

A revision of the late Miocene mustelid carnivoran *Eomellivora*

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Abstract. A taxonomic revision of the mustelid carnivoran genus *Eomellivora* ZDANSKY, 1924 (= *Perunium* ORLOV, 1947) is carried out. The genus is removed to the subfamily Mustelinae FISCHER VON WALDHEIM, 1817 (= Peruniinae ORLOV, 1947). It consists of the single lineage or species *Eomellivora wimani* ZDANSKY, 1924 that evolved during the Late Miocene in Eurasia and North America. The characteristic feature in the evolution of this species was a progressive anteroposterior shortening and buccolingual broadening of the upper canines and the upper and lower premolars, as well as an increase in the massiveness of the lower canines, associated with a gradual augmentation in the number and size of the secondary cusps on the premolars. The species comprised the primitive Vallesian (early Late Miocene) chronosubspecies *Eomellivora wimani piveteaui* OZANSOY, 1965 known from Europe and the derived Turolian, Baodean, and Hemphillian (late Late Miocene) chronosubspecies *Eomellivora wimani wimani* ZDANSKY, 1924 occurring in Europe, Asia, and North America. The synonymy of *Eomellivora wimani piveteaui* includes *Eomellivora liguritor* CRUSAFONT PAIRÓ & GINSBURG, 1973, whereas that of *Eomellivora wimani wimani* contains *Eomellivora californica* KRETZOI, 1942, *Eomellivora hungarica hungarica* KRETZOI, 1942, *Eomellivora hungarica altera* KRETZOI, 1942, *Perunium ursogulo* ORLOV, 1947, *Eomellivora rumana* ORLOV, 1947, and *Eomellivora orlovi* KRETZOI, 1965. The species '*Eomellivora*' *necrophila* PILGRIM, 1932 and '*Eomellivora*' *tenebrarum* PILGRIM, 1932 are excluded from the genus *Eomellivora*. Key words: systematics, Mustelinae, Peruniinae, *Eomellivora*, *Perunium*, Miocene, Europe, Asia, North America.

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I. INTRODUCTION

The genus *Eomellivora* was erected by ZDANSKY (1924) for his new species *Eomellivora wimani* from the Upper Miocene of China. Since that time, ten new species-group taxa assigned to *Eomellivora* have been described from European, Asian, and North American sites of late Tertiary age. All these taxa, including ZDANSKY's *Eomellivora wimani*, were based on small samples of one to three or exceptionally seven specimens, which have until quite recently constituted almost the whole of the available material attributed to *Eomellivora*.

A rich accumulation of more than a hundred remains of *Eomellivora*, which have recently been collected from about 3 m³ of upper Miocene deposits in a limestone quarry near Gritsev in western

Ukraine, has for the first time enabled a thorough study of the range of individual variation in a population of that genus and induced us to make an attempt at revising it taxonomically and reconstructing its pattern of evolution.

The geochronologic unit Late Miocene as used in this paper corresponds to the Vallesian and Turolian European Land Mammal Ages (DE BRUIJN et al. 1992) and the Bahean and Baodean East Asian Land Mammal Ages (LI et al. 1984), and the Clarendonian and Hemphillian North American Land Mammal Ages (TEDFORD et al. 1987). The Vallesian Age contains the Mammal Neogene (MN) units 9 and 10 while the Turolian Age comprises MN 11, 12, and 13 (DE BRUIJN et al. 1992).

A b b r e v i a t i o n s f o r c o l l e c t i o n s: **IPS**, The M. Crusafont Institute of Palaeontology, Sabadell, Spain; **LACM-CIT**, California Institute of Technology Collection, Natural History Museum of Los Angeles County, Los Angeles, USA; **PIN**, Palaeontological Institute, Russian Academy of Sciences, Moscow, Russia; **PMK**, Palaeontological Museum, Central Museum of Natural History, National Academy of Sciences of Ukraine, Kiev, Ukraine; **PMU**, Palaeontological Museum, University of Uppsala, Uppsala, Sweden.

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II. SYSTEMATICS

Class Mammalia LINNAEUS, 1758

Order Carnivora BOWDICH, 1821

Suborder Caniformia KRETZOI, 1943

Infraorder Arctoidea FLOWER, 1869

Parvorder Arctomorpha WOLSAN, 1993

Superfamily Musteloidea FISCHER VON WALDHEIM, 1817

Family Mustelidae FISCHER VON WALDHEIM, 1817

Subfamily Mustelinae FISCHER VON WALDHEIM, 1817

A d d i t i o n a l s y n o n y m: Peruniinae ORLOV, 1947a: pp. 947, 949, 950. Type genus: *Perunium* ORLOV, 1947a. Synonymized with Mustelinae also by THENIUS & HOFER (1960: p. 164) through the synonymizing of the type genus with *Plesiogulo* ZDANSKY, 1924 and referral of the latter to the Mustelinae, by GROMOVA et al. (1962: pp. 206, 208; 1968: pp. 274, 277), DE MUIZON (1982: p. 268), and THENIUS (1989: p. 254) through the placement of the type genus within the Mustelinae, and by WOLSAN & SEMENOV (1994: pp. 83, 84) through the inclusion of the type species of *Perunium* in *Eomellivora* and ascription of the latter genus to Mustelinae. Synonymized with Mellivorinae GRAY, 1865 by OZANSOY (1965: pp. 16, 23-25) through the synonymizing of the type genus with *Eomellivora* and assignment of the latter to Mellivorinae, by WEBB (1969: pp. 67, 68) through the attribution of the type genus to Mellivorinae, and by LUNGU (1978: pp. 41, 45, 46, tables 2, 3) through the inclusion of the type species of *Perunium* in *Eomellivora* and referral of the latter genus to Mellivorinae. Synonymized with Guloninae GRAY, 1825 by BARYSHNIKOV (1988: pp. 56, 57) through the assignment of the type genus to Guloninae.

C o m m e n t s. The subfamily Mustelinae has recently been rediagnosed by WOLSAN (1993: p. 378) as characterized by the following derived features: the sagittal crest of the skull present in adults so that the dorsal cranial crests are Y-shaped, the posterior border of the caudal-entotympanic bone of the auditory bulla situated behind the posterior margin of the fossa leading to the posterior lacerate foramen, the suprameatal fossa of the middle-ear cavity partially or completely closed by the posterior wall of the external auditory meatal tube anteriorly, the postlateral sulcus of the brain present, the carnassial notch of P^4 absent, M^1 smaller than P^4 , the lingual half of the M^1 crown equal in anteroposterior length to or longer than the buccal one, the lingual and buccal halves of the M^1 crown separated from each other by an anteroposterior constriction, M^2 absent, the trigonid of M_1 more than three times as long as the talonid, the metaconid of M_1 distinctly lower than the paraconid or absent, and M_2 single-rooted. The genus *Eomellivora* is included in the Mustelinae because it shows all the diagnostic characters of the subfamily, with the exception of the bulla condition, which is, however, regarded here as a secondary development. Since *Perunium*, which is the type genus of the subfamily Peruniinae, appears to be a synonym of *Eomellivora* (see below), the name Peruniinae ORLOV, 1947a is therefore synonymized with Mustelinae FISCHER VON WALDHEIM, 1817.

Genus *Eomellivora* ZDANSKY, 1924

A b b r e v i a t e d s y n o n y m y: *Eomellivora* ZDANSKY, 1924: pp. 61, 65-67, 151, captions to pls XI, XII.

Pliogulo KROKOS in VOZNESENSKY, 1937: p. 60. Nomen nudum.

Perunium ORLOV, 1947a: pp. 947-950. Type species, by monotypy, *Perunium ursogulo* ORLOV, 1947a. Synonymized with *Eomellivora* also by OZANSOY (1957: p. 43; 1965: pp. 16, 24, 25) explicitly, as well as by LUNGU (1978: pp. 45, 46, tables 2, 3) and WOLSAN & SEMENOV (1994: pp. 83, 84) through the inclusion of the type species in *Eomellivora*. Synonymized with *Plesiogulo* ZDANSKY, 1924 by THENIUS & HOFER (1960: p. 164), ROMER (1966: p. 384), and HERÁŇ (1982: p. 35).

Pliogulo KROKOS in KRETZOI, 1965: pp. 131, 132. Nomen nudum.

E m e n d e d d i a g n o s i s. Musteline mustelids of very large size, distinguished morphologically by a combination of the following features: auditory bulla relatively small, with a rugose ventral surface; posterior carotid and posterior lacerate foramina closely adjacent to each other; premolar teeth crowded; P^1 single-rooted; P^3 with cingulum continuous or nearly continuous around the base of its crown, and with one or two secondary cusps on the posterior slope of its principal cusp; P^4 with cingulum almost continuous around its crown base, with a bulged buccal base of its crown at the level between the paracone and metacone, with a subconical protocone, and with the paracone-protocone and paracone-parastyle crests; M^1 with cingulum conspicuously swollen buccally and lingually, with a vestigial metacone, with an arched, ridge-shaped protocone continued into the anterior protocone crest (or anterocrista), and with its talon being about equally expanded anteriorly and posteriorly; P_1 single-rooted; P_4 with a secondary cusp on the posterior slope of the principal cusp; M_1 with cingula anterobuccally, posterobuccally, and lingually at the level of the carnassial notch, without any differentiated metaconid but with a well-marked crest passing across the lingual surface of the protoconid from the tip of this cusp through the bulged basal portion of the crown at the posterolingual corner of the trigonid to continue into the lingual talonid crest that lingually encloses a vestigial talonid basin, as well as with a single but strong talonid cusp, the hypoconid, being nearly centrally positioned on the talonid; M_2 elongated anteroposteriorly, with a low crown surrounded by a cingulum and with a very small, almost centrally placed, single cusp, the protoconid, being linked with the cingulum by crests anteriorly, posteriorly, and lingually.

Type and only species. By monotypy, *Eomellivora wimani* ZDANSKY, 1924.

Excluded species: '*Eomellivora*' *necrophila* PILGRIM, 1932, designated as the type species of the genus *Sivamellivora* KRETZOI, 1942 by KRETZOI (1942: pp. 320, 322), and '*Eomellivora*' *tenebrarum* PILGRIM, 1932, transferred to the genus *Sivamellivora* by KRETZOI (1942: p. 322) and to the subgenus *Hoplictis* GINSBURG, 1961 of the genus *Ischyrictis* HELBING, 1930 by SCHMIDT-KITTLER (1976: pp. 36, 38).

Occurrence. The early and late Late Miocene of Europe and the late Late Miocene of Asia and North America.

Comments. The name *Perunium* ORLOV, 1947a is synonymized with *Eomellivora* ZDANSKY, 1924 because the type species of these genera, *Perunium ursogulo* and *Eomellivora wimani*, constitute synonyms as evidenced below.

Eomellivora wimani ZDANSKY, 1924

Synonymy. See synonymy lists of the included chronosubspecies.

Emended diagnosis. Same as for the genus.

Lectotype. Designated by KRETZOI (1965: p. 132), a facial-palatal portion of skull (PMU M3692) associated with partial right and left dentaries (PMU M3693), preserving all teeth except the right M₂, figured by ZDANSKY (1924: pl. XI, fig. 6; pl. XII, fig. 2).

Type locality and age: Shangyingou (Shang-Yin-Kou, Locality 12), China; Baodean (LI et al. 1984).

Included chronosubspecies: *Eomellivora wimani wimani* ZDANSKY, 1924 and *Eomellivora wimani piveteaui* OZANSOY, 1965.

Comments. When the finds of *Eomellivora* are arranged according to stratigraphic sequence, a progressive trend towards greater number and size of secondary premolar cusps through time can be observed (Table I, WOLSAN & SEMENOV 1994). The increase in number and size of the secondary cusps is associated with anteroposterior contraction and buccolingual extension of the premolars and the upper canines and with an augmentation in the massiveness of the lower canines (Fig. 1). Apart from the characters involved in this trend, no others could be scored to distinguish the Vallesian population of *Eomellivora* from the Turolian, Baodean, or Hemphillian one. This plainly justifies the conclusion that all the populations are simply parts of the single lineage or species *Eomellivora wimani* that evolved during the Late Miocene in Eurasia and North America. For purposes of practical application to biostratigraphy, we subdivide this species into the two chronosubspecies: the primitive Vallesian *Eomellivora wimani piveteaui* OZANSOY, 1965 and the derived Turolian, Baodean, and Hemphillian *Eomellivora wimani wimani* ZDANSKY, 1924.

Eomellivora wimani wimani ZDANSKY, 1924

Abbreviated synonymy: *Eomellivora Wimani* ZDANSKY, 1924: pp. 61, 151, pl. XI, figs 5, 6, pl. XII, figs 1, 2.

Eomellivora aff. *hungarica* KRETZOI in KADIĆ & KRETZOI, 1930: p. 48. Nomen nudum.

Pliogulo gigas KROKOS in VOZNESENSKY, 1937: p. 60. Nomen nudum.

Eomellivora californica KRETZOI, 1942: pp. 319, 322. Lectotype, designated herein, LACM-CIT 50/1210, associated partial right and left maxillae with right and left P³-M¹, figured by STOCK & HALL (1933: pl. 4, figs A, B). Type locality and age: Kern River Formation site 1, California, USA; early Hemphillian.

Table I

Occurrence and size of secondary cusps on premolar teeth in *Eomellivora wimani piveteaui* and *Eomellivora wimani wimani*. Sources: *Eomellivora wimani piveteaui*, OZANSOY (1965: p. 23, pl. II, figs 1, 5), LUNGU (1978: pp. 42, 45, 46, text-figs 8, 10, pl. I, figs 1, 2, 5, 6), GINSBURG et al. (1981: pl. II, fig. 6), and this paper (PMK Ca 1, 15-19, 39-62, 64, 66, 82-88, 90-102, 112-121, 208); *Eomellivora wimani wimani*, SIMIONESCU (1938b: text-figs 23, 24, pl. II, figs 2, 3), KRETZOI (1942: p. 320, pl. XXII, figs 1, 2, 5, 7; 1965: p. 130, pl., figs 4-7), and this paper (cast of LACM-CIT 50/1210; PIN 655-1, 655-2, 655-3; PMU M3692, M3693, M3847)

Character	<i>Eomellivora wimani piveteaui</i>	<i>Eomellivora wimani wimani</i>
P ¹ anterior secondary cusp	absent	absent
P ¹ posterior secondary cusp	absent	absent
P ² anterior secondary cusp	absent	absent
P ² posterior secondary cusp	absent	absent to very small
P ³ anterior secondary cusp	absent	very small to small
P ³ posterior secondary cusp	absent to very small	small
P ⁴ anterior secondary cusp	absent	absent to very small
P ₁ anterior secondary cusp	absent	absent
P ₁ posterior secondary cusp	absent	absent
P ₂ anterior secondary cusp	absent	absent to very small
P ₂ posterior secondary cusp	absent	absent to very small
P ₃ anterior secondary cusp	absent	absent to small
P ₃ posterior secondary cusp	absent to small	very small to small
P ₄ anterior secondary cusp	absent to small	small to very large
P ₄ posterior secondary cusp	very small to large	large

Eomellivora hungarica KRETZOI, 1942: pp. 319-322, pl. XXII, figs 1-3, 6. Holotype, by original designation, a partial left dentary with C₁, P₂, P₄, and M₁, figured by KORMOS (1914: text-fig. 17) and KRETZOI (1942: pl. XXII, figs 1, 2). Type locality and age: Polgárdi 2, Hungary; Turolian, MN 13.

Eomellivora hungarica altera KRETZOI, 1942: pp. 321, 322, pl. XXII, figs 4, 5, 7-10. Holotype, by original designation, a left P⁴, figured by KRETZOI (1942: pl. XXII, fig. 5). Type locality and age: Csákvár, Hungary; Turolian, MN 11.

Perunium ursogulo ORLOV, 1947a: p. 947, text-figs 1-4. Holotype, by monotypy, a nearly complete skull preserving all teeth except the right P¹ (PIN 655-1), associated with partial right and left dentaries bearing the right I₃-M₂ and left M₁ and M₂ (PIN 655-2), figured by ORLOV (1947a: text-figs 1-4; 1947b: text-figs 1, 2; 1947c: text-figs 1, 2, 3A, 4, 5A-C, 6, 7A, 8-12; 1948: text-figs 1, 2, 3a, 4, 5a-c, 6, 7a, 8-12), PIVETEAU (1961: text-figs 133, 200), GROMOVA et al. (1962: text-fig. 222; 1968: text-fig. 222), THENIUS (1969a: text-figs 390, 391a; 1969b: text-figs 390, 391a), and MÜLLER (1970: text-fig. 177; 1989: text-fig. 204). Type locality and age: Grebeniki, Ukraine; Turolian, MN 11.

Eomellivora rumana ORLOV, 1947c: pp. 26, 56, tables 2, 6 [not *Lutra rumana* SIMIONESCU, 1922, not *Pannonictis rumana* (SIMIONESCU, 1922)]. Holotype, by monotypy, a partial left maxilla with C¹ and P⁴, figured by SIMIONESCU (1938b: text-figs 23, 24, 25/6, pl. II, figs 2, 3). Type locality and age: Cimislia, Moldova; Turolian, MN 12.

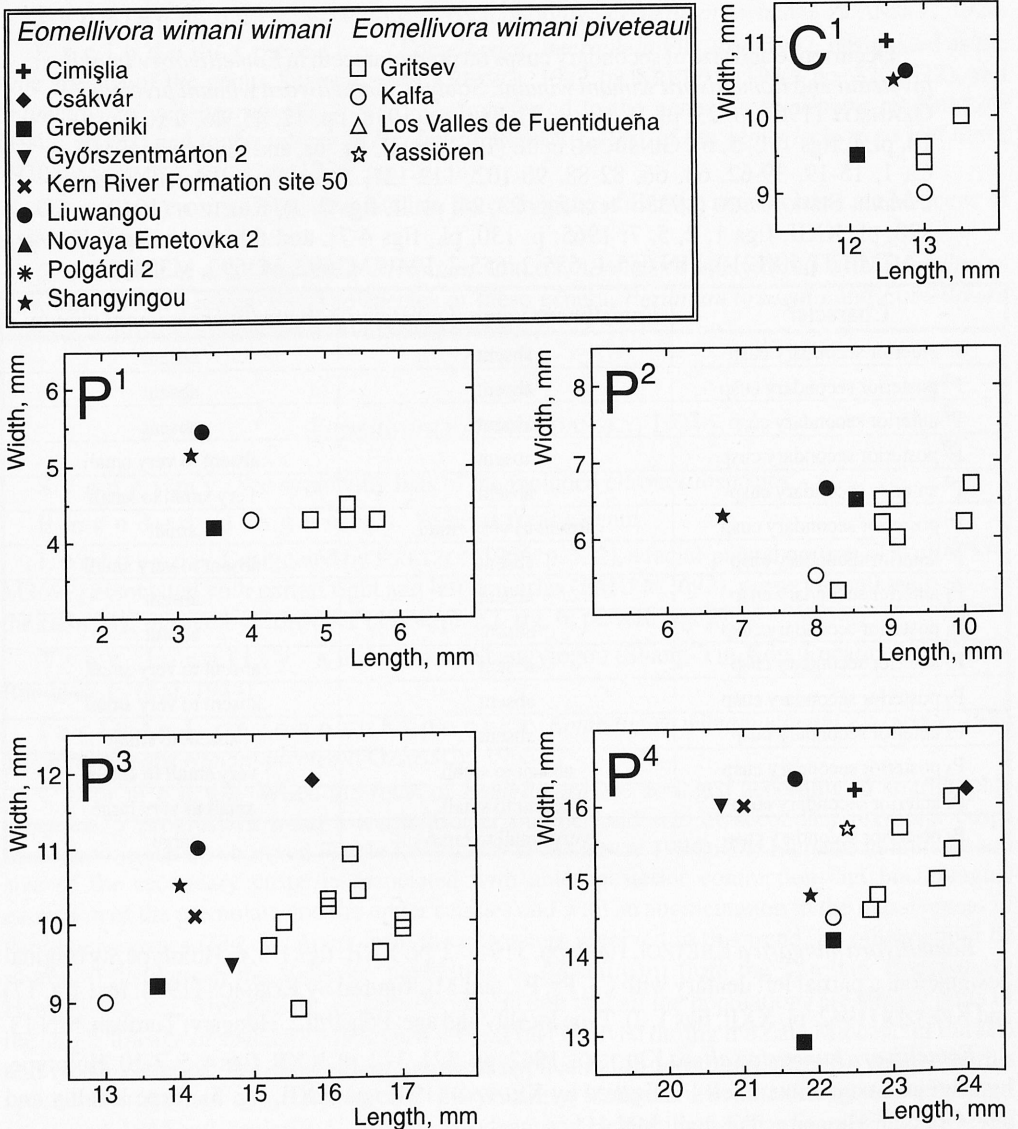
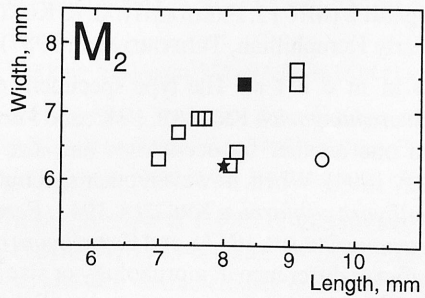
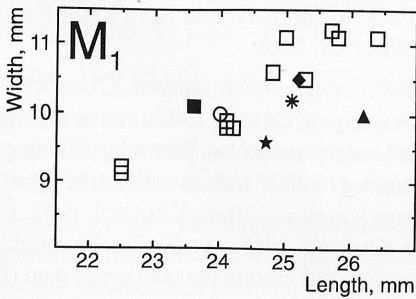
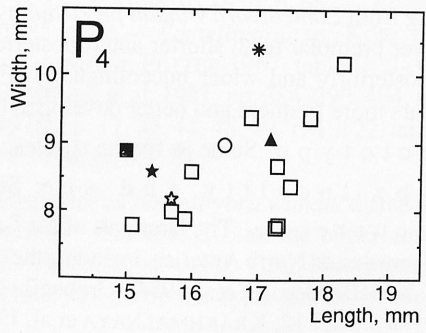
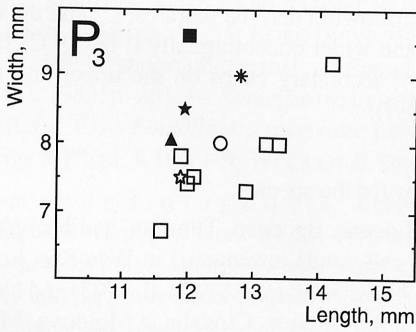
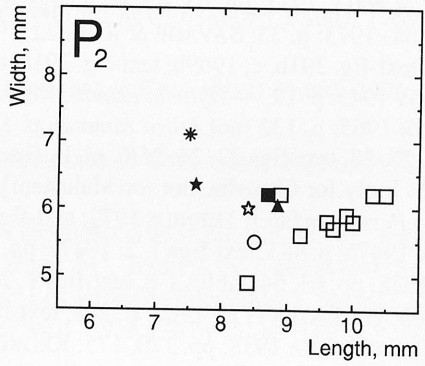
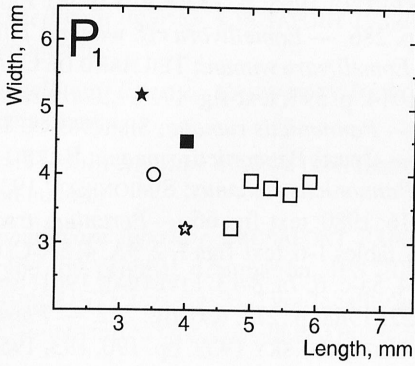
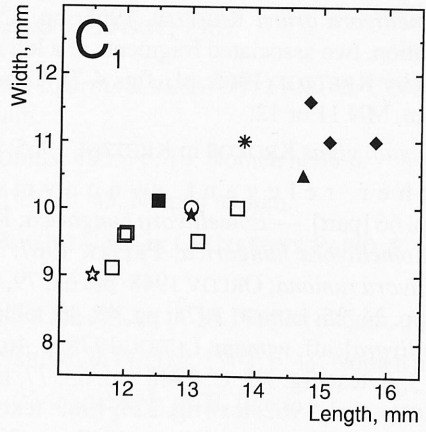
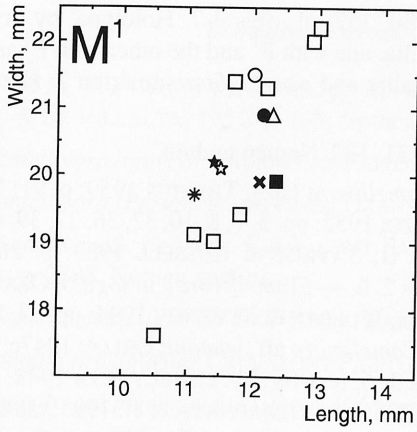


Fig. 1. Relationships between lengths and widths of teeth in *Eomellivora wimani wimani* and *Eomellivora wimani piveteaui* from various localities. Sources: Cimişlia (C¹ width), SIMIONESCU (1938b: p. 28); Cimişlia (C¹ length), this paper, an estimation based on fig. 2 of pl. II in SIMIONESCU (1938b), instead of the obviously erroneous original data published on pp. 27 and 28 in SIMIONESCU (1938b); Cimişlia (P⁴), KRETZOI (1965: p. 132); Csákvár, KRETZOI (1942: p. 321); Grebeniki, this paper, PIN 655-1 and 655-2 (for P⁴ the dimensions of the right and left teeth are presented separately because of their significant discrepancy); Gritsev, this paper, PMK Ca 1, 3, 5, 15, 17-27, 30-32, 37-50, 52-62, 64-68, 70, 71, 82-87, 89-103, 105-109, 112-121, 202-208; Győrszentmárton 2, KRETZOI (1965: p. 130); Kalfa (except M¹), LUNGU (1978: tables 2, 3); Kalfa (M¹), this paper, estimations based on text-fig. 9 in LUNGU (1978), instead of the apparently mistaken original data given in table 2 in LUNGU (1978); Kern River Formation site 1, STOCK & HALL (1933: p. 65); Liuwangou, this paper, PMU M3847; Los Valles de Fuentidueña, this paper, IPS 2057; Novaya Emetovka 2, this paper, PIN 655-3; Polgárdi 2, KRETZOI (1942: p. 320); Shangyingou, this paper, PMU M3692, M3693; Yassiören (P⁴ and M¹), this paper, estimations based on fig. 5 of pl. II in OZANSOY (1965), instead of the evidently confused original data provided on p. 23 in OZANSOY (1965); Yassiören (C¹-P⁴), OZANSOY (1965: p. 23).



Eomellivora orlovi KRETZOI, 1965: pp. 128, 130, 132, pl., figs 4-7. Holotype, by original designation, two associated fragments of a left maxilla, one with P¹ and the other with P³ and P⁴, figured by KRETZOI (1965: pl., figs 4-7). Type locality and age: Gyórszentmárton 2, Hungary; Turolian, MN 11 or 12.

Pliogulo gigas KROKOS in KRETZOI, 1965: pp. 131, 132. Nomen nudum.

Other relevant synonyms: *Eomellivora* [sp.]; THENIUS 1959: p. 91; WEBB 1969: p. 66 [part]. — *Eomellivora hungarica*; KRETZOI 1952: pp. 3, 7, 8, 10, 32, 36, 37, 39, 40. — [not] *Eomellivora hungarica*; PETTER 1967: table II; SAVAGE & RUSSELL 1983: p. 261. — *Eomellivora rumana*; ORLOV 1948: pp. 63, 79, tables 2, 6. — *E[omellivora]. ursogulo*; OZANSOY, 1965: pp. 24, 25; LUNGU 1978: pp. 45, 46, tables 2, 3; WOLSAN & SEMENOV 1994: pp. 83, 84. — *E[omellivora]. aff. wimani*; LUNGU 1978: p. 46. — *Eomellivora aff. wimani*; ORLOV 1947c: p. 56, tables 3, 6, text-fig. 7B, C; 1948: pp. 63, 77, tables 3, 6, text-fig. 7b, c; BELYAEVA 1948: p. 56; GROMOVA et al. 1962: text-fig. 225; 1968: text-fig. 225; KRAKHMALNAYA et al. 1993: table 2. — *Eomellivora aff. wimani*; ORLOV 1947c: p. 23 [typographic error]. — *Eomellivora cf. wimani*; STOCK & HALL 1933: pp. 63, 65, pl. 4, figs A-E; KRETZOI 1965: p. 132; CRUSAFONT PAIRÓ & GINSBURG 1973: p. 33; SAVAGE & RUSSELL 1983: p. 286. — *Eomellivora cfr. wimani*; THENIUS 1969a: text-fig. 391b, c; 1969b: text-fig. 391b, c. — *Eomellivora wimani*; TEILHARD DE CHARDIN & LEROY 1945: p. 19. — *Hyaena eximia*; KORMOS 1914: p. 591, text-fig. 17. — „*Lutra rumana*”; KRETZOI 1965: p. 132 [not *Lutra rumana*, p. 131]. — *Pannonictis rumana*; SIMIONESCU 1938b: pp. 14, 27, 28, text-figs 23, 24, 25/6, pl. II, figs 2, 3. — [part] *Pannonictis rumana*; BARBU 1959: table 24 [only for Cimisia, not for Malusteni]. — *Pannonictis rumanus*; SIMIONESCU 1938a: p. 576. — *Perunium* [sp.]; THENIUS 1972: text-fig. 69/16; 1980: text-fig. 66. — *Perunium ursogulo*; ORLOV 1947b: p. 883, text-figs 1, 2; 1947c: pp. 5, 56, tables 1-6, text-figs 1, 2, 3A, 4, 5A-C, 6, 7A, 8-13; 1948: pp. 63, 64, tables 1-6, text-figs 1, 2, 3a, 4, 5a-c, 6, 7a, 8-13; PIVETEAU 1961: text-figs 133, 200; GROMOVA et al. 1962: p. 208, text-fig. 222; 1968: p. 277, text-fig. 222. — *Plesiogulo* [sp.]; PIDOPLICHKA 1938: pp. 170, 175; KROKOS in VOZNESENSKY 1939: pp. 190, 193, 195, 196.

E m e n d e d d i a g n o s i s. The nominotypical chronosubspecies of *Eomellivora wimani* differing from *Eomellivora wimani piveteaui* by the following derived features: C¹ and the upper and lower premolar teeth shorter anteroposteriorly and wider buccolingually (Fig. 1); C₁ longer anteroposteriorly and wider buccolingually (Fig. 1); secondary cusps on the upper and lower premolars more frequent and better developed (Table I).

L e c t o t y p e. Same as for the species.

T y p e l o c a l i t y a n d a g e: Same as for the species.

O c c u r r e n c e. The later part of the Late Miocene, Baodean, Turolian, and Hemphillian Ages, Eurasia and North America, including the type locality and Liuwangou (Liu-Wan-Kou, Locality 31) in China (Baodean, Li et al. 1984); Grebeniki (MN 11, KRAKHMALNAYA et al. 1993) and Novaya Emetovka 2 (MN 12, KRAKHMALNAYA et al. 1993) in the Ukraine; Cimisia in Moldova (MN 12, MEIN 1990); Csákvár (MN 11, MEIN 1990), Gyórszentmárton 2 (MN 11 or 12, KRETZOI 1982), and Polgárdi 2 (MN 13, FREUDENTHAL & KORDOS 1989) in Hungary; and Kern River Formation site 1 (early Hemphillian, TEDFORD et al. 1987) in California, USA.

C o m m e n t s. The type specimens of *Eomellivora wimani wimani* ZDANSKY, 1924, *Eomellivora hungarica* KRETZOI, 1942, and *Perunium ursogulo* ORLOV, 1947a can be distinguished from one another by occurrence and size of secondary cusps on premolars (WOLSAN & SEMENOV 1994). When, however, other specimens referred to these taxa as well as the hypodigms of *Eomellivora californica* KRETZOI, 1942, *Eomellivora hungarica altera* KRETZOI, 1942, *Eomellivora rumana* ORLOV, 1947c, and *Eomellivora orlovi* KRETZOI, 1965 are added to the comparison, no significant difference in morphology or size can be detected among the taxa concerned (Fig. 1, Table I). For this reason, we synonymize all these names with one another.

Eomellivora wimani piveteaui OZANSOY, 1965

Abbreviated synonymy: *Eomellivora liguritor* CRUSAFONT PAIRÓ in CRUSAFONT PAIRÓ & DE VILLALTA, 1951: p. 148. Nomen nudum.

Eomellivora liguritor CRUSAFONT PAIRÓ in TOBIEN, 1955: p. 19. Nomen nudum.

Eomellivora (Perunium) piveteaui OZANSOY, 1957: p. 43. Nomen nudum.

E[omellivora]. liguritor CRUSAFONT PAIRÓ & GINSBURG in CRUSAFONT PAIRÓ & GOLPE, 1962a: p. 2808. Nomen nudum.

E[omellivora]. liguritor CRUSAFONT PAIRÓ & GOLPE, 1962b: p. 14. Nomen nudum.

Eomellivora liguritor CRUSAFONT PAIRÓ & GINSBURG in PETTER, 1963: p. 41. Nomen nudum.

Eomellivora piveteaui OZANSOY, 1965: pp. 16, 23-25, table 5, pl. II, figs 1, 5.

E[omellivora]. liguritor CRUSAFONT PAIRÓ in OZANSOY, 1965: p. 24. Nomen nudum.

Eomellivora liguritor CRUSAFONT PAIRÓ & GINSBURG in CRUSAFONT PAIRÓ, 1969: p. 55. Nomen nudum.

Eomellivora liguritor CRUSAFONT PAIRÓ & GINSBURG in CRUSAFONT PAIRÓ, 1971: p. 155. Nomen nudum.

Eomellivora liguritor CRUSAFONT PAIRÓ & GINSBURG in CRUSAFONT PAIRÓ, 1973: p. 64. Nomen nudum.

Eomellivora liguritor CRUSAFONT PAIRÓ & GINSBURG, 1973: pp. 32, 33, 43, text-fig. 2. Holotype, by original designation, IPS 2057, a right M¹, figured by CRUSAFONT PAIRÓ & GINSBURG (1973: text-fig. 2). Type locality and age: Los Valles de Fuentidueña, Spain; Vallesian, MN 9. Synonymized with *Eomellivora piveteaui* OZANSOY, 1965 also by LUNGU (1978: pp. 41, 46).

Other relevant synonyms: *Eomellivora nova* sp.; CRUSAFONT PAIRÓ 1958: p. 21. — *Eomellivora* [sp.]; CRUSAFONT PAIRÓ 1958: p. 25; THENIUS 1959: p. 66. — *Eomellivora* sp.; LUNGU 1968: pp. 31, 35; KOROTKEVICH et al. 1985: p. 82. — *Eomellivorae* sp.; KOROTKEVICH 1988: p. 109 [?typographic error]. — *Eomellivora hungarica*; PETTER 1967: table II; SAVAGE & RUSSELL 1983: p. 261. — *Eomellivora liguritor*; GINSBURG et al. 1981: pp. 384, 390, 404, text-fig. 8, pl. II, fig. 6. — *Eomellivora piveteaui*; LUNGU 1978: pp. 17, 33, 41, 48, 49, 121, 122, tables 1-3, text-figs 8-10, pl. I, figs 1-6; WOLSAN & SEMENOV 1994: pp. 83, 84.

Emended diagnosis. A chronosubspecies of *Eomellivora wimani* differing from *Eomellivora wimani wimani* by the following primitive features: C¹ and the upper and lower premolar teeth longer anteroposteriorly and narrower buccolingually (Fig. 1); C₁ shorter anteroposteriorly and narrower buccolingually (Fig. 1); secondary cusps on the upper and lower premolars less frequent and less well developed (Table I).

Lectotype. Designated herein, a partial right dentary with I₂-P₄ and the M₁ trigonid, figured by OZANSOY (1965: pl. II, fig. 1).

Type locality and age: Yassiören, Turkey; Vallesian, MN 9 (DE BRUIJN et al. 1992).

Occurrence. The earlier part of the Late Miocene, Vallesian Age, Europe, including the type locality, as well as Gritsev in the Ukraine (MN 9, KOROTKEVICH 1988), Kalfa in Moldova (MN 9, MEIN 1990), and Los Valles de Fuentidueña in Spain (MN 9, DE BRUIJN et al. 1992).

Comments. The name *Eomellivora liguritor* CRUSAFONT PAIRÓ & GINSBURG, 1973 is synonymized with *Eomellivora wimani piveteaui* OZANSOY, 1965 because no significant differences could be discerned between the morphological and size characteristics of the hypodigms of these taxa (Fig. 1, Table I).

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Longer papers should be divided into several chapters numbered with Roman numerals. Acknowledgements should be gathered under a single heading (acapit) at the end of introduction.

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Nomenclature. First used binominal Latin names, according to Intern. Codex of Nomenclature, should be used full i.e. together with not abbreviated names of their authors and dates after coma – be careful using brackets [e.g. *Passer domesticus* (LINNAEUS, 1758) but *Aquila pomarina* BREHM, 1831]. If repeated later on in text the names might be abbreviated [e.g. *P. domesticus*, *A. pomarina*].

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