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CATALOGUE OF FOSSIL BIRDS:
Part 2 (Anseriformes through Galliformes)

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CATALOGUE OF FOSSIL BIRDS:

Part 2 (Anseriformes through Galliformes)

PIERCE BRODKORB [1]

SYNOPSIS: The second installment of the Catalogue of Fossil Birds treats 13 families comprising the orders Anseriformes, Accipitriformes, and Galliformes. The species included in this section number 474, of which 262 are paleospecies and 212 neospecies. Seven paleospecies are added to those included in groups covered in Part 1. The two parts now published thus cover 856 species, of which 542 are extinct and 314 living, being about two-thirds of the known fossil birds.

Modifications from the general plan adopted in the first installment are few. Common names for the higher taxa of living birds are provided in the Table of Contents. The synonymies of order-group and family-group names have been expanded to include all principal synonyms based on generic names, insofar as found. Subfamily headings have been included in the lists of neospecies.

Several generally recognized families are reduced to the subfamily level, namely: Paranyrocinae (to Anatidae), Teratornithinae (to Vulturidae), Gallinuloidinae (to Cracidae), and Tetraoninae and Meleagrinae (to Phasianidae).

Two new subfamily terms are proposed. Leptodontinae supplants Perninae, as *Leptodon* is the type genus of this section of the Accipitridae. The new subfamily Filholornithinae is erected in the Cracidae for *Filholornis* Milne-Edwards, formerly of Incertae Sedis.

Genera described as new are *Ludiortyx* and *Pirortyx* in the Gallinuloidinae, and *Schaubortyx* and *Proalector* in the Phasianinae.

[1] The author is Professor of Biological Sciences at the University of Florida, Gainesville. Manuscript received 3 February 1964.—ED.

Brodkorb, Pierce. 1964. Catalogue of fossil birds, Part 2 (Anseriformes through Galliformes). Bull. Florida State Mus., vol. 8, no. 3, pp. 195-335.

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INTRODUCTION

The first part of the Catalogue of Fossil Birds (1963, Bull. Florida State Mus., vol. 7, no. 4, pp. 179-293) treated the orders Archaeopterygiformes through Ardeiformes. The second installment now continues with the waterfowl, the diurnal birds of prey, and the gallinaceous birds. The fossil record of these three orders, the Anseriformes, Accipitriformes, and Galliformes, is quite extensive, more so than in any other group except the as yet untreated marsh birds. Part 1 of the Catalogue, with its addenda published herewith, covers 15 orders (4 extinct and 11 living), 49 families (23 extinct and 26 living), 162 genera (107 paleogenera and 55 neogenera), and 382 species (280 paleospecies and 102 neospecies). By contrast the three orders in Part 2 comprise only 13 families, all but one living. Yet the fossil record of these families runs to 256 genera (150 paleogenera and 106 neogenera) and 474 species (262 paleospecies and 212 neospecies).

The general plan adopted in the first installment is continued here with a few minor modifications. At the request of workers in other branches of paleontology, common names of the higher living taxa are included in the Table of Contents. Synonymies of order-group and family-group names are expanded to include all principal synonyms and variants based on generic names, insofar as found. Subfamilies with no fossil record are listed with appropriate notation. Subfamily headings are inserted in the lists of neospecies.

The manuscript of the present part was read in whole or in part by Hildegarde Howard, Alden H. Miller, and Alexander Wetmore, to whom I am greatly indebted.

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The continuing help of the many friends mentioned in the introduction of Part 1 is gratefully acknowledged. To those who supplied information or specimens must now be added David Bardack, Lawrence Kansas; Noemi Cattoi, Buenos Aires, Argentina; Mary Dawson, Pittsburgh, Pennsylvania; Charles A. Fleming, Lower Hutt, New Zealand; Morton Green, Rapid City, South Dakota; Daniel A. Guthrie, Amherst, Massachusetts; Lyndon L. Hargrave, Globe, Arizona; Dénes Jánossy, Budapest, Hungary; E. Kurochkin, Moscow, U.S.S.R.; J. David Ligon, Ann Arbor, Michigan; Oskar Kuhn, Munich, Germany; B. J. Marples, Dunedin, New Zealand; Paul O. McGrew, Laramie, Wyoming; Allan R. Phillips, Mexico City; A. S. Romer, Cambridge,

Massachusetts; Lester L. Short, Jr., Washington, D. C.; Robert E. Sloan, Minneapolis, Minnesota; Peter Stettenheim, East Lansing, Michigan; E. Tchernov, Jerusalem, Israel; Albert E. Wood, Amherst, Massachusetts; and J. C. Yaldwyn, Sydney, Australia.

"Priority is the basic principle of zoological nomenclature." [1] In the first installment of the Catalogue I expressed concern that the new International Code of Zoological Nomenclature included numerous provisions contrary to this principle. At the recent meeting of the Section on Nomenclature of the XVI International Congress of Zoology, the Commission failed to modify or rescind portions of Article 23, or any other section of the Code, despite the protests of the majority of taxonomists present. Under the circumstances I see no alternative but to return independently to adherence to the law of priority, disregarding the suppression of validly proposed names under the so-called plenary powers of the Commission, whose "real authority lies in the extent to which it interprets and expresses the will of zoologists." [2]

The two parts of the Catalogue now published treat 18 orders (4 extinct and 14 living), or slightly more than half of the orders of birds. These comprise 62 families (24 extinct and 38 living), or about one-fourth of the known families. Genera number 418 (257 paleogenera and 161 neogenera), and species total 856 (542 paleospecies and 314 neospecies). Nearly two-thirds of the described paleospecies of birds have now been treated, but these represent only a tiny fraction of those potentially knowable.

The proportion of living genera and species unknown as fossils further hints at the tremendous store of knowledge still awaiting discovery. In the families covered by the two parts of the Catalogue now published, 202 additional neogenera (56 per cent of the 363 recognized) and 796 additional neospecies (72 per cent of the 1110 known) are still unrepresented in the fossil record. It is obvious that paleornithology remains one of the most fertile fields in systematic biology.

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[1] International Code of Zoological Nomenclature adopted by the XV International Congress of Zoology, International Trust for Zoological Nomenclature, London, 1961, preamble, p. 3.

[2] Op. cit., preface, p. iv.

ADDENDA TO PART 1

Four species have been described since the publication of Part 1, and three others were overlooked during its preparation. I am indebted to B. J. Marples, Lester L. Short, Jr., and Robert W. Storer for calling the latter to my attention and urge other workers knowing of similar omissions to inform me.

Family Dromiceiidae Wetmore

Genus *Dromiceius* Vieillot

4. *Dromiceius ocypus* A. H. Miller

Dromiceius ocypus A. H. Miller, 1963 (Aug. 23), Records South Australian Mus., vol. 14, no. 3, p. 414, fig. 1c (type from Lawson quarry, right tarsometatarsus, South Australian Mus. no. P13444).

Lower Pliocene (Mampuwordu sands). South Australia: Lake Palankarinna: Lawson quarry.

Family Podicipedidae (Bonaparte)

Genus *Podiceps* Latham

7. *Podiceps gadowi* Hachisuka

Podiceps gadowi Hachisuka, 1953, The dodo and kindred birds, p. 124 (type from Mauritius, right ulna, Cambridge Univ.).

Quaternary. Mauritius.

Family Spheniscidae Bonaparte

Genus †*Palaeospheniscus* Moreno and Mercerat

33. *Palaeospheniscus novaezealandiae* Marples

Palaeospheniscus novaezealandiae Marples, 1960 (Jan. 31), Records Canterbury Mus., vol. 7, no. 3, p. 194, text-figs. 1c, 2, pl. 2-5 (type from Motunau, partial skeleton, including skull, vertebrae, sternum, rib fragments, clavicle, and left coracoid, scapula, humerus, radius, ulna, carpals, and fragments of carpometacarpus, Canterbury Mus. no. 16527).

Lower Pliocene (probably Waitotaran stage). New Zealand: South Island: North Canterbury: Motunau.

Family PHOENICOPTERIDAE Bonaparte

Genus †*Phoeniconotius* A. H. Miller

10. *Phoeniconotius eyrensis* A. H. Miller

Phoeniconotius eyrensis A. H. Miller, 1963 (July 23), Condor, vol. 65, no. 4, p. 292, fig. 3 (type from Lake Palankarinna, distal end of left tarsometatarsus, with associated proximal phalanx of left digit III and right digit IV, South Australian Mus. no. P13649).

LOWER MIOCENE? (Etadunna formation). SOUTH AUSTRALIA: Lake Eyre region: west shore of Lake Palankarinna.

Genus *Phoenicopterus* Linnaeus

11. *Phoenicopterus novaehollandiae* A. H. Miller

Phoenicopterus novaehollandiae A. H. Miller, 1963 (July 23), Condor, vol. 65, no. 4, p. 289, figs. 1*a*, 1*c*, 2*a* (type from Lake Pitikanta, distal part of right tarsometatarsus, South Australian Mus. no. P13648).

LOWER MIOCENE? (Etadunna formation). SOUTH AUSTRALIA: Lake Eyre region: west side of Lake Pitikanta.

Genus *Phoeniconaias* G. R. Gray

Phoeniconaias G. R. Gray, 1869 (October), Ibis, n.s., vol. 5, no. 20, pp. 440, 442 (type by monotypy *Phoenicopterus minor* Geoffroy).

12. *Phoeniconaias gracilis* A. H. Miller

Phoeniconaias gracilis A. H. Miller, 1963 (July 23), Condor, vol. 65, no. 4, p. 294, figs. 4*a*, 4*c* (type from Lake Kanunka, distal end of left tarsometatarsus, South Australian Mus. no. P13650).

LOWER PLEISTOCENE (Katipiri sands, Kanunka fauna). SOUTH AUSTRALIA: Lake Eyre region: Lake Kanunka.

Family CICONIIDAE (Gray)

Genus *Leptotilos* Lesson

22. *Leptotilos pliocenicus Zubareva*

Leptotilos pliocenicus Zubareva, 1948, Trudy Inst. Zool. Akad. Nauk Ukr. R.S.R., vol. 1, p. 114 (in Ukrainian!; type from near Odessa).

LOWER PLIOCENE. UKRAINE: near Odessa.

Order ANSERIFORMES (Wagler)

Anseres Linnaeus, 1758, Systema naturae, ed. 10, vol. 1, pp. 81, 84, 122 (ordo; not based on generic name).—Wagler, 1831, Isis von Oken, Heft 5, p. 531 (ordo; type *Anser* Brisson).—*Anseriformes* Garrod, 1874, Proc. Linn. Soc. London, p. 118.

Palamedeae Sclater, 1880 (July), Ibis, ser. 4, vol. 4, no. 16, p. 406 (order; type *Palamedea* Linnaeus, 1766, a junior synonym of *Anhima* Brisson, 1760).—*Palamedeiformes* Fürbringer, 1888, Untersuch. Morph. Syst. Vögel, vol. 2, p. 1565 (subordo).

Anhimae Wetmore and W. D. Miller, 1926 (July 3), Auk, vol. 43, no. 3, p. 341 suborder; type *Anhima* Brisson).

Anatiformes Hay, 1930 (January), Carnegie Instn. Washington Publ. no. 390, vol. 2, p. 299 (suborder; type *Anas* Linnaeus).

Suborder ANSERES Wagler

Anseres Linnaeus, 1758, Systema naturae, ed. 10, vol. 1, pp. 81, 84, 122 (ordo; not based on generic name).—Wagler, 1831, Isis von Oken, Heft 5, p. 531 (ordo; type *Anser* Brisson).—*Anseriformes* Garrod, 1874, Proc. Linn. Soc. London, p. 118.

Anatiformes Hay, 1930 (January), Carnegie Instn. Washington Publ. no. 390, vol. 2, p. 299 (suborder; type *Anas* Linnaeus).

Family ANATIDAE Vigors

Anatidae "Leach," Vigors, 1825 (after Jan.), Trans. Linn. Soc. London, vol. 14, pp. 416, 498 (family; type *Anas* Linnaeus).—*Anatina* Vigors, 1825, fide Gray.—*Anatinae* Swainson, 1837, Natural history and classification of birds, vol. 2, pp. 189, 366 (subfamily).—*Anatoideae* Stejneger, 1885, Standard natural history, vol. 4, p. 136 (superfamily).—*Anatoidae* Hay, 1930 (January), Carnegie Instn. Washington Publ., no. 390, vol. 2, p. 299 (superfamily).

Cygnina Vigors, 1825, fide Gray (type *Cygnus* Bechstein).—*Cygninae* Bonaparte, 1838, (April 14), Geographical and comparative list of the birds of Europe and North America, p. 55 (tribe, i.e. subfamily); 1838, Nuovi Ann. Sci. nat. (Bologna), vol. 2, p. 119.—*Cygnidae* Kaup, 1850, fide Gray.

Anserina Vigors, 1825, fide Gray (type *Anser* Brisson).—*Anserinae* Swainson, 1837, Nat. hist. classif. birds, vol. 2, pp. 191, 394 (subfamily).—*Anseridae* Kaup, 1850, fide Gray.

Cereopsina Vigors, 1825, fide Gray (type *Cereopsis* Latham).—*Cereopsinae* G. R. Gray, 1840, List of the genera of birds, fide Gray, 1871.—*Cereopsidae* Kaup, 1850, fide Gray.

Fuligulinae Swainson, 1831 (February 1832?), Fauna boreali-americana, pt. 2, fide Gray (subfamily; type *Fuligula* Stephens, 1824, a junior synonym of *Aythya* Boie, 1822); 1837, Nat. hist. classif. birds, vol. 2, pp. 189, 368.—*Fuligulidae* Carus, 1868, Handbuch der Zoologie, fide Gadow.

Merganinae Swainson, 1831 (February 1832?), Fauna boreali-americana, pt. 2, fide Gray (type *Mergus* Linnaeus).—*Merganidae* Swainson, 1837, Nat. hist.

classif. birds, vol. 2, pp. 190, 369 (subfamily!).—*Merginae* Bonaparte, 1838 (April 14), Geog. comp. list birds Eur. N. Amer., p. 50 (tribe).—*Mergidae* G. R. Gray, 1840, List of the genera of birds, fide Gray, 1871.

Plectropterinae G. R. Gray, 1840, List of the genera of birds, fide Gray, 1871 (type *Plectropterus* Stephens).—*Plectropteridae* Carus, Handbuch der Zoologie, fide Gadow.

Clangulinae Reichenbach, 1849, fide Gray (type *Clangula* Leach).—*Clanguleae* Bonaparte, 1854, Ann. Sci. nat. (Paris), vol. 1, p. 46.

Somaterinae Reichenbach, 1849, fide Gray (type *Somateria* Leach); "1850" (after Oct. 1, 1852), Avium systema naturale, p. VIII (tribus, i.e. subfamily).

Erismaturinae Reichenbach, "1850" (after Oct. 1, 1852), Avium syst. nat. p. VIII (tribus, i.e. subfamily; type *Erismatura* Bonaparte, 1832, a junior synonym of *Oxyura* Bonaparte, 1828).—*Erismaturidae* Carus, 1868, Handbuch der Zoologie, fide Gadow.

Hareldinae Reichenbach, "1850" (after Oct. 1, 1852), Avium syst. nat., p. VIII (tribus, i.e. subfamily; type *Harelda* Stephens, 1824, a junior synonym of *Clangula* Leach, 1819).

Marilinae Reichenbach, "1850" (after Oct. 1, 1852), Avium syst. nat., p. VIII (tribus, i.e. subfamily; type *Marila* Reichenbach, 1852, a junior synonym of *Aythya* Boie, 1822).

Berniclinae Reichenbach, "1850" (after Oct. 1, 1852), Avium syst. nat., p. IX (tribus, i.e. subfamily; type *Bernicla* Stephens, 1824, a junior synonym of *Branta* Scopoli, 1769).

Marecinae Reichenbach, "1850" (after Oct. 1, 1852), Avium syst. nat., p. IX (tribus, i.e. subfamily; type *Mareca* Stephens, 1824, a junior synonym of *Anas* Linnaeus, 1758).

Dafilineae Reichenbach, "1850" (after Oct. 1, 1852), Avium syst. nat., p. IX (tribus, i.e. subfamily; type *Dafila* Leach, 1824, a junior synonym of *Anas* Linnaeus, 1758).

Boschinae Reichenbach, "1850" (After Oct. 1, 1852), Avium syst. nat., p. IX (tribus, i.e. subfamily; type *Boschas* Swainson, 1831, a junior synonym of *Anas* Linnaeus, 1758).

Dendrocygninae Reichenbach, "1850" (after Oct. 1, 1852), Avium syst. nat., p. IX (tribus, i.e. subfamily; type *Dendrocygna* Swainson).

Tadorninae Reichenbach, "1850" (after Oct. 1, 1852), Avium syst. nat., p. X (tribus, i.e. subfamily; type *Tadorna* Fleming).—*Tadornidae* Carus, 1868, Handbuch der Zoologie, fide Gadow.

Cygnopinae Reichenbach, "1850" (after Oct. 1, 1852), Avium syst. nat., p. X (tribus, i.e. subfamily; type *Cygnopsis* J. F. Brandt).

Olorinae Reichenbach, "1850" (after Oct. 1, 1852), Avium syst. nat., p. X (tribus, i.e. subfamily; type *Olor* Wagler).

Merganetteae Bonaparte, 1853 (read Oct. 31), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646 (section; type *Merganetta* Gould).—*Merganettinae* Bonaparte, 1854, Ann. Sci. nat. (Paris), vol. 1, p. 47 (sous-famille).

Oidemieae Bonaparte, 1854, Ann. Sci. nat. (Paris), vol. 1, p. 47 (section; type *Oidemia* Fleming, before July 1822, a synonym of *Melanitta* Boie, before May 1822).

Cnemiornithidae Stejneger, 1885, Standard natural history, vol. 4, p. 136 (family; type *Cnemiornis* Owen).

Anseranatidae Stejneger, 1885, Stand. nat. hist., vol. 4, p. 138 (family; type *Anseranas* Lesson).—*Anseranatinae* Salvadori, 1895, Catalogue of the birds in the British Museum, vol. 27, p. 44 (subfamily).

Oxyurinae J. C. Phillips, 1926, Natural history of the ducks, vol. 4, p. 201 (subfamily; type *Oxyura* Bonaparte).

Nyrocinae Peters, 1931 Check-list of birds of the world, vol. 1, pp. xv, 173 (subfamily; type *Nyroca* Fleming, before July 1822, a synonym of *Aythya* Boie, before May 1822).

Romainvillinae Lambrecht, 1933, Handbuch der Palaeornithologie, p. 351 (subfamilia; type *Romainvillia* Lebedinsky).

Eonessinae Wetmore, 1938 (May), Jour. Paleontology, vol. 12, no. 3, p. 280 (subfamily; type *Eonessa* Wetmore).

Paranyrocidae A. H. Miller and Compton, 1939 (July 15), Condor, vol. 41, no. 4, p. 153 (family; type *Paranyroca* A. H. Miller and Compton).

Aythyini Delacour and Mayr, 1945 (March 31), Wilson Bull., vol. 57, no. 1, p. 26 (tribe; type *Aythya* Boie).—*Aythyinae* American Ornithologists' Union, 1946 (July 24), Auk, vol. 63, no. 3, p. 429 (subfamily).

Cairinini Delacour and Mayr, 1945 (March 31), Wilson Bull., vol. 57, no. 1, p. 26 (tribe; type *Cairina* Fleming).

Subfamily †EONESSINAE Wetmore

Eonessinae Wetmore, 1938 (May), Jour. Paleontology, vol. 12, no. 3, p. 280 (type *Eonessa* Wetmore).

Genus †*Eonessa* Wetmore

Eonessa Wetmore, 1938 (May), Jour. Paleontology, vol. 12, no. 3, p. 280 (type by original designation *Eonessa anaticula* Wetmore).

1. *Eonessa anaticula* Wetmore

Eonessa anaticula Wetmore, 1938 (May), Jour. Paleontology, vol. 12, no. 3, p. 280, figs. 1-5 (type from Myton pocket, left wing bones, Princeton Univ. Dept. Geol., no. 14399).

MIDDLE EOCENE (Uinta formation, horizon C). UTAH: Duchesne County: Myton pocket.

Subfamily †ROMAINVILLIINAE (Lambrecht) [1]

Romainvillinae Lambrecht, 1933, Handbuch Palaeorn., p. 351 (type *Romainvillia* Lebedinsky).

Genus †*Romainvillia* Lebedinsky

Romainvillia Lebedinsky, 1927, Abh. schweiz. pal. Ges., vol. 47, no. 2, p. 1 (type by monotypy *Romainvillia* Lebedinsky).

2. *Romainvillia stehlini* Lebedinsky

Romainvillia stehlini Lebedinsky, 1927, Abh. schweiz. pal. Ges., vol. 47, no. 2, p. 1, text-fig. 1, pl. 1 (types from Romainville, 2 metacarpi, right tarsometatarsus, left coracoid, fragmentary furculum, Basel Mus. nos. P.G. 25, 38, 38a, 53, 55.)

LOWER OLIGOCENE (marnes blanches supragypseuses). FRANCE: Dept. Seine: Romainville.

Subfamily CYGNINAE (Vigors)

Cygnina Vigors, 1825, fide Gray (type *Cygnus* Bechstein).—*Cygninae* Bonaparte, 1838 (Apr. 14), Geog. comp. list birds Eur. N. Amer., p. 55.
Olorinae Reichenbach, "1850" (after Oct. 1, 1852), Avium syst. nat., p. X (type *Olor* Wagler).

Genus †*Cygnopterus* Lambrecht

Cygnopterus Lambrecht, 1931, Bull. Mus. Hist. nat. belgique, vol. 7, no. 31, p. 1 (type *Sula affinis* Van Beneden).

3. *Cygnopterus affinis* (Van Beneden)

Sula affinis Van Beneden, 1883, Bull. Acad. Sci. nat. belgique, ser. 3, vol. 6, p. 132 (types from Rupelmonde, humerus, head of coracoid, proximal end of scapula, distal end of ulna, femur, proximal end of tibiotarsus, Mus. Hist. Nat. Bruxelles).

MIDDLE OLIGOCENE (argile rupelièn ne). BELGIUM: East Flanders: Rupelmonde.

Genus †*Cygnavus* Lambrecht

Cygnavus Lambrecht, 1931, Bull. Mus. Hist. nat. belgique, vol. 7, no. 31, p. 3 (type *Cygnavus senckenbergi* Lambrecht).

[1] New emendation.

4. *Cygnavus senckenbergi* Lambrecht

Cygnavus senckenbergi Lambrecht, 1931, Bull. Mus. Hist. nat. belgique, vol. 7, no. 31, p. 3, pl. 1, fig. 3-4; pl. 2, fig. 9-12 (types from River Hessler, femur, distal end of tibiotarsus, phalanx, Senckenberg Mus., Frankfurt a.M.).

LOWER MIOCENE (upper Hydrobienschichten). GERMANY: Prov. Hesse-Nassau: River Hessler near Wiesbaden.

Genus *Cygnus* Bechstein

Cygnus Bechstein, 1803, Orn. Taschenb. Deutschl., vol. 2, p. 404 footnote (type *Anas olor* Gmelin).

Palaeocycnus Stejneger, 1882 (July 25), Proc. U. S. nat. Mus., vol. 5, no. 275, p. 180 (type by original designation *Cygnus falconeri* Parker).

Archaeocycnus DeVis, 1905 (Sept. 30), Ann. Queensland Mus., no. 6, p. 11 (type by original designation *Archaeocycnus lacustris* DeVis).

5. *Cygnus herrenthalsi* Van Beneden

Cygnus herrenthalsi Van Beneden, 1871, Bull. Acad. Sci. nat. belgique, ser. 2, vol. 32, p. 218 (type from Herenthals canal, toe phalanx, Mus. Hist. Nat. Bruxelles).

Cygnus herenthalsii Stejneger, 1883, Proc. U. S. nat. Mus., vol. 5, p. 181 (lapsus).

UPPER MIOCENE (Bolderian sand). BELGIUM: Herrenthals canal near Antwerp.

6. *Cygnus falconeri* Parker

Cygnus falconeri Parker, 1865, Proc. zool. Soc. London, p. 752 (types from Zebbug Cave, tibiotarsus, tarsometatarsus, toe phalanges, Brit. Mus.).

Cygnus melitensis Falconer, 1868, Falconer pal. Mem., vol. 2, p. 300 (same material).

MIDDLE PLEISTOCENE (cave deposit). MALTA: Zebbug Cave (Parker, 1865); Har Dalam cavern? (Bate, 1916, Proc. zool. Soc. London, pp. 422, 427).

7. *Cygnus lacustris* (DeVis)

Archaeocycnus lacustris DeVis, 1905 (Sept. 30), Ann. Queensland Mus., no. 6, p. 11, pl. 3, fig. 1-7 (types from Lower Cooper, Kalamurina, Wankamaminna, Undwampa, Malkuni, and Wurdulumankula, fragmentary left coracoid, distal ends of right and left humeri, proximal end of right radius, distal end of right ulna, proximal ends of right and left femora, distal end of left tibia, proximal end of left tarsometatarsus, cervical vertebra).

Chenopis nanus DeVis, 1905 (Sept. 30), Ann. Queensland Mus., no. 6, p. 13, pl. 2, fig. 3-7 (types from Lower Cooper, Malkuni, Wurdulumankula, and Unduwumpa, proximal end of left coracoid, distal end of right humerus, distal end of left tibia, distal ends of 2 left tarsometatarsi, fragmentary pelvis). Appears to be juvenile of the above.

UPPER PLEISTOCENE (Katipiri sands, Malkuni fauna). AUSTRALIA: South Australia: Lower Cooper; Kalamurina; Wankamaminna; Undwampa or Unduwumpa; Malkuni; Wurdulumankula, all near Lake Eyre.

8. *Cygnus sumnerensis* (Forbes)

Chenopis sumnerensis Forbes, 1889, Trans. Proc. N. Zealand Inst., vol. 24, p. 188 (type from Monck's Cave at Sumner, coracoids and humerus, Brit. Mus.).—Oliver, 1930, N. Zealand Birds, ed. 1, p. 232, fig. (type from Chatham Islands, skull, Dominion Mus. at Wellington).

Cygnus chathamicus Oliver, 1955, N. Zealand Birds, ed. 2, p. 603, fig. (type from Chatham Islands, skull, Dominion Mus., same specimen as above).

QUATERNARY. NEW ZEALAND: South Island: Monck's Cave at Sumner near Christchurch (Forbes, 1889); Warrington (Lambrecht, 1933, Handb. Palaeorn., p. 389); Wairau Bar (Oliver, 1955); Lake Grassmere (Oliver, 1955). North Island: Te Aute (Lambrecht, 1933). CHATHAM ISLANDS: Wharekauri Island (Forbes, 1893, Ibis, p. 545).

9. *Cygnus paloregonus* Cope

Cygnus paloregonus Cope, 1878, Bull. U. S. geol. geog. Surv. Terrs. (Hayden), vol. 4, no. 2, p. 388 (type from Fossil Lake, tarsometatarsus, Amer. Mus. Nat. Hist., no. 2552A; cast Brodkorb coll.).

Anser condoni Shufeldt, 1892, Jour. Acad. nat. Sci. Philadelphia, vol. 9, pp. 406, 410, pl. 16, fig. 19, 26-27 (type from Fossil Lake, furculum, Amer. Mus. Nat. Hist. no. 3536).

Olor matthewi Shufeldt, 1913 (July 9), Bull. Amer. Mus. nat. Hist., vol. 32, art. 6, pp. 151, 156, pl. 26, fig. 309; pl. 35, fig. 422 (types from Fossil Lake, 2 carpometacarpi, 2 scapulae, Amer. Mus. Nat. Hist.).

Olor paleocygnus Lindgren, 1900, U. S. geol. Surv., Ann. Rept., vol. 20, pt. 3, p. 90 (lapsus for *paloregonus*; cervical vertebra from Fromans Ferry).

MIDDLE PLEISTOCENE (Fossil Lake formation). OREGON: Lake County: Fossil Lake (Cope, 1878). IDAHO: Fromans Ferry? (Lindgren, 1900).

Genus †*Cygnanser* Kretzoi

Cygnanser Kretzoi, 1957, Aquila, vol. 63-64, pp. 240 (Magyar), 245 (English) (type by original designation *Cygnus csakvarensis* Lambrecht).

10. *Cygnanser csakvarensis* (Lambrecht)

Cygnus csakvarensis Lambrecht, 1933, Handbuch Palaeorn., p. 383, figs. 128g-k (holotype from Esterházy cave, proximal part of carpometacarpus, paratypes prox. part of another carpometacarpus, phalanx 1 of alar digit II, Magyar Geol. Mus., Budapest).

LOWER PLIOCENE (*Hipparion* fauna, lower Pannonian). HUNGARY: County Fejer: Esterházy cave, on south face of Vertes Mountains, 2 kilometers S of Csákvár (near Báracháza and Székesfehérvár).

Genus *Olor* Wagler

Olor Wagler, 1832, Isis von Oken, col. 1234 (type *Anas cygnus* Linnaeus).

11. *Olor hibbardi* (Brodkorb)

Cygnus hibbardi Brodkorb, 1958 (Oct. 31), Wilson Bull., vol. 70, p. 283, fig. 1 (type from section 20, tarsometatarsus, Univ. Mich. Mus. Paleo. no. 33894).

LOWER PLEISTOCENE (Hagerman lake beds). IDAHO: Twin Falls County: section 20, Township 7 S, Range 13 E, across Snake River from Hagerman.

Subfamily ANSERINAE Vigors

Anserina Vigors, 1825, fide Gray (type *Anser* Brisson).—*Anserinae* Swainson, 1837, Nat. hist. classif. birds, vol. 2, pp. 191, 394.

Berniclinae Reichenbach, "1850" (after Oct. 1, 1852), Avium syst. nat., p. IX (type *Bernicla* Stephens, 1824, a junior synonym of *Branta* Scopoli, 1769).

Cygnopinae Reichenbach, "1850" (after Oct. 1, 1852), Avium syst. nat., p. X (type *Cygnopsis* J. F. Brandt).

Genus †*Chenornis* Portis

Chenornis Portis, 1884, Mem. Accad. Sci. Torino, ser. 2, vol. 36, p. 364 (type *Chenornis graculoides* Portis). Position uncertain.

12. *Chenornis graculoides* Portis

Chenornis graculoides Portis, 1884, Mem. Accad. Sci. Torino, ser. 2, vol. 36, p. 364, pl. 1, fig. 5 (type from Ceva, postcranial skeleton impression).

LOWER MIOCENE (Aquitanian). ITALY: Piedmont: Ceva.

Genus †*Presbychen* Wetmore

Presbychen Wetmore, 1930 (July 15), Proc. California Acad. Sci., ser. 4, vol. 19, no. 8, p. 92 (type by monotypy *Presbychen abavus* Wetmore).

13. *Presbychen abavus* Wetmore

Presbychen abavus Wetmore, 1930 (July 15), Proc. California Acad. Sci., ser. 4, vol. 19, no. 8, p. 92, fig. 5-7 (type from Sharktooth Hill, distal end of right tibiotarsus, U. S. Nat. Mus. no. 11973).

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

Genus *Anser* Brisson

Anser Brisson, 1760, Ornithologia, vol. 1, p. 58; vol. 6, p. 261 (type *Anas anser* Linnaeus).

14. *Anser scaldii* (Van Beneden)

Anas scaldii Van Beneden, 1872, Jour. de Zool., vol. 1, p. 284 (type from Antwerp, humerus, Mus. Bruxelles).

UPPER MIOCENE (Anversian black sands). BELGIUM: near Antwerp.

15. *Anser atavus* (Fraas)

Anas atava O. Fraas, 1870, Jahresh. Ver. Naturk. Württemberg, vol. 26, p. 275, pl. 13, fig. 1 (type from Steinheim, distal end of femur, Stuttgart Mus.).

UPPER MIOCENE (obere Süsswassermolasse). GERMANY: Bavaria: Steinheim (Fraas, 1870); Hahnenberg, Spitzberg, and Günzburg (Lambrecht, 1933, Handb. Palaeorn., p. 678).

16. *Anser cygniformis* (Fraas)

Anas cygniformis O. Fraas, 1870, Jahresh. Ver. Naturk. Württemberg, vol. 26, p. 276, pl. 13, fig. 2, 10, 12 (types from Steinheim, coracoid, radius, ulna, carpometacarpus, femur, phalanges, vertebrae, Stuttgart Mus.).

UPPER MIOCENE (obere Süsswassermolasse). GERMANY: Bavaria: Steinheim.

17. *Anser oeningensis* (Meyer)

Anas oeningensis H. von Meyer, 1865, Palaeontographica, vol. 14, p. 126, pl. 30, fig. 2 (type from Öhningen, partial skeleton including sternum, scapulae, coracoids, furculum, humeri, carpometacarpus, phalanx 1 of digit II, Brit. Mus. no. 42804).

UPPER MIOCENE (Oehningerkalke). SWITZERLAND: Oehningen near Radolfzell on the Bodensee.

18. *Anser pressus* (Wetmore)

Chen pressa Wetmore, 1933 (Dec. 27), Smithsonian misc. Coll., vol. 87, no. 20, p. 9, figs. 5-8 (type from Hagerman, left femur, U. S. Nat. Mus. no. 12823).

LOWER PLEISTOCENE (Hagerman lake beds). IDAHO: Gooding County: near Hagerman.

19. *Anser azerbaidzhanicus* Serebrovsky

Anser azerbaidzhanicus Serebrovsky, 1940, Doklady Akad. Nauk. S.S.S.R., vol. 27, no. 7, p. 766 (type from Binagada).

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

20. *Anser equitum* (Bate)

Cygnus equitum Bate, 1916, Proc. zool. Soc. London, pp. 422, 427, figs. 1-2 (type from Har Dalam cavern, right carpometacarpus, apparently in Malta Mus.). Figure of the type has characters of a goose, not a swan.

MIDDLE PLEISTOCENE (cave deposits). MALTA: Har Dalam cavern (Bate, 1916); Ta Gandia fissure, Tal Herba fissure, Benghisa Gap, and Calafrana fissure (Lambrecht, 1933, Handb. Palaeorn., p. 386).

Genus †*Eremochen* Brodkorb

Eremochen, Brodkorb, 1961 (Nov. 7), Quart. Jour. Florida Acad. Sci., vol. 24, no. 3, p. 174 (type by original designation *Eremochen russelli* Brodkorb).

21. *Eremochen russelli* Brodkorb

Eremochen russelli Brodkorb, 1961 (Nov. 7), Quart. Jour. Florida Acad. Sci., vol. 24, no. 3, p. 175, fig. 3 (type from Juntura, proximal part of left humerus, Univ. Oregon Mus. Nat. Hist. nos. F-5424 and F-5414).

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

Genus *Branta* Scopoli

Branta Scopoli, 1769, Annus I, Historico-naturalis, p. 67 (type *Anas bernicla* Linnaeus).

22. *Branta esmeralda* Burt

Branta esmeralda Burt, 1929 (March 19), Univ. Calif. Publ., Bull. Dept. geol. Sci., vol. 18, no. 6, p. 222, pl. 20, figs. 1, 4-5, 8 (type from Fish Lake Valley, left carpometacarpus, Univ. Calif. Mus. Paleo. no. 29601).

LOWER PLIOCENE (Esmeralda formation). NEVADA: Esmeralda County: Fish Lake Valley, 7 miles north of Chiatovich Ranch.

23. *Branta howardae* L. Miller

Branta howardae L. Miller, 1930 (July 15), Condor, vol. 32, no. 4, p. 208, fig. 74 (type from Ricardo, fragmentary left carpometacarpus, Univ. Calif. Mus. Paleo. no. 28811).

LOWER PLIOCENE (Ricardo formation). CALIFORNIA: Kern County: Ricardo.

24. *Branta propinqua* Shufeldt

Branta propinqua Shufeldt, 1892 (Oct. 20), Jour. Acad. nat. Sci. Philadelphia, vol. 9, sig. 53, pp. 407, 410, pl. 15, fig. 17 (type from Fossil Lake, humerus, Amer. Mus. Nat. Hist. no. 3547).

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

25. *Branta dickeyi* L. Miller

Branta dickeyi L. Miller, 1924 (Sept. 15), Condor, vol. 26, no. 5, p. 179, fig. 46 (type from McKittrick, tibiotarsus, Univ. Calif. Mus. Paleo.).

UPPER PLEISTOCENE (tar pits). CALIFORNIA: Kern County: McKittrick (L. Miller, 1924).

UPPER PLEISTOCENE (Dry Creek beds). OREGON: Malheur County: Dry Creek (L. Miller, 1944, Condor, vol. 46, p. 27, fig. 6).

Subfamily DENDROCYGNINAE Reichenbach

Dendrocygninae Reichenbach, "1850" (after Oct. 1, 1852), Avium systema naturale, p. IX (tribus, i.e. subfamily; type *Dendrocygna* Swainson).

Genus †*Dendrochen* A. H. Miller

Dendrochen A. H. Miller, 1944 (June 22), Univ. Calif. Publ., Bull. Dept. geol. Sci., vol. 27, no. 4, p. 88 (type by monotypy *Dendrochen robusta* Miller).

26. *Dendrochen robusta* A. H. Miller

Dendrochen robusta A. H. Miller, 1944 (June 22), Univ. Calif. Publ., Bull. Dept. geol. Sci., vol. 27, no. 4, p. 88, fig. 3 (type from Flint Hill, left humerus, Univ. Calif. Mus. Paleo. no. 37364).

LOWER MIOCENE (Rosebud formation). SOUTH DAKOTA: Bennett County: Flint Hill, 9 miles WSW of Martin.

Genus *Dendrocygna* Swainson

Dendrocygna Swainson, 1837, Nat. Hist. Classif. Birds, vol. 2, p. 365 (type *Anas arcuata* Horsfield).

27. *Dendrocygna eversa* Wetmore

Dendrocygna eversa Wetmore, 1924 (Jan. 15), Proc. U. S. nat. Mus., vol. 64, art. 5, p. 3, fig. 1-2 (type from section 22, proximal half of right humerus, U. S. Nat. Mus. no. 10547).

LOWER PLEISTOCENE (San Pedro Valley formation). ARIZONA: Cochise County: section 22, Township 17 S, Range 20 E, 2 miles S of Benson.

28. *Dendrocygna validipinnis* DeVis

Dendrocygna validipinnis DeVis, 1888, Proc. Linn. Soc. N. S. Wales, ser. 2, vol. 3, p. 1282, pl. 34, fig. 5a-6 (types from River Condamine, proximal half of left humerus, right ulna).

Dendrocygna validipennis Lambrecht, 1933, Handbuch Palaeorn., p. 367 (lapsus).

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

Subfamily PLECTROPTERINAE Gray

Plectropterinae G. R. Gray, 1840, List genera birds, fide Gray, 1871 (type *Plectropterus* Stephens).

Genus †*Teleornis* Ameghino

Teleornis F. Ameghino, 1899 (July), Sinopsis geológico-paleontológica, Suplemento, p. 9 (type by monotypy *Teleornis impressus* Ameghino). Subfamily uncertain.

29. *Teleornis impressus* Ameghino

Teleornis impressus Ameghino, 1899 (July), Sinopsis geológico-palaeontológica, Suplemento, p. 9 (type from Patagonia, distal part of humerus).

LOWER OLIGOCENE (Deseado formation). ARGENTINA: Patagonia (i.e., Río Deseado?).

Genus †*Loxornis* Ameghino

Loxornis Ameghino, 1895, Bol. Inst. geog. argentino, vol. 15, cahiers 11-12, p. 97 (type by monotypy *Loxornis clivus* Ameghino). Subfamily uncertain.

30. *Loxornis clivus* Ameghino

Loxornis clivus Ameghino, 1895, Bol. Inst. geog. argentino, vol. 15, cahiers 11-12, p. 97, fig. 41 (type from Río Deseado, distal end of left tibiotarsus).

LOWER OLIGOCENE (Deseado formation). ARGENTINA: Terr. Santa Cruz: Rio Deseado (Ameghino, 1895). Terr. Chubut: Chico del Chubut, west of Puerto Vissa (Loomis, 1914, Deseado formation of Patagonia, p. 225).

Genus *Neochen* Oberholser

Neochen Oberholser, 1918, Jour. Washington Acad. Sci., vol. 8, p. 571 (type *Anser jubatus* Spix).

31. *Neochen pugil* (Winge)

Chenalopex pugil O. Winge, 1887 (Oct. 1), E Museo Lundii, Bind 1, Afh. 2, p. 19, figs. 1-6 (figured ♂ types probably from Lapa da Escrivania Nr. 5, right coracoid, proximal end of left humerus, right carpometacarpus, distal half of left tibiotarsus, left tarsometatarsus, Copenhagen Mus.).

UPPER PLEISTOCENE (cave deposits). BRAZIL: Minas Geraes: Lapa da Escrivania nos. 5 and 11; Lapa dos Tatus, all near Lagoa Santa (O. Winge, 1887).

32. *Neochen debilis* (Ameghino)

Chenalopex debilis F. Ameghino, 1891, Rev. argentina Hist. nat., vol. 1, p. 445 (type from La Plata, tarsometatarsus).

UPPER PLEISTOCENE (middle part of Pampas formation, piso belgranense). ARGENTINA: Prov. Buenos Aires: ciudad de La Plata.

Genus *Alopochen* Stejneger

Alopochen Stejneger, Stand. nat. Hist., vol. 4, p. 141 (type *Anas aegyptiaca* Linnaeus).

33. *Alopochen sirabensis* (Andrews)

Chenalopex sirabensis Andrews, 1897 (July), Ibis, ser. 7, vol. 3, no. 11, p. 355, pl. 9, figs. 1-3 (type from Sirabé, skull, Brit. Mus.).

UPPER PLEISTOCENE (marl layer?). MADAGASCAR: Sirabé.

Genus †*Euryanas* Oliver

Euryanas Oliver, 1930, New Zealand Birds, ed. 1, p. 220 (type *Anas finschi* Van Beneden).

34. *Euryanas finschi* (Van Beneden)

Anas finschi Van Beneden, 1875, Bull. Soc. géol. Belgique, vol. 2, p. 123, pl. 3 (types from Earnscleugh Cave, in Bremen Mus. and Berlin Mus., cranium, premaxilla, mandible, humerus, ulna, scapula, metacarpus, index phalanx 1, furculum, coracoid, femur, tibiotarsus, fibula, tarsometatarsus, toe phalanges).

QUATERNARY. NEW ZEALAND: South Island: Earnscleugh Cave in Otago (Van Beneden, 1875); Castle Rocks and Ngapara (Hamilton, 1893, Trans. N. Zealand Inst., vol. 25, p. 106); Pyramid Valley Swamp (Scarlett, 1955, Rec. Canterbury Mus., vol. 6, no. 4, p. 262); Lake Grassmere and Pareora (Oliver, 1955, N. Zealand Birds, ed. 2, p. 600). NORTH ISLAND: Martinborough Cave I (Yaldwyn, 1956, Records Dominion Mus., vol. 3, p. 3).

Genus †*Geochen* Wetmore

Geochen Wetmore, 1943 (July 23), Condor, vol. 45, no. 4, p. 146 (type by monotypy *Geochen rhuax* Wetmore).

35. *Geochen rhuax* Wetmore

Geochen rhuax Wetmore, 1943 (July 23), Condor, vol. 45, no. 4, p. 146, fig. 39 (type from Kaumaikeohu, fragmentary right tibiotarsus, U. S. Nat. Mus. no. 16740).

MIDDLE? PLEISTOCENE (Pahala formation, ash member). ISLAND OF HAWAII: shoulder of Kaumaikeohu Peak, above Pahala.

Genus †*Centrornis* Andrews

Centrornis Andrews, 1897 (July), Ibis, ser. 7, vol. 3, no. 11, p. 344 (type by monotypy *Centrornis majori* Andrews).

36. *Centrornis majori* Andrews

Centrornis majori Andrews, 1897 (July), Ibis, ser. 7, vol. 3, no. 11, p. 344, pl. 8, figs. 1-7 (type from black earth, Sirabé, right femur, right tibiotarsus, upper end of left coracoid, proximal end of left scapula, proximal end of right metacarpus, Brit. Mus.).

UPPER PLEISTOCENE (marl layer). MADAGASCAR: Sirabé (Andrews, 1897).

RECENT (black earth layer). MADAGASCAR: Sirabé (Andrews, 1897); Ambolisatra (Lambrecht, 1933, Handb. Palaeorn., p. 375).

Subfamily CEREOPSINAE Vigors

Cereopsina Vigors, 1825, fide Gray (type *Cereopsis* Latham).—*Cereopsinae* G. R. Gray, 1840, List genera birds, fide Gray, 1871.

Cnemiornithidae Stejneger, 1885, Stand. nat. Hist., vol. 4, p. 136 (family; type *Cnemiornis* Owen).

Genus †*Cnemiornis* Owen

Cnemiornis Owen, 1865, Trans. zool. Soc. London, vol. 5, p. 396 (type *Cnemiornis calcitrans* Owen).

37. *Cnemiornis calcitrans* Owen

Cnemiornis calcitrans Owen, 1865, Trans. zool. Soc. London, vol. 5, p. 396, pl. 63-68 (types from Timaru, cranium, sternum, left humerus, left ulna, left metacarpus, pelvis, left femur, left tibiotarsus, fibula, left tarsometatarsus, 6 dorsal vertebrae, Brit. Mus. nos. 46575, 46581-46582, 46584-46592, 46610-46613).

Cereopsis novae-zealandiae Forbes, 1891, Some Extinct Birds of New Zealand, p. 2 (type from New Zealand, skull, Brit. Mus.; see Dawson, 1958, Ibis, p. 234).

Cnemiornis minor Forbes, 1891, Trans. Proc. N. Zealand Inst., vol. 24, p. 185 (Oamaru, type lost?; nomen nudum, fide Lambrecht, 1933; = ♀?).

QUATERNARY. NEW ZEALAND: South Island: Timaru (Owen, 1865); Otago and Hamilton (Lydekker, 1891, Cat. foss. birds Brit. Mus., pp. 99, 102); Earnscleugh Cave, Glemmark, Kapua, Enfield, Dunstan, Springvale, and Oamaru (Lambrecht, 1933, Handb. Palaeorn., pp. 374-375); Pyramid Valley swamp (Scarlett, 1955, Rec. Canterbury Mus., vol. 6, p. 262); Herbert (Oliver, 1955, N. Zealand Birds, ed. 2, p. 602).

38. *Cnemiornis septentrionalis* Oliver

(?) *Cnemiornis gracilis* Forbes, 1891, Some Extinct Birds of New Zealand, p. 2 ("type" left tibiotarsus, Brit. Mus. no. A2074; the question is academic whether the so-called type is from Oamaru on the South Island (Lambrecht, 1933, Handb. Palaeorn., p. 375) or from the North Island (Dawson, 1958, Ibis, p. 235), for the name appears to be a nomen nudum).

Cnemiornis septentrionalis Oliver, 1955, N. Zealand Birds, ed. 2, p. 602 (type from Hunterville, tibia, Wanganui Mus.).

QUATERNARY. NEW ZEALAND: North Island: Hunterville, Kaiiwi, and Napier (Oliver, 1955); Te Aute (Lambrecht, 1933, Handb. Palaeorn., pp. 374-375).

Subfamily TADORNINAE Reichenbach

Tadorninae Reichenbach, "1850" (after Oct. 1, 1852), Avium systema naturale, p. X (type *Tadorna* Fleming).

Genus † *Anabernicula* Ross

Anabernicula Ross, 1935 (Aug. 24), Trans. San Diego Soc. nat. Hist., vol. 8, no. 15, p. 107 (type by monotypy *Anabernicula gracilenta* Ross).

39. *Anabernicula minuscula* (Wetmore)

Branta minuscula Wetmore, 1924 (Jan. 15), Proc. U. S. nat. Mus., vol. 64, art. 5, p. 6, figs. 3-4 (type from 2 miles south of Benson, proximal half of right humerus, U. S. Nat. Mus. no. 10548).

LOWER PLEISTOCENE (San Pedro Valley formation). ARIZONA: Cochise County: 2 miles south of Benson.

40. *Anabernicula* n. sp., Howard (MS.)

Anabernicula, species, Howard, 1946 (Jan. 25), Carnegie Instn. Washington Publ., no. 551, pp. 171, 190 (Fossil Lake).

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

41. *Anabernicula gracilenta* Ross

Anabernicula gracilenta Ross, 1935 (Aug. 24), Trans. San Diego Soc. nat. Hist., vol. 8, no. 15, p. 107, fig. 1 (type from McKittrick, left tarsometarsus, Calif. Inst. Tech. no. 1169, now in Los Angeles Mus.).

UPPER PLEISTOCENE (tar pits). CALIFORNIA: Kern County: McKittrick (Ross, 1935). Los Angeles County: Rancho La Brea (Howard, 1936, Condor, vol. 38, p. 34).

UPPER PLEISTOCENE (cave deposits). NEVADA: White Pine County: Smith Creek Cave (Howard, 1952, Bull. S. Calif. Acad. Sci., vol. 51, pt. 2, p. 53). NEW MEXICO: Grant County: Howells Ridge Cave (Howard, 1962, Condor, vol. 64, p. 242). Dona Ana County: Shelter Cave (Howard, 1962).

UPPER PLEISTOCENE (Groesbeck Creek beds). TEXAS: Hardeman County: Groesbeck Creek (Midwestern Univ.).

Genus †*Brantadorna* Howard

Brantadorna Howard, 1963 (Dec. 30), Los Angeles County Mus., Contributions in Science, no. 73, p. 8 (type by original designation, *Brantadorna downsi*, new species).

42. *Brantadorna downsi* Howard

Brantadorna downsi Howard, 1963 (Dec. 30), Los Angeles County Mus., Contributions in Science, no. 73, p. 8, pl. 1, figs. G-I, (type from Mesquite Oasis, proximal end of right humerus, Los Angeles Co. Mus. no. 3911).

MIDDLE PLEISTOCENE (upper part of Palm Spring formation). CALIFORNIA: San Diego County: Mesquite Oasis.

Subfamily ANATINAE (Vigors)

Anatidae "Leach," Vigors, 1825 (after Jan.), Trans. Linn. Soc. London, pol. 14, pp. 416, 498 (family; type *Anas* Linnaeus).—*Anatinae* Swainson, 1837, Nat. hist. classif. birds, vol. 2, pp. 189, 361.

Marecinae Reichenbach, "1850" (after Oct. 1, 1852), Avium syst. nat., p. IX type *Mareca* Stephens, 1824, a junior synonym of *Anas* Linnaeus, 1758).

Dafilineae Reichenbach, "1850" (after Oct. 1, 1852), Avium syst. nat., p. IX (type *Dafila* Leach, 1824, a junior synonym of *Anas* Linnaeus).

Boschinae Reichenbach, "1850" (after Oct. 1, 1852), Avium syst. nat., p. IX (type *Boschas* Swainson, 1831, a junior synonym of *Anas* Linnaeus).

Cairinini Delacour and Mayr, 1945 (March 31), Wilson Bull., vol. 57, no. 1, p. 26 (tribe; type *Cairina* Fleming).

Genus *Anas* Linnaeus

Anas Linnaeus, 1758, Systema naturae, ed. 10, vol. 1, p. 122 (type *Anas platyrhynchos* Linnaeus).

43. *Anas oligocaena* Tugarinov

Anas oligocaena Tugarinov, 1940, Doklady Akad. Nauk S.S.S.R., vol. 26, no. 3, p. 307, fig. 1 (type from Agispe).

UPPER OLIGOCENE (Lake Aral beds). KAZAKSTAN: Agispe, on north shore of Lake Aral.

44. *Anas basaltica* Bayer

Anas basaltica Bayer, 1883, Sitz.-Ber. böhm. Ges. Wiss., for 1882, p. 62, fig. 1 (types from Warnsdorf, coracoid, scapula, humerus, rib, Böhmischen Landesmuseum at Prag, and Naturhist. Mus. at Wien).

UPPER OLIGOCENE (Braunkohlen von Warnsdorf). CZECHOSLOVAKIA: Warnsdorf.

45. *Anas skalicensis* Bayer

Anas skalicensis Bayer, 1883, Sitz.-Ber. böhm. Ges. Wiss., for 1882, p. 64, fig. 2 type from Skalitz, impression of humerus, ulna, radium, vertebrae, Böhmnischen Landesmuseum at Prag).

LOWER MIOCENE (Diatomeenschiefer von Skalitz). CZECHOSLOVAKIA: Skalitz (near Leitmeritz = Litomerice).

46. *Anas luederitzensis* Lambrecht

Anas luederitzensis Lambrecht, 1929, Abh. bayer. Akad. Wiss., neue Folge, vol. 4, p. 15, pl. 2, fig. 4-5 (types from Lüderitz Bay, coracoid, humerus, Munich Mus.).

LOWER MIOCENE (Kalahari formation). SOUTHWEST AFRICA: Great Namaqualand: Lüderitz Bay.

47. *Anas blanchardi* Milne-Edwards

Anas blanchardi Milne-Edwards, 1863 (séance June 29), C. R. Acad. Sci. Paris, vol. 56, p. 1221 (type from Dept. Allier, nearly complete skeleton, coll. Milne-Edwards; very brief characterization).

Anas blanchardii Milne-Edwards, 1867, Oiseaux fossiles France, vol. 1, sheet 17, p. 129, pl. 21-24 (Saint-Gérand-le-Puy; Langy; Billy; Chaveroches; Weisenau; complete description).

LOWER MIOCENE (Aquitanian). FRANCE: Dept. Allier: Saint-Gérand-le-Puy, Langy, Billy, and Chaveroches (Milne-Edwards, 1867, p. 129); Vaumas (Paris, 1912, Rev. Franç. Orn., vol. 4, p. 290); Treteau and Montaigu le Blin (Lambrecht, 1933, Handb. Palaeorn., p. 356).

LOWER MIOCENE (Hydrobienschichten). GERMANY: Rheinhessen: Weisenau (Milne-Edwards, 1863, p. 143).

LOWER MIOCENE (Braunkohle von Skyritz). CZECHOSLOVAKIA: Prokopi (= Mariannenschacht), 45 km. SSE of Most (= Brüx) (Lambrecht, 1933).

48. *Anas consobrina* Milne-Edwards

Anas consobrina Milne-Edwards, 1867, Oiseaux fossiles France, vol. 1, sheet 19, p. 145, pl. 25, figs. 1-13 (types from Langy, tarsometatarsus, tibia, femur, metacarpus, Paris Mus.).

LOWER MIOCENE (Aquitanian). FRANCE: Dept. Allier: Langy (Milne-Edwards, 1867); Saint-Gérand-le-Puy (Lambrecht, 1933, Handb. Palaeorn., p. 357).

49. *Anas isarensis* Lambrecht

Anas isarensis Lambrecht, 1933, Handbuch Palaeorn., p. 361, fig. 123A (type from River Isar, proximal half of right scapula, Munich Mus.).

UPPER MIOCENE (Flinz von München). GERMANY: Bavaria: left bank of River Isar at Aumeister near Munich.

50. *Anas robusta* Milne-Edwards

Anas robusta Milne-Edwards, 1867, Oiseaux fossiles France, vol. 1, sheet 20, p. 155, pl. 25, fig. 23-25 (type from Sansan, distal end of left humerus).

UPPER MIOCENE (Braunkohlen der Oberpfalz). GERMANY: Bavaria: clayworks of Mayer and Reinhard between Dechbetten and Prüfening (von Ammon, 1918, Abh. Naturw. Ver. Regensburg, vol. 12, p. 35).

UPPER MIOCENE (Tortonian). FRANCE: Dept. Gers: colline de Sansan (Milne-Edwards, 1867).

UPPER MIOCENE (Rieser Süsswasserkalk). GERMANY: Bavaria: Lierheim near the Hahnenberg (Lydekker, 1891, Cat. Foss. Birds, p. 116).

51. *Anas sansaniensis* Milne-Edwards

Anas sansaniensis Milne-Edwards, 1867, Oiseaux fossiles France, vol. 1, sheet 20, p. 153, pl. 25, fig. 26-30; pl. 26, figs. 19-22 (types from Sansan, distal ends of right tibia, right humerus, coll. Milne-Edwards).

UPPER MIOCENE (Tortonian). FRANCE: Dept. Gers: Colline de Sansan (Milne-Edwards, 1867).

UPPERMOST MIOCENE (Rieser Süsswasserkalk). GERMANY: Bavaria: Wallerstein chalk hill, 4 kilometers N of Nordlingem; the Hahnenberg near Appetzhofen (Lambrecht, 1933, Handb. Palaeorn., p. 358).

52. *Anas risgoviensis* von Ammon

Anas risgoviensis von Ammon, 1918, Abh. zool. -mineral Ver. Regensburg, vol. 12, p. 41 (new name for *Anas* sp., Lydekker, 1891, Cat. Foss. Birds, p. 117; types from Lierheim, left and right coracoids, Brit. Mus. nos. 48165, 48165a).

UPPERMOST MIOCENE (Rieser Süsswasserkalk). GERMANY: Bavaria: Lierheim near Hahnenberg (Lydekker, 1891); Steinheim (Fraas, 1870, Jahresh. Ver. Vaterl. Naturk. Wurttemberg, vol. 26, p. 279).

53. *Anas lignitifila* Portis

Anas lignitifila Portis, 1884, Mem. Accad. Sci. Torino, ser. 2, vol. 36, separate p. 13 (type from Monte Bamboli, crushed skeleton).

LOWER PLIOCENE (lignite beds). ITALY: Tuscany: prov. Grosseto: Monte Bamboli.

54. *Anas pachyscelus* Wetmore

Anas pachyscelus Wetmore, 1960 (July 7), Smithsonian misc. Coll., vol. 140, no. 2, p. 2, pl. 1, figs. 1-5 (type from Wilkinson quarry, left tarsometatarsus, U. S. Nat. Mus. no. 22506).

MIDDLE? PLEISTOCENE (post-Walsingham). BERMUDA: Hamilton Parish: H. Bernard Wilkinson quarry (Wetmore, 1960); Government quarry (Brodkorb coll.).

55. *Anas itchtucknee* McCoy

Anas itchtucknee McCoy, 1963 (July 30), Auk, vol. 80, no. 3, p. 341, figs. 2 (type from Itchtucknee River, left coracoid, Brodkorb no. 8501, not 8500 as published).

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

56. *Anas theodori* Newton and Gadow

Anas theodori E. T. Newton and Gadow, 1893, Trans. zool. Soc. London, vol. 13, pp. 282, 291, pl. 34, figs. 11-17 (types from Mare aux Songes, fragmentary sternum, coracoid, humerus, tarsometatarsus, Cambridge Univ. Mus. and Mauritius Mus.; casts in Brit. Mus.).

QUATERNARY. MAURITIUS: Mare aux Songes.

Genus *Querquedula* Stephens

Querquedula Stephens, 1824, Shaw's gen. Zool., vol. 12, no. 2, p. 142 (type *Anas querquedula* Linnaeus).

Archeoquerquedula Spillman, 1942, Proc. Eighth Amer. sci. Congress, vol. 4, p. 387 (type by monotypy *Archeoquerquedula lambrechti* Spillman).—*Archaeoquerquedula* Wetmore, 1951, Proc. X. internat. ornith. Congress, p. 67 (emendation).

57. *Querquedula natator* (Milne-Edwards)

Anas natator Milne-Edwards, 1867, Oiseaux fossiles France, vol. 1, sheet 19, p. 148, pl. 25, figs. 14-22 (lectotype from couches à Indusies, Langy, Paris Mus., designated by Storer, 1956, Condor, vol. 58, p. 422).

LOWER MIOCENE (Aquitanian). FRANCE: Dept. Allier: couches à Indusies, Langy (Milne-Edwards, 1867); Saint-Gérand-le-Puy (Lambrecht, 1933, Handb. Palaeorn., p. 357).

LOWER MIOCENE (Hydrobienkalke). GERMANY: Hesse: Weisenau and Kastel Bruch (Lambrecht, 1933).

LOWER MIOCENE (Braunkohle von Skyritz). CZECHOSLOVAKIA: Skyritz (Lambrecht, 1933).

58. *Querquedula integra* A. H. Miller

Querquedula integra A. H. Miller, 1944 (June 22), Univ. Calif. Publ. Zool., Bull. Dept. Geol. Sci., vol. 27, no. 4, p. 90, fig. 4 (type from Flint Hill, right coracoid, Univ., Calif. Mus. Paleo. no. 37370).

LOWER MIOCENE (Rosebud formation). SOUTH DAKOTA: Bennett County: Flint Hill, in SW ¼, section 31, Township 37 N, Range 38 W, 9 mi. WSW of Martin.

59. *Querquedula pullulans* Brodkorb

Querquedula pullulans Brodkorb, 1961 (Nov. 7), Quart. Jour. Florida Acad. Sci., vol. 24, no. 3, p. 176, fig. 4 (type from Juntura, proximal part of left carpometacarpus, Univ. Ore. Mus. Nat. Hist. no. F-6289).

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

60. *Querquedula lambrechti* (Spillmann)

Archeoquerquedula lambrechti Spillmann, 1942, Proc. Eighth Amer. sci. Congress, vol. 4, p. 387, fig. 9 (type from Río Chico and Carolina Oil Company, cranium and rostrum).

UPPER? PLEISTOCENE (Santa Elena asphalt sands). ECUADOR: Santa Elena peninsula: Río Chico and Carolina Oil Company camp.

Genus *Nettion* Kaup

Nettion Kaup, 1829, Skizz. Entw. Gesch. Nat. Syst. Europ. Thierw., pp. 95, 196 (type *Anas crecca* Linnaeus).

61. *Nettion velox* (Milne-Edwards)

Anas velox Milne-Edwards, 1867, Oiseaux fossiles France, vol. 1, sheet 19, p. 150, pl. 26, figs. 1-18 (types from Sansan, left coracoid, proximal part of left ulna, left carpometacarpus, distal end of right tibiotarsus).

UPPER MIOCENE (Helvetian). FRANCE: Dept. Gers: colline de Sansan. Records from Germany (von Ammon, 1918, Abh. Naturw. Ver. Regensburg, vol. 12, p. 10; Lambrecht, 1933, Handb. Palaeorn., p. 359) are unsatisfactory.

62. *Nettion eppelsheimense* (Lambrecht)

Anas eppelsheimensis Lambrecht, 1933, Handbuch Palaeorn., p. 362, fig. 124 (type from Eppelsheim, fragmentary coracoid, Mus. Preussischen Geologischen Landesanstalt, Berlin).

LOWER PLIOCENE (Dinotheriensande). GERMANY: Rheinhessen: Eppelsheim.

63. *Nettion greeni* Brodkorb

Nettion greeni Brodkorb, 1964 (April 27), Quart. Jour. Florida Acad. Sci., vol. 27, no. 1, p. 55, fig. 1 (type from Rice ranch, distal half of right humerus, S. Dakota School of Mines and Tech. no. 63576).

LOWER PLIOCENE (lower part of Ash Hollow formation). SOUTH DAKOTA: Bennett County: D. C. Rice ranch, 3 miles NE of Tuthill.

64. *Nettion ogallalae* Brodkorb

Nettion ogallalae Brodkorb, 1962 (Dec. 5), Quart. Jour. Florida Acad. Sci., vol. 25, no. 2, p. 157, fig. 1 (type from Section 15, distal half of left humerus, Univ. Mich. Mus. Paleo. no. 41458).

LOWER PLIOCENE (Ogallala formation). KANSAS: Trego County: SW corner, section 15, Township 11 S, Range 22 W, 6½ miles NE of Wakeeney.

65. *Nettion bunkeri* Wetmore

Nettion bunkeri Wetmore, 1944 (May 15), Univ. Kansas Sci. Bull., vol. 30, pt. 1, no. 9, p. 92, figs. 1-3 (type from Rexroad ranch, right carpometacarpus, Univ. Kansas Mus. no. 3982).

MIDDLE PLIOCENE (McKay reservoir beds). OREGON: Umatilla County: McKay Reservoir (Brodkorb, 1958, Condor, vol. 60, p. 252).

MIDDLE PLIOCENE (Hemphill formation). TEXAS: Hemphill County: Coffee ranch? (Compton, 1934, Condor, vol. 36, p. 40).

UPPER PLIOCENE (Rexroad formation). KANSAS: Meade County: Rexroad ranch, locality 3, section 22, Township 33 S, Range 29 W (Wetmore, 1944).

LOWER PLEISTOCENE (San Pedro Valley formation). ARIZONA: Cochise County: 2 miles S of Benson (Wetmore, 1944).

LOWER PLEISTOCENE (Hagerman Lake beds). IDAHO: Gooding County: near Hagerman (Wetmore, 1933, Smithsonian misc. Coll., vol. 87, no. 20, p. 11).

66. *Nettion elapsum* DeVis

Anas elapsa DeVis, 1888, Proc. Linn. Soc. N. S. Wales, vol. 3, no. 2, p. 1281, pl. 33, figs. 4a-c (types from River Condamine, left tibia, proximal part left femur).

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

67. *Nettion gracilipes* DeVis

Anas gracilipes DeVis, 1905 (Sept. 30), Ann. Queensland Mus., no. 6, p. 14, pl. 4, figs. 4-5 (types left coracoid from Lower Cooper, right tarsometatarsus from Kalamurina).

UPPER PLEISTOCENE (Malkuni fauna, Katipiri sands). AUSTRALIA: South Australia: Lower Cooper and Kalamurina E of Lake Eyre.

68. *Nettion strenuum* (DeVis)

Anas (Nettium) strenua DeVis, 1905 (Sept. 30), Ann. Queensland Mus., no. 6, p. 15, pl. 4, figs. 6-7 (types from Patteramordu, proximal and distal parts of left humerus).

UPPER PLEISTOCENE (Malkuni fauna, Katipiri sands). AUSTRALIA: South Australia: Patteramordu.

Genus † *Eoneornis* Ameghino

Eoneornis Ameghino, 1895, Bol. Inst. geog. argentino, vol. 15, cahiers 11-12, p. 95 (type by monotypy *Eoneornis australis* Ameghino).

69. *Eoneornis australis* Ameghino

Eoneornis australis Ameghino, 1895, Bol. Inst. geog. argentino, vol. 15, cahiers 11-12, p. 95, fig. 39 (type from Monte Observación, distal part of radius, Brit. Mus.).

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

Genus †*Eutelornis* Ameghino

Eutelornis Ameghino, 1895, Bol. Inst. geog. argentino, vol. 15, cahiers 11-12, p. 96 (type by monotypy *Eutelornis patagonicus* Ameghino).

70. *Eutelornis patagonicus* Ameghino

Eutelornis patagonicus Ameghino, 1895, Bol. Inst. geog. argentino, vol. 15, cahiers 11-12, p. 96, fig. 40 (types from Monte Observación, distal part of humerus, proximal parts of tibiotarsus).

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

Genus *Nettapus* Brandt

Nettapus Brandt, 1836, Descriptiones et iconés avium Rossicor. nov., fasc. 1, p. 5 (type *Anas aurita* Boddaert).

71. *Nettapus anatoides* (Depéret)

Anser anatoides Depéret, 1890, Mém. Soc. géol. France, vol. 3, p. 129, pl. 13, fig. 1 (type from Fort-du-Serrat-d'en Vacquer, tibiotarsus, Univ. Lyon?).

UPPER PLIOCENE (Rousillon beds, Astian). FRANCE: Dept. Pyrénnées-Orientales: Fort-du-Serrat-d'en Vacquer, in Rousillon basin near Perpignan.

72. *Nettapus eyrensis* DeVis

Nettapus eyrensis DeVis, 1905 (Sept. 30), Ann. Queensland Mus., no. 6, p. 16, pl. 4, figs. 9-10 (type from Lower Cooper, upper part of right coracoid, distal part of right humerus).

UPPER PLEISTOCENE (Malkuni fauna, Katipiri sands). AUSTRALIA: South Australia: Lower Cooper River at east end of Lake Eyre.

Genus *Sarkidiornis* Eyton

Sarkidiornis Eyton, 1838, Monogr. Anatidae, p. 20 (type *Anser melanotos* Pennant).

73. *Sarkidiornis mauritianus* Newton and Gadow

Sarkidiornis mauritianus E. T. Newton and Gadow, 1893, Trans. zool. Soc. London, vol. 13, p. 290, pl. 34, figs. 9-10 (type from Mare aux Songes, carpometacarpus, Cambridge Univ.).

QUATERNARY. MAURITIUS: Mare aux Songes.

Genus †*Pachyanas* Oliver

Pachyanas Oliver, 1955, N. Zealand Birds, ed. 2, p. 599 (type by original designation *Pachyanas chathamica* Oliver).

74. *Pachyanas chathamica* Oliver

Pachyanas chathamica Oliver, 1955, N. Zealand Birds, ed. 2, p. 599, fig. (type from Chatham Island, cranium, Canterbury Mus.).

QUATERNARY. CHATHAM ISLANDS.

Subfamily AYTHYINAE (Delacour and Mayr)

Fuligulinae Swainson, 1831 (February 1832?), Fauna boreali-americana, pt. 2, fide Gray (type *Fuligula* Stephens, 1824, a junior synonym of *Aythya* Boie, before May, 1822).

Marilinae Reichenbach, "1850" (after Oct. 1, 1852), Avium syst. nat., p. VIII (type *Marila* Reichenbach, 1852, a junior synonym of *Aythya* Boie).

Nyrocinae Peters, 1931, Check-list of birds of the world, vol. 1, pp. xv, 173 (type *Nyroca* Fleming, before July 1822, a synonym of *Aythya* Boie).

Aythinini Delacour and Mayr, 1945 (March 31), Wilson Bull., vol. 57, no. 1, p. 26 (tribe; type *Aythya* Boie).—*Aythyinae* American Ornithologists' Union, 1946 (July 24), Auk, vol. 63, no. 3, p. 429 (subfamily).

Genus *Aythya* Boie

Aythya Boie, 1822 (before May), Tagebl. Ges. deutsch. Naturforsch. Ärzte, p. 351 (type *Anas marila* Linnaeus).

75. *Aythya arvernensis* (Lydekker)

Fuligula arvernensis Lydekker, 1891 (April 25), Cat. Foss. Birds Brit. Mus., p. 122, (types from Puy-de-Dome, right humerus, fragmentary ulna, Brit. Mus. no. A.159).

LOWER MIOCENE (Aquitanian). FRANCE: Dept. Allier: Puy-de-Dome.

76. *Aythya meyerii* (Milne-Edwards)

Anas meyerii Milne-Edwards, 1867, Oiseaux fossiles France, vol. 1, sheet 16, p. 129 (type from Öhningen, crushed tarsometatarsus and foot, Brit. Mus. no. 42805).

UPPER MIOCENE (Oehninger Kalk). SWITZERLAND: Oehningen.

77. *Aythya aretina* (Portis)

Fuligula aretina Portis, 1889, Mem. Ist. Firenze, p. 4, pl. 1, figs. 1-10 (types from Montecarlo and Strette, shaft of femur, distal end of tarsometatarsus, proximal end of carpometacarpus, furculum, 2 cervical vertebrae, Florence Mus.).

UPPER PLIOCENE (Stellicione or Valdarno superiore, Astian age). ITALY: Tuscany: Montecarlo in Arno Valley; Strette near Terranuova.

78. *Aythya sepulta* (Portis)

Fuligula sepulta Portis, 1889, Mem. Ist. Firenze, p. 9, pl. 1, figs. 11-23 (type from Montecarlo, furculum, coracoid, ulna, radius, carpometacarpus, cervical vertebra, rib, Florence Mus.).

UPPER PLIOCENE (Astian). ITALY: Tuscany: Montecarlo in Arno Valley.

79. *Aythya robusta* (DeVis)

Nyroca robusta DeVis, 1888, Proc. Linn. Soc. N. S. Wales, ser. 2, vol. 3, p. 1278, pl. 33, fig. 1-2 (types from River Condamine, distal half of right humerus, proximal end of ulna, left coracoid).

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

80. *Aythya reclusa* (DeVis)

Nyroca reclusa DeVis, 1888, Proc. Linn. Soc. N. S. Wales, ser. 2, vol. 3, p. 1292, pl. 33, fig. 3 (type from River Condamine, left coracoid).

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

81. *Aythya effodiata* (DeVis)

Nyroca effodiata DeVis, 1905 (Sept. 30), Ann. Queensland Mus., no. 6, p. 15, pl. 14, fig. 8 (type from Wurdulumankula, distal end of right humerus).

UPPER PLEISTOCENE (Malkuni fauna, Katipiri sands). AUSTRALIA: South Australia: Wurdulumankula, east of Lake Eyre.

Subfamily †PARANYROCINAE (A. H. Miller and Compton)[1]

Paranyrocidae A. H. Miller and Compton, 1939 (July 15), Condor, vol. 41, no. 4, p. 153 (type *Paranyroca* A. H. Miller and Compton).

Genus †*Paranyroca* A. H. Miller and Compton

Paranyroca A. H. Miller and Compton, 1939 (July 15), Condor, vol. 41, no. 4, p. 153 (type *Paranyroca magna* Miller and Compton).

82. *Paranyroca magna* A. H. Miller and Compton

Paranyroca magna A. H. Miller and Compton, 1939 (July 15), Condor, vol. 41, no. 4, p. 153, fig. 34 (type from Flint Hill, left tarsometatarsus, Univ. Calif. Mus. Paleo. no. 34456).

LOWER MIOCENE (Rosebud formation). SOUTH DAKOTA: Bennett County: Flint Hill, 9 miles WSW of Martin.

[1] New rank.

Subfamily MERGINAE (Swainson)

Merganinae Swainson, 1831 (Feb. 1832?), Fauna boreali-americana, pt. 2, fide Gray (type *Mergus* Linnaeus).—*Merginae* Bonaparte, 1838 (April 14), Geog. comp. list birds Eur. N. Amer., p. 59.

Clangulinae Reichenbach, 1849, fide Gray (type *Clangula* Leach).

Somaterinae Reichenbach, 1849, fide Gray (type *Somateria* Leach); "1850" (after Oct. 1, 1852), Avium syst. nat., p. VIII.

Hareldinae Reichenbach, "1850" (after Oct. 1, 1852), Avium syst. nat., p. VIII (type *Harelda* Stephens, 1824, a junior synonym of *Clangula* Leach, 1819).

Oidemiae Bonaparte, 1854, Ann. Sci. nat. (Paris), vol. 1, p. 47 (section; type *Oidemia* Fleming, before July 1822, a synonym of *Melanitta* Boie, before May 1822).

Genus †*Ocyplonessa* Brodkorb

Ocyplonessa Brodkorb, 1961 (Nov. 7), Quart. Jour. Florida Acad. Sci., vol. 24, no. 3, p. 177 (type by original designation *Ocyplonessa shotwelli* Brodkorb).

83. *Ocyplonessa shotwelli* Brodkorb

Ocyplonessa shotwelli Brodkorb, 1961 (Nov. 7), Quart. Jour. Florida Acad. Sci., vol. 24, no. 3, p. 178, fig. 5 (type from Juntura, distal part of left tarsometatarsus, Univ. Ore. Mus. Nat. Hist. nos. F-10485 and F-11291).

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

Genus *Bucephala* Baird

Bucephala Baird, 1858, Reports of explorations and survey . . . for a railroad . . . to the Pacific, vol. 9, pp. L, 788, 795, (type *Anas albeola* Linnaeus).

84. *Bucephala ossivallis* Brodkorb

Bucephala ossivallis Brodkorb, 1955 (Nov. 30), Florida geol. Surv. Rept. Invest., no. 14, p. 18, figs. 16-17 (type from Brewster, upper part of left coracoid, Brodkorb no. 172).

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

85. *Bucephala fossilis* Howard

Bucephala fossilis Howard, 1963 (Dec. 30), Los Angeles County Mus., Contributions in Science, no. 73, p. 11, pl. 1, figs. A-C (type from Arroyo Tapiado, proximal end of carpometacarpus, Los Angeles Co. Mus. no. 2787).

MIDDLE PLEISTOCENE (upper part of Palm Spring formation). CALIFORNIA: San Diego County: Arroyo Tapiado. *Bucephala* sp. (Brodkorb, 1961, Quart. Jour. Florida Acad. Sci., vol. 24, no. 3, p. 180), from the Lower Pleistocene Hagerman lake beds, Idaho, possibly belongs here.

Genus †*Chendytes* L. Miller

Chendytes L. Miller, 1925 (July 15), Condor, vol. 27, no. 4, p. 145 (type by monotypy *Chendytes lawi* Miller).

86. *Chendytes milleri* Howard

Chendytes milleri Howard, 1955 (May 25), Condor, vol. 57, no. 3, p. 137, fig. 1a, d-g, i; fig. 2b-c; fig. 3 (type from Coney Point, right humerus, Los Angeles Mus. no. 2364).

LOWER PLEISTOCENE (San Pedro formation). CALIFORNIA: San Nicolas Island: near Coney Point.

87. *Chendytes lawi* L. Miller

Chendytes lawi L. Miller, 1925 (July 15), Condor, vol. 27, no. 4, p. 145, fig. 40 (type from Santa Monica, tibiotarsus, Univ. Calif. Mus. Paleo.).

LOWER PLEISTOCENE (San Pedro formation). CALIFORNIA: Ventura County: Sexton Canyon (L. Miller, 1934, Science, n.s., vol. 80, p. 141).

UPPER PLEISTOCENE (Palos Verdes sands). CALIFORNIA: Los Angeles County: Santa Monica (L. Miller, 1925); San Pedro (L. Miller, 1930, Condor, vol. 32, p. 117); Playa del Rey = Del Rey Hills (Howard, 1936, Condor, vol. 38, p. 212); Bixby Slough in Hermosa Beach (Howard, 1944, Bull. S. Calif. Acad. Sci., vol. 43, pt. 2, p. 74); Lomita (Howard, 1955, Condor, vol. 57, p. 135); Vermont and Sepulveda boulevards in Los Angeles (Howard, 1955); Palos Verdes (Howard, 1955). Orange County: Newport Bay (Howard, 1947, Los Angeles Co. Mus. Quart., vol. 6, no. 2, p. 8).

UPPER PLEISTOCENE (marine terrace). CALIFORNIA: Ventura County: West Anacapa Island (L. Miller, Mitchell, and Lipps, 1961, Contr. Sci. Los Angeles Co. Mus., no. 43, p. 3, pl. 1-2).

RECENT (kitchen middens). CALIFORNIA: San Nicolas Island: Malaga Cove (Howard, 1955).

Subfamily OXYURINAE J. C. Phillips

Erismaturinae Reichenbach, "1850" (after Oct. 1, 1852), Avium syst. nat., p. VIII (type *Erismatura* Bonaparte, 1832, a junior synonym of *Oxyura* Bonaparte, 1828).

Oxyurinae J. C. Phillips, 1926, Nat. hist. ducks, vol. 4, p. 201 (type *Oxyura* Bonaparte).

Genus *Oxyura* Bonaparte

Oxyura Bonaparte, 1828, Ann. Lyc. nat. Hist. N. Y., vol. 2, p. 390 (type *Anas rubidus* Wilson).

88. *Oxyura bessomi* Howard

Oxyura bessomi Howard, 1963 (Dec. 30), Los Angeles County Mus., Contributions in Science, no. 73, p. 13, pl. 1, figs. D-E (type from Vallecito Creek, left carpometacarpus, Los Angeles Co. Mus. no. 2785).

MIDDLE PLEISTOCENE (upper part of Palm Spring formation). CALIFORNIA: San Diego County: south side of Vallecito Creek and Arroyo Tapiado (Howard, 1963).

MIDDLE PLEISTOCENE (Seymour formation). TEXAS: Knox County: O. L. Patterson ranch (Univ. Michigan).

Genus *Biziura* Stephens

Biziura Stephens, 1824, Shaw's gen. Zool., vol. 12, pt. 2, p. 221 (type *Anas lobata* Shaw).

89. *Biziura exhumata* DeVis

Biziura exhumata DeVis, 1889, Proc. Roy. Soc. Queensland, vol. 6, p. 55 (type from Darling Downs, left tarsometatarsus).

UPPER PLEISTOCENE (Chinchilla beds). AUSTRALIA: Queensland: Darling Downs (DeVis, 1889).

UPPER PLEISTOCENE (Malkuni fauna, Katipiri sands). AUSTRALIA: South Australia: Malkuni; east of Pirani (DeVis, 1905, Ann. Queensland Mus., no. 6, p. 14, figs. 1-3).

Subfamily MERGANETTINAE Bonaparte

Merganetteae Bonaparte, 1853 (read Oct. 31), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646 (section); type *Merganetta* Gould).—*Merganettinae* Bonaparte, 1854, Ann. Sci. nat. (Paris), vol. 1, p. 47 (sous-famille).

No fossil record.

Subfamily ANSERANATINAE (Stejneger)

Anseranatidae Stejneger, 1885, Stand. nat. hist., vol. 4, p. 138 (family; type *Anseranas Lesson*).—*Anseranatinae* Salvadori, 1895, Cat. birds Brit. Mus., vol. 27, p. 44 (subfamily).

No fossil record.

Neospecies of Anatidae from Pleistocene and *prehistoric sites:

Subfamily CYGNINAE:

1. *Cygnus olor* (Gmelin). IRELAND: Castlepook fens (Lambrecht, 1933, Handb. Palaeorn., p. 743). ENGLAND: Southern Fen? (Lydekker, 1891, Ibis, p. 390); Cambridge (Lambrecht, 1933). DENMARK: Maglemose and *Vangede Brogaards Mose (H. Winge, 1903, Vidensk. Meddel. naturhist. Foren. Copenhagen, vol. 6, p. 79). GERMANY: Weimar-Taubach (Lambrecht, 1933). PORTUGAL: Grotte de Furninha? (Lambrecht, 1933). ITALY: Grotta Romanelli (Lambrecht, 1933). AZERBAIJAN: Binagada (*Cygnus olor bergmanni* Serebrovsky, Dec. 20, 1941, Doklady Akad. Nauk S.S.S.R., vol. 33, no. 7-8, p. 472; type pelvis, Azerbaijan Acad. Sci.).

2. *Cygnus atratus* (Latham). NEW ZEALAND: *subfossil (Dawson, 1958, XV internat. Congr. Zool., sect. V, paper 22, p. 1).

3. *Olor cygnus* (Linnaeus). IRELAND: Dungarvan (Lydekker, 1891, Ibis, p. 390); Edenvale Cave (Lambrecht, 1933, Handb. Palaeorn., p. 743). ENGLAND: Grays, Essex (Milne-Edwards, 1867, Ois. Foss. France, vol. 1, p. 157); Ilford and Cambridgeshire (Lydekker, 1891, Ibis, p. 390); Southery Fen in Norfolk (Lydekker, 1891, Cat. Foss. Birds Brit. Mus., p. 107); Burwell and Glastonbury (Lambrecht, 1933). DENMARK: Fannerup, Mejlgaard, Aamoelle, Hadsund, Visborg Bjergbakke, Havnoe, Krabbesholm, Aasted, Virksund, Erteboelle, Blegkilde, Gudumlund, Vester Ulslev, Klintesoe, Jaegerspris, Haraldsborg, Havelse, Soelager, Sejroe, Oerum Aa, Aalborg, Svendborg, Uggerslevgaard, *Ettang Vig, *Vejleby, *Borrebjerg, *Vordingborg, *Kolding Fjord, and *Radbjerg Mose (H. Winge, 1903, Vidensk. Meddel. naturhist. Foren. Copenhagen, vol. 6, p. 81). FRANCE: Grotte d'Arcy-sur-Cure (Milne-Edwards, 1867, p. 156); Grotte Goudan, Madelaine, and Massat (Lambrecht, 1933, p. 734). MONACO: Grottes de Menton (Lambrecht, 1933, p. 744). ITALY: Grotta dei Colombi? (Regàlia, 1893, Arch. Antrop. Etnol., vol. 23, pp. 262, 265, 340). MALTA: Har Dalam cavern (Bate, 1916, Proc. zool. Soc. London, pp. 422, 427). SWITZERLAND: Kesslerloch, Schaafhausen, and *Robenhausen (Lambrecht, 1933, p. 743). GERMANY: Upper Schwabia, Hohlefels, and Andernach (Lambrecht, 1933). FINLAND: Ladogasee (Lambrecht, 1933).

4. *Olor buccinator* (Richardson). ALASKA: *Kodiak Island (Friedmann, 1935, Jour. Washington Acad. Sci., vol. 25, p. 47). OREGON: Fossil Lake (Shufeldt, 1913, Bull. Amer. Mus. nat. Hist., vol. 32, pp. 150, 156). IOWA: *Mill Creek (Hamon, 1961, Plains Anthropologist, vol. 6, p. 209). ILLINOIS: Aurora (Wetmore, 1935, Wilson Bull., vol. 47, p. 237); *Kingston (Baker, 1936, Trans. Illinois State Acad. Sci., vol. 29, p. 245); *James Ramey mound at Cahokia and *Powell mound (Baker, 1941, Trans. Amer. philos. Soc., n.s., vol. 32, p. 66); *Fisher site and *Snyders site (Parmalee, 1958, Auk, vol. 75, p. 171). OHIO: *Kettle Hill cave (Goslin, 1955, Ohio Jour. Sci., vol. 55, p. 359). FLORIDA: Itchtucknee River (Wetmore, 1931, Smithsonian misc. Coll., vol. 85, no. 2, p. 19).

5. *Olor bewickii* (Yarrell). IRELAND: Shandon cave? (Lydekker, 1891, Ibis, p. 390). ENGLAND: Newport (Lydekker, 1891, Cat. Foss. Birds Brit. Mus., p. 108); *Colchester (Bate, 1934, Ibis, p. 391). DENMARK: Fannerup, Mejlgaard, Havnoe, Erteboelle, Gudumlund, Havelse, Soelager, Oerum Aa, Aalborg, Uggerslev, and *Kolding Fjord (H. Winge, 1903, Vidensk. Meddel. naturhist. Foren.

Copenhagen, vol. 6, p. 80). SWITZERLAND: Thayingen (Lambrecht, 1933, Handb. Palaeorn., p. 743).

6. *Olor columbianus* (Ord). ALASKA: *St. Lawrence Island and *Bonasila (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, pp. 89, 237); *Kodiak Island (Friedmann, 1935, op. cit., vol. 25, p. 47); *Little Kiska (Friedmann, 1937, op cit., vol. 27, p. 436). CALIFORNIA: McKittrick (L. Miller, 1935, Condor, vol. 37, p. 75); Rancho La Brea (Howard, 1936, Condor, vol. 38, p. 34); *Buena Vista Lake (DeMay, 1942, Condor, vol. 44, p. 228). IDAHO: Hagerman (A. H. Miller, 1948, Condor, vol. 50, p. 132). NORTH DAKOTA: *Riggs site (L. Miller, 1961, Bull. S. Calif. Acad. Sci., vol. 60, pt. 3, p. 125). ILLINOIS: *Kingston (Baker, 1936, Trans. Illinois State Acad. Sci., vol. 29, p. 245); *James Ramey mound at Cahokia (Baker, 1941, Trans. Amer. philos. Soc., n.s., vol. 32, p. 66); *Modoc rock shelter (Parmalee, 1956, Illinois State Mus., Rept. Invest., no. 4, p. 53). FLORIDA: Seminole Field in St. Petersburg (Wetmore, 1931, Smithsonian misc. Coll., vol. 85, no. 2, p. 18); Itchtucknee River (McCoy, 1963, Auk, vol. 80, p. 340). Records from Fossil Lake, Oregon, are erroneous (fide Howard, 1946, Carnegie Instn. Washington Publ., no. 551, pp. 159, 190).

7. *Coscoroba coscoroba* (Molina). ARGENTINA: Lujan (Ameghino, 1891, Rev. arg. Hist. nat., vol. 1, p. 446).

Subfamily ANSERINAE:

8. *Anser caerulescens* (Linnaeus).[1] OREGON: Fossil Lake (includes *Anser hypsibatus* Cope, 1878, Bull. geol. geogr. Surv. Terr., vol. 4, no. 2, p. 387, type left tarsometatarsus, Amer. Mus. Nat. Hist. no. 3539B; see Howard, 1946, Carnegie Instn. Washington Publ., no. 551, pp. 167, 190, pl. 2, fig. 4). CALIFORNIA: McKittrick (L. Miller, 1925, Univ. Calif. Publ. geol. Sci., vol. 15, p. 314); Rancho La Brea (Howard, 1936, Condor, vol. 38, p. 34); *Buena Vista Lake (DeMay, 1942, Condor, vol. 44, p. 228). ARIZONA: *Turkey Tank Caves (Hargrave, 1939, Condor, vol. 41, p. 207). IDAHO: American Falls (Brodkorb, 1963, Quart. Jour. Florida Acad. Sci., vol. 26, p. 280). KANSAS: Shorts Creek (Stettenheim, 1958, Wilson Bull., vol. 70, p. 197). IOWA: *Mill Creek (Hamon, 1961, Plains Anthropologist, vol. 6, p. 209). ILLINOIS: *James Ramey mound at Cahokia (Baker, 1941, Trans. Amer. philos. Soc., n.s., vol. 32, p. 66); *Modoc rock shelter (Parmalee, 1956. Illinois State Mus., Rept. Invest., no. 4, p. 52). GEORGIA: *Etowah site (Parmalee, 1960, Florida Anthropologist, vol. 8, p. 49). ST. CROIX: *Concordia (Wetmore, 1937, Jour. Agr. Univ. Puerto Rico, vol. 21, p. 7).

9. *Anser rossii* Cassin. ALASKA: *Kodiak Island (Friedmann, 1935, Jour. Washington Acad. Sci., vol. 25, p. 47). OREGON: Fossil Lake (Howard, 1946, Carnegie Instn. Washington Publ., no. 551, p. 166). CALIFORNIA: Rancho La Brea? (Howard, 1936, Condor, vol. 38, p. 34); *Buena Vista Lake? (DeMay, 1942, Condor, vol. 44, p. 228).

10. *Anser anser* (Linnaeus). SCOTLAND: *Ardrossan, Dalry (Lambrecht, 1933, Handb. Palaeorn., p. 741). ENGLAND: Grays? (Lydekker, 1891, Cat. Foss. Birds Brit. Mus., p. 103); Cambridge, Norfolk, and Salisbury (Lydekker, 1891, Ibis, p. 389); Forest bed of West Runton, Langwith Bassett Cave, Chudleigh Cave, Ightham caves, Lawford, Castlepook, *Glastonbury? *Silchester, and *Fisherton (Lambrecht, 1933). NORWAY: Vardo (Lambrecht, 1933). DENMARK: Mejlgaard,

[1] Includes *Anser hyperboreus* Pallas, not a distinct species.

Asmoelle, Erteboelle, Blegkilde, Gudumlund, Klintesoe, Oerum Aa, Aalborg, Uggerslev, Lejre Aa, Vejleby, Borrebjerg, *Silkeborg, *Barsmark, *Kolding Fjord, *Dalsgaardem, *Faarup, *Jordloese, *Vangede Brogaard, and *Ordrup Mose (H. Winge, 1903, Vidensk. Meddel. naturhist. Foren. Copenhagen, vol. 6, p. 87). FRANCE: Saint-Acheul (Milne-Edwards, 1867, Ois. foss. France, vol. 1, p. 163). ITALY: Grotta Romanelli and Grotta dei Colombi (Lambrecht, 1933). SWITZERLAND: Kesslerloch, Schweizerbild, and *Schaffhausen (Lambrecht, 1933). GERMANY: Weimar-Taubach? and fissures near Ulm and Schelklingen (Lambrecht, 1933). AUSTRIA: Schusterlucke (Lambrecht, 1933). HUNGARY: Takács-Menyhért Cave (Kormos, 1917, Barlangkutatás, vol. 5, pp. 18, 62); *Hallstatt and *Merk (Lambrecht, 1933). CZECHOSLOVAKIA: Predmost, Ludmirau, and Certova dira (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, pp. 938, 939, 941); Vypustek, Zuzlavitz, Kostelik, Kulna, and Holubic (Lambrecht, 1933). AZERBAIJAN: Binagada? (Serebrovsky, 1941, Doklady Akad. Nauk S.S.S.R., vol. 33, no. 7-8, p. 473).

11. *Anser albifrons* (Scopoli). IRELAND: Kesh Cave, Edenvale Cave, and Newhall Cave (Lambrecht, 1933, Handb. Palaeorn., p. 741). ENGLAND: Langwith Bassett Cave (Lambrecht, 1933). ITALY: Grotta dei Colombi? (Lambrecht, 1933). CZECHOSLOVAKIA: Certova dira (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, p. 941). HUNGARY: Remetehegy (Lambrecht, 1914, Aquila, vol. 21, p. 89); *Devencze Cave (Lambrecht, 1933). AZERBAIJAN: Binagada (Serebrovsky, 1941, Doklady Akad. Nauk S.S.S.R., vol. 33, no. 7-8, p. 473). ALASKA: *St. Lawrence Island, *Amaknak Island, and *Kodiak Island (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, pp. 89, 231, 234); *Little Kiska and *Attu Island (Friedmann, 1937, op. cit., vol. 27, pp. 436, 438); *Cape Prince of Wales (Friedmann, 1941, op. cit., vol. 31, p. 406). OREGON: Fossil Lake (Shufeldt, 1892, Jour. Acad. nat. Sci. Philadelphia, vol. 9, p. 408). CALIFORNIA: San Pedro (L. Miller, 1914, Univ. Calif. Publ. Geol., vol. 8, p. 36); Rancho La Brea (Howard, 1936, Condor, vol. 38, p. 36); Newport Bay? (Howard, 1949, Condor, vol. 51, p. 21); *Buena Vista Lake (DeMay, 1942, Condor, vol. 44, p. 228). NEW MEXICO: Shelter Cave? (Howard, 1962, Condor, vol. 64, p. 242).

12. *Anser erythropus* (Linnaeus). ITALY: Grotta Romanelli and Grotta del Castello di Termini Imerese? (Lambrecht, 1933, Handb. Palaeorn., pp. 742, 929).

13. *Anser fabalis* (Latham). IRELAND: Shandon Cave? (Lydekker, 1891, Ibis, p. 389). ENGLAND: Kent's Hole Cavern and Brixham Cave (Lydekker, 1891, Cat. Foss. Birds Brit. Mus., p. 103). ITALY: Grotta Romanelli, Terramare del Castellaccio di Termini Imolese, Grotta dei Colombi?, and Colle Quirinale? (Lambrecht, 1933, Handb. Palaeorn., p. 741). MALTA: caves (Lambrecht, 1933). SWITZERLAND: *Robenhausen (Lambrecht, 1933). CZECHOSLOVAKIA: Predmost? (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, p. 938); Volyn and Zechovitz (Lambrecht, 1933). HUNGARY: Palffy cave (Lambrecht, 1913, Aquila, vol. 20, p. 427); *Pilisszanto, alluvium (Lambrecht, 1915, Mitteil. Jahrb. Kon. Ungar. Geol. Reichsanstalt, vol. 23, p. 479); *Devencze cave (Lambrecht, 1933).

14. *Anser neglectus* Sushkin. SWEDEN: *Sundswall? (Lambrecht 1933, Handb. Palaeorn., p. 742).

15. *Anser brachyrhynchus* Baillon. ITALY: Grotta Romanelli? (Lambrecht, 1933, Handb. Palaeorn., p. 741).

16. *Cygnopsis cygnoid* (Linnaeus). CHINA: Honan (Lambrecht, 1933, Handb. Palaeorn., pp. 388, 744).

17. *Branta bernicla* (Linnaeus).[1] ENGLAND: Walthamstow and Kirkdale Cave (Lydekker, 1819, Cat. Foss. Birds Brit. Mus., p. 105); Clevedon Cave (Lambrecht, 1933, Handb. Palaeron., p. 742). DENMARK: Mejlgaard, Havnoe, Erteboelle, Gudumlund, Soelager, and *Kolding Fjord (H. Winge, 1903, Vidensk. Meddel. naturhist. Foren. Copenhagen, vol. 6, p. 88). ITALY: Grotta Romanelli? (Lambrecht, 1933). MALTA: Har Dalam cavern (Bate, 1916, Proc. zool. Soc. London, p. 426); Zebbug Cave (Lambrecht, 1933). CZECHOSLOVAKIA: Predmost? (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, p. 938). HUNGARY: Puskaporos (Lambrecht, 1916, Barlangkutatás, vol. 4, p. 205). ALASKA: *St. Lawrence Island (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, p. 89); *Kodiak Island (Friedmann, 1935, op. cit., vol. 25, p. 47); *Little Kiska Island, *Atka Island, and *Attu Island (Friedmann, 1937, op. cit., vol. 27, pp. 436-438); *Cape Prince of Wales (Friedmann, 1941, op. cit., vol. 31, p. 406). OREGON: Fossil Lake (Shufeldt, 1913, Bull. Amer. Mus. nat. Hist., vol. 32, p. 147). CALIFORNIA: San Pedro (Howard, 1949, Condor, vol. 51, pp. 21, 27); Rancho La Brea (Howard, 1962, Los Angeles County Mus., Contr. in Sci., no. 58, pp. 7, 20). FLORIDA: *Green Mound (Hamon, 1959, Auk, vol. 76, p. 533).

18. *Branta leucopsis* (Bechstein). IRELAND: Shandon Cave? (Lydekker, 1891 Ibis, p. 390). GIBRALTAR: Forbes quarry? (Lambrecht, 1933, Handb. Palaeorn., p. 742). ITALY: Grotta Romanelli (Lambrecht, 1933). MALTA: Har Dalam cavern (Bate, 1916, Proc. zool. Soc. London, p. 426); Benghisa Gap, Musta Ravine, and Ta Gandia fissure (Lambrecht, 1933).

19. *Branta canadensis* (Linnaeus). ALASKA: *St. Lawrence Island and *Cape Denbeigh (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, pp. 89, 237); *Cape Prince of Wales (Friedmann, 1941, op. cit., vol. 31, p. 405). OREGON: Fossil Lake (Shufeldt, 1892, Jour. Acad. nat. Sci. Philadelphia, vol. 9, p. 408). CALIFORNIA: Rancho La Brea (L. Miller, 1909, Univ. Calif. Publ. Geol., vol. 5, p. 306); Potter Creek Cave (L. Miller, 1911, op. cit., vol. 6, p. 396); San Pedro (L. Miller, 1914, op. cit., vol. 8, p. 36); Mission San Jose (Shufeldt, 1915, Trans. Connecticut Acad. Arts Sci., vol. 19, p. 64); McKittrick? (L. Miller, 1935, Condor, vol. 37, p. 75); Santa Rosa Island (Howard, 1944, Bull. south. Calif. Acad. Sci., vol. 43, pt. 2, p. 74); Newport Bay? (Howard, 1949, Condor, vol. 51, p. 21); Manix Lake (Howard, 1955, U. S. geol. Surv. prof. Paper 264-J, p. 203); Irvington (Wetmore, 1956, Smithsonian misc. Coll., vol. 131, no. 5, p. 26); *Buena Vista Lake (DeMay, 1942, Condor, vol. 44, p. 228). NEVADA: Rattlesnake Hill (Wetmore, 1940, Smithsonian misc. Coll., vol. 99, no. 4, p. 20); Smith Creek Cave (Howard, 1952, Bull. south. Calif. Acad. Sci., vol. 51, pt. 2, p. 54). UTAH: *Poncho House (Hargrave, 1939, Condor, vol. 41, p. 207). ARIZONA: *Turkey Tank and *Winona Village (Hargrave, 1939). NEW MEXICO: Conkling Cavern (Howard and A. H. Miller, 1933, Condor, vol. 35, p. 15). NORTH DAKOTA: *Thomas Riggs site and *Huff site (L. Miller, 1961, Bull. south. Calif. Acad. Sci., vol. 60, pt. 3, p. 125). MINNESOTA: St. Paul (Wetmore, 1958, Smithsonian misc. Coll., vol. 135, no. 8, p. 6). IOWA: *Mill Creek (Hamon, 1961, Plains Anthropologist, vol. 6, p. 209). ILLINOIS: *Kingston (Baker, 1936, Trans. Illinois State Acad. Sci., vol. 29, p. 245); *Powell mound, *James Ramey mound at Cahokia, and *Plum Island (Baker, 1941, Trans. Amer. philos. Soc., n.s., vol. 32, p. 66); *Modoc rock shelter (Parmalee, 1956, Illinois State Mus., Rept. Invest., no. 4, p. 52). NOVA SCOTIA: *Port Jollie (Halifax Museum). GEORGIA: *Etowah site (Parma-

[1] Includes *Branta nigricans* (Lawrence), not a distinct species.

lee, 1960, Florida Anthropologist, vol. 8, p. 49). FLORIDA: Seminole Field in St. Petersburg, Melbourne, and Itchtucknee River (Wetmore, 1931, Smithsonian misc. Coll., vol. 85, no. 2, p. 19); Haile (Ligon, in press); Wakulla Spring (Brodkorb coll.). Record from Santa Monica, California, is erroneous (fide L. Miller and DeMay, 1942, Univ. Calif. Publ. Zool., vol. 47, p. 59).

20. *Branta ruficollis* (Pallas). HUNGARY: Balla cave? (Lambrecht, 1912, Aquila, vol. 19, p. 273); Pálffy cave (Lambrecht, 1933, Handb. Palaeorn., p. 742).

21. *Philacte canagica* (Sevastianoff). ALASKA: *St. Lawrence Island (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, p. 89); *Kodiak Island (Friedmann, 1935, op. cit., vol. 25, p. 47); *Dutch Harbor, *Little Kiska Island, *Atka Island, and *Attu Island (Friedmann, 1937, op. cit., vol. 27, pp. 435-438); *Cape Prince of Wales (Friedmann, 1941, op. cit., vol. 31, p. 406).

Subfamily DENDROCYGNINAE:

22. *Dendrocygna viduata* (Linnaeus). VENEZUELA: *Los Tamarindos, *Hacienda Tocorón, and *Cascabel (Wetmore, 1935, Auk, vol. 52, p. 329). BRAZIL: Lapa da Escrivania? and Lapa da Lagoa do Sumidouro? (Winge, 1887, E Museo Lundii, vol. 1, pt. 2, p. 19).

23. *Dendrocygna bicolor* (Vieillot). VENEZUELA: *Los Tamarindos (Wetmore, 1935, Auk, vol. 52, p. 329).

24. *Dendrocygna autumnalis* (Linnaeus). PUERTO RICO: *Barrio Cañas (Wetmore, 1938, Auk, vol. 55, p. 53). VENEZUELA: *Los Tamarindos and *Hacienda Tocorón (Wetmore, 1935, Auk, vol. 52, p. 329).

25. *Dendrocygna arborea* (Linnaeus). PUERTO RICO: *Cueva Toraño and Cueva Clara (Wetmore, 1922, Bull. Amer. Mus. nat. Hist., vol. 46, p. 303); *Barrio Cañas (Wetmore, 1938, Auk, vol. 55, p. 53).

Subfamily TADORNINAE:

26. *Tadorna ferruginea* (Pallas). IRELAND: Newhall Cave and Bantick Cave (Lambrecht, 1933, Handb. Palaeorn., p. 740). SCOTLAND: *Ardrossan (Lambrecht, 1933). ENGLAND: Brixham Cave (Lydekker, 1891, Ibis, p. 390). PORTUGAL: Grotte de Furninha (Lambrecht, 1933). MALTA: (Lambrecht, 1933).

27. *Tadorna variegata* (Gmelin). NEW ZEALAND: Waingongoro (Lydekker, 1891, Cat. Foss. Birds Brit. Mus., p. 111); *Pyramid Valley (Scarlett, 1955, Rec. Canterbury Mus., vol. 6, p. 261).

28. *Tadorna tadorna* (Linnaeus). DENMARK: Soelager and *Borrebjerg (H. Winge, 1903, Vidensk. Meddel. naturhist. Foren. Copenhagen, vol. 6, p. 79). SARDINIA: Cagliari (Lambrecht, 1933, Handb. Palaeorn., p. 741). AZERBAIJAN: Binagada (Serebrovsky, 1941, Doklady Akad. Nauk. S.S.S.R., vol. 33, no. 7-8, p. 473). MONGOLIA: Sjara-Osso-Gol, Ordos (Bate, 1931, Pal. sinica, ser. C, vol. 6, fasc. 4, p. 41).

Subfamily ANATINAE:

29. *Sarkidiornis sylvicola* Ihering and Ihering. ARGENTINA: Lujan (Ameghino, 1891, Rev. arg. Hist. nat., vol. 1, p. 446).

30. *Cairina moschata* (Linnaeus). PANAMA: El Hatillo (Wetmore, 1956, Wilson Bull., vol. 68, p. 327). VENEZUELA: *Hacienda Tocorón (Wetmore, 1935

Auk, vol. 52, p. 329). PERU (Lambrecht, 1933, Handb. Palaeorn., p. 738). BRAZIL: Lapa da Pedra dos Indios, Lapa da Lagoa do Sumidouro, and Lapa da Escrivania (O. Winge, 1887, E Museo Lundii, vol. 1, pt. 2, p. 22).

31. *Chenonetta jubata* (Latham). NEW ZEALAND: Earnsclough Cavern and Timaru (Lydekker, 1891, Cat. Foss. Birds Brit. Mus., p. 106).

32. *Aix sponsa* (Linnaeus). ONTARIO: Hamilton (Wetmore, 1958, Smithsonian misc. Coll., vol. 135, no. 8, p. 9). KANSAS: Shorts Creek (Stettenheim, 1958, Wilson, Bull., vol. 70, p. 198). ILLINOIS: *Kingston (Baker, 1936, Trans. Illinois State Acad. Sci., vol. 29, p. 245); *Modoc rock shelter (Parmalee, 1956, Illinois State Mus., Rept. Invest., no. 4, p. 53). OHIO: *Canter caves (Goslin, 1955, Ohio Jour. Sci., vol. 55, p. 361). FLORIDA: Rock Spring (Woolfenden, 1959, Wilson Bull., vol. 71, p. 185); Itchtucknee River (McCoy, 1963, Auk, vol. 80, p. 343); Haile (Ligon, in press); *Vero Beach (Weigel, 1963, Florida Geol. Surv. Spec. Publ., no. 10, p. 27); *Goodman site (Wing, 1963, Contr. Florida State Mus., no. 10, p. 56). Erroneous records include Kirkdale Cave, England (fide Lydekker, 1891, Ibis, p. 391), and Fossil Lake, Oregon (fide Howard, 1946, Carnegie Instn. Washington Publ., no. 551, p. 191).

33. *Malacorhynchus membraceus* (Latham). NEW ZEALAND: *Pyramid Valley? (Oliver, 1955, N. Zealand Birds, ed. 2, p. 600).

34. *Anas platyrhynchos* Linnaeus. IRELAND: Kesh Cave, Bantick Cave, Edenvale Cave, Newhall Cave, and Castlepook Cave? (Lambrecht, 1933, Handb. Palaeorn., p. 738). ENGLAND: Cambridgeshire fens and Salisbury (Lydekker, 1891, Ibis, p. 390); Grays Thurrock, Fisherton, Bielbacks, Kirkdale Cave, Clevedon, Wye Cave, Chudleigh Cave, Igtham Cave, Burwell, Southery fens, Whitemsea, and Walthamstow (Lambrecht, 1933). DENMARK: Fannerup, Mejlgaard, Erteboelle, Gudumlund, Vester Ulslev, Maglemose, Klintesoe, Soelager, Oerum Aa, Munkholm, *Vejleby, *Borrebjerg, *Vordingborg, *Barsmark, *Oester Vandet Most, *Erholms Mose, *Vimose, *Krogsboelle Mose, *Oexnebjerg, *Radbjerg Mose, *Ladager Mose, *Vangede Brogaards Mose, *Jaegersborg Mose, *Ordrup Mose (H. Winge, 1903, Vidensk. Meddel. naturhist. Foren., vol. 6, p. 78). BELGIUM: Magrite, Naulette, Chaleux, Nutons, and Sureau holes (Lambrecht, 1933). FRANCE: Montgodier and Bruniquel (Milne-Edwards, 1867, Ois. Foss. France, vol. 1, p. 159); Gourdan and les Eyzies (Lambrecht, 1933). MONACO: Grotte de Grimaldi and Grotte de Menton (Lambrecht, 1933). ITALY: Grotta Cucigliana, Grotte de Parignana, Caverna d'Equi, and Grotta dei Colombi? (Lambrecht, 1933). SARDINIA? (Giebel, 1847, Fauna der Vorwelt, vol. 1, pt. 2, p. 32). CORSICA: Grotta de Funtanedu? (Lambrecht, 1933). MALTA: Musta ravine (Lambrecht, 1933). SWITZERLAND: Schweizersbild, Kesslerloch, Veyrier, Ettingen?, *Moosseedorf, *Wauwill, *Robenhausen, *Concise, and *Szontagsee (Lambrecht, 1933). GERMANY: Lahn Valley? (Lydekker, 1891, Cat. Foss. Birds Brit. Mus., p. 114); Thiede bei Braunschweig (Blasius, 1901, Jour. Ornith., vol. 49, p. 58); Westeregeln, Pottenstein, and Balve (Lambrecht, 1912, Aquila, vol. 19, p. 298); Andernach?, Schmiechenfels, Seveckenberg?, Saalfeld, Buchberg, Schelklingen, and Raumgrotte (Lambrecht, 1933, Handb. Palaeorn., p. 738). AUSTRIA: Schusterlucke (Lambrecht, 1933). CZECHOSLOVAKIA: Balcarova skála, Ludmirau, Sipka, and Certova díra (Capek, 1910, Ber. V. internat. Ornith. Kongr. Berlin, p. 939); Malenice, *Slavikovic-Austerlitz?, *Legény Cave, (Lambrecht, 1933). HUNGARY: Balla and Istállóskö caves (Lambrecht, 1912, Aquila, vol. 19, p. 273); Pálffy cave (Lambrecht, 1913, Aquila, vol. 20, p. 427); Öregkö cave near Bajót

(Kormos and Lambrecht, 1914, Barlangkutatás, vol. 2, p. 105); Remetehegy (Lambrecht, 1914, Aquila, vol. 21, p. 89); Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. ungar. geol. Anstalt, vol. 23, p. 479); Otto Herman cave (Lambrecht, 1916, Aquila, vol. 22, p. 189); Puskaporos (Lambrecht, 1916, Barlangkutatás, vol. 4, p. 204); Csakvar (Lambrecht, 1933, Handb. Palaeorn., p. 738); Betfia (Kretzoi, 1941, Földtani Közlöny, vol. 71, p. 253); Istállóskö (Jánossy, 1952, Aquila, vol. 55-58, p. 218); Subalyuk cave (Jánossy, 1962, Aquila, vol. 67-68, p. 177). PALESTINE: Kebara Cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, p. 115). AZERBAIJAN: Binagada (*Anas platyrhynchos palaeoboschas* Serebrovsky, Dec. 20, 1941, Doklady Akad. Nauk S.S.S.R., vol. 33, no. 7-8, p. 471; type cranium, from Kirov beds, Azerbaijan Acad. Sci., no. 45). MONGOLIA: Sjara-Osso-Gol (Bate, 1931, Pal. sinica, ser. c, vol. 6, fasc. 4, p. 41). WASHINGTON: *Puget Sound (L. Miller, 1960, Wilson Bull., vol. 72, p. 394). OREGON: Fossil Lake (Shufeldt, 1892, Jour. Acad. nat. Sci. Philadelphia, vol. 9, p. 403). CALIFORNIA: San Pedro (L. Miller, 1914, Univ. Calif. Publ. Geol., vol. 8, p. 35); McKittrick (L. Miller, 1925, Univ. Calif. Publ. geol. Sci., vol. 15, p. 313); Carpinteria (L. Miller, 1931, op. cit., vol. 20, p. 364); Rancho La Brea (Howard, 1936, Condor, vol. 38, p 36); Santa Rosa Island (Howard, 1949, Condor, vol. 51, p. 27). IDAHO: Hagerman lake beds (Brodkorb, 1958, Wilson Bull., vol. 70, p. 238); American Falls (Brodkorb, 1963, Quart. Jour. Florida Acad. Sci., vol. 26, p. 280). NEVADA: Smith Creek cave (Howard, 1952, Bull. south Calif. Acad. Sci., vol. 51, pt. 2, p. 54). TEXAS: Clear Creek, Jackson farm, and Lubbock reservoir (Brodkorb, in press); *Bell Cave (Wetmore, 1935, Condor, vol. 37, p. 176). IOWA: *Mill Creek (Hamon, 1961, Plains Anthropologist, vol. 6, p. 209). ILLINOIS: *Kingston (Baker, 1936, Trans. Illinois State Acad. Sci., vol. 29, p. 245); *Cahokia, *Mossville, and *Plum Island (Baker, 1941, Trans. Amer. philos. Soc., n.s., vol. 32, p. 67); *Modoc rock shelter (Parmalee, 1956, Illinois State Mus., Rept. Invest., no. 4, p. 52). OHIO: *Boone rock shelter and *Canter caves (Goslin, 1955, Ohio Jour. Sci., vol. 55, pp. 360-361). FLORIDA: Itchtucknee River, Seminole Field?, and Venice? (Wetmore, 1931, Smithsonian misc. Coll., vol. 85, no. 2, p. 20); Haile (Brodkorb, 1953, Wilson Bull., vol. 65, p. 50); *Lemon Bluff and *Bluffton (Neill, Gut, and Brodkorb, 1956, Amer. Antiquity, vol. 4, p. 388); Hornsby Spring and Lake Monroe (Brodkorb coll.). CUBA: Baños de Ciego Montero (Wetmore, 1928, Amer. Mus. Novit., 301, p. 3).

35. *Anas rubripes* Brewster. ILLINOIS: *Cahokia, *Mossville, *Plum Island, and *Kingston (Baker, 1941, Trans. Amer. philos. Soc., n.s., vol. 32, p. 67). FLORIDA: Itchtucknee River (Wetmore, 1931, Smithsonian misc. Coll., vol. 85, no. 2, p. 20); *Good's Shell pit and *Bluffton (Neill, Gut, and Brodkorb, 1956, Amer. Antiquity, vol. 4, p. 388); Lake Monroe and Hornsby Spring (Brodkorb coll.).

36. *Anas fulvigula* Ridgway. FLORIDA: Seminole Field, Bradenton, and Itchtucknee River (Wetmore, 1931, Smithsonian misc. Coll., vol. 85, no. 2, p. 20); Reddick (Brodkorb, 1957, Jour. Paleont., vol. 31, p. 134); Rock Spring (Woolfenden, 1959, Wilson Bull., vol. 71, p. 185); Haile (Ligon, in press); *Vero Beach (Weigel, 1963, Florida geol. surv., spec. Publ. no. 10, p. 26).

37. *Anas melleri* Sclater. MADAGASCAR: Sirabé (Andrews, 1897, Ibis, p. 355).

38. *Anas superciliosa* Gmelin. NEW ZEALAND: Pyramid Valley (Scarlett, 1955, Rec. Canterbury Mus., vol. 6, p. 261).

39. *Anas bahamensis* Linnaeus. ST. CROIX: *Concordia (Wetmore, 1937, Jour. Agr. Univ. Puerto Rico, vol. 21, p. 8).

40. *Anas acuta* Linnaeus. IRELAND: Kesh and Newhall caves (Lambrecht, 1933, Handb. Palaeorn., p. 739). ENGLAND: Clevedon cave? (Lambrecht, 1933). MONACO: Grottes de Menton (Lambrecht, 1933). SWITZERLAND: Schlossfelsen von Birseck? and Schweizersbild? (Lambrecht, 1933). GERMANY: Raumgrotte (Lambrecht, 1933). CZECHOSLOVAKIA: Volyn (Lambrecht, 1933). HUNGARY: Pálffy cave (Lambrecht, 1913, Aquila, vol. 20, p. 426). AZERBAIJAN: Binagada (Serebrovsky, 1941, Doklady Akad. Nauk S.S.S.R., vol. 33, no. 7-8, p. 473). OREGON: Fossil Lake (Shufeldt, 1892, Jour. Acad. nat. Sci. Philadelphia, vol. 9, p. 404). CALIFORNIA: McKittrick? (L. Miller, 1925, Univ. Calif. Publ. geol. Sci., vol. 15, p. 314); Vallecito Creek? (Howard, 1963, Los Angeles Co. Mus., Contr. Sci., no. 73, p. 9). NEVADA: Smith Creek Cave (Howard, 1952, Bull. south. Calif. Acad. Sci., vol. 51, pt. 2, p. 54). NEW MEXICO: Shelter Cave (Howard and A. H. Miller, 1933, Condor, vol. 35, p. 15); Howells Ridge cave? (Howard, 1962, Condor, vol. 64, p. 242). KANSAS: Jones Sink (Downs, 1954, Condor, vol. 56, p. 209). TEXAS: Jackson Farm (Brodkorb, in press). 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 (Baker, 1941, Trans. Amer. philos. Soc., vol. 32, p. 67); *Modoc rock shelter (Parmalee, 1956, Illinois State Mus., Rept. Invest., no. 4, p. 53). FLORIDA: Reddick (Brodkorb, 1957, Jour. Paleont., vol. 31, p. 134); Rock Spring (Woolfenden, 1959, Wilson Bull., vol. 71, p. 185); Itchtucknee River (McCoy, Auk, vol. 80, p. 341); Haile (Ligon, in press); *Bluffton (Neill, Gut, and Brodkorb, 1956, Amer. Antiquity, vol. 4, p. 388).

41. *Anas angustirostris* Ménétriès. MALTA: Ta Gandia fissure and Ghar Dalam cave (Lembrecht, 1933, Handb. Palaeorn., p. 702).

42. *Anas erythrorhyncha* Gmelin. MADAGASCAR: Sirabé (Andrews, 1897, Ibis, p. 355).

43. *Anas strepera* Linnaeus. ITALY: Grotta dei Colombi (Lambrecht, 1933, Handb. Palaeorn., p. 738). CZECHOSLOVAKIA: Holubic (Lambrecht, 1933). HUNGARY: Pálffy cave (Lambrecht, 1913, Aquila, vol. 20, p. 427); Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. ungar. geol. Anstalt, vol. 23, p. 479); Püspökfürdö (Capek, 1917, Barlangkutatás, vol. 5, p. 26). AZERBAIJAN: Binagada (Serebrovsky, 1941, Doklady Akad. Nauk S.S.S.R., vol. 33, no. 7-8, p. 473). CALIFORNIA: Rancho La Brea (L. Miller, 1912, Univ. Calif. Publ. Geol., vol. 7, p. 78); McKittrick (L. Miller, 1935, Condor, vol. 37, p. 76). IOWA: *Mill Creek (Hamon, 1961, Plains Anthropologist, vol. 6, p. 209). FLORIDA: Itchtucknee River (McCoy, 1963, Auk, vol. 80, p. 342); *Bluffton (Neill, Gut, and Brodkorb, 1956, Amer. Antiquity, vol. 4, p. 388). Listed by error from Fossil Lake, Oregon (Lambrecht, 1933, Handb. Palaeorn., p. 738).

44. *Anas penelope* Linnaeus. IRELAND: Kesh, Edenvale, Newhall, and Castlepook caves (Lambrecht, 1933, Handb. Palaeorn., p. 738). ENGLAND: Clevedon Cave? (Lambrecht, 1933). ITALY: Grotta Romanelli, Caverna d'Equi, and Grotta dei Colombi? (Lambrecht, 1933). HUNGARY: Remetehegy (Lambrecht, 1914, Aquila, vol. 21, p. 89); Puskaporos (Lambrecht, 1916, Barlangkutatás, vol. 4, p. 204); Pálffy cave (Lambrecht, 1933, Handb. Palaeorn., p. 738). AZERBAIJAN: Binagada (Serebrovsky, 1941, Doklady Akad. Nauk S.S.S.R., vol. 33, no. 7-8, p. 473).

45. *Anas americana* Gmelin. OREGON: Fossil Lake (Shufeldt, 1892, Jour. Acad. nat. Sci. Philadelphia, vol. 9, p. 403). CALIFORNIA: McKittrick (L. Miller, 1925, Univ. Calif. Publ. geol. Sci., vol. 15, p. 313); San Pedro (Howard, 1949, Condor, vol. 51, p. 21). NEVADA: Smith Creek Cave (Howard, 1952, Bull. south. Calif. Acad. Sci., vol. 51, pt. 2, p. 54). NEW MEXICO: Howells Ridge Cave? (Howard, 1962, Condor, vol. 64, p. 242). OKLAHOMA: Nye Sink (Harrell, 1959, Proc. S. Dak. Acad. Sci., vol. 38, p. 105). IOWA: *Mill Creek (Hamon, 1961, Plains Anthropologist, vol. 6, p. 210). ILLINOIS: *Plum Island (Baker, 1941, Trans. Amer. philos. Soc. n.s., vol. 32, p. 67). FLORIDA: Itchtucknee River (McCoy, 1963, Auk, vol. 80, p. 342).

46. *Anas clypeata* Linnaeus. ENGLAND: West Runton (Lydekker, 1891, Ibis, p. 391); Mundesley and Ightham fissure (Lambrecht, 1933, Handb. Palaeorn., p. 740). MONACO: Grottes de Menton, Grotte de l'Observatoire, and Grotte de Grimaldi (Lambrecht, 1933). ITALY: Grotta dei Colombi? (Lambrecht, 1933). HUNGARY: Püspökfürdö (Capek, 1917, Barlangkutatás, vol. 5, p. 26). AZERBAIJAN: Binagada (Serebrovsky, 1941, Doklady Akad. S.S.S.R., vol. 33, no. 7-8, p. 473). OREGON: Fossil Lake (Shufeldt, 1892, Jour. Acad nat. Sci., Philadelphia, vol. 9, p. 404). CALIFORNIA: McKittrick (L. Miller, 1925, Univ. Calif. Publ. geol. Sci., vol. 17, p. 314); Rancho La Brea (A. H. Miller, 1929, Condor, vol. 31, p. 223); San Pedro (Howard, 1949, Condor, vol. 51, p. 24); Vallecito Creek (Howard, 1963, Los Angeles Co. Mus., Contr. Sci., no. 73, p. 11). NEVADA: Smith Creek Cave (Howard, 1952, Bull. south Calif. Acad. Sci., vol. 51, pt. 2, p. 54). KANSAS: Jones Sink (Downs, 1954, Condor, vol. 56, p. 209); Dixon (Harrell, 1959, Proc. S. Dak. Acad. Sci., vol. 38, p. 104). IOWA: *Mill Creek (Hamon, 1961, Plains Anthropologist, vol. 6, p. 210). ILLINOIS: *Cahokia (Baker, 1941, Trans. Amer. philos. Soc., n.s., vol. 32, p. 67). FLORIDA: Reddick (Brodkorb, 1957, Jour. Paleont., vol. 31, p. 134); Arredondo (Brodkorb, 1959, Bull. Florida State Mus., vol. 4, p. 274); Itchtucknee River (McCoy, 1963, Auk, vol. 80, p. 343); Haile (Ligon, in press).

47. *Querquedula querquedula* (Linnaeus). FRANCE: Grotte de Bruniquel (Milne-Edwards, 1867, Ois. foss. France, vol. 1, p. 161). MONACO: Grotte de Grimaldi (Lambrecht, 1933, Handb. Palaeorn., p. 739). ITALY: Grotta dei Colombi, Buca del Bersagliere, and Caverna d'Equi (Lambrecht, 1933). SWITZERLAND: *Moosseedorf and *Robenhausen (Lambrecht, 1933). CZECHOSLOVAKIA: Balcarova skala (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, p. 939); Holubic (Lambrecht, 1933). HUNGARY: Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. ungar. geol. Anstalt, vol. 23, p. 479); Püspökfürdö (Capek, 1917, Barlangkutatás, vol. 5, pp. 26, 67); *Legeny cave (Lambrecht, 1933); Subalyuk cave (Jánossy, 1962, Aquila, vol. 67-68, p. 177). AZERBAIJAN: Binagada (Serebrovsky, 1941, Doklady Akad. Nauk S.S.S.R., vol. 33, no. 7-8, p. 473).

48. *Querquedula discors* (Linnaeus). NEVADA: Smith Creek Cave? (Howard, 1952, Bull. south. Calif. Acad. Sci., vol. 51, pt. 2, p. 54). TEXAS: Cita Canyon?, Patterson Ranch, Good Creek, and Groesbeck Creek (Brodkorb, in press). IOWA: *Mill Creek (Hamon, 1961, Plains Anthropologist, vol. 6, p. 210). ILLINOIS: *Kingston (Baker, 1936, Trans. Illinois State Acad. Sci., vol. 29, p. 245); *Mossville, *Cahokia, and *Plum Island (Baker, 1941, Trans. Amer. philos. Soc., n.s., vol. 32, p. 67); *Modoc rock shelter (Parmalee, 1956, Illinois State Mus., Rept. Invest., no. 4, p. 52). OHIO: *Canter caves (Goslin, 1955, Ohio Jour. Sci., vol. 55, p. 361). VIRGINIA: Natural Chimneys (Wetmore, 1962, Smithsonian misc.

Coll., vol. 145, no. 2, p. 6). FLORIDA: Reddick (Brodkorb, 1957, Jour. Paleont., vol. 31, p. 134); Arredondo (Brodkorb, 1959, Bull. Florida State Mus., vol. 4, p. 274); Rock Spring (Woolfenden, 1959, Wilson Bull., vol. 71, p. 185); Williston (Holman, 1959, Bull. Florida State Mus., vol. 5, p. 3); Itchtucknee River (McCoy, 1963, Auk, vol. 80, p. 341); Haile (Ligon, in press); Lake Monroe and Winter Beach (Brodkorb coll.). Removed from list of Fossil Lake, Oregon (Howard, 1946, Carnegie Instn. Washington Publ., no. 551, p. 191).

49. *Querquedula cyanoptera* (Vieillot). OREGON: Fossil Lake (Howard, 1946, Carnegie Instn. Washington Publ., no. 551, pp. 174, 191). CALIFORNIA: San Pedro (L. Miller, 1914, Univ. Calif. Publ., Bull. Dept. Geol., vol. 8, p. 36; see Howard, 1949, Condor, vol. 51, p. 24); McKittrick (L. Miller, 1925, Univ. Calif. Publ. geol. Sci., vol. 15, p. 313). Tentative record (Merriam, 1916, Univ. Calif. Publ. Geol., vol. 9, pp. 168, 173), from Upper Miocene at Cedar Mountain, Nevada, is absurd.

50. *Nettion chlorotis* (Gray). NEW ZEALAND: *Pyramid Valley (Scarlett, 1955, Rec. Canterbury Mus., vol. 6, p. 261).

51. *Nettion gibberifrons* (S. Müller). NEW ZEALAND: *Pyramid Valley (Scarlett, 1955, Rec. Canterbury Mus., vol. 6, p. 261).

52. *Nettion formosum* (Georgi). CHINA: Chou-kou-tien (Howard, 1939, Fortschritte der Paläont., vol. 2, p. 314).

53. *Nettion crecca* (Linnaeus).[1] IRELAND: Newhall (Lambrecht, 1933, Handb. Palaeorn., p. 739). ENGLAND: Cambridgeshire fens [error?] (Lydekker, 1891, Ibis, p. 391); *Glastonbury and *Caerwent, Silchester (Lambrecht, 1933). DENMARK: Mejlgaard (H. Winge, 1903, Vidensk. Meddel. naturhist. Foren. Copenhagen, vol. 6, p. 77). FRANCE: caves [error?] (Lambrecht, 1912, Aquila, vol. 19, pp. 298, 305). ITALY: Caverna d'Equi, Grotta dei Colombi, and Grotta Romanelli? (Lambrecht, 1933). PORTUGAL: Grotte de Furninha (Lambrecht, 1933). SWITZERLAND: Schlossfelsen von Birseck and Ermitage (Lambrecht, 1933). AUSTRIA: Gudenus cave? (Lambrecht, 1933). HUNGARY: Felsnische Remetehegy (Lambrecht, 1914, Aquila, vol. 21, pp. 89, 92); Puskaporos (Lambrecht, 1916, Barlangkutatás, vol. 4, p. 205); Novi (Lambrecht, 1912, Aquila, vol. 19, pp. 298, 305). CZECHOSLOVAKIA: Balcarova skála, Sipka, and Certova díra (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, pp. 939-941). GERMANY: Thiede bei Braunschweig (Blasius, 1901, Jour. Ornith., vol. 49, p. 58); Westregeln bei Magdeburg, Seveckenberg?, and Kleine Scheuer in Lonetal (Lambrecht, 1933). LATVIA: Klauenstein? (Lambrecht, 1933). AZERBAIJAN: Binagada (Serebrovsky, 1941, Doklady Akad. Nauk S.S.S.R., vol. 33, no. 7-8, p. 473). CHINA: Chou-kou-tien (Howard, 1939, Fortschritte der Paläont., vol. 2, p. 314). OREGON: Fossil Lake (Shufeldt, 1892, Jour. Acad. nat. Sci. Philadelphia, vol. 9, p. 403). CALIFORNIA: Hawver Cave and San Pedro (L. Miller, 1912, Univ. Calif. Publ. Geol., vol. 7, pp. 75, 112); McKittrick (L. Miller, 1925, Univ. Calif. Publ. geol Sci., vol. 15, p. 313); Rancho La Brea (Howard, 1936, Condor, vol. 38, p. 36); Santa Rosa Island (Howard, 1944, Bull. south. Calif. Acad. Sci., vol. 43, pt. 2, p. 74). NEVADA: Smith Creek Cave (Howard, 1952, Bull. south. Calif. Acad. Sci., vol. 51, pt. 2, p. 54); [record from Upper Miocene at Cedar Mountain (Merriam, 1916, Univ. Calif. Publ. Geol., vol. 9, pp. 168, 173), is preposterous]. ARIZONA: Grand Falls and *Wupatki Pueblo (Hargrove, 1939, Condor, vol. 41, p. 207). NEW

[1] Includes *N. carolinense* (Gmelin).

MEXICO: Shelter Cave (Howard and A. H. Miller, 1933, Condor, vol. 35, p. 15); Howells Ridge Cave? (Howard, 1962, Condor, vol. 64, p. 242). KANSAS: Kentuck locality in McPherson County (Galbreath, 1955, Wilson Bull., vol. 67, p. 62). TEXAS: Groesbeck Creek (Midwestern Univ.), [supposed record from Canadian River in Hemphill County (Reed and Longnecker, 1933, Univ. Texas Bull. 3231, p. 68) is *Fulica* (fide Compton, 1934, Condor, vol. 36, p. 40); fragmentary ulna from Middle Pliocene Coffee Ranch in Hemphill County (Compton, 1934) most probably represents one of the Pliocene species of this genus]. IOWA: *Mill Creek (Hamon, 1961, Plains Anthropologist, vol. 6, p. 210). ILLINOIS: *Kingston (Baker, 1936, Trans. Illinois State Acad. Sci., vol. 29, p. 245); *Cahokia (Baker, 1941, Trans. Amer. philos. Soc., n.s., vol. 32, p. 67). FLORIDA: Seminole Field in St. Petersburg (Wetmore, 1931, Smithsonian misc. Coll., vol. 85, no. 2, p. 21); Crystal Springs (Brodkorb, 1956, Wilson Bull., vol. 68, p. 158); Reddick (Brodkorb, 1957, Jour. Paleont., vol. 31, p. 134); Arredondo (Brodkorb, 1959, Bull. Florida State Mus., vol. 4, p. 273); Rock Spring (Woolfenden, 1959, Wilson Bull., vol. 71, p. 185); Itchtucknee River (McCoy, 1963, Auk, vol. 80, p. 342); Haile (Ligon, in press); Lake Monroe (Brodkorb coll.).

54. *Nettion brasiliense* (Gmelin). BRAZIL: Lapa da Escrivania and Lapa da Lagoa do Sumidouro (O. Winge, 1887, E Museo Lundii, vol. 1, no. 2, pp. 13, 22).

Subfamily AYTHYINAE:

55. *Aythya valisineria* (Wilson). ALASKA: *Dutch Harbor (Friedmann, 1937, Jour. Washington Acad. Sci., vol. 27, p. 435). WASHINGTON: *Puget Sound (L. Miller, 1960, Wilson Bull., vol. 72, p. 394). CALIFORNIA: Rancho La Brea? (Howard, 1936, Condor, vol. 38, p. 35); Manix Lake? (Howard, 1955, U. S. G. S. Prof. Paper, V 264-J, p. 203). IOWA: *Mill Creek (Hamon, 1961, Plains Anthropologist, vol. 6, p. 210). ILLINOIS: *Kingston (Baker, 1936, Trans. Illinois State Acad. Sci., vol. 29, p. 245). FLORIDA: Itchtucknee River (Wetmore, 1931, Smithsonian misc. Coll., vol. 85, no. 2, p. 22). Record from Fossil Lake, Oregon (L. Miller, 1912, Univ. Calif. Publ. Geol., vol. 7, pp. 81, 112), is erroneous (Howard 1946, Carnegie Instn. Washington Publ., no. 551, p. 191).

56. *Aythya ferina* (Linnaeus). IRELAND: Edenvale Cave and Newhall Cave (Lambrecht, 1933, Handb. Palaeorn., p. 737). ENGLAND: Ostend? (Lydekker, 1891, Cat. Fossil Birds Brit. Mus., p. 121); Bacton (Lydekker, 1891, Ibis, p. 391). ITALY: Grotta Romanelli? and Grotta dei Colombi (Lambrecht, 1933). CZECHOSLOVAKIA: Volyn (Lambrecht, 1933). HUNGARY: Puskaporos? (Lambrecht, 1912, Aquila, vol. 19, pp. 298, 305). AZERBAIJAN: Binagada (Serebrovsky, 1941, Doklady Akad. Nauk S.S.S.R., vol. 33, no. 7-8, p. 473).

57. *Aythya americana* (Eyton). OREGON: Fossil Lake? (Shufeldt, 1913, Bull. Amer. Mus. nat. Hist., vol. 32, pp. 141, 156). CALIFORNIA: McKittrick (L. Miller, 1925, Univ. Calif. Publ. geol. Sci., vol. 15, p. 314). TEXAS: Jackson Farm (Brodkorb, in press). FLORIDA: Itchtucknee River (McCoy, 1963, Auk, vol. 80, p. 343).

58. *Aythya collaris* (Donovan). OREGON: Fossil Lake? (Shufeldt, 1913, Bull. Amer. Mus. nat. Hist., vol. 32, pp. 141, 156). NEW MEXICO: Howells Ridge Cave? (Howard, 1962, Condor, vol. 64, p. 242). TEXAS: Groesbeck Creek (Midwestern Univ.). ILLINOIS: *Kingston, *Cahokia, and *Plum Island (Baker, 1941, Trans. Amer. philos. Soc., n.s., vol. 32, p. 67); *Modoc rock shelter (Parmalee, 1956, Illinois State Mus., Rept. Invest., no. 4, p. 53). OHIO: *Canter caves (Gos-

lin, 1955, Ohio Jour. Sci., vol. 55, p. 361). FLORIDA: Crystal Springs (Brodkorb, 1956, Wilson Bull., vol. 68, p. 158); Reddick (Brodkorb, 1957, Jour. Paleont., vol. 31, p. 134); Arredondo (Brodkorb, 1959, Bull. Florida State Mus., vol. 4, p. 274); Rock Spring (Woolfenden, 1959, Wilson Bull., vol. 71, p. 185); Itchtucknee River (McCoy, 1963, Auk, vol. 80, p. 343); Haile (Ligon, in press); *Good's Shellpit and *Bluffton (Neill, Gut, and Brodkorb, 1956, Amer. Antiquity, vol. 21, p. 388). Record (Merriam, 1916, Univ. Calif. Publ. Geol., vol. 9, pp. 168, 173) from Upper Miocene at Cedar Mountain, Nevada, is unbelievable.

59. *Aythya fuligula* (Linnaeus). IRELAND: Edenvale and Newhall caves (Lambrecht, 1933, Handb. Palaeorn., p. 737). ENGLAND: *Glastonbury (Lambrecht, 1933). DENMARK: Soelager, *Vimose, and *Ordrup Mose (H. Winge, 1903, Vidensk. Meddel. naturhist. Foren, Copenhagen, vol. 6, p. 83). MONACO: Grotte de Grimaldi, Grottes de Menton (Lambrecht, 1933). ITALY: Grotta Romanelli?, Grotta dei Colombi? (Lambrecht, 1933). GERMANY: Hohlefels near Schelklingen (Lambrecht, 1933). HUNGARY: Pálffy Cave (Lambrecht, 1913, Aquila, vol. 20, p. 426).

60. *Aythya nyroca* (Güldenstädt). GERMANY: Hohlefels im Achtal near Ulm (Lambrecht, 1933, Handb. Palaeorn., p. 737). HUNGARY: Öregkö Cave near Bajót (Kormos and Lembrecht, 1914, Barlangkutatás, vol. 2, p. 105); Remetehegy (Lambrecht, 1914, Aquila, vol. 21, pp. 89, 90, 94); Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. ungar. geol. Anstalt, vol. 23, p. 479); Puskaporos (Lambrecht, 1916, Barlangkutatás, vol. 4, p. 205); Püspökfürdö (Capek, 1917, Barlangkutatás, vol. 5, pp. 26, 67); Bajót, Czákvár, and Legény Cave near Pilisszentlélek (Lambrecht, 1933).

61. *Aythya novaeseelandiae* (Gmelin). NEW ZEALAND: Waingongoro (Lydekker, 1891, Cat. Fossil Birds Brit. Mus., p. 122). CHATHAM ISLANDS: (Forbes, 1893, Ibis, p. 545).

62. *Aythya marila* (Linnaeus). IRELAND: Castlepook Cave and Kesh Cave (Lambrecht, 1933, Handb. Palaeorn., p. 737). ENGLAND: *Glastonbury (Lambrecht, 1933). DENMARK: Havnoe, Klintesoe, Havelse, Soelager, and Sejroe (H. Winge, 1903, Vidensk. Meddel. naturhist. Foren. Copenhagen, vol. 6, p. 83). ITALY: Grotta dei Colombi and Grotta Romanelli (Lambrecht, 1933). ALASKA: *St. Lawrence Island (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, p. 90); *Cape Prince of Wales (Friedmann, 1941, op. cit., vol. 31, p. 406). OREGON: Fossil Lake (Shufeldt, 1892, Jour. Acad. nat. Sci. Philadelphia, vol. 9, p. 405). NEVADA: Smith Creek Cave (Howard, 1952, Bull. S. Calif. Acad. Sci., vol. 51, pt. 2, p. 54).

63. *Aythya affinis* (Eyton). ALASKA: *Kodiak Island (Friedmann, 1935, Jour. Washington Acad. Sci., vol. 25, p. 47). OREGON: Fossil Lake (Shufeldt, 1913, Bull. Amer. Mus. nat. Hist., vol. 32, p. 141). CALIFORNIA: McKittrick (Miller, 1935, Condor, vol. 37, p. 76); *Buena Vista Lake (DeMay, 1942, Condor, vol. 44, p. 228). TEXAS: Groesbeck Creek and Lubbock reservoir (Brodkorb, in press); *Bell Cave (Wetmore, 1935, Condor, vol. 37, p. 176). KANSAS: Shorts Creek (Stettenheim, 1958, Wilson Bull., vol. 70, p. 198). IOWA: *Mill Creek (Hamon, 1961, Plains Anthropologist, vol. 6, p. 210). ILLINOIS: *Kingston (Baker, 1936, Trans. Illinois State Acad. Sci., vol. 29, p. 245); *Cahokia and *Plum Island (Baker, 1941, Trans. Amer. philos. Soc., n.s., vol. 32, p. 67). OHIO: *Canter caves (Goslin, 1955, Ohio Jour. Sci., vol. 55, p. 361). FLORIDA: Melbourne, Seminole Field, Venice, Itchtucknee River, and Sabertooth Cave (Wetmore, 1931,

Smithsonian misc. Coll., vol. 85, no. 2, p. 22); Rock Spring (Woolfenden, 1959, Wilson Bull., vol. 71, p. 185); Santa Fe River (Brodkorb, 1963, Auk, vol. 80, p. 115); Haile (Ligon, in press); Lake Monroe and Hornsby Spring (Brodkorb coll.); *Good's Shellpit, *Lemon Bluff, and *Bluffton (Neill, Gut and Brodkorb, 1956, Amer. Antiquity, vol. 21, p. 388); *Jungerman site? (Wing, 1963, Contr. Florida State Mus., no. 10, p. 53).

Subfamily MERGINAE:

64. *Bucephala clangula* (Linnaeus). ENGLAND: *Glastonbury (Lambrecht, 1933, Handb. Palaeorn., p. 737). SWEDEN: Slangemölla in Halland (Lambrecht, 1933). DENMARK: Majlgaard, Gudumlund, Klintesoe, Halvelse, Soelager, and *Borrebjerg (H. Winge, 1903, Vidensk. Meddel. naturhist. Foren. Copenhagen, vol. 6, p. 83). MONACO: Grotte de Grimaldi (Lambrecht, 1933). ITALY: Grotta Romanelli (Lambrecht, 1933). AZERBAIJAN: Binagada? (Serebrovsky, 1941, Doklady Akad. Nauk S.S.S.R., vol. 33, no. 7-8, p. 473). ALASKA: *Kodiak Island (Friedmann, 1935, Jour. Washington Acad. Sci., vol. 25, p. 48); *Dutch Harbor (Friedmann, 1937, op. cit., vol. 27, p. 433); *Cape Prince of Wales (Friedmann, 1941, op. cit., vol. 31, p. 406).

65. *Bucephala albeola* (Linnaeus). ALASKA: *Little Kiska Island (Friedmann, 1937, Jour. Washington Acad. Sci., vol. 27, p. 436). WASHINGTON: *Puget Sound (L. Miller, 1960, Wilson Bull., vol. 72, p. 394). OREGON: Fossil Lake (Shufeldt, 1913, Bull. Amer. Mus. nat. Hist., vol. 32, pp. 142, 156). CALIFORNIA: McKittrick (L. Miller, 1935, Condor, vol. 37, p. 76); *Buena Vista Lake (DeMay, 1942, Condor, vol. 44, p. 228); San Pedro (Howard, 1949, Condor, vol. 51, pp. 21, 27). KANSAS: Meade Co. (Wetmore, 1944, Univ. Kansas Sci. Bull., vol. 30, p. 94). ILLINOIS: *Kingston (Baker, 1936, Trans. Illinois State Acad. Sci., vol. 29, p. 245). VIRGINIA: Natural Chimneys (Wetmore, 1962, Smithsonian misc. Coll., vol. 145, p. 6). FLORIDA: Seminole Field in St. Petersburg (Wetmore, 1944, Univ. Kansas Sci. Bull., vol. 30, p. 94); Itchtucknee River (McCoy, 1963, Auk, vol. 80, p. 343); Haile (Ligon, in press); *Lemon Bluff (Neill, Gut, and Brodkorb, 1956, Amer. Antiquity, vol. 21, p. 388).

66. *Clangula hyemalis* (Linnaeus). DENMARK: Borgbakke and Maglemose (H. Winge, 1903, Vidensk. Meddel. naturhist. Foren. Copenhagen, vol. 6, p. 84). AZERBAIJAN: Binagada? (Serebrovsky, 1941, Doklady Akad. Nauk S.S.S.R., vol. 33, no. 7-8, p. 473). ALASKA: *St. Lawrence Island, *Amaknak, *Kowieruk, and *Kodiak Island (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, pp. 90, 231, 234); *Cape Prince of Wales (Friedmann, 1941, op. cit., vol. 31, p. 406). OREGON: Fossil Lake (Howard, 1946, Carnegie Instn. Washington Publ., no. 551, pp. 175, 191). FLORIDA: Haile (Ligon, in press).

67. *Histrionicus histrionicus* (Linnaeus). SWEDEN: Östergötland and Halland (Lambrecht, 1933, Handb. Palaeorn., p. 737). ALASKA: *St. Lawrence Island, *Amaknak Island, *Cape Denbeigh, *Kowieruk, and *Seward Peninsula (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, pp. 90, 231, 237); *Kodiak Island (Friedmann, 1935, op. cit., vol. 25, p. 48). CALIFORNIA: San Pedro (Howard, 1949, Condor, vol. 51, pp. 24, 27). Record from Fossil Lake, Oregon (Shufeldt, 1913, Bull. Amer. Mus. nat. Hist., vol. 32, pp. 142, 143, 156), is erroneous (see Howard, 1946, Carnegie Instn. Washington Publ., no. 551, pp. 176, 191).

68. *Somateria mollissima* (Linnaeus). IRELAND: Shandon Cave (Lydekker, 1891, Ibis, p. 391). SCOTLAND: Strathedon (Lydekker, 1891, Ibis, p. 391). NOR-

WAY: Vardo (Lambrecht, 1933, Handb. Palaeorn., p. 736). DENMARK: Loenstrup Klint, Mejlgaard, Havnoe, Klintesoe, Havelse, Soelager, Hesseloe, *Borrebjerg, and *Kjoebenhavn (H. Winge, 1903, Vidensk. Meddel. naturhist. Foren. Copenhagen, vol. 6, p. 85). ALASKA: *St. Lawrence Island, *Amaknak, *Cape Denbeigh, and *Kodiak Island (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, pp. 90, 232, 237); *Dutch Harbor, *Little Kiska, and *Attu Island (Friedmann, 1937, op. cit., vol. 27, pp. 435, 437, 438); *Cape Prince of Wales (Friedmann, 1941, op. cit., vol. 31, p. 407).

69. *Somateria spectabilis* (Linnaeus). ALASKA: *St. Lawrence Island, *Amaknak Island, *Cape Denbeigh, and *Kodiak Island (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, pp. 91, 232, 237); *Dutch Harbor and *Little Kiska (Friedmann, 1937, op. cit., vol. 27, pp. 435, 437); *Cape Prince of Wales (Friedmann, op. cit., vol. 31, p. 407).

70. *Polysticta stelleri* (Pallas). ALASKA: *St. Lawrence Island (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, p. 90); *Kodiak Island (Friedmann, 1935, op. cit., vol. 25, p. 48); *Little Kiska (Friedmann, 1937, op. cit., vol. 27, p. 437); *Cape Prince of Wales (Friedmann, 1941, op. cit., vol. 31, p. 406). Record from Fossil Lake, Oregon (Shufeldt, 1913, Bull. Amer. Mus. nat. Hist., vol. 32, pp. 143, 156), is erroneous (Howard, 1936, Carnegie Instn. Washington Publ., no. 551, pp. 176, 191).

71. *Arctonetta fischeri* (Brandt). ALASKA: *St. Lawrence Island and *Kodiak Island (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, pp. 91, 235).

72. *Melanitta nigra* (Linnaeus). IRELAND: Kesh Cave (Lambrecht, 1933, Handb. Palaeorn., p. 736). SCOTLAND: Tyrie (Lydekker, 1891, Ibis, p. 391); Seaton (Lambrecht, 1933). ENGLAND: Igtham Fissure (Lambrecht, 1933). PORTUGAL: Grotta de Furninha (Lambrecht, 1933). DENMARK: Mejlgaard, Havnoe, Erteboelle, Klintesoe, Havelse, Soelager, and Oerum Aa (H. Winge, 1903, Vidensk. Meddel. naturhist. Foren. Copenhagen, vol. 6, p. 84). CZECHOSLOVAKIA: Certova díra (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, p. 941). HUNGARY: Pálffy Cave (Lambrecht, 1913, Aquila, vol. 20, p. 426). ALASKA: *St. Lawrence Island, *Amaknak Island, *Kodiak Island, and *Cape Denbeigh (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, pp. 92, 232, 235, 237); *Dutch Harbor (Friedmann, 1937, op. cit., vol. 27, p. 435); *Cape Prince of Wales (Friedmann, 1941, op. cit., vol. 31, p. 407).

73. *Melanitta fusca* (Linnaeus). SWEDEN: Slangemölla in Halland (Lambrecht, 1933, Handb. Palaeorn., p. 736). DENMARK: Fannerup, Mejlgaard, Aamoelle, Havnoe, Erteboelle, Gudumlund, Klintesoe, Jaegerspris, Havelse, and Soelager (H. Winge, 1903, Vidensk. Meddel. naturhist. Foren. Copenhagen, vol. 6, p. 83), GIBRALTAR: Devil's Tower (Bate, 1928, Jour. Roy. anthrop. inst., vol. 58, p. 104). ITALY: Grotta dei Colombi, Grotta Romanelli, and Caverna Pollera (Lambrecht, 1933). AZERBAIJAN: Binagada (Serebrovsky, 1941, Doklady Akad. Nauk S.S.S.R., vol. 33, no. 7-8, p. 473).

74. *Melanitta deglandi* (Bonaparte). ALASKA: *St. Lawrence Island, *Amaknak Island, *Kodiak Island, *Cape Denbeigh, and *Bonasila (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, pp. 91, 232, 235, 237); *Dutch Harbor, *Little Kiska, *Atka Island, and *Attu Island (Friedmann, 1937, op. cit., vol. 27, pp. 435, 437); *Cape Prince of Wales (Friedmann, 1941, op. cit., vol. 31, p. 407). CALIFORNIA: Newport Bay and San Pedro (Howard, 1949, Condor, vol. 51, pp. 21, 24, 27).

75. *Melanitta perspicillata* (Linnaeus). SCOTLAND: Stratheden (Lambrecht, 1933, Handb. Palaeorn., p. 736). ENGLAND: Merlin's Cave (Lambrecht, 1933). ALASKA: *St. Lawrence Island (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, p. 91); *Kodiak Island (Friedmann, 1935, op. cit., vol. 25, p. 49); *Dutch Harbor and *Little Kiska (Friedmann, 1937, op. cit., vol. 27, pp. 433, 435, 437). OREGON: Fossil Lake (Howard, 1946, Carnegie Instn. Washington Publ., no. 551, pp. 175, 191). CALIFORNIA: San Pedro (L. Miller, 1914, Univ. Calif. Publ. Geol., vol. 8, p. 36); Vallecito Creek? (Howard, 1963, Los Angeles Co. Mus., Contr. Sci., no. 73, p. 13).

76. *Mergellus albellus* (Linnaeus). IRELAND: Co. Sligo, Kesh Cave, and Reach Fen (Lambrecht, 1933, Handb. Palaeorn., p. 736). ENGLAND: Chudleigh Cave and Merlin's Cave (Lambrecht, 1933). ITALY: Grotta dei Colombi (Lambrecht, 1933). AUSTRIA: (Lambrecht, 1918, Aquila, vol. 24, p. 206). CZECHOSLOVAKIA: Puskaporos and Bajót Cave (Lambrecht, 1933); Certova díra (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, p. 941). HUNGARY: Pálffy Cave (Lambrecht, 1913, Aquila, vol. 20, p. 427). AZERBAIJAN: Binagada (Serebrovsky, 1941, Doklady Akad. Nauk S.S.S.R., vol. 33, no. 7-8, p. 473).

77. *Lophodytes cucullatus* (Linnaeus). KANSAS: Kentuck (Galbreath, 1955, Wilson Bull., vol. 67, p. 62). OKLAHOMA: Nye Sink (Lunk, 1952, Condor, vol. 54, p. 317). ILLINOIS: *Kingston (Baker, 1936, Trans. Illinois State Acad. Sci., vol. 29, p. 245); *Cahokia and *Plum Island (Baker, 1941, Trans. Amer. philos. Soc., n.s., vol. 32, p. 67). FLORIDA: Vero Beach no. 2 (includes *Querquedula floridana* Shufeldt, 1917, Florida geol. Surv., 9th Ann. Rept., p. 36, pl. 1, fig. 4, pl. 2, fig. 25, type right humerus, formerly Florida Geol. Survey no. V298, now in U.S. Nat. Mus., casts in Brodkorb coll.; see Brodkorb, 1953, Wilson Bull., vol. 65, p. 96; Wetmore, 1955, Condor, vol. 57, p. 189); Itchtucknee River, Seminole Field in St. Petersburg, Venice, and Melbourne (Wetmore, 1931, Smithsonian misc. Coll., vol. 85, no. 2, pp. 21, 23); Hornsby Spring and Winter Beach (Brodkorb coll.); Haile (Ligon, in press); *Good's Shellpit and *Lemon Bluff (Neill, Gut, and Brodkorb, 1956, Amer. Antiquity, vol. 21, p. 388); *Vero Beach no. 3 (Weigel, 1963, Florida geol. Surv. Spec. Publ. no. 10, p. 27); *Goodman site (Wing, 1963, Contr. Florida State Mus., no. 10, p. 56). Record from Fossil Lake, Oregon (Shufeldt, 1892, Jour. Acad. nat. Sci. Philadelphia, vol. 9, p. 402), is erroneous (see Howard, 1946, Carnegie Instn. Washington Publ., no. 551, pp. 176, 191).

78. *Mergus merganser* Linnaeus. NORWAY: Vardo (Lambrecht, 1933, Handb. Palaeorn., p. 736). DENMARK: Klintesoe, Havelse, and Soelager (H. Winge, 1903, Vidensk. Meddel. naturhist. Foren. Copenhagen, vol. 6, p. 87). SWITZERLAND: Ettengen (Lambrecht, 1933). GERMANY: Weimar-Taubach (Lambrecht, 1933). CZECHOSLOVAKIA: Certova díra (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, p. 941). HUNGARY: Balla Cave (Lambrecht, 1913, Aquila, vol. 19, pp. 273, 283); Pálffy Cave (Lambrecht, 1913, Aquila, vol. 20, p. 427); Volyn (Lambrecht, 1933). ALASKA: *St. Lawrence Island (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 27, p. 92); *Dutch Harbor (Friedmann, 1937, op. cit., vol. 27, p. 435). OREGON: Fossil Lake (Howard, 1946, Carnegie Instn. Washington Publ., vol. 551, pp. 175, 191). CALIFORNIA: *Buena Vista Lake (DeMay, 1942, Condor, vol. 44, p. 228). IDAHO: American Falls (Brodkorb, 1963, Quart. Jour. Florida Acad. Sci., vol. 26, p. 280). ILLINOIS: Chicago (Wetmore, 1948, Wilson Bull., vol. 60, p. 240). FLORIDA: Santa Fe River (Brodkorb, 1963, Auk, vol. 80, p. 115); Itchtucknee River (McCoy, 1963, Auk, vol. 80, p. 343).

79. *Mergus serrator* Linnaeus. SCOTLAND: *Oransay and *Ardrossan (Lambrecht, 1933, Handb. Palaeorn., p. 736). ENGLAND: Merlin's Cave, Lea Valley, and *Glastonbury (Lambrecht, 1933). GIBRALTAR: Devil's Tower (Bate, 1928, Jour. Roy. anthrop. Inst., vol. 58, p. 104). DENMARK: Fannerup, Aamoelle, Havnoe, Krabbesholm, Gudumlund, Klintesoe, Havelse, Soelager, Sejroe, Borrebjerg, and *Kolding Fjord (H. Winge, 1903, Vidensk. Meddel. naturhist. Foren. Copenhagen, vol. 6, p. 86). ITALY: Grotta Romanelli (Lambrecht, 1933). AUSTRIA: (Lambrecht, 1918, Aquila, vol. 24, p. 206). CZECHOSLOVAKIA: Certova díra (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, p. 941). ALASKA: *St. Lawrence Island (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, p. 92); *Little Kiska Island (Friedmann, 1937, op. cit., vol. 27, p. 437). ILLINOIS: Chicago (Wetmore, 1940, Smithsonian misc. Coll., vol. 99, no. 4, p. 29). FLORIDA: Rock Spring (Woolfenden, 1959, Wilson Bull., vol. 71, p. 185); *Goodman site? (Wing, 1963, Contr. Florida State Mus., no. 10, p. 56).

80. *Mergus octosetaceus* Vieillot. BRAZIL: Lapa da Escrivania (O. Winge, 1887, E Museo Lundii, vol. 2, pp. 4, 9, 23).

81. *Mergus australis* Hombron and Jacquinot. NEW ZEALAND: (Dawson, 1958, XV internat. Congr. Zool., Sect. 5, Paper 22, p. 1 of reprint).

Record of *Bucephala islandica* (Gmelin) from Fossil Lake, Oregon (Shufeldt, 1892, Jour. Acad. nat. Sci. Philadelphia, vol. 9, p. 405), is erroneous (see Howard, 1946, Carnegie Instn. Washington Publ., no. 551, pp. 176, 191).

Subfamily OXYURINAE:

82. *Nomonyx dominicus* (Linnaeus). BRAZIL: Lapa da Escrivania and Lapa da Lagoa do Sumidouro (O. Winge, 1887, E Museo Lundii, vol. 1, pp. 4, 13, 22).

83. *Oxyura jamaicensis* (Gmelin). OREGON: Fossil Lake (L. Miller, 1912, Univ. Calif. Publ. Geol., vol. 7, pp. 81, 112). CALIFORNIA: McKittrick (L. Miller, 1925, Univ. Calif. Publ. geol. Sci., vol. 15, p. 314); *Buena Vista Lake (DeMay, 1942, Condor, vol. 44, p. 228); Manix Lake (Howard, 1955, U. S. geol. Surv. Prof. Paper, 264-J, p. 204). ILLINOIS: *Modoc rock shelter (Parmalee, 1956, Illinois State Mus., Rept. Invest., no. 4, p. 53). VIRGINIA: Natural Chimneys (Wetmore, 1962, Smithsonian misc. Coll., vol. 145, no. 2, p. 6). FLORIDA: Venice (Wetmore, 1931, Smithsonian misc. Coll., vol. 85, no. 2, p. 23); *Good's Shellpit and *Lemon Bluff (Neill, Gut, and Brodkorb, 1956, Amer. Antiquity, vol. 21, p. 388).

84. *Biziura lobata* (Shaw). NEW ZEALAND: (Dawson, 1958, XV internat. Congr. Zool., Sect. 5, Paper 22, p. 1 of reprint).

Suborder ANHIMAE Wetmore and W. D. Miller

Palamedeae Sclater, 1880 (July), Ibis, ser. 4, vol. 4, no. 16, p. 406 (order; type *Palamedea* Linnaeus, 1766, a junior synonym of *Anhima* Brisson, 1760).—*Palamedeiformes* Fürbringer, 1888, Untersuch. Morph. Syst. Vögel, vol. 2, p. 1565 (subordo).

Anhimae Wetmore and W. D. Miller, 1926 (July 3), Auk, vol. 43, no. 3, p. 341 (suborder; type *Anhima* Brisson).

Family ANHIMIDAE Stejneger

Palamedeinae Bonaparte, 1831, Saggio di una distribuzione metodica degli Animali Vertebrati, p. 56 (subfamily; type *Palamedea* Linnaeus, a junior synonym of *Anhima* Brisson).—*Palamedeidae* G. R. Gray, 1840, List genera birds, fide Gray, 1871.

Anhimoideae Stejneger, 1885, Stand. nat. Hist., vol. 4, p. 132 (superfamily; type *Anhima* Brisson).—*Anhimidae* Stejneger, 1885, op. cit., p. 134 (family).

No extinct fossil species.

Neospecies of Anhimidae from Pleistocene and *prehistoric sites:

1. *Anhima cornuta* (Linnaeus). VENEZUELA: *Los Tamarindos and *Hacienda Tocorón (Wetmore, 1935, Auk, vol. 52, p. 329).

2. *Chauna torquata* (Oken). ARGENTINA: Lujan (Ameghino, 1891, Rev. argentina Hist. nat., vol. 1, p. 446); *Santiago del Estero (Lambrecht, 1933, Handb. Palaeorn., p. 735).

Order ACCIPITRIFORMES (Vieillot)

Accipitres Linnaeus, 1758, Syst. nat., ed. 10, vol. 1, pp. 81, 83, 86 (ordo; not based on generic name).—*Accipitres* Vieillot, 1816, Analyse d'une nouvelle ornithologie élémentaire, fide Gadow (ordre; type *Accipiter* Brisson).—*Acciptres* Bonaparte, 1831, Saggio di una distribuzione metodica degli Animali Vertebrati, p. 29.—*Accipitriformes* Sharpe, 1891, Review of recent attempts to classify birds, p. 71.

Falcones Sharpe, 1874, Cat. Birds Brit. Mus., vol. 1, pp. ix, 1 (type *Falco* Linnaeus).—*Falconiformes* Seebohm, 1890, Classification of birds, pp. vii, 13 (subclass).

Suborder SARCORAMPHI (Ridgway)

Sarcorhamphi Ridgway, 1881, Bull. Illinois State Lab. nat. Hist., no. 4, p. 190 (type *Sarcoramphus* Duméril).

Cathartides Coues, 1884, Key to North American birds, ed. 2, pp. 497, 557 (superfamily or suborder; type *Cathartes* Illiger).—*Cathartes* Seebohm, 1890, Classification of birds, pp. vii, xi, 16, 23 (order and suborder).—*Cathartidiformes* Sharpe, 1891, Review of recent attempts to classify birds, p. 78 (order).—*Cathartae* Gadow, 1893, Bronn Klass. Ordn., Vögel, pt. 2, pp. 77, 156, 158, 300 (Unterordnung).—*Catharteae* Pycraft, 1902, Proc. zool. Soc. London, pp. 318, 319 (suborder).—*Cathartiformes* Gaillard, 1908 (June 13), Ann. Univ. Lyon, n.s., vol. 1, fasc. 23, p. 41 (sous-ordre).

Vultures Swann, 1924, Monograph of Birds of Prey, vol. 1, pt. 1, p. 1 (type *Vultur* Linnaeus).

Family VULTURIDAE (Illiger)

Vulturini Illiger, 1811, Prodromus systematis mammalium et avium, fide Gadow (familia; type *Vultur* Linnaeus).—*Vulturidae* Vigors, 1824, Zool. Jour., vol. 1, p. 315 (family).—*Vulturinae* Bonaparte, 1838, Geogr. comp. list birds Europe and N. Amer., p. 1 (subfamilia).

Cathartinae Lafresnaye, 1839, Rev. zool., p. 194 (type *Cathartes* Illiger).—*Cathartidae* G. R. Gray, 1842, Appendix to a list of the genera of birds, fide Gray, 1869 (family).—*Cathartoidea* Wetmore, 1944 (May 24), Ann. Carnegie Mus., vol. 30, p. 69 (superfamily).

Sarcoramphidae G. R. Gray, 1844, List of the specimens of birds in the collection of the British Museum, pt. 1, p. 1 (type *Sarcoramphus* Duméril).—*Sarcoramphinae* Gray, 1844, loc. cit. (subfamily).—*Sarcorhamphinae* Eyton, 1849, in Jardine, Contributions to ornithology for 1848-52, p. 133.

Gryphinae Reichenbach, "1850" = 1852, Avium systema naturale, p. C (type *Gryphus* Oken, 1816, a junior synonym of *Vultur* Linnaeus).

Subfamily VULTURINAE (Illiger)

Vulturini Illiger, 1811, Prodromus systematis mammalium et avium, fide Gadow (familia; type *Vultur* Linnaeus).—*Vulturinae* Bonaparte, 1838, Geogr. comp. list birds Eur. N. Amer., p. 1 (subfamilia).

Genus †*Lithornis* Owen

Lithornis Owen, 1841, Trans. geol. Soc. London, ser. 2, vol. 6, p. 206 (type *Lithornis vulturinus* Owen).

1. *Lithornis vulturinus* Owen

Lithornis vulturinus Owen, 1841, Trans. geol. Soc. London, ser. 2, vol. 6, p. 206, pl. 21, figs. 5-6 (type from Sheppey, sternum, coracoid, femur, tibiotarsus, Royal College of Surgeons).

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

Genus †*Eocathartes* Lambrecht

Eocathartes Lambrecht, 1935, Nova Acta Leopoldina, neue Folge, vol. 3, no. 14, p. 362 (type by monotypy *Eocathartes robustus* Lambrecht).

2. *Eocathartes robustus* Lambrecht

Eocathartes robustus Lambrecht, 1935, Nova Acta Leopoldina, neue Folge, vol. 3, no. 14, p. 362, pl. 18, fig. 2 (type from Grube Cecilie, pelvis, right and left femora, right tibiotarsus, right tarsometatarsus, basal phalanx of toes II-IV, Geiseltal Mus.).

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

Genus †*Diatropornis* Oberholser

Tapinopus Milne-Edwards, 1892, C. R. 2e. Congrès internat. ornith., Budapest, p. 79 (type by monotypy *Tapinopus ellioti* Milne-Edwards). Preoccupied by *Tapinopus* Saussure.

Diatropornis Oberholser, 1899 (June 2), Proc. Acad. nat. Sci. Philadelphia, p. 203 (type by original designation *Tapinopus ellioti* Milne-Edwards).

3. *Diatropornis ellioti* (Milne-Edwards)

Tapinopus ellioti Milne-Edwards, 1892, C. R. 2e. Congrès internat. ornith. Budapest, p. 79 (type from phosphate de Chaux, tarsometatarsus, Paris Mus.).

UPPER EOCENE OR LOWER OLIGOCENE (phosphorites du Quercy). FRANCE: Boussac near Caylux.

Genus †*Plesiocathartes* Gaillard

Plesiocathartes Gaillard, 1908 (June 13), Ann. Univ. Lyon, n.s., vol. 1, fasc. 23, p. 41 (type by monotypy *Plesiocathartes europaeus* Gaillard).

4. *Plesiocathartes europaeus* Gaillard

Plesiocathartes europaeus Gaillard, 1908 (June 13), Ann. Univ. Lyon, n.s., vol. 1, fasc. 23, p. 41, text-fig. 6; pl. 2, fig. 13-16 (type from plateau of Quercy, distal part of left tarsometatarsus, Univ. Lyon).

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

Genus †*Teracus* Aymard

Teracus Aymard, 1856, Congr. sci. France, vol. 22, no. 1, p. 234 (type *Teracus littoralis* Aymard). Position uncertain.

5. *Teracus littoralis* Aymard

Teracus littoralis Aymard, 1856, Congr. sci. France, vol. 22, no. 1, p. 234 (types from Ronzon, femur, coracoid).

LOWER OLIGOCENE (Tongrian). FRANCE: Dept. Haut Loire: Ronzon near Puy-en-Velay.

Genus †*Phasmagyps* Wetmore

Phasmagyps Wetmore, 1927 (July 15), Proc. Colorado Mus. nat. Hist., vol. 7, no. 2, p. 3 (type by monotypy *Phasmagyps patritus* Wetmore).

6. *Phasmagyps patritus* Wetmore

Phasmagyps patritus Wetmore, 1927 (July 15), Proc. Colorado Mus. nat. Hist., vol. 7, no. 2, p. 3, figs. 1-6 (type from Horsetail Creek, distal part of right tibiotarsus, Colorado Mus. Nat. Hist. no. 804).

LOWER OLIGOCENE (Chadron formation). COLORADO: Weld County: Horsetail Creek, in sections 26-27, Township 10 N, Range 57 W.

Genus †*Palaeogyps* Wetmore

Palaeogyps Wetmore, 1927 (July 15), Proc. Colorado Mus. nat. Hist., vol. 7, no. 2, p. 5 (type by monotypy *Palaeogyps prodromus* Wetmore).

7. *Palaeogyps prodromus* Wetmore

Palaeogyps prodromus Wetmore, 1927 (July 15), Proc. Colorado Mus. nat. Hist., vol. 7, no. 2, p. 5, fig. 7-14 (type from Horsetail Creek, distal part of right tibiotarsus, Colo. Mus. Nat. Hist. no. 803).

LOWER OLIGOCENE (Chadron formation). COLORADO: Weld County: Horsetail Creek, in sections 26-27, Township 10 N, Range 57 W.

Genus *Sarcoramphus* Duméril

Sarcoramphus Duméril, 1806, Zoologie analytique, p. 32 (type by designation of Vigors, 1825, *Vultur papa* Linnaeus, Recent).

8. *Sarcoramphus kernense* (L. Miller)

Vultur kernensis L. Miller, 1931 (March 18), Condor, vol. 33, p. 70, fig. 16 (type from Pozo Creek, distal third of humerus, formerly Calif. Inst. Tech. no. 454, now in Los Angeles County Mus.).

MIDDLE PLIOCENE (Kern River series). CALIFORNIA: Kern County: Pozo Creek, 9 miles northeast of Bakersfield.

Genus *Vultur* Linnaeus

Vultur Linnaeus, 1758, Systema naturae, ed. 10, vol. 1, p. 86 (type by designation of Allen, 1907, *Vultur gryphus* Linnaeus, Recent).

9. *Vultur patruus* (Lönnberg)

Sarcorhamphus patruus Lönnberg, 1902, Bull. geol. Instn. Upsala, vol. 6, p. 1, figs. 2, 4 (types from Tarija Valley, tarsometatarsus, femur, Upsala Univ.).

PLIOCENE. BOLIVIA: Dept. Tarija: Tarija Valley.

Genus †*Pliogyps* Tordoff

Pliogyps Tordoff, 1959 (Sept. 25), Condor, vol. 61, no. 5, p. 338 (type by original designation *Pliogyps fisheri* Tordoff).

10. *Pliogyps fisheri* Tordoff

Pliogyps fisheri Tordoff, 1959 (Sept. 25), Condor, vol. 61, no. 5, p. 339, fig. 1 (type from Rexroad ranch, right tarsometatarsus, Univ. Mich. Mus. Paleo. no. 38319).

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

Genus *Gymnogyps* Lesson

Gymnogyps Lesson, 1842, Écho du Monde savant, ser. 2, vol. 6, p. 1037 (type by monotypy *Vultur californianus* Shaw).

11. *Gymnogyps amplus* L. Miller [1]

Gymnogyps amplus L. Miller, 1911 (Oct. 28), Univ. Calif. Publ., Bull. Dept. Geol., vol. 6, no. 5, p. 390, fig. 2 (type from Samwel Cave, distal part of right tarsometatarsus, Univ. Calif. Mus. Paleo. no. 9834).

[1] Probably only a temporal subspecies of Recent *G. californianus* (Shaw).

MIDDLE PLEISTOCENE (Reddick beds). FLORIDA: Marion County: Reddick (Brodkorb, 1957, Jour. Paleont., vol. 31, p. 134).

UPPER PLEISTOCENE (cave deposits). CALIFORNIA: Shasta County: Samwel Cave and Potter Creek Cave = Stone Man Cave (Miller, 1911). NEVADA: White Pine County: Smith Creek Cave (Howard, 1952, Bull. S. Calif. Acad. Sci., vol. 51, pt. 2, pp. 52, 54). ARIZONA: Mohave County: Rampart Cave (L. Miller, 1960, Condor, vol. 62, p. 70). NEW MEXICO: Otero County: Rocky Arroyo (Wetmore, 1931, Condor, vol 33, p. 76); Grant County: Howells Ridge Cave (Howard, 1962, Condor, vol. 64, p. 241. TEXAS: Bexar County: Friesenhahn Cave (Brodkorb, in press). NUEVO LEÓN: Aramberri: San Josecito Cave (L. Miller, 1943, Univ. Calif. Publ. Zool., vol. 47, p. 151).

UPPER PLEISTOCENE (tar pits). CALIFORNIA: Los Angeles County: Rancho La Brea in Los Angeles (L. Miller, 1910, Univ. Calif. Publ., Bull. Dept. Geol., vol. 6, p. 6, fig. 1). Santa Barbara County: Carpinteria (L. Miller, 1927, Science, n.s., vol. 66, p. 156). Kern County: McKittrick (L. Miller and DeMay, 1942, Univ. Calif. Publ. Zool., vol. 47, p. 92).

UPPER PLEISTOCENE (Pamlico formation). FLORIDA: Pinellas County: Seminole Field in St. Petersburg (Wetmore, 1931, Smithsonian misc. Coll., vol. 85, no. 2, p. 25). Sarasota County: Hog Creek in Sarasota (Wetmore, 1931).

UPPER PLEISTOCENE (Itchtucknee River beds). FLORIDA: Columbia County: Itchtucknee River (McCoy, 1963, Auk, vol. 80, p. 343).

Genus *Coragyps* Geoffroy

Coragyps Geoffroy, 1853, in Le Maout, Histoire naturelle des Oiseaux, p. 66 (type *Vultur atratus* Bechstein).

12. *Coragyps occidentalis* (L. Miller)

Catharista occidentalis L. Miller, 1909 (Sept. 10), Univ. Calif. Publ., Bull. Dept. Geol., vol. 5, no. 21, p. 306 (type from Rancho La Brea, Univ. Calif. Mus. Paleo. no. 12509).

Catharista shastensis L. Miller, 1911 (Oct. 28), Univ. Calif. Publ., Bull. Dept. Geol., vol. 6, no. 16, p. 388, fig. 1 (type from Potter Creek Cave, left tarsometatarsus, Univ. Calif. Mus. Paleo. no. 8603).

MIDDLE PLEISTOCENE (Reddick beds). FLORIDA: Marion County: Reddick (Brodkorb, 1957, Jour. Paleont., vol. 31, p. 134).

MIDDLE PLEISTOCENE (Arredondo clay). FLORIDA: Alachua County: Haile (Ligon, in press).

UPPER PLEISTOCENE (tar pits). CALIFORNIA: Los Angeles County: Rancho La Brea (L. Miller, 1909, Univ. Calif. Publ., Bull. Dept. Geol.,

vol. 5, p. 306). Santa Barbara County: Carpinteria (L. Miller, 1931, Univ. Calif. Publ., Bull. Dept. Geol. Sci., vol. 20, p. 364). Kern County: McKittrick (L. Miller, 1935, Condor, vol. 37, p. 76).

UPPER PLEISTOCENE (cave deposits). CALIFORNIA: Shasta County: Potter Creek Cave and Samwel Cave (L. Miller, 1911, Univ. Calif. Publ., Bull. Dept. Geol., vol. 6, p. 388). NEVADA: White Pine County: Smith Creek Cave, 34 miles north of Baker (Howard, 1935, Condor, vol. 37, p. 206). NEW MEXICO: Dona Ana County: Conkling Cavern on Pyramid Peak, Organ Mountains (Howard, 1930, Science, p. xiv). Grant County: Howells Ridge Cave (Howard, 1962, Condor, vol. 64, p. 242). TEXAS: Friesenhahn Cave (Brodkorb, in press). NUEVO LEÓN: Aramberri: San Josecito Cave (L. Miller, 1943, Univ. Calif. Publ. Zool., vol. 47, p. 151).

RECENT (midden, 8000 years b.p.). OREGON: Wasco County: Five Mile Rapids (L. Miller, 1957, Condor, vol. 59, p. 59).

Genus †*Breagyps* L. Miller and Howard

Breagyps L. Miller and Howard, 1938 (Feb. 18), Publ. Univ. Calif. at Los Angeles in biol. Sci., vol. 1, no. 9, p. 171 (type by original designation *Sarcorhamphus clarki* L. Miller).

13. *Breagyps clarki* (L. Miller)

Sarcorhamphus clarki L. Miller, 1910 (Nov. 28), Univ. Calif. Publ., Bull. Dept. Geol., vol. 6, no. 1, p. 11, figs. 3a-b (type from Rancho La Brea, tarsometatarsus, Univ. Calif. Mus. Paleo. no. 12588).

UPPER PLEISTOCENE (tar pits). CALIFORNIA: Los Angeles County: Rancho La Brea (L. Miller, 1910).

UPPER PLEISTOCENE (cave deposit). NEVADA: White Pine County: Smith Creek Cave, 34 miles north of Baker (Howard, 1935, Condor, vol. 37, p. 206).

Subfamily †TERATORNITHINAE (L. Miller) [1]

Teratornithidae L. Miller, 1909 (Sept. 10), Univ. Calif. Publ., Bull. Dept. Geol., vol. 5, no. 21, p. 317 (family tentatively proposed; type *Teratornis* L. Miller).—L. Miller, 1925, Carnegie Instn. Washington Publ., no. 349, pp. 87, 94.

Genus †*Teratornis* L. Miller

Teratornis L. Miller, 1909 (Sept. 10), Univ. Calif. Publ., Bull. Dept. Geol., vol. 5, no. 21, 307 (type by monotypy *Teratornis merriami* Miller).

Pleistogyps L. Miller, 1910, (Nov. 28), Univ. Calif. Publ., Bull. Dept. Geol., vol. 6, no. 1, p. 16 (type by monotypy *Pleistogyps rex* Miller).

[1] New rank.

14. *Teratornis incredibilis* Howard

Teratornis incredibilis Howard, 1952 (after May 1), Bull. S. Calif. Acad. Sci., vol. 51, pt. 2, p. 51, pl. 10 (type from Smith Creek Cave, cuneiform, Calif. Inst. Tech. no. 5067 now in Los Angeles County Mus.).

MIDDLE PLEISTOCENE (upper part of Palm Spring formation). CALIFORNIA: San Diego County: Vallecito Creek (Howard, 1963, Los Angeles Co. Mus., Contr. Sci., no. 73, p. 16, pl. 2).

UPPER PLEISTOCENE (cave deposit). NEVADA: White Pine County: Smith Creek Cave, Snake Range, 34 miles north of Baker.

15. *Teratornis merriami* L. Miller

Teratornis merriami L. Miller, 1909 (Sept. 10), Univ. Calif. Publ., Bull. Dept. Geol., vol. 5, no. 21, p. 307, figs. 1-9 (type from Rancho La Brea, skull, Univ. Calif. Mus. Paleo. no. 12101).

Pleistogyps rex L. Miller, 1910 (Nov. 28), Univ. Calif. Publ., Bull. Dept. Geol., vol. 6, no. 1, p. 16, fig. 5a-b (type from Rancho La Brea, tarsometatarsus, Univ. Calif. Mus. Paleo. no. 12599).

UPPER PLEISTOCENE (tar pits). CALIFORNIA: Los Angeles County: Rancho La Brea (L. Miller, 1909). Kern County: McKittrick (L. Miller, 1922, Condor, vol. 44, p. 123). Santa Barbara County: Carpinteria (L. Miller, 1927, Science, n.s., vol. 66, p. 156).

UPPER PLEISTOCENE (Pamlico formation). FLORIDA: Pinellas County: Seminole Field in St. Petersburg (Wetmore, 1931, Smithsonian misc. Coll., vol. 85, no. 2, p. 26, text-figs. 6-12, pl. 5). Manatee County: Bradenton (Wetmore, 1931). Record from Itchtucknee River, Florida (McCoy, 1963, Auk, vol. 80, p. 343) is erroneous.

UPPER PLEISTOCENE (cave deposit). NUEVO LEÓN: Aramberri: San Josecito Cave (L. Miller, 1943, Univ. Calif. Publ. Zool., vol. 47, p. 151).

Genus †*Cathartornis* L. Miller

Cathartornis L. Miller, 1910 (Nov. 28), Univ. Calif. Publ., Bull. Dept. Geol., vol. 6, no. 1, p. 14 (type by monotypy *Cathartornis gracilis* Miller).

16. *Cathartornis gracilis* L. Miller

Cathartornis gracilis L. Miller, 1910 (Nov. 28), Univ. Calif. Publ., Bull. Dept. Geol., vol. 6, no. 1, p. 14, figs. 4a-b (type from Rancho La Brea, tarsometatarsus, Univ. Calif. Mus. Paleo. no. 12598).

UPPER PLEISTOCENE (tar pits). CALIFORNIA: Los Angeles County: Rancho La Brea.

Neospecies of Vulturidae from Pleistocene and *prehistoric sites:

1. *Vultur gryphus* Linnaeus. ARGENTINA: Canada de Rocha, Lujan (*Sarcorhamphus fossilis* Moreno and Mercerat, May 1891, An. Mus. La. Plata, Pal. arg., vol. 1, pp. 27, 69, pl. 18, fig. 9, type fragmentary left ulna, La Plata Mus. nos. 194 and 195; see Ameghino, 1891, Rev. arg. Hist. nat., vol. 1, p. 444).

2. *Sarcoramphus papa* (Linnaeus). BRAZIL: Lapa da Escrivania? and Lapa do Bahu (O. Winge, 1887, E Museo Lundii, vol. 1, no. 2, p. 32).

3. *Coragyps atratus* (Bechstein). NEW MEXICO: Rocky Arroyo and *Hawikuh Pueblo (Wetmore, 1932, Condor, vol. 34, p. 141); Albuquerque (Brodkorb coll.). FLORIDA: Seminole Field and Sabertooth Cave (Wetmore, 1931, Smithsonian misc. Coll., vol. 85, no. 2, p. 24); Rock Spring (Woolfenden, 1959, Wilson Bull., vol. 71, p. 185); Itchtucknee River (McCoy, 1963, Auk, vol. 80, p. 343); *Vero Beach no. 3 (Weigel, 1963, Florida geol. Surv. Spec. Publ., no. 10, p. 27); *Good's shell-pit (Brodkorb coll.). BRITISH HONDURAS: *Barton Ramie site (Brodkorb coll.). BRAZIL: Lapa da Escrivania, Lapa da Lagoa do Sumidouro, and Lapa do Tiu? (O. Winge, 1887, E Museo Lundii, vol. 1, no. 2, p. 31).

4. *Cathartes aura* (Linnaeus). OREGON: *Five Mile Rapids (L. Miller, 1957, Condor, vol. 59, p. 59). CALIFORNIA: Rancho La Brea (L. Miller, 1909, Univ. Calif. Publ., Bull. Dept. Geol., vol. 5, p. 306); Hawver Cave, Potter Creek Cave, and Samwel Cave (L. Miller, 1911, op. cit., vol. 6, p. 387); San Pedro (L. Miller, 1914, op. cit., vol. 8, p. 37); Carpinteria (L. Miller, 1931, Univ. Calif. Publ., Bull. Dept. geol. Sci., vol. 20, p. 364); McKittrick (L. Miller, 1935, Condor, vol. 37, p. 76); *Emeryville (Howard, 1929, Univ. Calif. Publ. Zool., vol. 32, p. 312). NEVADA: Smith Creek Cave (Howard, 1952, Bull. S. Calif. Acad. Sci., vol. 51, pt. 2, p. 54). ARIZONA: Rampart Cave (L. Miller, 1960, Condor, vol. 62, p. 70); *Awatobi Pueblo (Hargrave, 1939, Condor, vol. 41, p. 207). NEW MEXICO: Rocky Arroyo (Wetmore, 1932, Condor, vol. 54, p. 141); Conkling Cavern and Shelter Cave (Howard and A. H. Miller, 1933, Condor, vol. 35, p. 15). TEXAS: *Bell Cave (Wetmore, 1935, Condor, vol. 37, p. 176). IOWA: *Mill Creek (Hamon, 1961, Plains Anthropologist, vol. 6, p. 210). FLORIDA: Seminole Field, Melbourne, and Sabertooth Cave (Wetmore, 1931, Smithsonian misc. Coll., vol. 85, no. 2, pp. 23, 24); Vero Beach no. 2 (Shufeldt, 1917, Florida geol. Surv., 9th Ann. Rept., p. 36); Reddick (Brodkorb, 1957, Jour. Paleont., vol. 31, p. 134); *Good's shell-pit (Neill, Gut, and Brodkorb, 1956, Amer. Antiquity, vol. 21, p. 388); *Green Mound (Hamon, 1959, Auk, vol. 76, p. 533); *Castle Windy (Bullen and Sleight, 1959, Bryant Found, Amer. Studies, Rept. no. 1, p. 20); *Vero Beach no. 3 (Weigel, 1963, Florida geol. Surv., Spec. Publ., no. 10, p. 27). BRAZIL: Lapa da Escrivania and Lapa da Lagoa do Sumidouro (O. Winge, 1887, E Museo Lundii, vol. 1, no. 2, p. 31). ARGENTINA: Canada de Rocha, Lujan (*Cathartes fossilis* Moreno and Mercerat, May, 1891, An. Mus. La Plata, Pal. arg., vol. 1, pp. 26, 67, pl. 20, fig. 9, type fragmentary right ulna, La Plata Mus. no. 185; see Ameghino, 1891, Rev. arg. Hist. nat., vol. 1, p. 444).

5. *Gymnogyps californianus* (Shaw). OREGON: *near Brookings (A. H. Miller, 1943, Murrelet, 1943, vol. 23, p. 77); *Five Mile Rapids (L. Miller, 1957, Condor, vol. 59, p. 59). CALIFORNIA: *Emeryville (Howard, 1929, Univ. Calif. Publ. Zool., vol. 32, p. 312). NEVADA: Gypsum Cave (L. Miller, 1931, Condor, vol. 33, p. 32). NEW MEXICO: Conkling Cavern and Shelter Cave (Howard and A. H. Miller, 1933, Condor, vol. 35, p. 15). TEXAS: *Mule Ears Peaks Cave (Wetmore and Friedmann, 1933, Condor, vol. 35, p. 37).

Family †Neocathartidae Wetmore

Eocathartidae Wetmore, 1944 (May 24), Ann. Carnegie Mus., vol. 30, p. 69 (type *Eocathartes* Wetmore).—*Eocathartoidea* Wetmore, 1944, (May 24), Ann. Carnegie Mus., vol. 30, p. 69 (superfamily).

Neocathartidae Wetmore, 1950 (April 28), Auk, vol. 67, no. 2, p. 235 (type *Neocathartes* Wetmore).—*Neocathartoidea* Wetmore, 1950 (April 28), Auk, vol. 67, no. 2, p. 235 (superfamily).

Genus †*Neocathartes* Wetmore

Eocathartes Wetmore, 1944 (May 24), Ann. Carnegie Mus., vol. 30, p. 69 (type by monotypy *Eocathartes grallator* Wetmore).

Neocathartes Wetmore, 1950 (April 28), Auk, vol. 67, no. 2, p. 235 (new name for above, preoccupied by *Eocathartes* Lambrecht, 1935).

1. *Neocathartes grallator* (Wetmore)

Eocathartes grallator Wetmore, 1944 (May 24), Ann. Carnegie Mus., vol. 30, p. 58, pl. 1-5, figs. 1-10 (type from Dobe Town crossing, partial skeleton, Carnegie Mus. Dept. Vert. Paleo. no. 9377).

Upper Eocene (Washakie formation, level B). Wyoming: Sweetwater County: one-half mile north of Dobe Town road crossing.

Suborder ACCIPITRES Vieillot

Accipitres Vieillot, 1816, Analyse d'une nouvelle ornithologie élémentaire, fide Gadow (ordre; type *Accipiter* Brisson).—*Accipitres* Garrod, 1874 (read Feb. 3), Proc. zool. Soc. London, p. 117 ("cohort" = suborder).

Falcones Sharpe, 1874, Cat. Birds Brit. Mus., vol. 1, pp. ix, 1 (suborder; type *Falco* Linnaeus).

Pandiones Sharpe, 1874, Cat. Birds Brit. Mus., vol. 1, pp. xiii, 448 (suborder; type *Pandion* Savigny).

Gypogeranides Coues, 1884, Key to North American birds, ed. 2, p. 497 (superfamily or suborder; type *Gypogeranus* Illiger 1811, a junior synonym of *Sagittarius* Hermann 1783).—*Gypogerani* Knowlton, 1909, Birds of the world, pp. 48, 209.

Serpentarii Seebohm, 1890, Classification of birds, pp. vii, 15 (suborder; type *Serpentarius* Cuvier 1797, a junior synonym of *Sagittarius* Hermann 1783).

Family SAGITTARIIDAE (Finsch and Hartlaub)

Gypogeranidae Vigors, 1825, Trans. Linn. Soc. London, vol. 14, p. 425 (type *Gypogeranus* Illiger 1811, a junior synonym of *Sagittarius* Hermann 1783).—Stephens, 1826, Shaw's General Zoology, vol. 13, pt. 2, p. 4.

Serpentariidae Selys-Longchamps, 1842, Fauna belge, pt. 1, fide Gray (type *Serpentarius* Cuvier 1797, a junior synonym of *Sagittarius* Hermann).

Sagittarinae Finsch and Hartlaub, 1870, Vögel Ost-Afrikas, p. 93 (subfamily; type *Sagittarius* Hermann).—*Sagittariidae* W. L. Sclater, 1924, Systema avium ethiopicarum, vol. 1, p. 46 (family).—*Sagittarioidea* Peters, 1931, Check-list of birds of the world, vol. 1, pp. xvi, 192 (superfamily).

Genus †*Amphiserpentarius* Gaillard

Amphiserpentarius Gaillard, 1908 (June 13), Ann. Univ. Lyon, n.s., sci. méd., no. 23, p. 44 (type by monotypy *Amphiserpentarius schlosseri* Gaillard).

1. *Amphiserpentarius schlosseri* Gaillard

Amphiserpentarius schlosseri Gaillard, 1908 (June 13), Ann. Univ. Lyon, n.s., sci. méd., no. 23, p. 45, text-fig. 7, pl. 2, figs. 5-8, (type from Escamps, distal part of left tibiotarsus, Munich Mus. no. 1).

UPPER EOCENE OR LOWER OLIGOCENE (phosphorites du Quercy). FRANCE: Dept. Lot: Escamps and Mouillac (Gaillard, 1908).

2. *Amphiserpentarius robustus* (Milne-Edwards)

Serpentarius robustus Milne-Edwards, 1870 (March), C. R. Acad. Sci. Paris, vol. 70, p. 557 (type from Lagny, tarsometatarsus, Paris Mus.).—Milne-Edwards, 1871, Ois. foss. France, vol. 2, sheet 59, p. 465, pl. 186, figs. 1-6.

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

No fossil record of the single neospecies, which is restricted to Africa.

Family PANDIONIDAE (Sclater and Salvin)

Pandioninae Sclater and Salvin, 1873, Nomenclator avium neotropicalium, p. 118 (subfamily; type *Pandion* Savigny).—*Pandionidae* Gurney, 1884, A list of the diurnal birds of prey, pp. xv, 112 (family).—Coues, 1884, Key to North American birds, ed. 2, pp. 498, 556 (family).

No extinct fossil species.

Neospecies of Pandionidae recorded from Pleistocene and *prehistoric sites:

1. *Pandion haliaetus* (Linnaeus). ENGLAND: Walthamstow (Lambrecht, 1933, Handb. Palaeorn., p. 751). DENMARK: Vester Ulslev, *Kolding Fjord, and *Toftum Mose (H. Winge, 1903, Vidensk. Meddel. naturhist Foren. Copenhagen, vol. 6, p. 102). SWITZERLAND: Schweizerbild and Kesslerloch (Lambrecht, 1933). GERMANY: Lindentaler Hyänenhöhle near Gera (Lambrecht, 1933). ITALY: Caverne d'Equi (Lambrecht, 1933). NOVA SCOTIA: *Bear River (Halifax Mus.). CALIFORNIA: *Buena Vista Lake (DeMay, 1942, Condor, vol. 44, p. 228). FLORIDA: Melbourne and Itchtucknee River (Wetmore, 1931, Smithsonian Misc. Coll., vol. 85, no. 2, p. 31); Rock Spring (Woolfenden, 1959, Wilson Bull., vol. 71, p. 185); Lake Monroe (Brodkorb coll.). BAHAMAS: Gordon Hills cave on Crooked Island (Wetmore, 1938, Auk, vol. 55, p. 52). Recorded in error from Fossil Lake, Oregon (Lambrecht, 1933).

Family ACCIPITRIDAE (Vieillot)

Accipitrini Illiger, 1811, Prodromus systematis mammalium et avium, fide Gadow (familia; not based on generic name).—*Accipitrini* Vieillot, 1816, Analyse d'une nouvelle ornithologie élémentaire, p. 22 (famille; type *Accipiter* Brisson).—*Accipitrina* Vigors, 1824 (October), Zool. Jour., vol. 1, p. 313 ("stirps" = subfamily).—*Accipitrinae* Swainson, 1837, On the natural history and classification of birds, vol. 2, p. 214 (subfamily).—*Accipitridae* Maynard, 1880 (Jan. 26), The birds of eastern North America, p. 302 (family).

Gypaeti Vieillot, 1816, Analyse d'une nouvelle ornithologie élémentaire, fide Gadow (famille; type *Gypaëtus* Storr).—*Gypaëtinae* Bonaparte, 1831, Saggio di una distribuzione metodica degli animali vertebrati, p. 36 (subfamily).—*Gypaëtidae* G. R. Gray, 1842, Appendix to a list of the genera of birds, fide Gray, 1869 (family).

Buteonina Vigors, 1824 (October), Zool. Jour., vol. 1, p. 314 ("stirps" = subfamily; type *Buteo* Lacépède).—*Buteoninae* Swainson, 1837, Nat. hist. classif. birds, vol. 2, p. 210 (subfamily).—*Buteonidae* Maynard, 1880 (April 6), Birds eastern N. Amer., p. 308 (family).

Milvina Vigors, 1824 (October), Zool. Jour., vol. 1, p. 314 ("stirps" = subfamily); type *Milvus* Lacépède).—*Milvinae* Bonaparte, 1838, A geographical and comparative list of the birds of Europe and North America, p. 4 (subfamilia).—*Milvidae* Maynard, 1880 (Jan. 26), Birds eastern N. Amer., p. 281 (family).

Aquilina Vigors, 1824 (October), Zool. Jour., vol. 1, p. 316 ("stirps" = subfamily; type *Aquila* Brisson).—*Aquilinae* Swainson, 1837, Nat. hist. classif. birds, vol. 2, p. 207 (subfamily).—*Aquilidae* Maynard, 1880 (April 16), Birds eastern N. Amer., p. 318 (family).

Cymindinae Swainson, 1837, Nat. hist. classif. birds, vol. 2, p. 208 (subfamily; type *Cymindis* Cuvier MS., Dumont 1816, a senior synonym of *Leptodon* Sundevall 1836; preoccupied by *Cymindis* Latreille 1806).

Circinae Bonaparte, 1838, Geog. comp. list birds Eur. N. Amer., p. 5 (subfamilia; type *Circus* Lacépède).

Racaminae G. R. Gray, 1840, A list of the genera of birds, fide Gray, 1869 (subfamily; type *Racama* Gray, 1840, a junior synonym of *Gypohierax* Rüppell 1835).

Gypohieracinae G. R. Gray, 1844, List of the specimens of birds in the collection of the British Museum, part 1, fide Gray, 1869 (subfamily; type *Gypohierax* Rüppell).—*Gypohieracidae* Bonaparte, 1859, fide Gray, 1869 (familia).

Neophroninae G. R. Gray, 1848, List of specimens of birds in the coll. of Brit. Mus., fide Gray, 1869 (subfamily; type *Neophron* Savigny).—*Neophrinae* Cassin, 1849, fide Gray.

Thrasaëtinae Blyth, 1849, Catalogue of the birds in the Museum Asiatic Society, fide Gray, 1869 (subfamily; type *Thrasaëtos* Bonaparte 1837, a junior synonym of *Harpia* Vieillot 1816).

Circaëtinae Blyth, 1849, Cat. birds Mus. Asiatic Soc., fide Gray, 1869 (subfamily; type *Circaëtus* Vieillot).

Haliaëtinae Blyth, 1849, Cat. birds Mus. Asiatic Soc., fide Gray, 1869 (subfamily; type *Haliaeetus* Savigny).—*Haliaetidae* Maynard, 1880 (Apr. 16), Birds eastern N. Amer., p. 320 (family).

Perninae Blyth, 1849, Cat. birds Mus. Asiatic Soc., fide Gray, 1869 (subfamily; type *Pernis* Cuvier).

Elaninae Blyth, 1849, Cat. birds Mus. Asiatic Soc., fide Gray (subfamily; type *Elanus* Savigny).

Percnopterinae Reichenbach, 1852, Systema avium naturale, fide Gray (subfamily; type *Percnopterus* Cuvier 1817, a junior synonym of *Neophron* Savigny 1809).

Harpyidae Burmeister, 1856, Systematische Uebersicht der Thiere Brasiliens, vol. 2, p. 57 (type *Harpia* Vieillot).

Archibuteones Ridgway, 1873, Proc. Boston Soc. nat. Hist., vol. 16, p. 72 ("group;" type *Archibuteo* Brehm 1828, a junior synonym of *Buteo* Lacépède 1799).

Ictiniae Ridgway, 1873, Proc. Boston Soc. nat. Hist., vol. 16, p. 54 ("group;" type *Ictinia* Vieillot).—*Ictininae* Shufeldt, 1891, Ibis, p. 232 (subfamily).

Morphni Ridgway, 1876, Bull. U. S. geol. geogr. Surv. Terr., ser. 2, no. 2, p. 147 ("group;" type *Morphnus* Dumont).

Elanoidinae Shufeldt, 1891, Ibis, p. 232 (subfamily; type *Elanoides* Vieillot).

Rostrhaminae Shufeldt, 1891, Ibis, p. 232 (subfamily; type *Rostrhamus* Lesson).

Cruschedulidae Ameghino, 1899 (July), Sinopsis geológico-paleontológica, Suplemento, p. 9 (familia; type *Cruschedula* Ameghino).

Craxireginae Poche, 1904, Zool. Anz., vol. 27, p. 503 (subfamily; type *Craxirex* Gould 1839, a junior synonym of *Buteo* Lacépède 1799).

Aegypiidae W. L. Sclater, 1924, Systema avium ethiopicarum, vol. 1, p. 47 (family; type *Aegypius* Savigny).—*Aegypiinae* Peters, 1931, Check-list of birds of the world, vol. 1, pp. xvii, 259 (subfamily).

Subfamily Buteoninae (Vigors)

Buteonina Vigors, 1824 (October), Zool. Jour., vol. 1, p. 314 ("stirps" = subfamily; type *Buteo* Lacépède).—*Buteoninae* Swainson, 1837, Nat. hist. classif. birds, vol. 2, p. 210 (subfamily).

Aquilina Vigors, 1824 (October), Zool. Jour., vol. 1, p. 316 ("stirps" = subfamily; type *Aquila* Brisson).—*Aquilinae* Swainson, 1837, Nat. hist. classif. birds, vol. 2, p. 207 (subfamily).

Thrasaëtinae Blyth, 1849, Catalogue of the birds in the Museum Asiatic Society, fide Gray (subfamily; type *Thrasaëtos* Bonaparte 1837, a junior synonym of *Harpia* Vieillot 1816).

Haliaëtinae Blyth, 1849, Cat. birds Mus. Asiatic Soc., fide Gray (subfamily; type *Haliaeetus* Savigny).

Harpyidae Burmeister, 1856, Systematische Uebersicht der Thiere Brasiliens, vol. 2, p. 57 (type *Harpia* Vieillot).

Archibuteones Ridgway, 1873, Proc. Boston Soc. nat. Hist., vol. 16, p. 72 ("group;" type *Archibuteo* Brehm 1828, a junior synonym of *Buteo* Lacépède 1799).

Morphni Ridgway, 1876, Bull. U. S. geol. geogr. Surv. Terr., ser. 2, no. 2, p. 147 ("group;" type *Morphnus* Dumont).

Cruschedulidae Ameghino, 1899 (July), Sinopsis geológico-paleontológica, Suplemento, p. 9 (type *Cruschedula* Ameghino).

Craxireginae Poche, 1904, Zool. Anz., vol. 27, p. 503 (subfamily; type *Craxirex* Gould 1839, a junior synonym of *Buteo* Lacépède 1799).

Genus †*Palaeocircus* Milne-Edwards

Palaeocircus Milne-Edwards, 1871, Ois. foss. France, vol. 2, sheet 57, p. 454 (type by monotypy *Palaeocircus cuvieri* Milne-Edwards).

1. *Palaeocircus cuvieri* Milne-Edwards

Palaeocircus cuvieri Milne-Edwards, 1871, Ois. foss. France, vol. 2, sheet 57, p. 454, pl. 185, fig. 16 (type from gypse de Montmartre, metacarpus and 4 phalanges of middle toe, Paris Mus.).

UPPER EOCENE (gypse de Montmartre). FRANCE: Dept. Seine: Montmartre (Milne-Edwards, 1871).

UPPER EOCENE (Hordwell beds). ENGLAND: Hampshire: Hordwell? (Lydekker, 1891, Cat. foss. Birds Brit. Mus., p. 22).

UPPER EOCENE OR LOWER OLIGOCENE (phosphate de Caylux). FRANCE: Dept. Tarn-et-Garonne: Caylux (Lydekker, 1891).

Genus †*Aquilavus* Lambrecht

Aquilavus Lambrecht, 1933, Handbuch Palaeorn., p. 407 (type *Aquila depredator* Milne-Edwards, designated by Brodkorb, 1952, Condor, vol. 54, p. 175).

2. *Aquilavus hypogaeus* (Milne-Edwards)

Aquila hypogaea Milne-Edwards, 1892, C. R. 2. Congrès internat. ornith. Budapest, p. 60 (type from Caylux, femur).

UPPER EOCENE OR LOWER OLIGOCENE (phosphate de Caylux). FRANCE: Dept. Tarn-et-Garonne: Caylux (Milne-Edwards, 1892).

UPPER EOCENE OR LOWER OLIGOCENE (phosphorites du Quercy). FRANCE: Dept. Lot: Escamps (Paris, 1912, Rev. française Orn., vol. 4, p. 288).

3. *Aquilavus corroyi* (Gaillard)

Aquila corroyi Gaillard, 1938, Arch. Mus. Hist. nat. Lyon, vol. 15, p. 3, fig. 1 (type from phosphorites du Quercy, right tarsometatarsus, Univ. Marseille).

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

4. *Aquilavus depredator* (Milne-Edwards)

Aquila depredator Milne-Edwards, 1871, Ois. foss. France, vol. 2, sheet 58, p. 458, pl. 183, figs. 11-16; pl. 184, figs. 5-10; pl. 186, figs. 7-12 (lectotype from Saint-Gérand-le-Puy, tarsometatarsus, chosen by Lydekker, 1891, Cat. foss. birds Brit. Mus., p. 25).

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

5. *Aquilavus priscus* (Milne-Edwards)

Aquila prisca Milne-Edwards, 1863 (read June 29), C. R. Acad. Sci. Paris, vol. 56, p. 1222 (nomen nudum).—Milne-Edwards, 1863, Ann. Sci. nat. (Paris),

p. 157 (nomen nudum).—Milne-Edwards, 1871, Ois. foss. France, vol. 2, sheet 58, p. 460, pl. 184, figs., 1-4, 11-13 (lectotype from Langy quarries, tarsometatarsus, Paris Mus., chosen by Lydekker, 1891, Cat. foss. birds Brit. Mus., p. 25).

LOWER MIOCENE (Aquitanian). FRANCE: Dept. Allier: Langy (Milne-Edwards, 1871); Saint-Gérand-le-Puy (Paris, 1912, Rev. française Orn., vol. 4, p. 288).

6. *Aquilavus bilinicus* (Laube)

Cygnus bilinicus Laube, 1909, Lotos, vol. 57, p. 159, pl. 1 (type from Preschen, impression of radius, ulna, carpometacarpus, Teplitz Mus.). Position uncertain.

LOWER MIOCENE (Tone von Preschen). CZECHOSLOVAKIA: northern Bohemia: Břeštany = Preschen, in Teplica = Teplitz basin.

Genus †*Climacarthrus* Ameghino

Climacarthrus Ameghino, 1899 (July), Sinopsis geológico-paleontológica, Suplemento, p. 8 (type by monotypy *Climacarthrus incompletus* Ameghino).

7. *Climacarthrus incompletus* Ameghino

Climacarthrus incompletus Ameghino, 1899 (July), Sinopsis geológico-paleontológica, Suplemento, p. 8 (type from "formacion guaranítica" Patagonia, tarsometatarsus).

LOWER OLIGOCENE (Deseado formation). ARGENTINA: Patagonia.

Genus †*Cruschedula* Ameghino

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

8. *Cruschedula revola* Ameghino

Cruschedula revola Ameghino, 1899 (July), Sinopsis geológico-paleontológica, Suplemento, p. 9 (type from "Guaranitico de Patagonia," said to be distal part of tarsometatarsus, but apparently proximal end of right scapula, Ameghino coll).—Ameghino, 1905, An. Mus. nac. Buenos Aires, vol. 13, p. 154, pl. 8, fig. "42" [= 40] (tipo de la parte basal del horizonte pyrotheriense del Golfo de San Jorge).

LOWER OLIGOCENE (Deseado formation). ARGENTINA: Ter. Santa Cruz: Golfo de San Jorge.

Genus *Buteo* Lacépède

Buteo Lacépède, 1799, Tableaux méthodiques des Mammiferes et des Oiseaux, p. 4 (type *Falco buteo* Linnaeus).

9. *Buteo grangeri* Wetmore and Case

Buteo grangeri Wetmore and Case, 1934 (January 15), Contr. Mus. Paleo. Univ. Michigan, vol. 4, no. 8, p. 129, pl. 1 (type from Pass Creek, cranium, Univ. Mich. Mus. Paleo. no. 14405).

MIDDLE OLIGOCENE (*Oreodon* beds, lower part of Brule formation). SOUTH DAKOTA: Washabaugh County: Big badlands of Pass Creek.

10. *Buteo fluviaticus* A. H. Miller and Sibley

Buteo fluviaticus A. H. Miller and Sibley, 1942 (Jan. 15), Condor, vol. 44, no. 1, p. 39, fig. 12 (type from Roy Elum Ranch, distal part of right tarsometatarsus, Univ. Calif. Mus. Paleo. no. 36266).

MIDDLE OLIGOCENE (*Oreodon* beds, lower part of Brule formation). COLORADO: Weld County: Chalk Bluffs, Roy Elum Ranch on Owl Creek, 6 miles east of Carr.

11. *Buteo antecursor* Wetmore

Buteo antecursor Wetmore, 1933 (October), Bull. Mus. comp. Zool., vol. 75, no. 7, p. 298, figs. 1-5 (type from near Torrington, left tarsometatarsus, Mus. comp. Zool. no. 2233).

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

12. *Buteo ales* (Wetmore)

Geranoaëtus ales Wetmore, 1926 (Apr. 10), Ann. Carnegie Mus., vol. 16, nos. 3-4, p. 403, pl. 38, figs. 1-5 (type from quarry no. 2, right tarsometatarsus, Carnegie Mus. no. 1828).

LOWER MIOCENE (lower Harrison beds, Arikaree formation). NEBRASKA: Sioux County: Agate Springs fossil quarry no. 2.

13. *Buteo typhoius* Wetmore

Buteo typhoius Wetmore, 1923 (Dec. 3), Bull. Amer. Mus. nat. Hist., vol. 48, art. 12, p. 489, figs. 3-5 (type from Snake Creek beds, 23 miles south of Agate, distal part of right tarsometatarsus, Amer. Mus. Nat. Hist. no. 1754).

UPPER MIOCENE (lower level of Snake Creek beds). NEBRASKA: Sioux County: 23 miles south of Agate. [1]

14. *Buteo contortus* (Wetmore)

Geranoaëtus contortus Wetmore, 1923 (Dec. 3), Bull. Amer. Mus. nat. Hist., vol. 48, art. 12, p. 492, figs. 6-10 (type from Sinclair Draw, left tarsometatarsus, Amer. Mus. Nat. Hist. no. 1758).

UPPER MIOCENE (lower level of Snake Creek beds). NEBRASKA: Sioux County: Sinclair Draw, 20 miles south of Agate (Wetmore, 1923); Olcott Hill (Wetmore, 1928, Amer. Mus. Novitates, no. 302, p. 1).

15. *Buteo dananus* (Marsh)

Aquila danana Marsh, 1871, (August), Amer. Jour. Sci., ser. 3, vol. 2, p. 125 (type from Loup Fork, distal part of left tibiotarsus, Yale Peabody Mus. no. 293).

LOWER PLIOCENE (upper level of Snake Creek beds). NEBRASKA: Howard County: Loup Fork.

16. *Buteo conterminus* (Wetmore)

Geranoaëtus conterminus Wetmore, 1923 (Dec. 3), Bull. Amer. Mus. nat. Hist., vol. 48, art. 12, p. 497, figs. 11-13 (type from sec. 31, distal half of left tarsometatarsus, Amer. Mus. Nat. Hist. no. 12156).

LOWER PLIOCENE (upper level of Snake Creek beds). NEBRASKA: Sioux County: locality 1000A, in NE ¼, section 31, Township 26 N, Range 55 W, 20 miles S of Agate.

Genus †*Palaeastur* Wetmore

Palaeastur Wetmore, 1943 (Dec. 8), Condor, vol. 45, no. 6, p. 230 (type by monotypy *Palaeastur atavus* Wetmore).

17. *Palaeastur atavus* Wetmore

Palaeastur atavus Wetmore, 1943 (Dec. 8), Condor, vol. 45, no. 6, p. 230, fig. 63 (type from *Stenomylus* quarry, distal part of right tarsometatarsus, Harold J. Cook coll. no. 693, now in Amer. Mus. Nat. Hist.).

LOWER MIOCENE (lower Harrison beds, Arikaree formation). NE-

[1] A tibiotarsus was recorded by Wetmore (1928, Condor, vol. 30, p. 149, figs. 58-61) from the *Stenomylus* quarry in the Lower Miocene (lower Harrison beds) 2 miles southeast of Agate Springs, but the specimen is not comparable to the type and because of the age differential probably represents another species, perhaps *B. ales*.

BRASKA: Sioux County: *Stenomylus* quarry, 2 miles southeast of Agate Springs.

Genus †*Miohierax* Howard

Miohierax Howard, 1944 (Sept. 27), Condor, vol. 46, no. 5, p. 236 (type by original designation *Miohierax stocki* Howard).

18. *Miohierax stocki* Howard

Miohierax stocki Howard, 1944 (Sept. 27), Condor, vol. 46, no. 5, p. 236, fig. 40 (type from Vasquez Canyon, distal end of left tarsometatarsus, metatarsal I, and 9 phalanges, Calif. Inst. Tech. no. 201/1396, now in Los Angeles County Museum).

LATE LOWER MIOCENE (Tick Canyon formation). CALIFORNIA: Los Angeles County: near head of Vasquez Canyon, northeast of Saugus.

Genus *Hypomorphnus* Cabanis

Hypomorphnus Cabanis, 1844, Arch. Naturgesch., vol. 10, no. 1, p. 263 (type by original designation *Falco urubitinga* Linnaeus).

19. *Hypomorphnus enectus* (Wetmore)

Urubitinga enecta Wetmore, 1923 (Dec. 3), Bull. Amer. Mus. nat. Hist., vol. 48, art. 12, p. 500, figs. 14-18 (type from 20 miles south of Agate, left tibiotarsus, Amer. Mus. Nat. Hist. no. 6300).

MIDDLE MIOCENE (lower level of Sheep Creek beds). NEBRASKA: Sioux County: 20 miles south of Agate.

20. *Hypomorphnus sodalis* (Shufeldt)

Aquila sodalis Shufeldt, 1891 (September), Amer. Natural., vol. 25, no. 297, p. 821 (type from Fossil Lake, proximal part of left tarsometatarsus, Amer. Mus. Nat. Hist. no. 3470).—Shufeldt, 1892, Jour. Acad. nat. Sci. Philadelphia, vol. 9, p. 417, pl. 15, fig. 5.

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

Genus *Hieraaëtus* Kaup

Hieraaëtus Kaup, 1844, Classification der Säugethiere und Vögel, p. 120 (type by original designation *Falco pennata* Gmelin).

21. *Hieraaëtus edwardsi* (Sharpe)

Aquila minuta Milne-Edwards, 1871, Ois. foss. France, vol. 2, sheet 58, p. 463, pl. 185, figs. 5-8 (type from Sansan, distal part of tibiotarsus).

Eutolmaëtus edwardsi Sharpe, 1899, Hand-list of genera and species of birds, vol. 1, p. 262 (new name for *Aquila minuta* Milne-Edwards, preoccupied by Brehm, 1831).

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

Genus *Haliaeetus* Savigny

Haliaeetus Savigny, 1809, Description de l'Égypte, vol. 1, pp. 68, 85 (type *Haliaeetus nisus* Savigny = *Falco albicilla* Linnaeus).

22. *Haliaeëtus piscator* Milne-Edwards

Haliaëtus piscator Milne-Edwards, 1871, Ois. foss. France, vol. 2, sheet 58, p. 464, pl. 185, figs. 9-11 (type from Sansan, proximal part of carpometacarpus).

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

Genus *Aquila* Brisson

Aquila Brisson, 1760, Ornithologia, vol. 1, pp. 28, 419 (type by tautonomy *Aquila* Brisson = *Falco chrysaëtos* Linnaeus).

23. *Aquila delphinensis* Gaillard

Aquila delphinensis Gaillard, 1938, Arch. Mus. Hist. nat. Lyon, vol. 15, p. 35, fig. 16 (type from Grive-Saint-Alban, upper part of left tarsometatarsus, Mus. Lyon).

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

24. *Aquila pennatoïdes* Gaillard

Aquila pennatoïdes Gaillard, 1938, Arch. Mus. Hist. nat. Lyon, vol. 15, p. 37, fig. 17 (type from Grive-Saint-Alban, upper part of left tarsometatarsus, Mus. Lyon).

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

Genus *Spizaëtus* Vieillot

Spizaëtus Vieillot, 1816, Analyse d'une nouvelle Ornithologie élémentaire, p. 24 (type *Falco ornatus* Daudin, designated by Gray, 1840).

25. *Spizaëtus pliogryps* (Shufeldt)

Aquila pliogryps Shufeldt, 1891 (September), Amer. Natural., vol. 25, no. 297, p. 821 (type from Fossil Lake, basal phalanx of hallux, Amer. Mus. Nat. Hist. no. 3471).—Shufeldt, 1892, Jour. Acad. nat. Sci. Philadelphia, p. 416, pl. 17, fig. 33.

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

26. *Spizaëtus grinnelli* (L. Miller)

Geranoaëtus grinnelli L. Miller, 1911 (Oct. 9), Univ. Calif. Publ., Bull. Dept. Geol., vol. 6, no. 12, p. 312, figs. 4a-b (type from Rancho La Brea, tarsometatarsus, Univ. Calif. Mus. Paleo. no. 12175).

UPPER PLEISTOCENE (tar pits). CALIFORNIA: Los Angeles County: Rancho La Brea (L. Miller, 1911). Santa Barbara County: Carpinteria (L. Miller, 1928, Condor, vol. 30, p. 255). Listed in error from McKittrick (Wetmore, 1956, Smithsonian misc. Publ., vol. 131, no. 5, p. 46).

UPPER PLEISTOCENE (cave deposit). MEXICO: Nuevo Leon: San Josecito Cave near Aramberri (L. Miller, 1943, Univ. Calif. Publ. Zool., vol. 47, p. 153).

27. *Spizaëtus willetti* Howard

Spizaëtus willetti Howard, 1935 (July 15), Condor, vol. 37, no. 4, p. 207, fig. 40 (type from Smith Creek Cave, distal part of tarsometatarsus, Calif. Inst. Tech. no. 1791, now in Los Angeles Mus.).

UPPER PLEISTOCENE (cave deposit). NEVADA: White Pine County: Smith Creek Cave, 34 miles north of Baker (Howard, 1935). NEW MEXICO: Grant County: Howells Ridge Cave in Little Hatchet Mountains (Howard, 1962, Condor, vol. 64, p. 242).

Genus *Buteogallus* Lesson

Buteogallus Lesson, 1830 (May 8), Traité d'ornithologie, livr. 2, p. 83 (type by monotypy *Buteogallus cathartoides* Lesson = *Falco aequinoctialis* Gmelin).

28. *Buteogallus fragilis* (L. Miller)

Geranoaëtus fragilis L. Miller, 1911 (Oct. 9), Univ. Calif. Publ., Bull. Dept. Geol., vol. 6, no. 12, p. 315, figs. 5a-b (type from Rancho La Brea, tarsometatarsus, Univ. Calif. Mus. Paleo. no. 12757).

UPPER PLEISTOCENE (tar pits). CALIFORNIA: Los Angeles County: Rancho La Brea (L. Miller, 1911). Santa Barbara County: Carpinteria (L. Miller, 1928, Condor, vol. 30, p. 255). Kern County: McKittrick (L. Miller, 1935, Condor, vol. 37, p. 77).

UPPER PLEISTOCENE (cave deposit). NEW MEXICO: Dona Ana County: Shelter Cave on Pyramid Peak in Organ Mountains (Howard and A. H. Miller, 1933, Condor, vol. 35, p. 16).

29. *Buteogallus milleri* (Howard)

Urubitinga milleri Howard, 1932 (October), Carnegie Instn. Washington Publ., no. 429, p. 25, pl. 2, figs. 3-3a; pl. 3, fig. 2 (type from Hawver Cave, coracoid, Univ. Calif. Mus. Paleo. no. 11050).

UPPER PLEISTOCENE (cave deposit). CALIFORNIA: Eldorado County: Hawver Cave.

Genus †*Calohierax* Wetmore

Calohierax Wetmore, 1937, (October), Bull. Mus. comp. Zool., vol. 80, no. 12, p. 428 (type by original designation *Calohierax quadratus* Wetmore).

30. *Calohierax quadratus* Wetmore

Calohierax quadratus Wetmore, 1937 (October), Bull. Mus. comp. Zool., vol. 80, no. 12, p. 429, figs. 1-3 (type from Great Exuma, distal part of right tarsometatarsus, Mus. Comp. Zool. no. 2256; cast Brodkorb coll.).

UPPER PLEISTOCENE (cave deposits). BAHAMAS: Great Exuma Island (Wetmore, 1937). New Providence Island: Banana Hole (Brodkorb, 1959, Bull. Florida State Mus., vol. 4, p. 351, pl. 1, fig. 1).

Genus †*Titanohierax* Wetmore

Titanohierax Wetmore, 1937 (October), Bull. Mus. Comp. Zool., vol. 80, no. 12, p. 430 (type by original designation *Titanohierax gloveralleni* Wetmore).

31. *Titanohierax gloveralleni* Wetmore

Titanohierax gloveralleni Wetmore, 1937 (October), Bull. Mus. Comp. Zool., vol. 80, no. 12, p. 431, figs. 4-9 and pl. (type from Great Exuma, right tarsometatarsus, Mus. Comp. Zool., no. 2257).

UPPER PLEISTOCENE (cave deposit). BAHAMAS: Great Exuma Island.

Genus *Morphnus* Dumont

Morphnus Dumont, 1816, Dictionnaire des Sciences naturelles, vol. 1, Suppl., p. 88 (type *Falco guianensis* Daudin, designated by Chubb, 1916).

32. *Morphnus woodwardi* L. Miller

Morphnus woodwardi L. Miller, 1911 (Oct. 9), Univ. Calif. Publ., Bull. Dept. Geol., vol. 6, no. 12, p. 312, figs. 3a-b (type from Rancho La Brea, tarsometatarsus, Univ. Calif. Mus. Paleo. no. 12787).

UPPER PLEISTOCENE (tar pits). CALIFORNIA: Los Angeles County: Rancho La Brea.

Genus †*Wetmoregyps* L. Miller

Wetmoregyps L. Miller, 1928 (July 16), Condor, vol. 30, no. 4, p. 255 (type by original designation *Morphnus daggetti* L. Miller).

33. *Wetmoregyps daggetti* (L. Miller)

Morphnus daggetti L. Miller, 1915 (Oct. 10), Condor, vol. 17, no. 5, p. 179, fig. 63 (type from Rancho La Brea, tarsometatarsus, Los Angeles County Mus. no. A-380).

UPPER PLEISTOCENE (tarpits). CALIFORNIA: Los Angeles County: Rancho La Brea (L. Miller, 1915). Santa Barbara County: Carpinteria (L. Miller, 1928, Condor, vol. 30, p. 255).

UPPER PLEISTOCENE (cave deposit). MEXICO: Nuevo León: San Josecito Cavern (L. Miller, 1943), Univ. Calif. Publ. Zool., vol. 47, p. 153).

Genus †*Lagopterus* Moreno and Mercerat

Lagopterus Moreno and Mercerat, 1891 (May), An. Mus. La Plata, Pal. arg., vol. 1, pp. 25, 66 (type by monotypy *Lagopterus minutus* Moreno and Mercerat).
Asthenopterus Ameghino, 1891 (December), Rev. argentina Hist. nat., vol. 1, pp. 443, 444 (new name for *Lagopterus* Moreno and Mercerat, supposedly preoccupied by *Lagoptera* Guenée, 1852).

34. *Lagopterus minutus* Moreno and Mercerat

Lagopterus minutus Moreno and Mercerat, 1891 (May), An. Mus. La Plata, Pal. arg., vol. 1, pp. 25, 66, pl. 18, fig. 7 (type from Lujan, right humerus, La Plata Mus. no. 183).

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

Genus †*Foetopterus* Moreno and Mercerat

Foetopterus Moreno and Mercerat, 1891 (May), An. Mus. La Plata, Pal. arg., vol. 1, pp. 26, 66 (type by monotypy *Foetopterus ambiguus* Moreno and Mercerat).

35. *Foetopterus ambiguus* Moreno and Mercerat

Foetopterus ambiguus Moreno and Mercerat, 1891 (May), An. Mus. La Plata, Pal. arg., vol. 1, pp. 26, 66, pl. 18, fig. 6 (type said to be from Monte Hermoso, but according to Ameghino, 1891, Rev. argentina Hist. nat., vol. 1, p. 444, from Cañada de Rocha, Lujan; left humerus, La Plata Mus. no. 184).

UPPER PLEISTOCENE (Pampas formation). ARGENTINA: Prov. Buenos Aires: Lujan. According to Ameghino it probably represents a living species.

Genus *Uroaëtus* Kaup

Uroaëtus Kaup, 1844, Classification der Säugethiere und Vögel, p. 121 (type by original designation *Aquila fucosa* Temminck = *Vultur audax* Latham).
Taphaetus DeVis, 1891, Proc. Linn. Soc. N. S. Wales, vol. 6, p. 123 (type by monotypy *Uroaëtus brachialis* Hurst). [1]

36. *Uroaëtus brachialis* Hurst

Uroaëtus brachialis Hurst, 1891, Proc. Roy. Soc. Queensland, vol. 6, p. 161 (type from near Warwick, humerus).

UPPER PLEISTOCENE (Darling Downs beds, Nototherian stage). AUSTRALIA: Queensland: Warwick.

37. *Uroaëtus lacertosus* (DeVis)

Taphaetus lacertosus DeVis, 1906, Ann. Queensland Mus., no. 6, p. 4, pl. 1, figs. 1-2 (type from Kalamurina, distal end of right humerus and right quadrate).

UPPER PLEISTOCENE (Katipiri sands, Malkuni fauna). AUSTRALIA: South Australia: Kalamurina on Lake Eyre.

Genus †*Necrastur* DeVis

Necrastur DeVis, 1892, Proc. Linn. Soc. N. S. Wales, ser. 2, vol. 6, p. 437 (type by monotypy *Necrastur alacer* DeVis). Subfamily uncertain.

38. *Necrastur alacer* DeVis

Necrastur alacer DeVis, 1892, Proc. Linn. Soc. N. S. Wales, ser. 2, vol. 6, p. 437, pl. 24, figs. 1a-b (type from Queensland, humerus).

UPPER PLEISTOCENE (Darling Downs beds). AUSTRALIA: Queensland.

Genus †*Harpagornis* Haast

Harpagornis Haast, 1872, Trans. Proc. N. Zealand Inst., vol. 4, p. 192 (type by monotypy *Harpagornis moorei* Haast).

39. *Harpagornis moorei* Haast

Harpagornis moorei Haast, 1872, Trans. Proc. N. Zealand Inst., vol. 4, p. 192, pl. 10, figs. 1, 4-5; pl. 11, figs. 1-2, 5 (types from Glenmark, left femur, third unguis, rib, Wellington Mus.; casts Brit. Mus. nos. 48056, 48059a).

[1] DeVis later (1906, Ann. Queensland Mus., no. 6, pp. 4, 6) transferred the type species back to the living genus *Uroaëtus*, while trying to maintain the generic name *Taphaetus* for his new species *Taphaetus lacertosus*. Should the latter species be in fact generically separable from the living *Uroaëtus audax* and from the Pleistocene *U. brachialis*, it would require a new generic name.

Harpagornis assimilis Haast, 1873, Trans. Proc. N. Zealand Inst., vol. 6, p. 62, pl. 7-10 (types from Glenmark, right humerus, left femur, Wellington Mus.; casts Brit. Mus. nos. 48061, 48062).

QUATERNARY. NEW ZEALAND: NORTH ISLAND: Waingongoro (Lydekker, 1891, Cat. foss. Birds Brit. Mus., p. 25); Te Aute (Lambrecht, 1933, Handb. Palaeorn., p. 411). SOUTH ISLAND: Glenmark (Haast, 1872); Hamilton Swamp, Enfield, Dunstan, Castle Rocks, Motunau, Warrington, and Kapua (Lambrecht, 1933); Pyramid Valley (Scarlett, 1955, Rec. Canterbury Mus., vol. 6, p. 262); Wairau Bar, Lake Grassmere, and Banks Peninsula (Oliver, 1955, N. Zealand birds, ed. 2, pp. 604-605).

Subfamily †PALAEOPLANCINAE Wetmore

Palaeoplancinae Wetmore, 1933 (Dec. 26), Smithsonian misc. Coll., vol. 87, no. 19, p. 9 (subfamily; type *Palaeoplancus* Wetmore).

Genus †*Palaeoplancus* Wetmore

Palaeoplancus Wetmore, 1933 (Dec. 26), Smithsonian misc. Coll., vol. 87, no. 19, p. 9 (type by monotypy *Palaeoplancus sternbergi* Wetmore).

40. *Palaeoplancus sternbergi* Wetmore

Palaeoplancus sternbergi Wetmore, 1933 (Dec. 26), Smithsonian misc. Coll., vol. 87, no. 19, p. 9, figs. 1-19 (type from Plum Creek, partial skeleton, U. S. Nat. Mus. no. 12479).

MIDDLE OLIGOCENE (upper level of *Oreodon* beds, Brule formation). WYOMING: Niobrara County: east side of Plum Creek.

Subfamily MILVINAE (Vigors)

Milvina Vigors, 1824 (October), Zool. Jour., vol. 1, p. 214 ("stirps" = subfamily; type *Milvus* Lacépède).—*Milvinae* Bonaparte, 1838, Geog. comp. list birds Europe and N. Amer., p. 4 (subfamilia).

Ictiniae Ridgway, 1873, Proc. Boston Soc. nat. Hist., vol. 16, p. 54 ("group;" type *Ictinia* Vieillot).—*Ictininae* Shufeldt, 1891, Ibis, p. 232 (subfamily).

Rostrhaminae Shufeldt, 1891, Ibis, p. 232 (subfamily; type *Rostrhamus* Lesson).

Genus *Milvus* Lacépède

Milvus Lacépède, 1799, Tableaux methodiques des Mammiferes et des Oiseaux, p. 4 (type *Falco milvus* Linnaeus).

41. *Milvus deperditus* Milne-Edwards

Milvus deperditus Milne-Edwards, 1871, Ois. foss. France, vol. 2, sheet 58, p. 461, pl. 185, figs. 1-4 (type from Langy, tarsometatarsus).

LOWER MIOCENE (Aquitanian). FRANCE: Dept. Allier: Langy (Milne-Edwards, 1871). Saint-Gerand-le-Puy? (Lambrecht, 1933, Handb. Palaeorn., p. 418). Recorded also from Upper Eocene or Lower Oligocene phosphorites du Quercy (Lambrecht, loc. cit.) but needs restudy.

Genus †*Promilio* Wetmore

Promilio Wetmore, 1958 (June 26), Smithsonian misc. Coll., vol. 135, no. 8, p. 3 (type by original designation *Proictinia effera* Wetmore).

42. *Promilio efferus* (Wetmore)

Proictinia effera Wetmore, 1923 (Dec. 3), Bull. Amer. Mus. nat. Hist., vol. 48, art. 12, p. 504, figs. 19-20 (type from Agate, right tarsometatarsus and 3 phalanges, Amer. Mus. Nat. Hist. no. 6299).

LOWER MIOCENE (lower Harrison beds, Arikaree formation). NEBRASKA: Sioux County: Agate fossil quarry.

43. *Promilio incertus* (Gaillard)

Milvus incertus Gaillard, 1938, Arch. Mus. Hist. nat. Lyon, vol. 15, p. 40, fig. 19 (type from Chavroches, right tarsometatarsus, Univ. Lyon).

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

44. *Promilio floridanus* (Brodkorb)

Proictinia floridana Brodkorb, 1956 (Sept. 24), Condor, vol. 58, no. 5, p. 368, fig. 2 (type from Thomas farm, distal part of left tarsometatarsus, Brodkorb no. 777).

LOWER MIOCENE (Thomas Farm beds). FLORIDA: Gilchrist County: Thomas farm, 8 miles north of Bell.

45. *Promilio epileus* Wetmore

Promilio epileus Wetmore, 1958 (June 26), Smithsonian misc. Coll., vol. 135, no. 8, p. 4, pl. 5, fig. 2 (type from Thomas farm, right femur, Mus. Comp. Zool. no. 2716).

LOWER MIOCENE (Thomas farm beds). FLORIDA: Gilchrist County: Thomas farm.

46. *Promilio brodkorbi* Wetmore

Promilio brodkorbi Wetmore, 1958 (June 26), Smithsonian misc. Coll., vol. 135, no. 8, p. 4, pl. 5, fig. 1 (type from Thomas farm, proximal part of left tarsometatarsus, Brodkorb no. 1775).

LOWER MIOCENE (Thomas farm beds). FLORIDA: Gilchrist County: Thomas farm.

Genus †*Proictinia* Shufeldt

Proictinia Shufeldt, 1913 (Aug. 4), Bull. Amer. Mus. nat. Hist., vol. 32, art. 16, p. 301 (type by monotypy *Proictinia gilmorei* Shufeldt).

47. *Proictinia gilmorei* Shufeldt

Proictinia gilmorei Shufeldt, 1913 (Aug. 4), Bull. Amer. Mus. nat. Hist., vol. 32, art. 16, p. 301, pl. 55, fig. 27 (type from Long Island, right coracoid, U. S. Nat. Mus. no. 6852).

LOWER PLIOCENE (Republican River beds, Ogallala formation). KANSAS: Phillips County: Long Island.

Subfamily GYPAETINAE (Vieillot)

Gypaeti Vieillot, 1816, Analyse d'une nouvelle ornithologie élémentaire, fide Gray (famille; type *Gypaëtus* Storr).—*Gypaëtinae* Bonaparte, 1831, Saggio dist. metod. Animali Vert., p. 36 (subfamily).

Racaminae G. R. Gray, 1840, List genera of brids, fide Gray (subfamily; type *Racama* Gray 1840, a junior synonym of *Gypohierax* Rüppell 1835).

Gypohieracinae G. R. Gray, 1844, List specimens of birds Brit. Mus., pt. 1, fide Gray (subfamily; type *Gypohierax* Rüppell).

Neophroninae G. R. Gray, 1848, Genera of birds, fide Gray (subfamily; type *Neophron* Savigny).

Percnopterinae Reichenbach, "1850" = 1852, Systema avium naturale, fide Gray (type *Percnopterus* Cuvier 1817, a junior synonym of *Neophron* Savigny 1809).

Aegypiidae W. L. Sclater, 1924, Syst. avium ethiop., vol. 1, p. 47 (family; type *Aegypius* Savigny).—*Aegypiinae* Peters, 1931, Check-list birds world, vol. 1, pp. xvii, 259 (subfamily).

Genus †*Palaeohierax* Milne-Edwards

Palaeohierax Milne-Edwards, 1871, Ois. foss. France, vol. 2, sheet 57, p. 456 (type by monotypy *Aquila gervaisii* Milne-Edwards).

48. *Palaeohierax gervaisii* (Milne-Edwards)

Aquila ou *Pandion* Gervais, 1859, Zoologie et paléontologie française, ed. 2, p. 414, pl. 50, figs. 3-3a (type from Chaptuzat, tarsometatarsus, Croizet coll., now in Paris Mus.).

Aquila gervaisii Milne-Edwards, 1863 (séance de 29 juin), C. R. Acad. Sci. Paris, vol. 56, p. 1222 (new name for the above).—Milne-Edwards, 1863, Ann. Sci. nat., Zool., ser. 4, vol. 20, p. 156.

LOWER MIOCENE (Aquitanian). FRANCE: Dept. Puy-de-Dôme: Chaptuzat (Gervais, 1859). Dept. Allier: Saint-Gerand-le-Puy (Milne-Edwards, 1871); Langy (Paris, 1912, Rev. française ornith., vol. 4, p. 288). Lydekker's tentative record (1891, Ibis, p. 385) of two claws from the Hordwell beds in the Upper Eocene of Hampshire must be disregarded.

Genus †*Palaeoborus* Coues

Palaeoborus Coues, 1884, Key to North American birds, ed. 2, p. 822 (type by original designation *Cathartes umbrosus* Cope).

49. *Palaeoborus rosatus* A. H. Miller and Compton

Palaeoborus rosatus A. H. Miller and Compton, 1939 (July 15), Condor, vol. 41, no. 4, p. 156, fig. 34B (type from Flint Hill, left ulna, Univ. Calif. Mus. Paleo. no. 34452).

LOWER MIOCENE (Rosebud formation). SOUTH DAKOTA: Bennett County: Flint Hill, 9 miles WSW of Martin.

50. *Palaeoborus howardae* Wetmore

Palaeoborus howardae Wetmore, 1936, Proc. U. S. nat. Mus., vol. 84, no. 3003, p. 73, fig. 13 (type from quarry A, distal part of right tarsometatarsus, U. S. Nat. Mus. no. 13897).

MIDDLE MIOCENE (Sheep Creek formation). NEBRASKA: Dawes County: quarry A in section 29, Township 31, Range 47.

51. *Palaeoborus umbrosus* (Cope)

Cathartes umbrosus Cope, 1874 (Oct. 20), Proc. Acad. nat. Sci. Philadelphia, vol. 26, p. 151 (type from Pojuaque, nearly complete skeleton).

LOWER PLIOCENE (Santa Fe formation). NEW MEXICO: Santa Fe County: north of Pojuaque (spelled thus on map and in Cope; Pojauque, by Lambrecht and Wetmore).

Genus †*Neophrontops* L. Miller

Neophrontops L. Miller, 1916 (March 10), Univ. Calif. Publ., Bull. Dept. Geol., vol. 9, no. 9, p. 106 (type by monotypy *Neophrontops americanus* L. Miller).

52. *Neophrontops vetustus* Wetmore

Neophrontops vetustus Wetmore, 1943 (Dec. 8), Condor, vol. 45, no. 6, p. 229, fig. 62 (type from Stonehouse Draw, distal end of right humerus, Harold J. Cook no. 691, now in Amer. Mus. Nat. Hist.).

MIDDLE MIOCENE (Sheep Creek beds). NEBRASKA: Sioux County: Stonehouse Draw quarry.

53. *Neophrontops dakotensis* Compton

Neophrontops dakotensis Compton, 1935 (October), Amer. Jour. Sci., ser. 5, vol. 30, no. 178, p. 344, fig. 1 (type from Big Spring Canyon, distal part of right humerus, Univ. Calif. Mus. Paleo. no. 30942).

LOWER PLIOCENE (Ogallala formation). SOUTH DAKOTA: Bennett County: Big Spring Canyon on Ed. Ross ranch, section 8, Township 36 N, Range 39 W, 15 miles SW of Martin.

MIDDLE PLIOCENE (Drewsey formation). OREGON: Malheur County: Juntura reservoir (Brodkorb, 1961, Quart. Jour. Florida Acad. Sci., vol. 24, p. 180, fig. 6).

54. *Neophrontops vallecitoensis* Howard

Neophrontops vallecitoensis Howard, 1963 (Dec. 30), Los Angeles County Mus., Contributions in Science, no. 73, p. 17, pl. 3, fig. B (type from Arroyo Hueso, distal part of left tarsometatarsus, Los Angeles County Mus., no. 2866).

MIDDLE PLEISTOCENE (upper part of Palm Spring formation). CALIFORNIA: San Diego County: Arroyo Hueso and Arroyo Tapiado (Howard, 1963).

55. *Neophrontops americanus* L. Miller

Neophrontops americanus L. Miller, 1916 (March 10), Univ. Calif. Publ., Bull. Dept. Geol., vol. 9, no. 9, p. 106, figs. 1a-1b (type from Rancho La Brea, tarsometatarsus, Univ. Calif. Mus. Paleo. no. 22402).

UPPER PLEISTOCENE (tar pits). CALIFORNIA: Los Angeles County: Rancho La Brea (L. Miller, 1916). Kern County: McKittrick (L. Miller, 1925, Univ. Calif. Publ., Bull. Dept. geol. Sci., vol. 15, p. 323). Santa Barbara County: Carpinteria (L. Miller, 1927, Science, n.s., vol. 66, p. 156).

UPPER PLEISTOCENE (cave deposit). MEXICO: Nuevo León: San Josecito Cavern, Aramberri (L. Miller, 1943, Univ. Calif. Publ. Zool., vol. 47, p. 154).

Genus †*Neogyps* L. Miller

Neogyps L. Miller, 1916 (March 10), Univ. Calif. Publ., Bull. Dept. Geol., vol. 9, no. 9, p. 108 (type by monotypy *Neogyps errans* L. Miller).

56. *Neogyps errans* L. Miller

Neogyps errans L. Miller, 1916 (March 10), Univ. Calif. Publ., Bull. Dept. Geol., vol. 9, no. 9, p. 108, fig. 2 (type from Rancho La Brea, tarsometatarsus, Univ. Calif. Mus. Paleo. no. 22401).

Upper Pleistocene (tar pits). California: Los Angeles County: Rancho La Brea (L. Miller, 1916). Kern County: McKittrick (L. Miller, 1927, Condor, vol. 29, p. 150). Santa Barbara County: Carpinteria (L. Miller, 1927, Science, n.s., vol. 66, p. 156).

Upper Pleistocene (cave deposits). Nevada: White Pine County: Smith Creek Cave, 34 miles north of Baker (Howard, 1952, Bull. S. Calif. Acad. Sci., vol. 51, pt. 2, p. 53). Mexico: Nuevo Leon: San Josecito Cavern, Aramberri (L. Miller, 1943, Univ. Calif. Publ. Zool., vol. 47, p. 154).

Genus *Gyps* Savigny

Gyps Savigny, 1809, Description de l'Égypte, vol. 1, pp. 68, 71 (type by monotypy *Gyps vulgaris* Savigny = *Vultur fulvus* Habliz!).

57. *Gyps melitensis* Lydekker

Gyps melitensis Lydekker, 1890, Proc. zool. Soc. London, p. 404, pl. 35, figs. 1-2a, 4-4a, 6, 8-9; pl. 36, fig. 7-7b (types from Zebbug Cave, right femur, tibiotarsi, tarsometatarsi, pedal phalanges, cervical vertebrae, Brit. Mus. nos. 49354-49357, 49360, 49363-49364).

Middle Pleistocene (cave deposits). Malta: Zebbug Cave (Lydekker, 1890); recorded in error by Lambrecht (1933, Handb. Palaeorn., p. 402) from Har Dalam Cave on the basis of Bate (1916, Proc. zool. Soc. London, p. 422), who only copied Lydekker's record. Monaco: Grotte de Grimaldi (Boule, 1919, Les Grottes de Grimaldi (Baousse-Rousse), vol. 1, fasc. 10, Aves, p. 299).

Subfamily Circinae Bonaparte

Circinae Bonaparte, 1838, Geogr. comp. list birds Eur. N. Amer., p. 5 (type *Circus* Lacépède).

Genus †*Thegornis* Ameghino

Thegornis Ameghino, 1895, Bol. Inst. geogr. argentino, vol. 15, p. 598 (type *Thegornis musculosus* Ameghino, designated by Richmond, 1902, Proc. U. S. Nat. Mus., vol. 24, p. 718).

58. *Thegornis musculosus* Ameghino

Thegornis musculosus Ameghino, 1895, Bol. Inst. geogr. argentino, vol. 15, p. 598, figs. 43a, 43c, (type from Tagua Quemada, fragmentary tarsometatarsus, Brit. Mus.).

MIDDLE MIOCENE (Santa Cruz formation). ARGENTINA: Santa Cruz: Tagua Quemada.

59. *Thegornis debilis* Ameghino

Thegornis debilis Ameghino, 1895, Bol. Inst. geogr. argentino, vol. 15, p. 600, fig. 43e (type from Corriguen Kaik, distal end of tarsometatarsus, Brit. Mus.).

MIDDLE MIOCENE (Santa Cruz formation). ARGENTINA: Santa Cruz: Corriguen Kaik.

Genus *Circus* Lacépède

Circus Lacépède, 1799, Tableaux methodiques des Mammiferes et des Oiseaux, p. 4 (type *Falco aeruginosus* Linnaeus, designated by Lesson, 1828).

60. *Circus teauteensis* Forbes

Circus teauteensis Forbes, 1891, Trans. Proc. N. Zealand Inst., vol. 24, p. 186 (type from Te Aute, tibiotarsus, Brit. Mus.).
Circus hamiltoni Forbes, 1891, Trans. Proc. N. Zealand Inst., vol. 24, p. 186 (type from South Island, Brit. Mus.; nomen nudum, fide Lambrecht).
Circus eylesi Scarlett, 1953, Records Canterbury Mus., vol. 6, p. 245 (type from Pyramid Valley swamp, Canterbury Mus.).

QUATERNARY. NEW ZEALAND: North Island: Te Aute swamp (Forbes, 1891). South Island: Pyramid Valley swamp (Scarlett, 1953); Lake Grassmere (Oliver, 1955, N. Zealand birds, ed. 2, p. 605).

Subfamily ACCIPITRINAE (Vieillot)

Accipitrini Vieillot, 1816, Analyse nouv. ornith. élém., p 22 (famille; type *Accipiter* Brisson).—*Accipitrina* Vigors, 1824 (October), Zool. Jour., vol. 1, p. 313 ("stirps" = subfamily).—*Accipitrinae* Swainson, 1837, Nat. hist. classif. birds, vol. 2, p. 214 (subfamily).

Genus *Accipiter* Brisson

Accipiter Brisson, 1760, Ornithologia, vol. 1, pp. 28, 310 (type by tautonomy *Accipiter* Brisson = *Falco nisus* Linnaeus, Recent).

61. *Accipiter alphonsi* (E. T. Newton and Gadow)

Astur alphonsi E. T. Newton and Gadow, 1893, Trans. zool. Soc. London, vol. 13, p. 285, pl. 33, figs. 9-10 (types from Mare aux Songes, tibiotarsus, carpometacarpus, Mauritius Mus.; casts Brit. Mus.).

QUATERNARY. MAURITIUS: Mare aux Songes.

Subfamily LEPTODONTINAE Brodkorb [1]

Cymindinae Swainson, 1837, Nat. hist. classif. birds, vol. 2, p. 208 (subfamily; type *Cymindis* Cuvier MS., Dumont 1816, a senior synonym of *Leptodon* Sundevall 1836; preoccupied by *Cymindis* Latreille 1806).

Perninae Blyth, 1849, Cat. birds Mus. Asiatic Soc., fide Gray (subfamily; type *Pernis* Cuvier).

Elanoidinae Shufeldt, 1891, Ibis, p. 232 (subfamily; type *Elanoides* Vieillot).

Genus *Aviceda* Swainson

Aviceda Swainson, 1836, Nat. hist. classif. birds, vol. 1, p. 300 (no included species).—Swainson, 1837, op. cit., vol. 2, p. 214 (type by monotypy *Aviceda cuculoïdes* Swainson).

62. *Aviceda gracilis* (DeVis)

Baza gracilis DeVis, 1906, Ann. Queensland Mus., no. 6, p. 7, pl. 1, fig. 4 (type from locality 6, humerus).

UPPER PLEISTOCENE (Katipiri sands, Malkuni fauna). AUSTRALIA: South Australia: locality 6 on lower Cooper Creek near Lake Eyre.

Subfamily ELANINAE Blyth

Elaninae Blyth, 1849, Cat. birds Mus. Asiatic Soc., fide Gray (subfamily; type *Elanus* Savigny).

No extinct fossil species.

Subfamily CIRCAETINAE Blyth

Circaëtinae Blyth, 1849, Cat. birds Mus. Asiatic Soc., fide Gray (subfamily; type *Circaëtus* Vieillot).

No extinct fossil species.

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[1] New name.

Neospecies of Accipitridae from fossil and *prehistoric sites:

Subfamily BUTEONINAE:

1. *Buteo fuscescens* (Vieillot). CALIFORNIA: Hawver Cave? (L. Miller, 1912, Univ. Calif. Publ., Bull. Dept. Geol., vol. 7, p. 75); McKittrick? (L. Miller, 1922, Condor, vol. 24, p. 123). FLORIDA: Seminole Field? (Wetmore, 1931, Smithsonian misc. Coll., vol. 85, no. 2, p. 30). CUBA: Baños de Ciego Montero (Wetmore, 1928, Amer. Mus. Novitates, no. 301, p. 3). BRAZIL: Lapa da Escrivania, Minas Geraes (O. Winge, 1887, E Museo Lundii, vol. 1, no. 2, p. 36).

2. *Buteo rufinus* (Cretzschmar). HUNGARY: Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. ungar. geol. Anstalt, vol. 23, p. 479). MONGOLIA: Sjara-Osso-Gol, Ordos? (Bate, 1931, Pal. sinica, ser. C, vol. 6, fasc. 4, p. 41).

3. *Buteo hemilasius* Temminck and Schlegel. CHINA: Yen-Ching-Kou, Szechwan (Wetmore, 1934, Amer. Mus. Novitates, no. 711, p. 15).

4. *Buteo regalis* (G. R. Gray). CALIFORNIA: Hawver Cave (L. Miller, 1911, Univ. Calif. Publ., Bull. Dept. Geol., vol. 6, p. 391); McKittrick (L. Miller, 1925, Univ. Calif. Publ., Bull. Dept. geol. Sci., vol. 15, p. 323); Rancho La Brea (Howard, 1936, Condor, vol. 38, p. 35); Carpinteria (DeMay, 1941, Carnegie Instn. Washington Publ., no. 530, p. 66); *Emeryville (Howard, 1929, Univ. Calif. Publ. Zool., vol. 32, p. 313). ARIZONA: *Wupatki Pueblo (Hargrave, 1939, Condor, vol. 41, p. 207). TEXAS: *Bell Cave (Wetmore, 1935, Condor, vol. 37, p. 176). NORTH DAKOTA: *Thomas Riggs site (L. Miller, 1961, Bull. S. Calif. Acad. Sci., vol. 60, pt. 3, p. 125).

5. *Buteo jamaicensis* (Gmelin). WASHINGTON: *Puget Sound (L. Miller, 1960, Wilson Bull., vol. 72, p. 396). CALIFORNIA: Rancho La Brea (L. Miller, 1909, Univ. Calif. Publ., Bull. Dept. Geol., vol. 5, p. 306); Potter Creek Cave (L. Miller, 1911, op. cit., vol. 6, p. 391); Carpinteria (L. Miller, 1931, Univ. Calif. Publ., Bull. Dept. geol. Sci., vol. 20, p. 364); McKittrick (L. Miller, 1935, Condor, vol. 37, p. 76); *Emeryville (Howard, 1929, Univ. Calif. Publ. Zool., vol. 32, p. 313); *Buena Vista Lake (DeMay, 1942, Condor, vol. 44, p. 228). NEVADA: Smith Creek Cave (Howard, 1952, Bull. S. Calif. Acad. Sci., vol. 51, pt. 2, p. 54); Rampart Cave (L. Miller, 1960, Condor, vol. 62, p. 70). ARIZONA: *35 miles north of Flagstaff (A. H. Miller, 1932, Condor, vol. 34, p. 138); *Awatobi Pueblo (Hargrave, 1939, Condor, vol. 41, p. 207). NEW MEXICO: Shelter Cave (Howard and A. H. Miller, 1933, Condor, vol. 35, p. 16); Howells Ridge Cave (Howard, 1962, Condor, vol. 64, p. 242). IDAHO: *Weiss rock shelter (L. Miller, 1963, Bull. S. Calif. Acad. Sci., vol. 62, pt. 4, p. 179). IOWA: *Mill Creek (Hamon, 1961, Plains Anthropologist, vol. 6, p. 210). ILLINOIS: *Kingston (Baker, 1936, Trans. Illinois State Acad. Sci., vol. 29, p. 245). PENNSYLVANIA: *Varner site (Guilday, 1961, Penn. Archaeologist, vol. 31, p. 122). VIRGINIA: Natural Chimneys (Wetmore, 1962, Smithsonian misc. Coll., vol. 145, no. 2, p. 7). GEORGIA: *Ewotah site (Parmalee, 1960, Florida Anthropologist, vol. 8, p. 49). FLORIDA: Seminole Field, Venice, and Melbourne (Wetmore, 1931, Smithsonian misc. Coll., vol. 85, no. 2, p. 29); Reddick (Brodkorb, 1957, Jour. Paleontology, vol. 31, p. 135); Arredondo (Brodkorb, 1959, Bull. Florida State Mus., vol. 4, p. 274); Rock Spring (Woolfenden, 1959, Wilson Bull., vol. 71, p. 185); Itchtucknee River (McCoy, 1963, Auk, vol. 80, p. 343); *Good's shellpit (Neill, Gut, and Brodkorb, 1956, Amer. Antiquity,

vol. 21, p. 388); *Vero Beach no. 3 (Weigel, 1963, Florida geol. Surv., spec. Publ., no. 10, p. 28). PUERTO RICO: *Barrio Canas (Wetmore, 1938, Auk, vol. 55, p. 53).

6. *Buteo albonotatus* Kaup. NEW MEXICO: Shelter Cave? (Howard and A. H. Miller, 1933, Condor, vol. 35, p. 16).

7. *Buteo lineatus* (Gmelin). CALIFORNIA: Carpinteria (L. Miller, 1931, Univ. Calif. Publ., Bull. Dept. geol. Sci., vol. 20, p. 364); *Emeryville (Howard, 1929, Univ. Calif. Publ. Zool., vol. 32, p. 313); *Buena Vista Lake (DeMay, 1942, Condor, vol. 44, p. 228). IOWA: *Mill Creek (Hamon, 1961, Plains Anthropologist, vol. 6, p. 210). ILLINOIS: *Kingston site (Baker, 1936, Trans. Illinois State Acad. Sci., vol. 29, p. 245). OHIO: *Canter Caves (Goslin, 1955, Ohio Jour. Sci., vol. 55, p. 361). VIRGINIA: Natural Chimneys (Wetmore, 1962, Smithsonian misc. Coll., vol. 145, no. 2, p. 7). GEORGIA: *Etowah site (Parmalee, 1960, Florida Anthropologist, vol. 8, p. 49). FLORIDA: Seminole Field, Venice, and Melbourne (Wetmore, 1931, Smithsonian misc. Coll., vol. 85, no. 2, p. 29); Reddick (Brodkorb, 1957, Jour. Paleont., vol. 31, p. 135).

8. *Buteo swainsoni* Bonaparte. CALIFORNIA: Samwel Cave? (L. Miller, 1911, Univ. Calif. Publ., Bull. Dept. Geol., vol. 6, p. 391); Rancho La Brea (L. Miller, 1925, Carnegie Instn. Washington Publ., no. 349, p. 95); McKittrick (L. Miller, 1935, Condor, vol. 37, p. 77); *Emeryville (Howard, 1929, Univ. Calif. Publ. Zool., vol. 32, p. 313). NEVADA: Smith Creek Cave (Howard, 1952, Bull. S. Calif. Acad. Sci., vol. 51, pt. 2, p. 54). NEW MEXICO: Rocky Arroyo (Wetmore, 1932, Condor, vol. 34, p. 141); Conkling Cavern and Shelter Cave (Howard and A. H. Miller, 1933, Condor, vol. 35, p. 16). IOWA: *Mill Creek (Hamon, 1961, Plains Anthropologist, vol. 6, p. 210).

9. *Buteo buteo* (Linnaeus). ENGLAND: Brixham Cave (Lydekker, 1891, Cat. foss. Birds Brit. Mus., p. 21); Clevedon Cave and Ightham Cave (Lambrecht, 1933, Handb. Palaeorn., p. 748); *Colchester (Bate, 1934, Ibis, p. 391). DENMARK: Mejlgaard, Havelse, *Vejleby, and *Barsmark (H. Winge, 1903, Vidensk. Meddel. naturhist. Foren. Copenhagen, vol. 6, p. 101). FRANCE: Grottes de l'Aude, dépôts d'Aurignac, and Grotte de Bruniquel (Paris, 1912, Rev. française ornith., vol. 4, p. 288). HUNGARY: Remetehegy (Lambrecht, 1914, Aquila, vol. 21, p. 89); Subalyuk Cave (Jánossy, 1962, Aquila, vol. 67-68, p. 178); *Buják (Janossy, 1959, Ann. Mus. hungarica, vol. 51, p. 114). ITALY: Grotta di Parignana, Caverna d'Equi, Portosa, Pentosa, and *Grotta all Onda (Lambrecht, 1933, Handb. Palaeorn., p. 748). SARDINIA: diluvium (*Aquila fossilis* Geibel, 1847, Fauna der Vorwelt, vol. 1, pt. 2, pp. 9, 39, types tarsus, ulna, and distal part of humerus)? FINLAND: Ladogasee (Lambrecht, 1933). PALESTINE: Kebara Cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, p. 106).

10. *Buteo lagopus* (Pontoppidan). ITALY: Grotta Romanelli and Grotta dei Colombi? (Lambrecht, 1933, Handb. Palaeorn., p. 747). CZECHOSLOVAKIA: Certova dirá (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, p. 940). HUNGARY: Nagyharsányhegy (Lambrecht, 1912, Aquila, vol. 19, p. 285); Remetehegy (Lambrecht, 1914, Aquila, vol. 21, p. 89); Puskaporos (Lambrecht, 1916, Barlangkutatás, vol. 4, p. 204); Pálffy Cave (Lambrecht, 1933, Handb. Palaeorn., p. 747). CALIFORNIA: Rancho La Brea (Howard, 1936, Condor, vol. 38, p. 35); *Emeryville (Howard, 1929, Univ. Calif. Publ. Zool., vol. 32, p. 313); *Buena Vista Lake (DeMay, 1942, Condor, vol. 44, p. 228). NEVADA: Smith Creek Cave (Howard, 1952, Bull. S. Calif. Acad. Sci., vol. 51, pt. 2, p. 54). IOWA: *Mill Creek (Hamon, 1961,

Plains Anthropologist, vol. 6, p. 210). ILLINOIS: *Plum Island (Baker, 1941, Trans. Amer. philos. Soc., n.s., vol. 32, p. 67).

11. *Buteo platypterus* (Vieillot). IOWA: *Mill Creek (Hamon, 1961, Plains Anthropologist, vol. 6, p. 210). 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. 7). FLORIDA: Seminole Field (Wetmore, 1931, Smithsonian misc. Coll., vol. 85, no. 2, p. 30); Haile (Ligon, in press). PUERTO RICO: *Barrio Canas (Wetmore, 1938, Auk, vol. 55, p. 53). MARTINIQUE: *Paquemar (Wetmore, 1952, Auk, vol. 69, p. 460).

12. *Buteo magnirostris* (Gmelin). BRAZIL: Lapa da Escrivania and Lapa da Lagoa do Sumidouro (O. Winge, 1887, E Museo Lundii, vol. 1, no. 2, p. 36). PERU: *Ancon (Lambrecht, 1933, Handb. Palaeorn., p. 749).

13. *Parabuteo unicinctus* (Audubon). MEXICO: San Josecito Cavern in Nuevo León (L. Miller, 1943, Univ. Calif. Publ. Zool., vol. 47, p. 152).

14. *Busarellus nigricollis* (Latham). VENEZUELA: *Los Tamarindos (Wetmore, 1935, Auk, vol. 52, p. 329).

15. *Harpia harpyja* (Linnaeus). BRAZIL: near Lagoa Santa? (O. Winge, 1887, E Museo Lundii, vol. 1, no. 2, p. 35).

16. *Hieraaëtus fasciatus* (Vieillot). GIBRALTAR: Devils Tower (Bate, 1928, Jour. Roy. anthrop. Inst., vol. 58, p. 104). ITALY: Grotta Romanelli (Lambrecht, 1933, Handb. Palaeorn., p. 747). MALTA (Bate, 1916, Proc. zool. Soc. London, p. 422).

17. *Hieraaëtus pennatus* (Gmelin). GIBRALTAR: Devils Tower (Bate, 1928, Jour. Roy. anthrop. Inst., vol. 58, p. 104).

18. *Aquila chrysaëtos* (Linnaeus). SCOTLAND: Perthichwareu Cave (Lambrecht, 1933, Handb. Palaeorn., p. 747). WALES: Cat's Hole Cavern near Gower (Lydekker, 1891, Ibis, p. 386). FRANCE: Grotte de Bruniquel (Lydekker, 1891, Cat. foss. birds Brit. Mus., p. 24); Madelaine, Moustier, Lacombe-Tayac, Gourdan, and Aurignac (Lambrecht, 1933, Handb. Palaeorn., p. 747). MONACO: Grotte de Grimaldi and Grotte de l'Observatoire (Lambrecht, 1933). ITALY: Grotta dei Colombi (Regalia, 1893, Arch. Antrop. Etnol., vol. 23, p. 262); Isola Pianosa, Velika Jama, Friaul, Grotta Romanelli, Caverna d'Equi, and Grotta dei Parignana (Lambrecht, 1933). SARDINIA: Monte San Giovanni (Lydekker, 1891, Proc. zool. Soc. London, p. 469). MALTA (Lambrecht, 1933). DENMARK: *Borrebjerg (H. Winge, 1903, Vidensk. Meddel. naturhist. Foren. Copenhagen, vol. 6, p. 101). GERMANY: Saalfeld (Lambrecht, 1933). SWITZERLAND: Schweizerbild, Villeneuve, Schlossfelsen cave, and *Robenhausen (Lambrecht, 1933). AUSTRIA: Willendorf (Lambrecht, 1933). CZECHOSLOVAKIA: Sipka and Certova díra (Capek, 1910, Ber. V. internat. Ornith. Kongr. Berlin, pp. 939, 940); Predmost (Lambrecht, 1933). HUNGARY: Kraszna-Kanal (Lambrecht, 1912, Aquila, vol. 19, p. 298); Subalyuk cave and *Pilisszántó (Jánossy, 1960, Vertebrata hungarica, vol. 2, p. 133). PALESTINE: Mugharet-el-Zuttiyeh? (Bate, 1927, *in* Turville-Petre, Researches in prehistoric Galilee 1922-1926, p. 28); Oumm Qatafa Cave? and Kebara Cave? (Tchernov, 1962, Bull. Research Council Israel, vol. 11, pp. 105, 115). AZERBAIJAN: Binagada (Serebrovsky, 1941, Doklady Akad. Nauk S.S.S.R., vol. 33, no. 7-8, p. 473). ALASKA: *Kodiak Island (Friedmann, 1937, Jour. Washington Acad. Sci., vol. 27, p. 433). OREGON: Fossil Lake (Shufeldt, 1913, Bull. Amer. Mus. nat. Hist., vol. 32, p. 157). CALIFORNIA: Rancho La Brea (L. Miller, 1909, Univ. Calif.

Publ., Bull. Dept. Geol., vol. 5, p. 306); McKittrick (L. Miller, 1922, Condor, vol. 24, p. 123); Carpinteria (L. Miller, 1927, Science, n.s., vol. 66, p. 156); Manix Lake (Howard, 1955, U. S. geol. Surv. Prof. Papers, no. 264-J, p. 204); Vallecito Creek? (Howard, 1963, Contr. Sci., Los Angeles County Mus., no. 73, p. 17); *Buena Vista Lake (DeMay, 1942, Condor, vol. 44, p. 228). NEVADA: Smith Creek Cave (Howard, 1952, Bull. S. Calif. Acad. Sci., vol. 51, pt. 2, p. 54). ARIZONA: *Awatobi Pueblo, *Turkey Tank Cave, *Nalakihu, and *Wupatki Pueblo (Hargrave, 1939, Condor, vol. 41, p. 207). NEW MEXICO: Conkling Cavern (Howard, 1932, Contr. Paleont. Carnegie Instn. Washington, no. 429, p. 1); Shelter Cave (Howard and A. H. Miller, 1933, Condor, vol. 35, p. 16); Howells Ridge Cave (Howard, 1962, Condor, vol. 64, p. 242). TEXAS: Wood Pit (Slaughter et al., 1962, Univ. Texas, Bur. econ. Geol., Rept. Invest., no. 48, p. 39); Friesenhahn Cave (Texas Mem. Mus.). NORTH DAKOTA: *Thomas Riggs site (L. Miller, 1961, Bull. S. Calif. Acad. Sci., vol. 60, p. 125). ILLINOIS: *Cahokia (Parmalee, 1958, Auk, vol. 75, p. 172). NUEVO LEÓN: San Josecito Cavern (L. Miller, 1943, Univ. Calif. Publ. Zool., vol. 47, p. 153).

19. *Aquila heliaca* Savigny. FINLAND: Ladogasee (Lambrecht, 1933, Handb. Palaeorn., p. 747). AZERBAIJAN: Binagada (Serebrovsky, 1941, Doklady Akad. Nauk S.S.S.R., vol. 33, p. 473).

20. *Aquila rapax* (Temminck). TANGANYIKA: Olduvai (Lambrecht, 1933, Handb. Palaeorn., p. 747).

21. *Aquila nipalensis* (Hodgson). AZERBAIJAN: Binagada (Serebrovsky, 1941, Doklady Akad. Nauk S.S.S.R., vol. 33, p. 473).

22. *Aquila clanga* Pallas. FRANCE: Massat (Lambrecht, 1918, Aquila, vol. 24, p. 203). AZERBAIJAN: Binagada (Serebrovsky, 1941, Doklady Akad. Nauk S.S.S.R., vol. 33, p. 473).

23. *Haliaeetus vocifer* (Daudin). NORTHERN RHODESIA: Broken Hill (Lambrecht, 1933, Handb. Palaeorn., p. 746).

24. *Haliaeetus vociferoides* Des Murs. MADAGASCAR: Ambolisatra (Lambrecht, 1933, Handb. Palaeorn., p. 746).

25. *Haliaeetus leucocephalus* (Linnaeus). ALASKA: *Amaknak Island and *Kodiak Island (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, pp. 232, 235); *Dutch Harbor, *Little Kiska, and *Atka Island (Friedmann, 1937, op. cit., vol. 27, pp. 433, 435, 437). WASHINGTON: *Puget Sound (L. Miller, 1960, Wilson Bull., vol. 72, p. 395). OREGON: Fossil Lake (Shufeldt, 1913, Bull. Amer. Mus. nat. Hist., vol. 32, p. 157); *Five Mile Rapids (L. Miller, 1957, Condor, vol. 59, p. 59). CALIFORNIA: Rancho La Brea (L. Miller, 1911, Univ. Calif. Publ., Bull. Dept. Geol., vol. 6, p. 310); San Pedro (L. Miller, 1930, Condor, vol. 32, p. 118); Carpinteria (L. Miller, 1931, Univ. Calif. Publ., Bull. Dept. geol. Sci., vol. 20, p. 364); McKittrick (Howard, 1932, Contr. Paleont. Carnegie Instn. Washington, no. 429, p. 1); *Emeryville (Howard, 1929, Univ. Calif. Publ. Zool., vol. 32, p. 313). ARIZONA: *Wuptaki Pueblo (Hargrave, 1939, Condor, vol. 41, p. 207). NEW MEXICO: Conkling Cavern (Howard, 1932, Contr. Paleont. Carnegie Instn. Washington, no. 429, p. 1). NEBRASKA: Niobrara River between Grayson and Peters (Shufeldt, 1913, Bull. Amer. Mus. nat. Hist., vol. 32, p. 29). IOWA: *Mill Creek (Hamon, 1961, Plains Anthropologist, vol. 6, p. 210). ILLINOIS: *Kingston (Baker, 1936, Trans. Illinois State Acad. Sci., vol. 29, p. 245); *Powell mound (Baker, 1941, Trans. Amer. philos. Soc., n.s., vol. 32, p. 67); *Modoc

shelter (Parmalee, 1956, Illinois State Mus., Rept. Invest., no. 4, p. 53); *Cahokia (Parmalee, 1958, Auk, vol. 75, p. 172). GEORGIA: *Etowah (Parmalee, 1960, Florida Anthropologist, vol. 8, p. 49). FLORIDA: Seminole Field, Sabertooth Cave, Venice, and Melbourne (Wetmore, 1931, Smithsonian misc. Coll., vol. 85, no. 2, p. 30); Rock Spring (Woolfenden, 1959, Wilson Bull., vol. 71, p. 185); *Silver Glen Springs (Neill, Gut, and Brodkorb, 1956, Amer. Antiquity, vol. 21, p. 388); *Castle Windy (Bullen and Sleight, 1959, William L. Bryant Found. Amer. Studies Rept., no. 1, p. 20).

26. *Haliaeetus albicilla* (Linnaeus). ENGLAND: Clevedon Cave, Burwell fen, Walthawstow, and *Glastonbury (Lambrecht, 1933, Handb. Palaeorn., p. 745). FRANCE: Gourdan cave and Teyjat (Lambrecht, 1933). BELGIUM: Trou de Chaleux and Trou des Nutons (Lambrecht, 1933). NORWAY: Vardo (Lambrecht, 1933). SWEDEN: Torf Skanen (Lambrecht, 1933). FINLAND: Ladogasee (Lambrecht, 1933). DENMARK: Fannerup, Mejlgaard, Erteboelle, Vester Ulslev, Maglemose, Klintesoe, Jaegerspris, Havelse, Soelager, Lejre Aa, *Holme, *Aarhus, *Vejleby, *Vordingborg, *Kolding Fjord, *Illemose, and *Radbjerg Mose (H. Winge, 1903, Vidensk. Meddel. naturhist. Foren. Copenhagen, vol. 6, p. 101). SWITZERLAND: Schaffhausen, Schweizerbild, and *Moosseedorf (Lambrecht, 1933). GIBRALTAR: Devils Tower (Bate, 1928, Jour. Roy. anthrop Inst., vol. 58, p. 104). MONACO: Grotte de Grimaldi (Lambrecht, 1933). ITALY: Finalmarina (Lambrecht, 1933). HUNGARY: Puskaporos (Lambrecht, 1914, Aquila, vol. 21, p. 85). YUGOSLAVIA: Krapina (Lambrecht, 1915, Barlangkutatás, vol. 3, p. 119). AZERBAIJAN: Binagada (Serebrovsky, 1941, Doklady Aka. Nauk S.S.S.R., vol. 33, p. 473). ALASKA: *Kodiak Island (Friedmann, 1935, Jour. Washington Acad. Sci., vol. 25, p. 49).

27. *Haliaeetus pelagicus* (Pallas). ALASKA: *Kodiak Island (Friedmann, 1935, Jour. Washington Acad. Sci., vol. 25, p. 49).

Subfamily MILVINAE:

28. *Ictinia mississippiensis* (Wilson). ILLINOIS: *Modoc (Parmalee, 1958, Auk, vol. 75, p. 171). OHIO: *Canter caves (Wetmore, 1932, Wilson Bull., vol. 44, p. 118).

29. *Milvus milvus* (Linnaeus). ENGLAND: *Glastonbury (Lambrecht, 1933, Handb. Palaeorn., p. 748). FRANCE: Aurignac (Paris, 1912, Rev. française Ornith., vol. 4, p. 288). MONACO: Grotte de Grimaldi (Lambrecht, 1933). SARDINIA: Monte San Giovanni (Lydekker, 1891, Proc. zool. Soc. London, p. 469). DENMARK: Maglemose (H. Winge, 1903, Vidensk. Meddel. naturhist. Foren. Copenhagen, vol. 6, p. 102). POLAND: *Robenhausen (Lambrecht, 1933). AZERBAIJAN: Binagada? (Serebrovsky, 1941, Doklady Akad. Nauk S.S.S.R., vol. 33, p. 473).

30. *Milvus migrans* (Boddaert). ITALY: Grotta Romanelli? (Lambrecht, 1933, Handb. Palaeorn., p. 748). CZECHOSLOVAKIA: Certova díra (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, p. 940).

Subfamily GYPAETINAE:

31. *Torgos tracheliotus* (J. R. Forster). GERMANY: Salzgitter-Lebenstedt (*Torgos tracheliotus todei* Kleinschmidt, 1953, Bonn zool. Beitr., vol. 1-2, p. 23, figs. 1-4; type sternum, Landesmuseum Braunschweig no. T 1).

32. *Aegypius monachus* (Linnaeus). GIBRALTAR: Forbes quarry (Lambrecht,

1933, Handb. Palaeorn., p. 745). FRANCE: Grotte de Bruniquel (Lydekker, 1891, Cat. foss. birds, p. 32); la Madelaine, Lacombe-Tayac, Grotte d'Enfer, Grotte Gourdan, and Aurignac? (Lambrecht, 1933). MONACO: Grotte de Grimaldi and Grotte de l'Observatoire (Lambrecht, 1933). SARDINIA (de la Marmora, 1831, Jour. géol. (Paris), vol. 3, p. 313); Monte Giovanni (Lydekker, 1891, Proc. zool. Soc. London, p. 469). GERMANY: Westeregeln bei Magdeburg (*Vultur fossilis* Germar, 1826 [1837, fide Paris], *in* Keferstein, Teutschland geognostisch-geologisch dargestellt, vol. 3, p. 612, type femur); Hermannshöhle bei Rübeland (Blasius, 1901, Jour. Ornith., vol. 49, p. 58). HUNGARY: Subalyuk-Höhle? (Jánossy, 1962, Aquila, vol. 67-68, p. 178). PALESTINE: Kebara Cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, p. 106). AZERBAIJAN: Binagada (Serebrovsky, 1941, Doklady Akad. Nauk S.S.S.R., vol. 33, p. 473). MONGOLIA: Sjara-Osso-Gol (Bate, 1931, Pal. sinica, ser. C, vol. 6, fasc. 4, p. 41).

33. *Gyps fulvus* (Hablizl). BELGIUM: Goyet caves near Namur (*Gyps fulvus spelaeus* Friant, 1950, C. R. Acad. Sci. Paris, vol. 231, no. 21, p. 1164, fig.). GIBRALTAR: Devils Tower (Bate, 1928, Jour. Roy. anthrop. Inst., vol. 58, p. 104). MONACO: Grotte de Grimaldi (Lambrecht, 1933, Handb. Palaeorn., p. 745). ITALY: Grotta dei Colombi (Regalia, 1893, Arch. Anthrop. Etnol., vol. 23, p. 262); Grotta Romanelli and Rome (Lambrecht, 1933, Handb. Palaeorn., p. 745). CZECHOSLOVAKIA: Predmost (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, p. 938). PALESTINE: Kebara Cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, p. 115). AZERBAIJAN: Binagada (Serebrovsky, 1941, Doklady Akad. Nauk S.S.S.R., vol. 33, p. 473).

34. *Gypaëtus barbatus* (Linnaeus). BELGIUM: Liège (Lambrecht, 1933, Handb. Palaeorn., p. 745). FRANCE: Grotte de Lacombe and Grotte de Bruniqeul (Paris, 1912, Rev. française Ornith., vol. 4, p. 288). SPAIN: caves of Burgos? (Lambrecht, 1933, Handb. Palaeorn., p. 745). MONACO: Grotte de l'Observatoire (Lambrecht, 1933). HUNGARY: Szeleta-Höhle (Lambrecht, 1914, Aquila, vol. 21, p. 85); Ölyvesköer Fuchsloch (Jánossy, 1960, Vertebrata hungarica, vol. 2, p. 134); Subalyuk-Höhle (Jánossy, 1962, Aquila, vol. 67-68, p. 177). CHINA: Chou-Kou-Tien? (Howard, 1939, Fortschritte der Paläont., vol. 2, p. 314).

Subfamily CIRCINAE:

35. *Circus cyaneus* (Linnaeus). CZECHOSLOVAKIA: Balcarova skala (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, p. 938). HUNGARY: Puskaporos? (Lambrecht, 1912, Aquila, vol. 19, p. 298); Pálffy-Höhle (Lambrecht, 1913, Aquila, vol. 20, p. 427); Öregkö-Höhle bei Bajót (Kormos and Lambrecht, 1914, Barlangkutatás, vol. 2, p. 105); Remetehegy (Lambrecht, 1914, Aquila, vol. 21, p. 89); Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. ungar. geol. Anstalt, vol. 23, p. 479); Tata (Lambrecht, 1916, Aquila, vol. 22, p. 194); Püspökfürdö? (Capek, 1917, Barlangkutatás, vol. 5, p. 27. OREGON: Fossil Lake (L. Miller, 1912, Univ. Calif. Publ., Bull. Dept. Geol., vol. 7, p. 113). CALIFORNIA: Rancho La Brea (L. Miller, 1909, Univ. Calif. Publ., Bull. Dept. Geol., vol. 5, p. 306); McKittrick (L. Miller, 1922, Condor, vol. 24, p. 123); Carpinteria (DeMay, 1941, Carnegie Instn. Washington Publ., no. 530, p. 66); *Emeryville (Howard, 1929, Univ. Calif. Publ. Zool., vol. 32, p. 313); *Buena Vista Lake (DeMay, 1942, Condor, vol. 44, p. 228). NEVADA: Smith Creek Cave (Howard, 1952, Bull. S. Calif. Acad. Sci., vol. 51, pt. 2, 54). ARIZONA: *Wupatki Pueblo (Hargrave, 1939, Condor, vol. 41, p. 207).

NORTH DAKOTA: *Thomas Riggs site and *Huff Focus site (L. Miller, 1961, Bull. S. Calif. Acad. Sci., vol. 60, pt. 3, p. 125). SOUTH DAKOTA: *Chouteau site (L. Miller, 1961, Bull. S. Calif. Acad. Sci., vol. 60, pt. 3, p. 125). NUEVO LEÓN: San Josecito Cavern (L. Miller, 1943, Univ. Calif. Publ. Zool., vol. 47, p. 154).

36. *Circus macrourus* (S. G. Gmelin). MONACO: Grotte de Grimaldi and Grotte de l'Observatoire (Lambrecht, 1933, Handb. Palaeorn., p. 749). ITALY: Grotta dei Parignana (Lambrecht, 1933). CZECHOSLOVAKIA: Holubic (Lambrecht, 1933).

37. *Circus aeruginosus* (Linnaeus). DENMARK: *Jaegersborg Mose (H. Winge, 1903, Vidensk. Meddel. naturhist. Foren. Copenhagen, vol. 6, p. 102). ITALY: Grotta dei Parignana (Lambrecht, 1933, Handb. Palaeorn., p. 749). CZECHOSLOVAKIA: Certova díra (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, p. 940).

38. *Circus approximans* Peale. NEW ZEALAND: Waingongoro (Lydekker, 1891, Cat. foss. birds Brit. Mus., p. 20); Pyramid Valley swamp (Scarlett, 1955, Rec. Canterbury Mus., vol. 6, p. 262).

Subfamily ACCIPITRINAE:

39. *Accipiter gentilis* (Linnaeus). ENGLAND: *Glastonbury (Lambrecht, 1933, Handb. Palaeorn., p. 749). DENMARK: *Vejleby and *Mariedals (H. Winge, 1903, Vidensk. Meddel. naturhist. Foren. Copenhagen, vol. 6, p. 102). FINLAND: Ladogasee (Lambrecht, 1933, Handb. Palaeorn., p. 749). MONACO: Grotte de Grimaldi and Grotte de l'Observatoire (Lambrecht, 1933). ITALY: Grotta dei Colombi (Regàlia, 1893, Arch. Anthrop. Etnol., vol. 23, p. 262). SWITZERLAND: *Moosseedorf, *Wauwyll, and *Szontagsee (Lambrecht, 1933, Handb. Palaeorn., p. 749). AUSTRIA: Hundsheim? (Lambrecht, 1933). CZECHOSLOVAKIA: Balcarova skála (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, p. 938); Volyn (Lambrecht, 1933). HUNGARY: Remetehegy (Lambrecht, 1914, Aquila, vol. 21, p. 89). AZERBAIJAN: Binagada (Serebrovsky, 1941, Doklady Akad. Nauk S.S.S.R., vol. 33, p. 473). CALIFORNIA: Carpinteria (L. Miller, 1931, Univ. Calif. Publ., Bull. Dept. geol. Sci., vol. 20, p. 364); Rancho La Brea (Compton, 1934, Condor, vol. 36, p. 221).

40. *Accipiter henstii* (Schlegel). MADAGASCAR: Sirabé (Andrews, 1897, Ibis, p. 358).

41. *Accipiter bicolor* (Vieillot). YUCATAN: *Actun Spukil Cave? (Fisher, 1953, Cranbrook Inst. Sci. Bull., no. 33, p. 82).

42. *Accipiter cooperii* (Bonaparte). CALIFORNIA: Rancho La Brea (L. Miller, 1921, Condor, vol. 23, p. 129); Carpinteria (L. Miller, 1931, Univ. Calif. Publ., Bull. Dept. geol. Sci., vol. 20, p. 364); McKittrick (L. Miller, 1935, Condor, vol. 37, p. 76); *Buena Vista Lake (DeMay, 1942, Condor, vol. 44, p. 228). NEW MEXICO: Rocky Arroyo (Wetmore, 1932, Condor, vol. 34, p. 141). GEORGIA: *Etowah? (Parmalee, 1960, Florida Anthropologist, vol. 8, p. 49). FLORIDA: Reddick (Brodkorb, 1957, Jour. Paleont., vol. 31, p. 135); Arredondo (Brodkorb, 1959, Bull. Florida State Mus., vol. 4, p. 274); Haile (Ligon, in press).

43. *Accipiter nisus* (Linnaeus). IRELAND: Newhall Cave (Lambrecht, 1933, Handb. Palaeorn., p. 748). FRANCE: Grotte de Fausan and Grotte de Bize (Paris, 1912, Rev. française Ornith., vol. 4, p. 288). GIBRALTAR (Lambrecht, 1933). CORSICA: Grotta de Funtanedu (Lambrecht, 1933). GERMANY: Kastlhäng-

Höhle (Lembrecht, 1933). POLAND: Ojcov cave? (Lambrecht, 1918, Aquila, vol. 24, p. 203). CZECHOSLOVAKIA: Balcarova skála and Certova díra (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, pp. 938, 940; Zuzlavitz? (Lambrecht, 1933). AUSTRIA: Mixnitz (Lambrecht, 1933). HUNGARY: Remetehegy (Lambrecht, 1914, Aquila, vol. 21, p. 89); *Legény-Höhle bei Pilisszentlélek (Lambrecht, 1915, Mitt. Jahrb. ungar. geol. Anstalt, vol. 23, p. 479). PALESTINE: Kebara Cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, p. 115).

44. *Accipiter striatus* Vieillot. CALIFORNIA: Samwel Cave (L. Miller, 1911, Univ. Calif. Publ., Bull. Dept. Geol., vol. 6, p. 392); Rancho La Brea (L. Miller, 1925, Carnegie Instn. Washington Publ., no. 349, p. 95); Carpinteria (L. Miller, 1931, Univ. Calif. Publ., Bull. Dept. geol. Sci., vol. 20, p. 364). ARIZONA: *Kiet Siel, *Grand Falls, and *Winona Village (Hargrave, 1939, Condor, vol. 41, p. 207). NEW MEXICO: Shelter Cave (Howard and A. H. Miller, 1933, Condor, vol. 35, p. 16). VIRGINIA: Natural Chimneys (Wetmore, 1962, Smithsonian misc. Coll., vol. 145, no. 2, p. 7). FLORIDA: Reddick (Brodkorb, 1957, Jour. Paleont., vol. 31, p. 135). BAHAMAS: Great Exuma Island (Wetmore, 1937, Bull. Mus. comp. Zool., vol. 80, p. 428). PUERTO RICO: *Cueva Catedral (Wetmore, 1922, Bull. Amer. Mus. nat. Hist., vol. 46, p. 306).

45. *Heterospizias meridionalis* (Latham). VENEZUELA: *Los Tamarindos (Wetmore, 1935, Auk, vol. 52, p. 329).

Subfamily LEPTODONTINAE:

46. *Elanoides forficatus* (Linnaeus). ILLINOIS: *Cahokia (Parmalee, 1958, Auk, vol. 75, p. 171). OHIO: *Canter Caves (Goslin, 1955, Ohio Jour. Sci., vol. 55, p. 361).

47. *Pernis apivorus* (Linnaeus). DENMARK: Aamoelle (H. Winge, 1903, Vidensk. Meddel. naturhist. Foren. Copenhagen, vol 6, p. 102). PALESTINE: Kebara Cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, p. 106).

48. *Chondrohierax uncinatus* (Temminck). BRAZIL: near Lagoa Santa (O. Winge, 1887, E Museo Lundii, vol. 1, no. 2, p. 35).

Subfamily ELANINAE:

49. *Elanus leucurus* (Vieillot). CALIFORNIA: Rancho La Brea (L. Miller, 1912, Univ. Calif. Publ., Bull. Dept. Geol., vol. 7, p. 78). NUEVO LEON: San Josecito Cavern (L. Miller, 1943, Univ. Calif. Publ. Zool., vol. 47, p. 152).

Subfamily CIRCAETINAE:

50. *Circaëtus gallicus* (Gmelin). ITALY: Grotta dei Parignana (Lambrecht, 1933, Handb. Palaeorn., p. 746).

Family FALCONIDAE Vigors

Falconidae "Leach," Vigors, 1824 (October), Zool. Jour., vol. 1, pp. 310, 312 (family; type *Falco* Linnaeus).—*Falconina* Vigors, 1824 (October), Zool. Jour., vol. 1, p. 313 ("stirps" = subfamily).—*Falconinae* Bonaparte, 1831, Saggio di una distribuzione metodica degli animali vertebrati, p. 30 (subfamilia).—*Falconeae* Ridgway, 1889, Ornithology of Illinois, vol. 1, p. 427.—*Falconides* Wetmore and W. D. Miller, 1926 (July 3), Auk, vol. 43, no. 3, p. 341 (superfamily).—*Falconoidae* Hay, 1930, Carnegie Instn. Washington Publ., no. 390, vol. 2, p. 313 (superfamily).—*Falconoidea* Peters, 1931, Check-list of birds of the world, vol. 1, pp. xvi, 192 (superfamily).

Caracaridae d'Orbigny, 1839, Voyage dans l'Amérique méridionale, vol. 4, pt. 3, p. 44 (type *Caracara* Merrem).

Polyborinae Lafresnaye, 1839, fide G. R. Gray (type *Polyborus* Vieillot not applicable).—*Polyborinae* Lesson, 1842 (Dec. 25), Écho du Monde savant, 9e ann. ser. 2, vol. 6, col. 1151.—*Polybori* Ridgway, 1873, Proc. Boston Soc. nat. Hist., vol. 16, p. 50.—*Polyboreae* Ridgway, 1889, Ornithology of Illinois, vol. 1, p. 427.

Herpetotherae Lesson, 1843 (Jan. 12), Écho du Monde savant, 9e ann., vol. 7, ser. 2, no. 3, col. 61 (type *Herpetotheres* Vieillot).—*Herpetothereae* Ridgway, 1873, Proc. Boston Soc. nat. Hist., vol. 16, p. 52.—*Herpetotheres* Ridgway, 1875 (June 10), Bull. U. S. geol. geog. Surv. Terrs. (Hayden), ser. 2, no. 4, p. 4.—*Herpetotherinae* Peters, 1931, Check-list of birds of the world, vol. 1, pp. xvii, 276 (subfamily).

Micrastureae Ridgway, 1873, Proc. Boston Soc. nat. Hist., vol. 16, p. 51 (type *Micrastur* G. R. Gray).—*Micrastures* Ridgway, 1875 (June 10), Bull. U. S. geol. geog. Surv. Terrs. (Hayden), ser. 2, no. 4, p. 4.—*Micrasturinae* Salvin and Godman, 1901, Biologia Centrali-Americana, Aves, vol. 3, p. 107.

Polihieracinae Peters, 1931, Check-list of birds of the world, vol. 1, pp. xviii, 281 (subfamily; type *Polihierax* Kaup).

Daptriinae Hellmayr and Conover, 1949 (Aug. 19), Field Mus. nat. Hist. Publ. (zool. Ser.), vol. 13, pt. 1, no. 4, pp. v, 259 (subfamily; type *Daptrius* Vieillot).

Subfamily FALCONINAE (Vigors)

Falconidae "Leach," Vigors, 1824 (October), Zool. Jour. vol. 1, pp. 310, 312 (family; type *Falco* Linnaeus).—*Falconina* Vigors, 1824 (October), Zool. Jour., vol. 1, p. 313 ("stirps" = subfamily).—*Falconinae* Bonaparte, 1831, Saggio dist. metodica animali vert., p. 30 (subfamilia).

Genus †*Badiostes* Ameghino

Badiostes Ameghino, 1895, Bol. Inst. geog. argentino, vol. 15, p. 102 (type by monotypy *Badiostes patagonicus* Ameghino).

1. *Badiostes patagonicus* Ameghino

Badiostes patagonicus Ameghino, 1895, Bol. Inst. geog. argentino, vol. 15, p. 102, figs. 44 (types from Patagonia, proximal part of tarsometatarsus, proximal and distal ends of femur, fragmentary ulna).

MIDDLE MIOCENE (Santa Cruz formation). ARGENTINA: Patagonia.

Genus *Falco* Linnaeus

Falco Linnaeus, 1758, Syst. Nat., ed. 10, vol. 1, p. 312 (type *Falco subbuteo* Linnaeus, designated by A.O.U., 1886).

2. *Falco ramenta* Wetmore

Falco ramenta Wetmore, 1936 (Nov. 3), Proc. U. S. nat. Mus., vol. 84, no. 3003, p. 75, fig. 14 (type from section 14, distal part of right tarsometatarsus, U. S. Nat. Mus. no. 13898).

MIDDLE MIOCENE (*Merychipphus* zone, Sheep Creek formation). NEBRASKA: Dawes County: *Merychippus* quarry in SW corner of NW ¼, section 14, Township 31, Range 47.

3. *Falco pisanus* Potris

Falco pisanus Portis, 1887, Mem. Accad. Sci. Torino, ser. 2, vol. 38, p. 17 of separate (type from Orciano Pisano, fragmentary ulna, Florence Mus.).

MIDDLE PLIOCENE (argille marine). ITALY: Pisa: Orciano Pisano near Valle di Fine.

4. *Falco readei* Brodkorb

Falco readei Brodkorb, 1959 (May 22), Bull. Florida State Mus., vol. 4, no. 9, p. 274, fig. 1 (type from Arredondo, distal end of left tibiotarsus, Brodkorb no. 1692).

MIDDLE PLEISTOCENE (Arredondo clay). FLORIDA: Alachua County: Arredondo, pit 2.

5. *Falco oregonus* Howard

Falco oregonus Howard, 1946 (Jan. 25), Publ. Carnegie Instn. Washington, no. 551, p. 178, pl. 1, figs. 2-3 (type from Fossil Lake, right carpometacarpus, Univ. Calif. Mus. Paleo. no. 31779).

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

6. *Falco swarthi* L. Miller

Falco swarthi L. Miller, 1927 (May 15), Condor, vol. 29, no. 3, p. 150, figs. 54c (type from McKittrick, right tarsometatarsus, Univ. Calif. Mus. Paleo. no. 27133).

UPPER PLEISTOCENE (tar pits). CALIFORNIA: Kern County: McKittrick.

Genus †*Sushkinia* Tugarinov

Sushkinia Tugarinov, 1935, Trudy Akad. Nauk S.S.S.R., vol. 4, pp. 84, 89 (type by monotypy *Sushkinia pliocaenica* Tugarinov).

7. *Sushkinia pliocaenica* Tugarinov

Sushkinia pliocaenica Tugarinov, 1935, Trudy Akad. Nauk S.S.S.R., vol. 4, pp. 84, 89, fig. 5b (type from Irtysh River, distal end of left tibiotarsus, Akad. Nauk S.S.S.R.).

LOWER PLIOCENE (Irtysh River beds). KAZAKSTAN: Irtysh River near Pavlodar.

Genus †*Plioaetus* Richmond

Asturaetus DeVis, 1906, Ann. Queensland Mus., no. 6, p. 6 (type by monotypy *Asturaetus furcillatus* DeVis).

Plioaetus Richmond, 1908 (Dec. 16), Proc. U. S. nat. Mus., vol. 35, no. 1656, p. 592, footnote (new name for *Asturaetus* DeVis, preoccupied by *Asturaëtos* C. L. Brehm, 1855).

8. *Plioaetus furcillatus* (DeVis)

Asturaetus furcillatus DeVis, 1906, Ann. Queensland Mus., no. 6, p. 6, pl. 1, (type from locality 5, tibiotarsus).

UPPER PLEISTOCENE (Katipiri sands, Malkuni fauna). AUSTRALIA: South Australia: locality 5 on Lower Cooper, Lake Eyre.

Subfamily CARACARINAE (d'Orbigny)

Caracaridae d'Orbigny, 1839, Voyage dans l'Amérique méridionale, vol. 4, pt. 3, p. 44 (type *Caracara* Merrem).—*Caracarinae* American Ornithologists' Union, 1950, Auk, vol. 67, no. 3, p. 369 (subfamily).

Polyborinae Lafresnaye, 1839, fide G. R. Gray (type *Polyborus* Vieillot, not applicable).—Lesson, 1842 (Dec. 25), Écho du Monde savant, 9e ann., ser. 2, vol. 6, col. 1151.

Daptriinae Hellmayr and Conover, 1949 (Aug. 19), Field Mus. nat. Hist. Publ. (zool. Ser.), vol. 13, pt. 1, no. 4, pp. v. 259 (type *Daptrius* Vieillot).

Genus *Caracara* Merrem

Caracara Merrem, 1826, Allg. Encyklop. Wiss. Künste, vol. 15, p. 159 (type *Falco plancus* J. F. Miller, designated by Hellmayr and Conover, 1949).

9. *Caracara prelutosa* (Howard)

Polyborus prelutosus Howard, 1938 (July 7), Carnegie Instn. Washington Publ., no. 487, p. 226, pl. 1, figs. 1-5; pl. 2, figs. 1-5; pl. 3, figs. 2, 4-4a, 6-8, 10-11

(type from pit 4, Rancho La Brea, right humerus, Los Angeles County Mus. no. E4398).

MIDDLE PLEISTOCENE (Seymour formation). TEXAS: Knox County: 6 miles SE of Gilliland (Univ. Michigan).

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

MIDDLE PLEISTOCENE (Arredondo clay). FLORIDA: Alachua County: Haile (Ligon, in press).

UPPER PLEISTOCENE (tar pits). CALIFORNIA: Los Angeles County: Rancho La Brea (Howard, 1938). Kern County: McKittrick (Howard, 1938). Santa Barbara County: Carpinteria (Howard, 1938).

UPPER PLEISTOCENE (Tecolote member, Santa Rosa Island formation). CALIFORNIA: Santa Barbara County: Santa Rosa Island: mouth of Corral Canyon (Howard, 1962, Bull. S. Calif. Acad. Sci., vol. 61, pt. 4, p. 228).

UPPER PLEISTOCENE (cave deposits). NEW MEXICO: Dona Ana County: Conkling Cavern in Organ Mountains (Howard, 1938); Shelter Cave (Howard and A. H. Miller, 1933, Condor, vol. 35, p. 16). TEXAS: Bexar County: Friesenhahn Cave (Texas Mem. Mus.).

UPPER PLEISTOCENE (Pamlico formation, stratum 2). FLORIDA: Pinellas County: Seminole Field in St. Petersburg (Howard, 1938). Brevard County: Melbourne (Howard, 1938).

9a. *Caracara prelutosa grinnelli* (Howard)

Polyborus prelutosus grinnelli Howard, 1940 (Jan. 19), Condor, vol. 42, no. 1, p. 41 (type from San Josecito Cavern, tarsometatarsus, Calif. Inst. Tech. no. 2709, now in Los Angeles County Mus.).

UPPER PLEISTOCENE (cave deposit). MEXICO: Nuevo León: San Josecito Cavern near Aramberri.

10. *Caracara creightoni* Brodkorb

Caracara creightoni Brodkorb, 1959 (June 3), Bull. Florida State Mus., vol. 4, no. 11, p. 353, pl. 1, fig. 7 (type from Banana Hole, left carpometacarpus, Univ. Florida no. 3153).

UPPER PLEISTOCENE (cave deposits). BAHAMAS: New Providence Island: Banana Hole.

11. *Caracara latebrosa* (Wetmore)

Polyborus latebrosus Wetmore, 1920 (Dec. 30), Proc. biol. Soc. Washington, vol. 33, p. 77 (type from Cueva Toraño, Proximal end of right carpometacarpus,

Amer. Mus. Nat. Hist. no. 4921).—Wetmore, 1922, Bull. Amer. Mus. nat. Hist., vol. 46, p. 303, figs. 1-2.

QUATERNARY (cave deposit). PUERTO RICO: Cueva Toraño near Utuado.

Subfamily MICRASTURINAE (Ridgway)

Micrastureae Ridgway, 1873, Proc. Boston Soc. nat. Hist., vol. 16, p. 51 (type *Micrastur* G. R. Gray).—*Micrastures* Ridgway, 1875 (June 10), Bull. U. S. geol. geog. Surv. Terrs. (Hayden), ser. 2, no. 4, p. 4.—*Micrasturinae* Salvin and Godman, 1901, Biologia Centrali-Americana, Aves, vol. 3, p. 107.

No extinct fossil species.

Subfamily HERPETOTHERINAE (Lesson)

Herpetotherae Lesson, 1843 (Jan. 12), Écho du Monde savant, 9e ann., vol. 7, ser. 2, no. 3, col. 61 (type *Herpetotheres* Vieillot).—*Herpetothereae* Ridgway, 1873, Proc. Boston Soc. nat. Hist., vol. 16, p. 52.—*Herpetotheres* Ridgway, 1875 (June 10), Bull. U. S. geol. geog. Surv. Terrs. (Hayden), ser. 2, no. 4, p. 4.—*Herpetotherinae* Peters, 1931, Check-list of birds of the world, vol. 1, pp. xvii, 276.

No fossil record.

Subfamily POLIHIERACINAE Peters

Polihieracinae Peters, 1931, Check-list of birds of the world, vol. 1, pp. xviii, 281 (type *Polihierax* Kaup).

No fossil record.

Neospecies of Falconidae from Pleistocene and *prehistoric sites:

Subfamily FALCONINAE:

1. *Falco biarmicus* Temminck. HUNGARY: Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. ungar. geol. Anstalt, vol. 23, p. 479).

2. *Falco mexicanus* Schlegel. OREGON: *Five Miles Rapids (L. Miller, 1957, Condor, vol. 59, p. 62). CALIFORNIA: Rancho La Brea (L. Miller, 1921, Condor, vol. 23, p. 129); McKittrick (L. Miller, 1927, Condor, vol. 29, p. 150); *Emeryville (Howard, 1929, Univ. Calif. Publ. Zool., vol. 32, p. 313); *Buena Vista Lake (DeMay, 1942, Condor, vol. 44, p. 228). NEVADA: Smith Creek Cave (Howard,

1952, Bull. S. Calif. Acad. Sci., vol. 51, pt. 2, p. 53). ARIZONA: *Flagstaff, 35 miles N (A. H. Miller, 1932, Condor, vol. 34, p. 138). NEW MEXICO: Rocky Arroyo (Wetmore, 1932, Condor, vol. 34, p. 141); Howells Ridge Cave (Howard, 1962, Condor, vol. 64, p. 242). TEXAS: Lubbock reservoir (Texas Mem. Mus.). NUEVO LEÓN: San Josecito Cavern (L. Miller, Univ. Calif. Publ. Zool., vol. 47, p. 155).

3. *Falco rusticolus* Linnaeus. SWEDEN: Toppeladugard (Lambrecht, 1933, Handb. Palaeorn., p. 750). CZECHOSLOVAKIA: Sipka and Certova díra (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, pp. 939-940). HUNGARY: Pálffy-Höhle (Lambrecht, 1913, Aquila, vol. 20, p. 426).

4. *Falco novae-seelandiae* Gmelin. NEW ZEALAND: Pyramid Valley swamp (Scarlett, 1955, Rec. Canterbury Mus., vol. 6, p. 262); Martinborough Cave (Yaldwyn, 1956, Rec. Dominion Mus., vol. 3, p. 3). CHATHAM ISLANDS (Forbes, 1893, Ibis, p. 544).

5. *Falco peregrinus* Tunstall. IRELAND: Newchin (Lambrecht, 1933, Handb. Palaeorn., p. 750). ENGLAND: Berry Head Cave and Ightham Cave (Lambrecht, 1933). FRANCE: caves of Aquitaine and Grotte de Lacombe-Thayac (Lambrecht, 1933). GIBRALTAR: Devils Tower (Bate, 1928, Jour. Roy. anthrop. Inst., vol. 58, p. 104). MONACO: Grotte de l'Observatoire (Lambrecht, 1933). ITALY: Grotta Zachito and Grotta dei Colombi? (Lambrecht, 1933). SWITZERLAND: Thierstein (Lambrecht, 1933). CZECHOSLOVAKIA: Sipka and Certova díra (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, pp. 939-940). HUNGARY: Puskaporos (Lambrecht, 1916, Barlangkutatás, vol. 4, p. 204); Püspökfürdö (Capek, 1917, Barlangkutatás, vol. 5, p. 28); Subalyuk-Höhle (Jánossy, 1962, Aquila, vol. 67-68, p. 178). AZERBAIJAN: Binagada (Serebrovsky, 1941, Doklady Akad. Nauk S.S.S.R., vol. 33, p. 473). CALIFORNIA: Potter Creek Cave (L. Miller, 1911, Univ. Calif. Publ., Bull. Dept. Geol., vol. 6, p. 392); Rancho La Brea (L. Miller, 1912, op. cit., vol. 7, p. 114); McKittrick (L. Miller, 1922, Condor, vol. 24, p. 123); * Emeryville (Howard, 1929, Univ. Calif. Publ. Zool., vol. 32, p. 313). NEW MEXICO: Shelter Cave (Howard and A. H. Miller, 1933, Condor, vol. 35, p. 16). IDAHO: American Falls (Brodkorb, 1963, Quart. Jour. Florida Acad. Sci., vol. 26, p. 280). OHIO: *Canter Caves (Goslin, 1955, Ohio Jour. Sci., vol. 55, p. 361). FLORIDA: Reddick (Brodkorb, 1957, Jour. Paleont., vol. 31, p. 135); Arredondo (Brodkorb, 1959, Bull. Florida State Mus., vol. 4, p. 276); Haile (Ligon, in press).

6. *Falco subbuteo* Linnaeus. FRANCE: Grotte de Gourdan and Massat? (Lambrecht, 1933, Handb. Palaeonr., p. 750). GIBRALTAR: Devils Tower (Bate, 1928, Jour. Roy. anthrop. Inst. vol. 58, p. 104). ITALY: Grotta dei Colombi, Grotta Zachito?, and Grotte d'Equi (Lambrecht, 1933). HUNGARY: Pálffy-Höhle? (Lambrecht, 1913, Aquila, vol. 20, p. 427); Istállóskö (Jánossy, 1954, Aquila, vol. 55-58, p. 217); Betfia (Kretzoi, 1962, Aquila, vol. 67-68, p. 170).

7. *Falco eleonorae* Géné. GIBRALTAR: Devils Tower (Bate, 1928, Jour. Roy. anthrop. Inst., vol. 58, p. 104). ITALY: Grotta dei Colombi (var. *major* Regàlia, Lambrecht, 1933, Handb. Palaeorn., p. 750).

8. *Falco femoralis* Temminck. ARIZONA: Rampart Cave (L. Miller, 1960, Condor, vol. 62, p. 70). BRAZIL: Lapa da Escrivania (O. Winge, 1887, E Museo Lundii, vol. 1, pt. 2, p. 5). Record from Rancho La Brea, California, is erroneous (see L. Miller, and DeMay, 1942, Univ. Calif. Publ. Zool., vol. 47, p. 105).

9. *Falco columbarius* Linnaeus. GIBRALTAR: Forbes quarry (Lambrecht, 1933,

Handb. Palaeorn., p. 750). CZECHOSLOVAKIA: Balcarova skála and Certova díra (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, pp. 938, 940). HUNGARY: Ó-Ruzsin (Lambrecht, 1912, Aquila, vol. 19, p. 298); 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. 204); Süttö (Lambrecht, 1933, Handb. Palaeorn., p. 750). CALIFORNIA: Rancho La Brea (L. Miller, 1921, Condor, vol. 23, p. 129); McKittrick (L. Miller, 1935, Condor, vol. 37, p. 77); *Emeryville (Howard, 1929, Univ. Calif. Publ. Zool., vol. 32, p. 313). IDAHO: *Birch Creek cave (L. Miller, 1963, Bull. S. Calif. Acad. Sci., vol. 62, pt. 4, p. 182).

10. *Falco vespertinus* Linnaeus. MONACO: Grotte de Grimaldi (Lambrecht, 1933, Handb. Palaeorn., p. 751). ITALY: Grotta dei Colombi? and Grotte d'Equi (Lambrecht, 1933). SWITZERLAND: Schweizerbild (Lambrecht, 1933). HUNGARY: 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. 204); Istállóskö (Jánossy, 1954, Aquila, vol. 55-58, p. 218); Subalyuk-Höhle (Jánossy, 1962, Aquila, vol. 67-68, p. 178).

11. *Falco naumanni* Fleischer. BELGIUM: Trou de Chaleux (Lambrecht, 1933, Handb. Palaeorn., p. 751). GIBRALTAR: Devils Tower? (Bate, 1928, Jour. Roy. anthrop. Inst., vol. 58, p. 104). ITALY: Grotta dei Colombi, Caverne de Verezzi, and Grotte d'Equi (Lambrecht, 1933).

12. *Falco tinnunculus* Linnaeus. IRELAND: Kesh Cave (Lambrecht, 1933, Handb. Palaeorn., p. 751). ENGLAND: Merlins Cave, Ballynamintra Cave, and Chudleigh Cave? (Lambrecht, 1933). FRANCE: Grotte de Lacombe (Paris, 1912, Rev. française Ornith., vol. 4, p. 287); Teyjat, Bruniquel, Demoiselles, and Gourdan (Lambrecht, 1933). GIBRALTAR: Devils Tower (Bate, 1928, Jour. Roy. anthrop. Inst., vol. 58, p. 104); Forbes quarry (Lambrecht, 1933). CORSICA: Grotte de Funtanedu (Lambrecht, 1933). ITALY: Cavernes de Verrezzi (Lambrecht, 1912, Aquila, vol. 19, p. 298); Grotta dei Colombi, Grotta Romanelli, and Grotte d'Equi (Lambrecht, 1933). SWITZERLAND: Schweizerbild (Lambrecht, 1933). CZECHOSLOVAKIA: Balcarova skála, Sipka, and Certova díra (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, pp. 938-940). HUNGARY: Balla-Höhle and Istállóskö-Höhle (Lambrecht, 1912, Aquila, vol. 19, p. 274); Palffy-Höhle (Lambrecht, 1913, Aquila, vol. 20, p. 427); Remetehegy (Lambrecht, 1914, Aquila, vol. 21, p. 89); Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. ungar. geol. Anst., vol. 23, p. 479); Otto Herman-Höhle, Kiskevély-Höhle, and Kalten-Szamos Valley (Lambrecht, 1916, Aquila, vol. 22, pp. 189, 191, 193); Puskaporos (Lambrecht, 1916, Barlangkutatás, vol. 4, p. 204); Püspökfürdö (Capek, 1917, Barlangkutatás, vol. 5, p. 28); Süttö and Hidegszamos (Lambrecht, 1933); Istállóskö (Jánossy, 1954, Aquila, vol. 55-58, p. 218); Betfia (Kretzoi, 1962, Aquila, vol. 67-68, p. 170); *Remetehegy (Lambrecht, 1916, Mitt. Jahrb. ungar. geol. Anst. vol. 22, p. 403). PALESTINE: Kebara Cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, p. 115). AZERBAIJAN: Binagada (Serebrovsky, 1941, Doklady Akad. Nauk S.S.S.R., vol. 33, p. 473). CHINA: Cave no. 1 in Chihli (Bate, 1931, Pal. sinica, ser. C, vol. 6, fasc. 4, p. 42).

13. *Falco sparverius* Linnaeus. OREGON: *Five Mile Rapids (L. Miller, 1957, Condor, vol. 59, p. 62). CALIFORNIA: Samwel Cave and Potter Creek Cave (L. Miller, 1911, Univ. Calif. Publ., Bull. Dept. Geol., vol. 6, p. 392); Rancho La Brea

(L. Miller, 1912, op. cit., vol. 7, p. 114); McKittrick (L. Miller, 1922, Condor, vol. 24, p. 123); Carpinteria (L. Miller, 1931, Univ. Calif. Publ., Bull. Dept. geol. Sci., vol. 20, p. 364); San Pedro (Howard, 1949, Condor, vol. 51, p. 22). NEVADA: Smith Creek Cave (Howard, 1952, Bull. S. Calif. Acad. Sci., vol. 51, pt. 2, p. 54). ARIZONA: *Flagstaff (35 miles N) and *Wide Ruin (A. H. Miller, 1932, Condor, vol. 34, p. 138); *Turkey Tank, *Winona Village, *Wupatki Pueblo, and *Terrace Pueblo (Hargrave, 1939, Condor, vol. 41, p. 207). NEW MEXICO: Conkling Cavern and Shelter Cave (Howard and A. H. Miller, 1933, Condor, vol. 35, p. 16). IDAHO: *Weiss rock shelter (L. Miller, 1963, Bull. S. Calif. Acad. Sci., vol. 62, pt. 4, p. 179). TEXAS: Friesenhahn Cave (Texas Mem. Mus.). FLORIDA: Sabertooth Cave (Wetmore, 1931, Smithsonian misc. Coll., vol. 85, no. 2, p. 31); Reddick (Brodkorb, 1957, Jour. Paleont., vol. 31, p. 135); Arredondo (Brodkorb, 1959, Bull. Florida State Mus., vol. 4, p. 276); Haile (Ligon, in press). NUEVO LEÓN: San Josecito Cavern (L. Miller, 1943, Univ. Calif. Publ. Zool., vol. 47, p. 156). PUERTO RICO: *Cueva Catedral and *Cueva Jobo (Wetmore, 1922, Bull. Amer. Mus. nat. Hist., vol. 46, p. 303). BRAZIL: Lapa da Escrivania (O. Winge, 1887, E Museo Lundii, vol. 1, no. 2, p. 5).

Subfamily CARACARINAE:

14. *Milvago chimachima* (Vieillot). BRAZIL: Lapa da Escrivania (O. Winge, 1887, E Museo Lundii, vol. 1, no. 2, p. 34). Listed in error (Lambrecht, 1933, Handb. Palaeorn., p. 749) from Lujan, Argentina.

15. *Milvago chimango* (Vieillot). BRAZIL: Lapa da Escrivania (O. Winge, 1887, E Museo Lundii, vol. 1, no. 2, p. 5). ARGENTINA: Lujan (Ameghino, 1891, Rev. argentina Hist. nat., vol. 1, p. 443).

16. *Caracara plancus* (J. F. Miller). TEXAS: *Mule Ears Peak Cave (Wetmore and Friedmann, 1933, Condor, vol. 35, p. 37). BRAZIL: Lapa da Escrivania (O. Winge, 1887, E Museo Lundii, vol. 1, no. 2, p. 5).

Subfamily MICRASTURINAE:

17. *Micrastur semitorquatus* (Vieillot). BRAZIL: Lagoa Santa (O. Winge, 1887, E Museo Lundii, vol. 1, no. 2, p. 5).

18. *Micrastur ruficollis* (Vieillot). BRAZIL: Lapa da Escrivania (O. Winge, 1887, E Museo Lundii, vol. 1, no. 2, p. 5).

Order GALLIFORMES (Temminck)

Gallinae Linnaeus, 1758, Systema naturae, ed. 10, vol. 1, pp. 82, 156 (ordo; not based on generic name).—*Gallinae* Temminck, 1820 (October), Manuel d'Ornithologie, ed. 2, pt. 1, p. lxxxix (ordre; type *Gallus* Brisson).—*Galli* Bonaparte, 1853 (séance du 31 Oct.), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646 (cohors).—*Galli* Fürbringer, 1888, Untersuchungen zur Morphologie und Systematik der Vögel, vol. 2, p. 1565 (gens).—*Galli* Gadow, 1893, Bronn Klass. Ordn., Vögel, pt. 2, pp. 78, 164, 171, 300 (Unterordnung).—*Galliformes* Garrod, 1874, (read Feb. 3), Proc. zool. Soc. London, p. 116 (order).

Perdices Bonaparte, 1853 (séance du 31 Oct.), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646 (cohors; type *Perdix* Brisson).

Opisthocomi Sclater, 1880 (October), Ibis, ser. 4, vol. 4, no. 16, p. 407 (order; type *Opisthocomus* Illiger).—*Opisthocomi* Sharpe, 1891, Review of recent attempts to classify birds, p. 68 (suborder).—*Opisthocomiformes* Sharpe, 1891, Review of recent attempts to classify bird, p. 68 (order).

Phasiani American Ornithologists' Union, 1886, Check-list of North American birds, ed. 1, p. 167 (suborder; type *Phasianus* Linnaeus).

Penelopes American Ornithologists' Union, 1886, Check-list of North American birds, ed. 1, p. 178 (suborder; type *Penelope* Merrem).

Craces Sharpe, 1891, Review of recent attempts to classify birds, p. 68 (suborder; type *Crax* Linnaeus).

Megapodii Sharpe, 1891, Review of recent attempts to classify birds, p. 68 (suborder; type *Megapodius* Gaimard).—*Megapodes* W. D. Miller, 1915, Bull. Amer. Mus. nat. Hist., vol. 34, p. 33 (subfamily).

Family CRACIDAE Vigors

Cracidae Vigors, 1825, Trans. Linn. Soc. London, vol. 14, p. 480 (family; type *Crax* Linnaeus).—*Cracinae* G. R. Gray, 1840, List of the genera of birds, fide Gray (subfamily).—*Cracides* Wetmore and W. D. Miller, 1926 (July 3), Auk, vol. 43, no. 3, p. 342 (superfamily).—*Cracoidea* American Ornithologists' Union, 1931, Check-list of North American birds, ed. 4, p. 78 (superfamily).

Penelopidae Bonaparte, 1831, Saggio di una distribuzione metodica degli animali vertebrati, p. 54 (familia; type *Penelope* Merrem).—*Penelopinae* Bonaparte, 1853 (séance du 31 Oct.), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646 (sous-famille).

Oreophaseae Bonaparte, 1853 (séance du 31 Oct.), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646 (section; type *Oreophasis* G. R. Gray).—*Oreophasiinae* Bonaparte, 1854, Ann. Sci. nat. (Paris), vol. 1, p. 42 (subfamilia).—*Oreophasidinae* G. R. Gray, 1870, Hand-list of genera and species of birds, pt. 2, pp. xiv, 253.—*Oreophasinae* Sclater and Salvin, 1873, Nomenclator avium neotropicalium, p. 137 (subfamily).

Gallinuloididae Lucas, 1900, Bull. Mus. comp. Zool., vol. 36, no. 4, p. 84 (family; type *Gallinuloides* Eastman).—*Gallinuloidinae* Tordoff and Macdonald, 1957 (June 3), Auk, vol. 74, no. 2, p. 182 (subfamily).

Subfamily †GALLINULOIDINAE (Lucas)

Gallinuloididae Lucas, 1900, Bull. Mus. comp. Zool., vol. 36, no. 4, p. 84 (family;

type *Gallinuloides* Eastman).—*Gallinuloidinae* Tordoff and Macdonald, 1957 (June 3), Auk, vol. 74, no. 2, p. 182 (subfamily).

Genus †*Gallinuloides* Eastman

Gallinuloides Eastman, 1900 (February), Geol., Mag., n.s., decade 4, vol. 7, no. 2, p. 54 (type by monotypy *Gallinuloides wyomingensis* Eastman).

Palaeobonasa Shufeldt, 1915 (Oct.-Nov.), Jour. Geol., vol. 23, no. 7, p. 633 (substitute name for *Gallinuloides* Eastman, considered inappropriate).

1. *Gallinuloides wyomingensis* Eastman

Gallinuloides wyomingensis Eastman, 1900 (February), Geol. Mag., n.s., decade 4, vol. 7, no. 2, p. 54, pl. 4 (type from Fossil, skeleton, Mus. Comp. Zool. no. 1598).

MIDDLE EOCENE (Green River shales). WYOMING: Lincoln County: Fossil (Eastman, 1900).

MIDDLE EOCENE (Bridger formation). WYOMING: Uinta County: Henrys Fork (Shufeldt, 1915, Trans. Connecticut Acad. Arts Sci., vol. 19, p. 40).

Genus †*Palaeortyx* Milne-Edwards [1]

Palaeortyx Milne-Edwards, 1869 (after April?), Ois. foss. France, vol. 2, sheet 28, p. 217 (type by original designation *Tringa? hoffmanni* Gervais).

2. *Palaeortyx hoffmanni* (Gervais)

Tringa? hoffmanni Gervais, 1852, Zoologie et paléontologie française (animaux vertébrés), ed. 1, vol. 1, p. 229 (type from Montmartre, skeleton, Paris Mus.).—Gervais, 1859, Zoologie et paléontologie françaises, ed. 2, p. 409, pl. 49, fig. 4.—*Palaeortyx hoffmanni* Milne-Edwards, 1869, Ois. foss. France, vol. 2, sheet 28, p. 217, pl. 124; pl. 125, fig. 1; pl. 126, fig. 2.

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

Genus †*Ludiortyx* Brodkorb [2]

3. *Ludiortyx blanchardi* (Milne-Edwards)

Palaeortyx blanchardi Milne-Edwards, 1869 (after April?), Ois. foss. France, vol.

[1] The straight, icterid-like bill and the absence of an intermetacarpal tuberosity in the type species of *Palaeortyx* preclude its reference to the Phasianidae.

[2] New genus. Type *Palaeortyx blanchardi* Milne-Edwards. Bill shorter, stouter, and more curved than in *Palaeortyx*. Humerus much more robust, with its shaft straight. Name formed from Ludes, on the Marne, representing the Paris gypsum, and Greek *ortyx*, a masculine noun meaning quail.

2, sheet 28, p. 223, pl. 126, figs. 1, 3-5 (types from Montmartre, anterior part of skeleton and several humeri, Paris Mus.).

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

4. *Ludiortyx cayluxensis* (Lydekker)

Palaeortyx cayluxensis Lydekker, 1891 (Apr. 15), Cat. foss. birds Brit. Mus., p. 138 (types from Caylux, right and left ulna, Brit. Mus. no. A.137a).

Palaeortyx ocyptera Milne-Edwards, 1892, C. R. 2. Congrès internat. ornith. Budapest, p. 71 (type from Caylux, humerus, Paris Mus.).—Gaillard, 1908, Ann. Univ. Lyon, n.s. 1, Sci. méd., fasc. 23, p. 98, text-fig. 27; pl. 5, figs. 13-16.

UPPER EOCENE OR LOWER OLIGOCENE (phosphate de Chaux). FRANCE: Dept. Tarn-et-Garonne: Caylux (Lydekker, 1891). Dept. Lot: Mouillac (Gaillard, 1908).

5. *Ludiortyx gaillardi* (Lambrecht)

Palaeortyx cayluxensis Milne-Edwards, 1892, C. R. 2. Congrès internat. ornith. Budapest, pp. 72, 80 (type from Caylux, proximal part of humerus, Paris Mus.).—Gaillard, 1908, Ann. Univ. Lyon, n.s. 1, Sci. méd., fasc. 23, p. 100, text-figs. 28-29; pl. 6, figs. 1-4.

Palaeortyx gaillardi Lambrecht, 1933, Handb. Palaeorn., p. 451 (new name for *Palaeortyx cayluxensis* Milne-Edwards, preoccupied).

"Palaeortyx gallardoi Gaillard" Lambrecht, 1933, Handb. Palaeorn., p. 664 (nomen nudum; = lapsus?).

UPPER EOCENE OR LOWER OLIGOCENE (phosphate de Chaux). FRANCE: Dept. Tarn-et-Garonne: Caylux (Milne-Edwards, 1892). Dept. Lot: Mouillac (Gaillard, 1908).

Genus †*Paraortyx* Gaillard

Paraortyx Gaillard, 1908 (June 13), Ann. Univ. Lyon, n.s. 1, Sci. méd., fasc. 23, p. 104 (type *Paraortyx lorteti* Gaillard, designated by Richmond, 1917, Proc. U. S. nat. Mus., vol. 53, no. 2221, p. 612).

6. *Paraortyx lorteti* Gaillard

Paraortyx lorteti Gaillard, 1908 (June 13), Ann. Univ. Lyon, n.s. 1, Sci. méd., fasc. 25, p. 105, text-fig. 30; pl. 6, figs. 5-8 (type from Escamps, left humerus, Munich Mus.).

UPPER EOCENE OR LOWER OLIGOCENE (phosphorites du Quercy). FRANCE: Dept. Lot: Escamps.

7. *Paraortyx brancoi* Gaillard

Paraortyx brancoi Gaillard, 1908 (June 13), Ann. Univ. Lyon, n.s. 1, Sci. méd., fasc. 25, p. 107, text-figs. 31-32; pl. 6, figs. 9-16 (type from Quercy, left humerus, Berlin Mus.; referred left tarsometatarsus from Mouillac, Munich Mus. no. 119).

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

Genus †*Pirortyx* Brodkorb[1]

8. *Pirortyx major* (Gaillard)

Palaeortyx major Gaillard, 1938, Arch. Mus. Hist. nat. Lyon, vol. 15, p. 22, fig. 10 (type from Quercy, right humerus, Paris Mus.).

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

9. *Pirortyx depereti* (Gaillard)

Palaeoocryptonyx depereti Gaillard, 1908 (June 13), Ann. Univ. Lyon, n.s. 1, Sci. méd., fasc. 25, p. 96, text-fig. 26; pl. 5, figs. 9-12 (type from Escamps, left humerus, Munich Mus. no. 127).

UPPER EOCENE OR LOWER OLIGOCENE (phosphorites du Quercy). FRANCE: Dept. Lot: Escamps.

Genus †*Procrax* Tordoff and Macdonald

Procrax Tordoff and Macdonald, 1957 (June 3), Auk, vol. 74, no. 2, p. 176 (type by original designation *Procrax brevipes* Tordoff and Macdonald).

10. *Procrax brevipes* Tordoff and Macdonald

Procrax brevipes Tordoff and Macdonald, 1957 (June 3), Auk, vol. 74, no. 2, p. 179, text-fig. 1, pl. 10 (type from section 4, postcervical skeleton, South Dakota School of Mines no. 511).

LOWER OLIGOCENE (top of Chadron formation). SOUTH DAKOTA: Pennington County: NE ¼, section 4, Township 1 S, Range 17 E.

[1] New genus. Type *Palaeortyx major* Gaillard. Head of humerus very wide transversely, compressed in anterior-posterior direction. Subtrochanteric fossa large but shallower than in *Palaeortyx* and pierced by a pneumatic foramen (lacking in *Palaeortyx*). Angle of deltoid crest proximal to level of internal tuberosity (below level in *Palaeortyx*). Shaft stout, strongly curved in lateral view. Entepicondyle short. On the degree of anatomical development, Gaillard suggested that *P. major* came from the Stampian (lower Oligocene) portion of the phosphorites. Name from Greek *peiro*, to pierce quite through, and *ortyx*, quail, masculine.

Genus †*Taoperdix* Milne-Edwards

Taoperdix Milne-Edwards, 1869 (after April?), Ois. foss. France, vol. 2, sheet 29, p. 225 (type by monotypy *Tetrao? pessieti* Gervais).

11. *Taoperdix pessieti* (Gervais)

Tetrao? pessieti Gervais, 1862 (séance du 28 avril), C. R. Acad. Sci. Paris, vol. 54, no. 16, p. 896 (type from Armissan, incomplete skeleton, coll. of M. Pessiéto of Narbonne, now in Paris Mus.?).—*Taoperdix pessieti* Milne-Edwards, 1869, Ois. foss. France, vol. 2, sheet 29, pl. 127.—Eastman, 1905, Mem. Carnegie Mus., vol. 2, no. 3, p. 137, pl. 15-16.

UPPER OLIGOCENE (Chattian). FRANCE: Dept. Aude: Armissan near Narbonne.

12. *Taoperdix gallica* (Milne-Edwards) [1]

Palaeortyx gallica Milne-Edwards, 1869 (after April), Ois. foss. France, vol. 2, sheet 29, p. 230, pl. 128-129 (type from Langy, furculum, coracoid, scapula, humerus, femur, tibiotarsus, tarsometatarsus, Paris Mus.).

LOWER MIOCENE (Aquitanian). FRANCE: Dept. Allier: Langy (Milne-Edwards, 1869); Saint-Gérand-le-Puy (Lambrecht, 1933, Handb. Palaeorn., p. 452). The record of a coracoid from Caylux (Lydekker, 1891, Cat. foss. birds Brit. Mus., p. 137) must refer to some other species.

13. *Taoperdix brevipes* (Milne-Edwards) [1]

Palaeortyx brevipes Milne-Edwards, 1869 (after April), Ois. foss. France, vol. 2, sheet 30, p. 235, pl. 130, figs. 1-21 (types from Langy, coracoid, humerus, ulna, femur, tibiotarsus, tarsometatarsus, Paris Mus.).

LOWER MIOCENE (Aquitanian). FRANCE: Dept. Allier: Langy (Milne-Edwards, 1869); St. Gérand-le-Puy (Lambrecht, 1933, Handb. Palaeorn., p. 451). The record of a humerus from Grive-Saint-Alban (Shufeldt, 1896, Proc. Acad. nat. Sci. Philadelphia, p. 514) must refer to some other species.

14. *Taoperdix phasianoides* (Milne-Edwards)

Palaeortyx (?) *phasianoides* Milne-Edwards, 1869 (after April), Ois. foss. France, vol. 2, sheet 30, p. 237, pl. 130, figs. 22-27 (types from Langy, scapula, humerus, Paris Mus.). Generic position tentative.

[1] Agrees with the type species in having the ulna longer than the humerus.

LOWER MIOCENE (Aquitanian). FRANCE: Dept. Allier: Langy (Milne-Edwards, 1869); Saint-Gérand-le-Puy (Lambrecht, 1933, Handb. Palaeorn., p. 452).

Subfamily †FILHOLORNITHINAE Brodkorb [1]

Genus †*Filholornis* Milne-Edwards

Filholornis Milne-Edwards, 1892, C. R. 2e. Congrès internat. ornith. Budapest, p. 67 (type *Filholornis paradoxa* Milne-Edwards, designated by Richmond, 1902, Proc. U. S. nat. Mus., vol. 24, p. 684).

15. *Filholornis paradoxus* Milne-Edwards

Filholornis paradoxa Milne-Edwards, 1892, C. R. 2e. Congrès internat. ornith. Budapest, p. 67 (types from Caylux, humerus, ulna, carpometacarpus).—Gaillard, 1908, Ann. Univ. Lyon, n.s. 1, Sci. méd., fasc. 23, p. 75, text-fig. 19; pl. 7, figs. 5-8.

UPPER EOCENE OR LOWER OLIGOCENE (phosphate de Chaux). FRANCE: Dept. Tarn-et-Garonne: Caylux (Milne-Edwards, 1892). Dept. Lot: Escamps (Gaillard, 1908).

16. *Filholornis gravis* Milne-Edwards

Filholornis gravis Milne-Edwards, 1892, C. R. 2e. Congrès internat. ornith. Budapest, p. 69 (types from Caylux, ulna, carpometacarpus, the latter in Paris Mus.).

UPPER EOCENE OR LOWER OLIGOCENE (phosphate de Chaux). FRANCE: Dept. Tarn-et-Garonne: Caylux.

17. *Filholornis debilis* Milne-Edwards

Filholornis debilis Milne-Edwards, 1892, C. R. 2e. Congrès internat. ornith. Budapest, p. 69 (type humerus, Paris Mus.).

UPPER EOCENE OR LOWER OLIGOCENE (phosphate de Chaux). FRANCE: Dept. Tarn-et-Garonne: Caylux.

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[1] New subfamily. Type *Filholornis* Milne-Edwards. Head of humerus only slightly rotated, little expanded proximally, compressed in palmar-anconal direction. Pneumatic opening present, but small. Deltoid crest long, extending more than one-third length of humerus, strongly angled in its lower two-thirds, the angle lying far below level of bicipital crest; deltoid crest little recurved palmarly. Shaft rather straight. Brachial depression deep, long. Ectepicondylar process prominent, high, extending above level of proximal end of external condyle. Condyles close, with intercondylar space obsolete. External condyle little elevated proximally above level of internal condyle, but rotated palmarly over internal condyle. Caropmetacarpus without intermetacarpal tubercle.

Subfamily Cracinae (Vigors)

Cracidae Vigors, 1825, Trans. Linn. Soc. London, vol. 14, p. 480 (family; type *Crax* Linnaeus).—*Cracinae* G. R. Gray, 1840, List of the genera of birds, fide Gray, 1870 (subfamily).

Genus †*Palaeophasianus* Shufeldt

Palaeophasianus Shufeldt, 1913 (Aug. 4), Bull. Amer. Mus. nat. Hist., vol. 32, art. 16, p. 291 (type by monotypy *Palaeophasianus meleagroides* Shufeldt). Position tentative.[1]

18. *Palaeophasianus meleagroides* Shufeldt

Palaeophasianus meleagroides Shufeldt, 1913 (Aug. 4), Bull. Amer. Mus. nat. Hist., vol. 32, art. 16, p. 291, pl. 58, figs. 81-84, 86-88 (type from Elk Creek, proximal and distal ends of left tarsometatarsus and fragments of tibiotarsus, Amer. Mus. Nat. Hist. no. 5128).

Lower Eocene (Willwood formation). Wyoming: Big Horn County: Elk Creek (Shufeldt, 1913).

Middle Eocene (Bridger formation). Wyoming: Uinta County: Henrys Fork (Shufeldt, 1915, Trans. Conn. Acad. Arts Sci., vol. 19, p. 50, pl. 2, fig. 20).

Genus †*Paracrax* Brodkorb

Paracrax Brodkorb, 1964, Quart. Jour. Florida Acad. Sci., vol. 27, no. 3, in press (type by original designation *Meleagris antiqua* Marsh).

19. *Paracrax antiqua* (Marsh)

Meleagris antiqua Marsh, 1871 (August), Amer. Jour. Sci., ser. 3, vol. 2, p. 126 (type from Gerry's ranch, distal end of right humerus, Yale Peabody Mus. no. 537).—Shufeldt, 1913 (Jan. 9), Auk, vol. 30, no. 1, p. 29, pl. 3, figs. 1-2).

Upper Oligocene (*Oreodon* beds, White River group). Colorado: Weld County: Gerry's ranch at Chalk Bluff, Township 11 N, Range 64 W.

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[1] The type is so covered with matrix that the only thing useful in the figures is the outline of the proximal end of the tarsometatarsus. The shapes of the cotylae and the proximal inner margin of the shaft are reminiscent of *Penelope*, although the large size recalls *Crax*. The type needs preparation and restudy before its position can be determined and before comparison can be made with the referred specimen from Henrys Fork.

Subfamily PENELOPINAE Bonaparte

Penelopidae Bonaparte, 1831, Saggio di una distribuzione metodica degli animali vertebrati, p. 54 (familia; type *Penelope* Merrem).—*Penelopinae* Bonaparte, 1853 (séance du 31 Oct.), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646 (sous-famille).

Oreophaseae Bonaparte, 1853 (séance du 31 Oct.), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646 (section; type *Oreophasis* G. R. Gray).—*Oreophasidinae* G. R. Gray, 1870, Hand-list of genera and species of birds, pt. 2, pp. xiv, 253 (subfamily).—*Oreophasinae* Sclater and Salvin, 1873, Nomenclator avium neotropicalium, p. 137.

Genus †*Palaeonossax* Wetmore

Palaeonossax Wetmore, 1956 (May 23), Condor, vol. 58, no. 3, p. 234 (type by original designation *Palaeonossax senectus* Wetmore).

20. *Palaeonossax senectus* Wetmore

Palaeonossax senectus Wetmore, 1956 (May 23), Condor, vol. 58, no. 3, p. 234, fig. 1 (type from near Scenic, distal end of right humerus, South Dakota School of Mines and Technology no. 457).

UPPER OLIGOCENE (*Protoceras* channel sandstone, upper part of Brule formation). SOUTH DAKOTA: Pennington County: 5 miles S of Scenic.

Genus †*Boreortalis* Brodkorb

Boreortalis Brodkorb, 1954 (Oct. 29), Wilson Bull., vol. 66, no. 3, p. 180 (type by original designation *Boreortalis laesslei* Brodkorb).

21. *Boreortalis laesslei* Brodkorb

Boreortalis laesslei Brodkorb, 1954 (Oct. 29), Wilson Bull., vol. 66, no. 3, p. 182, fig. 1 (type from Thomas farm, distal part of right tibiotarsus, Brodkorb no. 743). Additional elements are now available.

LOWER MIOCENE (Thomas farm beds). FLORIDA: Gilchrist County: Thomas farm, 8 miles N of Bell.

22. *Boreortalis pollicaris* (A. H. Miller)

Ortalis pollicaris A. H. Miller, 1944 (June 22), Univ. Calif. Publ., Bull. Dept. geol. Sci., vol. 27, no. 4, p. 91, fig. 5 (type from Flint Hill, proximal end of left carpometacarpus, Univ. Calif. Mus. Paleo. no. 37371). Generic position tentative.

LOWER MIOCENE (Rosebud formation). SOUTH DAKOTA: Bennett County: Flint Hill, 9 miles WSW of Martin.

23. *Boreortalis tantala* (Wetmore)

Ortalis tantala Wetmore, 1933 (March 17), Condor, vol. 35, no. 2, p. 64, figs. 10-14 (type from Agate Springs, distal end of right tibiotarsus, Harold J. Cook no. 498, now in Amer. Mus. Nat. Hist.).

LOWER MIOCENE (lower Harrison beds, Arikaree formation). NEBRASKA: Sioux County: Agate Springs quarry on SW side of Carnegie Hill.

24. *Boreortalis tedfordi* (L. Miller)

Cyrtonyx tedfordi L. Miller, 1952 (Sept. 22), Condor, vol. 54, no. 5, p. 298, fig. 2 (type from near Barstow, right carpometacarpus, Univ. Calif. Mus. Paleo. no. 42223). Almost certainly a cracid, but generic position tentative (see Holman, 1961, Bull. Florida State Mus., vol. 6, pp. 194-195).

UPPER MIOCENE (lake bed horizon, Barstow formation). CALIFORNIA: San Bernardino County: near Barstow, at Univ. Calif. locality no. V492, in middle of SE ¼, NW ¼, section 15, Township 11 N, Range 2 W.

25. *Boreortalis phengites* (Wetmore)

Ortalis phengites Wetmore, 1923 (Dec. 3), Bull. Amer. Mus. nat. Hist., vol. 48, art. 12, p. 487, figs. 1-2 (type from south of Agate, distal part of left humerus, Harold J. Cook no. 426, now in Amer. Mus. Nat. Hist.).

LOWER PLIOCENE (upper part of Snake Creek beds). NEBRASKA: Sioux County: south of Agate.

Genus †*Anisolornis* Ameghino [1]

Anisolornis Ameghino, 1891 (December), Rev. argentina Hist. nat., vol. 1, p. 449 (type by monotypy *Anisolornis excavatus* Ameghino).

Anissolornis Ameghino, 1899 (July), Sinopsis geológico-paleontológica, Suplemento, p. 8 (emendation or lapsus).

26. *Anisolornis excavatus* Ameghino

Anisolornis excavatus Ameghino, 1891 (December), Rev. argentina Hist. nat., vol. 1, p. 449 (type from southern Patagonia, tarsometatarsus).

MIDDLE MIOCENE (Santa Cruz formation). ARGENTINA: southern Patagonia.

[1] Possibly belongs in Tinamidae.

Neospecies of Cracidae from Pleistocene and *prehistoric sites:

Subfamily CRACINAE:

1. *Crax alberti* Fraser. VENEZUELA: *Los Tamarindos (Wetmore, 1935, Auk, vol. 52, p. 329).

2. *Crax fasciolata* Spix. BRAZIL: Lapa da Escrivania and Lapa do Capão Secco (O. Winge, 1887, E Museo Lundii, vol. 1, no. 2, p. 24).

3. *Crax rubra* Linnaeus. YUCATAN: *Mayapan (Pollock and Ray, 1957, Carnegie Instn. Washington, Current Repts. Dept. Archaeology, no. 41, p. 645).

Subfamily PENELOPINAE:

4. *Penelope purpurascens* Wagler. YUCATAN: *Actun Spukil (Fisher, 1953, Cranbrook Instn. Sci. Bull., no. 33, p. 82).

5. *Penelope obscura* Temminck. BRAZIL: Lapa da Escrivania (O. Winge, 1887, E Museo Lundii, vol. 1, no. 2, p. 23).

6. *Penelope superciliaris* Temminck. BRAZIL: Lapa do Bahu and Lapa da Escrivania (O. Winge, 1887, E Museo Lundii, vol. 1, no. 2, p. 23).

7. *Ortalis vetula* (Wagler). YUCATAN: *Actun Lara, *Actun Has, *Loltun, *Actun Coyuk, and *Actun Spukil (Fisher, 1953, Cranbrook Inst. Sci. Bull., no. 33, p. 82); *Mayapan (Pollock and Ray, 1957, Carnegie Instn. Washington, Current Repts. Dept. Archaeology, no. 41, p. 645). BRITISH HONDURAS: *Barton Ramie site (Brodkorb coll.).

8. *Ortalis guttata* (Spix). BRAZIL: Mocambo cave and Lapa da Escrivania (O. Winge, 1887, E Museo Lundii, vol. 1, no. 2, p. 23).

Family OPISTHOCOMIDAE (G. R. Gray)

Opisthocominae G. R. Gray, 1840, A list of the genera of birds, fide Gray, 1870 (subfamily; type *Opisthocomus* Illiger).—*Opisthocomidae* Selys, 1842, fide Gray (family).

Genus †*Hoazinoides* A. H. Miller

Hoazinoides A. H. Miller, 1953 (Nov. 30), Auk, vol. 70, no. 4, p. 484, (type by monotypy *Hoazinoides magdalenae* A. H. Miller).

1. *Hoazinoides magdalenae* A. H. Miller

Hoazinoides magdalenae A. H. Miller, 1953 (Nov. 30), Auk, vol. 70, no. 4, p. 484, figs. 1b, 1e, 2b, 2e (type from La Venta, incomplete skull, Univ. Calif. Mus. Paleo. no. 42823).

MIDDLE MIOCENE (La Venta beds, Honda group). COLOMBIA: Dept. Huila: La Venta, along Villavieja-San Alfonso trail in upper Magdalena valley.

Family MEGAPODIIDAE (Swainson)

Megapodinae Swainson, 1837, On the natural history and classification of birds, vol. 2, p. 350 (family; type *Megapodius* Quoy and Gaimard).—*Megapodiidae* Bonaparte, 1853 (séance du 31 Oct.), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646 (familia).—*Megapodiinae* Bonaparte, 1853, opt. cit., p. 646 (subfamilia).—*Megapodidae* G. R. Gray, 1870, Hand-list of genera and species of birds, pt. 2, p. 254 (family).

Talegallinae G. R. Gray, 1846, Genera of birds, fide Gray, 1870, (subfamily; type *Talegalla* Lesson).

Genus †*Chosornis* DeVis

Chosornis DeVis, 1889, Proc. Roy. Soc. Queensland, vol. 6, p. 55 (type by monotypy *Chosornis praeteritus* DeVis).

1. *Chosornis praeteritus* DeVis

Chosornis praeteritus DeVis, 1889, Proc. Roy. Soc. Queensland, vol. 6, p. 55 (type from Queensland, proximal half of left carpometacarpus).

UPPER PLEISTOCENE (Darling Downs beds). AUSTRALIA: Queensland.

Neospecies of Megapodiidae recorded from the Pleistocene:

1. *Alectura lathami* J. E. Gray. NEW SOUTH WALES: Wellington (Lydekker, 1891, Cat. foss. Birds Brit. Mus., p. 143).

Family NUMIDIDAE (Reichenbach)

Numidinae Reichenbach, 1850 (= after Oct. 1, 1852), Avium systema naturale, p. xxvi (familia, type *Numida* Linnaeus).—*Numididae* Bonaparte, 1853 (seance du 31 Oct.), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646.

Agelastinae Bonaparte, 1853 (séance du 31 Oct.), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646 (subfamilia; type *Agelastes* Bonaparte).

No extinct fossil species.

Neospecies of Numididae from Pleistocene and *prehistoric sites:

1. *Numida meleagris* Linnaeus. GERMANY: Sasbach (Giebel, 1847, Fauna der Vorwelt, vol. 1, pt. 2, pp. 23, 40). CZECHOSLOVAKIA: *Kulna Cave and *Kostelik Cave (Lambrecht, 1933, Handb. Palaeorn., p. 752). HUNGARY: Takács-Menyhért Cave (Kormos, 1917, Barlangkutatás, vol. 5, pp. 18, 62); Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. ungar. geol. Anst., vol. 23, p. 488); *Remetehegy (Lambrecht, 1933, p. 752).

Family PHASIANIDAE Vigors

Phasianidae Vigors, 1825, Trans. Linn. Soc. London, vol. 14, p. 480 (family; type *Phasianus* Linnaeus).—*Phasianinae* G. R. Gray, 1840, List of the genera of birds, fide Gray, 1870 (subfamily).—*Phasianeae* Bonaparte, 1853 (séance du 31 Oct.), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646 (section).—*Phasianides* Wetmore and W. D. Miller, 1926, Auk, vol. 43, no. 3, p. 342 (superfamily).—*Phasianoidea* American Ornithologists' Union, 1931, Check-list of North American birds, ed. 4, p. 78 (superfamily).

Tetraonidae "Leach" Vigors, 1825, Trans. Linn. Soc. London, vol. 14, p. 480 (family; type *Tetrao* Linnaeus).—*Tetraoninae* G. R. Gray, 1840, List of the genera of birds, p. 62 (subfamily).

Pavonidae Swainson, 1837, Natural history and classification of birds, vol. 2, pp. 165, 340 (family; type *Pavo* Linnaeus).—*Pavoninae* G. R. Gray, 1840, List of the genera of birds, p. 59 (subfamily).—*Pavoneae* Bonaparte, 1853 (séance du 31 Oct.), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646 (section).

Perdicinae Bonaparte, 1838, Geographical and comparative list of the birds of Europe and North America, p. 42 (subfamilia; type *Perdix* Brisson).—*Perdicinae* Reichenbach, "1850" (= after Oct. 1, 1852), Avium systema naturale, p. xxvii (familia).—*Perdicidae* Bonaparte, 1853 (séance du 31, Oct.), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646 (familia).—*Perdiceae* Bonaparte, 1854, Ann. Sci. nat. (Paris), vol. 1, p. 43 (section).

Gallinae G. R. Gray, 1840, List of the genera of birds, fide Gray, 1870 (subfamily; type *Gallus* Brisson).—*Gallininae* Reichenbach, "1850" (= after Oct. 1, 1852), Avium systema naturale, p. xxvi (familia).—*Galleae* Bonaparte, 1853 (séance du 31 Oct.), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646 (section).—*Gallidae* Fürbringer, 1888, Untersuchungen zur Morphologie und Systematik der Vögel, vol. 2, p. 1567 (familia).—*Galloidae* Hay, 1930, Carnegie Instn. Washington Publ., no. 390, vol. 2, p. 324 (superfamily).

Meleagrinae G. R. Gray, 1840, List of the genera of birds, p. 60 (subfamily; type *Meleagris* Linnaeus).—*Meleagridinae* Bonaparte, 1849, fide Gray.—*Meleagridae* Bonaparte, 1853 (séance du 31 Oct.), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646 (familia).—*Meleagrididae* Coues, 1874, *in* Baird, Brewer, and Ridgway, 1874, History of North American birds, vol. 3, p. xxvi.

Odontophorinae Gould, 1844, Monograph of the Odontophorinae, pt. 1, p. 1 (subfamily; type *Odontophorus* Vieillot).—*Odontophoridae* Sharpe, 1899, Hand-list of the genera and species of birds, vol. 1, pp. xi, 43 (family).

Oreotetragidae Cabanis, 1846, fide G. R. Gray, 1870 (family; type *Oreotetrax* Cabanis, a junior synonym of *Tetraogallus* J. E. Gray).

Polyplectroninae Blyth, 1849, Catalogue of the birds in the museum Asiatic Society, fide Gray, 1870 (subfamily; type *Polyplectron* Temminck).—*Polyplectroneae* Bonaparte, 1854, Ann. Sci. nat. (Paris), vol. 1, p. 42 (section).

Cryptonichinae Reichenbach, 1849, fide G. R. Gray, 1870 (type *Cryptonix* Temminck, 1815, a junior synonym of *Rollulus* Bonnaterre, 1790).

Alectorinae Reichenbach, 1852 (after Oct. 1), Avium systema naturale, p. XXIII (familia; type *Alectoris* Kaup).

Coturnicinae Reichenbach, 1852 (after Oct. 1), Avium systema naturale, p. XXVIII (tribus = subfamily; type *Coturnix* Bonnaterre).—*Coturnicinae* Bonaparte, 1853 (séance du 31 Oct.), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646 (subfamilia).

Francolininae Reichenbach, 1852 (after Oct. 1), Avium systema naturale, p. XXVIII (tribus = subfamily; type *Francolinus* Stephens).

Urogallinae Reichenbach, 1852 (after Oct. 1), Avium systema naturale, p. XXIX (familia; type *Urogallus* Scopoli, 1777, a junior synonym of *Tetrao* Linnaeus, 1758).

Satyrinae Reichenbach, 1852 (after Oct. 1), Avium systema naturale, p. XXIX (familia; type *Satyra* Lesson, 1829, preoccupied by *Satyra* Meigen, 1803; a senior synonym of *Pucrasia* G. R. Gray, 1891).—*Satyreae* Bonaparte, 1854, Ann. Sci. nat. (Paris), vol. 1, p. 42 (section).

Lophophorinae Reichenbach, 1852 (after Oct. 1), Avium systema naturale, p. XXIX (familia; type *Lophophorus* Temminck).—*Lophophoreae* Friedmann, 1946, Bull. U. S. nat. Mus., no. 50, pt. 10, p. 232 (subgroup).

Polyprectoneae Bonaparte, 1853 (séance du 31 Oct.), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646 (section; type *Polyprecton* Temminck).

Rollulidae Bonaparte, 1853 (séance du 31 Oct.), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646 (familia; type *Rollulus* Bonnaterre).—*Rollulinae* Bonaparte, 1853, op. cit., p. 646 (subfamilia).

Arginae Bonaparte, 1854, Ann. Sci. nat. (Paris), vol. 1, p. 42 (subfamilia; type *Argus* Temminck, 1815, preoccupied by *Argus* Poli, 1795; a senior synonym of *Argusianus* Rafinesque, 1815).

Caccabinae G. R. Gray, 1855, Catalogue of the genera and subgenera of birds, fide Gray, 1870 (subfamily; type *Caccabis* Kaup, 1829, a synonym of *Alectoris* Kaup, 1829).

Ortyginae Bonaparte, 1854, Ann. Sci. nat. (Paris), vol. 1, p. 43 (subfamilia; type *Ortyx* Stephens, 1819, a senior synonym of *Colinus* Goldfuss, 1820; subfamily name preoccupied by *Ortyginae* Bonaparte, 1831, type *Ortygis* Illiger; *Ortyx* Stephens preoccupied by *Ortyx* Oken, 1816).

Starneae Bonaparte, 1854, Ann. Sci. nat. (Paris), vol. 1, p. 43 (section; type *Starna* Bonaparte, 1838, a junior synonym of *Perdix* Brisson, 1760).

Argusianae Friedmann, 1946, Bull. U. S. nat. Mus., no. 50, pt. 10, p. 233 (subgroup; type *Argusianus* Rafinesque).

Subfamily Odontophorinae Gould

Odontophorinae Gould, 1844, Monograph of the Odontophorinae, pt. 1, p. 1 (type *Odontophorus* Vieillot).

Ortyginae (not of Bonaparte, 1838), Bonaparte, 1854, Ann. Sci. nat. (Paris), vol. 1, p. 43 (type *Ortyx* Stephens, 1819 = *Colinus* Goldfuss, 1820; preoccupied by *Ortyx* Oken, 1816).

Genus †*Nanortyx* Weigel

Nanortyx Weigel, 1963 (Dec. 5), Quart. Jour. Florida Acad. Sci., vol. 26, no. 3, p. 257 (type by original designation *Nanortyx inexpectatus* Weigel).

1. *Nanortyx inexpectatus* Weigel

Nanortyx inexpectatus Weigel, 1963 (Dec. 5), Quart. Jour. Florida Acad. Sci., vol. 26, no. 3, p. 259, pl. 1, figs. *a, e* (type from Calf Creek, distal end of right tarsometatarsus, Saskatchewan Mus. Nat. Hist. no. 1417).

LOWER OLIGOCENE (Cypress Hills formation). SASKATCHEWAN: north branch of Calf Creek, 10 miles northwest of Eastend, in Legal Subdivision 4, section 8, Township 8, Range 22, W 3rd meridian.[1]

Genus †*Miortyx* A. H. Miller

Miortyx A. H. Miller, 1944 (June 22), Univ. Calif. Publ., Bull. Dept. geol. Sci., vol. 27, no. 4, p. 93 (type by monotypy *Miortyx teres* A. H. Miller).

2. *Miortyx teres* A. H. Miller

Miortyx teres A. H. Miller, 1944 (June 22), Univ. Calif. Publ., Bull. Dept. geol. Sci., vol. 27, no. 4, p. 93, fig. 7 (type from Flint Hill, proximal part of right humerus, Univ. Calif. Mus. Paleo. no. 34453).

LOWER MIOCENE (Rosebud formation). SOUTH DAKOTA: Bennett County: Flint Hill, 9 miles WSW of Martin.

Genus *Cyrtonyx* Gould

Cyrtonyx Gould, 1844, Monograph of the Odontophorinae, pt. 1, pl. [2] and text (type by monotypy *Ortyx massena* Lesson = *Ortyx montezumae* Vigors).

3. *Cyrtonyx cooki* Wetmore

Cyrtonyx cooki Wetmore, 1934 (Jan. 15), Condor, vol. 36, no. 1, p. 30, figs. 5 (type from 17 miles south of Agate, distal half of left humerus, Harold J. Cook no. 647, now in Amer. Mus. Nat. Hist.).

MIDDLE MIOCENE (upper part of Sheep Creek beds). NEBRASKA: Sioux County: 17 miles south of Agate.

Genus *Lophortyx* Bonaparte

Lophortyx Bonaparte, 1838, Geographical and comparative list of the birds of Europe and North America, p. 42 (type *Tetrao californicus* Shaw, Recent, designated by G. R. Gray, 1840).

4. *Lophortyx shotwelli* Brodkorb

Lophortyx shotwelli Brodkorb, 1958 (July 23), Condor, vol. 60, no. 4, p. 253, fig. 1 (type from McKay Reservoir, proximal part of left humerus, Univ. Oregon Mus. Nat. Hist., no. F-3611).

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[1] Odontophorinae, gen. et sp. indet., recorded from Middle Oligocene (White River formation), in Logan County, Colorado (Tordoff, 1951, Condor, vol. 53, p. 203).

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

Genus *Colinus* Goldfuss

Colninus Goldfuss, 1820, Handb. Zool., vol. 2, p. 220 (type by monotypy *Perdix mexicanus* Latham = *Tetrao virbinianus* Linnaeus).

5. *Colinus hibbardi* Wetmore

Colinus hibbardi Wetmore, 1944 (May 15), Univ. Kansas Sci. Bull., vol. 30, pt. 1, no. 9, p. 96, figs. 4-8 (type from Rexroad locality 3, distal part of right tarsometatarsus, Univ. Kansas Mus. no. 3981).

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

6. *Colinus suilium* Brodkorb

Colinus suilium Brodkorb, 1959 (May 22), Bull. Florida State Mus., vol. 4, no. 9, p. 276, figs. 2-8 (type from Arredondo, left humerus, Brodkorb no. 1291).

MIDDLE PLEISTOCENE (Arredondo clay). FLORIDA: Alachua County: Arredondo (Brodkorb, 1959); Haile (Holman, 1961, Bull. Florida State Mus., vol. 6, p. 202). Levy County: Williston (Holman, 1959, Bull. Florida State Mus., vol. 5, p. 3). Marion County: Orange Lake, Oakhurst quarry, Zuber, and Eichelberger Cave (Holman, 1961).

MIDDLE PLEISTOCENE (Reddick beds). FLORIDA: Marion County: Reddick (Holman, 1961).

Genus †*Neortyx* Holman

Neortyx Holman, 1961, (Dec. 22), Bull. Florida State Mus., vol. 6, no. 2, p. 198 (type by original designation *Neortyx peninsularis* Holman).

7. *Neortyx peninsularis* Holman

Neortyx peninsularis Holman, 1961 (Dec. 22), Bull. Florida State Mus., vol. 6, no. 2, p. 200, fig. 3 (type from Reddick, left femur, Brodkorb no. 1224).

MIDDLE PLEISTOCENE (Arredondo clay). FLORIDA: Alachua County: Haile (Ligon, in press).

MIDDLE PLEISTOCENE (Reddick beds). FLORIDA: Marion County: Dixie Lime Products Company mine, 1 mile south of Reddick.

Subfamily PHASIANINAE (Vigors)

Phasianidae Vigors, 1825, Trans. Linn. Soc. London, vol. 14, p. 480 (family; type *Phasianus* Linnaeus).—*Phasianinae* G. R. Gray, 1840, List of the subgenera of birds, fide Gray, 1870 (subfamily).

Pavonidae Swainson, 1837, Natural history and classification of birds, vol. 2, pp. 165, 340 (family; type *Pavo* Linnaeus).—*Pavoninae* G. R. Gray, 1840, List of the genera of birds, p. 59 (subfamily).

Perdicinae Bonaparte, 1838, Geographical and comparative list of the birds of Europe and North America, p. 42 (subfamilia; type *Perdix* Brisson).

Gallinae G. R. Gray, 1840, List of the genera of birds, fide Gray, 1870 (subfamily; type *Gallus* Brisson).

Oreotragidae Cabanis, 1846, fide G. R. Gray, 1870 (family; type *Oreotetrax* Cabanis, a junior synonym of *Tetraogallus* J. E. Gray).

Polyplectroninae Blyth, 1849, Catalogue of the birds in the museum Asiatic Society, fide Gray, 1870 (subfamily; type *Polyplectron* Temminck).

Cryptonichinae Reichenbach, 1849, fide G. R. Gray, 1870 (type *Cryptonix* Temminck, 1815, a junior synonym of *Rollulus* Bonnaterre, 1790).

Alectorinae Reichenbach, 1852 (after Oct. 1), Avium systema naturale, p. XXIII (familia; type *Alectoris* Kaup).

Coturnicinae Reichenbach, 1852 (after Oct. 1), Avium systema naturale, p. XXVIII (tribus = subfamily; type *Coturnix* Bonnaterre).

Francolininae Reichenbach, 1852 (after Oct. 1), Avium systema naturale, p. XXVIII (tribus = subfamily; type *Francolinus* Stephens).

Satyrinae Reichenbach, 1852 (after Oct. 1), Avium systema naturale, p. XXIX (familia; type *Satyra* Lesson, 1829, preoccupied by *Satyra* Meigen, 1803; a senior synonym of *Pucrasia* G. R. Gray, 1891).

Lophophorinae Reichenbach, 1852 (after Oct.), Avium systema naturale, p. XXIX (familia; type *Lophophorus* Temminck).

Rollulidae Bonaparte, 1853 (séance du 31 Oct.), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646 (familia; type *Rollulus*, Bonnaterre).—*Rollulinae* Bonaparte, 1853, op. cit., p. 646 (subfamilia).

Polyprectoneae Bonaparte, 1853 (read Oct. 31), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 646 (section; type *Polyprecton* Temminck).

Arginae Bonaparte, 1854, Ann. Sci. nat. (Paris), vol. 1, p. 42 (subfamilia; type *Argus* Temminck, 1815, preoccupied by *Argus* Poli, 1795; a senior synonym of *Argusianus* Rafinesque, 1815).

Starneae Bonaparte, 1854, Ann. Sci. nat. (Paris), vol. 1, p. 43 (section; type *Starna* Bonaparte, 1838, a junior synonym of *Perdix* Brisson, 1760).

Caccabinae G. R. Gray, 1855, Catalogue of the genera and subgenera of birds, fide Gray, 1870 (subfamily; type *Caccabis* Kaup, 1829, a synonym of *Alectoris* Kaup, 1829).

Argusianae Friedmann, 1946, Bull. U. S. nat. Mus., no. 50, pt. 10, p. 233 (subgroup; type *Argusianus* Rafinesque).

Genus †*Schaubortyx* Brodkorb [1]

8. *Schaubortyx kelticus* (Eastman)

Taoperdix keltica Eastman, 1905, Mem. Carnegie Mus., vol. 2, no. 3, p. 134, pl. 13-14 (type from Armissan, skeleton impression, Carnegie Mus. no. 2023).—Schaub, 1945, Eclogae geol. Helvetiae, vol. 38, no. 2, p. 616, pl. 23 (reverse of type, Basel Mus. no. T. F. 104).

UPPER OLIGOCENE (Chattian). FRANCE: Dept. Aude: Armissan near Narbonne.

Genus †*Palaeoperdix* Milne-Edwards

Palaeoperdix Milne-Edwards, 1869 (after April), Ois. foss. France, vol. 2, sheet 31, p. 245 (type by monotypy *Palaeoperdix longipes* Milne-Edwards, designated by Lydekker, 1891, Cat. fossil birds Brit. Mus., p. 139).

9. *Palaeoperdix longipes* Milne-Edwards

Palaeoperdix longipes Milne-Edwards, 1869 (after April), Ois. foss. France, vol. 2, sheet 31, p. 245, pl. 130, figs. 28-31 (type from Sansan, proximal end of tarsometatarsus).

UPPER MIOCENE (gisement lacustre de Sansan, Helvetian). FRANCE: Dept. Gers: Sansan.

10. *Palaeoperdix priscus* Milne-Edwards

Palaeoperdix prisca Milne-Edwards, 1869 (after April), Ois. foss. France, vol. 2, sheet 31, p. 246, pl. 131, figs. 1-17 (types from Sansan, distal end of humerus, distal part of tibiotarsus, proximal part of tarsometatarsus).

UPPER MIOCENE (gisement lacustre de Sansan, Helvetian). FRANCE: Dept. Gers: Sansan.

11. *Palaeoperdix sansaniensis* Milne-Edwards

Palaeoperdix sansaniensis Milne-Edwards, 1869 (after April), Ois. foss. France, vol. 2, sheet 32, p. 249, pl. 131, figs. 18-23 (type from Sansan, lower part of tibiotarsus).

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[1] New genus. Type *Taoperdix keltica* Eastman. Size and wing proportions near *Palaeortyx hoffmanni* (Gervais), but legs longer; bill shorter, curved; carpometacarpus with well developed intermetacarpal tuberosity, lacking in *Palaeortyx* and *Taoperdix*. Much smaller than *Taoperdix pessieti* (Gervais) and proportions different; ulna 90 per cent of humeral length instead of equal to it; metacarpus about half length of humerus (55.8 per cent in *T. pessieti*); tibiotarsus relatively short (133 per cent) and tarsometatarsus relatively long (75.8 per cent), in comparison with femur, as in Perdicinae. Named for the late Samuel Schaub, who pointed out some of the generic differences. The Greek noun *ortyx* is masculine.

UPPER MIOCENE (gisement lacustre de Sansan, Helvetian). FRANCE: Dept. Gers: Sansan.

12. *Palaeoperdix edwardsi* (Depéret)

Palaeortyx edwarsi [sic] Depéret, 1887, Arch. Mus. Lyon, vol. 4, p. 285, pl. 13, figs. 51-52 (types from Payrebeau quarry, right proximal and 2 distal ends of humerus, ulna, proximal end of femur, proximal end of tibiotarsus, distal end of tarsometatarsus, Mus. Lyon).

Palaeortyx edwardsi Lydekker, 1891, Cat. foss. birds Brit. Mus., p. 139.

UPPER MIOCENE (argile sidérolithique de La Grive, Tortonian). FRANCE: Dept. Isère: Payrebeau quarry, 200 meters from railroad station of La Grive-Saint-Alban.

Genus †*Miophasianus* Lambrecht

Miophasianus Lambrecht, 1933, Handbuch der Palaeornithologie, p. 439 (type *Phasianus altus* Milne-Edwards, designated by Brodkorb, 1952, Condor, vol. 54, p. 175).

13. *Miophasianus desnoyersi* (Milne-Edwards)

Phasianus desnoyersi Milne-Edwards, 1869, (after April), Ois. foss. France, vol. 2, sheet 31, p. 243, pl. 131, figs. 37-39 (type from faluns de Touraine, carpometacarpus).

UPPER MIOCENE (faluns de Touraine, Helvetian). FRANCE: Dept. Loire-et-Cher.

14. *Miophasianus medius* (Milne-Edwards)

Phasianus medius Milne-Edwards, 1869 (after April), Ois. foss. France, vol. 2, sheet 31, p. 242, pl. 131, figs. 24-26 (type from Sansan, distal part of tarsometatarsus).

UPPER MIOCENE (gisement lacustre de Sansan, Helvetian). FRANCE: Dept. Gers: Sansan (Milne-Edwards, 1869).

UPPER MIOCENE (argile sidérolithique de La Grive, Tortonian). FRANCE: Dept. Isère: Grive-Saint-Alban (Ennouchi, 1930, Contr. étude faune Tortonien de La Grive-St-Alban, p. 60, pl. 5, figs. 1-8).

15. *Miophasianus altus* (Milne-Edwards)

Phasianus altus Milne-Edwards, 1869 (after April), Ois. foss. France, vol. 2, sheet 30, pl. 131, figs. 27-36 (types from Sansan, upper part of tarsometatarsus, lower end of tibiotarsus, first phalanx of middle finger).

UPPER MIOCENE (gisement lacustre de Sansan, Helvetian). FRANCE: Dept. Gers: Sansan (Milne-Edwards, 1869).

UPPER MIOCENE (argile sidérolithique de La Grive, Tortonian). FRANCE: Dept. Isère: Grive-Saint-Alban (Lydekker, 1891, Cat. foss. birds Bris Mus., p. 140).

UPPER MIOCENE (Oeninger Kalk, Sarmatian). SWITZERLAND: Oeningen near Constance (Lydekker, 1891, Cat. foss. birds Brit. Mus., p. 140, fig. 34).

UPPER MIOCENE (fissure deposits, Vindobonian). GERMANY: Bavaria: Attenfeld near Neuberg/D. (Lambrecht, 1921, Fossilium Catalogus, p. 84).

16. *Miophasianus maximus* (Lydekker)

Palaeortyx maxima Lydekker, 1893, Proc. zool. Soc. London, p. 520, pl. 41, fig. 11 (type from Grive-Saint-Alvan, coracoid, Brit. Mus.).

UPPER MIOCENE (argile sidérolithique de La Grive, Tortonian). FRANCE: Dept. Isère: Grive-Saint-Alban.

17. *Miophasianus augustus* (von Ammon)

Phasianus augustus von Ammon, 1918, Abh. naturwiss. Ver. Regensburg, vol. 12, p. 45, figs. 9-10 (type from clayworks, left femur, Naturw. Verein zu Regensburg).

UPPER MIOCENE (Braunkohlen der Oberfalz, Tortonian). GERMANY: Bavaria: clayworks of Mayer and Reinhard between Dechbetten and Prüfening.

Genus †*Miogallus* Lambrecht

Miogallus Lambrecht, 1933, Handb. Palaeorn., p. 442 (type *Gallus longaevus* von Ammon, designated by Brodkorb, 1952, Condor, vol. 54, p. 175).

18. *Miogallus longaevus* (von Ammon)

Gallus longaevus von Ammon, 1918, Abh. naturwiss. Ver. Regensburg, vol. 12, p. 41, fig. 8 (type from clayworks, upper end of left coracoid, Naturw. Verein zu Regensburg).

UPPER MIOCENE (Braunkohlen der Oberpfalz, Tortonian). GERMANY: Bavaria: clayworks of Mayer and Reinhard between Dechbetten and Prüfening.

Genus †*Proalector* Brodkorb [1]

19. *Proalector miocaenus* (Gaillard)

Palaeortyx miocaena Gaillard, 1938, Arch. Mus. Hist. Lyon, vol. 15, p. 50, figs. 26-27 (types from Grive-Saint-Alban, right and left humerus, left tarsometatarsus, Mus. Lyon).

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

20. *Proalector gaillardi* (Ennouchi)

Palaeocryptonyx gaillardi Ennouchi, 1930 (July 8), Contribution à l'étude de la faune du Tortonien de la Grive-St-Alban (Isère), p. 78, pl. 4, figs. 1-4 (type from Grive-Saint-Alban, right humerus, Mus. Lyon).

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

Genus †*Palaeocryptonyx* Depéret

Palaeocryptonyx Depéret, 1892 (read March 21), C. R. Acad. Sci. Paris, vol. 114, no. 12, p. 691 (type by monotypy *Palaeocryptonyx donnezani Depéret*).—*Palaeocrytonyx* Ennouchi, 1930 (July 8), Contribution à la ètude de la faune du Tortonien de la Grive-St.-Alban (Isère), p. 72 (misprint).

21. *Palaeocryptonyx grivensis* Ennouchi

Palaeocrytonyx [sic, *Palaeocryptonyx* on plate and in text] *grivensis* Ennouchi, 1930 (July 8), Contribution à la étude de la faune du Tortonien de la Grive-St.-Alban (Isère), p. 72, pl. 4, figs. 5-8 (type from Grive-St.-Alban, left humerus, Mus. Lyon).

UPPER MIOCENE (argile sidérolithique de La Grive, Tortonian). FRANCE: Dept. Isère: La Grive-Saint-Alban.

22. *Palaeocryptonyx donnezani* Depéret

Palaeocryptonyx donnezani Depéret, 1892 (read March 21), C. R. Acad. Sci. Paris, vol. 114, no. 12, p. 691 (types from Perpignan, humerus and tarsometatarsus, Mus. Lyon).—Depéret, 1897, Mém. Soc. géol. France (Pal.), ser. 3, vol. 18, p. 131, figs. 2-10).

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[1] New genus. Type *Palaeortyx miocaena* Gaillard. Humerus resembles that of *Alectoris* Kaup in having a large pneumatic foramen in subtrochanteric fossa, tricipital fossa extensive but of moderate depth, bicipital surface moderately extensive, and shaft stout, but deltoid crest less projecting palmarly. Hypotarsus with one canal as in *Alectoris*, but inner hypotarsal ridge shortest; inner edge of planta tarsi without long, raised bony crest; internal trochlea more deflected to rear; external trochlea much more deflected. Differs from *Palaeocryptonyx* Depéret in having trochleae convergent. Name formed from Greek *pro*, before, and *alector*, cock, masculine. The differences, if any, between the two nominal species assigned to this genus have not been pointed out; published measurements of the humeri are identical.

MIDDLE PLIOCENE (limons de Perpignan). FRANCE: Dept. Pyrénées-Orientales: Fort-du-Serrat-d'en Vacquer, near Perpignan, in old province of Rousillon.

Genus †*Plioperdix* Kretzoi

Pliogallus Tugarinov, 1940, Doklady Akad. Nauk S.S.S.R., vol. 26, no. 3, p. 305 (type by monotypy *Pliogallus coturnoides* Tugarinov; preoccupied by *Pliogallus* Gaillard, 1938).

Plioperdix Kretzoi, 1955, Aquila, vol. 59-62, p. 367 (new name for *Pliogallus* Tugarinov).

23. *Plioperdix grivensis* (Lydekker)

Palaeortyx grivensis Lydekker, 1893, Proc. zool. Soc. London, p. 521, pl. 41, fig. 12 (type from Grive-St.-Alban, humerus, Brit. Mus.).

UPPER MIOCENE (argile sidérolithique de La Grive, Tortonian). FRANCE: Dept. Isère: Grive-Saint-Alban.

24. *Plioperdix depereti* (Ennouchi)

Palaeortyx depereti Ennouchi, 1930 (July 8), Contribution à la étude de la faune du Tortonien de la Grive-St.-Alban (Isère), p. 72, pl. 3, figs. 1-8 (types from Grive-St.-Alban, left humerus and left tarsometatarsus, Mus. Lyon).

UPPER MIOCENE (argile sidérolithique de La Grive, Tortonian). FRANCE: Dept. Isère: Grive-Saint-Alban.

25. *Plioperdix joleaudi* (Ennouchi)

Palaeortyx joleaudi Ennouchi, 1930 (July 8), Contribution à la étude de la faune du Tortonien de la Grive-St.-Alban (Isère), p. 76, pl. 3, figs. 9-12 (type from Grive-St.-Alban, right humerus, Mus. Lyon).

UPPER MIOCENE (argile sidérolithique de La Grive, Tortonian). FRANCE: Dept. Isère: Grive-Saint-Alban.

26. *Plioperdix coturnoides* (Tugarinov)

Pliogallus coturnoides Tugarinov, 1940, Doklady Akad. Nauk S.S.S.R., vol. 26, no. 3, p. 305, fig. 3 (types from near Odessa, wing bones).

LOWER PLIOCENE (Pontian). UKRAINE: near Odessa.

Genus *Ammoperdix* Gould

Ammoperdix Gould, 1851, Birds of Asia, pt. 3, pl. 4-5 and text (type *Perdix heyi* designated by Reichenbach, 1852).

27. *Ammoperdix ponticus* Tugarinov

Ammoperdix ponticus Tugarinov, 1940, Doklady Akad. Nauk S.S.S.R., vol. 26, no. 3, p. 304, fig. 2 (type from near Odessa).

LOWER PLIOCENE (Pontian). UKRAINE: near Odessa.

Genus *Alectoris* Kaup

Alectoris Kaup, 1829, Skizz. Entw.-Gesch. Eur. Thierw., pp. 180, 193 (type by monotypy *Alectoris petrosa* Kaup = *Perdix barbara* Bonnaterre).

28. *Alectoris pliocaenica* Tugarinov

Alectoris pliocaenica Tugarinov, 1940, Doklady Akad. Nauk S.S.S.R., vol. 26, no. 3, p. 304, fig. 1 (type from near Odessa).

LOWER PLIOCENE (Pontian). UKRAINE: near Odessa.

Genus *Gallus* Brisson

Gallus Brisson, 1760, Ornithologia, vol. 1, pp. 26, 166 (type by tautonomy *Phasianus gallus* Linnaeus).

29. *Gallus aesculapi* Gaudry

Gallus aesculapi Gaudry, 1862 (read March 3), C. R. Acad. Sci. Paris, vol. 54, no. 8, p. 504 (type from Pikermi, articulated distal part of tibiotarsus, tarsometatarsus with spur, and 2 phalanges, Paris Mus.).

LOWER PLIOCENE (Pontian). GREECE: Attica: Pikermi (Gaudry, 1862). UKRAINE: Novo-Elisavetovka (Alexejew, 1916, Animaux fossiles du village Novo-Elisavetovka, p. 393, pl. 10, fig. 18); Tiraspol (Lambrecht, 1933, Handb. Palaeorn., p. 443).

30. *Gallus bravardi* Gervais

"Gallinacé" Gervais, 1844 (Aug. 5), Remarques sur les oiseaux fossiles, p. 22 ("et M. Bravard, [m'a prêté] deux os, l'un recueilli par lui à Ardé; c'est un portion de tarse de Gallinacé avec son éperon").

Gallus Bravardi Gervais, 1849, Mém. Acad. Sci. Lett. Montpellier, vol. 1, p. 220 (nomen nudum: "d'après un fragment de tarse éperonné (Ois. foss., p. 22), recueilli à Ardé, par M. Bravard. M. Pedroni nous a fait voir une portion de tarse assez semblable à celle-ci trouvée dans le bassin de Bordeaux, à Cavillac").—Gervais, 1852, Zoologie et paléontologie française (animaux vertébrés), vol. 1, p. 239 (not seen; description?).—Gervais, 1859, Zoologie et paléontologie françaises, ed. 2, p. 418, pl. 51, fig. 1.

MIDDLE PLIOCENE (alluvions ponceuses). FRANCE: Dept. Puy-de-Dôme: Ardé or Ardes, near Issoire (Gervais, 1844). Dept. Haute-

Loire: Senèze near Brioude (Lambrecht, 1933, Handb. Palaeorn., p. 443).

MIDDLE PLIOCENE (limons de Perpignan). FRANCE: Dept. Pyréneés-Orientales: Fort-du-Serrat-d'en Vacquer, in former province of Rousillon (Depéret, 1892, C. R. Acad. Sci. Paris, vol. 114, p. 691).

MIDDLE PLIOCENE. FRANCE: Dept. Gironde?: Cavillac, near Bordeaux (Gervais, 1849).

Genus *Phasianus* Linnaeus

Phasianus Linnaeus, 1758, Systema naturae, ed. 10, pp. 85, 158 (type by tautonomy *Phasianus colchicus* Linnaeus).

31. *Phasianus archiaci* Gaudry

Phasianus archiaci Gaudry, 1862 (read March 3), C. R. Acad. Sci. Paris, vol. 54, no. 8, p. 503 (type from Pikermi, incomplete skeleton, Paris Mus.).—Gaudry, 1862, Bull. Soc. géol. France, ser. 2, vol. 19, p. 629, pl. 16, figs. 6-7.

LOWER PLIOCENE (Pontian). GREECE: Attica: Pikermi.

32. *Phasianus hermonis* Bate

Phasianus hermonis Bate, 1927, *in* F. Turville-Petre, Researches in prehistoric Galilee, 1922-1926, p. 28, fig. 5, (type from Mugharet-el-Zuttiyeh, proximal part of left tarsometatarsus, British School of Archaeology, Jerusalem).

MIDDLE PLEISTOCENE (cave deposits, Mousterian culture). PALESTINE: Mugharet-el-Zuttiyeh (Bate, 1927); Kebara cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, no. 3, p. 118, pl. [4], fig. 24; pl. [5], figs. 6-7).

Genus †*Pliogallus* Gaillard

Pliogallus Gaillard, 1938, Arch. Mus. Hist. nat. Lyon, vol. 15, p. 59 (type by present designation *Pliogallus crassipes* Gaillard).

33. *Pliogallus crassipes* Gaillard

Pliogallus crassipes Gaillard, 1938, Arch. Mus. Hist. nat. Lyon, vol. 15, p. 59, fig. 31 (type from Czarnota, right tarsometatarsus, Mus. Lyon?).

LOWER PLEISTOCENE (Villafranchian). HUNGARY: Czarnota, on Villány Mountain.

34. *Pliogallus kormosi* Gaillard

Pliogallus kormosi Gaillard, 1938, Arch. Mus. Hist. nat. Lyon, vol. 15, p. 61, fig. 32 (type from Czarnota, left tarsometatarsus, Mus. Lyon?).

LOWER PLEISTOCENE (Villafranchian). HUNGARY: Czarnota, on Villány Mountain.

Genus *Francolinus* Stephens

Francolinus Stephens, 1819, in *Shaw*, General zoology, vol. 11, pt. 2, p. 316 (type by tautonomy *Francolinus vulgaris* Stephens = *Tetrao francolinus* Linnaeus.

35. *Francolinus capeki* Lambrecht

Francolinus capeki Lambrecht, 1933, Handb. Palaeorn., p. 433, fig. 136 (types from Püskpökfürdö, fragmentary sternum, proximal part of scapula, coracoid, fragmentary furculum, humerus, radius, ulna, carpometacarpus, index finger, Mus. Kgl. Ung. Geologischen Anstalt, Budapest).

UPPER LOWER PLEISTOCENE (Biharian). HUNGARY: Komitat Bihar: Püspökfürdö (Lambrecht, 1933). Komitat Baranya: Beremend (Lambrecht, 1933). CZECHOSLOVAKIA: Stránska skála? (Capek, 1917, Barlangkutatás, vol. 5, pp. 27, 68).

Genus *Perdix* Brisson

Perdix Brisson, 1760, Ornithologia, vol. 1, pp. 26, 219 (type by tautonomy *Perdix cinerea* Brisson = *Tetrao perdix* Linnaeus.

36. *Perdix jurcsaki* Kretzoi

Perdix jurcsáki Kretzoi, 1962 (February), Aquila, vol. 67-68, p. 171 (type from Betfia, right tarsometatarsus, Mus. Oradea no. 1899a/3).

UPPER LOWER PLEISTOCENE (Biharian). RUMANIA: Betfia.

Subfamily TETRAONINAE (Vigors)

Tetraonidae "Leach" Vigors, 1825, Trans. Linn. Soc. London, vol. 14, p. 480 (family; type *Tetrao* Linnaeus).—*Tetraoninae* G. R. Gray, 1840, List of the genera of birds, p. 62 (subfamily).

Urogallinae Reichenbach, 1852 (after Oct. 1), Avium systema naturale, p. XXIX (familia; type *Urogallus* Scopoli, 1777, a junior synonym of *Tetrao* Linnaeus, 1758).

Genus †*Palaealectoris* Wetmore

Palaealectoris Wetmore, 1930 (May 15), Condor, vol. 32, no. 3, p. 152 (type by monotypy *Palaealectoris incertus* Wetmore).

37. *Palaealcetoris incertus* Wetmore

Palaealectoris incertus Wetmore, 1930 (May 15), Condor, vol. 32, no. 3, p. 152, figs. 51-53 (type from Agate Springs quarry, proximal and distal parts of left humerus, Mus. Comp. Zool. no. 2190).

LOWER MIOCENE (lower Harrison beds, Arikaree formation). NEBRASKA: Sioux County: Agate Springs quarry.[1]

Genus *Tympanuchus* Gloger

Tympanuchus Gloger, 1841, Gemeinnütziges Hand- und Hilfsbuch der Naturgeschichte, p. 396 (type by monotypy *Tetrao cupido* Linnaeus).

38. *Tympanuchus stirtoni* A. H. Miller

Tympanuchus stirtoni A. H. Miller, 1944 (June 22), Univ. Calif. Publ., Bull. Dept. geol. Sci., vol. 27, no. 4, p. 92, fig. 6 (type from Flint Hill, proximal part of left tarsometatarsus, Univ. Calif. Mus. Paleo. no. 34455).

LOWER MIOCENE (Rosebud formation). SOUTH DAKOTA: Bennett County: Flint Hill, 9 miles WSW of Martin.

39. *Tympanuchus lulli* Shufeldt

Tympanuchus lulli Shufeldt, 1915 (February), Trans. Connecticut Acad. Arts Sci., vol. 19, p. 69, pl. 12, fig. 90 (type from Hornerstown, distal part of left humerus, Yale Peabody Mus. no. 911).

LOWER? PLEISTOCENE (Bridgeton formation?). NEW JERSEY: Monmouth County: Hornerstown.

40. *Tympanuchus ceres* (Shufeldt)

Bonasa or *Lagopus ceres* Shufeldt, 1913 (Aug. 4), Bull. Amer. Mus. nat. Hist., vol. 32, art. 16, p. 300, pl. 55, figs. 18-20; pl. 56, figs. 45-72 (types from Conard fissure, rostrum, vertebrae, 2 coracoids, scapula, sternum, 6 humeri, 6 ulnae, 4 radii, 7 carpometacarpi, 6 femora, 8 tibiotarsi, 4 tarsometatarsi, Amer. Mus. Nat. Hist. no. 12392).—*Tympanuchus ceres* Wetmore, 1959, Wilson Bull., vol. 71, no. 2, p. 178 (types restudied).

MIDDLE PLEISTOCENE (Arredondo clay). FLORIDA: Alachua County: Haile (Ligon, in press); Devil's Den (Univ. Florida).

UPPER PLEISTOCENE (fissure deposit, Sangamon age). ARKANSAS: Newton County: Conard fissure, 4 miles W of Willcockson and 1 mile N of Buffalo River (Shufeldt, 1913).

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[1] *Palaealectoris* sp. recorded from Middle Miocene (Calvert formation) near Chesapeake Beach, Calvert County, Maryland (Wetmore, 1930).

UPPER PLEISTOCENE (Lower Shuler member, Sangamon age). TEXAS: Dallas County: Coppell (Southern Methodist Univ.).

Genus †*Archaeophasianus* Lambrecht

Archaeophasianus Lambrecht, 1933, Handbuch Palaeorn., p. 438 (type *Phasianus roberti* Stone, designated by Brodkorb, 1952, Condor, vol. 54, p. 175). Position uncertain.

41. *Archaeophasianus roberti* (Stone)

Phasianus americanus Shufeldt, 1915 (February), Trans. Connecticut Acad. Arts Sci., vol. 19, p. 58, pl. 12, figs. 83-84 (types from "Parilina" Creek = Paulina Creek, distal end of left tarsometatarsus and pedal phalanx, Yale Peabody Mus. no. 956); preoccupied by *Phasianus americanus* Audubon, 1839).

Phasianus roberti Stone, 1915 (June 29), Auk, vol. 32, no. 3, p. 376 (new name for *Phasianus americanus* Shufeldt).

UPPER MIOCENE (Mascall formation). OREGON: Crook County: Paulina Creek, 6 miles SW of Camp Watson at junction with Beaver Creek.

42. *Archaeophasianus mioceanus* (Shufeldt)

Phasianus mioceanus Shufeldt, 1915 (February), Trans. Connecticut Acad. Arts. Sci., vol. 19, p. 60, pl. 13, figs. 94, 96 (types from Chimney Rock and Scottsbluff, proximal part of right humerus and proximal end of left femur, Yale Peabody Mus. nos. 908 and 909; Shufeldt says: "same individual?" but the localities are about 20 miles apart!).

UPPER MIOCENE (Sheep Creek or Marsland formation). NEBRASKA: Scotts Bluff County: Scottsbluff (Shufeldt, 1915). Morrill County: Chimney Rock (Shufeldt, 1915).

Genus *Tetrao* Linnaeus

Tetrao Linnaeus, 1758, Syst. nat., ed. 10, vol. 1, p. 159 (type *Tetrao urogallus* Linnaeus, designated by G. R. Gray, 1840).

43. *Tetrao partium* (Kretzoi)

Lyrurus partium Kretzoi, 1962 (February), Aquila, vol. 67-68, p. 171 (holotype from Betfia, right tarsometatarsus, Magyar Nat. Mus. Pal. no. G 50:155/1).

UPPER LOWER PLEISTOCENE (Biharian). RUMANIA: Betfia.

Genus †*Palaeotetrix* Shufeldt

Palaeotetrix Shufeldt, 1891 (September), Amer. Naturalist, vol. 25, no. 297, p. 821 (type by monotypy *Palaeotetrix gilli* Shufeldt).

44. *Palaeotetrix gilli* Shufeldt

Palaeotetrix gilli Shufeldt, 1891 (September), Amer. Naturalist, vol. 25, no. 297, p. 821 (type from Fossil Lake, right carpometacarpus, Amer. Mus. Nat. Hist. no. 3474).—Shufeldt, 1892, Jour. Acad. nat. Sci. Philadelphia, ser. 2, vol. 9, p. 415, pl. 17, fig. 34.

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

Genus *Dendragapus* Elliot

Dendragapus Elliot, 1864, Proc. Acad. nat. Sci. Philadelphia, vol. 16, no. 1, p. 23 (type *Tetrao obscurus* Say, designated by Baird, Brewer, and Ridgway, 1874, Hist. N. Amer. birds, land birds, vol. 3, p. 415).

45. *Dendragapus nanus* (Shufeldt)

Pediocaetes nanus Shufeldt, 1891 (September), Amer. Naturalist, vol. 25, no. 297, p. 821 (lectotype from Fossil Lake, right tarsometatarsus, Amer. Must. Nat. Hist. no. 3475, designated by Howard, 1946, Carnegie Instn. Washington Publ., no. 551, pp. 180, 191).—Shufeldt, 1892, Jour. Acad. nat. Sci. Philadelphia, ser. 2, vol. 9, p. 414, pl. 17, fig. 36.

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

46. *Dendragapus lucasi* (Shufeldt)

Pediocaetes lucasi Shufeldt, 1891 (October), Auk, vol. 8, no. 4, p. 367 (type from Fossil Lake, right ulna, Amer. Mus. Nat. Hist. no. 3476).—Shufeldt, 1892, Jour. Acad. nat. Sci. Philadelphia, ser. 2, vol. 9, p. 414, pl. 17, fig. 30.

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

Subfamily MELEAGRINAE G. R. Gray

Meleagrinae G. R. Gray, 1840, List of the genera of birds, p. 60 (type *Meleagris* Linnaeus).

Genus *Agriocharis* Chapman

Agriocharis Chapman, 1896, Bull. Amer. Mus. nat. Hist., vol. 8, pp. 287, 288 (type by monotypy *Meleagris ocellata* Cuvier).

47. *Agriocharis progenes* Brodkorb

Agriocharis progenes Brodkorb, 1964 (in press), Quart. Jour. Florida Acad. Sci., vol. 27, no. 3, pl. 1, figs. 1-3 (type from Rexroad ranch, distal part of right tarsometatarsus, Univ. Michigan Mus. Paleo. no. 31034).

UPPERMOST PLIOCENE (Rexroad formation). KANSAS: Meade County: Rexroad ranch, locality 3.

UPPERMOST PLIOCENE (San Pedro Valley formation). ARIZONA: Cochise County: 2½ miles S of Benson? (Wetmore, 1924, Proc. U. S. nat. Mus., vol. 64, art. 5, p. 8, fig. 5).

48. *Agriocharis leopoldi* (A. H. Miller and Bowman)

Meleagris leopoldi A. H. Miller and Bowman, 1956 (March 5), Wilson Bull., vol. 68, no. 1, p. 42, figs. 1a-1c (type from Harrell-Edd ranch, distal end of right tarsometatarsus, Univ. Calif. Mus. Paleo. no. 45086).

LOWER PLEISTOCENE (Cita Canyon beds). TEXAS: Randall County: Cita Canyon at Newton Harrell-Edd ranch, 3½ miles S and 13 miles E of Canyon (A. H. Miller and Bowman, 1956).

49. *Agriocharis anza* Howard

Agriocharis anza Howard, 1963 (Dec. 30), Los Angeles County Mus., Contr. in Sci., no. 73, p. 19, pl. 3, fig. A (type from Arroyo Tapiado, right humerus, Los Angeles Mus. no. 3753).

MIDDLE PLEISTOCENE (upper part of Palm Spring formation). CALIFORNIA: San Diego: Arroyo Tapiado.

MIDDLE PLEISTOCENE (Seymour formation). TEXAS: Knox County: Rattlesnake Point (Brodkorb, 1964, Quart. Jour. Florida Acad. Sci., vol. 27, no. 3, in press).

50. *Agriocharis crassipes* (L. Miller)

Meleagris crassipes L. Miller, 1940 (May 15), Condor, vol. 42, no. 3, p. 154, figs. 44-45 (type from San Josecito Cavern, tarsometatarsus, Calif. Instn. Tech. no. 2708, now in Los Angeles County Mus.).

UPPER PLEISTOCENE (cave deposit). MEXICO: Nuevo León: San Josecito Cavern near Aramberri.

Genus *Meleagris* Linnaeus

Meleagris Linnaeus, 1758, Systema naturae, ed. 10, vol. 1, p. 156 (type by tautonomy *Meleagris gallopavo* Linnaeus).

Meleagrops (Marsh, MS.) Shufeldt, 1913 (Jan. 9), Auk, vol. 30, no. 1, p. 33 (type by monotypy *Meleagris celer* Marsh).

51. *Meleagris alta* Marsh

Meleagris altus Marsh, 1870 (March), Proc. Acad. nat. Sci. Philadelphia, p. 11 (nomen nudum).—Marsh, 1870 (July), Amer. Naturalist, vol. 4, no. 5, p. 317 (types from Monmouth County, portions of 3 skeletons; tibiae and tarsometatarsi much elongate compared with *M. gallopavo*).—Marsh, 1872 (October), Amer. Jour. Sci., ser. 3, vol. 4, no. 22, p. 260 (descr. humerus, coracoid, femur, tibia, tarsometatarsus with spur core).—Shufeldt, 1915, Trans. Connecticut Acad. Arts Sci., vol. 19, p. 66, pl. 10, figs. 71-73; pl. 11, figs. 74-77 (Marsh's types from Manalapan, 3 right humeri, 1 left radius, 1 left ulna, 1 left coracoid, 1 left scapula, 2 right femora, 2 tibiotarsi, 1 right tarsometatarsus, Yale Peabody Mus. nos. 533-536, collected by J. [sic] C. Thompson).

Meleagris superbus Cope, 1871 (= Dec. 1870, fide Wetmore), Trans. Amer. philos. Soc., n.s., vol. 14, pt. 1, p. 238 (types from Monmouth County, types right tibia, imperfect left tibia, left femur, right coracoid, coll. by Dr. C. C. Thompson [apparently from same individual as one of Marsh's types, above]).

Meleagris celer Marsh, 1872 (October), Amer. Jour. Sci., ser. 3, vol. 4, no. 22, p. 261 (types from Monmouth County, tibia and proximal half of left tarsometatarsus, Yale Peabody Mus. [apparently the female of the above]).—Shufeldt, 1913, Auk, vol. 30, no. 1, p. 29, pl. 3, figs. 3-5.

LOWER PLEISTOCENE (cave deposits). PENNSYLVANIA: Montgomery County: Port Kennedy cave (Mercer, 1899, Jour. Acad. nat. Sci. Philadelphia, ser. 2, vol. 11, pt. 2, p. 280). Blair County: Frankstown cave (Peterson, 1926, Ann. Carnegie Mus., vol. 16, no. 2, p. 254, pl. 17, figs. 1-10). NEW JERSEY: Monmouth County: Manalapan, near Freehold (Shufeldt, 1915).

52. *Meleagris tridens* Wetmore

Meleagris tridens Wetmore, 1931 (Apr. 13), Smithsonian misc. Coll., vol. 85, no. 2, p. 33, fig. 13, pl. 6 (type from Seminole Field, central part of right tarsometatarsus, U. S. Nat. Mus. no. 12052 [possibly aberrant *M. gallopavo*?]).

UPPER PLEISTOCENE (Pamlico formation, stratum 2). FLORIDA: Pinellas County: Seminole Field in St. Petersburg.

Genus †*Parapavo* L. Miller

Parapavo L. Miller, 1916 (March 10), Univ. Calif. Publ., Bull. Dept. Geol., vol. 9, no. 7, p. 96 (type by monotypy *Pavo californicus* L. Miller).

53. *Parapavo californicus* (L. Miller)

Pavo californicus L. Miller, 1909 (Aug. 14), Univ. Calif. Publ., Bull. Dept. Geol., vol. 5, no. 19, p. 285, pl. 25 (type from Rancho La Brea, right tarsometatarsus, Univ. Calif. Mus. Paleo. no. 11300).

Meleagris richmondi Shufeldt, 1915 (February), Trans. Connecticut Acad. Arts Sci., vol. 19, p. 67, pl. 2, fig. 19 (type from Mission San Jose, fragmentary sternum, Yale Peabody Mus. no. 905)?

UPPER PLEISTOCENE (asphalt pits). CALIFORNIA: Los Angeles County: Rancho La Brea (L. Miller, 1909). Santa Barbara County: Carpinteria (L. Miller, 1927, Science, n.s., vol. 66, p. 156).

UPPER PLEISTOCENE (cave deposit). CALIFORNIA: Shasta County: Potter Creek Cave (L. Miller, 1911, Univ. Calif. Publ., Bull. Dept. Geol., vol. 6, no. 16, p. 396).

UPPER PLEISTOCENE (fluviatile deposits). CALIFORNIA: Alameda County: Mission San Jose in Niles Canyon? (Shufeldt, 1915). Los Angeles County: Los Angeles: Workman Street (Howard, 1936, Condor, vol. 38, p. 249); York Valley (L. Miller, 1942, Condor, vol. 44, p. 383). Orange County: La Habra (Howard, 1936).

Neospecies of Phasianidae from Pleistocene or *prehistoric sites:

Subfamily ODONTOPHORINAE:

1. *Callipepla squamata* (Vigors). NEW MEXICO: Shelter Cave (Howard and A. H. Miller, 1933, Condor, vol. 35, p. 16). ARIZONA: *Winona Village, *Deadman's Fort, *Terrace Pueblo, and *Wupatki Pueblo (Hargrave, 1939, Condor, vol. 41, p. 207).

2. *Lophortyx californica* (Shaw). CALIFORNIA: Hawver Cave (L. Miller, 1911, Univ. Calif. Publ., Bull. Dept. Geol., vol. 6, no. 16, p. 397); San Pedro (L. Miller, 1914, op. cit., vol. 8, no. 4, p. 36); McKittrick (L. Miller, 1922, Condor, vol. 24, p. 123); Carpinteria (L. Miller, 1927, Science, n.s., vol. 66, p. 156); Rancho La Brea (A. H. Miller, 1937, Condor, vol. 39, p. 251); *Buena Vista Lake (DeMay, 1942, Condor, vol. 44, p. 228).

3. *Lophortyx gambelii* Gambel. CALIFORNIA: Vallecito Creek (Howard, 1963, Contr. Sci., Los Angeles County Mus., no. 73, p. 18). ARIZONA: *35 miles N of Flagstaff (A. H. Miller, 1932, Condor, vol. 34, p. 138). NEW MEXICO: Conkling Cavern? and Shelter Cave? (Howard and A. H. Miller, 1933, Condor, vol. 35, p. 16).

4. *Colinus virginianus* (Linnaeus). TEXAS: Friesenhahn Cave (Holman, 1961, Bull. Florida State Mus., vol. 6, p. 203); *South Mule Ears Peak cave (Wetmore and Friedmann, 1933, Condor, vol. 35, p. 37). ILLINOIS: *Kingston (Baker, 1936,

Trans. Illinois State Acad. Sci., vol. 29, p. 245); *Modoc rock shelter (Parmalee, 1956, Illinois State Mus., Rept. Invest., no. 4, p. 53). OHIO: *Kettle Hill Cave and *Canter Cave (Goslin, 1955, Ohio Jour. Sci., vol. 55, pp. 359, 361). TENNESSEE: bone caves (Shufeldt, 1897, Amer. Naturalist, vol. 31, p. 646). PENNSYLVANIA: *Varner site (Guilday, 1961, Penn. Archaeologist, vol. 31, p. 122). VIRGINIA: Natural Chimneys (Wetmore, 1962, Smithsonian misc. Coll., vol. 145, no. 2, p. 9). GEORGIA: *Etowah site (Parmalee, 1960, Florida Anthropologist, vol. 8, p. 49). FLORIDA: Seminole Field, Sabertooth Cave, and Melbourne (Wetmore, 1931, Smithsonian misc. Coll., vol. 85, no. 2, p. 32); Vero Beach, Kanapaha, and *Warren's Cave (Holman, 1961, Bull. Florida State Mus., vol. 6, p. 203); Lake Monroe (Brodkorb coll.).

5. *Colinus nigrogularis* (Gould). YUCATAN: *Actun Lara, *Actun Has, *Actun Jih, *Actun Coyok, *Actun Spukil, and *Actun Chacaljas (Fisher, 1953, Cranbrook Inst. Sci. Bull., no. 33, p. 82).

6. *Oreortyx picta* (Douglas). CALIFORNIA: Hawver Cave and Potter Creek Cave (L. Miller, 1911, Univ. Calif. Publ., Bull. Dept. Geol., vol. 6, p. 397); Samwel Cave (L. Miller, 1912, op. cit., vol. 7, p. 71). NEW MEXICO: Rocky Arroyo (Wetmore, 1932, Condor, vol. 34, p. 141); Shelter Cave (Howard and A. H. Miller, 1933, Condor, vol. 35, p. 16); Howells Ridge Cave (Howard, 1962, Condor, vol. 64, p. 242). IDAHO: *Birch Creek cave (L. Miller, 1963, Bull. S. Calif. Acad. Sci., vol. 62, pt. 4, p. 183).

7. *Cyrtonyx montezumae* (Vigors). NUEVO LEÓN: San Josecito Cavern (L. Miller, 1943, Univ. Calif. Publ. Zool., vol. 47, p. 156).

8. *Odontophorus guttatus* (Gould). YUCATAN: *Actun Spukil? (Fisher, 1953, Cranbrook Inst. Sci. Bull., no. 33, p. 82).

9. *Odontophorus gujanensis* (Gmelin). BRAZIL: Lapa da Escrivania, Lapa do Marinho, Lapa do Periperi, and Lapa Vermelha (O. Winge, E. Museo Lundii, vol. 1, no. 2, p. 24).

Subfamily PHASIANINAE:

10. *Ammoperdix heyi* Temminck). PALESTINE: Oumm Qatafa Cave (Tchernov, 1962, Bull. Res. Council Israel, vol. 11, no. 3, p. 100).

11. *Alectoris graeca* (Meisner). MONACO: Grotte de Grimaldi and Grotte de l'Observatoire (Lambrecht, 1933, Handb. Palaeorn., p. 755). ITALY: Buca del Bersagliere, Grotta dei Colombi, Buca del Tasso, and Caverna d'Equi (Lambrecht, 1933). AUSTRIA: Mixnitz and Schusterlucke (Lambrecht, 1933). HUNGARY: Puskaporos (Lambrecht, 1933). CZECHOSLOVAKIA: St. Ivan cave near Beraun (Lambrecht, 1933). LEBANON: Antelias Cave (Lambrecht, 1933). PALESTINE: Oumm Qatafa Cave and Kebara Cave (Tchernov, 1962, Bull. Res. Council Israel, pp. 99, 106).

12. *Alectoris rufa* (Linnaeus). GIBRALTAR: Forbes quarry and Devils Tower (Lambrecht, 1933, Handb. Palaeorn., p. 755). PORTUGAL: Grotte de Furninha and Grotte das Fontainhas (Lambrecht, 1933). MONACO: Grotte de Grimaldi and Grotte de l'Observatoire (Lambrecht, 1933). ITALY: Grotta dei Colombi (Lembrecht, 1933). SARDINIA: Monte Santa Cave (Lambrecht, 1933). CORSICA: Grotta de Funtanedu (Lambrecht, 1933).

13. *Alectoris barbara* (Bonnaterre). GIBRALTAR: Devils Tower? (Bate, 1928, Jour. Roy anthrop. Inst., vol. 58, p. 104). MONACO: Grotte de Grimaldi and Grotte de l'Observatoire (Lambrecht, 1933, Handb. Palaeorn., p. 755).

14. *Francolinus pictus* (Jardine and Selby). INDIA: Cathedral Cave (Lydekker, 1891, Cat. foss. birds Brit. Mus., p. 136).

15. *Francolinus pondicerianus* (Gmelin). INDIA: Cathedral Cave (Lambrecht, 1933, Handb. Palaeorn., p. 755).

16. *Perdix perdix* (Linnaeus). IRELAND: Edenvale Cave, Newhall Cave, and Merlin's Cave (Lambrecht, 1933, Handb. Palaeorn., p. 754). ENGLAND: Kirkdale Cave (Lydekker, 1891, Ibis, ser. 6, vol. 3, p. 393); Langwith Bassett Cave, Wye Cave, Chudleigh Cave, *Barton, *Corbridge, and *Silchester (Lambrecht, 1933). FRANCE: Brenguez (Giebel, 1847, Fauna der Vorwelt, vol. 1, pt. 2, pp. 22, 40); Grotte de Lourdes and Grotte des Ecoutiers (Paris, 1912, Rev. franç. Ornith., vol. 4, p. 296); Eyzies, Madelaine, Aurignac, Lacombe, Eglise, Vieille-Cast, Miallet, Jobertas, Fausan, and Salléles (Lambrecht, 1933). PORTUGAL: Grotte de Furninha? and Grotte de Hornos (Lambrecht, 1933). MONACO: Grotte de Grimaldi and Grotte de l'Observatoire (Lambrecht, 1933). ITALY: Grotta dei Colombi? (Regàlia, 1893, Arch. Anthrop. Etnol., vol. 23, p. 262); Grotta di Cucigliana, Caverna d'Equi, Buca della Volpe, and Grotta Romanelli (Lambrecht, 1933). SWITZERLAND: Ermitage, Schlossfelsen von Birseck, Schweizersbild, and Ettingen (Lambrecht, 1933). BELGIUM: Trou du Sureau (Lambrecht, 1912, Aquila, vol. 19, p. 300); Trou des Noutons and Trou Frontal (Lambrecht 1933). GERMANY: Fuchslocher am Roten Berge bei Saalfeld, Zergloch bei Pottenstein, Langenbrunn, and Steeten (Lambrecht, 1912, Aquila, vol. 19, p. 300); Velburg, St. Wolfgang, Hohlestein, Kleine Scheuer, Schmiechenfels, Petershöhle bei Velden, Wildscheuer, and Raumgrotte (Lambrecht, 1933). AUSTRIA: Gudenushöhle and Schusterlucke (Lambrecht, 1912, Aquila, vol. 19, p. 300); Hundsheim (Lambrecht, 1933). CZECHOSLOVAKIA: Balcarova skála, Ludmirau, Sipka, and Certova díra (Capek, 1910, Ber. V. internat. ornith. Kongr., pp. 938-940; Volyn (Lambrecht, 1933). HUNGARY: Balla-Höhle (Lambrecht, 1912, Aquila, vol. 275, p. 282, pl. 4, fig. 26); Bajót Höhle and *recent (Lambrecht, 1913, Aquila, vol. 20, p. 425); Remetehegy (Lambrecht, 1914, Aquila, vol. 21, p. 89); Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. ungar. geol. Anstalt, vol. 23, p. 478); *Remetehegy (Lambrecht, 1916, Mitt. Jahrb. ungar. geol. Anstalt, vol. 22, p. 394); Püspökfürdö (Capek, 1917, Barlangkutatás, vol. 5, p. 27); Palffy-Höhle and O-Ruzsin (Lambrecht, 1933); Csév passage (Jánossy, 1959, Ann. Mus. hungarica, vol. 51, p. 117); Subalyuk-Höhle (Jánossy, 1962, Aquila, vol. 67-68, p. 179); Tarkö (Jánossy, 1962, Ann. Mus. hungarica, vol. 54, p. 157).

17. *Perdix barbata* J. Verreaux and Des Murs. MONGOLIA: Sjara-Osso-Gol (Bate, 1931, Pal. sinica, ser. C, vol. 6, fasc. 4, p. 41). CHINA: Chou-Kou-Tien (Howard, 1939, Fortshcritte der Paläont., vol. 2, p. 314).

18. *Coturnix coturnix* (Linnaeus). IRELAND: Castlepook Cave and Newhall Cave (Lambrecht, 1933, Handb. Palaeorn., p. 754). ENGLAND: Chudleigh Cave (Lambrecht, 1933). FRANCE: Caverne de l'Avison and brèches de Montmorency (Paris, 1912, Rev. franç. Ornith., vol. 4, p. 296); Carcassone (Lambrecht, 1933). MONACO: Grotte de Grimaldi, Grotte de l'Observatoire, and Grottes de Menton (Lambrecht, 1933). CORSICA: Grotta de Funtanedu (Lambrecht, 1933). SARDINIA: Pietro Tampoia on Tavolara Island (Lydekker, 1891, Proc. zool. Soc. London, p. 474, pl. 37, fig. 12). ITALY: Grotta dei Colombi (Regália, 1893, Arch. Antrop. Etnol., vol. 23, p. 262); Grotta Romanelli, Buca del Bersagliere, and Caverna de Verezzi (Lambrecht, 1933). GERMANY: Saalfeld, Fuchslöcher am Roten Berge bei Saalfeld, Fuchsloch bei Gleitsen (Lambrecht, 1933). CZECHOSLOVAKIA: Volyn and Holubic (Lambrecht, 1933). AUSTRIA: Schusterlucke (Lam-

brecht, 1933). HUNGARY: Remetehegy (Lambrecht, 1914, Aquila, vol. 21, p. 89); Pilisszántó (Lambrecht, Mitt. Jahrb. ungar. geol. Anstalt, vol. 23, p. 478); Puskaporos (Lambrecht, 1916, Barlangkutatás, vol. 4, p. 204); Süttö, Ó-Ruzsin, *Bajót, and *Legénybarlang bei Pilisszentlélek (Lambrecht, 1933); Subalyuk-Höhle (Jánossy, 1962, Aquila, vol. 67-68, p. 179). PALESTINE: Mugharet-el-Zuttiyeh (Bate, 1927, *in* Turville-Petre, Researches in prehistoric Galilee 1922-1926, p. 28); Oumm Qatafa Cave and Kebara Cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, pp. 100, 106). MONGOLIA: Sjara-Osso-Gol (Bate, 1931, Pal. sinica, ser. C, vol. 6, fasc. 4., p. 41). CHINA: Chou-Kou-Tien (Howard, 1939, Fortschritte der Paläont., vol. 2, p. 314).

19. *Coturnix novae-zelandiae* Quoy and Gaimard. NEW ZEALAND: Waingongoro (Lydekker, 1891, Cat. fossil birds Brit. Mus., p. 136).

20. *Tragopan temminckii* (J. E. Gray). CHINA: Yen-Ching-Kou (Wetmore, 1934, Amer. Mus. Novitates, no. 711, p. 15).

21. *Crossoptilon mantchuricum* Swinhoe. CHINA: Chou-Kou-Tien (Howard, 1939, Fortschritte der Paläont., vol. 2, p. 314).

22. *Crossoptilon chrossoptilon* (Hodgson). CHINA: Yen-Ching-Kou (Wetmore, 1934, Amer. Mus. Novitates, no. 711, p. 15).

23. *Gallus gallus* (Linnaeus). IRELAND: Castlepook Cave, Kesh Cave, Bantick Cave, Edenvale Cave, and Newhall Cave (Lambrecht, 1933, Handb. Palaeorn., p. 753). ENGLAND: Langwith Basset Cave, Chudleigh Cave, Berry Head Cave, *Barton, *Castleton, *Glastonbury, *Caerwent, *Settle, and *Lewes (Lambrecht, 1933); *Colchester (Bate, 1934, Ibis, p. 391). FRANCE: Lünel-Vieil caves and breccia of Mt. Molière (*Gallus domesticus fossilis* Giebel, 1847, Fauna der Vorwelt, vol. 1, pt. 2, pp. 23, 40; nomen nudum); Fontainebleau, Grotte Gourdan, Bruniquel, Grotte des Fees, and Teyjat (Lambrecht, 1933). MONACO: Grotte de l'Observatoire (Lambrecht, 1933). ITALY: Grotta di Frola, Terramare del Castellaccio, *Buca del Tasso, *Buca Tana di Maggiano, and *Buca della Volpe (Lambrecht, 1933). BELGIUM: Liège (Lambrecht, 1933). DENMARK: *Voerbjerg, *Hundshoved, *Janum, *Vejleby, *Borrebjerg, *Vordingbord, *Barsmark, and *Kolding Fjord (H. Winge, Vidensk. Meddl. naturhist. Foren. Copenhagen, vol. 6, p. 89). GERMANY: Köstritz, Stecklenburg am Harz, and Lahn valley (Giebel, 1847, Fauna der Vorwelt, vol. 1, pt. 2, pp. 23, 40; Lydekker, 1891, Cat. fossil birds Brit. Mus., p. 142); Fuchslöcher am Roten Berge bei Saalfeld, Fuchsloch bei Gleitsen, Petershöhle bei Velden an der Pegnitz, Thiede bei Westregeln, Saalfeld, Pössneck, and Zwergloch bei Pottenstein (Lambrecht, 1933). SWITZERLAND: Veyrier am Salève (Lambrecht, 1933). AUSTRIA: Gudenushöhle, Eichmaier Höhle, and Schusterlucke, (Lambrecht, 1933). CZECHOSLOVAKIA: Zuzlawitz bei Winterberg and Vypustek cave? (Lambrecht, 1933). YUGOSLAVIA: Pytina jama (Lambrecht, 1933). HUNGARY: Polgárdi? (Lambrecht, 1912, Aquila, vol. 19, p. 286); Takács-Menyhért Höhle (Kormos, 1917, Barlangkutatás, vol. 5, pp. 18, 62); *Devencze Höhle (Lambrecht, 1933); *Legénybarlang near Pilisszentlédlek; *Csév passage (Jánossy, 1959, Ann. Mus. hungarica, vol. 51, p. 117). *GREECE (Lowe, 1934, Ibis, p. 332). *CRETE (Lowe, 1934). *EGYPT (Lowe, 1934). INDIA: *Indus valley (Lowe, 1934). JAPAN: *Iki Island (Kuroda, 1959, Bull. biogeograph. Soc. Japan, vol. 21, p. 73, pl. 3). OHIO: *Kettle Hill Cave (Goslin, 1955, Ohio Jour. Sci., vol. 55, p. 359). FLORIDA: *Itchtucknee River, *Gainesville, and *Fannin Spring (Brodkorb coll.). CUBA: *Baños de Ciego Montero (Wetmore, 1928, Amer. Mus. Novitates, no. 301, p. 4). PUERTO RICO: *Cueva Clara (Wetmore, 1922, Bull. Amer. Mus. nat. Hist., vol. 46, p. 306). ST. THOMAS: *midden (Wetmore, 1918,

Proc. U. S. nat. Mus., vol. 54, p. 515). NEW ZEALAND: *Waingongoro (Lydekker, 1891, Cat. fossil birds Brit. Mus., p. 142).

24. *Pucrasia macrolopha* (Lesson). CHINA: Chou-Kou-Tien (Howard, 1939, Fortschritte der Paläont., vol. 2, p. 314).

25. *Phasianus colchicus* Linnaeus. IRELAND: Plunkett Cave, Newhall Cave, Bantick Cave, and Edenvale Cave (Lambrecht, 1933, Handb. Palaeorn., p. 753). SCOTLAND: *Ardrossan (Lambrecht, 1933). ENGLAND: Merlin's Cave, Langwith Bassett Cave, Chudleigh Cave, *Barton, *Corbridge, and *Silchester (Lambrecht, 1933). FRANCE: Bize cave and *Paris (Giebel, 1847, Fauna der Vorwelt, vol. 1, pt. 2, p. 23); Pageyral (Paris, 1912, Rev. franç. Ornith., vol. 4, p. 296); Fausan Cave, Vezère cave, Pageyral Cave near Cro-Magnon, Caverne Santimaminse (Lambrecht, 1933). GIBRALTAR (Lambrecht, 1933). CORSICA: *Gradicchia Cave (Lambrecht, 1933). GERMANY: Lahn Valley cave (Lydekker, 1891, Cat. fossil birds Brit. Mus., p. 140). CZECHOSLOVAKIA: *Kulna cave and *Kostelik cave (Lambrecht, 1933). HUNGARY: Takács-Menyhért Höhle bei Jászó (Kormos, 1917, Barlangkutatás, vol. 5, p. 18); Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. ungar. geol. Anstalt, vol. 23, p. 479); *Csákvár (Lambrecht, 1933). CHINA: Chihli locality 61? (Bate, 1931, Pal. sinica, ser. C, vol. 6, fasc. 4, p. 42); Yen-Ching-Kou? (Wetmore, 1934, Amer. Mus. Novitates, no. 711, p. 15); Chou-Kou-Tien? (Howard, 1939, Fortschritte der Paläont., vol. 2, p. 314).

26. *Syrmaticus reevesii* (J. E. Gray). CHINA: Chou-Kou-Tien (Howard, 1939, Fortschritte Paläont., vol. 2, p. 314).

27. *Chrysolophus amherstiae* (Leadbeater). CHINA: Yen-Ching-Kou (Wetmore, 1934, Amer. Mus. Novitates, no. 711, p. 16).

Subfamily TETRAONINAE:

28. *Tetrao urogallus* Linnaeus. ENGLAND: Ostend (Lydekker, 1891, Cat. fossil birds Brit. Mus., p. 133); Teesdale cave (Lydekker, 1891, Ibis, ser. 6, vol. 3, p. 392). DENMARK: Fannerup, Aamoelle, Erteboelle, Jaegerspris, Soelager, Oerum Aa, *Ladager Mose, *Ordrup Mose, *Naerum Mose (H. Winge, 1903, Vidensk. Meddel. naturhist. Foren. Copenhagen, vol. 6, p. 90). FRANCE: Grotte de Bruniquel (Paris, 1912, Rev. franç. Ornith., vol. 4, p. 297); Raymonden (Lambrecht, 1933, Handb. Palaeorn., p. 756). BELGIUM: Trou Magrite, Trou de Chaleux, Trou des Nutons, Trou du Frontal, and *Fouron le Comte (Lambrecht, 1933). MONACO: Grottes de Menton (Lambrecht, 1933). ITALY: Cavernes de Verrezzi (Lambrecht, 1912, Aquila, vol. 19, p. 299); Buco del Tasso?, Grotta de Cucigliani, and Grotta dei Colombi (Lambrecht, 1933). SWITZERLAND: Schweizerbild bei Schaffhausen, Thayingen, and Salève (Lambrecht, 1933). GERMANY: Zwergloch bei Pottenstein, Hoeschs Höhle im Ailsbachtal, Fuchslöcher am Roten Berge bei Saalfeld, and Steeten an der Lahn (Lambrecht, 1912, Aquila, vol. 19, p. 299); Fuchloch bei Gleitsen, St. Wolfgang Höhle, Dürrloch bei Schwaighausen (Lambrecht, 1933). POLAND: Zuzlawitz, and Wolin (Lambrecht, 1912, Aquila, vol. 19, p. 299); *Danzig and Szontagsee (Lambrecht, 1933). CZECHOSLOVAKIA: Sipka and Certova díra (Capek, 1910, Ber. V. internat. ornith. Kongr., p. 940); Balcarova skála?, Konieprus and St. Ivanhöhle bei Beraun, Sosuvka, Kulna, and Kostelik (Lambrecht, 1933). HUNGARY: Balla-Höhle, Istállóskö-Höhle, Höhle Peskö, Csobánkaer Höhle, *Somlyohegy at Püspökfürdö (Lambrecht, 1912, Aquila, vol. 19, p. 274); Ó-Ruzsin and Csobánka (Lambrecht, 1912, Aquila, vol. 19, p. 299); Pálffy-Höhle (Lambrecht, 1913, Aquila, vol. 20, p 427); Remetehegy (Lambrecht, 1914, Aquila, vol.

21, p. 89); Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. ungar. geol. Anstalt, vol. 23, p. 479); Kalten-Szamos-Tal (Lambrecht, 1916, Aquila, vol. 22, p. 193); Puskaporos (Lambrecht, 1916, Barlangkutatás, vol. 4, p. 203); Hidegszamos (Lambrecht, 1933, Handb. Palaeorn., p. 756); Betfia? (Kretzoi, 1962, Aquila, vol. 67-68, p. 171).

28a. *Tetrao medius* Leisler (= hybrid, *Tetrao urogallus* ♂ X *"Lyrurus" tetrix* ♀). GERMANY: Thiede bei Wolfenbüttel, Wildscheuer, and Steeten (Lambrecht, 1933, Handb. Palaeorn., p. 756). AUSTRIA: Gudenushöhle and Schusterlucke (Lambrecht, 1933). CZECHOSLOVAKIA: Sipka and Certova díra (Capek, 1910, Ber. V. internat. ornith. Kongr., p. 940); Volyn (Lambrecht, 1933). HUNGARY: Höhle Peskö and Balla-Höhle? (Lambrecht, 1912, Aquila, vol. 19, p. 279).

29. *Tetrao tetrix* Linnaeus. IRELAND: Waterford cave (Lydekker, 1891, Ibis, ser. 6, vol. 3, p. 392); Ballynamintra (Lambrecht, 1933, Handb. Palaeorn., p. 756). SCOTLAND: Assynt (Lambrecht, 1933). ENGLAND: Newport (Lydekker, 1891, Cat. fossil birds Brit. Mus., p. 132); Kent's Cavern at Torquay (Lydekker, 1891, Ibis, p. 392); Kirkdale Cave, *Corbridge, and *Settle (Lambrecht, 1933). WALES: Little Hoyle at Gower (Lambrecht, 1933). BELGIUM: Trou de Sureau (Lambrecht, 1912, Aquila, vol. 19, p. 299); Trou Magrite, Trou de Chaleux, Trou de Noutons, Trou de Sureau?, and *Fouron le Comte (Lambrecht, 1933). DENMARK: *Ordrup Mose (H. Winge, 1903, Vidensk. Meddel. naturhist. Foren. Copenhagen, vol. 6, p. 89). FRANCE: Moustier and Massat (Lambrecht, 1933). SPAIN: prov. Burgos (Lambrecht, 1933). MONACO: Grottes de Menton and Grotte de Grimaldi (Lambrecht, 1933). ITALY: Grotta dei Colombi (Regàlia, 1893, Arch. Antrop. Etnol., vol. 23, pp. 262, 345, pl. 6, fig. 18); Grotta all Onda, Caverna d'Equi, and Caverna Bricco Peagna (Lambrecht, 1933). SWITZERLAND: Schweizersbild bei Schaffhausen, Thierstein, Salève?, and Spielhahn (Lambrecht, 1933). GERMANY: Thiede bei Braunschweig and Hermannshöhle bei Rübeland (Blasius, 1901, Jour. Ornith., vol. 49, p. 58); Westeregeln bei Magdeburg, Lindentaler Hyänenhöhle bei Gera, Würzburg, Hoeschs Höhle and Elisabeth Höhle im Ailsbachtal, Fuchslöcher am Roten Berge bei Saalfeld, and Steeten an der Lahn (Lambrecht, 1912, Aquila, vol. 19, p. 299); Zwergloch bei Pottenstein, Wildscheuer, Altenburg bei Possneck, Heigelsbachtal, Kastlhäng-Höhle, Petershöhle bei Velden, Buchberg bei Münster, Velberg, St. Wolfgang, Steinkirche bei Schwarzfeld, Hohlefels bei Happurg, Fuchsloch bei Gleitsen, Schmiechenfels, Kleine Scheuer im Lonetal, and Raumgrotte (Lambrecht, 1933). AUSTRIA: Schusterlucke (Lambrecht, 1912, Aquila, vol. 19, p. 299). CZECHOSLOVAKIA: Balcarova skála, Ludmirau, Sipka, and Certova díra (Capek, 1910, Ber. V. internat. ornith. Kongr., pp. 938-940); Kilna, Kostelik, Sosubka, and Holubic (Lambrecht, 1933). POLAND: Zuzlawitz and Wolin [Volyn] (Lambrecht, 1912, Aquila, vol. 19, p. 299); *Szontagsee (Lambrecht, 1933). YUGOSLAVIA: Marinova Pecina near Rogousici (Lambrecht, 1933). HUNGARY: Balla, Istállóskö, Peskö, Puskaporos, and Tata (Lambrecht, 1912, Aquila, vol. 19, p. 299); Bajót Höhle, Pálffy-Höhle, and Pilisszántó (Lambrecht, 1913, Aquila, vol. 20, pp. 424-428); Remetehegy (Lambrecht, 1914, Aquila, vol. 21, p. 89); Otto-Herman-Höhle, Kiskevély Höhle, and Tata (Lambrecht, 1916, Aquila, vol. 22, pp. 189-194); *Remetehegy (Lambrecht, 1916, Mitt. Jahr. ungar. geol. Anst., vol. 22, p. 394); Istállóskö (Jánossy, 1954, Aquila, vol. 55-58, p. 219); Subalyuk-Höhle (Jánossy, 1962, Aquila, vol. 67-68, p. 178); Tarkö (Jánossy, 1962, Ann. Mus. hungarica, vol. 54, p. 157). FINLAND: *Ladogasee (Lambrecht, 1933. MALTA: *Musta ravine (Lambrecht, 1933, p. 756, fig. 176B).

30. *Dendragapus obscurus* (Say). WASHINGTON: *Puget Sound (L. Miller, 1960, Wilson Bull., vol. 72, p. 396). CALIFORNIA: Samwel Cave and Potter Creek Cave (L. Miller, 1911, Univ. Calif. Publ., Bull. Dept. Geol., vol. 6, p. 396). IDAHO: *Birch Creek and *Weiss rock shelter (L. Miller, 1963, Bull. S. Calif. Acad. Sci., vol. 62, pt. 4, pp. 179, 182).

31. *Canachites canadensis* (Linnaeus). VIRGINIA: Natural Chimneys (Wetmore, 1962, Smithsonian misc. Coll., vol. 145, no. 2, p. 7).

32. *Lagopus scoticus* (Linnaeus). IRELAND: Edenvale Cave, Kesh Cave, *Castlepook Cave, and *Merlin's Cave? (Lambrecht, 1933, Handb. Palaeorn., p. 758); record from Shandon Cave pertains to *L. mutus*, fide Lydekker. SCOTLAND: *Ardrossan and *Assynt (Lambrecht, 1933). ENGLAND: Langwith Bassett Cave, Wye Cave, and Chudleigh Cave (Lambrecht, 1933). FRANCE: Madelaine, Eyzies, Gorge d'Enfer, Gourdan, Lhern, and Bize (Lambrecht, 1933). GERMANY: Schmiechenfels? (Lambrecht, 1933). AUSTRIA: Gudenus? and Schusterlucke? (Lambrecht, 1933).

33. *Lagopus lagopus* (Linnaeus). ENGLAND: Kent's Hole at Torquay (Lambrecht, 1912, Aquila, vol. 19, p. 299). BELGIUM: Trou de Sureau (Lambrecht, 1912, Aquila, vol. 19, p. 299); Trou Magrite, Trou de Chaleux, Trou des Nutons, Trou de Sureau, Trou du Frontal, and *Fouron le Comte (Lambrecht, 1933, Handb. Palaeorn., p. 757). FRANCE: Caverne de Bruniquel near Montauban (Lydekker, 1891, Cat. fossil birds Brit. Mus., p. 134); Grottes de Eyzies (Paris, 1912, Rev. franç. Ornith., vol. 4, p. 297); Madelaine, Gorge d'Enfer, Massat, Aurignac, Lherm, Grotte d'Aure, Lourdes, Gourdan, Langeroche, and Dorgodne? (Lambrecht, 1933, Handb. Palaeorn., p. 757). MONACO: Grottes de Menton (Lambrecht, 1933). ITALY: Cavernas de Verrezzi (Lambrecht, 1912, Aquila, vol. 19, p. 299). SWITZERLAND: Schweizersbild bei Schaffhausen (Lambrecht, 1912, Aquila, vol. 19, p. 299); Villeneuve, Veyrier am Selève, Schlossfelsen von Birseck, Ettingen, Kaltbrunnental, Kesslerloch, Psetzi bei Thayingen, and Thayinger Höhle bei Schaffhausen (Lambrecht, 1933). GERMANY: Thiede bei Braunschweig and Hermannshöhle bei Rübeland (Blasius, 1905, Jour. Ornith., vol. 49, pp. 57-58); Zwergloch bei Pottenstein, Hoechs Höhle and Elisabeth-Höhle im Ailsbachtal, Steeten, and Balve-Höhle (Lambrecht, 1912, Aquila, vol. 19, p. 299); Probstfelsen, Steinkirche bei Schwarzfeld, St. Wolfgang, Velburger Schlossberg, Kastlhäng-Höhle, Hyänenhöhle bei Gera?, Fuchslöcher am Roten Berge bei Saalfeld, Wildscheuer, Martinshöhle bei Lethmaten, Sudmerberg bei Goslar, Seveckenberg?, Fuchsloch bei Gleitsen, Langenaubach, Pössneck, Altenburg, Hohlefels, Anderrach, and Raumgrotte (Lambrecht, 1933). AUSTRIA: Gudenushöhle, Eichmaierhöhle, and Schüsterlucke (Lambrecht, 1912, Aquila, vol. 19, p. 299); Hundsteig bei Krems (Lambrecht, 1933). CZECHOSLOVAKIA: Predmost, Balcarova skála, Ludmirau, Sipka, and Certova díra (Capek, 1910, Ber. V. internat. ornith. Kongr., pp. 938-940); Holubic, Kostelik, Kulna, Byciskála, Sosuvka, Dekansky vrch, Zechovitz, and Stramberg-Höhle (Lambrecht, 1933). POLAND: Zuzlawitz and Wolin (Lambrecht, 1912, Aquila, vol. 19, pp. 299-313). HUNGARY: Balla-Höhle, Istállóskö-Höhle, and Höhle Peskö (Lambrecht, 1912, Aquila, vol. 19, p. 274, pl. 3); Puskaporos, Novi I and III, and Ó-Ruzsin (Lambrecht, 1912, Aquila, vol. 19, p. 299); Bajót Höhle, Pálffy-Höhle, and Pilisszántó (Lambrecht, 1913, Aquila, vol. 20, p. 425); Öregköhöhle bei Bajót (Kormos and Lambrecht, 1914, Barlangkutatás, vol. 2, p. 105); Remetehegy (Lambrecht, 1914, Aquila, vol. 21, p. 89); Otto-Herman-Höhle and Kies-Grube (Lambrecht, 1916, Aquila, vol. 22, pp. 189, 195); Szamosfalva and Csákvár (Lambrecht, 1933). MALTA: *Musta ravine (Lambrecht, 1933,

p. 757, fig. 176A). ALASKA: *Cape Denbeigh (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, p. 237); *Cape Prince of Wales? (Friedmann, 1941, op. cit., vol. 31, p. 407).

34. *Lagopus mutus* (Montin). IRELAND: Shandon Cave (Lydekker, 1891, Ibis, ser. 6, vol. 3, p. 392); Ballynamintra Cave, Kesh Cave, Plunkett, and Coffey (Lambrecht, 1933, Handb. Palaeorn., p. 758). SCOTLAND: Allt man Uamti, Inchnadamff Cave, and Assynt Cave (Lambrecht, 1933). ENGLAND: Merlin's Cave, Langwith Bassett Cave, and Chudleigh Cave (Lambrecht, 1933). CHANNEL ISLANDS: St. Brelade on Jersey (Lambrecht, 1933). FRANCE: Caverne de Bruniquel near Montauban (Lydekker, 1891, Cat. fossil birds Brit. Mus., p. 134); Caverne du Périgord and Caverne du Mont-Salève (Paris, 1912, Rev. franç. Ornith., vol. 4, p. 297); Eyzies, Madelaine, Massat, Gourdan, Lherm, and Lourdes (Lambrecht, 1933). BELGIUM: Trou de Sureau (Lambrecht, 1912, Aquila, vol. 19, p. 300); Lagopède de saules?, Hohle Stein near Gallenstadt, and Remouchamps (Lambrecht, 1933). NORWAY: Vardo, Sundtagen, Finseland, Kraejavand, and Norre Lynby (Lambrecht, 1933). DENMARK (Lambrecht, 1933). GERMANY: Thiede bei Braunschweig (Blasius, 1901, Jour. Ornith., vol. 49, p. 58); Elisabeth-Höhle im Ailsbachtal and Steeten (Lambrecht, 1912, Aquila, vol. 19, p. 300); Petershöhle bei Velden, Finsterhöhle bei Pegnitz, Buchberg bei Münster, Hohlefels bei Happurg, Wildscheuer, St. Wolfgang, Velburger Schlossberg, Steinkirche bei Schwarzfeld, Kastlhänghöhle, Langenaubach, Sirgenstein, Schmiechenfels, Probstfelsen, and Raumgrotte (Lambrecht, 1933). SWITZERLAND: Thayinger Höhle bei Schaffhausen (Lambrecht, 1912, Aquila, vol. 19, p. 300); Kesslerloch, Schlossfels von Birseck, Kaltbrunnental, and Ettingen (Lambrecht, 1933). AUSTRIA: Gudenushöhle, Eichmaierhöhle, and Schusterlucke (Lambrecht, 1912, Aquila, vol. 19, p. 300); Tischoferhöhle bei Kufstein (Lambrecht, 1933). CZECHOSLOVAKIA: Predmost, Balcarova skála, Ludmirau, Sipka, and Certova díra (Capek, 1910, Ber. V. internat. ornith. Kongr., pp. 938-940); Millowitz, Stramberg, Kulna, Kostelik, Byciskála, and Kulnicka (Lambrecht, 1933). POLAND: Zuzlavitz and Volyn (Lambrecht, 1933). YUGOSLAVIA: Bukovac cave (Lambrecht, 1912, Aquila, vol. 19, p. 284). HUNGARY: Balla, Istállóskö, and Peskö (Lambrecht, 1912, Aquila, vol. 19, p. 282); Novi I and III and Ó-Ruzsin (Lambrecht, 1912, Aquila, vol. 19, p. 305); Bajót, Pálffy-Höhle, and Pilisszántó (Lambrecht, 1913, Aquila, vol. 20, pp. 425-428); Öregköhöhle bei Bajót (Kormos and Lembrecht, 1914, Barlangkutatás, vol. 2, p. 105); Remetehegy (Lambrecht, 1914, Aquila, vol. 21, p. 89); Otto-Herman-Höhle and Kiskevély-Höhle (Lambrecht, 1916, Aquila, vol. 22, p. 189); Puskaporos (Lambrecht, 1916, Barlangkutatás, vol. 4, p. 203); Hidegszamos and Csákvár (Lambrecht, 1933). ITALY: Bucca del Tasso, Caverna d'Equi, and Grotta dell Onda (Lambrecht, 1933). SPAIN: Grotte des Hornos (Lambrecht, 1933). ALASKA: *Kodiak Island and *Cape Denbeigh (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, pp. 235, 237); *Dutch Harbor? (Friedmann, 1937, op. cit., vol. 27, p. 436); *Cape Prince of Wales? (Friedmann, 1941, op. cit., vol. 31, p. 407).

35. *Tetrastes bonasia* (Linnaeus). GERMANY: Andernach (Lambrecht, 1933, Handb. Palaeorn., p. 755). AUSTRIA: Schusterlucke (Lambrecht, 1933). POLAND: Volyn, Zechovice, and *Robenhausen (Lambrecht, 1933). HUNGARY: Ó-Ruzsin (Lambrecht, 1933); Subalyuk-Höhle (Janossy, 1962, Aquila, vol. 67-68, p. 178). YUGOSLAVIA: Krapina (Lambrecht, 1915, Barlangkutatás, vol. 3, p. 118).

36. *Bonasa umbellus* (Linnaeus). CALIFORNIA: Potter Creek Cave (L. Miller, 1911, Univ. Calif. Publ., Bull. Dept. Geol., vol. 6, p. 397). IDAHO: American Falls (Brodkorb, 1963, Quart. Jour. Florida Acad. Sci., vol. 26, p. 280); *Birch

Creek cave (L. Miller, 1963, Bull. S. Calif. Acad. Sci., vol. 62, pt. 4, p. 183). TENNESSEE: bone caves (Shufeldt, 1897, Amer. Naturalist, vol. 31, p. 647). OHIO: *Kettle Hill Cave and *Canter Caves (Goslin, 1955, Ohio Jour. Sci., vol. 55, pp. 359, 361). PENNSYLVANIA: Frankstown Cave (Peterson, 1926, Ann. Carnegie Mus., vol. 16, p. 254); Lloyd's Rock Sinkhole near New Paris (Wetmore, 1959, Wilson Bull., vol. 71, p. 182); *Varner site (Guilday, 1961, Penn. Archaeologist, vol. 31, p. 122). MARYLAND: Cumberland Cave (Wetmore, 1927, Auk, vol. 44, p. 561). VIRGINIA: Natural Chimneys (Wetmore, 1962, Smithsonian misc. Coll., vol. 145, no. 2, p. 8). FLORIDA: Arredondo (Brodkorb, 1959, Bull. Florida State Mus., vol. 4, p. 276).

37. *Pedioecetes phasianellus* (Linnaeus). OREGON: Fossil Lake (Shufeldt, 1892, Jour. Acad. nat. Sci. Philadelphia, vol. 9, p. 414). NEVADA: Smith Creek Cave (Howard, 1952, Bull. S. Calif. Acad. Sci., vol. 51, pt. 2, p. 54). IDAHO: *Weiss rock shelter (L. Miller, 1963, Bull. S. Calif. Acad. Sci., vol. 62, pt. 4, p. 180). NEW MEXICO: *Jemez Springs (Wetmore, 1936, Condor, vol. 38, p. 90). IOWA: *Mill Creek (Hamon, 1961, Plains Anthropologist, vol. 6, p. 210). PENNSYLVANIA: Lloyd's Rock Sinkhole (Wetmore, 1959, Wilson Bull., vol. 71, p. 182). VIRGINIA: Natural Chimneys (Wetmore, 1962, Smithsonian misc. Coll., vol. 145, no. 2, p. 8).

38. *Tympanuchus cupido* (Linnaeus). NORTH DAKOTA: *Thomas Riggs site and *Huff Focus site (L. Miller, 1961, Bull. S. Calif. Acad. Sci., vol. 60, pt. 3, p. 125). IOWA: *Mill Creek (Hamon, 1961, Plains Anthropologist, vol. 6, p. 210). ILLINOIS: *Kingston (Baker, 1936, Trans. Illinois State Acad. Sci., vol. 29, p. 245); *Powell Mound and *Mossville (Baker, 1941, Trans. Amer. philos. Soc., n.s., vol. 32, p. 67); *Cahokia (Parmalee, 1958, Aukm vol. 75, p. 172). OHIO: *Feurt Village site (Wetmore, 1943, Wilson Bull., vol. 55, p. 55); *Kettle Hill Cave and *Canter Caves (Goslin, 1955, Ohio Jour. Sci., vol. 55, pp. 359, 361). TENNESSEE: bone caves (Shufeldt, 1897, Amer. Naturalist, vol. 31, p. 647).

39. *Tympanuchus pallidicinctus* (Ridgway). NEW MEXICO: Rocky Arroyo (Howard and A. H. Miller, 1933, Condor, vol. 35, p. 16). Removed from Fossil Lake, Oregon, list (Howard, 1946, Carnegie Instn. Washington Publ., no. 551, p. 191).

40. *Centrocercus urophasianus* (Bonaparte). OREGON: Fossil Lake (Shufeldt, 1913, Bull. Amer. Mus. nat. Hist., vol. 32, p. 139, pl. 9, 41). IDAHO: *Birch Creek cave (L. Miller, 1963, Bull. S. Calif. Acad. Sci., vol. 62, pt. 4, p. 183). NEVADA: Smith Creek Cave (Howard, 1952, Bull. S. Calif. Acad. Sci., vol. 51, pt. 2, p. 53). NEW MEXICO: Conkling Cavern and Rocky Arroyo (Howard and A. H. Miller, 1933, Condor, vol. 35, p. 16); Howells Ridge Cave (Howard, 1962, Condor, vol. 64, p. 242).

Subfamily MELEAGRINAE:

41. *Agriocharis ocellata* (Cuvier). YUCATAN: *Actun Coyok and *Actun Spukil (Fisher, 1953, Cranbrook Inst. Sci. Bull., no. 33, p. 83); *Mayapan (Pollock and Ray, 1957, Carnegie Instn. Washington, Current Repts. Dept. Archaeology, no. 41, p. 645). BRITISH HONDURAS: *Barton Ramie site (Brodkorb coll.).

42. *Meleagris gallopavo* Linnaeus. UTAH: *Poncho House (Hargrave, 1939, Condor, vol. 41, p. 208). ARIZONA: *35 miles N. of Flagstaff and *Wide Ruin (A. H. Miller, 1932, Condor, vol. 34, p. 138); *Betatakin Pueblo, *Kiet Siel Pueblo, *Turkey Cave, *Kacody Pueblo, *Awatobi Pueblo, *Grand Falls, *Walnut Canyon, *Winona village, *Wupatki Pueblo, *Baker's Bluff, and *Medicine Cave (Har-

grave, 1939, Condor, vol. 41, p. 208). NEW MEXICO: *Puye (Shufeldt, 1913, Bull. Amer. Mus. nat. Hist., vol. 32, p. 305, pl. 58, figs. 79-80, 85); Rocky Arroyo (Wetmore, 1932, Condor, vol. 34, p. 141); Conkling Cavern and Shelter Cave (Howard and A. H. Miller, 1933, Condor, vol. 35, p. 16); San Antonio (Wetmore, 1940, Smithsonian misc. Coll., vol. 99, no. 4, p. 47); Howells Ridge Cave (Howard, 1962, Condor, vol. 64, p. 242). TEXAS: Oapitz Pit (Southern Methodist Univ.). IOWA: *Mill Creek (Hamon, 1961, Plains Anthropologist, vol. 6, p. 210). ARKANSAS: Conard Fissure (Shufeldt, 1913, Bull. Amer. Mus. nat. Hist., vol. 32, p. 299, pl. 59). ILLINOIS: *Kingston (Baker, 1936, Trans. Illinois State Acad. Sci., vol. 29, p. 245); Ashmore (Wetmore, 1940, Smithsonian misc. Coll., vol. 99, no. 4, p. 47); *Powell Mound, *Mossville, *Plum Island, *James Ramey Mound, *Naples Mound, and *Fulton County mounds (Baker, 1941, Trans. Amer. philos. Soc., n.s., vol. 32, p. 68); *Modoc rock shelter (Parmalee, 1956, Illinois State Mus., Rept. Invest., no. 4, p. 52). INDIANA: Potato Creek (Wetmore, 1945, Wilson Bull., vol. 57, p. 204). OHIO: *Kettle Hill Cave, *Ash Cave, *Boone rock shelter, *Twinsburg rock shelter, and *Canter Caves (Goslin, 1955, Ohio Jour. Sci., vol. 55, pp. 359-361). TENNESSEE: bone caves (Shufeldt, 1897, Amer. Naturalist, vol. 31, p. 648). PENNSYLVANIA: Hartman or Crystal Hill Cave near Stroudsburg, Durham Cave near Riegelsville, and Carlisle cave (Wetmore, 1931, *in* Amer. Ornith. Union, Check-list of North Amer. birds, ed. 4, p. 443); *Varner site (Guilday, 1961, Pennsylvania Archaeologist, vol. 31, p. 122). VIRGINIA: Natural Chimneys (Wetmore, 1962, Smithsonian misc. Coll., vol. 145, no. 2, p. 9). GEORGIA: *Etowah site (Parmalee, 1960, Florida Anthropologist, vol. 8, p. 49). FLORIDA: *Vero Beach, stratum 3 (*Ardea sellardsi* Shufeldt, 1917, Florida geol. Surv., Ninth annual Rept., p. 38, pl. 2, fig. 15; type distal part of right tibiotarsus, formerly FGS no. 7551, now in U. S. Nat. Mus.; see Wetmore, 1931, Smithsonian misc. Coll., vol. 85, no. 2, p. 33); Itchtucknee River, Sabertooth cave near Lecanto, Seminole Field in St. Petersburg, Hog Creek near Sarasota, Bradenton, and Melbourne (Wetmore, 1931, op. cit., p. 32); Reddick (Brodkorb, 1957, Jour. Paleont., vol. 31, p. 135); Arredondo (Brodkorb, 1959, Bull. Florida State Mus., vol. 4, p. 279); Rock Spring (Woolfenden, 1959, Wilson Bull., vol. 71, p. 185); Williston (Holman, 1959, Bull. Florida State Mus., vol. 5, p. 5); *Good's Shellpit, *Lemon Bluff, *Bluffton, and *Silver Glen Springs (Neill, Gut, and Brodkorb, 1956, Amer. Antiquity, vol. 21, p. 388); *Summer Haven (Brodkorb, 1960, Auk, vol. 72, p. 342); Hudson, Haile, Kendrick, Meffert Lime Company at Ocala, and Florida Lime Company near Ocala, Oakhurst quarry, and *Woodruff pasture shell ridge (Brodkorb coll.). IRELAND: *Doneraile Cave, *Kesh Cave, and *Newhall Cave (Lambrecht, 1933, Handb. Palaeorn., p. 752). ENGLAND: *River Lea in North London (Lambrecht, 1933). CZECHOSLOVAKIA: *Kulna and *Kostelik (Lambrecht, 1933). HUNGARY: *Buda (Bökönyi and Jánossy, 1959, Aquila, vol. 65, p. 268, figs. 21-23).

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Manuscripts and all editorial matters should be addressed to:

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