4.0	4.0	—	4.4	3.8	—	—	4.2
M_1—M_4	5.7	5,6	5.5	5.4	—	—	—	—	5.5
M_1—M_3	4.5	4.4	4.3	4.5	—	—	4.3	—	4.4
M_3—M_3	3.1	3.1	2.8	3.0	—	—	—	2.8	3.1
P_4 length	1.7	1.6	1.5	—	2.0	1.5	—	—	1.5
width	1.1	1.0	1.0	—	1.1	1.1	—	—	1.1
M_1 length	2.7	2.6	2.6	2.7	2.7	2.6	2.7	—	2.7
width	1.6	1.6	1.6	1.6	1.6	1.6	1.6	—	1.6
M_2 length	2.0	2.0	1.8	2.0	—	—	2.0	2.1	2.0
width	1.5	1.3	1.4	1.5	—	—	1.4	1.5	1.5
M_3 length	1.3	1.2	1.1	1.0	—	—	—	0.9	1.2
width	0.9	0.9	0.9	0.9	—	—	—	0.8	0.9
Depth of jaw below M_1	3.1	2.7	2.7	3.1	3.1	2.7	3.0	2.7	2.8
Thickness in the same place	1.6	1.5	1.6	1.5	1.6	1.6	1.6	1.5	1.6

Discussion. — The specimens of *Amphechinus (Palaeoscaptor) acridens* (MATTHEW & GRANGER, 1924) in the present material differ from the Chinese specimen from Saint-Jacques (San-Tao-Ho), described by TEILHARD DE CHARDIN (1926), in their smaller dimensions and better developed talonid of M_3. In agreement with MCKENNA and HOLTON (1967) the specimen described by TEILHARD de CHARDIN (1926) is assigned by the present author to *Amphechinus (Palaeoscaptor) rectus* (MATTHEW & GRANGER, 1924). In the same way, the present specimens differ from the Oligocene representatives of this species from Shargaltein-Tal and Tabenbuluk, described by BOHLIN (1937, 1942). These differences, however, in the opinion of the present author, are not a sufficient base for assignment of all the mentioned specimens to

different species. All the so far known specimens of *A. (Palaeoscaptor) acridens* (MATTHEW & GRANGER, 1924) differ from *A. (Palaeoscaptor) rectus* (MATTHEW & GRANGER, 1924) in their decidedly smaller dimensions, better developed talonids of the last molars and greater number of alveoli for premolars (cf. Pl. XIX, Figs. 3*b*, 4*b*); Text-fig. 2*A-B*).

The structure of two teeth — P_4 and M_3 — merits special attention. On P_4 one can see (observations based on the material of the present author and literature) rather marked differences in the development of the metaconid. On some specimens of P_4 this is a well visible cusp, separated from the protoconid, on others it appears only in the shape of a protuberance or simply as a more strongly marked metaconidal crest (Text-fig. 1,I). M_3 in the representatives of the genus *Palaeoscaptor* MATTHEW & GRANGER, regarded here as a subgenus, is always double-rooted, with talonid always present, although this can be less or more developed. On the other hand, in the representatives of the subgenus *Palaeoerinaceus* FILHOL, this tooth is single-rooted and the talonid is not developed. This feature, together with the structure of the first incisor (see also BOHLIN, 1942), can also be considered a feature of lower than generic rank. ROMER (1966) and VAN VALEN (1967) considered both genera, as well as the doubtful *Parvericius* KOERNER, 1940, from the Miocene of North America, congeneric with the genus *Amphechinus* AYMARD, 1849.

On the base of earlier investigations on the tooth structure of erinaceids (see BUTLER, 1948, 1956*a*, 1956*b*; FRIANT, 1934*a*, 1934*b*; VIRET, 1938 and other authors) and his own observations, the present writer considers that all these forms, in which the first incisors are rather weakly developed, and the last molars double-rooted with fairly well developed talonids, should be assigned to *Amphechinus (Palaeoscaptor)* AYMARD, 1849 (MATTHEW & GRANGER, 1924). On the other hand, those which have big and strong first incisors and the last molars single-rooted with reduced talonid, should be assigned to *Amphechinus (Palaeoerinaceus)* AYMARD, 1849 (FILHOL, 1879).

Amphechinus (Palaeoscaptor) cf. **rectus** (MATTHEW & GRANGER, 1924)

(Pl. XIX, Fig. 4; Text-fig. 2*A*, *C*)

Material. — Tatal Gol: Z. Pal. No. MgM-III/22 — right lower jaw with M_2. Z. Pal. No. MgM-III/23 — right lower jaw with I_2—P_3 alveoli.

Measurements (in mm), measured along the alveoli: length of I_2—M_3 (from posterior end of I_2 to posterior edge of M_3 crown) — 13.1, length of P_4—M_3 ca. 9.3, length of M_1—M. ca. 6.8, and length/width of M_2 — 2.1/1.8, depth of the jaw below M_2 — 3.8.

Description. — M_2 large, smaller than M_1 (alveoli), but distinctly larger than M_3 (alveoli)$_3$ I_2, strong and large (alveolus). The jaw massive and high. Mental foramen below anterior root of P_4. M_3 double-rooted. P_2 lacking.

Discussion. — The structure of M_2 as well as the size and arrangement of the alveoli (especially I_1 and M_3, see Pl. XIX, Fig. 4*b*; Text-fig. 2*A*), allow one to assign the here described specimens to subgenus *Amphechinus (Palaeoscaptor)* AYMARD, 1849 (MATTHEW & GRANGER, 1924). On the other hand, lack of the rest of the dentition and ascending processes does not allow the present author to assign them definitely to the species *A. (Palaeoscaptor) rectus* (MATTHEW & GRANGER, 1924). In addition, the lack of one alveolus for a premolar seems to indicate that the jaws belong rather to this latter species than to *A. (Palaeoscaptor) acridens* (MATTHEW & GRANGER, 1924).

Amphechinus (Palaeoerinaceus) cf. minimus (BOHLIN, 1942)

(Pl. XIX, Figs. 5—7; Text-fig. 2*D-F*)

Material. — Nareen Bulak: Z. Pal. No. MgM-III/24 — right lower jaw with M_2—M_3. Z. Pal. No. MgM-III/25 — right lower jaw with M_1—M_2 and posterior root of P_4. Z. Pal. No. MgM-III/26 — right lower jaw with P_4—M_2.

Measurements — see Table 5.

Description. — Protoconid of P_4 is nearly in level with the protoconid top of M_1. Crown of P_4 is of trigonid type with three well developed cusps. Labial cingulum visible, fine. M_1—M_2 five-cusped, double-rooted, with distinct labial cingulum. Paraconids of these molars are well

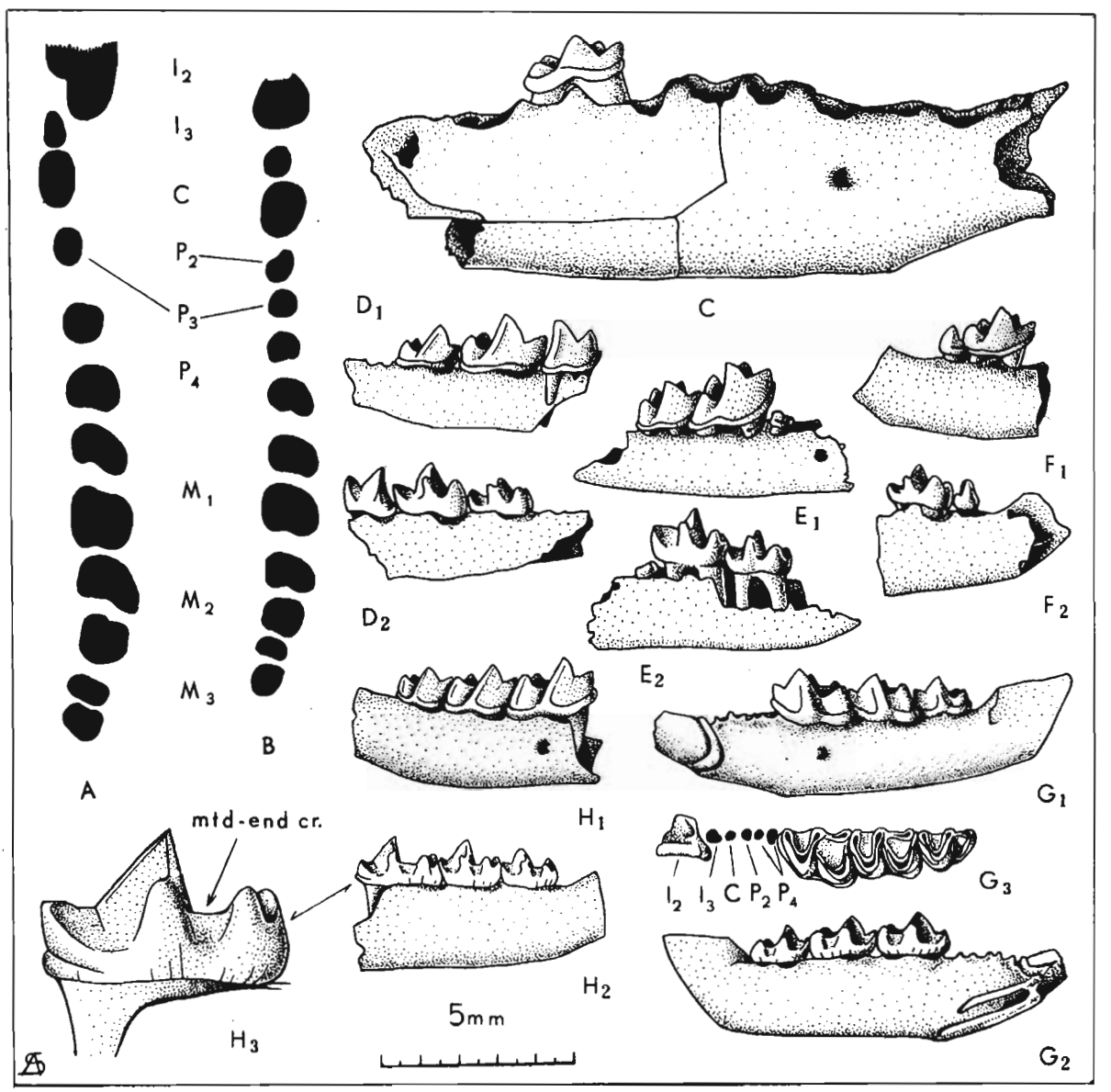

Fig. 2

visible, sharp but lower than protoconids. Protoconids (in trigonids) and entoconids (in talonids) are the highest of all the cusps. M_1 and M_2 are of equal size. M_3 small, single-rooted with crown consisting of trigonid and strongly reduced paraconid. (Pl. XIX, Fig. 5; Text-fig. 2*F*). Trigonids on first two molars slightly longer than talonids but equal in width. Mental foramen situated near anterior root of P_4.

Discussion. — BOHLIN (1942) described a small hedgehog-like form of the genus *Palaeoerinaceus* FILHOL, 1879, from the Upper Oligocene deposits of Tabenbuluk, which he designated *P. minimus* BOHLIN. The specimens at the disposal of the present author differ from this species in their somewhat bigger dimensions of jaws and teeth, structure of P_4 (protoconid more curved backwards) and length of molars. Lack of anterior teeth and posterior section of jaws with ascending processes does not allow the present author to assign these specimens definitely to this species.

Table 5

Amphechinus (Palaeoerinaceus) cf. *minimus* (BOHLIN, 1942) — measurements (in mm)

Z. Pal. Nos. MgM-	III/26	III/25	III/24
Length of:			
P_4—M_3	ca. 5.8	—	—
P_4—M_2	5.0	—	—
P_4—M_1	3.4	—	—
M_1—M_3	ca. 4.6	—	—
M_1—M_2	3.6	3.4	—
M_2—M_3	ca. 2.6	—	2.4
P_4	1.4	ca. 1.2	—
M_1	2.1	2.0	—
M_2	1.6	1.4	1.6
M_3	ca. 0.9	—	0.7
Depth of the jaw below M_1 or M_2	1.8	1.6	1.7

Fig. 2

Amphechinus (Palaeoscaptor) cf. *rectus* MATTHEW & GRANGER, 1924

A Arrangement of alveoli, scheme; ca. × 7·5.
C Right jaw with M_2 from outer side (Z. Pal. No. MgM-III/22).

Amphechinus (Palaeoscaptor) acridens (MATTHEW & GRANGER, 1924)

B Arrangement of alveoli, scheme; ca. × 7·5.

Amphechinus (Palaeoerinaceus) cf. *minimus* (BOHLIN, 1942)

D Right jaw with P_4—M_3: *1* outer view, *2* inner view (Z. Pal. No. MgM-III/26).
E Right jaw with M_1—M_3: *1* outer view, *2* inner view (Z. Pal. No. MgM-III/25).
F Right jaw with M_2—M_3: *1* outer view, *2* inner view (Z. Pal. No. MgM-III/24).

Gobisorex kingae n. gen., n. sp.

G Left jaw with I_3, M_1—M_3: *1* outer view, *2* inner view, *3* occlusal view. Type specimen (Z. Pal. No. MgM-III/27).
H Right jaw with M_1—M_3: *1* outer view, *2* inner view, *3* M_1 from inner side, *mtd-ent cr.* metaconid-entoconid crest. Paratype (Z. Pal. No. MgM-III/28).

Figs. *C-H* — see also Plate XIX

Superfamily **SORICOIDEA** Gill, 1872
Family SORICIDAE Gray, 1821
Subfamily SORICINAE Murray, 1866
Genus **GOBISOREX** nov.

Type species: *Gobisorex kingae* n. sp.
Derivation of the name: *Gobi* — from Gobi Desert, and generic name of *Sorex* Linnaeus.

Diagnosis. — I_2 large, with distinct labial cingulum. Five alveoli between I_2 and M_1, for 4(?) single-cusped teeth. M_1—M_3 are nearly equal in length. M_3 narrower than M_1 and M_2 with a short and narrow talonid with very weak entoconid and without hypoconulid. Talonid of M_1 wider than trigonid. Labial cingulum well developed, distinct under hypoconid and disappearing below protoconid. Entoconid and metaconid on M_1 and M_2 joined by a low metaconid-entoconid crest. Hypoconulid lacking. Mental foramen below anterior root of M_1. Postsymphyseal foramen lacking. Jaw slender, rather long in anterior part and without lower notch or swelling. This genus is monotypic.

Dental formula: $\frac{?}{2?\ 1?\ 2?\ 3}$

Discussion. — See discussion on p. 67.

Gobisorex kingae n. sp.

(Pl. XIX, Figs. 8—9; Text-fig. 2*G-H*)

Type specimen: Z. Pal. No. MgM-III/27 — left lower jaw with I_2 and M_1—M_3.
Referred specimen: Z. Pal. No. MgM-III/28 — right lower jaw with M_1—M_3. Paratype.
Type horizon and locality: Probably late Lower Oligocene (Hsanda Gol Formation), lower layers under the basalt lava; Tatal Gol, Northern Gobi Desert, ca. 20 km east of Loh.
Derivation of the name: *kingae* — from the name of author's daughter Kinga.

Diagnosis. — As for the genus.
Measurements — see Table 6.

Table 6

Gobisorex kingae n. gen., n. sp. — measurements (in mm)

Z. Pal. Nos. MgM-	III/27	III/28
Length of:		
I_2—M_3	6.3	—
M_1—M_3	4.6	4.7
M_1—M_2	3.5	3.6
M_2—M_3	2.7	2.8
M_1	2.0	2.1
M_2	1.7	1.8
M_3	1.3	1.3
Depth of jaw below M_1	1.7	1.7

Description. — Type specimen has basal part of I_2 crown, five small alveoli for five or four single-cusped intermediate teeth, and well preserved M_1—M_3. I_2 is large, massive and per-

haps long, with a top somewhat upwards and forwards directed. Labial cingulum on this tooth is well developed. Behind I_2 is an alveolus, that may belong to a single-rooted I_3(?). The three following alveoli (Text-fig. 2G_3) are smaller than the first and belong perhaps to a canine, first single-rooted premolar P_2, and the last, the same diameter as the preceding one, may belong to P_3 or more probably to anterior root of P_4. The fifth alveolus, as large as the first, belongs without doubt to P_4. M_1 with trigonid somewhat longer and narrower than talonid. Trigonid and talonid cusps well developed, with characteristic features for soricines. Protoconid high, higher than paraconid, and metaconid well developed and somewhat lower than protoconid. Between metaconid and entoconid occurs low, but well visible crest (metaconid-entoconid crest) (Text-fig. 2G_2, H_{2-3}). Labial cingulum distinct, disappearing below protoconid. Hypoconid and entoconid nearly equal in height. Cusps on molars rather strong, wide at the base. Hypoconulid lacking. M_2 does not differ from M_1 and is of equal width and length in both parts of the crown. M_3 somewhat smaller than M_2. Talonid on this tooth shows reduction of postero-labial part of the crown. Entoconid is very weak and hypoconid low. M_3 crown has a narrower trigonid than M_1 and M_2. All molars are double-rooted.

Discussion. — The new genus is monotypic, erected to include *Gobisorex kingae* n. sp. This species comes from the Oligocene deposits of Tatal Gol (Hsanda Gol Formation), probably from the lower layer, lying under the basalt lava level, and is known only from this place in Mongolia.

Data on the occurrence of shrew-like forms, similar to the genus *Gobisorex* n. gen., in the Oligocene of Central Asia are lacking. Primitive representatives of soricoids, belonging to two Oligocene-Miocene subfamilies Metacodontinae BUTLER, 1948 and Heterosoricinae VIRET & ZAPFE, 1951, with several species of such genera as *Plesiosorex* POMEL, 1848, *Heterosorex* GAILLARD, 1915, *Domnina* COPE, 1873, *Paradomnina* HUTCHINSON, 1966, *Ingentisorex* HUTCHINSON, 1966, are known, on the other hand, from Europe and North America (see SCHLOSSER, 1887; SEEMANN, 1938, SCHREUDER, 1940; THENIUS, 1949; VIRET & ZAPFE, 1951; MEIN, 1958; MAWBY, 1960; WILSON, 1960, 1963; ROMER, 1966; HUTCHINSON, 1966; VAN VALEN, 1967).

Gobisorex n. gen. differs from *Plesiosorex* POMEL, 1848 in the considerably smaller dimensions of its jaws and teeth, smaller number of intermediate teeth, structure of molars, especially the labial cingulum, lack of a post-symphyseal foramen, presence of a metaconid-entoconid crest and many other features which makes it easy to distinguish one genus from the other. The data on the occurrence of the genus *Plesiosorex* POMEL, 1848 (see ROMER, 1966; VAN VALEN, 1967) in the Early Miocene beds of Asia are very doubtful, possibly the remains recorded there belong to some other species.

Comparison of *Gobisorex* n. gen. with many European and American species of the genus *Heterosorex* GAILLARD, 1915, shows similarities in the increased number of intermediate teeth, placement of the mental foramen and the fairly considerable hypertrophy of the first incisor (in *Gobisorex* n. gen. this tooth seems to be somewhat more procumbent). In spite of these similarities, *Gobisorex* n. gen. differs from the species of the genus *Heterosorex* GAILLARD, 1915 not only in the smaller dimensions of the jaws and teeth, but above all in the low-crowned molars, weakly differentiated in size, better developed labial cingulum on molars, presence of a metaconid-entoconid crest and lack of a post-symphyseal foramen.

A certain similarity is also noted between *Gobisorex* n. gen. and other Oligocene-Miocene American representatives of Heterosoricinae VIRET & ZAPFE, 1951, such as *Domnina* COPE, 1873, and *Paradomnina* HUTCHINSON, 1966 (HUTCHINSON, 1966). The similarity is limited, however, to agreement in the number of anterior alveoli or intermediate teeth and dimensions of teeth and jaws. *Gobisorex* n. gen. differs from these genera in the lack of a post-symphyseal foramen,

presence of a metaconid-entoconid crest, incomplete labial cingulum on the molars and a weak but visible post-entoconid valley.

From the Oligocene European genus *Crocidosorex* LAVOCAT, 1951 (Soricinae MURRAY, 1866), *Gobisorex* n. gen. differs in the position of its mental foramen, incomplete labial cingulum, low-crowned molars and in size. The genera *Macrosorex* and *?Necrosorex*, found in the Oligocene of Europe (see ROMER, 1966; VAN VALEN, 1967) are doubtful and should be revised.

Gobisorex n. gen. seems to be rather close to the primitive Miocene species of the genus *Sorex* LINNAEUS, 1758, described from Europe and North America. This refers to such species as: *Sorex antiquus* POMEL, 1848 (SCHLOSSER, 1887, 1924; WILSON, 1960), *S. grivensis* DEPÉRET, 1892 (DEPÉRET, 1892; WILSON, 1960), *S. dehmi* VIRET & ZAPFE, 1951 (VIRET & ZAPFE, 1951; MEIN, 1958; WILSON, 1960), *S. collongensis* MEIN, 1958 (MEIN, 1958), *S. vireti* WILSON, 1960 (WILSON, 1960; HUTCHINSON, 1966), *S. compressus* WILSON, 1960 (WILSON, 1960; HUTCHINSON, 1966), or for example *Alluvisorex arcadentes* HUTCHINSON, 1966 (HUTCHINSON, 1966) and others. In all the above named species of shrews, as well as in *Gobisorex* n. gen. (*G. kingae* n. sp.), there is a fairly clear similarity in the increased number of intermediate teeth, presence of a metaconid-entoconid crest and weak hypertrophy of the first incisor, the slenderness of the jaws, especially in the elongation of the anterior part, embracing the intermediate teeth, in the lack of a post-symphyseal foramen and in the proportion of the molars.

It is possible that *Gobisorex* n. gen. represents an earlier stage of soricine evolution showing, at the same time, some resemblances to heterosoricines.

STRATIGRAPHICAL CONCLUSIONS

The deposits of the "River Section" Formation in Yuan-Hü-Hsien (Shansi) were defined by ZDANSKY (1930, p. 83) as Early Oligocene (Sanoisien) on the base of an analysis of the fauna composition, especially taking into consideration the rather frequently occurring typical forms of antracotheres and rodents (e. g. *Cricetodon schaubi*). On the other hand, the deposits of the Hsanda Gol Formation in the Loh locality have been recognized as Lower or Middle or Upper Oligocene (MATTHEW & GRANGER, 1924; TROFIMOW, 1960; GROMOVA, 1962; BELAYEVA, 1964; ROMER, 1966; VAN VALEN, 1967) on the base of a rich and characteristic assemblage of carnivores and rodents. MATTHEW and GRANGER, for instance, stated that: "All of these Carnivora are clearly in an Oligocene stage of evolution and *appear to be rather early Oligocene*" (*l. c.*, pp. 5—6). On the other hand, the remaining assemblage of fauna occurring in Loh has been recognized by these authors as later than Lower Oligocene.

Divergences in assigning the deposits of Hsanda Gol Formation in Loh and Tatal Gol to Lower or Upper Oligocene are most certainly due to the different composition of the all fauna occurring in the two localities. It may also be assumed that the deposits in Tatal Gol, divided by a two meter thick layer of basalt lava belong to different Oligocene horizons. Specimens of *Ictopidium tatalgolensis* n. sp., for instance, collected in Tatal Gol by the Polish-Mongolian Expedition were found only in deposits lying below the layer of basalt lava. But on the other hand, the majority of the specimens of genus *Amphechinus (Palaeoscaptor)* AYMARD, 1849 (MATTHEW & GRANGER, 1924) come from the upper deposits, above the layer of basalt lava.

It seems, therefore, that the deposits below the basalt lava horizon in Tatal Gol could be of earlier age, perhaps even late Lower Oligocene, and are probably of the same age as

the deposits of Khatan Khayrkhan. This latter is, as far as the composition of fauna is concerned, clearly connected with the "River Section" Formation in Yuan-Hü-Hsien, referred by ZDANSKY (1930 p. 83) to late Lower Oligocene (Sannoisien).

Amphechinus (Palaeoerinaceus) minimus (BOHLIN, 1942) was known so far from the late Upper Oligocene deposits of Tabenbuluk (Yindirte, Kansu) (BOHLIN, 1946, pp. 247—249). It occurs also in the new locality of Nareen Bulak, in the deposits presumably of the same age.

Since the submission of material for this article a paper of MELLETT (1968) has come to the author's attention, MELLETT regards of all Hsanda Gol mammals as Middle Oligocene (*l. c.*, pp. 5, 7).

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PLATES

A. SULIMSKI: OLIGOCENE INSECTIVORE REMAINS

PLATE XVIII

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Ictopidium tatalgolensis n. sp. 55

Figs. 1, 5, 6: Khatan Khayrkhan (Western Gobi Desert), probably late Lower Oligocene ("River Section" Formation)
Figs. 2—4: Tatal Gol (Northern Gobi Desert), probably late Lower Oligocene (lower layers under the basalt lava; Hsanda Gol Formation)

Fig. 1. Right jaw with P_4—M_3, and part of P_3 crown: *a* outer view, *b* inner view, *c* stereo-photograph of the same in occlusal view. Type specimen (Z. Pal. No. MgM-III/4).
Fig. 2. Left jaw with P_3—M_1: *a* outer view, *b* inner view, *c* stereo-photograph of the same in occlusal view (Z. Pal. No. MgM-III/5).
Fig. 3. Right jaw with P_3—M_2: *a* outer view, *b* inner view, *c* stereo-photograph of the same in occlusal view (Z. Pal. No. MgM-III/6).
Fig. 4. Right jaw with P_3—P_4: *a* outer view, *b* inner view, *c* stereo-photograph of the same in occlusal view (Z. Pal. No. MgM-III/7).
Fig. 5. Left jaw with P_3, P_4—M_1,: *a* outer view, *b* inner view. Paratype (Z. Pal. No. MgM-III/8).
Fig. 6. Left jaw with M_1—M_3: *a* outer view, *b* inner view, *c* stereo-photograph of the same in occlusal view (Z. Pal. No. MgM-III/9).

Amphechinus (Palaeoscaptor) acridens (MATTHEW & GRANGER) 61

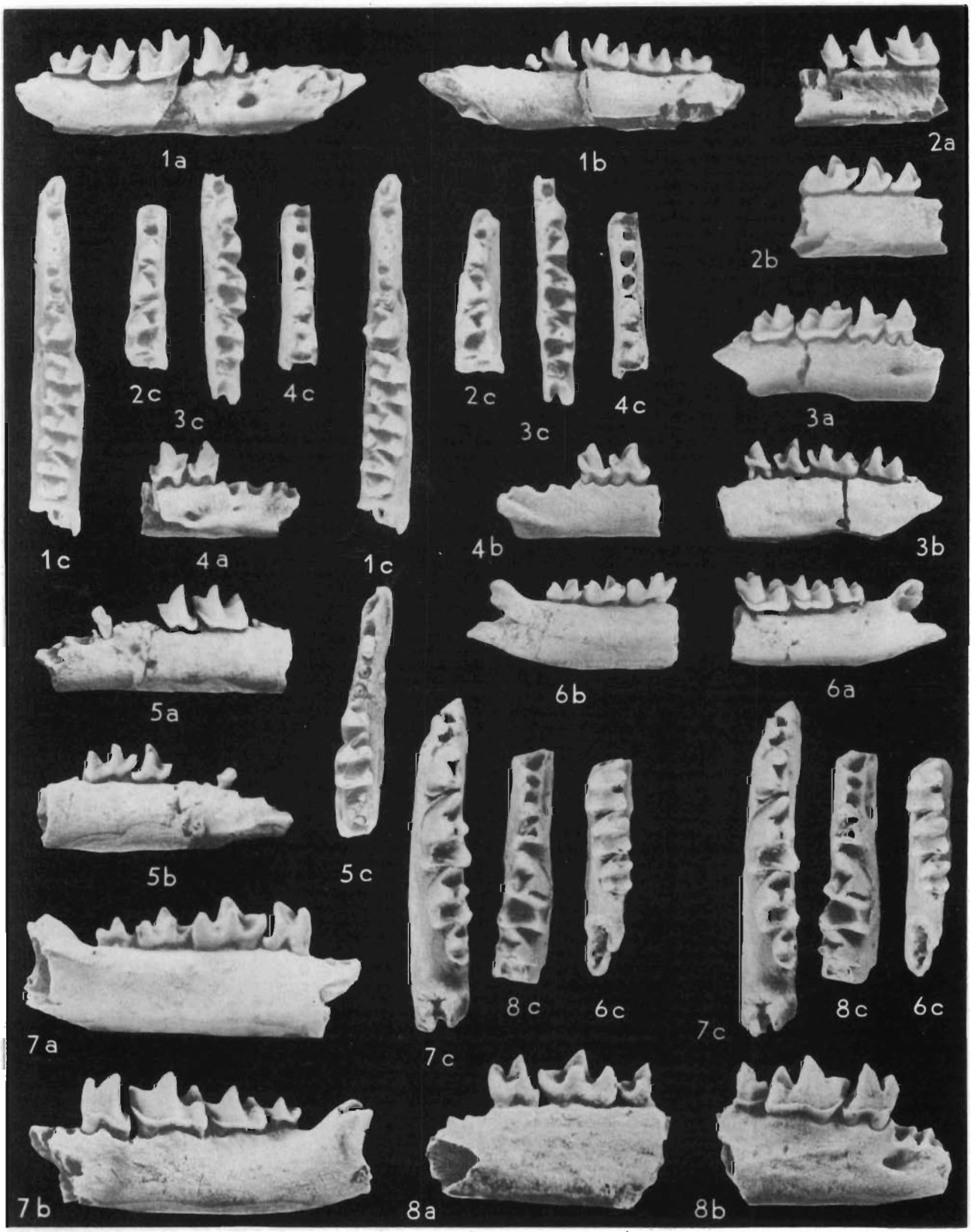
Tatal Gol (Northern Gobi Desert), Middle Oligocene (upper layers of Hsanda Gol Formation)

(see also Plate XIX)

Fig. 7. Left jaw with P_4—M_3: *a* inner view, *b* outer view, *c* stereo-photograph of the same in occlusal view (Z. Pal. No. MgM-III/10).
Fig. 8. Right jaw with P_4—M_1, and M_2 trigonid: *a* inner view, *b* outer view, *c* stereo-photograph of the same in occlusal view (Z. Pal. No. MgM-III/11).

All specimens × 5

Photo: M. Czarnocka



A. SULIMSKI: OLIGOCENE INSECTIVORE REMAINS

A. SULIMSKI: OLIGOCENE INSECTIVORE REMAINS

PLATE XIX

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Amphechinus (Palaeoscaptor) acridens (MATTHEW & GRANGER) 61

Tatal Gol (Northern Gobi Desert), Middle Oligocene (upper layers of Hsanda Gol Formation)

(see also Plate XVIII)

Fig. 1. Right jaw with P_4—M_3: *a* outer view, *b* inner view, *c* stereo-photograph of the same in occlusal view (Z. Pal. No. MgM-III/19).

Fig. 2. Left jaw with P_4—M_3: *a* inner view (Z. Pal. No. MgM-III/12).

Fig. 3. Right jaw with M_1—M_3: *a* outer view, *b* the same in occlusal view. Old individual (Z. Pal. No. MgM-III/15).

Amphechinus (Palaeoscaptor) cf. *rectus* (MATTHEW & GRANGER) 63

Tatal Gol (Northern Gobi Desert), Middle Oligocene (upper layers of Hsanda Gol Formation)

Fig. 4. Right jaw with M_2: *a* outer view, *b* the same in occlusal view (Z. Pal. No. MgM-III/22).

Amphechinus (Palaeoerinaceus) cf. *minimus* (BOHLIN) 64

Nareen Bulak (Western Gobi Desert), probably early Upper Oligocene (Tabenbuluk Formation)

Fig. 5. Right jaw with M_2—M_3: *a* outer view, *b* inner view, *c* stereo-photograph of the same in occlusal view (Z. Pal. No. MgM-III/24).

Fig. 6. Right jaw with M_1—M_2: *a* outer view, *b* inner view (Z. Pal. No. MgM-III/25).

Fig. 7. Right jaw with P_4—M_2: *a* outer view, *b* inner view, *c* stereo-photograph of the same in occlusal view (Z. Pal. No. MgM-III/26).

Gobisorex kingae n. gen., n. sp. 66

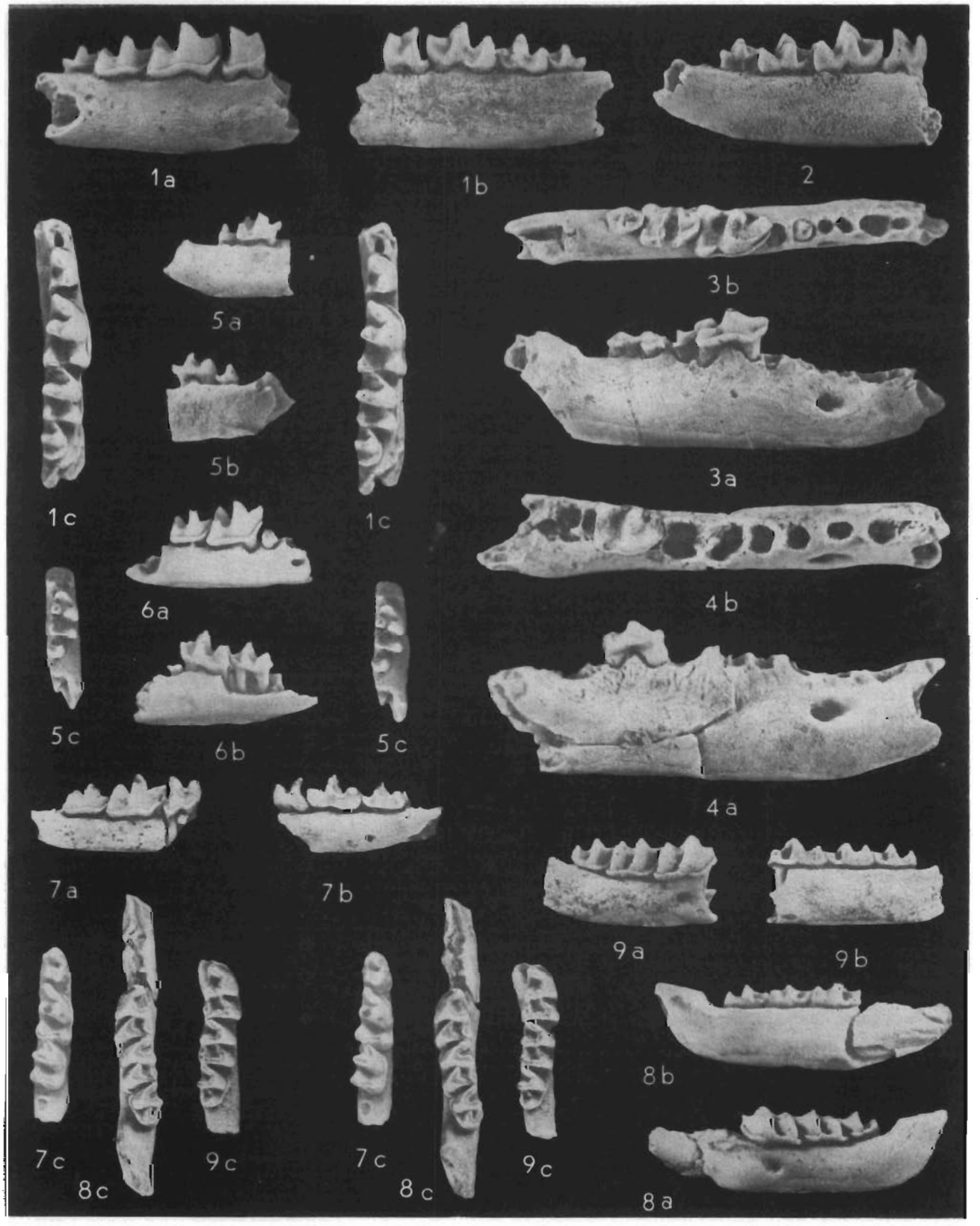
Tatal Gol (Northern Gobi Desert), probably late Lower Oligocene (lower layers under the basalt lava; Hsanda Gol Formation)

Fig. 8. Left jaw with I_2, M_1—M_3,: *a* outer view, *b* inner view, *c* stereo-photograph of the same in occlusal view. Type specimen (Z. Pal. No. MgM-III/27).

Fig. 9. Right jaw with M_1—M_3,: *a* outer view, *b* inner view, *c* stereo-photograph of the same in occlusal view (Z. Pal. No. MgM-III/28).

All specimens × 5

Photo: M. Czarnocka



A. SULIMSKI: OLIGOCENE INSECTIVORE REMAINS