



A new species of Peltephilidae (Mammalia: Xenarthra: Cingulata) from the late Miocene (Chasicooan SALMA) of Argentina

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Abstract

A new species of Peltephilidae (Mammalia, Xenarthra, Cingulata) (early Eocene–late Miocene) is described here. The new taxon is based on three specimens collected from the margins of Arroyo Chasicó, Buenos Aires Province, (Argentina), which correspond to the Arroyo Chasicó Formation (late Miocene, Chasicooan SALMA). The new species is characterized by osteoderms with a very rough exposed surface showing high longitudinal and well developed crests (two lateral and one central) with deep and ample valleys among them. The new taxon is the only “relictual” xenarthran cingulate of the Santacrucian Age (late early Miocene) to be registered for the last time in the Chasicooan SALMA (late Miocene), and represents the youngest record of the family Peltephilidae.

Key words: Xenarthra, Peltephilidae, Miocene, Chasicooan SALMA, Argentina

Introduction

The Peltephilidae (Xenarthra, Cingulata) are a peculiar group of fossil mammals known since the late XIX century (Ameghino 1887) and characterized by a short and broad rostrum, high skull, short jaw, completely fused and expanded mandibular symphysis, teeth with chisel-like occlusal surfaces forming a complete series without diastema, U-shaped dental arcade, dental formula 7/7, and the presence of a pair of osteoderms on the nasals and maxillaries forming recurved “horns” (Ameghino, 1891, 1894; Scott, 1903). Like all cingulates, they have a dorsal carapace of osteoderms regionalized in a cephalic shield, a dorsal shield, and a caudal sheath (Engelmann, 1985).

Peltephilines were traditionally regarded as specialized carnivores (Hoffstetter, 1958), but recent analyses (Vizcaíno & Fariña, 1994, 1997; Vizcaíno, 2009) proposed an alternative view for peltephilines as having fed on moderately tough items, although animalivory cannot be excluded as a dietary habit, which might have included plant material of underground origin in addition to carrion.

The Peltephilidae are registered exclusively in South America and are recorded from the Paleogene (early Eocene, Riochican SALMA; Scillato-Yané, 1986; Carlini *et al.*, 2005, 2010) to the Neogene (late Miocene, Chasicooan SALMA; Pascual, 1965). The last detailed systematic revision of the group dates from the 1930s (Bordas, 1936, 1938). According to the catalogue of Mones (1986), there are five genera (*Peltephilus* Ameghino, *Peltecoelus* Ameghino, *Anantiosodon* Ameghino, *Epipeltephilus* Ameghino, and *Parapeltecoelus* Bordas) and 17 species of Peltephilidae formally nominated, of which 12 were considered valid by Scillato-Yané (1980). In addition, two undescribed species are referred in the literature (Barrio *et al.*, 1984; Croft *et al.*, 2009).

The presence of Chasicooan Peltephilidae is known since Cabrera and Kraglievich (1931) mentioned materials of *Peltephilus* or an allied genus from Arroyo Chasicó, Buenos Aires Province (Figure 1). Later on, those specimens, as well as newly collected material, were assigned to *Epipeltephilus* by Kraglievich (1934), Pascual (1965), and Cattoi (1966), sometimes with a doubtful specific identification.

Scillato-Yané (1979) identified three specimens of peltephilids from the Chasicoan and described one of them briefly. This author assigned all the specimens to *Peltephilidae incertae sedis*, because previous identifications were not based on empiric evidence and because they were not clearly assigned to any of the known genera. Later on, Scillato-Yané (1982), in his unpublished PhD dissertation, recognized a new genus and species of *Peltephilidae* based on same three specimens; unfortunately, this description remains unpublished.

After studying the specimens identified by Scillato-Yané (1979, 1982), as well as a new specimen collected during recent field work in Arroyo Chasicó, we have concluded that the material represents a new species of *Epipeltephilus*. This new species, exclusive to the Chasicoan fauna, is the youngest record of the family *Peltephilidae*.

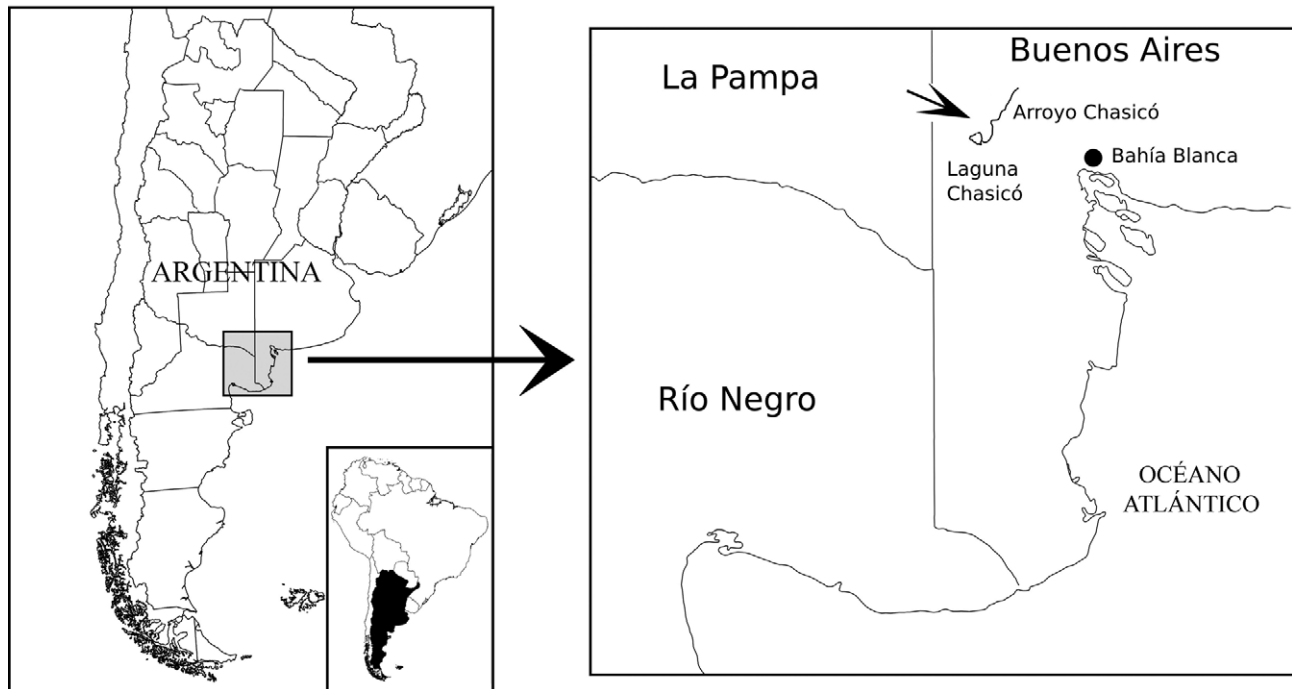


FIGURE 1. Geographic location of the type locality Arroyo Chasicó, Buenos Aires Province, Argentina.

Material and methods

Characteristics of osteoderms of the cephalic shield, dorsal shield, and caudal sheath of cingulates have traditionally been used in the diagnosis and description of the different genera and species. In fact, most taxonomic studies on fossil armadillos are based on different patterns of ornamentation and morphology of the osteoderms from the carapace (Ameghino, 1889; Yepes, 1928; Hoffstetter, 1958; Paula Couto, 1979; Scillato-Yané, 1982; Wetzel, 1982; Carlini *et al.*, 2009, 2010). The terminology here used to describe the osteoderms follows Croft *et al.* (2007), Krmptotic *et al.* (2009), and Carlini *et al.* (2009).

We follow the higher level taxonomic arrangement of McKenna and Bell (1997), as well as the catalogues of Scillato-Yané (1980) and Mones (1986) for the species of *Peltephilidae* considered valid, and the preliminary listing offered by González (2010a, b). The geochronologic scheme follows Flynn and Swisher (1995). We examined specimens from the following institutions: MACN: Museo Argentino de Ciencias Naturales “Bernardino Rivadavia”, Buenos Aires, Argentina; MACN A: Colección Nacional Ameghino, Museo Argentino de Ciencias Naturales “Bernardino Rivadavia”, Buenos Aires; MLP: División Paleontología de Vertebrados, Facultad de Ciencias Naturales y Museo, Universidad de La Plata, La Plata, Argentina; MMP: Museo Municipal de Ciencias Naturales de Mar del Plata “Lorenzo Scaglia”, Mar del Plata, Argentina.

For comparative purposes, the following specimens were studied: *Peltephilus strepens* Ameghino 1887 (MACN A 771; MLP 55-XII-13-132; MLP 67-VIII-13-2; MLP 69-IX-9-18); *Peltephilus pumilus* Ameghino 1887 (MACN A 866-870; MLP 67-XI-13-1a3); *Peltephilus giganteus* Ameghino 1894 (MACN A 4891-4900, type); *Peltephilus ferox* Ameghino 1891 (MACN A 4901, type; MACN A-7784-7798); *Peltephilus nanus* Ameghino 1898 (MACN A 7958-7959, type); *Peltephilus depressus* Ameghino 1897 (MACN A 12016, type); *Peltephilus*

granosus Ameghino 1902 (MACN A 12019, type); *Peltephilus protervus* Ameghino 1897 (MACN A 12020, type); *Peltephilus depressus* Ameghino 1897 (MACN A 12016, type); *Anantiosodon rarus* Ameghino 1891 (MACN A 5119, type); *Peltecoelus praelucens* Ameghino 1902 (MACN A 12022, type); *Parapeltecoelus pattersoni* Bordas 1938 (MACN 11946, type); *Epipeltephilus recurvus* Ameghino 1904 (MACN A 11641, type); *Epipeltephilus recurvus?* (MLP 16-2; MLP 69-XII-19-5; MLP 69-XII-19-9; MLP 91-IX-7-14).

Results

Most of the species of Peltephilidae (*E. recurvus*, *Peltephilus nanus*, *P. giganteus*, *P. protervus*, *P. depressus*, *P. granosus*, *Peltecoelus praelucens*) are known by few osteoderms (< 10), while *Peltephilus pumilus* and *P. strepens* are known by a few more osteoderms (< 100). If we consider that extant “armadillos” have between 600–1000 osteoderms (Vizcaíno y Bargo, 1993; González, 2010a), we conclude that carapaces of Peltephilidae are still poorly known. Thus, the knowledge of the carapace of Peltephilidae is based on the genus *Peltephilus*, which is represented by more complete specimens (Scott, 1903). The cephalic shield is formed by 19–21 large osteoderms that are placed following a pattern: three large hexagonal osteoderms in the middle line, the posterior one being the larger, and seven polygonal osteoderms on each side. In front of the middle line there are two large “horn-like” osteoderms on the nasals and maxilars. There were possibly two additional anterior osteoderms (Ameghino, 1894; Scott, 1903). The osteoderms from the caudal sheath are still unknown.

Epipeltephilus is a monotypic taxon (*E. recurvus*) and the holotype (MACN A 11641) comes from Lago Blanco (=Laguna Blanca) Chubut Province (Río Mayo Formation, “Mayoan” SALAMA). The type is formed only by a portion of the skull and one hemi-mandible. There are four groups of osteoderms from other Mayoan localities assigned to *Epipeltephilus recurvus*: MLP 16-2 and MLP 69-XII-19-9, from Río Huemules; MLP 69-XII-19-5 from Río Genguel; and MLP 91-IX-7-14 from Cerro Guenguel (see González, 2010a). Another mention of *Epipeltephilus* from Río Senguer (Kraglievich, 1930; Bondesio *et al.*, 1980) is a misidentification, and the osteoderms belongs to *Proeutatus* sp. (MLP 16-5) (see González, 2010a).

The allocation of this new species within *Epipeltephilus* is based on the characters of the osteoderms surface of the dorsal carapace, principally the combination of roughness of the exposed surface and the development of elevated longitudinal crests. Given the absence of a phylogenetic analysis of the Peltephilidae the diagnosis of the species of this family are based almost exclusively on qualitative characters of the osteoderms (see González, 2010a).

Systematic Paleontology

Xenarthra Cope 1889

Cingulata Illiger 1811

Dasyopodoidea Gray 1821

Peltephilidae Ameghino 1894

Epipeltephilus Ameghino 1904

Type specie. *Epipeltephilus recurvus* Ameghino 1904.

Included species. The type species and the species described below.

Diagnosis (emended from Ameghino, 1904 and González, 2010a). Skull larger and posteriorly wider and shallower than *Peltephilus* and *Parapeltecoelus*, and with the temporal and parietals extended laterally. Sagittal and occipital crests less developed than *Peltephilus*. The mandibular ramus is larger than that of *Peltephilus* and with vertically implanted molariforms, which are anteriorly inclined in *Peltephilus*. The upper molariforms (as well the lower in *Peltephilus*) are sub-elliptical, whereas they are prismatic-triangular in *Peltephilus* and *Parapeltecoelus*. The last upper molariform is similar in shape to other of the same series unlike *Peltephilus* and *Parapeltecoelus* which have very small last molariforms. The osteoderms of the dorsal carapace of *Epipeltephilus* are rougher and with more elevated and developed crests than *Peltecoelus* and *Peltephilus*.

Epipeltephilus kanti new species

(Figures 2–3A)

Etymology. “*kanti*” in honor of the Prussian philosopher Emmanuel Kant (1724–1804), brilliant creator of the criticism and precursor of the modern scientific philosophy.

Holotype. MLP 92-XI-19-7, three fixed osteoderms of the dorsal shield (Figure 2 A–C).

Geographic and stratigraphic occurrence of the holotype. Arroyo Chasicó (38°37′06.10″S, 62°59′14.53″W), Buenos Aires Province, Vivero Member, Arroyo Chasicó Formation, Chasicóan SALMA. Material collected during a field trip organized by the Facultad de Ciencias Naturales y Museo de La Plata (Argentina) and Duke University (USA).

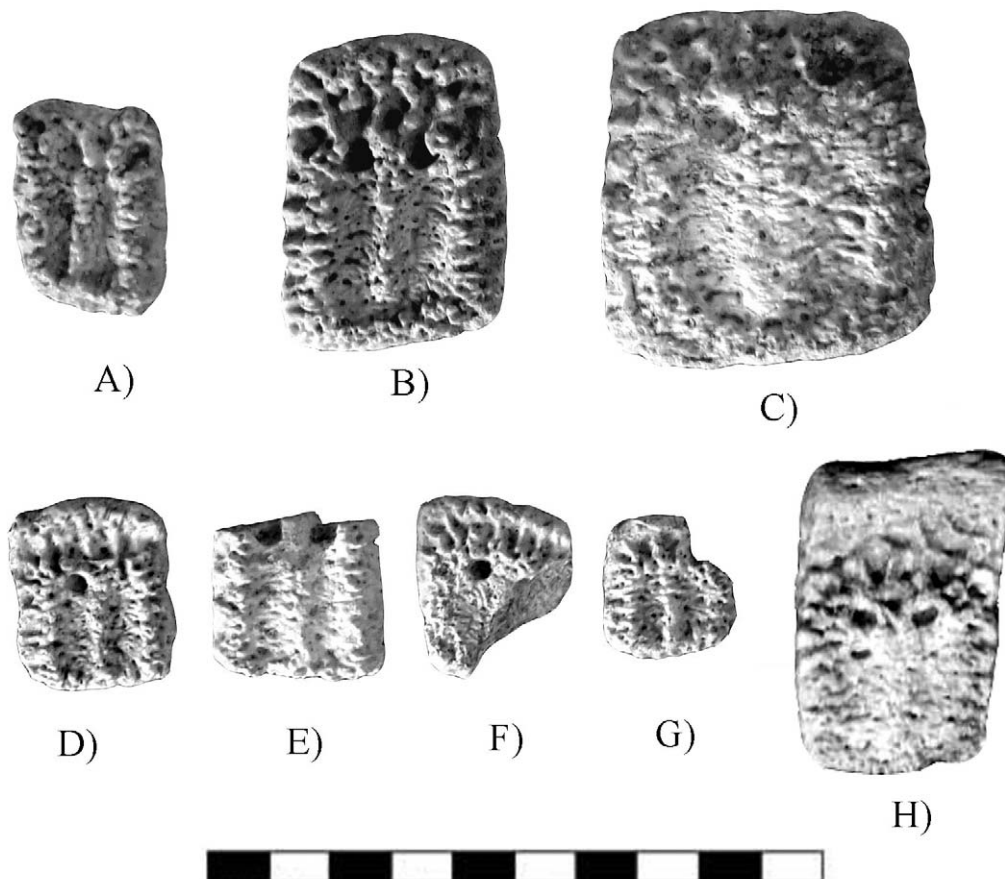


FIGURE 2. Osteoderms of *Epipeltephilus kanti*: A–C, Holotype (MLP 92-XI-19-7); D–G, Referred material, D–G (MLP 28-X-11-66), H (MMP 339-M). Scale Bar: 5 cm.

Referred material. MLP 28-X-11-66, three complete, fixed osteoderms and an additional fragment of the dorsal shield (Figure 2 D–G); MLP 60-VI-18-3, one molariform and osteoderms of an indeterminate region of the dorsal shield; MMP 339-M, one movable osteoderm of the dorsal shield (Figure 2 H). All specimens were collected in the Vivero Member, Arroyo Chasicó Formation (Figure 1).

Differential diagnosis. Osteoderms larger than those of *Peltephilus nanus* and *Peltephilus pumilus*, and similar in size to those of *Epipeltephilus recurvus*, *Peltecoelus praelucens*, and the other species of *Peltephilus*. Longitudinal crests (two lateral and one central) are higher and more developed than in *Epipeltephilus recurvus*, *Peltephilus giganteus*, *Peltephilus pumilus*, *Peltephilus strepens* and *Peltephilus protervus*. These crest are absent in *Peltecoelus praelucens*, *Peltephilus depressus*, *Peltephilus granosus* and *Peltephilus nanus*. Exposed surface of the osteoderms roughed like *Epipeltephilus recurvus* much more than the species of *Peltephilus* and *Peltecoelus praelucens*.

Comparative description. Molariform. Scillato-Yané (1982) described the molariform MLP 60-VI-18-3¹ as very small and lower because the main wear pit is located externally, as in *Peltephilus* according to Scott (1903), and it would correspond to the third or fourth molariform of the left dental series. It is broken in its base and the preserved part measures 7.6 mm of maximum antero-posterior diameter, and 3.5 mm of maximum cross-sectional diameter.

According to Scillato-Yané (1982) the molariform section is subtriangular, less compressed than in *Anantiosodon*, whereas in *Epipeltephilus* (*E. recurvus*) teeth are subleptitic. In addition, Vizcaíno and Fariña (1997: 81) remarked that the molariforms of *Peltephilus* are “chiefly triangular in section and slenderly built”. Lower molariforms of *Peltecoelus* and *Parapeltecoelus* are not known.

Osteoderms of the dorsal shield. Shape and size. The known osteoderms of *Epipeltephilus kanti* are rectangular or quadrangular (Figure 2 A–H). They cover a large range of sizes (Table 1), indicating that osteoderms from different regions of the dorsal shield are represented; also, that the size variation of the osteoderms was probably remarkable at intraspecific level, depending on the regions of the dorsal shield, as it happens in *Eutatus* (Burmeister, 1883; Scillato-Yané, 1982).

In relation to other species of Peltephilidae, the osteoderms of *Epipeltephilus kanti* are larger than those of *Peltephilus nanus*, and generally larger than those of *Peltephilus pumilus*, but within the range of variation of the remaining species of *Peltephilus*, as well as *Epipeltephilus recurvus* and *Peltecoelus praelucens* (Table 1).

TABLE 1. Measurements of osteoderms and their associated foramina (mm).

Taxon	Osteoderm type	Osteoderm surface		Foramina	
		Width (min-max)	Length (min-max)	Width (min-max)	Length (min-max)
<i>Epipeltephilus kanti</i>	Fixed	12.4–27.1	11.5–29.5	1.4–3.1	1.6–3.5
	Movable	16.1	24.6	1.4–1.9	0.8–1.0
<i>Epipeltephilus recurvus?</i>	Fixed	12.1–19.0	11.2–22.6	2.0–2.8	2.2–2.5
	Movable	17.6–21.5	22.3–23.9	1.0–1.6	2.1–2.6
<i>Peltephilus strepens</i>	Fixed	13.8–21.1	16.4–25.4	1.2–1.5	1.7–1.5
	Movable	16.5–19.3	18.6–27.1	0.9–0.9	1.1–1.3
<i>Peltephilus pumilus</i>	Fixed	9.1	12.5	1.1–1.5	1.2–1.4
	Movable	8.5–11.9	10.2–15.8	0.9–2.5	1.0–2.7
<i>Peltecoelus praelucens</i>	Fixed	14.8–23.4	19.3–25.8	3.0	2.4
<i>Peltephilus nanus</i>	Fixed	7.7–8.7	5.9–7.2	1.3–1.9	1.2–1.8
<i>Peltephilus protervus</i>	Movable	22.3	35.8	2.4	2.6
<i>Peltephilus giganteus</i>	Fixed	12.4–13.6	16.0–17.1	1.85–2.2	2.3–2.5
<i>Peltephilus depressus</i>	Movable	17.4–19.7	22.5–26.2	1.4–2.1	1.6–1.7
<i>Peltephilus granosus</i>	Fixed	14.5–13.0	17.8–23.3	1.8–2.4	2.4–2.8

Foramina. Osteoderms of *Epipeltephilus kanti* generally have one or two big oval foramina, which can be associated to glandular cisterns (Scillato-Yané, 1979; Croft *et al.*, 2007). In the case of *Epipeltephilus kanti*, the largest foramina correspond to the largest osteoderms (Figure 2 A–H, 3A). In some osteoderms, there is a smaller foramen between and over the previous ones; this character is mentioned by Croft *et al.* (2007) for the osteoderms of a specimen of cf. *Peltephilus* sp. One movable osteoderm of *Epipeltephilus kanti* has a third big foramina underneath the two bigger (Figure 2 H).

Much variation has been documented for the number of osteoderm foramina in different species of Peltephili-

1. : * We searched this specimen several times in the MLP collections with Dr. Marcelo Reguero (Collection Manager) and with Dr. Scillato-Yané (who originally described it in 1982) but we could not find it. Unfortunately, the molariform is lost in the Museum and the illustrations given by Scillato-Yané (1982: plate 1, figura 4) do not have enough resolution for comparisons.

dae: *Peltephilus strepens* has two or four (Ameghino 1887) (Figure 3 F–G); *Peltephilus pumilus*, *P. nanus*, *P. giganteus*, *P. protervus* and *P. granosus* have two (Figure 3 C, D, E, H, J); *Peltephilus depressus* has two or three; Ameghino (1897) mentioned four foramina for that species, but the type and assigned material have two or three (Figure 3 I); *Peltecoelus praelucens* has three foramina (Ameghino, 1902) (Figure 3 K), and *Epipeltephilus recurvus* has generally four foramina (Croft *et al.*, 2009) (Figure 3 B), although there are also osteoderms with one, two or three foramina.

Crests. The osteoderms of *Epipeltephilus kanti* have one middle longitudinal crest and two lateral longitudinal crests. All of them are elevated, wide and have rough margins, with the subsequent development of deep and ample valleys among them. The middle longitudinal crest may or may not reach the posterior border while the two laterals always do. The posterior border is elevated and has rough margins.

Some osteoderms of *Epipeltephilus recurvus* have a middle longitudinal crest, but unlike *Epipeltephilus kanti*, it is a narrow and not high. *Peltephilus giganteus* has three longitudinal crests, but they are rounded, without roughness and without ample valleys between them (Figure 3 E). *Peltephilus protervus* has a smooth and well developed crest, which extends only one half the surface of the osteoderm, being anteriorly wide and disappearing posteriorly (Ameghino, 1897) (Figure 3 H). A longitudinal crest is developed in *Peltephilus strepens* (Figure 3 F–G) (Ameghino, 1887), but it is low instead of marked as in *P. giganteus* or *Epipeltephilus kanti*. Some osteoderms assigned to *Peltephilus pumilus* have a high and narrow longitudinal middle crest (Ameghino, 1887) (Figure 3C), whereas in other specimen assigned to this species this crest is absent. The osteoderms of *Peltephilus nanus*, *Peltephilus depressus*, *Peltephilus granosus* and *Peltecoelus praelucens* lack the longitudinal crests (Ameghino, 1897; Ameghino, 1902) (Figure 3 D, I, J, K).

Surface roughness. The exposed surface of the osteoderms of *Epipeltephilus kanti* is rougher than any other Peltephilidae. The osteoderms of *Epipeltephilus recurvus* are not as rough as in *E. kanti*. *Peltephilus pumilus*, *P. nanus*, *P. giganteus*, and *P. strepens* has osteoderms with similarly rough surfaces (Figure 3 C–G), but rougher than in *Peltephilus protervus*, *P. depressus*, and *Peltecoelus praelucens* (Figure 3 H, I, K), and less than *E. recurvus* and *E. kanti* (Figure 3 A–B). Although *P. granosus* has an anterior rough region, *Peltephilus protervus* and *P. granosus* has smooth and punctuate surfaces (Ameghino, 1897, 1902). Finally, although Ameghino (1902) remarks that the osteoderms of *Peltecoelus praelucens* are completely smooth, we observed that they are also punctuate.

Geochronology and biostratigraphy. The first fossils from Arroyo Chasicó (Figure 1) were collected by S. Roth and his assistant B. Eugui around 1915 (Kraglievich, 1934; Pascual, 1961; Bondesio *et al.*, 1980). Cabrera (1928) and Kraglievich (1934) were the first to mention this locality, followed by works of Reig (1957), Pascual (1961, 1965), and Pascual *et al.* (1965).

Kraglievich (1934) recognized the Chasicóan (“*Chasicoense*”) geologic horizon and assigned a Miocene age to its fauna, while indicating that: “...esta fauna es casi equivalente a la más antigua de Entre Ríos y su edad puede considerarse Miocena” (Kraglievich, 1934: 89). Pascual (1961, 1965) and Pascual *et al.* (1965) defined the Arroyo Chasicó Formation indicating the existence of outcrops in the headwaters of Arroyo Chasicó and in the cliffs of the Chasicó lagoon (type area). They also recognized a Chasicóan SALMA on the basis of the presence of “relictual” mammals from the Santacrucian SALMA and the primitive character of the Pan-Araucanian predominant taxa.

Bondesio *et al.* (1980) summarized the data on the geology and fossil mammals of the area and divided Arroyo Chasicó Formation into two Members: the lower Vivero Member and the upper Las Barrancas Member. According to these authors, these members are related to two different biozones: 1) Biozone of *Chasicotherium rothi* Ameghino, which is a local representation of the “Viverense” (lower Chasicóan); and 2) Biozone of *Chasicotatus ameghinoi* Scillato-Yané, which represents the “Barranquense” (upper Chasicóan). Both units were deposited during the earliest part of the late Miocene (Tonni *et al.*, 1998; Cione *et al.*, 2000). Zárate *et al.* (2007) conducted a geologic study of the Chasicóan deposits recognizing different lithofacies and paleosols. This lithofacial adjustment does not fit with the lithostratigraphic division of the Arroyo Chasicó Formation in two members.

In accordance with the more recent biostratigraphic scheme proposed by Verzi *et al.* (2008), *Chasicotatus ameghinoi* was recorded in the Biozones of *Chasichimys bonaerense* Pascual, *Chasichimys scagliai* (Pascual), *Xenodontomys simpsoni* Kraglievich and *Xenodontomys elongatus* (Verzi, Montalvo & Tiranti). For that reason, Verzi *et al.* (2008) suggested to change the Biozone of *Chasicotatus ameghinoi*, since it would be not an exclusive taxon for that biozone. Finally, Schultz *et al.* (2004) presented an $^{40}\text{Ar}/^{39}\text{Ar}$ age of 9.23 ± 0.09 Ma for Arroyo Chasicó Formation, placing the Chasicóan fauna between the Mayoan (ca.10.0–11.8 Ma) and the Huayquerian (6.8–9.0 Ma) faunas, in the time interval of ca. 9.0–10.0? Ma based on the scheme by Flynn and Swisher (1995).

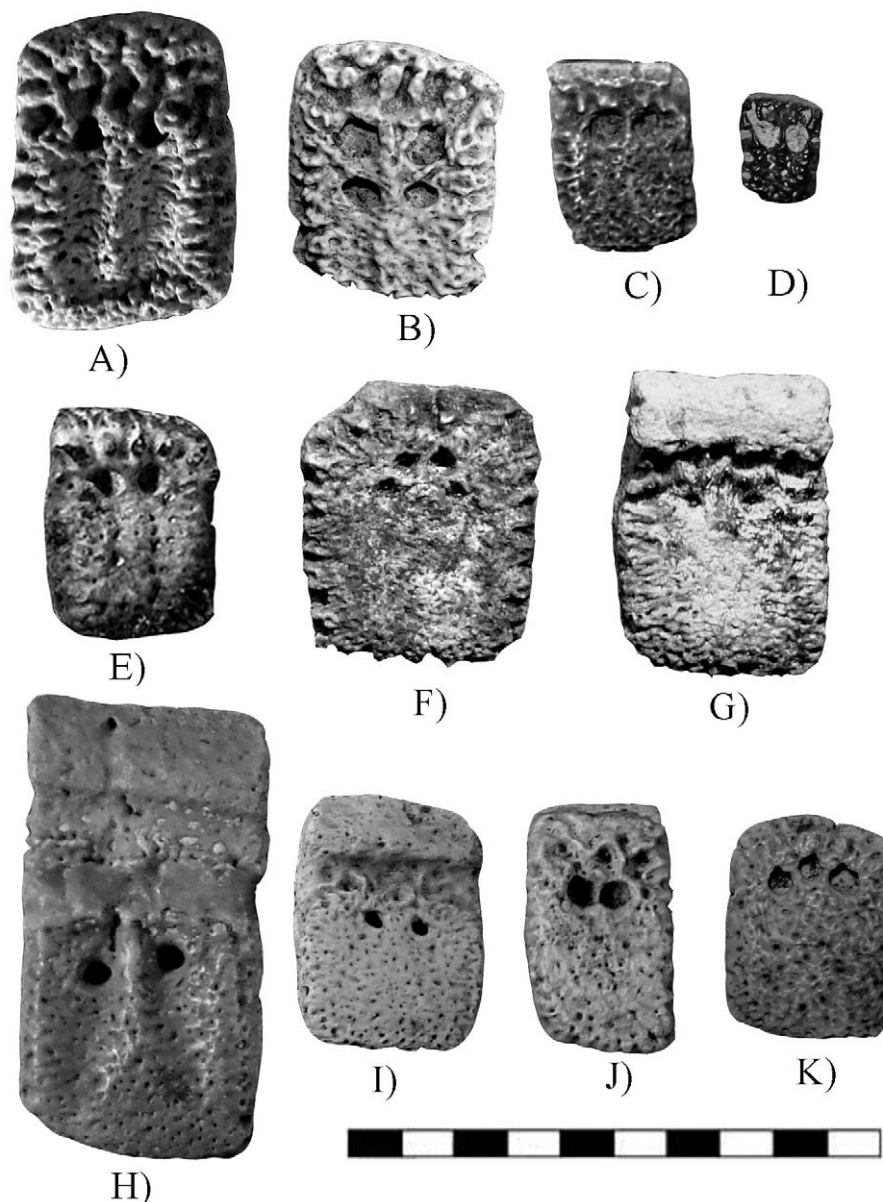


FIGURE 3. Osteoderms of Peltephilidae: A, *Epipeltephilus kanti* (MLP 92-XI-19-7, part of the holotype); B, *Epipeltephilus recurvus?* (MLP 91-IX-7-14); C, *Peltephilus pumilus* (MACN A-866-870); D, *Peltephilus nanus* (MACN A 7958-7959, part of the type); E, *Peltephilus giganteus* (MACN A-4891-4900, part of the type); F-G, *Peltephilus strepens* (MACN A-771); H, *Peltephilus protervus* (MACN A-12020, part of the type); I, *Peltephilus depressus* (MACN A-12016, part of the type); J, *Peltephilus granosus* (MACN A-12019, part of the type); K, *Peltecoelus praelucens* (MACN A-12022, part of the type). Scale Bar: 5 cm.

Discussion and conclusions

The Peltephilidae are represented by 12 recognized valid species distributed in 5 genera (Scillato-Yané, 1980), from which 11 are registered during late Oligocene–early Miocene (ca 28.4–15.97 Ma), and only one, *Epipeltephilus recurvus*, during the entire middle and late Miocene (ca 15.97–5.33 Ma), specifically for the upper part of the middle Miocene (Río Mayo Formation, Mayoan SALMA, ?10.0–11.8 Ma). In that context, although peltephilids for the late Miocene (Arroyo Chasicó Formation, Chasicóan SALMA, 9.0–10.0? Ma) were mentioned and briefly described, they have never been formally nominated and studied in detail.

Only the holotype of the new taxon (MLP 92-XI-19-7) has precise stratigraphic information, i.e., that of Arroyo Chasicó Formation, and was collected in the Vivero Member, lower in the section (*in schedula*). Bondesio *et al.* (1980) mentioned the Peltephilidae only for the Vivero Member, implying that all other known specimens may come exclusively from this Member.

On the basis of the particular “aggregate” of fossil mammals, Pascual (1965) and Pascual *et al.* (1965) recognized the Chasicoan SALMA, characterized by “*la presencia de mamíferos Pan-santacrucianos y en el carácter primitivo de sus elementos Pan-araucanianos, que son predominantes*” (Pascual *et al.*, 1965: 177). Within these “santacrucian mammals” recorded up to the Chasicoan, two cingulate xenarthrans are included: the Peltephilidae, and one Dasypodidae Euphractinae, the genus *Vetelia* Ameghino (Scillato-Yané, 1986). The latter has been recently recorded in several Huayquerian localities, slightly younger than the Chasicoan (Esteban & Nasif, 1996; Esteban *et al.*, 2001; Ciancio *et al.*, 2006; Georgieff *et al.*, 2004; Tonni *et al.*, 1998); therefore, its biocron exceeds the Chasicoan SALMA and are no longer considered as the last occurrence of those “relictual” Santacrucian taxa. According to this, within the Cingulata, the Peltephilidae, with *Epipeltephilus kanti*, is the only “relictual Santacrucian” taxon whose last record is the Chasicoan SALMA. In addition, although Ameghino (1906: 482) indicated in a list of taxa the presence of “*?Peltephilus*” for its “*Faunas Entrerrianas*”, that record was opportunely disestimated by Scillato-Yané (1982: 62), essentially because the material was never described or figured, and has not been found in its repository (MACN). At the moment, *Epipeltephilus kanti* sp. nov. is the youngest record of the entire family Peltephilidae.

Finally, the presence of *Epipeltephilus*, *Vetelia perforata*, and Palaehoplophorini (“Hoplophorinae”) in the Mayoan and Chasicoan (all absent in the Colloncuran), as well as the absence of Stegotheriini, *Proeutatus* (Eutatini), *Stenotatus* (Eutatini), *Prozaedyus* (Euphractini), and Propalaehoplophorinae (all recorded in the Colloncuran) indicates a closer affinity between the Mayoan and Chasicoan faunas than between the Mayoan and the Colloncuran ones, according with the interpretations of Bond (1993) and Vucetich *et al.* (1993) for native ungulates and rodents, respectively.

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