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**CATALOGUE OF FOSSIL BIRDS:**  
**Part 3 (Ralliformes, Ichthyornithiformes,**  
**Charadriiformes)**

**Pierce Brodkorb**



**UNIVERSITY OF FLORIDA**  
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## CATALOGUE OF FOSSIL BIRDS:

### Part 3 (Ralliformes, Ichthyornithiformes, Charadriiformes)

PIERCE BRÖDKORB<sup>1</sup>

SYNOPSIS: The third installment of the Catalogue of Fossil Birds treats 34 families comprising the orders Ralliformes, Ichthyornithiformes, and Charadriiformes. The species included in this section number 366, of which 215 are paleospecies and 151 are neospecies. With the addenda of 14 paleospecies, the three parts now published treat 1,236 species, of which 771 are paleospecies and 465 are living or recently extinct.

The nominal order Diatrymiformes is reduced in rank to a suborder of the Ralliformes, and several generally recognized families are reduced to subfamily status. These include Geranoididae and Eogruidae (to Gruidae); Brontornithidae (to Phorusrhacidae); Bathornithidae, Psilopteridae, and "Hermosiornithidae" (to Cariamidae); Rostratulidae, Charadriidae, Phalaropodidae, and Haematopodidae (to Scolopacidae); Presbyornithidae (to Recurvirostridae); Rhegminornithidae (to Jacanidae); and Mancallidae (to Alcidae).

New taxa include the family Gryzajidae (for *Gryzaja odessana* Zubareva, in suborder Otides); the subfamilies Palaeociconiinae (for *Palaeociconia* Moreno and Mercerat, in Phorusrhacidae) and Prophororhacinae (for *Prophororhacus* Rovereto, in Cariamidae); the genus *Eortyx* (for *Tringa? hoffmanni* Gervais, in Gallinuloidinae); and the species *Gallinula kansarum* (Upper Pliocene, Kansas), *Eogrus wetmorei* (Upper Miocene, Inner Mongolia), *Limosa ossivallis* (Lower Pliocene, Florida), and *Erolia ennouchii* (new name for *Totanus minor* Ennouchi, pre-occupied).

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<sup>1</sup> The author is Professor of Biological Sciences and Zoology at the University of Florida, Gainesville. Manuscript received 13 July 1965.—Ed.

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<sup>1</sup> New rank.

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<sup>1</sup> New emendation.<sup>2</sup> New name.<sup>3</sup> New subfamily.

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<sup>1</sup> New family.

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<sup>1</sup> New rank.



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<sup>1</sup> New subfamily.

## INTRODUCTION

The present installment treats the marsh birds, the Ichthyornithiformes, and the shorebird-gull-auk complex. In these three orders the fossil record covers 34 families (10 extinct and 24 living), 180 genera (99 paleogenera and 81 neogenera), and 366 species (215 paleospecies and 151 neospecies), plus 6 paleogenera and 14 paleospecies in the Addenda.

The marsh birds have a more extensive fossil record than any other avian group, but opinion still differs as to whether they are monophyletic or should be divided into three or more orders (Stresemann makes ten). Uniting the rails, cranes, bustards, and satellite groups tends to equate the taxon more nearly with ordinal rank in other vertebrate classes. No trenchant reason exists for excluding *Diatryma* and its allies from the Ralliformes. Like the ostriches, these large birds and the phororhacoids have been given a superfluity of names at the specific, generic, and higher levels. I have attempted to cut this Gordian knot by synonymizing those coetaneous taxa for which differentiating characters have not been established.

Pending completion of a revision of Marsh's material, I tentatively place *Ichthyornis* and *Apatornis* between the Ralliformes and the Charadriiformes, and hold in abeyance the question of the toothed jaws.

Hildegard Howard and Alexander Wetmore read the manuscript of the present installment, as well as the preceding parts, and their help is gratefully acknowledged. No longer available was the advice of Alden Holmes Miller (4 February 1906—9 October 1965), whose extensive bibliography includes 27 papers on paleornithology, with data on the fossil occurrence of neospecies and descriptions of a new family (Paranyrociidae), 10 new genera, and 23 new species of fossil birds.

Numerous friends mentioned in the introduction of Parts 1 and 2 of the Catalogue continued to furnish information or specimens. To these I am happy to add the names of Ticul Alvarez, Mexico City; Andrew A. Arata, New Orleans, Louisiana; Donald Baird, Princeton, New Jersey; Peter Ballman, Munich, Germany; Dietrich E. Berg, Mainz, Germany; Lowell Bernstein, Raleigh, North Carolina; N. Burchak-Abramovich, Tiflis, USSR; Charles T. Collins, New York City; C. S. Churcher, Toronto, Canada; Edwin C. Galbreath, Carbondale, Illinois; John E. Guilday, Pittsburgh, Pennsylvania; H. James Gut, Sanford, Florida; Yoshikazu Hasegawa, Tokyo, Japan; Robert W. Hiatt, Glendive, Montana; James A. Hopson, New Haven, Connecticut; K. Hudec, Brno, Czechoslovakia; Joseph R. Jehl, Jr., Ann Arbor,

Michigan; Miklós Kretzoi, Budapest, Hungary; Nagahisa Kuroda, Tokyo; Sanford R. Leffler, San Carlos, California; Miles B. Markus, Pretoria, South Africa; Robert W. McFarlane, Gainesville, Florida; Bertram G. Murray, Jr., Ann Arbor; Arno H. Müller, Freiberg, German Democratic Republic; Wilfred T. Neill, New Port Richey, Florida; John H. Ostrom, New Haven; Ralph S. Palmer, Albany, New York; Arnold Ross, New York City; Dale Russell, Ottawa, Canada; E. G. Franz Sauer, Gainesville; R. J. Scarlett, Christchurch, New Zealand; Robert K. Selander, Austin, Texas; Morris Skinner, New York City; Kenneth G. Simpson, Melbourne, Australia; Robert O. Vernon, Tallahassee, Florida; S. David Webb, Gainesville; Glen E. Woolfenden, Tampa, Florida.

The National Science Foundation continued its support through grant number GB-1686.

With the present installment all the water birds have been treated, as well as some of the land birds. These represent 96 families (34 extinct and 62 living), 550 genera (303 paleogenera and 247 neogenera), and 1,230 species (771 paleospecies and 465 neospecies). The remaining groups, species incertae sedis, and nomina nuda will, hopefully, comprise the fourth part of the Catalogue.

## ADDENDA TO PREVIOUS PARTS

Genera and species listed below supplement the previous Addenda published on pages 203-204 of Part 2. They include new taxa based on diagnostic parts of the skeleton and described since preceding installments of the Catalogue. I am indebted to James Fisher, London, and E. Kurotchkin, Moscow, for calling to my attention a species overlooked during the preparation of Part 2, and I hope that workers knowing of similar omissions will so inform me.

## ADDENDA TO PART 1

On p. 241, family Diomedeidae, insert:

5. *Diomedea milleri* Howard

*Diomedea milleri* Howard, 1966 (Dec. 28; postmarked Feb. 15, 1967), Los Angeles County Mus., Contr. in Sci., no 114, p. 2, fig. 1,C (type from Sharktooth Hill, proximal end of left ulna, Los Angeles Co. Mus. no. 7319).

MIDDLE MIOCENE (Temblor formation). CALIFORNIA: Kern County: Sharktooth Hill, 7 miles NE of Bakersfield.

On p. 255, family Phalacrocoracidae, insert:

24. *Phalacrocorax goletensis* Howard

*Phalacrocorax goletensis* Howard, 1965 (Apr. 26), Bull. S. California Acad. Sci., vol. 64, pt. 1, p. 51, fig. 1 (type from La Goleta, right coracoid, Los Angeles County Mus., no. 4632).

MIDDLE? PLIOCENE (Goleta formation). MEXICO: Michoacán: Morelia lacustrine basin near La Goleta.

On p. 265, family †Cyphornithidae, insert:

Genus †*Tympanonesiotes* Hopson

*Tympanonesiotes* Hopson, 1964 (July 15), Postilla, no. 83, p. 14 (type by monotypy and new genus new species convention *Tympanonesiotes wetmorei* Hopson).

3. *Tympanonesiotes wetmorei* Hopson

*Tympanonesiotes wetmorei* Hopson, 1964 (July 15), Postilla, no. 83, p. 14, fig. 3 (type from Drum Island, distal part of right tarsometatarsus, U. S. Nat. Mus. no. 16809; cast in Brodtkorb coll.).

LOWER MIOCENE (Hawthorne formation). SOUTH CAROLINA: Charleston County: Cooper River near Drum Island.

On p. 267, family Pelecanidae, insert:

10a. *Pelecanus conspicillatus novaezealandiae* Scarlett

*Pelecanus conspicillatus novaezealandiae* Scarlett, 1966 (Dec.), Notornis, vol. 13, no. 4, p. 209, figs. 1-11 (type from Poukawa, mandible, left quadrate, and post-cranial skeleton, Russell Price coll.).

QUATERNARY. NEW ZEALAND: North Island: Poukawa on Hawkes Bay; Waikaremoana. South Island: Marfell Beach on Lake Grassmere in Marlborough.

On p. 289, subfamily Ciconiinae, insert:

Genus †*Dissourodes* Short

*Dissourodes* Short, 1966 (May 26), Smithsonian Misc. Coll., vol. 149, no. 9, p. 1 (type by original designation *Dissourodes milleri* Short).

22. *Dissourodes milleri* Short

*Dissourodes milleri* Short, 1966 (May 26), Smithsonian Misc. Coll., vol. 149, no. 9, p. 1, fig. 1 (type from near Valentine, distal half of left tibiotarsus, Nebraska State Mus. no. 5780; cast in U. S. Nat. Mus.).

LOWER PLIOCENE (Valentine formation). NEBRASKA: Cherry County: 4 miles SE of Valentine, in section 17, Township 33 N, Range 27 W.

ADDENDA TO PART 2

On p. 216, subfamily Plectropterinae, insert:

90. *Neochen barbadiana* Brodkorb

*Neochen barbadiana* Brodkorb, 1965 (Jan. 18), Jour. Barbados Mus. & Hist. Soc., vol. 31, no. 1, p. 5, pl. 1 (type from Ragged Point, left coracoid, Univ. Florida no. 7456).

UPPER PLEISTOCENE (post-Coral Rock). BARBADOS: St. Philip Parish: Ragged Point.

On p. 219, for 40. *Anabernicula* n. sp., Howard (MS.) read:

40. *Anabernicula oregonensis* Howard

*Anabernicula oregonensis* Howard, 1964 (Dec. 15), Amer. Mus. Novitates, no. 2200, p. 5, figs. 1-2 (type from Fossil Lake, left humerus, Amer. Mus. Nat. Hist. no. 3548).

MIDDLE PLEISTOCENE (Fossil Lake formation). OREGON: Lake County: Fossil Lake.

On p. 223, subfamily Anatinae, insert:

91. *Anas apscheronica* Burchak-Abramovich

*Anas apscheronica* Burchak-Abramovich, 1958, Uchenie Zapiski Azerbaijan State Univ., ser. biol., no. 1, p. 85, fig. 1 (type from Enikend, upper end of right coracoid, coll. N. Burchak-Abramovich).

UPPER PLIOCENE (Apscheron). AZERBAIJAN: Enikend, on right bank of Kura River.

On p. 227, subfamily Anatinae, insert:

Genus †*Wasonaka* Howard

*Wasonaka* Howard, 1966 (Apr. 4), Los Angeles County Mus., Contr. in Sci., no. 94, p. 5 (type by original designation *Wasonaka yepomerae* Howard).

92. *Wasonaka yepomerae* Howard

*Wasonaka yepomerae* Howard, 1966 (Apr. 4), Los Angeles County Mus., Contr. in Sci., no. 94, p. 5, fig. 1 A-E, H-I (type from Arroyo de las Barrancas Blancas, right humerus, Los Angeles County Mus. no. 4620).

MIDDLE PLIOCENE (Chihuahua formation). MEXICO: Chihuahua: Arroyo de las Barrancas Blancas, ¼ mile east of Yepomera.

On p. 230, subfamily Merginae, insert:

93. *Bucephala angustipes* Jánossy

*Bucephala angustipes* Jánossy, 1965 (June), Paläont. Abhandl., Abt. A. Bd. 2, Heft 2-3, p. 345, text-fig. 6, pl. 6, figs. 12-20 (type from Voigtstedt, Institut für Quatärpaläontologie, Weimar, no. Voi.2795).

LOWER PLEISTOCENE. GERMANY: Thüringia: Voigtstedt.

On p. 253, subfamily Vulturinae, insert:

Genus †*Dryornis* Moreno and Mercerat

*Dryornis* Moreno and Mercerat, 1891 (May), An. Museo La Plata, Pal. argentina, vol. 1, pp. 24, 59 (type by monotypy *Dryornis pampeanus* Moreno and Mercerat).

17. *Dryornis pampeanus* Moreno and Mercerat

*Dryornis pampeanus* Moreno and Mercerat, 1891 (May-Aug. 5), An. Museo La Plata, Pal. argentina, vol. 1, pp. 24, 59, pl. 16, fig. 1 only (lectotype from Monte Hermoso, distal end of right humerus, La Plata Mus. no. 169, designated by L. Kraglievich, 1932, An. Mus. Hist. nat. Montevideo, ser. 2, vol. 3, p. 329 note).

MIDDLE PLIOCENE (Monte Hermoso formation). ARGENTINA: PROV. Buenos Aires: Monte Hermoso.

On p. 276, subfamily Gypaetinae, insert:

Genus †*Arikarornis* Howard

*Arikarornis* Howard, 1966 (July 22), Los Angeles County Mus., Contr. in Sci., no. 107, p. 2 (type by original designation *Arikarornis macdonaldi* Howard).

63. *Arikarornis macdonaldi* Howard

*Arikarornis macdonaldi* Howard, 1966 (July 22), Los Angeles County Mus., Contr. in Sci., no. 107, p. 2, fig. 1 A-D (type from Sharp's Cutoff, distal end of left tibiotarsus, Los Angeles Co. Mus. no. 9357).

LOWER MIOCENE (middle of Sharp's formation). SOUTH DAKOTA: Shannon County: south side of Sharp's Cutoff Road, in SW ¼, section 9, Township 39 N, Range 43 W.

On p. 298, subfamily Gallinuloidinae, for Genus †*Palaeortyx* Milne-Edwards and *Palaeortyx hoffmanni* (Gervais), substitute:

Genus †*Eortyx* Brodkorb<sup>1</sup>

2. *Eortyx hoffmanni* (Gervais)

On p. 301, subfamily Callinuloidinae, add:

27. *Taoperdix miocaena* Ballmann

*Taoperdix miocaena* Ballmann, 1966 (postmarked 16 Feb. 1967), Die Vögel aus der altburdigalen Spaltenfüllung von Wintershof (West) bei Eichstätt in Bayern, p. 44, pl. 1. fig. 1 (type from Wintershof (West), proximal part of left carpo-metacarpus, Bayer. Staatssammlung f. Pal. u. hist. Geol. München no. 18111).

MIDDLE MIOCENE (Burdigalian fissure deposit). GERMANY: Bavaria: Wintershof (West) bei Eichstätt.

<sup>1</sup>New genus. Name from Greek *Eos* (Dawn) and masculine *ortyx* (quail). Type *Tringa? hoffmanni* Gervais. As pointed out by Ballmann (1967, Die Vögel aus der altburdigalen Spaltenfüllung von Wintershof (West) bei Eichstätt in Bayern, pp. 43 ff), the expression "*Palaeortyx hoffmanni*, nov. gen." (Milne-Edwards, 1869, Ois. foss. France, vol. 2, p. 217) was not a designation of that species as the type of the genus, for he says of *Palaeortyx gallica*, nov. sp., "Cette espèce devra même être considérée comme le type de cette genre" (p. 230). Accordingly a different generic name is needed for the straight-billed *Tringa? hoffmanni*.

On p. 310, subfamily Odontophorinae, insert:

54. *Miortyx aldeni* Howard

*Miortyx aldeni* Howard, 1966 (July 22), Los Angeles County Mus., Contr. in Sci., no. 107, p. 5, fig. 1 E (type from Sharp's Cutoff, proximal end of left humerus, Los Angeles Co. Mus. no. 9388).

LOWER MIOCENE (middle of Sharp's formation). SOUTH DAKOTA: Shannon County: south side of Sharp's Cutoff Road, in N ½, section 17, Township 39 N, Range 43 W.

On p. 313, subfamily Phasianinae, after *Schaubortyx kelticus* (Eastman), add:

Genus †*Palaeortyx* Milne-Edwards (from p. 298)

55. *Palaeortyx gallica* Milne-Edwards (from p. 301)

56. *Palaeortyx brevipes* Milne-Edwards (from p. 301)

57. *Palaeortyx phasianoides* Milne-Edwards (from p. 301)

58. *Palaeortyx intermedia* Ballmann

*Palaeortyx*? *intermedia* Ballmann, 1966 (Feb. 16, 1967), Vögel altburdigal. Spaltenfüllung von Wintershof (West), p. 54, pl. 1, fig. 3 (type from Wintershof (West), left coracoid, Bayer. Staatssaml. Pal. Hist. Geol. no. 18103).

MIDDLE MIOCENE (Burdigalian fissure deposit). GERMANY: Bavaria: Wintershof (West) bei Eichstätt.

On p. 318, subfamily Phasianinae, add:

59. *Alectoris bavarica* Ballmann

*Alectoris bavarica* Ballmann, 1966 (Feb. 16, 1967), Vögel altburdigal. Spaltenfüllung von Wintershof (West), p. 61, pl. 1, fig. 2 (type from Wintershof (West), left tarsometatarsus, Bayer. Staatssaml. Pal. hist. Geol. no. 18110).

MIDDLE MIOCENE (Burdigalian fissure deposit). GERMANY: Bavaria: Wintershof (West) bei Eichstätt.



## Order RALLIFORMES (Reichenbach)

- Otides* Wagler, 1830, Natürliches System der Amphibien mit vorangehender Classification der Säugethiere und Vögel, pp. 80, 82 (ordo; type *Otis* Linnaeus).—*Otides* Fürbringer, 1888, Untersuchungen zur Morphologie und Systematik der Vögel, vol. 2, p. 1566 (gens [between suborder and family]).—*Otides* Sharpe, 1891, Review of Recent Attempts to Classify Birds, p. 73 (suborder).—*Otidea* Verheyen, 1961 (Oct.), Bull. Inst. roy. Sci. nat. Belgique, vol. 37, no. 27, p. 26 (suborder; misprint for *Otides*?, cf. p. 21).
- Fulicariae* Reichenbach, 1852 (after Oct. 1), Avium systema naturale, p. XX (cohors = suborder; type *Fulica* Linnaeus).—*Fulicariae* Sclater and Salvin, 1873, Nomenclator avium neotropicalium, pp. viii, 139 (order).—*Fulicariae* Fürbringer, 1888, Untersuch. Morph. Syst. Vögel, vol. 2, p. 1566 (gens).
- Rallariae* Reichenbach, 1852 (after Oct. 1), Avium syst. nat., p. XXII (cohors = suborder; type *Rallus* Linnaeus).—*Ralliformes* Coues, 1884, Key to North American Birds, ed. 2, pp. ix, 669 (suborder).—*Ralli* American Ornithologists' Union, 1886, Check-list of North American Birds, ed. 1, p. 139 (suborder).—*Ralliformes* Sharpe, 1891, Review of Recent Attempts to Classify Birds, p. 70 (order).—*Rallimorphae* Lowe, 1931 (July), Ibis, ser. 13, vol. 1, no. 3, p. 491 (order).—*Ralli* Stresemann, 1959 (July 9), Auk, vol. 76, no. 3, p. 278 (order).
- Grues* Bonaparte, 1854, Ann. Sci. nat. Paris, vol. 1, p. 36 (tribus = suborder; type *Grus* Pallas).—*Gruiformes* Coues, 1884, Key to North American Birds, ed. 2, pp. ix, 666 (suborder).—*Grues* Fürbringer, 1888, Untersuch. Morph. Syst. Vögel, vol. 2, p. 1566 (gens).—*Gruiformes* Sharpe, 1891, Review of Recent Attempts to Classify Birds, p. 74 (order).—*Gruimorphae* Lowe, 1931 (July), Ibis, ser. 13, vol. 1, no. 3, p. 491 (suborder).—*Gruae* Lowe, 1931 (July), op. cit., p. 491 (suborder).—*Grues* Mayr and Amadon, 1951 (Apr. 2), Amer. Mus. Novitates, no. 1496, p. 34 (order).
- Turnicomorphae* Huxley, 1868, Proc. Zool. Soc. London, p. 303 ("group" [below suborder]; type *Turnix* Bonnaterre).—*Turnices* Gadow, 1893, Bronn Klass. Ordn., Vögel, no. 2, pp. 78, 164, 300 (Unterordnung).—*Turniciformes* Verheyen, 1958 (Jan.), Bull. Inst. roy. Sci. nat. Belgique, vol. 34, no. 2, pp. 1, 16 (ordo).—*Turnices* Stresemann, 1959 (July 9), Auk, vol. 76, no. 3, p. 278 (order).
- Hemipodii* Sclater, 1880 (July), Ibis, ser. 4, vol. 4, no. 15, p. 340 (order; type *Hemipodius* Reinwardt, 1815, a junior synonym of *Turnix* Bonnaterre, 1791).—*Hemipodii* Fürbringer, 1888, Untersuch. Morph. Syst. Vögel, vol. 2, p. 1566 (gens).
- Gastornithes* Stejneger, 1885, Standard Nat. Hist., vol. 4, p. 54 (order; type *Gastornis* Hébert).—*Gastornithiformes* Sharpe, 1899, Hand-list of Genera and Species of Birds, vol. 1, p. 230 (order).
- Eurypygae* Fürbringer, 1888, Untersuch. Morph. Syst. Vögel, vol. 2, p. 1566 (gens; type *Eurypyga* Illiger).—*Eurypygae* Sharpe, 1891, Review of Recent Attempts to Classify Birds, p. 74 (suborder).—*Eurypygae* Stresemann, 1959 (July 9), Auk, vol. 76, no. 3, p. 278 (order).
- Cariamae* Fürbringer, 1888, Untersuch. Morph. Syst. Vögel, vol. 2, p. 1566 note (gens; type *Cariama* Brisson).—*Cariamae* Wetmore and W. D. Miller, 1926 (July 3), Auk, vol. 43, no. 3, p. 343 (suborder).—*Cariamiformes* Verheyen, 1957 (Aug.), Bull. Inst. roy. Sci. nat. Belgique, vol. 33, no. 39, pp. 1, 6 (ordo).—*Cariamae* Stresemann, 1959 (July 9), Auk, vol. 76, no. 3, p. 278 (order).

- Stereornithes* Moreno and Mercerat, 1891 (May), An. Mus. La Plata, Pal. argentina, vol. 1, pp. 20, 37 (ordo; type *Stereornis* Moreno and Mercerat, 1891, a junior synonym of *Phorusrhacos* Ameghino, 1887).
- Heliornithiformes* Sharpe, 1891, Review of Recent Attempts to Classify birds, p. 70 (order; type *Heliornis* Bonnaterre).—*Heliornithes* Sharpe, 1891, op. cit., p. 70 (suborder).—*Heliornithes* Stresemann, 1959 (July 9), Auk, vol. 76, no. 3, p. 278 (order).
- Arami* Sharpe, 1891, Review of Recent Attempts to Classify Birds, p. 74 (suborder; type *Aramus* Vieillot).
- Rhinochetides* Sharpe, 1891, Review of Recent Attempts to Classify Birds, p. 74 (suborder; type *Rhynochetos* Verreaux and Des Murs).—*Rhynochetes* Sharpe, 1899, Hand-list of Genera and Species of Birds, p. 180 (suborder).—*Rhynocheti* Wetmore, 1930 (Jan. 8), Proc. U. S. Nat. Mus., vol. 76, art. 24, p. 4 (suborder).—*Rhynocheti* Stresemann, 1934, Handbuch der Zoologie, vol. 7, p. 769.—*Rhynocheti* Stresemann, 1959 (July 9), Auk, vol. 76, no. 3, p. 278 (order).
- Mesitides* Sharpe, 1891, Review of Recent Attempts to Classify Birds, p. 74 (suborder; type *Mesites* Geoffroy, Apr. 1838, preoccupied by *Mesites* Schönherr, before Feb. 1838).—*Mesites* Gadow, 1893, Bronn Klass. Ordn., Vögel, pt. 2, p. 300 (Unterordnung).
- Psophiae* Sharpe, 1891, Review of Recent Attempts to Classify Birds, p. 74 (suborder; type *Psophia* Linnaeus).—*Psophiiformes* Mathews, 1913, Birds of Australia, vol. 3, pt. 4, p. 373 (order).—*Psophiae* Stresemann, 1959 (July 9), Auk, vol. 76, no. 3, p. 278 (order).
- Dicholophi* Sharpe, 1891, Review of Recent Attempts to Classify Birds, p. 74 (suborder; type *Dicholophus* Illiger, 1811, a junior synonym of *Cariama* Brisson, 1790).
- Stephanornithes* Moreno, 1897, An. Soc. cien. argentina, vol. 43, p. 226 (ordo; type *Stephanornis* Mercerat).
- Mesoenatides* Sharpe, 1899, Hand-list of Genera and Species of Birds, vol. 1, p. 180 (suborder; type *Mesoenas* Reichenbach, 1862, new name for *Mesites* Geoffroy, preoccupied).—*Mesoenades* Stresemann, 1959 (July 9), Auk, vol. 76, no. 3, p. 278 (order).
- Diatrymae* Matthew and Granger, 1917 (May 28), Bull. Amer. Mus. Nat. Hist., vol. 37, art. 11, p. 321 (order; type *Diatryma* Cope).—*Diatrymiformes* Wetmore, 1930 (Jan. 8), Proc. U. S. Nat. Mus., vol. 76, no. 2821, p. 4 (order).—*Diatrymatiformes* Hay, 1930 (Jan. 27), Carnegie Instn. Washington Publ., no. 390, vol. 2, p. 283 (suborder).
- Megalornithiformes* Wetmore and W. D. Miller, 1926 (July 3), Auk, vol. 43, no. 3, p. 342 (order; type *Megalornis* G. R. Gray, 1841, a junior synonymy of *Grus* Pallas, 1766).—*Megalornithes* Wetmore and W. D. Miller, 1926 (July 3), op. cit., p. 342 (suborder).
- Brontornithes* Dolgopod de Saez, 1927, An. Soc. cien. argentina, vol. 103, p. 145 (suborden).—*Brontorniformes* L. Kraglievich, 1932, An. Mus. Hist. nat. Montevideo, ser. 2, vol. 3, p. 350 (orden).
- Phororhaci* Wetmore, 1930 (Jan. 8), Proc. U. S. Nat. Mus., vol. 76, art. 24, p. 4 (suborder; type *Phorusrhacos* Ameghino).—*Phororhaciformes* Kraglievich, 1932, An. Mus. Hist. nat. Montevideo, ser. 2, vol. 3, p. 350 (orden).
- Mesitornithes* Wetmore, 1960 (June 23), Smithsonian Misc. Coll., vol. 139, no. 11, pp. 12, 26 (suborder; type *Mesitornis* Bonaparte, 1855, new name for *Mesites* Geoffroy, 1838, preoccupied).

## Suborder RALLI (Reichenbach)

- Rallariae* Reichenbach, 1852 (after Oct. 1), Avium syst. nat., p. XXII (cohors = suborder; type *Rallus* Linnaeus).—*Ralliformes* Coues, 1884, Key to North American Birds, ed. 2, pp. ix, 669 (suborder).—*Ralli* American Ornithologists' Union, 1886, Check-list of North American Birds, ed. 1, p. 139 (suborder).—*Ralliformes* Sharpe, 1891, Review of Recent Attempts to Classify Birds, p. 70 (order).—*Rallimorphae* Löwe, 1931 (July), Ibis, ser. 13, vol. 1, no. 3, p. 491 (order).—*Ralli* Stresemann, 1959 (July 9), Auk, vol. 76, no. 3, p. 278 (order).
- Fulicariae* Reichenbach, 1852 (after Oct. 1), Avium syst. nat., p. XX (cohors = suborder; type *Fulica* Linnaeus).—*Fulicariae* Sclater and Salvin, 1873; Nomenclator avium neotropicalium, pp. viii, 139 (order).—*Fulicariae* Fürbringer, 1888, Untersuch. Morph. Syst. Vögel, vol. 2, p. 1566 (gens).
- Heliornithiformes* Sharpe, 1891, Review of Recent Attempts to Classify Birds, p. 70 (order; type *Heliornis* Bonaterre).—*Heliornithes* Sharpe, 1891, op. cit., p. 70 (suborder).—*Heliornithes* Stresemann, 1959 (July 9), Auk, vol. 76, no. 3, p. 278 (order).

## Family RALLIDAE Vigors

- Rallidae* Vigors, 1825, Trans. Linn. Soc. London, vol. 14, p. 416 (family; type *Rallus* Linnaeus).—*Rallinae* C. R. Gray, 1840 (before Apr.), List of Genera of Birds, p. 71 (subfamily).—*Ralleae* Bonaparte, 1853 (read Oct. 31), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646 (section).—*Rallioidea* Shufeldt, 1895, Jour. Anat. Physiol. London, vol. 29, p. 33 (superfamily).—*Ralloidea* Shufeldt, 1904, American Naturalist, vol. 38, p. 852 (superfamily).—*Rallides* Wetmore and W. D. Miller, 1926 (July 3), Auk, vol. 43, no. 3, p. 342 (superfamily).—*Ralloidae* Hay, 1930 (Jan. 27), Carnegie Instn. Washington Publ., no. 390, vol. 2, p. 333 (superfamily).
- Fulicariae*<sup>1</sup> Nitzsch, 1829, Observationes de avium arteria carotide communi (familia, fide A. Newton; type *Fulica* Linnaeus).—*Fulicinae* Bonaparte, 1849 (subfamily, fide Gray, 1871).—*Fulicidae* Kaup, 1850, Ueber Classification der Vögel, (family, fide Gray, 1871).—*Fuliceae* Bonaparte, 1853 (read Oct. 31), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646 (section).
- Gallinulinae* C. R. Gray, 1840 (before Apr.), List of Genera of Birds, p. 72 (subfamily; type *Gallinula* "Ray" [Brisson]).—*Gallinuleae* Bonaparte, 1853 (read Oct. 31), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646 (section).—*Gallinulidae* Blasius, 1860, Naturgeschichte der Vögel, Fortsetzung der Nachträge (family, fide Gray, 1871).
- Porphyroninae* Reichenbach, 1850 (fide Gray, 1871; type *Porphyrio* Brisson).—*Porphyriinae* Verheyen, 1957 (May), Bull. Inst. roy. Sci. nat. Belgique, vol. 33, no. 21, pp. 24, 41 (sous-famille).
- Ocydrominae* Bonaparte, 1853 (read Oct. 31), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646 (subfamilia; type *Ocydromus* Wagler, 1830, a synonym of *Gallirallus* Lafresnaye, 1841).

<sup>1</sup> An earlier use of *Fulicariae* as a family-group name may be Nitzsch, 1820, Deutsches Archiv für die Physiologie, vol. 6, p. 263 (fide Ridgway and Friedmann, 1941).

- Aptornithidae* Bonaparte, 1856 (read Nov. 3), C. R. Acad. Sci. Paris, vol. 43, no. 18, p. 841 (familia; type *Aptornis* Owen).—*Aptornithinae* Bonaparte, 1856 (read Nov. 3), op. cit., p. 841 (subfamilia).
- Himanthornithinae* G. R. Gray, 1871 (after July 8), Hand-list of Genera and Species of Birds, pt. 3, p. 64 (subfamily; type *Himanthornis* Temminck, 1854[?], a synonym of *Himantornis* Hartlaub, 1855).—*Himantornithinae* Verheyen, 1957 (May) Bull. Inst. roy. Sci. nat. Belgique, vol. 33, no. 21, pp. 25, 41 (sous-famille).
- Ortygometridae* Sharpe, 1891, Review of Recent Attempts to Classify Birds, p. 70 (family; type *Ortygometra* Leach, 1816, a junior synonym of *Crex* Bechstein, 1803).
- Telecrecinae* Wetmore, 1934 (Apr. 7), Amer. Mus. Novit., no. 711, p. 13 (subfamily; type *Telecrex* Wetmore).
- Sarothrurinae* Verheyen, 1957 (May), Bull. Inst. roy. Sci. nat. Belgique, vol. 33, no. 21, pp. 24, 41 (sous-famille; type *Sarothrura* Heine).

### Subfamily RALLINAE (Vigors)

- Rallidae* Vigors, 1825, Trans. Linn. Soc. London, vol. 14, p. 416 (family; type *Rallus* Linnaeus).—*Rallinae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, p. 71 (subfamily).—*Ralleae* Bonaparte, 1853 (read Oct. 31), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646 (section).—*Rallioidea* Shufeldt, 1895, Jour. Anat. Physiol. London, vol. 29, p. 33 (superfamily).—*Ralloidea* Shufeldt, 1904, Amer. Naturalist, vol. 38, p. 852 (superfamily).—*Rallides* Wetmore and W. D. Miller, 1926 (July 3), Auk, vol. 43, no. 3, p. 342 (superfamily).—*Ralloidae* Hay, 1930 (Jan. 27), Carnegie Instn. Washington Publ., no. 390, vol. 2, p. 333 (superfamily).
- Ocydrominae* Bonaparte, 1853 (read Oct. 31), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646 (subfamilia; type *Ocydromus* Wagler, 1830, a synonym of *Gallirallus* Lafresnaye, 1841).
- Himanthornithinae* G. R. Gray, 1871 (after July 8), Hand-list of Genera and Species of birds, pt. 3, p. 64 (subfamily; type *Himanthornis* Temminck, 1854[?], a synonym of *Himantornis* Hartlaub, 1855).—*Himantornithinae* Verheyen, 1957 (May), Bull. Inst. roy. Sci. nat. Belgique, vol. 33, no. 21, pp. 25, 41 (sous-famille).
- Ortygometridae* Sharpe, 1891, Review of Recent Attempts to Classify Birds, p. 70 (family; type *Ortygometra* Leach, 1816, a junior synonym of *Crex* Bechstein, 1803).
- Sarothrurinae* Verheyen, 1957 (May), Bull. Inst. roy. Sci. nat. Belgique, vol. 33, no. 21, pp. 24, 41 (sous-famille; type *Sarothrura* Heine).

### Genus †*Telmatornis* Marsh

- Telmatornis* Marsh, 1870 (March), Amer. Jour. Sci., ser. 2, vol. 49, no. 146, p. 210 (type *Telmatornis priscus* Marsh, by gen.n., sp.n., convention and by designation of Hay, 1902, Bull. U. S. Geol. Surv., no. 179, p. 528). Subfamily uncertain.

1. *Telmatornis priscus* Marsh

*Telmatornis priscus* Marsh, 1870 (March), Amer. Jour. Sci., ser. 2, vol. 49, no. 146, p. 210 (type from Hornerstown, distal half of left humerus, Yale Peabody Mus. no. 840).—Shufeldt, 1915, Trans. Connecticut Acad. Arts Sci., vol. 19, p. 25, pl. 26, fig. 37 (type restudied).

UPPER CRETACEOUS ("middle marl bed" = Navesink formation, middle Maestrichtian, fide Donald Baird, in press). NEW JERSEY: Monmouth County: Cream Ridge Marl Company quarry near Hornerstown.

2. *Telmatornis affinis* Marsh

*Telmatornis affinis* Marsh, 1870 (March), Amer. Jour. Sci., ser. 2, vol. 49, no. 146, p. 211 (type from Hornerstown, distal portion of right humerus, Yale Peabody Mus. no. 845 [possibly ♀ of *T. priscus*]).—Shufeldt, 1915, Trans. Connecticut Acad. Arts Sci., vol. 19, p. 27, pl. 6, fig. 36 (type restudied).

UPPER CRETACEOUS ("middle marl bed" = Navesink formation, middle Maestrichtian). NEW JERSEY: Monmouth County: Cream Ridge Marl Company quarry near Hornerstown.

3. *Telmatornis rex* Shufeldt

*Telmatornis rex* Shufeldt, 1915 (Feb.), Trans. Connecticut Acad. Arts Sci., vol. 19, p. 27, pl. 13, fig. 101 (type from Hornerstown, distal two-thirds of right humerus, Yale Peabody Mus. no. 902 or 948).

UPPER CRETACEOUS (Hornerstown marl [probably basal, late Maestrichtian, fide Baird, in press]). NEW JERSEY: Monmouth County: Hornerstown.

Genus †*Palaeorallus* Wetmore

*Palaeorallus* Wetmore, 1931 (May 15), Condor, vol. 33, no. 3, p. 108 (type by monotypy *Palaeorallus troxelli* Wetmore).

4. *Palaeorallus troxelli* Wetmore

*Palaeorallus troxelli* Wetmore, 1931 (May 15), Condor, vol. 33, no. 3, p. 108, figs. 26-29 (type from Preator's ranch, distal end of right tibiotarsus, U. S. Nat. Mus. no. 12042).

LOWER EOCENE (Willwood formation). WYOMING: Big Horn County: south of Preator's ranch, south of Burlington.

Genus †*Gypsornis* Milne-Edwards

*Gypsornis* Milne-Edwards, 1869, Oiseaux fossiles de la France, vol. 2, p. 140 (type by monotypy *Gypsornis cuvieri* Milne-Edwards).

5. *Gypsornis cuvieri* Milne-Edwards

*Gypsornis cuvieri* Milne-Edwards, 1869, Ois. foss. France, vol. 2, p. 140, pl. 103, figs. 1-5 (type from Montmartre, proximal portion of tarsometatarsus, Paris Mus.).

UPPER EOCENE (gypse de Montmartre). FRANCE: Dept. Seine: Montmartre.

Genus †*Quercyrallus* Lambrecht

*Quercyrallus* Lambrecht, 1933, Handb. Palaeorn., p. 461 (type *Rallus arenarius* Milne-Edwards, designated by Brodkorb, 1952, Condor, vol. 54, p. 175).

6. *Quercyrallus ludianus* Brodkorb

*Rallus intermedius* Milne-Edwards, 1869, Ois. foss. France, vol. 2, p. 144, pl. 103, fig. 17 (type from Montmartre, skeleton impression lacking carpometacarpus, fingers, tibiotarsi, tarsometatarsi, toes, Paris Mus. [preoccupied by *Rallus intermedius* Johann Hermann, 1804]).

*Quercyrallus ludianus* Brodkorb, 1963 (Oct. 31), Auk, vol. 80, no. 4, p. 542 (new name for *Rallus intermedius* Milne-Edwards).

UPPER EOCENE (gypse de Montmartre). FRANCE: Dept. Seine: Montmartre.

7. *Quercyrallus arenarius* (Milne-Edwards)

*Rallus arenarius* Milne-Edwards, 1892, C. R. 2. Congrès internat. ornith. Budapest, p. 74 (type from Caylux, humerus, Paris Mus.).—Gaillard, 1908, Ann. Univ. Lyon, fasc. 23, p. 110, fig. 33 (type restudied).

UPPER EOCENE OR LOWER OLIGOCENE (phosphorites du Quercy). FRANCE: Dept. Tarn-et-Garonne: Caylux (Milne-Edwards, 1892). Dept. Lot: Escamps (Gaillard, 1908); Bach near Lalbenque (Lambrecht, 1933, Handb. Palaeorn., p. 461).

8. *Quercyrallus dasypus* (Milne-Edwards)

*Rallus dasypus* Milne-Edwards, 1892, C. R. 2. Congrès internat. ornith. Budapest, p. 73 (type from St. Antonin, femur and distal end of humerus, Paris Mus.).—Gaillard, 1908, Ann. Mus. Lyon, fasc. 23, p. 112 (types restudied).

UPPER EOCENE OR LOWER OLIGOCENE (phosphorites du Quercy). FRANCE: Dept. Tarn-et-Garonne: St. Antonin.

Genus †*Rallicrex* Lambrecht

*Rallicrex* Lambrecht, 1933, Handb. Palaeorn., p. 463 (type by monotypy *Rallicrex kolozsvarensis* Lambrecht).

9. *Rallicrex kolozsvarensis* Lambrecht

*Rallicrex kolozsvarensis* Lambrecht, 1933, Handb. Palaeorn., p. 463, fig. 141 (type from Kolozsvár, distal portion of left tarsometatarsus, Kgl. Ungar. Geol. Anstalt, Budapest).

UPPER OLIGOCENE (*Corbula* Schichten). ROMANIA: Siebenburgen: south face of Zitadelle zu Kolozsvár.

Genus †*Palaeoaramides* Lambrecht

*Palaeoaramides* Lambrecht, 1933, Handb. Palaeorn., p. 462 (type by monotypy *Rallus christyi* Milne-Edwards).

10. *Palaeoaramides christyi* (Milne-Edwards)

*Rallus christyi* Milne-Edwards, 1869, Ois. foss. France, vol. 2, p. 146, pl. 103, figs. 1-5; pl. 104, figs. 1-9 (types from Langy, tibiotarsus, tarsometatarsus, Paris Mus.).

LOWER MIOCENE (Aquitanian). FRANCE: Dept. Allier: Langy (Milne-Edwards, 1869); Montaignut (Lambrecht, 1933, Handb. Palaeorn., p. 462).

11. *Palaeoaramides eximius* (Milne-Edwards)

*Rallus eximius* Milne-Edwards, 1869, Ois. foss. France, vol. 2, p. 149, pl. 103, figs. 6-11 (type from Langy, tarsometatarsus, Paris Mus. [possibly the ♀ of *P. christyi*]).

LOWER MIOCENE (Aquitanian). FRANCE: Dept. Allier: Langy.

Genus †*Paraortygometra* Lambrecht

*Paraortygometra* Lambrecht, 1933, Handb. Palaeorn., p. 462 (type by monotypy *Rallus porzanoides* Milne-Edwards).

12. *Paraortygometra porzanoides* (Milne-Edwards)

*Rallus porzanoides* Milne-Edwards, 1869, Ois. foss. France, vol. 2, p. 150, pl. 105, figs. 1-16 (types from St.-Gérard-le-Puy, humerus, distal portion of femur, tarsometatarsus, Paris Mus.).

LOWER MIOCENE (Aquitanian). FRANCE: Dept. Allier: St.-Gérard-le-Puy.

Genus †*Pararallus* Lambrecht

*Pararallus* Lambrecht, 1933, Handb. Palaeorn., p. 466 (type by monotypy *Rallus dispar* Milne-Edwards).

13. *Pararallus dispar* (Milne-Edwards)

*Rallus dispar* Milne-Edwards, 1869, Ois. foss. France, vol. 2, p. 155, pl. 105, figs. 17-30 (types from Sansan, distal end of humerus, distal end of tibiotarsus, proximal 2/3 of left and distal end of right tarsometatarsus [Paris Mus.?).

UPPER MIOCENE (Helvetian). FRANCE: Dept. Gers. Sansan.

14. *Pararallus beaumonti* (Milne-Edwards)

*Rallus beaumonti* Milne-Edwards, 1869, Ois. foss. France, vol. 2, p. 152, pl. 104, figs. 10-26 (types from Sansan, humerus, distal end of tibiotarsus, distal end of tarsometatarsus [Paris Mus.?). Generic position provisional.

UPPER MIOCENE (Helvetian). FRANCE: Dept. Gers: Sansan.

Genus *Rallus* Linnaeus

*Rallus* Linnaeus, 1758, Syst. Nat., ed. 10, vol. 1, p. 153 (type *Rallus aquaticus* Linnaeus, designated by Fleming, 1821).

15. *Rallus dubius* Portis

*Rallus dubius* Portis, 1887, Mem. R. Accad. Sci. Torino, ser. 2, vol. 38, separate p. 5, pl. 1, fig. 2 (type from Sinigaglia, sternum impression [Mus. Torino?]).

LOWER PLIOCENE (Messiniano). ITALY: Ancona prov.: Senigallia [Sinigaglia].

16. *Rallus prenticei* Wetmore

*Rallus prenticei* Wetmore, 1944 (May 15), Univ. Kansas Sci. Bull., vol. 30, pt. 1, no. 9, p. 99, figs. 9-19 (type from Rexroad locality 2, right humerus, Univ. Kansas no. 3865).

UPPER PLIOCENE (Rexroad formation). KANSAS: Meade County: Rexroad ranch.

17. *Rallus phillipsi* Wetmore

*Rallus phillipsi* Wetmore, 1957 (July 23), Condor, vol. 59, no. 4, p. 267, fig. 1 (type from Gray Ranch, right tarsometatarsus, Allan R. Phillips no. L.135, on deposit in U. S. Nat. Mus.).

UPPER PLIOCENE. ARIZONA: Mohave County: Gray Ranch near Wikieup post office.

Genus †*Creccooides* Shufeldt

*Creccooides* Shufeldt, 1892 (Apr. 14), Proc. Amer. philos. Soc., vol. 30, p. 125 (type by monotypy *Creccooides osbornii* Shufeldt).

*Creccooides* Shufeldt, 1892 (Oct. 20), Jour. Acad. Nat. Sci. Phila., vol. 9, pt. 3, p. 412 note (emendation).

*Ralloides* Shufeldt, 1892 (Oct. 20), Jour. Acad. Nat. Sci. Phila., vol. 9, pt. 3, p. 412, note (substitute name for *Creccooides* Shufeldt).



18. *Creccoides osbornii* Shufeldt

*Creccoides osbornii* Shufeldt, 1892 (Apr. 14) Proc. Amer. philos. Soc., vol. 30, p. 125 (type from Blanco Canyon, proximal portion tarsometatarsus).

LOWER PLEISTOCENE (Blanco formation). TEXAS: Crosby County: Blanco Canyon.

Genus *Porzana* Vieillot

*Porzana* Vieillot, 1816, Analyse Nouv. Orn. Élémentaire, p. 61 (type by monotypy *Rallus porzana* Linnaeus).

19. *Porzana lacustris* Brodkorb

*Porzana lacustris* Brodkorb, 1958 (Oct. 31), Wilson Bull., vol. 70, no. 3, p. 239, fig. 1 (type from section 28, right humerus, Univ. Mich. Mus. Paleo. no. 33916).

LOWER PLEISTOCENE (Hagerman lake beds). IDAHO: Twin Falls County: NW¼, SW¼, section 28, T. 7 S., R. 13 E.

20. *Porzana auffenbergi* Brodkorb

*Porzana auffenbergi* Brodkorb, 1954 (March 26), Condor, vol. 56, no. 2, p. 103, fig. 1 (type from pit I at Haile, left humerus, Brodkorb no. 742).

MIDDLE PLEISTOCENE (Arredondo clay). FLORIDA: Alachua County: Haile, pits I (Brodkorb, 1954) and XI (Ligon, 1966, Bull. Florida State Mus., vol. 10, no. 4, p. 143); Bull. Florida State Mus., vol. 4, p. 280).

MIDDLE PLEISTOCENE (Reddick beds). FLORIDA: Marion County: Reddick (Brodkorb, 1957, Jour. Paleont., vol. 31, p. 135).

21. *Porzana guti* (Brodkorb)

*Laterallus guti* Brodkorb, 1952 (June 15), Wilson Bull., vol. 64, no. 2, p. 80, fig. 1 (type from Reddick, left humerus, Brodkorb no. 84).

MIDDLE PLEISTOCENE (Reddick beds). FLORIDA: Marion County: Dixie Lime Products Company quarry, 1 mile S. of Reddick (Brodkorb, 1952).

MIDDLE PLEISTOCENE (Arredondo clay). FLORIDA: Alachua County: Haile, pit XI (Ligon, 1966, Bull. Florida State Mus., vol. 10, no. 4, p. 143).

Genus †*Euryonotus* Mercerat

*Euryonotus* Mercerat, 1897, An. Soc. cient. Argentina, vol. 43, p. 238 (type *Euryonotus brachypterus* Mercerat, designated by Richmond, 1902, Proc. U. S. Nat. Mus., vol. 24, no. 1267, p. 683).

22. *Euryonotus brachypterus* Mercerat

*Euryonotus brachypterus* Mercerat, 1897, An. Soc. cient. Argentina, vol. 43, p. 238 (type from Arrecifes, humerus).

UPPER PLEISTOCENE (Pampas formation). ARGENTINA: Prov. Buenos Aires: Arrecifes.

23. *Euryonotus argentinus* Mercerat

*Euryonotus argentinus* Mercerat, 1897, An. Soc. cient. Argentina, vol. 43, p. 239 (type from Arrecifes, proximal portion of humerus).

UPPER PLEISTOCENE (Pampas formation). ARGENTINA: Prov. Buenos Aires: Arrecifes.

Genus †*Aphanocrex* Wetmore

*Aphanocrex* Wetmore, 1963 (Sept. 1); Ibis, vol. 103b, p. 379 (type by original designation *Aphanocrex podarces* Wetmore).

24. *Aphanocrex podarces* Wetmore

*Aphanocrex podarces* Wetmore, 1963 (Sept. 1), Ibis, vol. 103b, p. 379, pl. 9 (type from Prosperous Bay, distal portion of left tarsometatarsus, Brit. Mus. no. S/1963.I.1).

QUATERNARY (silt). ST. HELENA: Prosperous Bay.

Genus †*Capellirallus* Falla

*Capellirallus* Falla, 1954, Rec. Auckland Mus., vol. 4, p. 241 (type *Capellirallus karamu* Falla).

25. *Capellirallus karamu* Falla

*Capellirallus karamu* Falla, 1954, Rec. Auckland Mus., vol. 4, p. 241 (type from Karamu, skeleton, Auckland Mus.).

QUATERNARY (cave deposits). NEW ZEALAND: North Island: Karamu near Pirongia in Te Kuiti district (Falla, 1954); Coonor and Waitanguru (Oliver, 1955, New Zealand Birds, ed. 2, p. 594).

Genus *Gallirallus* Lafresnaye.

*Gallirallus* Lafresnaye, 1841, Rev. Zool., p. 234 (type by monotypy *Gallirallus brachypterus* Lafresnaye = *Rallus troglodytes* Gmelin).

26. *Gallirallus minor* Hamilton

*Gallirallus minor* Hamilton, 1893, Trans. New Zealand Inst., vol. 25, p. 103 (type from Castle Rocks, sternum, pelvis, femur, tibiotarsus, tarsometatarsus, New Zealand Mus.).

QUATERNARY. NEW ZEALAND: South Island: Castle Rocks (Hamilton, 1893); Pyramid Valley swamp (Scarlett, 1955, Records Canterbury Mus., vol. 6, p. 262); Takaka, Lake Grassmere, Forest Hill, Hamilton Swamp and Lime Hills (Oliver, 1955, New Zealand Birds, ed. 2, p. 594).

Genus †*Diaphorapteryx* Forbes

*Diaphorapteryx* Forbes, 1893 (April), Ibis, ser. 6, vol. 5, no. 18, p. 254 (type by monotypy *Aphanapteryx hawkinsi* Forbes).

27. *Diaphorapteryx hawkinsi* (Forbes)

*Aphanapteryx hawkinsi* Forbes, 1892, Nature, vol. 46, p. 252 (type from Wharekauri, skeleton, British Museum?).

QUATERNARY. CHATHAM ISLANDS: Wharekauri.

## Subfamily GALLINULINAE Gray

*Gallinulinae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, p. 72 (subfamily; type *Gallinula* "Ray" [Brisson]).—*Gallinuleae* Bonaparte, 1853 (read Oct. 31), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646 (section).—*Gallinulidae* Blasius, 1860, Naturgeschichte der Vögel, Fortsetzung der Nachträge (family, fide Gray, 1871).

*Porphyriioninae* Reichenbach, 1850 (fide Gray, 1871; type *Porphyrio* Brisson).—*Porphyriinae* Verheyen, 1957 (May), Bull. Inst. roy. Sci. nat. Belgique, vol. 33, no. 21, pp. 24, 41 (sous-famille).

Genus †*Eocrex* Wetmore

*Eocrex* Wetmore, 1931 (May 15), Condor, vol. 33, no. 3, p. 107 (type by monotypy *Eocrex primus* Wetmore).

28. *Eocrex primus* Wetmore

*Eocrex primus* Wetmore, 1931 (May 15), Condor, vol. 33, no. 3, p. 107, fig. 21-25, (type from Steamboat Springs, distal end of right tibiotarsus, U. S. Nat. Mus. no. 12043).

LOWER EOCENE (Cathedral Bluffs tongue of Wasatch formation). COLORADO: Sweetwater County, near Steamboat Springs, section 13, Township 24 N, Range 102 West.

Genus †*Palaeocrex* Wetmore

*Palaeocrex* Wetmore, 1927 (July 15), Proc. Colorado Mus. Nat. Hist., vol. 7, no. 2, p. 9 (type by monotypy *Palaeocrex fax* Wetmore).

29. *Palaeocrex fax* Wetmore

*Palaeocrex fax* Wetmore, 1927 (July 15), Proc. Colorado Mus. Nat. Hist., vol. 7, no. 2, p. 9, figs. 15-18 (type from Horsetail Creek, distal portion of left tarsometatarsus, Colorado Mus. Nat. Hist., Denver, no. 1978).

LOWER OLIGOCENE (lower part of Horsetail Creek member of Chadron formation). COLORADO: Weld County: *Trigonias* quarries on Horsetail Creek, sections 26-27, Township 10 N, Range 57 W.

Genus †*Miorallus* Lambrecht

*Miorallus* Lambrecht, 1933, Handbuch Paleorn., p. 466 (type by monotypy *Rallus major* Milne-Edwards).

30. *Miorallus major* (Milne-Edwards)

*Rallus major* Milne-Edwards, 1869, Ois. Foss. France, vol. 2, p. 157, pl. 103, fig. 12-16 (type from Sansan, distal end of humerus, Paris Mus [?]).

MIDDLE MIOCENE (Helvetian). FRANCE: Dept. Gers: Sansan (Milne-Edwards 1869).<sup>1</sup>

Genus †*Thiornis* Navás

*Thiornis* Navás, 1922, Bol. Soc. ibérica Cienc. nat., ser. 4, vol. 21, p. 59 (type by monotypy *Thiornis sociata* Navás).

31. *Thiornis sociata* Navás

*Thiornis sociata* Navás, 1922, Vol. Soc. ibérica Cienc. nat., ser. 4, vol. 21, p. 59, pl. 2 (type from Libros, skeleton impression, Brit. Mus.).

LOWER PLIOCENE (Pontian). SPAIN: Prov. Teruel: Libros.

<sup>1</sup> The report by O. Fraas (1870, Jahresh. Ver. vaterl. Naturk. Württemberg, vol. 26, p. 288) from the Upper Miocene Schwäbische Süßwassermolasse at Steinheim, Germany, cannot be accepted without restudy.

Genus *Gallinula* Brisson

*Gallinula* Brisson, 1760, *Ornithologia*, vol. 1, p. 50, vol. 6, p. 2 (type by tautonymy *Fulica chloropus* Linnaeus).

32. *Gallinula kansarum* Brodkorb<sup>1</sup>

*Fulica americana* Gmelin, Wetmore, 1944, *Univ. Kansas Sci. Bull.*, vol. 30, pt. 1, p. 103 (*Univ. Kansas nos.* 3994, 3988).

UPPER PLIOCENE (Rexford formation). KANSAS: Meade County: Rexroad.

33. *Gallinula brodkorbi* McCoy

*Gallinula brodkorbi* McCoy, 1963 (July 30), *Auk*, vol. 80, no. 3, p. 344, fig. 3 (type from Itchtucknee River, right humerus, Brodkorb no. 16).

UPPER PLEISTOCENE (Itchtucknee River beds). FLORIDA: Columbia County: Itchtucknee River.

34. *Gallinula strenuipes* DeVis

*Gallinula strenuipes* DeVis, 1888, *Proc. Linn. Soc. N. S. Wales*, ser. 2, vol. 3, p. 1284, pl. 34, fig. 8a-b (type from River Condamine, left tarsometatarsus).

UPPER PLEISTOCENE (Chinchilla beds). AUSTRALIA: Queensland: Darling Downs north bank of River Condamine, 3 miles south of Chinchilla.

35. *Gallinula peralata* DeVis

*Gallinula peralata* DeVis, 1892, *Proc. Linn. Soc. N. S. Wales*, ser. 2, vol. 6, p. 440, pl. 24, fig. 3a-b (type from Queensland, humerus).

UPPER PLEISTOCENE. AUSTRALIA: Queensland.

<sup>1</sup> New species. Holotype from Rexroad locality 3, distal part of left humerus, *Univ. Kansas no.* 3994, collected by C. W. Hibbard and party, 1937. Referable to *Gallinula* in having condyles close and intercondylar space narrow, so that proximal end of external condyle extends over internal condyle (in *Fulica* condyles distant and intercondylar space wide, so that proximal end of external condyle is in line with outer edge of internal condyle); edge of ectepicondylar process strongly concave in palmar view (nearly straight in *Fulica*). Differs from Pleistocene *Gallinula brodkorbi* McCoy and living and Pleistocene *Gallinula chloropus* (Linnaeus) in having ectepicondylar process shorter, with edge in palmar view even more strongly concave; entepicondyle shorter with distal end truncate. Distal width 8.0 (8.6 in type of *G. brodkorbi*, 7.4-8.3 in 14 *G. chloropus*).

No. 3988, a right ulna lacking the olecranon and otherwise damaged, is from the same locality but is referred only tentatively. It is 10-20 mm shorter than in *Fulica americana*, besides differing in structural details, e.g. the external condyle falls short of the trochleae (in *Fulica* the external condyle forms the most distal part of the bone). It is stouter and slightly longer than the ulna of *G. brodkorbi* and *G. chloropus*. Length as preserved, 46.8; width through condyles, 5.6; width of shaft, 4.5 mm.

Genus †*Epirallus* L. Miller

*Epirallus* L. Miller, 1942 (March 6), Univ. Calif. Publ. Zool., vol. 47, no. 3, p. 43 (type by monotypy *Epirallus natator* L. Miller).

36. *Epirallus natator* L. Miller

*Epirallus natator* L. Miller, 1942 (March 6), Univ. Calif. Publ. Zool., vol. 47, no. 3, p. 43, fig. 1a (type from San Josecito cave, tarsometatarsus, Calif. Inst. Tech. no. 2943, now in Los Angeles County Mus.).

UPPER PLEISTOCENE (Chinchilla beds). AUSTRALIA: Queensland: Cave, near Aramberri.

Genus *Porphyrio* Brisson

*Porphyrio* Brisson, 1760, Ornithologia, vol. 1, p. 48; vol. 5, p. 522 (type by tautonomy *Fulica porphyrio* Linnaeus).

37. *Porphyrio repertus* DeVis

*Porphyrio reperta* DeVis, 1888, Proc. Linn. Soc. N. S. Wales, ser. 2, vol. 3, p. 1283, pl. 34, fig. 7a-b (type from River Condamine, distal two-thirds of right tarsometatarsus).

UPPER PLEISTOCENE (cave deposit). NUEVO LEON: San Josecito Darling Downs, north bank of River Condamine, 3 miles south of Chinchilla.

38. *Porphyrio mackintoshi* DeVis

*Porphyrio mackintoshi* DeVis, 1892, Proc. Linn. Soc. N. S. Wales, ser. 2, vol. 6, p. 440, pl. 24, figs. 2a-b (type from Warwick, tarsometatarsus).

UPPER PLEISTOCENE. AUSTRALIA: Queensland: Warwick.

Genus *Tribonyx* DuBus

*Tribonyx* DuBus, 1840, Bull. Acad. Roy. Sci. Bruxelles, vol. 7, pt. 1, p. 212 (type by monotypy *Tribonyx mortierii* DuBus).

39. *Tribonyx effluxus* DeVis

*Fulica prior*, in part, DeVis, 1888, Proc. Linn. Soc. N. S. Wales, ser. 2, vol. 3, p. 1285, pl. 35, fig. 9b (distal end of humerus only, from River Condamine).

*Tribonyx effluxus* DeVis, 1892, Proc. Linn. Soc. N. S. Wales, ser. 2, vol. 6, p. 439 (type distal end of humerus mentioned above).

UPPER PLEISTOCENE (Chinchilla beds). AUSTRALIA: Queensland: Darling Downs, north bank of River Condamine, 3 miles south of Chinchilla.

Genus †*Hovacrex* Brodkorb

*Hovacrex* Brodkorb, 1965 (June 25), Quart. Jour. Florida Acad. Sci., vol. 28, no. 2, p. 197 (type by original designation *Tribonyx roberti* Andrews).

40. *Hovacrex roberti* (Andrews)

*Tribonyx roberti* Andrews, 1897, Ibis, ser. 7, vol. 3, no. 11, p. 356, pl. 9, figs. 4-7 (type from Sirabé, pelvis, Brit. Mus.).

QUATERNARY. MADAGASCAR: Sirabé.

Genus †*Nesotrochis* Wetmore

*Nesotrochis* Wetmore, 1918 (Nov. 21), Proc. U. S. Nat. Mus., vol. 54, no. 2245, p. 516 (type by original designation *Nesotrochis debooyi* Wetmore).

41. *Nesotrochis debooyi* Wetmore

*Nesotrochis debooyi* Wetmore, 1918 (Nov. 21), Proc. U. S. Nat. Mus., vol. 54, no. 2245, p. 516, pl. 82, figs. 1-5 (type from Magens Bay, right femur, U. S. Nat. Mus. no. 225845).

QUATERNARY (cave deposits). PUERTO RICO: Cueva Clara, Cueva San Miguel near Morovis, Cueva Toraño, and Hacienda Jobo cave near Utuado (Wetmore, 1922, Bull. Amer. Mus. Nat. Hist., vol. 46, p. 307, figs. 3-9); Barrio Cañas near Ponce (Wetmore, 1938, Auk, vol. 55, p. 53).

QUATERNARY (pre-Columbian middens). ST. THOMAS: Magens Bay (Wetmore, 1918). ST. CROIX: mouth of Salt River (Wetmore, 1918); Richmond estate near Christiansted (Lambrecht, 1933, Handb. Palaeorn., p. 467); Concordia (Wetmore, 1937, Jour. Agr. Univ. Puerto Rico, vol. 21, p. 9, pl. 1, figs. 1-7).

Genus †*Pyramida* Oliver

*Pyramida* Oliver, 1955, New Zealand Birds, ed. 2, pp. 595, 657 (type by original designation *Rallus hodgeni* Scarlett; *Pyramidia* on p. 596; spelling restricted to *Pyramida* by Dawson, 1957, Nature, vol. 179, p. 1307).

42. *Pyramida hodgeni* (Scarlett)

*Rallus hodgeni* Scarlett, 1955, Rec. Canterbury Mus., vol. 6, no. 4, p. 265 (type from Pyramid Valley Swamp, pelvis, Canterbury Mus. no. 6197; measurements only, no description).—*Pyramidia hodgeni* Oliver, 1955, New Zealand Birds, ed. 2, p. 596 (descr. pelvis, tibiotarsus).

QUATERNARY. NEW ZEALAND: South Island: Pyramid Valley swamp, Marfell Beach sand dunes on Lake Grassmere in Marlborough, and Glenmark swamp (Scarlett, 1955).

Genus *Notornis* Owen

*Notornis* Owen, 1848, Proc. Zool. Soc. London, p. 2 (type by monotypy *Notornis mantelli* Owen).

43. *Notornis mantelli* Owen

*Notornis mantelli* Owen, 1848, Trans. Zool. Soc. London, vol. 3, p. 347, pl. 56, figs. 7-13 (type from Wainganui, cranium, Brit. Mus. no. 21695, type from Waingongoro, rostrum and mandible, Brit. Mus. no. 21968).

*Notornis parkeri* Forbes, 1891, Trans. New Zealand Inst., vol. 24, p. 185 (type from North Island).

QUATERNARY. NEW ZEALAND: North Island: Wainganui and Waingongoro (Owen, 1848); Martinborough and Coonor cave (Lambrecht, 1933, Handb. Palaeorn., p. 477).

## Subfamily FULICINAE (Nitzsch)

*Fulicariae* Nitzsch, 1820, Deutsches Archiv f. d. Physiologie, p. 263 (familia; type *Fulica* Linnaeus).—*Fulicinae* Bonaparte, 1849, fide Gray, 1871.—*Fulicidae* Kaup, 1850, fide Gray, 1871.—*Fuliceae* Bonaparte, 1853 (read Oct. 31), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646.

Genus †*Fulicaletornis* Lambrecht

*Fulicaletornis* Lambrecht, 1933, Handbuch Palaeorn., p. 479 (type by monotypy *Aletornis venustus* Marsh).

44. *Fulicaletornis venustus* (Marsh)

*Aletornis venustus* Marsh, 1872 (October), Amer. Jour. Sci., ser. 3, vol. 4, no. 22, p. 257 (type from Henrys Fork, distal portion of left tibiotarsus, Yale Peabody Mus. no. 206).

MIDDLE EOCENE (Twin Buttes member of Bridger formation). WYOMING: Unita County: Henrys Fork.

Genus †*Miofulica* Lambrecht

*Miofulica* Lambrecht, 1933, Handbuch Paleorn., p. 480 (type by monotypy *Fulica dejardini* Van Beneden).

45. *Miofulica dejardini* (Van Beneden)

*Fulica dejardini* Van Beneden, 1872, Bull. Acad. Roy. Belg., ser. 2, vol. 32, p. 218, pl. 1, fig. 8 (type "du crag," distal portion of femur).

*Fulica desjardini* Sharpe, 1894, Cat. Birds Brit. Mus., vol. 23, p. 209 note.



MIDDLE MIOCENE (Anversian black sand). BELGIUM: Near Antwerp (see Dollo, 1909, Ann. N. Y. Acad. Sci., vol. 19, no. 4, pt. 1, p. 116).

Genus *Fulica* Linnaeus

*Fulica* Linnaeus, 1758, Syst. Nat., ed. 10, vol. 1, p. 152 (type by tautonymy *Fulica atra* Linnaeus).

46. *Fulica infelix* Brodkorb

*Fulica infelix* Brodkorb, 1961 (Nov. 7), Quart. Jour. Florida Acad. Sci., vol. 24, no. 3, p. 181, fig. 7 (type from Juntura, distal portion of left tibiotarsus, Univ. Oregon, Mus. Nat. Hist. no. F-5758).

LOWER PLEISTOCENE (Juntura formation). OREGON: Malheur County: Juntura.

47. *Fulica shufeldti* Brodkorb

*Fulica minor* Shufeldt, 1891 (Sept.), Amer. Naturalist, vol. 25, no. 297, p. 820; Shufeldt, 1892, Jour. Acad. Nat. Sci. Phila., vol. 9, p. 412, pl. 17, fig. 32 (type from Fossil Lake, left humerus, Amer. Mus. Nat. Hist. no. 3480).—*Fulica americana minor* Howard, 1946, Carnegie Instn. Washington Publ., no. 551, p. 182 (type restudied).

*Fulica shufeldti* Brodkorb, 1964 (Nov. 4), Quart. Jour. Florida Acad. Sci., vol. 27, no. 3, p. 186 (new name for *Fulica minor* Shufeldt, preoccupied by *Fulica minor* Brehm, 1831).

MIDDLE PLEISTOCENE (Fossil Lake formation). OREGON: Lake County: Fossil Lake (Shufeldt, 1892).

MIDDLE PLEISTOCENE (Reddick beds). FLORIDA: Marion County: Reddick (Brodkorb, 1957, Jour., Paleont., vol. 31, p. 135).

MIDDLE PLEISTOCENE (Arredondo clay). FLORIDA: Alachua County: Arredondo (Brodkorb, 1959, Bull. Florida State Mus., vol. 4, p. 280); Paynes Prairie (Brodkorb coll.).

UPPER PLEISTOCENE (Pamlico formation). FLORIDA: Orange County: Rock Spring (Woolfenden, 1959, Wilson Bull., vol. 71, p. 185). Volusia County: Lake Monroe (Brodkorb coll.).

UPPER PLEISTOCENE (Itchtucknee River beds). FLORIDA: Columbia County: Itchtucknee River (McCoy, 1963, Auk, vol. 80, p. 347).

48. *Fulica hesterna* Howard

*Fulica hesterna* Howard, 1963 (Dec. 30), Los Angeles County Mus., Contr. in Sci., no. 73, p. 22, pl. 1, fig. F (type from Arroyo Tapiado, distal end of left tibiotarsus, Los Angeles County Mus. no. 2873).

MIDDLE PLEISTOCENE (Palm Spring formation). CALIFORNIA: San Diego County: Arroyo Tapiado.

49. *Fulica podagrica* Brodkorb

*Fulica podagrica* Brodkorb, 1965 (Jan. 18), Jour. Barbados Mus. and Hist. Soc., vol. 31, no. 1, p. 7, pl. [1] (type from Ragged Point, left humerus, Univ. Florida no. 7458).

UPPER PLEISTOCENE (post-Coral Rock). BARBADOS: St. Philip Parish: Ragged Point.

50. *Fulica prior* DeVis

*Fulica prior* DeVis, 1888, Proc. Linn. Soc. N. S. Wales, ser. 2, vol. 3, p. 1285, pl. 35, fig. 9a only (type from River Condamine, proximal end of right humerus, selected by DeVis, 1892).

UPPER PLEISTOCENE (Chinchilla beds). AUSTRALIA: Queensland: Darling Downs, north bank of River Condamine, 3 miles south of Chinchilla.

Genus †*Palaeolimnas* Forbes

*Palaeolimnas* Forbes, 1893 (Oct.), Ibis, ser. 6, vol. 5, no. 20, p. 544 (type by monotypy *Fulica newtoni* Milne-Edwards).

*paludiphilus* Hachisuka, 1953, The Dodo and Kindred Birds, p. 154 (type by monotypy *Fulica newtoni* Milne-Edwards).

51. *Palaeolimnas newtoni* (Milne-Edwards)

*Fulica newtoni* Milne-Edwards, 1868, Ann. Sci. Nat., ser. 5, Zool., vol. 8, p. 195, pl. 13 (types from Mauritius, premaxilla, sternum, vertebrae, pelvis, femur, tibiotarsus; tarsometatarsus, Cambridge Univ. Mus.).

*Fulica newtonii* Milne-Edwards, 1866-1873, Recherches sur la faune ornithologique des Iles Mascareignes et de Madagascar, p. 43 et seq.

QUATERNARY. MAURITIUS.

Genus †*Nesophalaris* Brodkorb and Dawson

*Nesophalaris* Brodkorb and Dawson, 1962 (Apr. 20), Auk, vol. 79, no. 2, p. 268 (type by original designation *Fulica chathamensis* Forbes).

52. *Nesophalaris chathamensis* (Forbes)

*Fulica chathamensis* Forbes, 1892, Nature, vol. 46, no. 1185, p. 252 (types from Chatham Islands, limb bones, not skulls so labeled in British Mus., see Dawson, 1958, Ibis, p. 235).

QUATERNARY. CHATHAM ISLANDS.

53. *Nesophalaris prisca* (Hamilton)

*Fulica prisca* Hamilton, 1893, Trans. New Zealand Inst., vol. 25, p. 98 (type from Castle Rocks, leg elements).

QUATERNARY. NEW ZEALAND: South Island: Castle Rocks (Hamilton, 1893); Kupua and Ngapara (Lambrecht, 1933, Handb. Palaeorn., p. 484); Pyramid Valley swamp (Scarlett, 1955, Records Canterbury Mus., p. 262); Takaka and Lake Grassmere (Oliver, 1955, New Zealand Birds, ed. 2, p. 599); Tai Rua, 14-16th Century (Trotter, 1965, Notornis, vol. 12, no. 3, p. 178).

## Subfamily †TELECRECINAE Wetmore

*Telecrecinae* Wetmore, 1934 (Apr. 7), Amer. Mus. Novitates, no. 711, p. 14 (type *Telecrex* Wetmore).

Genus †*Telecrex* Wetmore

*Telecrex* Wetmore, 1934 (Apr. 7), Amer. Mus. Novitates, no. 711, p. 13 (type by monotypy *Telecrex grangeri* Wetmore).

54. *Telecrex grangeri* Wetmore

*Telecrex grangeri* Wetmore, 1934 (Apr. 7), Amer. Mus. Novitates, no. 711, p. 13, fig. 6 (type from Chimney Butte, proximal portion of right femur, Amer. Mus. Nat. Hist. no. 2942).

UPPER EOCENE (Irdin Manha formation). INNER MONGOLIA: Suiyuan Province: Chimney Butté, Shara Murun region.

## Subfamily †APTORNITHINAE Bonaparte

*Aptornithidae* Bonaparte, 1856 (read Nov. 3), C. R. Acad. Sci. Paris, vol. 43, no. 18, p. 841 (familia; type *Aptornis* Owen).—*Aptornithinae* Bonaparte, 1856 (read Nov. 3), op. cit., p. 841 (subfamilia).

Genus †*Aptornis* Owen

*Aptornis* Owen, 1848, Trans. Zool. Soc. London, vol. 3, p. 347 (type *Dinornis otidiformis* Owen).

*Apterygiornis* Warren, fide Bonaparte, 1856, C. R. Acad. Sci. Paris, vol. 43, p. 841.

55. *Aptornis otidiformis* (Owen)

*Dinornis otidiformis* Owen, 1844, Trans. Zool. Soc. London, vol. 3, p. 247 (type from Poverty Bay, tibiotarsus).

PLEISTOCENE (ménaccenite beds) and RECENT. NEW ZEALAND: North Island: Poverty Bay (Owen, 1884); menaccenite beds at Te Rangatapu near Waingongoro, Waingongoro and Wainganui (Lydekker, 1891, Cat. Fossil Birds, p. 147); East Cape and Martinborough (Lambrecht, 1933, Handb. Palaeorn., p. 486); Coonoor (Oliver, 1955, New Zealand Birds, ed. 2, p. 597).

### 56. *Aptornis defossor* Owen

*Aptornis defossor* Owen, 1871, Trans. Zool. Soc. London, vol. 7, p. 354, pl. 40-44 (types from Oamaru, skull, left femur, right tibiotarsus, fibula, Brit. Mus. nos. 46498-50, 46502, 46503; other types from Timaru, cranium, left tarsometatarsus, Brit. Mus. nos. 46621, 46630).

QUATERNARY (superficial deposits). NEW ZEALAND: South Island: Camaru and Timaru (Owen, 1871); Pyramid Valley swamp (Scarlett, 1955, Records Canterbury Mus., vol. 6, p. 262); Oreti River, Kapua, Glenmark, and Redcliffs (Lambrecht, 1933, Hand. Palaeorn., p. 486); Takaka, Lake Grassmere, Herbert, Ngapara, Castle Rocks, Forest Hill and Lime Hills (Oliver, 1955, New Zealand Birds, ed. 2, p. 597, fig.); Waimataitai midden (Trotter, 1965, Notornis, vol. 12, no. 3, p. 177).

### Neospecies of Rallidae from Pleistocene and \*prehistoric sites:

#### Subfamily RALLINAE

1. *Rallus longirostris* Boddaert. FLORIDA: Seminole Field in St. Petersburg (Wetmore, 1931, Smithsonian Misc. Coll., vol. 85, no. 2, p. 37). ST. CROIX: \*Concordia (Wetmore, 1937, Jour. Agr. Univ. Porto Rico, vol. 21, no. 1, p. 8).

2. *Rallus elegans* Audubon. FLORIDA: Seminole Field and Itchtucknee River (Wetmore, 1931, Smithsonian Misc. Coll., vol. 85, no. 2, p. 37); Arredondo (Brodkorb, 1959, Bull. Florida State Mus., vol. 4, no. 9, p. 279); Haile (Ligon, 1966, Bull. Florida State Mus., vol. 10, no. 4, p. 142); Hornsby Spring (Brodkorb coll.); \*Vero Beach, stratum 3 (Weigel, 1963, Florida Geol. Surv., Spec. Publ., no. 10, p. 28).

3. *Rallus limicola* Vieillot. OREGON: Fossil Lake (Howard, 1946, Carnegie Instn. Washington Publ., no. 551, p. 182). CALIFORNIA: McKittrick (L. Miller, 1925, Univ. Calif. Publ. Bull. Dept. Geol. Sci., vol. 15, no. 9, p. 330); Vallecito Creek? (Howard, 1963, Contr. in Sci., no. 73, p. 22); \*Buena Vista Lake (DeMay, 1942, Condor, vol. 44, p. 228). FLORIDA: Reddick (Brodkorb, 1954, vol. 56, p. 103); Arredondo (Brodkorb, 1959, Bull. Florida State Mus., vol. 4, p. 279); Itchtucknee River (McCoy, 1963, Auk, vol. 80, p. 344); Haile (Ligon, 1966, Bull. Florida State Mus., vol. 10, no. 4, p. 143); \*Vero Beach, stratum 3 (Weigel, 1963, Florida Geol. Surv., Spec. Publ., no. 10, p. 28).

4. *Rallus aquaticus* Linnaeus. IRELAND: Bántick, Edenvale, and Newhall Cave (Lambrecht, 1933, Handb. Palaeorn., p. 760). SCOTLAND: Oransay, Colon-

say, and Ardrossan (Lambrecht, 1933). ENGLAND: Ightham Cave and Merlins Cave (Lambrecht, 1933). FRANCE: Bruniquiel (Lambrecht, 1933). MONACO: Grottes de Menton (Lambrecht, 1933). ITALY: Grotta dei Colombi? and Buca del Bersagliere (Lambrecht, 1933). GERMANY: Höhle bei St. Wolfgang (Lambrecht, 1933). CZECHOSLOVAKIA: Balcarova Skála and Certova díra (Capek, 1910, Ber. V. Internat. Ornith. Kongr. Berlin, pp. 938, 940). HUNGARY: Pálffy-Höhle (Lambrecht, 1913, Aquila, vol. 20, p. 426); Oregköhöle bei Bajót (Kormos and Lambrecht, 1914, Barlangkutató, vol. 2, p. 105); Remetehegy (Lambrecht, 1914, Aquila, vol. 21, p. 89); Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. ungar. Geol. Anstalt, vol. 23, p. 479) Puskaporos (Lambrecht, 1916, Barlangkutató, vol. 4, p. 205); Subalyuk-Höhle (Jánossy, 1962, Aquila, vol. 67-68, p. 179); \*Csév Passage (Jánossy, 1959, Ann. Mus. hungarica, vol. 51, p. 117). PALESTINE: Kebara Cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, p. 106).

5. *Rallus philippensis* Linnaeus. MACQUARIE ISLAND: \*Aurora Cave and \*Eagle Cave (Vestjens, 1963, Emu, vol. 62, p. 249).

6. †*Nesolimnas dieffenbachii* (C. R. Gray). CHATHAM ISLANDS (Forbes, 1893, Ibis, ser. 6, vol. 5, p. 544). Exterminated in 1840.

7. †*Cabalus modestus* (Hutton). CHATHAM ISLANDS: Wharekauri Island (Forbes, 1893, Ibis, ser. 6, vol. 5, p. 544). Exterminated in 1900.

8. *Ortygonax nigricans* (Vieillot). BRAZIL: Lapa da Escrivana and Lapa do Capão Secco? (O. Winge, 1887, E Museo Lundii, vol. 1, no. 2, p. 26).

9. *Aramides cajaneu* (P.L.S. Müller). FLORIDA: Seminole Field (Wetmore, 1931, Smithsonian Misc. Coll., vol. 85, no. 2, p. 37 figs. 14-16). BRAZIL: Lapa da Escrivania? (O. Winge, 1887, E Museo Lundii, vol. 1, no. 2, pp. 12, 25).

10. †*Aphanapteryx bonasia* (Selys-Longchamps). MAURITIUS: Mare aux Songes (Milne-Edwards, 1869, Ibis, p. 275, figs. 3-8). Exterminated about 1675.

11. †*Aphanapteryx leguati* (Milne-Edwards). RODRIGUEZ (*Erthyromachus leguati* Milne-Edwards, 1874, Bibl. École Haute Études, vol. 11, art. 3, p. 6, pl. 11-12). Exterminated about 1730.

12. *Gallirallus australis* (Spartman). NEW ZEALAND: Waingongoro (Lydekker, 1891, Cat. Fossil Birds Brit. Mus., p. 146). Martinborough Caves? (Yaldwyn, 1956, Records Dominion Mus., vol. 3, p. 3). CHATHAM ISLANDS? (Forbes, 1893, Ibis, ser. 6, vol. 5, p. 545).

13. *Crex crex* (Linnaeus). IRELAND: Kesh Cave, Castlepook Cave, Bantick Cave, and Newhall Cave (Lambrecht, 1933, Handb. Palaeorn., p. 760). ENGLAND: \*Glastonbury (Lambrecht, 1933). DENMARK: \*Uggerslev (H. Winge, 1903, Vidensk. Meddel. Naturh. Foren., vol. 6, p. 95). FRANCE: Montmorency (Paris, 1912, Rev. franc. Ornith., vol. 4, p. 295). MONACO: Grotte de Grimaldi and Grottes de Menton (Lambrecht, 1933). ITALY: Caverne de Verezzi, Grotta d'Equi, Buca del Bersagliere, and Grotta dei colombi (Lambrecht, 1933). CZECHOSLOVAKIA: Balcarova Skála, Ludmirau and Certova díra (Capek, 1910, Ber. V. internat. Ornith. Kongr. Berlin, pp. 938-940). HUNGARY: Balla-Höhle and Köszeg (Lambrecht, 1912, Aquila, vol. 19, pp. 275, 283); Puskaporos (Kormos, 1911, Mitt. Jahrb. ungar. geol. Anst., vol. 19, no. 3, 153); Pálffy-Höhle and Pilisszántó (Lam-

brecht, 1913, *Aquila*, vol. 20, pp. 427-428); Remetehegy (Lambrecht, 1916, *Mitt. Jahrb. ungar. geol. Anstalt*, vol. 22, p. 395); Püspökfürdő (Capek, 1917, *Barlangkutatás*, vol. 5, p. 26); Istállókö (Jánossy, 1954, *Aquila*, vol. 55-58, p. 218); \*Legénybarlang bei Pilisszentlélek (Lambrecht, 1933, *Handb. Palaeorn.*, p. 760); \*Csev Passage (Jánossy, 1959, *Ann. Mus. hungarica*, vol. 51, p. 117). PALESTINE: Oumm Qatafa Cave and Kebara Cave (Tchernov, 1962, *Bull. Research Council Israel*, vol. 11, pp. 100, 118).

14. *Porzana parva* (Scopoli). SARDINIA: Tavolara? (E. T. Newton, 1921, *Proc. zool. Soc. London*, p. 230). CORSICA: Grotta di Funtanedu? (Newton, 1921). AZERBAIJAN: Binagady? (Burchak-Abramovich, 1962, *Ornitologiya*, vol. 4, p. 462).

15. *Porzana pusilla* (Pallas). PALESTINE: Kebara Cave (Tchernov, 1962, *Bull. Research Council Israel*, vol. 11, p. 106).

16. *Porzana porzana* (Linnaeus). MONACO: Grottes de Menton and Grotte de Grimaldi (Lambrecht, 1933, *Handb. Palaeorn.*, p. 760). ITALY: Grotta dei Colombi (Lambrecht, 1933). SWITZERLAND: Etingen (Lambrecht, 1933). CZECHOSLOVAKIA: Sipka and Certova díra (Capek, 1910, *Ber. V. internat. ornith. Kongr. Berlin*, p. 940). POLAND: Holubic and Wollin (Lambrecht, 1933). HUNGARY: Pálffy-Höhle (Lambrecht, 1913, *Aquila*, vol. 20, p. 426); Remetehegy (Lambrecht, 1914, *Aquila*, vol. 21, p. 89); Pilisszántó (Lambrecht, 1915, *Mitt. Jahrb. ungar. geol. Anstalt*, vol. 23, p. 479); Puskaporos (Lambrecht, 1916, *Barlangkutatás*, vol. 4, p. 205); Istállóskő (Jánossy, 1954, *Aquila*, vol. 55-58, p. 218). PALESTINE: Kebara Cave (Tchernov, 1962, *Bull. Research Council Israel*, vol. 11, p. 106).

17. *Porzana carolina* (Linnaeus). NEW MEXICO: Shelter Cave (Howard and A. H. Miller, 1933, *Condor*, vol. 35, p. 16). ILLINOIS: \*Kingston (Baker, 1936, *Trans. Illinois State Acad. Sci.*, vol. 29, p. 245). TEXAS: Lubbock (Univ. Texas); Groesbeck Creek (Midwestern Univ.). FLORIDA: Reddick (Brodkorb, 1954, *Condor*, vol. 56, p. 103, fig. 1); Arredondo (Brodkorb, 1959, *Bull. Florida State Mus.*, vol. 4, no. 9, p. 280); Itchtuknee River (McCoy, 1963, *Auk*, vol. 80, p. 344); Haile (Ligon, 1966, *Bull. Florida State Mus.*, vol. 10, no. 4, p. 143); \*Vero Beach, stratum 3 (Weigel, 1963, *Florida Geol. Surv. Spec. Publ.*, no. 10, p. 29). DOMINICAN REPUBLIC: Cerro San Francisco (Bernstein, 1965, *Quart. Jour. Florida Acad. Sci.*, vol. 28, p. 272).

18. *Porzana flaviventris* (Boddaert). DOMINICAN REPUBLIC: Cerro San Francisco (Bernstein, 1965, *Quart. Jour. Florida Acad. Sci.*, vol. 28, p. 272). PUERTO RICO: \*Cueva Clara (Wetmore, 1922, *Bull. Amer. Mus. Nat. Hist.* vol. 46, p. 307). Records from Lapa da Escrivania and Lapa da Lagoa do Sumidouro, Brazil (O. Winge, 1887, *E. Museo, Lundii*, vol. 1, no. 2, p. 4) pertain to some other species.

19. *Porzana albicollis* (Vieillot). BRAZIL: Lapa da Escrivania (O. Winge, 1887, *E. Museo Lundii*, vol. 1, no. 2, p. 26).

20. *Porzana noveboracensis* (Gmelin). FLORIDA: Reddick (Brodkorb, 1957, *Jour. Paleont.*, vol. 31, p. 135); Haile (Ligon, 1966, *Bull. Florida State Mus.*, vol. 10, no. 4, p. 143).

21. *Porzana melanophatus* (Vieillot). BRAZIL: Lapa da Escrivania (O. Winge, 1887, *E. Museo Lundii*, vol. 1, no. 2, p. 26).

## Subfamily GALLINULINAE

22. *Gallinula chloropus* (Linnaeus). IRELAND: Castlepook Cave, Edenvale Cave, and Newhall Cave (Lambrecht, 1933, Handb. Palaeorn., p. 761). ENGLAND: Burwell fen (Lambrecht, 1933). FRANCE: Essonnes (Milne-Edwards, 1871, Ois. foss. France, vol. 2, p. 160); Massat (var. *major* Milne-Edwards, fide Lambrecht, 1933). MONACO: Grotte de Grimaldi (Lambrecht, 1933). ITALY: Buca del Bersagliere and Grotta dei Colombi (Lambrecht, 1933). CZECHOSLOVAKIA: Balcarova skála (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, p. 938). PALESTINE: Oumm Qatafa Cave (Tchernov, 1963, Bull. Research Council Israel, vol. 11, p. 100). CALIFORNIA: \*Buena Vista Lake (DeMay, 1942, Condor, vol. 44, p. 228). ARIZONA: Benson? (Wetmore, 1924, Proc. U. S. Nat. Mus., vol. 64, art. 5, p. 11). IDAHO: Hagerman (Wetmore, 1933, Smithsonian Misc. Coll., vol. 87, no. 20, p. 12). ILLINOIS: \*Cahokia (Baker, 1941, Trans. Amer. Philos. Soc., vol. 32, p. 68). FLORIDA: Seminole Field and Itchtucknee River (Wetmore, 1931, Smithsonian Misc. Coll., vol. 85, p. 39); Haile (Brodkorb, 1953, Wilson Bull., vol. 65, p. 50; Ligon, 1966, Bull. Florida State Mus., vol. 10, no. 4, p. 144); Arredondo (Brodkorb, 1959, Bull. Florida State Mus., vol. 4, p. 280); Rock Spring (Woolfenden, 1959, Wilson Bull., vol. 71, p. 185); Hornsby Spring (Brodkorb coll.). CUBA: Baños de Ciego Montero (Wetmore, 1928, Amer. Mus. Novitates, no. 301, p. 4). ST. CROIX: \*midden (Wetmore, 1918, Proc. U. S. Nat. Mus., vol. 54, p. 520). VENEZUELA: \*Los Tamarindos and \*Hacienda Tocarón (Wetmore, 1935, Auk, vol. 52, p. 329). BRAZIL: Lapa da Escrivania (O. Winge, 1887, E Museo Lundii, vol. 1, no. 2, p. 4).

23. *Porphyrula martinica* (Linnaeus). ILLINOIS: \*Kingston (Baker, 1941, Trans. Amer. Philos. Soc., vol. 32, p. 68). FLORIDA: Haile (Brodkorb, 1953, Wilson Bull., vol. 65, p. 50; Ligon, 1966, Bull. Florida State Mus., vol. 10, no. 4, p. 144); Arredondo (Brodkorb, 1959, Bull. Florida State Mus., vol. 4, p. 280); \*Good's shellpit (Neill, Cut, and Brodkorb, 1956, Amer. Antiquity, vol. 21, p. 388). DOMINICAN REPUBLIC: Cerro San Francisco (Bernstein, 1965, Quart. Jour. Florida Acad. Sci., vol. 28, p. 272). PUERTO RICO: \*Barrio Cañas (Wetmore, 1938, Auk, vol. 55, p. 54). ST. CROIX: \*Concordia (Wetmore, 1937, Jour. Agr. Univ. Puerto Rico, vol. 21, p. 8). ST. KITTS: \*midden (Univ. of Florida). MARTINIQUE: \*Paquemar (Wetmore, 1952, Auk, vol. 69, p. 460). VENEZUELA: \*Los Tamarindos (Wetmore, 1935, Auk, vol. 52, p. 329). BRAZIL: Lapa da Escrivania? (O. Winge, 1887, E Museo Lundii, vol. 1, no. 2, p. 27).

24. *Porphyrion poliocephaulus* (Latham). NEW ZEALAND: \*Ototara (Trotter, 1965, Notornis, vol. 12, p. 178).

25. *Notornis hochstetteri* A. B. Meyer. NEW ZEALAND, SOUTH ISLAND: Timaru (Lydekker, 1891, Cat. Fossil Birds Brit. Mus., p. 157); Patience Bay, Lake Te Anau, and Castle Rocks (Lambrecht, 1933, Handb. Palaeorn., p. 478); Pyramid Valley (Scarlett, 1955, Records Canterbury Mus., vol. 6, p. 262); Waitati, Dusky Sound, Earnsclough Cave, Greenhills, Enfield, Kapua, and Aniseed Valley (Oliver, 1955, New Zealand Birds, ed. 2, p. 375); \*Ototara (Trotter, 1965, Notornis, vol. 12, p. 178).

## Subfamily FULICINAE:

26. *Fulica atra* Linnaeus. IRELAND: Ballynamitra Cave (Lydekker, 1891, Ibis, ser. 6, vol. 3, p. 393); Edenvale Cave (Lambrecht, 1933, Handb. Palaeorn.,

p. 761). ENGLAND: Cambridgeshire fens (Lydekker, 1891); Merlin's Cave and \*Glastonbury (Lambrecht, 1933). WALES: Gop Cave at Prestatyn (Lambrecht, 1933). MONACO: Grottes de Menton (Lambrecht, 1933). ITALY: Grotta Romanelli, Grotta dei Colombi, and Torbiera della Catarangna (Lambrecht, 1933). SWITZERLAND: \*Robenhausen (Lambrecht, 1933). AZERBAIJAN: Binagady (Burchak-Abramovich, 1962, Ornitologiya, vol. 4, p. 462).

27. *Fulica americana* Gmelin. OREGON: \*Five Mile Rapids (L. Miller, 1957; Condor, vol. 59, p. 59). CALIFORNIA: Rancho La Brea (Howard, 1936, Condor, vol. 38, p. 35); San Pedro (Howard, 1949, Condor, vol. 51, p. 24); Vallecito?, Arroyo Hueso?, and Arroyo Tapiado? (Howard, 1963, Contr. in Sci., no. 73, p. 22); \*Buena Vista Lake (DeMay, 1942, Condor, vol. 44, p. 228). NEVADA: Smith Creek Cave (Howard, 1952, Bull. south. Calif. Acad. Sci., vol. 51, pt. 2, p. 54). ARIZONA: \*35 miles north of Flagstaff (A. H. Miller, 1932, Condor, vol. 34, p. 138); \*Wupatki Pueblo (Hargrave, 1939, Condor, vol. 41, p. 208). NEW MEXICO: Shelter Cave (Howard and A. H. Miller, 1933, Condor, vol. 35, p. 16). TEXAS: Hemphill County (Compton, 1934, Condor, vol. 36, p. 40, fig. 7a). KANSAS: Dixon (Harrell, 1959, Proc. S. Dakota Acad. Sci., vol. 38, p. 104).<sup>1</sup> IOWA: \*Mill Creek (Hamon, 1961, Plains Anthropologist, vol. 6, p. 210). ILLINOIS: \*Kingston (Baker, 1936, Trans. Illinois State Acad. Sci., vol. 29, p. 245); \*Plum Island and \*Sand Ridge (Baker, 1941, Trans. Amer. Philos. Soc., vol. 32, p. 68). FLORIDA: Seminole Field, Bradenton, and Itchtucknee River (Wetmore, 1931, Smithsonian misc. Coll., vol. 85, no. 2, p. 39); Haile (Brodkorb, 1953, Wilson Bull., vol. 65, p. 50; Ligon, 1966, Bull. Florida State Mus., vol. 10, no. 4, p. 144); \*Good's shellpit, \*Lemon Bluff, \*Bluffton, and \*Silver Glen Springs (Neill, Gut, and Brodkorb, 1956, Amer. Antiquity, vol. 21, p. 388); \*South Indian Field (Weigel, 1959, Florida Anthropologist, vol. 12, pl. 74); \*Williston (Brodkorb coll.). NUEVO LEON: San Josecito Cave (L. Miller, 1943, Univ. Calif. Publ. Zool., vol. 47, p. 159).

### Family †IDIORNITHIDAE Brodkorb

*Orthocnémides* Gaillard, 1908 (June 13), Les oiseaux des phosphorites du Quercy, Univ. Lyon, Thèses présentées a la Faculté des Sciences, p. 113 (vernacular name; famille des *Orthocnémides*; type *Orthocnemus* Milne-Edwards).—*Orthocnemidae* Lambrecht, 1933, Handbuch Palaeorn., p. 490 (type *Orthocnemus* Milne-Edwards, a preoccupied senior synonym of *Idiornis* Oberholser).  
*Idiornithidae* Brodkorb, 1965 (June 25), Quart. Jour. Florida Acad. Sci., vol. 28, no. 2, p. 197 (type *Idiornis* Oberholser).

Position uncertain.

### Genus †*Idiornis* Oberholser

*Orthocnemus* Milne-Edwards, 1891 (before Oct.), C. R. 2. Congrès internat. Orn. Budapest, p. 74 (type by original designation, *Orthocnemus gallicus* Milne-Edwards). Preoccupied by *Orthocnemus* Jekel, 1857, Fabr. Ent., vol. 1, p. 131.  
*Idiornis* Oberholser, 1899 (June 2), Proc. Acad. Nat. Sci. Philadelphia, p. 202 (type by original designation *Orthocnemus gallicus* Milne-Edwards).

<sup>1</sup> Specimens from Upper Pliocene at Rexroad ranch (Wetmore, 1944, Univ. Kansas Sci. Bull., vol. 30, pt. 1, no. 9, p. 103) are *Gallinula kansarum* n. sp.



1. *Idiornis gallicus* (Milne-Edwards)

*Orthocnemus gallicus* Milne-Edwards, 1891 (before Oct.), C. R. 2. Congrès internat. Orn. Budapest, p. 74 (type from phosphate de Chaux, fragmentary tibiotarsus, tarsometatarsus, Paris Mus.).—Gaillard, 1908, Ann. Univ. Lyon, fasc. 23, p. 117 (type restudied).

UPPER EOCENE OR LOWER OLIGOCENE (phosphorites du Quercy).  
FRANCE: plateau of Quercy: Chaux.

2. *Idiornis cursor* (Milne-Edwards)

*Orthocnemus cursor* Milne-Edwards, 1891 (before Oct.), C. R. 2. Congrès internat. Orn. Budapest, p. 76 (type from phosphate de Chaux and Caylux, tarsometatarsus and lower part of tibia, Paris Mus.).—Gaillard, 1908, Ann. Univ. Lyon, fasc. 23, p. 120 (types restudied).

UPPER EOCENE OR LOWER OLIGOCENE (phosphorites du Quercy).  
FRANCE: plateau of Quercy: Chaux.

3. *Idiornis major* (Milne-Edwards)

*Orthocnemus major* Milne-Edwards, 1891 (before Oct.), C. R. 2. Congrès internat. Orn. Budapest, p. 76 (type from phosphate de Chaux, distal end of tarsometatarsus, Paris Mus.).—Gaillard, 1938, Arch. Mus. Hist. nat. Lyon, vol. 15, p. 27 (type restudied).

UPPER EOCENE OR LOWER OLIGOCENE (phosphorites du Quercy).  
FRANCE: plateau of Quercy: Chaux (Milne-Edwards, 1892). Dept. Lot: Escamps (Gaillard, 1908, Ann. Univ. Lyon, fasc. 23, p. 119, text-fig. 35, pl. 7); Bach (Gaillard, 1938, Arch. Mus. nat. Lyon, vol. 15, p. 27, fig. 13).

4. *Idiornis minor* (Milne-Edwards)

*Orthocnemus minor* Milne-Edwards, 1891 (before Oct.), C. R. 2. Congrès internat. Orn. Budapest, p. 77 (type from phosphate de Chaux, distal end of tarsometatarsus, Paris Mus.).—Gaillard, 1908, Ann. Univ. Lyon, fasc. 23, p. 114, text-fig. 34, pl. 8, figs. 1-4 (Quercy).

UPPER EOCENE OR LOWER OLIGOCENE (phosphorites du Quercy).  
FRANCE: plateau of Quercy: Chaux (Milne-Edwards, 1892); Quercy (Gaillard, 1908).

Genus †*Elaphrocnemus* Milne-Edwards

*Elaphrocnemus* Milne-Edwards, 1891 (before Oct.), C. R. 2. Congrès internat. Orn. Budapest, p. 77 (type *Elaphrocnemus phasianus* Milne-Edwards, designated by Richmond, 1902, Proc. U. S. nat. Mus., vol. 24, no. 1267, p. 680).

5. *Elaphrocnemus phasianus* Milne-Edwards

*Elaphrocnemus phasianus* Milne-Edwards, 1891 (before Oct.), C. R. 2. Congrès internat. Orn. Budapest, p. 77 (type from phosphate de Chaux, tarsometatarsus, Paris Mus.).—Gaillard, 1908, Ann. Univ. Lyon, fasc. 23, p. 122, text-fig. 36, pl. 8, figs. 5-8 (Quercy).—Gaillard, 1938, Arch. Mus. Hist. nat. Lyon, vol. 15, p. 29, fig. 14 (type restudied).

UPPER EOCENE OR LOWER OLIGOCENE (phosphorites du Quercy).  
FRANCE: plateau of Quercy: Chaux (Milne-Edwards, 1892); Quercy (Gaillard, 1908).

6. *Elaphrocnemus gracilis* Milne-Edwards

*Elaphrocnemus gracilis* Milne-Edwards, 1891 (before Oct.), C. R. 2. Congrès internat. Orn. Budapest, p. 78 (type from phosphate de Chaux, tarsometatarsus, Paris Mus.).—Gaillard, 1908, Ann. Univ. Lyon, fasc. 23, p. 124 (type restudied).—Gaillard, 1938, Arch. Mus. Hist. nat. Lyon, vol. 15, p. 31, fig. 15 (type restudied).

UPPER EOCENE OR LOWER OLIGOCENE (phosphorites du Quercy).  
FRANCE: plateau of Quercy: Chaux (Milne-Edwards, 1892). Dept. Lot: Boussac (Gaillard, 1938).

7. *Elaphrocnemus crex* Milne-Edwards

*Elaphrocnemus crex* Milne-Edwards, 1891 (before Oct.), C. R. 2. Congrès internat. Orn. Budapest, p. 78 (type from phosphate de Chaux, tarsometatarsus, Paris Mus.).—Gaillard, 1908, Ann. Univ. Lyon, fasc. 23, p. 125 (type restudied).

UPPER EOCENE OR LOWER OLIGOCENE (phosphorites du Quercy).  
FRANCE: plateau of Quercy: Chaux; Boussac (Gaillard, 1908).

8. *Elaphrocnemus alfhildae* (Shufeldt)

*Phasianus alfhildae* Shufeldt, 1915 (Feb.), Trans. Connecticut Acad. Arts Sci., vol. 19, p. 71, pl. 12, figs. 79, 81, 85-86 (types from Haystack Butte, distal ends of right and left tarsometatarsi, distal end of right humerus, upper end of left coracoid, Yale Peabody Mus. nos. 947-848). Position tentative; apparently not galliform.

UPPER EOCENE (Washakie B). WYOMING: Sweetwater County: 100 feet below horizon of Haystack Butte.

## Suborder HELIORNITHES Sharpe

*Heliornithes* Sharp, 1891, Review of Recent Attempts to Classify Birds, p. 70 (suborder; type *Heliornis* Bonnatere).

## Family HELIORNITHIDAE (Gray)

*Heliorninae* G. R. Gray, 1849 (before Apr.), List of Genera of Birds, p. 72, subfamily; type *Heliornis Bonnaterre*.—*Heliornithidae* Selys, 1842, fide Gray, 1871.—*Heliorninae* Reichenbach, 1852 (after Oct. 1), Avium systemia naturale, p. XXII (familia).—*Heliornithinae* Sundevall, 1872, Methodi naturalis avium disponendarum tentamen, p. 132 (familia).

No fossil record.

## Suborder RHYNCHETI (Sharpe)

*Rhynchetides* Sharpe, 1891, Review of Recent Attempts to Classify Birds, p. 74 (suborder; type *Rhynchetos Verreaux* and Des Murs).—*Rhyncheti* Wetmore, 1960, Smithsonian Misc. Coll., vol. 139, no. 11, p. 27 (suborder).

## Family RHYNCHETIDAE Newton

*Rhynchetidae* A. Newton, 1868, fide Gray (type *Rhynchetos Verreaux* and Des Murs).—*Rhynchaetinae* Sundevall, 1872, Methodi naturalis avium disponendarum tentamen, p. 129 (familia).

No fossil record.

## Suborder EURYPYGAE Fürbringer

*Eurypygae* Fürbringer, 1888, Untersuch. Morph. Syst. Vögel, vol. 2, p. 1566 (gens; type *Eurypyga Illiger*).

## Family EURYPYGIDAE Bonaparte

*Eurypyginae* Bonaparte, 1849, fide Gray, 1871 (type *Eurypyga Illiger*).—*Euripyginae* Bonaparte, 1854, Ann. Sci. nat., vol. 1, p. 37 (type "*Euripyga*" Illiger).—*Eurypygidae* Bonaparte, 1855, fide Gray.

No fossil record.

## Suborder MESITORNITHES Wetmore

*Mesitides* Sharpe, 1891, Review of Recent Attempts to Classify Birds, p. 74 (type *Mesites Geoffroy*, April 1838, preoccupied by Schönherr, before Feb. 1838).—*Mesites* Gadow, 1893, Bronn, pp. 164, 165 (Unterordnung).  
*Mesoenatides* Sharpe, 1899, Hand-list Genera Sp. Birds, vol. 1, p. 180 (type *Mesoenas Reichenbach*, 1862, new name for *Mesites Geoffroy*).  
*Mesitornithes* Wetmore, 1960, Smithsonian Misc. Coll., vol. 139, no. 11, p. 12 (type *Mesitornis Bonaparte*, 1855, Rev. et Mag. Zool., ser. 2, vol. 7, p. 484; new name for *Mesites Geoffroy*).

## Family MESITORNITHIDAE Wetmore

*Mesitidae* Bonaparte, 1954, Ann. Sci. nat., vol. 1, p. 41 (type *Mesites* Geoffroy, April, 1838; preoccupied by *Mesites* Schönherr, before February, 1838).

*Mesonenatidae* Sharpe, 1899, Hand-list Genera Sp. Birds, vol. 1, p. 180 (type *Mesoenas* Reichenbach, new name for *Mesites* Geoffroy).

*Mesitornithidae* Wetmore, 1960, Smithsonian Misc. Coll., vol. 139, no. 11, p. 12 (type *Mesitornis* Bonaparte, 1855, new name for *Mesites* Geoffroy).

No fossil record.

## Suborder TURNICES (Huxley)

*Turnicomorphae* Huxley, 1868, Proc. Zool. Soc. London, p. 303 (type *Turnix* Bonnatere).—*Turnices* Gadow, 1893, Bronn's Kl. u. Ordn. Thier-Reichs, Vögel, pt. 2, pp. 78, 164, 168, 300 (Unterordnung; type *Turnix*).—*Turniciformes* Verheyen, 1958 (Jan.), Bull. Inst. roy. Sci. nat. Belgique, vol. 34, no. 2, pp. 1, 16 (ordo).

*Hemipodii* Sclater, 1880, Ibis, pp. 340-350; 399-411 (order; type *Hemipodius* Reinwardt).

## Family TURNICIDAE (Gray)

*Ortyginae*<sup>1</sup> Bonaparte, 1831, Saggio di una distribuzione metodica degli Animali Vertebrati, p. 55 (subfamilia; type *Ortygis* "Illiger," Boie, 1826, a junior synonym of *Turnix* Bonnatere, 1791).

*Turnicinae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, p. 63 (subfamily; type by monotypy and tautonymy *Turnix* Bonnatere).—*Turnicidae* Carus, 1868, Handbuch der Zoologie, fide Gadow.

*Hemipodiidae* Fürbringer, 1888, Untersuch. Morph. Syst. Vögel, vol. 2, p. 1566 (type *Hemipodius* Reinwardt, 1815).

Fossil record confined to *Turnix* sp. from the Pleistocene of China.

## Family PEDIONOMIDAE Gadow

*Pedionomidae*<sup>2</sup> Gadow, 1893, Bronn's Kl. u. Ordn. Thier-Reichs, Vögel, pt. 2, p. 168 (type *Pedionomus* Gould, 1841).

No fossil record.

<sup>1</sup> *Ortyginae* Bonaparte, 1854, Ann. Sci. nat., vol. 1, p. 43 (subfamilia; type *Ortyx* Stephens) is a synonym of *Odontophorinae* Gould.

<sup>2</sup> *Pedionomi* Vieillot (1816, Analyse d'une nouvelle ornithologie élémentaire, p. 24) was proposed as a family name for *Otis* Linnaeus, the only included genus. The genus *Pedionomus* Gould was not proposed until 25 years later.

Suborder †GASTORNITHES Stejneger<sup>1</sup>

- Gastornithes* Stejneger, 1885, Standard Nat. Hist., vol. 4, p. 54 (order; type *Gastornis* Hébert).—*Gastornithiformes* Sharpe, 1899, Hand-list of Genera and Species of Birds, vol. 1, p. 230 (order).
- Diatrymae* Matthew and Granger, 1917 (May 28), Bull. Amer. Mus. Nat. Hist., vol. 37, art. 11, p. 321 (order; type *Diatryma* Cope).—*Diatrymiformes* Wetmore, 1930 (Jan. 8), Proc. U. S. Nat. Mus., vol. 76, no. 2821, p. 4 (order).—*Diatrymatiformes* Hay, 1930 (Jan. 27), Carnegie Instn. Washington Publ., no. 390, vol. 2, p. 283 (suborder).

## Family †GASTORNITHIDAE Fürbringer

- Gastornithidae* Fürbringer, 1888, Untersuch. Morph. Syst. Vögel, vol. 2, p. 1178 (type *Gastornis* Hébert).

Genus †*Remiornis* Lemoine

- Remiornis* Lemoine, 1881 (read Dec. 26), C. R. Acad. Sci. Paris, vol. 93, no. 26, p. 1159 (type by monotypy *Remiornis herberti* Lemoine, 1881, a junior synonym of *Gastornis minor* Lemoine, 1878).—*Remiornis* Lemoine, 1881 (postdates above paper?), Recherches sur les oiseaux fossiles des terrains tertiaires inférieurs des environs de Reims, pt. 2, pp. 77, 158 (same type).

1. *Remiornis minor* (Lemoine)

- Gastornis minor* Lemoine, 1878, Recherches sur les oiseaux fossiles des terrains tertiaires inférieurs des environs de Reims, pt. 1, pp. 12, 50, pl. 4, figs. 1-5 (type from Montchard, lower end of left tibiotarsus, coll. Lemoine).
- Remiornis herberti* Lemoine, 1881 (read Dec. 26), C. R. Acad. Sci. Paris, vol. 93, no. 26, p. 1159 (new name for *Gastornis minor* Lemoine).—Lemoine, 1881 (postdates paper read Dec. 26?), Recherches ois. foss. terr. tert. inf. envir. Reims, pt. 2, pp. 77, 158, pl. 8, figs. 21-25; pl. 9, figs. 7-13).

UPPER PALEOCENE (conglomérat de Cernay). FRANCE: Dept. Haut-Rhin: Montchard.

Genus †*Gastornis* Hébert

- Gastornis* Hébert, 1855 (read March 12), C. R. Acad. Sci. Paris, vol. 40, no. 11, p. 559 (type by monotypy *Gastornis parisiensis* Hébert).

2. *Gastornis edwardsii* Lemoine

- Gastornis edwardsii* Lemoine, 1878, Recherches sur les oiseaux fossiles des terrains tertiaires inférieurs des environs de Reims, pt. 1, p. 13, pl. 1-3; pl. 5, figs. 13-20 (types from Cernay, cervical vertebra and right femur; type from Rilly, right tibiotarsus; type from Berru au Montchard, left tarsometatarsus).—*Gastornis*

<sup>1</sup> New rank

*edwardsii* Lemoine, 1881, op. cit. pt. 2, p. 168 in explanation of pl. 6 (lapsus).—*Gastornis edwardsi* E. T. Newton, 1886 (Dec.), Trans. Zool. Soc. London, vol. 12, pt. 5, no. 1, p. 150 (emendation).

UPPER PALEOCENE (sables de Rilly). FRANCE: Dept. Haut-Rhin or Marne: Rilly (Lemoine, 1878).

UPPER PALEOCENE (conglomérat de Cernay). FRANCE: Dept. Haut-Rhin: Cernay and Berru au Montchard (Lemoine, 1878).

UPPER PALEOCENE (Cernaysian crevice deposit). GERMANY: Saxony: Welbeck? (Thenius, 1959, Handbuch der stratigraphischen Geologie, vol. 3, pt. 2, p. 16).

UPPER PALEOCENE (Landénien inférieur). BELGIUM: Hainault: Mesvin near Mons (Dollo, 1883, Bull. Mus. roy. Hist. nat. Belg., vol. 2, p. 297)

### 3. *Gastornis klaasseni* E. T. Newton

*Gastornis klaassenii* E. T. Newton, 1885 (Aug.), Geol. Mag., n.s., decade 3, vol. 2, no. 8, pp. 362, 363 (nomen nudum; abstract of paper read before Zoological Society May 5, 1885).—*Gastornis klaasseni* E. T. Newton, 1885 (read May 5, published Oct. 1), Proc. Zool. Soc. London, pt. 3, p. 446 (nomen nudum).—E. T. Newton, 1886 (Dec.), Trans. Zool. Soc. London, vol. 12, pt. 5, no. 1, pp. 143, 152, pl. 28, figs. 1-4; pl. 29 (orig. desc.; type from Park-Hill railroad cut, portions of 5 tibiotarsi and a femur, Geol. Surv. London Mus.; casts British Mus. nos. A.86, A.86a).

UPPER PALEOCENE (Woolwich bottom beds). ENGLAND: Surrey: Park-Hill cut, Woodside and South-Croydon Railway, near Croydon.

### 4. *Gastornis parisiensis* Hébert

*Gastornis parisiensis* Hébert, 1855 (read March 12), C. R. Acad. Sci. Paris, vol. 40, no. 11, pp. 557 (nomen nudum), 559 (orig. desc.; type from Bas Meudon, left tibiotarsus, lacking head, Ecole normale supérieure, Paris; cast Brit. Mus. no. 32384).—Milne-Edwards, 1867, Ois. foss. France, vol. 1, sheet 21, p. 165, pl. 28-29 (type restudied).

UPPER PALEOCENE (conglomérat de Meudon). FRANCE: Seine-et-Oise: Bas Meudon (Hébert, 1855); Passy (Milne-Edwards, 1867).

### Genus †*Dasornis* Owen

*Dasornis* Owen, 1869 (read Jan. 28; printed April?), Proc. Zool. Soc. London, pt. 1, p. 59 (nomen nudum).—Owen, 1870 (before March), Trans. Zool. Soc. London, vol. 7, pt. 2, p. 145 (type by monotypy *Dasornis londinensis* Owen). *Dasyornis* Lydekker, 1891 (July), Ibis, ser. 6, vol. 3, no. 11, p. 409 ("corrected spelling" for *Dasornis* Owen, but see Lydekker, April 25, 1891, Cat. Foss. Birds British Mus., p. 359; preoccupied by *Dasyornis* Vigors and Horsfield, 1826).

5. *Dasornis londinensis* Owen

*Dasornis londinensis* Owen, 1869 (read Jan. 28; printed April?), Proc. Zool. Soc. London, pt. 1, p. 59 (nomen nudum).—Owen, 1870 (before March), Trans. Zool. Soc. London, vol. 7, pt. 2, p. 145, pl. 16 (orig. desc.; type from Sheppey, posterior part of cranium, Brit. Mus. no. 31929).

*Dasornis londiniensis* Lydekker, 1891 (Apr. 25), Cat. Foss. Birds British Mus., p. 359 (emendation).

UPPER PALEOCENE (London Clay). ENGLAND: Kent: Sheppey Isle.

## Family †DIATRYMIDAE Matthew and Granger

*Diatrymidae* Matthew and Granger, 1917 (May 28), Bull. Amer. Mus. Nat. Hist., vol. 37, art. 11, p. 321 (family; type *Diatryma* Cope).—*Diatrimidae* Sinclair, 1928, Proc. Amer. Philos. Soc., vol. 67, no. 1, p. 65 (lapsus).—*Diatrymatidae* Hay, 1930 (Jan. 27), Carnegie Instn. Washington Publ., no. 390, vol. 2, p. 283 (emendation).

Genus †*Diatryma* Cope

*Diatryma* Cope, 1876 (Apr. 18), Proc. Acad. Nat. Sci. Philadelphia, vol. 28, sig. 2, p. 11 (type by monotypy *Diatryma gigantea* Cope).<sup>1</sup>

*Barornis* Marsh, 1894 (Oct.), Amer. Jour. Sci., ser. 3, vol. 48, p. 344 (type by monotypy *Barornis regens* Marsh).

*Omorhamphus* Sinclair, 1928, Proc. Amer. Philos. Soc., vol. 67, no. 1, p. 51 (type by monotypy *Omorhamphus storchii* Sinclair).

1. *Diatryma ajax* Shufeldt

*Diatryma ajax* Shufeldt, 1913 (Aug. 4), Bull. Amer. Mus. Nat. Hist., vol. 32, art. 16, p. 287, pl. 52, figs. 4-5; pl. 53, figs. 8-10; pl. 54, figs. 13-14 (types from Pat O'Hara Creek, distal part of tarsometatarsus and two toe phalanges, Amer. Mus. Nat. Hist. nos. W.G. 261, 282).

UPPER PALEOCENE (Clark Fork beds). WYOMING: Park County: 3 and 5 miles southeast of mouth of Pat O'Hara Creek (Shufeldt, 1913).

UPPER PALEOCENE (Sand Coulee beds). WYOMING: Park County: Princeton camp 1 in Sand Coulee basin (Wetmore, 1933, Condor, vol. 35, p. 117; juvenile).

2. *Diatryma gigantea* Cope

*Diatryma gigantea* Cope, 1876 (Apr. 18), Proc. Acad. Nat. Sci. Philadelphia, vol. 28, sig. 2, p. 11 (types from Island Point, proximal end and two trochleae of tarsometatarsus, U. S. Nat. Mus. no. 1120).—Cope, 1877, Geographical Surveys

<sup>1</sup> Wetmore treats *Diatryma* as if of neuter gender but it is feminine, being formed from Greek *dià* (through) and *trymê* (a hole).

West of the One Hundredth Meridian (Wheeler), vol. 4, pt. 2, p. 7, pl. 32, figs. 23-25 (types).—Schufeldt, 1913, Bull. Amer. Mus. Hist., vol. 32, art. 16, p. 287, pl. 51; pl. 52, figs. 6-7; pl. 53, figs. 11-12; pl. 54, figs. 15-16 (types restudied).—Shufeldt, 1915, Trans. Connecticut Acad. Arts Sci., vol. 19, p. 34, pl. 9, fig. 68 (types restudied).

*Barornis regens* Marsh, 1894 (Oct.), Amer. Jour. Sci., ser. 3, vol. 48, p. 344, fig. (type from Squankum, phalanx 1 of right toe III, Yale Peabody Mus. no. 417).—Shufeldt, 1915, Trans. Connecticut Acad. Arts Sci., vol. 19, p. 35, pl. 1, figs. 7-9; pl. 5, fig. 32 (type restudied).

*Diatryma steini* Matthew and Granger, 1917 (May 28), Bull. Amer. Mus. Nat. Hist., vol. 37, art. 11, p. 322, pl. 20-33 (type from South Elk Creek, juvenile skeleton, Amer. Mus. Nat. Hist. no. 6169).

*Omorhamphus storchi* Sinclair, 1928, Proc. Amer. Philos. Soc., vol. 67, no. 1, p. 52, text-figs. 1-3, pl. 1-2 (type from south of Dorsey Creek, juvenile partial skeleton, consisting of tip of rostrum, 2 skull fragments, fragmentary vertebrae, left femur, left tibiotarsus, proximal part of left fibula, right and left tarsometatarsi, left toes, Princeton Mus. no. 13106).—*Omorhamphus storchi* Wetmore, 1931, in American Ornithologists' Union, Check-list of North American Birds, ed. 4, p. 451 (emendation).

LOWER EOCENE (Grey Bull member of Willwood formation). WYOMING: Big Horn County: South Elk Creek (Matthew and Granger, 1917); 1½ miles southeast of Dorsey Creek [2 miles south of Otto-Basin road] (Sinclair, 1928).

LOWER EOCENE ("San Jose" formation [preoccupied]). NEW MEXICO: Rio Arriba County: Island Point on North Horseshoe near Gallina (Shufeldt, 1915, Trans. Connecticut Acad. Arts Sci., vol. 19, p. 34, pl. 2, fig. 16; pl. 5, fig. 30; pl. 9, fig. 68).

LOWER EOCENE ("upper marl beds" = Manasquan marl [possibly middle Eocene; see Baird, in press]). NEW JERSEY: Monmouth County: Squankum (Marsh, 1894).

### 3. *Diatryma sarasini* Schaub

(?)*Diatryma sarasini* Schaub, 1929 (Oct. 18), Verh. Naturf. Ges. Basel, vol. 40, no. 2, p. 588, figs. 1-3, 6, 8 (types from Monthelon, distal end of left tarsometatarsus and phalanx 1 of toe II, Basel Mus. nos. T.S.94, T.S.8).

LOWER EOCENE (sables à *Teredina*). FRANCE: Dept. Marne: Monthelon near Epernay (Schaub, 1929). Dept. Haut-Rhin: Cernay (Lemoine, 1881, Recherches ois. foss. terr. tert. inf. envir. Reims, pt. 2, pp. 78, 157, pl. 7, fig. 12)?

### 4. *Diatryma cotei* Gaillard

*Diatryma*? *cotei* Gaillard, 1936 (March), Ann. Soc. Linn. Lyon, n.s., vol. 80, p. 113, figs. 1-6, 8-10 (types from Mont-d'Or, distal end of left tarsometatarsus, phalanx 1 of digit II, and phalanx 1 of digit III, Univ. Lyon).



MIDDLE EOCENE (gisements sidérolithiques). FRANCE: Dept. Rhône: northwest slope of Mont-d'Or near Clôtre in commune of Lissieu (Gaillard, 1936).

MIDDLE EOCENE (Lutetian). GERMANY: HESSEN: Messel bei Darmstadt (D. Berg, 1965, Hessischen Landesamtes f. Bodenforschung Notizblatt, vol. 93, p. 68).

MIDDLE EOCENE (Braunkohle des Geiseltales). GERMANY: SAXONY: Grube Neumark-West (K. Fischer, 1962, Hallesches Jahrb. Mitteldeutsche Erdgeschichte, vol. 4, p. 26, pl. 4-5).

### Suborder GRUES Bonaparte

*Grues* Bonaparte, 1854, Ann. Sci. nat. Paris, vol. 1, p. 36 (tribus = suborder; type *Grus* Pallas).

*Arami* Sharpe, 1891, Review of Recent Attempts to Classify Birds, p. 74 (suborder; type *Aramus* Vieillot).

*Psophiae* Sharpe, 1891, Review of Recent Attempts to Classify Birds, p. 74 (suborder; type *Psophia* Linnaeus).

*Megalornithes* Wetmore and W. D. Miller, 1926 (July 3), Auk, vol. 43, no. 3, p. 342 (suborder; type *Megalornis* G. R. Gray, 1841, a junior synonym of *Grus* Pallas, 1766).

### Family GRUIDAE Vigors

*Gruidae* Vigors, 1825, Trans. Linn. Soc. London, vol. 14, p. 488 (family; type *Grus* Pallas).—*Grues* L'Herminier, 1827, Actes Linn. Soc. Paris, vol. 6, pp. 3-93 (family; vernacular name).—*Grues* Cuvier, 1829 (before Apr. 11), Règne animal, ed. 2, vol. 1, p. 506 (tribu [below family]; vernacular name).—*Gruinae* Nitzsch, 1829, Observationes de Avium arterio carotide communi, (familia).—*Grueae* Bonaparte, 1857, Conspectus generum avium, vol. 2, p. 97.—*Gruinae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, p. 66 (subfamily).—*Gruoideae* Stejneger, 1885, Standard Natural History, vol. 4, p. 121 (superfamily).—*Gruoidea* Hay, 1902, Bull. U. S. Geol. Surv., no. 179, p. 527 (superfamily).—*Gruoidea* Hay, 1930 (Jan. 27), Carnegie Instn. Washington Publ., no. 390, vol. 2, p. 331 (superfamily).

*Anthropoideae* Bonaparte, 1857, Conspectus generum avium, vol. 2, p. 97 (section; type *Anthropoides* Vieillot).—*Anthropoinae* Verheyen, 1957 (May), Bull. Inst. roy. Sci. nat. Belgique, vol. 33, no. 21, pp. 10, 12 (sous-famille).

*Megalornithidae* Wetmore and W. D. Miller, 1926 (July 3), Auk, vol. 43, no. 3, p. 342 (family; type *Megalornis* G. R. Gray, 1841, a junior synonym of *Grus* Pallas, 1766).—*Megalornithides* Wetmore and W. D. Miller, 1926 (July 3), Auk, vol. 43, no. 3, p. 342 (superfamily).

*Geranoididae* Wetmore, 1933 (May 15), Condor, vol. 35, no. 3, p. 115 (family; type *Geranoides* Wetmore).

*Eogruidae* Wetmore, 1934 (Apr. 7), Amer. Mus. Novitates, no. 711, p. 3 (family; type *Eogrus* Wetmore).

*Balearicidae* W. L. Sclater, 1924, Systema avium ethiopicarum, vol. 1, p. 110 (family; type *Balearica* Brisson).—*Balearicinae* Peters, 1934, Check-list Birds of the World, vol. 2, p. 154 (subfamily).

### Subfamily †GERANOIDINAE (Wetmore)<sup>1</sup>

*Geranoididae* Wetmore, 1933 (May 15), Condor, vol. 35, no. 3, p. 115 (type *Geranoides* Wetmore).

#### Genus †*Geranoides* Wetmore

*Geranoides* Wetmore, 1933 (May 15), Condor, vol. 35, no. 3, p. 115 (type by original designation. *Geranoides jepseni* Wetmore).

#### 1. *Geranoides jepseni* Wetmore

*Geranoides jepseni* Wetmore, 1933 (May 15), Condor, vol. 35, no. 3, p. 115, fig. 22 (type from South Elk Creek; distal end of left tarsometatarsus, Princeton Univ. no. I3257).

LOWER EOCENE (Willwood formation). WYOMING: Bighorn County: South Elk Creek.

### Subfamily BALEARICINAE (W. L. Sclater)

*Balearicidae* W. L. Sclater, 1924, Systema avium ethiopicarum, vol. 1, p. 110 (family; type *Balearica* Brisson).—*Balearicinae* Peters, 1934, Check-list Birds World, vol. 2, p. 154 (subfamily).

#### Genus †*Paragrus* Lambrecht

*Paragrus* Lambrecht, 1933, Handbuch Palaeorn., p. 520 (type by monotypy *Gallinuloides prentici* Loomis).

#### 2. *Paragrus prentici* (Loomis)

*Gallinuloides prentici* Loomis, Amer. Jour. Sci., ser. 4, vol. 22, p. 481, fig. 1-3 (type from head of Elk Creek; distal end of right tibiotarsus, femur, proximal end of fibula, phalanges, ungues, Amherst College Museum).

LOWER EOCENE (Willwood formation). WYOMING: Bighorn County: head of Elk Creek, 10 miles west of Otto.

<sup>1</sup> New rank

Genus †*Aletornis* Marsh

*Aletornis* Marsh, 1872, Amer. Jour. Sci., ser. 3, vol. 14, p. 256 (type *Aletornis nobilis* Marsh, designated by Hay, 1902, Bull. U. S. Geol. Surv., 179, p. 527).  
*Protogrus* Lambrecht, 1933, Handbuch Palaeorn., p. 520 (type *Aletornis nobilis* Marsh, designated by Brodkorb, 1952, Condor, vol. 54, no. 3, p. 175).

3. *Aletornis nobilis* Marsh

*Aletornis nobilis* Marsh, 1872 (Oct.), Amer. Jour. Sci., ser. 3, vol. 4, no. 22, p. 256 (type from Grizzly Buttes, distal end of left tarsometatarsus, Yale Peabody Mus. no. 63).—Shufeldt, 1915, Trans. Connecticut Acad. Arts Sci., vol. 19, p. 30, pl. 2, fig. 15; pl. 6, fig. 43 (type restudied).

MIDDLE EOCENE (Blacks Fork member of Bridger formation).

WYOMING: Uinta County: Grizzly Buttes on Smiths Fork, 1 mile SW of Mountainview.

4. *Aletornis marshi* (Shufeldt)

*Grus marshi* Shufeldt, 1915 (Feb.), Trans. Connecticut Acad. Arts Sci., vol. 19, p. 41, pl. 15, figs. 144-147 (type from Henrys Fork, distal end of right tibiotarsus, Yale Peabody Mus. no. 888).

MIDDLE EOCENE (Twin Buttes member of Bridger formation).

WYOMING: Uinta County: Henrys Fork.

5. *Aletornis pernix* Marsh

*Aletornis pernix* Marsh, 1872 (Oct.), Amer. Jour. Sci., ser. 3, vol. 4, no. 22, p. 256 (type from Henrys Fork, distal end of left tibiotarsus, Yale Peabody Mus. no. 64).—Shufeldt, 1915, Trans. Connecticut Acad. Arts Sci., vol. 19, p. 31, pl. 6, fig. 47 (type restudied).

MIDDLE EOCENE (Twin Buttes member of Bridger formation).

WYOMING: Uinta County: Henrys Fork.

Genus †*Ornitocnemus* Zigno

*Ornitocnemus* Zigno, 1876, Mem. Ist. veneto Sci., vol. 20, p. 445 (type by monotypy *Ornitocnemus robustus* Zigno).

*Palaeogrus* Portis, 1884, Mem. Accad. Sci. Torino, ser. 2, vol. 36, p. 362 (type by monotypy *Palaeogrus princeps* Portis).

6. *Ornitocnemus robustus* Zigno

*Ornitocnemus robustus* Zigno, 1876, Mem. Ist. veneto Sci., vol. 20, p. 445 (type from Monte Zuello, distal end of tibiotarsus).

*Palaeogrus princeps* Portis, 1884, Mem. Accad. Sci. Torino, ser. 2, vol. 36, p. 362 (same type).

MIDDLE EOCENE (Lutetian). ITALY: Monte Zuello.

7. *Ornitocnemus geiseltalensis* (Lambrecht)

*Palaeogrus geiseltalensis* Lambrecht, 1935, Nova Acta Leopoldina, n.s., vol. 3, no. 14, p. 361, pl. 1, fig. 1 (type from Cecilie Mine, fragmentary right tibiotarsus and tarsometatarsus, Geiseltalmuseum).

MIDDLE EOCENE (Braunkohle des Geiseltales). GERMANY: Saxony: Grube Cecilie near Halle/Saale.

8. *Ornitocnemus hordwellienis* (Lydekker)

*Grus hordwellienis* Lydekker, 1891, Cat. Foss. Birds Brit. Mus., p. 165, fig. 36 (type from Hordwell, distal portion of right tibiotarsus, Brit. Mus. no. 30333).

UPPER EOCENE (Hordwell beds). ENGLAND: Hampshire: Hordwell.

9. *Ornitocnemus excelsus* (Milne-Edwards)

*Grus excelsa* Milne-Edwards, 1871, Ois foss. France, vol. 2, p. 24, pl. 75; pl. 76, figs. 1-2 (type from Chavroches and Langy, coracoid, humerus, radius, ulna, carpometacarpus, tibiotarsus, tarsometatarsus, Paris Mus.).

LOWER MIOCENE (Aquitanian). FRANCE: Dept. Allier: Chavroches and Langy (Milne-Edwards, 1871); Saint-Gerand-le-Puy (Lambrecht, 1933, Handb. Palaeorn., p. 519, fig. 155A).

Genus †*Eobalearica* Gureev

*Eobalearica* Gureev, 1949, Doklady Akad. Nauk SSSR, vol. 64, no. 2, p. 249 (type by monotypy *Eobalearica tugarinovi* Gureev).

10. *Eobalearica tugarinovi* Gureev

*Eobalearica tugarinovi* Gureev, 1949, Doklady Akad. Nauk SSSR, vol. 64, no. 2, p. 249 (Ferghana).

UPPER(?) EOCENE (Ferghana beds). UZBEK SSR: Ferghana sink.

Genus †*Geranopsis* Lydekker

*Geranopsis* Lydekker, 1891, Cat. Foss. Birds British Mus., p. 166 (type by original designation *Geranopsis hastingsiae* Lydekker).

11. †*Geranopsis hastingsiae* Lydekker

*Geranopsis hastingsiae* Lydekker, 1891, Cat. Foss. Birds British Mus., p. 166, fig. 37 (type from Hordwell, left coracoid, Brit. Mus. no. 30331\*).

UPPER EOCENE (Hordwell beds). ENGLAND: Hampshire: Hordwell.

12. *Geranopsis elatus* Milne-Edwards

*Geranopsis elatus* Milne-Edwards, 1892, C. R. 2. Congrès internat. Orn. Budapest, p. 72 (type from phosphate de Chaux, tibiotarsus). According to Lambrecht (1933), a synonym of *G. hastingsiae* Lydekker.

UPPER EOCENE OR LOWER OLIGOCENE (phosphorites du Quercy).  
FRANCE: plateau of Quercy.

Genus †*Probalearica* Lambrecht

*Probalearica* Lambrecht, 1933, Handbuch Palaeorn., p. 519 (type by monotypy *Grus problematica* Milne-Edwards).

13. *Probalearica problematica* (Milne-Edwards)

*Grus problematica* Milne-Edwards, 1871, Ois. foss. France, vol. 2, p. 30, pl. 76, fig. 3-7 (type from St.-Gerand-le-Puy, rostrum; referred sternum from Gannat, coll. Marquis de Lazier).

LOWER MIOCENE (Aquitainian). FRANCE: Dept. Allier: Gannat and Saint-Gerand-le-Puy (Milne-Edwards, 1871).

14. *Probalearica crataegensis* Brodkorb

*Probalearica crataegensis* Brodkorb, 1963 (Sept. 20), Quart. Jour. Florida Acad. Sci., vol. 26, no. 2, p. 163, pl. 1, figs. h-l (type from Tallahassee, distal end of right tibiotarsus, Brodkorb no. 8503).

LOWER MIOCENE (Hawthorne formation). FLORIDA: Leon County: Tallahassee, north of "Runaway Track," Switchyard B, Seaboard Air-line R.R., in SE ¼ of NW ¼ section 3, Township 1 South, Range 1 West.

Genus †*Pliogrus* Lambrecht

*Pliogrus* Lambrecht, 1933, Handbuch Palaeorn., p. 522 (type *Pliogrus germanicus* Lambrecht, designated by Brodkorb, 1952, Condor, vol. 54, p. 175).

16. *Pliogrus germanicus* Lambrecht

*Pliogrus germanicus* Lambrecht, 1933, Handbuch Palaeorn., p. 522, fig. 156 (type from Eppelsheim, distal end left tibiotarsus, Mus. Preussischen Geologischen Landesanstalt zu Berlin).

LOWER PLIOCENE (Dinotheriensande). GERMANY: Mainz basin: Eppelsheim.

17. *Pliogrus pentelici* (Gaudry)

*Grus pentelici* Gaudry, 1862 (read March 3), C. R. Acad. Sci. Paris, vol. 54, no. 8, p. 504 (type from Pikermi, 2 cervicals, proximal end of coracoid, humerus, ulna, index, pelvis, sacrum, distal end of femur, proximal half of tibiotarsus, both ends of tarsometatarsus, Paris Mus.).

LOWER PLIOCENE (Pontian). GREECE: Attica: Pikermi (Gaudry, 1862).

LOWER PLIOCENE (marnes de la Croix-Rousse). FRANCE: Croix-Rousse, on right bank of Saone near Lyon (Depéret, 1887)?

LOWER PLIOCENE (*Hipparion* fauna, lower Pannonian). HUNGARY: County Fejer: Esterházy cave near Csákvár (Kretzoi, 1957, *Aquila*, vol. 63-64, pp. 244, 248, figs. 50-51).

Subfamily †EOGRUINAE (Wetmore)<sup>1</sup>

*Eogruidae* Wetmore, 1934 (Apr. 7), Amer. Mus. Novitates, no. 711, p. 3 (type *Eogrus* Wetmore).

Genus †*Eogrus* Wetmore

*Eogrus* Wetmore, 1934 (Apr. 7), Amer. Mus. Novitates, no. 711, p. 3 (type by monotypy *Eogrus aeola* Wetmore).

18. *Eogrus aeola* Wetmore

*Eogrus aeola* Wetmore, 1934 (Apr. 7), Amer. Mus. Novitates, no. 711, p. 3 figs. 2-5 (type from Chimney Butte; right tarsometatarsus, Amer. Mus. no. 2936).

UPPER EOCENE (Irdin Manha [Ulan Shireh] formation). INNER MONGOLIA: Shara Murum region, Suiyuan Prov.: Chimney Butte; 5 miles N of Arshanto Obo; Camp Margetts, 25 miles SW of Iren Dabasu (Wetmore, 1934).

LOWER OLIGOCENE (Ardyn Obo beds). OUTER MONGOLIA: near Ardyn Obo (Wetmore, 1934)?

19. *Eogrus wetmorei* Brodkorb<sup>2</sup>

*Eogrus* sp. Wetmore, 1934 (Apr. 7), Amer. Mus. Novitates, no. 711, p. 12 (40 miles SE of Iren Dabasu).

<sup>1</sup> New rank.

<sup>2</sup> New species. Type distal portion of tibiotarsus, Amer. Mus. no. 2949. Smaller than *E. aeola*: distal width 18.7 (19.1-20.7 in five *E. aeola*); least width of shaft, 9.7 (10.3-10.6 in four *E. aeola*); depth of outer condyle, 17.8 (19.1-20.7 in six *E. aeola*); depth of inner condyle, 17.7 (19.7-21.4 in four *E. aeola*, fide Wetmore).

UPPER MIOCENE (Tung Gur formation). INNER MONGOLIA: PROV. CHAHAR: 40 miles SE of Iren Dabasu.

Subfamily GRUINAE (Vigors)

*Grudae* Vigors, 1825, Trans. Linn. Soc. London, vol. 14, p. 488 (family; type *Grus Pallas*).—*Gruinæ* Bonaparte, 1831, Saggio di una distribuzione metodica degli animali vertebrati, p. 24.

Genus *Grus* Pallas

*Grus Pallas*, 1766, Misc. Zool., p. 66 (type by tautonomy *Ardea grus* Linnaeus).

20. *Grus conferta* A. H. Miller and Sibley<sup>1</sup>

*Grus conferta* A. H. Miller and Sibley, 1942 (May 15), Condor, vol. 44, no. 3, p. 126, fig. 50 (type from Black Hawk ranch, distal end of left tarsometarsus, Univ. California Mus. Paleo. no. 34715).

UPPER LOWER PLIOCENE (Siesta formation). CALIFORNIA: Contra Costa County: Black Hawk ranch, Univ. Calif. locality no. V-3310.

21. *Grus nannodes* Wetmore and Martin

*Grus nannodes* Wetmore and Martin, 1930 (Jan. 20), Condor, vol. 32, no. 1, p. 62, fig. 23-25 (type from Sherman County, distal portion of left carpometacarpus, Univ. Kansas Mus. no. 3757).

MIDDLE PLIOCENE (Edson beds, Ogallala formation). KANSAS: Sherman County, section 25, T. 10 S., R. 38 W.

22. *Grus bohatschevi* (Serebrovsky)

*Sarcogeranus bohatschevi* Serebrovsky, 1940, Doklady Acad. Sci. U.R.S.S., vol. 27, no. 7, p. 767 (type from Binagady; type skull, Azerbaijan Acad. Sci. no. 2).—*Leucogeranus bohatschevi* Serebrovsky, 1941, Doklady Akad. Nauk U.R.S.S., vol. 33, no. 718, p. 473, fig. 767.—*Leucogeranus bohatschevi* Serebrovsky, 1948, Trudy Estest.-Istor. Muz., Akad. Nauk Azerbaidzhan SSR, pts. 1-2, p. 43, fig. 35).

LOWER<sup>2</sup> PLEISTOCENE (Kirov beds). AZERBAIJAN: Binagady.

23. *Grus melitensis* Lydekker

*Grus melitensis* Lydekker, 1890, Proc. Zool. Soc. London, p. 408, pl. 36, fig. 2-2a, 4, 5a-b (type from Zebbug Cave, proximal half of left coracoid, fragmentary left innominate, Brit. Mus. nos. 49365, 49322m).

MIDDLE PLEISTOCENE (cave deposit). MALTA: Zebbug Cave.

<sup>1</sup> The humerus attributed to *Grus canadensis* from the Lower Pliocene at Kilpatrick pasture, Sioux County Nebraska (Wetmore, 1928, Amer. Mus. Novitates, no. 302, p. 1, figs. 1-2) may belong here.

Genus †*Baeopteryx* Wetmore

*Baeopteryx* Wetmore, 1960 (July 7), Smithsonian Misc. Coll., vol. 140, no. 2, p. 6 (type by original designation *Baeopteryx latipes* Wetmore).

24. *Baeopteryx latipes* Wetmore

*Baeopteryx latipes* Wetmore, 1960 (July 7), Smithsonian Misc. Coll., vol. 140, no. 2, p. 6, pl. 2, fig. 1-2; pl. 3, figs. 1-3 (type from Wilkinson quarry, right tarsometatarsus, U. S. Nat. Mus. no. 22505).

LOWER PLEISTOCENE. BERMUDA: H. Bernard Wilkinson Quarry, south and west of Coney Island, Hamilton Parish (Wetmore, 1960); Government quarry (Brodkorb coll.).

## Neospecies of Gruidae from Pleistocene and \*prehistoric sites:

1. *Bugëranus carunculatus* (Gmelin). SOUTHERN RHODESIA: Broken Hill (Lambrecht, 1933, Handb. Palaeorn., p. 762).

2. *Anthropoides virgo* (Linnaeus). FRANCE: Senèze? (Lambrecht, 1933, Handb. Palaeorn., p. 762). AZERBAIJAN: Binagady (Burchak-Abramovich, 1962, Ornitologiya, vol. 4, p. 458).

3. *Grus grus* (Linnaeus). IRELAND: Ballycotton (Lydekker, 1891, Ibis, ser. 6, vol. 3, p. 393); Edenvale Cave and Newhall Cave (Lambrecht, 1933, Handb. Palaeorn., p. 761). ENGLAND: Burwell, King's Lym Fen, London Wall, Norwich, Cambridge, \*Glastonbury, \*Barton, \*Silchester, and \*East York (Lambrecht, 1933). DENMARK: Maglemose, Havelse, Uggerslevgaard, Uggerslev, Lejre Aa, \*Borrebjerg, \*Lysemose, \*Skavngaards Mose, \*Aspedam, \*Ordrup Mose, and \*Broensholm Soemose (H. Winge, 1903, Vidensk. Middel. naturhist. Foren. Copenhagen, vol. 6, p. 95). GERMANY: Andernach? (Lambrecht, 1933); Ehrenstein (Soergel, 1955, Verh. vaterl. Naturk. Wurttemberg, vol. 110, p. 121). ITALY: Pro Forschin south of Peschiera (*Grus turfa* Portis, 1884, Mem. R. Accad. Sci. Torino, ser. 2, vol. 36, p. 327, pl. 2, figs. 1-13; type postcranial skeleton; see Soergel, 1955); Cardamona, Cataragna near Solferino della Battaglia (Lambrecht, 1933). AZERBAIJAN: Binagady (Burchak-Abramovich, 1962, Ornitologiya, vol. 4, p. 459). JAVA: Watocalang (Wetmore, 1940, Jour. Paleont., vol. 14, p. 450, figs. 6-7).

4. *Grus canadensis* (Linnaeus). ALASKA: \*St. Lawrence Island (Freidmann, 1934, Jour. Washington Acad. Sci., vol. 24, p. 92); \*Kodiak Island (Friedmann, 1935, op. cit., vol. 25, p. 49); \*Cape Prince of Wales (Friedmann, 1941, op. cit., vol. 31, p. 407). WASHINGTON: \*Puget Sound (L. Miller, 1960, Wilson Bull., vol. 72, p. 396). CALIFORNIA: Rancho La Brea (*Grus minor* L. Miller, 1910, Univ. Calif. Publ., Bull. Dept. Geol., vol. 5, no. 30, p. 446, fig. 8; type distal end of left tibiotarsus, Univ. Calif. Mus. Paleo. no. 12533; see L. Miller, 1925, Carnegie Instn. Washington Publ., no. 349, p. 76); McKittrick (L. Miller, 1925, Univ. Calif. Publ., Bull., Dept. geol. Sci., vol. 15, p. 318); Manix Lake? (Howard, 1955,



U. S. Geol. Surv. Prof. Paper, no. 264-J, p. 204); \*Buena Vista Lake (DeMay, 1942, Condor, vol. 44, p. 228). ARIZONA: \*Turkey Tank and \*Wupatki Pueblo (Hargrave, 1939, Condor, vol. 41, p. 208). WYOMING: Grizzly Buttes (Shufeldt, 1915, Trans. Connecticut Acad. Arts Sci., vol. 19, p. 65, pl. 2, fig. 21). NORTH DAKOTA: \*Thomas Riggs site (L. Miller, 1961, Bull. South. Calif. Acad. Sci., vol. 60, pt. 3, pl. 126). SOUTH DAKOTA: \*Chouteau site (L. Miller, 1961, Bull. South. Calif. Acad. Sci., vol. 60, pt. 3, p. 216). NEBRASKA: Niobrara River (*Grus haydeni* Marsh, 1870 (March), Amer. Jour. Sci., ser. 2, vol. 49, no. 146, p. 214; type distal end of left tibiotarsus, Acad. Nat. Sci. Philadelphia; see Shufeldt, 1915, Trans. Connecticut Acad. Arts Sci., vol. 19, p. 65, pl. 8, fig. 67; Wetmore 1928, Amer. Mus. Novitates, no. 302, p. 4). IOWA: \*Mill Creek (Hamon, 1961, Plains Anthropologist, vol. 6, p. 210). ILLINOIS: \*Kingston (Baker, 1936, Trans. Illinois State Acad. Sci., vol. 29, no. 2, p. 245); \*Jacob and \*Plum Island (Baker, 1937, Auk, vol. 54, p. 388); Ashmore (Galbreath, 1944, Condor, vol. 46, p. 35); \*Modoc rock shelter (Parmalee, 1956, Illinois State Mus., Rept. Invest., no. 4, p. 53); \*Cahokia (Parmalee, 1958, Auk, vol. 75, p. 172). OHIO: \*Fuert village (Wetmore, 1943, Wilson Bull., vol. 55, p. 127). NEW JERSEY: Monmouth County (*Grus proavus* Marsh, 1872, (Oct.), Amer. Jour. Sci., ser. 3, vol. 4, no. 22, p. 261; type sternum and femur, Princeton Mus. Geol. nos. 16258, 16258-A; see Wetmore, 1958, Smithsonian Misc. Coll., vol. 135, no. 8, p. 7, pl. 1-3, pl. 4, fig. 1, where synonymized with *Grus canadensis tabida* Peters, which it antedates). GEORGIA: \*Etowah (Parmalee, 1960, Florida Anthropologist, vol. 13, p. 49). FLORIDA: Melbourne, Seminole Field, and Bradenton (Wetmore, 1931, Smithsonian Misc. Coll., vol. 85, no. 2, p. 36); Rock Spring (Woolfenden, 1959, Wilson Bull., vol. 71, p. 185); \*Lemon Bluff (Neill, Gut, and Brodkorb, 1956, Amer. Antiquity, vol. 21, p. 388); \*Jungerman site (Wing, 1963, Contrib. Florida State Mus., no. 10, p. 53). MEXICO: \*San Juan de Aragon (Martin del Campo, 1944, Anal. Inst. Biol., vol. 15, p. 315, fig.

5. *Grus americana* (Linnaeus). CALIFORNIA: Rancho La Brea (Howard, 1930, Condor, vol. 32, p. 84). IDAHO: 13 miles northwest of Grandview (L. Miller, 1944, Condor, vol. 46, p. 30). NORTH DAKOTA: \*Thomas Riggs site (L. Miller, 1961, Bull. S. Calif. Acad. Sci., vol. 60, pt. 3, p. 126). ILLINOIS: \*Sand Ridge (Baker, 1937, Auk, vol. 54, p. 388); \*Kingston (Baker, 1941, Trans. Amer. Philos. Soc., n.s., vol. 32, p. 68). MICHIGAN: Ferry (Wetmore, 1962, Smithsonian Misc. Coll., vol. 145, no. 2, p. 7). KENTUCKY: \*Carlson Annis mound (Webb, 1950, Univ. Kentucky Repts. Anthropol., vol. 7, no. 4, p. 293). VIRGINIA: Natural Chimneys (Wetmore, 1962, Smithsonian Misc. Coll., vol. 145, no. 2, p. 9). FLORIDA: Itchtucknee River, Seminole Field, and Melbourne (Wetmore, 1931, Smithsonian misc. Coll., vol. 85, no. 2, p. 35).

6. *Grus antigone* (Linnaeus). FRANCE: Grotte de Eyzies in Dept. Dordogne (*Grus primigenia* Milne-Edwards, 1869, Ois. foss. France, vol. 2, p. 33, pl. 76, figs. 8-11; type distal end of tibiotarsus, Paris Mus.; see Soergel, 1955, Verh. vaterl. Naturk. Württemberg, vol. 110, p. 121); Grotte della Madelaine and Grotte Gourdan (Milne-Edwards, 1875, Matér. Hist. prim. Homme, ser. 2, vol. 6, p. 498). GERMANY: Ehrenstein (Soergel, 1955, Verh. vaterl. Naturk. Württemberg, vol. 110, p. 121).

7. *Grus leucogeranus* Pallas. AZERBAIJAN: Binagady (Burchak-Abramovich, 1962, Ornitologiya, vol. 4, p. 459).

Family †*ERGILORNITHIDAE* Kozlova

*Ergilornithidae* Kozlova, 1960 (June 15), Trudy Problemykh i Tematicheskikh Soveshchaniy, Akad. Nauk S.S.S.R., no. 9, p. 329 (type *Ergilornis* Kozlova). Position tentative; possibly related to Struthionidae.

Genus †*Proergilornis* Kozlova

*Proergilornis* Kozlova, 1960 (June 15), Trudy Prob. Temat. Sov., Akad. Nauk S.S.S.R., no. 9, p. 327 (type by original designation *Proergilornis minor* Kozlova).

1. *Proergilornis minor* Kozlova

*Proergilornis minor* Kozlova, 1960 (June 15), Trudy Prob. Temat. Sov., Akad. Nauk S.S.S.R., no. 9, p. 327, fig. 2 (type from Ergil-Obo, distal end of left tarsometatarsus, Akad. Nauk S.S.S.R. no. 473-367; cast in Brodkorb coll.).

LOWER OR MIDDLE OLIGOCENE. INNER MONGOLIA: southeast Gobi: Ergil-Obo.

Genus †*Ergilornis* Kozlova

*Ergilornis* Kozlova, 1960 (June 15), Trudy Prob. Temat. Sov., Akad. Nauk S.S.S.R., no. 9, p. 323 (type by original designation *Ergilornis rapidus* Kozlova).

2. *Ergilornis rapidus* Kozlova

*Ergilornis rapidus* Kozlova, 1960 (June 15), Trudy Prob. Temat. Sov., Akad. Nauk S.S.S.R., no. 9, p. 323, fig. 1 (type from Ergil-Obo, distal part of right tarsometatarsus, Akad. Nauk S.S.S.R. no. 473-457; cast in Brodkorb coll.).

LOWER OR MIDDLE OLIGOCENE. INNER MONGOLIA: southeast Gobi: Ergil-Obo.

Genus †*Urmiornis* Mecquenem

*Urmiornis* Mecquenem, 1925, Ann. d'Hist. nat., vol. 1, Paléont. (Paris), p. 54 (type by monotypy *Urmiornis maraghanus* Mecquenem). Position tentative; digits resemble those of the Struthionidae.

3. *Urmiornis maraghanus* Mecquenem

*Urmiornis maraghanus* Mecquenem, 1925, Ann. d'Hist. nat., vol. 1, Paléont. (Paris), p. 54, fig. 16 (type from Maragha, distal end of tibiotarsus, tarsometatarsus, Paris Mus.).

LOWER PLIOCENE (Meotian). UKRAINE: Moldavia: Tiraspol (Lambrecht, 1933, Handb. Palaeorn., p. 521).

LOWER PLIOCENE (Pontian). IRAN: Lake Urmia: Maragha (Mecquenem, 1925).

## Family ARAMIDAE Bonaparte

*Araminae* Bonaparte, 1849, fide Gray, 1871 (type *Aramus* Vieillot); 1853, C. R. Acad. Sci. Paris, vol. 37, p. 646.—*Aramidæ* Bonaparte, 1854 (before May 1855?), *Conspectus Generum Avium*, vol. 2, p. 103.

Genus †*Aminornis* Ameghino

*Aminornis* Ameghino, 1899, *Sinopsis geol.-paleon. Suplemento*, p. 9 (type by monotypy *Aminornis excavatus* Ameghino).

1. *Aminornis excavatus* Ameghino

*Aminornis excavatus* Ameghino, 1899, *Sinopsis geol.-paleon., Suplemento*, p. 9 (type from Rio Deseado, coracoid).

LOWER OLIGOCENE (Deseado formation). ARGENTINA: Ter. Santa Cruz: Rio Deseado.

Genus †*Loncornis* Ameghino

*Loncornis* Ameghino, 1899, *Sinopsis geol.-paleon., Suplemento*, p. 9 (type by monotypy *Loncornis erectus* Ameghino).

Position uncertain.

2. *Loncornis erectus* Ameghino

*Loncornis erectus* Ameghino, 1899, *Sinopsis geol.-paleon., Suplemento*, p. 9 (type from Rio Deseado, femur).

LOWER OLIGOCENE (Deseado formation). ARGENTINA: Ter. Santa Cruz: Rio Deseado.

Genus †*Badistornis* Wetmore

*Badistornis* Wetmore, 1940 (Jan. 2), *Jour. Morphology*, vol. 66, no. 1, p. 30 (type by monotypy *Badistornis aramus* Wetmore).

3. *Badistornis aramus* Wetmore

*Badistornis aramus* Wetmore, 1940 (Jan. 2), *Jour. Morphology*, vol. 66, no. 1, p. 30, fig. 7-10 (type from near Scenic, left tarsometatarsus, South Dakota School of Mines no. 3631).

MIDDLE OLIGOCENE (*Metamynodon* zone, lower part of Brule formation). SOUTH DAKOTA: 35 miles SW of Scenic (Washington County?).

Genus †*Gnotornis* Wetmore

*Gnotornis* Wetmore, 1942 (May 11), Smithsonian Misc. Coll., vol. 101, no. 14, p. 1, (type by monotypy *Gnotornis aramiellus* Wetmore).

4. *Gnotornis aramiellus* Wetmore

*Gnotornis aramiellus* Wetmore, 1942 (May 11), Smithsonian Misc. Coll., vol. 101, no. 14, p. 1, fig. 1-4 (type from near Rockyford, distal end of left humerus, South Dakota School of Mines no. 40158).

UPPER OLIGOCENE (*Protoceras-Leptauchenia* beds, upper part of Brule formation). SOUTH DAKOTA: Washington County (6 miles east of Rockyford).

Genus †*Aramornis* Wetmore

*Aramornis* Wetmore, 1926 (March 11), Amer. Mus. Novitates, no. 211, p. 1 (type by original designation *Aramornis longurio* Wetmore).

5. *Aramornis longurio* Wetmore

*Aramornis longurio* Wetmore, 1926 (March 11), Amer. Mus. Novitates, no. 211, p. 1, fig. 1-4 (type from Sheep Creek, distal end of left tarsometatarsus, Amer. Mus. Nat. Hist. no. 6292).

MIDDLE MIOCENE (*Merychippus primus* zone, lower Sheep Creek beds). NEBRASKA: Sioux County (Snake Creek quarries).

Neospecies of *Aramidae* recorded from the Pleistocene:

1. *Aramus guarauna* (Linnaeus). FLORIDA: Seminole Field and Itchtucknee River (Wetmore, 1931, Smithsonian Misc. Coll., vol. 85, no. 2, p. 37); Crystal Spring (Brodkorb, 1956, Wilson Bull., vol. 68, p. 158); Rock Spring (Woolfenden, 1959, Wilson Bull., vol. 71, p. 185); Hornsby Spring (Brodkorb coll.); \*Good's shellpit (Neill, Gut, and Brodkorb, 1956, Amer. Antiquity vol. 21, p. 388). VENEZUELA: \*Hacienda Tocorón (Wetmore, 1935, Auk, vol. 52, p. 329).<sup>1</sup>

## Family PSOPHILAE Bonaparte

*Psophidae* Bonaparte, 1831, Saggio di una distribuzione metodica degli Animali Vertebrati, p. 56 (familia; type *Psophia* Linnaeus).—*Psophinae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, p. 66 (subfamily).—*Psophiidae* Bonaparte, 1853 (read Oct. 31), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646 (familia).

No fossil record.

<sup>1</sup> *Aramus* sp. is recorded from the Lower Pliocene, Upper Snake Creek beds, of Nebraska (Wetmore, 1928, Amer. Mus. Novitates, no. 302, p. 4).

## Suborder CARIAMAE Fürbringer

- Cariamae* Fürbringer, 1888, *Untersuch. Morph. Syst. Vögel*, vol. 2, p. 1566 note (gens; type *Cariama* Brisson).—*Cariamae* Wetmore and W. D. Miller, 1926 (July 3), *Auk*, vol. 43, no. 3, p. 343 (suborder).—*Cariamiformes* Verhëyen, 1957 (Aug.), *Bull. Inst. roy Sci. nat. Belgique*, vol. 33, no. 39, pp. 1, 6 (ordo).
- Stereornithes* Moreno and Mercerat, 1891 (May), *An. Mus. La Plata, Pal. argentina*, vol. 1, pp. 20, 37 (ordo; type *Stereornis* Moreno and Mercerat, 1891, a junior synonym of *Phorusrhacos* Ameghino, 1887).
- Dicholophi* Sharpe, 1891, *Review of Recent Attempts to Classify Birds*, p. 74 (suborder; type *Dicholophus* Illiger, 1811, a junior synonym of *Cariama* Brisson, 1790).
- Stephanornithes* Moreno, 1897, *An. Soc. cien. argentina*, vol. 43, p. 226 (order; type *Stephanornis* Mercerat).
- Brontornithes* Dolgopol de Saez, 1927, *An. Soc. cien. argentina*, vol. 103, p. 145 (type *Brontornis* Moreno and Mercerat).—*Brontorniformes* Kraglievich, 1932, *An. Mus. Hist. nat. Montevideo*, ser. 2, vol. 3, p. 350.
- Phororhaci* Wetmore, 1930 (Jan. 8), *Proc. U. S. Nat. Mus.*, vol. 76, art. 24, p. 4 (suborder; type *Phorusrhacos* Ameghino).—*Phororhaciformes* Kraglievich, 1932, *An. Mus. Hist. nat. Montevideo*, ser. 2, vol. 3, p. 350.

## Family †CUNAMPAIDAE Rusconi

- Cunampaiidae* Rusconi, 1946, *Bol. Paleont. Buenos Aires*, no. 21, p. 1 (type *Cunampaia* Rusconi). Position tentative.

Genus †*Cunampaia* Rusconi

- Cunampaia* Rusconi, 1946, *Bol. Paleont. Buenos Aires*, no. 21, p. 1 (type by monotypy *Cunampaia simplex* Rusconi).

1. *Cunampaia simplex* Rusconi

- Cunampaia simplex* Rusconi, 1946, *Bol. Paleont. Buenos Aires*, no. 21, p. 1, fig. 1-2 (type from Mina Atala, various associated bones, Museo de Mendoza).

LOWER OLIGOCENE (Atala formation = Divisadero Largo formation). ARGENTINA: Mendoza: 500 meters west of Mina Atala, Las Heras.

## Family †PHORUSRHACIDAE (Ameghino)

- Phororhacosidae* Ameghino, 1899, *Actas Acad. nac. Ciencias Córdoba*, vol. 6, fide Paterson and Kraglievich (type *Phororhacos* Ameghino = *Phorusrhacos* Ameghino).—*Phororhacosidae* Ameghino, 1891 (Dec.), *Revista argentina Hist. nat.*, vol. 1, p. 449.—*Phororhacidae* Lydekker, 1893, *Ibis*, ser. 6, vol. 5, p. 43 (emendation).—*Phororhacidae* Ameghino, 1895, *Bol. Inst. geográfico argentino*, vol. 15, cahiers 11-12, p. 10 of reprint (emendation).—*Phororhacinae* L. Kraglievich, 1932, *An. Mus. Hist. nat. Montevideo*, ser. 2, vol. 3, p. 350 (sub-

- familia).—*Phororhacoidea* Patterson, 1941, Field Mus. Nat. Hist., Geol., Ser., vol. 8, p. 49 (superfamily).—*Phorusrhacoidea* Brodkorb, 1963 (Apr. 16), Auk, vol. 80, no. 2, p. 111 (superfamily; emendation).—*Phorusrhacidae* Brodkorb, 1963 (Apr. 16), loc. cit. (family; emendation).—*Phorusrhacinae* Brodkorb, 1963 (Apr. 16), loc. cit. (subfamily; emendation).
- Brontornithidae* Moreno and Mercerat, 1891 (May), Anales del Museo de La Plata, Paleontología argentina, vol. 1, pp. 20, 37 (type *Brontornis* Moreno and Mercerat).—*Brontorniidae* [sic] L. Kraglievich, 1932, An. Mus. Hist. nat. Montevideo, ser. 2, vol. 3, p. 350.—*Brontorniinae* [sic] L. Kraglievich, 1932, op. cit., pp. 348, 350 (subfamilia).
- Devincenziidae* L. Kraglievich, 1932, An. Mus. Hist. nat. Montevideo, ser. 2, vol. 3, pp. 323, 350 (type *Devincenzia* L. Kraglievich).
- Liorninae* [sic] L. Kraglievich, 1932, An. Mus. Hist. nat. Montevideo, ser. 2, vol. 3, pp. 348, 350 (type *Liornis* Ameghino, 1895, a junior synonym of *Rostrornis* Moreno and Mercerat, 1891; subfamilia).
- Stereornithidae* Moreno and Mercerat, 1891 (May), op. cit., vol. 1, pp. 21, 44 (type *Stereornis* Moreno and Mercerat, 1891, a junior synonym of *Phorusrhacos* Ameghino, 1887).
- Darwinornithidae* Moreno and Mercerat, 1891 (May), op. cit., pp. 24, 60 (type *Darwinornis* Moreno and Mercerat, 1891, a junior synonym of *Phorusrhacos* Ameghino, 1887).
- Patagornithidae* Mercerat, 1897, An. Soc. cient. argentina, vol. 43, pp. 225, 230 (type *Patagornis* Moreno and Mercerat, 1891, a coetaneous synonym of *Palaeociconia* Moreno and Mercerat, 1891).
- Mesembriornidae* [sic] L. Kraglievich, 1932, An. Mus. Hist. nat. Montevideo, ser. 2, vol. 3, pp. 332, 349 (type *Mesembriornis* Moreno and Mercerat, 1891; a junior synonym of *Phorusrhacos* Ameghino, 1887).—*Mesembriornidae* [sic] L. Kraglievich, 1932, op. cit., p. 349.—*Mesembriornithidae* J. L. Kraglievich, 1946, An. Soc. cient. argentina, vol. 142, p. 108 (emendation).
- Tolmodinae* L. Kraglievich, 1932, An. Mus. Hist. nat. Montevideo, ser. 2, vol. 3, pp. 348, 350 (type *Tolmodus* Ameghino, June 1891, a junior synonym of *Palaeociconia* Moreno and Mercerat, May 1891).

#### Subfamily †BRONTORNITHINAE (Moreno and Mercerat)<sup>1</sup>

- Brontornithidae* Moreno and Mercerat, 1891 (May), Anales del Museo de La Plata, Paleontología argentina, vol. 1, pp. 20, 37 (type *Brontornis* Moreno and Mercerat).—*Brontorniidae* [sic] L. Kraglievich, 1932, An. Mus. Hist. nat. Montevideo, ser. 2, vol. 3, p. 350 (emendation).—*Brontorniinae* [sic] L. Kraglievich, 1932, op. cit., pp. 348, 350 (subfamilia).
- Devincenziidae* L. Kraglievich, 1932, An. Mus. Hist. nat. Montevideo, ser. 2, vol. 3, pp. 323, 350 (type *Devincenzia* L. Kraglievich).
- Liorninae* [sic] L. Kraglievich, 1932, An. Mus. Hist. nat. Montevideo, ser. 2, vol. 3, pp. 348, 350 (type *Liornis* Ameghino, 1895, a junior synonym of *Rostrornis* Moreno and Mercerat, 1891; subfamilia).

<sup>1</sup> New emendation.

Genus †*Physornis* Ameghino

*Physornis* Ameghino, 1895, Bol. Inst. Geográfico argentino, vol. 15, p. 576 [p. 78 of reprint] (type by monotypy *Physornis fortis* Ameghino).

*Aucornis* Ameghino, 1899, Sinopsis geol.-paleont., Suplemento, p. 9 (type by n.g. n.sp. convention and by present designation *Aucornis eurhynchus* Ameghino).

1. *Physornis fortis* Ameghino

*Physornis fortis* Ameghino, 1895, Bol. Inst. geográf. argentino; vol. 15, p. 576 (type *Pyrótherium* beds, mandible, Brit. Mus.).

*Aucornis eurhynchus* Ameghino, 1899, Sinopsis geol.-paleont., Suplemento, p. 9 ("cretáceo de Patagonia," types mandibular symphysis and proximal portion of tarsometatarsus).

*Aucornis solidus* Ameghino, 1899, op. cit., p. 9 (type from "cretáceo de Patagonia," phalanx 1 of toe II).

LOWER OLIGOCENE (Deseado formation). ARGENTINA: Ter. Santa Cruz: Río Deseado.

Genus †*Brontornis* Moreno and Mercerat

*Brontornis* Moreno and Mercerat, 1891 (May), Anales del Museo de La Plata, Paleontologia argentina, vol. 1, pp. 20, 37 (type by monotypy *Brontornis burmeisteri* Moreno and Mercerat).

*Rostrornis* Moreno and Mercerat, 1891 (May), op. cit., pp. 20, 40 (type by monotypy *Rostrornis floweri* Moreno and Mercerat, a synonym of *Brontornis burmeisteri* Moreno and Mercerat).

[?] *Stephanornis* Mercerat, 1893, Note sur la géologie de la Patagonie, p. 5 (not seen; type by monotypy *Stephanornis princeps* Mercerat).

*Liornis* Ameghino, 1895, Bol. Inst. geogr. argentino, vol. 15, p. 570 [p. 72 of reprint] (type by monotypy *Liornis floweri* Ameghino).

*Devincenzia* L. Kraglievich, 1932, Anales del Museo de Hist. nat. de Montevideo, ser. 2, vol. 3, p. 323 (type by monotypy *Devincenzia gallinali* L. Kraglievich).

2. *Brontornis burmeisteri* Moreno and Mercerat

*Brontornis burmeisteri* Moreno and Mercerat, 1891 (May-Aug. 5), An. Mus. La Plata, Pal. argentina, vol. 1, pp. 20, 37, pl. 3, figs. 1-4; pl. 5, fig. 2 (lectotypes by present designation from Lago Argentina, left femur, left tibiotarsus, fibula, and left tarsometatarsus, La Plata Mus. nos. 88-91; two additional distal ends of tarsometatarsi, nos. 92-93, are from Santa Cruz).

*Rostrornis floweri* Moreno and Mercerat, 1891 (May-Aug. 5), op. cit., pp. 20, 40, pl. 4, fig. 1; pl. 5, figs. 1, 3-5; pl. 6; pl. 7, figs. 1-3 (lectotypes by present designation from Monte León, various bill and skull fragments, seven vertebrae and fragments, femoral head, lower part of left femur, ectocondyle of right tibiotarsus, La Plata Mus. nos. 94-111; pedal phalanges and trochleae of tarsometatarsus must represent another species if actually from Monte Hermoso as stated).

- [?] *Stephanornis princeps* Mercerat, 1893, Note sur la géologie de la Patagonie, p. 5 (not seen; type from Patagonia).—Mercerat, 1899, Veröffentlichungen der Deutschen Akademischen Vereinigung zu Buenos Aires, vol. 1, no. 1, p. 9 (Santa Cruz beds; type more massive than the *Stereornithes*).
- (?) *Brontornis platyonyx* Ameghino, 1895, Bol. Inst. geogr. argentino, vol. 15, p. 567 [p. 69 of reprint], fig. 25 (type from Monte Observación, phalanges II, 1, 2, 4; IV, 1, 3, 4, 5, Brit. Mus.).
- Liornis floweri* Ameghino, 1895, Bol. Inst. geogr. argentino, vol. 15, p. 571 [p. 73 of reprint], fig. 26 (type from Monte Observación, distal part of tibia, distal part of tarsometatarsus, and phalanx 1 of digits III and IV, an incompletely grown juvenile, Brit. Mus.).
- Liornis minor* Dolgopol de Saez, 1927, Physis, p. 581; An. Soc. cient. argentina, vol. 103, p. 160, pl. 4, figs. 1-2 (type from Santa Cruz, La Plata Mus.).
- [?] *Devincenzia gallinali* L. Kraglievich, 1932, An. Mus. Hist. nat. Montevideo, ser. 2, vol. 3, pp. 323, 338, pl. 57-59 (type from unknown locality and horizon but thought to be from Arroyo Román, Oligocene or Miocene, [juvenile?] right tarsometatarsus, Mus. Hist. Nat. Montevideo).

LOWER MIOCENE (Patagonian formation). ARGENTINA: Ter. Santa Cruz.: Lago Argentina and Monte León (Moreno and Mercerat, 1891).

MIDDLE MIOCENE (Santa Cruz formation). ARGENTINA: Ter. Santa Cruz: Santa Cruz (Moreno and Mercerat, 1891; Dolgopol de Saez, 1927); Monte Observación, Karaiken, and La Cueva (Lambrecht, 1933, Handb. Palaeorn., pp. 511-512).

MIOCENE? URUGUAY: Dept. Río Negro: Arroyo Román? (Kraglievich, 1932).

#### Subfamily †PALAEOCICONIINAE Brodkorb<sup>1</sup>

- Patagornithidae* Mercerat, 1897, An. Soc. cient. argentina, vol. 43, pp. 225, 230 (type *Patagornis* Moreno and Mercerat, 1891, a synonym of *Palaeciconia* Moreno and Mercerat, 1891; family).
- Tolmodinae* L. Kraglievich, 1932, An. Mus. Hist. nat. Montevideo, ser. 2, vol. 3, pp. 348, 350 (type *Tolmodus* Ameghino, June 1891, a junior synonym of *Palaeciconia* Moreno and Mercerat, May 1891).

#### Genus †*Andrewsornis* Patterson

*Andrewsornis* Patterson, 1941, Field Mus. Nat. Hist., Geol. Ser., vol. 8, no. 8, p. 50 (type *Andrewsornis abbotti* Patterson).

<sup>1</sup> New name. In confused misinterpretation of the nomenclature of *Palaeciconia*, *Mesembriornis*, and *Hermosornis*, Lucas Kraglievich (references cited above and 1931, Physis, vol. 10, p. 305 footnote) wanted to substitute "Mesembriornithidae" for Hermosornithidae, and *Mesembriornis* for *Hermosornis*.



3. *Andrewsornis abbotti* Patterson

*Phororhacos affinis* F. Ameghino, 1899 (July), Sinopsis geologico-paleontológica, Suplemento, p. 9 (type from "Guaranítico de Patagonia" [= Deseado formation], tarsometatarsus; preoccupied by *Owenornis affinis* Moreno and Mercerat, 1891, a synonym of *Phorusrhacos longissimus* Ameghino).

*Andrewsornis abbotti* Patterson, 1941, Field Mus. Nat. Hist., Geol. Ser., vol. 8, no. 8, p. 50, fig. 16 (type from Cabeza Blanca, Field Mus. Nat. Hist.).

LOWER OLIGOCENE (Deseado formation). ARGENTINA: Ter. Chubut: Cabeza Blanca.

Genus †*Palaeociconia* Moreno and Mercerat<sup>1</sup>

*Palaeociconia* Moreno and Mercerat, 1891 (May), Anales Museo La Plata, Paleontología argentina, vol. 1, pp. 19, 36 (type *Palaeociconia cristata* Moreno and Mercerat, selected by Rovereto, 1914, An. Mus. nac. Buenos Aires, vol. 25, p. 163).

*Patagonis* Moreno and Mercerat, 1891 (May), op. cit., pp. 23, 55 (type *Patagonis marshi* Moreno and Mercerat, designated by Richmond, 1902, Proc. U. S. Nat. Mus., vol. 24, no. 1267, p. 704).

*Tolmodus* Ameghino, 1891 (June), Revista argentina Historia nat., vol. 1, p. 157 (type *Tolmodus inflatus* Ameghino, a junior synonym of *Palaeociconia cristata* Moreno and Mercerat).

*Moreno-merceratia* Lambrecht, 1933, Handb. Palaeorn., p. 512 (type by monotypy *Palaeociconia cristata* Moreno and Mercerat).

4. *Palaeociconia cristata* Moreno and Mercerat

*Palaeociconia cristata* Moreno and Mercerat, 1891 (May-Aug. 5), Anales del Museo de La Plata, Paleontología argentina, vol. 1, pp. 19, 36, pl. 19, figs. 12, 14; pl. 20, fig. 9 (types from Santa Cruz, two vertebrae and two ungues, La Plata Mus. nos. 83-86).

*Patagonis marshi* Moreno and Mercerat, 1891 (May-Aug. 5), op. cit., pp. 23, 56, pl. 14, figs. 2-11; pl. 15, figs. 1-3 (types from Santa Cruz, premaxillary fragment, 3 vertebrae and fragments, fragment of sacrum, scapular fragments, upper part of right femur, lower part of left femur, fragment of right tibia, mesotrochlea of left and ectotrochlea of right tarsometatarsus, unguis, and fragments, La Plata Mus. nos. 143-158).

*Patagonis lemoinei* Moreno and Mercerat, 1891 (May-Aug. 5), op. cit., pp. 23, 58, pl. 15, figs. 5-5a (types from Monte León, fragment of vertebra, head and distal fragment of right femur, distal end of right tibia, trochlea of tarsometatarsus, unguis, La Plata Mus. nos. 159-164).

*Tolmodus inflatus* Ameghino, 1891 (June 1), Revista argentina Hist. nat., vol. 1, no. 3, p. 157, fig. 62 (type from Santa Cruz formation, right premaxilla; de-

<sup>1</sup> Not affected by *Palaeociconia* Moreno, 1889 (Breve reseña de los progresos del Museo La Plata, durante el segundo semestre de 1888, Bol. La Plata, p. 30; type *Palaeociconia australis* Moreno, designated by Richmond, 1902, Proc. U. S. Nat. Mus., vol. 24, p. 702), as both generic and specific names are nomina nuda at this point.

scribed as an edentate mammal).—*Phororhacos inflatus* Ameghino, 1891 (Aug. "1" = 11), Rev. argentina Hist. nat., vol. 1, no. 4, p. 258 (transferred to Aves).—*Phororhacos inflatus* Andrews, 1899, Trans. Zool. Soc. London, vol. 15, pt. 3, pp. 55-86, pl. 14-17 (monograph).

*Phororhacos modicus* Ameghino, 1895, Bol. Inst. geogr. argentino, vol. 15, p. 548 [p. 50 of reprint], fig. 15 (types from Santa Cruz formation, humerus, tarsometatarsus).

LOWER MIOCENE (Patagonian formation). ARGENTINA: Ter. Santa Cruz: Monte León.

MIDDLE MIOCENE (Santa Cruz formation). ARGENTINA: Ter. Santa Cruz: Santa Cruz; Monte Observación, Tagua Quemada, and La Cueva (Lambrecht, 1933, Handb. Palaeorn., p. 503).

### Genus †*Andalgalornis* Patterson and J. L. Kraglievich

*Andalgalornis* Patterson and J. L. Kraglievich, 1960, Publ. Museo municipal de Ciencias naturales y tradicional de Mar del Plata, vol. 1, no. 1, p. 33 (type by original designation *Andalgalornis ferox* Patterson and J. L. Kraglievich).

#### 5. *Andalgalornis steulleti* (L. Kraglievich)

*Phororhacos steulleti* L. Kraglievich, 1931, Physis, vol. 10, p. 312, fig. 4 (type from barrancas del Rio Paraná, phalanx 1 of digit IV, Museo Arg. Ciencias Naturales no. 4244).

*Phororhacos daeutieri* L. Kraglievich, 1931, Physis, vol. 10, p. 312, fig. 5 (type from barrancas del Rio Paraná, distal end of right femur, Buenos Aires Mus. no. 6932).

LOWER PLIOCENE (base of Entre Ríos series). ARGENTINA: Prov. Entre Ríos: ravines of the Rio Paraná.

#### 6. *Andalgalornis ferox* Patterson and J. L. Kraglievich

*Andalgalornis ferox* Patterson and J. L. Kraglievich, 1960, Publ. Museo municipal Ciencias nat. y tradicional de Mar del Plata, vol. 1, no. 1, p. 34, figs. 3, 4, 6 (misspelled *terox* and *torax* on legends; type from Chiquimil, partial skeleton, including cranium, mandible, presynsacral vertebrae except atlas, sixth rib, pelvis, and synsacrum, Field Nat. Mus. no. 14357).

MIDDLE PLIOCENE (Andalgalá formation). ARGENTINA: Prov. Catamarca: Chiquimil.

### Subfamily †PHORUSRHACINAE (Ameghino)

*Phororhacosidae* Ameghino, 1889, Actas Acad. nac. Cienc. Córdoba, vol. 6, fide Patterson and Kraglievich (type *Phororhacos* Ameghino = *Phorusrhacos* Ameghino).—*Phororhacosidae* Ameghino, 1891 (Dec.), Revista argentina Hist. nat.,

- vol. 1, p. 449.—*Phororhacidae* Lydekker, 1893, Ibis, ser. 6, vol. 5, p. 43 (emendation).—*Phororhacidae* Ameghino, 1895, Bol. Inst. geogr. argentino, vol. 15, cahiers 11-12, p. 10 of reprint (emendation).—*Phororhacinae* L. Kraglievich, 1932, An. Mus. Hist. nat. Montevideo, ser. 2, vol. 3, p. 350 (subfamilia).—*Phorusrhacinae* Brodkorb, 1963 (Apr. 16), Auk, vol. 80, no. 2, p. 111 (subfamily).
- Stereornithidae* Moreno and Mercerat, 1891 (May), Anales Museo La Plata, Paleontología argentina, vol. 1, p. 21 (type *Stereornis* Moreno and Mercerat, 1891, a junior synonym of *Phorusrhacos* Ameghino, 1887).
- Darwinornithidae* Moreno and Mercerat, 1891 (May), op. cit., p. 24 (type *Darwinornis* Moreno and Mercerat, 1891, a junior synonym of *Phorusrhacos* Ameghino, 1887).
- Devincenziidae* L. Kraglievich, 1932, An. Mus. Hist. nat. Montevideo, ser. 2, vol. 3, pp. 323, 350 (type *Devincenzia* L. Kraglievich).
- Mesembriornithidae* L. Kraglievich, 1932, An. Mus. Hist. nat. Montevideo, ser. 2, vol. 3, pp. 332, 349 (type *Mesembriornis* Moreno and Mercerat, 1891, a junior synonym of *Phorusrhacos* Ameghino, 1887).—*Mesembriornidae* L. Kraglievich, 1932, op. cit., p. 349.—*Mesembriornithidae* J. L. Kraglievich, 1946, An. Soc. cient. argentina, vol. 142, p. 108 (emendation).

### Genus †*Phorusrhacos* Ameghino

- Phorusrhacos* Ameghino, 1887, Enumeración sistemática de las especies de mamíferos fósiles coleccionados por Carlos Ameghino en los terrenos eocenos de la Patagonia austral depositados en el Museo La Plata, Bol. Mus. La Plata, vol. 1, p. 24 (type by monotypy *Phorusrhacos longissimus* Ameghino).—*Phorusrhachios* Lydekker, 1888, Zoological Record, vol. 24, Mammalia, p. 52 (emendation).—*Phororhacos* Ameghino, 1889, Act. Acad. nac. Cienc. Cordoba, vol. 6, p. 659 (emendation).—*Phororhacos* Ameghino, 1891 (Aug. 11), Revista argentina Historia natural, vol. 1, no. 4 for Aug. 1, p. 256.—*Phororhachos* Lydekker, 1892, Zoological Record, vol. 28, Mammalia, p. 54 (emendation).—*Phororhacis* Sclater, 1893, Ibis, ser. 6, vol. 5, p. 41 (emendation).—*Phorusrhacos* Lydekker, 1896, in Newton, Dictionary of Birds, fasc. 4, p. 905 (emendation).—*Phororhacus* Ameghino, 1898, Segundo Censo de la Republica Argentina, vol. 1, p. 235 (emendation).
- Stereornis* Moreno and Mercerat, 1891 (May), Anales Museo La Plata, Paleont. argentina, vol. 1, p. 21 (type *Stereornis rollieri* Moreno and Mercerat, designated by Richmond, 1902, Proc. U. S. Nat. Mus., vol. 24, no. 1267, p. 716, = *Phorusrhacos longissimus* Ameghino).
- Darwinornis* Moreno and Mercerat, 1891 (May), op. cit., p. 24 (type *Darwinornis copei* Moreno and Mercerat, designated by Richmond, 1902, Proc. U. S. Nat. Mus., vol. 24, no. 1267, p. 677 = *Phorusrhacos longissimus* Ameghino).
- Owenornis* Moreno and Mercerat, 1891 (May), op. cit., p. 25 (type *Owenornis affinis* Moreno and Mercerat, designated by Richmond, 1902, Proc. U. S. Nat. Mus., vol. 24, no. 1267, p. 702 = *Phorusrhacos longissimus* Ameghino).
- Mesembriornis* Moreno, 1889, Breve reseña de los progresos del Museo La Plata, durante el segundo semestre de 1888, Bol. Mus. La Plata, p. 29 (type by monotypy *Mesembriornis milnē-edwardsi* Mercerat, nomen nudum).—Moreno and Mercerat, 1891 (May), An. Mus. La Plata, Pal. argentina, vol. 1, pp. 21, 48 (type designated by Rovereto, 1914, An. Mus. nac. Hist. nat. Buenos Aires, vol.

- 25, p. 163, *Mesembriornis studeri* Moreno and Mercerat = *Phorusrhacos longissimus* Ameghino).
- Titanornis* Mercerat, 1893, Note Géol. Patagonie, p. 5 (type by monotypy *Titanornis mirabilis* Mercerat, nomen nudum).—Mercerat, 1897, An. Soc. cient. argentina, vol. 43, p. 229 (brief descr.; type by monotypy *Titanornis mirabilis* Mercerat = *Phorusrhacos longissimus* Ameghino).
- Callornis* Ameghino, 1895, Bol. Inst. geogr. argentina, vol. 15, p. 574 (type by monotypy *Callornis giganteus* Ameghino = *Phorusrhacos longissimus* Ameghino).
- Eucallornis* Ameghino, 1901, An. Soc. cien. argentina, vol. 51, p. 78 (new name for *Callornis* Ameghino, preoccupied).

### 7. *Phorusrhacos longissimus* Ameghino

- Phorusrhacos longissimus* Ameghino, 1887, Enumeración sistemática de las especies de mamíferos fósiles coleccionados por Carlos Ameghino en los terrenos eocenos de la Patagonia austral depositados en el Museo de La Plata, p. 24 (type from Santa Cruz, mandible, La Plata Mus. no. 118; described as an edentate mammal).
- Stereornis rollieri* Moreno and Mercerat, 1891 (text published in May, plates Aug. 5), Anales Museo La Plata, Paleontología argentina, vol. 1, pp. 21, 45, pl. 9, fig. 3; pl. 10, figs. 1-2; pl. 11, fig. 1 (types from Santa Cruz, upper part of left tibia, upper part of left tarsometatarsus, La Plata Mus. nos. 119-120).
- Stereornis gaudryi* Moreno and Mercerat, 1891 (May-Aug. 5), op. cit., pp. 21, 47, pl. 9, fig. 4; pl. 10, fig. 3 (type from Monte León, proximal part of left tarsometatarsus, La Plata Mus. no. 121).
- Mesembriornis studeri* Moreno and Mercerat, 1891 (May-Aug. 5), op. cit., pp. 21, 48, pl. 4, figs. 2-3; pl. 7, fig. 4; pl. 10, fig. 4; pl. 11, fig. 2-4; pl. 12, fig. 1-6 (types from Monte León, fragment of right temporal region, other skull fragments, proximal part of left mandible, numerous fragments of vertebrae, fragments of upper limbs, proximal part of right femur, proximal and distal fragments of left femur, right tibia lacking ends, right tarsometatarsus lacking the two lateral trochleae, lower part of right tarsometatarsus, numerous toe phalanges, numerous other fragments of the legs, La Plata Mus. nos. 122-134).
- Mesembriornis quatrefragesi* Moreno and Mercerat, 1891 (May-Aug. 5), op. cit., vol. 1, pp. 22, 50, pl. 4, fig. 4; pl. 12, figs. 7-9; pl. 14, fig. 1 (types from Santa Cruz, lower part of left humerus, upper part of left ulna, distal fragment of right tibia, trochlea of right tarsometatarsus, ungual phalanx, Mus. La Plata nos. 135-139).
- Darwinornis copei* Moreno and Mercerat, 1891 (May-Aug. 5), op. cit., vol. 1, pp. 24, 60, pl. 17, figs. 1-2 (types from Santa Cruz, lower part of left tibia, trochlea of middle toe, and fragments, La Plata Mus. nos. 171-173).
- Darwinornis zittelli* Moreno and Mercerat, 1891 (May-Aug. 5), op. cit., vol. 1, pp. 25, 63, pl. 17, figs. 3-4 (types from Santa Cruz, ectocondyle of right tibia, mesotrochlea of tarsometatarsus, La Plata Mus. nos. 174-175).
- Darwinornis socialis* Moreno and Mercerat, 1891 (May-Aug. 5), op. cit., vol. 1, pp. 25, 63, pl. 17, fig. 5 (type from Santa Cruz, mesotrochlea of left tarsometatarsus, La Plata Mus. no. 176).

- Owenornis affinis* Moreno and Mercerat, 1891 (May-Aug. 5), op. cit., vol. 1, pp. 25, 64, pl. 17, fig. 6; pl. 18, fig. 1 (type from Santa Cruz, mesotrochlea of right tarsometatarsus, La Plata Mus. no. 177).
- Owenornis lydekkeri* Moreno and Mercerat, 1891 (May-Aug. 5), op. cit., vol. 1, pp. 25, 64, pl. 18, figs. 2-5 (types from Santa Cruz, fragmentary vertebrae, entocondyle of right tibia, mesotrochlea of right tarsometatarsus, ectotrochlea of left tarsometatarsus, La Plata Mus. nos. 178-182).
- Phororhacos sehuenensis* Ameghino, 1891 (Aug. "1" = 11), Revista argentina Hist. nat., vol. 1, no. 4, p. 258 (type from Río Sehuen, fragment of lower mandible, dorsal vertebra, femur, tibiotarsus, tarsometatarsus).
- Phororhacos platygnathus* Ameghino, 1891 (Dec. 1), Revista argentina Hist. nat., vol. 1, no. 6, p. 452 (types from Monte Observación, mandible, tarsometatarsus, now in Brit. Mus.).
- Titanornis mirabilis* Mercerat, 1893, Note sur la géologie de Patagonie, p. 5 (not seen; apparently nomen nudum).—*Titanornis mirabilis* Mercerat, 1897, An. Soc. cient. argentina, vol. 43, p. 230 (type from Santacruzian, most of a skeleton, larger than *Phororhacos longissimus*).
- Callornis giganteus* Ameghino, 1895, Bol. Inst. geográfico argentino, vol. 15, p. 78 of reprint, figs. 28-29 (types from La Cueva, distal part of right tibiotarsus without condyles, distal end of right tarsometatarsus, now in Brit. Mus.).—*Eucallornis giganteus* Ameghino, 1901, An. Soc. cient. argentina, vol. 51, p. 78.

LOWER MIOCENE (Patagonia formation). ARGENTINA: Ter. Santa Cruz: Monte León (Moreno and Mercerat, 1891).

MIDDLE MIOCENE (Santa Cruz formation). ARGENTINA: Ter. Santa Cruz: Santa Cruz (Ameghino, 1887); Río Sehuen (Ameghino, 1891); Monte Observación (Ameghino, 1891); La Cueva (Ameghino, 1895); Tagua Quemada (Lambrecht, 1933, Handb. Palaeorn., p. 501).

#### Genus †*Onactornis* Cabrera

- Onactornis* Cabrera, 1839 (Apr. 10), Rev. Mus. La. Plata, n.s., sec. paleont., vol. 2, no. 6, p. 15 (type *Onactornis depressus* Cabrera).

#### 8. *Onactornis pozzii* (L. Kraglievich)

- Phororhacos pozzii* L. Kraglievich, 1931, Physis, vol. 10, p. 306, figs. 1-3, (type from El Brete, distal portion of right tarsometatarsus, Buenos Aires Mus. no. 6554; referred unguis of toe III, no. 6681).
- Onactornis depressus* Cabrera, 1939 (Apr. 10), Rev. Mus. La Plata, n.s., sec. paleont., vol. 2, no. 6, p. 15, figs. 11-15 (type from Campo de Robilotte, incomplete cranium and phalanx 1 of toes II and III, Mus. La Plata no. 37-III-7-8).

LOWER PLIOCENE (Mesopotamian). ARGENTINA: PROV. Entre Ríos: El Brete. PROV. BUENOS AIRES: Campo de Robilotte, southeast of Laguna Epecuén, partido de Adolfo Alsina.

9. *Onactornis mendocinus* (L. Kraglievich)

*Phororhacos longissimus mendocinus* L. Kraglievich, 1931, *Physis*, vol. 10, p. 304, fig. 105 (type from Huayquerías, proximal portion of right femur without head, Buenos Aires Mus. no. 6930).

MIDDLE PLEISTOCENE (Huayqueriana). ARGENTINA: Prov. Mendoza: Huayquerías.

Genus †*Titanis* Brodkorb

*Titanis* Brodkorb, 1963 (Apr. 16), *Auk*, vol. 80, no. 2, p. 111 (type by original designation *Titanis walleri* Brodkorb).

10. *Titanis walleri* Brodkorb

*Titanis walleri* Brodkorb, 1963 (Apr. 16), *Auk*, vol. 80, no. 2, p. 113, figs. 1-7 (type from Santa Fe River, distal part of right tarsometatarsus, Univ. Florida no. 4108; referred phalanx I of digit III).

UPPER? PLEISTOCENE (fluvial deposit). FLORIDA: Gilchrist/Columbia County line: Santa Fe River, in NE ¼ of NW ¼, section 34, Township 7 S, Range 16 E.

## Family CARIAMIDAE Bonaparte

*Dicholophidae* Kaup, 1850, fide Gray, 1871 (type *Dicholophus* Illiger, 1811, a junior synonym of *Cariama* Brisson, 1760).

*Cariamidae* Bonaparte, 1853, C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646 (type *Cariama* Brisson).—*Cariaminae* Bonaparte, 1853, loc. cit. (subfamilia).—*Cariamoideae* Stejneger, 1885, *Standard Natural History*, vol. 4, p. 119 (superfamily).—*Cariamoidea* Patterson, 1941, *Field Mus. Nat. Hist., Geol. Ser.*, vol. 8, p. 49 (emendation; superfamily).

*Pelecynornidae* [sic] Ameghino, 1891 (Dec.), *Revista argentina Hist. nat.*, vol. 1, no. 6, p. 448 (type *Pelecynornis* Ameghino, Dec. 1891, a junior synonym of *Psilopterus* Moreno and Mercerat, May 1891).—*Pelecynornisidae* Ameghino, 1891 (Dec.), op. cit., p. 450 in text.

*Hermosiornidae* [sic] Rovereto, 1914 (Jan. 22), *An. Mus. nac. Buenos Aires*, vol. 25, sig. 7, p. 110; sig. 11 (Jan. 20), p. 163 (type *Hermosiornis* Rovereto).—*Hermosiorniidae* [sic] L. Kraglievich, 1932, *An. Mus. Hist. nat. Montevideo*, ser. 2, vol. 3, pp. 332, 349 (emendation).—*Hermosiornithidae* Wetmore, 1934 (Apr. 23), *Smithsonian Misc. Coll.*, vol. 89, no. 13, p. 7 (emendation).—*Hermosiornithinae* Patterson and J. L. Kraglievich, 1960, *Publ. Mus. municipal de Ciencias nat. y trad. Mar del Plata*, vol. 1, no. 1, p. 17 (subfamilia).

*Bathornithinae* Wetmore, 1927 (July 15), *Proc. Colorado Mus. Nat. Hist.*, vol. 7, no. 2, p. 13 (subfamily; type *Bathornis* Wetmore).—*Bathornithidae* Wetmore, 1933 (Oct.), *Bull. Mus. Comp. Zool.*, vol. 75, no. 7, p. 301 (family).

*Psilopteridae* Dolgopol de Saez, 1927, An. Soc. cient. argentina, vol. 103, p. 156 (type *Psilopterus* Moreno and Mercerat).—*Psilopteridae* [sic] L. Kraglievich, 1932, An. Mus. Hist. nat. Montevideo, ser. 2, vol. 3, p. 349.—*Psilopterinae* Patterson and J. L. Kraglievich, 1960, Publ. Mus. municipal Ciencias nat. y trad. Mar del Plata, vol. 1, no. 1, p. 13 (subfamilia).

### Subfamily †BATHORNITHINAE Wetmore

*Bathornithinae* Wetmore, 1927 (July 15), Proc. Colorado Mus. Nat. Hist., vol. 7, no. 2, p. 13 (type *Bathornis* Wetmore).—*Bathornithidae* Wetmore, 1933 (Oct.), Bull. Mus. Comp. Zool., vol. 75, no. 7, p. 301 (family).

### Genus †*Bathornis* Wetmore

*Bathornis* Wetmore, 1927 (July 15), Proc. Colorado Mus. Nat. Hist., vol. 7, no. 2, p. 11 (type by monotypy *Bathornis veredus* Wetmore).

#### 1. *Bathornis veredus* Wetmore

*Bathornis veredus* Wetmore, 1927 (July 15), Proc. Colorado Mus. Nat. Hist., vol. 7, no. 2, p. 11, figs. 19-24 (type from lower part of Horsetail Creek member, distal portion of right tarsometatarsus, Colorado Mus. Nat. Hist. no. 805; see Galbreath, 1953, Univ. Kansas Paleont. Contr., Vertebrata, art. 4, p. 40).

LOWER OLIGOCENE (Chadron formation). COLORADO: Weld County: Horsetail Creek, sections 26 and 27, Township 10 N, Range 57 W (Wetmore, 1927). NEBRASKA: George Everson ranch, 11 miles northwest of Crawford (Wetmore, Apr. 1933, Auk, vol. 50, no. 2, p. 213). SOUTH DAKOTA: Pennington County: Indian Creek (Wetmore, 1937, Condor, vol. 39, no. 6, p. 256, fig. 70).

#### 2. *Bathornis celeripes* Wetmore

*Bathornis celeripes* Wetmore, 1933 (Oct.), Bull. Mus. Comp. Zool., vol. 75, no. 7, p. 302, figs. 6-14 (type from near Torrington, left tarsometatarsus, Mus. Comp. Zool. no. 2234).

MIDDLE OLIGOCENE ("base of Scenic member"). SOUTH DAKOTA: Pennington County: 2 miles E of Scenic (Wetmore, 1958, Smithsonian Misc. Coll., vol. 135, no. 8, p. 5, pl. 4, fig. 2).

MIDDLE OLIGOCENE (Oreodon beds). NEBRASKA: Everson Ranch, 12 miles northwest of Crawford (Wetmore, Oct. 1933).

UPPER OLIGOCENE (Brule formation). WYOMING: Goshen County: 4 miles from Torrington, in head of canyon, in S ½ of NW ¼, section 32, Township 24 N, Range 61 W (Wetmore, Oct. 1933).

3. *Bathornis cursor* Wetmore

*Bathornis cursor* Wetmore, 1933 (Oct.), Bull. Mus. Comp. Zool., vol. 75, no. 7, p. 310, figs. 15-19 (type from near Torrington, distal end of left tarsometatarsus, Mus. Comp. Zool. no. 2236).

*Bathornis geographicus* Wetmore, 1942 (May 11), Smithsonian Misc. Coll., vol. 101, no. 14, p. 3, fig. 5-13 (type from near Rockyford, left tarsometatarsus, Mus. South Dakota School of Mines, no. 4030).

UPPER OLIGOCENE (*Protoceras* beds of Brule formation). SOUTH DAKOTA: 25 miles southeast of Scenic and 6 miles east of Rockyford (Wetmore, 1942).

UPPER OLIGOCENE (Brule formation). WYOMING: Goshen County: 4 miles from Torrington, head of canyon, in S  $\frac{1}{2}$  of NW  $\frac{1}{4}$ , section 32, Township 24 N, Range 61 W (Wetmore, Oct. 1933).

## Subfamily †PSILOPTERINAE Dolgopol de Saez

*Pelecynornidae* [sic] Ameghino, 1891 (Dec.), Revista argentina Hist. nat., vol. 1, no. 6, p. 448 (type *Pelecynornis* Ameghino, Dec. 1891, a junior synonym of *Psilopterus* Moreno and Mercerat, May 1891).—*Pelecynornisidae* Ameghino, 1891 (Dec.), op. cit., p. 450 in text.

*Psilopteridae* Dolgopol de Saez, 1927, An. Soc. cient. argentina, vol. 103, p. 156 (type *Psilopterus* Moreno and Mercerat).—*Psilopteriidae* [sic] L. Kraglievich, 1932, An. Mus. Hist. nat. Montevideo, ser. 2, vol. 3, p. 349.—*Psilopterinae* Patterson and J. L. Kraglievich, 1960; Publ. Mus. municipal Ciencias nat. y trad. Mar del Plata, vol. 1, no. 1, p. 13 (subfamilia).

Genus †*Riacama* Ameghino

*Riacama* Ameghino, 1899 (July), Sinopsis geológico-paleontológica, Suplemento, p. 9 (type by monotypy *Riacama caliginea* Ameghino).

4. *Riacama caliginea* Ameghino

*Riacama caliginea* Ameghino, 1899 (July), Sinopsis geológico-paleontológica, Suplemento, p. 9 (type from "Guanítico de Patagonia," coracoid).

LOWER OLIGOCENE (Deseado formation). ARGENTINA: Patagonia.

Genus †*Smiliornis* Ameghino

*Smiliornis* Ameghino, 1899 (July), Sinopsis geol.-pal., Suplemento, p. 9 (type by monotypy *Smiliornis penetrans* Ameghino).

5. *Smiliornis penetrans* Ameghino

*Smiliornis penetrans* Ameghino, 1899 (July), Sinopsis geol.-pal., Suplemento, p. 9 (type from "Guanítico de Patagonia," coracoid).

LOWER OLIGOCENE (Deseado formation). ARGENTINA: Patagonia.



Genus †*Pseudolarus* Ameghino

- Pseudolarus* Ameghino, 1891 (Dec.), Revista argentina Hist. nat., vol. 1, no. 6, p. 446 (type by monotypy *Pseudolarus eocaenus* Ameghino).
- Pseudogavia* Sharpe, 1892, Zool. Record, vol. 28, p. 39 (substitute for *Pseudolarus* Ameghino).
- Ameghinia* Sharpe, 1899, Handlist of Genera and Species of Birds, vol. 1, p. 184 (new name for *Pseudolarus* Ameghino, on grounds of vox hybrida).

6. *Pseudolarus guaraniticus* Ameghino

- Pseudolarus guaraniticus* Ameghino, 1899 (July), Sinopsis geologico-paleontológica, Suplemento, p. 9 (type from "cretáceo de Patagonia," proximal portion of humerus).

LOWER OLIGOCENE (Deseado formation). ARGENTINA: Patagonia.

7. *Pseudolarus eocaenus* Ameghino

- Pseudolarus eocaenus* Ameghino, 1891 (Dec.), Revista argentina Hist. nat., vol. 1, no. 6, p. 446 (type from Monte Observación fide Lambrecht, proximal portion of humerus, Brit. Mus.).

MIDDLE MIOCENE (Santa Cruz formation). ARGENTINA: Ter. Santa Cruz: Monte Observación.

Genus †*Psilopterus* Moreno and Mercerat

- Psilopterus* Moreno and Mercerat, 1891 (May), An. Mus. La Plata, Pal. argentina, vol. 1, pp. 26, 68 (type *Psilopterus communis* Moreno and Mercerat, designated by Richmond, 1902, Proc. U. S. Nat. Mus., vol. 24, no. 1267, p. 710).
- Pelecyornis* Ameghino, 1891 (Dec.), Revista argentina Hist. nat., vol. 1, no. 6, p. 448 (new name for *Psilopterus* Moreno and Mercerat, supposed to be preoccupied [by *Psiloptera* Solier, 1833]).
- [?] *Staphylornis* Mercerat, 1897, An. Soc. cient. argentina, vol. 43, p. 233 (type *Staphylornis gallardoi* Mercerat, designated by Sharpe, 1898, Zool. Record, vol. 34, p. 35).

8. *Psilopterus australis* Moreno and Mercerat

- Psilopterus australis* Moreno and Mercerat, 1891 (May-Aug. 5), An. Mus. La Plata, Pal. argentina, vol. 1, pp. 26, 68, pl. 18, fig. 10; pl. 20, fig. 5 (types from Santa Cruz, distal part of left tarsometatarsus, ungual phalanx, La Plata Mus. nos. 188-189).
- Pelecyornis tubulatus* Ameghino, 1895, Bol. Inst. geogr. argentino, vol. 15, p. 62 of reprint, fig. 22 (types from Santa Cruz formation, figured tarsometatarsus, tibiotarsus, and phalanx I of toe III, now in Brit. Mus.).
- [?] *Staphylornis gallardoi* Mercerat, 1896, An. Soc. cient. argentina, vol. 43, p. 233 (no locality stated, said by Lambrecht to be Monte Observación, distal

portions of right and left femur, proximal fragment of left tibia, and proximal part of left tarsometatarsus, La Plata Mus.).

[?] *Staphylornis erithacus* Mercerat, 1897, An. Soc. cient. argentina, vol. 43, p. 235 (no locality stated, type proximal part of left tibia, La Plata Mus.).

*Pelecymnis tenuirostris* Sinclair, in Sinclair and Farr, 1932 (Jan. 8), Patagonian Exped. Princeton Univ., vol. 7, p. 188, pl. 25; pl. 26, fig. 3; pl. 27, fig. 6; pl. 29, fig. 1; pl. 30, fig. 2; pl. 31, figs. 3-4 (type from south of Santa Cruz, associated skull, mandible, and most of skeleton, Am. Mus. Nat. Hist. no. 9157).

LOWER MIOCENE (Patagonian formation). ARGENTINA: Ter. Santa Cruz: Monte León (Lambrecht, 1933, Handb. Palaeorn., p. 506).

MIDDLE MIOCENE (Santa Cruz formation). ARGENTINA: Ter. Santa Cruz: Santa Cruz (Moreno and Mercerat, 1891); Killik Aike and 10 miles S of Coy Inlet (Sinclair, 1932, p. 185); Monte Observación, Take Harvey, La Cueva, Corriguen Kaik, Tagua Quemada, and Karaiken (Lambrecht, 1933).

### 9. *Psilopterus communis* Moreno and Mercerat

*Psilopterus communis* Moreno and Mercerat, 1891 (May-Aug. 5), An. Mus. La Plata, Pal. argentina, vol. 1, pp. 26, 68, pl. 18, fig. 11; pl. 21, fig. 5 (types from Santa Cruz, distal part of right and left tarsometatarsi, La Plata Mus. nos. 186-187).

*Psilopterus intermedius* Moreno and Mercerat, 1891 (May-Aug. 5), op. cit., pp. 26, 68, pl. 20, fig. 1 (provisionally named; types from Santa Cruz, 4 trochlear fragments of tarsometatarsus, La Plata Mus. nos. 190-193).

*Patagonis bachmanni* Moreno and Mercerat, 1891 (May-Aug. 5), op. cit., pp. 24, 58, pl. 15, figs. 7-10 (types from Santa Cruz, proximal and distal ends of femur, distal end of left tibia, and proximal end of tarsometatarsus, La Plata Mus. nos. 165-168).

*Phororhacos delicatus* Ameghino, 1891 (Aug. 1), Revista argentina Hist. nat., vol. 1, no. 4, p. 259 (not seen; fide Lambrecht types are from Monte Observación, La Cueva, and Río Sehuen, Brit. Mus.).—*Phororhacos delicatus* Ameghino, 1895, Bol. Inst. geogr. argentino, vol. 15, p. 51 of reprint, fig. 17 (figured dorsal vertebra, humerus, proximal end of femur, distal end of tibia, tarsometatarsus, toes II, 1; III, 1-4; IV, 1).

*Pelecymnis pueyrredonensis* Sinclair, in Sinclair and Farr, 1932 (Jan. 8), Patagonian Exped. Princeton Univ., vol. 7, p. 187, pl. 24; pl. 26, figs. 5-6; pl. 27, figs. 4-5; pl. 29, figs. 4-5 (type from Lake Pueyrredon, skull and associated skeleton, Princeton Mus. no. 15904).

MIDDLE MIOCENE (Santa Cruz formation). ARGENTINA: Ter. Santa Cruz: Santa Cruz (Moreno and Mercerat, 1891); Lake Pueyrredon (Sinclair, 1932); Monte Observación, La Cueva, and Río Sehuen (Lambrecht, 1933, p. 503).

10. *Psilopterus minutus* (Ameghino)

*Pelecyornis minutus* Ameghino, 1891 (Dec.), Revista argentina Hist. nat., vol. 1, no. 6, p. 449 (type said by Lambrecht to be from Monte Observación, distal end of tarsometatarsus, Brit. Mus.).

MIDDLE MIOCENE (Santa Cruz formation). ARGENTINA: Ter. Santa Cruz: Monte Observación.

Genus †*Lophiornis* Ameghino

*Lophiornis* Ameghino, 1891 (Dec.), Revista argentina Hist. nat., vol. 1, no. 6, p. 449 (type by monotypy *Lophiornis obliquus* Ameghino).

11. *Lophiornis obliquus* Ameghino

*Lophiornis obliquus* Ameghino, 1891 (Dec.), Revista argentina Hist. nat., vol. 1, no. 6, p. 449 (type from Monte Observación fide Lambrecht, distal end of tibiotarsus, Brit. Mus.).—*Lophiornis obliquus* Ameghino, 1895, Bol. Inst. geogr. argentino, vol. 15, p. 79 of reprint, fig. 30.

MIDDLE MIOCENE (Santa Cruz formation). ARGENTINA: Ter. Santa Cruz: Monte Observación.

Genus †*Procarriama* Rovereto

*Procarriama* Rovereto, 1914 (Jan. 22), An. Mus. nac. Buenos Aires, vol. 25, sig. 7, p. 110 (type by monotypy *Procarriama simplex* Rovereto).

12. *Procarriama simplex* Rovereto

*Procarriama simplex* Rovereto, 1914 (Jan. 22), An. Mus. nac. Buenos Aires, vol. 25, sig. 7, p. 110, pl. 9, figs. 1, 3, and 5 only (lectotype from Andalgalá, posterior portion of cranium, pelvis, proximal and distal parts of left femur, distal part of right tibiotarsus, proximal and distal parts of right tarsometatarsus, proximal part of left tarsometatarsus, left digit IV and parts of left digits I-III, Buenos Aires Mus. no. 8225, selected by Patterson and Kraglievich, 1960, Publ. Mus. munic. Ciencias nat. y trad. Mar del Plata, vol. 1, no. 1, p. 13).

MIDDLE PLEISTOCENE (Andalgalá formation). ARGENTINA: Prov. Catamarca: Andalgalá.

Subfamily †PROPHORORHACINAE Brodkorb<sup>1</sup>

*Hermosiornidae* [sic] Rovereto, 1914 (Jan. 22), An. Mus. nac. Buenos Aires, vol. 25, sig. 7, p. 110; sig. 11 (Jan. 29), p. 163 (type *Hermosiornis* Rovereto, a junior synonym of *Prophororhacus* Rovereto).—*Hermosiorniidae* [sic] L. Kraglievich, 1932, An. Mus. Hist. nat. Montevideo, ser. 2, vol. 3, pp. 332, 349 (emendation).—*Hermosiornithidae* Wetmore, 1934 (Apr. 23), Smithsonian Misc. Coll., vol. 89, no. 13, p. 7 (emendation).—*Hermosiornithinae* Patterson and J. L.

<sup>1</sup> New subfamily. Type *Prophororhacus* Rovereto. For characters and discussion see Patterson and J. L. Kraglievich, 1960, pp. 17 ff.

Kraglievich, 1960, Publ. Mus. municipal de Ciencias nat. y trad. Mar del Plata, vol. 1, no. 1, p. 17 (subfamilia).

### Genus †*Prophororhacus* Rovereto

*Prophororhacus* Rovereto, 1914 (Jan. 26), An. Mus. nac. Buenos Aires, vol. 25, sig. 8, p. 114 (type *Prophororhacus incertus* Rovereto).

*Hermosiornis* Rovereto, 1914 (Jan. 29), op. cit., vol. 25, sig. 11, p. 163 (type by original designation *Mesembriornis milne-edwardsi* Moreno and Mercerat).

#### 13. *Prophororhacus incertus* Rovereto

*Prophororhacus incertus* Rovereto, 1914 (Jan. 26), An. Mus. nac. Buenos Aires, vol. 25, sig. 8, p. 114, pl. 10, fig. 2 (type from Catamarca, dorsal vertebra, fragmentary coracoid, right humerus, right ulna, fragmentary right radius, distal portion of right tarsometatarsus, phalanx 1 and 3 of digit II, and phalanx 1 of digit IV, Buenos Aires Mus. no. 6934).

LOWER PLIOCENE (Andalgalá or Corral Quemado formation). ARGENTINA: Prov. Catamarca: probably Valle de Santa María.

#### 14. *Prophororhacus australis* (Moreno and Mercerat)

*Palaeociconia australis* Moreno, 1889, Breve reseña de los progresos del Museo de La Plata durante el segundo semestre de 1888, p. 30 (nomen nudum).—Moreno and Mercerat, 1891 (May-Aug. 5), An. Mus. La Plata, Pal. argentina, vol. 1, pp. 19, 36, pl. 2, fig. 3 (type from Monte Hermoso, distal part of left tarsometatarsus, La Plata Mus. no. 87).

*Mesembriornis milne-edwardsi* Moreno, 1889, Breve reseña de los progresos del Museo de La Plata durante el segundo semestre de 1888, p. 30 (nomen nudum).—Moreno and Mercerat, 1891 (May-Aug. 5), An. Mus. La Plata, Pal. argentina, vol. 1, pp. 22, 51, pl. 13, figs. 1-6; pl. 16, fig. 3 (types from Monte Hermoso, cervical vertebra, proximal parts of right tibiotarsus and fibula, La Plata Mus. nos. 140-142).

*Dryornis pampeanus* Moreno and Mercerat, 1891 (May-Aug. 5), op. cit., vol. 1, pp. 24, 59, pl. 16, fig. 2 only (femur only, not lectotype).

UPPER PLIOCENE (Monte Hermoso formation). ARGENTINA: Prov. Buenos Aires: Monte Hermoso.

#### 15. *Prophororhacus rapax* (L. J. Kraglievich)

*Mesembriornis rapax* L. J. Kraglievich, 1946, An. Soc. cient. argentina, vol. 142, pt. 3, p. 108, figs. 2-9 (type from Arroyo Lobería, incomplete skeleton, consisting of skull, mandible, left humerus, ulna, radius, left and distal part of right femur, right tibiotarsus, right and left fibula, right [not left as stated] tarsometatarsus without middle and inner trochleae, unguis, Mus. Mar del Plata no. S-155).

LOWER PLEISTOCENE (Chapadmalal formation). ARGENTINA: Prov. Buenos Aires: near mouth of Arroyo Lobería.

## Subfamily CARIAMINAE Bonaparte

*Dicholophidae* Kaup, 1850, fide Gray, 1871 (type *Dicholophus* Illiger, 1811, a junior synonym of *Cariama* Brisson, 1760).

*Cariamidae* Bonaparte, 1853, C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646 (type *Cariama* Brisson).—*Cariaminae* Bonaparte, 1853, loc. cit. (subfamilia).

No extinct fossil species.

Neospecies of Cariaminae from Pleistocene and \*prehistoric sites:

1. *Cariama cristata* (Linnaeus). BRAZIL: Lapa da Lagoa do Sumidouro (O. Winge, 1887, E Museo Lundii, vol. 1, no. 2, p. 31). ARGENTINA: \*Llajta-Maüca, \*Las Represas; and \*Bislin, all in Santiago del Estero (L. Kraglievich and Rusconi, 1931, Physis, vol. 10, no. 36, p. 240).

2. *Chunga burmeisteri* (Hartlaub). ARGENTINA: \*Llajta-Maüca, \*Las Represas, \*Las Marias, and \*Blanco Pozo, all in Santiago del Estero (L. Kraglievich and Rusconi, 1931, Physis, vol. 10, no. 36, p. 240).

## Suborder OTIDES Wagler

*Otides* Wagler, 1830, Natürliches System der Amphibien mit vorangehender Classification der Säugethiere und Vögel, pp. 80, 82 (ordo; type *Otis* Linnaeus).

## Family OTIDIDAE (Gray)

*Otinae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, p. 64 (subfamily; type *Otis* Linnaeus).—*Otididae* Selys, 1842, fide Gray (family).—*Otidinae* Gray, 1845 (Feb.), Genera of Birds, vol. 3, p. 532 (subfamily).—*Otididae* Bonaparte, 1853, C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646 (familia).—*Otidiae* Bonaparte, 1854, Ann. Sci. nat., vol. 1, p. 44 (familia).

*Lissotinae* Verheyen, 1957 (May), Bull. Inst. roy. Sci. nat. Belgique, vol. 33, no. 21, pp. 40-41 (sous-famille; type *Lissotis* Reichenbach).

*Neotinae* Verheyen, 1957 (May), Bull. Inst. roy. Sci. nat. Belgique, vol. 33, no. 21, pp. 40-41 (sous-famille; type *Neotis* Sharpe).

Genus †*Palaeotis* Lambrecht

*Palaeotis* Lambrecht, 1928, Jahrb. Halleschen Verband f. d. Erforsch. d. mitteldeutsch. Bodenschätze, new ser., vol. 7, p. 20 (type by monotypy *Palaeotis weigelti* Lambrecht).

1. *Palaeotis weigelti* Lambrecht

*Palaeotis weigelti* Lambrecht, 1928, Jahrb. Halleschen Verband f. d. Erforsch. d. mitteldeutsch. Bodenschätze, n. s., vol. 7, pp. 20, 24, text-fig. 6; pl. 1, figs. 1-10 (type from Grube Cecilie, distal part of left tarsometatarsus with phalanx 1 of digit II, Geol. Universitätsinstitut Halle a.S.).

MIDDLE EOCENE (Braunkohle des Geiseltales). GERMANY: Saxony: Kreis Meseburg: Grube Cecilie near Mücheln in Geisel Valley.

### Genus *Chlamydotis* Lesson

*Chlamydotis* Lesson, 1839, Rev. Zool., p. 47 (type by monotypy *Otis houbara* Desfontaines, 1787, a junior synonym of *Psophia undulata* Jacquin, 1784).

#### 2. *Chlamydotis affinis* (Lydekker)

*Otis affinis* Lydekker, 1891 (Apr. 25), Cat. Fossil Birds British Mus., p. 168 (type from Schnaitheim, postcranial skeleton, Brit. Mus. no. 36745).

MIDDLE MIOCENE (Burdigalian). GERMANY: Bavaria: Schnaitheim bei Heidenheim. The locality should perhaps be Steinheim and the horizon in that case upper Miocene (see von Ammon, 1918, Abh. Naturw. Ver. Regensburg, vol. 12, p. 55; Lambrecht, 1933, Handb. Palaeorn., p. 528).

### Genus *Otis* Linnaeus

*Otis* Linnaeus, 1758, Syst. Nat., ed. 10, vol. 1, p. 154 (type *Otis tarda* Linnaeus, designated by Gray, 1840).

#### 3. *Otis lambrechtii* Kretzoi

*Otis lambrechtii* Kretzoi, 1941, Földtani Közlöny, vol. 71, nos. 7-12, pp. 253 [Magyar], 325 [German] (type from Betfia, tarsometatarsus; very brief description).

LOWER PLEISTOCENE (Biharian fauna). RUMANIA: Transylvania: Betfia (=Püspökfürdő-5).

### Neospecies of Otididae from Pleistocene sites:

1. *Tetrax tetrax* (Linnaeus). MALTA: Bengehisa Gap; Ghar-Dalam Cave (Lambrecht, 1933, Handb. Paleorn., p. 762). ITALY: Grotta Romanelli; Grotta dei Colombi (Lambrecht, 1933). GERMANY: Seveckenberg bei Quedlinburg (*Otis brevipes* Giebel, 1847, Fauna der Vorwelt, vol. 1, pt. 2, p. 26; type distal end of tarsometatarsus). CZECHOSLOVAKIA: Balcarova skala? (Capek, 1910, Ber. V. Internat. Orn. Kongr. Berlin, p. 938). HUNGARY: Subalyuk Cave (Jánossy, 1962, Aquila, vol. 67-68, p. 179). AZERBAIJAN: Biñagady (Serebrovsky, 1948, Trudy Estest.-Istor. Muz. Akad. Nauk Azerbaidzhan SSR, pts. 1-2, p. 42, fig. 33).

2. *Otis tarda* Linnaeus. ENGLAND: Norfolk? (Lambrecht, 1933, Handb. Palaeorn., p. 762). MALTA: Ghar-Dalam Cave (Lambrecht, 1933). ITALY: Grotta Romanelli; Grotta dei Colombi (Lambrecht, 1933). CZECHOSLOVAKIA: Holubic (Lambrecht, 1933). GERMANY: Westregeln near Magdeburg (Lambrecht, 1933). AZERBAIJAN: Binagady (Serebrovsky, 1948, Trudy Estest.-Istor. Muz. Akad. Nauk Azerbaidzhan SSR, pts. 1-2, p. 42, fig. 32).

Family †GRYZAJIDAE Brodkorb<sup>1</sup>Genus †*Gryzaja* Zubareva

*Gryzaja* Zubareva, 1939 (June 13), Doklady Akad. Nauk SSSR, vol 23, no. 6, p. 607 (type by monotypy *Gryzaja odessana* Zubareva).

4. *Gryzaja odessana* Zubareva

*Gryzaja odessana* Zubareva, 1939 (June 13), Doklady Akad. Nauk SSSR, vol. 23, no. 6, p. 607, fig. (types from Odessa, distal half of right and left tibiotarsus, Ukrainian Acad. Sci. nos. 6617, 6618).—Zubareva, 1948, Trudy Institutu Zoologii, Akad. Nauk Ukrainskoi RSR, vol. 1, p. 125, figs. 7-9 (types and additional material).—Voinštevensky, 1959, Doklady Akad. Nauk Ukrain. SSR, vol. 2, p. 198, figs. 1-6 (revision).

*Chlamydotis pliodeserti* Serebrovsky, 1941, Doklady Akad. Nauk SSSR, vol. 33, nos. 7-8, p. 474 (type from Odessa, coracoid).—Voinštevensky, 1959, Doklady Akad. Nauk Ukrain. SSSR, vol. 2, p. 198 (referred to *Gryzaja odessana* Zubareva).

LOWER PLIOCENE (Meotian stage karst caverns). UKRAINE: Odessa.

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<sup>1</sup> New family. Type *Gryzaja* Zubareva. Differs from Otidae in having tibiotarsus stout and relatively short; proximal end with inner cnemial crest recurved and reduced, little elevated above articular surface, without prominent anterior and proximal extension of Otidae; shaft wide transversely, in antero-posterior direction greatly expanded through most of its length (differing from all other birds) and narrowing rapidly above condyles; condyles and intercondylar area widened transversely; internal condyle short and rounded in antero-posterior direction, without distal notch.

Order †**ICHTHYORNITHIFORMES** (Marsh)

- Odontornithes* Marsh, 1873 (Jan. 21), Amer. Jour. Sci., ser. 3, vol. 5, no. 26, p. 161 (subclass; not based on generic name).  
*Ichthyornithes* Marsh, 1873 (Jan. 21), op. cit., p. 162 (order; type *Ichthyornis* Marsh).—*Ichthyornithides* Gill, 1874, in Baird, Brewer, and Ridgway, Hist. N. Amer. Birds, vol. 1, p. xiii (order).—*Ichthyornithiformes* Fürbringer, 1888, Untersuch. Morph. Syst. Vögel, vol. 2, pp. 1542, 1566 (subordo).  
*Odontotormae* Marsh, 1875, Amer. Nat., vol. 9, no. 12, p. 630 (new name for *Ichthyornithes* Marsh, said to be preoccupied; not based on generic name).—*Odontormae* Steinmann and Döderlein, 1890, Elemente der Paläontologie, p. 673.—*Odontormae* Lydekker, 1891, Cat. Fossil Birds Brit. Mus., p. 200.—*Odontotornae* Forbes, 1884, Ibis, ser. 5, vol. 2, no. 5, p. 119 (order).  
*Pteropappi* Stejneger, 1885, Standard Natural History, vol. 4, p. 23 (order; not based on generic name).

Family †**ICHTHYORNITHIDAE** (Marsh)

- Ichthyornidae* Marsh, 1873 (Jan.), Amer. Jour. Sci., ser. 3, vol. 5, no. 25, p. 74 (type *Ichthyornis* Marsh).—*Ichthyornidae* Marsh, 1873 (Feb. = Jan. 21), op. cit., ser. 3, vol. 5, no. 26, p. 161.—*Ichthyornidae* Marsh, 1875 (Dec.), Amer. Nat., vol. 9, no. 12, p. 630 note.—*Ichthyornithidae* Fürbringer, 1888, Untersuch. Morph. Syst. Vögel, vol. 2, pp. 1141, 1422, 1542, 1566.

Genus †**Ichthyornis** Marsh

- Ichthyornis* Marsh, 1872 (Oct.), Amer. Jour. Sci., ser. 3, vol. 4, no. 22, p. 344 (type by monotypy *Ichthyornis dispar* Marsh).—*Ichthyornis* Menzbier, 1887, Vergleichende Osteologie der Pinguine in Anwendung zur Haupteintheilung der Vögel, p. 55 ff (lapsus).  
 [?] *Colonosaurus* Marsh, 1872 (Nov.), Amer. Jour. Sci., ser. 3, vol. 4, no. 23, p. 406 (type by monotypy *Colonosaurus mudgei* Marsh).

1. *Ichthyornis anceps* (Marsh)

- Graculavus anceps* Marsh, 1872 (May), Amer. Jour. Sci., ser. 3, vol. 3, no. 17, p. 364 (type from North Fork, distal portion of left carpometacarpus, Yale Peabody Mus. no. 1208).

UPPER CRETACEOUS (Smoky Hill chalk, Niobrara formation). KANSAS: Logan County: North Fork of Smoky Hill River 12 miles E of Wallace (collected by Marsh, November, 1870).

2. *Ichthyornis dispar* Marsh

- Ichthyornis dispar* Marsh, 1872 (Oct.), Amer. Jour. Sci., ser. 3, vol. 4, no. 22, p. 344 (type from near Solomon R., incomplete postcranial skeleton, Yale Peabody Mus. no. 1450).—*Ichthyornis dispar* Marsh, 1873 (Jan. 21), op. cit., vol. 5, no. 26, p. 161 (jaws described as *Colonosaurus mudgei* now referred to *I. dispar*).—Gregory, 1952, Condor, vol. 54, no. 2, p. 74, figs. 1-5 (jaws are neither avian nor proavian).



[?] *Colonosaurus mudgei* Marsh, 1872 (Nov.), Amer. Jour. Sci., ser. 3, vol. 4, no. 23, p. 406 (type two lower jaws, Yale Peabody Mus., collected by Prof. B. F. Mudge).

UPPER CRETACEOUS (Smoky Hill chalk, Niobrara formation). KANSAS: Rooks County: near Solomon River in sec. 1, Township 6, Range 19 (collected by Mudge, 1872).

### 3. *Ichthyornis agilis* (Marsh)

*Graculavus agilis* Marsh, 1873 (March), Amer. Jour. Sci., ser. 3, vol. 5, no. 27, p. 230 (type from Butte Creek, proximal portion of left carpometacarpus, Yale Peabody Mus. no. 1209).

UPPER CRETACEOUS (Smoky Hill chalk, Niobrara formation). KANSAS: Logan County: Butte Creek, a tributary of Smoky Hill River (collected by Marsh, October, 1872).

### 4. *Ichthyornis victor* Marsh

*Ichthyornis victor* Marsh, 1876 (June), Amer. Jour. Sci., ser. 3, vol. 11, no. 54, p. 511 (type from Wallace Co., humerus, coracoid, scapula, Yale Peabody Mus. no. 1452).—Gregory, 1952, Condor, vol. 54, no. 2, p. 74 (jaw YPM 1735 not avian).

UPPER CRETACEOUS (Smoky Hill chalk, Niobrara formation). KANSAS: Wallace County (type collected by H. A. Brous, May 1876). Gove County: Hackberry Creek near Smoky Hill River (YPM 1733, Marsh, 1880, Odontornithes, p. 199). Graham County (Yale Peabody Museum).

### 5. *Ichthyornis validus* Marsh

*Ichthyornis validus* Marsh, 1880 (advance copy noticed in Amer. Jour. Sci., ser. 3, vol. 20, no. 115, July 1880), Odontornithes, pp. 147, 153, 198, pl. 30, figs. 11-14 (type from near Solomon River, ulna and radius, Yale Peabody Mus. no. 1740).

UPPER CRETACEOUS (Smoky Hill chalk, Niobrara formation). KANSAS: Graham County: near Solomon River (type collected by S. W. Williston, September, 1877).

### 6. *Ichthyornis tener* Marsh

*Ichthyornis tener* Marsh, 1880 (July or earlier), Odontornithes, pp. 151, 198, pl. 30, fig. 8 (type from Wallace Co., distal portion of humerus, Yale Peabody Mus. no. 1760).

UPPER CRETACEOUS (Smoky Hill chalk). KANSAS: Wallace County (collected by E. W. Guild, 1879).

7. *Ichthyornis lentus* (Marsh)

*Graculavus lentus* Marsh, 1877 (Sept.), Amer. Jour. Sci., ser. 3, vol. 14, no. 131, p. 253 (type from near McKinney, distal part of left tarsometatarsus, Yale Peabody Mus. no. 1796).—*Ichthyornis lentus* Marsh, 1880, Odontornithes, p. 198.

UPPER CRETACEOUS (Austin chalk). TEXAS: Colling County: near McKinney.

## Family †APATORNITHIDAE Fürbringer

*Apatornithidae* Fürbringer, 1888, Untersuch. Morph. Syst. Vögel, vol. 2, pp. 1141, 1542, 1566 (type *Apatornis* Marsh).

Genus †*Apatornis* Marsh

*Apatornis* Marsh, 1873 (Feb. = Jan. 21), Amer. Jour. Sci., ser. 3, vol. 5, no. 26, p. 162 (type by original designation *Ichthyornis celer* Marsh).

1. *Apatornis celer* (Marsh)

*Ichthyornis celer* Marsh, 1873 (Jan.), Amer. Jour. Sci., ser. 3, vol. 5, no. 25, p. 74 (very brief description; type from Smoky Hill River, sacrum, Yale Peabody Mus. no. 1451).—*Apatornis celer* Marsh, 1873 (Feb. = Jan. 21), op. cit., ser. 3, vol. 5, no. 26, p. 162 (brief description).—*Apatornis celer* Marsh, 1880, Odontornithes, pp. 147-148, 152, 156, 159, 163-164, 173-174, 192, pl. 28-33 (monograph).

UPPER CRETACEOUS (Smoky Hill chalk, Niobrara formation). KANSAS: Logan County: Butte Creek, near Smoky Hill River.

2. *Apatornis retusus* (Marsh)

*Cimolopteryx retusus* Marsh, 1892 (Aug.), Amer. Jour. Sci., ser. 3, vol. 44, no. 260, p. 175 (type from "Converse" County, upper fragment of left coracoid without head, Yale Peabody Mus. no. 513).—*Apatornis retusus* Brodkorb, 1963 (Jan. 7, 1964?), Proc. XIII Internat. Ornith. Congress, p. 69 (type restudied).

UPPER CRETACEOUS (Lance formation). WYOMING: Niobrara [formerly part of Converse] County: Lance Creek.

## Order CHARADRIIFORMES (Huxley)

- Charadriomorphae* Huxley, 1867, Proc. Zool. Soc. London, p. 347 ("group;" type *Charadrius* Linnaeus).—*Charadriiformes* Garrod, 1874, Proc. Zool. Soc. London, pp. 117-122 (order).—*Charadrii* Fürbringer, 1888, Untersuch. Morph. Syst. Vögel, vol. 2, p. 1566 (gens = suborder).
- Parrae* Fürbringer, 1888, Untersuch. Morph. Syst. Vogel, vol. 2, p. 1566 (gens [= suborder]; type *Parra* Linnaeus, 1766, a junior synonym of *Jacana* Brisson, 1760).—*Parrae* Sharpe, 1891, Review of Recent Attempts to Classify Birds, p. 73 (suborder).
- Dromades* Sharpe, 1891, Review of Recent Attempts to Classify Birds, p. 72 (suborder; type *Dromas* Paykull).
- Chionides* Sharpe, 1891, op. cit., p. 72 (suborder; type *Chionis* Forster).
- Attagides* Sharpe, 1891, op. cit., p. 72 (suborder; type *Attagis* St. Hilaire and Lesson).
- Glareolae* Sharpe, 1891, op. cit., p. 73 (suborder; type *Glareola* Brisson).
- Cursorii* Sharpe, 1891, op. cit., p. 73 (suborder; type *Cursorius* Latham).
- Oedicnemi* Sharpe, 1891, op. cit., p. 73 (suborder; type *Oedicnemus* Temminck, 1815, a junior synonym of *Burhinus* Illiger, 1811).
- Lariformes* Sharpe, 1891, op. cit., p. 72 (order; type *Larus* Linnaeus).—*Lari* Sharpe, 1891, op. cit., p. 72.
- Alcae* Sharpe, 1891, op. cit., p. 72 (suborder; type *Alca* Linnaeus).—*Alciformes* Sharpe, 1891, op. cit., p. 72 (order).
- Cepphi* American Ornithologists' Union, 1910, Check-list of North American Birds, ed. 3, p. 24 (type *Cephus* Pallas).
- Jacaniformes* Verheyen, 1957 (Oct.), Bull. Inst. roy. Sci. Nat. Belgique, vol. 33, no. 48, pp. 1, 16 (order; type *Jacana* Brisson).—*Jacanae* Stresemann, 1959 (July 9), Auk, vol. 76, no. 3, p. 278 (order).
- Thinocori* Stresemann, 1959 (July 9), Auk, vol. 76, no. 3, p. 278 (order; type *Thinocorus* Eschscholtz).

## Suborder CHARADRII (Huxley)

- Charadriomorphae* Huxley, 1867, Proc. Zool. Soc. London, p. 457 ("group;" type *Charadrius* Linnaeus).—*Charadriomorphae* Huxley, 1872, Manual of the Anatomy of Vertebrated Animals, p. 234 (order).—*Charadriiformes* Garrod, 1874, Proc. Zool. Soc. London, pp. 117-122 (order).—*Charadrii* Fürbringer, 1888, Untersuch. Morph. Syst. Vogel, vol. 2, p. 1566 (gens [= suborder]).
- Parrae* Fürbringer, 1888, Untersuch. Morph. Syst. Vogel, vol. 2, p. 1566 (gens;=suborder, type *Parra* Linnaeus, 1766, a junior synonym of *Jacana* Brisson, 1760).—*Parrae* Sharpe, 1891, Review of Recent Attempts to Classify Birds, p. 73 (suborder).
- Dromades* Sharpe, 1891, Review of Recent Attempts to Classify Birds, p. 72 (suborder; type *Dromas* Paykull).
- Chionides* Sharpe, 1891, op. cit., p. 72 (suborder; type *Chionis* Forster).

- Attagides* Sharpe, 1891, op. cit., p. 72 (suborder; type *Attagis* St. Hilaire and Lesson).
- Glareolae* Sharpe, 1891, op. cit., p. 73 (suborder; type *Glareola* Brisson).
- Cursorii* Sharpe, 1891, op. cit., p. 73 (suborder; type *Cursorius* Latham).
- Oedicnemi* Sharpe, 1891, op. cit., p. 73 (suborder; type *Oedicnemus* Temminck, 1815, a junior synonym of *Burhinus* Illiger, 1811).
- Jacaniiformes* Verheyen, 1957 (Oct.), Bull. Inst. roy. Sci. Nat. Belgique, vol. 33, no. 48, pp. 1, 16 (order; type *Jacana* Brisson).—*Jacanae* Stresemann, 1959 (July 9), Auk, vol. 76, no. 3, p. 278 (order).
- Thinocori* Stresemann, 1959 (July 9), Auk, vol. 76, no. 3, p. 278 (order; type *Thinocorus* Eschscholtz).

### Family †CIMOLOPTERYGIDAE Brodkorb

- Cimolopterygidae* Brodkorb, 1963 (Jan. 7, 1964?),<sup>1</sup> Proc. XIII Internat. Ornith. Congress Ithaca, p. 64 (type *Cimolopteryx* Marsh).

### Genus †*Cimolopteryx* Marsh

- Cimolopteryx* Marsh, 1889 (July), Amer. Jour. Sci., ser. 3, vol. 38, no. 223, p. 83 footnote (nomen nudum).—Marsh, 1892 (Aug.), Amer. Jour. Sci., ser. 3, vol. 44, no. 260, p. 175 (type *Cimolopteryx rarus* Marsh, designated by Hay, 1902, Bull. U.S. Geol. Surv., no. 179, p. 537).
- Timolopteryx* Ogilvie-Grant, 1912, General Index to Hand-list of Genera and Species of Birds, pp. 153, 154, 184 (misreading of *Cimolopteryx*, printed in antique type in Sharpe).

### 1. *Cimolopteryx rara* Marsh

- Cimolopteryx rarus* Marsh, 1889 (July), Amer. Jour. Sci., ser. 3, vol. 38, no. 223, p. 83 footnote (nomen nudum).—Marsh, 1892 (Aug.), Amer. Jour. Sci., ser. 3, vol. 44, no. 260, p. 175, pl. 3, fig. 2 (type from "Converse" County, left coracoid, lacking head and hyposternal process, Yale Peabody Mus. no. 1805).—*Cimolopteryx rara* Brodkorb, 1963 (1964?), Proc. XIII Internat. Ornith. Congress Ithaca, p. 64, figs. 4-6 (type restudied).

UPPER CRETACEOUS (Lance formation). WYOMING: Niobrara [formerly part of Converse] County: Lance Creek, locality V-5620.

<sup>1</sup> Both volumes of the Proceedings bear the date 1963, but it is highly improbable that they were published before January 1964. As late as December 23, 1963, the binder in St. Louis assured editor J. J. Hickey that mailing would begin on December 30, with the first copy going to the Card Catalog Division of the Library of Congress, but neither printer nor binder have confirmed that this actually took place. There is no record of the date of receipt at the Library of Congress, where both volumes cleared the Monthly Checklist of State Publications Section on January 30, 1964, and "probably arrived sometime earlier in January" (Mary Ellis Kahler, Chief, Serial Record Division, letter of February 20, 1964). Copies of both volumes were delivered in Gainesville on January 10 and 11, post-marked from St. Louis on January 7.

2. *Cimolopteryx minima* Brodkorb

*Cimolopteryx minima* Brodkorb, 1963 (Jan. 7, 1964?), Proc. XIII Internat. Ornith. Congress Ithaca, p. 67, fig. 7 (type from locality V-5003 Lance Creek, upper two-thirds of right coracoid, Univ. Calif. Mus. Paleo. no. 53976).

UPPER CRETACEOUS (Lance formation). WYOMING: Niobrara County: Lance Creek, locality V-5003.

3. *Cimolopteryx maxima* Brodkorb

*Cimolopteryx maxima* Brodkorb, 1963 (Jan. 7, 1964?), Proc. XIII Internat. Ornith. Congress Ithaca, p. 66, figs. 8-9 (type from locality V-5711, Lance Creek, upper portion of left coracoid, Univ. Calif. Mus. Paleo. no. 53973).

UPPER CRETACEOUS (Lance formation). WYOMING: Niobrara County: Lance Creek, localities V-5711 and V-5620.

Genus †*Ceramornis* Brodkorb

*Ceramornis* Brodkorb, 1963 (Jan. 7, 1964?), Proc. XIII Internat. Ornith. Congress Ithaca, p. 69 (type by original designation *Ceramornis major* Brodkorb).

4. *Ceramornis major* Brodkorb

*Ceramornis major* Brodkorb, 1963 (Jan. 7, 1964?), Proc. XIII Internat. Ornith. Congress Ithaca, p. 69, fig. 10 (type from locality V-5620, Lance Creek, upper portion of right coracoid, Univ. Calif. Mus. Paleo. no. 53959).

UPPER CRETACEOUS (Lance formation). WYOMING: Niobrara County: Lance Creek, locality V-5620.

## Family SCOLOPACIDAE Vigors

*Scolopacidae* Vigors, 1825 (Jan. or later, see p. 465), Trans. Linn. Soc. London, vol. 14, pp. 488-489, 491 (family; type *Scolopax* Linnaeus).—*Scolopidae* [sic] Bonaparte, 1838, Geogr. and Comp. List of Birds of Europe and North America, p. 49 (family).—*Scolopacinae* Bonaparte, 1838, op. cit., p. 52 (subfamily).—*Scolopacoideae* Stejneger, 1885, Standard Natural History, vol. 4, pp. 91, 49 (superfamily).—*Scolopacoidea* Hay, 1902, Bull. U. S. Geol. Surv., no. 179, p. 526 (superfamily).

*Charadriidae* Vigors, 1825 (Jan. or later), Trans. Linn. Soc. London, vol. 14, pp. 488-489, 494-495 (family; type *Charadrius* Linnaeus).—*Charadriidae* Bonaparte 1831, Saggio di una distribuzione metodica degli animali vertebrati, p. 56 (familia).—*Charadrianae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, p. 65 (subfamily).—*Charadinae* G. R. Gray, 1847 (March), Genera of Birds, vol. 3, p. 542 (subfamily).—*Charadriidae* Bonaparte, 1854, Ann. Sci. nat., vol. 1, p. 44 of reprint (family).—*Charadriidae* Bonaparte, op. cit., p. 44 of reprint (series).—*Charadrii* Ridgway, 1919 (June 26), Bull. U. S. Nat. Mus.,

- no. 50, pt. 8, p. 4 (superfamily).—*Charadriides* Wetmore and W. D. Miller, 1926 (July 3), Auk, vol. 43, no. 3, p. 343 (superfamily).—*Charadrioidae* Hay, 1930 (Jan. 27), Carnegie Instn. Washington Publ., no. 390, vol. 2, p. 335 (superfamily).—*Charadriodea* American Ornithologists' Union, 1931 (Oct. 1), Check-list of North American Birds, ed. 4, p. 101 (superfamily).
- Phalaropodinae* Bonaparte, 1831, Saggio di una distribuzione metodica degli animali vertebrati, p. 59 (subfamily; type *Phalaropus* Brisson).—*Phalaropodidae* Bonaparte, 1831, op. cit., p. 59 (family).—*Phalaropinae* Mayr and Amadon, 1951 (Apr. 2), Amer. Mus. Novitates, no. 1496, p. 34.
- Haematopinae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, p. 65 (subfamily; type *Haematopus* Linnaeus).—*Haematopodinae* Gray, 1841, List of Genera of Birds, ed. 2, p. 85 (subfamily).—*Haematopidae* Selys, 1842, Faune Belge, p. 278 (family).—*Haematopodidae* Carus, 1868, Handbuch der Zoologie, vol. 1, p. 337.
- Totantinae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, ed. 1, p. 68 (subfamily; type *Totanus* Ray, i.e. Bechstein).—*Totaneae* Bonaparte, 1854, Ann. Sci. nat., vol. 1, p. 45 of reprint.
- Numeninae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, ed. 1, p. 68 (subfamily; type *Numenius* Ray [= Brisson]).—*Numeniae* Ridgway, 1919 (June 26), Bull. U.S. Nat. Mus., no. 50, p. 149.
- Tringinae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, ed. 1, p. 69 (subfamily; type *Tringa* Linnaeus).—*Tringaeae* Bonaparte, 1854, Am. Sci. Nat., vol. 1, 45 of reprint.
- Strepsilinae* G. R. Gray, 1849 (before Apr.) List of Genera of Birds, ed. 1, p. 70 (subfamily; type *Strepsilas* Illiger, 1811, a junior synonym of *Arenaria* Brisson, 1760).—*Strepsilasinae* Selater and Salvin, 1873, Nomenclator avium neotropicalium, p. 143.—*Strepsilidae* Ridgway, 1880 (Sept. 4), Proc. U.S. Nat. Mus., vol. 1, p. 239 (family).—*Strepsilanae* Coues, Key to North American Birds, ed. 2, p. 608 (subfamily).
- Cinclinae* G. R. Gray, 1841, List of Genera of Birds, ed. 2, p. 85 (type *Cinclus* Moehring, 1752, pre-Linnaean; *Cinclus* Gray, 1841, a junior synonym of *Arenaria* Brisson, 1760, is preoccupied by *Cinclus* Borkhausen, 1797, and by *Cinclus* Bechstein, 1802).
- Limosinae* G. R. Gray, 1841, List of Genera of Birds, ed. 2, (subfamily; type *Limosa* Brisson).—*Limoseae* Bonaparte, 1854, Ann. Sci. nat., vol. 1, p. 45 of reprint.
- Calidrinae* Reichenbach, 1849, Avium systema naturale, fide Gray, 1871 (type *Calidris* Merrem).
- Heteropodinae* Reichenbach, 1849, fide Gray, 1871 (type *Heteropoda* Nuttall, 1834, a junior synonym of *Ereunetes* Illiger, 1811).
- Lobipodinae* Reichenbach, 1849, fide Gray, 1871 (type *Lobipes* Cuvier).
- Vanellinae* Blyth, 1849, Catalogue of Birds in the Museum Asiatic Society, (subfamily; type *Vanellus* Brisson).—*Vanelleae* Bonaparte, 1854, Ann. Sci. nat., vol. 1, p. 44 of reprint (series).
- Prosoboniinae* Bonaparte, 1854, Ann. Sci. nat., vol. 1, p. 45 of reprint (type *Prosobonia* Bonaparte).
- Aphrizidae* Coues, 1884, Key to North American Birds, ed. 2, p. 605 (family; type *Aphriza* Audubon).—*Aphrizinae* Coues, 1884, op. cit., p. 605 (subfamily).
- Anarhynchidae* Baird, Brewer, and Ridgway, 1884, Water birds of North America, vol. 1, p. 108 (type *Anarhynchus* Quoy and Gaimard).

- Arenariinae* Stejneger, 1885, Standard Natural History, vol. 4, p. 99 (subfamily; type *Arenaria* Brisson).—*Arenaridae* Shufeldt, 1888 (Nov.), Jour. Morphology, vol. 2, no. 2, p. 338 (family).—*Arenariidae* Oberholser, 1905, Outline of classification of North American birds, p. 2 (family).
- Lobivanellinae* Sharpe, 1896, Cat. Birds British Mus., vol. 24, pp. x, 90, 122 (subfamily; type *Lobivanellus* Gray).
- Morinellidae* Mathews, 1913 (Apr.), Birds of Australia, vol. 3, pt. 1, p. 4 (family; type *Morinella* Meyer, 1815, a junior synonym of *Arenaris* Brisson, 1760).
- Eroliinae* Lowe, 1915, Ibis, ser. 10, vol. 3, no. 3, p. 609 (subfamily; type *Erolia* Vieillot).—*Eroliae* Ridgway, 1919 (June 26), Bull. U. S. Nat. Mus., no. 50, pt. 8, p. 147.

### Subfamily †PALAEOTRINGINAE Wetmore

- Palaeotringinae* Wetmore, 1940 (June 18), Smithsonian Misc. Coll., vol. 99, no. 4, p. 57 (subfamily; type *Palaeotringa* Marsh).

### Genus †*Palaeotringa* Marsh

- Palaeotringa* Marsh, 1870 (Marsh), Amer. Jour. Sci., ser. 2, vol. 49, no. 146, p. 208 (type by original designation *Palaeotringa littoralis* Marsh).

#### 1. *Palaeotringa littoralis* Marsh

- Palaeotringa littoralis* Marsh, 1870 (March), Amer. Jour. Sci., ser. 2, vol. 49, no. 146, p. 208 (type from Hornerstown, distal portion of left tibiotarsus, Yale Peabody Museum no. 830).

UPPER CRETACEOUS (Navesink formation, middle Maestrichtian).  
NEW JERSEY: Monmouth County: Hornerstown (marl pit of Nicholas Waln).

#### 2. *Palaeotringa vagans* Marsh

- Palaeotringa vagans* Marsh, 1872 (May), Amer. Jour. Sci., ser. 3, vol. 3, no. 17, p. 365 (type from Hornerstown, distal portion of left tibiotarsus, Yale Peabody Mus. no. 835).

UPPER CRETACEOUS (Navesink formation). NEW JERSEY: Monmouth County: Hornerstown.

#### 3. *Palaeotringa vetus* Marsh

- Palaeotringa vetus* Marsh, 1870 (March), Amer. Jour. Sci., ser. 2, vol. 49, no. 146, p. 209 (type from Arneytown, distal portion of left tibiotarsus, Acad. Nat. Sci. Philadelphia).

UPPER CRETACEOUS (Navesink formation). NEW JERSEY: Burlington County: Arneytown.

4. *Palaeotringa bella* (Marsh)

*Aletornis bellus* Marsh, 1872 (Oct.), Amer. Jour. Sci., ser. 3, vol. 4, no. 22, p. 258 (type from Grizzly Buttes, distal portion of left tarsometatarsus, Yale Peabody Mus. no. 60).

MIDDLE EOCENE (Blacks Fork member, Bridger formation). WYOMING: Uinta County: Grizzly Buttes. Position uncertain.

5. *Palaeotringa gracilis* (Marsh)

*Aletornis gracilis* Marsh, 1872 (Oct.), Amer. Jour. Sci., ser. 3, vol. 4, no. 22, p. 258 (type from Henry's Fork, proximal end of left humerus, Yale Peabody Mus. no. 61).

MIDDLE EOCENE (Bridger formation). WYOMING: County: Henry's Fork.

## Subfamily ROSTRATULINAE Ridgway

*Rostratulinae* Ridgway, 1919 (June 26), Bull. U.S. Nat. Mus., no. 50, pt. 8, p. 145 note (subfamily; type *Rostratula Vieillot*).—*Rostratulidae* Lowe, 1931, Ibis, pp. 503, 507-531.

Genus †*Rhynchaeites* Wittich

*Rhynchaeites* Wittich, 1899, Abhandl. Grossherzogl.—hess. geol. Landesanst., vol. 3, no. 3, p. 103 (type *Rhynchaeites messelensis* Wittich).

6. *Rhynchaeites messelensis* Wittich

*Rhynchaeites messelensis* Wittich, 1899, Abhandl. Grossherzogl.—hess. geol. Landesanst., vol. 3, no. 3, p. 103, pl. 2, figs. 1-17 (type from Messel, skeleton impression).

MIDDLE EOCENE (Messele Braunkohle). GERMANY: Hesse: Messel, near Darmstadt.

## Subfamily SCOLOPACINAE (Vigors)

*Scolopacidae* Vigors, 1825, Trans. Linn. Soc. London, vol. 14, pp. 488, 489, 491 (family; type *Scolopax* Linnaeus).—*Scolopacinae* Bonaparte, 1838, Geog. and Comparative List of Birds of Europe and North America, p. 52.

*Totantinae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, ed. 1, p. 68 (subfamily; type *Totanus* Ray, i.e. Bechstein).—*Totanae* Bonaparte, 1854, Ann. Sci. nat., vol. 1, p. 45 of reprint.

*Numeninae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, ed. 1, p. 68. (subfamily; type *Numenius* Ray = Brisson).—*Numeniae* Ridgway, 1919 (June 26), Bull. U.S. Nat. Mus., no. 50, p. 149.



- Tringinae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, ed. 1, p. 69 subfamily; type *Tringa* Linnaeus).—*Tringae* Bonaparte, 1854, Ann. Sci. nat., vol. 1, p. 45 of reprint.
- Limosinae* G. R. Gray, 1841, List of Genera of Birds, ed. 2, p. 000 (subfamily; type *Limosa* Brisson).—*Limoseae* Bonaparte, 1854, Ann. Sci. nat., vol. 1, p. 45 of reprint.
- Calidrinae* Reichenbach, 1849, Avium systema naturale, fide Gray, 1871 (type *Calidris* Merrem).
- Heteropodinae* Reichenbach, 1849, fide Gray, 1871 (type *Heteropoda* Nuttall, 1834, a junior synonym of *Ereunetes* Illiger, 1811).
- Prosoboniinae* Bonaparte, 1854, Ann. Sci. nat., vol. 1, p. 45 of reprint (type *Prosobonia* Bonaparte).
- Erolinae* Lowe, 1915, Ibis, sér. 10, vol. 3, no. 3, p. 609 (subfamily; type *Erolia* Vieillot).—*Eroliae* Ridgway, 1919 (June 26), Bull. U.S. Nat. Mus., no. 50, pt. 8, p. 147.

### Genus *Limosa* Brisson

- Limosa* Brisson, 1760, Orn., vol. 1, p. 48; vol. 5, p. 261 (type *Scolopax limosa* Linnaeus, Recent).

#### 7. *Limosa gypсорum* (Gervais)

- Numenius gypсорum* Gervais, 1844, Remarques sur les oiseaux fossiles, p. 39 (type from Montmartre, skeleton impression, Paris Mus.).
- Tantalus fossilis* Giebel, 1847, Fauna der Vorwelt, vol. 1, pt. 2, p. 28 (same type).

UPPER EOCENE (gypse de Montmartre). FRANCE: Montmartre in Paris. Generic position very doubtful.

#### 8. *Limosa vanrossemi* L. Miller

- Limosa vanrossemi* L. Miller, 1925 (August), Carnegie Inst. Washington Publ., no. 349, p. 116, pl. 6 (type from Lompoc, postcranial skeleton impression, Univ. Calif. Mus. Paleo. no. 26545).

MIDDLE MIOCENE (Monterey diatomaceous shale). CALIFORNIA: Santa Barbara County: Lompoc.

#### 9. *Limosa ossivallis* Brodkorb<sup>1</sup>

- Limosa* sp. Brodkorb, 1955, Florida Geol. Surv. Rept. Invest., no. 14, p. 24, figs. 22-23 (type from near Brewster, distal portion of right tibiotarsus, Brodkorb coll. no. 526).

LOWER PLIOCENE (Bone Valley gravel). FLORIDA: Polk County: near Brewster.

<sup>1</sup> New name.

Genus *Totanus* Bechstein

*Totanus* Bechstein, 1803, Orn. Taschenbuch Deutschland, vol. 2, p. 282 (type *Scolopax totanus* Linnaeus, Recent).

10. *Totanus edwardsi* Gaillard

*Totanus edwardsi* Gaillard, 1908, Ann. Univ. Lyon, n.s., vol. 1, fasc. 23, p. 128, fig. 37 (type from Mouillac, distal half of right humerus, Munich Mus. no. 124).

UPPER EOCENE OR LOWER OLIGOCENE (phosphorites du Quercy). FRANCE: Dept. Tarn-et-Garonne: Mouillac.

11. *Totanus lartetianus* Milne-Edwards

*Totanus lartetianus* Milne-Edwards, 1863, C. R. Acad. Sci. Paris, vol. 56, p. 1221 (practically a nomen nudum)—Milne-Edwards, 1868, Ois. Foss. France, vol. 1, sheet 51, p. 402, pl. 63, figs. 1022 (type from Langy, tarsometatarsus, tibiotalrus, coracoid, humerus, ulna, carpometacarpus, Paris Mus.).

LOWER MIOCENE (Aquitanian). FRANCE: Dept. Allier: Langy; Montaigut; Saint-Gérard-le-Puy.

12. *Totanus praecursor* Laube

*Totanus praecursor* Laube, 1901, Abhandl. Naturw. Mediz. Ver. Lotos, vol. 2, p. 172, fig. 14 (type from Preschen impression of pelvis, in coll. P. Manel, Dresden).

LOWER MIOCENE (Tone von Preschen). CZECHOSLOVAKIA: Preschen.

13. *Totanus majori* Lydekker

*Totanus majori* Lydekker, 1893, Proc. Zool. Soc. London, p. 521, pl. 41, fig. 14 (type from Grive-St.-Alban, humerus, Brit. Mus.).

UPPER MIDDLE MIOCENE (Tortonian). FRANCE: Dept. Isère: La Grive-Saint-Alban.

14. *Totanus grivensis* Ennouchi

*Totanus grivensis* Ennouchi, 1930, Contr. Étude Faune Tortonien Grive-St.-Alban, p. 92, pl. 2, fig. 1-8 (type from Grive-St.-Alban, proximal part of right and distal part of left humeri, Mus. Lyon).

UPPER MIDDLE MIOCENE (Tortonian). FRANCE: Dept. Isère: La Grive-Saint-Alban.

15. *Totanus scarabellii* Portis

*Totanus scarabellii* Portis, 1888, Mem. R. Acad. Sci. Torino, ser. 2, vol. 38, p. 181, pl. 1, fig. 1 (type from Senigallia, fragmentary tibiotarsus, tarsometatarsus, phalanges).

LOWER PLIOCENE (Messinian). ITALY: Prov. Marche: Senigallia, north of Ancona.

16. *Totanus numenioides* Serebrovsky

*Totanus numenioides* Serebrovsky, 1941, Doklady Akad. Sci. U.R.S.S., vol. 33, nos. 7-8, p. 476 (type from Odessa).

LOWER PLIOCENE (Meotian). UKRAINE: Odessa.

Genus †*Paractitis* Weigel

*Paractitis* Weigel, 1963 (Dec. 5), Quart. Jour. Florida Acad. Sci., vol. 26, no. 3, p. 259 (type by original designation *Paractitis bardi* Weigel).

17. *Paractitis bardi* Weigel

*Paractitis bardi* Weigel, 1963 (Dec. 5), Quart. Jour. Florida Acad. Sci., vol. 26, no. 3, p. 260, pl. 1, figs. *b-c* (type from Calf Creek, lower end of left coracoid, Saskatchewan Mus. Nat. Hist., no. 1412).

LOWER OLIGOCENE (Cypress Hills formation). SASKATCHEWAN: north branch of Calf Creek, 10 miles. NW of Eastend, in legal subdivision 4, section 8, Township 8, Range 22, west of 3rd meridian.

Genus †*Elorius* Milne-Edwards

*Elorius* Milne-Edwards, 1868, Ois. Foss. France, vol. 1, sheet 51, p. 407 (type by monotypy *Elorius paludicola* Milne-Edwards).

18. *Elorius paludicola* Milne-Edwards

*Elorius paludicola* Milne-Edwards, 1868, Ois. Foss. France, vol. 1, sheet 51, p. 407, pl. 63, fig. 31 (types from Saint-Gérand-le-Puy, tarsometatarsus, coracoid, humerus, Paris Mus.).

LOWER MIOCENE (Aquitanian). FRANCE: Dept. Allier: Saint-Gérand-le-Puy; Langy.

Genus *Numenius* Brisson

*Numenius* Brisson, 1760, Orn., vol. 1, p. 48; vol. 5, p. 311 (type *Scolopax arquata* Linnaeus, Récent).

19. *Numenius antiquus* Milne-Edwards

*Numenius antiquus* Milne-Edwards, 1868, Ois. Foss. France, vol. 1, sheet 52, p. 415, pl. 64, fig. 27-31 (type from Sansan, upper and lower ends of tarsometatarsus, coll. Lartet).

MIDDLE MIOCENE (Helvetian). FRANCE: Dept. Gers: Sansan.

Genus *Bartramia* Lesson

*Bartramia* Lesson, 1831, Traité d'Orn., livr. 7, p. 553 (type *Tringa longicauda* Bechstein, Recent).

20. *Bartramia umatilla* Brodkorb

*Bartramia umatilla* Brodkorb, 1958, Condor, vol. 60, no. 4, p. 254, fig. 1 (type from McKay reservoir, right carpometacarpus, Univ. Oregon Mus. no. F-3727).

MIDDLE PLIOCENE (McKay reservoir deposits). OREGON: Umatilla County: east bank of McKay reservoir.

Genus †*Palnumenius* L. Miller

*Palnumenius* L. Miller, 1942 (March 6), Univ. Calif. Publ. Zool., vol. 47, no. 3, p. 45 (type by original designation *Palnumenius victima* L. Miller).

21. *Palnumenius victima* L. Miller

*Palnumenius victima* L. Miller, 1942 (March 6), Univ. California Publ. Zool., vol. 47, no. 3, p. 45, fig. 1b (type from San Josecito Cave, tarsometatarsus, Calif. Inst. Tech. No. 2944).

UPPER PLEISTOCENE (San Josecito Cave local fauna, Wisconsin age). MEXICO: NUEVO LEÓN: San Josecito Cave, Aramberri.

Genus *Erolia* Vieillot

*Erolia* Vieillot, 1816, Analyse, p. 55 (type *Scolopax testacea* Pallas, Recent).

22. *Erolia gracilis* (Milne-Edwards)

*Tringa gracilis* Milne-Edwards, 1867, Ois. Foss. France, vol. 1, pl. 58, fig. 2; 1868, vol. 1, sheet 52, p. 411, pl. 64, figs. 1-24 (types from Langy, tarsometatarsus, tibiotarsus, humerus, ulna, Paris Mus.; type from Weisenau, distal end of humerus, coll. J. Desnoyers).

LOWER MIOCENE (Aquitanian: Hydrobienschichten). FRANCE: Dept. Allier: Langy; Labeur, near Vaumas; Peublanc; Saint-Gérand-le-Puy. GERMANY: Hesse: Weisenau.

23. *Erolia ennouchii* Brodkorb<sup>1</sup>

*Totanus minor* Ennouchi, 1930, Contr. Étude Faune Tortonien Grive-St.-Alban, p. 94, pl. 2, figs. 9-12 (type from Grive-St.-Alban, 5 humeri, Mus. Lyon). Pre-occupied in *Erolia* by *Tringa cinclus minor* Schlegel, 1844, a synonym of *Erolia alpina* (Linnaeus, 1758).

UPPER MIDDLE MIOCENE (Tortonian). FRANCE: Dept. Isère: Grive-Saint-Alban.

24. *Erolia penepusilla* Brodkorb

*Erolia penepusilla* Brodkorb, 1955 (Nov. 30), Florida Geol. Surv. Rept. Invest., no. 14, p. 23, fig. 21 (type from near Brewster, distal portion of left humerus, Brodkorb no. 611).

LOWER PLIOCENE (Bone Valley gravel). FLORIDA: Polk County: near Brewster.

Genus *Ereunetes* Illiger

*Ereunetes* Illiger, 1811, Prodrromus systematis mammalium et avium, p. 262 (type by monotypy *Ereunetes petrificatus* Illiger, new name for *Tringa pusilla* Linnaeus).

25. *Ereunetes rayi* Brodkorb

*Ereunetes rayi* Brodkorb, 1963 (Feb. 8), Florida Geol. Surv., Spec. Publ., no. 2, paper 4, p. 4, pl. 2, figs. A-B (type from McGhee farm, left coracoid, Univ. Florida no. 32978).

LOWER PLIOCENE (Alachua clay). FLORIDA: Alachua County: C. C. McGehee farm, in SW ¼ of section 15, Township 9 S, Range 17 E, 3.6 miles north of Newberry.

Genus *Calidris* Merrem

*Calidris* Merrem, 1804, Allg. Lit. Zeitung, vol. 2, no. 168, col. 542 (type by tautonomy *Tringa canutus* Linnaeus, Recent).

26. *Calidris pacis* Brodkorb

*Calidris pacis* Brodkorb, 1955 (Nov. 30), Florida Geol. Surv. Rept. Invest., no. 14, p. 22, fig. 19-20 (type from near Brewster, proximal portion of left humerus, Brodkorb coll. no. 594).

LOWER PLIOCENE (Bone Valley gravel). FLORIDA: Polk County: near Brewster.

<sup>1</sup> New name.

Genus *Micropalama* Baird

*Micropalama* Baird, 1859, Rept. Expl. Surv. R. R. Pac., vol. 9, pp. xxii, xlvii, 714, 726 (type *Tringa himantopus* Bonaparte, Recent).

27. *Micropalama hesternus* Wetmore

*Micropalama hesternus* Wetmore, 1924 (Jan. 15), Proc. U.S. Nat. Mus., vol. 64, art. 5, no. 2495, p. 11, fig. 6-7 (type from near Benson, proximal portion of right humerus, U.S. Nat. Mus. no. 10550).

UPPER PLIOCENE (Benson beds of San Pedro Valley formation). ARIZONA: Cochise County: 2 miles south of Benson.

Genus *Philomachus* Merrem

*Philomanhus* Merrem, 1804, Allg. Lit. Zeitung, vol. 2, no. 168, col. 542 (type *Tringa pugnax* Linnaeus, Recent).

28. *Philomachus binagadensis* (Serebrovsky)

*Machetes* (*Tringa*?) *binagadensis* Serebrovsky, 1940, Doklady Acad. Sci. U.R.S.S., vol. 27, no. 7, p. 767 (type from Binagady).

LOWER PLEISTOCENE (Kirov beds). AZERBAIJAN: Binagady near Baku.

Genus *Capella* Frenzel

*Capella* Frenzel, 1801, Besch. Vögel u. Eyer Wittenberg, p. 58 (type *Scolopax gallinago* Linnaeus, Recent).

29. *Capella anthonyi* (Wetmore)

*Gallinago anthonyi* Wetmore, 1920 (Dec. 30), Proc. Biol. Soc. Washington, vol. 33, p. 78 (type from Cueva Cathedral, right humerus, Amer. Mus. Nat. Hist. no. 4022).

QUATERNARY (cave deposit). PUERTO RICO: Cueva Cathedral near Morovis; Cueva Clara.

Genus *Coenocorypha* Gray

*Coenocorypha* G. R. Gray, 1855, Cat. Gen. Subgen. Birds, p. 119 (type *Gallinago aucklandicus* Gray, Recent).

30. *Coenocorypha chathamica* (Forbes)

*Gallinago chathamica* Forbes, 1893, Ibis, ser. 6, vol. 5, p. 545 (type from Chatham Islands, skull).

QUATERNARY. CHATHAM ISLANDS: Wharekauri.

## Subfamily APHRIZINAE Coues

- Strepsilinae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, ed. 1, p. 70 (subfamily; type *Strepsilas* Illiger, 1811, a junior synonym of *Arenaria* Brisson, 1760).—*Strepsilasinae* Sclater and Salvin, 1873, Nomenclator avium neotropicalium, p. 143.—*Strepsilidae* Ridgway, 1880 (Sept. 4), Proc. U.S. Nat. Mus., vol. 1, p. 239 (family).—*Strepsilaninae* Coues, Key to North American Birds, ed. 2, p. 608 (subfamily).
- Cinclinae* G. R. Gray, 1841, List of Genera of Birds, ed. 2, p. 85 (type *Cinclus* Moehring, 1752, pre-Linnaean; *Cinclus* Gray, 1841, a junior synonym of *Arenaria* Brisson, 1760, is preoccupied by *Cinclus* Borkhausen, 1797, and by *Cinclus* Bechstein, 1802).
- Aphrizidae* Coues, 1884, Key to North American Birds, ed. 2, p. 605 (family; type *Aphriza* Audubon).—*Aphrizinae* Coues, 1884, op. cit., p. 605 (subfamily).
- Arenarinae* Stejneger, 1885, Standard Natural History, vol. 4, p. 99 (subfamily; type *Arenaria* Brisson).—*Arenaridae* Shufeldt, 1888 (Nov.), Jour. Morphology, vol. 2, no. 2, p. 338 (family).—*Arenariidae* Oberholser, 1905, Outline of Classification of North American Birds, p. 2 (family).
- Morinellidae* Mathews, 1913 (Apr.), Birds of Australia, vol. 3, pt. 1, p. 4 (family; type *Morinella* Meyer, 1815, a junior synonym of *Arenaria* Brisson, 1760).

## Subfamily CHARADRIINAE (Vigors)

- Charadriidae* Vigors, 1825, Trans. Linn. Soc. London, vol. 14, pp. 488-489, 494-495 (family; type *Charadrius* Linnaeus).—*Charadriidae* Bonaparte, 1831, Saggio, p. 56 (familia).—*Charadrianae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, p. 65 (subfamily).—*Charadriinae* G. R. Gray, 1847 (March), Genera of Birds, vol. 3, p. 542 (subfamily).—*Charadriinae* Stejneger, 1885, Standard Nat. Hist., vol. 4, p. 99.
- Vanellinae* Blyth, 1849, Catalogue of Birds in the Museum Asiatic Society, fide Gray (subfamily; type *Vanellus* Brisson).
- Anarhynchidae* Baird, Brewer, and Ridgway, 1884, Water Birds of North America, vol. 1, p. 108 (type *Anarhynchus* Quoy and Gaimard).
- Lobivanellinae* Sharpe, 1896, Cat. Birds British Mus., vol. 24, p. x, 90, 122 (subfamily; type *Lobivanellus* Gray).

Genus †*Dolicopterus* Aymard

- Dolicopterus* Aymard, 1856, Congrès scientifique de France, vol. 1, pp. 234, 267 (type *Dolicopterus viator* Aymard).—*Dolicopterus* Lydekker, 1891 (Apr. 25), Cat. Fossil Birds British Mus., p. 175 (emendation). Position uncertain.
- Camaskelus* Aymard, 1856, Congrès scientifique de France, vol. 1, pp. 233, 267 (type *Camaskelus palustris* Aymard).

31. *Dolicopterus viator* Aymard

- Dolicopterus viator* Aymard, 1856, Congrès scientifique de France, vol. 1, pp. 234, 267 (types from Ronzon, coracoid, radius, carpometacarpus, vertebrae).
- Camaskelus palustris* Aymard, 1856, Congrès scientifique de France, vol. 1, pp. 233, 267 (type from Ronzon, tarsometatarsus).

LOWER OLIGOCENE (Sannoisian). FRANCE: Dept. Haute-Loire: Ronzon.

Genus *Charadrius* Linnaeus

*Charadrius* Linnaeus, 1758, Syst. Nat., ed. 10, vol. 1, p. 150 (type *Charadrius hiaticula* Linnaeus, Recent).

32. *Charadrius sheppardianus* Cope

*Charadrius sheppardianus* Cope, 1881 (Feb. 11), Bull. Geol. Geogr. Surv. Terr., vol. 6, no. 1, p. 83 (type from Florissant, synsacrum, 9 caudals, femur, tibiotarsus, tarsometatarsus, feather impression).

MIDDLE OLIGOCENE (Florissant lake beds). COLORADO: Teller County: Florissant.

Genus †*Limicolavis* Shufeldt

*Limicolavis* Shufeldt, 1915 (Feb.), Trans. Connecticut Acad. Arts Sci., vol. 19, p. 55 (type by monotypy *Limicolavis pluvianella* Shufeldt). Position uncertain.

33. *Limicolavis pluvianella* Shufeldt

*Limicolavis pluvianella* Shufeldt, 1915 (Feb.), Trans. Connecticut Acad. Arts Sci., vol. 19, p. 55, pl. 15, fig. 129 (type from lower Willow Creek, distal part of right tibiotarsus, Yale Peabody Mus. no. 957).

LOWER MIOCENE (John Day formation). OREGON: Malheur County: lower Willow Creek.

Genus *Vanellus* Brisson

*Vanellus* Brisson, 1760, Orn., vol. 1, p. 48; vol. 5, p. 94 (type *Tringa vanellus* Linnaeus).

34. *Vanellus selysii* Van Beneden

*Vanellus selysii* Van Beneden, 1872, Bull. Acad. Roy. Belgique, ser. 2, vol. 32, no. 11, p. 259, fig. 2 (type from Rupelmonde, distal end of right humerus).

MIDDLE OLIGOCENE (Rupelian sand). BELGIUM: East Flanders: mouth of River Rupel.

Genus †*Dorypaltus* Brodkorb

*Dorypaltus* Brodkorb, 1959 (May 22), Bull. Florida State Mus., vol. 4, no. 9, p. 281 (type by original designation *Dorypaltus proosphatus* Brodkorb).



35. *Dorypaltus prospatus* Brodkorb

*Dorypaltus prospatus* Brodkorb, 1959 (May 22), Bull. Florida State Mus., vol. 4, no. 9, p. 281, fig. 9 (type from Pit 2, Arredondo, distal portion of left humerus, Brodkorb, coll. no. 1712).

MIDDLE PLEISTOCENE (Arredondo clay). FLORIDA: Alachua County: Arredondo (Brodkorb, 1959); Haile (Ligon, 1966, Bull. Florida State Mus., vol. 10, no. 4, p. 144).

## Subfamily PHALAROPODINAE Bonaparte

*Phalaropodinae* Bonaparte, 1831, Saggio di una distribuzione metodica degli animali vertebrati, p. 59 (subfamily; type *Phalaropus* Brisson).—*Phalaropodidae* Bonaparte, 1831, op. cit., p. 59, (family).—*Phalaropinae* Mayr and Amadon, 1951 (Apr. 2), Amer. Mus. Novitates, no. 1496, p. 34.

*Lobipodinae* Reichenbach, 1849, fide Gray, 1871 (type *Lobipes* Cuvier).

No extinct fossil species.

## Subfamily HAEMATOPODINAE Gray

*Haematopinae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, p. 65 (subfamily; type by monotypy *Haematopus* Linnaeus).—*Haematopodinae* Gray, 1841, List of Genera of Birds, ed. 2, p. 85 (subfamily).—*Haematopidae* Bonaparte, 1854, Ann. Sci. nat., vol. 1, p. 45 of reprint.

Genus †*Paractiornis* Wetmore

*Paractiornis* Wetmore, 1930 (May 15), Condor, vol. 32, no. 3, p. 153 (type by original designation *Paractiornis perpusillus* Wetmore).

36. *Paractiornis perpusillus* Wetmore

*Paractiornis perpusillus* Wetmore, 1930 (May 15), Condor, vol. 32, no. 3, p. 153, figs. 54-56 (type from Carnegie Hill, left tarsometatarsus, Mus. Comp. Zool. no. 2191).

LOWER MIOCENE ("Harrison Beds" of Arikaree formation). NEBRASKA: Sioux County: Carnegie Hill near Agate.

Genus †*Palostralegus* Brodkorb

*Palostralegus* Brodkorb, 1955 (Nov. 30), Florida Geol. Surv. Rept. Invest. no. 14, p. 19 (type by original designation *Palostralegus sulcatus* Brodkorb).

37. *Palostralegus sulcatus* Brodkorb

*Palostralegus sulcatus* Brodkorb, 1955 (Nov. 30), Florida Geol. Surv. Rept. Invest., no. 14, p. 20, fig. 18 (type from near Brewster, distal portion of right tibiotarsus, Brodkorb no. 177).

LOWER PLIOCENE (Bone Valley gravel). FLORIDA: Polk County: near Brewster.

Neospecies of Scolopacidae from Pleistocene and \*prehistoric sites:

Subfamily SCOLOPACINAE:

1. *Limosa limosa* (Linnaeus). CZECHOSLOVAKIA: Certova díra (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, p. 941). HUNGARY: Pálffy cave (Lambrecht, 1913, Aquila, vol. 20, p. 426); Puskaporos (Lambrecht, 1916, Barlangkutatás, vol. 4, p. 205). RUMANIA: Püspökfürdő = Betfia (Capek, 1917, Barlangkutatás, vol. 5, p. 67). AZERBAIJAN: Binagady (Serebrovsky, 1941, Doklady Akad. Nauk U.S.S.R., vol. 33, p. 473).
2. *Limosa lapponica* (Linnaeus). AZERBAIJAN: Binagady (Serebrovsky, 1941, Doklady Akad. Nauk U.S.S.R., vol. 33, p. 473).
3. *Limosa fedoa* (Linnaeus). CALIFORNIA: Rancho La Brea<sup>P</sup> (Howard, 1936, Condor, vol. 38, p. 35); San Pedro<sup>P</sup> (Howard, 1949, Condor, vol. 51, p. 22). ILLINOIS: \*Steuben site (Parmalee, 1958, Auk, vol. 75, p. 172).
4. *Totanus erythropus* (Pallas). CZECHOSLOVAKIA: Balcarova skála and Certova díra (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, pp. 938, 940). HUNGARY: Pálffy cave (Lambrecht, 1913, Aquila, vol. 20, p. 426). AZERBAIJAN: Binagady<sup>P</sup> (Serebrovsky, 1941, Doklady Akad. Nauk U.S.S.R., vol. 33, p. 473).
5. *Totanus totanus* (Linnaeus). IRELAND: Kesh Cave and Edenvale Cave (Lambrecht, 1933, Handb. Palaeorn., p. 763). CORSICA: Grotta di Funtanedu (E. T. Newton, 1921, Proc. Zool. Soc. London, p. 231). CZECHOSLOVAKIA: Certova díra (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, p. 940); Sipka (Lambrecht, 1933). HUNGARY: Otto Herman cave (Lambrecht, 1916, Aquila, vol. 22, p. 189); Ó-Ruzsin (Lambrecht, 1933). AZERBAIJAN: Binagady (Burchak-Abramovich, 1962, Ornitologiya, vol. 4, p. 462).
6. *Totanus flavipes* (Gmelin). FLORIDA: Reddick (Brodkorb, 1957, Jour. Paleont., vol. 31, p. 135).
7. *Totanus melanoleucus* (Gmelin). OREGON: Fossil Lake Howard, 1946, Carnegie Instn. Washington Publ., no. 551, p. 183). CALIFORNIA: McKittrick (L. Miller, 1925, Univ. Calif. Publ. geol. Sci., vol. 15, p. 321); Rancho La Brea (Howard, 1936, Condor, vol. 38, p. 35). FLORIDA: Arredondo (Brodkorb, 1959, Bull. Florida State Mus., vol. 4, p. 282); Haile (Ligon, 1966; Bull. Florida State Mus., vol. 10, p. 147).
8. *Totanus stagnatilis* Bechstein. AZERBAIJAN: Binagady<sup>P</sup> (Serebrovsky, 1941, Doklady Akad. Nauk U.S.S.R., vol. 33, p. 473).
9. *Totanus nebularius* (Gunnerus). ITALY: Grotta dei Colombi<sup>P</sup> (Lambrecht, 1933, Handb. Palaeorn., p. 764). CZECHOSLOVAKIA: Sipka and Certova díra (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, p. 940). AZERBAIJAN: Binagady (Serebrovsky, 1941, Doklady Akad. Nauk U.S.S.R., vol. 33, p. 473).

10. *Tringa ochropus* Linnaeus. ENGLAND: Merlin's Cave (Lambrecht, 1933, Handb. Palaeorn., p. 764). ITALY: Grotta dei Colombi? (Lambrecht, 1933). CZECHOSLOVAKIA: Balcarova skála, Ludmirau, Sipka, and Certova díra (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, pp. 938-940). AZERBAIJAN: Binagady (Burchak-Abramovich, 1962, Ornitologiya, vol. 4, p. 462).

11. *Tringa solitaria* Wilson. FLORIDA: Arredondo (Brodkorb, 1959, Bull. Florida State Mus., vol. 4, p. 282). BRAZIL: Lapa da Escrivania (O. Winge, 1887, E Museo Lundii, vol. 1, no. 2, p. 28).

12. *Tringa glareola* Linnaeus. AZERBAIJAN: Binagady (Serebrovsky, 1948, Trudi Estest.-Istor. Muz. Akad. Nauk Azerbaidzhan S.S.R., pts. 1-2, p. 39, fig. 23).

13. *Xenus cinereus* (Güldenstaedt). AZERBAIJAN: Binagady (Serebrovsky, 1941, Doklady Akad. Nauk U.S.S.R., vol. 33, p. 473).

14. *Bartramia longicauda* (Bechstein). KANSAS: Jones Sink and Kentuck (Downs, 1954, Condor, vol. 56, p. 211, fig. 1). VIRGINIA: Natural Chimneys (Wetmore, 1962, Smithsonian misc. Coll., vol. 145, no. 2, p. 10).

15. *Numenius borealis* (J. R. Forster). KANSAS: Kentuck (Galbreath, 1955, Wilson Bull. vol. 67, p. 62).

16. *Numenius phaeopus* (Linnaeus). ENGLAND: Clevedon Cave and Chudleigh Cave (Lambrecht, 1933, Handb. Palaeorn., p. 765). ITALY: Buca del Bersagliere? and Grotta Romanelli (Lambrecht, 1933). CZECHOSLOVAKIA: Holubic (Lambrecht, 1933). HUNGARY: Balla cave? (Lambrecht, 1912, Aquila, vol. 19, p. 283); Pilisszántó? (Lambrecht, 1915, Mitt. Jahrb. ungar. geol. Anstalt, vol. 23, p. 480); Puskaporos? (Lambrecht, 1916, Barlangkutató, vol. 4, p. 205); Pálffy cave (Lambrecht, 1933). AZERBAIJAN: Binagady (Serebrovsky, 1941, Doklady Akad. Nauk U.S.S.R., vol. 33, p. 473). CALIFORNIA: Rancho La Brea (Compton, 1934, Condor, vol. 36, p. 221). ILLINOIS: \*Modoc (Parmalee, 1956, Illinois State Mus., Rept. Invest., no. 4, p. 53); \*McDonough Lake (Parmalee, 1958, Auk, vol. 75, p. 173). Includes *Numenius hudsonicus* Latham.

17. *Numenius tenuirostris* Vieillot. ITALY: Grotta Romanelli (Lambrecht, 1933, Handb. Palaeorn., p. 765). AZERBAIJAN: Binagady (Serebrovsky, 1941, Doklady Akad. Nauk U.S.S.R., vol. 33, p. 473).

18. *Numenius arquata* (Linnaeus). ENGLAND: \*Mount Caburn (Lambrecht, 1933, Handb. Palaeorn., p. 765). CZECHOSLOVAKIA: Holubic (Lambrecht, 1933). HUNGARY: Tata (Lambrecht, 1916, Aquila, vol. 22, p. 194); Subalyuk cave (Jánossy, 1962, Aquila, vol. 67-68, p. 180). AZERBAIJAN: Binagady (Serebrovsky, 1941, Doklady Akad. Nauk U.S.S.R., vol. 33, p. 473).

19. *Numenius americanus* Bechstein. OREGON: Fossil Lake? (Howard, 1946, Carnegie Instn. Washington Publ., no. 551, p. 183). CALIFORNIA: Rancho La Brea (Compton, 1934, Condor, vol. 36, p. 221); McKittrick (L. Miller, 1935, Condor, vol. 37, p. 78). NEW MEXICO: Howells Ridge cave (Howard, 1962, Condor, vol. 64, p. 242). IOWA: \*Mill Creek (Hamon, 1961, Plains Anthropologist, vol. 6, p. 211). ILLINOIS: \*Kingston (Baker, 1936, Trans. Illinois State Acad. Sci., vol. 29, p. 245); \*Cahokia (Parmalee, 1958, Auk, vol. 75, p. 173). FLORIDA: Haile (Ligon, 1966, Bull. Florida State Mus., vol. 10, p. 146).

20. *Actitis hypoleucos* (Linnaeus). ITALY: Caverna d'Equi (Lambrecht, 1933, Handb. Palaeorn., p. 764). POLAND: Wollin (Lambrecht, 1933). AZERBAIJAN: Binagady? (Serebrovsky, 1941, Doklady Akad. Nauk U.S.S.R., vol. 33, p. 473).
21. *Actitis macularia* (Linnaeus). FLORIDA: Haile (Ligon, 1966, Bull. Florida State Mus., vol. 10, p. 146).
22. *Catoptrophorus semipalmatus* (Gmelin). CALIFORNIA: Newport Bay (Howard, 1958, Condor, vol. 60, p. 136); Rancho La Brea (Howard, 1962, Los Angeles Co. Mus. Contr. Sci., no. 58, p. 22). NEVADA: Smith Creek Cave (Howard, 1; 52, Bull. So. Calif. Acad. Sci., vol. 51, pt. 2, p. 54). VIRGINIA: Natural Chimneys (Wetmore, 1962, Smithsonian misc. Coll., vol. 145, no. 2, p. 10). FLORIDA: \*Goodman site (E. Wing, 1963, Contr. Florida State Mus., no. 10, p. 56). PUERTO RICO: Barrio Canas (Wetmore, 1938, Auk, vol. 55, p. 54).
23. *Heteroscelus incanus* (Gmelin). ALASKA: \*St. Lawrence Island (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, p. 93).
24. *Erolia alpina* (Linnaeus). ENGLAND: \*Caerwent (Lambrecht, 1933, Handb. Palaeorn., p. 764). SWEDEN: Skateholm and Schonen (Lambrecht, 1933). HUNGARY: Pálffy cave (Lambrecht, 1913, Aquila, vol. 20, p. 428); Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. ungar. geol. Anstalt, vol. 23, p. 493). CALIFORNIA: McKittrick (L. Miller, 1925, Univ. Calif. Publ. Geol. Sci., vol. 15, p. 321); Rancho La Brea (Howard, 1962, Los Angeles Co. Mus. Contr. Sci., no. 58, p. 22).
25. *Erolia testacea* (Pallas). AZERBAIJAN: Binagady? (Serebrovsky, 1941, Doklady Akad. Nauk U.S.S.R., vol. 33, p. 473).
26. *Erolia melanotos* (Vieillot). KANSAS: Jones Sink? (Downs, 1954, Condor, vol. 56, p. 211, fig. 5a). BRAZIL: Lapa da Escrivania (O. Winge, 1887, E Museo Lundii, vol. 1, no. 2, p. 28).
27. *Erolia minutilla* (Vieillot). VIRGINIA: Natural Chimneys (Wetmore, 1962, Smithsonian misc. Coll., vol. 145, no. 2, p. 10).
28. *Ereunetes pusillus* (Linnaeus). BRAZIL: Lapa da Escrivania (O. Winge, 1887, E Museo Lundii, vol. 1, no. 2, p. 28).
29. *Calidris canutus* (Linnaeus). ENGLAND: Merlin's Cave and Chudleigh Cave (Lambrecht, 1933, Handb. Palaeorn., p. 763).
30. *Philomachus pugnax* (Linnaeus). DENMARK: Gudumland (H. Winge, 1903, Vidensk. Meddel. naturhist. Foren., vol. 6, p. 96). FINLAND: Ladogasee (Lambrecht, 1933, Handb. Palaeorn., p. 764). CZECHOSLOVAKIA: Certova díra and Balcarova skála (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, pp. 938, 940). HUNGARY: Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. ungar. geol. Anstalt, vol. 23, p. 480). AZERBAIJAN: Binagady (Serebrovsky, 1941, Doklady Akad. Nauk U.S.S.R., vol. 33, p. 473).
31. *Crocethia alba* (Pallas). CALIFORNIA: Rancho La Brea? (Howard, 1962, Los Angeles Co. Mus. Contr. Sci., no. 58, p. 22).
32. *Limnodromus griseus* (Gmelin). OREGON: Fossil Lake? (Howard, 1946, Carnegie Instn. Washington Publ., no. 551, p. 183). CALIFORNIA: McKittrick (L. Miller, 1925, Univ. Calif. Publ. Geol. Sci., vol. 15, p. 320); Rancho La Brea (A. H. Miller, 1929, Condor, vol. 31, p. 223). ILLINOIS: \*Kingston (Baker, 1936, Trans. Illinois State Acad. Sci., vol. 29, p. 245).

33. *Limnodromus scolopaceus* (Say). FLORIDA: Rock Spring (Woolfenden, 1959, Wilson Bull., vol. 71, p. 185); Haile? (Ligon, 1966, Bull. Florida State Mus., vol. 10, p. 147).

34. *Capella media* (Latham). MONACO: Grotte de Grimaldi (Lambrecht, 1933, Handb. Palaeorn., p. 764). ITALY: Grotta di Cucigliana (Lambrecht, 1933). HUNGARY: Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. ungar. geol. Anstalt; vol. 23, p. 479); Puskaporos (Lambrecht, 1916, Barlangkutató, vol. 4, p. 205).

35. *Capella gallinago* (Linnaeus). IRELAND: Edenvale Cave and Newhall Cave (Lambrecht, 1933, Handb. Palaeorn., p. 764). ENGLAND: Kirkdale Cave (Lydeker, 1891, Ibis, ser. 6, vol. 3, p. 393). ITALY: Grotta dei Colombi? (Lambrecht, 1933). GERMANY: Thiede bei Wolfenbuttel (Lambrecht, 1912, Aquila, vol. 19, p. 301). CZECHOSLOVAKIA: Sipka, Balcarova skála, and Certova díra (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, pp. 939-940); Holubic (Lambrecht, 1933). HUNGARY: Puskaporos (Kormos, 1911, Mitt. Jahrb. ungar. geol. Anst., vol. 19, p. 153); Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. ungar. geol. Anst., vol. 23, p. 479); Pálffy cave (Lambrecht, 1933). AZERBAIJAN: Binagady (Burchak-Abramovich, 1962, Ornitologiya, vol. 4, p. 462). CALIFORNIA: Rancho La Brea (Howard, 1936, Condor, vol. 38, p. 35). NEVADA: Smith Creek Cave (Howard, 1952, Bull. So. Calif. Acad. Sci., vol. 51, pt. 2, p. 54). TEXAS: Lubbock (Univ. Texas). PENNSYLVANIA: Port Kennedy cave (Mercer, 1899, Jour. Acad. Nat. Sci. Philadelphia, ser. 2, vol. 11, p. 280). FLORIDA: Reddick (Brodkorb, 1957, Jour. Paleont., vol. 31, p. 135); Haile (Ligon, 1966, Bull. Florida State Mus., vol. 10, p. 146). BAHAMAS: Great Exuma Island (Wetmore, 1937, Bull. Mus. Comp. Zool., vol. 80, p. 435). Includes *Capella delicata* (Ord).

36. *Capella paraguayae* (Vieillot). BRAZIL: Lapa da Escrivania and Lapa da Lagoa do Sumidouro (O. Winge, 1887, E Museo Lundii, vol. 1, pt. 2, pp. 13, 28).

37. *Lymnocyptes minimus* (Brünnich). ENGLAND: Chudleigh Cave (Lambrecht, 1933, Handb. Palaeorn., p. 765). CZECHOSLOVAKIA: Balcarova skála (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, p. 939).

38. *Scolopax rusticola* Linnaeus. IRELAND: Kesh Cave and Newhall Cave (Lambrecht, 1933, Handb. Palaeorn., p. 765). ENGLAND: Swaffham fen and \*Silchester (Lambrecht, 1933). MONACO: Grottes de Menton, Grotte de l'Observatoire, and Grotte de Grimaldi (Lambrecht, 1933). SARDINIA: Monte Santa cave (E. T. Newton, 1921, Proc. zool. Soc. London, p. 232). DENMARK: Oexnebjerg (H. Winge, 1903, Vidensk. Meddel. naturhist. Foren., vol. 6, p. 96). GERMANY: Hoeschs Höhle im Ailsbachtal (Lambrecht, 1912, Aquila, vol. 19, p. 305). POLAND: Wollin (Lambrecht, 1933). CZECHOSLOVAKIA: Balcarova skála, Sipka, and Certova díra (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, pp. 938, 940). HUNGARY: Pálffy cave (Lambrecht, 1913, Aquila, vol. 20, p. 428); Remetehegy (Lambrecht, 1914, Aquila, vol. 21, p. 91); Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. ungar. geol. Anst., vol. 23, p. 479, figs. 57-58); Puskaporos (Lambrecht, 1916, Barlangkutató, vol. 4, p. 205).

39. *Philohela minor* (Gmelin). ILLINOIS: \*Kingston (Baker, 1936, Trans. Illinois State Acad. Sci., vol. 29, p. 245). VIRGINIA: Natural Chimneys (Wetmore, 1962, Smithsonian misc. Coll., vol. 145, no. 2, p. 10). FLORIDA: Eichelberger Cave (Brodkorb, 1956, Auk, vol. 73, p. 136); Haile (Ligon, 1966, Bull. Florida State Mus., vol. 10, p. 146).

## Subfamily APHRIZINAE:

40. *Arenaria interpres* (Linnaeus). ENGLAND: Clevedon Cave (Lambrecht, 1933, Handb. Palaeorn., p. 764).

## Subfamily CHARADRIINAE:

41. *Squatarola squatarola* (Linnaeus). IRELAND: Kesh Cave (Lambrecht, 1933, Handb. Palaeorn., p. 763). ENGLAND: Merlin's Cave? and \*Silchester (Lambrecht, 1933). CZECHOSLOVAKIA: Certová díra (Capek, 1910, Ver. V. internat. ornith. Kongr. Berlin, p. 940). AZERBAIJAN: Binagady (Burchak-Abramovich, 1962, Ornitologiya, vol. 4, p. 462). CALIFORNIA: Rancho La Brea (Howard, 1936, Condor, vol. 38, p. 35).

42. *Pluvialis apricaria* (Linnaeus). IRELAND: Edenvale and Castlepook Cave (Lambrecht, 1933, Handb. Palaeorn., p. 763). ENGLAND: Clevedon Cave and \*Caerwent (Lambrecht, 1933). NORWAY: Sundtangen, Finsland (Lambrecht, 1933). DENMARK: \*Ulstrup Mark (H. Winge, 1903, Vidensk. Meddel. naturhist. Foren., vol. 6, p. 96). ITALY: Grotta Romanelli? (Lambrecht, 1933). CZECHOSLOVAKIA: Sipka and Certova díra (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, p. 940).

43. *Pluvialis dominica* (P. L. S. Muller). AZERBAIJAN: Binagady? (Serebrovsky, 1941, Doklady Akad. Nauk U.S.S.R., vol. 33, p. 473).

44. *Charadrius hiaticula* Linnaeus. SCOTLAND: Cnocsligeach, Oransay, and Ardrossan (Lambrecht, 1933, Handb. Palaeorn., p. 763). ENGLAND: Clevedon Cave (Lambrecht, 1933).

45. *Charadrius dubius* Scopoli. AZERBAIJAN: Binagady (Burchak-Abramovich, 1962, Ornitologiya, vol. 4, p. 462).

46. *Charadrius vociferus* Linnaeus. CALIFORNIA: McKittrick (L. Miller, 1925, Univ. Calif. Publ. Geol. Sci., vol. 15, p. 321); Rancho La Brea (A. H. Miller, 1929, Condor, vol. 31, p. 223); Vallecito Creek (Howard, 1963, Los Angeles Co. Mus. Contr. Sci., no. 73, p. 24). VIRGINIA: Natural Chimneys (Wetmore, 1962, Smithsonian misc. Coll., vol. 145, no. 2, p. 9). FLORIDA: Reddick (Brodkorb, 1957, Jour. Paleont., vol. 31, p. 135); Haile (Ligon, 1966, Bull. Florida State Mus., vol. 10, p. 145).

47. *Charadrius montanus* Townsend. CALIFORNIA: McKittrick (L. Miller, 1935, Condor, vol. 37, p. 78).

48. *Eudromias morinellus* (Linnaeus). CZECHOSLOVAKIA: Balcarova skála and Certova díra (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, pp. 938, 940); Holubic (Lambrecht, 1933, Handb. Palaeorn., p. 763). AZERBAIJAN: Binagady (Serebrovsky, 1941, Doklady Akad. Nauk U.S.S.R., vol. 33, p. 473).

49. *Vanellus vanellus* (Linnaeus). IRELAND: Bantick Cave, Edenvale Cave, and Newhall Cave (Lambrecht, 1933, Handb. Palaeorn., p. 763). ENGLAND: Merlin's Cave and Chudleigh Cave (Lambrecht, 1933). PORTUGAL: Grotte das Fontainhas (Lambrecht, 1933). GIBRALTAR: Forbes quarry (Lambrecht 1933). MONACO: Grotte de Grimaldi (Lambrecht, 1933). ITALY: Grotta Romanelli,

Grotta dei Colombi, and South Cosimato (Lambrecht, 1933). SWITZERLAND: Schweizersbild bei Schaffhausen? (Lambrecht, 1933). CZECHOSLOVAKIA: Balcarova skála, Ludmirau, Sipka, and Certova díra (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, pp. 938-940); Holubic (Lambrecht, 1933). POLAND: Wollin (Lambrecht, 1933). HUNGARY: Puskapóros (Kormos, 1911, Mitt. Jahrb. ungar. geol. Anst., vol. 19, p. 153); Pálffy cave (Lambrecht, 1913, Aquila, vol. 20, p. 427); Pilisszántó (Lambrecht, 1914, Mitt. Jahrb. ungar. geol. Anst., vol. 23, p. 492); \*Legény cave near Pilisszentlélek (Lambrecht, 1933). PALESTINE: Kebara cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, p. 117). AZERBAIJAN: Binagady (Serebrowsky, 1941, Doklady Akad. Nauk U.S.S.R., vol. 33, p. 473).

50. *Belonopterus chilensis* (Molina). BRAZIL: Lapa da Escrivania (O. Winge, 1887, E Museo Lundii, vol. 1, no. 2, p. 13). ARGENTINA: Luján (Ameghino, 1881, Rev. Argentina Hist. nat., vol. 1, p. 446).

51. *Lobibyx novaehollandiae* (Stephens). AUSTRALIA: Queensland? (Lambrecht, 1921, Fossilium catalogus, p. 51).

#### Subfamily PHALAROPODINAE:

52. *Phalaropus fulicarius* (Linnaeus). CALIFORNIA: Manix Lake? (Howard, 1955, U.S. Geol. Surv. Prof. Papers, no. 264-J, p. 204); Rancho La Brea? (Howard, 1962, Los Angeles Co. Mus. Contr. Sci., no. 58, p. 22). NEVADA: Smith Creek Cave? (Howard, 1952, Bull. So. Calif. Acad. Sci., vol. 51, pt. 2, p. 54).

53. *Lobipes lobatus* (Linnaeus). OREGON: Fossil Lake (Shufeldt, 1892, Jour. Acad. Nat. Sci. Philadelphia, vol. 9, p. 413).

#### Subfamily HAEMATOPODINAE:

54. *Haematopus bachmani* Audubon. ALASKA: \*Kodiak Island (Friedmann, 1937, Jour. Washington Acad. Sci., vol. 27, pt. 10, p. 433).

55. *Haematopus ostralegus* Linnaeus. SCOTLAND: Ardrossan (Lambrecht, 1933, Handb. Palaeorn., p. 762).

56. *Haematopus unicolor* Forster. CHATHAM ISLANDS: (Forbes, 1893, Ibis, ser. 6, vol. 5, no. 20, p. 545).

### Family RECURVIROSTRIDAE Bonaparte

*Recurvirostrinae* Bonaparte, 1831, Saggio di una distribuzione metodica degli animali vertebrati, p. 59 (subfamily; type *Recurvirostra* Linnaeus.—*Recurvirostridae* Bonaparte, 1854, Ann. Sci. nat., vol. 1, p. 45 of reprint.—*Recurvirostreae* Bonaparte, 1854, Ann. Sci. nat., p. 45).

*Avocettinae* Reichenbach, 1849, fide Gray, 1871 (type *Avocetta* Brisson, 1760, a junior synonym of *Recurvirostra* Linnaeus, 1758).

*Himantopodinae* Reichenbach, 1849, fide Gray, 1871 (type *Himantopus* Brisson, 1760).—*Himantopodeae* Bonaparte, 1854, Ann. Sci. nat., vol. 1, p. 45.

*Presbyornithidae* Wetmore, 1926 (Apr. 10), Ann. Carnegie Mus., vol. 16, nos. 3-4, p. 396 (family; type *Presbyornis* Wetmore).

*Ibidorhynchinae* Peters, 1934 (after March 14), Check-list of birds of the World, vol. 2, pp. xvi, 288 (subfamily; type *Ibidorhyncha* Vigors).

### Subfamily †PRESBYORNITHINAE (Wetmore)<sup>1</sup>

*Presbyornithidae* Wetmore, 1926 (Apr. 10), Ann. Carnegie, Mus., vol. 16, nos. 3-4, p. 396 (family; type *Presbyornis* Wetmore).

### Genus †*Presbyornis* Wetmore

*Presbyornis* Wetmore, 1926 (April 10), Ann. Carnegie, Mus., vol. 16, nos. 3-4, p. 396 (type by original designation *Presbyornis pervetus* Wetmore).

#### 1. *Presbyornis pervetus* Wetmore

*Presbyornis pervetus* Wetmore, 1926 (Apr. 10), Ann. Carnegie Mus., vol. 16, nos. 3-4, p. 396, pl. 37, figs. 10-20 (type from White River, left tarsometatarsus, Carnegie Mus. no. 11360).

UPPER LOWER EOCENE (bottom of Green River formation). UTAH: Uintah County: White River, 2 miles from Colorado line.

### Genus †*Coltonia* Hardy

*Coltonia* Hardy, 1959 (March 3), Auk, vol. 76, no. 1, p. 106 (type *Coltonia recurvirostra* Hardy). Needs comparison with *Presbyornis*.

#### 2. *Coltonia recurvirostra* Hardy

*Coltonia recurvirostra* Hardy, 1959 (March 3), Auk, vol. 76, no. 1, p. 106, fig. 1 (type from Ephraim Canyon, fragments of left humerus, radius, ulna, and carpometaacarpus, Univ. Kansas Mus. no. 10105).

LOWER EOCENE (Colton formation). UTAH: Sanpete County: mouth of Ephraim Canyon, Wasatch plateau.

### Subfamily RECURVIROSTRINAE Bonaparte

*Recurvirostrinae* Bonaparte, 1831, Saggio di una distribuzione metodica degli animali vertebrati, p. 59 (subfamily; type *Recurvirostra Linnaeus*).—*Recurvirostridae* Bonaparte, 1854, Ann. Sci. nat., vol. 1, p. 45.

*Avocettinae* Reichenbach, 1849, fide Gray, 1871 (type *Avocetta* Brisson, 1760, a junior synonym of *Recurvirostra* Linnaeus, 1758).

*Himantopodinae* Reichenbach, 1849; fide Gray, 1871 (type *Himantopus* Brisson, 1760).

<sup>1</sup> New rank.



*Ibidorhynchinae* Peters, 1934 (after March 14), Check-list of Birds of the World, vol. 2, pp. xvi, 288 (subfamily; type *Ibidorhyncha* Vigors).

No extinct fossil species.<sup>1</sup>

Neospecies of *Recurvirostrinae* from Pleistocene and \*prehistoric sites:

1. *Himantopus himantopus* (Linnaeus). ITALY: Grotta dei Colombi (Lambrecht, 1933, Handb. Palaeörn., p. 762). HUNGARY: Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. ungar. geol. Anstalt, vol. 23, p. 508).

2. *Himantopus leucocephalus* Gould. NEW ZEALAND: Pyramid Valley swamp (Scarlett, 1955, Rec. Canterbury Mus., vol. 6, p. 263).

3. *Himantopus mexicanus* (Müller). OREGON: Fossil Lake (Howard, 1946, Carnegie Instn. Washington Publ., no. 551, p. 184). CALIFORNIA: \*Buena Vista Lake (DeMay, 1942, Condor, vol. 44, p. 228). NEVADA: Smith Creek Cave? (Howard, 1952, Bull. So. Calif. Acad. Sci., vol. 51, pt. 2, p. 54).

4. *Recurvirostra americana* Gmelin. OREGON: Fossil Lake (Howard, 1946, Carnegie Instn. Washington Publ., no. 551, p. 184). CALIFORNIA: McKittrick (L. Miller, 1925, Univ. Calif. Publ., Bull. Dept. Geol. Sci., vol. 15, p. 320); Rancho La Brea (Howard, 1936, Condor, vol. 38, p. 35); \*Buena Vista Lake (DeMay, 1942, Condor, vol. 44, p. 228). NEVADA: Smith Creek Cave (Howard, 1952, Bull. So. Calif. Acad. Sci., vol. 51, pt. 2, p. 54). FLORIDA: Haile (Ligon, 1966, Bull. Florida State Mus., vol. 10, no. 4, p. 147).

### Family JACANIDAE (Stejneger)

*Parrinae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, p. 70 (subfamily; type *Parra* Linnaeus, 1766, a junior synonym of *Jacana* Brisson, 1760).—*Parriidae* Selys, 1842, Fauna Belge, fide Gray (family).

*Jacanidae* Stejneger, 1885, Standard Nat. Hist., vol. 4, p. 103 (family; type *Jacana* Brisson).—*Jacani* Ridgway, 1919 (June 26), Bull. U.S. Nat. Mus., no. 50, pt. 8, pp. 4-5 (superfamily).—*Jacanoidea* Wetmore and W. D. Miller, 1926 (July 3), Auk, vol. 43, no. 3, p. 343 (superfamily).—*Jacanides* Wetmore, 1930 (Jan. 8), Proc. U.S. Nat. Mus., vol. 76, art. 24, p. 4 (superfamily).—*Jacanoidea* American Ornithologists' Union, 1931 (Oct. 1), Check-list of North American Birds, ed. 4, p. 101 (superfamily).

*Rhegminornithidae* Wetmore, 1943 (June 23), Proc. New England Zool. Club, vol. 22, p. 60 (type *Rhegminornis* Wetmore).

### Subfamily †RHEGMINORNITHINAE (Wetmore)<sup>2</sup>

*Rhegminornithidae* Wetmore, 1943 (June 23), Proc. New England Zool. Club, vol. 22, p. 60 (type *Rhegminornis* Wetmore).

<sup>1</sup> *Himantopus brevipes* Milne-Edwards, from the Lower Miocene Aquitanian of France, is a nomen nudum.

*Recurvirostra* sp. recorded by L. Miller (1961, Condor, vol. 63, p. 402) from Upper Middle Miocene (Temblor formation) at Sharktooth Hill, California.

<sup>2</sup> New rank.

Genus †*Rhegminornis* Wetmore

*Rhegminornis* Wetmore, 1943 (June 23), Proc. New England Zool. Club, vol. 22, p. 61 (type by original designation *Rhegminornis calobates* Wetmore).

1. *Rhegminornis calobates* Wetmore

*Rhegminornis calobates* Wetmore, 1943 (June 23), Proc. New England Zool. Club, vol. 22, p. 61, pl. 9, figs. 1-5 (type from Thomas Farm, distal end of right tarsometatarsus, Mus. Comp. Zool. no. 2331).

LOWER MIOCENE (Thomas Farm local fauna, Hawthorne age).  
FLORIDA: Gilchrist County: Thomas farm, 8 miles north of Bell.

Subfamily JACANINAE (Stejneger)<sup>1</sup>

*Parrinae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, p. 70 (subfamily; type *Parra* Linnaeus, 1766, a junior synonym of *Jacana* Brisson, 1760).—*Parri-  
dae* Selys, 1842, Fauna Belge, fide Gray (family).

*Jacanidae* Stejneger, 1885, Standard Nat. Hist., vol. 4, p. 103 (family; type *Jacana* Brisson).—*Jacani* Ridgway, 1919 (June 26), Bull. U.S. Nat. Mus., no. 50, pt. 8, pp. 4-5 (superfamily).—*Jacanoidea* Wetmore and W. D. Miller, 1926 (July 3), Auk, vol. 43, no. 3, p. 343 (superfamily).—*Jacanides* Wetmore, 1930 (Jan. 8), Proc. U.S. Nat. Mus., vol. 76, art. 24, p. 4 (superfamily).—*Jacanoidea* American Ornithologists' Union, 1931 (Oct. 1), Check-list of North American Birds, ed. 4, p. 101 (superfamily).

## Neospecies of Jacaninae from Pleistocene sites:

1. *Jacana spinosa* (Linnaeus). BRAZIL: Lapa da Escrivania and Lapa da Lagoa do Sumidouro (O. Winge, 1887, E Museo Lundii, vol. 1, pt. 2, pp. 13, 29).

## Family BURHINIDAE Mathews

*Oedicneminae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, p. 64 (subfamily; type *Oedicnemus* Temminch, 1815, a junior synonym of *Burhinus* Illiger, 1811).—*Aedicneminae* Bonaparte, 1854, Ann. Sci. nat., vol. 1, p. 44 of reprint.—*Oedicnemidae* Sclater and Salvin, 1873, Nomenclator avium neotropicalium, pp. viii, 142 (family).—*Oedicnemi* Ridgway, 1919 (June 26), Bull. U.S. Nat. Mus., no. 50, pt. 8, p. 4 (superfamily).—*Oedicnemides* Wetmore, 1930 (Jan. 8), Proc. U.S. Nat. Mus., vol. 76, art. 24, p. 4 (superfamily).

*Burhinidae* Mathews 1913 (Dec. 31), Birds of Australia, vol. 3, pt. 4, p. 342 (type *Burhinus* Illiger).—*Burhinoidea* Wetmore, 1934 (April 23), Smithsonian Misc. Coll., vol. 89, no. 13, p. 7 (superfamily).

<sup>1</sup> New rank.

Genus †*Milnea* Lydekker

*Milnea* Lydekker, 1891, Cat. Foss. Birds British Mus., p. 169 (type by original designation *Milnea gracilis* Lydekker).

1. *Milnea gracilis* Lydekker

*Milnea gracilis* Lydekker, 1891, Cat. Foss. Birds British Mus., p. 169, fig. 38 (type from Allier, left humerus, Brit. Mus. 47457).

LOWER MIOCENE (Aquitania). FRANCE: Dept. Lot: Allier.

Genus *Burhinus* Illiger

*Burhinus* Illiger, 1811, Prodrum systematis mammalium et avium, p. 250 (type *Charadrius magnirostris* Latham).

2. *Burhinus nanus* Brodkorb

*Burhinus nanus* Brodkorb, 1959 (June 3), Bull. Florida State Mus., vol. 4, no. 11, p. 354, pl. 1, figs. 2-4 (type from Banana Hole, left coracoid, Univ. Florida no. 3154).

UPPER PLEISTOCENE (cave deposits). BAHAMAS: New Providence Island: Banana Hole.

## Neospecies of Burhinidae from the Pleistocene:

1. *Burhinus oedictnemus* (Linnaeus). FRANCE: Lacombe-Thayac (Lambrecht, 1933, Handb. Palaeorn., p. 762). AZERBAIJAN: Binagady (Serebrovsky, 1941, Doklady Akad. Nauk U.S.S.R., vol. 33, p. 473).

## Family DROMADIDAE (Gray)

*Dromadine* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, p. 65 (subfamily; type *Dromas* Paykull).—*Dromadidae* Salys, 1843, Fauna Belge, fide Gray (family).—*Dromades* Ridgway, 1919 (June 26), Bull. U.S. Nat. Mus., no. 50, pt. 8, p. 4 (superfamily).—*Dromadoidea* Wetmore, 1934 (April 23), Smithsonian Misc. Coll., vol. 89, no. 13, p. 7 (superfamily).

No fossil record.

## Family GLAREOLIDAE Brehm

*Glareolidae* Brehm, 1831, Handbuch der Naturgeschichte aller Vögel Deutschlands, p. 564 ("Ordnung" = family; type *Glareola* Brisson).—*Glareolinae*

- G. R. Gray, 1844 (July), *Genera of Birds*, vol. 3, p. 540 (subfamily).—*Glareolae* Ridgway, 1919 (June 26), *Bull. U.S. Nat. Mus.*, no. 50, pt. 8, p. 4 (superfamily).—*Glareolides* Wetmore, 1930 (Jan. 8), *Proc. U.S. Nat. Mus.*, vol. 76, art. 24, p. 5 (superfamily).—*Glareoloidea* Wetmore, 1934 (April 23), *Smithsonian Misc. Coll.*, vol. 89, no. 13, p. 7.
- Cursoriinae* G. R. Gray, 1840 (before Apr.), *List of Genera of Birds*, p. 64 (subfamily; type *Cursorius* Latham).—*Cursorinae* G. R. Gray, 1844 (July), *Genera of Birds*, vol. 3, p. 536 (subfamily).—*Cursoriidae* Hartert, 1916, *Vög. paläarkt. Fauna*, vol. 2, p. 1522 (family).

No fossil record.

#### Family THINOCORIDAE (Gray)

- Thinocorinae* G. R. Gray, 1845 (May), *Genera of Birds*, vol. 3, p. 520 (subfamily; type *Thinocorus* Eschscholtz).—*Thinocoridae* Bonaparte, 1850, *fide* Gray (family).—*Thinocoridae* Bonaparte, 1853, *C. R. Acad. Sci. Paris*, vol. 37, p. 646.—*Thinocorides* Wetmore, 1930 (Jan. 8), *Proc. U.S. Nat. Mus.*, vol. 76, art. 4, p. 5 (superfamily).—*Thinocoroidea* Wetmore, 1934 (April 23), *Smithsonian Misc. Coll.*, vol. 89, no. 13, p. 7 (superfamily).
- Attagides* Ridgway, 1919 (June 26), *Bull. U.S. Nat. Mus.*, no. 50, pt. 8, p. 4 (superfamily; type *Attagus* Geoffroy and Lesson).

No fossil record.

#### Family CHIONIDIDAE Bonaparte

- Chionididae* Bonaparte, 1832, *fide* Gray, (familia; type *Chionis* Forster).—*Chionidae* G. R. Gray, 1840 (before Apr.), *List of Genera of Birds*, p. 62 (family).—*Chionidinae* G. R. Gray, 1845 (Apr.), *Genera of Birds*, vol. 3, p. 522 (subfamily).—*Chioninae* Bonaparte, 1854, *Ann. Sci. nat.*, vol. 1, p. 40.—*Chionomorphae* Coues and Kidder, 1876, *Bull. U.S. Nat. Mus.*, no. 3, p. 115.—*Chionoideae* Stejneger, 1885, *Standard Natural History*, vol. 4, pp. 91-92 (super-family).—*Chionides* Ridgway, 1919 (June 26), *Bull. U.S. Nat. Mus.*, no. 50, pt. 8, p. 4 (superfamily).—*Chionoidea* Wetmore, 1934 (April 23), *Smithsonian Misc. Coll.*, vol. 89, no. 13, p. 7 (superfamily).—*Chionidoidea* Peters, 1934 (June 18), *Check-list of Birds of the World*, vol. 2, pp. xvi, 308 (superfamily).

No fossil record.

#### Suborder LARI Sharpe

- Lariformes* Sharpe, 1891, *Review of Recent Attempts to Classify Birds*, p. 72 (order; type *Larus* Linnaeus).—*Lari* Sharpe, 1891, *op. cit.*, p. 72 (suborder).

## Family LARIDÆ Vigors

- Laridæ* Vigors, 1825, Trans. Linn. Soc. London, vol. 14, p. 498 (family; type *Larus* Linnaeus).—*Larinae* Bonaparte, 1831, Saggio di una distribuzione metodica degli animali vertebrati, p. 59 (subfamily).—*Lareae* Bonaparte, 1853, C.R. Acad. Sci. Paris, vol. 37, no. 18, p. 643.—*Laroideae* Stejneger, 1885, Standard Natural History, vol. 4, p. 74 (superfamily).—*Laroidae* Hay, 1930 (Jan. 27), Carnegie Instn. Washington Publ., no. 390, vol. 2, p. 339 (superfamily).
- Sterninae* Bonaparte, 1838, Geogr. and Comp. List of Birds of Europe and North America, p. 61 (subfamily; type *Sterna* Linnaeus).—*Sterneae* Bonaparte, 1854, Ann. Sci. nat., vol. 1, p. 40 of reprint ([series]).—*Sternidae* Reichenow, 1882, Vögel der zoologischen Gärten, vol. 1, p. 27 (family).
- Xemeae* Bonaparte, 1853 (séance du 31 Oct.), C.R. Acad. Sci. Paris, vol. 37, no. 18, p. 643 (type *Xema* Leach).
- Anoeae* Bonaparte, 1854, Ann. Sci. nat., vol. 1, p. 40 of reprint (type *Anous* Leach).

## Subfamily LARINÆ (Vigors)

- Laridæ* Vigors, 1825, Trans. Linn. Soc. London, vol. 14, p. 498 (family; type *Larus* Linnaeus).—*Larinae* Bonaparte, 1831, Saggio di una distribuzione metodica degli animali vertebrati, p. 59 (subfamily).—*Laroideae* Stejneger, 1885, Standard Natural History, vol. 4, p. 74 (superfamily).—*Laroidae* Hay, 1930 (Jan. 27), Carnegie Instn. Washington Publ., no. 390, vol. 2, p. 339 (superfamily).
- Xemeae* Bonaparte, 1854, Revue et Mag. Zool., no. 11, p. 4 of reprint (series; type *Xema* Leach).—*Xemeae* Bonaparte, 1854, Ann. Sci. nat., vol. 1, p. 40.

Genus †*Halcyornis* Owen1. *Halcyornis toliapicus* (König)

- Larus toliapicus* König, 1825, Icones Fossiles Sectiles, pl. 16, fig. 193 (type from Sheppey, cranium, Brit. Mus. no. 130)

UPPER PALEOCENE (London clay). ENGLAND: Kent: Isle of Sheppey.

Genus †*Rupelornis* Van Beneden

- Rupelornis* Van Beneden, 1871, Bull. Acad. Roy. Belge, ser. 2, vol. 32, no. 11, p. 260 (type by monotypy *Rupelornis definitus* Van Beneden).

2. *Rupelornis definitus* Van Beneden

- Rupelornis definitus* Van Beneden, 1871, Bull. Acad. Roy. Belge, ser. 2, vol. 32, no. 11, p. 260, fig. 7 (type apparently from Rupelmonde, distal part of left tibiotarsus).

MIDDLE OLIGOCENE (Repelian sand). BELGIUM: East Flanders: mouth of River Rupel.

Genus *Larus* Linnaeus

*Larus* Linnaeus, 1758, Syst. Nat., ed. 10, vol. 1, p. 136 (type *Larus marinus* Linnaeus, Recent).

3. *Larus desnoyersii* Milne-Edwards

*Larus desnoyersii* Milne-Edwards, 1863, C. R. Acad. Sci. Paris, vol. 56, p. 1222 (type from Labeur, proximal portion of tarsometatarsus).

LOWER MIOCENE (Aquitanian). FRANCE: Dept. Allier: Labeur; Langy; Saint-Gérand-le-Puy.

4. *Larus elegans* Milne-Edwards

*Larus elegans* Milne-Edwards, 1867-1868, Ois. Foss. France, vol. 1, sheet 44, p. 350 (1868), pl. 56, fig. 11-29 (1867); pl. 57, figs. 1-11; pl. 58, fig. 1 (types from Langy, Saint-Gérand-le-Puy, and Chantegre, tarsometatarsus, tibiotarsus, femur, coracoid, humerus, ulna, metacarpus, Paris Mus.).

LOWER MIOCENE (Aquitanian) FRANCE: Dept. Allier: Langy; Saint-Gérand-le-Puy; Chantegre; Gannat; Chaptuzat. Dept. Puy-de-Dôme: Antoing near Issoire. This species and *L. totanoides* were recorded by Shufeldt (1896, Proc. Acad. Nat. Sci. Philadelphia, p. 515) from Grive-St.-Alban in the Upper Middle Miocene, undoubtedly through misidentification of some other species. *L. elegans* is possibly a tern; the name is preoccupied in *Sterna* by Gambel, 1849.

5. *Larus totanoides* Milne-Edwards

*Larus totanoides* Milne-Edwards, 1867, Ois. Foss. France, vol. 1, pl. 57, figs. 12-17; 1868, sheet 45, p. 358 (types from Langy, tarsometatarsus, tibiotarsus, femur, coracoid, ulna, carpometacarpus, Paris Mus.).

LOWER MIOCENE (Aquitanian). FRANCE: Dept. Allier: Langy.

6. *Larus pristinus* Shufeldt

*Larus pristinus* Shufeldt, 1915 (Feb.), Trans. Connecticut Acad. Sci., vol. 19, p. 54, pl. 14, fig. 112 (type from Willow Creek, proximal portion of left tibiotarsus, Yale Peabody Mus. no. 935).

LOWER MIOCENE (John Day formation). OREGON: Malheur County: Willow Creek.

7. *Larus elmorei* Brodkorb

*Larus elmorei* Brodkorb, 1953 (June), Wilson Bull., vol. 65, no. 2, p. 94, fig. 1 (type from 1½ miles south of Brewster, distal portion of right humerus, Brodkorb coll. no. 140).

LOWER PLIOCENE (Bone Valley gravel). FLORIDA: Polk County: near Brewster.

8. *Larus robustus* Shufeldt

*Larus robustus* Shufeldt, 1891 (Sept.), Amer. Nat., vol. 25, no. 297, p. 820 (type from Fossil Lake, left coracoid, Amer. Mus. Nat. Hist. no. 3492).

UPPER PLEISTOCENE (Fossil Lake formation). OREGON: Lake County: Fossil Lake.

9. *Larus oregonus* Shufeldt

*Larus oregonus* Shufeldt, 1891 (Sept.), Amer. Nat., vol. 25, no. 297, p. 820 (type from Fossil Lake, proximal part of left humerus, Amer. Mus. Nat. Hist. no. 3494).

UPPER PLEISTOCENE (Fossil Lake formation). OREGON: Lake County: Fossil Lake.

Genus †*Gaviota* A. H. Miller and Sibley

*Gaviota* A. H. Miller and Sibley, 1941 (Oct.), Auk, vol. 58, no. 4, p. 563 (type by original designation *Gaviota niobrara* Miller and Sibley).

10. *Gaviota niobrara* A. H. Miller and Sibley

*Gaviota niobrara* A. H. Miller and Sibley, 1941 (Oct.), Auk, vol. 58, no. 4, p. 563, fig. 1 (type from Little Beaver A, distal end of left humerus, Univ. Calif. Mus. Paleo. no. 30933).

UPPER MIOCENE (Niobrara River zone, Ogallala formation). NEBRASKA: Cherry County: near Little Beaver Creek, section 18, Township 34 North, Range 26 West.

Genus †*Ocyplanus* DeVis

*Ocyplanus* DeVis, 1906, Ann. Queensland Mus., no. 6, p. 8 (type by monotypy *Ocyplanus proeses* DeVis). Position uncertain, described in "Limicolae."

11. *Ocyplanus proeses* DeVis

*Ocyplanus proeses* DeVis, 1906, Ann. Queensland Mus., no. 6, p. 8, pl. 1, fig. 5b (type apparently from Lake Eyre, distal part of right tarsometatarsus).

UPPER PLEISTOCENE (Katipiti sands, Malkuni fauna). AUSTRALIA: South Australia: Lake Eyre.

## Subfamily STERNINAE Bonaparte

*Sterninae* Bonaparte, 1838, Geogr. and Comp. List of Birds of Europe and North America, p. 61 (subfamily; type *Sterna* Linnaeus).—*Sternidae* Reichenow, 1882, Vögel der zoologischen Garten, vol. 1, p. 27 (family).

*Anoae* Bonaparte, 1854, Ann. Sci. nat., vol. 1, p. 40 (series; type *Anous* Leach).

Genus *Sterna* Linnaeus

*Sterna* Linnaeus, 1758, Syst. Nat., ed. 10, vol. 1, p. 137 (type *Sterna hirundo* Linnaeus).

12. *Sterna milne-edwardsii* Riabinin

*Sterna milne-edwardsii* Riabinin, 1931, Zapiski Rossicckgo Minera-Pogicheskogo Obshechestra, vol. 40, no. 2, p. 276, fig. 1 (type from Kissatibi, skeleton impression).

UPPER(?) MIOCENE (diatomite de Kissatibi). GEORGIAN SSR: Kissatibi near Akhalzykh.

Genus †*Pseudosterna* Mercerat

*Pseudosterna* Mercerat, 1897 (May), An. Soc. cient. Argentina, vol. 43, p. 237 (type *Pseudosterna degener* Mercerat, designated by Richmond, 1902, Proc. U.S. Nat. Mus., vol. 24, no. 1267, p. 710).

13. *Pseudosterna degener* Mercerat

*Pseudosterna degener* Mercerat, 1897 (May), An. Soc. cient. Argentina, vol. 43, p. 237 (type from Lujan, distal end of left humerus, La Plata Mus.).

UPPER PLEISTOCENE (lake beds of Pampas formation). ARGENTINA: Prov. Buenos Aires: Lujan.

14. *Pseudosterna pampeana* Mercerat

*Pseudosterna pampeana* Mercerat, 1897, An. Soc. cient. Argentina, vol. 43, p. 238 (type from Arrecifes, distal end of left ulna, La Plata Mus.).

UPPER PLEISTOCENE (lake beds of Pampas formation). ARGENTINA: Prov. Buenos Aires: Arrecifes.

## Neospecies of Laridae from Pleistocene and \*prehistoric sites:

## Subfamily LARIDAE:

1. *Larus canus* Linnaeus. IRELAND: Ballintoy Cave (Lambrecht, 1933, Handb. Palaeorn., p. 765). ENGLAND: Clevedon Cave (Lambrecht, 1933, Handb. Palaeorn., p. 765). DENMARK: Mejlgaard, Erteboelle, and Klintesoe (H. Winge, 1903, Vidensk. Meddel. naturhist. Foren., vol. 6, p. 96). CZECHOSLOVAKIA: Certova díra (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, p. 941). AUSTRIA: (Lambrecht, 1918, Aquila, vol. 24, p. 205). HUNGARY: Pálffy-Höhle (Lambrecht, 1913, Aquila, vol. 20, p. 426). ALASKA: \*St. Lawrence Island (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, p. 94); \*Kodiak Island (Friedmann, 1935, op. cit., vol. 25, p. 50); \*Attu Island (Friedmann, 1937, op. cit., vol. 27, p. 438). CALIFORNIA: Rancho La Brea? (Howard, 1936, Condor, vol. 38, p. 36).



2. *Larus argentatus* Pontoppidan. SCOTLAND: \*Ardrossan (Lambrecht, 1933, Handb. Palaeorn., p. 765). DENMARK: Kolind, Fannerup, Mejlgaard, Visborg, Bjergbakke, Havnoe, Erteboelle, Gudumlund, Klintesoe, Jaegerspris, Havelse, Soelager and \*Borrebjerg (H. Winge, 1903, Vidensk. Meddel. naturhist. Foren., vol. 6, p. 96). NORWAY: Vardo (Lambrecht, 1933, Handb. Palaeorn., p. 765). ITALY: Grotta Romanelli, and Grotta dei Colombi? (Lambrecht, 1933, Handb. Palaeorn., p. 765). AUSTRIA: (Lambrecht, 1918, Auila, vol. 24, p. 205). CZECHOSLOVAKIA: Predmost (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, p. 938). AZERBAIJAN: Binagady (Serebrovsky, 1941, Doklady Akad. Nauk U.R.S.S., vol. 33, p. 473). ALASKA: \*Kodiak Island (Friedmann, 1935, Jour. Washington Acad. Sci., vol. 25, p. 50); \*Dutch Harbor, \*Little Kiska Island, and \*Attu Island (Friedmann, 1937, op. cit., vol. 27, pp. 434-437); \*Cape Prince of Wales (Friedmann, 1941, op. cit., vol. 31, p. 407). NOVA SCOTIA: \*Whynacht and \*Bear River (Halifax Mus.). FLORIDA: \*Castle Windy (Bullen and Sleight, 1959, William L. Bryant Foundation Amer. Studies, Rept. no. 1, p. 20); \*Green Mound (Hamon, 1959, Auk, vol. 76, no. 4, p. 533); \*Goodman site (E. Wing, 1963, Contrib. Florida State Mus., no. 10, p. 56); recorded in error from Seminole Field (Wetmore, 1930, Proc. VII. Internat. Ornith. Congr. Amsterdam, p. 481; see Wetmore, 1940, Smithsonian Misc. Coll., vol. 99, 4, p. 61 footnote). Record from Fossil Lake, Oregon (Shufeldt, 1892, Jour. Acad. Nat. Sci. Philadelphia, vol. 9, p. 397), pertains to *Stercorarius shufeldti* Howard (1946, Carnegie Instn. Washington Publ., no. 551, p. 184).

3. *Larus fuscus* Linnaeus. IRELAND: Castlepook Cave (Lambrecht, 1933, Handb. Palaeorn., p. 765). GIBRALTAR: Devil's Tower (Bate, 1928, Jour. Roy. Anthr. Instn., vol. 58, p. 104). NORWAY: Vardo (Lambrecht, 1933, Handb. Palaeorn., p. 765).

4. *Larus californicus* Lawrence. OREGON: Fossil Lake (Howard, 1946, Carnegie Instn. Washington, no. 551, p. 186).

5. *Larus dominicanus* Lichtenstein. ARGENTINA: Lujan (Ameghino, 1891, Revista argentina Hist. nat., vol. 1, p. 446). NEW ZEALAND: \*Waimataitai (Trotter, 1965, Notornis, vol. 12, p. 178).

6. *Larus marinus* Linnaeus. ENGLAND: \*Exeter (Lambrecht, 1933, Handb. Palaeorn., p. 765). DENMARK: Kolind, Fannerup, Mejlgaard, Aamoelle, Erteboelle, Gudumlund, Klintesoe, Havelse, and Soelager (H. Winge, 1903, Vidensk. Meddel. naturh. Foren., vol. 6, p. 97). NORWAY: Vardo? (Lambrecht, 1933, Handb. Palaeorn., p. 765). FLORIDA: \*Green Mound (Hamon, 1959, Auk, vol. 76, no. 4, p. 533).

7. *Larus glaucescens* Naumann. ALASKA: \*St. Lawrence Island (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, p. 94); \*Amaknak Island and \*Kodiak Island (Friedmann, 1934, op. cit., pp. 233, 235); \*Dutch Harbor, \*Atka Island, \*Attu Island, and \*Little Kiska Island (Friedmann, 1937, op. cit., vol. 27, pp. 436-438); \*Cape Prince of Wales (Friedmann, 1941, op. cit., vol. 31, p. 407). CALIFORNIA: San Pedro (L. Miller, 1930, Condor, vol. 32, p. 117); Newport Bay? (Howard, 1949, Condor, vol. 51, p. 27).

8. *Larus hyperboreus* Gunnerus. SWEDEN: Bohuslänska Tapebank (Lambrecht, 1933, Handb. Palaeorn., p. 766). AZERBAIJAN: Binagady? (Burchak-Abramovich, "1963," 1962, Ornitologiya, vol. 4, p. 462). ALASKA: \*St. Lawrence Island (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, p. 93); \*Amaknak Island

and \*Kodiak Island (Friedmann, 1934, op. cit., vol. 27, pp. 436-438); \*Dutch Harbor, \*Little Kiska Island, and \*Attu Island (Friedmann, 1937, op. cit., vol. 27, p. 434-438). \*Cape Prince of Wales (Friedmann, 1941, op. cit., vol. 31, p. 407). FLORIDA: \*Green Mound (Bullen and Sleight, 1960, Rept. Bryant Foundation of Amer. Studies, no. 2, p. 32).

9. *Larus atricilla* Linnaeus. FLORIDA: \*Green Mound (Hamon, 1959, Auk, vol. 76, no. 4, p. 533).

10. *Larus melanocephalus* Temminck. ITALY: (Lambrecht, 1918, Aquila, vol. 24, p. 205).

11. *Larus bulleri* Hutton. NEW ZEALAND: \*Ototara (Trotter, 1965, Notornis, vol. 12, p. 178).

12. *Larus ridibundus* Linnaeus. DENMARK: Gudumlund and Maglemose (Winge, 1903, Vidensk. Meddel. naturh. Foren., vol. 6, p. 96). GERMANY: Höhle bei St. Wolfgang (Lambrecht, 1933, Handb. Palaeorn., p. 766). ITALY: Grotta Romanelli? (Lambrecht, 1933, Handb. Palaeorn., p. 766). AUSTRIA: (Lambrecht, 1918, Aquila, vol. 24, p. 205). CZECHOSLOVAKIA: Predmost (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, p. 938). HUNGARY: Balla-Höhle (Lambrecht, 1912, Aquila, vol. 19, p. 276); Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. ungar. geol. Anst., vol. 23, p. 480); Puskaporos (Lambrecht, 1916, Barlangkutató, vol. 4, p. 205).

13. *Larus philadelphia* (Ord.). OREGON: Fossil Lake (Shufeldt, 1892, Jour. Acad. Nat. Sci. Philadelphia, vol. 9, p. 398).

14. *Rissa tridactyla* (Linnaeus). NORWAY: Vardo (Lambrecht, 1933, Handb. Palaeorn., p. 766). ALASKA: \*St. Lawrence Island (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, p. 94); \*Kodiak Island (Friedmann, 1937, op. cit., vol. 27, p. 434); \*Cape Prince of Wales (Friedmann, 1941, op. cit., vol. 31, p. 408). CALIFORNIA: Rancho La Brea? (Howard, 1936, Condor, vol. 38, p. 36).

15. *Rissa brevirostris* (Bruch). ALASKA: \*St. Lawrence Island (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, p. 94); \*Kodiak Island and \*Dutch Harbor (Friedmann, 1937, op. cit., vol. 27, p. 434).

16. *Xema sabini* (J. Sabine). ALASKA: \*Cape Prince of Wales (Friedmann, 1941, Jour. Washington Acad. Sci., vol. 31, p. 408). Record from Fossil Lake, Oregon (Shufeldt, 1892, Jour. Acad. Nat. Sci. Philadelphia) is erroneous, see Howard, 1946, Carnegie Instn. Washington Publ., no. 551, p. 187).

#### Subfamily STERNINAE:

17. *Chlidonias hybrida* (Pallas). ITALY: Grotta dei Colombi? (Lambrecht, 1933, Handb. Palaeorn., p. 766).

18. *Chlidonias nigra* (Linnaeus). ITALY: Grotta dei Colombi? (Lambrecht, 1933, Handb. Palaeorn., p. 766). OREGON: Fossil Lake (Shufeldt, 1892, Jour. Acad. Nat. Sci. Philadelphia, vol. 9, p. 399).

19. *Hydroprogne caspia* (Pallas). CALIFORNIA: \*Buena Vista Lake (DeMay, 1942, Condor, vol. 44, p. 228).

20. *Sterna hirundo* Linnaeus. CORSICA: Grotta di Funtanedu? (E. T. Newton, 1921, Proc. zool. Soc. London, p. 231). SCOTLAND: \*Oransay (Lambrecht, 1933, Handb. Palaeorn., p. 766). ENGLAND: Merlin's Cave (Lambrecht, 1933, Handb. Palaeorn., p. 766). FINLAND: Ladogasee (Lambrecht, 1933, Handb. Palaeorn., p. 766). POLAND: Volyn (Lambrecht, 1933, Handb. Palaeorn., p. 766). HUNGARY: Pilissántó (Lambrecht, 1915, Mitt. Jahrb. ungar. geol. Anst., vol. 23, p. 480).

21. *Sterna paradisaea* Pontoppidan. ITALY: Bucca del Bersagliere? (Lambrecht, 1933, Handb. Palaeorn., p. 766). ALASKA: \*Cape Prince of Wales (Friedmann, 1941, Jour. Washington Acad. Sci., vol. 31, p. 408).

22. *Sterna forsteri* Nuttall. OREGON: Fossil Lake (Howard, 1946, Carnegie Instn. Washington Publ., no. 551, p. 187).

23. *Sterna striata* Gmelin. NEW ZEALAND: Ototara (Trotter, 1965, Notornis, vol. 12, p. 178).

24. *Sterna anaethetus* Scopoli. ST. THOMAS: \*midden? (Wetmore, 1918, Proc. U.S. Nat. Mus., vol. 54, p. 519).

25. *Sterna fuscata* Linnaeus. BAHAMAS: Crooked Island (Wetmore, 1938, Auk, vol. 55, p. 52). ST. HELENA: \*Prosperous Bay (Ashmole, 1963, Ibis, vol. 103b, p. 404).

26. *Thalasseus maximus* (Boddaert). PUERTO RICO: \*Barrio Canas (Wetmore, 1938, Auk, vol. 55, p. 54). ST. CROIX: \*Concordia (Wetmore, 1937, Jour. Agric. Univ. Puerto Rico, vol. 21, p. 11).

27. *Thalasseus sandwicensis* (Latham). GIBRALTER: Devil's Tower? (Bate, 1928, Jour. Roy. Anthropol. Instn., vol. 58, p. 104).

28. *Anous stolidus* (Linnaeus). ST. THOMAS: \*midden? (Wetmore, 1918, Proc. U.S. Nat. Mus., vol. 54, p. 519). ST. CROIX: \*Concordia (Wetmore, 1937, Jour. Agric. Univ. Puerto Rico, vol. 21, p. 11).

Record of *Thalasseus elegans* (Gambel) from Fossil Lake, Oregon (Shufeldt, 1892, Jour. Acad. Nat. Sci. Philadelphia, vol. 9, p. 399), is erroneous (see Howard, 1946, Carnegie Instn. Washington Publ., no. 551, pp. 183, 184).

### Family STERCORARIIDAE (Gray)

*Lestrinae* Bonaparte, 1831, Saggio di una distribuzione metodica degli animali vertebrati, p. 60 (subfamily; type *Lestris* Illiger, 1811, a junior synonym of *Stercorarius* Brisson, 1760).—*Lestridae* Kaup, 1879, Jardine's Contr. Orn., p. 119 (family).—*Lestridinae* Bonaparte, 1852 (Sept. 26), unpagged sheet without title (sub-familia).—*Lestriginae* Bonaparte, 1853 (séance du 31 Oct.), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 643.

*Stercorariinae* G. R. Gray, 1871, Hand-list Genera and Species of Birds, vol. 3, p. 110 (subfamily; type *Stercorarius* Brisson).—*Stercorariidae* Ridgway, 1880 (Sept. 4), Prov. U. S. Nat. Mus., vol. 3, p. 240 (family).

Genus *Stercorarius* Brisson

*Stercorarius* Brisson, 1760, Orn., vol. 1, p. 56; vol. 6, p. 149 (type *Larus parasiticus* Linnaeus, Recent).

1. *Stercorarius shufeldti* Howard

*Stercorarius shufeldti* Howard, 1946 (Jan. 25), Carnegie Instn. Washington Publ., no. 551, pp. 184, 191, pl. 2, figs. 1-2 (type from Fossil Lake, humerus, Amer. Mus. Nat. Hist. no. 3491).

MIDDLE PLEISTOCENE (Fossil Lake formation). OREGON: Lake County: Fossil Lake.

Neospecies of Stercorariidae recorded from Pleistocene and \*pre-historic sites:

1. *Stercorarius pomarinus* (Temminck). ALASKA: \*St. Lawrence Island (Friedmann, 1934, Jour. Wash. Acad. Sci., vol. 24, p. 93); \*Cape Prince of Wales (Friedmann, 1941, op. cit., vol. 31, p. 407). CALIFORNIA: Newport Bay? (Howard, 1949, Condor, vol. 51, p. 21).

2. *Stercorarius parasiticus* (Linnaeus). ALASKA: \*St. Lawrence Island (Friedmann, 1934, Jour. Wash. Acad. Sci., vol. 24, p. 93); \*Amaknak Island (Friedmann, 1934, op. cit., vol. 24, p. 232).

3. *Stercorarius longicaudus* Vieillot. ALASKA: \*St. Lawrence Island (Friedmann, 1934, Jour. Wash. Acad. Sci., vol. 24, p. 93); \*Amaknak Island (Friedmann, 1934, op. cit., vol. 24, p. 232); \*Kodiak Island (Friedmann, 1935, op. cit., vol. 25, p. 50).

## Family RYNCHOPIDAE (Bonaparte)

*Rhynchopsinae* Bonaparte, 1838, Geogr. and Comp. List of Birds of Europe and North America, p. 60 (subfamily; type *Rynchops* Linnaeus).—*Rhynchopinae* G. R. Gray, 1845 (Sept.), Genera of Birds, vol. 3, p. 656 (subfamily).—*Rhynchopinae* Bonaparte, 1852 (Sept. 26), unpaginated sheet without title [see Zimmer] (subfamily).—*Rynchopidae* American Ornithologists' Union, 1896, Check-list North American Birds, ed. 2, p. 96 (family).

No fossil record.

## Suborder ALCAE Sharpe

*Alcae* Sharpe, 1891, Review of Recent Attempts to Classify Birds, p. 72 (suborder; type *Alca* Linnaeus).—*Alciformes* Sharpe, 1891, op. cit., p. 72 (order). *Cepphi* American Ornithologists' Union, 1910, Check-list of North American birds, ed. 3, p. 24 (type *Cephus* Pallas).

## Family ALCIDAE Vigors

- Alcidae* Vigors, 1825, Trans. Linn. Soc. London, vol. 14, p. 498 (type *Alca* Linnaeus).—*Alcinae* Bonaparte, 1831, Saggio di una distribuzione degli animali vertebrati, p. 35 (subfamily).—*Alcidae* Bonaparte, 1831, Saggio di una distribuzione degli animali vertebrati, p. 35 (family).—*Alcanae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, p. 76 (subfamily).—*Alcoideae* Stejneger, 1885, Standard Natural History, vol. 4, p. 68 (superfamily).—*Alcoidae* Hay, 1930 (Jan. 27), Carnegie Instn. Washington Publ., no. 390, vol. 2, p. 342 (superfamily).
- Phalerinae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, p. 76 (subfamily; type *Phaleris* Temminck).—*Phaleridinae* G. R. Gray, 1848 (Feb.), Genera of Birds, vol. 3, p. 638 (subfamily).—*Phalereae* Ridgway, 1919 (June 26), Bull. U.S. Nat. Mus., no. 50, pt. 8, p. 704.
- Urianae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, p. 77 (subfamily; type *Uria* Brisson).—*Urinae* G. R. Gray, 1848, (Aug.), Genera of Birds, vol. 3, p. 644 (subfamily).—*Uriinae* Bonaparte, 1853, C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646 (subfamily).—*Uriae* Ridgway, 1919, Bull. U.S. Nat. Mus., no. 50, pt. 8, p. 703 (group).
- Plautéae* Ridgway, 1919 (June 26), Bull. U.S. Nat. Mus., no. 50, pt. 8, p. 702 (type *Plautus* Gunnerus).
- Ceppheae* Ridgway, 1919 (June 26), Bull. U.S. Nat. Mus., no. 50, pt. 8, p. 703 (type *Cepphus* Pallas).
- Brachyrampheae* Ridgway, 1919 (June 26), Bull. U.S. Nat. Mus., no. 50, pt. 8, p. 703 (type *Brachyrampus* Brandt).
- Synthliboramphaeae* Ridgway, 1919 (June 26), Bull. U.S. Nat. Mus., no. 50, pt. 8, p. 704 (type *Synthliboramphus* Brandt).
- Fraterculinae* Ridgway, 1919 (June 26), Bull. U.S. Nat. Mus., no. 50, pt. 8, p. 705 (type *Fratercula* Brisson).
- Nautilornithinae* Wetmore, 1926 (Apr. 10), Annals Carnegie Mus., vol. 16, nos. 3-4, p. 394 (type *Nautilornis* Wetmore).
- Mancallidae* L. Miller, 1946 (Jan.), Condor, vol. 48, no. 1, p. 34 (family; type *Mancalla* Lucas).

## Subfamily †NAUTILORNITHINAE Wetmore

- Nautilornithinae* Wetmore, 1926 (Apr. 10), Annals Carnegie Mus., vol. 16, nos. 3-4, p. 394 (type *Nautilornis* Wetmore).

Genus †*Nautilornis* Wetmore

- Nautilornis* Wetmore, 1926 (Apr. 10), Ann. Carnegie Mus., vol. 16, nos. 2-4, p. 392 (type by original designation *Nautilornis avus* Wetmore).

1. *Nautilornis avus* Wetmore

- Nautilornis avus* Wetmore, 1926 (Apr. 10), Annals Carnegie Mus., vol. 16, nos. 3-4, p. 392, pl. 36, figs. 1-8 (type from White River, right humerus, Carnegie Mus. no. 11,358).

UPPER LOWER EOCENE (bottom of Green River formation). UTAH:  
 Uintah County: White River, 2 miles from Colorado line.

2. *Nautilornis proavitus* Wetmore

*Nautilornis proavitus* Wetmore, 1926 (Apr. 10), Annals Carnegie Mus., vol. 16,  
 nos. 3-4, p. 394, pl. 36, fig. 9 (type from White River, sternum, Carnegie Mus.  
 no. 11,359).

UPPER LOWER EOCENE (bottom of Green River formation). UTAH:  
 Uintah County: White River, 2 miles from Colorado line.

Genus †*Hydrotherikornis* A. H. Miller

*Hydrotherikornis* A. H. Miller, 1931, (Apr. 21), Univ. Calif. Publ., Bull. Dept.  
 Geol. Sci., vol. 20, no. 3, p. 24 (type by original designation *Hydrotherikornis*  
*oregonus* A. H. Miller).

3. *Hydrotherikornis oregonus* A. H. Miller

*Hydrotherikornis oregonus* A. H. Miller, 1931 (Apr. 21), Univ. Calif. Publ., Bull.  
 Dept. Geol. Sci., vol. 20, no. 3, p. 24, fig. 1 (type from Sunset Bay, left tibio-  
 tarsus, Univ. Calif. Mus. Paleo. no. 31346).

UPPER EOCENE (lower part of Arago group). OREGON: COOS COUN-  
 TY: cliff on north side of Sunset Bay, near Coos Bay.

Subfamily ALCINAE (Vigors)

*Alcadae* Vigors, 1825, Trans. Linn. Soc. London, vol. 14, p. 498 (type *Alca*  
 Linnaeus).—*Alcinae* Bonaparte, 1831, Saggio di una distribuzione degli animali  
 vertebrati, p. 35.—*Alcidae* Bonaparte, 1831, Saggio di una distribuzione degli  
 animali vertebrati, p. 35.—*Alcoideae* Stejneger, 1885, Standard Natural History,  
 vol. 4, p. 68 (superfamily).—*Alcoidae* Hay, 1930 (Jan. 27), Carnegie Instn.  
 Washington Publ., no. 390, vol. 2, p. 342 (superfamily).

*Uriinae* Fürbringer, 1888, Untersuch. Morph. Syst. Vögel, vol. 2 (type *Uria*  
 Brisson).—*Uriae* Ridgway, 1919, Bull. U.S. Nat. Mus., no. 50, pt. 8, p. 703.

*Plauteae* Ridgway, 1919 (June 26), Bull. U.S. Nat. Mus., no. 50, pt. 8, p. 702  
 (type *Plautus* Gunnerus).

*Phalerinae* Ridgway, 1919 (June 26), Bull. U.S. Nat. Mus., no. 50, pt. 8, p. 703  
 (type *Phaleris* Temminck).—*Phalereae* Ridgway, 1919 (June 26), Bull. U.S.  
 Nat. Mus., no. 50, pt. 8, p. 704.

*Ceppheae* Ridgway, 1919 (June 26), Bull. U.S. Nat. Mus., no. 50, pt. 8, p. 703  
 (type *Cepphus* Pallas).

*Brachyrampheae* Ridgway, 1919 (June 26), Bull. U.S. Nat. Mus., no. 50, pt. 8,  
 p. 703 (type *Brachyrampus* Brandt).

*Synthliboramphaeae* Ridgway, 1919 (June 26), Bull. U.S. Nat. Mus., no. 50, pt. 8,  
 p. 704 (type *Synthliboramphus* Brandt).

*Fraterculinae* Ridgway, 1919 (June 26), Bull. U.S. Nat. Mus., no. 50, pt. 8, p.  
 705 (type *Fratercula* Brisson).

Genus †*Miocepphus* Wetmore

*Miocepphus* Wetmore, 1940 (Jan. 2), Jour. Morphology, vol. 66, no. 1, p. 35 (type by original designation *Miocepphus mcclungi* Wetmore).

4. *Miocepphus mcclungi* Wetmore

*Miocepphus mcclungi* Wetmore, 1940, Jour. Morphology, vol. 66, no. 1, p. 35, figs. 11-14 (type from near Parker Creek, right humerus, U.S. Nat. Mus. no. 16159).

MIDDLE MIOCENE (Calvert formation, zone 12). MARYLAND: Calvert County: cliff about 0.9 mile north of mouth of Parker Creek.

Genus *Cerorhinca* Bonaparte

*Cerorhinca* Bonaparte, 1828, Ann. Lyceum Nat. Hist. N.Y., vol. 2, p. 427 (type *Cerorhinca occidentalis* = *Alca monocerata* Pallas, Recent).

5. *Cerorhinca dubia* L. Miller

*Cerorhinca dubia* L. Miller, 1925, Carnegie Instn. Washington Publ., no. 349, p. 115, pl. 2, fig. B (type from Lompoc, impression of legs, Univ. Calif. Mus. Paleo. no. 26546).

MIDDLE MIOCENE (Temblor formation). CALIFORNIA: Santa Barbara County: Lompoc.

Genus *Uria* Brisson

*Uria* Brisson, 1760, Orn., vol. 1, p. 52; vol. 6, p. 70 (type *Colymbus aalge* Pontopidan, Recent).

6. *Uria antiqua* (Marsh)

*Catarractes antiquus* Marsh, 1870 (March), Amer. Jour. Sci., ser., 2, vol. 49, no. 146, p. 213 (type from Tarboro, left humerus, Acad. Nat. Sci. Philadelphia).

MIDDLE MIOCENE (Chesapeake group). NORTH CAROLINA: Edgecombe County: Tarboro.

7. *Uria ausonia* Portis

*Uria ausonia* Portis, 1887, Mem. R. Accad. Sci. Torino, ser. 2, vol. 38, p. 17 of separate (type from Orciano Pisano, distal portion of humerus, Museo di Firenze).

MIDDLE PLIOCENE (Orciano Pisano), ITALY.

8. *Uria affinis* (Marsh)

*Catarractes affinis* Marsh, 1872 (Oct.), Amer. Jour. Sci., ser. 3, vol. 4, no. 22, p. 259 (type from near Bangor; right humerus, Acad. Nat. Sci. Philadelphia).

UPPER(?) PLEISTOCENE (railroad cut, 47 feet below surface). MAINE: Penobscot County: bank of Penobscot River near Bangor.

Genus †*Australca* Brodkorb

*Australca* Brodkorb, 1955 (Nov. 30), Florida Geol. Surv. Rept. Invest., no. 14, p. 25 (type by original designation *Australca grandis* Brodkorb).

9. *Australca grandis* Brodkorb

*Australca grandis* Brodkorb, 1955 (Nov. 30), Florida Geol. Surv. Rept. Invest., no. 14, p. 27, figs. 24-29 (type from near Brewster, right coracoid, Brodkorb coll. no. 141).

LOWER PLIOCENE (Bone Valley gravel). FLORIDA: Polk County: near Brewster.

Genus *Brachyramphus* Brandt

*Brachyramphus* Brandt, 1837, Bull. Sci. Acad. Imp. Sci. St.-Petersbourg, vol. 2, no. 22, col. 346 (type *Colymbus marmoratus* Gmelin, Recent).

10. *Brachyramphus pliocenium* Howard

*Brachyramphus pliocenus* Howard, 1949 (June 22), Carnegie Inst. Washington Publ., no. 584, p. 191, pl. 3, figs. 1-2 (type from San Diego, humerus, Los Angeles County Mus. no. 2119).

MIDDLE PLIOCENE (San Diego formation). CALIFORNIA: San Diego County: San Diego, Washington Boulevard Freeway.

Genus *Ptychoramphus* Brandt

*Ptychoramphus* Brandt, 1837, Bull. Sci. Acad. Imp. Sci. St.-Petersbourg, vol. 2, no. 22, col. 347 (type *Uria aleutica* Pallas, Recent).

11. *Ptychoramphus tenuis* L. Miller and Bowman

*Ptychoramphus tenuis* L. Miller and Bowman, 1958 (March 6), Contrib. in Sci., Los Angeles Co. Mus., no. 20, p. 14, fig. 4 (type from San Diego, right tarsometatarsus, Univ. Calif. Mus. Paleo. no. 45662).

MIDDLE PLIOCENE (San Diego formation). CALIFORNIA: San Diego County: San Diego.



Subfamily †Mancallinae (L. Miller)<sup>1</sup>

*Mancallidae* L. Miller, 1946 (Jan.), Condor, vol. 48, no. 1, p. 34 (family; type *Mancalla* Lucas).

Genus †*Praemancalla* Howard

*Praemancalla* Howard, 1966 (May 5), Los Angeles County Mus., Contr. in Sci., no. 101, p. 4 (type by original designation *Praemancalla lagunensis* Howard).

12. *Praemancalla lagunensis* Howard

*Praemancalla lagunensis* Howard, 1966 (May 5), Los Angeles County Mus., Contr. in Sci., no. 101, p. 4, fig. 1A, C-E, G (type from Laguna Hills, distal end of right humerus, Los Angeles Co. Mus. no. 15288; paratype proximal half of right carpometacarpus, no. 15287; referred fragmentary coracoid, scapula, mandible).

UPPER MIOCENE? (marine bed). CALIFORNIA: Orange County: Laguna Hills, 1¾ miles SW of El Toro, in SW/4 of NE/4 of SW/4, sec. 34, Township 6 S, Range 8 W.

Genus †*Mancalla* Lucas

*Mancalla* Lucas, 1901 (March 15), Science, n.s., vol. 13, no. 324, p. 428 (type by monotypy *Mancalla californiensis* Lucas).

*Pliolunda* L. Miller, 1937 (Dec. 15), Trans. San Diego Soc. Nat. Hist., vol. 8, no. 29, p. 376 (type by original designation *Pliolunda diegensis* L. Miller).

*Pliolundia* Piveteau, 1955, Traité de Paléontologie, p. 1056 (lapsus).

13. *Mancalla californiensis* Lucas

*Mancalla californiensis* Lucas, 1901 (March 15), Science, n.s., vol. 13, no. 324, p. 428.—Lucas, 1901 (Sept. 27), Proc. U.S. Nat. Mus., vol. 24, no. 1245, p. 133, figs. 1-2 (type from Third Street tunnel, proximal portion of left humerus, U.S. Nat. Mus. no. 4976).

LOWER PLIOCENE (Repetto formation). CALIFORNIA: Los Angeles County: Los Angeles, Third Street tunnel; Orange County: Corona del Mar.

14. *Mancalla diegensis* (L. Miller)

*Pliolunda diegensis* L. Miller, 1937, (Dec. 15), Trans. San Diego Soc. Nat. Hist., vol. 8, no. 29, p. 376, figs. 1-2 (type from Market Street near Euclid Ave., right femur, Univ. Calif. Mus. Paleo. no. 33409)

MIDDLE PLIOCENE (San Diego formation). CALIFORNIA: San Diego County: San Diego.

<sup>1</sup> New rank.

## Neospecies of Alcidae from Pleistocene and \*prehistoric sites:

1. *Plautus alle* (Linnaeus). IRELAND: Kesh Cave and Merlin's Cave (Lambrecht, 1933, Handb. Palaeorn., p. 767). ENGLAND: Chudleigh Cave and Whitepark Bay (Lambrecht, 1933, Handb. Palaeorn., p. 767). NORWAY: Vardo (Lambrecht, 1933, Handb. Palaeorn., p. 767).

2. †*Pinguinus impennis* (Linnaeus). ICELAND: \*Kyrkjuvogr (Blasius, 1884, Jour. f. Ornith., vol. 32, no. 165, p. 145); Baejasker near Cape Reykjanes (Grieve, 1885, The Great Auk, or Garefowl (*Alca impennis*, Linn.), p. 41, App. p. 58). IRELAND: Waterford Cave, Whitepark Bay, and Donegal (Lambrecht, 1933, Handb. Palaeorn., p. 767). SCOTLAND: \*Keiss in Caithness and \*Oronsay in Argyleshire (Blasius, 1884, Jour. f. Ornith., vol. 32, no. 165, p. 143); record from \*Colonsay (Lambrecht, 1933, Handb. Palaeorn., p. 767) appears incorrect. ENGLAND: \*Marsden Cave near Cleadon on coast of Durham (Blasius, 1884, Jour. f. Ornith., vol. 32, no. 165, p. 143); \*Whitburn Lizards in Co. Durham (Grieve, 1885, The Great Auk, or Garefowl (*Alca impennis*, Linn.), p. 62, App. p. 58). CHANNEL ISLANDS: St. Brelade (Lambrecht, 1933, Handb. Palaeorn., p. 767). NORWAY: Vardo (Lambrecht, 1933, Handb. Palaeorn., p. 767). SWEDEN: southwest Skania (Lambrecht, 1933, Handb. Palaeorn., p. 767). DENMARK: \*Fannerup Randers, \*Gudumlund, \*Havelse, \*Meilgaard Randers, and Solager (Blasius, 1884, Jour. f. Ornith. vol. 32, no. 165, p. 142); Havnoe, Erteboelle, Klinteso, Sejroe, and Kvernevig (H. Winge, 1903, Vidensk. Meddel. naturh. Foren., vol. 6, p. 98). GIBRALTAR: Devil's Tower (Bate, 1928, Jour. Roy. Anthropol. Instn., vol. 58, p. 104, fig. 25). ITALY: Grotta Romanelli (Lambrecht, 1933, Handb. Palaeorn., p. 767). NEWFOUNDLAND: \*Funk Island (Blasius, 1884, Jour. f. Ornith., vol. 32, no. 165, p. 146). NOVA SCOTIA: \*Whynacht, \*Reid, and \*Frostfish (Halifax Mus.). MAINE: \*Mount Desert and \*Crouch's Cave near Portland (Blasius, 1884, Jour. f. Ornith., vol. 32, no. 165, p. 142). MASSACHUSETTS: \*Marblehead, \*Eagle-hill in Ipswich, and \*Plumb Island (Grieve, 1885, The Great Auk, or Garefowl (*Alca impennis*, Linn.), p. 30, App. p. 58). FLORIDA: \*Cotton midden on Halifax River, 1 mile north of Ormond (Hay, 1902, Auk, vol. 19, p. 255); \*Castle Windy (Bullen and Sleight, 1950, William L. Bryant Foundation Amer. Studies, Rept. no. 1, p. 20); \*Summer Haven midden (Brodkorb, 1960, Auk, vol. 77, p. 342). Exterminated in 1844.

3. *Alca torda* Linnaeus. IRELAND: Newhall Cave (Lambrecht, 1933, Handb. Palaeorn., p. 766). SCOTLAND: \*Keiss in Caithness and \*Oronsay in Argyleshire (Grieve, 1885, The Great Auk, or Garefowl (*Alca impennis*, Linn.), pp. 45, 54; \*Ardrossan (Lambrecht, 1933, Handb. Palaeorn., p. 766). ENGLAND: Burwell fen (Lambrecht, 1933, Handb. Palaeorn., p. 766). DENMARK: Meilgaard, Erteboelle, Gudumlund, Soelager, Munkholm, and \*Ordstrup Mos (H. Winge, 1903, Vidensk. Meddel. naturhist. Foren., vol. 6, p. 98). NOVA SCOTIA: \*Bear River, \*Reid, and \*Brighton (Halifax Mus.). FLORIDA: \*Green Mound (Hamon, 1959, Auk, vol. 76, p. 533).

4. *Uria lomvia* (Linnaeus). NORWAY: Vardo (Lambrecht, 1933, Handb. Palaeorn., p. 767). SWEDEN: Aure (Lambrecht, 1933, Handb. Palaeorn., p. 767). ALASKA: \*St. Lawrence Island (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, p. 94); \*Amaknak Island, \*Kodiak Island, \*Cape Denbeigh (Friedmann, 1934, op. cit., vol. 24, p. 233). \*Dutch Harbor?, \*Little Kiska Island?, and \*Attu Island? (Friedmann, 1937, op. cit., vol. 27, pp. 436-437); \*Cape Prince of

Wales? (Friedmann, 1941, op. cit., vol. 31, p. 408). NOVA SCOTIA: \*Port Jolie, \*Whynacht, \*Reid, and \*Matthews Island (Halifax Mus.).

5. *Uria aalge* (Pontoppidan). IRELAND: Edenvale Cave (Lambrecht, 1933, Handb. Palaeorn., p. 767). SCOTLAND: \*Oronsay in Argyleshire (Grieve, 1885, The Great Auk, or Garefowl (*Alca impennis*, Linn.), p. 54); \*Ardrossan and \*Colonsay (Lambrecht, 1933, Handb. Palaeorn., p. 767). ENGLAND: Norwich Crag (Lydekker, 1891, Ibis, ser. 6, vol. 3, p. 395); Yarn Hill and Chillesford Bads (Lambrecht, 1933, Handb. Palaeorn., p. 767). NORWAY: Vardo (Lambrecht, 1933, Handb. Palaeorn., p. 767). DENMARK: Fannerup, Mejlgaard, Aamoelle, Gudumlund, Klintesoe, Soelager, Sejroe, and Aalorg (H. Winge, 1903, Vidensk. Meddel. naturh. Foren., vol. 6, p. 97). GIBRALTAR: Devil's Tower (Bate, 1928, Jour. Roy. Anthropol. Inst., vol. 58, p. 104). ITALY: Grotta Romanelli? (Lambrecht, 1933, Handb. Palaeorn., p. 767). ALASKA: \*Amaknak Island (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, p. 233); \*Kodiak Island (Friedmann, 1935, op. cit., vol. 25, p. 50); \*Dutch Harbor?, \*Little Kiska Island?, and \*Attu Island? (Friedmann, 1937, op. cit., vol. 27, pp. 4360437); \*Cape Prince of Wales? (Friedmann, 1941, op. cit., vol. 31, p. 408). CALIFORNIA: Del Rey Hills = Playa del Rey (Howard, 1936, Condor, vol. 38, p. 212); Mussel Rock (A. H. Miller and Peabody, 1941, Condor, vol. 43, p. 78). FLORIDA: \*Summer Haven (Brodkorb, 1960, Auk, vol. 77, p. 342).

6. *Cephus grylle* (Linnaeus). ENGLAND: Chudleigh Cave? (Lambrecht, 1933, Handb. Palaeorn., p. 767). NORWAY: Vardo (Lambrecht, 1933, Handb. Palaeorn., p. 767). NOVA SCOTIA: \*Port Jolie and \*Whynacht (Halifax Mus.).

7. *Cephus columba* Pallas. ALASKA: \*St. Lawrence Island (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, p. 95); \*Amaknak Island, \*Kodiak Island, and \*Cape Denbeigh (Friedmann, 1934, op. cit., vol. 24, p. 233); \*Dutch Harbor, \*Little Kiska Island, and \*Attu Island (Friedmann, 1937, op. cit., vol. 27, p. 436) \*Cape Prince of Wales (Friedmann, 1941, op. cit., vol. 31, p. 408).

8. *Brachyramphus marmoratus* (Gmelin). ALASKA: \*Little Kiska Island (Friedmann, 1937, Jour. Washington Acad. Sci., vol. 27, p. 437).

9. *Brachyramphus brevirostris* (Vigors). ALASKA: \*St. Lawrence Island (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, p. 95).

10. *Synthliboramphus antiquum* (Gmelin). ALASKA: \*Kodiak Island, \*Dutch Harbor, and \*Little Kiska Island (Friedmann, 1937, Jour. Washington Acad. Sci., vol. 27, p. 434). CALIFORNIA: San Pedro (L. H. Miller, 1914, Univ. Calif. Publ., Bull. Dept. Geol., vol. 43, pt. 2, p. 75); Santa Monica? (Howard, 1949, Condor, vol. 51, p. 27).

11. *Ptychoramphus aleuticus* (Pallas). CALIFORNIA: San Pedro (Howard, 1949, Condor, vol. 51, p. 27).

12. *Cyclorhynchus psittacula* (Pallas). ALASKA: St. Lawrence Island (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, p. 95); \*Kodiak Island (Friedmann, 1935, op. cit., vol. 25, p. 50); \*Cape Prince of Wales (Friedmann, 1941, op. cit., vol. 31, p. 408).

13. *Aethia cristatella* (Pallas). ALASKA: \*St. Lawrence Island (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, p. 95); \*Kodiak Island, \*Dutch

Harbor, and \*Little Kiska Island (Friedmann, 1937, op. cit., vol. 27, p. 434); \*Cape Prince of Wales (Friedmann, 1941, op. cit., vol. 31, p. 408).

14. *Aethia pusilla* (Pallas). ALASKA: \*St. Lawrence Island (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, p. 96); \*Little Kiska Island (Friedmann, 1937, op. cit., vol. 27, p. 437); \*Cape Prince of Wales (Friedmann, 1941, op. cit., vol. 31, p. 408).

15. *Cerorhinca monocerata* (Pallas). ALASKA: \*Little Kiska Island (Friedmann, 1937, Jour. Washington Acad. Sci., vol. 27, p. 437).

16. *Fratercula arctica* (Linnaeus). SCOTLAND: \*Ardrossan (Lambrecht, 1933, Handb. Palaeorn., p. 767). NORWAY: Vardo (Lambrecht, 1933, Handb. Palaeorn., p. 767). FINLAND: Ladogasee (Lambrecht, 1933, Handb. Palaeorn., p. 767). NOVA SCOTIA: \*Matthews Island (Halifax Mus.).

17. *Fratercula corniculata* (Naumann). ALASKA: \*St. Lawrence Island (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, p. 96); \*Cape Denbeigh (Friedmann, 1934, op. cit., vol. 24, p. 237); Kodiak Island, \*Dutch Harbor, and \*Little Kiska Island (Friedmann, 1937, op. cit., vol. 27, p. 434); \*Cape Prince of Wales (Friedmann, 1941, op. cit., vol. 31, p. 409).

18. *Lunda cirrhata* (Pallas). ALASKA: \*St. Lawrence Island (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, p. 96); \*Amaknak Island (Friedmann, 1934, op. cit., vol. 24, p. 233); \*Kodiak Island (Friedmann, 1935, op. cit., vol. 25, p. 51); \*Dutch Harbor and \*Little Kiska Island (Friedmann, 1937, op. cit., vol. 27, p. 434); \*Cape Prince of Wales (Friedmann, 1941, op. cit., vol. 31, p. 409).

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