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SUPPLEMENTARY ONLINE MATERIAL FOR

Phylogeny and evolutionary patterns of South American  
octodontoid rodents

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**Supplementary Online Material:**

**SOM 1**

(a) Description of characters used in the phylogenetic analysis

References

(b) Character matrix

(c) The three most parsimonious trees.

(d) Strict consensus tree; numbers indicate unambiguous synapomorphies

**SOM 2**

List of taxa and specimens examined.

References

**SOM 3**

Age estimates for the first appearance data of Octodontoidea

References

## **SOM 1**

**(a)** Description of characters used in the phylogenetic analysis. Nomenclature of craniomandibular traits follows Hill (1935), Lavocat (1971, 1976), Woods & Howland (1979), Moore (1981), Wahlert (1984), Novacek (1993), Verzi (2001), Olivares et al. (2012a). Dental nomenclature follows Marivaux et al. (2004, fig. 1) and Antoine et al. (2012, fig. S1). References of publications that include at least partial descriptions of the listed characters are indicated.

Character 1. Premaxillary septum separating incisive foramina (Verzi 2001): with posterior ends of premaxillae joined medially, forming a pointed or rounded projection which may join an anterior apophysis of the maxilla (0); with posterior ends of premaxillae divergent, each one forming a small lateral apophysis (1).

Character 2. Lateral walls of incisive foramina (or of the corresponding cavity in case of partially obliterated foramina) (Verzi, 2008): with concave margins (0); with protruding medial walls of premaxillae producing anteriorly convergent margins (1); margins very narrow or not developed posterior to premaxillary-maxillary suture (2).

Character 3. Premaxillary-maxillary suture at medial margin of incisive foramen (Verzi 2008; Verzi et al. 2010): level with the portion of the suture located lateral to the foramen (0); displaced anteriorly (1); displaced posteriorly (2).

Character 4. Medial margins of maxillary fossae (Olivares et al. 2012b): separated (0); approximating each other or fused along the midline and generally forming a crest (1).

Character 5. External margins of incisive foramina posterior to premaxillary-maxillary suture: separate (0); very close or fused to each other (1).

Character 6. Anterior portion of premaxilla anterior to incisive alveolus (Carvalho and Salles 2004; Olivares et al. 2012b): low to very low (0); high, forms the ventrolateral side of a tube that is dorsally completed by the nasal (1).

Character 7. Alveolar margins of M1-M2: level with palatal bridge, or ventral and forming acute alveolar margins (0); dorsal to the palatal bridge, forming wide to moderately convex, sometimes swollen, margins (1).

Character 8. Protuberance on maxilla ventral to bottom of alveolar sheath of I1: absent (0); present and located at the level of the external alveolar margin of DP4 (1); present and located at the level of the external alveolar margin between DP4 and M1 (2).

Character 9. Lateral flange of canal for infraorbital nerve in zygomatic root (Verzi 2008; Verzi et al. 2010): with dorsal margin free or slightly in contact with bottom of alveolar sheath of upper incisor (0); with dorsal margin joined to bottom of alveolar sheath of upper incisor (1).

- Character 10. Lacrimal foramen: opens into the orbital portion of the lacrimal (0); opens into the maxilla (1).
- Character 11. Portion of maxilla surrounding foramen into lacrimal canal: with a suture posterior to the foramen (0); continuous around foramen (1).
- Character 12. Foramen into nasolacrimal canal: opens into maxilla (0); surrounded posteriorly by lacrimal (1).
- Character 13. Orientation of nasolacrimal canal (Glanz and Anderson 1990): anteroventrally oblique to subvertical (0); subhorizontal (1).
- Character 14. Dorsal part of nasolacrimal canal (Olivares et al. 2012b): with posterior margin slightly to strongly developed (0); without posterior margin (1).
- Character 15. Dorsal part of nasolacrimal canal: formed only by lacrimal (0); formed by lacrimal and maxilla (and in some cases also by frontal) (1).
- Character 16. Dorsal and anterodorsal portions of alveolar sheath of M1 (Verzi 2008): not hidden inside sphenopalatine fissure (0); hidden inside sphenopalatine fissure (1).
- Character 17. Sphenopalatine fissure: well developed (0); reduced (not owing to height of molar alveoli) (1).
- Character 18. Anterior portion of sphenopalatine fissure (Olivares et al. 2012b): located ventral or anteroventral to lacrimal foramen (0); located posteroventral to lacrimal foramen (1).
- Character 19. Portion of maxilla dorsal to anterior part of sphenopalatine fissure (Olivares et al. 2012b): narrow, little extended behind nasolacrimal canal (0); wide, markedly extended behind nasolacrimal canal (1).
- Character 20. Dorsal projection of jugal in antorbital zygomatic bar: absent (0); present (1).
- Character 21. Maxilla in anterior portion of zygomatic arch: with an extension located dorsal to the jugal at the base of the antorbital zygomatic bar (0); extension dorsal to jugal reduced or absent (1).
- Character 22. Suborbital fossa on jugal (Verzi 2008; Olivares et al. 2012b): absent (0); present (1).
- Character 23. Anterior end of jugal fossa (Olivares et al. 2012b): acute (0); wide, rounded to subquadrangular (1).
- Character 24. Inferior jugal process (Emmons 2005; Olivares et al. 2012b): level with or slightly anterior to paraorbital process (or to the suture between squamosal and jugal) (0); behind level of paraorbital process (1).

- Character 25. Relationship between zygoma and orbital region: dorsal margin of zygoma concave, not restricting orbital region (0); dorsal margin of zygoma very slightly concave or straight, restricting orbital region (1).
- Character 26. Contact of maxilla, lateral palatine plate and alisphenoid in basitemporal region (Verzi 2001): located posterior to the M3 alveolus (0); lateral to the M3 alveolus (1).
- Character 27. Posterior portion of maxilla in basitemporal region (Verzi 2001): without apophysis (0); with an apophysis lateral to M3 alveolus, oriented posterodorsally (1); with an apophysis posterior to M3 alveolus, oriented laterally (2).
- Character 28. External auditory meatus (Verzi 2008; Verzi et al. 2010): short, moderately protruding with respect to auditory bulla and epitympanic recess (0); markedly protruding, with its anterodorsal and anterior wall moderately to very concave (1).
- Character 29. Alisphenoid (Verzi 2008; Olivares et al. 2012b): without contact with maxilla or only contacting via a posterior maxillary apophysis (0); with its anterior margin joined to the maxilla (1).
- Character 30. Anterior margin of alisphenoid: oriented posterodorsally (0); oriented dorsally or anterodorsally (1).
- Character 31. Posterior margin of maxilla in alveolar region (in ventral view): anterior to anterior margin of alisphenoid-glenoid fossa (0); level with or slightly posterior to anterior margin of alisphenoid (1).
- Character 32. Masticatory and buccinator foramina: present (0); absent (1).
- Character 33. Pterygoid fossa in ventral view (between alisphenoid bridge and anterior margin of lateral palatine plate): subcircular, with the anteroposterior and transverse diameters being similar (0); suboval, with the anteroposterior diameter exceeding the transverse one (1).
- Character 34. Ventral margin of posterior process of squamosal (Olivares et al. 2012b): thin (0); thick (1).
- Character 35. Ventral margin of posterior process of squamosal (Olivares et al. 2012b): not laterally deflected (0); laterally deflected, thus forming a shelf (1).
- Character 36. Posterior process of squamosal (Verzi 2001): straight, with posterior portion wide (0); with posterior portion narrow, ventrally inclined, and reaching posterior margin of epitympanic recess (1); with posterior portion narrow, ventrally inclined, and not reaching posterior margin of epitympanic recess (2).

- Character 37. Tip of lateral process of supraoccipital: located ventral to posteroventral tip of posterior process of squamosal (0); close to or level with posteroventral tip of posterior process of squamosal (1).
- Character 38. Lateral process of supraoccipital (Woods 1984: p. 434; Olivares et al. 2012b): short, located dorsal to mastoid process (0); long, ventrally extended below level of mastoid process (1).
- Character 39. Tip of paroccipital process (Woods 1984, p. 427; Verzi 2001, 2008): extending to a level ventral to auditory bulla (0); terminating dorsal to the level of the ventral portion of auditory bulla (1).
- Character 40. End of paroccipital process in posterior view: free or joined to auditory bulla, not strongly expanded on to the latter (0); forming a scale-like structure adhering on to bulla, strongly expanded dorsally and ventrally (1).
- Character 41. Orientation of distal portion of paroccipital process: on a plane parallel or subparallel to occipital plane (0); rotated so that its external margin becomes posterolateral or posterior (1).
- Character 42. Paroccipital process: ventral or ventrolaterally oriented (0); laterally oriented (1).
- Character 43. Root of paroccipital process (Verzi 2001): facing posteriorly and aligned with the plane of the occiput, or more medially oriented owing to the development of the mastoid bulla (0); inflected at level of dorsal portion of occipital condyle and perpendicular to plane of occiput (1).
- Character 44. Posterior portion of mastoid bulla: level with or anterior to root of paroccipital process (0); located posterior to level of root of paroccipital process (1); posterior to level of paroccipital process owing to hypertrophy of auditory bulla (2).
- Character 45. Origin of masseteric crest of mandible (Verzi 2008; Verzi et al. 2010): oriented in the same direction as ventral border of notch for tendon of medial masseter muscle, or nearly so (0); ventrally deflected with respect to notch for tendon of medial masseter muscle (1).
- Character 46. Dorsal portion of postcondyloid process in posterior view (Olivares et al. 2012b): deflected ventrolaterally (0); vertical (1).
- Character 47. Notch for tendon of medial masseter muscle (Olivares et al. 2012b): developed as a semicircular step anterior to origin of the masseteric crest (0); incorporated into origin of the masseteric crest, as an inconspicuous groove or rough area (1).
- Character 48. Lateral crest of mandible: oblique (0); subvertical (1).

- Character 49. Lower incisor (Olivares et al. 2012b): long, bottom alveolar sheath at level of posterior portion of m3 (0); short, bottom alveolar sheath at level of m2 or m3 but not reaching posterior portion of m3 (1); extremely short, bottom of alveolar sheath at level of Dp4 (2).
- Character 50. Anteroloph on DP4: reaching the labial side of the tooth, with labial end level with end of protoloph or nearly so (0); markedly shorter, labial end not reaching level of end of protoloph (1).
- Character 51. Mesolophule on DP4 (Antoine et al. 2012): developed as an independent loph or partially fused to posteroloph (or posteroloph + metaloph), transversely oriented (0); represented by a posteriorly oriented spur contacting the posteroloph (or posteroloph + metaloph) (1); spur extremely reduced or absent (2).
- Character 52. Protoloph on M1–2 (Carvalho and Salles 2004; Olivares et al. 2012b): present as a complete loph, independent or fused to anteroloph (0); reduced to its labial portion, forming a tubercle isolated or fused to the anteroloph (1).
- Character 53. Mesolophule on M1 (Antoine et al. 2012): reaching the labial side of the tooth, with its labial end reaching the labial end of the posteroloph + metaloph (0); shorter and oriented posterolabially (1).
- Character 54. Mesolophule on M1 (Antoine et al. 2012): with its labial end not joined to medial wall of metacone (0); with its labial end joined to medial wall of metacone (1).
- Character 55. Mesolophule on M1–2 (see Lavocat's interpretation in Wood 1974: fig. 1; Antoine et al. 2012): lingually connected to anterior arm of hypocone (0); lingually disconnected from anterior arm of hypocone, with its labial end connected to posteroloph (or posteroloph + metaloph) (1).
- Character 56. Posteroloph (or posteroloph + metaloph) on M1–3: widely connected to the hypocone (0); connection to the hypocone narrow or absent (1).
- Character 57. Posteroflexus of M1–M2: curved and of variable length, but never occupying the entire occlusal surface (0); transverse and strongly penetrating, crossing the entire occlusal surface (1).
- Character 58. Anterior face of Dp4 (Verzi 2001): rounded and without secondary folds (0); pointed and with well-defined secondary folds on the labial and lingual sides (1); with a deep secondary fold on the lingual side (2); pointed and with weak secondary folds on either side, or with secondary folds absent (3).
- Character 59. Dp4: with persistent flexids/fossetids (0); with hypo- and mesoflexid (1); with hypostria and mesostria (2); without flexids (3).

- Character 60. Dp4: with parallel lophids (0); with lophids anterior to hypolophid (metalophulid I, metalophulid II and mesolophid) joined to form a lobe of variable morphology (1); with lophids anterior to posterolophid joined to form a lobe of variable morphology (2).
- Character 61. Flexids (or the corresponding fossettids) of m1–2 (Verzi et al. 2010): present (0); only hypo- and mesoflexid/fossettids are present (1); absent or vestigial (2).
- Character 62. Lingual flexids of m1–m2: forming fossettids in adult (0); persistent, trilophodont laminar pattern (1); persistent, tetralophodont laminar pattern (2).
- Character 63. Lophids of m1–3: straight (0); moderately concave anteriorly (1).
- Character 64. Orientation of metalophulid I, hypolophid, and posterolophid in m1–3: transverse or moderately oblique and posteriorly oriented (0); strongly directed posteriorly (1).
- Character 65. Protoconid, hypolophid and ectolophid: not aligned (0); aligned and posterolingually oriented (1).
- Character 66. Hypo- and mesoflexid of m1-m2, if figure-eight shaped: present (0); closed and leaving an evident stria in non-senile adults (1).
- Character 67. Mesolophid of m1–2 (or the corresponding spur; Antoine et al. 2012): present at least during early ontogenetic stages (0); absent (1); fused to metalophulid II forming a complex crest (2). A complete sequence showing the formation of the latter complex crest is presented in Patton (1987, figs. 24 to 30).
- Character 68. Metalophulid II in non-laminar m1–2 (Antoine et al. 2012): forming a complete crest (0); reduced, proximal portion forming a spur or absent, distal portion fused to metalophulid I so that the lingual end of the latter is usually expanded (1).
- Character 69. Occlusal morphology of adult m1–m2 (Verzi 2001, 2008; Vucetich and Kramarz 2003): with transverse or slightly oblique lophids and flexids/fossettids (0); figure-eight shaped (1); subrhombic to crescent-shaped (2).
- Character 70. Basal portion of molar crown (without flexids) (Verzi et al. 2011): short, with at least the hypoflexid extending to the base of the crown (0); high (1).
- Character 71. Occlusal morphology of m–m2, if subrhombic to crescent-shaped (Verzi 2008; Verzi et al. 2010): without anterior protrusion limiting the lingual concavity (0); crescent-shaped, with an anterior protrusion limiting the lingual concavity (1).
- Character 72. m3 (Verzi 2008; Verzi et al. 2010): not reduced or moderately reduced (especially its posterior lobe) (0); extremely reduced, subelliptic to subcircular in cross section, with its implantation posterolateral or posterior and dorsal to i1 (1).
- Character 73. Occlusal portion of molars: moderate to small relative to skull or mandible size (0); proportionally very large (1).

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**(b) Character matrix. Multistate character 49 was treated as ordered (additive).**

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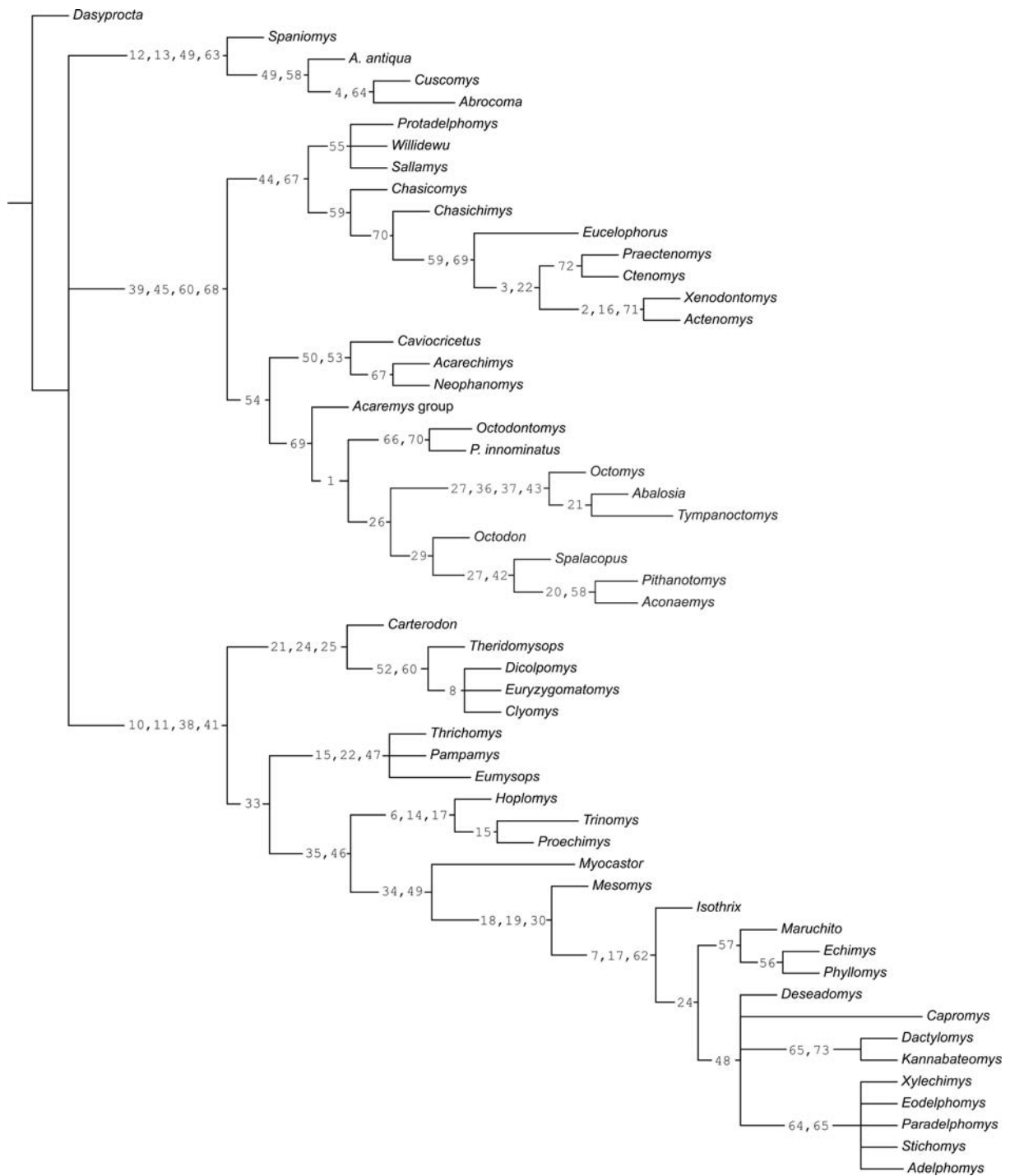
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(c) The three most parsimonious trees.



(d) Strict consensus tree; numbers indicate unambiguous synapomorphies.



## SOM 2.

List of taxa and specimens examined.

*Institutional abbreviations.*— Cátedra de Geología Histórica, Facultad de Ciencias Exactas y Naturales, Universidad Nacional de La Pampa, Santa Rosa, Argentina (GHUNLPam); Cátedra de Geología Histórica, Universidad Nacional del Sur, Bahía Blanca, Argentina (UNSGH); Centro de Ensino e Pesquisas Arqueológicas da Universidade de Santa Cruz do Sul, Santa Cruz do Sul, Brasil (UNISC); Centro Nacional Patagónico, Puerto Madryn, Argentina (CNP Pv); Colección Boliviana de Fauna, La Paz, Bolivia (CBF); Colección de Mamíferos, Universidad Austral de Chile, Valdivia, Chile (UACH); Instituto Miguel Lillo, Tucumán, Argentina (PVL); Instituto y Museo de Ciencias Naturales, San Juan, Argentina (IMCN); Museo Argentino de Ciencias Naturales “Bernardino Rivadavia”, Buenos Aires, Argentina (MACN); Museo de Ciencias Naturales de Mar del Plata “Lorenzo Scaglia”, Mar del Plata, Argentina (MMP); Museo de Ciencias Naturales de Monte Hermoso “V. Di Martino”, Monte Hermoso, Argentina (MMH); Museo de Ciencias Naturales de la Universidad Nacional de La Rioja, La Rioja, Argentina (UNLaR); Museo de La Plata, La Plata, Argentina (MLP); Museo “Florentino y Carlos Ameghino”, Universidad Nacional de Rosario, Rosario, Argentina (IFG); Museo Nacional de Historia Natural de Montevideo, Uruguay (MNHN-DP); Museo Paleontológico Egidio Feruglio, Trelew, Argentina (MPEF); Museo Regional Provincial Padre Manuel Jesús Molina, Río Gallegos, Argentina (MPM-Pv); Museu Arqueológico do Rio Grande do Sul, Rio Grande do Sul, Brasil (MARSUL); Museu de Zoologia, Universidade de São Paulo, São Paulo, Brasil (USP); Museu de Zoologia, Universidade Federal de Bahia, Bahia, Brasil (UFBA); Museu Nacional, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brasil (MN-UFRJ); Museum of Vertebrate Zoology, University of California, Berkeley, USA (MVZ); Universidad Autónoma Tomás Frías, Potosí, Bolivia (UATF); Universidade de Brasília, Brasília, Brasil (UnB).

†*Abalosia castellanosi*.— MMP 572-M, 1060-M, 1439-M, 1452-M, 1522-M–1524-M; PVL 1252 (holotype of *Plataeomys castellanosi*).

†*Abrocoma*.— MACN 19722; MMP 1059-M; †*A. antiqua*: IFG 546; IMCN 505, 536; MACN 8353 (holotype); MLP 99-XII-13-1; UNLaR 36a,b; *Abrocoma*: MLP 31.XII.02.80, 1930, 1931, 2038.

†*Acarechimys*.— MLP 15-188 (holotype of *Acarechimys minutissimus*), 90-II-13-150a, 90-II-13-150b, 90-II-13-150c, 90-II-13-150d, 90-II-13-150e, 90-II-13-150f (n=2); MPEF 5065, 5066.

†*Acaremys* group.— MLP 15-24 (lectotype of *Sciamys varians*), 15-125, 15-197, 15-218, 15-222, 15-223, 15-225, 15-347, 15-349, 15-352, 15-391b, 15-393, 15-390, 15-410 (lectotype of *Acaremys murinus*), 15-146 (lectotype of *Sciamys principalis*), 55-XII-13-151, 59-XII-16-3, 63-XII-19-120, 63-XII-19-126, 63-XII-19-127, 63-XII-19-129 – 63-XII-19-134, 63-XII-19-137 – 63-XII-19-139, 63-XII-69-120, 84-III-8-43, S/N<sup>o</sup>; MPM-PV 3563, 3721, 3737, 4185, 4205, 4224.

*Aconaemys*.— *A. fuscus* UACH 1 – 3, 2254, 2524-2528, 3703, 4179 – 4183. *A. porteri* MVZ 159431, 159433, 159436, MLP 17.II.92.1 – 17.II.92.7, 17.II.92.11; UACH 2255 – 2274, 3704 – 3723, 4184 – 4201, 4386 – 4398, 3701, 3702. *A. sagei* UACH 2785, 4399, 4401; MLP 17.II.92.8 – 17.II.92.10; MVZ 163417, 163421.

†*Actenomys priscus*.— MLP 46-V-13-30, 46-V-13-32, 46-V-13-36, 46-V-13-42, 46-V-13-46, 46-V-13-47, 46-VI-27-6, 48-XII-16-209, 48-XII-16-210, 51-VI-11-5, 51-VI-11-10, 52-X-4-50, 52-IX-6-48, 52-X-6-99, 57-V-1-17, 57-VII-23-17, 57-VII-23-18, 57-VIII-3-19, 60-VII-29-12, 62-VII-27-8, 62-VII-27-27, 62-VII-27-57, 63-VI-10-7, 63-VI-10-33, 63-VI-10-36, 66-IV-26-2 – 66-IV-26-4, 71-II-11-15, 77-V-9-3, 86-VI-20-5, 86-VI-20-8, 86-VI-20-10, 86-VI-20-14, 87-V-20-1, 87-V-20-14, 89-XII-15-5, 89-XII-15-6(1), 89-XII-15-6(2), 89-XII-15-7, 89-XII-15-14, 89-XII-15-16, 89-XII-15-19, 89-XII-15-33, 91-II-20-5, 91-III-1-17, 91-III-1-47, 91-III-1-72, 91-III-1-97, 91-IV-1-17, 91-IV-1-41, 91-IV-5-22, 91-IV-5-195, 91-IV-5-202 – 91-IV-5-204, 91-IV-5-207, 91-IV-5-211, 91-IV-5-220, 91-IV-5-245, 91-IV-5-255, 91-IV-5-257, 91-IV-5-262, 91-IV-5-272, 91-IV-5-273, 91-IV-5-286, 91-IV-6-19, 91-IV-6-20, 91-IV-6-27, 91-IV-6-52, 91-IV-6-53, 91-IV-6-59, 91-IV-6-61 – 91-IV-6-64, 91-IV-6-65a,b, 92-XI-10-1, 93-I-1-26, 94-II-1-111, 94-II-1-131, 94-II-1-140, 94-II-1-142, 94-II-1-144, 94-II-1-147, 95-IX-4-20, 97-IV-1-12, 99-X-1-1, 99-X-1-16; MLP field numbers H-1, H-53, H-150, D-51, P-269; MMP 115-S, 147-S, 193-S, 208-S, 211-S, 240-S, 243-S, 246-S, 337-S, 347-S, 348-S, 351-S, 363-S, 364-S, 367-S, 368-S, 371-S, 372-S, 373-S, 385-S, 391-S, 395-S, 396-S, 464-S, 474-S, 493-S, 532-S, 569-S, 579-S, 581-S, 582-S, 620-S, 699-S, 703-S, 715-S – 720-S, 750-S, 758-S, 766-S, 767-S, 799-S, 808-S, 330-M, 360-M, 411-M, 417-M – 420-M, 426-M, 497-M, 498-M, 516-M, 517-M, 605-M, 648-M, 769-M, 778-M, 780-M, 782-M – 784-M, 786-M, 787-M, 792-M – 794-M, 803-M – 805-M, 829-M, 831-M, 849-M, 859-M, 884-M, 893-M, 895-M, 1121-M, 1134-M, 1136-M, 1210-M, 1211-M, 1217-M, 1224-M, 1240-M – 1243-M, 1250-M – 1252-M, 1266-M, 1355-M, 1382-M, 1383-M, 1483-M, 1484-M, 1550-M – 1552-M, 1556-M, 1557-M, 1559-M, 1560-M – 1568-M, 1641-M – 1644-M, 1845-M, 2017-M – 2027-M, 2029-M, 2030-M – 2034-M, 2036-M – 2038-M, 2041-M – 2043-M, 2066-M – 2071-M, 2075-M, 2094-M, 2115-M, 2120-M, 2121-M, 2127-M, 2354-M, 2402-M, 2403-M, 2405-M, 2434-M, 2445-M, 2449-M – 2452-M, 4255-M.



†*Adelphomys*.— MACN-A 239 – 243, 1918 – 1921, 1923, 1925 – 1927, 1930; MLP 15-183, 15-216 (holotype of †*Adelphomys candidus*).

*Capromys*.— MLP 15.X.98.6, MLP provisional numbers 67, 87, 135.

*Carterodon*.— MN-UFRJ 1946, 22235, 22238, 24230, 54368; USP 34765, 34766.

†*Caviocricetus lucasi*.— MPEF 505 (holotype), 5052 (n=2), 5064 (n=2), 5073, 5075, 5076 (n=3), S/Nº (n=3); MLP 90-II-13-151 (n=10), 99-XII-10-1 – 99-XII-10-3.

†*Chasichimys*.— †*C. bonaerense* MLP 60-VI-18-108 (holotype), 55-IV-28-4, 55-IV-28-99; GHUNLPam 5068, 8035. †*C. scagliai* GHUNLPam 311, 2011; MLP 87-XI-20-30; MMP 481-M (holotype of †*Pattersomys scagliai*). †*Chasichimys* morphotype a GHUNLPam 2217.

†*Chasicomys octodontiforme*.— MLP 55-IV-28-1 (holotype); MMP 480-M, 535-M, 1502-M, 1509-M – 1511-M; MMH 86-9-118D, MMH-CH 85-4-131.

*Clyomys laticeps*.— UnB 2077, 2079, MN-UFRJ 63851, 63853, 68967.

*Ctenomys*.— †*C. chapalmalensis* MACN 12681 (holotype of †*Paractenomys chapalmalensis*), 13839, 19242, 19243, 19245 – 19256; MLP 52-IX-27-53, 90-IV-4-1 – 90-IV-4-3; MMP 298-S, 356-S – 358-S, 444-S, 481-S, 575-S, 601-S, 606-S, 613-S, 642-S, 377-M, 483-M, 646-M, 845-M, 889-M – 891-M, 1061-M, 1214-M, 1223-M, 1225-M – 1227-M, 1229-M, 1319-M, 1449-M, 1526-M, 1620-M, 1622-M, 1730-M. †*C. kraglievichi* MACN 6457 (holotype of †*Megactenomys kraglievichi*), MACN 10846 (holotype of †*C. dasseni longirostris*); MNHN-DP 533 (holotype of †*Ctenomys praderii*); MLP 52-X-1-6; 91-IV-25-97; 91-IV-25-160; 92-VII-5-1; 92-XI-12-1; 03-II-15-1; MMP 366-S; 429-M; 512-S; 513-S; 517-S; 527-S; 626-S; 628-S; 632-S; 684-S; 689-S; 1330-M; 2350-M; 2351-M; 2353-M; UNSGH 330; UNSGH 321. †*C. uquiensis* MLP 96-II-29-1 (holotype), MLP 96-II-29-2. *C. argentinus* MMP Ma 2450 - 2453, 4074. *C. australis* MLP 1.I.72.1, 3.XI.95.5, 7.XI.95.1 - 7.XI.95.7, 7.XI.95.9, 7.XI.95.11, 7.XI.95.12, 10.XI.95.2, 28.V.01.11, 27.XII.01.61; MMP Ma I1072, I1075, 1797, 1803. *C. azarae* MLP 1.I.03.7, 1.I.03.8, 2.IV.02.7, 21.III.78.27, 30.V.01.6, 30.V.01.7. *C. "chasiquensis"* MLP 27.12.01.62, MMP Ma 1761 - 1767. *C. dorbignyi* MLP 5.VI.00.1, 5.VI.00.6; MMP Ma 3424 - 3428, 3452, 3455 - 3457. *C. flamarioni* MLP 28.V.01.5, 28.V.01.6. *C. frater* CBF 00940, 2307. *C. fulvus* MLP 7.X.92.1 – 7.X.92.3, 7.X.92.11, 7.X.92.13, 7.X.95.2, 7.XI.95.8, 7.XI.95.10, 9.XI.95.2. *C. latro* MLP 3.XI.95.6, 10.XI.95.1; MMP Ma 2426 - 2428, 3187 – 3190. *C. leucodon* CBF 3658, 3659, 4999, 5793. *C. lewisi* CBF 00926, 2280, 2282. *C. magellanicus* MMP Ma 7, 2500 – 2502, 2807, 2808, 4157; MLP 9.XI.09.1 – 9.XI.09.65. *C. maulinus* MLP 1.X.01.4, 1.X.01.3, 7.X.92.10. *C. mendocinus* MLP 7.X.92.4, 3.XI.95.7, 30.V.01.1. *C. opimus* MLP 12.XI.02.16 – 12.XI.02.18;

MMP Ma 2202, 3102 – 3105. *C. pearsoni* MLP 30.XI.93.3, 30.XI.93.4. *C. perrensi* MMP Ma 2437, 2438, 2440, 2447, 2474, 3417 – 3420, 3422, 3423, 3453. *C. porteousi* MMP Ma 1337, 1340, 1343, 1347, 2288 – 2293, 2296, 2297, 3213, 3215, 3216, 3219. *C. roigi* MMP Ma 2410 - 2412, 2442, 3461. *C. sociabilis* MMP Ma 3708, 3709. *C. steinbachi* CBF 00942 - 00944. *C. talarum* MLP 20.III.78.1 – 20.III.78.7, 21.III.78.19 – 21.III.78.22, 10.V.87.1 – 10.V.87.9, 1.XI.95.8 – 1.XI.95.15, 3.XI.95.1 – 3.XI.95.4, 10.XI.95.6, 10.XI.95.7, 23.VIII.01.2, 23.VIII.01.7, 23.VIII.01.10, 1.VIII.00.11. *C. tuconax* MLP 12.VI.70.3, 12.VI.70.4, 12.VI.70.6, 27.III.78.2, 28.V.01.1; MMP Ma 2429, 2430, 2960 – 2963, 3182, 3303, 3304, 3311, 3342, 3346, 3695, 4161, 4206. *C. tucumanus* MLP 1838, 7.X.92.6.

*Dasyprocta*.— MLP 1090, 1420 – 1422, 10.VI.98.1, 5.IX.97.2; MN-UFRJ 27955.

*Dactylomys dactylinus*.— MLP 8.V.95.6; MN-UFRJ 31575, 42846; MVZ 190620.

†*Dicolpomys fossor*.— UNISC 1508-1, 1562-2, 1690-13, 1695-2, 1698-5, 1699-3, 1700-5, 1702-3, 1702-7, 1704-9, 1707-1, 1757-6, 1757-14, 1761-12, 1761-13, 1761-14, 1763-7, 1763-12, 1763-13, 1763-14, 1763-21, 1764-2, 1764-3, 1765-2, 1765-18, 1767-6, 1767-8, 1769-9, 1769-10, 1770-5; MARSUL 671-54, 687-21, 689-24, 698-53, 699-51, 702-50.

†*Deseadomys*.— *D. arambourgi* MLP 93-XI-21-5, 95-III-10-13; *D. loomisi* MPEF 571.

*Echimys*.— MACN 31.160, 31.161, 3.28; MN-UFRJ 3847, 21505, 60538.

†*Eucelophorus*.— †*E. cabrerai* MACN 7294 (holotype), 7286, 7288, 7665, 15569. †*E. chapalmalensis* MACN 1142 (holotype), 18087; MLP 91-IV-6-31, 91-IV-25-60, 91-IV-25-82, 91-IV-25-91, 91-IV-25-98, 91-IV-25-99, 91-IV-25-146, 91-IV-25-189, 91-IV-25-207, 95-XII-1-5, 95-XII-1-18, 96-III-11-1, 97-II-1-60, 97-II-1-74; MMP 370-S, 415-S, 448-S, 449-S, 485-S – 488-S, 506-S, 603-S, 610-S, 756-S, 788-S, 600-M, 613-M, 645-M, 651-M, 668-M, 840-M, 1070-M, 1125-M, 1718-M, 1333-M, 2012-M (holotype of †*Eucelophorus zaratei*), 2013-M – 2015-M.

†*Eumysops*.— †*E. laeviplicatus* MACN-A 1623 (holotype), 1626, MACN-Pv 7314, 7322, 7337, 7339, 7663, 9560; MD-FM-08-46; MLP 48-XII-16-233, 48-XII-16-234, 60-X-4-61; MMP 857-M. †*E. formosus* MACN-A 7327 (holotype of †*Proatherura formosa*), MACN-Pv 7313, 7315; MD-FM-08-47. †*Eumysops* sp. MACN-A 53-2, MACN-Pv 98 – 101, 5798, 5834, 5839, 5911, 5912, 6011, 6012, 6076, 6441, 6653, 6657, 6658, 10011, 10030, 10056, 10174, 10208, 10245, 10279, 10297, 10334, 10346, 10373, 10396, 10935, 10963, 10976, 11657, 14287, 14290, 16808, 17297, 17574, 17765, 17772, 17778, 17790, 17791, 17804, 17819, 17868, 17869, 17905, 18082, 19302, 19312, 19319, 19324, 19335, 19357, 19433, 19449, 19455, 19470, 19475, 19479, 19531,

19698 – 19705; MLP 15-18<sup>a</sup>, 15-20, 15-21<sup>a</sup>, 48-IV-14-1, 48-IV-22-1 – 48-IV-22-4, 48-IV-27-2, 48-IV-27-3, 48-IV-27-8, 49-IX-7-2, 51-VI-11-48, 51-VI-11-37, 52-IX-27-55, 52-IX-27-56, 56-X-17-2, 58-IX-3-23, 62-VII-27-7, 62-VII-27-75, 62-VII-27-77, 62-VII-27-78, 62-VII-27-130, 63-IX-25-11, 71-II-11-13, 84-XII-3-44, 84-XII-3-46, 84-XII-3-48, 84-XII-3-49, 84-XII-3-51, 88-VII-5-2, 88-VII-5-5, 91-II-20-3, 91-II-20-9, 91-IV-5-190, 91-IV-5-191, 91-IV-5-224, 91-IV-5-228, 91-IV-6-1 – 91-IV-6-3, 91-IV-6-5 – 91-IV-6-9, 91-IV-6-11, 91-IV-6-13 – 91-IV-6-16, 94-VI-5-4, 94-VI-5-7a, 94-VI-5-7b, 96-II-2-1, 97-IV-1-2, 97-V-1-3, 97-V-1-6, 97-V-1-14, 97-V-1-15, 99-X-25-1, 52-X-2-1; MMP 03\_1, 03\_5, 63-S, 69-S, 163-S, 194-S, 212-S, 264-S, 323-S, 349-S, 369-S, 406-S, 408-S, 429-S, 435-S, 441-S, 446-S, 451-S, 456-M, 467-S, 482-S, 484-S, 490-S, 567-S, 568-S, 668-S, 728-S, 729-S, 765-S, 775-M, 781-S, 782-S, 792-S, 363-M, 399-M, 403-M – 406-M, 410-M, 415-M, 521-M, 547-M, 557-M, 563-M, 591-M, 592-M, 595-M, 504-M, 559-M, 603-M, 622-M – 628-M, 634-M – 636-M, 781-M, 791-M, 798-M, 799-M, 832-M, 834-M, 839-M, 1052-M, 1053-M, 1055-M – 1058-M, 1216-M, 1259-M, 1328-M, 1331-M, 1332-M, 1342-M, 1362-M, 1627-M, 1670-M, 1676-M, 1710-M, 2055-M, 2077-M, 2082-M, 2114-M, 2365-M, 2436-M, 4201-M, 4172-M, 4173-M, 4174-M.

*Euryzomatomys spinosus*.— MLP 16.VII.02.11; MACN 18103; USP 25875, 25876, 26558, 26559.

*Hoplomys*.— USP 2001.

*Isothrix*.— MLP 1447, MN-UFRJ 56811; *I. bistrinata* MVZ 190629, USP 23789.

*Kannabateomys amblyonyx*.— MACN 15457, 49359.

†*Maruchito trilofodonte*.— MLP 90-XII-19-3, 91-IV-1-22 (holotype), 91-IV-1-21, 91-IX-1-27, 91-IX-2-83.

*Mesomys hispidus*.— MN-UFRJ 27956; MVZ 190653.

*Myocastor*.— †*M. columnaris* MACN 5404 (holotype); *M. coypus* MLP 483, 689, 705, 1172, 1414, 1709, 1710, 1720, 1.X.01.15, 15.V.96.1, 15.V.96.4, 16.IV.98.5, 20.XII.89.2 – 20.XII.89.4, 20.XII.89.7, 20.XII.89.8, 20.XII.89.10 – 20.XII.89.12, 20.XII.89.19, 20.XII.89.20, 20.XII.89.22 – 20.XII.89.25, 20.XII.89.27, 20.XII.89.32, 20.XII.89.33, 20.XII.89.37, 23.IV.50.4, 23.IV.50.5, 26.V.99.2.

†*Neophanomys*.— †*N. biplicatus* MACN 8253 (holotype), 8565 (holotype of †*Eumysops parvidens*). †*N. pristinus* GHUNLPam 5040 (holotype), 2948, 5699, 8072, 8805, 22669. †*N. recens* GHUNLPam 19602 (holotype), 19603 – 19605, 19847, 19848, 21886.

*Octodon*.— *O. bridgesi* MLP 5.X.99.9, 12.VII.55.9; UACH 1066, 1764, 2455 – 2461, 2736, 3144 – 3146, 3501 – 3503, 3874 – 3585, 3881, 3882, 3887 – 3889, 4328, 4485 – 4487, 5211 – 5219. *O. degus* MLP 12.XI.02.13, 12.XI.02.14, 30.XI.93.2; UACH 745, 1763, 2738 – 2745, 5216 – 5225, 5433 – 5436. *O. lunatus* UACH 2747. *Octodon* sp. MLP 12.VII.88.1 – 12.VII.88.7.

*Octodontomys gliroides*.— MACN 17832 – 17837, 27.92 – 27.94, 27.96, 31.39, 32.15, 32.16, 32.59, 49.101, 30.51, 30.52, 30.54, 30.55, 30.112; MLP 11.XII.35.19, 25.XI.98.1, 25.XI.98.2, 12.VII.88.10; MMP 755, 2200, 2532, 3057, 3557; UACH 2462 – 2464, 4329 – 4333, 4335 – 4338.

*Octomys mimax*.— IMCN 023, 024; IADIZA CM 03067, 03785; MACN 13764, 13765, 13770, 13773, 13782; MMP 388.

†*Pampamys emmonsae*.— GHUNLPam 308, 309, 2010, 2170, 2214 (holotype), 2216, 2229, 2337, 2344, 2364, 5021, 5079, 5080, 5082, 5083, 5085, 5086, 5078, 5235, 5244, 5316, 5318, 5455, 5456, 5967, 6637, 8557, 8558, 8571, 8977, 9187, 9188, 9620, 9621, 9927, 12883, 14126, 14128, 14421, 14423, 14992, 14331, 19606, 22585, 22586; MLP 65-VII-29-88.

†*Paradelphomys fissus*.— MMP 125-M (holotype).

*Phyllomys*.— MN-UFRJ 21603, 21616, 21617, 31539; *Phyllomys pattoni* MVZ 183139.

†*Pithanotomys*.— †*P. chapalmalensis* MACN-Pv 1476, 10969, 11761, 17027, 17069, 17904, 19392; MLP 52-IX-30-79, 63-VI-5-1, 77-V-12-5, 91-IV-6-51; MMP 326-S, 328-S, 504-S, 650-S, 644-M, 844-M, 1007-M, 2132-M. †*P. columnaris* IFG 1306; MACN-A 1647, 1648 (holotype), MACN-Pv 6676, 7316, 7317, 7331, 7332, 7349 – 7351, 7354, 7417, 7431, 7459, 7529, 7531, 9549, 9557, 9559, 9567, 9569, 9589; MLP 46-V-13-48, 48-XII-16-133, 61-VII-10-8, 52-X-2-96, 77-II-1-8, 86-VI-20-11; MMH 81-3-6, 81-11-9, 84-01-33, 85-12-12, 85-12-28, 86-4-2; PVL 2291, 2294. †*P. similis* MACN-A 1110-1111 (holotype).

†*Praectenomys rhombidens*.— GB 248 (casts MMP 1237-M, 1238-M).

*Proechimys*.— *P. brevicauda* MVZ 153623. *P. poliopus* MLP 22.II.00.8, 22.II.00.7. *P. roberti* MVZ 197578; UnB 316, 326.

†*Protadelphomys*.— †*P. latus* MACN-A 52-143 (holotype); MPEF 1049, 1413, 5002, 5006, 5020 5045, 5070, 5083, 5096, 5098, 8162, 8164, 8163; Field N° CF 025, 90-166/1/2, 90-217/1/2, 90-332, 90-348, 90-391/1/2/3/4, 92-81. †*Protadelphomys* sp. CNP Pv 89-21 a,b; MLP 61-V-16-35; MPEF 5047, 5085, 5106.

†*Pseudoplateomys innominatus*.— IFG 307; MACN 8363, 8364, 8366, 8367; UNLaR 30.

†*Sallamys*.— UATF-V 5000 – 5003, 5005 – 5007, 5009 – 5016, 5019.

*Spalacopus cyanus*.— MLP 30.XI.93.1, 10.XI.95.5; UACH 953 – 966, 1844 – 1850, 2510 – 2523, 4001 – 4020, 4358 – 4365, 4367 – 4379, 4381 – 4385, 4523 – 4568, 4894, 5326 – 5330; MMP 362-M, 3583-M – 3585-M, 3590-M, 3591-M, 3619-M, 3623-M – 3625-M, 3628-M, 3807-M.

†*Spaniomys*.— MACN-A 251 – 253, 263, 264, 4184, 4185, 4312; MLP 15-19 (holotype of †*S. riparius*), 15-20 – 15-22, 15-27 – 15-29, 15-33, 15-37 (holotype of †*S. modestus*), 15-44, 15-50 – 15-52, 15-55, 15-58, 15-60, 15-75, 15-76, 15-78 – 15-80; MMP 243 (n=4).

†*Stichomys*.— MACN-A 239, 240, 4179 – 4181, 4214, 4222 – 4224, 4262, 4269, 4375; MLP 15-283 (lectotype of †*S. regularis*). MMP 242.

†*Theridomysops parvulus*.— MACN-Pv 8379 (holotype of †*Eumysops parvulus*), 8380; GHUNLPam 9473, 14772.

*Thrichomys*.— MMP 1242 – 1245, 1246, 1247, 1292, 1293, 1297, 1294, 1295, 1296, 150; UnB 188 – 190; MN-UFRJ 46896, 616599, 34406.

*Trinomys*.— *T. dimidiatus* UnB 723, 739; MN-UFRJ 62273, 62275, 62278. *T. yonenagae* UFBA 00467 – 00473.

*Tympanoctomys*.— *T. barrerae*: IADIZA CM 03314, 03821, 03845; MACN 39944 – 39949; MMP 3199; MLP 2050 (lot from owl pellets, Lihue Calel, La Pampa). *T. aureus* IADIZA CM 06558, 06559, 06560, 06561.

†*Willidewu*.— †*W. esteparius* MACN 21160; MLP 88-V-30-1 (holotype), MLP field number 90-II-13; MPEF 5016, 5017, 5024, 5031, 5034, 5050, 5071, 5107, field number 90-166/3, 90-333. †*Willidewu* sp. MPEF 5032, 5051, 5079.

†*Xenodontomys*.— †*X. ellipticus* MACN 9789 (holotype), 9811, 9852a, 9855, 9895, 9933, 9950; MLP 52-IX-30-3, 52-X-5-53, 57-VII-23-13, 57-VII-23-14, 57-VII-23-24, 60-X-4-3, 60-X-4-6 – 60-X-4-10, 60-X-4-48, 60-X-4-59, 63-VI-10-22, 63-VI-10-49, 63-VI-10-50, 63-VI-10-51, 94-II-1-118. †*X. elongatus* GHUNLPam 19714 (holotype), 19631 – 19654, 19656 – 19678, 19680 – 19689, 19692 – 19697, 19699 – 19703, 19705, 19706, 19710, 19712, 19713, 19715 – 19724, 19726, 19728, 19733, 19736, 19737, 19829, 19849, 19850, 21005, 21007, 21008, 21080, 21093, 21231 – 21265, 21267 – 21269, 21271, 21273, 21275 – 21277, 21279, 21584, 21613. †*X.*

*simpsoni* MMP 553-M (holotype), GHUNLPam 342, 441, 442, 2005, 2015, 2134, 2140, 2403, 5016, 5018, 5027, 5342, 5935, 5936, 6517, 6518, 12811, 14852.

*Xylechimys obliquus*.— MLP 59-II-26-81.

In addition, specimens of *Cuscomys*, *Proechimys*, *Abrocoma*, †*Eodelphomys*, †*Sallamys*, and *Thrichomys*, were revised through illustrations, both unpublished and available in the literature (Lavocat 1976; Patterson and Wood 1982; Patton 1987; Frailey and Campbell 2004; Emmons 1999; Neves and Pessôa 2011).

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### SOM 3

Age estimates for the first appearance data of Octodontoidea analyzed (in millions of years), fixed as the age of oldest bearing levels. Bibliographical sources, SALMAs, and localities in brackets. Sources of dates are specified as radiometric (rm), biochronological (bio), magnetostratigraphic (mst) or a combination (such as rm/mst). Age used for calculating MSM\* is indicated.

#### Octodontidae

†*Abalosia castellanosi*: >2.0 Ma (Verzi and Quintana 2005; Sanadresian, Upper Marplatan, late Pliocene, Punta San Andrés and Santa Isabel, Buenos Aires, Argentina); bio/mst; MSM\*: 2.0 Ma.

†*Acarechimys*: >20.0 Ma (Vucetich et al. 2010a; Colhuehuapian, early Miocene, Bryn Gwyn, Chubut, Argentina); bio. MSM\*: 20.0 Ma.

†*Acaremys* group (including *Sciamys*): >16.2 Ma (Fleagle et al. 1995; Flynn and Swisher 1995; Santacrucian, upper early Miocene, Barrancas Río Santa Cruz, Puesto La Costa, and La Angelina, Santa Cruz, Argentina); bio. MSM\*: 16.0 Ma.

†*Actenomys*: >5.0 Ma (Zárate 2005; Verzi et al. 2008; Montehermosan, lower Pliocene, Farola Monte Hermoso, Buenos Aires, Argentina), bio. MSM\*: 5.0 Ma.

†*Caviocricetus*: >20.0 Ma (Vucetich et al. 2010a; Colhuehuapian, early Miocene, Bryn Gwyn, Chubut, Argentina); bio. MSM\*: 20.0 Ma.

†*Chasichimys*: >9.0 Ma (Zárate 2005; Zárate et al. 2007; Chasicoan, lower late Miocene, Chasicó, Buenos Aires, Argentina); rm/mst. MSM\*: 9.0 Ma.

†*Chasicomys*: >9.0 Ma (Zárate 2005; Zárate et al. 2007; Chasicoan, lower late Miocene, Chasicó, Buenos Aires, Argentina); rm/mst. MSM\*: 9.0 Ma.

*Ctenomys*: 3.5 Ma (Reguero et al. 2007; Verzi et al. 2010; Chapadmalalan, late Pliocene, Esquina Blanca, Jujuy, Argentina); rm/mst. MSM\*: 3.0 Ma.

†*Eucelophorus*: >5.0 Ma (Zárate 2005; Verzi et al. 2008; Montehermosan, lower Pliocene, Farola Monte Hermoso, Buenos Aires, Argentina), bio. MSM\*: 5.0 Ma.

†*Pithanotomys*: >5.0 Ma (Zárate 2005; Verzi et al. 2008; Montehermosan, lower Pliocene, Farola Monte Hermoso, Buenos Aires, Argentina), bio. MSM\*: 5.0 Ma.

†*Protadelphomys*: >20.0 Ma (Vucetich et al. 2010a; Colhuehuapian, early Miocene, Bryn Gwyn, Chubut, Argentina); bio. MSM\*: 20.0 Ma.

†*Pseudoplateomys innominatus*: >6.8 Ma (Ciccioli et al. 2005; Huayquerian, late Miocene, Quebrada de La Troya, La Rioja, Argentina); rm; MSM\*: 7.0 Ma.

†*Sallamys*: >25.5 Ma (Kay et al. 1998; Deseadan, late Oligocene, Salla Luribay, Bolivia);  
rm/mst. MSM\*: 25.0 Ma.

†*Willidewu*: >20.0 Ma (Vucetich et al. 2010a; Colhuehuapian, early Miocene, Bryn Gwyn,  
Chubut, Argentina); bio. MSM\*: 20.0 Ma.

†*Xenodontomys*: 6.0 Ma (Zárate 2005; Verzi et al. 2008; Huayquerian, late Miocene, Barrancas  
Coloradas and El Guanaco, La Pampa, Argentina); bio. MSM\*: 6.0 Ma.

### **Echimyidae**

†*Adelphomys*: >16.2 Ma (Fleagle et al. 1995; Flynn and Swisher 1995; Santacrucian, upper early  
Miocene, Barrancas Río Santa Cruz, Santa Cruz, Argentina); bio. MSM\*: 16.0 Ma.

†*Deseadomys*: >26.0 Ma. (Flynn and Swisher 1995; Kay et al. 1998; Madden et al. 2010;  
Deseadan, late Oligocene, La Flecha and Las Cascadas, Chubut, Argentina, and Cabeza Blanca,  
Santa Cruz, Argentina); bio. MSM\*: 26.0 Ma.

†*Dicolpomys*: <0.003 Ma (Hadler et al. 2008; late Pleistocene – Holocene; Garivaldino and  
Sangão sites, Rio Grande do Sul, Brazil); rm. MSM\*: 0.0 Ma.

†*Eumysops*: >5.0 Ma (Zárate 2005; Verzi et al. 2008; Montehermosan, lower Pliocene, Farola  
Monte Hermoso, Buenos Aires, Argentina); bio. MSM\*: 5.0 Ma.

†*Maruchito*: 15.7 Ma (Madden et al. 1997, Vucetich et al. 1993; Colloncuran, middle Miocene,  
Cañadón del Tordillo, Neuquén, Argentina); rm. MSM\*: 15.0 Ma.

*Myocastor*: >6.0 Ma (Cione et al. 2000; Candela and Noriega 2004; Zárate 2005; Huayquerian,  
late Miocene, Entre Ríos, Argentina), bio. MSM\*: 6.0 Ma.

†*Pampamys*: 6.0 Ma (Zárate 2005; Verzi et al. 2008; late Miocene, Laguna Chillué, Bajo  
Giuliani, Telén, Loventué, La Pampa, Argentina); bio. MSM\*: 6.0 Ma.

†*Paradelphomys*: >20.0 Ma (Ré et al. 2010; Vucetich et al. 2010a; Colhuehuapian, early  
Miocene, Gran Barranca, Chubut, Argentina); rm. MSM\*: 20.0 Ma.

†*Stichomys*: >16.2 Ma (Fleagle et al. 1995; Flynn and Swisher 1995; Santacrucian, upper early  
Miocene, Barrancas Río Santa Cruz, Santa Cruz, Argentina); bio. MSM\*: 16.0 Ma.

†*Theridomysops*: 6.0 Ma (Zárate 2005; Verzi et al. 2008; late Miocene, Telén and Loventué, La  
Pampa, Argentina); bio. MSM\*: 6.0 Ma.

†*Xylechimys*: >26.0 Ma. (Flynn and Swisher 1995; Kay et al. 1998; Madden et al. 2010;  
Deseadan, late Oligocene, Laguna de Los Machos, Chubut, Argentina); bio. MSM\*: 26.0 Ma.

### **Abrocomidae**



*Abrocoma*: >2.0 Ma (Verzi and Quintana 2005; Sanadresian, Upper Marplatan, late Pliocene, Punta San Andrés and Santa Isabel, Buenos Aires, Argentina); bio/mst; MSM\*: 2.0 Ma.

*Abrocoma antiqua*: >6.8 Ma (Ciccioli et al. 2005; Huayquerian, late Miocene, Quebrada de La Troya, La Rioja, Argentina); rm; MSM\*: 7.0 Ma.

†*Spaniomys*: >16.2 Ma (Fleagle et al. 1995; Flynn and Swisher 1995; Santacrucian, upper early Miocene, Barrancas Río Santa Cruz, Santa Cruz, Argentina); bio. MSM\*: 16.0 Ma.

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