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AN ANNOTATED CATALOGUE OF THE FOSSIL AMPHIBIANS, BIRDS, AND MAMMALS OF COLORADO

By

Harold E. Koerner, B.A.,

University of Colorado, 1929.

A Thesis Submitted to the Faculty of the Graduate School of the University of Colorado in Partial Fulfillment of the Requirements for the Degree M.A.

Department of Geology

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This Thesis for the M.A degree, by

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not proof read, has been approved for the

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By

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Class AMPHIBIA

ICHNITES

Genus LAOPORUS Lull

Laoporus coloradensis (Henderson).

Limnopus? coloradensis. Henderson, Jour. Geol., XXXII, p. 228, f. 1, 2, 3, 1924; Lyons sandstone, Lyons, Colo.

Laoporus coloradoensis. Gilmore, Smithson. Miscell. Coll., LXXVII, p. 16, Pl. VII, f. 1, 2, text f. 10, 1926; Lyons (Permian), Lyons, Colo.; Coconino (Permian), Grand Canyon, Ariz.; in Lee, U. S. Geol. Survey Prof. P. 149, p. 12, 1927; same data.

Laoporus coloradensis. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 15, 1930; Permian, Colo.

Class AVES

Order CARINATAE

Family DIATRYMATIDAE

Genus DIATRYMA Cope

Diatryma? filiferum Cockerell.

Diatryma? filifera. Cockerell, Amer. Mus. Novit., LXII, p. 4, f. 1, 1923; Eocene (Green River), Colo. Anonymous, Nat. Hist., XXIII, p. 413, 1923; same data.

Diatryma? filiferum. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 283, 1930; Eocene (Green River), Colo.

Family PHALACROCORACIDAE

Genus PHALACROCORAX Brisson

Phalacrocorax mediterraneus Shufeldt.

Phalacrocorax mediterraneus. Shufeldt, Trans. Conn. Acad. Arts Sci., XIX, p. 58, Pl. XV, f. 138, 1915; Olig. (White River), Gerry's Ranch, NE. Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 292, 1930; same data.

Family VULTURIDAE

Genus PHASMAGYPS Wetmore

Phasmagyps patritus Wetmore.

Phasmagyps patritus. Wetmore, Proc. Colo. Mus. Nat. Hist., VII, p. 3, f. 1-6, 1927; Olig. (Chadron), Weld Co., Colo.; Jour. Wash. Acad. Sci., XVIII, p. 152, 1928; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 312, 1930; same data.

Genus PALAEOGYPS Wetmore

Palaeogyps prodromus Wetmore.

Palaeogyps prodromus. Wetmore, Proc. Colo. Mus. Nat. Hist., VII, p. 5, f. 7-14, 1927; Olig. (Chadron), Weld Co., Colo.; Jour. Wash. Acad. Sci., XVIII, p. 152, 1928; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 312, 1930; same data.

Family RALLIDAE

Genus PALAEOCREX Wetmore

Palaeocrex fax Wetmore.

Palaeocrex fax. Wetmore, Proc. Colo. Mus. Nat. Hist., VII, p. 9, f. 15-18, 1927; Olig. (Chadron), Weld Co., Colo.; Jour. Wash. Acad. Sci., XVIII, p. 152, 1928; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 335, 1930; same data.

Family CHARADRIIDAE

Genus CHARADRIUS Linnaeus

Charadrius sheppardianus Cope.

Charadrius sheppardianus. Cope, Bull. U.S. Geol. and Geog. Survey Terr., VI, p. 83, 1881; Tertiary, Florissant, Colo.; Rept., U.S. Geol. Survey Terr., Hayden, III, p. 755, Pl. LIX, f. 5, 1884; same data. Coues, Key to North American Birds, 2d ed., p. 823, 1884; same data. Zittel, Handbuch der Palaeont., I Abth, III Band, p. 844, 1890; Miocene, Colo. Hay, U.S. Geol. Survey Bull. 179, p. 526, 1902; "Eocene", Colo.; Carnegie Inst.

Wash. Pub. No. 390, II, p. 336; Miocene, (Florissant), Colo. Cockerell, Univ. Colo. Studies, III, p. 163, 1906; same data. Lambrecht, Aquila, XXIII, p. 491, 1916; same data. Wetmore, Jour. Wash. Acad. Sci., XVIII, p. 152, 1928; same data.

Family OEDICNEMIDAE

Genus BATHORNIS Wetmore

Bathornis veredus Wetmore.

Bathornis veredus. Wetmore, Proc. Colo. Mus. Nat. Hist., VII, p. 11, f. 19-24, 1927; Olig. (Chadron), Weld Co., Colo.; Jour. Wash. Acad. Sci., XVIII, p. 152, 1928; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 339, 1930; same data.

Family PALAEOSPIZIDAE

Genus PALAEOSPIZA Allen

Palaeospiza bella Allen.

Palaeospiza bella. Allen, Bull. U.S. Geol. and Geog. Survey Terr., IV, p. 443, Pl. I, f. 1, 2, 1878; Tertiary, Florissant. Cope, Amer. Naturalist, XV, p. 253, 1881; same data. Coues, Key to North American Birds, 2d ed., p. 822, 1884; same data. Hay, U.S. Geol. Survey Bull. 179, p. 537, 1902; Eocene? (Amyzon shales), Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 359, 1930; Miocene (Florissant), Colo. Lucas, Animals before Man in North America, p. 233, 1902; same data. Cockerell, Univ. Colo. Studies, III, p. 163, 1906; same data.

Shufeldt, Jour. Geol., XXI, p. 634, f. 8, 1913; "Oligocene", Florissant. Wetmore, Bull. Mus. Comp. Zool., LXVII, p. 183, Pls. I- IV, text f. 1, 2, 1925; Miocene, Florissant; Jour. Wash. Acad. Sci., XVIII, p. 152, 1928; same data.

Bird Remains of Uncertain Systematic Position

Genus FONTINALIS Lesquereux

Fontinalis pristina Lesquereux.

Fontinalis pristina. Lesquereux, Rept. U.S. Geol. Survey Terr., VIII, p. 135, Pl. XXI, f. 9, 1883; Miocene, Florissant; named as a moss. Knowlton, Proc. U.S. Nat. Mus., LI, p. 245, 1916; same data; recognized as a bird. Wetmore, Bull. Mus. Comp. Zool., LXVII, p. 184, 1925; same data; Jour. Wash. Acad. Sci., XVIII, p. 152, 1928; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 359, 1930; same data.

Class MAMMALIA

Order TRICONODONTA

Family TRICONODONTIDAE

Genus PRIACODON Marsh

Priacodon ferox (Marsh).

Tinodon ferox. Marsh, Amer. Jour. Sci. (3), XX, p. 236, 1880; Morrison, Wyo.

Triconodon ferox. Lull, Organic Evolution: p. 545, f. 172, 1917; Comanchian, Wyo.

?Priacodon ferox. Cannon, Proc. Colo. Sci. Soc., VIII, p. 196, 1906; Berkeley Bluffs, Colo.

Priacodon ferox. Simpson, Amer. Jour. Sci. (5), X, pp. 159, 165, 344, 357, f. 5, 15; pp. 341, 342, f. 13, 14, 1925; Morrison, Wyo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 370, 1930; Morrison, Wyo., ?Colo.

Order PANTOTHERIA

Family DRYOLESTIDAE

Genus KEPOLESTES Simpson

Kepolestes coloradensis Simpson.

Kepolestes coloradensis. Simpson, Amer. Jour. Sci., (5), XIII, p. 413, 1927; Morrison, Garden Park, Colo.; Amer. Mesozoic Mammalia, p. 70, 1929; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 374, 1930; Morrison, Wyo.

Family DICROCYONODONTIDAE

Genus DOCODON Marsh

Docodon sp. indet.

Docodon sp. Simpson, Amer. Mesozoic Mammalia, p. 70, 1929; Morrison, Garden Park, Colo.

Order MULTITUBERCULATA

Family PTILODONTIDAE

Genus ECTYPODUS Matthew and Granger

Ectypodus musculus Matthew and Granger.

Ectypodus musculus. Matthew and Granger, Amer. Mus. Novit., No. 13, p. 1, 1921; Paleocene, (Tiffany beds), Animas Co., Colo. Reeside, U.S. Geol. Survey Prof. P. 134, p. 47, 1924; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 381, 1930; same data.

Order MARSUPIALIA

Family DIDELPHIDAE

Genus PERATHERIUM Aymard

Peratherium alternans (Cope).

Embassis alternans. Cope, Synopsis of New Vertebrata from the Tert. of Colo., p. 7, 1873; Tertiary, Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 468, 1874; White River, NE. Colo.

Didelphis alternans. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 52, 1899; Olig. (White River), Cedar Creek, NE. Colo. Hay, U.S. Geol. Survey Bull. 179, p. 571, 1902, same data.

Peratherium alternans. Cope, Rept. U.S. Geol. Survey Terr., Hayden, III, pp. 794, 798, Pl. LXII, f. 22-24, 1884; M. Olig. (White River), Colo. Matthew, U.S. Geol. Survey Bull. 361, p. 105, 1909; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 393, same data.

Peratherium fugax (Cope).

Herpetotherium fuzax (typ. err.). Cope, Paleont. Bull. No. 16, p. 1, 1873; White River, NE. Colo.

Herpetotherium fugax. Cope, Synopsis of New Vertebrata from the Tert. of Colo., pp. 5, 6, 1873; White River, NE. Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1879, Hayden, p. 467, 1874; same data; U.S. Geol. and Geog. Surv. Terr., Bull. I, p. 23, 1874; same data.

Didelphis fugax. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 52, 1899, Olig. (White River), NE. Colo. Hay, U.S. Geol. Survey Bull. 179, p. 571, 1902; same data.

Peratherium fugax. Cope, Rept. U.S. Geol. Survey Terr., Hayden, III, p. 794, Pl. LXII, f. 1-9, 1884; Olig., NE. Colo.; Amer. Naturalist, XVIII, p. 687, f. 1, 1884; same data. Matthew, U.S. Geol. Survey Bull. 361, p. 105, 1909; Olig. (White River), Cedar Creek, NE. Colo. Seeley,

Geol. Mag. n.s. (3), III, p. 513, figs., 1886; White River, no loc. Troxell, Amer. Jour. Sci. (5), V, p. 507, 1923; White River, Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 393, M. Olig. (Cedar Creek), Colo.; (Brule?), Neb.

Peratherium huntii (Cope).

Herpetotherium huntii. Cope, Synopsis of New Vertebrata from the Tert. of Colo., p. 5, 1873; Tertiary, Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 466, 1874; Olig. (White River), NE. Colo.

Didelphis huntii. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 52, 1899; Olig. (White River), NE. Colo. Hay, U.S. Geol. Survey Bull. 179, p. 571, 1902; same data.

Herpetotherium stevensoni. Cope, Synopsis of New Vertebrata from the Tert. of Colo.; pp. 5,6, 1873; Tertiary, Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 467, 1874; White River, Colo.

Miothen gracile. Cope, Synopsis of New Vertebrata from the Tert. of Colo., p. 8, 1873; Tertiary, Colo.

Domnina gracilis. Cope, Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 470, 1874; White River, Colo.

Peratherium huntii. Cope, Rept. U.S. Geol. Survey Terr., Hayden, III, pp. 794, 796, Pl. LXII, f. 12-16, 1884; White River, Colo. Matthew, U.S. Geol. Survey Bull. 361, p. 105, 1909; M. Olig. (White River), Cedar Creek, NE. Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p.

393, 1930; same data.

Peratherium marginale (Cope).

Herpetotherium marginale. Cope, Synopsis of New Vertebrata from the Tert. of Colo., pp. 5, 6, 1873; Tertiary, Colo.

Embassis marginalis. Cope, Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 468, 1874; White River, Colo.

Didelphis marginalis. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 52, 1899; Olig. (White River), Colo. Hay, U.S. Geol. Survey Bull. 179, p. 571, 1902; same data.

Peratherium marginale. Cope, Rept. U.S. Geol. Survey Terr., Hayden, III, pp. 794, 798, Pl. LXII, f. 19-21, 1884; White River, Colo. Matthew, U.S. Geol. Survey Bull. 361, p. 105, 1909; M. Olig. (White River), Cedar Creek, NE. Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 393, 1930, same data.

Peratherium pygmaeum (Scott).

Didelphis pygmaea. Scott, Amer. Jour. Sci. (3), XXVII, p. 442, fig., 1884; White River, Colo. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 52, 1899; same data. Hay, U.S. Geol. Survey Bull. 179, p. 571, 1902; same data.

Didelphys pygmaea. Dall and Harris, U.S. Geol. Survey Bull. 84, p. 305, 1892; "Pliocene", Chalk Bluffs, Colo.

Peratherium pygmaeum. Matthew, U.S. Geol. Survey Bull. 361, p. 105, 1909; M. Olig. (White River), Cedar Creek, NE. Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 393, 1930; same data.

Peratherium scalare (Cope).

Herpetotherium scalare. Cope, Synopsis of New Vertebrata from the Tert. of Colo., pp. 5, 7, 1873; Tertiary, Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 467, 1874; White River, Colo.

Didelphis scalaris. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 52, 1899; Olig. (White River), NE. Colo. Hay, U.S. Geol. Survey Bull. 179, p. 571, 1902; same data.

Peratherium scalare. Cope, Rept. U.S. Geol. Survey Terr., Hayden, III, pp. 794, 797, Pl. LXII, f. 17, 18, 1884; White River, Colo. Matthew, U.S. Geol. Survey Bull. 361, p. 105, 1909; M. Olig. (White River), Cedar Creek, Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 393, 1930; same data.

Peratherium tricuspe (Cope).

Herpetotherium tricuspis. Cope, Synopsis of New Vertebrata from the Tert. of Colo., p. 5, 1873; Tertiary, Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 466, 1874; White River, Colo.

Didelphis tricuspis. Hay, U.S. Geol. Survey Bull. 179, p. 571, 1902; Olig. (White River) Colo.

Peratherium tricuspis. Matthew, U.S. Geol. Survey Bull. 361, p. 105, 1909; Olig. (White River), Cedar Creek, Colo.

Peratherium tricuspe. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 393, 1930; M. Olig. (Cedar Creek), Colo.

Genus PERADECTES Matthew and Granger

Peradectes elegans Matthew and Granger.

Peradectes elegans. Matthew and Granger, Amer. Mus. Novit., No. 13, p. 2, 1921; Paleocene, (Tiffany beds), SW. Colo. Reeside, U.S. Geol. Survey Prof. P. 134, p. 47, 1924; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 393, 1930; same data.

Order TAENIODONTA

Family STYLINODONTIDAE

Genus PSITTACOTHERIUM Cope

Psittacotherium sp. indet.

Psittacotherium sp. Gidley, U.S. Geol. Survey Prof. P. 134, p. 47, 1924; Eocene (Wasatch), Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 400, same data.

Order XENARTHRA

Family MEGATHERIIDAE

Genus MYLODON Owen

Mylodon harlani Owen.

Mylodon harlani. Owen, Zoology of the Voyage of H. M. S. Beagle: pp. 68, 69, Pl. XVII, f. 3, 4, 1840. Allen, Mem. Mus. Comp. Zool., XL, Pl. IV, f. 16, 1913; Pleist., Cal., Colo. Stock, Bull. Dept. Geol. Univ. Cal., VIII, p. 320, 1914; same data; idem., X, p. 166, 1917; same data. Hay, Carnegie Inst. Wash. Pub. No. 322-A, p. 6, 1924; Pleist.; Colo. locality: Walsenburg; idem., 390, II, p. 412, 1930; Pleist., Pa. to Fla., Wash. to Mexico.

Mylodon n. sp. Cockerell, Univ. Colo. Studies, VI, p. 309, 1909; Pleist., Walsenburg, Colo.

Paramylodon nebrascensis. Brown, Bull. Amer. Mus. Nat. Hist., XIX, p. 571, Pls. L, LI, 1903; Pleist., Neb.

Order INSECTIVORA

Family LEPTICTIDAE

Genus MESODECTES Cope

Mesodectes caniculus (Cope).

Isacis caniculus. Cope, Palaeont. Bull. No. 16, p. 3, 1873; Synopsis of New Vertebrata from the Tert. of Colo., p. 8, 1873; Tertiary, Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 473, 1874; White River, NE. Colo.; U.S. Geol. and Geog. Surv. Terr., Bull. I, p. 23, 1874; "Pliocene", N. Colo.

Mesodectes caniculus. Cope, Rept. U.S. Geol. Survey Terr., Hayden, III, p. 805, Pl. LXII, f. 33-50, 1884; White River, NE. Colo.; Amer. Naturalist, XVIII, p. 478, 1884; same data. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 55, 1899; M. Olig. (White River), NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 357, 1901; same data. Hay, U.S. Geol. Survey Bull. 179, p. 739, 1902; same data; Carnegie Inst. Wash. Pub. No. 390, II, p. 431, 1930; same data.

Genus LEPTACODON Matthew and Granger

Leptacodon tener. Matthew and Granger.

Leptacodon tener. Matthew and Granger, Amer. Mus. Novit., No. 13, p. 2, 1921; Paleocene, (Tiffany beds), SW. Colo. Reeside, U.S. Geol. Survey Prof. P. 134, p. 47, 1924; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 432, 1930; same data.

Genus XENACODON Matthew and Granger

Xenacodon mutilatus Matthew and Granger

Xenacodon mutilatus. Matthew and Granger, Amer. Mus. Novit., No. 13, p. 3, 1911; Paleocene, (Tiffany beds), SW. Colo. Reeside, U.S. Geol. Survey Prof. P. 134, p. 47, 1924; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 432, 1930; same data.

Family TALPIDAE

Genus PROSCALOPS Matthew

Proscalops miocaenus Matthew.

Proscalops miocaenus. Matthew, Mem. Amer. Mus. Nat. Hist., I, pp. 375-376, f. 1, 2, 1901; Olig., (Leptauchenia beds), NE. Colo.; U.S. Geol. Survey Bull. 361, p. 107, 1909; U. Brule, Lower Martin Canyon, Colo.; Mem. Amer. Mus. Nat. Hist., IX, p. 537, Pl. XLIX, f. 5, 1909; same data. Osborn, Evol. of Mamm. Molar Teeth, p. 121, text f. 73, 1907; U. Olig., Colo. Zittel and Schloesser, Grundzüge der Palaeont., p. 368, f. 538, 1911; "Miocene", Colo. Zittel, Textbook of Palaeont., III, p. 41, f. 64, 1925; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 436, 1930; U. Olig. (Brule), Colo.

Genus DOMNINA Cope

Domnina crassigenis (Cope).

Miothen crassigenis. Cope, Synopsis of New Vertebrata from the Tert. of Colo., p. 8, 1873; Tertiary, Colo.

Domnina crassigenis. Cope, Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 470, 1874; White River, NE. Colo.; Rept. U.S. Geol. Survey Terr., Hayden, III, p. 811, Pl. LXII, f. 24-29, 1884; same data. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 55, 1899; M. Olig. (White River), NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 357, 1901; same data; U.S. Geol. Survey Bull. 361, p. 105, 1909; L. Brule, Cedar Creek, NE. Colo. Hay, U.S. Geol. Survey Bull. 179, p. 741, 1902; same data; Carnegie Inst. Wash. Pub. No. 390, II, p. 436, 1930; same data.

Dommina gradata Cope.

Domnina gradata. Cope, Palaeont. Bull. No. 16, p. 1, 1873; Synopsis of New Vertebrata from the Tert. of Colo., p. 8, 1873; Tertiary, Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 469, 1874; White River, NE. Colo.; Rept. U.S. Geol. Survey Terr., Hayden, III, p. 810, Pl. LXII, f. 25, 26, 1884; same data. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 55, 1899; M. Olig. (White River), NE. Colo.; U.S. Geol. Survey Bull. 361, p. 105, 1909; L. Brule (White River), NE. Colo. Hay, U.S. Geol. Survey Bull. 179, p. 741, 1902; same data; Carnegie Inst. Wash. Pub. No. 390, II, p. 436, 1930; same data.

Genus GEOLABIS Cope

Geolabis rhynchaeus Cope.

Geolabis rhynchaeus. Cope, Rept. U.S. Geol. Survey Terr., Hayden, III, p. 808, Pl. LXII, f. 30-32, 1884; no loc. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 55,

1899; M. Olig. (White River), NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 357, 1901; Oreodon beds, NE. Colo.; U.S. Geol. Survey Bull. 361, p. 105, 1909; L. Brule, Cedar Creek, Colo. Hay, U.S. Geol. Survey Bull. 179, p. 739, 1902; same data; Carnegie Inst. Wash. Pub. No. 390, II, p. 439, 1930; same data.

Family HYOPSODONTIDAE

Genus HYOPSODUS Leidy

Hyopsodus markmani Abel and Cook.

Hyopsodus markmani. Abel and Cook, Proc. Colo. Mus. Nat. Hist., V, p. 34, f. 1-4, 1925; Eocene, Moffat Co., Colo. Weber and Abel, Die Säugetiere, p. 628, 1928; same data. Hay, Carengie Inst. Wash. Pub. No. 390, II, p. 443, 1930; Early Eocene, Colo.

Hyopsodus powellianus Cope.

Hyopsodus powellianus. Cope, Rept. U.S. Geol. Survey Terr., Hayden, III, p. 235, Pl. XXIII, f. 3, 4, 1884; Wasatch, Wyo. Hay, U.S. Geol. Survey Bull. 179, p. 791, 1902; same data; Carnegie Inst. Wash. Pub. No. 390, II, p. 444, 1930; same data.

Hyopsodus cf. powellianus. Osborn, Bull. Amer. Mus. Nat. Hist., IX, p. 256, 1897; L. Huerfano, S. Colo. Matthew, idem., XII, p. 34, 1899; same data; U.S. Geol. Survey Bull. 361, p. 93, 1909; same data.

Hyopsodus sp. indet.

Hyopsodus sp. Matthew, U.S. Geol. Survey Bull.

361, pp. 49, 93, 1909; L. Huerfano, S. Colo.

Family PLESIADAPIDAE

Genus LABIDOLEMUR Matthew and Granger

Labidolemur soricoides Matthew and Granger.

Labidolemur soricoides. Matthew and Granger, Amer. Mus. Novit., No. 13, p. 4, 1921; Paleocene, (Tiffany beds), S.W. Colo. Reeside, U.S. Geol. Survey Prof. P. 134, p. 47, 1924; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 446, 1930; same data.

Genus NOTHODECTES Matthew

Nothodectes gidleyi Matthew.

Nothodectes gidleyi. Matthew, Bull. Amer. Mus. Nat. Hist. XXXVII, p. 832, Pls. XCIX-CII, 1917; Paleocene, (Tiffany beds), SW. Colo.; Amer. Jour. Sci. (5), I, p. 509, 1921; same data. Gregory, Mem. Amer. Mus. Nat. Hist., n. s., III, p. 70, 1921; same data. Gidley, U.S. Geol. Survey Prof. P. 134, p. 47, 1924; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 446, same data.

Nothodectes sp. indet.

Nothodectes sp. Granger, Bull. Amer. Mus. Nat. Hist., XXXVII, p. 828, 1917; L. Eocene, SW. Colo. Reeside, US. Geol. Survey Prof. P. 134, p. 46, 1924; same data.

Genus IGNACIUS Matthew and Granger

Ignacius frugivorus Matthew and Granger.

Ignacius frugivorus. Matthew and Granger, Amer. Mus. Novit., No. 13, p. 5, 1921; Paleocene, (Tiffany beds),

SW. Colo. Reeside, U.S. Geol. Survey Prof. P. 134, p. 47, 1924; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 447, 1930; same data.

Family MICROSYOPSIDAE

Genus MICROSYOPS Leidy

Microsyops sp. indet.

Microsyops sp. Matthew, U.S. Geol. Survey Bull. 361, pp. 49, 95, 1909; Eocene, (U. Huerfano), Colo.

Order CHIROPTERA

Family PHYLLOSTOMIDAE

Genus ZANYCTERIS Matthew

Zanycteris paleocenus Matthew.

Zanycteris paleocenus. Matthew, Bull. Amer. Mus. Nat. Hist., XXXVII, p. 569, f. 1, 1917; Wasatch Eocene, near Ignacio, Colo. Reeside, U.S. Geol. Survey Prof. P. 134, p. 47, 1924; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 456, 1930; Eocene or Paleocene (Ignacio), Colo.

Palaeonycteris paleocenus. Weber and Abel, Die Säugetiere, p. 159, 1928; same data.

Order CARNIVORA

Family OXYCLAENIDAE

Genus MIXOCLAENUS Matthew and Granger

Mixoclaenus encinensis Matthew and Granger.

Mixoclaenus encinensis. Matthew and Granger, Amer. Mus. Novit., No. 13, p. 7, 1921; Paleocene (Tiffany), SW. Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 463, 1930; same data.

Family OXYAENIDAE

Genus OXYAENA Cope

Oxyaena lupina Cope.

Oxyaena lupina. Cope, Geog. Surveys west of 100th Meridian, Wheeler, IV, p. 101, Pl. XXXIV, f. 14-17; Pl. XXXV, f. 1-4, 1877; Eocene, N. Mex. Matthew, Bull. Amer. Mus. Nat. Hist., XXXIV, p. 49, f. 44, 1915; Eocene, Wyo., N. Mex.; O. huerfanensis in synonymy. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 471, 1930; same data.

Oxyaena huerfanensis. Osborn, Bull. Amer. Mus. Nat. Hist., IX, p. 255, 1897; L. Huerfano, Colo. Matthew, idem., XII, p. 35, 1899; same data; U.S. Geol. Survey Bull. 361, pp. 49, 93, 1909; same data. Hay, U.S. Geol. Survey Bull. 179, p. 757, 1902; same data.

Oxyaena morsitans? Richardson, U.S. Geol. Survey Bull. 381, Pt. II, p. 390, 1910; Huerfano, S. Colo.

Oxyaena transiens Matthew.

Oxyaena transiens. Matthew, Bull. Amer. Mus. Nat. Hist., XXXIV, pp. 46, 47, f. 42, 43, 1915; Eocene (Wasatch), Wyo. Thorpe, Amer. Jour. Sci. (5), V, p. 223, 1923; Wasatch, Red Dog Buttes, Colo.?, Wyo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 471, 1930; same data.

Genus AMBLOCTONUS Cope

Ambloctonus coloradensis (Matthew).

Patriofelis ulta (non Leidy). Osborn, Bull. Amer. Mus. Nat. Hist., IX, p. 256, 1897; Eocene (U. Huerfano), Colo.; idem, XIII, p. 278, f. 8, 1900; no data. Matthew idem., XII, p. 41, 1899; same data.

?Patriofelis coloradensis. Matthew, U.S. Geol. Survey Bull. 361, p. 96, 1909; U. Huerfano, Colo.

Ambloctonus coloradensis. Matthew, Bull. Amer. Mus. Nat. Hist., XXXIV, p. 62, 1915; Eocene (Huerfano), Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 473, 1930; same data.

Family HYAENODONTIDAE

Genus HYAENODON Lazier and Parieu

Hyaenodon crucians Leidy.

Hyaenodon crucians. Leidy, Proc. Acad. Nat. Sci. Phila., VI, p. 393, 1853; Olig. (White River), Neb.; 2d (4th) Ann. Rept. U.S. Geol. Survey Terr., Hayden, p. 342, 1871; same data. Cope, Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 505, 1874; White River, NE. Colo. King, U.S. Geol. Explor. 40th Parallel, I,

p. 411, 1878; "Miocene", Great Plains. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 53, 1899; M. Olig., NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 357, 1901; Oreodon beds, Cedar Creek, Colo.; U.S. Geol. Survey Bull. 361, p. 105, 1909; same data. Hay, U.S. Geol. Survey Bull. 179, p. 758, 1902; Olig. (White River), S. Dak.; Carnegie Inst. Wash. Pub. No. 390, II, p. 480, 1930; M. Olig. (Brule), Colo., Neb. Sinclair, Proc. Amer. Philos. Soc., LXIII, pp. 101, 103, 106, 1924; Oreodon beds, S. Dak.

Hyaenodon cruentus Leidy.

Hyaenodon cruentus. Leidy, Proc. Acad. Nat. Sci. Phila. VI, p. 393, 1853; Olig. (White River), Neb.; 2d (4th) Ann. Rept. U.S. Geol. Survey Terr., Hayden, p. 342, 1871; same data. King, U.S. Geol. Explor. 40th Parallel, I, p. 411, 1878; "Miocene", Great Plains. Scott, Jour. Acad. Nat. Sci. Phila. (2) IX, p. 175, Pl. VI, f. 2, 1888; White River, N. America; Jour. Acad. Nat. Sci. Phila., IX, f. 1-4, 6, 7, 10, 1894; same data. Osborn and Wortman, Bull. Amer. Mus. Nat. Hist., VI, p. 224, 1894; same data. Matthew idem, XII, p. 53, 1899; M.Olig., NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 380, 1901; same data; U.S. Geol. Survey Bull. 361, p. 105, 1909; Brule (White River), Cedar Creek, NE. Colo. Hay, U.S. Geol. Survey Bull. 179, p. 758, 1902; White River, S. Dak.; Carnegie Inst. Wash. Pub. No. 390, II, p. 480, 1930; M. Olig. (Brule), Colo., Neb., Wyo. Sinclair, Proc. Amer. Philos. Soc., LXIII, pp. 101, 103, 106, f. 1, 1924; Oreodon beds, S. Dak.

Hyracodon cruentus. Darton and Siebenthal, U.S. Geol. Survey Folio 173, p. 11, 1910; White River, Wyo.

Hyaenodon montanus Douglass.

Hyaenodon montanus. Douglass, Trans. Amer. Philos. Soc. (2), XX, p. 237, 1901; Olig. (White River), Mont. Thorpe, Amer. Jour. Sci. (5), III, p. 284, 1922; White River, Gerry's Ranch, NE. Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 480, 1930; M. Olig. (White River), Mont.

Genus NEOHYAENODON Thorpe

Neohyaenodon horridus (Leidy).

Hyaenodon horridus. Leidy, Proc. Acad. Nat. Sci. Phila., VI, p. 392, 1853; Olig. (White River), Neb.; 2d (4th) Ann. Rept. U.S. Geol. Survey Terr., Hayden, p. 342, 1871; same data. Cope, Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 505, 1874; White River, NE. Colo.; Amer. Naturalist, XVIII, p. 346, f. 12, 1884; White River, Neb. King, U.S. Geol. Explor. 40th Parallel, p. 411, 1878; "Miocene", Great Plains. Scott, Jour. Acad. Nat. Sci. Phila., (2), IX, p. 175, Pl. VII, f. 4-6, 1888; White River, N. America; idem. IX, p. 500, f. 5, 1894; same data. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 53, 1899; Olig., S. Dak.; U.S. Geol. Survey Bull. 361, p. 105, 1909; Brule (White River), Cedar Creek, NE. Colo. Hay, U.S. Geol. Survey Bull. 179, p. 758, 1902; White River, S. Dak.

Neohyaenodon horridus. Thorpe, Amer. Jour. Sci. (5), III, pp. 277-280, text f. 1, 2, 1922; White River, S. Dak. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 480, 1930; M. Olig. (Brule), Colo., S. Dak., Neb.

Family MIACIDAE

Genus DIDYMICTIS Cope

Didymictis altidens Cope.

Didymictis altidens. Cope, Amer. Naturalist, XIV, p. 746, 1880; Wind River Eocene, Wyo.; Rept. U.S. Geol. Survey Terr., Hayden, III, pp. 305, 307, Pl. XXVa, f. 13, 14, 1884; same data. Osborn, Bull. Amer. Mus. Nat. Hist. IX, p. 255, 1897; Huerfano, S. Colo. Matthew, U.S. Geol. Survey Bull. 361, p. 93, 1909; L. Huerfano, S. Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 482, 1930; L. Eocene, Wyo.

Viverravus altidens. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 35, 1899; Eocene, Wyo. Hay, U.S. Geol. Survey Bull. 179, p. 754, 1902; same data.

Didymictis protenus (Cope).

Limnocyon protenus. Cope, Extract from App. FF of the Ann. Rept. of the Chief of Engineers, p. 15, 1874; Eocene, N. Mex.

Viverravus protenus. Matthew, Bull. Amer. Mus. Nat. Hist., XII, pp. 30, 35, 1899; Huerfano, SE. Colo. Hay, U.S. Geol. Survey Bull. 179, p. 755, 1902; Eocene, N. Mex., Wyo., Colo.

Didymictis protenus. Cope, Rept. U.S. Geol. Survey Terr., Hayden, III, pp. 305, 311, Pl. XXVd, f. 4, 5, 1884, Eocene, Wyo. Osborn, Bull. Amer. Mus. Nat. Hist., IX, p. 255, 1897; Eocene (L. Huerfano), Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 482, 1930; L. Eocene, (Wasatch), N. Mex., Wyo.

Genus VIVERRAVUS Marsh

Viverravus dawkinsianus (Cope).

Didymictis dawkinsianus. Cope, Bull. U.S. Geol. and Geog. Survey Terr., VI, p. 191, 1881; Eocene, Wyo.; Rept. U.S. Geol. Survey Terr., Hayden, III, pp. 306, 310, Pl. XXVa, f. 11, 1884; same data; Amer. Naturalist, XVIII, p. 485, f. 30, a-c, 1884; same data. Zittel, Handbuch der Palaeont., I Abth, IV Band, p. 603, f. 506B, 1893; same data. Osborn, Bull. Amer. Mus. Nat. Hist., IX, p. 255, 1897; L. Huerfano, Colo.

Viverravus gracilis. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 35, 1899; Huerfano, S. Colo.; Didymictis dawkinsianus in synonymy. Wortman and Matthew, idem., XII, p. 136, 1899; no data. Hay, U.S. Geol. Survey Bull. 179, p. 784, 1902; Eocene, Wyo., Colo.; (in part).

Viverravus dawkinsianus. Matthew, U.S. Geol. Survey Bull. 361, p. 93, 1909; L. Huerfano, Colo.; Bull. Amer. Mus. Nat. Hist., XXXIV, p. 28, f. 20, 1915; Wind River, Wyo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 483, 1930, L. Eocene, Wyo.; Huerfano, Colo.

Family CANIDAE

Genus CYNODICTIS Bravard and Pomel

Cynodictis angustidens (Marsh).

Amphicyon angustidens. Marsh, Amer. Jour. Sci., (3), II, p. 124, 1871; Miocene, Neb.

Cynodictis angustidens. Thorpe, Amer. Jour. Sci., (5), III, pp. 425-427, text f. 1, 1922; M. and U. Olig., Colo. and Neb.; Syn. of Canis gregarius. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 490, 1930; Miocene (Valentine); Neb., S. Dak., Colo.

Cynodictis gregarius (Cope).

Canis gregarius. Cope, Palaeont. Bull. No. 16, p. 3, 1873; Synopsis of New Vertebrata from the Tert. of Colo., p. 9, 1873; Tertiary, Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 506, 1874; White River, NE. Colo.

Galecynus gregarius. Cope, Amer. Naturalist, XVII, p. 241, 1883; White River, Colo., S. Dak.; Rept. U.S. Geol. Survey Terr., Hayden, III, pp. 915, 916, Pl. LXVIIa, f. 7-11; Pl. LXVIII, f. 5-8, 1884; White River, NE. Colo.

Cynodictis gregarius. Scott, Trans. Amer. Philos. Soc., XIX, p. 367, Pl. XIX, f. 11-13; Pl. XX, f. 23-24, 1898; White River, no loc. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 54, 1899; M. Olig., NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 380, Pl. I; same data; U.S. Geol. Survey Bull. 361, p. 105, 1909; L. Brule, Cedar Creek, Colo. Wortman and Matthew, Bull. Amer. Mus. Nat. Hist.,

XII, pp. 123, 130, 1899; Oreodon beds. Hatcher, Mem. Carnegie Mus., I, p. 105, Pl. XVI, f. 1; Pl. XVIII, f. 2, 3, 1902; White River, no loc. Sinclair, Proc. Amer. Philos. Soc., LXIII, pp. 102, 111, 1924; Oreodon beds, S. Dak. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 490, 1930; M. Olig., Colo.; Brule, Neb., S. Dak.

Cynodictis lippincottianus (Cope).

Canis lippincottianus. Cope, Synopsis of New Vertebrata from the Tert. of Colo., p. 9, 1873; Tertiary, Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 506, 1874; White River, NE. Colo.

Galecynus lippincottianus. Cope, Rept. U.S. Geol. Survey Terr., Hayden, III, p. 919, Pl. LXVII, f. 5, 6, 1884; White River, NE. Colo.

Amphicyon gracilis (non Pomel). Leidy, Amer. Jour. Sci. (2), XXI, p. 90, 1856.

Daphoenus gracilis. Roger, Bericht Naturwiss. Vereins f. Schwaben and Neuburg, (a. V.), XXXII, p. 44, 1896.

Cynodictis hylactor. Hay, U.S. Geol. Survey Bull. 179, p. 771; Olig. (White River), S. Dak.

Cynodictis lippincottianus. Scott, Trans. Amer. Philos. Soc., XIX, p. 400, 1898; White River, Colo. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 54, 1899; M. Olig., NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 380, 1901; same data; U.S. Geol. Survey Bull. 361, p. 105, 1909; L. Brule, Cedar Creek, Colo. Hay, U.S. Geol.

Survey Bull. 179, p. 771, 1902; Olig., Colo., Ore.; Carnegie Inst. Wash. Pub. No. 390, II, p. 491, 1930; Olig., Colo., Neb. Thorpe, Amer. Jour. Sci. (5), III, pp. 427, 428, 1922; M. Olig., Colo.; includes Galecynus lippincottianus, Amphicyon gracilis (non Pomel), Daphoenus gracilis, and Cynodictis hylactor in synonymy.

Cynodictis paterculus Matthew.

Cynodictis paterculus. Matthew, Bull. Amer. Mus. Nat. Hist., XIX, p. 209, 1903; Olig., Mont. Thorpe, Amer. Jour. Sci. (5), III, p. 428, 1922; L. Brule, Pawnee Buttes, NE. Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 491, 1930; Olig. (Titanotherium beds), Mont., Colo., S. Dak.

Galecynus paterculus. Zittel and Schlosser, Grundzüge der Palaeont., p. 387, 1911; White River, no loc.

Cynodictis temnodon Wortman and Matthew.

Cynodictis temnodon. Wortman and Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 130, 1899; Protoceras beds. Matthew, Mem. Amer. Mus. Nat. Hist., I, p. 357, 1901; Leptauchenia beds, NE. Colo.; U.S. Geol. Survey Bull. 361, p. 106, 1909; U. Brule, Lower Martin Canyon, Colo. Hay, U.S. Geol. Survey Bull. 179, p. 771, 1902; White River, S. Dak.; Carnegie Inst. Wash. Pub. No. 390, II, p. 491, 1930; Olig. (Brule), Colo., Neb.

Genus NOTHOCYON Matthew

Nothocyon vulpinus coloradoensis Thorpe.

Nothocyon vulpinus coloradoensis. Thorpe, Amer. Jour.

Sci. (5), III, p. 430, text f. 2, 1922; L. Mioc., Pawnee Buttes, Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 493, 1930; same data.

Genus MESOCYON Scott

Mesocyon robustus Matthew.

Mesocyon robustus. Matthew, Bull. Amer. Mus. Nat. Hist., XXIII, p. 185, f. 3, 1907; L. Rosebud, S. Dak. Thorpe, Amer. Jour. Sci. (5), III, p. 429, 1922; Gerry's Ranch, Weld Co., Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 493, 1930; L. Mioc., S. Dak., Colo.

Genus TEPHROCYON Merriam

Tephrocyon hippophagus Matthew and Cook.

Tephrocyon hippophagus. Matthew and Cook, Bull. Amer. Mus. Nat. Hist., XXVI, pp. 373-375, 1909; U. Mioc. Neb. Thorpe, Amer. Jour. Sci. (5), III, p. 435, 1922; Neb. and Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 509, 1930; same data; in synonymy of Tomarctus brevirostris.

Tephrocyon temerarius (Leidy).

Canis temerarius. Leidy, Proc. Acad. Nat. Sci. Phila., 1858, p. 21; Pliocene, Neb. Cope, Rept. U.S. Geol. Survey Terr., Hayden, III, p. 915, 1884; Loup Fork, NE. Colo. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 67, 1899; same data. Hay, U.S. Geol. Survey Bull. 179, p. 776, 1902; Loup Fork, Neb., Colo.

"Canis" cf. temerarius. Matthew, Mem. Amer. Mus. Nat. Hist., I, p. 358, 1901; M. Mioc. (Deep River Seq.), Pawnee Creek, NE. Colo.; U.S. Geol. Survey Bull. 361, p. 114, 1909; same data.

Tephrocyon temerarius. Merriam, Bull. Dept. Geol. Univ. Cal., VII, pp. 360, 361, 365, f. 7, 8, 1913; Mohave beds, Cal. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 494, 1930; L. Plioc. (Arikaree), Neb.; U. Mioc. (Snake Creek), Neb.; (Pawnee Creek), Colo., (Barstow?), Cal.?

Genus CANIS Linnaeus

Canis sp. indet.

"Canis" sp. Matthew, U.S. Geol. Survey Bull. 361, p. 114, 1909; M. Mioc. (Deep River Seq.), Pawnee Creek, Colo.

Genus ICTICYON Lund

Icticyon sp. indet.

? Cyon or Ictocyon sp. Matthew, Bull. Amer. Mus. Nat. Hist., XVI, p. 285, 1902; M. Mioc. (Deep River Seq.), Pawnee Creek, Colo.; U.S. Geol. Survey Bull. 361, p. 114, 1909; same data.

Genus CUON Hodgson

Cuon sp. indet.

?Cyon or Ictocyon sp. Matthew, Bull. Amer. Mus. Nat. Hist., XVI, p. 285, 1902; M. Mioc. (Deep River Seq.), Pawnee Creek, Colo.; U.S. Geol. Survey Bull. 361, p. 114, 1909; same data.

Cuon sp. indet. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 504, 1930; same data.

Genus DAPHOENUS Leidy

Daphoenus hartshornianus (Cope).

Canis hartshornianus. Cope, Synopsis of New Vertebrata from the Tert. of Colo., p. 9, 1873; Tertiary, Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 505, 1874; White River, NE. Colo.

Amphicyon hartshornianus. Cope, Amer. Naturalist, XVII, p. 237, f. 2b, 1883; White River, Colo.; Rept. U.S. Geol. Survey Terr., Hayden, III, pp. 896, 906, 1884; same data.

Daphaenus hartshornianus. Scott, Trans. Amer. Philos. Soc., XIX, p. 361, Pl. XIX, f. 1-5; Pl. XX, f. 19-21a, p. 363, text f. A, 2, 1898; White River, Colo. Matthew, Bull. Amer. Mus. Nat. Hist., XII, pp. 52, 62, 1899; M. Olig., NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 357, 1901; Creodon beds, NE. Colo. Wortman and Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 129, 1899; same data.

Protemnocyon hartshornianus. Lambe, Cont. Canad. Pal., III, (4to), pt. IV, pp. 11, 63, Pl. VII, f. 17-20, 1908; Olig., Sask.

Daphoenus hartshornianus. Hay, U.S. Geol. Survey Bull. 179, p. 772, 1902; Olig. (White River), Colo.,

S. Dak.; Carnegie Inst. Wash. Pub. No. 390, II, p. 505, 1930; Brule, Colo., Neb. Matthew, U.S. Geol. Survey Bull. 361, p. 105, 1909; L. Brule, Cedar Creek, Colo. Thorpe, Amer. Jour.Sci., (5), III, p. 429, 1922; same data. Sinclair, Proc. Amer. Philos. Soc., LXIII, pp. 101, 108, 111, 1924; Oreodon beds, S. Dak.

Daphoenus robustus Scott.

Daphaenus robustus. Scott, Princeton Univ. Bull., IX, p. 2, 1897; Olig. (White River), Colo.

Daphoenus robustus. Hay, U.S. Geol. Survey Bull. 179, p. 772, 1902; Olig., (White River), Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 505, 1930; same data.

Daphoenus vetus Leidy.

Daphoenus vetus. Leidy, Proc. Acad. Nat. Sci. Phila., VI, p. 393, 1853; White River, Neb. Wortman and Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 129, 1899; Oreodon beds. Hay, U.S. Geol. Survey Bull. 179, p. 772, 1902; Olig. (White River), S. Dak., Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 505, 1930; same data. Matthew, U.S. Geol. Survey Bull. 361, p. 105, 1909; L. Brule, Cedar Creek, Colo. Thorpe, Amer. Jour. Sci. (5), III, p. 428, 1922; Greeley, Colo.; idem., (5), VI, p. 98, f. 3, 4, 1923; M. Olig., Neb. Sinclair, Proc. Amer. Philos. Soc., LXIII, p. 101, f. 2, 4, 1924; Oreodon beds, S. Dak.

Amphicyon vetus. Cope, Bull. U.S. Geol. and Geog. Survey Terr., VI, p. 178, 1881; "Miocene", N. America; Rept. U.S. Geol. Survey Terr., Hayden, III, p. 894, 1884; White River, NE. Colo.

Daphaenus vetus. Scott, Trans. Amer. Philos. Soc., XIX, Pl. XIX, f. 8-10, 1898; White River, no loc. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 53, 1899; M. Olig., NE. Colo.

Genus EUOPLOCYON Matthew

Euoplocyon sp. indet.

Euoplocyon sp. Matthew, Bull. Amer. Mus. Nat. Hist., L, p. 71, 1924, U. Mioc., (Pawnee Creek), Colo.

Genus HYAENOGNATHUS Merriam

Hyaenognathus pugnator (Cook).

Porthocyon pugnator. Cook, Proc. Colo. Mus. Nat. Hist., IV, p. 5, No. 184, 1922; Pliocene, Yuma Co., Colo. Matthew, Bull. Amer. Mus. Nat. Hist., L, p. 102, 1924; same data.

Hyaenognathus pugnator. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 509, 1930; Pliocene (Snake Creek), Colo.

Genus CYNARCTUS Matthew

Cynarctus saxatilis Matthew.

Cynarctus saxatilis. Matthew, Bull. Amer. Mus. Nat. Hist., XVI, pp. 281-284, text f. 1, 1902; Miocene (Deep River Seq.), Pawnee Creek, Colo.; U.S. Geol. Survey

Bull. 361, p. 114, 1909; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 509, 1930; M. Mioc., (Pawnee Creek), Colo.

Genus TOMARCTUS Cope

Tomarctus brevirostris Cope.

Tomarctus brevirostris. Cope, Palaeont. Bull. No. 16, p. 2, 1873; Synopsis of New Vertebrata from the Tert. of Colo., p. 9, 1873; Tertiary, Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 520, 1874; Loup Fork, NE. Colo.; Bull. U.S. Geol. and Geog. Survey Terr., I, p. 11, 1874; Plioc., N. Colo.; Amer. Naturalist, XVII, p. 243, 1883; Loup Fork, Colo. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 68, 1899; same data; Mem. Amer. Mus. Nat. Hist., I, p. 359, 1901; M. Mioc., Pawnee Creek, Colo.; U.S. Geol. Survey Bull. 361, p. 114, 1909; same data; Amer. Mus. Nat. Hist., Mon. Ser. 2, Pl. CXIXc, f. 4, 1915; same data; Bull. Amer. Mus. Nat. Hist., L, p. 71, 1924; same data. Hay, U.S. Geol. Survey Bull. 179, p. 775, 1902; Mioc. (Loup Fork), Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 509, 1930; U. Mioc. (Pawnee Creek), Colo.; (L. Snake Creek), Neb.; includes Tephrocyon hippophagus in synonymy.

Genus AMPHICYON Lartet

Amphicyon americanus Wortman.

Amphyicyon americanus. Wortman, Amer. Jour. Sci., XI, p. 201, f. A, B, 1901; Loup Fork, Neb. Matthew, Bull. Amer. Mus. Nat. Hist., XVI, pp. 287-288, 1902; Mioc. (Loup Fork), Pawnee Creek, Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 511, 1930; Mioc. (Arikaree), Neb.?

Amphicyon reinheimeri Cook.

Amphicyon reinheimeri. Cook, Proc. Colo. Mus. Nat. Hist., VI, No. 5, p. 29, 1926; M. to U. Mioc., (Pawnee Creek), Weld Co., Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 511, 1930; same data.

Amphicyon sinapius Matthew.

Amphyicyon sinapius. Matthew, Bull. Amer. Mus. Nat. Hist., XVI, pp. 288-289, text f. 2-4, 1902; Mioc. (Deep River Seq.), Pawnee Creek, NE. Colo.; U.S. Geol. Survey Bull. 361, p. 114, 1909; same data; Bull. Amer. Mus. Nat. Hist., L, p. 71, 1924; same data. Frick, idem, LVI, p. 43, 1926; Mioc., no loc. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 511, 1930; Mioc. (Pawnee Creek), Colo.; (Snake Creek), Neb.

Canis sp. incerta. Cope, Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 519, 1874; Mioc. (Loup Fork), Colo.

Amphicyon amnicola. Cook, Neb. Geol. Survey, VII, p. 57, Pl. I, 1915, Snake Creek, Neb.

Pliocyon amnicola. Matthew, Bull. Amer. Mus. Nat. Hist., XXXVIII, p. 185, 1918; Snake Creek, Neb.

Family PROCYONIDAE

Genus PHLAOCYON Matthew

Phlaocyon leucosteus Matthew.

Phlaocyon leucosteus. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 54, 1899; U. Olig., N.E. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 381, f. 7, 1901; same data; U.S. Geol. Survey Bull. 361, p. 112, 1909; Arikaree, Uppermost Martin Canyon, Colo.; Bull. Amer. Mus. Nat. Hist., L, p. 138, 1924; L. Mioc., Colo. Wortman and Matthew, idem., XII, pp. 129, 131, Pl. VI, 1899; U. Olig., Colo. Hay, U.S. Geol. Survey Bull. 179, p. 765, 1902; Olig., Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 514, 1930; L. Mioc. (Harrison), Colo. Zittel and Schlosser, Grundzüge der Palaeont., p. 392, f. 557, 1911; same data. Abel, Die vorzeitlichen Säugetiere, p. 79, f. 44, 1914; same data. Peterson, Ann. Carnegie Mus., XV, p. 301, 1924; same data. Zittel, Textbook of Palaeont., III, p. 69, f. 95, 1925; Mioc., Colo.

Phlaocyon willistoni Peterson.

Phlaocyon willistoni. Peterson, Ann. Carnegie Mus. XV, p. 300, f. 1, 2, 1924; L. Mioc. (Brown's Park), Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 514, 1930; same data.

Family BASSARISCIDAE

Genus BASSARISCOPS Peterson

Bassariscops willistoni Peterson.

Bassariscops willistoni. Peterson, Mem. Carnegie Mus., XI, p. 96, text f. 1-7, 1928; Mioc. or Plioc. (Brown's Park), Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 516, 1930; same data.

Family URSIDAE

Genus URSAVUS Schlosser

?Ursavus pawniensis Frick.

Ursavus pawniensis. Frick, Bull. Amer. Mus. Nat. Hist., LVI, pp. 106, 110, tab. 3, f. 49, 56, 1926; Mioc., Pawnee Buttes, Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 518, 1930; same data.

?Ursavus sp. Matthew, Bull. Amer. Mus. Nat. Hist., XVI, p. 285, 1902; White River, Pawnee Buttes, Colo.

Family MUSTELIDAE

Genus BUNAELURUS Cope

Bunaelurus lagophagus Cope.

Bunaelurus lagophagus. Cope, Synopsis of New Vertebrata from the Tert. of Colo., p. 8, 1873; Tertiary, Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 508, 1874; White River, NE. Colo.; Rept. U.S. Geol. Survey Terr., Hayden, III, p. 946, Pl. LXVIIa, f. 13, 14, 1884; same data. Zittel, Handbuch der Palaeont.,

I Abth, IV Band, p. 649, 1893; same data. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 54, 1899; M. Olig., NE. Colo.; U.S. Geol. Survey Bull. 361, p. 105, 1909; L. Brule, Cedar Creek, NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 357, 1901; same data; Bull. Amer. Mus. Nat. Hist., XVI, p. 137, f. 1-3, 1902; U. Oreodon beds, E. Pawnee Butte, Colo. Hay, U.S. Geol. Survey Bull., 179, p. 767, 1902; Olig., Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 525, 1930; same data. Zittel and Schlosser, Grundzüge der Palaeont., p. 393, f. 559, 1911; White River, no loc. Zittel, Textbook of Palæeont., III, p. 70, f. 98, 1925; Olig., Colo.

Canis osorum. Cope, Synopsis of New Vertebrata from the Tert. of Colo., p. 10, 1873; Tertiary, Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 507, 1874; White River, NE. Colo.; Rept. U.S. Geol. Survey Terr., Hayden, III, p. 947, Pl. LXVIIa f. 12, 1884; same data. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 54, 1899; M. Olig., NE. Colo.; in synonymy of Bunaelurus lagophagus; idem., XVI, p. 137, text f. 1-3, 1902; U. Oreodon beds, Pawnee Buttes, Colo.

Genus PLIONICTIS Matthew

Plionictis ogygia (Matthew)

Mustela ogygia. Matthew, Mem. Amer. Mus. Nat. Hist., I, p. 383, f. 8-9, 1901; U. Mioc., NE. Colo.; U.S. Geol. Survey Bull. 361, p. 114, 1909; M. Mioc. (Deep

River Seq.), Pawnee Creek, Colo.

Plionictis ogygia. Matthew, Bull. Amer. Mus. Nat. Hist., L, pp. 71, 135, 1924; M. Mioc. (Pawnee Creek), NE. Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 527, 1930; same data.

Plionictis parviloba (Cope).

Aelurodon mustelinus. Cope, Palaeont. Bull. No. 14, p. 1, 1873; not Mustela (Plesiogale) mustelina Pomel.

Martes mustelinus. Cope, Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 520, 1874; Loup Fork, NE. Colo.; Bull. U.S. Geol. and Geog. Survey Terr., I, p. 11, 1874; "Plioc.", N. Colo.

Mustela parviloba. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 68, 1899; Loup Fork, NE. Colo.; U.S. Geol. Survey Bull. 361, p. 114, 1909; M. Mioc. (Deep River Seq.), Pawnee Creek, Colo. Hay, U.S. Geol. Survey Bull. 179, p. 767, 1902; Mioc. (Loup Fork), Colo., Neb.

Plionictis parviloba. Matthew, Bull. Amer. Mus. Nat. Hist., L, pp. 65, 71, 136, f. 35, 1924; U. Mioc., Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 527, 1930; same data.

Genus MUSTELA Linnaeus

Mustela sp. indet.

Mustela sp. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 68, 1899; Loup Fork, NE. Colo.

Genus LEPTARCTUS Leidy

Leptarctus primus Leidy.

Leptarctus primus. Leidy, Proc. Acad. Nat. Sci. Phila., VIII, p. 311, 1856; Mioc., S. Dak. Matthew, Bull. Amer. Mus. Nat. Hist., L, pp. 65, 71, 88, 139, f. 37, 38, 1924; U. Mioc., Pawnee Creek, Colo.

Genus STHENICTIS Peterson

Sthenictis lycopotamica (Cope).

Lutrictis lycopotamicus. Cope, Bull. U.S. Geol. and Geog. Survey Terr., V, p. 66, 1879; Mioc., Ore. Hay, U.S. Geol. Survey Bull. 179, p. 769, 1902; Mioc. (Loup Fork), Ore.

Lutra lycopotamica. Zittel, Handbuch der Palaeont., I Abth, IV Band, p. 654, 1893; Loup Fork, N. America.

Potamotherium lycopotamicum. Thorpe, Amer. Jour. Sci., (5), III, p. 444, 1922; Mioc., Neb.

Sthenictis lycopotamica. Matthew, Amer. Mus. Nat. Hist. Mon. Ser. 2, Pl. CXIXc f. 5, 1915; M. Mioc., Pawnee Creek, NE. Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, 536, 1930; M. Mioc. (Mascall), Colo.; Mioc., Neb.

Family FELIDAE

Genus DINICTIS Leidy

Dinictis felina Leidy.

Deinictis felina. Leidy, Proc. Acad. Nat. Sci. Phila., VIII, p. 91, 1856; White River, Neb. Hay,

U.S. Geol. Survey Bull. 179, p. 780, 1902; Olig., (White River), S. Dak., Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 541, 1930; Olig. (Brule), S. Dak., Neb.

Dinictis felina. Leidy, 2d (4th) Rept. U.S. Geol. Survey Terr., Hayden, p. 343, 1871; White River, S. Dak. Cope, Amer. Naturalist, XIV, p. 846, 1880; White River, Colo.; Rept. U.S. Geol. Survey Terr., Hayden, III, pp. 974, 978, 1884; same data. Adams, Amer. Jour. Sci. (4), I, p. 430, Pl. XII, f. 3, 1896; no data. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 54, 1899; Olig.; S. Dak.; idem., XXVIII, p. 310, 1910; Oreodon beds, (White River), S. Dak., Colo. Zittel, Handbuch der Palaeont., I Abth, IV Band, p. 669, f. 559, 1893; L. Micc., Neb.

Dinictis fortis Adams.

Dinictis fortis. Adams, Amer. Naturalist, XXIX, p. 574, text f. 1, 1895; Olig., no loc.; Amer. Jour. Sci., (4), I, pp. 430, 436, Pl. XII, f. 4, 1896; no loc. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 54, 1899; Olig., S. Dak.

Deinictis fortis. Hay, U.S. Geol. Survey Bull. 179, p. 780, 1902; Olig., (White River), Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 542, 1930; Olig. (Chadron), S. Dak.

Dinictis squalidens (Cope).

Daptophilus squalidens. Cope, Palaeont. Bull. No. 16, p. 2, 1873; Synopsis of New Vertebrata from the Tert. of Colo., p. 9, 1873; Tertiary, Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 508, 1874; White River, NE. Colo.

Dinictis squalidens. Hay, U.S. Geol. Survey Bull. 179, p. 780, 1902; Olig., (White River), Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 542, 1930; M. Olig., Colo.; Brule, Neb.

Dinictis squalidens. Cope, Proc. Acad. Nat. Sci. Phila., 1879, p. 176; White River, Colo.; Amer. Naturalist, XIV, p. 847, 1880; same data; Rept. U.S. Geol. Survey Terr. Hayden, III, pp. 974, 979, Pl. LXVIIa, f. 15, 16, 1884; same data. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 54, 1899; M. Olig. (White River), NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 390, f. 11-15, Pl. XXXVIII, 1901; L. Brule, Cedar Creek, Colo.; U.S. Geol. Survey Bull. 361, p. 105, 1909; same data; Bull. Amer. Mus. Nat. Hist., XXVIII, p. 310, 1910; same data. Osborn, Evol. of Mammalian Molar Teeth, p. 140, f. 97, 1907; Olig., Colo. Sinclair, Proc. Amer. Philos. Soc., LXIII, pp. 102, 112, 1924; Creodon beds, S. Dak.

Genus HOPLOPHONEUS Cope

Hoplophoneus latidens Thorpe.

Hoplophoneus latidens. Thorpe, Amer. Jour. Sci. (4), L, pp. 214-218, text f. 2, 3, 1920; Olig. (White

River), near Pine Bluffs, Colo. Sinclair, Proc. Amer. Philos. Soc., LXIII, pp. 112, 116, 118, 1924, no data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 544, 1930; Olig. (White River), Colo.

Hoplophoneus oreodontis (Cope).

Machaerodus oreodontis. Cope, Synopsis of New Vertebrata from the Tert. of Colo., p. 9, 1873; Tertiary, Colo.

Hoplophoneus oreodontis. Cope, Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 509, 1874; White River, NE. Colo.; Bull. U.S. Geol. and Geog. Survey Terr., I, p. 23, 1874; "Pliocene", N. Colo.; Amer. Naturalist, XIV, p. 850, 1880; White River, NE. Colo.; Rept. U.S. Geol. Survey Terr., Hayden, III, pp. 976, 993, Pl. LXVIIa, f. 17; Pl. LXXVa, f. 1, 2, 1884; same data. Adams, Amer. Jour. Sci. (4), I, p. 429, Pl. XI, f. 2, 1896; White River; Amer. Naturalist, XXX, p. 50, Pl. I, f. 2, 1896; no data. Matthew, Bull. Amer. Mus. Nat. Hist. XII, p. 55, 1899; N. Olig. (White River), NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 357, 1901; Oreodon beds, Colo.; U.S. Geol. Survey Bull., 361, p. 105, 1909; L. Brule, Cedar Creek, NE. Colo.; Bull. Amer. Mus. Nat. Hist., XXVIII, p. 313, 1910; White River, Colo., S. Dak. Thorpe, Amer. Jour. Sci. (4), L, p. 213, 1920; Olig., no loc. Sinclair, Proc. Amer. Philos. Soc., LXIII, p. 118, 1924; White River, NE. Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p.

544, 1930; M. Olig. (Brule), Neb.; (Cedar Creek), Colo.

Genus MACHAIRODUS Kaup

Machairodus catocopis Cope.

Machaerodus catocopis. Cope, Amer. Naturalist, XXI, p. 1019; Loup Fork, Kas. Matthew, Bull. Amer. Mus. Nat. Hist., L, p. 148, 1924; Snake Creek, Neb.; Heterofelis coloradensis a synonym.

Machaerodus (Heterofelis) coloradensis. Cook, Proc. Colo. Mus. Nat. Hist., IV, p. 7, No. 211, 1922; Pliocene, Yuma Co., Colo.

Horlophoneus catocopis. Hay, U.S. Geol. Survey Bull. 179, p. 778, 1902; Mioc. (Loup Fork), Kas.

Machairodus catocopis. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 546, 1930; U. Mioc. or L. Plioc., Kas.; Plioc. (Snake Creek), Neb., Colo.

Genus METAILURUS Zdansky

Metailurus intrepidus (Leidy).

Felis (Pseudaelurus) intrepidus. Leidy, Proc. Acad. Nat. Sci. Phila., X, p. 22, 1858; Pliocene, Neb.

Drepanodon intrepidus. King, U.S. Geol. Explor. 40th Parallel, I, p. 411, 1878; "Miocene", Great Plains.

Pseudaelurus intrepidus. Leidy, 2d (4th) Ann. Rept. U.S. Geol. Survey Terr., Hayden, p. 343, 1871; Pliocene, Neb. Cope, Amer. Naturalist, XIII, p. 798a, 1879; Loup Fork, Colo. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 68, 1899; same data; Mem. Amer. Mus. Nat.

Hist., I, p. 359, 1901; M. Mioc. (Deep River Seq.), Pawnee Creek, Colo.; U.S. Geol. Survey Bull. 361, p. 114, 1909; same data; Bull. Amer. Mus. Nat. Hist., XXVIII, p. 312, 1910; same data. Hay, U.S. Geol. Survey Bull. 179, p. 782, 1902; Mioc. (Loup Fork), Neb., Colo.

Metailurus intrepidus. Zdansky, Paleont. Sinica, II, fasc. 1, pp. 127, 131, 1924; Snake Creek beds, Neb. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 550, 1930; M. Mioc., Colo.; Mioc., Neb.

Metailurus marshi (Thorpe).

Pseudaelurus marshi. Thorpe, Amer. Jour. Sci. (5), III, pp. 446-447, text f. 12, 1922; M. or U. Mioc., NE. Colo.

Metailurus marshi. Zdansky, Paleont. Sinica, II, fasc. 1, pp. 131, 134, 1924; M. or U. Mioc., N. America. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 550, 1930; U. Mioc. (Valentine), Neb.

Order AMBLYPODA

Family PERIPTYCHIDAE

Genus PERIPTYCHUS Cope

Periptychus sp. indet.

Periptychus sp. Granger, Bull. Amer. Mus. Nat. Hist., XXXVII, p. 828, 1917; L. Eocene, SW. Colo. Reeside, U.S. Geol. Survey Prof. P. 134, p. 46, 1924; same data.

Family CORYPHODONTIDAE

Genus CORYPHODON Owen

Coryphodon ventanus Osborn.

Coryphodon ventanus. Osborn, Bull. Amer. Mus. Nat. Hist., X, pp. 191, 197, 210, f. 16, 17, 26D, 1898; Wind River Eocene, Wyo. Matthew, idem., XII, p. 36, 1899; L. Huerfano, SE. Colo.; U.S. Geol. Survey Bull. 361, p. 94, 1909; same data. Hay, U.S. Geol. Survey Bull. 179, p. 700, 1902; Eocene, Wyo., Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 616, 1930; same data.

Family EOBASILEIDAE

Genus UINTATHERIUM Leidy

?Uintatherium sp. indet.

?Uintatherium sp. Osborn, Bull. Amer. Mus. Nat. Hist., IX, p. 258, 1897; Eocene (U. Huerfano), SW. Colo. Matthew, U.S. Geol. Survey Bull. 361, p. 97, 1909; same data.

Genus UINTACOLOTHERIUM Cook

Uintacolotherium blayneyi Cook.

Uintacolotherium blayneyi. Cook, Proc. Colo. Mus. Nat. Hist., VI, p. 7, Nos. 495, 496, 1926; Eocene, Moffat Co., Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 619, 1930; M. Eocene (Bridger), Colo.

Order PROBOSCIDEA

Family ELEPHANTIDAE

Genus MAMMUT Blumenbach

Mammut americanum (Kerr).

Elephas americanus. Kerr, The Animal Kingdom, p. 116, 1792.

Mastodon americanus. Leidy, 2d (4th) Ann. Rept. U.S. Geol. Survey Terr., Hayden, p. 358, 1871; Pleist., N. America; Rept. U.S. Geol. Survey Terr., Hayden, I, pp. 237, 255, 330, Pl. XXII, f. 5, 6; Pl. XXVIII, f. 9; 1873; same data. Marsh, U.S. Geol. Survey Mon. X, f. 74, 1884; same data; U.S. Geol. Survey, 5th Ann. Report, f. 107; 1885; same data.

Tapirus mastodontoides. Harlan, Fauna Americana, p. 224, 1825.

Mastodon giganteum. Foster, Amer. Jour. Sci., XXXVI, p. 189, f. 1, 1839; Chio.

Tetracaulodon godmani. Hays, Proc. Amer. Philos. Soc., II, p. 265, 1842.

Mastodon giganteus. Warren, The Mastodon Giganteus of North America: Pl. I--XXVI + 1, 1852.

Trilophodon ohioticus. Cope, Proc. Amer. Philos. Soc., XI, p. 15, 1871; Pleist., N. J.

Mastodon ohioticus. Cope, Ann. Rept. Geog. Explor. and Surveys west of 100th Meridian, Wheeler, App. LL, p. 66, 1875.

Mammut americanum. Hay, U.S. Geol. Survey Bull. 179, p. 708, 1902; Pleist., N. America; Carnegie Inst. Wash. Pub. No. 322-A, p. 35, 1924; Pleist.; Colo. localities: Pueblo, Golden; idem., 390, II, p. 630; Pleist., all of N. America.

Genus ANANCUS Lartet

Anancus? hicksi (Cook).

Trilophodon hicksi. Cook, Proc. Colo. Mus. Nat. Hist., IV, pp. 5, 6, f. 1-3, 1922; U. Mioc. or L. Plioc., Yuma Co., Colo.; idem., VIII, p. 39, 1928; same data.

Anancus? hicksi. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 631, 1930; U. Mioc.?, Colo.

Genus GOMPHOTHERIUM Burmeister

Gomphotherium obscurum (Leidy).

Mastodon obscurus. Leidy, Jour. Acad. Nat. Sci. Phila., (2), VII, p. 396, Pl. XXVII, f. 13, 1869; Mioc., Md.; Proc. Acad. Nat. Sci. Phila., 1870; p. 99; same data; 2d (4th) Ann. Rept. U.S. Geol. Survey Terr., Hayden, p. 358, 1871; Pleist., N. America. Marsh, U.S. Geol. Survey Mon. XXVII, p. 527; Pliohippus beds, Cheyenne Co., Colo.

Tetrabelodon obscurus. Cope, Amer. Naturalist, XXIII, pp. 196, 200, 203, 1889; N. America.

Mammut obscurum. Hay, U.S. Geol. Survey Bull. 179, p. 711, 1902; Mioc., Md., N. Caro., S. Caro., Colo.

Mastodon longirostris. Harlan, Amer. Jour. Sci., XLIII, p. 143, 1842; Mioc., Ga.

Mastodon angustidens. Gibbes, Proc. Amer. Assoc. Adv. Sci., 3d Meeting, p. 69, 1870; Mioc., N. Caro.

Gomphotherium obscurum. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 637, 1930; Mioc.?, Md.?

Gomphotherium paladentatum (Cook).

Trilophodon paladentatus. Cook, Proc. Colo. Mus. Nat. Hist., IV, pp. 6, 7, f. 5, 6, 1922; U. Mioc. or L. Plioc., Yuma Co., Colo.; idem., p. 38, 1928; same data.

Gomphotherium paladentatum. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 637, 1930; U. Mioc.?, Colo.

Gomphotherium petersoni Hay.

Gomphotherium petersoni. Hay, in Peterson, Mem. Carnegie Mus., XI, p. 121, 1928; Mioc. (Brown's Park), Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 638, 1930; same data.

Serridentinus fricki. Peterson, Mem. Carnegie Mus. XI, p. 111, Pls. XI, XV, text f. 21, 22, 1928; Mioc. (Brown's Park), Colo.

Gomphotherium? proavus (Cope).

Mastodon proavus. Cope, Synopsis of New Vertebrata from the Tert. of Colo., p. 10, 1873; Tertiary, Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 531, 1874; Loup Fork, NE. Colo.; Bull. U.S. Geol. and Geog. Survey Terr., I, p. 22, 1874; "Pliocene",

N. Colo. Scott, Amer. Naturalist, XXVII, p. 659, 1893; Loup Fork.

Mammut proavus. Hay, U.S. Geol. Survey Bull. 179, p. 711, 1902; Mioc. (Loup Fork), Kas., Neb., Colo., N. Mex.

Tetrabelodon proavus. Lull, Amer. Jour. Sci., (4), XXV, p. 190, 1908; Mioc., N. America.

Trilophodon (=Gomphotherium) proavus. Matthew, U. S. Geol. Survey Bull. 361, p. 114, 1909; M. Mioc., (Pawnee Creek), Colo.

Trilophodon proavus. Osborn, Age of Mammals: p. 292, 1910; no data.

Rhynchotherium proavus. Osborn, Amer. Mus. Novit. I, p. 6, 1921; M. Mioc. (Pawnee Creek), Colo.

Mastodon angustidens. Cope, Amer. Naturalist, XVIII, p. 525, 1884; Loup Fork, Kas., Neb., S. Dak.

Tetrabelodon angustidens. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 68, 1899; Loup Fork, N. Mex., Neb.

Gomphotherium? proavus. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 638, 1930; M. Mioc. (Pawnee Creek), Colo.

Gomphotherium rectidens (Osborn).

Rhynchotherium rectidens. Osborn, Amer. Mus. Novit., XCIX, p. 3, 1923; M. Mioc., Pawnee Buttes, Colo.

Gomphotherium rectidens. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 638, 1930; M. Mioc., Pawnee Buttes.

Genus ELEPHAS Linnaeus.

Elephas columbi Falconer.

Elephas (Euelephas) columbi. Falconer, Quart. Jour. Geol. Soc. Lond., 1857, p. 319.

Elephas columbi. Leidy, Proc. Acad. Nat. Sci. Phila., 1870, p. 97; Pleist., Texas. Hay, U.S. Geol. Survey Bull. 179, p. 713, 1902; Pleist., Ga., S. Caro., Ala., Texas, Colo., Ore., N. Mex., Cal., N. Y., Fla., Mexico, Canada; Carnegie Inst. Wash. Pub. No. 322-A, p. 72, 1924; Pleist.; Colo. localities: Grass Valley, Colorado City, Elbert, Calhan, Monument, Parker, Denver, Golden, Greeley, Big Thompson Creek, Ft. Collins, Hayden; idem.390, II, p. 644, 1930; greater part of N. America. Richardson, U.S. Geol. Survey Folio 198, p. 9, 1915; Pleist., Elbert, Colo.

Elephas primigenius columbi. Cope, Amer. Naturalist, XXIII, p. 209, Pl. XIV, 1889; Pleist., Texas.

Elephas jacksoni. Briggs and Foster, Canadian Nat. and Geog. (I), VIII, f. 1-5, 1863; Pleist., Canada.

Elephas americanus (part). Leidy, 2d (4th) Ann. Rept. U. S. Geol. Survey Terr., Hayden, p. 359, 1871; Pleist., N. America.

Elephas imperator Leidy.

Elephas imperator. Leidy, Proc. Acad. Nat. Sci. Phila., 1858, p. 10; Pleist., Neb.; Jour. Acad. Nat. Sci. Phila. (2), VII, pp. 252, 254, Pl. XXV, f. 3, 1869;

same data. Hay, Carnegie Inst. Wash. Pub. No. 322-A, p. 97, 1924; Pleist.; Colo. localities: Laveta, Colorado Springs, Denver, Boulder, Ft. Collins, South Canyon (near Glenwood Springs): idem., 390, II, p. 646, 1930; Early Pleist., western and southern U.S., Mexico.

Archidiskodon imperator. Osborn, Nat. Hist., XXV, pp. 28, 31, f. 3, 1925; Pleist., N. America.

Elephas texianus. Blake, The Geologist, V, Pl. IV, 1862; Pleist., Texas.

Elephas columbi (non Falconer). Finlay, U.S. Geol. Survey Folio 203, p. 11, 1916; Colorado Springs, Colo.

Elephas sp. indet.

Elephas sp. Berthoud and Rockwell, Amer. Jour. Sci., (3), III, pp. 302, 373, 1872; Pleist., Golden, Colo. Emmons, U.S. Geol. Survey Mon. XXVII, p. 260, 1896; Pleist., Denver. Richardson, U.S. Geol. Survey Folio 198, p. 9, 1915; Pleist., near Castle Rock; also near Melvin, Colo. Hay, Carnegie Inst. Wash. Pub. No. 322-A, p. 111, 1924; same localities.

"Elephas primigenius". Woodhull, Amer. Jour. Sci. (3), III, p. 374, 1872; Ft. Lyon, Colo.

Order ANCYLOPODA

Family CHALICOTHERIIDAE

Genus CHALICOTHERIUM Kaup

Chalicotherium sp. indet.

Chalicotherium? sp. Peterson, Mem. Carnegie Mus. XI, p. 110, f. 70, 1928; Mioc. or Plioc. (Brown's Park), Colo.

Family MOROPODIDAE

Genus MOROPUS Marsh

Moropus matthewi Holland and Peterson.

Moropus matthewi. Holland and Peterson, Mem. Carnegie Mus. III, pp. 217, 230, 1913; M. Mioc., Pawnee Creek, Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 662, 1930; same data.

Moropus sp. indet.

Moropus sp. Matthew, U.S. Geol. Survey Bull. 361, p. 115, 1909; M. Mioc. (Deep River Seq.), Pawnee Creeek, NE. Colo.

Order PERISSODACTYLA

Family EQUIDAE

Genus EOHIPPUS Marsh

Eohippus venticolus (Cope).

Hyracotherium venticolum. Cope, Bull. U.S. Geol. and Geog. Survey Terr., VI, p. 198, 1881; Wind River

Eocene, Wyo.; Amer. Naturalist, XXI, p. 995, Pl. XXX, text f. 5-7, 1887; same data.

Protorohippus venticolus. Wortman, Bull. Amer. Mus. Nat. Hist., VIII, p. 105, Pl. II, f. N, text f. 14, 15, 1896; Wind River, Wyo. Matthew, idem., XII, p. 36, 1899; Huerfano, SE. Colo. Hay, U.S. Geol. Survey Bull. 179, p. 610, 1902; Eocene, Wyo., Colo.

Eohippus venticolus. Granger, Bull. Amer. Mus. Nat. Hist., XXIV, pp. 245-247, 1908; Huerfano Basin, SE. Colo. Matthew, U.S. Geol. Survey Bull. 361, p. 95, 1909; L. Eoc., Huerfano Basin, Colo. Loomis, Evolution of the Horse, p. 80, 1926; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 669, 1930; L. Eocene, Wyo., N. Mex.

Genus MESOHIPPUS Marsh

Mesohipppus bairdii (Leidy).

Palaeotherium bairdii. Leidy, Proc. Acad. Nat. Sci. Phila., V, p. 122, 1850; Olig., S. Dak.

Anchitherium bairdii. Cope, Synopsis of New Vertebrata from the Tert. of Colo., p. 14, 1873; Tertiary, Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 496, 1874; White River, NE. Colo.

Titanotherium bairdii. Osborn, Bull. Amer. Mus. Nat. Hist., VIII, p. 174, 1896; no data.

Miohippus bairdi. Hay, U.S. Geol. Survey Bull. 179, p. 613, 1902; Olig., S. Dak., Neb., Colo., Ore.?

Mesohippus bairdii. Marsh, Amer. Jour. Sci., (3),

IX, p. 248, 1875; "Miocene". Scott and Osborn, Bull. Mus. Comp. Zool., XX, p. 87, f. 10, 11, 1890; White River, S. Dak., Neb. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 55, 1899; M. Olig. (White River), NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 357, 1901; Oreodon beds, NE. Colo.; U.S. Geol. Survey Bull. 361, p. 106, 1909; same data. Osborn, Bull. Amer. Mus. Nat. Hist., XX, pp. 168, 172, Pls. IV; V, B, text f. 3, 1904; Olig., S. Dak.; Mem. Amer. Mus. Nat. Hist., n.s., II, pt. 1, pp. 37, 45, 46, Pl. 1, f. 3, 4; Pl. 2, f. 4, 13; Pl. 39, f. 15, 18; Pl. 51, f. 7, 11; text f. 25, 26; 1918; Olig., S. Dak. Loomis, Evolution of the Horse, pp. 103, 105, Pl. VIII, 1926. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 673, 1930; M. Olig. (Brule); S. Dak., Neb., Colo.?, Mont.?

Mesohippus celer (Marsh).

Anchitherium celer. Marsh, Amer. Jour. Sci. (3), VII, p. 251, 1874; Olig., Neb.

Miohippus celer. Marsh, U.S. Geol. Survey Mon. XXVII, p. 524, f. 101, 1897; "Miocene". Hay, U.S. Geol. Survey Bull. 179, p. 613, 1902; Olig., Colo.?

Mesohippus celer. Marsh, Amer. Jour. Sci. (3), IX, p. 248, 1875; "Miocene"; idem., XLIII, p. 350, f. 18, 19, 1892; same data. Osborn and Wortman, Bull. Amer. Mus. Nat. Hist., VII, p. 353, 1895; "Mioc.", Colo. Matthew, idem. XII, p. 56, 1899; White River, no loc. Osborn, Mem. Amer. Mus. Nat. Hist., n.s., II, pp.

36-38, Pl. 2, f. 9, text f. 17, 1918; Olig., Neb. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 674, 1930; L. Olig. (Chadron), S. Dak., Neb.

Mesohippus cuneatus (Cope).

Anchitherium cuneatum. Cope, Palaeont. Bull. No. 16, p. 7, 1873; White River, NE. Colo.; Synopsis of New Vertebrata from the Tert. of Colo., p. 14, 1873; Tertiary, Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 497, 1874; White River, NE. Colo. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 56, 1899; M. Olig. (White River), NE. Colo.; in synonymy of Mesohippus bairdi.

Miohippus cuneatus. Hay, U.S. Geol. Survey Bull. 179, p. 614; 1902; Olig., Colo.

Mesohippus cuneatus. Osborn and Wortman, Bull. Amer. Mus. Nat. Hist., VII, p. 353, footnote, 1895; "Miocene", Colo. Osborn, Mem. Amer. Mus. Nat. Hist., n.s., II, pp. 37, 47, 1918, M. Olig. (White River), Cedar Creek, Logan Co., Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 674, 1930; same data.

Mesohippus eulophus Osborn.

Mesohippus eulophus. Osborn, Bull. Amer. Mus. Nat. Hist., XX, pp. 168, 173, text f. 5, 1904; M. Olig., U. Oreodon beds, Cedar Creek, Colo.; Mem. Amer. Mus. Nat. Hist., n.s., II, pp. 37, 49, Pl. 1, f. 6; Pl. 2, f. 8; text f. 29, 1918; same data. Matthew,

U.S. Geol. Survey Bull. 361, p. 106, 1909; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 674, 1930; same data.

Mesohippus exoletus (Cope).

Anchitherium exoletum. Cope, Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 496, 1874; White River, NE. Colo. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 56, 1899; M. Olig., NE. Colo.; in synonymy of Meschippus bairdi.

Michippus exoletus. Hay, U.S. Geol. Survey Bull. 179, p. 614, 1902; White River, Colo.

Mesohippus exoletus. Osborn and Wortman, Bull. Amer. Mus. Nat. Hist., VII, p. 353, 1895; "Mioc.", Colo. Osborn, idem., XX, p. 173, 1904; no data; Mem. Amer. Mus. Nat. Hist., n.s., II, pp. 37, 47, 1918; Olig. (White River), Cedar Creek, Logan Co., Colo. Matthew, U.S. Geol. Survey Bull. 361, p. 106, 1909; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 674, 1930; same data.

Genus HYPOHIPPUS Leidy

Hypohippus equinus (Scott).

Anchitherium equinum. Scott, Amer. Naturalist, XXVII, p. 661, 1893; Deep River, Mont. Hay, U. S. Geol. Survey Bull. 179, p. 615, 1902; same data.

Hypohippus equinus. Gidley, Bull. Amer. Mus. Nat. Hist., XX, p. 192, 1904; no data; idem., XXIII, pp.

875, 923; 1907; Mioc., Mont. Osborn, Mem. Amer. Mus. Nat. Hist., n.s., II, pp. 16, 17, 203, 204; text f. 167, 1918; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 679, 1930; M. Mioc. (Deep River), Mont., Colo., (Virgin Valley), Nev.

Hypohippus osborni Gidley.

Hypohippus osborni. Gidley, Bull. Amer. Mus. Nat. Hist., XXIII, pp. 876, 930, 1907; M. Mioc., (Pawnee Creek beds), Pawnee Buttes, Colo.: Sci. Monthly, XXV, p. 268, 1927; Mioc., no loc. Matthew, U.S. Geol. Survey Bull. 361, p. 115, 1909; Deep River Seq., Pawnee Creek, Colo.; Bull. Amer. Mus. Nat. Hist., L, pp. 66, 72, 171, 1924; same data.; Quart. Rev. Biol., I, p. 166, 1926; same data. Osborn, Mem. Amer. Mus. Nat. Hist., n.s., II, pp. 204, 207, Pl. 5, f. 9; Pl. 6, f. 4; Pl. 35, f. 2, 4; Pl. 39, f. 8, 11; Pl. 51, f. 2, 5; text f. 51, 168; 1918; same data. Gregory, Bull. Amer. Mus. Nat. Hist., XLII, p. 273, Pl. XVIII, 1920; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 679, 1930; U. Mioc. (Pawnee Creek), Colo.; (L. Snake Creek), Neb.; (Virgin Valley), Nev.; (Cedar Mt.), Cal.

Hypohippus sp. indet.

Hypohippus sp. Matthew, U.S. Geol. Survey Bull. 361, p. 115, 1909; M. Mioc. (Deep River Seq.), Pawnee Creek, Colo.

Genus PARAHIPPUS Leidy

Parahippus coloradensis Gidley.

Parahippus coloradensis. Gidley, Bull. Amer. Mus. Nat. Hist., XXIII, pp. 876, 932, 1907; M. Mioc. (Pawnee Creek beds), Logan Co., Colo. Matthew, U.S. Geol. Survey Bull. 361, p. 115, 1909; same data; Bull. Amer. Mus. Nat. Hist., L, p. 155, 1924; same data. Osborn, Mem. Amer. Mus. Nat. Hist., n.s., II, pp. 75, 93-94, Pl. 8, f. 7; Pl. 12; text f. 70, 1918; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 681, 1930; same data.

Parahippus pawniensis Gidley.

Parahippus pawniensis. Gidley, Bull. Amer. Mus. Nat. Hist., XXIII, pp. 876, 932, 1907; M. Mioc. (Pawnee Creek beds); NE. Colo. Matthew, U.S. Geol. Survey Bull. 361, p. 115, 1909; same data. Osborn, Mem. Amer. Mus. Nat. Hist., n.s., II, pp. 75, 92, Pl. 8, f. 3; Pl. 9, f. 3; text f. 68, 69, 1918; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 682, 1930; same data.

Parahippus texanus (Leidy).

Anchippus texanus. Leidy, Proc. Acad. Nat. Sci. Phila., 1868, p. 231; Miocene, Texas; 2d (4th) Ann. Rept. U.S. Geol. Survey Terr., Hayden, p. 362, 1871; same data. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 56, 1899; U. Olig. (White River), NE. Colo.?; Mem. Amer. Mus. Nat. Hist., I, p. 358, 1901; same data. Hay, U.S. Geol. Survey Bull. 179, p. 615, 1902; Mioc. Texas, Colo.

Parahippus texanus. Osborn, Mem. Amer. Mus. Nat. Hist., n.s., II, pp. 75, 84; Pl. 8, f. 3; Pl. 9, f. 1; text f. 59, 1918; M. Mioc., Texas. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 682, 1930; same data.

Parahippus sp. indet.

Parahippus sp. Cockerell, Science, n.s., XXVIII, p. 683, 1908; M. or U. Mioc., Middle Park, Colo. Matthew, U.S. Geol. Survey Bull. 361, p. 113, 1909; Arikaree, Uppermost Martin Canyon, Colo.

Genus MERYCHIPPUS Leidy

Merychippus calamarius (Cope).

Hippotherium calamarium. Cope, Proc. Acad. Nat. Sci. Phila., 1875, p. 259; Santa Fe Marls, N. Mex.; Proc. Amer. Philos. Soc., XXVI, p. 451, f. 15, 1889; Loup Fork, N. Mex., Colo.

Hipparion calamarium. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 70, 1899; Loup Fork, NE. Colo. Hay, U.S. Geol. Survey Bull. 179, p. 619, 1902; Miocene, N. Mex., Colo.

Merychippus calamarius. Osborn, Mem. Amer. Mus. Nat. Hist., n.s., II, pp. 99, 123-125, Pl. 11, f. 4; Pl. 17, f. 8; Pl. 18, f. 2, 6; text f. 98, 1918; Santa Fe Marls, N. Mex. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 684, 1930; L. Plioc., N. Mex., Neb. Cal.

Merychippus campetris Gidley.

Merychippus campestris. Gidley, Bull. Amer. Mus. Nat. Hist., XXIII, pp. 876, 928, 1907; M. Mioc., Pawnee Buttes, Colo. Matthew, U.S. Geol. Survey Bull. 361, p. 115, 1909; same data; Bull. Amer. Mus. Nat. Hist., L, p. 67, 1924, Mioc., Neb. Osborn, Mem. Amer. Mus. Nat. Hist., n.s., II, pp. 99, 114-115, Pl. 15, f. 4, 5; Pl. 19, f. 3, 4; Pl. 26, f. 1; Pl. 44, f. 1; Pl. 49, f. 1; Pl. 50, f. 3, 7; text f. 88, 89, 1918; M. Mioc., (Pawnee Creek formation), Pawnee Buttes, Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 684, 1930; U. Mioc., Colo., Neb.

Merychippus eohipparion Osborn.

Merychippus eohipparion. Osborn, Mem. Amer. Mus. Nat. Hist., n.s., II, pp. 99, 117, Pl. 20, f. 2; Pl. 44, f. 3; Pl. 47, f. 3; Pl. 49, f. 3; Pl. 50, f. 4, 8; Pl. 54, f. 3; text f. 92, 1918; M. Mioc. (Pawnee Creek beds), Pawnee Buttes, Colo. Matthew, Bull. Amer. Mus. Nat. Hist., L, pp. 67, 72, 159, 1924; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 684, 1930; U. Mioc., Colo., Neb.

Merychippus eoplacidus Osborn.

Merychippus eoplacidus. Osborn, Mem. Amer. Mus. Nat. Hist., n.s., II, pp. 99, 114; Pl. 20, f. 1, Pl. 39, f.6; Pl. 44, f. 2; Pl. 47, f. 1; Pl. 49, f. 2; Pl. 54, f. 2; text f. 90, 1918; M. Mioc. (Pawnee Creek beds), Pawnee Buttes, Colo. Hay, Carnegie Inst.

Wash. Pub. No. 390, II, p. 684, 1930; U. Mioc., Colo., Neb.

Merychippus isonesus (Cope).

Hippotherium isonesum. Cope, Proc. Amer. Philos. Soc., XXVI, p. 451, f. 23, 1889; John Day beds, Ore.

Hipparion isonesum. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 70, 1899; Loup Fork, NE. Colo. Hay, U.S. Geol. Survey Bull. 179, p. 620, 1902; Mioc., Mont., Ore., Colo.

Hippotherium seversum (part). Cope, Proc. Amer. Philos. Soc., XXIII, p. 359, 1886.

Merychippus isonesus. Osborn, Mem. Amer. Mus. Nat. Hist., n.s., II, pp. 99, 101, Pl. 6, f. 8; Pl. 10, f. 4; Pl. 13, f. 1, 2; Pl. 17, f. 3, 4; Pl. 42, f. 1, 2; text f. 75, 77, 1918; John Day beds, Ore. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 685, 1930; M. Mioc., Ore., Cal.

Merychippus labrosus (Cope).

Protohippus labrosus. Cope, Bull. U. S. Geol. and Geog. Survey Terr., I, p. 13, 1874; "Pliocene", N. Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 523, 1874; Loup Fork, NE. Colo. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 69, 1899; same data; doubtfully included in the synonymy of Protohippus perditus.

Protohippus insignis (non Leidy). Cope and Matthew, Amer. Mus. Nat. Hist. Mon. Ser. 2, Pl. CXLVIIIa, f. 5, 6, 7, 1915; M. Mioc. Colo.

Merychippus labrosus. Hay, U.S. Geol. Survey Bull. 179, p. 617, 1902; Miocene, Colo. Gidley, Bull. Amer. Mus. Nat. Hist., XXIII, pp. 873, 891, 1907; M. Mioc. (Pawnee Creek beds), Colo. Matthew, U.S. Geol. Survey Bull. 361, p. 115, 1909; same data. Osborn, Mem. Amer. Mus. Nat. Hist., n.s., II, pp. 99, 109, text f. 84, 1918; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 685, 1930; same data.

Merychippus paniensis (Cope).

Hippotherium paniense. Cope, Bull. Geol. and Geog. Survey Terr., I, p. 12, 1874; "Pliocene", N. Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 522, 1874; Loup Fork, NE. Colo.; Proc. Amer. Philos. Soc., XXVI, p. 447, f. 13, 14, 1889; same data.

Hipparion paniense. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 70, 1899; Loup Fork, NE. Colo. Hay, U.S. Geol. Survey Bull. 179, p. 620; same data.

Merychippus paniensis. Gidley, Bull. Amer. Mus. Nat. Hist., XXIII, pp. 873, 890, 1907; M. Mioc., (Pawnee Creek formation), Pawnee Buttes, Colo. Matthew, U.S. Geol. Survey Bull. 361, p. 115, 1909; same data; Bull. Amer. Mus. Nat. Hist., L, pp. 66, 72, 159, f. 47, 48, 1924; same data. Osborn, Mem. Amer. Mus. Nat. Hist., n.s., II, pp. 99, 109, Pl. 11, f. 2; Pl. 16, f. 4, 5,

6; Pl. 18, f. 1, 5; Pl. 25, f. 5; Pl. 34, f. 1, 2; Pl. 43, f. 2; Pl. 48, f. 2; Pl. 50, f. 2, 6; Pl. 53, f. 2; text f. 83, 1918; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 685, 1930; M. Mioc., Colo.; U. Mioc., Neb.

Merychippus proparvulus Osborn.

Merychippus proparvulus. Osborn, Mem. Amer. Mus. Nat. Hist., n.s., II, pp. 99, 117, Pl. 11, f. 3; Pl. 15, f. 6, 7; Pl. 20, f. 3; Pl. 54, f. 1; text f. 91, 1918; M. Mioc., (Pawnee Creek beds), Pawnee Buttes, Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 686, 1930; U. Mioc., Colo., Neb.

Merychippus sejunctus (Cope).

Protohippus sejunctus. Cope, Bull. Geol. and Geog. Survey Terr., I, p. 15, 1874; "Pliocene", N. Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, pp. 523, 524, 1874; Loup Fork, NE. Colo.; Amer. Naturalist., XV, p. 271, f. 3, 1881; same data; idem., XXI, p. 1071, f. 39, 1887; same data. Zittel, Handbuch der Palaeont., I Abth., IV Band., p. 256, f. 200, 201, 1893; "L. Pliocene", Colo. Woodward, Vert. Paleont. p. 337, text f. 194, 1898; Loup Fork, Colo. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 69, 1899; same data.

Merychippus sejunctus. Hay, U.S. Geol. Survey Bull. 179, p. 618, 1902; Mioc., Colo., Mont. Gidley, Bull.

Amer. Mus. Nat. Hist., XXIII, pp. 873, 891, 1907; M. Mioc. (Pawnee Creek beds) Pawnee Buttes , Colo. Matthew, U.S. Geol. Survey Bull. 361, p. 115, 1909; same data; Amer. Mus. Nat. Hist., Mon. Ser. 2, Pls. CL, CLI, 1915; Pawnee Creek beds, Weld Co., Colo. Osborn, Mem. Amer. Mus. Nat. Hist., n.s., II, pp. 99, 110; Pl. 11, f. 1; Pl. 16, f. 1, 2, 3; Pl. 19, f. 1, 2; Pl. 20; Pl. 43, f. 3; Pl. 48, f. 1; Pl. 50, f. 1, 5; Pl. 53, f. 3; text f. 85, 85a, 86, 1918; same data. Zittel, Text-book of Palaeont., III, p. 154, f. 209, 1925; "L. Plioc.", Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 686, 1930; M. Mioc., Colo.; U. Mioc., Neb.

Merychippus sphenodus (Cope).

Hippotherium sphenodum. Cope, Proc. Amer. Philos. Soc., XXVI, p. 449, f. 21, 22, 1889; Loup Fork, NE. Colo.

Hipparion sphenodus. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 71, 1899; Loup Fork, NE. Colo. Hay, U.S. Geol. Survey Bull. 179, p. 621, 1902; same data.

Hippotherium speciosum (non Leidy). Cope, Bull. U.S. Geol. and Geog. Survey, I, p. 12, 1874; "Pliocene", N. Colo.

Merychippus sphenodus. Gidley, Bull. Amer. Mus. Nat. Hist., XXIII, pp. 874, 908, 1907; M. Mioc. (Pawnee Creek beds), Pawnee Buttes, Colo. Matthew, U.S. Geol. Survey Bull. 361, p. 115, 1909; same data; Amer. Mus. Nat. Hist. Mon. Ser. 2, Pl. CXLVIII, f. 9, 10, 1915,

same data. Osborn, Mem. Amer. Mus. Nat. Hist., n. s., II, pp. 99, 112, Pl. 10, f. 2; Pl. 12; Pl. 15, f. 1, 2, 3; Pl. 18, f. 4; Pl. 43, f. 1; Pl. 47, f. 2; Pl. 48, f. 3; Pl. 53, f. 1; text f. 87, 1918; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 686, 1930; same data.

Merychippus sp. indet.

Merychippus sp. Frick, Bull. Amer. Mus. Nat. Hist., LVI, p. 106, 1926; Mioc. (Pawnee Creek), Colo.

Genus PROTOHIPPUS Leidy

Protohippus perditus (Leidy).

Equus (Protohippus) perditus. Leidy, Proc. Acad. Nat. Sci. Phila., 1858, p. 26; L. Pliocene., Neb.

Merychippus perditus. Hay, U.S. Geol. Survey Bull. 179, p. 617, 1902; Mioc., Neb., Colo., Okla., Kas., Wyo.; Plioc., Texas.

Protohippus perditus. Cope, Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, pp. 524, 528, 1874; Loup Fork, NE. Colo.; Bull. U.S. Geol. and Geog. Survey Terr., I, p. 18, 1874; Plioc., N. Colo.; Amer. Naturalist, XXVI, p. 943, Pl. XXVI, f. 2, 1892; same data. Matthew, Bull. Amer. Mus. Nat. Hist., XII, pp. 69, 75, 1899; Mem. Amer. Mus. Nat. Hist., I, p. 358, 1901; Pawnee Creek beds, NE. Colo. Osborn, idem., n.s., II, pp. 128-131; Pl. 21, f. 3; Pl. 25, f. 8; text f. 102, 103, 116a, 1918; L. Plioc., Neb. Hay, Carnegie Inst.

Wash. Pub. No. 390, II, p. 688, 1930; L. Plioc., Neb., S. Dak.; Mioc., Texas.

Protohippus placidus Leidy.

Protohippus placidus. Leidy, 2d (4th) Ann. Rept. U.S. Geol. Survey Terr., Hayden, p. 360, 1871; L. Plioc., Neb. Cope, Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, pp. 524, 528, 1874; Loup Fork, NE. Colo.; Bull. U.S. Geol. and Geog. Survey Terr., I, p. 19, 1874; Plioc., N. Colo.; Proc. Acad. Nat. Sci. Phila., 1892, p. 325, Pl. XXV; same data. Osborn, Mem. Amer. Mus. Nat. Hist., n.s., II, pp. 128, 133, Pl. 34, f. 4; text f. 106, 107, 116a, 1918; L. Plioc., Neb. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 689, 1930; Mioc., Texas; L. Plioc., Neb.

Protohippus proplacidus Osborn.

Protohippus proplacidus. Osborn, Mem. Amer. Mus. Nat. Hist., n.s., II, p. 128, 139, Pl. 25, f. 7; Pl. 34, f. 3; text f. 112, 1918; L. Pliocene (U. Pawnee Creek), Sand Cañon, Logan Co., Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 689, 1930; same data.

Protohippus sp. indet.

Protohippus sp. Cook, Proc. Colo. Mus. Nat. Hist., IV, No. II, p. 10, f. 146, 147, 1922; U. Mioc. or L. Plioc., Yuma Co., Colo.

Genus HIPPARION Christol

Hipparion coloradense Osborn.

Hipparion coloradense. Osborn, Mem. Amer. Mus. Nat.

Hist., n.s., II, pp. 174, 183, text f. 146, 1918; L. Plioc. (U. Pawnee Creek), Sand Cañon, Logan Co., Colo. Hay, Carnegie Inst. Wash. Pub. No.390, II, p. 692, 1930; same data.

Hipparion dolichops (Gidley).

Neohipparion dolichops. Gidley, Bull. Amer. Mus. Nat.Hist., XXII, pp. 148, 149, f. 14, 1906; L. Plioc., S. Dak.

Hipparion dolichops. Osborn, Mem. Amer. Mus. Nat. Hist., n.s., II, pp. 182-183, text f. 145, 1918; L. Plioc., S. Dak.

Hipparion cf. dolichops. Cook, Proc. Colo. Mus. Nat. Hist., IV, p. 10, f. 149, 1922; U. Mioc. and L. Plioc., Yuma Co., Colo.

Hipparion occidentale Leidy.

Hipparion occidentale. Leidy, Proc. Acad. Nat. Sci. Phila., VIII, p. 59, 1856; U. Mioc. or L. Plioc., Neb.; Jour. Acad. Nat. Sci. Phila., (2), VII, pp. 281, 282, Pl. XVIII, f. 1-5, 1869; same data. Osborn, Mem. Amer. Mus. Nat. Hist., II, pp. 174, 176, Pl. 25, f. 9; Pl. 34, f. 5; text f. 140, 1918; same data. Cook, Proc. Colo. Mus. Nat. Hist., IV, p. 10, 1922; U. Mioc. or L. Plioc., Yuma Co., Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 693, 1930; Mioc., S. Dak.; L. Plioc., Neb., Ore., Nev.

Hippotherium occidentale. Dall and Harris, U.S. Geol. Survey Bull. 134, pp. 282, 292, 1892.

Neohipparion occidentale. Gidley, Bull. Amer. Mus. Nat. Hist., XX, p. 245, 1904; Miocene, S. Dak.

Genus PLIOHIPPUS Marsh

Pliohippus mirabilis (Leidy).

Merychippus mirabilis. Leidy, Proc. Acad. Nat. Sci. Phila., 1870, p. 67; U. Mioc., Neb. Hay, U.S. Geol. Survey Bull. 179, p. 617, 1902; Mioc., Neb., Colo., S. Dak., Texas, Utah?

Protohippus mirabilis. Cope, Amer. Naturalist, XXVI, p. 943, 1892; Loup Fork, Colo.

Merychippus cf. mirabilis. Cook, Proc. Colo. Mus. Nat. Hist., IV, p. 10, f. 153, 164, 1922; U. Mioc. or L. Plioc., Yuma Co., Colo.

Pliohippus mirabilis. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 70, 1899; Loup Fork, NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 359, 1901; Pawnee Creek beds, Colo. Osborn, idem., n.s., II, p. 147, Pl. 25, f. 10; Pl. 26, f. 3; text f. 117, 1918; U. Mioc., Neb. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 697, 1930; U. Mioc. or L. Plioc., Neb.; Plioc., Cal.

Pliohippus pernix Marsh.

Pliohippus pernix. Marsh, Amer. Jour. Sci. (3), VII, p. 252, 1874; U. Mioc., Neb. Hay, U.S. Geol. Survey Bull. 179, p. 618, 1902; Mioc. (Loup Fork), Neb., Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 698, 1930; U. Mioc. or L. Plioc., S. Dak., Neb.

Osborn, Mem. Amer. Mus. Nat. Hist., n.s., II, part I, pp. 147, 151, Pl. 25, f. 12; Pl. 28, f. 1; text f. 120, 121, 122, 1918; Mioc., Neb.

Protohippus pernix. Gidley, Bull. Amer. Mus. Nat. Hist., XXII, p. 144, 1906; Mioc., S. Dak.

Genus EQUUS Linnaeus

Equus complicatus Leidy.

Equus complicatus. Leidy, Proc. Acad. Nat. Sci. Phila., 1858, p. 11; Pleist., Kas. Gidley, Bull. Amer. Mus. Nat. Hist., XIV, pp. 95, 109, 139, Pl. XVIII, text f. 2, 3, 7, 8, 1901; Pleist., western and southwestern states; includes E. intermedius and E. eous in synonymy. Hay, U.S. Geol. Survey Bull. 179, p. 622, 1902; Pleist., widely distributed; Carnegie Inst. Wash. Pub. No. 322-A, p. 148, 1924; Pleist.; Colo. localities: Longmont, Greeley; idem., 390, II, p. 703; no data.

Neohippus complicatus. Abel, Die Stamme der Wirbeltiere: p. 864, 1919.

Equus major. Cope, Amer. Naturalist, XII, p. 125, 1878; Plioc., Cre.

Equus americanus. Merriam, Mem. Univ. Cal., I, p. 221, 1912; Pleist., Cal.

Equus laurentius Hay.

Equus laurentius. Hay, Proc. U.S. Nat. Mus., XLIV, p. 584, Pls. LXXII, LXXIII, text f. 25-27, 1913;

Pleist., Kas.; Carnegie Inst. Wash. Pub. No. 322-A, pp. 144, 145, 1924; Pleist.; Colo. localities: Silver Cliff?, Glenwood Springs; idem., 390, II, p. 705, 1930; Pleist., Neb., Kas., Ia., Okla.

Equus sp. indet.

Equus sp. Cannon, Proc. Colo. Sci. Soc., III, p. 61, 1888; Pleist., Denver, Colo. Hay, Proc. U.S. Nat. Mus., LIX, p. 599, 1922; same data; Carnegie Inst. Wash. Pub. No. 322A, p. 377, 1924; Pleist., Colo. Cook, Scientific Amer., Nov., 1926, p. 335, 1926; Pleist., Colo., Tex.

Family LAMBDOTHERIIDAE

Genus LAMBDOTHERIUM Cope

Lambdotherium magnum Osborn.

Lambdotherium magnum. Osborn, Bull. Amer. Mus. Nat. Hist., XLI, p. 562, f. 3, No. 17527, 1919; Eocene (L. Huerfano), Colo.; (Wind River), Wyo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 711, 1930; L. Eocene (Huerfano), Colo.

Lambdotherium popoagicum Cope.

Lambdotherium popoagicum. Cope, Amer. Naturalist, XIV, p. 746, 1880; Wind River, Wyo.; Rept. U.S. Geol. Survey Terr., Hayden, III, p. 710, Pl. XXIXa, f. 7; Pl. LVIII, f. 3-5; 1884; same data; Amer. Naturalist, XXI, p. 1060, text f. 24, 26, 1887; same data.

Osborn, Bull. Amer. Mus. Nat. Hist., IX, p. 256, 1897; Eocene (L. Huerfano), Colo. Matthew, idem., XII, p. 36, 1899; same data; U.S. Geol. Survey Bull. 361, p. 95, 1909; same data. Hay, U.S. Geol. Survey Bull. 179, p. 629, 1902; Eocene, Wyo., Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 711, 1930; L. Eocene, Wyo., N. Mex.

Lambdotherium priscum Osborn.

Lambdotherium priscum. Osborn, Bull. Amer. Mus. Nat. Hist., XXXII, p. 413, 1913; Wind River, Wyo.; idem., XLI, p. 560, f. 3, No. 17526, 1919; Eocene (L. Huerfano), Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 711, 1930; L. Eocene, Wyo.

Lambdotherium progressum Osborn.

Lambdotherium progressum. Osborn, Bull. Amer. Mus. Nat. Hist., XXXII, p. 415, f. 8, 1913; Wind River, Wyo.; idem., XLI, pp. 560, 562, f. 2, 1919; Eocene (L. Huerfano), Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 711, 1930; L. Eocene, Wyo.

Genus EOTITANOPS Osborn

Eotitanops brownianus (Cope).

Lambdotherium brownianus. Cope, Bull. U.S. Geol. and Geog. Survey Terr., VI, p. 196, 1881; Eocene, Wyo.; Rept. U.S. Geological Survey Terr., Hayden, III, p. 709, Pl. LVIa, f. 10, 1884; no location.

Telmatherium boreale (part). Hay, U.S. Geol. Survey Bull. 179, p. 631, 1902; Eocene, Wyo.

Eotitanops brownianus. Osborn, Bull. Amer. Mus. Nat. Hist., XLI, p. 563, f. 4C, 1919; Eocene (U. Huerfano), Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 712, 1930; L. Eocene, Wyo.

Eotitanops gregoryi Osborn.

Eotitanops gregoryi. Osborn, Bull. Amer. Mus. Nat. Hist., XXXII, p. 408, f. 1, 4V, 1913; Wind River, Wyo.; idem., XLI, p. 564, f. 4B, 1919; Eocene (U. Huerfano), Colo. Hay, Carnegie Inst. Wash. Puo. No. 390, II, p. 712, 1930; L. Eocene, Wyo.

Eotitanops minimus Osborn.

Eotitanops minimus. Osborn, Bull. Amer. Mus. Nat. Hist., XLI, p. 564, f. 4, A, A', 1919; Eocene (U. Huerfano), Colo. Hay, Carnegie Inst. Wash.Pub. No. 390, II, p. 712, 1930; same data.

Genus PALAEOSYOPS Leidy

Palaeosyops fontinalis Cope.

Palaeosyops fontinalis. Cope, Proc. Amer. Philos. Soc., XIII, p. 35, 1873. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 47, 1899; Eocene, Wyo. Osborn, idem., XLI, p. 565, text f. 5, 1919; Eocene (U. Huerfano), Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 712, 1930; M. Eocene, Wyo.

Genus TELMATHERIUM Marsh

Telmatherium accola Cook.

Telmatherium accola. Cook, Proc. Colo. Mus. Nat. VI, p. 16, Pls. IX, X, 1926; M. Eocene, Moffat Co., Colo. Hay, Carnegie Inst. Wash.Pub. No. 390, II, p. 714, 1930; L. Olig., (Chadron), Colo.

Telmatherium advocatum Cook.

Telmatherium advocata. Cook, Proc. Colo. Mus. Nat., Hist., VI, p. 17, Pls. IX, XI, 1926; M. Eocene, Moffat Co., Colo.

Telmatherium advocatum. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 714, 1930; L. Olig. (Chadron), Colo.

Genus MANTEOCERAS Hatcher

Manteoceras foris Cook.

Manteoceras foris. Cook, Proc. Colo. Mus. Nat. Hist., VI, p. 18, Pl. VII, 1926; M. Eocene, Moffat Co., Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 715, 1930; L. Olig. (Chadron), Colo.

Manteoceras pratensis Cook.

Manteoceras pratensis. Cook, Proc. Colo. Mus. Nat. Hist., VI, p. 18, Pl. VIII, 1926; M. Eocene, Moffat Co., Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 715, 1930; L. Olig. (Chadron), Colo.

Manteoceras sp. indet.

Manteoceras sp. Cook, Proc. Colo. Mus. Nat. Hist.,

VI, p. 18, Pl. XI, 1926; M. Eocene, Moffat Co., Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 715, 1930; Olig. (Chadron), Colo.

Genus TANYORHINUS Cook

Tanyorhinus blairi Cook.

Tanyorhinus blairi. Cook, Proc. Colo. Mus. Nat. Hist., VI, p. 13, Pls. I-III, 1926; M. Eocene, Moffat Co., Colo. Young and Cooper, Radiology, March, 1927, p. 2; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 716, 1930; L. Olig. (Chadron), Colo.

Tanyorhinus bridgeri Cook.

Tanyorhinus bridgeri. Cook, Proc. Colo. Mus. Nat. Hist., VI, p. 15, Pls. IV-VI, 1926; M. Eocene, Moffat Co., Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 716, 1930; L. Olig. (Chadron), Colo.

Tanyorhinus harundivorax Cook.

Tanyorhinus harundivorax. Cook, Proc. Colo. Mus. Nat. Hist., VI, p. 16, Pl. X, 1926; M. Eocene, Moffat Co., Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 716, 1930; L. Olig. (Chadron), Colo.

Genus EOMETARHINUS Osborn

Eometarhinus huerfanensis Osborn.

Eometarhinus huerfanensis. Osborn, Bull. Amer. Mus. Nat. Hist., XLI, p. 568, text f. 6, 7, 1919; Eocene (U. Huerfano), Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 717, 1930; same data.

Family BRONTOTHERIIDAE

Genus SYMBORODON Cope

Symborodon acer (Cope).

Megaceratops acer. Cope, Palaeont. Bull. No. 15, p. 4, 1873.

Titanotherium acer. Hatcher, Amer. Naturalist, XXVII, p. 219, f. 1, 1893; White River. Osborn, Bull. Amer. Mus. Nat. Hist., VIII, p. 178, Pl. IV, text f. 3A, 4, 1896; Olig., Colo.

Titanotherium acre. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 58, 1899; L. Olig. (White River), NE. Colo.

Symborodon altirostris. Cope, Synopsis of New Vertebrata from the Tert. of Colo., p. 12, 1873; Tertiary, Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 486, Pls. V, VI; Pl. VIII, f. 1, 1874; White River, NE. Colo.: Amer. Naturalist, XXI, Pl. XXIII, f.a.; Pl. XXXIV, f. 1, 1887; same data. Matthew, Mem. Amer. Mus. Nat. Hist., I, p. 356, 1901; Titanotherium beds, NE. Colo. Osborn, Bull. Amer. Mus. Nat. Hist., XVI, p. 103, 1902; same data; in synonmy of S. acer.

Symborodon acer. Cope, Synopsis of New Vertebrata from the Tertiary of Colo., p. 13, 1873; Tertiary, Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 488, Pl. VII; Pl. VIII, f. 3, 1874; "Miocene",

Colo.; Amer. Naturalist, XXI, p. 1064, f. 28; Pl. XXXIV, f. 3, 1887; White River, Colo. Matthew, Mem. Amer. Mus. Nat. Hist., I, p. 356, 1901; Titanotherium beds, NE. Colo.; U.S. Geol. Survey Bull. 361, p. 104, 1909; same data. Hay, U.S. Geol. Survey Bull. 179, p. 637, 1902; Olig., Colo., Neb., S. Dak., Canada; Carnegie Inst. Wash. Pub. No. 390, II, p. 718, 1930; L. Olig. (Chadron), Colo., Canada.

Symborodon torvus Cope.

Symborodon torrus (Typ. err.). Cope, Palaeont. Bull. No. 15, p. 2, 1873; Tertiary, Colo.

Symborodon torvus. Cope, Synopsis of New Vertebrata from the Tert. of Colo., p. 14, 1873; Tertiary, Colo. Matthew, Mem. Amer. Mus. Nat. Hist., I, p. 356, 1901; Titanotherium beds, NE. Colo.; U.S. Geol. Survey Bull. 361, p. 104, 1909; Chadron (White River), Horsetail Creek, N.E. Colo. Osborn, Bull. Amer. Mus. Nat. Hist., XVI, p. 103, 1902; same data. Hay, U.S. Geol. Survey Bull. 179, p. 637, 1902; Olig., S. Dak., Colo., Neb.; Carnegie Inst. Wash. Pub. No. 390, II, p. 718, 1930; L. Olig. (Chadron), Colo.

Symborodon bucco. Cope, Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 485, Pl. II, f. 1; Pls. III, IV; Pl. VIII, f. 2; 1874; White River, NE. Colo.; Amer. Naturalist, XXI, p. 1063, Pl. XXXIII, f. b; Pl. XXXIV, f. 2; same data.

Titanotherium torvum. Osborn, Bull. Amer. Mus. Nat. Hist., VIII, p. 176, Pl. III; not text f. 2, 3; 1896; Olig., Colo. Matthew, idem., XII, p. 58, 1899; L. Olig. (White River), NE. Colo.

Titanotherium bucco. Osborn, Bull. Amer. Mus. Nat. Hist., VIII, p. 179, Pl. III, 1896; Olig., Colo.

Menodus torvus. Osborn, G.S.A. Bull. XXV, p. 414, 1914; Olig., Colo.

Genus MENODUS Pomel

Menodus heloceras (Cope).

Megaceratops helocerus (typ. err.). Cope, Palaeont. Bull. No. 15, p. 4, 1873.

Symborodon heloceras. Cope, Synopsis of New Vertebrata from the Tert. of Colo., p. 14, 1873; Tertiary, Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, pp. 484, 487, 1874; White River, NE. Colo.

Titanotherium heloceras. Hatcher, Amer. Naturalist, p. 219, f. 3, 1893; White River. Osborn, Bull. Amer. Mus. Nat. Hist., VIII, p. 179, Pl. III, text f. p. 171, 1896; same data. Matthew, idem., XII, p. 58, 1899; L. Olig. (White River), NE. Colo. Hay, U.S. Geol. Survey Bull. 179, p. 636, 1902; same data.

Titanotherium helocerus. Matthew, Mem. Amer. Mus. Nat. Hist., I, p. 356, 1901; Chadron (White River), Horsetail Creek, NE. Colo.; U.S. Geol. Survey Bull. 361, p. 104, 1909; same data.

Menodus heloceras. Osborn, C.S.A. Bull. XXV, p. 414, 1914; no data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 719, 1930; L. Olig., Colo., S. Dak., Neb.

Menodus ingens (Marsh).

Brontotherium ingens. Marsh, Amer. Jour. Sci., (3), VII, p. 85, Pls. I, IV, 1874; "Miocene", Colo.; idem., XI, p. 335, Pls. X-XIII, text f. 1, 2, 1876; same data; U.S. Geol. Survey, 5th Ann. Rept., f. 101, 130, 131, 1885; same data; U.S. Geol. Survey Mon. XXVII, p. 522, f. 93, 1897; same data.

Titanotherium ingens. Hatcher, Amer. Naturalist, XXVII, p. 219, f. 2, 1893; White River, Osborn, Bull. Amer. Mus. Nat. Hist., VIII, p. 182, text f. p. 171, 1896; no data.; idem., XVI, p. 96, 1902; Olig., no loc. Matthew, idem., XII, p. 58, 1899; L. Olig. (White River), NE. Colo.; U.S. Geol. Survey Bull. 361, p. 104, 1909; same data. Hay, U.S. Geol. Survey Bull. 179, p. 636, 1902; Olig., S. Dak., Colo.

Menodus ingens. Cope, Amer. Naturalist, XXI, p. 1063, 1887; White River. Scott and Osborn, Bull. Mus. Comp. Zool., XIII, p. 158, 1887; White River, Colo. Osborn, Amer. Mus. Novit., CCII, p. 5, 1925; same data; syn. of M. giganteus. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 719, 1930; L. Olig. (Chadron), Colo., S. Dak., Neb.

Menodus trigonoceras (Cope).

Symborodon trigonoceras. Cope, Synopsis of New Vertebrata from the Tert. of Colo., p. 13, 1873; Tertiary, Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 488, 1874; White River, NE. Colo.; Bull. U. S. Geol. and Geog. Survey Terr., I, p. 28, 1874; "Plioc.", N. Colo.; Amer. Naturalist, XXI, p. 1065, f. 29, 30, ?31, 1887; White River, Colo.

Titanotherium trigonoceras. Scott and Osborn, Bull. Mus. Comp. Zool., XIII, p. 158, 1887; White River, Colo.; synonym of Menodus coloradensis. Osborn, Bull. Amer. Mus. Nat. Hist., VIII, p. 180, Pl. III, text f. 501 and 6355 on p. 167; not text f. 5, 6; 1896; Olig., S. Dak. Matthew, idem., XII, p. 58, 1899; L. Olig., (White River), NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 356, 1901; Titanotherium beds, Horsetail Creek, NE. Colo.; U.S. Geol. Survey Bull. 361, p. 104, 1909; same data. Hay, U.S. Geol. Survey Bull. 179, p. 637, 1902; Olig., Colo., S. Dak.

Menops varians. Cope, Amer. Naturalist, XXI, p. 926, 1887; White River, Colo.; Syn. of Menodus trigonoceras. Marsh, Amer. Jour. Sci. (3), XXXIV, p. 328, f. 9; not f. 10; 1887; Brontotherium beds, S. Dak.

Titanotherium varians. Osborn, Bull. Amer. Mus. Nat. Hist., VIII, p. 189, Pl. III, 1896; Olig., S. Dak.

Menodus trigonoceras. Osborn, G.S.A. Bull. XXV, p. 414, 1914; no data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 719, 1930; L. Olig., (Chadron), S. Dak., Colo.

Genus MEGACEROPS Leidy

Megacerops coloradensis Leidy.

Megacerops coloradensis. Leidy, Proc. Acad. Nat. Sci. Phila., p. 1, 1870; White River, Colo.; 4th Ann. Rept. U.S. Geol. Survey Terr., Hayden, p. 352, 1871; same data; Rept. U.S. Geol. Survey Terr., Hayden, No. 1, pp. 239, 335, Pl. 1, f. 2, 3; Pl. II, f. 2; 1873; same data. Marsh, Amer. Jour. Sci., (3), V, p. 296, 1873; no loc. U.S. Geol. Survey Mon. XXVII, p. 527, 1897; Brontotherium beds, Weld Co., Colo. Hay, U.S. Geol. Survey Bull. 179, p. 633, 1902; Olig., S. Dak.; Carnegie Inst. Wash. Pub. No. 390, II, p. 720, 1930; L. Olig. (White River), Colo., Canada. Matthew, U.S. Geol. Survey Bull. 361, p. 104, 1909; Chadron (White River), Horsetail Creek, NE. Colo.

Megaceratops coloradoensis. Cope, Amer. Naturalist, XXI, p. 1063, 1887; White River, Colo. Peale, Rept. U.S. Geol. Survey Terr., Hayden, for 1874, p. 150, 1876; "Miocene", Colo. Cross, Amer. Jour. Sci., XXXVII, p. 279, 1889; Monument Creek beds, Colo. Cannon, Proc. Colo. Sci. Soc., IV, p. 232, 1894; same data.

Titanotherium coloradensis, Osborn, Bull. Amer. Mus. Nat. Hist., VIII, p. 175, Pl. III, 1896; Olig., Colo. Matthew, idem., XII, p. 57, 1899; same data. Megacerops riggsi Osborn.

Megacerops riggsi. Osborn, Bull. Amer. Mus. Nat. Hist., XXXV, p. 723, f. 2, 1916; Titanotherium zone, Horsetail Creek, NE. Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 721, 1930; L. Olig. (White River), Colo. Megacerops robustus (Marsh).

Brontops robustus. Marsh, Amer. Jour. Sci. (3), XXXIV, p. 326, 1887; "Miocene", Neb.; U.S. Geol. Survey Mon. XXVII, pl. XXIX, 1897; same data.

Titanotherium robustum. Hatcher, Amer. Naturalist, XXVII, p. 212, 1893; Oreodon beds, Neb. Osborn and Wortman, Bull. Amer. Mus. Nat. Hist., VII, p. 346, Pls. VIII, IX, text f. 1-3, 1895; White River, S. Dak. Osborn, idem., VIII, text f. 8, 1896; Titanotherium beds, no loc.

Brontotherium robustum. Hay, U.S. Geol. Survey Bull. 179, p. 635, 1902; Olig., Neb., Colo.

Megacerops robustus. Matthew, U.S. Geol. Survey Bull. 361, p. 104, 1909; Chadron, S. Dak., Neb. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 721, 1930; same data.

Genus BRONTOTHERIUM Marsh

Brontotherium bucco (Cope).

Symborodon bucco. Cope, Synopsis of New Vertebrata

from the Tert. of Colo., p. 11, 1873; Tertiary, Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 485, 1874; White River, N.E. Colo.; (in part); Amer. Naturalist, XXI, p. 1063, 1887; same data.

Titanotherium (Symborodon) bucco. Matthew, Mem. Amer. Mus. Nat. Hist., I, p. 356, 1901; Titanotherium beds, NE. Colo.

Brontotherium bucco. Hay, U.S. Geol. Survey Bull. 179, p. 634, 1902; Olig., Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 722, 1930; L. Olig., Colo. Matthew, U.S. Geol. Survey Bull. 361, p. 104, 1909; Chadron (White River), Horsetail Creek, NE. Colo.

Brontotherium curtum (Marsh).

Titanops curtus. Marsh, Amer. Jour. Sci., (3), XXXIV, p. 330, f. 11, 1887; "Miocene", Colo.; U.S. Geol. Survey Mon. XXVII, p. 522, f. 94, 1897; same data.

Titanotherium curtum. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 58, 1899; L. Olig. (White River) NE. Colo.

Menodus platyceras. Cope, Amer. Naturalist, XXI, p. 926, 1887; no data.

Menodus peltoceras. Cope, Amer. Naturalist, XXV, p. 48, 1891; no data.

Titanotherium peltoceras. Matthew, Bull. Amer. Mus.

Nat. Hist., XII, p. 58, 1899; Olig., S. Dak.

Brontotherium curtum. Hay, U.S. Geol. Survey Bull. 179, p. 634, 1902; Olig., S. Dak., Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 722, 1930; L. Olig., ?Neb., Colo. Matthew, U.S. Geol. Survey, Bull. 361, p. 104, 1909; Chadron (White River), Horsetail Creek, N.E. Colo.

Brontotherium gigas Marsh.

Brontotherium gigas. Marsh, Amer. Jour. Sci., (3), V, p. 486, 1873; "Miocene", Colo.; idem. XI, Pl. XII, 1876; same data; U.S. Geol. Survey Mon. XXVII, p. 527, 1897; Brontotherium beds, Weld Co., Colo. Hay, U.S. Geol. Survey Bull. 179, p. 635, 1902; Olig., S. Dak., Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 722, 1930; L. Olig., Colo., Neb. Matthew, U.S. Geol. Survey Bull. 361, p. 104, 1909; Chadron (White River), Horsetail Creek, NE. Colo.

Titanops elatus. Marsh, Amer. Jour. Sci. (3), XXXIV, p. 330, f. 12, 1887; "Miocene", S. Dak.

Titanotherium elatum. Osborn and Wortman, Bull. Amer. Mus. Nat. Hist., VII, p. 349, 1895; White River, no loc. Osborn, Century Magazine, XXX, pp. 709, 714, illus. 5, 1896; White River, S. Dak.

Brontotherium hypoceras (Cope).

Symborodon hypoceras. Cope, Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 491, 1874;

White River, NE. Colo.

Titanotherium hypoceras. Osborn, Bull. Amer. Mus. Nat. Hist., VIII, p. 183, 1896; Olig., Colo. Matthew, Mem. Amer. Mus. Nat. Hist., I, p. 356, 1901; same data.

Brontotherium hypoceras. Hay, U.S. Geol. Survey Bull. 179, p. 635, 1902; Olig., Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 722, 1930; L. Olig. (White River), Colo. Matthew, U.S. Geol. Survey Bull. 361, p. 104, 1909; same data.

Brontotherium? ophryas (Cope).

Miobasileus ophryas. Cope, Palaeont Bull. No. 15, p. 3, 1873; Synopsis of New Vertebrata from the Tert. of Colo., p. 14, 1873; Tertiary, Colo.

Symborodon ophryas. Cope, Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 490, 1874; White River, NE. Colo.

Titanotherium ophryas. Osborn, Bull. Amer. Mus. Nat. Hist., VIII, p. 177, 1896; Olig., Colo.

Brontotherium? ophryas. Hay, U.S. Geol. Survey Bull. 179, p. 635, 1902; Olig., Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 722, 1930; L. Olig. (White River), Colo.

Brontotherium sp. indet.

Brontotherium sp. Figgins, Rept. Colo. Mus. Nat. Hist., 1924, p. 19, Plate; L. Olig., Colo.

Family TAPIRIDAE

Genus TAPIRAVUS Marsh

?Tapiravus sp. indet.

Tapiravus sp. Matthew, U.S. Geol. Survey Bull. 361, p. 115, 1909; M. Mioc. (Deep River Seq.), Pawnee Creek, NE. Colo.

Genus TAPIRUS Brisson

? Tapirus sp. indet.

Tapirus sp. Frick, Bull. Amer. Mus. Nat. Hist., LVI, p. 106, 1926; Mioc. (Pawnee Creek), Colo.

Family HYRACODONTIDAE

Genus ANCHISODON Cope

Anchisodon quadriplicatus (Cope).

Hyracodon quadriplicatus. Cope, Palaeont. Bull. No. 15, p. 1, 1873; Synopsis of New Vertebrata from the Tert. of Colo., p. 14, 1873: Tertiary, Colo.

Aceratherium quadriplicatum. Cope, Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 495, 1874; White River, Colo. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 57, 1899; M. Olig. (White River), NE. Colo.

Subhyracodon quadriplicatus. Wood, Bull. Amer. Paleont., XIII, (No. 50), p. 68, 1927; Oreodon beds, Cedar Creek, Logan Co., Colo.

Anchisodon quadriplicatus. Cope, Bull. U.S. Geol. and Geog. Survey Terr., 1879-80, V, p. 234; White River, Colo. Amer. Naturalist, XIII, p. 270, 1879; same data.

Hay, U.S. Geol. Survey Bull. 179, p. 640, 1902; same data; Carnegie Inst. Wash. Pub. No. 390, II, p. 735, 1930; M. Olig. (Cedar Creek), Colo. Matthew, U.S. Geol. Survey Bull. 361, p. 105, 1909; same data.

Genus HYRACODON Leidy

Hyracodon arcidens Cope.

Hyracodon arcidens. Cope, Palaeont. Bull. No. 15, p. 2, 1873; Synopsis of New Vertebrata from the Tert. of Colo., p. 14, 1873; Tertiary, Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 493, 1874; White River, NE. Colo.; Bull. U.S. Geol. and Geog. Survey Terr., 1879-80, V, p. 234; same data. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 57, 1899; M. Olig. (White River), NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 357, 1901; same data; U.S. Geol. Survey Bull. 361, p. 105, 1909; Brule (White River), Cedar Creek, NE. Colo.; Amer. Mus. Nat. Hist. Mon. Ser. 2, Pl. CII, 1915; same data. Hay, U.S. Geol. Survey Bull. 179, p. 640, 1902; Olig., Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 736, 1930; Olig., Colo., S. Dak., Canada.

Hyracodon priscidens. Lambe, Trans. Roy. Soc. Canada (2), XI, p. 37, Pl. I, 1905; Olig., Canada.

Hyracodon arcidens minimus. Troxell, Amer. Jour. Sci. (5), II, p. 36, f. 1, 1921; Olig., S. Dak.

Hyracodon selenidens. Troxell, Amer. Jour. Sci. (5), II, p. 37, 1921; M. Olig., Colo.

Hyracodon nebrascensis (Leidy).

Rhinoceros nebrascensis. Leidy, Proc. Acad. Nat. Sci. Phila., V, p. 121, 1850; Missouri Terr.

Aceratherium nebrascense. Leidy, Proc. Acad. Nat. Sci. Phila., VII, p. 157, 1851; "Eocene", Neb.

Aceratherium pumilum (in part). Cope, Amer. Naturalist, XXIII, p. 154, 1889; Olig., Canada.

Hyracodon nebraskensis. Hay, U.S. Geol. Survey Bull. 179, p. 64, 1902; Olig., S. Dak., Neb., Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 736, 1930; M. Olig., S. Dak.

Hyracodon nebrascensis. Leidy, Proc. Acad. Nat. Sci. Phila., VIII, p. 92, 1856; White River, Neb.; 2d (4th) Ann. Rept. U.S. Geol. Survey Terr., Hayden, p. 357, 1871; White River, Colo. Cope, Synopsis of New Vertebrata from the Tert. of Colo., p. 14, 1873; Tertiary, Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 493, 1874; White River, NE. Colo.; Amer. Naturalist, XXI, p. 1003; f. 17, 1887; same data. Osborn, Century Magazine, XXX, pp. 711, 714, illust. 7, 1896; White River, S. Dak.; Mem. Amer. Mus. Nat. Hist., I, pp. 82, 93, f. 2, 11, 1898; White River, Neb. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 57, 1899; M. (and U.?) Olig., NE. Colo.; U.S. Geol. Survey Bull. 361, p. 105, 1909; Brule (White River), Cedar Creek, NE. Colo.

Hyracodon sp. indet.

Hyracodon sp. div. Matthew, U.S. Geol. Survey Bull. 361, p. 108, 1909; U. Brule (White River), Lower Martin Canyon, Colo.

Family RHINOCEROTIDAE

Genus TRIGONIAS Lucas

Trigonias hypostylus Gregory and Cook.

Trigonias hypostylus. Gregory and Cook, Proc. Colo. Mus. Nat. Hist., VIII, pp. 11, 15, 22; tab. I-IV, VII, VIII; graphs 1-5; f. 4, 5; Pl. V, B; 1928; L. Chadron, Weld Co., Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 740, 1930; same data.

Trigonias osborni Lucas.

Trigonias osborni. Lucas, Proc. U.S. Nat. Mus., XXIII, p. 221, f. 1, 2, 1900; "Miocene", S. Dak. Hay, U.S. Geol. Survey Bull. 179, p. 642; White River, S. Dak.; Carnegie Inst. Wash. Pub. No. 390, II, p. 740, 1930; Olig. (Chadron), Neb., Colo. Cockerell, Sci. Monthly, XVII, p. 273, f. 1-5, 1923; Olig., Weld Co., Colo.

Trigonias osborni figginsi Gregory and Cook.

Trigonias osborni figginsi. Gregory and Cook, Proc. Colo. Mus. Nat. Hist., VIII, pp. 9, 14, 18, 20, 22; tab. I-VIII; graphs 1-5; f. 4, 5; Pls. I, III, B. IV, B; 1928; L. Chadron, Weld Co., Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 740, 1930; same data.

Trigonias osborni secundus Gregory and Cook.

Trigonias osborni secundus. Gregory and Cook, Proc. Colo. Mus. Nat. Hist., VIII, pp. 10, 15, 22; tab. 1-VIII; graphs 1-5; text f. 4, 5; Pl. III, A; 1928; L. Chadron, Weld Co., Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 740, 1930; same data.

Trigonias precopei Gregory and Cook.

Trigonias precopei. Gregory and Cook, Proc. Colo, Mus. Nat. Hist., VIII, pp. 12, 15, 16, 28; tab. I-IV, VII, VIII; graphs 1-5; f. 4, 5; Pl. VI, A; 1928; L. Chadron, Weld Co., Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 740, 1930; same data.

Trigonias preoccidentalis Gregory and Cook.

Trigonias preoccidentalis. Gregory and Cook, Proc. Colo. Mus. Nat. Hist., VIII, pp. 12, 16, 17, 22; tab. I-IV, VII, VIII; graphs 1-5; f. 4, 5; Pl. VI, B; 1928; L. Chadron, Weld Co., Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 740, 1930; same data.

Trigonias taylori Gregory and Cook.

Trigonias taylori. Gregory and Cook, Proc. Colo. Mus. Nat. Hist., VIII, pp. 11, 17, 19, 22; tab. I-IV, VI-VIII; Graphs 1-5; f. 4, 5; Pl. V, A; 1928; L. Chadron, Weld Co., Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 740, 1930; same data.

Trigonias sp. indet.

Trigonias sp. Gregory and Cook, G.S.A. Bull. XXXVIII, p. 235, 1927; L. Olig., Colo.

Genus CAENOPUS Cope

Caenopus mitis (Cope).

Aceratherium mite. Cope, Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 493, 1874; White River, NE. Colo.; Bull. U.S. Geol. and Geog. Survey Terr., 1879-80, V, p. 235; 1879; same data; Amer. Naturalist, XIII, p. 333, 1879; same data. Osborn and Wortman, Bull. Amer. Mus. Nat. Hist., VII, p. 371, 1895; Olig., North America. Osborn, Mem. Amer. Mus. Nat. Hist., I, pp. 89, 136; f. 8, 36, 37, 39, 1898; Titanotherium beds, NE. Colo. Matthew, Bull. Amer. Mus. Nat Hist., XII, p. 57, 1899; M. Olig. (White River), NE. Colo.

Aceratherium pumilum. Osborn and Wortman, Bull. Amer. Mus. Nat. Hist., VI, p. 208, 1894; Olig., North America.

Caenopus mitis. Cope, Amer. Naturalist, XIV, p. 611, 1880; Olig., North America. Matthew, Mem. Amer. Mus. Nat. Hist., I, p. 357, 1901; Oreodon beds, NE. Colo.; U.S. Geol. Survey Bull. 361, p. 104, 1909; same data; Amer. Mus. Nat. Hist. Mon. Ser. 2, Pl. CIV, f. 1, 2; Pl. CV, f. 1-5; 1915; Horsetail Creek beds, Logan Co., Colo. Hay, U.S. Geol. Survey Bull. 179, p. 643, 1902; Olig. (White River), S. Dak., Canada; Carnegie Inst. Wash. Pub. No. 390, II, p. 742, 1930; L. Olig., Colo., Canada. Wood, Bull. Amer. Paleont., XIII, p. 56, 1927; L. Olig., Colo.

Caenopus occidentalis (Leidy).

Rhinoceros occidentalis. Leidy, Proc. Acad. Nat. Sci. Phila., V, p. 276, 1851; no data.

Aceratherium occidentale. Cope, Synopsis of New Vertebrata from the Tert. of Colo., p. 14, 1873; Tertiary, Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 495, 1874; White River, NE. Colo.; Bull. U.S. Geol. and Geog. Survey Terr., 1879-80, V, p. 235, 1879; same data. Osborn and Wortman, Bull. Amer. Mus. Nat. Hist., VI, p. 204, Pl. II, f. C, text f, 3A, 1894; Oreodon beds, North America; idem., VII, p. 373, f. 12, 1895; same data. Osborn, Mem. Amer. Mus. Nat. Hist., I, pp. 90, 109, 128, 131, 134, 150; Pl. XVI; Pl. XIX, f. 9; text f. 9, 21, 33, 34, 35; 1898; White River, Neb. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 57, 1899; M. Olig., (White River), NE. Colo.

Subhyracodon occidentalis. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 741, 1930; M. Olig. (Brule), Colo., Neb.

Caenopus occidentalis. Cope, Amer. Naturalist, XXI, p. 924, 1887; no data. Matthew, Mem. Amer. Mus. Nat. Hist., I, p. 357, 1901; Oreodon beds, NE. Colo.; U.S. Geol. Survey Bull. 361, p. 105, 1909; same data. Hay, U.S. Geol. Survey Bull. 179, p. 643, 1902; Olig., S. Dak., Neb., Colo., Canada.

Caenopus persistens Osborn.

Caenopus persistens. Osborn, Bull. Amer. Mus. Nat. Hist., XX, p. 318, text f. 16, 1904; M. Mioc., Pawnee Buttes, Colo. Matthew, U.S. Geol. Survey Bull. 361, p. 114, 1909; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 742, 1930; same data.

Aceratherium persistens. Zittel and Schlosser, Grundzüge der Palaeont., p. 452, 1911; Mioc., Colo.

Diceratherium? persistens. Wood, Bull. Amer. Paleont., XIII, pp. 55, 72, 1927; Mioc., Logan Co., Colo.

Caenopus platycephalus nanolophus Troxell.

Caenopus platycephalus nanolophus. Troxell, Amer. Jour. Sci., CCII, p. 46, f. 3, 1921; M. or U. Olig., Colo.; idem., CCIV, p. 36, 1922; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 742, 1930; same data.

Caenopus nanolophus. Wood, Bull. Amer. Paleont., XIII, p. 39, tabs. IIIa, IIIb, 1927; M. or U. Olig., Colo.; Syn. of Trigonias osborni.

?Caenopus premitis Gregory and Cook.

?Caenopus premitis. Gregory and Cook, Proc. Colo. Mus. Nat. Hist., VIII, pp. 13, 19, 22; tab. I-IV, VII, VIII; graphs 1-5; Pl. IV, A; 1928; L. Chadron, Weld Co., Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 742, 1930; same data.

Caenopus tridactylus(Osborn).

Ceratherium tridactylum. Osborn, Science, XXI, p. 261, 1893; White River, S. Dak.

Diceratherium proavitum. Hatcher, Amer. Geologist, XX, p. 313, 1897; White River, S. Dak.

Diceratherium tridactylum. Hatcher, Ann. Carnegie Mus., I, p. 144, 1901; White River, S. Dak.

Subhyracodon tridactylum. Wood, Bull. Amer. Paleont., XIII, pp. 11, 69, tab. Vb-VII, 1927; Olig., S. Dak.

Subhyracodon proavitum. Wood, Bull. Amer. Paleont., XIII, p. 69, tab. Vb, 1927; Olig., S. Dak.

Caenopus tridactylus. Matthew, U.S. Geol. Survey Bull. 361, p. 108, 1909; Brule (White River), Lower Martin Canyon, Colo. (?) Hay, U.S. Geol. Survey Bull. 179, p. 643, 1902; Olig., S. Dak., N.Dak.; Carnegie Inst. Wash. Pub. No. 390, II, p. 743, 1930; Olig. (U. Brule), Colo.?, N.Dak., Neb.

Caenopus sp. indet.

Caenopus sp. Matthew, U.S. Geol. Survey Bull. 361, p. 104, 1909; Chadron (White River), Horsetail Creek, NE. Colo.

Genus APHELOPS Cope

Aphelops ceratorhinus Douglass.

Aphelops ceratorhinus. Douglass, Ann. Carnegie Mus., II, pp. 154, 195, f. 33-35, 1903; U. Mioc., Mont. Osborn, Bull. Amer. Mus. Nat. Hist., XX, p. 317, f. 12-14, 1904;

same data. Matthew, idem., XXXVIII, pp. 202, 204, f. 9, 1918; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 746, 1930; Mioc. or Plioc. (Brown's Park), Colo.; U. Mioc. (Arikaree), Mont.

Aphalops ceratorhinus. Peterson, Mem. Carnegie Mus. XI, p. 101, Pl. X, f. 1, 2, 5, 10-19, 1928; Mioc. or Plioc. (Brown's Park) Colo.

Aphelops crassus (Leidy).

Rhinoceros crassus. Leidy, Proc. Acad. Nat. Sci. Phila., 1865, p. 176; Neb.

?Rhinoceros crassus. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 71, 1899; Loup Fork, NE. Colo.; in synonymy of Aceratherium megalodum.

Aceratherium crassum. Cope, Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 521, 1874; Loup Fork, NE. Colo.; Amer. Naturalist, XIII, p. 771,h, 1879; no data.

Diceratherium crassum. King, U.S. Geol. Explor. 40th Parallel, I, p. 424, 1878; Mioc., Ore.

Aphelops crassus. Cope, Bull. U.S. Geol. and Geog. Survey Terr., I, p. 12, 1874; Plioc., N.Colo.; idem., V, p. 237, 1879; Mioc., E. Colo. Hay, U.S. Geol. Survey Bull. 179, p. 645, 1902; Mioc., Neb., Kas., Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 747, 1930; L. Plioc., Neb.; U. Mioc., Neb., Texas.

Aphelops megalodus (Cope).

Aceratherium megalodum. Cope, Palaeont. Bull. No. 14, p. 1, 1873; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 520, 1874; Loup Fork, NE. Colo. Osborn, Mem. Amer. Mus. Nat. Hist., I, p. 115, f. 26, 1898; no data; Bull. Amer. Mus. Nat. Hist., XX, p. 309, text f. 3, 1904; M. Mioc., Pawnee Buttes, Colo. Matthew, idem. XII, p. 71, 1899; same data.

Rhinoceros megalodus. Zittel, Handbuch der Paleont., I Abth, IV Band, p. 291, f. 232, 1893; L. Plioc., (Loup Fork), Colo.

Aphelops megalodus. Cope, Synopsis of New Vertebrata from the Tert. of Colo., p. 14, 1873; Tertiary, Colo.; Bull. U.S. Geol. and Geog. Survey Terr., I, p. 11, 1874; "Pliocene", N. Colo.; Amer. Naturalist, XIII, p. 771c, f. 1, 2, 4, 5, 1879; Loup Fork, Colo.; idem., XV, p. 270, f. 2, 1881; same data. Woodward, Vert. Paleont., p. 335, text f. 192; 1898; same data. Hay, U.S. Geol. Survey Bull. 179, p. 646, 1902; same data; Carnegie Inst. Wash. Pub. No. 390, II, p. 747, 1930; M. Mioc., Colo., Neb. Matthew, U.S. Geol. Survey Bull. 361, p. 114, 1909; same data; Amer. Mus. Nat. Hist., Mon. Ser. 2, Pls. CXXV-CXXX; Pl. CXXXV, f. 1; 1915; Pawnee Creek Beds, Weld Co., Colo. Zittel, Textbook of Palaeont., III, p. 140, f. 182, 1925; "L. Pliocene", (Loup Fork), Colo.

Aphelops planiceps Osborn.

Aphelops planiceps. Osborn, Bull. Amer. Mus. Nat. Hist., XX, p. 321, text f. 18, 1904; M. Mioc., Pawnee Buttes, Colo. Matthew, U.S. Geol. Survey Bull. 361, p. 114, 1909; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 747, 1930; same data.

Aphelops profectus (Matthew).

Aceratherium profectum. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 71, 1899; Loup Fork, NE. Colo. Osborn, idem., XX, p. 317, f. 15, 1904; same data.

Aphelops profectus. Matthew, Mem. Amer. Mus. Nat. Hist., I, p. 358, 1901; Pawnee Creek beds, NE. Colo.; U.S. Geol. Survey Bull. 361, p. 114, 1909; same data. Hay, U.S. Geol. Survey Bull. 179, p. 646, 1902; Mioc., Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 747, 1930; M. Mioc. (Pawnee Creek), Colo.

Genus TELEOCERAS Hatcher

Teleoceras fossiger (Cope).

Aphelops fossiger. Cope, Bull. U.S. Geol. and Geog. Survey Terr., IV, p. 382, 1878; Loup Fork, Kas. Scott and Osborn, Bull. Mus. Comp. Zool., XX, p. 92, Pls. II, III, text f. 15, 1890; same data. Zittel, Handbuch der Palaeont., I Abth, IV Band, p. 292, f. 233, 1893; L. Plioc., Colo.

Aceratherium fossiger. Osborn, Mem. Amer. Mus. Nat. Hist., I, pp. 99, 109, 110; f. 15, 21, 22, 1898; U. Mioc., Kas.

Rhinoceros proterus. Leidy, Proc. Acad. Nat. Sci. Phila., 1885, p. 33; Post-Eocene, Fla.

Teleoceras major. Hatcher, Amer. Geologist, XIII, p. 149, 1894; Loup Fork beds, Neb.

Aceratherium acutum. Marsh, U.S. Geol. Survey Mon. XXVII, pp. 525, 527, f. 102, 1897; Pliohippus beds, Cheyenne Co., Colo.

Teleoceras fossiger. Osborn, Bull. Amer. Mus. Nat. Hist., X, Pls. IV, IVA, 1898; Mioc., Kas. Matthew, idem., XII, p. 71, 1899; Loup Fork, Neb.; Teleoceras major and Aceratherium acutum in synonymy. Hay, U.S. Geol. Survey Bull. 179, p. 646, 1902; Mioc., Kas., Neb., Colo., Fla.; Carnegie Inst. Wash. Pub. No. 390, II, p. 749, 1930; Plioc., Kas.; L. Plioc., Neb.; Plioc.?, Colo.; Pleist.?, Idaho. Cockerell, Sci. Monthly, XVII, p. 276, f. 6, 7, 1923; Plioc., Yuma Co., Colo.

Teleoceras hicksi Cook.

Teleoceras hicksi. Cook, Proc. Colo. Mus. Nat. Hist., VII, p. 1, No. 309, 1927; Plioc., Yuma Co., Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 750, 1930; same data.

Teleoceras mediocornutus Osborn.

Teleoceras mediocornutus. Osborn, Bull. Amer. Mus. Nat. Hist., XX, p. 319, text f. 17, 1904; M. Mioc., Pawnee Buttes, Colo. Matthew, U.S. Geol. Survey Bull. 361, p. 114, 1909; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 750, 1930; U. Mioc., Colo., Neb.

Order ARTIODACTYLA

Family LEPTOCHOERIDAE

Genus LEPTOCHOERUS Leidy

Leptochoerus lemurinus (Cope).

Menotherium lemurinum. Cope, Proc. Acad. Nat. Sci. Phila., 1873, p. 419; "Miocene", Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 510, 1874; White River, NE. Colo.; Bull. U.S. Geol. and Geog. Survey Terr., I, p. 22, 1874; "Pliocene", N. Colo.; Rept. U.S. Geol. Survey Terr., Hayden, III, p. 808, Pl. LXVI, f. 34-36, 1884; no loc. Hay, U.S. Geol. Survey Bull. 179, p. 792, 1902; Olig. (White River), Colo.

Leptochoerus lemurinus. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 60, 1899; M. Olig. (White River), NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 357, 1901; same data; U.S. Geol. Survey Bull. 361, p. 106, 1909; same data. Osborn, Bull. Amer. Mus. Nat. Hist., XVI, p. 174, 1902; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 752, 1930; M. Olig. (Cedar Creek), Colo.

Leptochoerus robustus (Marsh).

Laopithecus robustus. Marsh, Amer. Jour. Sci. (3), IX, p. 240, 1875; "Miocene", S. Dak.: idem., XLVI, p. 412, Pl. X, f. 5, 1893; "Miocene", Rocky Mtn. Region. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 59, 1899; White River, no loc.; in synonymy of

Leptochoerus spectabilis.

Menotherium robustum. Hay, U.S. Geol. Survey Bull. 179, p. 792, 1902; Olig. (White River), S. Dak.

Leptochoerus robustus. Matthew, U.S. Geol. Survey Bull. 361, p. 106, 1909; L. Brule (White River), Cedar Creek, Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 752, 1930; same data.

Genus STIBARUS Cope

Stibarus obtusilobus Cope.

Stibarus obtusilobus. Cope, Synopsis of New Vertebrata from the Tert. of Colo., p. 9, 1873; Tertiary, Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 503, 1874; White River, NE. Colo. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 61, 1899; M. Olig. (White River), NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 358, 1901; same data; U.S. Geol. Survey Bull. 361, p. 106, 1909; L. Brule, (Cedar Creek), NE. Colo. Hay, U.S. Geol. Surve, Bull. 179, p. 672, 1902; Olig. (White River), Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 753, 1930; M. Olig. (Cedar Creek), Colo.

Family DICHOBUNIDAE

Genus TRIGONOLESTES Cope

Trigonolestes secans (Cope).

Pantolestes secans. Cope, Rept. U.S. Geol. Survey Terr., Hayden, III, pp. 717, 725, Pl. XXVa, f. 6, 1884;

Wind River, Wyo.

?Trigonolestes secans. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 36, 1899; Huerfano, S. Colo.

Diacodexis secans. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 757, 1930; L. Eocene,(Wind River), Wyo., Colo.

Trigonolestes secans. Hay, U.S. Geol. Survey Bull. 179, p. 649, 1902; Eocene, Wyo., Colo. Matthew, idem., 361, p. 95, 1909; Eocene (L. Huerfano), Colo.

Family ELOTHERIIDAE

Genus ELOTHERIUM Pomel

Elotherium sp. indet.

Elotherium sp. Figgins, Rept. Colo. Mus. Nat. Hist., 1924, p. 19; Olig., Colo.

Genus ARCHAEOTHERIUM Leidy

Archaeotherium clavum (Marsh).

Elotherium clavum. Marsh, Amer. Jour. Sci., (3), XLVI, p. 409, Pl. IX, f. 1, 1893; Oreodon beds, S. Dak. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 59, 1899; no data. Hay, U.S. Geol. Survey Bull. 179, p. 655, 1902; Olig., S. Dak.?, Colo.

Entelodon clavus. Marsh, U.S. Geol. Survey Mon. XXVII, p. 523, f. 97, 1897; "Miocene", NE. Colo.

Archaeotherium mortoni clavum. Peterson, Mem. Carnegie Mus., IV, p. 49, f. 7, 1909; Olig., S. Dak.

Archaeotherium clavum. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 763, 1930; L. Olig., S. Dak.

Archaeotherium crassum (Marsh).

Elotherium crassum. Marsh, Amer. Jour. Sci., (3), V, p. 487, 1873; "Miocene", Colo.; U.S. Geol. Survey Mon., X, f. 75, 1884; "Miocene"; U.S. Geol. Survey 5th Ann. Rept., f. 108, 1885; same data; Amer. Jour. Sci. (3), XLVI, p. 408, Pl. VIII, 1893; "L. Miocene", Colo.; idem., XLVII, Pl. IX, 1894; same data. Zittel, Handbuch der Palaeont., I Abth, IV Band, p. 337, f. 373; 1893; White River, S. Dak. Woodward, Vert. Paleont., p. 345, f. 197, 1898; White River, Colo. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 59, 1899; M. and U. Olig., NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 356, 1901; Titanotherium and Oreodon beds, NE. Colo.; U.S. Geol. Survey Bull. 361, p. 104, 1909; same data. Hay, U.S. Geol. Survey Bull. 179, p. 655, 1902; Olig. (White River), S. Dak., Colo.

Entelodon crassum. Marsh, U.S. Geol. Survey Mon. XXVII, Pl. XXX, 1897; "Miocene", Colo.

Archaeotherium crassum. Peterson, Mem. Carnegie Mus., IV, No. 3, pp. 51-53, text f. 8, 1909; L. Olig., NE. Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 763, 1930; Olig.,(Chadron), Colo.; (Brule), Neb.

Archaeotherium mortoni Leidy.

Archaeotherium mortoni. Leidy, Proc. Acad. Nat.

Sci. Phila., V, p. 90, 1850; White River, Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 764, 1930; Olig. (White River), Colo.; (Brule), Neb.

Entelodon mortoni. Scott and Osborn, Bull. Mus. Comp. Zool., XIII, p. 156, 1887; White River, S. Dak., Neb.

Elotherium mortoni. Leidy, 2d (4th) Ann. Rept. U.S. Geol. Survey Terr., Hayden, p. 353, 1871; White River, S. Dak.; idem., I, pp. 125, 320, Pl. VII, f. 28, 29, 1873; "Miocene", S. Dak., Wyo. Zittel, Handbuch der Palaeont., I Abth, IV Band, p. 336, f. 271, 1893; White River, Neb. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 59, 1899; L. Olig., (White River), NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 356, 1901; same data; U.S. Geol. Survey Bull. 361, p. 106, 1909; same data. Hay, U.S. Geol. Survey Bull. 179, p. 655, 1902; White River, S. Dak., Neb., Colo.

Archaeotherium sp. indet.

Archaeotherium sp. Gregory and Cook, Proc. Colo. Mus. Nat. Hist., VIII, p. 3, 1928; Olig., (Chadron), Colo.

Genus PELONAX Cope

Pelonax potens (Marsh).

Ammodon potens. Marsh, Amer. Jour. Sci., (3), XLVI, p. 410, 1893; "Miocene", Colo.; U.S. Geol. Survey Mon., XXVII, p. 527, 1897; Brontotherium beds, Weld Co., Colo.

Elotherium potens. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 59, 1899; White River, no loc.

Pelonax potens. Peterson, Mem. Carnegie Mus., IV, p. 60, f. 14, 1909; U. Olig.?, Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 765, 1930; M. Olig. (Cedar Creek), Colo.

Pelonax ramosus (Cope).

Elotherium ramosum. Cope, Bull. U.S. Geol. and Geog. Survey Terr., I, p. 27, 1874; "Pliocene", N. Colo. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 59, 1899; M. Olig., (White River), NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 356, 1901; same data. Hay, U.S. Geol. Survey Bull. 179, p. 656, 1902; Olig.; Colo., N. Dak.

Pelonax ramosum. Peterson, Mem. Carnegie Mus. IV, p. 56, text f. 12, 1909; U. Olig.?, NE. Colo.

Pelonax ramosus. Cope, Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, pp. 463, 504, 1874; White River, NE. Colo. Matthew, U.S. Geol. Survey Bull. 361, p. 106, 1909; L. Brule (White River), Cedar Creek, NE. Colo.; Amer. Mus. Nat. Hist. Mon. Ser. 2, Pl. CIX,a, f. 1; 1915; Leptauchenia zone, Cedar Creek beds, NE. Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 765, 1930; same data.

Family TAYASSUIDAE

Genus PROSTHENNOPS Gidley

Prosthennops sp. indet.

Prosthenops sp. Cook, Proc. Colo. Mus. Nat. Hist.,

IV, p. 12, 1922; U. Mioc. or L. Plioc., Yuma Co., Colo.

Family AGRIOCHOERIDAE

Genus OREODON Leidy

Oreodon affinis Leidy.

Oreodon affinis. Leidy, Jour. Acad. Nat. Sci. Phila. (2), VII, pp. 105, 380, Pl. IX, f. 3, 1869, Olig. (White River), S. Dak.

Merycoidodon affinis. Thorpe, Amer. Jour. Sci. (5), II, pp. 339, 341, 1921; Olig., Colo., Neb. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 720, 1930; Olig. (Chadron), Neb., Colo.

Oreodon coloradensis Cope.

Oreodon coloradensis. Cope, Proc. Amer. Philos. Soc., XXI, p. 511, 1884; White River, Colo. Matthew, U.S. Geol. Survey Bull. 361, p. 106, 1909; L. Brule, (White River), Cedar Creek, NE. Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 780, 1930; in synonymy of Merycoidodon gracilis.

Oreodon culbertsonii Leidy.

Merycoidodon culbertsonii. Leidy, Proc. Acad. Nat. Sci. Phila., IV, p. 47, Plate; 1848; no data. Hay, U. S. Geol. Survey Bull. 179, p. 666, 1902; Olig., S. Dak.; Carnegie Inst. Wash. Pub. No. 390, II, p. 780, 1930; M. Olig., Mont., Colo., Neb., S. Dak., Wyo.

Cotylops speciosa. Leidy, Proc. Acad. Nat. Sci.

Phila., V, p. 239, 1851; Olig., Neb.

Oreodon robustum. Leidy, Proc. Acad. Nat. Sci. Phila., V, p. 276, 1851; Olig., Neb.

Oreodon priscum. Leidy, Proc. Acad. Nat. Sci. Phila., V, p. 238, 1851; Olig., Neb.

Oreodon culbertsonii. Leidy, Proc. Acad. Nat. Sci. Phila., 1870, p. 67; White River, S. Dak. Marsh, Amer. Jour. Sci. (2), XLIX, p. 292, 1870; White River, NE. Colo. Cope, Proc. Amer. Philos. Soc., XXI, pp. 511-513, 1884; White River, S. Dak., Neb., Wyo., Colo. Scott, Morpholog. Jahrbuch, XVI, Pl. XII; Pl. XIII, f. 4; Pl. XVI, f. 27-29; text f. II, III, IV, X, 1890. Osborn and Wortman, Bull. Amer. Mus. Nat. Hist., VI, p. 215, f. 5A, 1894; Olig., N. America. Matthew, Idem., XII, p. 60, 1899; M. Olig. (White River), NE. Colo.; U.S. Geol. Survey Bull. 361, p. 106, 1909; same data.

Oreodon culbertsonii periculorum Cope.

Oreodon culbertsonii periculorum. Cope, Proc. Amer. Philos. Soc., XXI, p. 511, 1884; White River, Colo., Wyo.

Merycoidodon culbertsonii (part). Hay, U.S. Geol. Survey Bull. 179, p. 666, 1902; White River, S. Dak.

Oreodon periculorum. Matthew, U.S. Geol. Survey Bull. 361, p. 106, 1909; L. Brule (White River), Cedar Creek, NE. Colo.

Merycoidodon culbertsonii periculorum. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 780, 1930; M.

Olig. (Brule), Mont., Colo., Neb., S. Dak., Wyo.

Oreodon gracilis Leidy.

Oreodon gracilis. Leidy, Proc. Acad. Nat. Sci. Phila., 1851, p. 239; Olig., Neb. Cope, Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 498, 1874; White River, NE. Colo. Scott, Morpholog. Jahrbuch, XVI, Pl. XIII, f. 5, text f. I; IX; X, 5; 1890. Osborn and Wortman, Bull. Amer. Mus. Nat. Hist., VI, p. 216, f. 5B, 1894; Olig., N. Amer. Matthew, idem., XII, p. 60, 1899; M. Olig., (White River), NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 358, 1901; same data; U.S. Geol. Survey Bull. 361, p. 106, 1909; L. Brule, (White River), Cedar Creek, NE. Colo.

Merycoidodon gracilis. Hay, U.S. Geol. Survey Bull. 179, p. 666, 1902; Olig., S. Dak., Neb., Colo.: Carnegie Inst. Wash. Pub. No. 390, II, p. 780, 1930; Olig. (L. Brule), S. Dak., Colo., Wyo., Neb.

Oreodon hybridus Leidy.

Oreodon hybridus. Leidy, Jour. Acad. Nat. Sci. Phila., (2), VII, pp. 105, 380, Pl. IX, f. 4, 1869; Olig. (White River), S. Dak.

Eporeodon hybridus. Thorpe, Amer. Jour. Sci., (5), VII, p. 221, 1924; M. Olig., Colo.

Merycoidodon hybridus. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 781, 1930; L. Olig., (Chadron), S. Dak., Neb.?; U. Olig., Colo.

Genus EPOREODON Marsh

Eporeodon cedrensis Matthew.

Eporeodon major cedrensis. Matthew, Mem. Amer. Mus. Nat. Hist., I, p. 396, 1901; U. Olig., NE. Colo. Thorpe, Amer. Jour. Sci. (5), VII, p. 224, 1924; same data.

Eporeodon cedrensis. Matthew, U.S. Geol. Survey Bull. 361, p. 109, 1909; U. Brule, Lower Martin Canyon, Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 782, 1930; same data.

Eporeodon major (Leidy).

Oreodon major. Leidy, Smithson. Cont. Knowledge, VI, p. 55, Pl. IV, f. 6, 1854; White River, S. Dak.

Eucrotaphus major. Scott and Osborn, Bull. Mus. Comp. Zool., XIII, p. 155, 1887; White River, S. Dak., Neb.

Eporeodon major. Marsh, Amer. Jour. Sci., (3), IX, p. 250, 1875; "Miocene"; U.S. Geol. Survey Mon. XXVII, p. 524, f. 98, 1897; Oreodon beds, Colo. Osborn and Wortman, Bull. Amer. Mus. Nat. Hist., VI, p. 218, f. 5D, 1894; Olig., N. America. Matthew, Mem. Amer. Mus. Nat. Hist., I, p. 358, 1901; Leptauchenia beds, NE. Colo. Hay, U.S. Geol. Survey Bull. 179, p. 667, 1902; Olig. (White River), S. Dak., N. Dak., Colo., Neb.; Carnegie Inst. Wash. Pub. No. 390, II, p. 782, 1930; U. Olig. (Brule), N. Dak., Neb.

Genus MERYCOCHOERUS Leidy

Merycochoerus proprius Leidy.

Merycochoerus proprius. Leidy, Proc. Acad. Nat. Sci. Phila., 1858, p. 24, 1858; Miocene, Neb. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 72, 1899; Loup Fork, NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 401, f. 18, 20, 21, 23-26, 1901; same data; U.S. Geol. Survey Bull. 361, p. 113, 1909; Arikaree, Uppermost Martin Canyon, Colo.; idem., p. 115; (?)M. Mioc. (Deep River Seq.), Pawnee Creek, Colo. Hay, U.S. Geol. Survey Bull. 179, p. 668, 1902; Mioc. (Loup Fork), Wyo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 786, 1930; L. Mioc., Wyo.; ?M. Mioc. (Pawnee Creek), Colo.

Merycochoerus rusticus Leidy.

Merycochoerus rusticus. Leidy, Proc. Acad. Nat. Sci. Phila., 1870, p. 109; Miocene, Wyo.; Rept. U.S. Geol. Survey Terr., Hayden, I, pp. 199, 319, Pl. III, f. 1-3; Pl. VII, f. 1-5; Pl. XX, f. 9-11; 1873; "Pliocene", Wyo. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 72, 1899; Loup Fork, Wyo.; Mem. Amer. Mus. Nat. Hist., I, pp. 358, 412, 1901; Pawnee Creek beds, NE. Colo. Hay, U.S. Geol. Survey Bull. 179, p. 668, 1902; Miocene, (Loup Fork), Wyo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 786, 1930; L. Mioc., Wyo.; ?M. Mioc., (Pawnee Creek), Colo.

Merycochoerus cf. rusticus. Matthew, U.S. Geol.

Survey Bull. 361, p. 115, 1909; M. Mioc. (Deep River Seq.), Pawnee Creek, NE. Colo.

Merychyus rusticus. Scott, Morpholog. Jahrbuch, XVI, pp. 341, 348, 1890.

Ticholeptus rusticus. Loomis, Amer. Jour. Sci. (4), L, pp. 281-286, text f. 1-3, 1920; Micc., Pawnee Creek, NE. Colo.

Genus MERYCHYUS Leidy

Merychyus major Leidy.

Merychyus major. Leidy, Proc. Acad. Nat. Sci. Phila., 1858, p. 26; "Pliocene", Neb.; idem., 1870, p. 109, same data; 2d (4th) Ann. Rept. U.S. Geol. Survey Terr.,Hayden, p. 348, 1871; Late Tertiary, Neb. Cope, Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 529, 1874; Loup Fork, NE. Colo.; Bull. U.S. Geol. and Geog. Survey Terr., I, p. 19, 1874; "Pliocene", N. Colo. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 72, 1899; Loup Fork, NE. Colo. Hay, U.S. Geol. Survey Bull. 179, p. 669, 1902; Miocene (Loup Fork), Neb., Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 787, 1930; U. Mioc., Neb.

Merychyus medius Leidy.

Merychyus medius. Leidy, Proc. Acad. Nat. Sci. Phila., X, p. 26, 1858; "Pliocene", Neb.; idem., 1870, p. 109; same data. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 72, 1899; Loup Fork, NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 358, 1901; Pawnee Creek beds,

NE. Colo. Hay, U.S. Geol. Survey Bull. 179, p. 669, 1902; Mioc., Neb., N. Mex., Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 788, 1930; U. Mioc., Neb.

Merychyus paniensis Loomis.

Merychyus paniensis. Loomis, Bull. Amer. Mus. Nat. Hist., LI, p. 34, f. 23, 24, 1924; M. Mioc. (Pawnee Creek), Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 788, 1930; same data.

Merychyus sp. indet.

Merychyus sp. div. Matthew, U.S. Geol. Survey Bull. 361, p. 115, 1909; M. Mioc. (Deep River Seq.), Pawnee Creek, Colo.

Genus LEPTAUCHENIA Leidy

Leptauchenia decora Leidy.

Leptauchenia decora. Leidy, Proc. Acad. Nat. Sci. Phila., VIII, p. 88, 1856; Olig. (White River), Neb.; Jour. Acad. Nat. Sci. Phila., (2), VII, pp. 127, 381, Pl. XII, f. 21, 22, 1869; same data. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 61, 1899; U. Olig. (White River), NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 357, 1901; same data. Hay, U.S. Geol. Survey Bull. 179, p. 670, 1902; Olig. (White River), S. Dak., Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 789; U. Olig. or L. Mioc., Neb., S. Dak.

Genus TICHOLEPTUS Cope

Ticholeptus sp. indet.

Ticholeptus sp. Peterson, Mem. Carnegie Mus.,

XI, p. 99, f. 8, 1928; Mioc. or Plioc., (Brown's Park), Colo.

Family CAMELIDAE

Genus POËBROTHERIUM Leidy

Poëbrotherium eximium Hay.

Poëbrotherium eximium. Hay, U.S. Geol. Survey Bull. 179, p. 675, 1902; Olig. , (White River), S. Dak. Matthew, U.S. Geol. Survey Bull. 361, p. 106, 1909; L. Brule, Cedar Creek, NE. Colo. Loomis, Amer. Jour. Sci. (5), XVI, p. 139, f. 2, 3, 1928; Olig., Neb.

Poëbrotherium wilsoni (non Leidy). Wortman, Bull. Amer. Mus. Nat. Hist., X, p. 111, f. 7, 1898; Olig., Neb.

Poëbrotherium labiatum Cope.

Poëbrotherium labiatum. Cope, Amer. Naturalist, XV, p. 271, f. 4, 1881; White River, Colo.; idem., XX, p. 618, f. 7, 1886; same data. Scott, Jour. Morphology, V, Pl. I, f. 7, Pl. II, f. 11-39; Pl. III, f. 40-42, 48-51, 1891. Zittel, Handbuch der Palaeont., I Abth., IV Band, pp. 359, 362, f. 292, 1893; White River, Colo. Wortman, Bull. Amer. Mus. Nat. Hist., X, p. 113, Pl. XI, f. C, D, 1898; same data. Matthew, idem., XII, p. 61, 1899; same data; Mem. Amer. Mus. Nat. Hist., I, p. 422, 1901; same data; Bull. Amer. Mus. Nat. Hist., XX, p. 214, 1904; same data; U.S. Geol. Survey Bull. 361, p. 106, 1909; L. Brule (White River), Cedar Creek, Colo.; Amer. Mus. Nat. Hist. Mon. Ser. 2, Pl. CXV, f. 1-13;

Pl. CXVa, f. 1-12, 1915; same data. Hay, U.S. Geol. Survey Bull. 179, p. 675, 1902; Olig. (White River), Colo., S. Dak.; Carnegie Inst. Wash. Pub. No. 390, II, p. 794, 1930; M. Olig. (Brule), Neb., Colo.

Poëbrotherium wilsoni Leidy.

Poëbrotherium wilsoni. Leidy, Proc. Acad. Nat. Sci. Phila., III, p. 322, 1847; no data; 2d (4th) Ann. Rept. U.S. Geol. Survey Terr., Hayden, p. 350, 1871; White River, S. Dak. Cope, Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 500, 1874; White River, NE. Colo. Scott, Jour. Morphology, V, Pl. I, f. 1-3, 8, 9; Pl. II, f. 1; Pl. III, f. 44-47, 1891. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 61, 1899; M. Olig. (White River), NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 427, 1901; same data; U. S. Geol. Survey Bull. 361, p. 106, 1909; L. Brule, (White River), Cedar Creek, NE. Colo.; Amer. Mus. Nat. Hist. Mon. Ser. 2, Pl. CXVa, f. 13-21, 1915; same data. Hay, U.S. Geol. Survey Bull. 179, p. 676, 1902; Olig., (White River), S. Dak., Neb.; Carnegie Inst. Wash. Pub. No. 390, II, p. 794, 1930; M. Olig. (Brule), S. Dak., Colo., Neb.

Poëbrotherium vilsoni (typ. err.). Cope, Amer. Naturalist, XXIII, p. 14, f. 12, 1899; White River, Colo.

Genus PROTOMERYX Leidy

Protomeryx cedrensis Matthew.

Protomeryx cedrensis. Matthew, Mem. Amer. Mus. Nat. Hist., I, p. 422, f. 29, 1901; Olig. (Leptauchenia beds), NE. Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 795, 1930; L. Mioc. (Upper Harrison), Neb.

Protomeryx halli Leidy.

Protomeryx halli. Leidy, Proc. Acad. Nat. Sci. Phila., VIII, p. 163, 1856; White River, S. Dak.; 2d (4th) Ann. Rept. U.S. Geol. Survey Terr., Hayden, p. 351, 1871; same data. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 61, 1899; U. Olig. (White River), NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 358, 1901; Leptauchenia beds, NE. Colo. Hay, U.S. Geol. Survey Bull. 179, p. 676, 1902; Olig. (White River), S. Dak., Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 795, 1930; L. Mioc., S. Dak.

Poëbrotherium halli. Cope, Bull. U.S. Geol. and Geog. Survey Terr., I, p. 23, 1874; "Pliocene", N. Colo.

Genus ALTICAMELUS Matthew

Alticamelus giraffinus Matthew.

Alticamelus giraffinus. Matthew, Bull. Amer. Mus. Nat. Hist., XXVI, p. 402, 1909; Mioc., (Pawnee Creek), Colo.; idem., L, p. 72, 1924; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 800, 1930; same data.

Alticamelus altus (non Marsh). Matthew, Mem. Amer. Mus. Nat. Hist., I, pp. 426, 430, Pl. XXXIX, 1901; M. Mioc., (Deep River Seq.), Pawnee Creek, Colo.; U.S. Geol. Survey Bull. 361, p. 115, 1909; same data. Alticamelus leptocolon (Matthew).

Procamelus robustus (non Leidy). Matthew, Mem. Amer. Mus. Nat. Hist., I, p. 427, f. 30, 1901; Loup Fork, NE. Colo.

Alticamelus leptocolon. Matthew, U.S. Geol. Survey Bull. 361, p. 115, 1909; M. Mioc. (Deep River Seq.), Pawnee Creek, Colo.

Alticamelus sp. indet.

Alticamelus sp. Cook, Proc. Colo. Mus. Nat. Hist., IV, pp. 12, 29, 1922; Plioc. (Snake Creek), Colo.

Genus PROTOLABIS Cope

Protolabis angustidens (Cope).

Procamelus angustidens. Cope, Bull. U.S. Geol. and Geog. Survey Terr., I, p. 20, 1874; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 529, 1874; Loup Fork, NE. Colo. Scott, Jour. Morphology, V, p. 57, Pl. I, f. 6, 1891. Wortman, Bull. Amer. Mus. Nat. Hist., X, p. 124, 1898; Loup Fork, no loc.; Syn. of Procamelus occidentalis; Hay, U.S. Geol. Survey Bull. 179, p. 677, 1902; Mioc. (Loup Fork), Colo., Kas.

Protolabis angustidens. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 74, 1899; Loup Fork, NE. Colo.;

Mem. Amer. Mus. Nat. Hist. , I, p. 434, 1901; same data; U.S. Geol. Survey Bull. 361, p. 115, 1909; M. Mioc., (Deep River Seq.), Pawnee Creek, Colo.; Amer. Mus. Nat. Hist. Mon. Ser. 2, Pl. CLIV, f. 4, 1915; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 801, 1930; U. Mioc. (Pawnee Creek), Colo.; U. and M. Mioc., Neb.

Protolabis fissidens (Cope).

Procamelus fissidens. Cope, Proc. Acad. Nat. Sci. Phila., 1876, p. 145; Loup Fork, Colo. Matthew, Mem. Amer. Mus. Nat. Hist., I, p. 428, 1901; same data; U. S. Geol. Survey Bull. 361, p. 115, 1909; M. Mioc., (Deep River Seq.), Pawnee Creek, Colo.

Miolabis (Procamelus?) fissidens. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 74, 1899; Loup Fork, NE. Colo.

Protolabis fissidens. Matthew, Bull. Amer. Mus. Nat. Hist., L, pp. 186, 190, 1924; Snake Creek, Neb. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 801, 1930; U. Mioc., (Pawnee Creek), Colo., Neb.

Protolabis heterodontus (Cope).

Procamelus heterodontus. Cope, Proc. Acad. Nat. Sci. Phila., XXV, p. 420, 1873; "Western Pliocene"; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 530, 1874; Loup Fork, NE. Colo. Wortman, Bull. Amer. Mus. Nat. Hist., X, pp. 120, 123, 1898; same data.

Hay, U.S. Geol. Survey Bull. 179, p. 677, 1902; same data.

Protolabis heterodontus. Cope, Proc. Acad. Nat. Sci. Phila., 1876, p. 145; Loup Fork, NE. Colo. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 74, 1899; same data; Mem. Amer. Mus. Nat. Hist., I, p. 433, 1901; same data; U.S. Geol. Survey Bull. 361, p. 115, 1909; M. Mioc. (Deep River Seq.), Pawnee Creek, Colo.; Amer. Mus. Nat. Hist. Mon. Ser. 2, Pl. CLIII, f. 3, 4, 1915; Pawnee Creek beds, Weld Co., Colo., Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 801, 1930; same data.

Protolabis longiceps Matthew.

Protolabis montanus (non Douglass). Matthew, Mem. Amer. Mus. Nat. Hist., I, p. 435, f. 31-33, 1901; Loup Fork, Colo.

Protolabis longiceps. Matthew, U.S. Geol. Survey Bull. 361, p. 115, 1909; M. Mioc. (Deep River Seq.), Pawnee Creek, Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 801, 1930; U. Mioc., Colo.

Genus MEGATYLOPUS Matthew and Cook

Megatylopus gigas Matthew and Cook.

Pliauchenia (Megatylopus) gigas. Matthew and Cook, Bull. Amer. Mus. Nat. Hist., XXVI, p. 396, text f. 16-18, 1909; Pliocene, Neb.; Proc. Colo. Mus. Nat. Hist., IV, pp. 11, 12, 1922; U. Mioc. or L. Plioc., Yuma Co., Colo.?

Megatylopus gigas. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 803, 1930; L. Plioc., Neb.

Genus CAMELOPS Leidy

Camelops huerfanensis (Cragin).

Auchenia huerfanensis. Cragin, Amer. Geologist, IX, p. 158, 1892; Huerfano Co., Colo. Cope, Fourth Ann. Rept. Geol. Survey Texas, p. 72, 1893; Pleist., Texas.

Camelops kansanus (part). Hay, U.S. Geol. Survey Bull. 179, p. 679, 1902; Pleist., Kas.

Camelops huerfanensis. Hay, Proc. U.S. Nat. Mus., XLVI, p. 269, Pls. 25, 26, 1914; Pleist., Huerfano River, Huerfano Co., Colo.; idem., LIX, p. 599, text f. 1-7, Pl. 116, 1922; Pleist., Denver; Carnegie Inst. Wash. Pub. No. 322-A, p. 166, 1924; Pleist., Gardner, Denver, Colo.; idem., 390, II, p. 804, 1930; Pleist., Colo., Texas, Kas.

Camelops sp. indet.

Camelops sp. indet. Hay, Carnegie Inst. Wash. Pub. No. 322-A, p. 374, 1924; Pleist.; Colo. localities: Denver, West Cliff.

Genus STENOMYLUS Peterson

Stenomylus sp. indet.

Stenomylus sp. Peterson, Ann. Carnegie Mus., XV, p. 304, f. 3, 1924; L. Mioc. (Brown's Park), Colo.

Family HYPERTRAGULIDAE

Genus LEPTOMERYX Leidy

Leptomeryx evansi Leidy.

Leptomeryx evansi. Leidy, Proc. Acad. Nat. Sci. Phila., VI, p. 394, 1853; Olig., Neb. Cope, Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, pp. 464, 503, 1874; White River, NE. Colo. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 61, 1899; M. (? and U.) Olig., (White River), NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 358, 1901; Oreodon beds, NE. Colo.; Bull. Amer. Mus. Nat. Hist., XXIV, pp. 544, 548, f. 8-11, 1908; M. Olig., S. Dak.; U.S. Geol. Survey Bull. 361, p. 106, 1909; L. Brule, Cedar Creek, Colo. Hay, U.S. Geol. Survey Bull. 179, p. 671, 1902; Olig. (White River), S. Dak., Colo., Neb.; Carnegie Inst. Wash. Pub. No. 390, II, p. 810, 1930; same data.

Trimerodus cedrensis. Cope, Synopsis of New Vertebrata from the Tert. of Colo., p. 14, 1873; Tertiary, Colo.

Leptomeryx mammifer Cope.

Leptomeryx mammifer. Cope, Ann. Rept. Geol. and Nat. Hist. Survey Canada, I, 1885, p. 84, 1886; Olig., Canada. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 61, 1899; M. Olig. (White River), NE. Colo. Hay, U.S. Geol. Survey Bull. 179, p. 672, 1902; Olig., Canada, Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 810;

L. Olig., Canada.

Leptomeryx sp. indet.

Leptomeryx sp. Matthew, Bull. Amer. Mus. Nat. Hist. XVI, p. 314, 1902; Olig. S. Dak., Colo.

Genus HYPISODUS Cope

Hypisodus minimus Cope.

Hypisodus minimus. Cope, Proc. Acad. Nat. Sci. Phila., 1873, p. 419; "Miocene", Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 50, 1874; White River, NE. Colo.; Bull. U.S. Geol. and Geog. Survey Terr., I, p. 26, 1874; "Pliocene", N. Colo. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 61, 1899; M. Olig. (White River), Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 440, f. 34, 1901; same data; Bull. Amer. Mus. Nat. Hist., XVI, p. 311, text f. 1, 1902; same data; U.S. Geol. Survey Bull. 361, p. 106, 1909; L. Brule, Cedar Creek, Colo. Hay, U.S. Geol. Survey Bull. 179, p. 672, 1902; Olig. (White River), Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 811, 1930; M. Olig., Colo., Neb., S. Dak., Wyo. Zittel and Schlosser, Grundzüge der Palaeont., p. 497, f. 693, 1911; Olig., Colo. Zittel, Textbook of Palaeont., III, p. 205, f. 285, 1925; same data.

Hypisodus rigens. Cope, Synopsis of New Vertebrata from the Tert. of Colo., p. 7, 1873; Tertiary, Colo.

Leptauchenia minima. Cope, Synopsis of New Vertebrata from the Tert. of Colo., p. 14, 1873; Tertiary, Colo.

Genus HYPERTRAGULUS Cope

Hypertragulus calcaratus (Cope).

Leptauchenia calcarata. Cope, Palaeont. Bull. No. 16, p. 7, 1873; Synopsis of New Vertebrata from the Tert. of Colo., p. 14, 1873; Tertiary, Colo.

Hypertragulus tricostatus. Cope, Proc. Acad. Nat. Sci. Phila., 1873, p. 419; " Miocene", Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 503, 1874; White River, Colo.; Bull. U.S. Geol. and Geog. Survey Terr., I, p. 27, 1874; Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 61, 1899; M. Olig., NE. Colo.

Hypertragulus calcaratus. Cope, Proc. Acad. Nat. Sci. Phila., 1873, p. 419; "Miocene", Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 502, 1874; same data; Bull. U.S. Geol. and Geog. Survey Terr., I, p. 26, 1874; Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 61, 1899; M. Olig., NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 358, 1901; same data; U.S. Geol. Survey Bull. 361, p. 106, 1909; L. Brule, Cedar Creek, Colo. Hay, U.S. Geol. Survey Bull. 179, p. 674, 1902; Olig. (White River), Colo., S. Dak., Mont., Canada; (Deep River?), Mont.?; Carnegie Inst. Wash. Pub. No. 390, II, p. 813, 1930; M. Olig., Colo., S. Dak.;

L. Mioc., Mont., S. Dak.?, Neb.

Family PALAEOMERYCIDAE

Genus PALAEOMERYX Meyer

Palaeomeryx sp. indet.

Palaeomeryx sp. Matthew, U.S. Geol. Survey Bull. 361, p. 115, 1909; M. Mioc. (Deep River Seq.), Pawnee Creek, Colo.

?Palaeomeryx sp. Cook, Proc. Colo. Mus. Nat. Hist., IV, p. 13, 1922; U. Mioc. and L. Plioc., Yuma Co., Colo.

Family CERVIDAE

Genus BLASTOMERYX Cope

Blastomeryx gemmifer (Cope).

Merycodus gemmifer. Cope, Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 531, 1874; Loup Fork, NE. Colo.; Bull. U.S. Geol. and Geog. Survey Terr., I, p. 22, 1874; "Pliocene", N. Colo.

Dicrocerus gemmifer. Cope, Ann. Rept. Geog. Explor. west of 100th meridian, App. LL, p. 68, 1875.

Córsoryx gemmifer. Cope, Amer. Naturalist XVIII, p. 1035, 1884; no data.

Blastomeryx gemmifer. Cope, Proc. Amer. Assoc. Adv. Sci., 33d meeting, Phila., p. 488, 1885; no data. Zittel, Handbuch der Palaeont., I Abth, IV Band, p. 399, f. 330, 1893; Loup Fork, Neb. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 74, 1899; Loup Fork, NE. Colo.;

idem., XX, p. 536, 1908; same data; U.S. Geol. Survey Bull. 361, p. 115, 1909; M. Mioc. (Deep River Seq.), Pawnee Creek, Colo. Hay, U.S. Geol. Survey Bull. 179, p. 682, 1902; Loup Fork, Colo., Texas?, N. Mex., Neb.; Carnegie Inst. Wash. Pub. No. 390, II, p. 818, 1930; same data.

Genus DROMOMERYX Douglass

Dromomeryx borealis (Cope).

Blastomeryx borealis. Cope, Proc. Amer. Philos. Soc., XVII, p. 222, 1878; Bull. U.S. Geol. and Geog. Survey Terr., 1878, p. 382; Amer. Naturalist, XVIII, p. 1035, 1884; no data. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 74, 1899; Loup Fork, NE. Colo.; idem., XX, p. 128, 1904; Mioc. (Deep River Seq.), Pawnee Creek, Colo. Hay, U.S. Geol. Survey Bull. 179, p. 682, 1902; Loup Fork, Colo., N. Mex., Neb.

Palaeomeryx borealis. Matthew, U.S. Geol. Survey Bull. 361, p. 115, 1909; Miocene., Mont.

Dromomeryx borealis. Matthew, Bull. Amer. Mus. Nat. Hist., L, p. 72, 1924; U. Mioc., Neb. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 819, 1930; U. Mioc., Neb.; Mioc., Mont., Nev.

Family MERYCODONTIDAE

Genus MERYCODUS Leidy

Merycodus osborni Matthew.

Merycodus osborni. Matthew, Bull. Amer. Mus. Nat.

Hist., XX, pp. 101, 107-121, Pl. III, text f. 1-4, 7-16, 1904; M. Mioc. (Pawnee Creek beds), NE. Colo.; U.S. Geol. Survey Bull. 361, p. 115, 1909; same data. Zittel and Schlosser, Grundzüge der Palaeont., p. 497, f. 694, 1911; U. Mioc., Colo. Zittel, Textbook of Palaeont., III, p. 205, f. 286, 1925; M. Mioc., Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 831, 1930; U. Mioc., Colo., S. Dak.

?Merycodus sp. indet.

?Meryccdus sp. Cook, Proc. Colo. Mus. Nat. Hist., IV, p. 12, 1922; U. Mioc. and L. Plioc., Yuma Co., Colo.

Family BOVIDAE

Genus NAEMORHEDUS H. Smith

Naemorhedus palmeri Cragin.

Nemorhoedus palmeri. Cragin, G. S. A. Bull., XI, p. 610, Pl. LVII, 1899, Pleist., Pikes Peak Region; Colo. College Studies, VIII, p. 23, 1900; same data; Science, n. s., XI, p. 219, 1900; same data.

Naemorhedus palmeri. Hay, Carnegie Inst. Wash. Pub. No. 322-A, pp. 144, 273, 275, 1924; Pleist., Manitou, Colo.; idem., 390, II, p. 840, 1930; Pleist., Colo.

Genus OVIBOS Blainville

Ovibos sp. indet.

Ovibos sp. indet. Hay, Carnegie Inst. Wash. Pub. No. 322-A, p. 182, 1924; Pleist., Colo. locality: Colorado Springs.

Genus BISON H. Smith

Bison bison (Linnaeus).

Bos bison. Linnaeus, Syst. Nat., ed. 10, p. 72, 1758.

Bison americanus. Allen, Mem. Mus. Comp. Zool., IV, No. 10, Pl. XI, f. 2; Pl. III, f. 2, 4, 7, 9, 11; Pl. V, f. 1-8; Pl. VI, f. 1-8; Pl. VII, f. 1-6, 9, 10; Pl. VIII, f. 1-11; Pl. IX, f. 1-8; Pl. X, f. 1-12; Pl. XI, f. 1-10; Pl. XII, f. 1-6; 1876.

Bos americanus. Lawson, Canad. Geol. Nat. Hist., Survey, p. 172, 1889; Pleist., Canada.

Bison bison. Hay, U.S. Geol. Survey Bull. 179, p. 689, 1902; Pleist., Ill., Ia., Wis., Kas., Colo., Pa., N.Y., S. Caro., Ky.; Carnegie Inst. Wash. Pub. No. 322-A, p. 204, 1924; Pleist.; Colo. localities: Gold Hill, Wellington; idem., 390, II, p. 849, 1930; Pleist., most of North America.

Bison sp. indet.

Bison sp. indet. Hay, Proc. U.S. Nat. Mus., LIX, p. 599, 1922; Pleist., Denver; Carnegie Inst. Wash. Pub. No. 322-A, pp. 195, 196, 1924; Pleist.; Colo. localities: Colorado Springs, Parker, Denver, Glenwood Springs.

Order TILLODONTIA

Family TILLOTHERIIDAE

Genus TILLOTHERIUM Marsh

Tillotherium fodiens Marsh.

Tillotherium fodiens. Marsh, Amer. Jour. Sci. (3), IX, p. 241, 1875; Eocene, Wyo.; Idem., XI, p. 250, Pl. VIII; Pl. IX, f. 1-3; text f. 1, 1876; same data. Osborn, Bull. Amer. Mus. Nat. Hist., IX, p. 257, 1897; Eocene (U. Huerfano), Colo. Matthew, idem., XII, p. 42, 1899; same data. Hay. U.S. Geol. Survey Bull. 179, p. 716, 1902; Eocene (Bridger), Wyo., Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 856, 1930; M. Eocene, Wyo.

?Tillotherium sp. indet.

?Tillotherium sp. Matthew, U.S. Geol. Survey Bull. 361, pp. 49, 97, 1909; Eocene (U. Huerfano), Colo.

Order DUPLICIDENTATA

Family LEPORIDAE

Genus PALAEOLAGUS Leidy

Palaeolagus agapetillus Cope.

Palaeolagus agapetillus. Cope, Palaeont. Bull. No. 15, p. 1, 1873; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 478, 1874; White River, NE. Colo.; Bull. U.S. Geol. Survey Terr., VI, p. 384,

1881; same data. Matthew, Bull. Amer. Mus. Nat. Hist., XVI, p. 307, text f. 16, 1902; U. Brule, Lower Martin Canyon, Colo.; U.S. Geol. Survey Bull. 361, p. 108, 1909; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 865, 1930; Olig. (White River), Colo.

Tricium agapetilla. Cope, Palaeont. Bull. No. 16, p. 5, 1873; Synopsis of New Vertebrata from the Tert. of Colo., p. 4, 1873; Tertiary, Colo.

Palaeolagus haydeni (part). Hay, U.S. Geol. Survey Bull. 179, p. 735, 1902.

Palaeolagus haydeni agapetillus. Troxell, Amer. Jour. Sci. (5), I, p. 347, f. 17, 19, 1921; Olig., no loc.

Palaeolagus haydeni Leidy.

Palaeolagus haydeni. Leidy, Proc. Acad. Nat. Sci. Phila., VIII, p. 89, 1856; Olig., Neb. Cope, Amer. Naturalist, XVII, p. 173, f. 20, 1883; White River, Colo.; Rept. U.S. Geol. Survey Terr., Hayden, III, p. 874, Pl. LXVI, f. 1-27, 1884; same data. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 53, 1899; M. and U. Olig., NE. Colo.; Mem. Amer. Mus.Nat. Hist., I, p. 357, 1901; same data; Bull. Amer. Mus. Nat. Hist., XVI, p. 308, 1902; same data; U.S. Geol. Survey Bull. 361, p. 105, 1909; same data. Hay, U.S. Geol. Survey Bull. 179, p. 735, 1902; Olig. (White River), S. Dak., Colo., Neb., Ore.?; Carnegie Inst. Wash. Pub. No. 390, II, p. 865, 1930; M. Olig., Colo., Neb.

Tricium avunculus. Cope, Palaeont. Bull. No. 16, p. 4, 1873; Synopsis of New Vertebrata from the Tertiary of Colo., p. 4, 1873; Tertiary Colo.

Tricium annae. Cope, Synopsis of New Vertebrata from the Tert. of Colo., p. 4, 1873; Tertiary, Colo.

Tricium leporinum. Cope, Palaeont. Bull. No. 16, p. 5, 1873; Synopsis of New Vertebrata from the Tert. of Colo., p. 4, 1873; Tertiary, Colo.

Palaeolagus leporinus. Hay, U.S. Geol. Survey Bull. 179, p. 736, 1902; Olig. (White River), Colo.

Palaeolagus intermedius Matthew.

Palaeolagus intermedius. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 53, 1899; M. and U. Olig., NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 377, 1901; Leptauchenia beds, NE. Colo.; Bull. Amer. Mus. Nat. Hist., XVI, p. 308, text f. 17, 1902; same data; U.S. Geol. Survey Bull. 361, p. 108, 1909; U. Brule, (White River), Lower Martin Canyon, Colo. Hay, U.S. Geol. Survey Bull. 179, p. 736, 1902; Olig. (White River), Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 865, 1930; same data. Osborn, Evol. of Mamm. Molar Teeth, p. 148, text f. 113, 1907; same data.

Palaeolagus haydeni intermedius. Troxell, Amer. Jour. Sci. (5), I, p. 348, 1921; Olig.

Palaeolagus turgidus Cope.

Palaeolagus turgidus. Cope, Palaeont. Bull. No. 16,

p. 4, 1873; Synopsis of New Vertebrata from the Tert. of Colo., p. 4, 1873; Tertiary Colo.: Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 479, 1874; White River, NE. Colo.; Bull. U.S. Geol. Survey Terr., VI, p. 384, 1881; same data; Rept. U.S. Geol. Survey Terr., Hayden, III, pp. 874, 882, Pl. LXVI, f. 28; Pl. LXVII, f. 13-27; 1884; same data. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 53, 1899; M. Olig., NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 377, 1901; U. Olig., Colo.: P. triplex a young individual of P. turgidus; Bull. Amer. Mus. Nat. Hist., XVI, p. 309; 1902; same data; U.S. Geol. Survey Bull. 361, p. 105, 1909; L. Brule, Cedar Creek, NE. Colo. Hay, U.S. Geol. Survey Bull. 179, p. 736, 1902; Olig. (White River), Colo., Canada; Carnegie Inst. Wash. Pub. No. 390, II, p. 866, 1930; M. Olig., Neb., Colo.

Tricium paniense. Cope, Palaeont. Bull. No. 16, p. 4, 1873; Synopsis of New Vertebrata from the Tert. of Colo., p. 4, 1873; Tertiary, Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 479, 1874; White River, Colo.

Palaeolagus triplex. Cope, Palaeont. Bull. No. 16, p. 4, 1873; Synopsis of New Vertebrata from the Tert. of Colo., p. 4, 1873; Tertiary, Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 479, 1874; same data; Bull. U.S. Geol. Survey Terr., VI, p. 384, 1881; same data; Rept. U.S. Geol. Survey

Hayden, III, pp. 874, 881; Pl. LXVI, f. 28, 1884; White River, Colo. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 53, 1899; M. Olig., NE. Colo. Hay, U.S. Geol. Survey Bull. 179, p. 736, 1902; M. Olig. (White River) Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 866, 1930; same data.

Order SIMPLICIDENTATA

Family SCIURIDAE

Genus MARMOTA Blumenbach

Marmota sp. indet.

Marmota sp. Cragin, Colo. Coll. Studies, VIII, p. 23, 1900; Pleist., Pikes Peak Region, Colo.

Family HETEROMYIDAE

Genus HELISCOMYS Cope

Heliscomys parvus (Troxell).

Diplolophus parvus. Troxell, Amer. Jour. Sci., (5), V, p. 158, f. 3-5, 1923; Olig., Colo.?

Heliscomys parvus. Hay, Carnegie Inst. Wash . Pub. No. 390, II, p. 880, 1930; Olig. (White River), Colo.

Heliscomys vetus Cope.

Heliscomys vetus. Cope, Synopsis of New Vertebrata from the Tert. of Colo., p. 3, 1873; Tertiary, Colo.; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 475, 1874; White River, NE. Colo.; Bull. U.S. Geol. Survey Terr., VI, p. 375, 1881; same data; Amer. Natur-

alist, XV, p. 586, 1881; same data; idem., XVII, p. 57, f. 13a-d, 1883; same data; Rept. U.S. Geol. Survey Terr., Hayden, III, p. 847, Pl. LXV, f. 14-18, 1884; same data. Allen, Rept. U.S. Geol. Survey Terr., Hayden, XI, p. 936, 1877; Tertiary, Colo. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 52, 1899; M. Olig., NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 357, 1901; same data. Hay, U.S. Geol. Survey Bull. 179, p. 729, 1902; same data; Carnegie Inst. Wash. Pub. No. 390, II, p. 880, 1930; same data.

Family ADJIDAUMIDAE

Genus ADJIDAUMO Hay

Adjidaumo minutus (Cope).

Gymnoptychus minutus. Cope, Palaeont. Bull. No. 16, p. 6, 1873; Bull. U.S. Geol. and Geog. Survey Terr., VI, p. 364, 1881; White River, N. America; Amer. Naturalist, XVII, p. 51, f. 5 a-d, 1883; White River, Colo.; Rept. U.S. Geol. Survey Terr., Hayden, III, p. 822; Pl. LXV, f. 19-30, 1884; same data. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 52, 1899; M. Olig., NE. Colo.; U.S. Geol. Survey Bull. 361, p. 105, 1909; same data.

Ischryomys minutus. Cope, Synopsis of New Vertebrata from the Tert. of Colo., p. 3, 1873; Tertiary, Colo.

Gymnoptychus nasutus. Cope, Ann. Rept. Geol. and Geog. Survey Terr. for 1873; Hayden, p. 476, 1874; White

River, NE. Colo. Allen, Rept. U.S. Geol. Survey Terr., Hayden, XI, p. 945, 1877; Tertiary of the Plains.

Ischryomys nasutus. Cope, Synopsis of New Vertebrata from the Tert. of Colo., p. 3, 1873; Tertiary, Colo.

Adjidaumo minutus. Hay, Science, (2), X, p. 253, 1899; U. S. Geol. Survey Bull. 179, p. 720, 1902; Olig. (White River), Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 881, 1930; Olig., Mont., Colo.

Adjidaumo trilophus (Cope).

Gymnoptychus trilophus. Cope, Palaeont. Bull. No. 16, p. 6, 1873; Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 476, 1874; White River, Colo.; Amer. Naturalist, XVII, p. 51, f. 5e, 1883; same data; Rept. U.S. Geol. Survey Terr., Hayden, III, p. 826, Pl. LXV, f. 31-34, 1884; same data. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 52, 1899; M. Olig., NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 357, 1901; Oreodon beds, Colo.; U.S. Geol. Survey Bull. 361, p. 105, 1909; L.Brule, Cedar Creek, NE. Colo.

Ischryomys trilophus. Cope, Synopsis of New Vertebrata from the Tert. of Colo., p. 3, 1873; Tertiary, Colo.

Gymnotychus liolophus. Matthew, Bull. Amer. Mus. Nat. Hist., XIX, p. 215, 1903; no data.

Adjidaumo trilophus. Hay, Science, (2), X, p. 253, 1899; no data; U.S. Geol. Survey Bull. 179, p. 720,

1902; M. Olig. (White River), Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 881, 1930; same data.

Family ISCHYROMYIDAE

Genus ISCHYROMYS Leidy

Ischyromys chrysodon (Cope).

Gymnoptychus chrysodon. Cope, Palaeont. Bull. No. 16, p. 5, 1873. Allen, Rept. U.S. Geol. Survey Terr., Hayden, XI, pp. 931, 945, 1877; Tertiary of the Plains.

Ischryomys chrysodon. Cope, Synopsis of New Vertebrata from the Tert. of Colo., p. 3, 1873; Tertiary, Colo.

Ischyromys typus (part). Hay, U.S. Geol. Survey Bull. 179, p. 725, 1902.

Ischyromys chrysodon. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 890, 1930; (White River), Neb., S. Dak., Colo.

Ischyromys cristatus (Cope).

Colotaxis cristatus. Cope, Palaeont. Bull. No. 15, p. 1, 1873; Synopsis of New Vertebrata from the Tert. of Colo., p. 3, 1873; Tertiary, Colo.

Ischyromys typus (part). Hay, U.S. Geol. Survey Bull. 179, p. 725, 1902.

Ischyromys cristatus. Matthew, U.S. Geol. Survey Bull. 361, p. 105, 1909; L. Brule, Cedar Creek, Colo.; Bull. Amer. Mus. Nat. Hist., XXVIII, p. 62, 1910; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p.

890; same data.

Ischyromys pliacus Troxell.

Ischyromys pliacus. Troxell, Amer. Jour. Sci., (5), III, p. 124, text f. 1, 1922; M. Olig., Cherry Creek, Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 891, 1930; same data.

Ischyromys typus Leidy.

Ischyromys typus. Leidy, Proc. Acad. Nat. Sci. Phila., VIII, p. 89, 1856; Olig., Neb.; 2d (4th) Ann. Rept. U.S. Geol. Survey Terr., Hayden, p. 363, 1871; White River. Cope, Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 477, 1874; White River, NE. Colo.; Amer. Naturalist, XVII, p. 48, f. 3, 1883; same data; Rept. U.S. Geol. Survey Terr., Hayden, III, p. 835, Pl. LXVII, f. 1-12, 1884; same data; Amer. Naturalist, XXII, p. 8, f. 5, 1888; same data. Zittel, Handbuch der Palaeont., I Abth., IV Band, p. 522, f. 431, 1893; same data. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 52, 1899; M. Olig. (White River), NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 357, 1901; same data. Hay, U. S. Geol. Survey Bull. 179, p. 725, 1902; Olig. (White River), S. Dak., Neb., Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 891, 1930; M. Olig., Neb., Mont., Sask.

Ischyromys typus nanus Troxell.

Ischyromys typus nanus. Troxell, Amer. Jour. Sci. (5), III, p. 124, text f. 2, 3, 1922; Olig., Gerry's

Ranch, Weld Co., Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 891, 1930; same data.

Family CRICETIDAE

Genus EUMYS Leidy

Eumys elegans Leidy.

Eumys elegans. Leidy, Proc. Acad. Nat. Sci. Phila., VIII, p. 90, 1856; Olig., Neb.; 2d (4th) Ann. Rept. U.S. Geol. Survey Terr., Hayden, p. 364, 1871; White River. Cope, Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 474, 1874; White River, NE. Colo.; Amer. Naturalist, XVII, p. 165, f. 13, 14, 1883; same data; Rept. U.S. Geol. Survey Terr., Hayden, III, p. 849; Pl. LXV, f. 1-14, 1884; same data. Zittel, Handbuch der Palaeont., I Abth., IV Band, p. 535, f. 448, 1893; "L. Mioc.", Colo. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 53, 1899; M. Olig., NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 357, 1901; same data; U. S. Geol. Survey Bull. 361, p. 105, 1909; L. Brule, Cedar Creek, NE. Colo. Hay, U.S. Geol. Survey Bull. 179, p. 726, 1902; Olig. (White River), S. Dak., Colo., Neb.; Carnegie Inst. Wash. Pub. No. 390, II, p. 892, 1930; Brule, Neb., Colo.?

Family PARAMYIDAE

Genus PARAMYS Leidy

Paramys sp. indet.

Paramys sp. div. Matthew, U.S. Geol. Survey Bull.

361, pp. 49, 97, 1909; Eocene (U. Huerfano), Colo.

Genus PROSCIURUS Matthew

Prosciurus relictus (Cope).

Paramys relictus. Cope, Synopsis of New Vertebrata from the Tert. of Colo., p. 3, 1873; Tertiary, Colo.

Sciurus relictus. Cope, Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, p. 475, 1874; White River, NE. Colo.; Bull. U.S. Geol. and Geog. Survey Terr., VI, p. 363, 1881; same data; Amer. Naturalist, XVII, p. 50, f. 4e, f, 1883; same data; Rept. U.S. Geol. Survey Terr., Hayden, III, p. 817, Pl. LXV, f. 35, 1884; same data. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 52, 1899; M. Olig., NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 357, 1901; same data. Hay, U.S. Survey Bull. 179, p. 719, 1902; same data.

Prosciurus relictus. Matthew, U.S. Geol. Survey Bull. 361, p. 105, 1909; L. Brule, Cedar Creek, NE. Colo. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 904; same data.

Prosciurus wortmani (Cope).

Sciurus wortmani. Cope, Proc. Amer. Philos. Soc., XVIII, p. 370, 1879; John Day, Ore.; Bull. U.S. Geol. and Geog. Survey Terr., VI, p. 363, 1881; White River, Colo., Ore.; Amer. Naturalist, XVII, p. 50, f. 4, g. h, 1883; Olig; Rept. U.S. Geol. Survey Terr. Hayden, III, p. 816, Pl. LXIII, f. 4, 1884; White River, Colo. Matthew, Mem. Amer. Mus. Nat. Hist., I, p. 357, 1901;

Oreodon beds, NE. Colo. Hay, U.S. Geol. Survey Bull. 179, p. 719, 1902; Mioc., Ore., Colo.?

Prosciurus vortmani. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 904, 1930; U. Olig. (John Day), Ore.

Sciurus cf. wortmani. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 52, 1899; M. Olig., NE. Colo.

Prosciurus wortmani. Matthew, U.S. Geol. Survey Bull. 361, p. 107, 1909; U. Olig., (John Day), Ore.

Family MYLAGAULIDAE

Genus MYLAGAULUS Cope

Mylagaulus laevis Matthew.

Mylagaulus laevis. Matthew, Bull. Amer. Mus. Nat. Hist., XVI, p. 298, 1902; Mioc. (Loup Fork), NE. Colo.; U.S. Geol. Survey Bull. 361, p. 114, 1909; M. Mioc. (Deep River Seq.), Pawnee Creek, NE. Colo.; Bull. Amer. Mus. Nat. Hist., L, pp. 66, 75, 78, f. 2-4, 1924; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 908, 1930; U. Mioc. (Pawnee Creek), Colo.; (L. Sheep Creek), Neb.

Mylagaulus monodon (non Cope). Matthew, Mem. Amer. Mus. Nat. Hist., I, p. 377, 1901; M. Mioc., Colo.

Mylagaulus monodon Cope.

Mylagaulus monodon. Cope, Bull. U.S. Geol. and Geog. Survey Terr., VI, p. 374, 1881; Neb.; Amer. Naturalist, XVII, p. 56, f. 12, 1883; Loup Fork, Neb. Matthew, Bull. Amer. Mus. Nat. Hist., XII, p. 66, 1899;

Loup Fork, NE. Colo.; Mem. Amer. Mus. Nat. Hist., I, p. 377, f. 3-6, 1901; same data; Mesogaulus ballensis Riggs in synonymy; Bull. Amer. Mus. Nat. Hist., XVI, p. 297, 1902; same data; Mesogaulus ballensis not a synonym. Hay, U.S. Geol. Survey Bull. 179, p. 721, 1902; Mioc. (Loup Fork), Neb., Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 908, 1930; Pleist., Neb.; Plioc., Neb.; Mioc., Nev.; U. Mioc., S. Dak., Kas. Osborn, Evol. of Mamm. Molar Teeth, p. 146, text f. 107, 108, 1907; U. Mioc., Colo.

Mylagaulus paniensis Matthew.

Mylagaulus paniensis. Matthew, Bull. Amer. Mus. Nat. Hist., XVI, p. 299, text f. 4, 1902; Loup Fork, Courthouse Butte, near Pawnee Buttes, Colo.; U.S. Geol. Survey Bull. 361, p. 114, 1909; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 908, 1930; U. Mioc., (Pawnee Creek), Colo., Mont.; (L. Snake Creek), Neb.

Genus CERATOGAULUS Matthew

Ceratogaulus rhinocerus Matthew.

Ceratogaulus rhinocerus. Matthew, Bull. Amer. Mus. Nat. Hist., XVI, p. 291, text f. 1, 1902; M. Mioc., (Deep River Seq.), Pawnee Creek, Colo.; U.S. Geol. Survey Bull. 361, p. 114, 1909; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 908, 1930; Mioc., Colo., Neb.

Order PRIMATES

Family ADAPIDAE

Genus PELYCODUS Cope

Pelycodus tutus (Cope).

Tomitherium tutum. Cope, Wheeler Surveys west of 100th Meridian, I, p. 141, Pl. XXXIX, f. 19; Pl. XL, f. 16-25; 1877; Eocene.

Pelycodus tutus. Cope, Rept. U.S. Geol. Survey Terr., Hayden, III, pp. 224, 225, 228, Pl. XXVa, f. 1-3, 1884; no loc. Osborn, Bull. Amer. Mus. Nat. Hist., XII, pp. 30, 34, 1899; Eocene (Huerfano), SE. Colo. Hay, U.S. Geol. Survey Bull. 179, p. 790, 1902; Eocene, N. Mex., Wyo., Colo.; Carnegie Inst. Wash. Pub. No. 390, II, p. 921, 1930; L. Eocene, Wyo., N. Mex.

Genus NOTHARCTUS Leidy

Notharctus sp. indet.

Notharctus sp. Granger and Gregory, Bull. Amer. Mus. Nat. Hist., XXXVII, p. 846, 1917; Eocene (Huerfano), Colo.

Family TARSIIDAE

Genus CARPODAPTES Matthew and Granger

Carpodaptes aulacodon Matthew and Granger.

Carpodaptes aulacodon. Matthew and Granger, Amer. Musl Novit., No. 13, p. 6, 1921; Paleocene (Tiffany

beds), SW. Colo. Reeside, U.S. Geol. Survey Prof. P. 134, p. 47, 1924; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 925, 1930; same data.

Genus HEMIACODON Marsh

Hemiacodon sp. indet.

Hemiacodon sp. Gidley, U.S. Geol. Survey Prof. P. 108, p. 59, 1918; L. Eocene (Wasatch), Colo. Reeside, idem., 134, p. 46, 1924; same data.

Genus NAVAJOVIUS Matthew and Granger

Navajovius kohlhaasae Matthew and Granger.

Navajovius kohlhaasae. Matthew and Granger, Amer. Mus. Novit., No. 13, p. 5, 1921; Paleocene (Tiffany beds), SW. Colo. Reeside, U.S. Geol. Survey Prof. P. 134, p. 47, 1924; same data. Hay, Carnegie Inst. Wash. Pub. No. 390, II, p. 929, 1930; same data.

BIBLIOGRAPHY

(Many of the less important references are not included in this list.)

Abel, O., Die Stämme der Wirbeltiere. Berlin and Leipzig, 1919.

Abel, O., and Cook, H. J., A preliminary study of early mammals in a new fauna from Colorado: Proc. Colo. Mus. Nat. Hist., V, pp. 33-36, 1925.

Cockerell, T.D.A., A new locality for Miocene mammals: Science, n.s., XXVIII, p. 683, 1908.

---- A fossil ground sloth in Colorado: Univ. Colo. Studies, VI, pp. 309-312, Pls. I, II, 1909.

---- The supposed plumage of the Eocene bird Diatryma: Amer. Mus. Novit., LXII, pp. 1-4, 1923.

---- Fossil mammals at the Colorado Museum of Natural History: Scientific Monthly, XVII, pp. 271-277, 1923.

Cook, H. J., Two new bunomastodonts from Colorado: Proc. Colo. Mus. Nat. Hist., IV, pp. 2-8, 1922.

---- A Pliocene fauna from Yuma County, Colorado: Idem., IV, pp. 3-15, 1922.

---- A new genus of uintatheres from Colorado: Idem., VI, pp. 7-11, 1926.

---- New Eocene titanotheres from Moffat County, Colorado: Idem., VI, pp. 12-18, 1926.

---- A new gigantic fossil dog from Colorado: Idem., VI, pp. 29-31, 1926.

---- A new rhinoceros of the genus Teleoceras from Colorado: Idem., VII, pp. 1-5, 1927.

Cope, E. D., On some new extinct Mammalia from the Tertiary of the Plains: Palaeontological Bulletin No. 14, 1873.

---- Second notice of extinct Vertebrata from the Tertiary of the Plains: Idem., No. 15, 1873.

---- Third notice of extinct Vertebrata from the Tertiary of the Plains: Idem., No. 16, 1873.

---- Synopsis of new Vertebrata from the Tertiary of Colorado, obtained during the summer of 1873. Washington, 1873.

---- Report on the vertebrate paleontology of Colorado: Ann. Rept. Geol. and Geog. Survey Terr. for 1873, Hayden, pp. 427-533, Pls. I-VIII, 1874.

---- Report on the stratigraphy and Pliocene vertebrate paleontology of northern Colorado: Bull. U.S. Geol. and Geog. Survey Terr., I, pp. 9-28, 1874.

---- Scientific news: Amer. Naturalist, XIII, pp. 798a-798b, 1879.

---- On a wading bird from the Amyzon shales: Bull. U.S. Geol. and Geog. Survey Terr., VI, pp. 83-85, 1881.

---- A new fossil bird: Amer. Naturalist, XV, p. 253, 1881.

---- The extinct Rodentia of North America: Idem., XVII, pp. 43-57, 165-174, 370-381, 1883.

---- Synopsis of the species of Oreodontidae: Proc. Amer. Philos. Soc., XXI, pp. 503-572, 1884.

---- The Vertebrata of the Tertiary formations of the West: Rept. U.S. Geol. Survey Terr. Hayden, III, pp. 1-1009, 1884.

Cope, E. D., and Matthew, W.D., Hitherto unpublished plates of Tertiary Mammalia and Permian Vertebrata: Amer. Mus. Nat. Hist., Mon. Ser. 2, 1915.

Gidley, J.W., Proper generic names of Miocene horses: Bull. Amer. Mus. Nat. Hist., XX, pp. 191-194, 1904.

---- Revision of the Miocene and Pliocene Equidae of North America: Idem., XXIII, pp. 865-934, 1907.

----Report on fossils found in "Tiffany" zone, Colorado: U.S. Geol. Survey Prof. P. CXXXIV, p. 47, 1924.

Granger, Walter, Notes on Paleocene and Lower Eocene Mammal horizons of northern N. Mex. and southern Colo.: Bull. Amer. Mus. Nat. Hist., XXXVII, pp. 821-830, 1917.

---- New tillodont skull from the Huerfano Basin, Colo.: G.S.A. Bull. XXIX, pp. 147-148, 1918.

Gregory, W. K., and Cook, H. J., A series of primitive Rhinoceros skulls (Trigonias) from the Lower Oligocene of Colo.: Proc. Colo. Mus. Nat. Hist., VIII, pp. 1-32, 1928.

Hay, O. P., Bibliography and catalogue of the fossil Vertebrata of North America: U.S. Geol. Survey Bull.

179, 1902.

---- The Pleistocene of the middle region of North America and its vertebrated animals: Carnegie Inst. Wash. Pub. No. 322-A, 1924.

---- Second bibliography and catalogue of the fossil Vertebrata of North America: Idem., 390, 1930.

Henderson, Junius, Footprints in Pennsylvanian sandstones of Colorado: Jour. Geol., XXXII, pp. 226-229, 1924.

King, C., Systematic geology: U.S. Geol. Explor. 40th Parallel, I, 1878.

Leidy, Joseph, The extinct mammalian fauna of Dakota and Nebraska: Jour. Acad. Nat. Sci. Phila. (2), VII, 1869.

---- Report on the vertebrate fossils of the Tertiary formations of the West: 2d (4th) Ann. Rept. U.S. Geol. Survey Terr., Hayden, pp. 340-370, 1871.

---- Contributions to the extinct vertebrate fauna of the Western Territories: Rept. U.S. Geol. Survey Terr., Hayden, pp. 14-358, 1873.

Loomis, F. B., The Evolution of the horse. Boston, 1926.

Marsh, O.C., Discovery of the Mauvaises Terres formation in Colorado: Amer. Jour. Sci. (2), L, p. 292, 1870.

---- Preliminary description of new Tertiary mammals: Idem., (3), IV, pp. 202-224, 1872.

---- Notice of new Tertiary mammals: Idem., (3), V, pp.

407-410, 485-488, 1873.

---- New vertebrate fossils: Idem., (3), XIV, pp. 249-256, 1877.

---- Vertebrate fossils of the Denver Basin: U.S. Geol. Survey Mon. XXVII, pp. 473-527, 1897.

Matthew, W. D., A provisional classification of the fresh-water Tertiary of the West: Bull. Amer. Mus. Nat. Hist., XII, pp. 19-75, 1899.

---- Fossil mammals of the Tertiary of northeastern Colorado: Mem. Amer. Mus. Nat. Hist., I, pp. 355-448, 1901.

---- New Canidae from the Miocene of Colorado: Bull. Amer. Mus. Nat. Hist., XVI, pp. 281-290, 1902.

---- A horned rodent from the Colorado Miocene: Idem., XVI, pp. 291-310, 1902.

---- Faunal lists of the Tertiary Mammalia of the West: U.S. Geol. Survey Bull. 361, pp. 91-138, 1909.

---- On the osteology and relationships of Paramys, and the affinities of the Ischromyidae: Bull. Amer. Mus. Nat. Hist., XXVIII, pp. 43-72, 1910.

---- The phylogeny of the Felidae: Idem., XXVIII, pp. 289-316, 1910.

---- A Paleocene bat: Idem., XXXVII, pp. 569-571, 1917.

Matthew, W.D., and Granger, Walter, New genera of Paleocene Mammals: Amer. Mus. Novit. No. 13, pp. 1-7, 1921.

Osborn, H.F., The Huerfano Lake basin, southern Colorado, and its Wind River and Bridger fauna: Bull. Amer. Mus. Nat. Hist., IX, pp. 247-258, 1897.

---- The extinct rhinoceroses: Mem. Amer. Mus. Nat. Hist., I, pp. 75-164, 1898.

---- The four phyla of Oligocene titanotheres: Bull. Amer. Mus. Nat. Hist., XVI, pp. 91-109, 1902.

---- New Oligocene horses: Idem., XX, pp. 167-179, 1904.

---- Evolution of Mammalian Molar Teeth, New York, 1907.

---- Cenozoic Mammal Horizons of western North America: U.S. Geol. Survey Bull. 361, pp. 1-90, 1909.

---- Lower Eocene titanotheres. Genera Lambdotherium, Eotitanops: Bull. Amer. Mus. Nat. Hist., XXXII, pp. 407-415, 1913.

---- Equidae of the Oligocene, Miocene, and Pliocene of North America: iconographic type revision: Mem. Amer. Mus. Nat. Hist., n.s., II, pp. 1-330, 1918.

---- New titanotheres of the Huerfano: Bull. Amer. Mus. Nat. Hist., XLI, pp. 557-569, 1919.

Osborn, H.F., and Wortman, J. L., Perissodactyls of the Lower Miocene White River beds: Bull. Amer. Mus. Nat. Hist., VII, pp. 343-375, 1895.

Peterson, O.A., Discovery of fossil mam als in the Brown's Park formation of Moffat County, Colorado: Ann. Carnegie Mus., XV, pp. 299-304, 1924.

---- The Brown's Park formation: Mem. Carnegie Mus., XI, pp. 87-120, 1928.

Reeside, J. B., Upper Cretaceous and Tertiary formations of the western part of the San Juan basin: U.S. Geol. Survey Prof. P. 134, pp. 1-70, 1924.

Scott, W. B., A new marsupial from the Miocene of Colorado: Amer. Jour. Sci. (3), XXVII, pp. 442-443, 1884.

---- Preliminary account of the fossil mammals from the White River formation, contained in the Museum of Comparative Zoology: Bull. Mus. Comp. Zool., XIII, pp. 151-171, 1887.

---- A history of land mammals in the western hemisphere, New York, 1913.

Shufeldt, R.W., Fossil birds in the Marsh collection of Yale University: Trans. Conn. Acad. Arts Sci., XIX, pp. 1-110, 1915.

Simpson, G.G., Mesozoic Mammalia. I, American triconodonts. II, Tinodon and its allies: Amer. Jour. Sci. (5), X, pp. 145-165, 332-358, 1925.

---- American Mesozoic Mammalia: Mem. Peabody Mus. III, I, 1929.

Thorpe, M.R., New species of Oligocene (White River) Felidae: Amer. Jour. Sci. (4), L, pp. 207-224, 1920.

---- A new genus of Oligocene Hyaenodontidae: Idem., (5), III, pp. 276-287, 1922.

---- Some Tertiary Carnivora in the Marsh collection, with

descriptions of new forms: Idem., (5), III, pp. 423-455, 1922.

Troxell, E. L., Palaeolagus, an extinct hare: Amer. Jour. Sci. (5), I, pp. 340-348, 1921.

---- New species of Hyracodon: Idem., (5), II, pp. 34-40, 1921.

---- Caenopus, the ancestral rhinoceros: Idem., (5), II, pp. 41-51, 1921.

---- Oligocene rodents of the genus Ischyromys: Idem., (5), III, pp. 123-130, 1922.

Wetmore, Alexander, Fossil birds from the Oligocene of Colorado: Proc. Colo. Mus. Nat. Hist., VII, pp. 3-13, 1927.

---- Prehistoric ornithology in North America: Jour. Wash. Acad. Sci., XVIII, pp. 145-158, 1928.

Woodward, A.S., Outlines of vertebrate paleontology for students of zoology, Cambridge Univ. Press, 1898.

Wortman, J. L., A new American species of Amphicyon: Amer. Jour. Sci. (4), XI, pp. 200-204, 1901.

Wortman, J. L., and Matthew, W.D., The ancestry of certain members of the Canidae, the Viverridae, and the Procyonidae: Bull. Amer. Mus. Nat. Hist., XII, pp. 109-139, 1899.

Zdansky, Otto, Jungtertiare Carnivoren Chinas: Palaeont. Sinica, II, fasc. 1, pp. 1-155, 1924.

Zittel, K.A., Handbuch der Palaeontologie, I Abth, III Band, Munich and Lepisic, 1890.

---- Handbuch der Palaeontologie, I Abth, IV Band, Munich and Leipsic, 1893.

Zittel, K.A., and Eastman, C.R., Textbook of palaeontology, 1902.

Zittel, K.A., and Schlosser, M., Grundzüge der Palaeontologie, Munich and Berlin, 1911 and 1923.

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