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Some Carnivorous Mammals from the Paleogene of the Eastern Gobi Desert, Mongolia, and the Application of Oligocene Carnivores to Stratigraphic Correlation[1]

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ABSTRACT

A right mandible with P4-M1 of a new viverrid (Carnivora) from the Alag Tsab, late Eocene of the eastern Gobi Desert is described. It represents a new species, *Stenoplesictis indigenus,* belonging to a genus previously known only from the Oligocene in western Europe. Another species, *Stenoplesictis simplex,* n. sp., is described from early Oligocene deposits in the eastern Gobi Desert (the locality of Ergilin Dzo).

A nimravid feliform, *Nimravus mongoliensis* (Gromova, 1959) is described from Ergilin Dzo and Khoer Dzan localities (Ergilin Dzo Formation, Ergilin Member, early Oligocene, Mongolia). Biostratigraphic correlation is suggested for the Oligocene of Mongolia with similar deposits in western Europe based on fossil carnivorous mammal remains. The Ergilin Dzo and Khoer Dzan localities (Ergilin fauna) correlate with MP21 (Soumailles) and the Ulaan Khongil and Schunkt localities (Hsanda Gol fauna) fauna with MP22 (Villebramar) in western Europe.

INTRODUCTION

Despite progress in the study of Mongolian Paleogene mammals, the Carnivora have not been studied adequately and few publications have focussed on this group. The first brief description of Carnivora from the Hsanda Gol Formation in the Valley of the Lakes was given by Matthew and Granger (1924). Gromova (1959) described *Aelurogale* (= *Nim-*

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ravus) *mongoliensis* from the Khoer Dzan locality in Mongolia. Yanovskaya (1970) made a more precise characterization of *Cynodictis* (= *Amphicynodon*) from the Tatal Gol locality on the basis of material found by the Mongolian Paleontological Expedition. Lange-Badré and Dashzeveg (1989) described some of the Carnivora and Creodonta discovered by the Polish-Mongolian Paleontological Expedition in 1964.

In September of 1989, a paleontological field party organized by the Geological Institute of the Mongolian Academy of Science collected remains of Oligocene mammals at the Ergilin Dzo and Khoer Dzan localities of the eastern Gobi Desert. Within the sample of mammals recovered were a few specimens of Carnivora, some of which are described below.

Abbreviations

AMNH	American Museum of Natural History
CAE	Central Asiatic Expedition of the American Museum of Natural History
MNHN	Museum National d'Histoire Naturelle, Institut de Paleontologie, Paris
MPE	Mongolian Paleontological Expedition, 1946–1949, Academy of Science of the USSR
PIN	Paleontological Institute, USSR Academy of Science, Moscow
PMPE	Polish-Mongolian Expedition, Academy of Sciences of the USSR and Mongolian Academy of Sciences
PSS	Paleontology and Stratigraphy Section of Geological Institute, Mongolian Academy of Sciences, Ulaanbaatar

Materials and Methods

The material described here was compared with material housed in the collections of the American Museum of Natural History and the National Museum of Natural History, Paris. Dental measurements were made with needle-point dial calipers to the nearest 0.1 mm. Tooth nomenclature follows MacIntyre (1966).

LOCALITIES AND GEOLOGICAL SETTING (fig. 1)

The Mongolian Paleogene deposits, particularly the Eocene and Oligocene terrestrial faunal localities, were reviewed by Russell and Zhai (1987). The localities containing the fossil remains of carnivorous mammals listed below are described in Dashzeveg (1985, 1991, 1993).

Alag Tsab: The remains of *Stenoplesictis* sp. were found in light-gray sand in the main exposures of Alag Tsab, associated with *Hyaenodon* sp. and *Ardynomys* sp. This locality is definitely older than the lower beds of the Ergilin Dzo Formation as exposed at the classical localities at Ergilin Dzo and Khoer Dzan. A late Eocene age is accepted for the Alag Tsab locality from a sequence that correlates with the Ula Usu locality (Shara Murun Formation) of northern China (Dashzeveg, 1985, 1991).

Ergilin Dzo: Fossils here were discovered in two exposures:

(a) Ergil Obo. *Stenoplesictis elegans* was found in 1990 in yellow sands of the Ergilin Member, containing remains of *Hypsamynodon cessator*.

(b) Bayan Tsab. *Nimravus mongoliensis* is known from this exposure. *Ronzotherium orientalis, Cadurcodon,* and *Bothriodon* were also discovered in the Ergilin Member gravels from the Bayan Tsab exposure (Dashzeveg, 1991).

Khoer Dzan: Fragments of *Nimravus mongoliensis* were found in the Ergilin Member gravels from the western slopes of Khoer Dzan. The specimen of *Nimravus mongoliensis* described by Gromova (1959) most likely came from these gravels.

The boundary between the Eocene and Oligocene in the section of Ergilin Dzo and Khoer Dzan of the eastern Gobi Desert is below the Ergilin Member, where early Oligocene genera of mammals are first observed. The relationship of this boundary to intercontinental faunal correlations and the Eocene/Oligocene boundary in Europe and North America is extensively discussed in Dashzeveg (1991), Dashzeveg and Devyatkin (1986), and Dashzeveg and Russell (1992). See also discussion below.

Ulaan Khongil (= Tatal Gol): Two faunal assemblages of different ages can be distinguished in this locality:

(a) Older assemblages with a large number of rodents, including *Cricetops dormitor, Selenomys mimicus,* and others, from lenses of

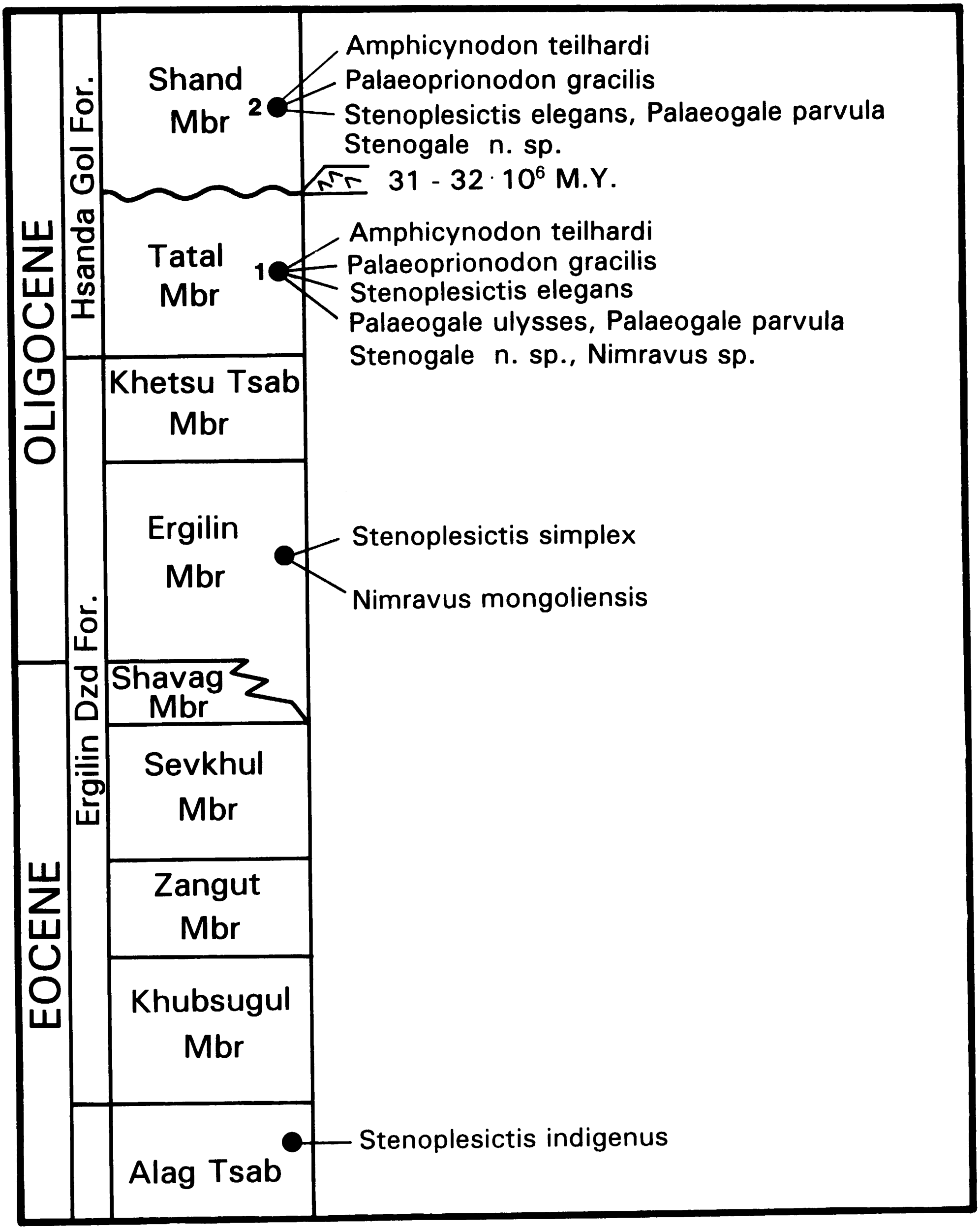

Fig. 1. Generalized scheme of stratigraphy of upper Eocene and lower Oligocene beds of Mongolia containing fossil carnivorous mammal remains. (1) Ulaan Khongil and (2) Schunkt localities.

light-brown sands and gravels in brown mudstone of the Tatal Member of the Hsanda Gol Formation.

(b) A younger assemblage with *Tachyoryctoides obrutschewi* and *Tataromys pricidens* from the Shand Member of the Hsanda Gol Formation (McKenna et al., MS).

In 1989–1990, Dashzeveg collected remains of *Palaeoprionodon gracilis, Stenoplesictis elegans, Amphicynodon teilhardi,* and

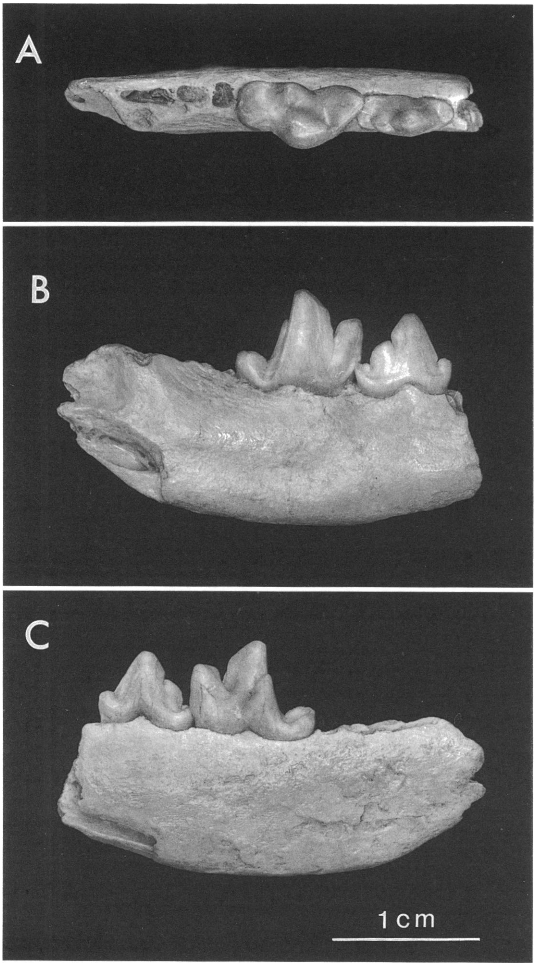

Fig. 2. *Stenoplesictis indigenus,* n. sp. Fragment of right lower jaw with p4-m1, PSS no. 40-15. **A**, Occlusal view; **B**, labial view; **C**, lingual view.

Paleogale sp. in the gravels of the Tatal Member from the main exposures of the Ulaan Khongil locality. Specimens of *Nimravus* sp. described by Toohey (1959) apparently came from the lower bone-bearing level of this locality (Mellett, 1968).

A basalt dividing the Shand Member from the Tatal Member of the Hsanda Gol Formation (fig. 1) has a K-Ar date of 31.2–32.7 Ma (Evernden et al., 1964; Mellett, 1968).

SCHUNKT: The remains of *Palaeogale, Paleopriondon, Amphicynodon,* and *Stenoplesictis* were found in the brown gravels in the sections of the Schunkt locality. Moreover, the rodents *Tatatomys plicidens* and *Tachyoryctoides obrutschewi* were obtained here. The fauna is analogous to that known from the Shand Member at the classic locality of Ulaan Khongil of the Valley of Lakes. The presence of *Tatatomys plicidens* and *Tachyoryctoides obrutschewi* makes it possible to assign the brown gravels of Schunkt locality to the Shand Member (Hsanda Gol Formation) of the early Oligocene of Mongolia. Therefore, the abovementioned genera of Carnivora are contemporary with the Hsanda Gol Formation of the early Oligocene.

SYSTEMATICS

ORDER CARNIVORA

INFRAORDER FELIFORMIA KRETZOI, 1945

SUPERFAMILY FELOIDEA SIMPSON, 1931

FAMILY VIVERRIDAE GRAY, 1821

SUBFAMILY STENOPLESICTINAE SCHLOSSER, 1923

Stenoplesictis Filhol, 1880

Stenoplesictis indigenus, new species
(Figure 2, table 1)

HOLOTYPE: PSS, no. 40/15, a fragment of the right lower jaw with p4-m1; eastern Gobi Desert, Alag Tsab locality (Dashzeveg, 1985).

REFERRED MATERIAL: None.

AGE: late Eocene.

ETYMOLOGY: *indigenus,* from the Latin term for local.

DIAGNOSIS: *Stenoplesictis indigenus* differs from European *Stenoplesictis cayluxi* and *S. minor* (Teilhard de Chardin, 1915) in having a more obtuse angle between the protoconid and paraconid on m1 and differs from the Asian species, *S. elegans* (Matthew and Granger, 1924), in being slightly smaller and in having a larger talonid on m1.

DESCRIPTION: The last premolar is simple and symmetrical, and the anterior accessory cusp is small and low. The posterior accessory cusp is positioned comparatively high on the buccal flank of the main cusp, from which it is separated by a short but distinct notch. The talonid is massive and low.

m1 has a high protoconid and lower paraconid. The metaconid is well expressed, but smaller than the paraconid. The talonid is narrower than the trigonid and the hypoconid is the largest talonid cusp. m2 is not preserved but, judging from the alveoli, it was two-rooted.

DISCUSSION: The Stenoplesictinae are assigned to Viverridae here, acknowledging some of the uncertainties of relationships among early aeluroid Carnivora. In a detailed analysis, Hunt (1989) favored a closer affinity between stenoplesictines and living viverrids than between this subfamily and felids. The reference of this jaw to *Stenoplesictis* is indicated by the high piercing protoconid on m1, the high ratio of trigonid width to talonid width, and the absence of m3. The dentition shows a structure correlated with an emphasis on shearing, or "hypercarnivory," originally ascribed to *Stenoplesictis* and other stenoplesictines by Teilhard (1915). *Stenoplesictis indigenus* is older than all the other known species of *Stenoplesictis* and it is sufficiently generalized morphologically to be a plausible common ancestor of European and Mongolian forms.

Stenoplesictis simplex, new species
(Figures 3, 4; table 1)

HOLOTYPE: PSS, no. 27–25, a fragment of the right lower jaw with p4-m2; eastern Gobi Desert, Ergilin Dzo, Ergil Obo locality.

REFERRED MATERIAL: None.

AGE: early Oligocene: Ergilin Dzo Formation, Ergilin Member.

ETYMOLOGY: *simplex,* from the Latin term for simple, dull.

DIAGNOSIS: Slightly larger than *S. cayluxi* and considerably larger (about 45–50%) than *S. minor.* Differs from the two western European species in having more developed metaconids on m1 and a more elongated m2. Differs from the Mongolian *S. elegans* and *S. indigenus* in being 40% larger in linear dimension and having a more massive talonid on m1.

TABLE 1
Measurements of Lower Cheek Teeth and Mandibles of *Stenoplesictis simplex* and *Stenoplesictis indigenus*

		S. simplex no. 27–25	*S. indigenus* no. 40–75
p4	Length	8.0	6.7
	Width	3.2	2.4
m1	Length	10.0	8.4
	Width	4.5	4.4
m2	Length	4.0	4.0
	Width	3.0	2.8
Height of ramus below p3		13.0	
Height of ramus below m1		13.4	9.4
Width of ramus below p2		5.0	
Width of ramus below m1		5.6	4.4

DESCRIPTION: The mandible is thin; the lower edge of the mandibular corpus is prominent under m1-2. The masseteric fossa is well developed. p4 is asymmetrical with the posterior cutting edge sloping more gently than the anterior. The first molar is very elongated (width/length = 0.45). The shearing edges of the paraconid and protoconid form an obtuse angle, open inside. The metaconid is well developed, separated from the protoconid, and is situated against the posterior internal side of the latter. There is a cingulum on the external side at the base of the crown. The talonid is ¼ the length of the m1 and the hypoconid is well developed. The m2 has two roots and is bunodont; the paraconid, protoconid, and metaconid are of almost equal size.

DISCUSSION: The new species, *Stenoplesictis simplex,* is easily distinguished from most species of the genus by its larger size and the more robust talonid on m1. The fact that *S. simplex* and *S. indigenus* are only represented by holotypes reflects a need for continued sampling at the eastern Gobi localities of Alag Tsab and Ergilin Dzo.

Stenoplesictis elegans
(Matthew and Granger, 1924)

Cynodictis elegans Matthew and Granger, 1924.
Cynodictis elegans Mellett, 1968.
Viverravus constans Matthew and Granger, 1924.

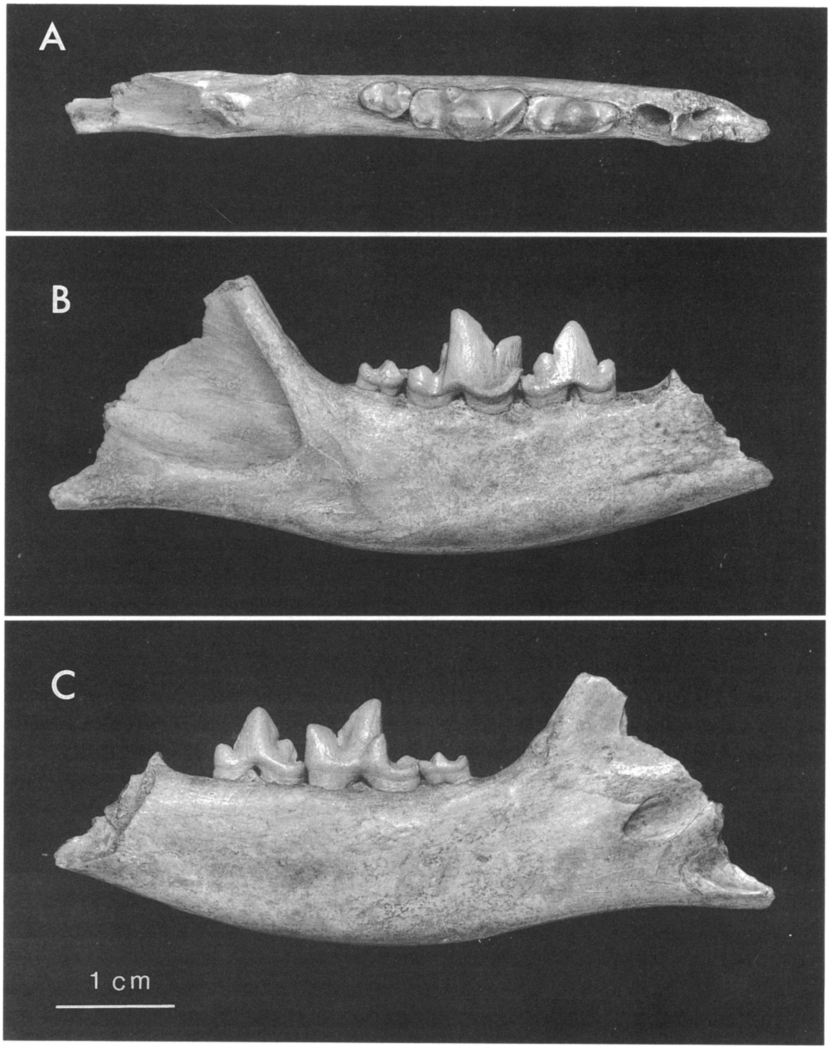

Fig. 3. *Stenoplesictis simplex*, n. sp. Fragment of right lower jaw with p4-m2, PSS no. 27-25. **A**, Occlusal view: **B**, labial view; **C**, lingual view.

REMARKS: Matthew and Granger (1924) provided the first description of two carnivorans, *Cynodictis elegans* and *Viverravus constans,* from the Oligocene Hsanda Gol Formation, Mongolia. Later, Mellett (1968) synonymized *V. constans* with *C. elegans.* Yanovskaya (1970) described *Cynodictis mongoliensis* from the Ulaan Khongil (= Tatal Gol) locality. There are no significant morphological differences between *C. mongoliensis* and *Amphicynodon teilhardi* Matthew and Granger from Hsanda Gol. Consequently, *Cynodictis mongoliensis* is a junior synonym of *Amphicynodon teilhardi* (Lange-Badré and Dashzeveg, 1989).

The specimens from the Oligocene of Ergilin Dzo and Ulaan Khongil localities, Mongolia, differ from the typical forms of *Cynodictis* in the absence of m3. The presence or absence of m3 is a diagnostic indicator of phylogenetic divergence in the order Carnivora, and in this case it serves to distinguish *Stenoplesictis* from typical *Cynodictis.* The high, piercing trigonid and emphasis of prevallid shear on m1, the presence of both a well-developed trigonid and narrow tren-

A

B

C

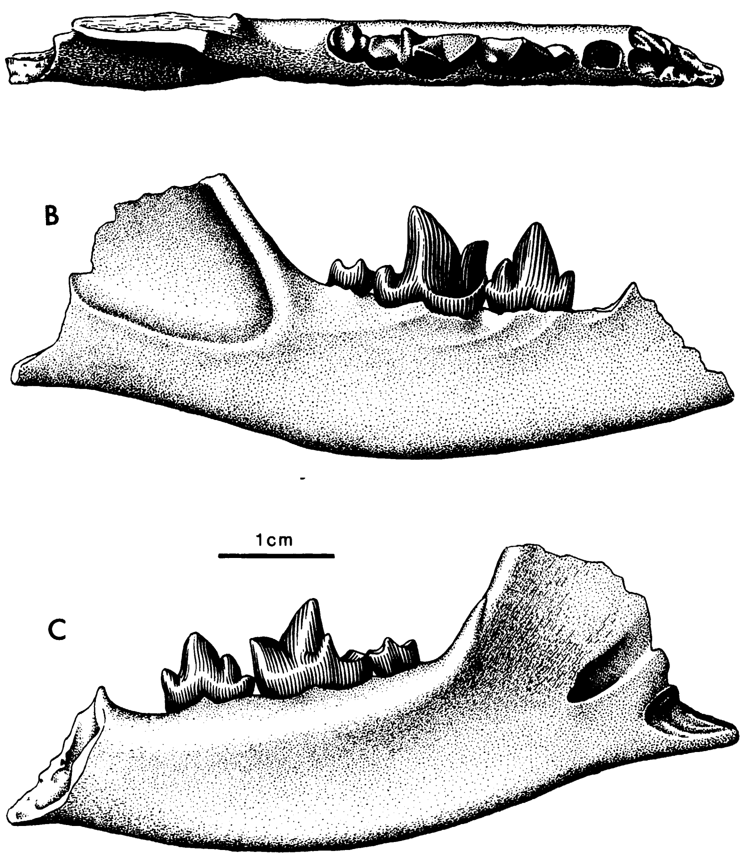

Fig. 4. *Stenoplesictis simplex,* n. sp. Fragment of right lower jaw with p4-m2, PSS no. 27-25. **A**, Occlusal view; **B**, labial view; **C**, lingual view.

chant heel on the much smaller m2, and the absence of m3 support the assignment of *Cynodictis elegans* to the genus *Stenoplesictis.* The latter is well known from the Oligocene of western Europe (Teilhard, 1915).

FAMILY NIMRAVIDAE TROUESSART, 1885

Nimravus Cope, 1879
Nimravus mongoliensis (Gromova, 1959)
(Figures 5, 6, 7; table 2)

Aelurogale mongoliensis Gromova, 1959: 65, fig. 1.

HOLOTYPE: PIN, no. 1379-7, a fragment of the left lower jaw with p2-m2; Khoer Dzan locality, eastern Gobi Desert.

REFERRED MATERIAL: Ergilin Dzo, PSS, no. 21–34, a fragment of left lower jaw with p4-m1 (lacking the protoconid); Khoer Dzan, PSS, no. 27–81, a fragment of left lower jaw with alveoli of p4-m2.

AGE: early Oligocene, Ergilin Dzo Formation, Ergilin Member.

DIAGNOSIS: Differs from western European *N. intermedius* and North American *N. brachyops* in being slightly smaller and in having a short diastema between the c and p1, and by the presence of p1 and a well-developed m2. The latter is usually reduced in the other species.

DESCRIPTION: Medium-sized compared with the abovementioned species, length of m1 18 mm. Massive mandibular corpus; its ventral edge is convex under p4 and m1. The anterior mental foramen is 12 mm below p1

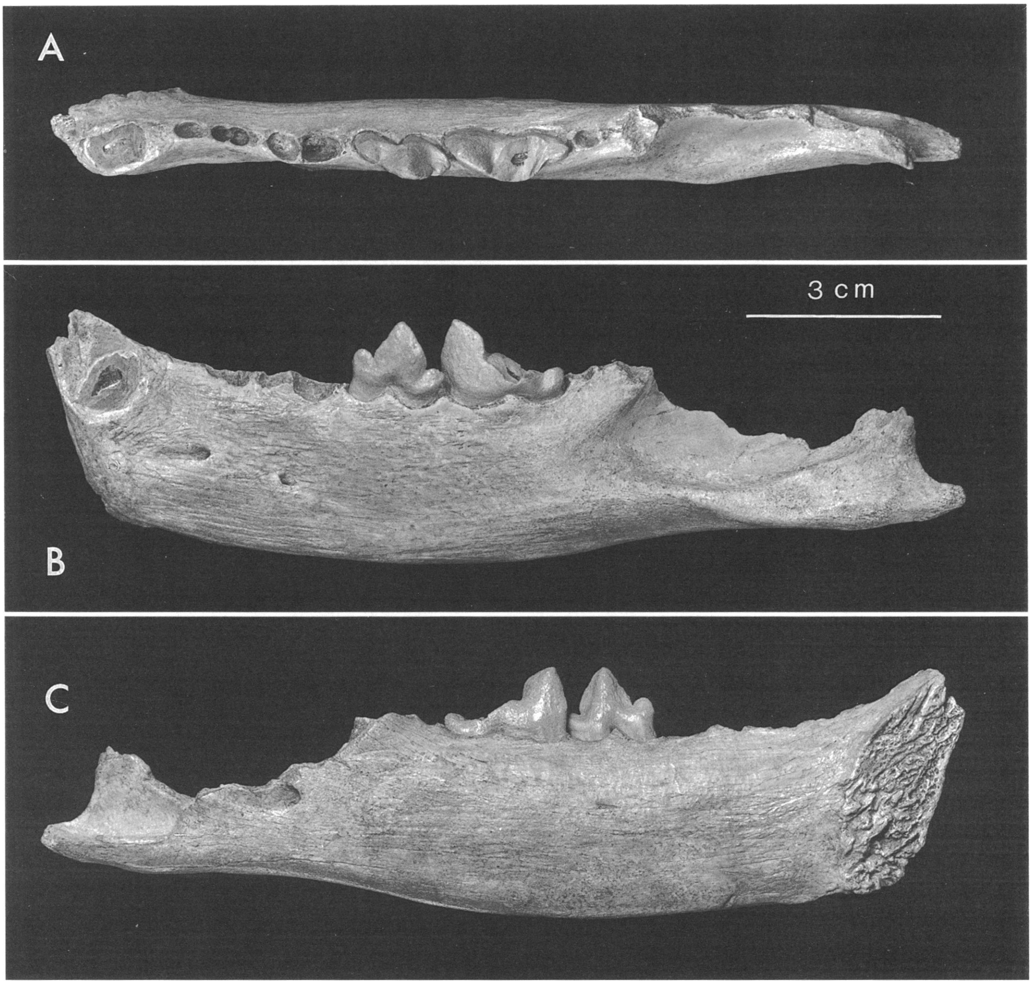

Fig. 5. *Nimravus mongoliensis* (Gromova, 1959). Fragment of left lower jaw with p4-m1, PSS no. 27-34. **A**, Occlusal view; **B**, labial view; **C**, lingual view.

and the posterior one is 11 mm behind the former. The diastema between c and p1 is 4 mm, between p1 and p2 is 2 mm, and between p2 and p3 is 3.5 mm. There are alveoli for i1 and i2, which indicates that i1 was slightly larger than i2. The canine root is large and oval in cross section. p1 is small and with one root, p2 has two roots, and p3 is much larger than p2. The last premolar is massive, and the anterior and posterior slopes of the main cusp form shearing surfaces. The main cusp is almost symmetrical and the anterior and posterior accessory cusps are well developed. The first lower molar is large; its length is 2.5 times its width. The tips of the paraconid and protoconid form an obtuse angle. The talonid of m1 is trenchant, with a well-developed hypoconid. Because the tooth is broken, it is impossible to discern the presence of a metaconid. Gromova (1959) noted the presence of the rudimentary metaconid on m1 in the holotype (PIN no. 1379-9) from Khoer Dzan.

REMARKS: Toohey (1959) gave the first description of *Nimravus* sp. from the material of the Central Asiatic Expeditions (CAE) from the Oligocene of Hsanda Gol, Mongolia. In the absence of an illustration, one cannot judge its relationship with *N. mongoliensis.* Assignment of *N. mongoliensis* to *Nimravus*

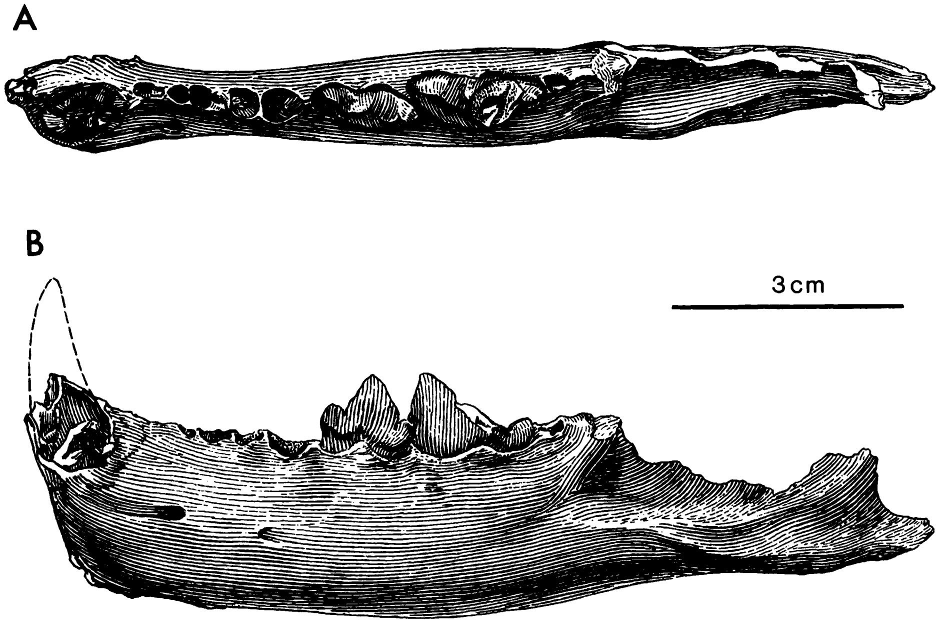

Fig. 6. *Nimravus mongoliensis* (Gromova, 1959). Fragment of left lower jaw with p4-m1, PSS no. 27–34. **A**, occlusal view; **B**, labial view.

is supported by its possession of a very deep mandible (which is particularly robust under p4-m1), a high-crowned p3, a massive shearing p4, the obtuse angle between the paraconid and protoconid of the large m1, the absence or only rudimentary development of the metaconid on m1, and the very trenchant talonid with a well-developed hypoconid on m1 (see diagnosis of *Nimravus* in Toohey, 1959).

BIOSTRATIGRAPHY AND CORRELATION

The Oligocene fauna of Eurasia is dominated by carnivorans of the family Viverridae (*Palaeoprionodon* and *Stenoplesictis*), Nimravidae (*Nimravus*), Ursidae (*Amphicynodon*), and "Mustelidae" (*Palaeogale*), in addition to the rhinos (*Ronzotherium* and *Tenisia*), entelodonts (*Entelodon*), and anthracotheres (*Bothriodon*). Among small mammals, rodents have biostratigraphic significance, but they have not been adequately studied. Their endemic character in the Oligocene of Asia is likely to limit their use in intercontinental correlations.

The following taxa are important for def-

TABLE 2

Measurements of Lower Teeth and Mandibles of *Nimravus mongoliensis*

		No. 1379-7	No. 21-34	No. 27-81
c	length	12.0	12.0	
	width	6.5	6.2	
p1	length	5.5*	3.5*	
	width	2.5	2.8	
p2	length	6.7*	5.2*	
	width	3.5	3.2	
p3	length	12.5*	12.0	
	width	5.7	5.2	
4	length	14.2	13.2	14.8[a]
	width	5.1	5.6	6.8
m1	length	18.2	18.4	22.2[a]
	width	7.2	7.0	8.2
m2	length	4.3	4.5	3.6[a]
	width	2.3	3.0	2.8
Diastema between c and p1		60.5	4.2	
Height of mandibular ramus at level p2 and p3		5.2	26.0	
Height of mandibular ramus below m1		25.0	25.0	22.0
Width of mandibular ramus below m1		12.0	12.0	12.0

[a] By alveoli.

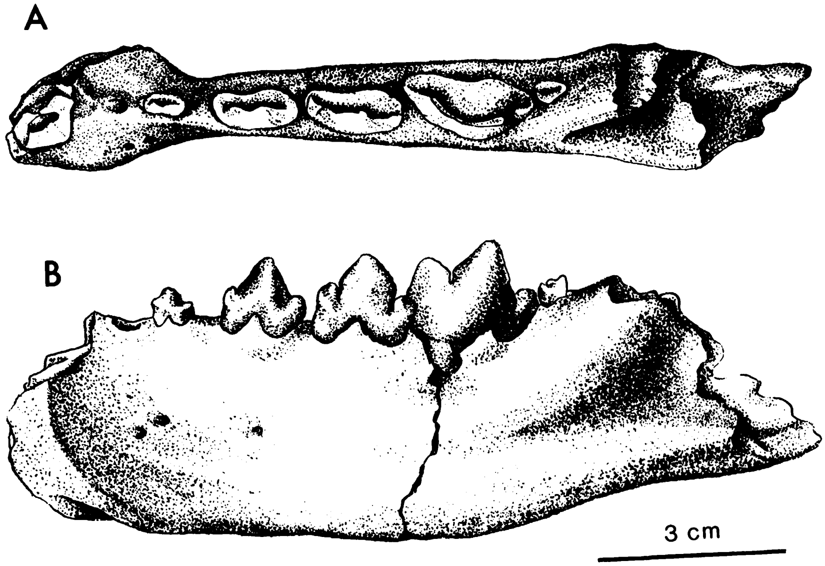

Fig. 7. *Nimravus mongoliensis* (Gromova, 1959). Fragment of left lower jaw with p2-m2, (holotype, PIN no. 1379-7). **A**, Occlusal view; **B**, labial view.

inition of the early Oligocene in Mongolia and China: *Nimravus, Stenoplesictis, Ronzotherium, Entelodon,* and *Bothriodon.* Widely distributed in Central Asia, they characterize a rather short stratigraphic interval. These factors allow them to be used in correlations.

According to Darlington (1957), dominant animal groups have a large areal extent and an abundance of certain species. These occupy new territory, and also fragment into subordinate taxonomic groups across their large zoogeographic range.

A biostratigraphic scheme for the Oligocene continental deposits of Central Asia can be proposed with reference to the western European Oligocene (fig. 8). The Paleogene terrestrial biostratigraphy of western Europe provides a succession of key horizons determined by different mammalian groups (Brunet, 1979; Brunet and Vianey-Liaud, 1987; Cirot and de Bonis, 1992; Russell et al., 1982).

During the Eocene, the Asian and European land areas were separated from each other by a water gap at Turgai Straits. Independent evolution of terrestrial mammals in the two areas precludes direct correlation of the Asian Eocene with that of Europe. However, rapid evolution of mammals and their intensive dispersal in the early Oligocene across the former water barrier allows biostratigraphic correlation between the continents.

The early Oligocene mammalian standard level for the Paris Basin is based on the faunal assemblage at the classic locality of Ronzon. Its age equivalents are well documented by early immigrants after the "Grande Coupure." Of these, the most common are the Asiatic genera *Eucricetodon, Stenofiber, Entelodon,* and *Bothriodon,* which first appeared in Europe in lower Oligocene (Russell et al., 1982; Brunet and Vianey-Liaud, 1987).

Elsewhere, the author made an attempt to relate the Ergilin fauna of Mongolia to the referred Oligocene standard levels of Europe (Dashzeveg, 1991). It is notable that *Entelodon orientalis* from the Ergilin Member at the Khoer Dzan and Ergilin Dzo localities is very similar to *E. magnum* from the standard level of Ronzon in western Europe. *Bothriodon* from the same beds of the Ergilin Dzo Formation resembles *B. velaunus* from Ronzon. Co-occurrence of *Nimravus mongoliensis* and *Stenoplesictis elegans* with *Ronzotherium orientalis* in the Ergilin Dzo and Khoer Dzan localities of Mongolia allows us to confidently assign the Ergilin Member to

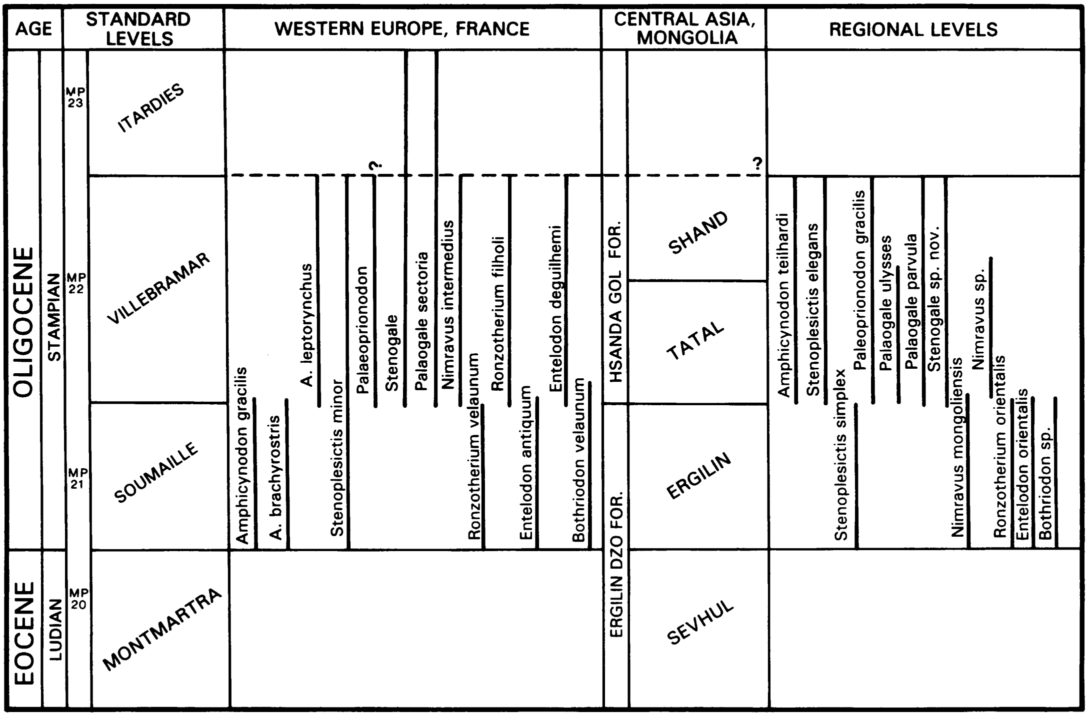

Fig. 8. Correlation of Oligocene deposits in central Asia (Mongolia) and western Europe (France) based on fossil occurrences of carnivorous mammals.

the base of the lower Oligocene and to correlate the Ergilin fauna to the reference level MP21 (Soumailles) of western Europe (Schmidt-Kittler, 1987).

The Asian carnivores, *Nimravus mongoliensis, Stenoplesictis simplex,* and *Palaeoprionodon gracilis,* are more primitive anatomically than closely related western European forms from reference level MP23 (Itardies). This is consistent with an age earlier than MP23 for the Mongolian faunas.

DeBonis (1981) has identified *Palaeogale parvulus* and *P. ulysses* from Mongolia and *P. sectoria* Gervais from the Oligocene deposits of western Europe. This identification was supported by Lang-Badré and Dashzeveg (1989). However, the previous study showed the primitive morphology (smaller size and larger m2) of the Mongolian *P. parvulus* and *P. ulysses* when compared with the European *P. sectoria.* This comparison would suggest a slightly older age for the Hsanda Gol assemblage than MP 22–24 of western Europe, but this conclusion must be assessed in light of overall comparisons of the faunas (see below).

Palaeogale sectoria is considered a characteristic species of the Oligocene deposits of western Europe. The oldest occurrences of *Palaeogale sectoria* are from two localities in the Phosphorites of Quercy, La Plante and Mas de Got, in France (Remy et al., 1987; Lange-Badré and Dashzeveg, 1989). According to the latest mammalian biozonation of the western European Paleogene, these localities correspond to the second half of the early Oligocene (MP22, the Villebramar level). The upper limit of the stratigraphic range of *P. sectoria* coincides with zone MP24. Thus the vertical range of *P. sectoria* is rather broad in western Europe (Brunet and Vianey-Liaud, 1987; Remy et al., 1987). Presumably, these carnivorans migrated from Asia to western Europe in the early Oligocene. In Europe the migrants then evolved rapidly, showing a great diversity of form.

It is important to note that most of the specimens of *Palaeogale parvulus, P. ulysses,* *Palaeoprionodon gracilis,* and *Stenoplesictis elegans* are restricted to the Tatal Member, beneath the basalt flow in the Ulaan Khongil sections.

Thus, the Tatal and Shand members of the Hsanda Gol Formation are younger than the Ronzon standard level and older than the Itardies level (MP 23) of western Europe. These Asian deposits occupy an intermediate position between these standard levels. Judged by their stage of evolution, *Amphicynodon teilhardi* and *Stenoplesictis elegans* can be assigned to an interval equivalent to the Villebramar standard level in western rope, even though these species are not present in western Europe. According to the designation, the Eocene/Oligocene boundary proposed by Swisher and Prothero (1990), the radiometric age of the basalt of the lava separating the Tatal Member from the Shand Member of the Hsanda Gol Formation would be early Oligocene.

On the basis of key genera of Carnivora, the Hsanda Gol fauna (Ulaan Khongil and Schunkt localities) is correlated with the European Paleogene mammalian reference level (niveaux-reperes) of Villebramar (MP22) in the standard western European Oligocene sequence (see Schmidt-Kittler, 1987, for definition). Consequently, the Hsanda Gol Formation, regarded as entirely middle Oligocene by Mellett (1968), Savage and Russell (1983), and Russell and Zhai (1987), should instead be dated as ranging from latest early to earliest middle Oligocene according to the tripartite division of this epoch as defined on mammal faunas by Savage and Russell (1983). This would place it entirely within the early Oligocene of most marine workers, who recognize a bipartite division of the epoch.

The Carnivora discussed herein can be considered to have migrated into western Europe from Asia in early Oligocene. Significant tectonic events occurred near the Eocene/Oligocene boundary, destroying connections between central Asian epicontinental seas and the Tethys. This resulted in compression of the western European basin and formation of the enormous intracontinental basin of Paratethys. Tectonic transformations that occurred in the Alpine geosyncline have promoted redistribution of land and sea masses as well as regional paleogeographic changes.

So, the continental massif of the Alpine orogenic belt may serve as a bridge for early Oligocene mammalian migrations from Asia into western Europe (Heissig, 1979). The faunal migration seems to have gone through the Turgai trough, South Urals, Caucasus, and the Transylvanian belt. After reaching western Europe, these immigrant mammalian taxa flourished and diversified.

CONCLUSIONS

1. Two species of Carnivora (Feloidea)—*Stenoplesictis simplex,* n. sp., and *Nimravus mongoliensis* Gromova, 1959)—from the early Oligocene of the eastern Gobi Desert, Mongolia have important biostratigraphic significance.

2. *Stenoplesictis indigenus,* n. sp., is established for the first time in the Late Eocene of Alag Tsab, Mongolia. It is the oldest occurrence of the genus, suggesting a possible Asian origin.

3. The Ergilin fauna from the Ergilin Dzo and Khoer Dzan localities, eastern Gobi Desert, is correlated with the standard level MP21 (Soumailles) and the Ulaan Khongil fauna from the Valley of Lakes to the standard level MP22 (Villebramar) of western Europe. The Ergilin fauna is placed in the first part of the early Oligocene and the Ulaan Khongil fauna in the last part of the early Oligocene.

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