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First record of *Scelidodon chiliense* (Lydekker) (Phyllophaga, Scelidotheriinae) from the Lujanian Stage (Late Pleistocene – Early Holocene) of Argentina

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With 2 figures and 1 table

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Abstract: The Scelidotheriinae constitutes a group of sloth with numerous problematics, mainly related to their origin and phylogenetic relationships. This subfamily is principally characterized by a narrow and elongated skull, a coincident modification of the dental series and having a medium size. It is reported the first record of *Scelidodon chiliense* (Lydekker) (Phyllophaga, Scelidotheriinae), exhumed from Lujanian sediments (Late Pleistocene – Early Holocene) belonging to the Uspara Formation of San Luis Province (Argentina). The fossil (MHIN-UNSL GEO V-199) consists of a sub-complete skull without teeth, except the right M1. The specific assignation is mainly based on: sagittal and temporal crests with little development and parietal and squamosal bones separated by an horizontal suture. This reports broad the geographical distribution of the species, known so far only for northern Chile, Bolivia, Peru and Ecuador. Finally, it allows raising and discussing some hypothesis related to its presence into the current territory of Argentina.

Key words: South America, Argentina, Quaternary, *Scelidodon*, biogeography, systematics.

1. Introduction

In Mylodontidae the Scelidotheriinae Ameghino are tardigrades with several problematic (Scillato-Yané et al. 1993; Scillato-Yané & Carlini 1998). Some authors (e.g. McDonald & Perea 2002) consider the "Friasian" (middle Miocene) genera *Neonematherium* Ameghino (from Argentina, Chile, and Colombia) and *Sibyllotherium* Scillato-Yané & Carlini (only recorded from Argentina), as the first representatives of the clade. In the most recent comprehensive phylogenetic analyses of the sloths, Gaudin (2004) suggests that the Scelidotheriinae are a natural group, supporting previous preliminary hypotheses (e.g. McDonald 1987; Scillato-Yané & Carlini 1998).

Scelidotheriines in a restricted sense (excluding the Nematheriinae Scillato-Yané, 1977, see Scillato-Yané et al. 1993; but see McDonald & Perea 2002), are characterized by an elongate and narrow skull, with the dental series accordingly modified (Pascual et al. 1966; McDonald & Perea 2002), and being middle to large sized mammals, although smaller than the remaining pleistocene Mylodontoidea (Pascual et al. 1966).

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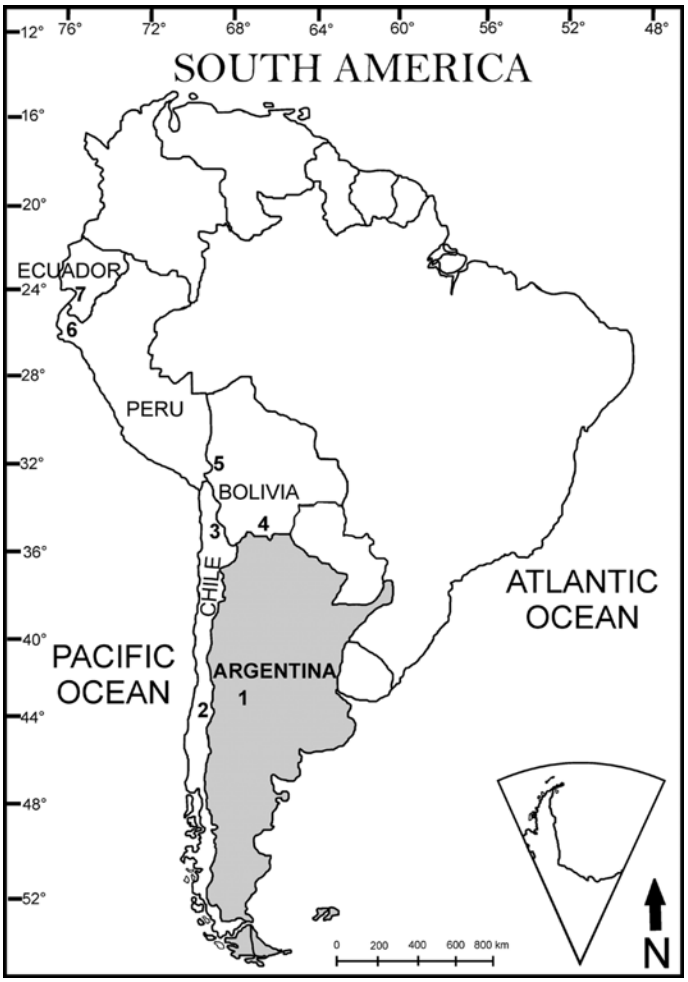

Fig. 1. Location map showing the locality from which the fossil was collected and geographic distribution of *Scelidodon chiliense*. 1- Merlo. 2- Santiago. 3- Tarapacá. 4- Tarija. 5- Ulloma. 6- Cupinisque. 7- La Carolina.

We follow the systematic arrangement of the Scelidotheriinae proposed by Kraglievich (1923), Hoffstetter (1982) and Pujos (2000), to know the recognation of three Pleistocene genera: *Scelidotherium* Owen, *Scelidodon* Ameghino and *Catonyx* Ameghino. We recognize a single species for *Catonyx, C. cuvieri*, which would be restricted to the Late Pleistocene – Early Holocene of Brazil (see McDonald & Perea 2002; Dantas & Zucon 2007). The genus *Scelidodon* is characterized by a fronto-nasal region transversally domed, with bulky nasal chamber (Kraglievich 1923), short premaxillary (Paula Couto 1979), not extended in front of the nasals (Pascual et al. 1966). The mandible is robust, with the pre-dentary region upward directed (Pascual et al. 1966, Paula Couto, 1979). Inferences about the palaeoecological requirements of *Scelidodon* are scarce. In this sense, Scillato-Yané et al. (1995) suggested that this taxon could be related to grassy open areas and temperate climate. This palaecological inference is based mainly in the associated palaeofauna (see Scillato-Yané et al. 1995).

The genus *Scelidodon* is distributed in Argentina, Bolivia, Uruguay, Chile, Peru, and Ecuador (Scillato-Yané et al. 1995; McDonald & Perea 2002). In Argentina, it is recorded in the Provinces of Buenos Aires, Corrientes, Córdoba, Entre Ríos and Tucumán (Scillato-Yané et al. 1995). Recently, Tauber & Palacios (2007) reported the presence of a Scelidotheriinae in Pleistocene sediments of the Santa Cruz Province (48° 41' S and 70 ° 08' W), which is referred tentatively to *Scelidodon*, in view of its dimensions. If

this taxonomic assignment is confirmed, this would be the southernmost record of the genus.

According to Pascual et al. (1966) and McDonald (1987), the oldest records of the genus are from the Early – Middle Pleistocene (Ensenadan Stage). The latest records come from the Late Pleistocene – Early Holocene sediments (Lujanian *sensu stricto*) from the Corrientes and Entre Ríos provinces (see Carlini et al. 2008).

The type species of *Scelidodon* is *Sc. copei* (MACN A-1158) Ameghino, from Pleistocene sediments of Buenos Aires Province, Argentina (Bonaerian Stage ca. 0.4-0.130 Ma B.P., Cione & Tonni 2005). Two species are recognized for this genus: *Sc. tarijensis* (= *Catonyx tarijensis*) (Gervais & Ameghino), recorded in the Early – Middle Pleistocene of Argentina and Uruguay (McDonald & Perea 2002), and the Late Pleistocene of Bolivia (Miño-Boilini & Carlini 2007) and *Sc. chiliense* (= *Catonyx chiliense*) (Lydekker) has been reported so far from the Late Pleistocene of Bolivia, Chile, Ecuador and Peru (McDonald & Perea 2002; Pujos & Salas 2004).

Carlini et al. (2005) suggest the existence of a new third *Scelidodon* species from the Late Pleistocene (ca. 50-35 ka) of Corrientes Province (Argentina). The goal of the present work is to report the first record of *Sc. chiliense* in Argentina, coming from the Uspara Formation, San Luis Province (Late Pleistocene – Early Holocene).

The study of the Pleistocene megafauna from the San Luis Province (Argentina) is scarce, and often, the geographic and stratigraphic data of the fossils collected is not precise (Chiesa et al. 1999a). Xenarthra cited for the Lujanian (Late Pleistocene – Early Holocene, ca. 130-8 ka B.P., Cione & Tonni 2005) in the study area (Fig. 1) have been referred to: *Scelidotherium leptocephalum* Owen, *Megatherium americanum* Cuvier, and *Sclerocalyptus ornatus* (Owen) (see Chiesa et al. 1999a and b, Tognelli et al. 2000). A revision of this material has permitted to attest the persence of *Scelidodon chiliense* (the specimen here reported) and *Neosclerocalyptus paskoensis*, in addition to *M. americanum* and *Scelidotherium leptocephalum* (Miño-Boilini et al. 2007).

Abbreviations: BMNH: British Museum of Natural History, London, England, FCS: Facultad de Ciencias Sociales, Universidad Nacional del Centro, Olavarría, Buenos Aires, Argentina; FMNH: Field Museum of Natural History, Chicago, USA; MACN: Museo Argentino de Ciencias Naturales "Bernardino Rivadavia", Buenos Aires, Argentina; MHIN-UNSL-GEO V: Museo de Historia Natural Universidad Nacional de San Luis, Geología Vertebrados, San Luis, Argentina; MNHN: Muséum national d'Histoire naturelle, Paris, France; MNHN SGO-PV: Museo Nacional de Historia Natural, Santiago, Chile; MNPA: Museo Nacional Paleontológico-Arqueológico, Tarija, Bolivia; MMP: Museo Municipal de Ciencias Naturales "Lorenzo Scaglia", Mar del Plata, Buenos Aires, Argentina.

2. Systematic paleontology

Superorder Xenarthra Cope, 1889
Suborder Phyllophaga Owen, 1842
Family Mylodontidae Gill, 1872
Subfamily Scelidotheriinae Ameghino, 1904

Diagnosis: Skull low, long and narrow; dental formula 5/4 with tooth rows parallel; no modification of first cheek tooth into caniniform and no diastema between first and second teeth; M1 elliptical in cross section; quadrangular and antero-posteriorly compressed femur, with concave facet of the astragalus for the cuboid astragalus with concave surface for cuboit in advanced genera (Pascual et al. 1966; McDonald 1987).

Genus *Scelidodon* Ameghino, 1881

Diagnosis: Skull elongate, slightly higher. The fronto-nasal region transversely vaulted, with the nasal chamber bulging. In anterior view, the nasal opening is circular or sub-circular. Premaxillaries less developed, acute in their sagittal joint. Upper pre-dented region as long as or shorter than the maxillary dental series. Mandible robust, the horizontal ramus is high, the ventral margin markedly convex. Mandibular symphysis strongly upward inclined. Mandibular keel very evident. Humerus with diaphysis more robust, Femur, in posterior view and with distal condyles horizontally, with the head in vertical line over the medial condyle, distal epiphysis narrower.

Scelidodon chiliense (Lydekker, 1886)
Fig. 2 A-E

Lectotype: BMNH M 2819 skull (see Pujos 2000: 199).

Type locality and age: Late Pleistocene (Casamiquela 1970) of Tamarugal (Tarapacá District, Chile).

Studied material: (MHIN-UNSL-GEO V 199) fragment of a well preserved skull, with right M1; the remaining cheek teeth are missing but the alveoli have been preserved. The left side of the skull is more damaged than the right one, and the pterygoid, alisphenoid, portion of the zygomatic process of the squamosal, palatine, the posterior portion of the frontal, and part of the maxillary and premaxillary are missing.

Geographic provenance and geological setting: The material reported was found in Pasos Malos locality,

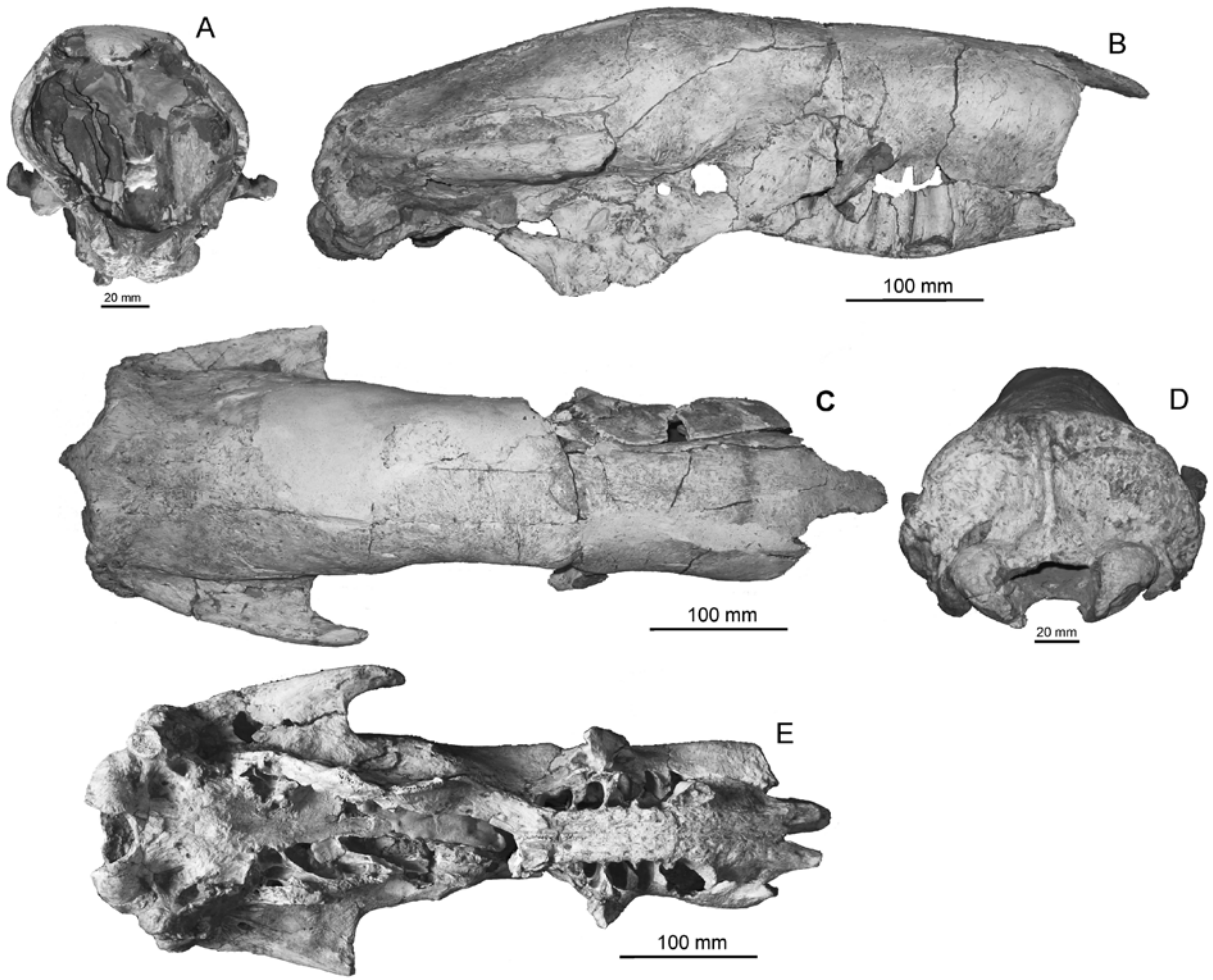

Fig. 2. Skull of *Scelidodon chiliense* (Lydekker) (MHIN-UNSL-GEO V 199). A - Anterior view. B - Lateral right view. C - Dorsal view. D - Posterior view. E - Palatal view.

Merlo, San Luis Province (Fig. 1), in the Uspara Formation (Late Pleistocene – Early Holocene). The Uspara Formation is composed of silty sands with fine gravels and calcareous cement.

Chiesa et al. (1999a) described the loessoid sediments of the Upsara Formation where the specimen of the present study (MHIN-UNSL-GEO V 199) was found (Pasos Malos, Merlo, Fig. 1). From base to top, they described six levels; the fossil-bearing level is composed by fine sands and silty sands, dark yellowish brown, with up to 4 % of gravels, and with bioturbation.

Description and comparison: The skull belongs to a large specimen (see Table 1), with an approximate length of 530 mm (from the posterior end of the occipital condyles to the anterior end of the maxillaries); nasals and maxillaries are short and "inflated", as typical in the genus *Scelidodon* (Ameghino 1889; Kraglievich 1923; Pascual et al. 1966).

In anterior view (Fig. 2A), the nasal opening is subcircular, slightly wider than high; in cross section, the rostrum is domed, although not reaching the development seen in specimens assigned to *Sc. tarijensis* (MMP 1267 and FCS 96.I.15/1), and it is not so isodiametric as in these specimens, as the region of these latter is almost circular in shape.

In lateral view (Fig. 2B), the angle between the pre-dental and dental regions of the maxillaries is marked (ca. 20º); the palatal plane in front of the M1 is upward directed and the whole rostral region is short. Consequently, the palate describes a curve line following an asymmetric parabola with the inflexion point level with the M1. Pterygoids are like a plane leaf as in all scelidotheres, and it is downward projected, but it has not the large development seen in *Sc. tarijensis* (MMP 1267 and FMNH P 14243).

The suture separating the squamosal from the parietal and frontal, allows distinguishing the *Scelidodon* species (McDonald 1987). It is horizontal in *Sc. chiliense* (type

Table 1. Comparative measurements (mm) between *Scelidodon chiliense* and *Scelidodon tarijensis*.

	Sc. chiliense		*Sc. tarijensis*
	MHIN-UNSL-GEO V 199	FMNH P 14238	MMP 1267
Width of palate between M1	32	30	37
Width of palate between M5	35	40	45
Alveolar length M1	28	28	32
Alveolar length M2	18	23	25
Alveolar length M3	19	22	24
Alveolar length M4	20	22	23
Alveolar length M5	18	20	21
Length of skull maximum	530	520	540
Alveolar length of maxilla	132	131	135
Length of predental region of maxilla	90	90	92

BMNH M 2819, MNHN SGO-PV 13-V-69-1); and subhorizontal in *Sc. tarijensis* (McDonald 1987: 51, fig. 12, Pujos 2000: 199). In front of the parietal-occipital suture, a slight depression of parietals delimits two subtriangular areas slightly concave. The angle between the parietal-frontal and frontal-nasal planes is quite marked (ca. 20º), compared to the type of *Sc. tarijensis* (MNHN TAR 1260) and other referred materials (e.g. FMNH P 14243), whose angle is equal or less than 10º.

In dorsal view (Fig. 2C), nasals and maxillaries are short. The anterior process of nasals extends beyond the anterior margin of the maxillaries, and going slightly downward distally. At the posterior half of the frontal there is located a smooth constriction, similar to the one observed in *Sc. chiliense* (type BMNH M 2819, see Lydekker 1886, pl. 48 and FMNH P14238). The sagittal crest is scarcely developed, unlike that of *Sc. tarijensis* (e.g. FMNH P 14243, MNHN TAR 1260, MMP 3989 and MNPA 005769), in which it is always strongly marked, characteristic feature of this species (see Gervais & Ameghino 1880; McDonald 1987; Pujos 2000; McDonald & Perea 2002). The temporal crest is also scarcely developed, another diagnostic feature that differentiates it from *Sc. tarijensis*, in which this structure is more evident (see Pujos 2000: 199) (e.g. FMNH P 14243, MNHN TAR 1260 and MMP 1267).

In posterior view (Fig. 2D), the occipital is low and the occipital and nuchal crests are very strong. The foramen *magnum* is oval in shape and transversally extended.

In palatal view the pre-dental region of the maxillary is shorter than the length of the molariform series, which are in parallel rows. In *C. cuvieri* both series of molariforms converge distally (see McDonald 1987, fig. 44c). The palatal surface exhibits a middle longitudinal furrow quite shallow, character already mentioned by McDonald & Perea (2002) for *Catonyx tarijensis* (= *Scelidodon tarijensis*), although it seems that in this specimen it would be deeper. Only the right M1 is preserved (Fig. 2, E). It is kidney-shaped in section, with the posterior-lateral concavity shallow and the anterior lobe more developed than the posterior one. This molariform is V shaped in *C. cuvieri* (Pujos 2000). The alveoli of the M2 and M3 show a longitudinal crest determining two sub-equal lobes; the whole section is subtriangular. However, *C. cuvieri* has a strong longitudinal furrow at the level of these molariforms (McDonald 1987; Pujos 2000) which determines two lobes, being the posterior one the most developed. These teeth are clearly triangular in cross section. In the studied specimen, the outline of the alveolus is similar to that of M2-3, but the longitudinal crest is smooth; that of the M5 is the smallest and strongly damaged, hence, its section could not be reconstructed. Despite the damage of M5, it can be observed that both lingual lobes are never as marked as those of this tooth in *Sc. tarijensis* (e.g. FMNH P 14243, MNPA 005769).

Concerning the skull length, *Sc. chiliense* is smaller than *Sc. tarijensis* (McDonald 1987; Pujos 2000; McDonald & Perea 2002). According to McDonald (1987) the specimens of *Sc. chiliense* from the Pleistocene of Ecuador are those of the largest range of this species (ca. 450-470 mm); however, the MNHN CPN 16 illustrated by Pujos (2000), from the Late Pleistocene of Peru, has a maximum length of 520 mm. In this context, the dimensions of the specimen from San Luis are placed within the range known for the species (see Table 1).

3. Associated paleofaunistic context and age of the fauna

Recent papers concern the study of Quaternary fossils from San Luis Province (see Chiesa et al. 1999a, b; Miño-Boilini et al. 2007); however, the level reached for other Argentine areas (e.g. Pampean and Mesopotamic regions; see Cione & Tonni 2005) has not been achieved yet.

Besides the *Sc. chiliense* remains, other fossil mammals have been collected in the Uspara Formation: *Neosclerocalyptus paskoensis* (Zurita, 2002),

Ctenomys sp. (Chiesa et al. 1999a) and *Equus* (*Ameripus*) cf. *neogeus* Lund (Tognelli et al. 2000 ; Miño-Boilini et al. 2007). From a biostratigraphic viewpoint, the record of the Equidae *E.* (*A.*) cf. *neogeus* and the Glyptodontidae *N. paskoensis* suggests that the bearing sediments would have been deposited during the Late Pleistocene – Early Holocene (Lujanian ca. 130-8.5 ka B.P.) (Cione & Tonni 2005; Miño-Boilini et al. 2007; Zurita 2007). Finally, regarding the paleoenvironmental conditions, the equids [*E.* (*A.*) cf. *neogeus*] are recorded in plains with xerophytic grasslands and compact soils (Alberdi & Prado 2004), *N. paskoensis* is related to arid environments of the Pampean region and central-northern Argentina, distributed accordingly with loessic soils (Zurita 2007); in turn, *Ctenomys* is interpreted as indicator of arid climates (Tonni et al. 1999).

4. Discussion and conclusions

The first records assignable to the genus *Scelidodon* (MACN 1041) are as old as Ensenadan, and were found in the "Toscas" of the Río de la Plata (ca. 1.07-0.98 Ma, Soibelzon et al. 2008) of the Pampean region (Pascual et al. 1966; McDonald 1987).

Only Megatheriinae and Scelidotheriinae sloths are recorded in the Pleistocene of the San Luis Province (Tognelli et al. 2000; Miño-Boilini et al. 2007). Lujanian Scelidotheriinae is represented by *Scelidotherium leptocephalum*, (see Chiesa et al. 1999b), from the Early Holocene, to which the record of *Sc. chiliense* is added. Noteworthy, Tognelli et al. (2000) originally classified the material here studied (MHIN-UNSL-GEO V 199) as *Scelidotherium leptocephalum*. The study of the specimen previously described clearly suggests that it belongs to *Sc. chiliense*. The specific assignment is supported by the following characters: a) sagittal crest barely marked; b) temporal crests scarcely developed; c) parietal and from squamosal bones separed by an horizontal suture, d) smooth constriction at the middle of the frontal. In this context, the skull characters a, b, and c are species diagnostic, and were previously noted by McDonald (1987), Pujos (2000), and McDonald & Perea (2002) to define and differentiate *Sc. chiliense* from the other Pleistocene species, *Sc. tarijensis*. In this sense, the comparative study of the specimen described here with other specimens of *Sc. chiliense* (type BMNH M 2819 and FMNH P14238) has shown that these specimens bear a slight constriction at the middle of the frontal (character d).

The finding of *Sc. chiliense* in Argentina enlarges the geographic distribution of the species, since it was found (Fig. 1) in Late Pleistocene sediments of Bolivia, Chile, Ecuador, and Peru (McDonald & Perea 2002), mostly Andean. It is, in fact, the species of *Scelidodon* with the largest latitudinal distribution, as *Sc. tarijensis* is only recorded undoubtedly in the Pleistocene of Argentina, Bolivia and Uruguay (McDonald & Perea 2002). The eastern extension of *Sc. chiliense* probably coincides with one of the repeated and antagonist pulses of climatic variation associated with temperature changes that favored the shift of the fringe of climatic continentality is such direction (see Soibelzon et al. 2006).

The materials used to recognize the species *Sc. chiliense* comes from Tamarugal (Tarapacá, see Lydekker 1886; Pujos 2000, among others). This site is located at northern Chile, and the estimated age corresponds to the Late Pleistocene – Early Holocene (Casamiquela 1970). The environmental conditions of the area suggest a semi-deserted area (Casamiquela 1970). In this sense, it is noteworthy that Moreno (2000) and Zurita et al. (2004) report evidence suggesting for this lapse, arid to very arid conditions for the center-north of Chile. However, towards the south, the conditions would have been more similar to the present ones (since 9.900 ka. B.P.) (Moreno 2000; Zurita et al. 2004).

Other mentions of this species in Chile were made by Casamiquela (1967, 1969), based on remains found in the Late Pleistocene of Santiago de Chile (central Chile). The records of the species in Chile correspond to Late Pleistocene – Early Holocene sediments (see Casamiquela 1967, 1970), and particularly those of the vicinities of Santiago. These remains are almost at the same latitude (ca. 33º 33' S, 70º 38' W) as the specimen here reported (Merlo, San Luis, Argentina). Consequently, the findings from Santiago (Chile) and San Luis (Argentina) are the southernmost records of *Sc. chiliense,* and in both cases they are Late Pleistocene – Early Holocene in age.

The Cordillera de los Andes acted certainly as an important paleogeographic barrier for some species, although it could have acted as well as a dispersal corridor for others (e.g. camelids) (see Casamiquela 1969). Probably this was the case of *Sc. chiliense*, taking into account that it is a species distributed frequently in the Andean and sub-Andean region (McDonald 1987; Pujos 2000; Pujos & Salas 2004), reaching southward up to central Chile (Casamiquela 1967, 1999).

As stated above, it is also likely that during the Lujanian, coincidently with the eastward shift of the fringe of continentality the species *Sc. chiliense* would have found the appropriate conditions for its dispersal toward the eastern side of the Cordillera. This shift could have occurred as a consequence of the sea level fall (e.g. OIS 2). This happened repeatedly during the the largest was that of the Last Glacial Maximum (ca. 21-18 ka B.P.), that caused the coeval shifting of the eastern coasts of Argentina several hundred kilometers (Soibelzon et al. 2006).

Finally the presence of *Sc. chiliense* in central Argentina could have occurred following two hypotheses, regarding that most records are out of this area, and concentrated mostly in central-northern Chile, Bolivia, Peru and Ecuador:

1) Casamiquela (1969: 146-147) proposed that the entering of Pleistocene mammals into the present territory of Argentina could have occurred through the southernmost regions of the Cordillera (e.g. cervids and camelids), where the altitude is lower (ca. 2000 m a.s.l.). Accordingly, Moreno et al. (1994) mention the possible biogeographic connection (37º45' S and 72º44' W) through a Trans-Andean corridor located in the Cordillera of Nahuelbuta, which coincides in latitude with the two southernmost records of *Sc. chiliense* (Santiago, Chile, and San Luis, Argentina). Somehow, this connection could have been used by this species to enter the Argentine territory. A similar situation was stated by Moreno et al. (1994) and Frassinetti & Alberdi (2005), who proposed that this possible biogeographic pathway was used for the arrival of *Stegomastodon* Pohlig, in Chile, from the Pampean region of Argentina. Labarca & López (2006) agree with this hypothesis when analyzing the record of *Glossotherium* Owen, in Chile, near Lonquimay, Malleco (38º30' S) (Casamiquela 1969, 1999; Moreno et al. 1994; Labarca & López 2006).

2) Other authors (Powell et al. 1993; Casamiquela 1999; Zurita et al. 2004) stated that the Andean corridor of south Bolivia (Tarija, where there are records of *Sc. chiliense* – see below), could have been used as a dispersal way toward the present territory of Chile (e.g. *Antifer, Palaeolama*, Notrotheriinae, among others) (see Powell et al. 1993; Zurita et al. 2004).

The specimen found in Padcaya (Tarija, Bolivia) (FMNH P 14238) was studied by McDonald (1987) and assigned to *Sc. tarijensis* (= *Catonyx tarijensis*). This author only reported the study of the mandible and post-cranium, and does not mention the skull (which is part of the collection). According to the new study of the same material, we determine that it belongs to *Sc. chiliense*, based on the sagittal and temporal crests slightly marked and the absence of an accessory lobe of the m4. In contrast in *Sc. tarijensis* such crests are very strong and the accessory lobe is present (McDonald 1987; McDonald & Perea 2002). According to McDonald (1987), in Bolivia *Sc. chiliense* is restricted to the Late Pleistocene of Ulloma, La Paz Department, some 600 km northwest of the Padcaya-Tarija Basin.

Consequently, this record (FMNH P14238) also enlarges the distribution of *Sc. chiliense* in Bolivia and allows speculation that this would be another dispersal rout followed by this taxon.

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Appendix Acronyms and list of specimens of *Scelidodon* mentioned in the text.

Material	Taxa	Stratigraphic and geographic provenance
BMNH M 2819, holotype	*Scelidodon chiliense* (LYDEKKER)	Late Pleistocene, Tarapacá, Chile. LYDEKKER (1886: pl. 48).
FMNH P14238	*Sc. chiliense*	Pleistocene, Tarija, Bolivia.
MNHN SGO-PV 13-V-69-1	*Sc. chiliense*	Late Pleistocene, Ulloma, Bolivia.
MNHN CPN 16	*Sc. chiliense*	Late Pleistocene, Cupinisque, Peru. PUJOS (2000: fig. 2a).
MNHN TAR 1260, holotype	*Sc. tarijensis* (GERVAIS & AMEGHINO)	Pleistocene, Tarija, Bolivia.
FCS 96.I.15/1	*Sc. tarijensis*	Pleistocene, Olavarría, Buenos Aires, Argentina.
FMNH P 14243	*Sc. tarijensis*	Pleistocene, Tarija, Bolivia.
MMP 1267	*Sc. tarijensis*	Pleistocene, Mar del Plata, Buenos Aires, Argentina.
MMP 3989	cf. *Sc. tarijensis*	Ensenadan, Mar del Plata, Buenos Aires, Argentina.
MNPA 005769	*Sc. tarijensis*	Pleistocene, Tarija, Bolivia.
MACN A-1158, holotype	*Sc. copei* AMEGHINO	Bonaerian, Mercedes, Buenos Aires, Argentina.
MACN 1041	*Scelidodon* sp.	Ensenadan, Toscas del Río de la Plata, Buenos Aires.