

APPENDIX 4.

Classification and Synonymy of the Sirenia and Desmostylia

The following compilation encapsulates the nomenclatural history of the Sirenia and Desmostylia as comprehensively as I have been able to trace it. Included are all known formal names of taxa and their synonyms and variant combinations, with abbreviated citations of the references where these first appeared and their dates of publication; statements of the designated or inferred types of these taxa and their provenances; and comments on the nomenclatural status of these names. Instances of the use of names or combinations subsequent to their original publication are, however, not listed. Of course, the choices of which taxa to recognize as valid and their proper arrangement reflect my own current views. This arrangement is outlined immediately hereafter to aid in finding taxa in this section. (Note that not all taxa in this summary list are necessarily valid; several are probable synonyms but have not been formally synonymized.) For a quick-reference summary of the names now in use for the Recent species of sirenians, see Appendix 5. – DPD

Summary Classification and List of Taxa Recognized

ORDER SIRENIA Illiger, 1811

Family Prorastomidae Cope, 1889

- Pezosiren* Domning, 2001
 - P. portelli* Domning, 2001
- Prorastomus* Owen, 1855
 - P. sirenoides* Owen, 1855

Family Protosirenidae Sickenberg, 1934

- Ashokia* Bajpai, Domning, Das, and Mishra, 2009
 - A. antiqua* Bajpai, Domning, Das, and Mishra, 2009
- Protosiren* Abel, 1907
 - P. eothene* Zalmout, Haq, and Gingerich, 2003
 - P. fraasi* Abel, 1907
 - P. sattaensis* Gingerich, Arif, Bhatti, Raza, and Raza, 1995
 - P. smithae* Domning and Gingerich, 1994
 - ?*P. minima* (Desmarest, 1822) Hooijer, 1952

Family Trichechidae Gill, 1872 (1821)

Subfamily Miosireninae Abel, 1919

- Anomotherium* Siegfried, 1965

A. langewieschei Siegfried, 1965
Miosiren Dollo, 1889
M. kocki Dollo, 1889
M. canhami (Flower, 1874) Sickenberg, 1934 [= *M. kocki*?]
Prohalicore Flot, 1887
P. dubaleni Flot, 1887

Subfamily Trichechinae (Gill, 1872 [1821]) Domning, 1994

Potamosiren Reinhart, 1951
P. magdalenensis Reinhart, 1951
Ribodon Ameghino, 1883
R. limbatus Ameghino, 1883
Trichechus Linnaeus, 1758
T. inunguis (Natterer in von Pelzeln, 1883) Thomas and Lydekker, 1897
T. manatus Linnaeus, 1758
T. m. bakerorum Domning, 2005
T. m. latirostris (Harlan, 1824) Hatt, 1934
T. m. manatus Linnaeus, 1758
T. senegalensis Link, 1795

Indeterminate Nominal Species of Trichechids

Trichechidae or Dugongidae incertae sedis

Sirenotherium Paula Couto, 1967
S. pirabense Paula Couto, 1967 [nomen dubium] .

Family Dugongidae Gray, 1821

Subfamily Halitheriinae (Carus, 1868) Abel, 1913

Caribosiren Reinhart, 1959
C. turneri Reinhart, 1959
Eosiren Andrews, 1902
E. abeli Sickenberg, 1934
E. imenti Domning, Gingerich, Simons, and Ankel-Simons, 1994
E. libyca Andrews, 1902
E. stromeri (Sickenberg, 1934) Kordos, 1977 .
Eotheroides Palmer, 1899
E. aegyptiacum (Owen, 1875) Trouessart, 1905
E. babiae Bajpai, Thewissen, Kapur, Tiwari, and Sahni, 2006
E. lambondrano Samonds, Zalmout, Irwin, Krause, Rogers, and Raharivony, 2009
?"*Eotherium*" *majus* Zdansky, 1938
Halitherium Kaup, 1838
H. alleni Simpson, 1932
?*H. antillense* Matthew, 1916

- H. christolii* Fitzinger, 1842
H. schinzii (Kaup, 1838) Kaup, 1855
H. taulannense Sagne, 2001
Metaxytherium Christol, 1840
M. aquitaniae Pilleri, 1987
M. arctodites Aranda-Manteca, Domning, and Barnes, 1994
M. beaumontii Christol in Blainville, 1844 [nomen dubium]
M. crataegense (Simpson, 1932) Aranda-Manteca, Domning, and Barnes, 1994
M. floridanum Hay, 1922
M. krahuletzii Depéret, 1895
M. lovisati Capellini, 1886 [= *M. medium*?]
M. medium (Desmarest, 1822) Hooijer, 1952
M. meyeri Abel, 1904 [nomen dubium]
M. petersi Abel, 1904
M. serresii (Gervais, 1847) Depéret, 1895
M. subapenninum (Bruno, 1839) Fondi and Pacini, 1974
Prototherium Zigno, 1887
P. veronense (Zigno, 1875) Zigno, 1887
"P." intermedium Bizzotto, 1983 [probably referable to a different genus]
Paralitherium Kordos, 1977
P. tarkanyense Kordos, 1977
Sirenavus Kretzoi, 1941
S. hungaricus Kretzoi, 1941

Subfamily Hydrodamalinae (Palmer, 1895 [1833]) Simpson, 1932

- Dusisiren* Domning, 1978
D. reinharti Domning, 1978
D. jordani (Kellogg, 1925) Domning, 1978
D. dewana Takahashi, Domning, and Saito, 1986
Hydrodamalis Retzius, 1794
H. cuestae Domning, 1978
H. gigas (Zimmermann, 1780) Palmer, 1895

Subfamily Dugonginae (Gray, 1821) Simpson, 1932

- Bharatisiren* Bajpai and Domning, 1997
B. indica Bajpai, Thewissen, Kapur, Tiwari, and Sahni, 2006
B. kachchhensis (Bajpai, Singh, and Singh, 1987) Bajpai and Domning, 1997
Crenatosiren Domning, 1991
C. olseni (Reinhart, 1976) Domning, 1991
Corystosiren Domning, 1990
C. varguezi Domning, 1990
Dioplotherium Cope, 1883
D. manigaulti Cope, 1883
D. allisoni (Kilmer, 1965) Domning, 1978

Domningia Thewissen and Bajpai, 2009
 D. sodhae Thewissen and Bajpai, 2009
Dugong Lacépède, 1799
 D. dugon (Müller, 1776) Palmer, 1895
"Halitherium" *bellunense* Zigno, 1875
Nanosiren Domning in Domning and Aguilera, 2008
 N. garciae Domning in Domning and Aguilera, 2008
 N. sanchezi Domning and Aguilera, 2008
Rytiodus Lartet, 1866
 R. capgrandi Lartet, 1866
Xenosiren Domning, 1989
 X. yucateca Domning, 1989

Dugongidae incertae sedis

Anisosiren Kordos, 1979
 A. pannonica Kordos, 1979
Indosiren von Koenigswald, 1952
 I. javanensis von Koenigswald, 1952
 I. koenigswaldi Sahni and Mishra, 1975
Miodugong Deraniyagala, 1969
 M. brevicranius Deraniyagala, 1969

Indeterminate Nominal Taxa of Sirenians

Taxa That Have Been Incorrectly or Doubtfully Referred to the Sirenia

ORDER DESMOSTYLIA Reinhart, 1953

Family Paleoparadoxiidae Reinhart, 1959

Behemotops Domning, Ray, and McKenna, 1986
 B. katsuiei Inuzuka, 2000
 B. proteus Domning, Ray, and McKenna, 1986
Paleoparadoxia Reinhart, 1959
 P. repenningi Domning and Barnes, 2007
 P. tabatai (Tokunaga, 1939) Reinhart, 1959
 P. weltoni Clark, 1991

Family Desmostylidae Osborn, 1905

Ashoroa Inuzuka, 2000
 A. laticosta Inuzuka, 2000
Cornwallius Hay, 1923
 C. sookensis (Cornwall, 1922) Hay, 1923
Desmostylus Marsh, 1888
 D. hesperus Marsh, 1888

Kronokotherium Pronina, 1957
K. brevimaxillare Pronina, 1957
Vanderhoofius Reinhart, 1959
V. coalingensis Reinhart, 1959

Taxa That Have Been Incorrectly Referred to the Desmostylia

Institutional Abbreviations

AMNH	American Museum of Natural History, New York, New York
AMP	Ashoro Museum of Paleontology, Ashoro Town, Hokkaido, Japan
AMU-CURS	Colección Alcaldía de Urumaco – Rodolfo Sánchez, Urumaco, Venezuela
ANSP	Academy of Natural Sciences, Philadelphia, Pennsylvania
BCPM	British Columbia Provincial Museum, Vancouver, Canada
BMNH	British Museum (Natural History), London, England
BSP	Bayerische Staatssammlung für Paläontologie und Historische Geologie, Munich, Germany
CASG	Department of Geology, California Academy of Sciences, San Francisco, California
CGM	Cairo Geological Museum, Cairo, Egypt
ChM	Charleston Museum, Charleston, South Carolina
DPUH	Paleontological collection, Museo Felipe Poey, Universidad de La Habana, Cuba
FCM	Facultad de Ciencias Marinas, Universidad Autónoma de Baja California, Ensenada, Baja California, Mexico
FIV	Palaeovertebrate Collection, Geological Institute, Budapest, Hungary
FMU	Locality number in Urumaco Formation, Dirección de Paleontología de la Alcaldía del Municipio Urumaco, Venezuela

GSI	Palaeontology Division – I, Geological Survey of India, Kolkata, India
HLMD	Hessisches Landesmuseum, Darmstadt, Germany
IGM	Instituto de Geologia, Universidad Nacional Autónoma de México, Mexico City
IITR-SB	Vertebrate Palaeontology Laboratory, Dept. of Earth Sciences, Indian Institute of Technology, Roorkee, Uttarakhand, India
LUVF	Laboratory of Vertebrate Paleontology, Geology Department, Lucknow University, India
MCZ	Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts
MGP, MGPD	Istituto di Geologia, Paleontologia e Geologia Applicata dell'Università, Padova, Italy
MNHB	Musée Royal d'Histoire Naturelle de Belgique, Brussels, Belgium
MNHN	Muséum National d'Histoire Naturelle, Paris, France
MNRJ	Museu Nacional, Rio de Janeiro, Brazil
NHMB	Naturhistorisches Museum, Basel, Switzerland
NSMT	National Science Museum, Tokyo, Japan
PIUW	Paläontologisches Institut der Universität Wien, Vienna, Austria
RGHP	Réserve Géologique de Haute Provence, France
SMNS	Staatliches Museum für Naturkunde, Stuttgart, Germany
TIU	Tohoku Imperial University, Sendai, Japan
UCMP	University of California Museum of Paleontology, Berkeley, California
UF/FGS	Florida Geological Survey collection, Florida Museum of Natural History, University of Florida, Gainesville, Florida
UHR	Hokkaido University, Sapporo, Japan

USNM U.S. National Museum of Natural History, Smithsonian Institution, Washington,
D.C.

YPM Yale Peabody Museum, New Haven, Connecticut

Class MAMMALIA Linnaeus, 1758

Subclass THERIA Parker and Haswell, 1897

Infraclass EUTHERIA Gill, 1872

Mirorder TETHYTHERIA McKenna, 1975

Order SIRENIA Illiger, 1811

Sirenia Illiger, 1811, *Prodromus Syst. Mamm. Av.*: 140. [Proposed as a family within Order Natantia; ?first raised to ordinal rank by Goldfuss, 1820, *Handb. Zool.* 2: 336. Reduced to infraorder within Order Uranotheria, Suborder Tethytheria, by McKenna and Bell, 1997, *Classif. Mamms. Above Sp. Level*: 493.]

Diopia Rafinesque, 1815, *Anal. Nat.*: 60. [Proposed as a family.]

[Cetaceae] Herbivorae Gray, 1821, *London Med. Reposit.* 15: 309. [Originally termed "Cétacés herbivores" by Cuvier, 1817, *Règne Animal*: 273.]

(Tribe) Anthropephala, (Nation) Manatides Billberg, 1827, *Syn. Faunae Scand.* 1(1): Tab. A, dorso 1 and p. 32. [Both taxa are equivalent to the Sirenia.]

Phytophaga F. Cuvier, 1836, _____. [Proposed as a tribe within Order Cetacea. Reference not seen.]

Manatina Bonaparte, 1837, *Syn. Vert. Syst.*: 7. [Proposed as a subfamily. Reference not seen.]

Sireniformia Burmeister, 1837, *Handb. Naturgesch.*: 792. [Proposed as a family within Order Cetacea.]

Sirenoidea Van Beneden, 1855?. [Date uncertain. See Agassiz (1859: 360). Reference not seen.]

Phycoceta Haeckel, 1866, *Gen. Morph. Org.* 2: clix. [Proposed as a suborder within Order Cetacea.]

Halobioidea Ameghino, 1889, *Actas Acad. Nac. Cienc. Córdoba* 6: 652, May 20, 1889. [Proposed at an unspecified superordinal level. Comprised only the Sirenia and the hypothetical coordinate taxon Prosirenia.]

Trichechiformes Hay, 1923, *Pan-Amer. Geologist* 39: 109, Mar. 1923. [Proposed as a suborder within the Order Sirenia coordinate with the Desmostyliformes, which latter were raised to ordinal rank by Reinhart (1953), leaving the Trichechiformes coextensive with the Sirenia.]

Sireniformes Kinman, 1994, *The Kinman System*: 38. [Reference not seen.]

Family PRORASTOMIDAE Cope, 1889

Prorastomidae Cope, 1889, *Amer. Nat.* 23: 876.

Prorastomatidae Flower and Lydekker, 1891, *Introd. Study Mamms. Living & Extinct*: 224.
[Unjustified emendation.]

Prorastominae Reinhart, 1959, *Univ. Calif. Publ. Geol. Sci.* 36(1): 5, July 24, 1959. [Proposed as subfamily.]

Type Genus. - *Prorastomus* Owen.

Pezosiren Domning, 2001

Pezosiren Domning, 2001, *Nature* 413(6856): 625, Oct. 11, 2001. [Type, by monotypy: *P. portelli* Domning.]

Pezosiren portelli Domning, 2001

Pezosiren portelli Domning, 2001, *Nature* 413(6856): 625, Oct. 11, 2001.

Holotype. - USNM 511925, pair of partial mandibles.

Type Locality. - Seven Rivers, Parish of St. James, western Jamaica.

Formation. - Guys Hill Member, Chapelton Formation, Yellow Limestone Group.

Age. - Early Middle Eocene.

Prorastomus Owen, 1855

Prorastomus Owen, 1855, *Quart. J. Geol. Soc. London* 11: 543. [Type, by monotypy: *P. sirenoides* Owen.]

Prorastoma Lydekker, 1892, *Proc. Zool. Soc. London* 1892(1): 83, June 1892. [Unjustified emendation of *Prorastomus* Owen.]

Prorastomus sirenoides Owen, 1855

Prorastomus sirenoides Owen, 1855, *Quart. J. Geol. Soc. London* 11: 543.

Holotype. - BMNH 44897, skull, mandible, and atlas.

Type Locality. - Bed of Quashies River near Freemans Hall, southern Trelawney Parish, west-central Jamaica.

Formation. - Stettin Member, Chapelton Formation, Yellow Limestone Group (Robinson, 1988, *Jour. Geol. Soc. Jamaica* 24: 49-67).

Age. - Early Middle Eocene.

Family PROTOSIRENIDAE Sickenberg, 1934

Protosirenidae Sickenberg, 1934, *Mém. Mus. R. Hist. Nat. Belgique* 63: 193, Dec. 31, 1934.

Protosireninae Reinhart, 1959, *Univ. Calif. Publ. Geol. Sci.* 36(1): 6, July 24, 1959. [Proposed as subfamily.]

Type Genus. - *Protosiren* Abel.

Ashokia Bajpai, Domning, Das, and Mishra, 2009

Ashokia Bajpai, Domning, Das, and Mishra, 2009, *Neues Jb. Geol. Pal. Abh.* 252(3): 259, June 2009. [Type, by original designation: *A. antiqua* Bajpai, Domning, Das, and Mishra, 2009.]

Ashokia antiqua Bajpai, Domning, Das, and Mishra, 2009

Eotheroides waghpadarensis Das and Basu, 1994, *Records Geol. Survey India* 127(2): 5.
[Nomen nudum; based on holotype of *Ashokia antiqua*.]

A. antiqua Bajpai, Domning, Das, and Mishra, 2009, *Neues Jb. Geol. Pal. Abh.* 252(3): 259, June 2009.

Holotype. – GSI-K60/448, subadult skull lacking the rostrum, left zygomatic arch, left exoccipital, left pterygoid process, left maxillary alveolar process, and the crowns of the right cheek teeth.

Type Locality. – About 1 km E of Waghpadar, district of Kutch, Gujarat State, India; 23° 28' 50" N, 68° 45' 00" E.

Formation. – Gypsified clay of the Harudi Formation, near its contact with the underlying, lower Eocene Naredi Formation

Age. – Early Middle Eocene (Lutetian).

Protosiren Abel, 1907

Protosiren Abel, 1904, *Abh. K.-K. Geol. Reichsanst.* 19(2): 214. [Nomen nudum.]

Protosiren Abel, 1907, *Meereskunde* 1(4): 29. [Type, by monotypy: *P. fraasi* Abel.]

Protosiren eoethene Zalmout, Haq, and Gingerich, 2003

Protosiren eoethene Zalmout, Haq, and Gingerich, 2003, *Contr. Mus. Pal. Univ. Michigan* 31(3): 81. Aug. 15, 2003.

Holotype. – GSP-UM 3487, partial thorax including vertebrae and ribs.

Type Locality. – Kunvit Basin, 30°05'21" N, 69°47'40" E, NW of Rakhni, eastern Balochistan Province, central Pakistan.

Formation. – Transition from Habib Rahi Formation to Domanda Formation.

Age. – Early Middle Eocene (early Lutetian).

Protosiren fraasi Abel, 1907

Protosiren Fraasi Abel, 1904, *Abh. K.-K. Geol. Reichsanst.* 19(2): 214. [Nomen nudum.]

Protosiren Fraasi Abel, 1907, *Meereskunde* 1(4): 29.

Eosiren Fraasi (Abel) Schlosser in von Zittel and Schlosser, 1923, *Grundzüge der Pal.*, ed. 4, Abt. 2: 634.

Prototherium fraasi Fuchs, 1973, *Studia Univ. Babeş-Bolyai, Ser. Geol.-Min.* 18(2): 75. [Lapsus for *Protosiren fraasi*.]

Holotype. - CGM C.10171, skull lacking mandible, previously described and tentatively referred to *Eotherium aegyptiacum* by Andrews (1906). [Abel's earlier designation (*Neues Jb. Min. Geol. Pal.* 1906(2): 50-51) of a different specimen as holotype did not suffice to validate the name and is therefore also invalid. Abel's 1907 work was the first publication of the name in connection with a valid indication, and that indication referred only to CGM C.10171, making that specimen the type by default, even though Abel did not explicitly refer to it as the type.]

Type Locality. - Mokattam Hills, Cairo, Egypt.

Formation. - Probably the upper part of the Lower Building Stone Member of the Mokattam Formation (Gingerich, 1992).

Age. - Middle Eocene (probably middle Lutetian).

Protosiren sattaensis Gingerich, Arif, Bhatti, Raza, and Raza, 1995

Protosiren sattaensis Gingerich, Arif, Bhatti, Raza, and Raza, 1995, *Contr. Mus. Pal. Univ. Michigan* 29(12): 337, Nov. 30, 1995.

Holotype. - GSP-UM 3001, partial postcranial skeleton.

Type Locality. - 1.9 km up a tributary of Bari Nadi (stream) to the south of Satta Post of the Border Military Police, 30°46'45" N, 70°27'50" E, topographic quadrangle 39 J/5, Punjab Province, Pakistan.

Formation. - Drazinda Formation.

Age. - Middle Eocene (late Lutetian).

Protosiren smithae Domning and Gingerich, 1994

Protosiren smithae Domning and Gingerich, 1994, *Contr. Mus. Pal. Univ. Michigan* 29(3): 73, Nov. 30, 1994.

Holotype. - CGM 42292, skull and partial skeleton of adult.

Type Locality. - Wadi Hitan (Zeuglodon Valley) locality ZV- 54, Fayum, Egypt.

Formation. - Gehannam Formation.

Age. - Late Middle Eocene (Bartonian).

?*Protosiren minima* (Desmarest, 1822) Hooijer, 1952

"Espèce voisine de l'hippopotame et plus petite que le cochon", Cuvier, 1821, *Rech. Oss.*

Fossiles, ed. 2, vol. 1: 333, pl. 7, figs. 12-20. [This is the form called "Hippopotame douteux" (= *Hippopotamus dubius*) by various authors.]

Hippopotamus minimus Desmarest, 1822, *Mammalogie*: 388.

H[ippopotamus]. dubius Cuvier, 1824, *Rech. Oss. Fossiles*, ed. 2, vol. 5(2): 527.

Halicore Cuvierii Christol, 1832 [*partim*], *Ann. Sci. Indust. Midi France* 2(8): 244.

Halicore Cuvierii Christol, 1834 [*partim*], *Ann. Sci. Nat. Zool.* (2)2: 274. [Published Mar. 25, 1835, *fide* Blainville, 1844: 95.]

Halianassa Studeri von Meyer, 1838 [*partim*], *Neues Jb. Min. Geogn. Geol. Pet.* 1838: 667, Sept. 1838. [Names placed on the Official Indexes of Rejected and Invalid Generic and Specific Names by ICZN Opinion 1535, *Bull. Zool. Nomencl.* 46(1): 83, March 1989.]

Halitherium dubium (Cuvier) Kaup, *sensu* Gervais, 1852, *Zool. Pal. Franç.* 1: 145.

?*Protosiren dubia* (Cuvier) Sickenberg, 1934, *Mém. Mus. R. Hist. Nat. Belgique* 63: 190, Dec. 31, 1934.

?*Protosiren minima* (Desmarest) Hooijer, 1952, *Osiris* 10: 113.

Syntypes. - Three molars (see Sickenberg, 1934b: fig. 36).

Type Locality. - Blaye, Gironde, France.

Formation. - Calcaire du Blaye.
Age. - Middle Eocene (Lutetian).
Remarks. - Inadequately known; status and affinities uncertain.

Family TRICHECHIDAE Gill, 1872 (1821)

Manatidae Gray, 1821, *London Med. Reposit.* 15: 309.

Halicoreae Brandt, 1833 [*partim*], *Mém. Acad. Sci. St.-Pétersbourg* (6)2: 114, Nov. 1833.
[Proposed as tribe.]

Halicorea Brandt, 1846 [*partim*], *Mém. Acad. Sci. St.-Pétersbourg* (6)5: 132. [Proposed as tribe
or family.]

Manatida Haeckel, 1866, *Gen. Morph. Org.* 2: clix. [Proposed as family.]

Trichechidae Gill, 1872, *Smithson. Misc. Coll.* 11(1)(230): 14, Nov. 1872.

Manatoidea Gill, 1872, *Smithson. Misc. Coll.* 11(1)(230): 14, Nov. 1872. [Proposed as
superfamily.]

Trichechoidea Gill, 1872, *Smithson. Misc. Coll.* 11(1)(230): 91, Nov. 1872 (*non* Giebel, 1847:
21). [Proposed as superfamily.]

Type Genus. - *Trichechus* Linnaeus (= *Manatus* Brünnich).

Subfamily MIOSIRENINAE Abel, 1919

Miosireninae Abel, 1919, *Die Stämme der Wirbelthiere*: 835.

Type Genus. - *Miosiren* Dollo.

Anomotherium Siegfried, 1965

Anomotherium Siegfried, 1965, *Palaeontographica* 124A: 118, Mar. 1965. [Type, by monotypy:
A. langewieschei Siegfried.]

Anomotherium langewieschei Siegfried, 1965

Anomotherium langewieschei Siegfried, 1965, *Palaeontographica* 124A: 119, Mar. 1965.

Holotype. - Partial skull and skeleton in Kreisheimatmuseum, Bünde, Westfalen, Germany; some teeth and fragments of same individual in Geol.-Pal. Inst., Univ. Münster (No. A575).

Type Locality. - Doberg bei Bünde, Westfalen, Germany.

Formation. - Probably Bed 36, Schichtengruppe E of Upper Doberg Beds.

Age. - Basal Late Oligocene (upper Chattian).

Miosiren Dollo, 1889

Miosiren Dollo, 1889, *Bull. (Proc.-verb.) Soc. Belge Géol. Pal. Hydrol.* 3: 420. [Type, by monotypy: *M. kocki* Dollo.]

Miosiren kocki Dollo, 1889

Miosiren Kocki Dollo, 1889, *Bull. (Proc.-verb.) Soc. Belge Géol. Pal. Hydrol.* 3: 420.

Holotype. - MNHB HE.M.136.A (= no. 1682), skull and partial skeleton of adult.

Type Locality. - Brickworks of Charles de Kock, "in den Hoek" near Boom, Belgium.

Formation. - Sands of Edeghem.

Age. - Early Miocene (lower Burdigalian; NN.3) (Hooybergs, 1980, *IGCP Report 6* [Project 124]: 106-118).

Miosiren canhami (Flower, 1874) Sickenberg, 1934

Halitherium Canhami Flower, 1874, *Quart. Jour. Geol. Soc. London* 30: 6.

Miosiren canhami (Flower) Sickenberg, 1934, *Mém. Mus. R. Hist. Nat. Belgique* 63: 333, Dec. 31, 1934.

Holotype. - Partial skull (Ipswich Museum).

Type Locality. - Foxhall, near Waldringfield, Suffolk, England.

Formation. - Red Crag.

Age. - Reworked into the Red Crag from earlier, possibly Miocene, deposits.

Remarks. - Possibly synonymous with *M. kocki*.

Prohalicore Flot, 1887

Prohalicore Flot, 1887, *Bull. Soc. Géol. France* (3)15: 135. [Type, by monotypy: *P. dubaleni* Flot.]

Prohalicore dubaleni Flot, 1887

Prohalicore Dubaleni Flot, 1887, *Bull. Soc. Géol. France* (3)15: 135.

Holotype. - Mus. de Mont-de-Marsan unnum., partial mandible.

Type Locality. - Quarry at Odon (Audon), near Tartas, Landes, SW France.

Formation. - Sables Fauves Formation; Matilon Member (S. Sorbi, unpubl. doctoral dissertation, 2008: 72).

Age. - Middle Miocene (Serravallian).

Remarks. - Status and affinities uncertain. Assignment to Miosireninae corroborated by S. Sorbi (unpubl. doctoral dissertation, 2008: 72).

Subfamily TRICHECHINAE (Gill, 1872 [1821]) Domning, 1994

Trichechinae Domning, 1994, *Proc. San Diego Soc. Nat. Hist.* 29: 186. May 1, 1994.

Type Genus. - *Trichechus* Linnaeus (= *Manatus* Brünnich).

Potamosiren Reinhart, 1951

Potamosiren Reinhart, 1951, *Univ. Calif. Publ., Bull. Dept. Geol. Sci.* 28(9): 203, Feb. 16, 1951. [Type, by monotypy: *P. magdalenensis* Reinhart.]

Potamosiren magdalenensis Reinhart, 1951

Potamosiren magdalenensis Reinhart, 1951, *Univ. Calif. Publ., Bull. Dept. Geol. Sci.* 28(9): 204, Feb. 16, 1951.

Metaxytherium ortegense Kellogg, 1966, *U.S. Natl. Mus. Bull.* 247(3): 93. [Holotype: USNM 10870, left maxillary fragment with M1-3. Type locality: Ortega, north of mouth of Río Saldana, Departamento Tolima, Colombia; Honda Group, Middle or Late Miocene.]

Felsinotherium ortegense Kellogg, 1966, *U.S. Natl. Mus. Bull.* 247(3): pl. 36. [Lapsus for *Metaxytherium ortegense*.]

Ribodon magdalenensis (Reinhart) Marshall, Hoffstetter, and Pascual, 1983, *Paleovertebrata, Mém. Extraord.*, 1983: 52.

Holotype. - UCMP 39471, left mandible and right M3.
Type Locality. - UCMP loc. V4533, near Cerro Gordo, Villavieja, Departamento del Huila, Colombia.
Formation. - El Libano sands and clays, Honda Group, La Venta fauna.
Age. - Middle Miocene (Friasian) (Marshall et al., 1977, Science 195: 1325-1328).

Ribodon Ameghino, 1883

Ribodon Ameghino, 1883, *Bol. Acad. Nac. Cienc. Córdoba* 5(1): 112. [Type, by monotypy: *R. limbatus* Ameghino.]

Ribodon limbatus Ameghino, 1883

Ribodon limbato Ameghino, 1883, *Bol. Acad. Nac. Cienc. Córdoba* 5(1): 112. [Incorrect original spelling; properly *R. limbatus*.]

Ribodon limbatus Ameghino, 1885, *Bol. Acad. Nac. Cienc. Córdoba* 8: 100. [Justified emendation.]

Holotype. - Upper molar.
Type Locality. - Rio Paraná, Entre Rios, Argentina.
Formation. - "Mesopotamian" beds.
Age. - Late Miocene-Early Pliocene (Huayquerian- Montehermosan) (Pascual and Odreman Rivas, 1971, *Ameghiniana* 8(3-4): 372-412).

Trichechus Linnaeus, 1758

Trichechus Linnaeus, 1758, *Syst. Nat.* (ed. 10) 1: 34. [Type, by monotypy: *T. manatus* Linnaeus. Placed on Official List of Generic Names by ICZN Opinion 112, *Smithson. Misc. Coll.* 73(6): 19, 1929.]

Manatus Brünnich, 1772, *Zoologiae Fundamenta*: 34, 38. [Type, according to Palmer (1904: 398), by monotypy and tautonymy: *Trichechus manatus* Linnaeus. Suspension of Rules in favor of *Manatus* Brünnich declined by ICZN Opinion 112, loc. cit.; name placed on Official Index of rejected names by Direction 13.]

Oxystomus Fischer von Waldheim, 1803, *Das Nationalmuseum Naturgesch. zu Paris* 2: 353. [Type, by monotypy: *Trichechus manatus* Linnaeus.]

Nemodermus Rafinesque, 1815, *Anal. Nat.*: 60. [Nomen nudum.]

Halipaedisca Gistel, 1848, *Naturgesch. Thierreichs f. höhere Schulen*: 83. [New name for *Manatus* Brünnich, 1772. Type, by monotypy: *Manatus americanus*.]

Trichechus inunguis (Natterer in von Pelzeln, 1883) Thomas and Lydekker, 1897

Phoca manatus (Linnaeus) Brisson, 1762 [*partim*], *Regnum Animale*: 164.

Manatus exunguis Natterer in Diesing, 1839, *Ann. Wiener Mus. Naturgesch.* 2: 230. [Name placed on Official Index of Rejected and Invalid Names by ICZN Opinion 1320, *Bull. Zool. Nomencl.* 42(2): 175-176, June 1985, with the Name Number 1149.]

Manatus inunguis Natterer in von Pelzeln, 1883, *Verh. Zool.-Bot. Ges. Wien* 33, Beiheft: 89. [Junior objective synonym of *M. exunguis*. Placed on Official List of Specific Names by ICZN Opinion 1320, *Bull. Zool. Nomencl.* 42(2): 175-176, June 1985, with the Name Number 2966.]

Trichechus inunguis (Natterer) Thomas and Lydekker, 1897, *Proc. Zool. Soc. London* 1897: 596.

Trichechus exunguis (Natterer) Stunkard, 1929, *Bull. Amer. Mus. Nat. Hist.* 58(6): 254.

Syntypes. - Five specimens in the Nathist. Mus., Vienna, were destroyed in 1848, *vide v.* Pelzeln (1883: 93) and Hartlaub (1886a: 103). However, at least one other skull collected by Natterer, and therefore presumably part of the basis of his original species concept, was sent to Rostock and described by Stannius (1845: 9ff.) and Hartlaub (1886a: 50, pl. 1, fig. 3). USNM 22438 may be a cast of this skull. Natterer also noted that the skeleton described and illustrated by G. Cuvier (1809) belongs to this species.

Type Locality. - Borba, lower Rio Madeira, Amazonas, Brazil.

Age. - Recent; no fossil record.

Trichechus manatus Linnaeus, 1758

Trichechus manatus Linnaeus, 1758, *Syst. Nat.* (ed. 10) 1: 34.

Phoca manatus (Linnaeus) Brisson, 1762 [*partim*], *Regnum Animale*: 164.

Siren Bartholini Oesterdam, 1766, [Dissertation on] *Siren lacertina*: plate 1. [Based on specimen from the "sea of Brazil" described and illustrated by Bartholin (1654).]

Manati Trichecus Boddaert, 1785 [*partim*], *Elenchus Anim.* 1: 173. [Based on Pennant's "Broad-tailed Manati," *vide* J. A. Allen (1882). Type locality fixed by Hatt (1934) as "West Indies."]

Trichechus Manatus australis Gmelin, 1788 [*partim*], *C. Linné Syst. Nat.*, ed. 13, vol. 1: 60.

Manati Clusii Pennant, 1793, *Hist. Quad.*, ed. 3, 2: 298. [Based on Clusius's figure and description of a West Indian manatee.]

M[anatus]. australis Retzius, 1794 [*partim*], *K. Svensk. Vetenskapsakad. Handl.* (2)15: 291, Oct.-Dec. 1794.

Trichechus antillarum Link, 1795, *Beytr. Naturgesch.* 1(2): 109. [Based on Buffon's "Grand Lamantin des Antilles." Type locality fixed by Hatt (1934) as "West Indies."]

Trichechus americanus Link, 1795, *Beytr. Naturgesch.* 1(2): 109. [Based on Buffon's "Petit Lamantin de l'Amérique." Type locality fixed by Hatt (1934) as "West Indies."]

Manatus Clusii (Pennant) Bechstein, 1800, in *Thomas Pennant's Allgemeine Uebersicht der vierfüssigen Thiere* 2: 732.

- Manatus Guyannensis* Bechstein, 1800, in *Thomas Pennant's Allgemeine Uebersicht der vierfüssigen Thiere* 2: 732. [Based on Pennant's "Guiana Manati" = *T. manatus* Linnaeus.]
- Manatus Oronocensis* Bechstein, 1800, in *Thomas Pennant's Allgemeine Uebersicht der vierfüssigen Thiere* 2: 732. [Based on Pennant's "Oronoko Manati". Type locality fixed by Hatt (1934) as "West Indies."]
- Trichechus Clusii* (Pennant) Shaw, 1800, *Gen. Zool.* 1(1): 246. [Based on Clusius's figure and description of a West Indian manatee. Type locality fixed by Hatt (1934) as "West Indies."]
- Trichechus Amazonius* Shaw, 1800, *Gen. Zool.* 1(1): 246. [Based on Pennant's "Oronoko Manati" = Buffon's "Petit Lamantin de l'Amérique". Type locality fixed by Hatt (1934) as "West Indies."]
- Manatus minor* Daudin, 1802, *Hist. Nat. of Buffon*, Didot Edition, "Quadrupeds" 14: 194. [Based on Buffon's "Petit Lamantin de l'Amérique". Type locality fixed by Hatt (1934) as "West Indies". Reference not seen.]
- Oxystomus manatus* (Linnaeus) Fischer von Waldheim, 1803, *Das Nationalmuseum Naturgesch. zu Paris* 2: 353.
- Manatus americanus* (Link) Illiger, 1815, *Abh. Akad. Wiss. Berlin* 1804-11: 110.
- Manatus fluviatilis* Illiger, 1815, *Abh. Akad. Wiss. Berlin* 1804- 11: 110. [Nomen nudum. Applied to the Antillean manatee by Olfers (1818); see Hershkovitz (1959).]
- M[anatus]. fluviatilis* Olfers, 1818, *Bemerk. Illiger's Ueberblick Säugeth.*: 235. [Based on Pennant's "Guiana Manati"; see Hershkovitz (1959). Reference not seen.]
- Manatus latirostris* Harlan, 1824, *J. Acad. Nat. Sci. Philadelphia* 3(2): 394, May 1824.
- Manatus atlanticus* Oken, 1838 [*partim*], *Allgem. Naturgesch.* 7(2), Säugth. 1: 1098. [Applied to both American and African manatees. Type locality fixed by Hatt (1934) as "West Indies".]
- H[alipaedisca]. americanus* [sic] (Link) Gistel, 1848, *Naturgesch. Thierreichs f. höhere Schulen*: 83.
- Trichechus latirostris* (Harlan) True, 1884, *Proc. U.S. Natl. Mus.* 7: 588, Nov. 29, 1884?
- Manatus Koellikeri* Kükenenthal, 1897, *Zool. Anz.* 20(523): 40, Feb. 1, 1897. [Type: none designated. Type locality: Suriname.]
- Trichechus koellikeri* (Kükenenthal) Trouessart, 1905, *Cat. Mamm.*, Suppl.: 749.
- Manatus manatus* (Linnaeus) Holland, 1917, *Ann. Carnegie Mus.* 11(3-4): 356. [Original author of combination not identified.]
- Trichechus inunguis koellikeri* (Kükenenthal) Derscheid, 1926, *Rev. Zool. Afr.* 14(2), *Bull. Cercle Zool. Congolais* 3(1-2): 27.
- Trichechus manatus manatus* Linnaeus, Hatt, 1934, *Bull. Amer. Mus. Nat. Hist.* 66(4): 538, Sept. 10, 1934. [Type: none designated. Type locality: West Indies.]
- Trichechus manatus latirostris* (Harlan) Hatt, 1934, *Bull. Amer. Mus. Nat. Hist.* 66(4): 538, Sept. 10, 1934. [Cotypes: ANSP 2497 and possibly 2422. Type locality: east coast of Florida.]
- Trichechus manatus koellikeri* (Kükenenthal) Kleinschmidt, 1982, *Braunschw. Naturk. Schr.* 1(3): 381, Oct. 1982.
- Trichechus manatus bakerorum* Domning, 2005, *Jour. Vert. Paleont.* 25(3): 686, Sept. 30, 2005.

Type. - No types of the species have been formally designated.
Type Locality. - Fixed by Thomas (1911) as "West Indies."
Age. - Recent; also reported from the Pleistocene.

Trichechus manatus bakerorum Domning, 2005

Trichechus manatus bakerorum Domning, 2005, *Jour. Vert. Paleont.* 25(3): 686, Sept. 30, 2005.

Holotype. – UF 123652, partial skull and mandibles of young adult.
Type Locality. – Rock Springs, Orange County, Florida, USA.
Formation. – Unnamed bluish-gray sandy clay.
Age. – Late Pleistocene (late Rancholabrean; probably late Sangamonian, ca. 125,000 years B.P.).

Trichechus manatus latirostris (Harlan, 1824) Hatt, 1934

Manatus latirostris Harlan, 1824, *J. Acad. Nat. Sci. Philadelphia* 3(2): 394, May 1824.
Trichechus latirostris (Harlan) True, 1884, *Proc. U.S. Natl. Mus.* 7: 588, Nov. 29, 1884?
Trichechus manatus latirostris (Harlan) Hatt, 1934, *Bull. Amer. Mus. Nat. Hist.* 66(4): 538, Sept. 10, 1934.

Cotypes. - ANSP 2497 and possibly 2422, partial skulls.
Type Locality. - East coast of Florida, USA.
Age. - Recent; no referred fossils.

Trichechus manatus manatus Linnaeus, 1758

Trichechus manatus Linnaeus, 1758, *Syst. Nat.* (ed. 10) 1: 34.
Siren Bartholini Oesterdam, 1766, [Dissertation on] *Siren lacertina*: plate 1. [Based on specimen from the "sea of Brazil" described and illustrated by Bartholin, 1654.]
Manati Trichecus Boddaert, 1785 [*partim*], *Elenchus Anim.* 1: 173. [Based on Pennant's "Broad-tailed Manati," fide J. A. Allen (1882). Type locality fixed by Hatt (1934) as "West Indies."]
Manati Clusii Pennant, 1793, *Hist. Quad.*, ed. 3, 2: 298. [Based on Clusius's figure and description of a West Indian manatee.]
M[anatus]. australis Retzius, 1794 [*partim*], *K. Svensk. Vetenskapsakad. Handl.* (2)15: 291, Oct.-Dec. 1794.
Tr[ichechus]. antillarum Link, 1795, *Beytr. Naturgesch.* 1(2): 109. [Based on Buffon's "Grand Lamantin des Antilles." Type locality fixed by Hatt (1934) as "West Indies."]
Tr[ichechus]. americanus Link, 1795, *Beytr. Naturgesch.* 1(2): 109. [Based on Buffon's "Petit Lamantin de l'Amérique." Type locality fixed by Hatt (1934) as "West Indies."]

- Manatus Clusii* (Pennant) Bechstein, 1800, in *Thomas Pennant's Allgemeine Uebersicht der vierfüssigen Thiere* 2: 732.
- Manatus Guyannensis* Bechstein, 1800, in *Thomas Pennant's Allgemeine Uebersicht der vierfüssigen Thiere* 2: 732. [Based on Pennant's "Guiana Manati" = *T. manatus* Linnaeus.]
- Manatus Oronocensis* Bechstein, 1800, in *Thomas Pennant's Allgemeine Uebersicht der vierfüssigen Thiere* 2: 732. [Based on Pennant's "Oronoko Manati". Type locality fixed by Hatt (1934) as "West Indies."]
- Trichechus Clusii* (Pennant) Shaw, 1800, *Gen. Zool.* 1(1): 246. [Based on Clusius's figure and description of a West Indian manatee. Type locality fixed by Hatt (1934) as "West Indies."]
- Trichechus Amazonius* Shaw, 1800, *Gen. Zool.* 1(1): 246. [Based on Pennant's "Oronoko Manati" = Buffon's "Petit Lamantin de l'Amérique". Type locality fixed by Hatt (1934) as "West Indies."]
- Manatus minor* Daudin, 1802, *Hist. Nat. of Buffon*, Didot Edition, "Quadrupeds" 14: 194. [Based on Buffon's "Petit Lamantin de l'Amérique". Type locality fixed by Hatt (1934) as "West Indies". Reference not seen.]
- Oxystomus manatus* (Linnaeus) Fischer von Waldheim, 1803, *Das National Museum Naturgesch. zu Paris* 2: 353.
- Manatus americanus* (Link) Illiger, 1815, *Abh. Akad. Wiss. Berlin* 1804-11: 110.
- Manatus fluviatilis* Illiger, 1815, *Abh. Akad. Wiss. Berlin* 1804- 11: 110. [Nomen nudum. Applied to the Antillean manatee by Olfers (1818); see Hershkovitz (1959).]
- M[anatus]. fluviatilis* Olfers, 1818, *Bemerk. Illiger's Ueberblick Säugeth.*: 235. [Based on Pennant's "Guiana Manati"; see Hershkovitz (1959). Reference not seen.]
- Manatus atlanticus* Oken, 1838 [partim], *Allgem. Naturgesch.* 7(2), Säugth. 1: 1098. [Applied to both American and African manatees. Type locality fixed by Hatt (1934) as "West Indies".]
- H[alipaedisca]. americanus* [sic] (Link) Gistel, 1848, *Naturgesch. Thierreichs f. höhere Schulen*: 83.
- Manatus Koellikeri* Kükenenthal, 1897, *Zool. Anz.* 20(523): 40, Feb. 1, 1897. [Type: none designated. Type locality: Suriname.]
- Trichechus koellikeri* (Kükenenthal) Trouessart, 1905, *Cat. Mamm.*, Suppl.: 749.
- Manatus manatus* (Linnaeus) Holland, 1917, *Ann. Carnegie Mus.* 11(3-4): 356. [Original author of combination not identified.]
- Trichechus inunguis koellikeri* (Kükenenthal) Derscheid, 1926, *Rev. Zool. Afr.* 14(2), *Bull. Cercle Zool. Congolais* 3(1-2): 27.
- Trichechus manatus manatus* Linnaeus, Hatt, 1934, *Bull. Amer. Mus. Nat. Hist.* 66(4): 538, Sept. 10, 1934.
- Trichechus manatus koellikeri* (Kükenenthal) Kleinschmidt, 1982, *Braunschw. Naturk. Schr.* 1(3): 381, Oct. 1982.

Type. - None designated.

Type Locality. - West Indies.

Age. - Recent; no referred fossils.

Trichechus senegalensis Link, 1795

- Phoca manatus* (Linnaeus) Brisson, 1762 [partim], *Regnum Animale*: 164.
- Manati Trichechus* Boddaert, 1785 [partim], *Elenchus Anim.* 1: 173.
- Trichechus Manatus australis* Gmelin, 1788 [partim], *C. Linné Syst. Nat.*, ed. 13, vol. 1: 60.
- M[anatus]. australis* Retzius, 1794 [partim], *K. Svensk. Vetenskapsakad. Handl.* (2)15: 291, Oct.-Dec. 1794.
- Tr[ichechus]. senegalensis* Link, 1795, *Beytr. Naturgesch.* 1(2): 109. [Based on Buffon's "Petit Lamantin du Sénégal", based mainly on Adanson's (1757) account. Adanson's Senegal skull is said to be in the MNHN, Paris. Type locality fixed by Hatt (1934) as Senegal.]
- Trichechus Australis* (Gmelin) Shaw, 1800, *Gen. Zool.* 1(1): 244. [Non *T. australis* Retzius, 1794; based on Pennant's "Round- tailed Manati", a specimen of which is said to be in the Leverian Museum. Restricted to the African manatee both by Shaw and by Hatt (1934).]
- Manatus stroggylonurus* Bechstein, 1800, in *Thomas Pennant's Allgemeine Uebersicht der vierfüssigen Thiere* 2: 732.
- Manatus sphaerurus* Illiger, 1815, *Abh. Akad. Wiss. Berlin* 1804- 11: 79. [Based on Adanson's (1757) description.]
- Trichechus, Manatus, africanus* Oken, 1816, *Lehrb. Naturgesch.* 3(2): 688. [Type locality restricted to Senegal by Hatt (1934). This work of Oken's was placed on the Official Index of Rejected Works in Zoology by ICZN Opinion 417; names in it are non-Linnaean and not available.]
- Manatus senegalensis* Desmarest, 1817, *Nouv. Dict. Hist. Nat.* 17: 262. [Based on description and figures in Cuvier (1809: 294- 296, pl. 19, figs. 4-5). Homonym of *T. senegalensis* Link, 1795. Reference not seen.]
- Manatus atlanticus* Oken, 1838 [partim], *Allgem. Naturgesch.* 7(2), Säugth. 1: 1098.
- Manatus nasutus* Wyman in Perkins, 1848, *Proc. Boston Soc. Nat. Hist.* 2: 199. [Holotype: MCZ 9368. Type locality: Caracalla (= Cavally?) River, 20 miles E of Cape Palmas, Ivory Coast- Liberia border. Strictly speaking, the name was originally based not on a specimen in hand but on Perkins' description, and it is not clear from Wyman's later papers (1850, 1851) whether MCZ 9368 represents the same individual described by Perkins; but it came from the same locality and is the only representative of this nominal species that Wyman claimed to have examined. Thus MCZ 9368 is for all intents and purposes the holotype.]
- Manatus Vogelii* Owen, 1856, *Edinburgh New Phil. J.* (2)4(2): 346, Oct. 1856; *Rept. 26th Meeting Brit. Assoc. Adv. Sci.*, 1857: 100; *L'Institut* 25(1208): 62, Feb. 25, 1857. [Type: None designated; name based on Vogel's description, published in translation by Shaw (1857: 98-99). Type locality: Benue River. The skull described and illustrated by Baikie (1857) (BMNH 1388d), although said by Baikie to have been exhibited by Owen at the time the latter proposed the name *Vogelii* before the BAAS, was not explicitly mentioned by Owen nor, apparently, considered by him to be referable to this species. Neither was it collected by Vogel on the Benue but rather by Baikie at Alburkah Is., near the main mouth of the Niger. Therefore it has merely the status of a referred specimen.]

Manatus Oweni Du Chaillu, 1861, *Proc. Boston Soc. Nat. Hist.* 7: 367. [Syntypes: BMNH 1388b, 1388c, 1388e=1864.12.1.8; USNM 20907 (formerly BMNH 1388a); and one in Mus. Royal Coll. Surgeons which has probably been destroyed. Type locality: the "Camma country", at the mouth of the Gaboon River.]

Trichechus senegalensis vogelli [sic] (Owen) Derscheid, 1926, *Rev. Zool. Afr.* 14(2), *Bull. Cercle Zool. Congolais* 3(1-2): 28. [Subspecies combination erroneously attributed by Derscheid to von Heuglin. No morphological basis given for distinguishing this form from the following.]

Trichechus senegalensis senegalensis Link, Derscheid, 1926, *Rev. Zool. Afr.* 14(2), *Bull. Cercle Zool. Congolais* 3(1-2): 29.

Trichechus aequatorialis (Lacépède [partim]) Hatt, 1934, *Bull. Amer. Mus. Nat. Hist.* 66(4): 537, Sept. 10, 1934. [Nomen nudum.]

Trichechus manatus senegalensis (Link) Vieira, 1949, *Bol. Mus. Paraense Emílio Goeldi* 10: 268.

Type. - No types of the species have been formally designated.

Type Locality. - Senegal.

Age. - Recent; no fossil record.

Indeterminate Nominal Species of Trichechids

Manatus vulgaris Bechstein, 1795, *Compend. Bibliothek.* 21 (Zool. I): 113. [Reference not seen.]

Manatus aequatorialis Lacépède, 1799, *Tabl. Div. Mamm.:* fasc. 17. [Nomen nudum.]

Trichechidae or Dugongidae incertae sedis

Sirenotherium Paula Couto, 1967

Sirenotherium Paula Couto, 1967, *Atas Simp. Biota Amaz.* 1: 347. [Type, by monotypy: *S. pirabense* Paula Couto.]

Sirenotherium pirabense Paula Couto, 1967 (nomen dubium)

Sirenotherium pirabensis [sic] Paula Couto, 1967, *Atas Simp. Biota Amaz.* 1: 347. [Incorrect original spelling.]

Holotype. - MNRJ 2.761-V, left upper molar.

Type Locality. - Ilha de Fortaleza, Baía de Pirabas, district of São João de Pirabas, municipality of Primavera, Pará, Brazil.

Formation. - Pirabas Formation.

Age. - Early Miocene.

Family DUGONGIDAE Gray, 1821

Dugongidae Gray, 1821, *London Med. Reposit.* 15: 309, Apr. 1, 1821?

Halicoridae Gray, 1825, *Ann. Philos.* 26(= n.s. 10)(5): 341, Nov. 1825.

Halicorida Brandt, 1868, *Mém. Acad. Sci. St.-Pétersbourg* (7)12(1): 344. [Proposed as family.]

Halicoroidea Gill, 1872, *Smithson. Misc. Coll.* 11(1)(230): 13, Nov. 1872. [Proposed as superfamily.]

Type Genus. - *Dugong* Lacépède (= *Halicore* Illiger).

Subfamily HALITHERIINAE (Carus, 1868) Abel, 1913

Halitherida Carus, 1868, *Handb. Zool.* 1: 168. [Proposed as family.]

Halitheriidae Gill, 1872, *Smithson. Misc. Coll.* 11(1)(230): 13, Nov. 1872. [Proposed as family.]

Halitheriinae Abel, 1913, *Palaeontographica* 59: 358.

Archaeosireninae Abel, 1914, *Vorzeitl. Säuget.*: 217. [Based on an unavailable nominal genus, though it also included the available genera *Protosiren* and *Miosiren*.]

Eotherioidinae Kretzoi, 1941, *Ann. Hist.-Nat. Mus. Nat. Hungar., Pars Min. Geol. Pal.* 34: 154. [Incorrect original spelling; properly "Eotheroidinae".]

Metaxytheriinae Kretzoi, 1941, *Ann. Hist.-Nat. Mus. Nat. Hungar., Pars Min. Geol. Pal.* 34: 155.

Prototheriidae Kretzoi, 1941, *Ann. Hist.-Nat. Mus. Nat. Hungar., Pars Min. Geol. Pal.* 34: 155. [Proposed as family.]

Halianassinae Reinhart, 1959 [partim], *Univ. Calif. Publ. Geol. Sci.* 36(1): 8, July 24, 1959.

Type Genus. - *Halitherium* Kaup.

Caribosiren Reinhart, 1959

Caribosiren Reinhart, 1959, *Univ. Calif. Publ. Geol. Sci.* 36(1): 8, July 24, 1959. [Type, by monotypy: *C. turneri* Reinhart.]

Caribosiren turneri Reinhart, 1959

Caribosiren turneri Reinhart, 1959, *Univ. Calif. Publ. Geol. Sci.* 36(1): 8, July 24, 1959.

Holotype. - UCMP 38722, skull lacking jugals and occiput, with left M2-3 and four thoracic vertebrae.

Type Locality. - UCMP loc. V4852, on road between San Sebastián and Lares, Puerto Rico.

Formation. - San Sebastián Formation.

Age. - Middle or Late Oligocene.

Eosiren Andrews, 1902

Eosiren Andrews, 1902, *Geol. Mag.* (No. 457, N.S., Decade IV) 9(7): 293, July 1902. [Type, by monotypy: *E. libyca* Andrews.]

Archaeosiren Abel, 1913, *Palaeontographica* 59: 307. [Type, by monotypy: *A. stromeri* Abel. Generic and specific names were both nomina nuda.]

Eosiren abeli Sickenberg, 1934

E[otherium]. (*Eosiren*) *abeli* Sickenberg, 1931, *Palaeobiologica* 4(6/7): 409. [Nomen nudum.]
Eotherium (*Eosiren*) *abeli* Sickenberg, 1934, *Mém. Mus. R. Hist. Nat. Belgique* 63: 34, Dec. 31, 1934.

Eotheriodes [*sic*] (*Eosiren*) *abeli* (Sickenberg) Kordos, 1977, *Magyar Állam. Földt. Int. Évi Jelent.* 1975: 366.

Holotype. - BSP 1903 II 21, right M2. [Destroyed in World War II, together with the referred skull, mandible, atlas, and M3; only a squamosal and some vertebrae survive from the original hypodigm.]

Type Locality. - Mokattam Hills, Cairo, Egypt.

Formation. - Probably Mokattam Formation (Gingerich, 1992).

Age. - Middle Eocene (Lutetian).

Eosiren imenti Domning, Gingerich, Simons, and Ankel-Simons, 1994

Eotherioides sp., Bown et al., 1982, *Jour. Human Evol.* 11: 618.

"Sirenian" [gen. et sp. indet.], Fleagle et al., 1986, in J. Else & P. Lee (eds.), *Primate Evolution*: 9.

Eosiren imenti Domning, Gingerich, Simons, and Ankel-Simons, 1994, *Contr. Mus. Pal. Univ. Michigan* 29(4): 90, Nov. 30, 1994.

Holotype. - CGM 40210, skull of adult.
Type Locality. - Fayum, Egypt.
Formation. - Gebel Qatrani Formation.
Age. - Early Oligocene (Rupelian).

Eosiren libyca Andrews, 1902

Eosiren libyca Andrews, 1902, *Geol. Mag.* (No. 457, N.S., Decade IV) 9(7): 293, July 1902.
Eotherium (Eosiren) libycum (Andrews) Sickenberg, 1934, *Mém. Mus. R. Hist. Nat. Belgique* 63: 96, Dec. 31, 1934.

Eotheroides libyca [sic] (Andrews) Reinhart, 1951, *Univ. Calif. Publ., Bull. Dept. Geol. Sci.* 28(9): 209, Feb. 16, 1951. [Because the governing noun *Eotherium* is neuter, so is the adjectival form *Eotheroides*; hence the specific name in this combination should have been spelled *libycum*, as emended by later authors.]

Holotype. - CGM C.10054, skull.
Type Locality. - Fayûm, Egypt.
Formation. - Qasr el-Sagha Formation, probably the Temple Member (Gingerich, 1992).
Age. - Late Eocene (late Priabonian).

Eosiren stromeri (Sickenberg, 1934) Kordos, 1977

Archaeosiren Stromeri Abel, 1913, *Palaeontographica* 59: 307. [Nomen nudum.]
Eotherium stromeri Sickenberg, 1931, *Palaeobiologica* 4(6/7): 409. [Nomen nudum.]
Eotherium stromeri Sickenberg, 1934, *Mém. Mus. R. Hist. Nat. Belgique* 63: 130, Dec. 31, 1934.
Eosiren stromeri (Sickenberg) Kordos, 1977, *Magyar Állam. Földt. Int. Évi Jelent.* 1975: 366.
E[otheroides]. stromeri (Sickenberg) Domning, 1978, in Maglio & Cooke (eds.), *Evol. Afr. Mamms.*: 576.

Holotype. - SMNS unnumbered, skull and partial skeleton.
Type Locality. - West of Dimeh, Fayûm, Egypt.
Formation. - Upper Qasr el-Sagha Formation.
Age. - Late Eocene (late Priabonian).

Eotheroides Palmer, 1899

Eotherium Owen, 1875, *Quart. J. Geol. Soc. London* 31(1)(No. 121): 100. [Junior homonym of *Eotherium* Leidy, 1853 (*Perissodactyla*). Type, by monotypy: *E. aegyptiacum* Owen.]

Eotheroides Palmer, 1899, *Science* (2)10: 494. [Replacement name for *Eotherium* Owen, 1875.]
Masrisiren Kretzoi, 1941, *Ann. Hist.-Nat. Mus. Nat. Hungar., Pars Min. Geol. Pal.* 34: 152.
[Type, by monotypy: *M. abeli* Kretzoi.]

Eotheroides aegyptiacum (Owen, 1875) Trouessart, 1905

Eotherium aegyptiacum Owen, 1875, *Quart. J. Geol. Soc. London* 31(1)(No. 121): 100.
Manatus Coulombi Filhol, 1878, *Bull. Soc. Philomath. Paris* (7)2: 124. [Types: Three lower molars. Type locality: Mokattam Hills, Cairo, Egypt; Mokattam Formation.]
Halitherium aegyptiacum (Owen) von Zittel, 1893, *Handb. Pal.* 4: 198.
Eotheroides aegyptiacum (Owen) Trouessart, 1905, *Cat. Mamm.*, Suppl.: 749.
Eotheroides coulombi (Filhol) Trouessart, 1905, *Cat. Mamm.*, Suppl.: 749.
Masrisiren Abeli Kretzoi, 1941, *Ann. Hist.-Nat. Mus. Nat. Hungar., Pars Min. Geol. Pal.* 34: 152. [Syntypes: "Individuum IX. und II. von Abel (1913)". Type locality: Mokattam Hills, Cairo, Egypt.]

Holotype. - BMNH 46722, natural endocast of cranial cavity.
Type Locality. - Mokattam Hills, Cairo, Egypt.
Formation. - Probably the upper part of the Lower Building Stone Member of the Mokattam Formation (Gingerich, 1992).
Age. - Middle Eocene (probably middle Lutetian).

Eotheroides babiae Bajpai, Thewissen, Kapur, Tiwari, and Sahni, 2006

Eotheroides babiae Bajpai, Thewissen, Kapur, Tiwari, and Sahni, 2006, *Jour. Vert. Paleont.* 26(2): 403, June 12, 2006.

Holotype. – IITR-SB 2775, left and right mandibles with m1-3.
Type Locality. – Rato Nala, Kachchh District, State of Gujarat, India.
Formation. – Harudi Formation.
Age. – Middle Eocene (Lutetian).

? "*Eotherium*" *majus* Zdansky, 1938

Eotherium majus Zdansky, 1938, *Palaeobiologica* 6(2): 434.

Holotype. - Left M2.
Type Locality. - Mokattam Hills, Cairo, Egypt.
Formation. - Mokattam Formation.
Age. - Middle Eocene (Lutetian).
Remarks. - Status and affinities uncertain.

Halitherium Kaup, 1838

- Pugmeodon* Kaup in Kaup and Scholl, 1834, *Verzeichn. Gyps-Abgüsse Ausgezeichnet. Urweltl. Thierrest. Grossh. Mus. Darmstadt*, 2. Ausg.: 16, Sept. 1834. [Type, by monotypy: *P. Schinzii* Kaup. Both names were nomina nuda.]
- Halytherium* Kaup, 1838, *Neues Jb. Min. Geogn. Geol. Pet.*: 319, May 1838. [Spelling changed to *Halitherium* on p. 536 of the same volume; *Halitherium* deemed to be the correct original spelling and placed on the Official List of Generic Names in Zoology, and *Halytherium* placed on the Official Index of Rejected and Invalid Generic Names, by ICZN Opinion 1535, *Bull. Zool. Nomencl.* 46(1): 83, March 1989. Type, by subsequent designation (in Opinion 1535): *Pugmeodon schinzii* Kaup.]
- Pugmeodon* Kaup, 1838, *Neues Jb. Min. Geogn. Geol. Pet.*: 319, May 1838. [Type, by monotypy: *P. schinzii* Kaup. The generic name is a nomen oblitum.]
- Halianassa* von Meyer, 1838 [partim], *Neues Jb. Min. Geogn. Geol. Pet.* 1838: 667, Sept. 1838. [Type, by monotypy: *Halianassa studeri* von Meyer. Name declared a junior objective synonym of *Halitherium* and placed on the Official List of Rejected and Invalid Generic Names by ICZN Opinion 1535, *Bull. Zool. Nomencl.* 46(1): 83, March 1989.]
- Halibutherium* Gloger, 1842, *Gemeinnütz. Hand- u. Hilfsbuch Naturgesch.* 1: 166. [Nomen nudum; = *Halitherium*?]
- Pygmaeodon* Giebel, 1847, *Fauna der Vorwelt*: 230. [Lapsus for *Pugmeodon*.]
- Trachytherium* Gervais, 1849, *C. R. Acad. Sci. Paris* 28: 644, May 1849. [Type, by monotypy: *T. raulinii* Gervais.]
- Crassitherium* van Beneden, 1871 [partim], *Bull. Acad. R. Belgique* (2)32(9/10): 171. [Type, by monotypy: *C. robustum* van Beneden.]
- Manatherium* Hartlaub, 1886, *Zool. Jb.* 1: 378. [Type, by monotypy: *M. delheidi* Hartlaub.]

Halitherium alleni Simpson, 1932

- Halitherium antiquum* (Leidy) Allen, *sensu* Allen, 1926, *Bull. Mus. Comp. Zool.* 67(14): 455, July, 1926. [Includes all the referred specimens described here by Allen, but not Leidy's original type specimen; see Simpson (1932a: 445).]
- Halitherium alleni* Simpson, 1932, *Bull. Amer. Mus. Nat. Hist.* 59(8): 445, Sept. 6, 1932.
- Felsinootherium alleni* (Simpson) Kellogg, 1966, *U.S. Natl. Mus. Bull.* 247(3): 91.
- M[etaxytherium]. alleni* (Simpson) Fondi and Pacini, 1974, *Palaeontogr. Ital.* 67(n.s. 37): 45.

Holotype. - MCZ 17142, parietal-supraoccipital skullcap.
Type Locality. - Ashley River phosphate deposits near Charleston, South Carolina, USA.
Formation. - Unknown; probably either the Ashley Formation of the Cooper Group or the Chandler Bridge Formation.
Age. - Unknown; probably Late Oligocene.
Remarks. - Status and affinities uncertain.

?Halitherium antillense Matthew, 1916

?Halitherium antillense Matthew, 1916, Ann. N. Y. Acad. Sci. 27: 25, Jan. 28, 1916.

Holotype. - AMNH 9844, posterior part of left mandible with M1-3; one cervical and one thoracic vertebra.

Type Locality. - West bank of Rio Jacaguas, 1 km N and 1 km W of Juana Díaz, Puerto Rico.

Formation. - Principal reference section of the Juana Díaz Formation, as designated by Monroe (1980: 68).

Age. - Middle Oligocene (upper *Globigerina ampliapertura* Zone; Moussa and Seiglie, 1970, AAPG Bull. 54(10): 1892); = lower Chattian, ca. 31 Ma.

Remarks. - Status and affinities uncertain.

Halitherium christolii Fitzinger, 1842

Halitherium Christolii Fitzinger, 1842, *6ter Ber. Mus. Franc.- Carol. Linz*: 71.

M[anatus]. Christolii (Fitzinger) Blainville, 1844, *Ostéogr., Genre Manatus*: 122.

Met[axytherium]. Christolii (Fitzinger) Laurillard, 1846, *Dict. Univ. d'Hist. Nat.* 8: 172.

Halianassa Collinii von Meyer [*partim*], *sensu* von Meyer, 1847, *Neues Jb. Min. Geogn. Geol. Pet.*: 189, 578.

Halitherium Schinzi Kaup, *sensu* Peters, 1867, *Jb. K.-K. Geol. Reichsanst. Wien* 17: 310.

Halitherium Schinzi Kaup [*partim*], *sensu* Lepsius, 1882, *Abh. Mittelrhein. Geol. Ver.* 1: 164.

Metaxytherium(?) pergense Toulou, 1899, *Neues Jb. Min. Geol. Pal.*, 12. Beilageband: 459, pl. 12. [Holotype: Oberöst. Landesmus. Linz No. 11/1899, skull roof. Type locality: Perg, Austria.]

Halitherium pergense (Toulou) Spillmann, 1959, *Denkschr. Math.-Nat. Kl. Oesterr. Akad. Wiss.* 110(3): 11.

Halitherium Abeli Spillmann, 1959, *Denkschr. Math.-Nat. Kl. Oesterr. Akad. Wiss.* 110(3): 36. [Holotype: Oberöst. Landesmus. Linz No. 257/1939, left and right mandibles with DP5-M3. Type locality: Linz, Austria.]

Type Series. - Mandible with left DP5-M2 and right M1-3; two isolated molars; ribs and vertebrae (Oberöst. Landesmus., Linz); isolated ?M3 (Mus. Naturgesch., Vienna).

Type Locality. - Sicherbauer-Gestätte sand quarry, Linz, Austria.

Formation. - "Erste Mediterranstufe"; Linzer Sande.

Age. - Late Oligocene (Egerian).

Remarks. - A case could be made for referring this species to *Metaxytherium*, as was done by some early authors.

Halitherium schinzii (Kaup, 1838) Kaup, 1855

- Pugmeodon Schinzii* Kaup in Kaup and Scholl, 1834, *Verzeichn. Gyps-Abgüsse Ausgezeichnet. Urweltl. Thierrest. Grossh. Mus. Darmstadt*, 2. Ausg.: 16, Sept. 1834. [Nomen nudum.]
- Hippopotamus dubius* Cuvier, *sensu* Kaup, 1838, *Neues Jb. Min. Geogn. Geol. Pet.*: 319, May 1838.
- Halytherium dubium* (Cuvier) Kaup, 1838, *Neues Jb. Min. Geogn. Geol. Pet.*: 319, pl. 2: figs. D1, 2, May 1838. [Note that this new combination was misapplied to material generically distinct from the original "*Hippopotamus*" *dubius* of Cuvier (= ?*Protosiren minima*). Spelling changed to *Halitherium* on p. 536. Based on HLMD Az 47, lower molar.]
- Pugmeodon Schinzii* Kaup, 1838, *Neues Jb. Min. Geogn. Geol. Pet.*: 319, pl. 2: fig. C1, 2, May 1838. [Holotype: HLMD Az 48, premolar. Name placed on the Official List of Specific Names in Zoology by ICZN Opinion 1535, *Bull. Zool. Nomencl.* 46(1): 83, March 1989.]
- Halianassa Studeri* von Meyer, 1838 [*partim*], *Neues Jb. Min. Geogn. Geol. Pet.*: 667, Sept. 1838. [Neotype: HLMD Az 48, premolar (= holotype of *Pugmeodon schinzii*); name declared an objective junior synonym of *Halitherium schinzii* and placed on the Official Index of Rejected and Invalid Specific Names by ICZN Opinion 1535, *Bull. Zool. Nomencl.* 46(1): 83, March 1989.]
- Manatus Renggeri* Bronn, 1838, *Lethaea Geogn.*: 840. [Nomen nudum; lapsus, = *Halitherium schinzii*; see Bronn, 1848.]
- M[anatus]. Guettardi* Blainville, 1844, *Ostéogr., Genre Manatus*: 122, 124. [Holotype: Partial skeleton. Type locality: Étrechy, near Étampes, France.]
- M[anatus]. Schinzii* (Kaup) Blainville, 1844, *Ostéogr., Genre Manatus*: 124.
- M[anatus]. dubius* (Cuvier) Blainville, 1844, *Ostéogr., Genre Manatus*: 124.
- Halianassa Collinii* von Meyer, 1846, *Neues Jb. Min. Geogn. Geol. Pet.*: 328. [Based on unspecified material from Flonheim.]
- Met[axytherium]. Guettardi* (Blainville) Laurillard, 1846, *Dict. Univ. d'Hist. Nat.* 8: 172.
- H[alitherium]. Guettardi* (Blainville) Gervais, 1847, *Ann. Sci. Nat. (Zool.)* (3)8: 221, Oct. 1847.
- Pygmaeodon Schinzii* Giebel, 1847, *Fauna der Vorwelt*: 230. [Lapsus for *Pugmeodon schinzii*.]
- Trachytherium Raulinii* Gervais, 1849, *C. R. Acad. Sci. Paris* 28: 644, May 1849. [Holotype: Mus. Hist. Nat. Bordeaux, isolated M3. Type locality: La Réole, Gironde, France.]
- Halitherium Cuvieri* (Christol) Kaup, 1840, *sensu* Kaup, 1855, *Beitr. Näh. Kenntn. Urweltl. Säugeth.*: 11.
- Halitherium Schinzi* (Kaup) Kaup, 1855, *Beitr. Näh. Kenntn. Urweltl. Säugeth.*: 11.
- Halitherium Kaupi* Krauss, 1858, *Neues Jb. Min. Geogn. Geol. Pet.*: 528. [Holotype: skull roof figured by Kaup (1855: pl. 2, fig. 1). Type locality: ?Flonheim, Germany.]
- Halitherium Bronni* Krauss, 1858, *Neues Jb. Min. Geogn. Geol. Pet.*: 530. [Holotype: SMNS 1539, skull roof. Type locality: Flonheim, Germany.]
- Crassitherium robustum* Van Beneden, 1871 [*partim*], *Bull. Acad. R. Belgique* (2)32(9/10): 171. [Types: ?reptile skull fragment and 8 vertebrae of *Halitherium schinzii*; see Sickenberg (1934b: 205, 207). Type locality: Boom, Belgium; Argile de Boom.]
- Halitherium Chouqueti* Gaudry, 1884, *Bull. Soc. Géol. France* (3)12(6): 373, May 1884. [Holotype: 14 ribs. Type locality: Louveciennes, Seine-et-Oise, France.]

- Manatherium delheidi* Hartlaub, 1886, *Zool. Jb.* 1: 378. [Holotype: MNHB Ht.M.151, skull fragments of juvenile. Type locality: Hemixem, near Hoboken, Belgium; Rupelton.] *H[alitherium]. Raulini* (Gervais) Depéret, 1895, *Sitzb. Math.-Nat. Kl. K. Akad. Wiss. Wien* 104(1): 410.
- Halitherium Uytterhoeveni* Abel, 1925, *Gesch. Meth. Rekonstr. Vorzeitl. Wirbelt.*: 39. [Holotype: MNHB 3663 (I.G. 6433), Plt.M.141, partial skeleton. Type locality: Boom, Belgium; Rupelton. Earliest known publication of this MS. name of Lefèvre; see Sickenberg (1934b: 206).]
- Halitherium schinzi* Kaup forma *typica* Sickenberg, 1934, *Mém. Mus. R. Hist. Nat. Belgique* 63: 271, Dec. 31, 1934.
- Halitherium schinzi* Kaup forma *delheidi* (Hartlaub) Sickenberg, 1934, *Mém. Mus. R. Hist. Nat. Belgique* 63: 207, Dec. 31, 1934.
- Halitherium schinzi lareolensis* [sic] Pilleri, 1987, *Sirenia of the Swiss Molasse*: 46. [Incorrect original spelling; properly "*H. s. lareolense*" as emended by Cahuzac and Audouin, 2005, *Bull. Soc. Linn. Bordeaux* 140 (N.S.) no. 33(3):187.] Holotype: NHMB M.G. 60, mandible with M1-3. Type locality: La Réole, Gironde, France; Lower Rupelian.] Synonymized by Domning, 1996, *Smithson. Contr. Paleobiol.* 80: 385, July 25, 1996.

Holotype. - HLMD Az 48, premolar.
 Type Locality. - Flonheim, Germany.
 Formation. - Unterer Meeressand.
 Age. - Middle Oligocene (Rupelian, Suevoian).

Halitherium taulannense Sagne, 2001

Halitherium taulannense Sagne, 2001, *C. R. Acad. Sci. Paris, Ser. 2, Sci. de la Terre & Planètes*, Fasc. A: 472.

Holotype. – RGHP D040, skull of adult. Several paratypes were also designated in the original publication.
 Type Locality. – Taulanne, near Castellane, Alpes-de-Haute-Provence, France.
 Formation. – Unnamed.
 Age. – Late Eocene (Priabonian).

Metaxytherium Christol, 1840

Halianassa von Meyer, 1838 [*partim*], *Neues Jb. Min. Geogn. Geol. Pet.*: 667, Sept. 1838. [Type, by monotypy: *H. studeri* von Meyer (= *Manatus studeri* von Meyer, 1837, nomen nudum; = *Metaxytherium krahuletzki* Depéret). Name placed on the Official Index of Rejected and Invalid Generic Names by ICZN Opinion 1535, *Bull. Zool. Nomencl.* 46(1): 83, March 1989.]

Cheirotherium Bruno, 1839, *Mem. R. Accad. Sci. Torino* 2(1): 160. [Junior homonym of *Cheirotherium* Kaup, 1835 (Reptilia). Type, by monotypy: *C. subapenninum* Bruno.]

Metaxytherium Christol, 1840, *L'Institut* Vol. 8, Sect. 1, No. 352: 323, Sept. 24, 1840; *Rev. Zool.* 3: 283, Sept. 1840; *C. R. Acad. Sci. Paris* 11(12): 529; *Ann. Sci. Nat. Zool.* (2)15: 332, June 1841. [Type, by subsequent designation (Depéret and Roman, 1920): *Metaxytherium cuvieri* Christol (= *Hippopotamus medius* Desmarest).]

Fucotherium Kaup, 1840, *Neues Jb. Min. Geogn. Geol. Pet.* 1840: 675. [Published as synonym of *Metaxytherium*; type, by monotypy: *Halicore cuvierii* Christol.]

Pontotherium Kaup, 1840, *Neues Jb. Min. Geogn. Geol. Pet.* 1840: 676. [Replacement name for *Cheirotherium* Bruno.]

Felsinootherium Capellini, 1865, *Atti Soc. Ital. Sci. Nat. Milano* 8: 281. [Nomen nudum.]

Felsinootherium Capellini, 1872, *Mem. Accad. Sci. Ist. Bologna* (3)1: 615. [Type, by original designation: *F. forestii* Capellini.]

Thalattosiren Sickenberg, 1928, *Denkschr. Akad. Wiss. Wien, Math.-Nat. Kl.* 101: 293. [Type, by monotypy: *Metaxytherium petersi* Abel.]

Hesperosiren Simpson, 1932, *Bull. Amer. Mus. Nat. Hist.* 59(8): 426, Sept. 6, 1932. [Type, by monotypy: *H. crataegensis* Simpson.]

Furcotherium Simpson, 1932, *Bull. Amer. Mus. Nat. Hist.* 59(8): 481, Sept. 6, 1932. [Lapsus for *Fucotherium*.]

Halysiren Kretzoi, 1941, *Ann. Hist.-Nat. Mus. Nat. Hungar., Pars Min. Geol. Pal.* 34: 153. [Replacement name for *Cheirotherium* Bruno.]

Haplosiren Kretzoi, 1951, *Földt. Közl.* 81(10-12): 438. [Type, by monotypy: *H. leganyii* Kretzoi.]

Metaxytherium aquitaniae Pilleri, 1987

Metaxytherium aquitaniae Pilleri, 1987, *Sirenia of the Swiss Molasse*: 41.

Holotype. - NHMB 09.917/1926, parietal-supraoccipital skullcap.
 Type Locality. - Courtebotte near Gans, district of Langon, Canton of Bazas, Gironde, France.
 Formation. - ?
 Age. - Early Miocene (Middle Aquitanian).
 Remarks. - Status and affinities uncertain.

Metaxytherium arctodites Aranda-Manteca, Domning, and Barnes, 1994

Metaxytherium arctodites Aranda-Manteca, Domning, and Barnes, 1994, *Proc. San Diego Soc. Nat. Hist.* 29: 192. May 1, 1994.

Holotype. - FCM 3693, skull and skeleton of subadult individual.
 Type Locality. - FCM loc. LM-1, La Misión, Baja California, Mexico.

Formation. - Rosarito Beach Formation, Los Indios Member.
Age. - Middle Miocene (Barstovian).

Metaxytherium beaumontii Christol in Blainville, 1844 (nomen dubium)

Metaxytherium Beaumontii Christol in Blainville, 1844, *Ostéogr., Genre Manatus*: 130.
Halitherium Beaumontii (Christol) Gervais, 1852, *Zool. Pal. Franç.* 1: 144.

Holotype. - Nearly complete skeleton lacking mandible; formerly at Faculté des Sciences de Dijon but now lost.

Type Locality. - Beaucaire, France.

Formation. - "Molasse de Beaucaire".

Age. - Early Miocene (Burdigalian; Depéret and Roman, 1920: 31).

Remarks. – Status and affinities uncertain.

Metaxytherium crataegense (Simpson, 1932)
Aranda-Manteca, Domning, and Barnes, 1994

Hesperosiren crataegensis Simpson, 1932, *Bull. Amer. Mus. Nat. Hist.* 59(8): 426, Sept. 6, 1932.

Metaxytherium calvertense Kellogg, 1966, *U.S. Nat. Mus. Bull.* 247(3): 71. [Holotype: USNM 16757, skull and partial skeleton of immature individual. Type Locality: Plum Point, Calvert County, Maryland, USA; Plum Point Member, Calvert Formation; earliest Middle Miocene (Langhian; lower part of planktonic foraminiferal zone N.9).]

Metaxytherium riveroi Varona, 1972, *Mem. Soc. Cienc. Nat. La Salle* (Caracas) No. 91, Tomo 32: 6, Jan.-Apr. 1972. [Holotype: DPUH 1255, partial skull and skeletal fragments of juvenile. Type locality: San Antonio de Cabezas, Matanzas, Cuba; Güines Formation.]
Synonymized by Domning, 1996, *Smithson. Contr. Paleobiol.* 80: 386, July 25, 1996.

Metaxytherium crataegense (Simpson) Aranda-Manteca, Domning, and Barnes, 1994, *Proc. San Diego Soc. Nat. Hist.* 29: 192. May 1, 1994.

Holotype. - AMNH 26838, skull, vertebrae, and ribs of adult.

Type Locality. - Floridin Company mine, N of Quincy, Gadsden County, Florida, USA.

Formation. - Hawthorn Group, Torreya Formation, Dogtown Member.

Age. - Early-Middle Miocene (late Hemingfordian or early Barstovian; Bryant, 1991).

Metaxytherium floridanum Hay, 1922

Manatus antiquus Leidy, *sensu* Leidy, 1889, *Trans. Wagner Free Inst. Sci.* 2: 27.

Metaxytherium floridanum Hay, 1922, *Proc. U.S. Nat. Mus.* 61(17): 1.

Felsinotherium floridanum (Hay) Simpson, 1932, *Bull. Amer. Mus. Nat. Hist.* 59(8): 447, Sept. 6, 1932.

Felsinotherium ossivallense Simpson, 1932, *Bull. Amer. Mus. Nat. Hist.* 59(8): 448, Sept. 6, 1932. [Holotype: AMNH 26805, maxillary fragment with M3. Type locality: Mulberry, Polk County, Florida, USA.]
F[elsinotherium]. gunteri Simpson, 1932, *Bull. Amer. Mus. Nat. Hist.* 59(8): 449, Sept. 6, 1932. [Nomen nudum; lapsus for *F. ossivallense*; see Reinhart (1976: 228).]
Metaxytherium ossivalense [sic] (Simpson) Reinhart, 1971, *Plaster Jacket* No. 15: [8], Oct. 1, 1971.

Holotype. - USNM 7221, right maxilla with M3.
Type Locality. - Pit No. 7 of the Prairie Pebble Phosphate Company, 1 mile W of Mulberry, Polk County, Florida, USA.
Formation. - Lower Bone Valley Formation; presumably Unit 4 of Crissinger (1977, *Southeast. Geol. Soc. Publ.* 19: 49-60)
Age. - Probably late Middle Miocene (Early Clarendonian).

Metaxytherium krahuletzki Depéret, 1895

Manatus Studeri von Meyer, 1837, *Neues Jb. Min. Geogn. Geol. Pet.* 8: 677. [Nomen nudum. Based on Mus. Naturgesch. Bern, unnumbered, left maxilla with DP5-M3. Type locality: Mäggenwyl, near Lenzburg, Canton Aargau, Switzerland; Burdigalian "Molassen-Sandstein".]
Halianassa Studeri von Meyer, 1838 [partim], *Neues Jb. Min. Geogn. Geol. Pet.* 1838: 667, Sept. 1838. [Names placed on the Official Indexes of Rejected and Invalid Generic and Specific Names by ICZN Opinion 1535, *Bull. Zool. Nomencl.* 46(1): 83, March 1989.]
M[anatus]. Studeri (von Meyer) Blainville, 1844 [partim], *Ostéogr., Genre Manatus*: 124.
Halitherium Studeri (von Meyer) Kaup, 1855 [partim], *Beitr. Näh. Kenntn. Urweltl. Säugeth.:* 12.
Halitherium Schinzi (Kaup), *sensu* Toula and Kail, 1885, *Denkschr. Akad. Wiss. Wien* 50: 300.
Halianassa studeri von Meyer, *sensu* Studer, 1887, *Abh. Schweiz. Pal. Ges.* 14: 10.
Metaxytherium krahuletzki Depéret, 1895, *Sitzb. Math.-Nat. Kl. Akad. Wiss. Wien* 104(1): 408.
M[etaxytherium]. studeri (von Meyer) Depéret, 1895, *Sitzb. Math.-Nat. Kl. Akad. Wiss. Wien* 104(1): 409.
Metaxytherium Christoli (Fitzinger) Laurillard, *sensu* Schlosser, 1902, *Geol. Pal. Abh.* (Koken), N.F., 5(3): 229.
Th[alattosiren]. studeri (von Meyer) Thenius, 1952, *Neues Jb. Geol. Pal. (Abh.)* 96(1): 113.
Metaxytherium argoviense Pilleri, 1987, *Sirenia of the Swiss Molasse*: 14. [Unavailable name; proposed conditionally.]
Metaxytherium krahuletzki excelsum Pilleri, 1987, *Sirenia of the Swiss Molasse*: 16. [Holotype: Collection of Jürg Jost, Zofingen, Switzerland, parietal-supraoccipital skullcap. Type locality: Safenwil-Striegel, Canton Aargau, Switzerland; upper marine molasse, Lower Burdigalian.]

Type Series. - Krahuletzmus. Eggenburg nos. G II 21, 22, 25, 26, 29, 34, six isolated molars.

Type Locality. - Schindergraben, near Eggenburg, Austria.

Formation. - "Erste Mediterranstufe (Horner Schichten)" (Depéret, 1895); = Burgschleinitz Formation.

Age. - Early Miocene (Eggenburgian).

Metaxytherium lovisati Capellini, 1886

Metaxytherium lovisati Capellini, 1886, *Mem. R. Accad. Sci. Ist. Bologna* (4)7: 50.

Holotype. - Cervical vertebrae 2-7 and thoracic vertebra 1.

Type Locality. - Monte Fiocca, near Sassari, Sardinia.

Formation. - ?

Age. - Miocene.

Remarks. - Status and affinities uncertain; likely synonymous with *M. medium*.

Metaxytherium medium (Desmarest, 1822) Hooijer, 1952

"Lamantin fossile", G. Cuvier, 1809, *Ann. Mus. Hist. Nat.* 13: 305, pl. 19: figs. 12, 19-23.

"Moyen hippopotame fossile", Cuvier, 1821, *Rech. Oss. Fossiles*, ed. 2, vol. 1: 332, pl. 7, fig. 9.

Hippopotamus medius Desmarest, 1822, *Mammalogie*: 388.

Hippopotamus intermedius Holl, 1829, *Handb. Petrefactenk.*: 57.

Manatus fossilis Holl, 1829, *Handb. Petrefactenk.*: 69.

Halicore Cuvierii Christol, 1832 [*partim*], *Ann. Sci. Indust. Midi France* 2(8): 244, pl. 6: figs. 1-3.

Halianassa Studeri von Meyer, 1838 [*partim*], *Neues Jb. Min. Geogn. Geol. Pet.* 1838: 667, Sept. 1838. [Names placed on the Official Indexes of Rejected and Invalid Generic and Specific Names by ICZN Opinion 1535, *Bull. Zool. Nomencl.* 46(1): 83, March 1989.]

Halitherium cuvieri (Christol) Kaup, 1840, *Neues Jb. Min. Geogn. Geol. Pet.*: 675.

"*Metaxytherium* ... d'Angers et de Nantes", Christol, 1841, *Ann. Sci. Nat. Zool.* (2)15: 332, pl. 7: figs. 1, 5, 9-11.

M[etaxytherium]. Cordieri Christol in Blainville, 1844, *Ostéogr., Genre Manatus*: 130. [Based on unspecified material from the Loire Valley, France.]

M[anatus]. Cuvieri (Christol) Blainville, 1844 [*partim*], *Ostéogr., Genre Manatus*: 122.

M[etaxytherium]. Cuvierii (Christol) Christol in Blainville, 1844, *Ostéogr., Genre Manatus*: 130.

Halitherium fossilis [sic] (Holl) Gervais, 1847, *Ann. Sci. Nat. (Zool.)* (3)8: 221, Oct. 1847.

Halianassa Cordieri (Christol) Bronn, 1848, *Index Pal.*: 562.

Halianassa Cuvieri (Christol) Bronn, 1848, *Index Pal.*: 562.

Halitherium cordieri (Christol) Peters, 1867, *Jahrb. Geol. Reichsanst. Wien* 17(2): 309.

M[etaxytherium]. fossile (Holl) Depéret, 1895, *Sitzb. Math.-Nat. Kl. K. Akad. Wiss. Wien* 104(1): 409.

Haplosiren leganyii Kretzoi, 1951, *Földt. Közl.* 81(10-12): 438. [Holotype: FIV 6001, left mandibular fragment with M2-3. Type locality: Mátraszöllös, Hungary; Rákos Leitha-Limestone Formation, Upper Tortonian, ?late Badenian.]

Metaxytherium medium (Desmarest) Hooijer, 1952, *Osiris* 10: 114.

Metaxytherium catalaunicum Pilleri in Pilleri, Biosca, and Via, 1989, *Tert. Sir. Catalonia*: 68. [Holotype: Mus. Vilafranca del Penedès (Barcelona) no. 1210, skull, mandible, and postcranial remains. Type locality: Olèrdola, Catalonia, Spain.] Synonymized by Domning, 1996, *Smithson. Contr. Paleobiol.* 80: 387, July 25, 1996.

Holotype. - MNHN Fs 2706, partial left mandible with M2-3 and roots of M1 (the "Moyen hippopotame" of Cuvier, 1821).

Type Locality. - Saint-Michel en Chaisine, Maine-et-Loire, France.

Formation. - Calcareous tuff.

Age. - Middle or Late Miocene (Serravallian-Tortonian).

Metaxytherium meyeri Abel, 1904 (nomen dubium)

Metaxytherium Meyeri Abel, 1904, *Abh. K.-K. Geol. Reichsanst.* 19(2): 15, June 1904.

Holotype. - SMNS unnumbered, proximal end of left humerus.

Type Locality. - Baltringen, Germany.

Formation. - "Meeresmolasse" (Upper Marine Molasse).

Age. - Miocene (late Burdigalian, MN 4).

Remarks. - Status and affinities uncertain.

Metaxytherium petersi Abel, 1904

Halitherium Cordieri Christol, *sensu* Peters, 1867, *Jb. Geol. Reichsanst. Wien* 17(2): 309.

Metaxytherium Petersi Abel, 1904, *Abh. K.-K. Geol. Reichsanst. Wien* 19(2): 15, 107, June 1904.

Thalattosiren Petersi (Abel) Sickenberg, 1928, *Denkschr. Akad. Wiss. Wien, Math.-Nat. Kl.* 101: 293.

Holotype. - Skeleton lacking skull; described by Peters (1867) and Abel (1904a), termed "Typusexemplar" by Pia and Sickenberg (1934: 403); formerly in Geol. Bundesanst., Vienna, but now lost and probably destroyed in World War II except for the distal epiphysis of a radius, two carpals, one metacarpal, one phalanx, the left innominate, and a cervical vertebra.

Type Locality. - Hainburg a. d. Donau, Austria.

Formation. - Zweite Mediterranstufe.

Age. - Middle Miocene (Badenian).

Remarks. - Status and affinities uncertain.

Metaxytherium serresii (Gervais, 1847) Depéret, 1895

- Halicore Cuvierii* Christol, 1832 [*partim*], *Ann. Sci. Indust. Midi France* 2(8): 244.
Halicore medius (Desmarest) Serres, 1838, *Ann. Sci. Nat. Zool.* (2)9: 286. [Note that this new combination was misapplied to material specifically distinct from the original "*Hippopotamus*" *medius* of Desmarest (= *Metaxytherium medium*).]
"*Metaxytherium* de Montpellier", Christol, 1841, *Ann. Sci. Nat. Zool.* (2)15: 332; pl. 7: figs. 2, 3, 6.
M[anatus]. Cuvieri (Christol), *sensu* Blainville, 1844 [*partim*], *Ostéogr., Genre Manatus*: 122.
M[etaxytherium]. Cuvieri (Christol), *sensu* Christol in Blainville, 1844, *Ostéogr., Genre Manatus*: 130. [This and the previous name are nomina oblita as applied to Montpellier specimens.]
Halitherium Serresii Gervais, 1847, *Ann. Sci. Nat. (Zool.)* (3)8: 221, Oct. 1847.
Felsinotherium Serresii (Gervais) Zigno, 1878, *Atti R. Accad. Lincei, Mem. Cl. Sci. Fis. Matem. Nat.* (3)2: 941.
Halitherium minor Cope, 1883, *Proc. Acad. Nat. Sci. Philadelphia* 1883: 52.
M[etaxytherium]. Serresi (Gervais) Depéret, 1895, *Sitzb. Math.-Nat. Kl. K. Akad. Wiss. Wien* 104(1): 409.

Type. - No type specimens of this species have ever been designated.

Type Locality. - Montpellier, France.

Formation. - Sables à *Gryphaea virleti*.

Age. - Early Pliocene (early Zanclean, MN 14).

Metaxytherium subapenninum (Bruno, 1839) Fondi and Pacini, 1974

- Cheirotherium sub-apenninum* Bruno, 1839, *Mem. R. Accad. Sci. Torino* 2(1): 160.
Cheirotherium Brocchii Blainville, 1844, *Ostéogr., Genre Manatus*: 121. [Lapsus for *C. subapenninum*.]
Manatus Brocchii (Blainville) Blainville, 1844, *Ostéogr., Genre Manatus*: 121.
Met[axytherium]. Brocchii (Blainville) Laurillard, 1846, *Dict. Univ. d'Hist. Nat.* 8: 171.
Halitherium Brocchii (Blainville) Gervais, 1847, *Ann. Sci. Nat. (Zool.)* (3)8: 221, Oct. 1847.
Halianassa Brocchii (Blainville) Bronn, 1848, *Index Pal.*: 562.
Halitherium subapenninum (Bruno) Kaup, 1855, *Beitr. Näh. Kenntn. Urweltl. Säugeth.*: 11.
Felsinotherium Forestii Capellini, 1872, *Mem. R. Accad. Sci. Ist. Bologna* (3)1: 617. [Holotype: Museum G. Capellini, Univ. of Bologna, unnumbered, skull, mandible, and postcranial elements. Type locality: Riosto, province of Bologna, Italy.]
Felsinotherium Gervaisi Capellini, 1872, *Mem. R. Accad. Sci. Ist. Bologna* (3)1: 634. [Holotype: partial skull and mandible. Type locality: Val di Pugna, near Siena, Italy.]
Felsinotherium subapenninum (Bruno) Zigno, 1878, *Bull. Soc. Géol. France* (3)6: 70.
Felsinotherium Gastaldi Zigno, 1878, *Atti R. Accad. Lincei (Roma), Mem. Cl. Sci. Fis. Matem. Nat.* (3)2: 941. [Holotype: Museo Craveri, Brà, Piemonte, unnumbered, skull and rib fragment. Type locality: Brà, Piemonte, Italy.]

Felsinotherium subalpinum Issel, 1910, *Mem. R. Accad. Lincei* (Roma) (5)8: 203. [Lapsus for *F. subappenninum*.]
Metaxytherium forestii (Capellini) Fondi and Pacini, 1974, *Palaeont. Ital.* 67(n.s. 37): 37.
Metaxytherium subappenninum [sic] (Bruno) Fondi and Pacini, 1974, *Palaeont. Ital.* 67(n.s. 37): 45.
Metaxytherium gervaisi (Capellini) Fondi and Pacini, 1974, *Palaeont. Ital.* 67(n.s. 37): 45.
Metaxytherium gastaldi (Zigno) Fondi and Pacini, 1974, *Palaeont. Ital.* 67(n.s. 37): 45.

Holotype. - Regional Mus. Nat. Hist. Turin no. NT-13889, partial skull and skeleton.
Type Locality. - Montiglio hills, Tanaro valley, Piemonte, Italy.
Formation. - Sabbie di Asti Formation.
Age. - Pliocene (late Zanclean-early Piacenzian; *Globorotalia puncticulata* Zone; 3.98-3.57 Ma) (S. Sorbi, unpubl. doctoral dissertation, 2008: 50-51).

Prototherium Zigno, 1887

Prototherium Zigno, 1887, *Bull. Soc. Géol. France* (3)15: 731. [Type, by monotypy: *Halitherium veronense* Zigno.]
Mesosiren Abel, 1906, *Neues Jb. Min. Geol. Pal. (Abh.)* 1906(2): 52. [Type, by monotypy: *M. dolloi* Abel.]
Paraliosiren Abel, 1906, *Neues Jb. Min. Geol. Pal. (Abh.)* 1906(2): 59. [Type, by monotypy: *P. suessi* Abel.]

Prototherium veronense (Zigno, 1875) Zigno, 1887

Halitherium veronense Zigno, 1875, *Mem. R. Ist. Veneto Sci. Lett. Arti* 18: 445.
Halitherium angustifrons Zigno, 1875, *Mem. R. Ist. Veneto Sci. Lett. Arti* 18: 441. [Syntypes: MGP 12 and 17, two skull fragments. Type locality: Monte Zuello, Italy.]
Halitherium curvidens Zigno, 1875, *Mem. R. Ist. Veneto Sci. Lett. Arti* 18: 443. [Holotype: MGP 11, partial mandible. Type locality: Monte Zuello, Italy.]
Halitherium (Prototherium) veronense Zigno, 1887, *Bull. Soc. Géol. France* (3)15: 731.
Prorastoma veronense (Zigno) Lydekker, 1892, *Proc. Zool. Soc. London* 1892(1): 83, June 1892.
Prorastomus veronensis (Zigno) Trouessart, 1898, *Cat. Mamm.*: 999.
Protosiren Dolloi Abel, 1904, *Abh. K.-K. Geol. Reichsanst.* 19(2): 214. [Nomen nudum.]
Mesosiren Dolloi Abel, 1906, *Neues Jb. Min. Geol. Pal. (Abh.)* 1906(2): 52. [Lectotype: PIUW unnumbered, left maxillary fragment with DP3-M1. Type locality: Monte Zuello, Italy. Abel did not designate a type from among the specimens available to him; Sickenberg (1934b: 154) referred to this one as the "Type", and I regard this as designation of a lectotype.]

Paraliosiren Suessi Abel, 1906, *Neues Jb. Min. Geol. Pal. (Abh.)* 1906(2): 59. [Holotype: PIUW 1870.II.216 and 219, right jugal and maxilla with DP3-M?2. Type locality: Monte Zuello, Italy. Identified as the "Type" by Sickenberg (1934b: 154).]

Protosiren veronense [sic] (Zigno) Kaltenmark, 1942, *Mammalia* 6(3/4): 108. [Lapsus for *Prototherium veronense*.]

Holotype. - MGP 10, nearly complete skull.

Type Locality. - Monte Zuello, near Ronca, Italy.

Formation. - ?

Age. - Late Eocene (Auversian).

"Prototherium" intermedium Bizzotto, 1983

Prototherium intermedium Bizzotto, 1983, *Mem. Sci. Geol., Ist. Geol. Min. Univ. Padova* 36: 111.

Prototherium solei Pilleri in Pilleri, Biosca, and Via, 1989, *Tert. Sir. Catalonia*: 17. [Holotype: Collection Jesus Solé (Tona, Spain) no. 441, partial skull and skeleton. Type locality: Tona, Spain.] Synonymized by Domning, 1996, *Smithson. Contr. Paleobiol.* 80: 388, July 25, 1996.

Prototherium montserratense Pilleri in Pilleri, Biosca, and Via, 1989, *Tert. Sir. Catalonia*: 37. [Holotype: Geol. Mus. in Seminarium (Barcelona) no. 44.892, skull and skeleton. Type locality: Castellbell i Vilar (Saint Cristòfol), Spain.] Synonymized by Domning, 1996, *Smithson. Contr. Paleobiol.* 80: 388, July 25, 1996.

P[rototherium]. intermedium solei (Pilleri) Bizzotto, 2005, *Lavori Soc. Ven. Sci. Nat.* 30: 122. Jan. 31, 2005.

P[rototherium]. intermedium montserratense (Pilleri) Bizzotto, 2005, *Lavori Soc. Ven. Sci. Nat.* 30: 122. Jan. 31, 2005.

Holotype. - MGP 25837 and 26300: mandible, skull and partial skeleton of one individual.

Type Locality. - Cava Cunial, Le Coe, Possagno, Italy.

Formation. - Marna di Possagno (Possagno Marl), upper part.

Age. - Late Eocene (Priabonian), *Globigerina cerroazulensis cunialensis* Biozone.

Remarks. - Probably generically distinct from *P. veronense*.

Paralitherium Kordos, 1977

Paralitherium Kordos, 1977, *Magyar Allam. Földt. Int. Evi Jelent.* 1975: 350. [Type, by original designation: *P. tarkanyense* Kordos.]

Paralitherium tarkanyense Kordos, 1977

Paralitherium tarkanyense Kordos, 1977, *Magyar Allam. Földt. Int. Evi Jelent.* 1975: 350.

Holotype. - FIV 10934 (Vt. 57), a pair of mandibles.

Type Locality. - Felsötárkány, Bükk Mountains, northeastern Hungary.

Formation. - "Base of Upper Eocene marine sequence" (Kordos, 1977); Nagysáp Limestone Formation.

Age. - Late Eocene (Priabonian).

Remarks. - Status and affinities uncertain; referable to *Sirenavus*, according to Kordos.

Sirenavus Kretzoi, 1941

Sirenavus Kretzoi, 1941, *Ann. Mus. Nat. Hung., Pars Min. Geol. Pal.* 34: 147. [Type, by monotypy: *S. hungaricus* Kretzoi.]

Sirenavus hungaricus Kretzoi, 1941

Sirenavus hungaricus Kretzoi, 1941, *Ann. Mus. Nat. Hung., Pars Min. Geol. Pal.* 34: 147.

Holotype. - Hung. Nat. Hist. Mus. (Budapest), Geol.-Pal. Dept. no. P.V. 1., partial skull and mandibles, with vertebrae and ribs (the latter now lost; Kordos, 1981).

Type Locality. - Felsőgalla, Hungary.

Formation. - Nummulitic limestone.

Age. - Middle Eocene (Lutetian).

Remarks. - Status and affinities uncertain.

Subfamily HYDRODAMALINAE (Palmer, 1895 [1833]) Simpson, 1932

Rytineae Brandt, 1833, *Mém. Acad. Sci. St.-Pétersbourg* (6)2: 115, Nov. 1833. [Proposed as tribe.]

Rytinadae Gray, 1843, *List Spec. Mamm. Brit. Mus.*: xxiii. [Proposed as family.]

Rhytinea Brandt, 1846, *Mém. Acad. Sci. St.-Pétersbourg* (6)5: 141. [Proposed as tribe or family.]

Rytinidae Girard, 1852, *Proc. Amer. Assoc. Adv. Sci.* 6: 326, 328. [Proposed as family.]

Rhytinida Haeckel, 1866, *Gen. Morph. Org.* 2: clix. [Proposed as family.]

Hydrodamalidae Palmer, 1895, *Science* (2)2(40): 450, Oct. 4, 1895. [Proposed as family.]

Hydrodamalinae Simpson, 1932, *Bull. Amer. Mus. Nat. Hist.* 59(8): 424, Sept. 6, 1932.

Halianassinae Reinhart, 1959 [*partim*], *Univ. Calif. Publ. Geol. Sci.* 36(1): 8, July 24, 1959.

[Other names based on *Rhytina* omitted.]

Type Genus. - *Hydrodamalis* Retzius (= *Rytina* Illiger).

Dusisiren Domning, 1978

Dusisiren Domning, 1978, *Univ. Calif. Publ. Geol. Sci.* 118: 13, Sept. 8, 1978. [Type, by original designation: *Metaxytherium jordani* Kellogg.]

Dusisiren reinharti Domning, 1978

Halianassa sp. indet., Reinhart, 1959, *Univ. Calif. Publ. Geol. Sci.* 36(1): 44, July 24, 1959.
M[etaxytherium]. n. sp., Domning, 1972, *Proc. Pacif. Coast Mioc. Biostrat. Symp.*, S.E.P.M.: 147, 149.

Dusisiren reinharti Domning, 1978, *Univ. Calif. Publ. Geol. Sci.* 118: 14, Sept. 8, 1978.

Holotype. - UCMP 39581, most of skull and skeleton of juvenile.

Type Locality. - UCMP loc. V5023, Punta Pequeña, Baja California Sur, Mexico.

Formation. - Ysidro Formation, Ysidro Sandstone Member.

Age. - Early Miocene (Vaquerosian-Temblorian).

Remarks. - Inadequately known; status uncertain.

Dusisiren jordani (Kellogg, 1925) Domning, 1978

- Metaxytherium jordani* Kellogg, 1925, *Carnegie Inst. Wash. Publ.* 348: 59, Apr. 1925.
Metaxytherium petersi Abel, *sensu* VanderHoof, 1941, *Bull. Geol. Soc. Amer.* 52(12): 1985, Dec. 1, 1941. [Based on UCMP 3794.]
H[alianassa]. jordani (Kellogg) Reinhart, 1951, *Univ. Calif. Publ., Bull. Dept. Geol. Sci.* 28(9): 210, Feb. 16, 1951.
Halianassa vanderhoofi Reinhart, 1959, *Univ. Calif. Publ. Geol. Sci.* 36(1): 23, July 24, 1959. [Holotype: UCMP 3794, skull and partial skeleton. Type locality: Scotts Valley, near Santa Cruz, California; Santa Margarita Formation, Mohnian-Delmontian, early Clarendonian.]
M[etaxytherium]. vanderhoofi (Reinhart) Shikama and Domning, 1970, *Trans. Proc. Palaeont. Soc. Japan* (2)80: 395, Dec. 20, 1970.
Dusisiren jordani (Kellogg) Domning, 1978, *Univ. Calif. Publ. Geol. Sci.* 118: 21, Sept. 8, 1978.

Holotype. - USNM 11051, cranium, vertebrae, ribs, and metacarpal of old adult.
Type Locality. - Celite Company #5 Quarry, Lompoc, Santa Barbara County, California, USA.
Formation. - Sisquoc Formation.
Age. - Late Miocene (early Delmontian).

Dusisiren dewana Takahashi, Domning, and Saito, 1986

- Dusisiren* Species D, Domning, 1978, *Univ. Calif. Publ. Geol. Sci.* 118: 72, Sept. 8, 1978.
Dusisiren dewana Takahashi, Domning, and Saito, 1986, *Trans. Proc. Palaeont. Soc. Japan*, N.S., No. 141: 300, April 30, 1986.
Dusisiren takasatensis Kobayashi, Horikawa, and Miyazaki, 1995, *Jour. Vert. Pal.* 15(4): 817, Dec. 27, 1995. [Holotype: Takasato Archive nos. 1-5, skull, scapula, radius-ulna, thoracic vertebra, and rib. Type locality: Bed of Agano River, Shiotsubo, Takasato, Yama County, Fukushima Prefecture, Japan; Shiotsubo Formation, Yamasato Group, Late Miocene, 8±2 Ma.]

Holotype. - Yamagata Prefectural Museum, Yamagata, Japan, unnumbered, skull and anterior half of skeleton.
Type Locality. - Bed of Mogami River near E bank, about 100 m upstream of Yoh Iron Bridge, hamlet of Yoh, Ohe Town, Nishimurayama County, Yamagata Prefecture, Honshu, Japan.
Formation. - Hongo Formation, Hashigami Sandstone Member.
Age. - Late Miocene (*Denticulopsis katayamae* Diatom Zone), 9.0-10.4 Ma.

Hydrodamalis Retzius, 1794

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- Manati* Steller, 1774, *Beschr. Lande Kamt.*: 97. [Used as uninominal, referring to the Commander Islands species. Placed on Official Index of Rejected and Invalid Generic Names by ICZN Opinion 1320, *Bull. Zool. Nomencl.* 42(2): 175- 176, June 1985, with the Name Number 2162. First binominal use by Zimmermann, 1780; type, by monotypy: *M. gigas* Zimmermann, which is a senior objective synonym of *Hydrodamalis stelleri* Retzius and therefore the correct name of the type species of *Hydrodamalis*.]
- Hydrodamalis* Retzius, 1794, *K. Svensk. Vetenskapsacad. Handl.* (2)15: 292, Oct.-Dec. 1794. [Type, by monotypy: *H. stelleri* Retzius (but see above). Generic name upheld in preference to *Rhytina* by ICZN Opinion 90, 1925, *Smithson. Misc. Colls.* 73(3): 39; placed on Official List of Generic Names by Opinion 1320, *Bull. Zool. Nomencl.* 42(2): 175-176, June 1985, with the Name Number 2262.]
- Sirene* Link, 1794, *Beytr. Naturgesch.* 1(1): 67. [Type, by monotypy: *Trichechus Manatus borealis* Gmelin.]
- Rytina* Illiger, 1811, *Prodromus Syst. Mamm. Av.*: 141. [Incorrect transliteration, but "correct original spelling" under the Code. Type, by monotypy: *Trichechus Manatus borealis* Gmelin.]
- Dystomus* Fischer von Waldheim, 1813, *Zoognosia*, ed. 3, 1: 15, 19. [Not associated with any species name.]
- Nepus* Fischer von Waldheim, 1814, *Zoognosia*, ed. 3, 3: 640. [Type, by monotypy: *Hydrodamalis stelleri* Retzius.]
- "Stellera", Bowdich, 1821, *Anal. Nat. Class. Mamm.*: 86. [Used as vernacular name for *Rytina*; not intended as a new generic name, though cited by all major nomenclators.]
- Stellerus* Desmarest, 1822, *Mammalogie* 2: 510. [Type, by monotypy: *Trichechus manatus borealis* Gmelin.]
- Rhytina* Berthold, 1827, *Latreille's Nat. Fam. Thierr.*: 62. [Unjustified emendation of *Rytina* Illiger, despite correctness of transliteration.]
- Haligyra* Billberg, 1827, *Syn. Faunae Scand.* 1(1): Tab. A, dorso 1 and p. 33. [Type, by monotypy: *Trichechus Manatus borealis* Gmelin.]
- Rhytine* Burmeister, 1837, *Handb. Naturgesch.*: 793. [Emendation of *Rhytina*? Type, by monotypy: *Hydrodamalis stelleri* Retzius.]

Hydrodamalis cuetstae Domning, 1978

- Hydrodamalis* n. sp., Domning, 1971, *Geol. Soc. Amer. Abstrs. Progs.* 3(2): 110, Feb. 1971.
- Hydrodamalis cuetstae* Domning, 1978, *Univ. Calif. Publ. Geol. Sci.* 118: 75, Sept. 8, 1978.
- Hydrodamalis spissus* [sic] Furusawa, 1988, *A New Species of Hydrodamaline Sirenia from Hokkaido, Japan*: 13. [Incorrect original spelling; properly "*H. spissa*". Holotype: Takikawa Mus. of Art & Nat. Hist. no. 0001, partial skull and skeleton. Type locality: Sorachi River near Takikawa City, Hokkaido, Japan; Takikawa Formation, Horokura Member, Early Pliocene.]
- Hydrodamalis spissa* Furusawa, 1990, *Prof. Akira Kasugai Mem. Vol.*: 100, March 1990. [Justified emendation.]

Holotype. - UCMP 86433, skull and much of skeleton of immature individual.
Type Locality. - UCMP loc. V70148, Avila Beach, San Luis Obispo County, California,
USA.

Formation. - Pismo Formation, Squire Member.

Age. - Late Pliocene (Blancan).

Remarks. - *H. spissa* may be a valid species.

Hydrodamalis gigas (Zimmermann, 1780) Palmer, 1895

Phoca manatus (Linnaeus) Brisson, 1762 [*partim*], *Regnum Animale*: 164.

Manati gigas Zimmermann, 1780, *Geogr. Gesch. Mensch. vierfüß. Thiere* 2: 426. [Placed on the Official List of Specific Names by ICZN Opinion 1320, *Bull. Zool. Nomencl.* 42(2): 175-176, June 1985, with the Name Number 2965.]

Manati Balaenurus Boddaert, 1785, *Elenchus Anim.* 1: 173. [Based on Pennant's "Whale-tailed Manati".]

Trichechus Manatus borealis Gmelin, 1788, *C. Linné Syst. Nat.*, ed. 13, vol. 1: 61.

H[ydrodamalis]. Stelleri Retzius, 1794, *K. Svensk. Vetenskapsacad. Handl.* (2)15: 292, Oct.-Dec. 1794.

S[irene]. borealis (Gmelin) Link, 1794, *Beytr. Naturgesch.* 1(1): 68.

M[anatus]. borealis (Gmelin) Link, 1795, *Beytr. Naturgesch.* 1(2): 110.

Manatus Balaenurus (Boddaert) Bechstein, 1800, *Thomas Pennant's Allgemeine Uebersicht der vierfüßigen Thiere* 2: 732.

Trichechus Borealis (Gmelin) Shaw, 1800, *Gen. Zool.* 1: 240.

Nepus Stelleri (Retzius) Fischer von Waldheim, 1814, *Zoognosia*, ed. 3, 3: 641.

Rytina borealis (Gmelin) Illiger, 1815, *Abh. Akad. Wiss. Berlin* 1804-11: 64, 75. [Illiger referred this species to *Rytina* in 1811 (*Prodromus Syst. Mamm. Av.*: 141, but did not actually publish the combination.)]

Rytina cetacea Illiger, 1815, *Abh. Akad. Wiss. Berlin* 1804-11: 68.

Rytina stelleri (Retzius) Desmarest, 1819, *Nouv. Dict. d'Hist. Nat.* 29: 574.

Stellerus borealis (Gmelin) Desmarest, 1822, *Mammalogie* 2: 510.

Haligyra borealis (Gmelin) Billberg, 1827, *Syn. Faunae Scand.* 1(1): 33.

Rh[ytine]. Stelleri (Retzius) Burmeister, 1837, *Handb. Naturgesch.*: 793.

Rytina gigas (Zimmermann) Gray, 1850, *Cat. Specs. Mamm. Coll. Br. Mus.* 1: 144.

Manatus gigas (Zimmermann) Lucas, 1891, *Rept. U.S. Natl. Mus.* 1888-89: 623.

Hydrodamalis gigas (Zimmermann) Palmer, 1895, *Science* (2)2(40): 449, Oct. 4, 1895.

[Combinations with *Rhytina* omitted.]

Type. - No type specimens have been formally designated. All the above names are based on the verbal description by Steller (1751), and are therefore objective synonyms. The masticatory plates illustrated in the latter paper, which are preserved in St. Petersburg, are the only surviving specimens of the type series and therefore constitute the types; skin fragments attributed to this species are of questionable identity (see Domning, 1978b: 132).

Type Locality. - Bering Island, Commander Islands.
Age. - Recent; also reported from the Pleistocene.

Subfamily DUGONGINAE (Gray, 1821) Simpson, 1932

Halicoreae Brandt, 1833 [*partim*], *Mém. Acad. Sci. St.-Pétersbourg* (6)2: 114, Nov. 1833.
[Proposed as tribe.]

Halicorea Brandt, 1846 [*partim*], *Mém. Acad. Sci. St.-Pétersbourg* (6)5: 132. [Proposed as tribe
or family.]

Halicorinae Abel, 1913, *Palaeontographica* 59: 358.

Rhytidinae Abel, 1914, *Vorzeitl. Säuget.*: 217. [Incorrect original spelling; properly
"Rytiodontinae". Type Genus: *Rytiodus* Lartet. Included taxa transferred to Dugonginae
by Domning (1994).]

Dugonginae Simpson, 1932, *Bull. Amer. Mus. Nat. Hist.* 59(8): 424, Sept. 6, 1932.

Rytiodontinae Kretzoi, 1941, *Ann. Hist.-Nat. Mus. Nat. Hungar., Pars Min. Geol. Pal.* 34: 155.
[Justified emendation of Rhytidinae Abel.]

Thelriopiinae Pilleri, 1987, *Sirenia of the Swiss Molasse*: 65. [Replacement name for
Rhytidinae Abel.]

Type Genus. - *Dugong* Lacépède (= *Halicore* Illiger).

Bharatisiren Bajpai and Domning, 1997

Bharatisiren Bajpai and Domning, 1997, *Jour. Vert. Paleont.* 17(1): 219, Apr. 16, 1997. [Type,
by original designation: *Metaxytherium kachchhense* Bajpai, Singh, and Singh.]

Bharatisiren indica Bajpai, Thewissen, Kapur, Tiwari, and Sahni, 2006

Bharatisiren indica Bajpai, Thewissen, Kapur, Tiwari, and Sahni, 2006, *Jour. Vert. Paleont.*
26(2): 405, June 12, 2006.

Holotype. – IITR-SB 2893, skull of adult.

Type Locality. – 1 km S of village of Matanomadh, Kachchh District, State of Gujarat, India.
Formation. – Bermoti Member, Maniyara Fort Formation.

Age. – Late Oligocene (Chattian or late Waiorian).

Bharatisiren kachchhensis (Bajpai, Singh, and Singh, 1987)
Bajpai and Domning, 1997

Metaxytherium kachchhensis [sic] Bajpai, Singh, and Singh, 1987, *Jour. Palaeont. Soc. India* 32: 21. [Incorrect original spelling; properly *M. kachchhense*.]

Metaxytherium kachchhense Domning, 1996, *Smithson. Contrib. Paleobiol.* 80: 386. [Justified emendation.]

Bharatisiren kachchhensis (Bajpai, Singh, and Singh) Bajpai and Domning, 1997, *Jour. Vert. Paleont.* 17(1): 219, Apr. 16, 1997.

Holotype. - LUVP/MP 1032, skull of adult.

Type Locality. - Khari River near Aida, southwestern Kachchh (= Kutch), India.

Formation. - Aidaian Stage or Khari Nadi Formation, Khari Series.

Age. - Early Miocene (Aquitanian).

Crenatosiren Domning, 1991

Crenatosiren Domning, 1991, *Jour. Vert. Paleont.* 11(3): 398, Sept. 30, 1991. [Type, by original designation: *Halitherium olseni* Reinhart.]

Crenatosiren olseni (Reinhart, 1976) Domning, 1991

Halitherium olseni Reinhart, 1971, *Plaster Jacket* No. 15: [8], Oct. 1, 1971. [Nomen nudum.]

Halitherium olseni Reinhart, 1976, *Bull. Florida St. Mus., Biol. Sci.* 20(4): 238, July 9, 1976.

Crenatosiren olseni (Reinhart) Domning, 1991, *Jour. Vert. Paleont.* 11(3): 398, Sept. 30, 1991.

Holotype. - UF/FGS V6094, skull and partial skeleton of old adult.

Type Locality. - FGS loc. 82, east bank of Suwannee River about 1.6 miles "below" [or more likely, in a straight line west of] White Springs, Hamilton County, Florida, USA; probably in NW part of Sec. 11, T. 2 S, R. 15 E, White Springs West 7.5' Quadrangle (1961).

Formation. - Parachucla Formation.

Age. - Late Oligocene (early Arikareean).

Corystosiren Domning, 1990

Corystosiren Domning, 1990, *Jour. Vert. Paleont.* 10(3): 361, Sept. 20, 1990. [Type, by original designation: *C. varguezii* Domning.]

Corystosiren varguezii Domning, 1990

Corystosiren varguezii Domning, 1990, *Jour. Vert. Paleont.* 10(3): 361, Sept. 20, 1990.

Holotype. - IGM 4569, nearly complete skull of young adult, with fragments of vertebrae and ribs.

Type Locality. - IGM loc. 2398, Rancho Chapas, about 1 km SSW of Km 40.5 on road from Tizimin east to Colonia Yucatan, State of Yucatan, Mexico.

Formation. - Carrillo Puerto Formation.

Age. - Early Pliocene.

Dioplotherium Cope, 1883

Dioplotherium Cope, 1883, *Proc. Acad. Nat. Sci. Philadelphia* 1883: 52, Mar. 27, 1883; *Amer. Naturalist* 17: 309, March 1883. [Type, by monotypy: *D. manigaulti* Cope.]

Dioplotherium manigaulti Cope, 1883

Dioplotherium manigaulti Cope, 1883, *Proc. Acad. Nat. Sci. Philadelphia* 1883: 53, Mar. 27, 1883; *Amer. Naturalist* 17: 309, March 1883.

Metaxytherium manigaulti (Cope) Allen, 1926, *Bull. Mus. Comp. Zool.* 67(14): 458, July 1926. [Kellogg referred this species to *Metaxytherium* in 1925 (*Carnegie Inst. Wash. Publ.* 348: 59), but did not actually publish the combination.]

Holotype. - ChM PV2896, premaxilla fragment and tusk.

Type Locality. - Bed of Wando River near Cainhoy, South Carolina, USA (Manigault, 1886).

Formation. - Unknown.

Age. - Uncertain; Late Oligocene or Early Miocene.

Dioplotherium allisoni (Kilmer, 1965) Domning, 1978

Halianassa(?) allisoni Kilmer, 1965, *Bull. So. Calif. Acad. Sci.* 64(2): 58, Apr.-June 1965.

Metaxytherium allisoni (Kilmer) Domning, 1971, *Geol. Soc. Amer. Abstrs. Progs.* 3(2): 110, Feb. 1971.

Dioplotherium allisoni (Kilmer) Domning, 1978, *Univ. Calif. Publ. Geol. Sci.* 118: 5, Sept. 8, 1978.

Holotype. - UCMP 47250, incomplete mandible and other fragments.

Type Locality. - UCMP loc. V5734, La Purísima, Baja California Sur, Mexico.

Formation. - Ysidro Formation, Ysidro Sandstone Member.

Age. - Early Miocene (Vaquerosian-Temblorian).

Domningia Thewissen and Bajpai, 2009

Domningia Thewissen and Bajpai, 2009, *Acta Palaeontologica Polonica* 54(1): 7, Mar. 2009.
[Type, by original designation: *D. sodhae* Thewissen and Bajpai.]

Domningia sodhae Thewissen and Bajpai, 2009

Domningia sodhae Thewissen and Bajpai, 2009, *Acta Palaeontologica Polonica* 54(1): 7, Mar. 2009.

Holotype. – IITR-SB 3091, complete adult skull with left and right dentaries. “The type specimen is in the collections of the ‘Fossil Park’ in the village Vithon, Taluka Nakhatrana, District Kutch, State of Gujarat, India. The ‘Fossil Park’ is a small, private museum run by Mohan Singh Sodha, who collected the specimen. As this museum does not keep a catalogue, the specimen has been entered in the catalogue of the Vertebrate Palaeontology Laboratory, Indian Institute of Technology, Roorkee, and casts of the specimen have been deposited with the institutions of the authors [i.e., Northeastern Ohio Universities College of Medicine, Rootstown, Ohio, USA, and IIT, Roorkee, India]. Vertebrae were associated with the holotype, but only some of these can be positively identified among the large amount of uncatalogued sirenian material in this collection.” (Thewissen and Bajpai, 2009: 8)

Type Locality. – Nangia, Kutch, India; in a dry tributary of the Nithi River crossing the road between the villages of Nangia and Sujapur 500 m NW of Nangia; 23° 22.337' N, 68° 54.866' E.

Formation. – Yellow sandstone overlying a sandstone rich in *Turritella* and oysters; part of the Khari Nadi Formation.

Age. – Generally presumed to be Lower Miocene (Aquitaniian).

Dugong Lacépède, 1799

- Dugong* Lacépède, 1799, *Tabl. Div. Mamm.*: 17. [Type, by monotypy: *Rosmarus indicus* Boddaert.]
- Platystomus* Fischer von Waldheim, 1803 [*non Platystoma* Meigen, 1803 (Insecta)], *Das Nationalmuseum Naturgesch. zu Paris* 2: 353. [Type, by monotypy: *Trichechus Dugong* Gmelin.]
- Dugungus* Tiedemann, 1808, *Zoologie*, vol. 1: 554. [Type, by monotypy: *Rosmarus indicus* Boddaert.]
- Halicore* Illiger, 1811, *Prodromus Syst. Mamm. Av.*: 140. [Type, by monotypy: *Trichechus Dugong* Gmelin.]
- Amblychilus* Fischer von Waldheim, 1814, *Zoognosia*, ed. 3, vol. 3: 638. [Type, by monotypy: *Trichechus Dugon* Müller.]
- Dugongidus* Gray, 1821, *London Med. Reposit.* 15: 309. [Type, by monotypy: *Trichechus Dugong* Gmelin.]
- Halicora* Fleming, 1822, *Phil. Zool.* 2: 204. [Unjustified emendation of *Halicore* Illiger.]

Dugong dugon (Müller, 1776) Palmer, 1895

- Phoca manatus* (Linnaeus) Brisson, 1762 [*partim*], *Regnum Animale*: 164.
- Trichechus* [sic] *dugon* Müller, 1776, *Des Ritters Carl v. Linné ... vollst. Natursyst.*, Suppl.: 21.
- Trichechus dugung* Erxleben, 1777, *Syst. Regni Anim.*: 599.
- Rosmarus indicus* Boddaert, 1785, *Elenchus Anim.* 1: 169. [Based on Buffon's "Dugon" and Pennant's "Indian Walrus".]
- Trichechus Dugong* Gmelin, 1788, *C. Linné Syst. Nat.*, ed. 13, vol. 1: 60.
- Tr[ichechus]. australis* Retzius, 1794, *K. Svensk. Vetenskapsakad. Handl.* (2)15: 291, Oct.-Dec. 1794. [*Non T. australis* (Gmelin) Shaw, 1800; based on Buffon's "Dugon".]
- Dugong indicus* (Boddaert) Lacépède, 1799, *Tabl. Div. Mamm.*: 17.
- Manatus indicus* (Boddaert) Daudin, 1802, *Hist. Nat. of Buffon*, Didot Edition, "Quadrupeds" 14: 194. [Reference not seen.]
- Platystomus Dugong* (Gmelin) Fischer von Waldheim, 1803, *Das Nationalmuseum Naturgesch. zu Paris* 2: 353.
- D[ugungus]. indicus* (Boddaert) Tiedemann, 1808, *Zoologie*, Vol. 1: 554.
- Dugungus marinus* "Tiedemann": ____ [Reference not seen.]
- Halicore Dugong* (Gmelin) Illiger, 1811, *Prodromus Syst. Mamm. Av.*: 141.
- Halicore cetacea* Illiger, 1815, *Abh. Akad. Wiss. Berlin* 1804-11: 79.
- Dugongidus dugong* (Gmelin) Gray, 1821, *London Med. Reposit.* 15: 309.
- Halicore indicus* [sic] (Boddaert) Desmarest, 1822, *Mammalogie*: 509.
- Halicore Syren* Brookes, 1828 or 1830?, *Cat. Mus.*: 40. [Reference not seen.]
- Halicora Hemprichii* Ehrenberg, 1832, *Symb. Phys.*, Mamm. II: sign. k, Sept. 1832. [Type locality: Barkan Is., Red Sea. Reference not seen.]
- Halicora Lottum* Ehrenberg, 1832, *Symb. Phys.*, Mamm. II: sign. k, Sept. 1832. [Type locality: Hauakel Is., Red Sea. Reference not seen.]

- Halicore tabernaculi* Rüppell, 1834, *Mus. Senck.* 1(2): 113. [Holotype: Senckenberg Mus. no. 1510, skin and skeleton of female. Type locality: Noura Is., Dahalak Archipelago, Ethiopia.]
- Manatus Dugong* (Erxleben) Blainville, 1844, *Ostéogr., Genre Manatus*: 57, 135.
- Manatus Tabernaculi* (Rüppell) Blainville, 1844, *Ostéogr., Genre Manatus*: 78.
- Halicore australis* (Retzius) Owen in Jukes, 1847, *Narrative ... Voyage of H.M.S. "Fly"*, 2: 323. [Reference not seen.]
- Halicore malayana* Owen, 1875, *Quart. Jour. Geol. Soc. London* 31: 560. [Nomen nudum; lapsus?]
- Dugong dugon* (Müller) Palmer, 1895, *Science* (2)2(40): 450, Oct. 4, 1895.
- Halicore brevirostris* De Vis, 1905, *Ann. Queensland Mus.* No. 6: 30. [Holotype: a fossilized rostral fragment in the Queensland Museum. Type locality: Woodlark Island, Papua New Guinea (Pleistocene?).]
- Dugong australis* (Retzius): [author of combination not identified]
- Dugong hemprichii* (Ehrenberg): [author of combination not identified]
- Dugong dugon* [sic] *tabernaculi* (Rüppell) Gohar, 1957, *Publ. Mar. Biol. Stn. Al-Ghardaqa* No. 9: 40.
- Dugong dugon australe* [sic] (Retzius) Kleinschmidt, 1982, *Braunsch. Naturk. Schr.* 1(3): 372, Oct. 1982.
- Dugong dugon dugon* (Müller) Kleinschmidt, 1982, *Braunsch. Naturk. Schr.* 1(3): 372, Oct. 1982.
- Dugong dugon hemprichii* (Ehrenberg) Kleinschmidt, 1982, *Braunsch. Naturk. Schr.* 1(3): 372, Oct. 1982.

Type. - No types of this species have been formally designated.

Type Locality. - Indian Ocean and East Indies. Müller (1776) described the species' range as extending from the Cape of Good Hope to the Philippines and beyond, to the South Pole and Strait of Magellan! The supposed South African record may be based on confusion with the hippopotamus; cf. Beeckman (1812).

Age. - Recent; some Subrecent occurrences.

"Halitherium" bellunense Zigno, 1875

Halitherium Bellunense Zigno, 1875, *Mem. R. Ist. Veneto Sci. Lett. Arti* 18: 438.

Metaxytherium Bellunense (Zigno) Lepsius, 1882, *Abh. Mittelrhein. Geol. Ver.* 1: 180.

Holotype. - MGPD 18Z-23Z, 7358Z-7387Z, associated skullcap, left and right zygomatic processes, fragment of left jugal, two fragments of maxillae with two right molars and left P4 and DP5-M2, left premaxilla with tusk, five vertebrae, and six rib fragments of juvenile individual.

Type Locality. - Cavarzano, Valle delle Guglie, near Belluno, Italy.

Formation. - Basal portion of Belluno Glauconitic Sandstone Formation.

Age. - Late Oligocene (Chattian) (S. Sorbi, unpubl. doctoral dissertation, 2008: 74).
Remarks. - Status and affinities uncertain; probably a dugongine, and definitely distinct from *Halitherium*.

Nanosiren Domning in Domning and Aguilera, 2008

Nanosiren Domning in Domning and Aguilera, 2008, *Jour. Vert. Paleont.* 28(2): 480, June 12, 2008. [Type, by original designation: *N. garciae* Domning.]

Nanosiren garciae Domning in Domning and Aguilera, 2008

"Early Pliocene ... small dugongine", Domning, 2001, *Palaeogeogr. Palaeoclim. Palaeoecol.* 166: 29.

Nanosiren garciae Domning in Domning and Aguilera, 2008, *Jour. Vert. Paleont.* 28(2): 480, June 12, 2008.

Holotype. - UF 201840, nearly complete braincase of adult, including right and partial left periotic and fragments of maxilla and left jugal.

Type Locality. - Four Corners phosphate strip mine, northeastern Manatee County, Florida, USA; about 27° 38' N, 82° 05' W.

Formation. - Collected from spoil; horizon inferred to be Upper Bone Valley Formation (= Unit 6 of Crissinger, 1977; = upper part of Bone Valley Member, Peace River Formation, Hawthorn Group of Scott, 2001).

Age. - Early Pliocene (latest Hemphillian), ca. 5.3-4.9 Ma; Palmetto Fauna of Webb and Hulbert (1986).

Nanosiren sanchezi Domning and Aguilera, 2008

Nanosiren sanchezi Domning and Aguilera, 2008, *Jour. Vert. Paleont.* 28(2): 480, June 12, 2008.

Holotype. - UNEFM-VF-041, disarticulated partial skull of subadult (left premaxilla and maxilla with I1 and M1-3, frontals, ethmoid, parietal-supraoccipital skullcap, right exoccipital, left jugal, right squamosal) and associated ribs.

Type Locality. - FMU 029, 3.8 km N of Urumaco (Norte de El Mamón), Estado Falcón, Venezuela (11° 14' 56.58" N, 70° 16' 37.64" W, REGVEN).

Formation. - Upper member of Urumaco Formation.

Age. —Late Miocene (probably Chasicuan-Huayquerian), ca. 9 Ma.

Rytiodus Lartet, 1866

- Rytiodus* Lartet, 1866, *Bull. Soc. Géol. France* (2)23: 682. [Incorrect transliteration, but "correct original spelling" under the Code. Type, by monotypy: *R. capgrandi* Lartet.]
- Rhytiodus* Delfortrie, 1872, *Act. Soc. Linn. Bordeaux* 28: 282. [Apparently the earliest use of this spelling. Unjustified emendation of *Rytiodus* Lartet, despite correctness of transliteration. Junior homonym of *Rhytiodus* Kner, 1858 (Pisces).]
- Thelriope* Pilleri, 1987, *Sirenia of the Swiss Molasse*: 65. [Replacement name for *Rhytiodus* "Lartet".]

Rytiodus capgrandi Lartet, 1866

- Rytiodus Capgrandi* Lartet, 1866, *Bull. Soc. Géol. France* (2)23: 682.
- H[alitherium]. capgrandi* (Lartet) Cope, 1883, *Proc. Acad. Nat. Sci. Philadelphia* 1883: 52.
- Rhytiodus Capgrandi* (Lartet) Woodward, 1885, *Quart. Jour. Geol. Soc. London* 41: 470. [Earliest use of this spelling and combination?]
- Thelriope capgrandi* (Lartet) Pilleri, 1987, *Sirenia of the Swiss Molasse*: 65.

Syntypes. - MNHN MBA 1-9, two pairs of tusks of different individuals, plus other cranial and rib fragments.

Type Locality. - Bournic, Lot-et-Garonne, France.

Formation. - "Calcaire marin coquillier (étage de Bazas)."

Age. - Early Miocene (Aquitanian).

Xenosiren Domning, 1989

- Xenosiren* Domning, 1989, *Jour. Vert. Paleont.* 9(4): 429, Dec. 19, 1989. [Type, by original designation: *X. yucateca* Domning.]

Xenosiren yucateca Domning, 1989

- Xenosiren yucateca* Domning, 1989, *Jour. Vert. Paleont.* 9(4): 429, Dec. 19, 1989.

Holotype. - IGM 4190, fragments of a skull and of a right incisor tusk, and right and left M3.

Type Locality. - IGM loc. 2397, Noc Ac, 10-15 km NW of Merida, State of Yucatan, Mexico.

Formation. - Carrillo Puerto Formation?

Age. - Late Miocene or Early Pliocene (Hemphillian).

Dugongidae incertae sedis

Anisosiren Kordos, 1979

Anisosiren Kordos, 1979, *Magyar Allam. Földt. Int. Evi Jelent.* 1977: 313. [Type, by original designation: *A. pannonica* Kordos.]

Anisosiren pannonica Kordos, 1979

Anisosiren pannonica Kordos, 1979, *Magyar Allam. Földt. Int. Evi Jelent.* 1977: 313.

Holotype. - FIV 11748 (Vt. 77), left maxillary fragment with M1-3, fragment of P4, and independent ?P3.

Type Locality. - Abandoned mine, XXIII/D at Oroszlány, Vértes Mountains, western Hungary.

Formation. - Unnamed.

Age. - Middle Eocene (Lutetian).

Remarks. - Status and affinities uncertain.

Indosiren von Koenigswald, 1952

Indosiren von Koenigswald, 1952, *K. Ned. Akad. Wetens., Proc. Sect. Sci., Ser. B (Phys. Sci.)* 55(5): 611. [Type, by monotypy: *I. javanensis* von Koenigswald.]

Indosiren javanensis von Koenigswald, 1952

Indosiren javanense [sic] von Koenigswald, 1952, *K. Ned. Akad. Wetens., Proc. Sect. Sci., Ser. B (Phys. Sci.)* 55(5): 611. [Incorrect original spelling; properly *I. javanensis*.]

Holotype. - Upper left molar.

Type Locality. - Tji Padaringan, near Tji Merang, Njalindung, Western Java.

Formation. - Horizon of *Vicarya callosa*.

Age. - "Upper Miocene, probably Sarmatian" (v. Koenigswald, 1952).

Remarks. - Status and affinities uncertain.

Indosiren koenigswaldi Sahni and Mishra, 1975

Indosiren koenigswaldi Sahni and Mishra, 1975, *Monogr. Palaeont. Soc. India* No. 3: 37, Apr. 7, 1975.

Holotype. - LUVF 11149, fragment of left maxilla with M1-3.

Type Locality. - Matanomadh, western Kutch, India.

Formation. - "Grey coloured shales of Aida Stage" (Sahni and Mishra, 1975).

Age. - Lower Miocene.

Remarks. - Status and affinities uncertain.

Miodugong Deraniyagala, 1969

Miodugong Deraniyagala, 1969, *J. R. Asiatic Soc. (Ceylon Branch)* (2)12: 97, May 15, 1969; *Loris* 11(5): 237, June 1969; *Spolia Zeylanica* 31(2): 563; *J. Palaeont. Soc. India* 13: 22. [Type, by monotypy: *M. brevicranius* Deraniyagala.]

Miodugong brevicranius Deraniyagala, 1969

Miodugong brevicranius Deraniyagala, 1969, *J. R. Asiatic Soc. (Ceylon Branch)* (2)12: 97, May 15, 1969; *Loris* 11(5): 237, June 1969; *Spolia Zeylanica* 31(2): 563; *J. Palaeont. Soc. India* 13: 22.

Holotype. - Fragment of left parietal and squamosal.

Type Locality. - Near Arna Kallu, about 15 miles N of Puttalam, Sri Lanka.

Formation. - Malu Member of Kudremale Stage, Jaffna Series.

Age. - Miocene.

Remarks. - Status and affinities uncertain.

INDETERMINATE NOMINAL TAXA OF SIRENIANS

Eotherium Markgrafi Abel, 1913, *Palaeontographica* 59: 319, 336- 337. [Based on specimen(s) from the Eocene of Egypt. Nomen nudum; see Sickenberg, 1934b: 41.]

Manatus antiquus Leidy, 1856, *Proc. Acad. Nat. Sci. Philadelphia* 8: 165, Sept. 1856. [Based on specimens from the Miocene and ?Pleistocene of New Jersey, Virginia, and South Carolina, USA. Nomen dubium.]

SYNONYMS:

Halitherium antiquum (Leidy) Allen, 1926, *Bull. Mus. Comp. Zool.* 67(14): 455, July 1926.

Trichechus antiquus (Leidy) Hay, 1902, *Bull. U.S. Geol. Surv.* 179: 583.
Manatus inornatus Leidy, 1873, *Rept. U.S. Geol. Surv. Terr.* 1: 336. [Based on a specimen from the ?Pleistocene of South Carolina, USA. Nomen dubium.]

SYNONYM:

Trichechus inornatus (Leidy) Hay, 1902, *Bull. U.S. Geol. Surv.* 179: 584.
Trachypleurotherium Dilg, 1909, *Gegenbaurs Morph. Jb.* 39(1): 90, Mar. 2, 1909. [Based on specimens from a "chalk formation" (presumably the Miocene Pirabas Fm.) on the coast of Pará, Brazil, now lost but evidently at one time in the Museu Goeldi, Belém. Nomen nudum.]

TAXA THAT HAVE BEEN INCORRECTLY OR DOUBTFULLY
REFERRED TO THE SIRENIA

Anoplonassa Cope, 1869; *A. forcipata* Cope, 1869 [Cetacea]
Antaodon Ameghino, 1886; *A. cinctus* Ameghino, 1886 [Tayassuidae]
Chronozoon De Vis, 1884; *C. australe* De Vis, 1884 [Diprotodontidae?]
Crassitherium Van Beneden, 1871; *C. robustum* Van Beneden, 1871 [*partim*] [Based on part of a ?reptile skull and 8 sirenian vertebrae]
Cymatotherium Kaup, 1841; *C. antiquum* Kaup, 1841 [Proboscidea]
SYNONYM: *Cyotherium* Simpson, 1932 [lapsus]
Deinotherium Kaup, 1829; *D. giganteum* Kaup, 1829 [Proboscidea]
Florentinoameghinia Simpson, 1932; *F. mystica* Simpson, 1932 [Mammalia incertae sedis]
Hemicaulodon Cope, 1869; *H. effodiens* Cope, 1869 [= *Odobenus*]
Hippopotamus minutus Cuvier, 1824 (= *Halicore minuta* (Cuvier) Bronn, 1838)
[Hippopotamidae]
Ischyrotherium Leidy, 1856; *I. antiquum* Leidy, 1856 [Reptilia]
Ishatherium Sahni and Kumar, 1980; *I. subathuense* Sahni and Kumar, 1980 [Anthracobunidae]
Lophiodolodus Stirton, 1947; *L. chaparralensis* Stirton, 1947 [Mammalia incertae sedis, possibly Sirenia]
Manatus giganteus DeKay, 1842 (= *Trichechus giganteus* (DeKay) Case, 1904) [Cetacea]
Manatus maeoticus von Eichwald, 1850 [Phocidae]
Otocetus emmonsii Leidy, 1859 [Odobenidae]
Pachyacanthus Brandt, 1873; *P. suessi* Brandt, 1873; *P. trachyspondylus* Brandt, 1873 [Cetacea]
Toxodon Owen, 1840 [Notoungulata]
Trichechus manatus siren Kerr, 1792, *Anim. Kingdom*: 120. [Based on Steller's "sea-ape". Nomen nudum.]

SYNONYMS:

Manatus simininus Bechstein, 1800, *Thomas Pennant's Allgemeine Uebersicht der vierfüssigen Thiere* 2: 732. [Nomen nudum.]
Trichechus? *Hydropithecus* Shaw, 1800, *Gen. Zool.* 1: 247. [Nomen nudum.]
Manatus? *Simia* Illiger, 1815, *Abh. Akad. Wiss. Berlin* 1804- 11: 64. [Nomen nudum.]
Manatus? *Hydropithecus* (Shaw) Fischer, 1829, *Synop. Mamm.*: 502. [Nomen nudum.]

Hydropithecus simia (Illiger) Gloger, 1842, *Gemeinnütz. Hand- u. Hilfsbuch Naturg.* 1: 166. [new genus; nomen nudum.]

Order DESMOSTYLIA Reinhart, 1953

Desmostyliformes Hay, 1923, *Pan-Amer. Geologist* 39: 109, March 1923. [Proposed as a suborder within the Order Sirenia. Resurrected as an order by Kinman, 1994, *The Kinman System*: 38; reference not seen].

Desmostyloidea Abel, 1933, in R. Dittler et al. (eds.), *Handwörterbuch der Naturwissenschaften* (ed. 2), 8: 875. [Proposed as an order within the Subclass Multituberculata. Nomen oblitum.]

Desmodontia Kishida, 1933, *Mammalia*: _____. [Proposed as a suborder within the Order Multituberculata. Nomen oblitum. Reference not seen.]

Desmostylia Reinhart, 1953, *Jour. Geol.* 61(2): 187, March 1953. [Proposed as an order. Reduced to a parvorder within the new Infraorder Behemota McKenna, Bell, and Shoshani in McKenna and Bell, 1997, *Classif. Mamms. Above Sp. Level*: 497. The Infraorder Behemota is there coordinate with the Infraorder Sirenia within the Suborder Tethytheria, Order Uranotheria.]

[N.B.: The assignment of genera to families within the Desmostylia has not been fully agreed upon. The assignments of genera given below provisionally follows Inuzuka, 2000.]

Family PALEOPARADOXIIDAE Reinhart, 1959

"Family Paleoparadoxia" [sic] Reinhart, 1953, *Jour. Geol.* 61(2): 187, March 1953. [Based on an unavailable nominal genus; also incorrect ending.]

Paleoparadoxidae [sic] Reinhart, 1959, *Univ. Calif. Publ. Geol. Sci.* 36(1): 94, July 24, 1959. [Incorrect original spelling; properly "Paleoparadoxiidae".]

Behemotopsidae Inuzuka, 1987, *Prof. M. Matsui Memorial Vol.*: 16.

Type Genus. – *Paleoparadoxia* Reinhart.

Behemotops Domning, Ray, and McKenna, 1986

Behemotops Domning, Ray, and McKenna, 1986, *Smithson. Contrib. Paleobiol.* 59: 6, May 28, 1986. [Type, by original designation: *B. proteus* Domning, Ray, and McKenna.]

Behemotops katsuiei Inuzuka, 2000

Behemotops katsuiei Inuzuka, 2000, *Bull. Ashoro Mus. Pal.* No. 1: 106, March 2000.

Holotype. – AMP 22, partial skeleton.

Type Locality. – Near the house of Katsuié Yabuki along the Morawan River, Morawan, Ashoro Town, eastern Hokkaido, Japan.

Formation. – Upper tuffaceous siltstone of the Morawan Formation.

Age. – Late Oligocene.

Behemotops proteus Domning, Ray, and McKenna, 1986

Behemotops proteus Domning, Ray, and McKenna, 1986, *Smithson. Contrib. Paleobiol.* 59: 6, May 28, 1986.

Behemotops emlongi Domning, Ray, and McKenna, 1986, *Smithson. Contrib. Paleobiol.* 59: 23, May 28, 1986. [Holotype: USNM 244033, left mandible of adult with M3. Type locality: 183 meters SSE of Elephant Rock, Seal Rock State Wayside, Lincoln County, Oregon, USA; lower part of Yaquina Formation, Late Oligocene (Juanian, Zemorrian).]

Holotype. - USNM 244035, right mandible of immature individual with DP4, C, and P3-M3; parts of right femur and tibia; and two phalanges.

Type Locality. - North shore of Olympic Peninsula, 34 km west of Port Angeles, Clallam County, Washington, USA.

Formation. - Lower part of the type section of the Pysht Formation.

Age. - Middle or (more likely) late (but not latest) Oligocene (Orellan or Whitneyan).

Paleoparadoxia Reinhart, 1959

Paleoparadoxia Reinhart, 1959, *Univ. Calif. Publ. Geol. Sci.* 36(1): 94, July 24, 1959. [Type, by original designation: *Cornwallius tabatai* Tokunaga.]

Paleoparadoxia repenningi Domning and Barnes, 2007

Paleoparadoxia tabatai (Tokunaga, 1939) Reinhart, 1959, sensu Inuzuka, 2005 [partim], *Bull. Ashoro Mus. Paleont.* No. 3: 10-12, March 2005.

Paleoparadoxia repenningi Domning and Barnes, 2007, *Jour. Vert. Paleont.* 27(3): 749, Sept. 12, 2007.

Holotype. – UCMP 81302, nearly complete skeleton of mature adult, lacking skull (the “Stanford skeleton”).

Type Locality. – UCMP locality V68129, Stanford Linear Accelerator Center, San Mateo County, California, USA.

Formation. – Ladera Sandstone Formation.

Age. - Middle Middle Miocene (Temblor; Luisian-?Relizian; Barstovian), ca. 14 Ma.

Paleoparadoxia tabatai (Tokunaga, 1939) Reinhart, 1959

Cornwallius tabatai Tokunaga, 1939, *Jubilee Publ. Comm. Prof. H. Yabe, M.I.A. Sixtieth Birthday* 1: 297.

Desmostylus japonicus Tokunaga and Iwasaki, sensu Takai, 1944, *Shigen Kagaku Kenkyusho Iho [Misc. Rept. Research Inst. Nat. Resources]* 5: 59.

Paleoparadoxia tabatai (Tokunaga) Reinhart, 1959, *Univ. Calif. Publ. Geol. Sci.* 36(1): 94, July 24, 1959.

Paleoparadoxia media Inuzuka, 2005, *Bull. Ashoro Mus. Pal.* No. 3: 9, March 2005.

Holotype. - An upper ?premolar and left second lower molar (possibly representing different individuals), formerly in Waseda University, Tokyo, but destroyed in World War II; a left third lower molar stored in the Aikawa Local Museum, Aikawa-cho, Sado Island, Japan, and designated as the lectotype of *P. tabatai* by Inuzuka (2005: 11).

Type Locality. - A tunnel in Nakayama Pass between Aikawa and Sawane, Sawada-cho, Sado-gun (Sadogashima or Sado Island), Niigata Prefecture, Japan.

Formation of Holotype. - Orito Formation.

Age of Holotype. - Earliest Middle Miocene (16.5 Ma).

Neotype. - NSMT P-5601, skull and skeleton of immature individual (the “Izumi specimen”). [Designated neotype by Shikama, 1966: 155. The apparent neotype designation by Shikama, 1957: 20 is invalid under Art. 8.2 of the *Code*, as this 1957 work was stated by the author to be merely a “popular essay”.]

Locality of Neotype. - Inkyo-yama hill, Kuziri, Izumi-machi, Doki City, Gifu Prefecture, Japan.

Formation of Neotype. - Yamanouchi Member, Akeyo Formation, Mizunami Group.

Age of Neotype. – Late Early Miocene (18 Ma).

Remarks. – The designation of the Izumi specimen as neotype of *P. tabatai* was considered by Inuzuka (2005) to be automatically set aside by rediscovery of an apparent part of the original type specimen from Sawane. He then designated the Sawane specimen as lectotype

of *P. tabatai* and coined the new name *P. media* for the Izumi species, which is evidently distinct from the Sawane (and Stanford) species to which he applied the name *P. tabatai*. Hasegawa and Kohno (2007) petitioned the ICZN (Case 3384) for conservation of usage of the name *P. tabatai* as fixed by Shikama's neotype designation, and for suppression of *P. media* as a junior objective synonym. Domning and Barnes (2007) concurred with this petition, and provided the new name *P. repenningi* for the Stanford species. In ICZN Opinion 2232 (2009), the neotype fixation proposed by Hasegawa and Kohno (2007) was declined and the Commission took no action, on the grounds that the lectotype designation by Inuzuka (2005), which their proposal sought to set aside, was invalid to begin with. Accordingly, Shikama's (1966) designation of the Izumi skeleton as neotype of *P. tabatai* was maintained, as Hasegawa and Kohno desired.

Paleoparadoxia weltoni Clark, 1991

Paleoparadoxia weltoni Clark, 1991, *Jour. Vert. Paleont.* 11(4): 494, Dec. 31, 1991.

Holotype. - UCMP 114285, skull and partial skeleton of immature individual.
Type Locality. - UCMP loc. V75135, near Iverson Point, south of Point Arena, Mendocino County, California, USA.
Formation. - Skooner Gulch Formation.
Age. - Early Miocene or Late Oligocene (Zemorrian or Saucesian; Arikareean).

Family DESMOSTYLIDAE Osborn, 1905

Desmostylidae Osborn, 1905, *C.R. 6me Congr. Internat. Zool.*, Session de Berne, 1904: 109.

Cornwalliidae Shikama, 1957, *Nat. Sci. and Museum* 24(1/2): 16. [Incorrect original spelling; properly "Cornwalliidae".]

Cornwalliidae Shikama, 1966, *Palaeont. Soc. Japan Spec. Paper* 12: 153, Sept. 20, 1966.
[Justified emendation of Cornwalliidae Shikama, 1957.]

Cornwalliinae Kalandadze and Rautian, 1992, *Sist. Mlek. Istor. Zoogeog.*: 110. [Reference not seen.]

Desmostylinae Kalandadze and Rautian, 1992, *Sist. Mlek. Istor. Zoogeog.*: 110. [Reference not seen.]

Type Genus. - *Desmostylus* Marsh.

Ashoroa Inuzuka, 2000

Ashoroa Inuzuka, 2000, *Bull. Ashoro Mus. Pal.* No. 1: 93, March 2000. [Type, by original designation: *A. laticosta* Inuzuka.]

Ashoroa laticosta Inuzuka, 2000

Ashoroa laticosta Inuzuka, 2000, *Bull. Ashoro Mus. Pal.* No. 1: 93, March 2000.

Holotype. – AMP 21, partial skeleton.

Type Locality. – Beside Yuri Bridge on bank of Morawan River, Morawan, Ashoro Town, eastern Hokkaido, Japan.

Formation. - Lower hard shale of the Morawan Formation.

Age. – Early Late Oligocene.

Cornwallius Hay, 1923

Cornwallius Hay, 1923, *Pan-Amer. Geologist* 39: 107, March 1923. [Type, by monotypy: *Desmostylus sookensis* Cornwall.]

Cornwallius sookensis (Cornwall, 1922) Hay, 1923

Desmostylus hesperus Marsh, *sensu* Lambe in Kermode, 1917, *Rept. Prov. Mus. Nat. Hist. Victoria* for 1916: 42.

Desmostylus sookensis Cornwall, 1922, *Canad. Field-Nat.* 36(7): 122, Oct. 1922.

Cornwallius sookensis (Cornwall) Hay, 1923, *Pan-Amer. Geologist* 39: 106, March 1923.

Holotype. - BCPM 486, lower molar.

Type Locality. - Near mouth of Coal (Kirby) Creek, Sooke, Vancouver Island, British Columbia, Canada.

Formation. - Sooke Formation.

Age. - Late Oligocene (Zemorrian).

Desmostylus Marsh, 1888

Desmostylus Marsh, 1888, *Amer. Jour. Sci.* (3)35(205): 95, Jan. 1888. [Type, by monotypy: *D. hesperus* Marsh.]

Desmostylella Nagao, 1937, *Proc. Imper. Acad. Tokyo* 13(3): 82, March 1937. [Type, by monotypy: *D. typica* Nagao.]

Desmostylus hesperus Marsh, 1888

- Desmostylus hesperus* Marsh, 1888, *Amer. Jour. Sci.* (3)35(205): 95, Jan. 1888.
- Desmostylus japonicus* Tokunaga and Iwasaki, 1914, *Jour. Geol. Soc. Tokyo* 21(250): 33, July 20, 1914. [Holotype: NSMT P- 5600, skull, mandible, and isolated teeth of adult, described by Yoshiwara and Iwasaki (1902). Type locality: Bogahora Valley, Togari, Mizunami City, Gifu Prefecture, Japan.]
- Desmostylus watasei* Hay, 1915, *Proc. U.S. Natl. Mus.* 49(2113): 396. [Holotype: NSMT P- 5600.]
- Desmostylus cymatias* Hannibal, 1922, *Jour. Mammalogy* 3(4): 239, Nov. 2, 1922. [Holotype: USNM 8191, skull of immature individual. Type locality: Spencer Creek, Yaquina Bay, Lincoln County, Oregon, USA.]
- Desmostylus californicus* Hay, 1923, *Pan-Amer. Geologist* 39: 106, March 1923. [Holotype: CASG 66601.01 (formerly Stanford Univ. no. 5118), right upper molar. Type locality: Monument Peak, Santa Clara County, California, USA.]
- Desmostylus mirabilis* Nagao, 1935, *Jour. Geol. Soc. Japan* 42(507): 822, Dec. 20, 1935. [Holotype: UHR 18466, skull and skeleton of adult (the "Keton specimen"). Type locality: Hatsuyuki-zawa, tributary of Keton River, Sakhalin, Russia.]
- Desmostylus minor* Nagao, 1937, *Proc. Imper. Acad. Tokyo* 13(2): 46, Feb. 1937. [Holotype: UHR 7428, right M2. Type locality: Second tributary of Asanai-zawa, Honto-mati, Sakhalin, Russia.]
- Desmostylella typica* Nagao, 1937, *Proc. Imper. Acad. Tokyo* 13(3): 82, March 1937. [Holotype: TIU 56701, left M2. Type locality: Yuda(?), Kintaiti-mura, Ninohe-gun, Iwate Prefecture, Honshu, Japan.]
- Desmostylus hesperus japonicus* (Tokunaga and Iwasaki) Shikama, 1966, *Palaeont. Soc. Japan Spec. Paper* 12: 161, Sept. 20, 1966
- Desmostylus hesperus hesperus* Marsh, Shikama, 1966, *Palaeont. Soc. Japan Spec. Paper* 12: 185, Sept. 20, 1966.

Holotype. - YPM 1395d, fragment of upper molar.

Type locality. - East of Mission San Jose, probably in Alameda County, California, USA (see VanderHoof, 1937: 197-198).

Formation. - Briones Formation.

Age. - Middle Miocene (Briones).

Kronokotherium Pronina, 1957

- Kronokotherium* Pronina, 1957, *Dokl. Akad. Nauk SSSR* 117(2): 312. [Type, by monotypy: *K. brevimaxillare* Pronina.]

Kronokotherium brevimaxillare Pronina, 1957

Kronokotherium brevimaxillare Pronina, 1957, *Dokl. Akad. Nauk SSSR* 117(2): 312.
Desmostylus brevimaxillare [sic] (Pronina) Reinhart, 1982, *Natl. Geogr. Soc. Research Repts.*
14: 551.

Holotype. - Left mandible in Zoological Institute, Academy of Science, St. Petersburg.
Type locality. - River bluff on tributary of Rakitinskaya River, Kronotski Region,
Kamchatka, Russia.

Formation. - Base of upper Tyushevskaya Formation, Rakitinskaya Member.

Age. - Middle Miocene.

Remarks. - Possibly referable to the genus *Desmostylus*.

Vanderhoofius Reinhart, 1959

Vanderhoofius Reinhart, 1959, *Univ. Calif. Publ. Geol. Sci.* 36(1): 90, July 24, 1959. [Type, by
original designation: *V. coalingensis* Reinhart.]

Vanderhoofius coalingensis Reinhart, 1959

Vanderhoofius coalingensis Reinhart, 1959, *Univ. Calif. Publ. Geol. Sci.* 36(1): 90, July 24,
1959.

Holotype. - UCMP 39989, left mandible.

Type Locality. - UCMP loc. V4854, Garza Creek, Kings County, California, USA.

Formation. - Upper member of Temblor sandstone.

Age. - Middle Miocene.

Remarks. - Possibly referable to the genus *Desmostylus*.

TAXA THAT HAVE BEEN INCORRECTLY REFERRED TO THE DESMOSTYLIA

Cryptomastodon von Koenigswald, 1933; *C. martini* von Koenigswald, 1933 [Proboscidea]
Neodesmostylus Khomenko, 1928; *N. primigenius* Khomenko, 1928 [Proboscidea]
SYNONYM: *Desmostylus Wollosowitschi* Pfizenmayer, 1927