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CATALOGUE OF FOSSIL BIRDS

PART 5 (PASSERIFORMES)

PIERCE BRODKORB



UNIVERSITY OF FLORIDA

GAINESVILLE

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**CATALOGUE OF FOSSIL BIRDS**  
**PART 5 (PASSERIFORMES)**  
**PIERCE BRODKORB<sup>1</sup>**

**SYNOPSIS:** The fifth installment of the *Catalogue of Fossil Birds* includes the Passeriformes, birds of uncertain position, trace fossils, nomina nuda, doubtful birds and a list of non-avian species deleted. Addenda and corrigenda to previous parts and an index to the whole work will be supplied later.

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FIGURE 1.—Some workers in avian paleontology, XVI International Ornithological Congress, Canberra, Australia, 17 August 1974. Left to right: G. F. van Tets, Lynéham, A. C. T.; Pat Vickers Rich, Clayton, Victoria; C. J. O. Harrison, Tring; Joel Cracraft, Chicago; Thomas Rich, Clayton; Pierce Brodkorb, Gainesville; Charles T. Collins, Long Beach, California; Ron J. Scarlett, Canterbury, New Zealand; Storrs L. Olson, Washington; Cyril A. Walker, London; Robert W. Storer, Ann Arbor; Joseph R. Jehl, San Diego; Peter Ballman, Köln. Photograph by C. A. Walker.

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## INTRODUCTION

In the recent avifauna the Passeriformes include almost twice as many genera and species as all the other avian orders combined, but their fossil record is very poor except for neospecies. We have no proof that they came into existence before the Miocene epoch, although in the 1800's four alleged passerines were described from the late Eocene of the Paris Basin. A presumed

nuthatch, *Sitta*<sup>2</sup> *cuvieri* Gervais 1852, later became the type of *Palaegithalus* Milne-Edwards 1871, who said it combined the characters of *Sylvia*, *Parus*, and *Parula* (genera belonging to three distantly related families)! In 1871 Milne-Edwards described *Laurillardia longirostris*, and in 1891 Flot added two more species, *L. munieri* and *L. parisiensis*, all said to be either starlings or thrushes. Both genera need restudy and close comparison with Coraciiformes as well as various oscine and suboscine families.

Four suborders of Passeriformes are ordinarily recognized, the Eurylaimi, Tyranni, Menuræ, and Passeres, but I agree with Feduccia in uniting the Old World and New World "suboscines" on the one hand versus the Passeres *sensu stricto*, Menuridae, Atrichornithidae, and Acanthisittidae on the other. The derived condition of the stapes in the Eurylaimi<sup>1</sup> eliminates that group from the ancestry of the Passeres, which retain a primitive stapes. The Eurylaimi and Halcyones<sup>2</sup> have similar stapedes, whereas it has long been recognized that Passeres and Piciformes share many osteological characters.

The orders of birds are too finely split. Relationships would be better expressed by reducing Piciformes and Coraciiformes to suborders of Passeriformes. The earliest record for Piciformes is early Eocene, for Coraciiformes middle Eocene, for Passeres early Miocene, and for Eurylaimi middle Miocene. All could have been derived from the same stock. The presumptive ancestor is the late Cretaceous Alexornithidae (see Addenda).

#### ACKNOWLEDGMENTS

The consultants for this issue, Alan Feduccia and Storrs Olson, have long been interested in the phylogeny of the Passeriformes. They have made many pertinent suggestions that have improved my work. Special thanks go to Dr. Olson, my former student, for his generous help in so many ways.

Friends acknowledged in previous parts have continued their valued cooperation. It is now my pleasure to thank the following additional persons for sending publications or specimens: Rafael Alvarez, Ann Arbor; O. G. Bendukidze, Tbilisi, Georgian SSR; Zygmunt Bochenski, Kraków, Poland; Richard Brooke, Salisbury, Rhodesia; Kenneth E. Campbell, Jr., Los Angeles; Graham S. Cowles, London; P. A. Clancy, Durban, Republic of South Africa; Andrzej Elzanowski, Warszawa, Poland; C. J. O. Harrison, Tring, U. K.; F. Clark Howell, Berkeley; J. Howard Hutchison, Berkeley; Carl Johanson, Cleveland; M. P. Stuart Irwin, Bulawayo, Rhodesia; William Morris, Los Angeles; Cécile Mourer-Chauviré, Lyon; Stephen A. Nesbitt, Gainesville; Oscar T. Owre, Coral Gables; Pat Vickers Rich and Thomas Rich, Clayton, Australia; Horace C. Richards, Philadelphia; David W. Steadman, Washington; John A. Talent, Melbourne,

<sup>1</sup> Feduccia used Tyranni for this suborder, which he raised to ordinal rank, naming it Tyranniformes. Although order-group names are not covered by the International Code of Zoological Nomenclature, it seems preferable to follow the Code's "basic principle of zoological nomenclature," priority, a practice with which I believe Feduccia now concurs. For order-group synonymies of Passeriformes see *postea*.

<sup>2</sup> In splitting the Coraciiformes into four separate orders Feduccia proposed another new ordinal name, Alcediniformes, based on the most junior of four order-group names for the todies, kingfishers, and motmots. For synonymies, see Part 4 of this work, pp. 248 and 252.

Australia; G. F. van Tets, Lyneham, Australia; M. A. Voinstvenski, Kiev; John S. Waldrop, Lake Wales, Florida; Alick D. Walker, Newcastle-upon-Tyne, U. K.; C. A. Walker, London; Clayton M. White, Provo, Utah.

As the earlier parts of the Catalogue are out of print and the literature on avian paleontology has increased greatly during the 15-year interval since the publication of Part 1, a revised edition is contemplated. I therefore request correspondents to continue their cooperation.

### Order PASSERIFORMES (Linnaeus)

*Passeres* Linnaeus 1758, *Systema Naturae*, ed. 10, vol. 1, pp. 82, 85, 162 (ordo; not based on generic name).—*Passeres* Linnaeus 1766, *Syst. Nat.*, ed. 12, pp. 119, 279 (ordo; type by tautonomy *Passer* Brisson 1760).—*Passerinae* Nitzsch 1820, *Deutsche Archiv für Physiologie*, vol. 6, p. 253.—*Passerini* Johannes Müller 1847, *Abhandl. K. Akad. Berlin, Phys. Kl.*, p. 366 (ordo).—*Passeriformes* Garrod 1874, *Proc. Zool. Soc. London*, pp. 117, 122 (order).—*Passeres* Sharpe 1877 (July 24), *Cat. Birds Brit. Mus.*, vol. 3, p. 1 (suborder).—*Passeriformes* Hay 1930 (Jan.), *Carnegie Inst. Washington, Publ. No. 390*, vol. 2, p. 353 (suborder).

*Hirundines* Wagler 1830, *Natürliches System der Amphibien mit vorangehender Classification der Säugethiere und Vögel*, pp. 82, 86 (ordo; type *Hirundo* Linnaeus).

*Corvi* Wagler 1830, *op. cit.*, pp. 82, 113 (ordo; type *Corvus* Linnaeus).—*Corviformes* Sharpe 1891, *Review of Recent Attempts to Classify Birds*, p. 89 (subsection [between section and family]).

*Certhiomorphae* Sundevall 1872, *Methodi Naturalis Avium Disponendarum Tentamen*, pt. 1, p. 46 (cohors; type *Certhia* Linnaeus).

*Cinnyrimorphae* Sundevall 1872, *Tentamen*, pt. 1, p. 48 (cohors; type *Cinnyris* Cuvier).

*Sylviiformes* Sundevall 1874, *ÖFversigt Kongl. Vetenskaps-Akad. Förhandl.*, no. 2, p. 28 (phalanx [between cohors and ordo]; type *Sylvia* Latham).

*Laniiformes* Sundervall 1874, *ÖFversigt Kongl. Vetenskaps-Akad. Forhandl.*, no. 2, p. 30 (phalanx; type *Lanius* Linnaeus).

*Fringilliformes* Sharpe 1885 (after March 9), *Cat. Birds Brit. Mus.*, vol. 10, pp. ix, 1 (section; type *Fringilla* Linnaeus).

*Eurylaemi* Seebohm 1890, *Classification of Birds*, pp. vii, xi, 4 (suborder; type *Eurylaemus* Agassiz 1846, an emendation of *Eurylaimus* Horsfield 1821).—*Eurylaemi* Sharpe 1891, *Review of Recent Attempts to Classify Birds*, p. 84 (order).—*Eurylaimi* Wetmore 1930 (Jan. 8), *Proc. U. S. Nat. Mus.*, vol. 76, art. 24, p. 6 (suborder).

*Menuræ* Sharpe 1891, *Review of Recent Attempts to Classify Birds*, p. 84 (order; type *Menura* Davies).—*Menuræ* Wetmore and W. deW. Miller 1926 (July 3), *Auk*, vol. 43, no. 3, p. 345 (suborder).—*Menuriformes* Mathews 1927, *Systema Avium Australasianarum*, p. 000 (order).

*Tyranni* Wetmore and W. deW. Miller 1926 (July 3), *Auk*, vol. 43, no. 3, p. 345 (suborder; type *Tyrannus* Lacépède).—*Tyranniformes* Feduccia 1975 (May 30), *Univ. Kansas Mus. Nat. Hist.*, Misc. Publ. no. 63, p. 30 (order).

*Furnarii* Ames 1971 (March), *Bull. Peabody Mus. Nat. Hist.*, no. 37, p. 153 (suborder; type *Furnarius* Vieillot).

### Suborder EURYLAIMI (Seebohm)

*Eurylaemi* Seebohm 1890.—*Eurylaimi* Wetmore, 1930.

*Tyranni* Wetmore and W. deW. Miller 1926.—*Tyranniformes* Feduccia, 1975.

*Furnarii* Ames 1971.

### Family EURYLAIMIDÆ (Swainson)

*Eurylaiminae* Swainson 1837, *Natural History and Classification of Birds*, vol. 2, p. 80 (subfamily; type *Eurylaimus* Horsfield).—*Eurylaimidae* Selys-Longchamps 1842, *fide* Newton



(family).—*Eurylaeminae* Cabanis 1847, Archiv f. Naturgeschichte, Jahrg. 23, vol. 1, pt. 2, p. 343 (subfamilia).—*Eurylaimidae* Bonaparte 1850, Conspectus Generum Avium, vol. 1, p. 168 (familia).—*Eurylaemidae* Sclater 1888 (June 28), Cat. Birds Brit. Mus., vol. 14, pp. xix, 454 (family).

*Calypomeninae* Bonaparte 1850, Conspectus Generum Avium, vol. 1, p. 169 (subfamilia; type *Calypomena* Raffles).

### *Eurylaimidae* gen. et sp. indet.

*Eurylaimidae* gen. indet., sp. indet. Ballmann "1966" (Jan. 25, 1967), Vögel aus der altburdigalen Spaltenfüllung von Wintershof (West) bei Eichstätt in Bayern, pp. 39, 89.—*Eurylaimidae* gen. et sp. indet. Ballman 1969 (1 Sept.), Zittelliana, vol. 1, p. 49, pl. 2, fig. 6-7 (proximal end of ulna, distal end of humerus and tarsometatarsus, Bayer. Staatssammlung für Paläontologie und historische Geologie, München).

MIDDLE MIOCENE (early Burdigalian). BAVARIA: Wintershof (West).

### Family PHILEPITTIDAE (Sharpe)

*Philepittinae* Sharpe 1870, Proc. Zool. Soc. London, p. 397 (subfamily; type *Philepitta* Geoffroy).—*Philepittidae* Forbes 1880, Proc. Zool. Soc. London, p. 387 (family).

*Paictinae* Sundevall 1872, Tentamen, pt. 1, p. 63 (familia; type *Paictes* Sundevall, 1872, a junior synonym of *Philepitta* Geoffroy 1839).

*Neodrepaninae* Sharpe 1909, Hand-list Gen. Sp. Birds, vol. 5, pp. xiii, 34 (subfamily; type *Neodrepanis* Sharpe).

No fossil record.

### Family PITTIDAE Bonaparte

*Brachyuridae* Blyth 1849, Cat. Birds Mus. Asiatic Soc., p. 155 (family type *Brachyurus* Thunberg 1821, a junior synonym of *Pitta* Vieillot, 1816).

*Pittidae* Bonaparte 1850, Conspectus Generum Avium, pt. 1, p. 253 (family; type *Pitta* Vieillot).

*Eucichlinae* Sundevall 1872, Tentamen, pt. 1, p. 5 (familia; type *Eucichla* Reichenbach 1850, a junior synonym of *Pitta* Vieillot, 1816).

No fossil record.

### Family FURNARIIDAE (Gray)

*Anabatinae* Swainson 1837, Natural History and Classification of Birds, vol. 2, pp. 131, 315 (subfamily; type *Anabates* Temminck 1820, a junior synonym of *Synallaxis* Vieillot, 1816).—*Anabatidae* Johannes Müller 1846 (read 1845), Abhandl. Kgl. Preuss. Akad. Wiss., Phys. Kl., p. 383 (familia).

*Uppucerthidae* D'Orbigny [1838], fide Gray (type *Uppucerthia* Lafresnaye and D'Orbigny, 1838, a junior synonym of *Uppucerthia* I. Geoffroy-Saint Hilaire 1832).

*Fumarinae* G. R. Gray 1840 (before Apr.), List of Genera of Birds, p. 16 (subfamily; type *Furnarius* Vieillot).—*Furnariinae* Cabanis 1847, Archiv für Naturgeschichte (Berlin), pt. 1, p. 339 (subfamilia).—*Furnariidae* Sundevall 1872, Methodi naturalis Avium dispendarum Tentamen, p. 55 (familia).—*Furnariidae* Stejneger 1885, Standard Natural History, vol. 4, p. 479 (family).—*Furnariides* Wetmore 1930 (Jan. 8), Proc. U. S. Nat. Mus., vol. 76, art. 24, p. 6 (superfamily).—*Furnarioidea* Wetmore 1934 (Apr. 23), Smithsonian Misc. Coll., vol. 89, no. 13, p. 10 (superfamily).

*Dendrocolaptinae* G. R. Gray 1840 (before Apr.), List of Genera of Birds, p. 17 (subfamily; type

- Dendrocolaptes* Herman).—*Dendrocolaptidae* Selys-Longchamps 1842, fide Gray (family).—*Dendrocolaptinae* Sundevall 1872, Tentamen, p. 56 (familia).—*Dendrocolaptea* Ridgway 1911 (nov. 29), Bull. U. S. Nat. Mus., no. 50, pt. 5, p. 226.
- Synallaxinae* G. R. Gray 1846 (Feb.), Genera of Birds, vol. 1, p. 135 (subfamily; type *Synallaxis* Vieillot).—*Synallaxinae* Sundevall 1872 Tentamen, p. 55 (subfamilia).—*Synallaxeae* Ridgway 1911 (Nov. 29), Bull. U. S. Nat. Mus., no. 50, pt. 5, p. 160.
- Sclerurinae* Sclater 1862, Cat. Coll. Am. Birds, p. 145 (subfamily; type *Sclerurus* Swainson).
- Philydorinae* Sclater 1890 (after March 7), Cat. Birds Brit. Mus., vol. 15, pp. xii, 3, 74 (subfamily; type *Philydor* Spix).
- Margarornithes* Ridgway 1911 (Nov. 29), Bull. U. S. Nat. Mus., no. 50, pt. 5, p. 159 (group; type *Margarornis* Reichenbach).
- Pseudocolaptea* Ridgway 1911 (Nov. 29), Bull. U. S. Nat. Mus., no. 50, pt. 5, p. 162 (group; type *Pseudocolaptes* Reichenbach).
- Automoleae* Ridgway 1911 (Nov. 29), Bull. U. S. Nat. Mus. no. 50, pt. 5, p. 162 (group; type *Automolus* Reichenbach).
- Xiphocolaptea* Ridgway 1911 (Nov. 29), Bull. U. S. Nat. Mus., no. 50, pt. 5, p. 226 (group; type *Xiphocolaptes* Lesson).
- Glyphorhynchinae* Ridgway 1911 (Nov. 29), Bull. U. S. Nat. Mus., no. 50, pt. 5, p. 227 (subfamily; type *Glyphorhynchus* Wied).—*Glyphorhyncheae* Ridgway 1911, loc. cit.
- Drymornithes* Ridgway 1911 (Nov. 29), Bull. U. S. Nat. Mus., no. 50, pt. 5, p. 227 (group; type *Drymornis* Eyton).
- Sittasomae* Ridgway 1911 (Nov. 29), Bull. U. S. Nat. Mus., no. 50, pt. 5, p. 227 (group; type *Sittasomus* Swainson).
- Dendrocinae* Ridgway 1911 (Nov. 29), Bull. U. S. Nat. Mus., no. 50, pt. 5, p. 227 (group; type *Dendrocincia* Gray).

## Neospecies of Furnariidae from the Pleistocene and \*Holocene

### Subfamily DENDROCOLAPTINAE

1. *Xiphocolaptes albicollis* (Vieillot). BRAZIL: Lapa da Escrivania (O. Winge 1887, E Museo Lundii, vol. 1, pp. 8, 9, 15, 48).
  2. *Lepidocolaptes angustirostris* (Vieillot). BRAZIL: Lapa da Escrivania and \*Lapa da Escrivania (as *Picolaptes bivittatus* O. Winge 1887, E Museo Lundii, vol. 1, pt. 2, pp. 8, 48).
- Winge also mentions "Species multae, indeterminate, etiam affines Furnario etc." See Lund (1841, Oversigt over det kongelige Danske videnskabernes Selskabs Forhandling, pp. 16-18). Giebel (1847, Fauna der Vorwelt, vol. 1, pt. 2, pp. 13, 17, 39) and Lambrecht (1933, Handbuch der Palaeornithologie, p. 779) refer to these indeterminate fossils under the names *Dendrocolaptes* [sic], *Opetiorhynchus* (a synonym of *Furnarius*), and *Anabates* (a synonym of *Synallaxis*).

### Family THAMNOPHILIDAE (Vigors)

- Thamnophilina* Vigors 1825, fide Gray (type *Thamnophilus* Vieillot).—*Thamnophilinae* Swainson 1832 (Feb.), Fauna Boreali-Americana, pt. 2, p. 105 (subfamily).—*Tamnophilinae* [sic] Bonaparte 1850 (Feb.), Conspectus Generum Avium, vol. 1, sig. 25, p. 197 (subfamilia).—*Thamnophilinae* Sundevall 1872, Tentamen, p. 63 (familia).—*Thamnophileae* Ridgway 1911 (Nov. 29), Bull. U. S. Nat. Mus., No. 50, pt. 5, p. 10.
- Myiotheridae* Boie 1826, Isis, p. 973 (type *Myiothera* Illiger 1811, a junior synonym of *Formicarius* Boddaert 1783).—*Myiotherinae* [sic] Swainson 1837, Nat. Hist. and Classif. Birds, vol. 2, pp. 18, 24 (subfamily).—*Myiotherinae* Bonaparte 1850 (Feb.), Conspectus Generum Avium, vol. 1, sig. 26, p. 197 (subfamilia).
- Formicarinae* G. R. Gray 1840 (before Apr.), List of Genera of Birds, p. 25 (subfamily; type *Formicarus* Boddaert).—*Formicariidae* Sclater 1858, Proc. Zool. Soc. London, p. 69 (family).—*Formicariinae* G. R. Gray, 1869 (after May 10), Hand-list of Genera and Subgenera of Birds, pt. 1, pp. xvi, 297 (subfamily).—*Formicaroidae* Stejneger 1885, Standard Nat. Hist., vol. 4, pp. 460, 476 (superfamily).—*Formicaroides* Cope 1889 (Oct.),

- Amer. Naturalist, vol. 23, p. 873 (superfamily).—*Formicariæ* Ridgway 1911 (Nov. 29), Bull. U. S. Nat. Mus., no. 50, pt. 5, p. 15 (group).—*Formicarioidæ* Hay 1930, Carnegie Inst. Washington, Publ. 390, vol. 2, p. 354 (superfamily).
- Eriodoridæ* Cabanis 1847, Archiv. für Naturgeschichte (Berlin), Jahrg. 23, vol. 1, no. 1, p. 209 (familia; type *Eriodora* Gloger 1826, a junior synonym of *Formicarius* Swainson 1824).—*Eriodorinæ* Cabanis 1847, op. cit. (subfamily).
- Formicivorinæ* Sclater 1858, Proc. Zool. Soc. London, p. 238 (subfamily; type *Formicivora* Swainson).—*Formicivoræ* Ridgway 1911 (Nov. 29), Bull. U. S. Nat. Mus., no. 50, pt. 5, p. 12 (group).
- Hypocnemidinae* Cabanis 1847, Archiv Naturg., Jahrg. 23, vol. 1, no. 1, p. 212 (subfamilia; type *Hypocnemis* Cabanis).—*Hypocnemididae* Cabanis 1859 (1 July), Museum Heineanum, pt. 2, sig. 1, p. 3 (familia).
- Myrmornithinae* Sundevall 1872, Methodi Naturalis Avium Dispondenarum Tentamen, p. 64 (familia; type *Myrmornis* Hermann).
- Hypsibaemoninae* Sundevall 1872, op. cit., p. 64 (familia; *Hypsibaemon* Cabanis 1847, a junior synonym of *Grallaria* Vieillot 1816).
- Conopophaginae* Sclater and Salvin 1873, Nomenclator Avium Neotropicalium, p. 41 (subfamilia; type *Conopophaga* Vieillot).—*Conopophagidae* Garrod 1877, Proc. Zool. Soc. London, p. 452.
- Grallariinae* Sclater 1890 (after March 7), Cat. Birds Brit. Mus., vol. 15, pp. xvi, 177, 306 (subfamily; type *Grallaria* Vieillot).—*Grallariæ* Ridgway 1911 (Nov. 29), Bull. U. S. Nat. Mus., no. 50, pt. 5, p. 17.
- Pithyæ* Ridgway 1911 (Nov. 29), Bull. U. S. Nat. Mus., no. 50, pt. 5, p. 16 (type *Pithys* Vieillot).
- Rhopoterpeæ* Ridgway 1911 (Nov. 29), Bull. U. S. Nat. Mus., no. 50, pt. 5, p. 17 (type *Rhopoterpe* Cabanis 1847, a junior synonym of *Formicivorus* Temminck 1807).
- Pittasomæ* [sic] Ridgway 1911 (Nov. 29), Bull. U. S. Nat. Mus., no. 50, pt. 5, p. 17 (type *Pittasoma* Cassin).

### Neospecies of *Thamnophilidae* from the Pleistocene

1. *Chamaeza brevicauda* (Vieillot). BRAZIL: Lapa da Escrivania (O. Winge 1887, E Museo Lundii, vol. 1, no. 2, pp. 8, 13, 47).

### Family SCYTALOPODIDÆ (J. Müller)

- Rhinomydææ* d'Orbigny 1838, Voyage dans l'Amérique Méridionale, vol. 4, pt. 3, p. 192 (type *Rhinomya* Geoffroy-Saint Hilaire 1832, preoccupied by *Rhinomya* Robineau-Desvoidy 1830).
- Scytalopidae* Johannes Müller 1846, Abhandl. K. Akad. Wiss. Berlin, p. 383 (familia; type *Scytalopus* Gould).—*Scytalopodidae* Huxley 1867, Proc. Zool. Soc. London, p. 471.—*Scytalopodinae* Sundevall 1872 (Aug. 1), Methodi naturalis avium dispondenarum Tentamen, pt. 1, p. 65.
- Pteroptochidae* Cabanis and Heine 1859 (4 Aug.), Museum Ornithologicum Heineanum, pt. 2, p. 20 (familia; type *Pteroptochus* Kittlitz).—*Pteroptochinae* Cabanis and Heine 1859, op. cit., p. 20 (subfamilia).
- Rhinocryptidae* Wetmore 1930 (Jan. 8), Proc. U. S. Nat. Mus., vol. 76, art. 24, p. 6 (familia; type *Rhinocrypta* Gray 1841, new name for *Rhinomya* Geoffroy-Saint Hilaire 1832).

No fossil record.

### Family TYRANNIDÆ (Vigors)

- Tyrannina* Vigors 1825, fide Gray (type *Tyrannus* Lacépède).—*Tyranninae* Swainson 1832, Fauna Boreali-Americana, pt. 2, p. 107 (subfamily).—*Tyrannidae* Müller 1846, Abhandl. K. Akad.

- Wiss. Berlin, p. 000.—*Tyranninae* Sundevall 1872, Tentamen, pt. 1, p. 57 (familia).—*Tyrannoideae* Stejneger 1885, Standard Nat. Hist., vol. 4, pp. 460, 463 (super-family).—*Tyrannoidea* Wetmore 1934, Smithsonian Misc. Coll., vol. 89, no. 13, p. 10.
- Fluvicolinae* Swainson 1837, Nat. Hist. Classif. Birds, vol. 2, pp. 5, 21, 89 (subfamily; type *Fluvicola* Swainson).
- Taeniopterinae* Gray 1841, List Genera Birds, ed. 2, p. 40 (subfamily; type *Taenioptera* Bonaparte 1830, a junior synonym of *Xolmis* Boie 1826).
- Alectrurinae* G. R. Gray 1847 (Sept.), Genera of Birds, vol. 1, p. 241 (subfamily; type *Alecturus* Vieillot).
- Colopteridae* Cabanis 1847, Archiv für Naturgeschichte, Jahrg. 23, Bd. 1, no. 1, p. 232 (familia; type *Colopterus* Cabanis, preoccupied by *Colopterus* Erichson 1842).
- Platyrhynchinae* Cabanis 1847, Archiv f. Naturg., Jahrg. 23, Bd. 1, pt. 1, p. 251 (subfamilia; type *Platyrinchus* Desmaret).—*Platyrinchinae* Hellmayr 1927, Field Mus. Nat. Hist., zool. ser., vol. 13, pt. 5, pp. 5, 261.
- Elaininae* Cabanis and Heine 1859 (Sept.), Museum Heineanum, pt. 2, p. 55 (subfamilia; type *Elaina* Sundevall).—*Elaineinae* Sclater 1888, Cat. Birds Brit. Mus., vol. 14, pp. viii, 3, 109.—*Elaeniinae* Hellmayr 1927, Field Mus. Nat. Hist., Zool. ser., vol. 13, pt. 4, pp. vi, 400.
- Conopophaginae* Sclater and Salvin 1873, Nomenclature Avium Neotropicalium, p. 41 (subfamily; type *Conopophaga* Vieillot).—*Conopophagidae* Garrod, 1877, Proc. Zool. Soc. London, p. 452.
- Euscarthminae* Ridgway, 1906 (Jan. 29), Proc. Biol. Soc. Washington, vol. 19, p. 11 (subfamily; type *Euscarthmus* Wied).
- Serpophaginae* Ridgway, 1906 (Jan. 29), Proc. Biol. Soc. Washington, vol. 19, p. 11 (subfamily; type *Serpophaga* Gould).
- Pitanginae* Ridgway, 1906 (Jan. 29), Proc. Biol. Soc. Washington, vol. 19, p. 12 (subfamily; type *Pitangus* Swainson).
- Myiarchinae* Hellmayr, 1926, Field Mus. Nat. Hist., zool. ser., vol. 13, pt. 5, pp. 158 (subfamily; type *Myiarchus* Cabanis).

### Neospecies of Tyrannidae from the Pleistocene and \*Holocene

1. *Sayornis phoebe* (Latham). ILLINOIS: \*Meyer Cave? (Parmalee, 1967, Nat. Speleological Soc. Bull., vol. 29, no. 4, p. 130). VIRGINIA: Natural Chimneys (Wetmore, 1962, Smithsonian Misc. Coll., vol. 145, no. 2, p. 12).
2. *Sayornis sayus* (Bonaparte). CALIFORNIA: Carpinteria? (A. H. Miller, 1932, Univ. Calif. Publ. Geol. Sci., vol. 21, no. 7, p. 172, pl. 13, fig. e). NEW MEXICO: Shelter Cave (Howard and A. H. Miller, 1933, Condor, vol. 35, p. 16).
3. *Tyrannus tyrannus* (Linnaeus). FLORIDA: Reddick (Brodkorb, 1957, Jour. Paleont., vol. 31, p. 136).
4. *Tyrannus dominicensis* (Gmelin). BAHAMAS: \*cave 10 mi. S. of March Harbor on Abaco Island (Conklin, 1971, Quart. Jour. Florida Acad. Sci., vol. 33, no. 3, p. 238). DOMINICAN REPUBLIC: Cerro San Francisco (Bernstein, 1965, Quart. Jour. Florida Acad. Sci., vol. 28, no. 3, p. 279). PUERTO RICO: Cueva Catedral and Cueva Clara (Wetmore, 1922, Bull. Amer. Mus. Nat. Hist., vol. 46, p. 324).
5. *Tyrannus vociferans* Swainson. CALIFORNIA: Rancho La Brea? (A. H. Miller, 1929, Univ. Calif. Publ. Geol. Sci., vol. 19, no. 1, p. 6, pl. 1, fig. b).
6. *Tyrannus caudifasciatus* (d'Orbigny). BAHAMAS: \*cave 10 mi. S. of Marsh Harbor on Abaco Island (Conklin, 1971, Quart. Jour. Florida Acad. Sci., vol. 33, no. 3, p. 238). HAITI: St. Michel de l'Atalye (Wetmore, 1922, Smithsonian Misc. Coll., vol. 74, no. 4, p. 4). DOMINICAN REPUBLIC: \*Cerro San Francisco (Bernstein, 1965, Quart. Jour. Florida Acad. Sci., vol. 28, no. 3, p. 279). PUERTO RICO: Cueva Catedral and Cueva Clara (Wetmore, 1922, Bull. Amer. Mus. Nat. Hist., vol. 46, p. 324).
7. *Myiarchus crinitus* (Linnaeus). ILLINOIS: \*Meyer Cave (Parmalee, 1967, Nat. Speleolog. Soc. Bull., vol. 29, no. 4, p. 130).
8. *Myiarchus stolidus* (Gosse). PUERTO RICO: Cueva Catedral (Wetmore, 1922, Bull. Amer. Mus. Nat. Hist., vol. 46, p. 325).

9. *Contopus virens* (Linnaeus). VIRGINIA: Natural Chimneys (Wetmore, 1962, Smithsonian Misc. Coll., vol. 145, no. 2, p. 12).

10. *Contopus caribaeus* (D'Orbigny). DOMINICAN REPUBLIC: Cueva San Francisco? (Bernstein, 1965, Quart. Jour. Florida Acad. Sci., vol. 28, no. 3, p. 279).

11. *Contopus latirostris* (Verreaux). PUERTO RICO: Cueva Catedral (Wetmore, 1922, Bull. Amer. Mus. Nat. Hist., vol. 46, no. 325).

12. *Empidonax* sp. CALIFORNIA: Carpinteria (A. H. Miller, 1932, Univ. Calif. Publ. Geol. Sci., vol. 21, no. 7, p. 172, pl. 14, fig. j). ILLINOIS: \*Meyer Cave (Farmalee, 1967, Nat. Speleolog. Soc. Bull., vol. 29, no. 4, p. 130).

### Family OXYRUNCIDAE Ridgway

*Oxyrhynchidae* Swainson, 1832, Fauna Boreali-Americana, pt. 2, p. 299 (subfamily; type *Oxyrhynchus* Swainson, 1821, a junior synonym of *Oxyruncus* Temminck, 1820).—Sundevall, 1872, Tentamen, pt. 1, p. 57 (familia).

*Oxyruncidae* Ridgway, 1906 (Jan. 29), Proc. Biol. Soc. Wash., vol. 19, p. 8 (family; type *Oxyruncus* Temminck).

No fossil record.

### Family PHYTOTOMIDAE (Swainson)

*Phytotominae* Swainson, 1837, Nat. Hist. Classif. Birds, vol. 2, p. 296 (subfamily; type *Phytotoma* Molina).—*Phytotomidae* Bonaparte, 1850, Conspectus Generum Avium, pt. 1, p. 86 (familia).

No fossil record.

### Family QUERULIDAE (Swainson)

*Ampelidae* Swainson, 1832, Fauna Boreali-Americana, pt. 2, p. 232 (family; type *Ampelis* Linnaeus, 1766, a junior synonym of *Cotinga* Brisson, 1760).—*Ampelinae* G. R. Gray, 1840 (before April), List of Genera of Birds, p. 34 (subfamily).

*Coracinae* Swainson, 1832, Fauna Boreali-Americana, pt. 2, p. 500 (subfamily; type *Coracina* Vieillot, 1816, a senior synonym of *Pyroderus* G. R. Gray, 1840).—*Coracininae* Cabanis, 1847, Arch. für Naturg., Jahrg. 23, vol. 1, pt. 1, p. 342.

*Querulinae* Swainson, 1837, Nat. Hist. Classif. Birds, vol. 2, pp. 91, 255 (type *Querula* Vieillot).—*Quaerulinae* Bonaparte, 1850, Conspectus Generum Avium, pt. 1, p. 179.

*Tityranae* G. R. Gray, 1840 (before April), List of Genera of Birds, p. 31 (subfamily; type *Tityra* Vieillot).—*Tityrinae* Gray, 1841, List Genera Birds, ed. 2, p. 41.—*Tityrinae* Sundevall, 1872, Tentamen, pt. 1, p. 62 (familia).—*Tityrae* Ridgway, 1907, Bull. U. S. Nat. Mus., no. 50, pt. 4, p. 777.

*Pyroderinae* G. R. Gray, 1840 (before April), List of Genera of Birds, p. 38 (subfamily; type *Pyroderus* G. R. Gray).—*Pyroderae* Ridgway, 1907, Bull. U. S. Nat. Mus., no. 50, pt. 4, p. 777.

*Gymnoderinae* G. R. Gray, 1847 (March), Genera of Birds, vol. 2, p. 317 (subfamily; type *Gymnoderus* Geoffroy).—*Gymnoderae* Ridgway, 1907, Bull. U. S. Nat. Mus., no. 50, pt. 4, p. 778.

*Psarinae* Cabanis, 1847, Archiv für Naturgeschichte, Jahrg. 23, vol. 1, no. 1, p. 236 (subfamily; type *Psaris* Curvier, 1817, a junior synonym of *Tityra* Vieillot, 1816).

*Cotingidae* Bonaparte, 1850, Conspectus Generum Avium, pt. 1, p. 170 (familia; type *Cotinga* Brisson).

*Heliocherinae* Bonaparte, 1853 (séance du 31 Oct.), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 645 (subfamilia; type *Heliochera* Filippi).

*Attilinae* Sclater, 1862, Cat. Coll. Amer. Birds, p. 194 (subfamily; type *Attila* Lesson).

- Rupicolinae* Sclater, 1962, Cat. Coll. Amer. Birds, p. 253 (subfamily; type *Rupicola* Brisson).—*Rupicola* Sundevall, 1872, Tentamen, pt. 1, p. 61 (familia).—*Rupicolidae* Ridgway, 1906 (Jan. 29), Proc. Biol. Soc. Washington, vol. 19, p. 9.
- Ampelioninae* Sundevall, 1872, Tentamen, pt. 1, p. 62 (familia; type *Ampelio* Cabanis).
- Procnatinae* Ridgway, 1907, Bull. U. S. Nat. Mus., no. 50, pt. 4, p. 778 (subfamily; type *Procnias* Illiger).
- Ptilochlorinae* Sclater, 1888, Cat. Birds Brit. Mus., vol. 14, pp. xvi, 282, 316 (subfamily; type *Ptilochloris* Swainson, 1837, a junior synonym of *Lantisoma* Swainson, 1832).

No fossil record.

### Family PIPRIDAE Vigors

- Pipridae* Vigors, 1825, Trans. Linn. Soc. Lond., vol. 14, p. 435 (family; type *Pipra* Linnaeus).—*Piprinae* G. R. Gray, 1840 (after Apr.), List of Genera of Birds, p. 33 (subfamily).—*Piprinae* Sundevall, 1872, Tentamen, pt. 1, p. 60 (familia).

No fossil record.

## Suborder PASSERES Linnaeus

- Passeres* Linnaeus 1766.  
*Hirundines* Wagler 1830.  
*Corvi* Wagler 1830.  
*Certhiomorphae* Sundevall 1872.  
*Cinnyriomorphae* Sundevall 1872.  
*Sylviiformes* Sundevall 1874.  
*Laniiformes* Sundevall 1874.  
*Menurae* Sharpe 1891.

### Family ALAUDIDAE (Vigors)

- Alaudina* Vigors, 1825, Zoological Journal, vol. 1, p. 445 (stirps; type *Alauda* Linnaeus).—*Alaudidae* Boie, 1826, Isis von Oken, col. 974 (family).—*Alaudinae* Bonaparte, 1831, Saggio di una Distribuzione Metodica degli Animali Vertebrati, p. 51 (subfamilia).  
*Alaudinae* Sundevall, 1872, Tentamen, pt. 1, p. 53 (familia).
- Calandritinae* Cabanis, 1851 (May), Museum Heineanum, pt. 1, sig. 16, p. 121 (subfamilia; type *Calandritis* Cabanis, 1851, a junior synonym of *Calandrella* Kaup, 1829).

### Genus *Melanocorypha* Boie

- Melanocorypha* Boie, 1828, Isis von Oken, vol. 21, col. 322 (type *Alauda yettoniensis* Forster, designated by Gray, 1840, Recent).

#### 1. *Melanocorypha gracilis* Tchernov

- Melanocorypha gracilis* Tchernov, 1968, Prelim. Invest. Birds Pleistocene Deposits of 'Ubeidiya, p. 14, pl. 2, figs. 1-18 (syntypes from Ubeidiya, 40 prox. ends of coracoids, 5 prox. and 9 dist. ends of humeri, 10 prox. and 15 dist. ends of ulnae, 33 prox. and 7 dist. ends of carpometacarpi, 15 frags. of premaxillae, Hebrew Univ., Jerusalem).

MIDDLE PLEISTOCENE ('Ubeidiya Formation). ISRAEL: 'Ubeidiya, on SW bank of Sea of Galilee.

Genus *Alauda* Linnaeus

*Alauda* Linnaeus, 1758, Syst. Nat., ed. 10, vol. 1, p. 165 (type *Alauda arvensis* Linnaeus, Recent).

2. *Alauda jordanica* Tchernov

*Alauda jordanica* Tchernov, 1968, Prelim. Invest. Birds Pleistocene Deposits of 'Ubeidiya, p. 19, pl. 3, figs. 1-8 (syntypes from Ubeidiya, 6 prox. and 2 dist. ends of carpometacarpi, 7 prox. and 8 dist. ends of ulnae, and 1 frag. mandible, Hebrew Univ., Jerusalem).

MIDDLE PLEISTOCENE ('Ubeidiya Formation). ISRAEL: 'Ubeidiya, on SW bank of Sea of Galilee.

## Neospecies of Alaudidae from the Pleistocene and \*Holocene

1. *Melanocorypha calandra* (Linnaeus). FRANCE: Mas Rambault, L'Escale, Orgnac-l'Aven, and Combe Grenal (Mourer-Chauviré, 1975 Docum. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 186). POLAND: Raj cave? (Bochenski, 1974, Birds Late Quaternary Poland, pp. 93, 200, fig. 60). UKRAINE: Syuren, Novgorod-Seversk, and \*Okunevki (Voinstvenski, 1967, Prirodnaya Obstanovka i Fauny Proshlogo, vol. 3, pp. 31, 40, 59). RUSSIA: Don River between Nizhne-Chirsk and Novocherkasska? (Voinstvenski, 1967, op. cit., p. 54). ISRAEL: Oumm Qatafa cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, no. 3, p. 104); Kebara cave on Mt. Carmel (*Melanocorypha major* Tchernov, Nov. 1962, op. cit., p. 111, pl. [4], fig. 27; pl. [6], fig. 8-9; holotype left humerus, Dept. Zool., Hebrew Univ., Jerusalem); 'Ubeidiya (Tchernov, 1968, Prelim. Invest. Birds Pleist. Deposits 'Ubeidiya, p. 18, pl. 2, fig. 18; *M. major* synonymized).

2. *Melanocorypha bimaculata* (Ménétriés), AZERBAIJAN: Binagady? (Serebrovsky, 1941, Doklady Akad. Nauk SSSR, vol. 33, no. 7-8, p. 473).

3. *Melanocorypha yeltoniensis* (Forster). UKRAINE: Tankov (Voinstvenski, 1967, Prirodnaya Obstanovka i Fauny Proshlogo, vol. 3, p. 80).

4. *Melanocorypha sibirica* (Gmelin). UKRAINE: Syuren I (Tugarinov, 1937, Trav. Sect. Soviét. Asso. Internat. Etude Quat., pt. 1, pp. 102, 112).

5. *Calandrella cinerea* (Gmelin). FRANCE: Grotte de l'Escale and Abîmes de la Fage (Mourer-Chauviré, 1975, Docum. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 186, pl. 16, fig. 9); Pech de l'Azé? (Mourer-Chauviré, 1976, op. cit., fasc. 2, p. 492). UKRAINE: Novgorod-Seversk and \*Alimovsk (Voinstvenski, 1967, Prirodnaya Obstanovka i Fauny Proshlogo, vol. 3, pp. 41, 58). See also *Calandrella* cf. *cinerea* from Pliocene of Tarkhankut, Crimea (Voinstvenski, 1967, op. cit., p. 22).

6. *Calandrella rufescens* (Vieillot). AZERBAIJAN: Binagady (Serebrovsky, 1941, Doklady Akad. Nauk U. R. S. S., vol. 33, p. 473).

7. *Galerida cristata* (Linnaeus). FRANCE: Montmorency? (Paris, 1912, Rev. Franç. Orn., vol. 4, p. 284); Abîmes de la Fage (Chauviré, 1965, C. R. Soc. Geol. France, no. 1, p. 8); Combe-Grenal (Mourer-Chauviré, 1972, Etudes Quaternaires, Mém. no. 1, p. 359; Rond-du-Barry and \*Rond-du-Barry (Mourer-Chauviré, 1974, Anthropologie, vol. 78, no. 1, p. 38); L'Escale, Orgnac-l'Aven, Le Lazaret, Abri Suard, Fontéchevade, Salpêtre de Pompignan, La Crouzade, La Balauzière, Villereversure?, Campalou?, Baume de Gigny, and La Crouzade (Mourer-Chauviré, 1975, Docum. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 186); Grotte Tournal and Neuville-sur-Ain (Mourer-Chauviré, 1976, op. cit., fasc. 2, pp. 392, 447). SWITZERLAND: Felsen bei Birseck? and Ermitage? (Lambrecht, 1933, Handb. Palaeorn., p. 789). GERMANY: Mauer an der Elsenz? and Thiede (Lambrecht, 1933, op. cit., p. 789). AUSTRIA: Schusterlucke (Lambrecht, 1912, Aquila, vol. 19, p. 304). CZECHOSLOVAKIA: Balcárka (Škutil and Stehlík, 1939, Ornitholog., vol. 6, no. 2-4, p. 22). HUNGARY: Puskaporos (Kormos, 1911, Mitt. Jahrb. kgl. ungar. Reichsanstalt, vol. 19, no. 3, p. 151); Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. kgl. ungar. geol. Reichsanst., vol. 23, pp. 481, 508). POLAND: Mamutowa cave (Bochenski, 1974, Birds Late Quaternary Poland, pp. 98, 200). UKRAINE: Syuren I (Tugarinov, 1937, Trav. Sect. Soviét. Asso. Internat. Etude Quat., pt. 4, pp. 103, 112); Novgorod-Seversk (Zubareva, 1950, Trudi

Inst. Zool. Akad. Nauk Ukrain. SSR, vol. 4, pp. 80, 92, pl. 3, fig. 14); Tankov, \*Alimovsk, and \*Okunevk (Voinstvenski, 1967, Prirodnaya Obstanovka i Fauny Proshlogo, vol. 3, pp. 30, 58, 59). AZERBAIJAN: Klit (Burchak-Abramovich, 1968, Fossil Birds in Caves of USSR, p. 241). ISRAEL: Oumm Qatafa cave and Kebara cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, no. 3, pp. 100, 104, 106); Hayonim cave (Bar-Yosef and Tchernov, 1966, Israel Jour. Zool., vol. 15, p. 132). CHINA: Cou-Kou-Tien? (Howard, 1939, Fortschritte Paläont., vol. 2, p. 314).

9. *Lullula arborea* (Linnaeus). FRANCE: Abimes de la Fage (Chauviré, 1965, C.R. Soc. Géol. France, no. 1, p. 8); \*Grotte de l'Hortus (Mourer-Chauviré, 1972, Études Quaternaires, Mém. no. 1, p. 291); Les Romains at Pierre-Châtel (Desbrosse and Mourer-Chauviré, 1973, Quaternär, p. 153); Rond-du-Barry (Mourer-Chauviré, 1974, Anthropologie, vol. 78, no. 1, p. 38); L'Escalé, Lunel-Viel, Orgnac-l'Aven, Le Lazaret, Cap de la Biehle, Aldène, Fontêchevade, La Balauzière, Cottier, Combe Grenal, Grotte Simard, and Baume de Gigny (Mourer-Chauviré, 1975, Docum. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 187). SARDINIA: Monte San Giovanni (Lydekker, 1891, Proc. Zool. Soc. London, p. 472, pl. 37, fig. 9). CZECHOSLOVAKIA: Volyn (Lambrecht, 1933, Handb. Palaeorn., p. 789). POLAND: Mamutowa cave and Raj cave (Bocheński, 1974, Birds Late Quaternary Poland, pp. 99, 200). UKRAINE: Adzhi-Koba and Syuren (Voinstvenski, 1967, Prirodnaya Obstanovka i Fauny Proshlogo, pt. 3, pp. 28, 31).

10. *Alauda arvensis* Linnaeus. IRELAND: Castlepook Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 404). ENGLAND: Kirkdale Cave? (Lydekker, 1891, Ibis, ser. 6, vol. 3, p. 384); Ightham fissure (E. T. Newton, 1894, Quart. Jour. Geol. Soc. London, Vol. 50, p. 191, pl. 10, figs. 10-12); Clevedon Cave, Langworth Bassett Cave, Chudleigh Cave, and \*Barton Mere (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 404). SPAIN: Caverna de Santimamine (Villata, 1964, Speleon, vol. 15, p. 97). FRANCE: Montmorency (Milne-Edwards, 1871, Ois. Foss. France, vol. 2, p. 598); Grotte de Moustier and Quercy (Lambrecht, 1933, Handb. Palaeorn., p. 789); Grotte de Lazaret (Mourer-Chauviré, 1964, Bull. Mus. Anthropol. prehist. Monaco, no. 11, pp. 64, 66, 72, 76, 78); Combe Grenal (Mourer-Chauviré, 1972, Études Quaternaires, Mém. no. 1, p. 359); Rond-du-Barry (Mourer-Chauviré, 1974, Anthropologie, vol. 78, no. 1, p. 38); Les Valerots?, L'Escalé, Abimes de la Fage, Orgnac-l'Aven, Fontêchevade, Eden Roc?, La Baulauzière, Soulabé, Combe Grenal, Pech de l'Azé, La Quina, and Le Placard (Mourer-Chauviré, 1975, Docum. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 187); Grotte de Balazuc? (Mourer-Chauviré, 1976, op. cit., fasc. 2, p. 435). CORSICA: Funtanedu (E. T. Newton, 1921, Proc. Zool. Soc. London, pt. 2, p. 231). SARDINIA: bone breccia (Milne-Edwards, 1971, Ois. Foss. France, vol. 2, p. 597); Monte San Giovanni? (Lambrecht, 1933, Handb. Palaeorn., p. 789). ITALY: Buco della Volpe above Rovenna (Portis, 1888, Mem. Accad. R. Torino, ser. 2, vol. 38, p. 197); Grotte du Prince at Grimaldi? (Mourer-Chauviré, 1975, op. cit., p. 187). GERMANY: Westeregin bei Magdeburg?, Audmerberg bei Goslar?, and Kleine Scheuer im Lonetal (Lambrecht, 1933, Handb. Palaeorn., p. 789). CZECHOSLOVAKIA: Holubice, Mikulov, Balcarova skála, Certova dira, and Stránská skála (Skutil and Stehlík, 1939, Ornitholog, vol. 6, no. 2-4, p. 5). AUSTRIA: Schusterlucke? (Lambrecht, 1933, Handb. Palaeorn., p. 789); Hundsheim? (Jánosy, 1974, Sitzb. Österr. Akad. Wiss., math.-naturw. Kl., Abt. 1, Bd. 182, Heft 6-8, p. 212). HUNGARY: Pálffy cave (Lambrecht, 1913, vol. 20, p. 426). RUMANIA: Püspökfürdő [Betfia] (Capek, 1917, Barlangkutatás, vol. 5, p. 30). POLAND: Mamutowa cave and Raj cave (Bochenski, 1974, Birds Late Quaternary Poland, pp. 101, 200). UKRAINE: Syuren I (Tugarinov, 1937, Trav. Sect. Soviét. Asso. Internat. Etude Quat., pt. 1, pp. 103, 112); Novgorod-Seversk (Zubareva, 1950, Trudi Inst. Zool. Akad. Ukrain. RSR, vol. 4, pp. 50, 92, pl. 3, figs. 3-8); grotto Chokurcha, Tardenuaz, Desny River below Chernigov, Kiev, \*Alimovsk, \*Okunevk, and \*Rayki (Voinstvenski, 1967, Prirodnaya Obstanovka i Fauny Proshlogo, vol. 3, pp. 25, 30, 35, 40, 49, 51, 58, 59, 65). RUSSIA: Don River between Nizhne-Chirskaya and Novocherkassk (Voinstvenski, 1967, op. cit., p. 54). ISRAEL: Oumm Qatafa Cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, no. 3, pp. 100, 104). CHINA: Chou-Kou-Tien? (Howard, 1939, Fortschritte Paläont., vol. 2, p. 314).

11. *Eremophila alpestris* (Linnaeus). ENGLAND: Chudleigh Cave? (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 404). BELGIUM: Grotte Marie-Jeanne (Ballmann, 1973, Cerfaut, vol. 63, p. 10). FRANCE: Mas Rambault and l'Escalé at Saint-Estève-Janson (Mourer-Chauviré, 1975, Docum. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 187). CORSICA: Grotta de Funtanedu? (E. T. Newton, 1921, Proc. Zool. Soc. London, pt. 2, p. 231). SWITZERLAND: Schweizersbild bei Schaffhausen (Lambrecht, 1933, Handb. Palaeorn., p. 789). CZECHOSLOVAKIA:



Balcárka (Skutil and Stehlík, 1939, *Ornitholog*, vol. 6, no. 2-4, p. 22). POLAND: Mamutowa cave and Raj cave, (Bochenski, 1974, *Birds Late Quaternary Poland*, pp. 95, 200, text-fig. 63, pl. 6, fig. 3). UKRAINE: Syuren I (Tugarinov, 1937, *Trav. Sect. Asso. Internat. Etude Quat.*, pt. 1, pp. 102, 112); Adzhi-Koba, Novgorod-Seversk, and Tankov (Voinstvenski, 1967, *Prirodnaya Obstanovka i Fauny Proshlogo*, vol. 3, pp. 28, 30, 40). AZERBAIJAN: Klit (Burchak-Abramovich, 1968, *Fossil Birds Caves USSR*, p. 241). CALIFORNIA: Rancho La Brea (L. Miller, 1912, *Univ. Calif. Publ., Bull. Dept. Geol.*, vol. 7, no. 5, p. 78); McKittrick (A. H. Miller, 1937, *Condor*, vol. 39, p. 250). NEW MEXICO: Conkling Cavern and Shelter Cave (Howard and A. H. Miller, 1933, *Condor*, vol. 70, no. 2, p. 183). SOUTH DAKOTA: \*Hosterman, \*Spiry-Eklo, and \*Sully (Parmalee, *Plains Anthropologist*, vol. 22-77, p. 197).

### Family HIRUNDINIDAE Vigors

*Hirundinidae* Vigors, 1825, *Trans. Linn. Soc. London*, vol. 14, p. 428 (family; type *Hirundo* Linnaeus).—*Hirundininae* Gray, 1840 (before Apr.), *List Genera Birds*, p. 8 (subfamily).—*Hirundininae* Sundevall, 1872, *Tentamen*, pt. 1, p. 52 (familia).  
*Psalidoprocinae* Sharpe, 1870, *Proc. Zool. Soc. London*, p. 288 (subfamily; type *Psalidoprocne* Cabanis).  
*Pseudochelidonidae* Shelley, 1896, *Birds of Africa*, vol. 1, p. 104 (family; type *Pseudochelidon* Hartlaub).—*Pseudochelidoninae* Bannerman, 1939, *Birds Tropical W. Africa*, vol. 5, p. 299 (subfamily).

### Genus *Hirundo* Linnaeus

*Hirundo* Linnaeus, 1758, *Syst. Nat.*, ed. 10, vol. 1, p. 191 (type *Hirundo rustica* Linnaeus, Recent, designated by Gray, 1840).

#### 1. *Hirundo aprica* Feduccia

*Hirundo aprica* Feduccia, 1967 (Oct. 9), *Condor*, vol. 69, no. 5, p. 526, fig. 1 (type from Fox Canyon, right humerus, Univ. Mich. Mus. Paleo. no. 28104).

UPPER PLIOCENE (Rexroad Formation). KANSAS: Meade County: Fox Canyon.

### Genus *Tachycineta* Cabanis

*Tachycineta* Cabanis, 1851, *Museum Heineanum*, pt. 1, p. 48 (type by original designation *Hirundo thalassina* Swainson, Recent).

#### 2. *Tachycineta speleodytes* Brodkorb

*Tachycineta speleodytes* Brodkorb, 1957 (Feb. 26), *Jour. Paleont.*, vol. 31, no. 1, p. 131 pl. 20, fig. 1-9 (type from Dixie Lime Products mine, left humerus, Brodkorb coll. no. 1270 with associated left ulna, no. 1271, and left radius, no. 1272; referred rostrum; coracoids, carpometaacarp, femur, tibiotarsi, tarsometatarsi).

UPPER PLEISTOCENE (Reddick beds). FLORIDA: Marion County: Dixie Lime Products Company mine, 1 mi SE Reddick (Brodkorb, 1957).

UPPER PLEISTOCENE (Arredondo clay). FLORIDA: Alachua County: Arredondo (Brodkorb, 1959, *Bull. Florida State Mus.*, vol. 4, no. 9, p. 283); Haile (Ligon, 1966), *Bull. Florida State Mus.*, vol. 10, no. 4, p. 149).

## Neospecies of Hirundinidae from the Pleistocene and \*Holocene

1. *Progne subis* (Linnaeus). IDAHO: Jaguar Cave (L. Miller, 1965, Tebiwa, vol. 8, no. 1, p. 19). FLORIDA: Reddick (Brodkorb, 1957, Jour. Paleont., vol. 31, no. 1, p. 136).
2. *Progne chalybea* (Gmelin). BRAZIL: Lapa da Escrivania and Lapa da Lagoa Sumidouro (O. Winge, 1887, E Museo Lundii, vol. 1, no. 2, p. 48).
3. *Stelgidopteryx ruficollis* (Vieillot). YUCATAN: \*Actun Has?, \*Actun Coyok?, and \*Actun Spukil? (H. I. Fisher, 1953 Cranbrook Inst. Sci. Bull., vol. 33, p. 83).
4. *Riparia riparia* (Linnaeus). FRANCE: Grotte du Lazaret (Mourer-Chauviré, 1964, Bull. Mus. anthrop. préhist. Monaco, no. 11, pp. 64-78); Grotte de l'Hortus (Mourer-Chauviré, 1972, Etudes Quaternaires, Mém. no. 1, p. 276). SARDINIA: (Lambrecht, 1918, Aquila, vol. 24, p. 207). UKRAINE: \*Alimovsk (Voinstvenski, 1967, Prirodnyaya Obstanovka i Fauny Proshlogo, pt. 3, p. 58).
5. *Ptyonoprogne rupestris* (Scopoli). FRANCE: Grotte de Lourdes (Milne-Edwards, 1871, Ois. Foss. France, vol. 2, p. 594); Grotte du Lazaret (Mourer-Chauviré, 1964, Bull. Mus. Anthrop. préhist. Monaco, no. 11, pp. 61, 66, 78); Grotte de l'Hortus, Combe Grenal, and \*Grotte de l'Hortus (Mourer-Chauviré, 1972, Etudes Quaternaires, Mém. no. 1, pp. 276, 289, 359); Rond-du-Barry (Mourer-Chauviré, 1974, Anthropologie, vol. 78, no. 1, p. 38); L'Escale, Abîmes de la Fage, Orgnac-l'Aven, Cap de la Biehle, Fontechevade, and Pié Lombard (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 188); Bruniquel (Mourer-Chauviré, 1976, op. cit., fasc. 2, p. 426). ITALY: Grotte Menton, Equi shelter and cave, and Grotta dei Colombi? (Lambrecht, 1933, Handb. Palaeorn., p. 776). HUNGARY: Subalyuk cave? (Jánossy, 1962, Aquila, vol. 67-68, p. 181).
6. *Hirundo rustica* Linnaeus. IRELAND: Kesh Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 403). ENGLAND: Ightham fissure (E. T. Newton, 1899, Quart. Jour. Geol. Soc. London, vol. 55, no. 219, p. 420); Langwith Bassett Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 403); Merlin's Cave (Lambrecht, 1933, Handb. Palaeorn., p. 775). FRANCE: Quercy and Bruniquel? (Lambrecht, 1933, op. cit., pp. 775, 776); Balme-les-Grottes (Chauviré, 1963, C. R. Sommaire Soc. Géol. France, fasc. 2, p. 53); Grotte du Lazaret (Mourer-Chauviré, 1964, Bull. Mus. Anthrop. préhist. Monaco, pp. 61, 72); Abîmes de la Fage (Chauviré, 1965, C. R. Soc. Géol. France, no. 1, p. 8); Morin (Chauviré, 1965, Congrès Soc. Savantes, p. 255); Grottes inférieures d'Aurensan (Bouchud, 1972, Bull. Asso. Franç. Etude Quat., vol. 1, pp. 53, 56); Soulabé, La Colombière at Neuville-sur-Ain, Le Blot, Cottier, Combe Grenal, and \*Arago (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 189). BELGIUM: Grotte Marie-Jeanne? (Ballmann, 1973, Gerfaut, vol. 63, p. 9). GIBRALTAR: Devil's Tower (Bate, 1928, Jour. Roy. Anthrop. Inst., vol. 58, p. 104); Forbes quarry (Lambrecht, 1933, Handb. Palaeorn., p. 775). SARDINIA: Monte Giovanni? (Lydekker, 1891, Proc. Zool. Soc. London, p. 473, pl. 37, fig. 10). MALTA: Ghar-Dalam? (Fischer and Stephan, 1974, Z. geol. Wiss. Berlin, vol. 4, p. 518). ITALY: Grotta dei Colombi? (Regalia, 1893, Arch. Antrop. Etnol., vol. 23, p. 262); Grotta Romanelli? (Lambrecht, 1933, Handb. Palaeorn., p. 775); Grotte du Prince? (Mourer-Chauviré, 1976, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, fasc. 2, p. 363). SWITZERLAND: Ettingen? (Lambrecht, 1933, Handb. Palaeorn., p. 776). GERMANY: Seveckenberg bei Quedlingburg (*Hirundo fossilis* Giebel, 1847, Fauna der Vorwelt, vol. 1, pt. 2, p. 18; types clavicle, carpometacarpus, 2 dist. frag. radii, prox. frag. tarsometatarsus; this sp.?). Hermannshöle bei Rübeland (Blasius, 1901, Jour. f. Orn., vol. 49, pp. 58-60); Westeregeln bei Magdeburg, Thiede bei Westerregeln, Roter Berg bei Saalfeld, Fuchsloch bei Bleitsen, Pössneck, and St. Wolfgang? (Lambrecht, 1933, Handb. Palaeorn., p. 776). CZECHOSLOVAKIA: Certova dira (Capek, 1910, Ber. Internat. Orn. Kongr. Berlin, p. 941); Stránska skála and Volyn (Lambrecht, 1933, Handb. Palaeorn., p. 776); Balcárka, Holstýn, and Kulna (Skutil and Stehlik, 1939, Ornitholog, vol. 6, nos. 2-4, p. 22). AUSTRIA: Schusterlucke (Lambrecht, 1933, Handb. Palaeorn., p. 775); Hundsheim? (Jánossy, 1974, Sitzb. Österr. Akad. Wiss., math.-naturw. Kl., pt. 1, vol. 182, no. 6-8, p. 212). HUNGARY: Remetehagy (Lambrecht, 1914, Aquila, vol. 21, p. 90); Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. ungar. geol. Anst., vol. 23, p. 480, fig. 18); Istállóskő (Jánossy, 1954, Aquila, vol. 55-58, p. 216); Czarnota? (Kretzoi, 1956, Geologica Hungarica, ser. pal., fasc. 27, p. 128). RUMANIA: Püspökfürdő [Betfia] (Capek, 1917, Barlangkutatás, vol. 5, p. 29). POLAND: Raj cave and Niedostepna rock-shelter (Bochenski, 1974, Birds Late Quarternary Poland, pp. 102, 200). UKRAINE: Syuren I (Tugarinov, 1937, Trav. Sect. Soviét. Asso. Internat.

Etude Quat., pt. 1, pp. 103, 112); Novgorod Seversk (Zubareva, 1950, Trudi Inst. Zool. Akad. Nauk Ukrain. RSR, vol. 4, pp. 80, 94, pl. 3, figs. 17-21); Tankov (Voinstvenski, 1967, Prirodnyaya Obstanovka i Fauny Proshlogo, vol. 3, p. 30); Murzan-Koba cave (Burchak-Abramovich, Fossil Birds in Caves USSR, p. 237). ISRAEL: Kebara Cave? (Tchernov, 1962, Bull. Research Council Israel, vol. 11, no. 3, pp. 106, 113, 126, 131, pl. 1, figs. 4-5; pl. 6, fig. 13); Hayonim Cave (Bar-Yosef and Tchernov, 1966, Israel Jour. Zool., vol. 15, p. 132). CHINA: Chou-Kou-Tien (Howard, 1932, Fortschritte Paläont., vol. 2, p. 314). BRAZIL: Lapa da Escrivania? (Winge, 1883, E. Museo Lundii, vol. 1, no. 2, pp. 80, 88); Lagoa do Sumidouro (Lambrecht, 1933, Handb. Palaeorn., p. 775 [error?]).

7. *Hirundo daurica* Linnaeus. FRANCE: Grotte de l'Hortus (Mourer-Chauviré, 1972, Etudes Quaternaires, Mém. no. 1, p. 276); Pierre-Châtel Desbrossé and Mourer-Chauviré, 1973, Quartär, vol. 23-24, p. 153); Rond-du-Barry (Mourer-Chauviré, 1974, Anthropologie, vol. 78, no. 1, p. 38); Abîmes de la Fage, Le Lazaret, Abri Suard, Pompignan, Remoulins, La Baulauzière, Les Romains, Grotte Jean Pierre no. 1, Jaurens, Le Blot, Pech de l'Azé, Grotte Simard, Baum de Gigny, and \*Rond-du-Barry (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 189). ITALY: Grotta dei Colombi (Lambrecht, 1933, Handb. Palaeorn., p. 776); Grotte du Prince (Mourer-Chauviré, 1976, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, fasc. 2, p. 363). ISRAEL: Oumm Qatafa Cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, no. 3, p. 100).

8. *Petrochelidon pyrrhonota* (Vieillot). CALIFORNIA: McKittrick (L. Miller, 1925, Univ. Calif. Publ., Bull. Dept. Geol. Sci., vol. 15, p. 325). VIRGINIA: Natural Chimneys (Wetmore, 1962, Smithsonian Misc. Coll., vol. 145, no. 2, p. 12).

9. *Petrochelidon fulva* (Vieillot). TEXAS: Klein Cave (Feduccia, 1972, Southwestern Naturalist, vol. 17, no. 3, p. 296). DOMINICAN REPUBLIC: Cerro San Francisco (Bernstein, 1965, Quart. Jour. Florida Acad. Sci., vol. 28, no. 3, p. 279); PUERTO RICO: Cueva Catedral (Wetmore, 1922, Bull. Amer. Mus. Nat. Hist., vol. 46, p. 325). YUCATÁN: \*Actun Lara?, \*Actun Coyok?, \*Actun Spukil?, and \*Actun Oxkintok (H. I. Fisher, 1953, Cranbrook Inst. Sci. Bull., vol. 33, p. 83).

10. *Delichon urbica* (Linnaeus). IRELAND: Newhall Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 403). ENGLAND: Carnfort Cave (Bell, 1915, op. cit., p. 403). FRANCE: \*Grotte de l'Hortus (Mourer-Chauviré, 1972, Etudes Quaternaires, Mém. no. 1, p. 291); Les Romains at Pierre-Châtel (Desbrossé and Mourer-Chauviré, Quartär, vol. 23-24, p. 153); Rond-du-Barry (Mourer-Chauviré, 1974, Anthropologie, vol. 78, no. 1, p. 38); Soulabé, Combe Grenal, and Petit Puymoyen (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 189). ITALY: Grotta dei Colombi (Lambrecht, 1933, Handb. Palaeorn., p. 766). CZECHOSLOVAKIA: Stránská skála and Balcárka (Skutil and Stehlík, 1939, Ornitholog, vol. 6, nos. 2-4, p. 22). RUMANIA: Püspökfürdő [= Betfia] (Capek, 1917, Barlangkutatás, vol. 5, p. 70). UKRAINE: Kara-Koba, Novgorod-Seversk, Nizhnee Krivche, and \*Alimovsk (Voinstvenski, 1967, Prirodnyaya Obstanovka i Fauny Proshlogo, vol. 3, pp. 36, 41, 42, 58). RUSSIA: Don River between Nizhnee-Chirskaya and Novocherasski (Voinstvenski, 1967, op. cit., p. 54).

### Family DICRURIDAE (Vigors)

*Dicrurina* Vigors, 1825, fide Gray (type *Dicrurus* Vieillot).—*Dicrurinae* Swainson, 1837, Nat. Hist. Classif. Birds, vol. 2, pp. 4, 221 (subfamily).—*Dicrourinae* Cabanis, 1847, Archiv. f. Naturgesch., Jahrg. 23, vol. 1, pt. 2, p. 323 (subfamilia).—*Dicrourinae* Sundevall, 1872, Tentamen, pt. 1, p. 22 (familia).—*Dicruridae* Blyth, 1849, Cat. Birds Mus. Asiatic Soc., p. 200 (family).

*Edolianae* Swainson, 1832, Fauna Boreali-Americana, pt. 2, p. 105 (subfamily; type *Edolius* Cuvier, 1817, a junior synonym of *Dicrurus* Vieillot, 1816).—*Edoliinae* Bonaparte, 1850, Conspectus Generum Avium, pt. 1, p. 349.

### Neospecies of Dicruridae from the Pleistocene

1. *Dicrurus macrocercus* Vieillot. CHINA: Chou-Kou-Tien? (Howard, 1939, Fortschritte Paläont., vol. 2, p. 314).

## Family ORIOLIDAE (Vigors)

- Oriolina* Vigors, 1825, fide Gray (type *Oriolus* Linnaeus).—*Oriolidae* Boie, 1826, Isis von Oken, col. (family).—*Oriolinae* Swainson, 1832, Fauna Boreali-Americana, pt. 2, p. 152 (subfamily).—*Oriolinae* Sundevall, 1872, Tentamen, pt. 1, p. 21 (familia).  
*Ireninae* Gray, 1869, Hand-list Gen. Sp. Birds, pt. 1, pp. xvi, 288 (subfamily; type *Irena* Horsfield).—*Irenidae* Oberholser, 1917, Jour. Wash. Acad. Sci., vol. 7, p. 537.

## Neospecies of Oriolidae from the Pleistocene and °Holocene

1. *Oriolus oriolus* (Linnaeus). FRANCE: Fontéchevade at Montbron (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 214). ITALY: \*Grotta dei Colombi (Lambrecht, 1933, Handb. Palaeorn., p. 784). CZECHOSLOVAKIA: Balcárka (Skutil and Stehlík, 1939, Ornitholog, vol. 6, nos. 2-4, p. 22). HUNGARY: Remetehegy (Lambrecht, 1914, Aquila, vol. 21, p. 90); Pilisszanto (Lambrecht, 1915, Mitt. Jahrb. ungar. geol. Anst. vol. 23, p. 408). ISRAEL: Kebara Cave? (Tchernov, 1962, Bull. Research Council Israel, vol. 11, no. 3, pp. 106, 110, 128, pl. 3, fig. 20).

## Family CORVIDAE Vigors

- Coraces* Illiger, 1811, Prorumus systematis mammalium et avium, pp. 196, 225 (familia; type by tautonomy *Coracia* Brisson, 1760 [nec *Coracias* Linnaeus, 1776], a junior synonym of *Corvus* Linnaeus, 1758).—*Coraces* Vieillot, 1816, Analyse d'un nouvelle ornithologie élémentaire, p. 35 (familie).  
*Corvidae* Vigors, 1825, Trans. Linn. Soc. London, vol. 14, p. 445 (family; type *Corvus* Linnaeus).—*Corvina* Vigors, 1825, fide Gray.—*Corvinae* Bonaparte, 1831, Saggio di una Distribuzione Metodica degli Animali Vertebrati, p. 42 (subfamilia).—*Corvinae* Sundevall, 1872, Tentamen, pt. 1, p. 43 (familia).  
*Garrulidae* Boie, 1825, Isis von Oken, col. 000 (family; type *Garrulus* Brisson).—*Garrulinae* Swainson, 1832, fide Gray (subfamily).—*Garrulinae* Sundevall, 1872, Tentamen, pt. 1, p. 42 (familia).  
*Crypsirinae* Swainson, 1832, Fauna Boreali-Americana, pt. 2, p. 288 (subfamily).—*Crypsirinae* Swainson, 1837, Nat. Hist. Classif. Birds, vol. 2, p. 96 (subfamily).  
*Fregilinae* Swainson, 1837, Nat. Hist. Classif. Birds, vol. 2, pp. 96, 268 (subfamily; type "*Fregilus*", i.e. *Fregilus* Cuvier, 1817, a junior synonym of *Pyrrhcorax* Vieillot, 1816). *Fregilinae* Gray, 1840 (before Apr.), List of Genera of Birds, p. 39 (subfamily).—*Fregilinae* Sundevall, 1872, Tentamen, pt. 1, p. 42 (familia).  
*Gymnorhinae* Gray, 1840 (before Apr.), List of Genera of Birds, p. 37 (subfamily; type *Gymnorhina* Gray).—*Gymnorhinae* Sundevall, 1872, Tentamen, pt. 1, p. 44 (familia).  
*Pyrrhcoracinae* Gray, 1846 (Apr.), Genera of Birds, vol. 2, p. 319 (subfamily; type *Pyrrhcorax* Vieillot).  
*Streperinae* Blyth, 1849, Cat. Birds Mus. Asiatic Soc., p. 105 (subfamily; type *Strepera* Lesson).—*Streperidae* Ridgway, 1909 (March), in Knowlton, Birds of World, p. 726 footnote (family).—*Streperidae* Sharpe, 1909 (preface dated Aug. 24), Hand-list Gen. Sp. Birds, vol. 5, p. 629).  
*Baritinae* Bonaparte, 1850, Conspectus Generum Avium, pt. 1, p. 367 (subfamily; type *Barita* Cuvier, 1817, a junior synonym of *Cracticus* Vieillot, 1816).  
*Nucifraginae* Sundevall, 1872, Tentamen, pt. 1, p. 42 (familia; type *Nucifraga* Vieillot).  
*Zavattariornithidae* Lowe, 1949, Ibis, vol. 91, p. 102 (family; type *Zavattariornis* Moltoni).  
*Cracticidae* Amadon, 1943, Amer. Mus. Novitates, no. 1247, p. 13 (family; type *Cracticus* Vieillot).  
*Grallinidae* Mayr and Amadon, 1941 (Apr. 2), Amer. Mus. Novitates, no. 1496, p. 31 (family; type *Grallina* Vieillot).  
*Corcoracinae* Mayr and Amadon, 1951 (Apr. 2), Amer. Mus. Novitates, no. 1496, p. 38 (subfamily; type *Corcorax* Lesson).  
*Aphelocomini* Hardy, 1961 (Dec. 29), Univ. Kansas Sci. Bull., vol. 42, no. 2, p. 137 (tribe; type *Aphelocoma* Cabanis).

*Cyanocorini* Hardy, 1961 (Dec. 29), Univ. Kansas Sci. Bull., vol. 42, no. 2, p. 137 (tribe; type *Cyanocorax* Boie).—*Cyanocoracini* Hardy, 1964 (Apr. 30), Occ. Papers C. C. Adams Center for Ecological Studies, no. 11, p. 1 ("justified emendation").

### Subfamily GARRULINAE (Boie)

*Garrulidae* Boie, 1825.—*Garrulinae* Swainson, 1832.  
*Crypsirininae* Swainson, 1831.  
*Alphelocomini* Hardy, 1961.  
*Cyanocorini* Hardy, 1961.

### Genus †*Miocitta* Brodkorb

*Miocitta* Brodkorb, 1972 (18 Sept.), Condor, vol. 74, no. 3, p. 347 (type by original designation *Miocitta galbreathi* Brodkorb).

#### 1. *Miocitta galbreathi* Brodkorb

*Miocitta galbreathi* Brodkorb, 1972 (18 Sept.), Condor, vol. 74, no. 3, p. 347, fig. 1 (holotype from near Peetz, distal portion of right humerus, Southern Illinois Univ. no. P 198).

UPPER MIOCENE (Kennesaw local fauna, lower part of Pawnee Creek Formation). COLORADO: Logan County: about 20 mi WSW Peetz, in SE 1/4, section 26, Township 11 N, Range 55 W.

### Genus †*Protocitta* Brodkorb

*Protocitta* Brodkorb, 1957 (Feb. 26), Jour. Paleont., vol. 31, no. 1, p. 132 (type by original designation *Protocitta dixi* Brodkorb).

#### 2. *Protocitta ajax* Brodkorb

*Protocitta ajax* Brodkorb, 1972 (18 Sept.), Condor, vol. 74, no. 3, p. 349, fig. 2 (holotype from Palo Duro Falls, Univ. Calif. Mus. Paleo. no. 43386, left tarsometatarsus; see also *Pica pica* A. H. Miller and Bowman, 1956, Condor, vol. 58, no. 2, p. 164, fig. 2).

UPPER PLIOCENE (Blancan age). TEXAS: Randall County: Palo Duro Falls, locality V-5318, 9 mi E, 3 1/2 mi N Canyon).

UPPER PLIOCENE (Rexroad Formation, Blancan age). KANSAS: Meade County: Rexroad Ranch (Brodkorb, 1972, p. 349).

#### 3. *Protocitta dixi* Brodkorb

*Protocitta dixi* Brodkorb, 1957 (Feb. 26), Jour. Paleont., vol. 31, no. 1, p. 132, pl. 20, figs. 14-18 (type from Dixie Lime mine, left humerus, Brodkorb coll. no. PB 428; referred coracoid, ulna, carpometacarpus, tarsometatarsus).—Hamon, 1964, Florida Geol. Surv. Geol. Bull., no. 44, p. 193, fig. (deser-scapula, femur, tibiotarsus).

LOWER UPPER PLEISTOCENE (Reddick beds). FLORIDA: Marion County: Dixie Lime Products Company mine, 1 mi SE Reddick.

LOWER UPPER PLEISTOCENE (Arredondo clay). FLORIDA: Alachua County: Haile (Ligon, 1966, Bull. Florida State Mus., vol. 10, no. 4, p. 149).

UPPER PLEISTOCENE (cave deposit). TEXAS: Llano County: Miller's Cave (Weigel, 1967, Texas Jour. Sci., vol. 19, no. 1, p. 108).

Genus *f**Henocitta* Holman

*Henocitta* Holman, 1959 (Sept. 3), Bull. Florida State Mus., vol. 5, no. 1, p. 5 (type by original designation *Henocitta brodkorbi* Holman).

4. *Henocitta brodkorbi* Holman

*Henocitta brodkorbi* Holman, 1959 (Sept. 3), Bull. Florida State Mus., vol. 5, no. 1, p. 6, pl. 1, figs. 1-2 (type from Connell and Schultz mine, distal half of left humerus, Brodkorb coll. no. PB 2323).

LOWER UPPER PLEISTOCENE (Arredondo clay). FLORIDA: Levy County: Connell and Schultz Limerock Company quarry, SE edge Williston.

## Subfamily CORVINAE (Vigors)

*Coraces* Illiger, 1811.

*Corvidae* Vigors, 1825.—*Corvinae* Bonaparte, 1831.

*Frigilinae* Swainson, 1837.

*Pyrrhocoracinae* Gray, 1846.

*Zavattariomithidae* Lowe, 1949.

Genus *Corvus* Linnaeus

*Corvus* Linnaeus, 1758, Syst. Nat., ed. 10, vol. 1, p. 105 (type by tautonomy *Corvus corax* Linnaeus, Recent).

*Miocorax* Lambrecht, 1933, Handbuch der Palaeornithologie, p. 636 (type by monotypy *Corvus larteti* Milne-Edwards; preoccupied by *Miocorax* Lambrecht, 1933, op. cit., p. 291).

*Miocorvus* Lambrecht, 1933, op. cit., p. 1024 (new name for *Miocorax* Lambrecht, p. 636).

*Palaeocorax* Forbes, 1892 (Dec. 31), Bull. Brit. Orn. Club, vol. 1, p. xxi (type by monotypy *Corvus moriorum* Forbes).

5. *Corvus larteti* Milne-Edwards

*Corvus larteti* Milne-Edwards, 1871, Ois. Foss. France, vol. 2, sig. 48, p. 381, pl. 151-152 (type from Sansan, tarsometatarsus, tibiotarsus, ends of femur, coracoid, scapula, ulna, carpometacarpus, phalanges, quadrate).

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

6. *Corvus pliocaenus* (Portis)

*Numenius* sp. (*Pliocaenus*) Portis, 1888, Mem. Accad. R. Torino, ser. 2, vol. 38, p. 194 (Il Tasso, distal portion ulna; nomen nudum).—Portis, 1889, Mem. Ist. Studi Superiori Firenze, p. 195, pl. 38, figs. 26a-b (type from Il Tasso, distal part of right ulna, Gabinetto di Geologia, Istituto di Studi Superiori, Firenze).—*Corvus pliocaenus* Regalia, 1902, Palaeontographia Italica, vol. 8, p. 220, pl. 27, fig. 1 (type restudied).

*Corvus praecorax* Depéret, 1890 (séance 21 March), C. R. Acad. Sci. Paris, vol. 114, no. 12, p. 691 (Rousillon [basin], brief descr. tarsometatarsus, tibiotarsus, carpometacarpus, coll. Dr. A. Donnezan).—Depéret, 1892 (séance 25 Apr.), C. R. Soc. géologique France, ser. 3, vol. 20, no. 7, p. lxx (Perpignan; no descr.).—Depéret, 1897, Mém. Soc. géol. France, Pal. Mém. no. 3, p. 135, pl. 13, figs. 12-19 (descr. humerus, ulna, carpometacarpus, tibiotarsus).—Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 248 (types restudied, now in Dépt. Sciences de la Terre, Lyon).<sup>1</sup>

<sup>1</sup>The single available measurement of the type of *N. pliocaenus*, the oblique width of the ulna, is 10.7 mm, only 0.2 mm. less than the corresponding measurement of *C. praecorax*. Mourer-Chauviré nevertheless considered them as representing different species of separate lineages.

*Corvus betfianus* Kretzoi, 1962 (Feb.), *Aquila*, vol. 67-68, p. 172 (holotype from Betfia 5, distal part of left carpometacarpus, Museum Regional, Oradea, no. 1899a/4). Position tentative.

UPPER PLIOCENE (Perpignan clay, Astian). FRANCE: Pyrénées Orientales: Fort de Serrat-d'en-Vacquer, near Perpignan, in Rousillon basin (Depéret, 1890).

UPPER PLIOCENE (Astian) or LOWEST PLEISTOCENE (Villafranchian). ITALY: Valdarno: Il Tasso, near Terranova (Portis, 1889).

UPPER LOWER PLEISTOCENE (Biharian terrarosa). ROMANIA: Betfia, no. 5, 9 km SE Nagyvárad (Kretzoi, 1962; tentatively referred, see Mourer-Chauviré, 1975, p. 237, fig. 30).

#### 6a. *Corvus pliocaenus janossyi* Mourer-Chauviré

*Corvus pliocaenus janossyi* Mourer-Chauviré, 1975 (27 June), *Doc. Lab. Géol. Fac. Sci. Lyon*, no. 64, fasc. 1, pp. 1, 230, pl. 18; pl. 19, figs. 1-2 (holotype from Grotte de l'Escale, left humerus, Univ. Lyon, no. CD 66-D-11290, referred radii, ulnae, carpometacarpus, coracoids, scapulae, femora, tibiotarsi, and tarsometatarsi; Lunel-Viel, coracoid; Abimes de la Fage, coracoid, distal half of ulna).—Mourer-Chauviré, 1975, *Nouv. Arch. Mus. Hist. Nat. Lyon*, fasc. 13, p. 99, pl. 99, fig. 12 (La Fage, ulna).

LOWER MIDDLE PLEISTOCENE (Mindel): FRANCE: Bouches-du-Rhône: Grotte de l'Escale at Saint-Estève-Janson.

MIDDLE MIDDLE PLEISTOCENE (Mindel-Riss). FRANCE: Hérault: Lunel-Viel.

UPPER MIDDLE PLEISTOCENE (Riss). FRANCE: Corrèze: Abimes de la Fage at Noailles.

#### 7. *Corvus hungaricus* Lambrecht

*Corvus hungaricus* Lambrecht, 1916, *Aquila*, vol. 22, pp. 173, 175, figs. 2-3 (holotype from Nagyarsány Mountain, left tarsometatarsus and referred distal end of right humerus, Mus. Kgl. Ungarisch. Geol. Anstalt, Budapest).

LOWER LOWER PLEISTOCENE (Villafranchian). FRANCE: Haute Loire: Senèze (Stehlin, 1923, *Eclogae geol. Helv.*, vol. 18, p. 280). Saint-Vallier (Mourer-Chauviré, 1975, *Doc. Lab. Géol. Fac. Sci. Lyon*, no. 64, fasc. 1, pp. 247-248, 253, pl. 22, fig. 14).

UPPER LOWER PLEISTOCENE (Biharian terrarosa). HUNGARY: Komitat Baranya: Nagyarsány Mountain (Lambrecht, 1916).

#### 8. *Corvus wetmorei* Brodkorb

*Corvus wetmorei* Brodkorb, 1959 (June 3), *Bull. Florida State Mus.*, vol. 4, no. 11, p. 363, pl. 3, figs. 1-9 (holotype from Banana Hole, distal portion of left humerus, Florida State Mus. no. UF 3210; referred ulna, carpometacarpus, femora, dist. tibiotarsus, prox. tarsometatarsus, unguis).

UPPER PLEISTOCENE (cave deposit). BAHAMAS: New Providence Island: Banana Hole (Brodkorb, 1959). Great Exuma Island (Wetmore, 1937, *Bull.*

Mus. Comp. Zool., vol. 80, no. 12, p. 440)? Crooked Island: Gordon Hills Cave (Wetmore, 1938, Auk, vol. 55, no. 1, p. 52)?

### 9. *Corvus pumilis* Wetmore

*Corvus pumilis* Wetmore, 1920 (Dec. 30), Prox. Biol. Soc. Washington, vol. 33, p. 81 (holotype from Cueva San Miguel, right ulna, Amer. Mus. Nat. Hist. no. 4925).—Wetmore, 1922, Bull. Amer. Mus. Nat. Hist., vol. 46, p. 327, fig. 23).—Wetmore, 1937, Jour. Agr. Univ. Puerto Rico, vol. 21, no. 1, p. 14, pl. 1, figs. 10-14 (tibiotarsus).

QUATERNARY (cave deposit). PUERTO RICO: Cueva San Miguel near Morovis (Wetmore, 1920).

RECENT (pre-Columbian midden). VIRGIN ISLANDS: St. Croix (Wetmore, 1937).

### 10. *Corvus moriorum* Forbes

*Corvus moriorum* Forbes, 1892, Nature, vol. 46, p. 252 (Chatham Islands).—*Palaeocorax moriorum* Forbes, 1892 (Dec. 31), Bull. Brit. Orn. Club, vol. 1, no. 4, p. xxi.—Forbes, 1893 (April), Ibis, ser. 6, vol. 5, no. 18, p. 254.—Dawson, 1958, Ibis, vol. 100, p. 235 (note on apparent types).—Scarlett, 1972, Bull. Canterbury Mus., no. 4, p. 19 (Chatham Islands; meas. humerus, radius, ulna, femur, tibiotarsus, tarsometatarsus).

QUATERNARY. CHATHAM ISLANDS.

### 10a. *Corvus moriorum antipodum* (Forbes)

*Palaeocorax antipodum* Forbes, 1893 (Oct.), Ibis, ser. 6, vol. 5, no. 20, p. 544 (type from North Island).—*Palaeocorax moriorum* Scarlett, 1972, Bull. Canterbury Mus., no. 4, p. 19, fig. 25, 58-59, 87-88, 140-141, 239-241 (New Zealand, meas.; fig. sternum, coracoid, scapula, humerus, radius, ulna, tibiotarsus, tarsometatarsus, femur).

QUATERNARY. NEW ZEALAND: North Island (Forbes, 1893). SOUTH ISLAND: Wairau Bar, Lake Grassmere, Pyramid Valley, Banks Peninsula, and Ngapara (Oliver, 1955), N. Z. Birds, ed. 2, p. 606, fig.); Tai Rua (Trotter, 1965, Notornis, vol. 12, no. 3, p. 178).

## Neospecies of Corvidae from the Pleistocene and \*Holocene Subfamily GARRULINAE (Boie)

1. *Gymnorhinus cyanocephalus* Wied. UTAH: \*Sand Dune Cave (Hargrave, 1970, Tech. Ser. Mus. N. Arizona, no. 9, pp. 40, 45). ARIZONA: \*Winona Village (Hargrave, 1939, Condor, vol. 41, no. 5, p. 209). NEW MEXICO: Conkling Cavern and Shelter Cave (Howard and A. H. Miller, 1933, Condor, vol. 35, no. 1, p. 16).

2. *Aphelocoma coerulescens* (Bosc). FLORIDA: Arredondo (Brodkorb, 1959, Bull. Florida State Mus., vol. 4, no. 9, p. 283); Reddick (Hamon, 1964, Florida Geol. Surv., Geol. Bull., no. 44, p. 193); Haile (Ligon, 1966, Bull. Florida State Mus., vol. 10, no. 4, p. 149).

3. *Aphelocoma californica* (Vigors). CALIFORNIA: Rancho La Brea (A. H. Miller, 1929, Univ. Calif. Publ., Bull. Dept. Geol. Sci., vol. 19, no. 6, pl. 1, fig. b); Carpinteria (A. H. Miller, 1932, Univ. Calif. Publ. Geol. Sci., vol. 21, no. 7, p. 173, pl. 12, figs. a, d); McKittrick (A. H. Miller, 1937, Condor, vol. 39, no. 6, p. 250). UTAH: \*Sand Dune Cave (Hargrave, 1970, Tech. Ser. Mus. N. Arizona, no. 9, pp. 38, 45). NEW MEXICO: \*Cochiti Dam? (Harris, 1968, Mus. New Mexico Research Records, no. 6, p. 222).

4. *Cyanocitta cristata* (Linnaeus). WISCONSIN: \*Raddatz rock shelter (Parmalee, 1959, Wisconsin Archeologist, vol. 40, no. 2, p. 85). PENNSYLVANIA: \*Sheep Rock shelter (Guilday



and Parmalee, 1965, *Pennsylvania Archaeologist*, vol. 35, no. 1, p. 39). VIRGINIA: Natural Chimneys (Wetmore, 1962, *Smithsonian Misc. Coll.*, vol. 145, no. 2, p. 13). FLORIDA: Reddick (Brodkorb, 1957, *Jour. Paleont.*, vol. 31, no. 1, p. 136); Arredondo (Brodkorb, 1959, *Bull. Florida State Mus.*, vol. 4, no. 9, p. 283); \*Vero Beach (Weigel, 1963, *Florida Geol. Surv. Spec. Publ.*, no. 10, p. 30).

5. *Cyanocitta stelleri* (Gmelin). OREGON: (Lambrecht, 1921, *Fossilium Catalogus*, p. 90). CALIFORNIA: Samwel Cave and Hawver Cave (L. Miller, 1911, *Univ. California Publ.*, *Bull. Dept. Geol.*, vol. 6, no. 16, p. 339); Carpinteria (A. H. Miller, 1932, *Univ. Calif. Publ. Geol. Sci.*, vol. 21, no. 7, p. 173, pl. 12, fig. b, c); Rancho La Brea (Wetmore, 1940, *Smithsonian Misc. Coll.*, vol. 99, no. 4, p. 71). ARIZONA: \*Kiet Siel Pueblo (Hargrave, 1939, *Condor*, vol. 41, no. 5, p. 209).

6. *Cissilopha yucatanica* (Dubois). YUCATÁN: \*Actun Chacaljas (H. I. Fisher, *Cranbrook Inst. Sci. Bull.*, vol. 33, p. 83); \*Actun Spukil? (as *Cyanocorax cyanomelas*, Fisher, 1935, *op. cit.*, pp. 83, 85).

7. *Xanthoura yncas* (Boddaert). YUCATÁN: \*Actun Spukil (H. I. Fisher, 1953, *Cranbrook Inst. Sci. Bull.*, vol. 33, p. 83).

8. *Cyanocorax cristatella* (Temminck). BRAZIL: Lapa da Escrivania (O. Winge, 1887, *E. Museo Lundii*, vol. 1, no. 2, p. 48).

9. *Perisoreus canadensis* (Linnaeus). VIRGINIA: Natural Chimneys (Wetmore, 1962, *Smithsonian Misc. Coll.*, vol. 145, no. 2, p. 12).

10. *Garrulus glandarius* (Linnaeus). IRELAND: Kesh Cave, Edenvale Cave, and Newhall Cave (Bell, 1915, *Zoologist*, ser. 4, vol. 19, no. 893, p. 404). ENGLAND: Chudleigh Cave and \*Hornsea (Bell, 1922, *Naturalist*, 1922, nos. 787-788, p. 251). SPAIN: Caverna de Santimamiñe (Villalta, 1964, *Speleon*, vol. 15, p. 99). FRANCE: Combe-Grenal (Mourer-Chauviré, 1972, *Etudes Quaternaires*, Mem. no. 1, p. 359); Grotte des Espélungues (Bouchud, 1972, *Bull. Asso. Franc. Étude Quatern.*, vol. 1, pp. 55-56); Les Romains at Pierre-Châtel (Desbrosse and Mourer-Chauviré, 1973, *Quartar*, vol. 23-24, p. 154); Rond-du-Barry and \*Rond-du-Barry (Mourer-Chauviré, 1974, *Anthropologie*, vol. 78, no. 1, p. 39); L'Escale at Saint-Estève-Janson, Lunel-Viel, Abimes de la Fage, Orgnac-l'Aven, Le Lazaret, Aldène at Cessero, Salpêtre de Pompiignan, Grotte Tournal at Bize, La Cruzade at Cruissan, Rond-du-Barry, Vergisson, Flavigny-sur-Ozerain, Baum de Gigny, \*Flavigny-sur-Ozerain, \*Baum de Gonvillars, and \*Arago actuel at Tautavel (Mourer-Chauviré, 1975, *Doc. Lab. Géol. Fac. Sci. Lyon*, no. 64, p. 214, pl. 17, fig. 17); Grotte de la Baulazière at Vers (Mourer-Chauviré, 1976, *op. cit.*, fasc. 2, p. 399). BELGIUM: Trou de Chaleux, du Sureau, du Frontal (Lambrecht, 1933, *Handb. Palaeorn.*, p. 783). LUXEMBURG: Oetrange (Ferrant and Friant, 1940, *Faune Pléistocène d'Oetrange*, p. 201, pl. 15). CORSICA: Grotta di Funtanedu (E. T. Newton, 1921, *Prox. Zool. Soc. London*, pt. 2, p. 231). ITALY: Grotte de Menton Buca dell Tasso, and \*Buca Tana di Maggiano (Lambrecht, 1933, *Handb. Palaeorn.*, p. 783); Grottes du Grimaldi, Gr. du Prince, and Gr. du Cavillon (Mourer-Chauviré, 1976, *Doc. Lab. Géol. Fac. Sci. Lyon*, no. 64, fasc. 2, pp. 365, 368). SWITZERLAND: Ettingen and \*Ettingen (Lambrecht, 1933, *Handb. Palaeorn.*, p. 783). GERMANY: Viogtstedt? (Jánossy, 1965, *Pal. Abhandl.*, Abt. A, vol. 2, nos. 2-3 p. 355). DENMARK: Maglemose (O. Winge, *Vidensk. Meddel. naturh. Foren.*, vol. 6, p. 103). CZECHOSLOVAKIA: Balcarova skála, Sipka, and Certova dira (Čapek, 1910, *Ber. V. internat. ornith. Kongr. Berlin*, p. 938); Volyn (Lambrecht, 1933, *Handb. Palaeorn.*, p. 783); Stránská skála, Holubic, Holstýn skála, Kulna, Zazdena, and Verunciva (Skutil and Stehlik, 1939, *Ornitholog*, vol. 6, nos. 2-4, p. 22). AUSTRIA: Mixnitz (Lambrecht, 1933, *Handb. Palaeorn.*, p. 783). HUNGARY: Remetehegy (Lambrecht, 1914, *Aquila*, vol. 21, p. 90); Pilisszántó and \*Pilisszántó (Lambrecht, 1915, *Mitt. Jahrb. ungar. Geol. Anst.*, vol. 23, p. 480); Kalten-Szamos-Tal (Lambrecht, 1916, *Aquila*, vol. 22, p. 194); Puskaporos (Lambrecht, 1916, *Barlangkutatás*, vol. 4, no. 3-4, p. 206); Hidegzsamos, Siebenbürgen, \*Devenceze, and \*Legenybarlang bei Pilisszentlélek (Lambrecht, 1933, *Handb. Palaeorn.*, p. 783). POLAND: Koziara Cave, \*Niedastepna rock-shelter, and Zamkowa Dolna Cave (Bocheński, 1974, *Birds Late Quaternary Poland*, pp. 108, 200). ROMANIA: Püspökfürdő (Čapek, 1917, *Barlangkutatás*, vol. 5, pp. 29, 70). MOLDAVIA: Starye Druitory (Voinstvenski, 1967, *Prirodnaya Obstanovka i Fauna Proshlogo*, pt. 3, p. 46). UKRAINE: Chokurcha, Belbek, Syuren II, Murzak-Koba, Shan-Koba, Nizhne Krivche, Rasponitsy, Desny River between Chernigov, middle Dnepr near Kiev, and Zaporozhya (Voinstvenski, 1967, *op. cit.*, pp. 26, 37, 38, 42, 44, 48, 53), RUSSIA: Don River between Nizhne-Chirsk and Novocherkassk (Voinstvenski, 1967,

op. cit., p. 54); \*Zhiguley Cave on Volga River (Burchak-Abramovich, 1968, Fossil Birds in Caves of USSR, p. 242). GEORGIAN SSR: \*Darkweti (Bendukidze, 1973, Tezisi Dokladov k IV Vsesouznomu Soveshchanizu po Izucheniu Chetvertichnogo Perioda, p. 88). ISRAEL: Kebara Cave (Tchernov, 1962, Bull. Res. Council Israel, vol. 11, no. 3, p. 106).

### Subfamily CORVINAE (Vigors)

11. *Pica pica* (Linnaeus). IRELAND: Castlepook Cave, Edenvale Cave, and Newhall Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 404). FRANCE: Caverne de Brengues (Giebel, 1847, Fauna der Vorwelt, vol. 1, pt. 2, p. 17); Lacombe-Thayac (Milne-Edwards, 1871, Ois. Foss. France, vol. 2, p. 594); Grotte du Lazaret (Mourer-Chauviré, 1964, Bull. Mus. Anthrop. préhist. Monaco, no. 11, pp. 62-78); Grottes inférieures et supérieures d'Aurensan (Bouchud, 1972, Bull. Asso. France. Étude Quatern., vol. 1, pp. 52, 54), Les Romains at Pierre-Châtel (Desbrosse and Mourer-Chauviré, 1973, Quartär, vol. 23-24, p. 154); Rond-du-Barry (Mourer-Chauviré, 1974, Anthropologie, vol. 78, no. 1, p. 39); Abîmes de la Fage, Ornac-l'Aven, Cap de la Biehle, Fontéchevade, Salpêtre de Pompignan, La Baulazière, La Salpêtrière at Remoulins, Soulabé, Espéluges at Lourdes, La Colombière at Neuville-sur-Ain, Campalou, Combe Grénal, Petit Puymoyen, Baum de Gigny, Baum de Convillars, \*Baum de Convillars, and \*Arago actuel (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 219); La Caune de l'Arago at Tautavel, Grotte des Hoteaux at Rossillon, La Columbière at Neuville sur Ain, and Pech de l'Azé (Mourer-Chauviré, 1976, op. cit., fasc. 2, pp. 324, 441, 447, 493). PORTUGAL: Grotte de Furninha? (Lambrecht, 1933, Handb. Palaeorn., p. 782). MALLORCA: Son Bauzá Cave (Ballmann and Adrover, 1970, Acta Geológica Hispanica, vol. 5, p. 62). MONACO: Grotte de l'Observatoire (Lambrecht, 1933, Handb. Palaeorn., p. 782). CORSICA: Grotta di Brietta (E. T. Newton, 1921, Proc. Zool. Soc. London, pt. 2, p. 231). SARDINIA: bonè breccia (Milne-Edwards, 1871, Ois. Foss. France, vol. 2, p. 595). ITALY: Cavernes de Verrezzi (Milne-Edwards, 1871, Ois. Foss. France, vol. 2, p. 595); Buco della Volpe above Rovenna (Portis, 1888, Mem. Accad. R. Torino, ser. 2, vol. 38, p. 197); Grotte de Menton, Grotte du Prince, Grotte du Cavillon at Grimaldi, Grotta d'Equi, Buca dell Tasso, Grotta dei Colombi?, caverna delle Arena candida, and Finalmarino (Lambrecht, 1933, Handb. Palaeorn., p. 782); Grotte de Gerbai (Mourer-Chauviré, 1976 (Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, fasc. 2, p. 359). SWITZERLAND: Höhle am Schlossfels von Birseck bei Basel, Ermitage, Kaltbrunnental-Höhle (Lambrecht, 1933, Handb. Palaeorn., p. 782). BELGIUM: Trou de Nutons, du Sureau, du Frontal (Lambrecht, 1933, Handb. Palaeorn., p. 782). \*DENMARK: (Løppenthin, 1967, Danske Ynglefugle i fortid og nutid, pp. 52, 54, 503, 558). CZECHOSLOVAKIA: Sipka and Ludmirau Certova díra (Čapek, 1910, Ber. V. internat. ornith. Kongr. Berlin, pp. 939, 940). AUSTRIA: Schusterlucke (Lambrecht, 1912, Aquila, vol. 19, p. 303); Mixnitz (Lambrecht, 1933, Handb. Palaeorn., p. 782). HUNGARY: Puskaporos (Kormos, 1911, Mitt. Jahrb. Kgl. Ungar. Geol. Reichsanstalt, vol. 19, no. 3, p. 150); Balla and Peskő (Lambrecht, Aquila, vol. 19, pp. 276, 282, 283); Bajót cave (Lambrecht, 1913, Aquila, vol. 20, p. 425); Oregkő cave (Kormos and Lambrecht, 1914, Barlangkutató, vol. 2, no. 2, p. 105); Remetehegy (Lambrecht, 1914, Aquila, vol. 21, p. 90); Pilisszántó and recent (Lambrecht, 1915, Mitt. Jahrb. Ungar. Geol. Anst., vol. 23, p. 480, 502); Instálloskő (Jánossy, 1954, Aquila, vol. 55-58, p. 208); Subalyuk-Höhle (Jánossy, 1962, Aquila, vol. 67-68, p. 182). UKRAINE: Shaitan-koba, Syuren I, Syuren II, \*Shan-koba, and \*Kiik-koba (Tugarinov, 1937, Trav. Sect. Soviét. Asso. Internat. Étude Quat., pt. 1, pp. 101, 111); Tankov, Azil, Tardenuaz, Zmeinogo, Nizhnee Krivche, Perevoloka, Desny River below Chernigov, Dnepr River near Kiev, Zaporozhya, \*Mikkaylovka, \*Voin, \*Lyubimovka (Voinstvenski, 1967, Prirodnaya Obstanovka i Fauny Proshlogo, pt. 3, pp. 30, 37, 38, 42, 45, 58, 51, 52, 62, 63, 67, 69); \*Podolia (Burchak-Abramovich, 1968, Fossil Birds in Caves of USSR, p. 240). RUSSIA: \*Balta (Burchak-Abramovich and Zalkin, 1972, Bull. Moscow Obshch. Ispit. Prirodi, vol. 77, no. 2, p. 53). Don River between Nizhne-Chirsk and Novocherkassk and \*Bershevo (Voinstvenski, 1967, op. cit., pp. 54, 67). GEORGIAN SSR: \*Barkweti (Bendukidze, 1973, Tezisi Dokladov k IV Vsesouznomu Soveshchanizu po Izucheniu Chetvertichnogo Perioda, p. 88); Krivchanska Cave (Burchak-Abramovich, 1968, Fossil Birds in Caves of USSR, p. 239). AZERBAIJAN: Binagady (Serebrovsky, 1948, Trudy Estest.-Istor. Muz. Akad. Nauk Azerbaidzhan SSR, pts. 1-2, pp. 56, 58, figs. 60-61). Achshtyrskaya Cave, Caves near River Yurezan, and \*Zhiguley Cave (Burchak-Abramovich, 1968, Fossil Birds in Caves of USSR, pp. 235, 242). ISRAEL: Kebara Cave (Tchernov, 1962, Bull. Research Council

Israel, vol. 11, no. 3, pp. 106, 126, 130, pl. 5, fig. 5; pl. 1, figs. 1-2). IRAN: Belt Cavé (Wetmore, 1951, in Coon, Univ. Penn. Mus. Monograph, p. 90). CHINA: Chou Kou Tien (Shaw, 1935, Bull. Geol. Soc. China, vol. 14, no. 1, p. 80). ALASKA: \*Kodiak Island (Friedmann, 1935, Jour. Washington Acad. Sci., vol. 25, no. 1, p. 51). OREGON: Five Mile Rapids (L. Miller, 1957, Condor, vol. 59, no. 1, p. 59). NEVADA: Smith Creek Cave (Howard, 1952, Bull. S. California Acad. Sci., vol. 51, pt. 2, p. 54). IDAHO: \*Weiss rock shelter and \*Birch Creek Valley (L. Miller, 1963, Bull. S. California Acad. Sci., vol. 62, pt. 4, pp. 181, 184). ARIZONA: \*Indian site 35 mi. N. of Flagstaff (A. H. Miller, 1932, Condor, vol. 34, p. 138). NEW MEXICO: Shelter Cave (Howard and A. H. Miller, 1933, Condor, vol. 35, no. 1, p. 16). NORTH DAKOTA: \*Huff Focus site (L. Miller, 1960, Bull. S. California Acad. Sci., vol. 60, pt. 3, p. 126). SOUTH DAKOTA: \*Hosterman, \*Black Partizan, \*Spiry-Eklo, \*Sully, and \*Medicine Crow (Parmalee, 1977, Plains Anthropologist, vol. 22-77, p. 197). NEBRASKA: Midway Canyon (Tate and Martin, 1968, Condor, vol. 70, no. 2, p. 183). VIRGINIA: Natural Chimneys (Wetmore, 1962, Smithsonian Misc. Coll., vol. 145, no. 2, p. 13).

11a. *Pica pica major* Jánossy. (*Pica pica major* (Jánossy, 1972, Anthropos, vol. 20 (n.s. 12), p. 59 (types from Stránská skála, 3 humeri, 2 tibiotarsi, 3 tarsometatarsi, Moravské Mus., Brno). MIDDLE PLEISTOCENE (end of Mindel glacial; Mindel-Riss interglacial). FRANCE: Grotte de l'Escale at Saint-Estève-Janson, ulna, femur, tibiotarsus; Grottes du Mas des Caves at Lunel-Viel, coracoid, humerus, tibiotarsus, tarsometatarsus (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, fasc. 1, p. 215, pl. 17, figs. 19-20; 1976, op. cit., fasc. 2, pp. 275, 285). AUSTRIA: Hundsheim (Jánossy, 1974, Sitzb. Österr. Akad. Wiss., math.-nat. Kl., pt. 1, vol. 182, no. 6-8, p. 212, coracoid, humerus, ulna, tibiotarsus). CZECHOSLOVAKIA: Stránská skála (Jánossy, 1972).

12. *Pica nuttallii* Audubon. CALIFORNIA: Rancho La Brea (A. H. Miller, 1929, Univ. Calif. Publ., Bull. Dept. Geol. Sci., vol. 19, p. 6); McKittrick (A. H. Miller, 1937, Condor, vol. 39, no. 6, p. 250); Carpinteria (A. H. Miller, 1932, Univ. Calif. Publ. Geol. Sci., vol. 21, no. 7, p. 174, pl. 12, fig. h).

13. *Nucifraga caryocatactes* (Linnaeus). FRANCE: Lacombe and Massat (Lambrecht, 1933, Handb. Palaeorn., p. 783); Abîmes de la Fage (Chauviré, 1965, C. R. Soc. Géol. France, no. 1, p. 8); Grotte de l'Hortus (Mourer-Chauviré, 1972, Etudes Quaternaires, Mém. no. 1, p. 277, fig. 4); L'Escale at Saint-Estève-Janson, Combe Grenal, and Baume de Gonvillars (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 219); Grotte de Soulabé (Mourer-Chauviré, 1976, op. cit., fasc. 2, p. 412). SPAIN: Caverna de Santimamiñe (Villalta, 1964, Speleon, vol. 15, p. 99). ITALY: Grotte du Prince at Grimaldi (Lambrecht, 1933, Handb. Palaeorn., p. 783). SWITZERLAND: Ermitage, Birseck, and Thierstein (Lambrecht, 1933, Handb. Palaeorn., p. 783). CZECHOSLOVAKIA: Bačcarova skála (Čapek, 1910, Ber. V. Internat. Ornith. Kongr. Berlin, p. 938); Certova díra (Čapek, 1910, Ber. V. Internat. Ornith. Kongr. Berlin, p. 940); Kulna and Pod (Skutil and Stehlik, 1939, Ornitholog, vol. 6, nos. 2-4, p. 22). AUSTRIA: Schusterlucke (Lambrecht, 1912, Aquila, vol. 19, p. 306); Mixnitz (Lambrecht, 1933, Handb. Palaeorn., p. 783). HUNGARY: Puskaporos (Kormos, 1911, Mitt. Jahrb. Kgl. Ungar. Geol. Reichsanstalt, vol. 19, no. 3, p. 150; Bajót, Pálffy, and Pilisszántó (Lambrecht, 1913, Aquila, vol. 20, p. 425); Remetehegy (Lambrecht, 1914, Aquila, vol. 21, pp. 90, 91, 93); Öregkő cave near Bajót (Kormos and Lambrecht, 1914, Barlangkutató, vol. 2, no. 12, p. 105); Galgóc (Lambrecht, 1912, Aquila, vol. 19, pp. 276, 278, 280, 282, 283, 303, pl. 4, figs. 1-12). GEORGIAN SSR: Krivchanska Cave (Burchak-Abramovich, 1968, Fossil Birds in Caves of USSR, p. 239).

14. *Nucifraga columbiana* (Wilson). CALIFORNIA: Rancho La Brea (Howard, 1962, Los Angeles Co. Mus. Contr. Sci., no. 58, p. 23). NEVADA: Smith Creek Cave (Howard, 1952, Bull. S. Calif. Acad. Sci., vol. 51, pt. 2, p. 54). IDAHO: Jaquar Cave (L. Miller, 1965, Tebiwa, vol. 9, no. 1, p. 19). ARIZONA: \*Wupatki Pueblo (Hargrave, 1939, Condor, vol. 41, no. 5, p. 209).

15. *Pyrrhocorax pyrrhocorax* (Linnaeus). FRANCE: Grotte de Massat (*Pyrrhocorax primigenius* Milne-Edwards, 1875, Matériaux pour l'Histoire primitive et naturelle de l'Homme, vol. 11, no. 2, pt. 6, p. 487, brief descr. shank.—*Pyrrhocorax pyrrhocorax primigenius* Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, fasc. 1, p. 219, syntypes designated, 2 tarsometatarsi, Inst. Pal., Mus. Hist. Nat. Paris, Würmian glaciation); Grotte de Brengues and Grotte de

<sup>1</sup> Contrary to the usual rule of larger size, late Pleistocene fossils tend to be slightly smaller than their Recent descendants, but the means are too close to allow subspecific recognition.

Lacombe (Paris, 1912, Rev. Franç. Orn., vol. 4, no. 37, p. 284); Perigord, Eyzies, l'Eglise, Bruniquel, Lherm, Gourdan, Aure, Lourdes, and Quercy (Lambrecht, 1933, Handb. Palaeorn., p. 784); Abîmes de La Fage (Chauviré, C.R. Soc. Géol. France, no. 1, p. 8); Grotte du Lazaret (Mourer-Chauviré, 1964 (Bull. Mus. Anthrop. préhist. Monaco, no. 11, pp. 61-78, pl. 1, fig. 5; pl. 2, fig. 1); Grotte de l'Hortus at Valflaunes and Combe-Grenal (Mourer-Chauviré, 1972, Études Quaternaires, Mém. no. 1, pp. 278, 292, 359); Pierre Châtel (Desbrosse and Mourer-Chauviré, 1973, Quartär, vol. 23-24, p. 155); Rond-du-Barry (Mourer-Chauviré, 1974, Anthropologie, vol. 78, no. 1, p. 39); Orgnac-l'Aven, L'Arago at Tautavel, Aldène at Cessero, Salpêtre de Pompignan, Grotte Tournal at Bize, La Crozade at Cruissan, La Baulazière at Vers, Soulabé at Montseron, Balazuc, Grand-Baille at Leymiat, Le Blot at Cerzat, Laugerie Haut Est at Les Eyzies, Baum de Gigny, Pié Lombard at Tourrettes-sur-Loup, and \*Jean Pierre at Saint-Thibaud-de-Couz (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 219); Grotte de Cottier at Retournac and Peche de l'Azé (Mourer-Chauviré, 1976, op. cit., fasc. 2, pp. 472, 492). MONACO: Grotte de l'Observatoire (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, fasc. 1, p. 219). LUXEMBURG: Oetrange (Ferrant and Friant, 1940, Faune Pleistocène d'Outrange, p. 201, pl. 15). PORTUGAL: Grotte de Furninha, Fontainhas?, and Grotte de Hornos? (Lambrecht, 1933, Handb. Palaeorn., p. 784). SPAIN: Cueva del Toll, Cueva de las Tuxuneras, Reclau Viver, Caverna de Santimaniñe, Caverna de Lumentxa, Cueva de la Ermitia, Gruta de Hornos?, and Isla Meda Grande? (Villalta, 1964, Speleon, vol. 15, p. 99). GIBRALTAR: Forbes quarry? (Lambrecht, 1933, Handb. Palaeorn., p. 784). ITALY: Cavernes de Verezzi (Milne-Edwards, 1871, Ois. Foss. France, vol. 2, p. 595); Grotta del Colombi (Regalia, 1933, Arch. Antrop. Etnol., vol. 23, p. 262); Grotta di Parignana, Grotta d'Equi, Buca del Bersagliere, Caverna Pollera, and Caverna delle Arene candida (Lambrecht, 1933, Handb. Palaeorn., p. 784); Grotte du Prince and Grotte de Cavillon (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, fasc. 1, p. 219). SWITZERLAND: \*Grotte de Cotencher (Dubois and Stehlin, 1932, Mém. Soc. Pal. Suisse, vol. 52, pp. 29, 168); Wildkirchli, Kaltbrunnental, Ettingen, Basel-land, and Thierstein (Lambrecht, 1933, Handb. Palaeorn., p. 784). GERMANY: Langenaubach (Lambrecht, 1933, Handb. Palaeorn., p. 784). AUSTRIA: Schusterlucke, Tischoferhöhle bei Kufstein, and Mixnitz (Lambrecht, 1933, Handb. Palaeorn., p. 784). UKRAINE: Kiik-koba, Syuren I, and \*Syuren II (Tugarinov, 1937, Trav. Sect. Soviét. Asso. Internat. Étude Quat., pt. 1, pp. 101, 112); Adzhi-Koba, Tankov, Kosh-Koba, Kara-Koba, Murzak-Koba (Voinstvenski, 1967, Prirodnyaya Obstanovka i Fauna Proshlogo, vol. 3, pp. 24, 27, 30, 33, 36, 37). GEORGIAN SSR: Cana Cave and Gvardzhilas-Klde Cave (Burchak-Abramovich, 1968, Fossil Birds in Caves of USSR, pp. 234, 238); AZERBAIJAN: Klit (Burchak-Abramovich, 1968, Fossil Birds in Caves of USSR, p. 241). IRAN: \*Zagros Mountains (Jánossy, 1974, Sitzb. Österr. Akad. Wiss., math.-nat. Kl., pt. 1, vol. 182, no. 6-8, p. 243).

16. *Pyrrhocorax graculus* (Linnaeus).<sup>1</sup> (*Pyrrhocorax graculus vetus* Kretzoi, 1962, Feb., Aquila, vol. 67-68, p. 173; tentatively named, syntypes damaged left metacarpus and two distal ends of right tibiotarsi, Mus. Regional, Oradea, nos. 297/2, 297/3, and 1964/5, from Middle Pleistocene, Betsfia, Rumania).

ENGLAND: Kirkdale Cave (Lydekker, 1891, Ibis, ser. 6, vol. 3, no. 11, p. 385); Chudleigh Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 404). WALES: Paviland Cave (Bell, 1922, Naturalist, nos. 787-788, p. 251). FRANCE: Grotte de Bruniquel (Lydekker, 1891, Cat. Fossil Birds Brit. Mus., p. 4); Gourdan (Lambrecht, 1933, Handb. Palaeorn., p. 784); Grotte de Nichet at Fromelennes (Bastin, Bull. Soc. Hist. Nat. Ardennes, vol. 28, no. 30, p. 48); Balmeles-Grottes (Chauviré, 1963, C. R. Sommaire Soc. Géol. France, 1963, fasc. 2, p. 52); Grotte du Lazaret (Mourer-Chauviré, 1964, Bull. Mus. Anthrop. préhist. Monaco, no. 11, pp. 61-78, pl. 1, fig. 5; pl. 2, fig. 1); Abîmes de la Fage (Chauviré, 1965, C. R. Soc. Géol. France, no. 1, p. 8); Grotte de l'Hortus and Combe-Grenal (Mourer-Chauviré, 1972, Études Quaternaires, Mém. no. 1, pp. 278, 360); Grotte inférieure d'Aurensan and Grotte des Espélonges (Bouchud), 1972, Bull. Asso. Franç. Étude Quatern., vol. 1, pp. 53-56); Les Romains at Pierre-Châtel (Desbrosse and Mourer-Chauviré, 1973, Quartär, vol. 23-24, p. 154); Rond-du-Barry at Sinzelles (Mourer-Chauviré, 1974, Anthropologie, vol. 78, no. 1, p. 39); Le Lazaret at Nice, Aldène at Cessero, Grotte des les Gras at Escagnolles, Eden Roc at Vaison-la-Romaine, Grotte Tournal at Bize,

<sup>1</sup> Variation in *P. graculus* is similar to that in *P. pyrrhocorax*, as Pleistocene fossils tend to be small and show great overlap with Recent birds, unworthy of subspecific recognition.

La Crouzade at Gruissan, Grotte de la Carrière at Gerde, Grotte de Malarnaud and Grotte de Soulabé and Grottes de las Bufios at Montseron, Espelugues at Lourdes, Les Trois Frères at Montesquieu-Avantès, Les Balmes at Villereversure, Grotte de Balazuc, Grotte de Ebbou and Le Colombiere and Deux Avens at Vallon-Pont-d'Arc, Grotte des Hoteaux at Rossillon, Saint-Romans, La Colombière at Neuville-sur-Ain, Grand-Baille at Laymiat, Abri Gay at Saint-Nazaire-en-Royans, Jean Pierre at Saint-Thibaud-de-Couz, Grotte des Fées at Châtelperon, Grotte de Jaurens at Nespouls, Grotte de Cottier at Retournac, Pech de l'Azé at Carsac, Laugerie Haute Est aux Eyzies, Vergisson, Grand Caveau at Flavigny-sur-Ozerain, Baume de Gigny, Cimay at Evenos, L'Escale at Saint-Estève-Janson, Orgnac-l'Aven, L'Arago at Tautavel, Le Lazaret at Nice, Abri Suard at La Chaise, Grotte d'Aldène at Cessero, and Pié Lombard at Tourrettes-sur-Loup (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, pp. 222, 228, pl. 17, fig. 21); Grotte du Salpêtré at Pompignan, Grotte de la Salpêtrière at Remoullins, Grotte de Tarté at Cassagne, and Abri de Campalou (Mourer-Chauviré, 1976, op. cit., fasc. 2, pp. 386, 402, 424, 461). MONACO: Grotte de l'Observatoire (Lambrecht, 1933, Handb. Palaeorn., p. 784). SPAIN: Meda Grande?, Caverna de Santimamiña, and Cueva de Berraberia (Villalta, 1964, Speleon, vol. 15, p. 99). GIBRALTAR: Devil's Tower (Bate, 1928, Jour. Roy. Anthropol. Inst., vol. 58, p. 104, fig. 24). MALLORCA (Lambrecht, 1933, Handb. Palaeorn., p. 784). CORSICA: Toga, Grotta di Funtanedu?, and Margine Cave (E. T. Newton, 1921, Proc. Zool. Soc. London, pt. 2, p. 230). ITALY: Cavernes de Verrezzi (Milne-Edwards, 1871, Ois. Foss. France, vol. 2, p. 595); Grotte dei Colombi (Regàlia, 1893, Arch. Anthrop. Etnol., vol. 23, p. 262); Grotte du Prince at Grimaldi and La Tana del Pastore near Toirano (Lambrecht, 1933, Handb. Palaeorn., p. 784). SWITZERLAND: Grotte de Cotencher (Dubois and Stehlin, 1932, Mém. Soc. Pal. Suisse, vol. 52, p. 169, pl. 7, fig. 22). CZECHOSLOVAKIA: Certova díra (Čapek, 1910, Ber. V. internat. orn. Kongr. Berlin, p. 940); Kůlna (Skutil and Stehlik, 1939, Ornitholog, vol. 6, nos. 2-4, p. 22); Stránská skála (Jánossy, 1972, Anthropol, vol. 20 (n.s. 12), p. 59). AUSTRIA: Hundsheim (Jánossy, 1974, Sitzb. Österr. Akad. Wiss. math.-nat. Kl., pt. 1, vol. 182, no. 6-8, p. 212). HUNGARY: Balla-Höhle and Höhle Peskő (Lambrecht, 1912, Aquila, vol. 19, pp. 276, 281-283, pl. 4, figs. 13-22); Bajót, Pálffy-Höhle, and Pilisszántó (Lambrecht, 1913, Aquila, vol. 20, p. 425); Remetehegy (Lambrecht, 1914, Aquila, vol. 21, p. 90); \*Remetehegy (Lambrecht, 1916, Mitt. Jahrb. Kgl. Ungar. Geol. Reichsanstalt, vol. 22, no. 6, pp. 339, 403); Kiskevely-Höhle and Kalten-Szamos-Tal (Lambrecht, 1916, Aquila, vol. 22, pp. 191, 193, fig. 6); Puskaporos (Lambrecht, 1916, Barlangkutatás, vol. 4, p. 206); Istállóska and Höhle Pince (Jánossy, 1954, Aquila, vol. 55-58, p. 208, figs. 17B-C); Subalyuk-Höhle and Szelim-Höhle (Jánossy, 1962, Aquila, vols. 67-68, p. 182, fig. 32A); Tarkó-Felsniche (Jánossy, 1962, Ann. Mus. Hungar., vol. 54, p. 157); Curata Cave (Jánossy, 1965, Vertebrata Hungarica, vol. 7, p. 112). ROMANIA: Püspökfürdő [Betfia] (Čapek, 1918, Barlangkutatás, vol. 5, pp. 29, 70). UKRAINE: Kiik-Koba and Syuren I (Tugarinov, 1937, Trav. Sect. Soviét. Asso. Internat. Etude Quat., pt. 1, pp. 107, 112); Tankov. Azil, Kara-Koba, and Fatma-Koba (Voinstvenski, 1967, Prirodnyaya Obstanovka i Fauny Proshlogo, vol. 3, pp. 24, 27, 36, 38). ISRAEL: Kebara Cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, no. 3, pp. 106, 107, 126, 131, pl. 1, fig. 3; pl. 6, fig. 14).

17. *Corvus monedula* Linnaeus. IRELAND: Edenvale Cave, Newhall Cave, Kesh Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 404). ENGLAND: Langwith Bassett Cave and Chudleigh Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 404), and Merlin's Cave (Lambrecht, 1933, Handb. Palaeorn., p. 782). FRANCE: Moustier Cave (Lambrecht, 1933, Handb. Palaeorn., p. 782); Balme-les-grottes (Chauviré, 1963, C. R. Sommaire Soc. Géol. France, 1963, fasc. 2, p. 52); Grotte du Lazaret at Nice (Mourer-Chauviré, 1964, Bull. Mus. Anthrop. préhist. Monaco, no. 11, pp. 61-78, pl. 1, figs 1, 4); Grotte de l'Hortus and \*Grotte de l'Hortus at Valflaunès (Mourer-Chauviré, 1972, Etudes Quaternaires, Mém. no. 1, p. 277); Lunel-Viel, Abîmes de la Fage at Noailles, Orgnac-l'Aven, Aldène at Casseras, Grotte Tournal at Bize, Soulabé and Las Bufios at Montseron, La Colombière at Neuville-sur-Ain, Jean Pierre at Saint-Thibaud-de-Couz, Les Fées at Châtel Perron?, Pair-non-Pair at Marcamps, Petit Putmoyen, Baume de Gigny, and Baume de Gonvillars (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 228, pl. 17, fig. 18). BELGIUM: Grotte Marie-Jeanne (Ballmann, 1973, Gerfaut, vol. 63, p. 11). PORTUGAL: Gruta das Fontainhas and Gruta de Furninha? (Lambrecht, 1933, Handb. Palaeorn., p. 782). SPAIN: Gruta de Hornos (Lambrecht, 1933, Handb. Palaeorn., p. 782). CORSICA: Grotta de Funtanedu (E. T. Newton, 1921, Proc. Zool. Soc. Lond., pt. 2, p. 231). ITALY: Grotta dei Colombi (Regàlia, 1893, Arch. Anthrop. Etnol., vol. 23, p. 262); Grotta di Parignana,

Grotta d'Equi, Grotta Romanelli, and Buca del Bersagliere? (Lambrecht, 1933, Handb. Palaeorn., p. 782). GERMANY: Zwergloch bei Pottenstein and Elisabeth-Höhle im Ailsbachtal? (Lambrecht, 1912, Aquila, vol. 19, p. 302); Hohle Fels in Achtal bei Ulm, Höhle Fels bei Schelkingen, Felsnische bei St. Wolfgang, Felsnische im Velburger Schlossberg (Lambrecht, 1933, Handb. Palaeorn. p. 782). SWITZERLAND: Magdalenian? (Lambrecht, 1933, Handb. Palaeorn., p. 782). DENMARK: \*Vordingborg and Taarnmark (O. Winge, 1903, Vidensk. Meddel. naturh. Foren., vol. 6, p. 103). CZECHOSLOVAKIA: Balcarova skála, Certova díra, and Spika (Čapek, 1910, Ber. V. internat. ornith. Kongr. Berlin, p. 938-940); Volyn (Lambrecht, 1933, Handb. Palaeorn. p. 782); Stránská Skála, Holstýn; Michalova, Kulna, and Pod (Skutil and Stehlík, 1939, Ornitholog, vol. 6, nos. 2-4, p. 22). AUSTRIA: Schreiberwandhöhle, Eichmaierhöhle?, Schusterlucke?, and Mixnitz (Lambrecht, 1933, Handb. Palaeorn., p. 782). HUNGARY: Puskaporos (Kormos, 1911, Mitt. Jahrb. Kgl. Ungar. Geol. Reichsanst., vol. 19, no. 3, p. 149); Höhle Penskő (Lambrecht, 1912, Aquila, vol. 19, p. 280); Pálffy-Höhle, and Pilisszántó (Lambrecht, 1913, Aquila, vol. 20, p. 428); Remetehégy (Lambrecht, 1916, Mitt. Jahrb. Kgl. Ungar. Geol. Reichsanst., vol. 22, no. 6, p. 403); Istállósók, (Jánossy, 1954, Aquila, vol. 55-58, p. 208); \*Tác (Bökönyi and Jánossy, 1966, Vertebrata Hungarica, vol. 7, p. 92). RUMANIA: Curată Cave (Jánossy, 1965, Vertebrata Hungarica, vol. 7, p. 113). POLAND: Manutowa Cave (Bochenski, Birds Late Quaternary Poland, pp. 106, 200). MOLDAVIA: Star, Druitor, and Trinka (Voinstvenski, 1967, Prirodnyaya Obstanovka i Fauny Proshlogo, vol. 3, pp. 46, 47). UKRAINE: Syuren I, \*Syuren II, and Shaitankoba (Tugarinov, 1937, Trav. Sect. Soviét. Asso. Internat. Etude Quat., pt. 1, pp. 101, 111); Kizil Koba?, Tankov, Azil, Tardenuaz, Syuren II shelter, Murzak-Koba, Fatma-Koba, Nizhnee Krivche Kremensta, Rasponitsy, Rukomysh, Perevoloka, \*Aimovsk, \*Olviu, \*Voin, and \*Raykii (Voinstvenski, 1967, op. cit., pp. 23, 30, 34, 37, 38, 42, 43, 45, 57, 61, 63, 65); \*Podolia (Burchak-Abramovich, 1968, Fossil Birds in Caves of USSR, p. 240). RUSSIA: Don Rivér between Nizhne-Chirsk and Novochoerkassk, and \*Fort Sarkel (Voinstvenski, 1967, Prirodnyaya Obstanovka i Fauny Proshlogo, vol. 3, p. 54); \*Zhiguley Cave on River Volga (Burchak-Abramovich, 1968, Fossil Birds in Caves of USSR, p. 242). SIBERIA: \*Cusinyi Log Cave on River Yenesei near Krasnoyarsk (Burchak-Abramovich, 1968, Fossil Birds in Caves of USSR, p. 241). ISRAEL: Oumm Qatafa Cave and Kebara Cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, no. 3, pp. 100, 106); 'Ubeidiya (Tchernov, 1968, Prelim. Invest. Birds Pleistocene Deposits 'Ubeidiya, p. 24). CHINA: Chou-Kou-Tien (Shaw, 1935, Bull. Geol. Soc. China, vol. 14, no. 1, p. 80).

18. *Corvus frugilegus* Linnaeus. IRELAND: Castelpook Cave, Kesh Cave, Edenvale Cave, Newhall Cave, and Bantick Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 404). ENGLAND: Langwith Bassett (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 404). FRANCE: Mentone (Lambrecht, 1933, Handb. Palaeorn., p. 781); La Balauzière at Vers and Grotte Simard at Puymoyen (Mourer-Chauviré, 1975, Docum. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 229). CORSICA: \*Gradicchia Cave (E. T. Newton, 1921, Proc. Zool. Soc. London, pt. 2, p. 231). ITALY: Grotta dei Colombi (Regália, 1893, Arch. Antrop., Etnol., vol. 23, p. 262); Grotte du Cavillon at Grotta Romanelli, and Grotta d'Equi (Lambrecht, 1933, Handb. Palaeorn., p. 781). BELGIUM: Trou des Nutons (Lambrecht, 1933, Handb. Palaeorn., p. 781). \*DENMARK: (Løppenthin, 1967, Danske ynglefugle i fortid og nutid, pp. 60, 501, 558). HUNGARY: Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. Ungar. Geol. Anst., vol. 23, pp. 480, 500, 508); \*Bajót (Lambrecht, 1933, Handb. Palaeorn., p. 781); \*Tác and \*Visegrád (Bökönyi and Jánossy, 1966, Vertebrata Hungarica, vol. 7, p. 92). GREECE: Nesakia on Isle of Cerigo (E. T. Newton, 1921, Proc. Zool. Soc. London, pt. 2, p. 232). UKRAINE: Syuren I (Tugarinov, 1937, Trav. Sect. Soviét. Asso. Internat. Etude Quat., pt. 1, pp. 101, 111); Tankov, Kréménts, Rasponitsy, Dnepr River near Kiev, Zaporozhya, \*Mikhaylovk, and \*Fort Sarkel (Voinstvenski, 1967, Prirodnyaya Obstanovka i Fauny Proshlogo, pt. 3, pp. 30, 43, 44, 51, 52, 66). RUSSIA: Don River between Nizhne-Chirsk and Novochoerkassk (Voinstvenski, 1967, Prirodnyaya Obstanovka i Fauny Proshlogo, vol. 3, p. 54); AZERBAIJAN: Binagady (Burchak-Abramovich, "1963" (1962), Ornithologia, vol. 4, p. 463). ISRAEL: Oumm Qatafa cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, no. 3, p. 100). IRAN: Belt Cave (Wetmore, 1951, in Coon, Univ. Penn. Mus. Monograph, p. 90).

19. *Corvus ossifragus* Wilson. ILLINOIS: \*Modoc Rock shelter and \*Snyders site (Parmalee, 1967, Wilson Bull., vol. 79, no. 2, p. 161); FLORIDA: Seminole Field (Wetmore, 1931, Smithsonian Misc. Coll., vol. 85, no. 2, p. 40); Reddick (Brodkorb, 1957, Jour. Paleont., vol. 31, no. 1, p. 136); Arredondo (Brodkorb, 1959, Bull. Florida State Mus., vol. 4, no. 9, p. 283); Rock Spring

(Woolfenden, 1959, *Wilson Bull.*, vol. 71, no. 2, p. 185); \*Bluffton (Neill, Cut, and Brodkorb, 1956, *Amer. Antiquity*, vol. 21, no. 4, p. 388); Haile (Ligon, 1966, *Bull. Florida State Mus.*, vol. 10, no. 4, p. 149); Nichol's Hammock in Dade County (Hirschfeld, 1969, *Quart. Jour. Florida Acad. Sci.*, vol. 31, no. 3, p. 181); \*Goodman site (Wing, 1963, *Contrib. Florida State Mus.*, no. 10, p. 56); Inglis (Univ. Florida).

20. *Corvus leucognathus* Daudin. PUERTO RICO: \*Barrio Canas (Wetmore, 1938, *Auk*, vol. 55, p. 55). ST. CROIX: \*Concordia (Wetmore, 1937, *Jour. Agr. Univ. Puerto Rico*, vol. 21, no. 1, p. 14).

21. *Corvus caurinus* Baird. ALASKA: \*Kodiak Island (Friedmann, 1934, *Jour. Washington Acad. Sci.*, vol. 24, no. 5, p. 236). WASHINGTON: \*Puget Sound midden (L. Miller, 1960, *Wilson Bull.*, vol. 72, no. 4, p. 397). CALIFORNIA: Rancho La Brea (A. H. Miller, 1929, *Univ. California Publ., Bull. Dept. Geol. Sci.*, vol. 19, no. 1, p. 8); Carpinteria (Wetmore, 1931, in A. O. U., *Check-list N. Amer. Birds*, ed. 4, p. 467; see also A. H. Miller, 1932, *Univ. Calif. Publ. Geol. Sci.*, vol. 21, no. 7, p. 175, pl. 12, fig. 1).

22. *Corvus brachyrhynchos* Brehm. OREGON: \*Five Mile Rapids (L. Miller, 1957, *Condor* vol. 59, p. 62). CALIFORNIA: Potter Creek Cave (L. Miller, 1911, *Univ. California Publ. Bull., Dept. Geol.*, vol. 6, no. 16, p. 399); Rancho La Brea (L. Miller, 1912, *Univ. California Publ., Bull. Dept. Geol.*, vol. 7, no. 5, p. 71); \*Rancho La Brea (A. H. Miller, 1937, *Condor*, vol. 39, no. 6, p. 252); Carpinteria (Wetmore, 1940, *Smithsonian Misc. Coll.*, vol. 99, no. 4, p. 72, but entirely absent according to A. H. Miller, 1937); Vallecito Creek? (Howard, 1963, *Contrib. in Sci.*, no. 73, p. 26); \*Buena Vista Lake (DeMay, 1942, *Condor*, vol. 44, no. 5, p. 228). NEVADA: Smith Creek Cave Howard, 1952, *Bull. S. California Acad. Sci.*, vol. 51, pt. 2, p. 54). IDAHO: \*Birch Creek Valley and \*Weiss rock shelter (L. Miller, 1963, *Bull. S. California Acad. Sci.*, vol. 62, pt. 4, pp. 181, 184). UTAH: \*Sand Dune Cave (Hargrave, 1971, *Tech. Ser. Mus. N. Arizona*, vol. 9, pp. 40, 45). ARIZONA: \*Walnut Canyon Pueblo (Hargrave, 1939, *Condor*, vol. 41, no. 4, p. 209). NEW MEXICO: \*Cochiti Dam (Harris, 1968, *Mus. New Mexico Research Records*, no. 6, pp. 206, 223). NORTH DAKOTA: \*Thomas Riggs site and \*Huff Focus site (L. Miller, 1961, *Bull. S. California Acad. Sci.*, vol. 60, pt. 3, p. 126). SOUTH DAKOTA: \*Chouteau site (L. Miller, 1961, *Bull. S. California Acad. Sci.*, vol. 60, pt. 3, 126); \*Hosterman, \*Crow Creek, \*Cattle Oiler, \*Sully School, \*Sully, and \*Black Partizan (Parmalee, 1977, *Plains Anthropologist*, vol. 22-77, p. 197). TEXAS: Moore pit near Dallas (Slaughter et al., 1962, *Bur. Econ. Geol. Univ. Texas, Rept. Invest.*, no. 48, p. 39); Ingleside pit (Feduccia, 1973, *Condor*, vol. 75, no. 2, p. 243). ARKANSAS: \*Zebree site? (Guilday and Parmalee, 1971, *Amer. Midland Nat.*, vol. 86, no. 1, p. 228). IOWA: \*Mill Creek (Hamon, 1961, *Plains Anthropologist*, vol. 6, p. 211). WISCONSIN: \*Raddatz rock shelter (Parmalee, 1959, *Wisconsin Archeologist*, vol. 40, p. 85). ILLINOIS: \*Plum Island (Baker, 1941, *Trans. Amer. Philos. Soc.*, vol. 32, p. 68); \*Cahokia (Parmalee, 1957, *Trans. Illinois State Acad. Sci.* vol. 50, p. 239); \*Apple Creek (Parmalee, Paloumpis, and Wilson, 1972, *Illinois State Mus. Rept. Invest.*, no. 23, pp. 31, 33). OHIO: \*Kettle Hill Cave and \*Canter Caves (Goslin, 1955, *Ohio Jour. Science*, vol. 55, no. 6, p. 359). PENNSYLVANIA: \*Varner site near Waynesburg (Guilday, 1961, *Pennsylvania Archaeologist*, vol. 31, no. 3-4, p. 122); \*Sheep rock shelter (Guilday and Parmalee, 1965, *Pennsylvania Archaeologist*, vol. 35, no. 1, p. 39); \*Fort Ligonier (Guilday, 1970, *Ann. Carnegie Mus.*, vol. 42, p. 181). NEW YORK: \*Cole quarry (Moore, 1973, *Bull. N.Y. Arch. Asso.*, no. 58, p. 33). WEST VIRGINIA: \*Buffalo village (Guilday, 1971, *West Virginia Geol. Econ. Surv., Rept. Archeol. Invest.*, no. 4, p. 8). FLORIDA: Seminole Field (Wetmore, 1931, *Smithsonian Misc. Coll.*, vol. 85, no. 2, p. 40); Reddick (Brodkorb, 1957, *Jour. Pal.*, vol. 31, no. 1, p. 136); Arredondo (Brodkorb, 1959, *Bull. Florida State Mus.*, vol. 4, no. 9, p. 283); Williston (Holman, 1959, *Bull. Florida State Mus.*, vol. 5, no. 1, p. 5); Haile (Ligon, 1966, *Bull. Florida State Mus.*, vol. 10, no. 4, p. 149).

23. *Corvus corone* Linnaeus. *Corvus cornix fossilis* Giebel, 1847, *Fauna der Vorwelt*, vol. 1, pt. 2, pp. 17, 39 (based on Rudolph Wagner, 1832, *Abh. K. bayer. Akad. Wiss.*, pt. 1, p. 779, pl. 2, fig. 53, Pleistocene bone breccia, Sardinia, femur).

ENGLAND: Palling (Lydekker, 1891, *Cat. Foss. Birds Brit. Mus.*, p. 3); Hastings and \*Glastonbury (Bell, 1915, *Zoologist*, ser. 4, vol. 19, no. 893, p. 404). FRANCE: Mentone (Lydekker, 1891, *Cat. Foss. Birds Brit. Mus.*, p. 3); Lourdes, Aure, and Lacombe-Thayac (Lambrecht, 1933, *Handb. Palaeorn.*, p. 781); Balme-les-Grottes (Chauviré, 1963, *C. R. Sommaire Soc. Géol. France*, fasc. 2, p. 53); Grotte de l'Hortus and \*Grotte de l'Hortus at Valflaunés (Mourer-Chauviré, 1972, *Études Quaternaires, Mém.* no. 1, pp. 277, 289); Grottes inférieures d'Aurensan and Grotte

des Espélonges (Bouchud, 1972, Bull. Asso. Franç. Etude Quatern., vol. 1, pp. 53-56; Les Romains at Pierre-Châtel (Desbrosse and Mourer-Chauviré, 1973, Quartär, vol. 23-24, p. 154); °Rond-du-Barry (Mourer-Chauviré, 1974, Anthropologie, vol. 78, no. 1, p. 39); Lunel-Viel, Orgnac-l'Aven, Le Lazaret at Nice, Fontéchevade at Montbron, Grand-Baille at Leymiat, Grand Caveau at Flavigny-sur-Ozerain, Pié Lombard at Tourrettes-sur-Loup, °Grand Caveau at Flavigny-sur-Ozerain, and Baum-de Gigny (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 229, pl. 19, fig. 18). MONACO: Grotte de l'Observatoire (Lambrech, 1933, Handb. Palaeorn., p. 781). PORTUGAL: Gruta de Furninha (Lambrech, 1933, Handb. Palaeorn., p. 781). SPAIN: Caverna de Santamiñe (Villalta, 1964, Speleon, vol. 15, p. 98). SARDINIA: bone breccia (Wagner, 1832, Abh. k. Bayer. Akad. Wiss., p. 779, pl. 2, fig. 53); Pietro Tampaia Cave on Tavolara (Lydekker, 1891, Proc. Zool. Soc. London, p. 471, pl. 37, fig. 5). MALTA? (Lambrech, Palaeorn., p. 781). ITALY: Grotte du Prince at Grimaldi, Grotta dei Colombi?, Grotta d'Equi, Grotta di Cucigliana, Grotta all Onda, and Grotta Romanelli (Lambrech, 1933, Handb. Palaeorn., p. 781). SWITZERLAND: Kesslerloch, Thayingen, Schweizerbild, and °Szontagsee (Lambrech, 1933, Handb. Palaeorn., p. 781). GERMANY: Fuchslöcher am Roten Berge bei Saalfeld? and Fuchsloch bei Gleitsen (Lambrech, 1933, Handb. Palaeorn., p. 781); Voigtstedt (Jánossy, 1965, pal. Abhandl., Abt. A, vol. 2, p. 354); Stellmoor (Løppenthin, 1967, Danske ynglefugle i fortid og nutid, p. 500). BELGIUM: Trou de la Naulette (Lambrech, 1933, Handb. Palaeorn., p. 781). DENMARK: Koling, Mejlgaard, Havnø, Ertebølle, Havelse, Sølager, Aalborg, °Borrebjerg, °Vordinborg, and °Taarnmark (Winge, 1903, Vidensk. Meddel. naturh. Foren., vol. 6, p. 104). CZECHOSLOVAKIA: Sipka and Certova díra (Čapek, 1910, Ber. V. Internat. ornith. Kongr. Berlin, p. 939, 940); Volyn (Lambrech, 1933, Handb. Palaeorn., p. 781); Stránska skála and Pod (Skutil and Stehlík, 1939, Ornitholog, vol. 6, nos. 2-4, p. 22). HUNGARY: Remetehegy (Lambrech, 1914, Aquila, vol. 21, p. 90); °Remetehegy (Lambrech, 1916, Mitt. Jahrb. Kgl. Ungar. Geol. Reichsanst., vol. 22, no. 6, p. 398, pl. 15, figs. 14-16); Ístállóskő (Jánossy, 1954, Aquila, vol. 55-58, p. 208). POLAND: Rock-shelter above Niedostepna Cave (Bochencki, 1974, Birds Late Quaternary Poland, pp. 105, 200). WHITE RUSSIA: °Novoğrudok (Burchak-Abramovich and Zalkin, 1972, Bull. Moscow Obshch. Ispit. Prirodi, vol. 77, no. 2, p. 53). UKRAINE: Syuren I (Tugarinov, 1937, Trav. Sect. Soviét. Asso. Internat. Étude Quat., pt. 1, pp. 101, 111); °Savatínovka (Bibikova, 1963, Prirodnaya Obstanovka i Fauny Proshlogo, vol. 1, p. 137); Tankov, Kara-Koba, Muzak-Koba, Rasponints, Dnepr River near Kiev, Zaporozhya, °Alimovsk, °Chayka, °Chersones, °Olvií, °Mikhaýlovka, °Fort Sarkel, and °Petukhovka (Voinstvenski, 1967, Prirodnaya Obstanovka i Fauny Proshlogo, vol. 3, pp. 30, 36, 37, 43, 44, 51, 52, 57, 59, 62, 66, 69); °Pololia and °Tash-Air Cave near Bakhisaray (Burchak-Abramovich, 1968, Fossil Birds in Caves of USSR, pp. 240, 243). RUSSIA: Don River between Nizhne-Chirsk and Novocherkassk, and °Borshavo (Voinstvenski, 1967, Prirodnaya Obstanovka i Fauny Proshlogo, vol. 3, pp. 54, 67); Yurezan River caves and °Zhiguley Cave on Volga River (Burchak-Abramovich, 1968, Fossil Birds in Caves of USSR, p. 242); °Moscow (Burchak-Abramovich and Zalkin, 1969, Bull. Moscow Obshch. Ispit. Prirodi, vol. 74, no. 6, p. 51); °Tanais (Burchak-Abramovich and Zalkin, 1971, Bull. Moscow Obshch. Ispit. Prirodi, vol. 76, no. 5, p. 55). GEORGIAN SSR: °Darkweti and °Kvemo-Kartli (Bendukidze, 1973, Tezisi Dokl. IV Vsesouzhomu Sov. Izúchen. Chetvert. Perioda, p. 88). AZERBAIJAN: Binagady (Serebrovsky, 1948, Trudy Estest-Istor. Mus. Akad. Nauk Azerbajian SSR, pts. 1-2, pp. 55, fig.). SIBERIA: °Gusinyi Log Cave of Yenesei River near Krasnoyarsk (Burchak-Abramovich, 1968, Fossil Birds in Caves of USSR, p. 241). ISRAEL: Oumm Qatafa Cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, no. 3, pp. 100, 106). JAPAN: °Iki Island off Kiushiu (Kuroda, 1959, Bull. Biogeogr. Soc. Japan, vol. 21, no. 7, pp. 67, 73, pl. 1, fig. F).

24. *Corvus macrorhynchos* Wagler. CHINA: Chou Kou Tien? (Shaw, 1935, Bull. Geol. Soc. China, vol. 14, no. 1, p. 80).

25. *Corvus cryptoleucus* Couch. CALIFORNIA: McKittrick (A. H. Miller, 1937, Condor, vol. 39, no. 6, p. 251); Rancho La Brea (Howard, 1939, Fortschritte der Paläont., vol. 2, p. 316).

26. *Corvus ruficollis* Lesson. AZERBAIJAN: Bingady? (Serebrovsky, 1941, Doklady Akad. Nauk U. R. S. S., vol. 33, p. 473; Serebrovsky, 1948, Trudy Estest-Istor. Mus. Akad. Nauk Azerbajian SSR, pts. 1-2, 56, 58, figs. 58-59).

27. *Corvus corax* Linnaeus. *Corvus fossilis* Giebel, 1847, Fauna der Vorwelt, vol. 1, pt. 2, pp. 16, 39 (Pleistocene, Seveckenberg bei Quedlinburg, Germany; syntypes complete tibiotarsus, distal half of left tibiotarsus, and upper part of tarsometatarsus, perhaps from the same



individual). *Corvus crassipennis* Giebel, 1847, op. cit., pp. 17, 39 (Seveckenberg, type distal part of ulna).

IRELAND: Shandon Cave near Dungarvan (Lydekker, 1891, Ibis, ser. 6, vol. 3, p. 384); Edenvale Cave, Newhall Cave, and Bantick Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 404). SCOTLAND: Linlithgow Cave (Lydekker, 1891, Ibis, ser. 6, vol. 3, p. 384). ENGLAND: Kirkdale Cave (Giebel, 1847, Fauna der Vorwelt, vol. 1, pt. 2, p. 39); Clevedon Cave, Langwith Bassett Cave, °Caerwent, °Cranbourn Chase, °Woodcuts, and °Lewes (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 404); Wall and °Pevensey (Bell, 1922, Naturalist, nos. 787-788, p. 251); °Colchester (Bate, 1934, Ibis, p. 391). SPAIN: Rodauviver and Caverna de Santimamiñe (Villalta, 1964, Speleon, vol. 15, p. 98). MALLORCA (Lambrecht, 1933, Handb. Palaeorn., p. 780). FRANCE: Abri Stuard at La Chaise, Salpêtre de Pompignan, Grotte Journal at Bize, La Crouzade at Gruissans, La Carrière at Gerde, Soulabé and Soulabé at Montseron, Espélugues at Lourdes, Abri Lafaye at Bruniquel, Villereversure, Balazuc, Saint Romans, La Colombière at Neuville-sur-Ain, Les Romains at Pierre-Châtel, Les Fées at Châtelperron, Rond du Barry at Sinzelles, Combe Grenal at Domme, Pech de l'Azé at Carzac, Laugier Haute Est aux Eyzies, Pair-non-Pair at Marcamps, Le Placard at Vilhonneur, Grand Caveau at Flavigny-sur-Ozerain, Baume de Gigny at Gigny-sur-Suran, °Grand Caveau at Flavigny-sur-Ozerain, and °Baume de Gonvillars (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 251). BELGIUM: Trou de Chaleux (Lambrecht, 1933, Handb. Palaeorn., p. 781); Grotte Marie-Jeanne near Hastière-Lavaux (Ballmann, 1973, Gerfaut, vol. 63, p. 11). MONACO: Grotte de l'Observatoire and Menton (Lambrecht, 1933, Handb. Palaeorn., p. 781). BALEARIC ISLANDS: Majorca (Lambrecht, 1933, Handb. Palaeorn., p. 781). SARDINIA (Lambrecht, 1933, Handb. Palaeorn., p. 781). MALTA (Lambrecht, 1933, Handb. Palaeorn., p. 781). ITALY: Grotta die Colombi (Regália, 1893, Arch. Antrop. Etnol., vol. 23, pp. 262, 340); Grotta d'Equi, Caverna Pollera, and Grotta Romanelli? (Lambrecht, 1933, Handb. Palaeorn., p. 781); Grotte du Prince at Grimaldi and Verezzi (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, pp. 251, 252, fig. 28). SWITZERLAND: Schaffhausen (Lambrecht, 1912, Aquila, vol. 19, pp. 302, 305); Grotte de Cotencher (Dubois and Stehlin, Mém. Soc. Pal. Suisse, vol. 52, p. 167); Schweizerbild, Kesslerloch cave, Thayingen, Kaltbrunnental, Thierstein, and °Ettingen (Lambrecht, 1933, Handb. Palaeorn., p. 781). GERMANY: Seveckenberg bei Quedlingburg and Lahntal (Giebel, 1847, Fauna der Vorwelt, vol. 1, pt. 2, p. 16, 17). °DENMARK (Löppenthin, 1967, Danske ynglefugle i fortid og nutid, pp. 46, 48, 496, 557). NORWAY: Vardo (Lambrecht, 1933, Handb. Palaeorn., p. 781). FINLAND: °Ladoga Lake (Lambrecht, 1933, Handb. Palaeorn., p. 781). CZECHOSLOVAKIA: Predmost, Balcarova skála, Sipka, and Certova díra (Čapek, 1910, Ber. V. internat. orn. Kongr. Berlin, pp. 938, 939, 940); Zuslavitz (Lambrecht, 1912, Aquila, vol. 19, pp. 302, 305); Theide, Kulna, Volyn, and Kostelik (Lambrecht, 1933, Handb. Palaeorn., p. 780); Stránská skála, Holstýn skála, and Pekárana (Skutil and Stehlik, 1939, Ornitholog, vol. 6, nos. 2-4, p. 22). AUSTRIA: Schusterlucke (Lambrecht, 1912, Aquila, vol. 19, pp. 302, 305). HUNGARY: Balla Cave (Lambrecht, 1912, Aquila, vol. 19, pp. 277, 282, 283, pl. 4, figs. 31-32); Pálffy Cave and Pillisszántó (Lambrecht, 1913, vol. 20, p. 428); Öregkö Cave near Bajót (Kormos and Lambrecht, 1914, Barlangkutató, vol. 2, no. 2, p. 105); Remetehegy (Lambrecht, 1914, Aquila, vol. 21, p. 90); °Remetehegy (Lambrecht, 1916, Mitt. Jahrb. Kgl. Ungar. Reichsanst., vol. 22, no. 6, p. 403, pl. 14, figs. 1-16); Puskaporos (Lambrecht, 1916, Barlangkutató, vol. 4, nos. 3-4, p. 206); Tarkő (Jánossy, 1962, Ann. Hist.-Nat. Mus. Nat. Hungar., pt. Min. Pal., vol. 54, p. 157); °Csákvar (Lambrecht, 1933, Handb. Palaeorn., p. 780). POLAND: °Raj Cave and °Za Murem Cave (Bochenski, 1974, Birds Late Quaternary Poland, pp. 105, 200). UKRAINE: Nizhnee Krivche, Krementsa, °Olvii, °Voin, and °Bernova Luke (Voinstvenski, 1967, Prirodnyaya Obstanovka i Fauna Proshlogo, vol. 3, pp. 42, 43, 61, 63, 67); °Podolia Burchak-Abramovich, 1968, Fossil Birds in Caves of USSR, p. 240). RUSSIA: °Kubenino II and °Beloozero (Burchak-Abramovich and Zalkin, 1972, Bull. Moscow. Obsheh. Ispit. Prirodi, vol. 77, no. 2, p. 53). ABKHAZIA: Kholodnogo Grotto (Burchak-Abramovich and Bendukidze, 1971, Fragmenta Balcanica, vol. 8, no. 12, p. 109). AZERBAIJAN: Binagady (Serebrovsky, 1941, C. R. Akad. Sci. URSS, vol. 33, no. 7-8, p. 473; Serebrovsky, 1948, Trudy Estest.-Istor. Mus. Akad. Nauk Azerbaidzhan SSR, pts. 1-2, pp. 54, 58, figs. 56-57). SIBERIA: °Cusinyi Log Cave on Yenesei River near Krasnoyarsk (Burchak-Abramovich, 1968, Fossil Birds in Caves of USSR, p. 241). ISRAEL: Kebara Cave (Thernov, 1962, Bull. Research Council Israel, vol. 11, no. 3, p. 106). ALASKA: °Kodiak Island (Friedmann, 1934, Jour. Washington Acad. Sci., vol. 24, no. 5, p. 236); °Dutch Harbor, °Little Kiska, °Atka

Island, and °Attu Island (Friedmann, 1937, op. cit., vol. 27, no. 10, pp. 436-438); °Cape Prince of Wales (Friedmann, 1941, op. cit., vol. 31, no. 9, p. 409); °Kangiguksuk (Hall, 1969, Condor, vol. 71, no. 1, p. 76). OREGON: °Five Mile Rapids (L. Miller, 1957, Condor, vol. 59, no. 1, p. 59). CALIFORNIA: Rancho La Brea (L. Miller, 1909, Univ. Calif. Publ., Bull. Dept. Geol. Sci., vol. 5, no. 21, p. 306); Hawver Cave (L. Miller, 1911, op. cit., vol. 6, no. 16, p. 398); McKittrick (L. Miller, 1925, Univ. California Publ., Geol. Sci., vol. 15, no. 9, p. 325); Carpinteria (L. Miller, 1927, Science, n. s., vol. 66, p. 156); Playa del Rey [Del Rey Hills] (Howard, 1936, Condor, vol. 38, no. 5, p. 212); °Buena Vista Lake (DeMay, 1942, Condor, vol. 44, no. 5, p. 228). NEVADA: Smith Creek Cave (Howard, 1952, Bull. S. California Acad. Sci., vol. 51, pt. 2, p. 54). IDAHO: °Weiss rock shelter (L. Miller, 1963, Bull. S. California Acad. Sci., vol. 62, pt. 4, p. 181); Jaguar Cave (L. Miller, 1965, Tebiwa, vol. 8, no. 1, p. 19). UTAH: °Sand Dune Cave (Hargrave, 1970, Tech. Ser. Mus. N. Arizona, no. 9, pp. 38, 54). ARIZONA: °Betatakin Pueblo, °Kiet Siel Pueblo, °Awatobi Pueblo, °Walnut Canyon Pueblo, °Winona Village, °Citadel Pueblo, °Nalakihi Pueblo, and °Wupatki Pueblo (Hargrave, 1939, Condor, vol. 41, no. 5, p. 209). NEW MEXICO: Conkling Cave and Shelter Cave (Howard and A. H. Miller, 1933, Condor, vol. 35, no. 1, p. 16); Howells Ridge Cave (Howard, 1962, Condor, vol. 64, no. 3, p. 242); °Cochiti Dam (Harris, 1968, Mus. New Mexico Research Records, no. 6, pp. 206, 223); Dark Canyon Cave (Howard, 1971, Condor, vol. 73, no. 2, p. 238); Dry Cave entrance fissure and Bison Sink (Magish and Harris, 1977, Condor, vol. 78, no. 3, p. 401). NORTH DAKOTA: °Thomas Riggs site and °Huff Focus site (L. Miller, 1961, Bull. S. Calif. Acad. Sci., vol. 60, pt. 3, p. 126). SOUTH DAKOTA: °Chouteau site (L. Miller, Bull. S. Calif. Acad. Sci., vol. 60, pt. 3, p. 126); °Crow Creek, °Cattle Oiler, °Sully School, °Sully, °Hosterman, °Black Partizan, °Spiry-Eklo, °Anton Rygh, °Medicine Crow, and °Mobridge (Parmalee, 1977, Plains Anthropologist, vol. 22, pp. 197, 217). IOWA: °Mill Creek (Hamon, 1961, Plains Anthropologist, vol. 6, p. 211); °Bear Creek (Parmalee, 1967, Wilson Bull., vol. 79, no. 2, p. 157). ILLINOIS: °Plum Island (Baker, 1941, Trans. Amer. Philos. Soc., n.s., vol. 32, p. 68); °Cahokia (Parmalee, 1957, Trans. Illinois State Acad. Sci., vol. 50, p. 239); °Fisher site (Parmalee, 1958, Auk, vol. 75, no. 2, p. 175); °Crawford farm and °Emmons site (Parmalee, 1967, Wilson Bull., vol. 79, no. 2, p. 157). OHIO: °Feurt Village (Wetmore, 1943, Wilson Bull., vol. 55, no. 1, p. 55); °Canter Caves (Goslin, 1955, Ohio Jour. Sci., vol. 55, no. 6, p. 361). WEST VIRGINIA: °Buffalo Village (Guilday, 1971, West Virginia Geol. Econ. Surv., Rept. Archeol. Invest., no. 4, p. 8). GEORGIA: °Etowah (Parmalee, 1960, Florida Anthropologist, vol. 13, nos. 2-3, p. 49). NUEVO LEON: San Josecito cavern (L. Miller, 1943, Univ. Calif. Publ. Zool., vol. 47, no. 5, p. 165).

### 27a. *Corvus corax antecorax* Mourer-Chauviré

- [?] *Corvus annectens* Shufeldt, 1892, Jour. Acad. Nat. Sci. Philadelphia, vol. 9, p. 419, pl. 15, figs. 14-16 (type from Pleistocene, Fossil Lake, Oregon, right tarsometatarsus, Cope collection, now in Amer. Mus. Nat. Hist., New York).
- [?] *Corvus shufeldti* Sharpe, 1909, Hand-list Gen. Sp. Birds, vol. 5, p. 599 (new name for *Corvus annectens* Shufeldt, 1892, preoccupied by *Corvus annectens* Brüggeman, 1877).—Howard, 1946, Carnegie Instn. Washington, Publ. 551, p. 189 (referred to *C. corax*).—Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 250 (proportions differ from those of line of *C. corax*).—Magish and Harris, 1977, Condor, vol. 78, no. 3, p. 403 (holotype falls within size range of *C. corax sinuatus*, *C. cryptoleucus*, and *C. neomexicanus*).
- Corvus antecorax* Mourer-Chauviré, 1975 (27 June), Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, fasc. 1, pp. 239, 253, pl. 19, figs. 3-17; pl. 20 (holotype from Abîmes de la Fage near Noailles, Dept. Corrèze, France, complete left humerus, Mus. Lyon, no. 41,707; nearly 30,000 topotypes including all parts of the skeleton).
- Corvus neomexicanus* Magish and Harris, 1977 (11 Jan.), Condor, vol. 78, no. 3, p. 402, figs. 3-4, meas. graphs only (holotype from Dry Cave, Eddy County, New Mexico, complete left femur, hab. Environmental Biol., Univ. Texas at El Paso, no. MALB 27-27; 87 paratypes include mandible, coracoid, humerus, prox. end of ulna, radius, carpal, carpometacarpus, dist. end tibiotarsus, tarsometatarsus, scapula).

MIDDLE PLEISTOCENE (Mindel-Riss interglacial). FRANCE: Mas du Cave at Lunel-Viel (Mourer-Chauviré, 1976, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, fasc. 2, p. 285).

UPPER MIDDLE PLEISTOCENE (Riss glacial). FRANCE: Abîmes de la Fage at Noailles, Orgnac-l'Aven, Caune de l'Arago at Tautavel?, Le Lazaret at Nice, and Grotte du Cap de la Biehle at Nestier? (Mourer-Chauviré, 1976, op. cit., pp. 294, 312, 323, 332, 336, 338, 340).

LOWER UPPER PLEISTOCENE (Fossil Lake Formation). OREGON: Lake County: Fossil Lake? (Shufeldt, 1892, Jour. Acad. Nat. Sci. Philadelphia, vol. 9, p. 419, pl. 15, figs. 14-16).

UPPER PLEISTOCENE (interstadial,  $\pm$  25,160-33,590 B.P.). NEW MEXICO: Eddy County: Dry Cave? (Magish and Harris, 1977, Condor, vol. 78, p. 402).

### Family PARADISAEIDAE (Vieillot)

- Paradisei* Vieillot (before Apr. 14), Analyse nouv. Orn. élém., p. 35 (famille; type *Paradisea* Linnaeus).—*Paradiseana* Vigors, 1825, fide Gray.—*Paradiseidae* Boie, 1826, Isis von Oken, fide Gray.—*Paradiseinae* Gray, 1840 (before Apr.) List Genera Birds, p. 39 (subfamily).—*Paradiseinae* Sundevall, 1872, Tentamen, pt. 1, p. 45 (familia).—*Paradisaeidae* Stejneger, 1885, Standard Nat. Hist., vol. 4, p. 516 (family; type *Paradisaea* Linnaeus, 1758).—*Paradisaeinae* Stejneger, 1885, op. cit., p. 516 (subfamily).
- Ptilonorhynchinae* Gray, 1846 (Apr.), Genera Birds, vol. 2, p. 323 (subfamily; type *Ptilonorhynchus* Kuhl).—*Ptilonorhynchinae* Sundevall, 1872, Tentamen, pt. 1, p. 19 (familia).—*Ptilonorhynchidae* Sharpe, 1891, Review Recent Attempts to Classify Birds, p. 85 (family).—*Ptilonorhynchidae* Stone, 1891, Proc. Acad. Nat. Sci. Philadelphia, p. 459.
- Phonygaminae* Gray, 1847 (June), List Genera Birds, ed. 2, p. 50 (subfamily; type *Phonygama* Lesson).
- Manucodiinae* Cabanis, 1847, fide Gray (type *Manucodia* Boddaert).
- Eptimachinae* Gray, 1848 (Feb.), Genera Birds, vol. 1, p. 93 (subfamily; type *Epimachus* Cuvier).—*Epimachidae* Bonaparte, 1850, Conspectus Generum Avium, pt. 1, p. 411 (familia).—*Eptimachinae* Sundevall, 1872, Tentamen, pt. 1, p. 45 (familia).
- Turnagridae* Buller, 1888, Hist. Birds New Zealand, ed. 2, vol. 1, p. 30 (family; type *Turnagra* Lesson).
- Cnemophilinae* Mayr, 1962, in Peters, Check-list Birds World, vol. 15, pp. ix, 181 (subfamily; type *Cnemophilus* DeVis).

### Neospecies of Paradisaeidae from the Pleistocene

#### Subfamily Ptilonorhynchinae

1. *Turnagra capensis* (Sparrman).<sup>1</sup> NEW ZEALAND: North Island: Awakino-Mohoenui area (Medway, 1971, Notornis, vol. 18, p. 218). South Island: Pyramid Valley Swamp? (Scarlett, 1955, Records Canterbury Mus., vol. 6, no. 4, p. 263).

### Family MENURIDAE (G. R. Gray)

- Menurinae* G. R. Gray, 1847 (March), Genera of Birds, vol. 1, p. 153 (subfamily; type *Menura* Davies).—*Menurinae* Cabanis, 1847, Archiv f. Naturgeschichte, Jahrg. 23, vol. 1, no. 2, p. 337 (subfamilia).—*Menuridae* Bonaparte, 1850, Conspectus Generum Avium, pt. 1, p. 215 (family).—*Menuroidae* Stejneger, 1885 Standard Nat. Hist., vol. 4, p. 460 (super-family).

No fossil record.

<sup>1</sup> Systematic position fide Storrs Olson (personal communication).

## Family ATRICHORNITHIDAE Stejneger

*Atrichornithidae* Stejneger, 1885, Standard Natural History, vol. 4, p. 46 (family; type *Atrichornis* Stejneger, 1885, new name for *Atrichia* Gould, preoccupied).

*Atrichiinae* Fürbringer, 1888, Untersuch. Morph. Syst. Vögel, vol. 2, p. 1538 (subfamily; type *Atrichia* Gould, 1844, preoccupied by *Atrichia* Schrank, 1803, and *Atrichia* Desv., 1830).

No fossil record.

## Family ACANTHISITTIDAE (Sundevall)

*Acanthisittinae* Sundevall, 1872, Methodi Naturalis Avium Disponendarum Tentamen, pt. 1, p. 47 (familia; type *Acanthisitta* Lafresnaye).—*Acanthisittidae* Newton, 1896, Dictionary of Birds, pt. 4, pt. 1055.—*Acanthisittidae* Wetmore, 1940, Smithsonian Misc. Coll., vol. 99, no. 7, p. 10.

*Xenicidae* Sclater, 1888, Cat. Birds Brit. Mus., vol. 14, pp. xix, 450 (family; type *Xenicus* Gray).—*Xenicidae* [sic] Sharpe, 1891, Review of Recent Attempts to Classify Birds, pp. 28, 88.

*Xenicornithidae* Mathews, 1930, Systema Avium Australasianarum, vol. 2, p. 435 (family; type *Xenicornis* Iredale and Mathews).

*Traversiidae* Mathews, 1930, Systema Avium Australasianarum, vol. 2, p. 435 (family; type *Traversia* Rothschild).

No fossil record.

## Family PARIDAE Boie

*Paridae* Boie, 1826, Isis von Oken, col. 000 (family; type *Parus* Linnaeus).—*Paridae* Brehm, 1831, Handbuch Naturg. aller Vögel Deutschlands, p. 459 ("Ordnung").—*Paridae* Bonaparte, 1831, Saggio di una Distribuzione metodica degli Animali Vertebrati, p. 51.—*Parinae* Bonaparte, 1838, Geog. and Comp. List of Birds Europe and North America, p. 19 (subfamilia).—*Parianae* Swainson, 1832, Fauna Boreali Americana, pt. 2, p. 200 (subfamilia).—*Parinae* Sundevall, 1872, Tentamen, pt. 1, p. 17 (familia).

*Aegithalinae* Reichenbach, 1850, Avium Systema Naturale, p. 000 (subfamily; type *Aegithalos* Hermann).—*Aegithalidae* Delacour and Vaurie, 1957 (Oct. 31), Los Angeles Co. Mus. Contr. Sci., no. 16, p. 5 (family).

*Remizinae* Wetmore and W. D. Miller, 1926, Auk, vol. 43, no. 3, p. 345 (subfamily; type *Remiz* Jarocki).—*Remizidae* Delacour and Vaurie, 1957 (Oct. 31), Los Angeles Co. Mus. Contr. Sci., no. 16, p. 5 (family).

*Psaltriparinae* Wetmore and W. D. Miller, 1926, Auk, vol. 43, no. 3, p. 345 (subfamily; type *Psaltriparus* Bonaparte).

## Neospecies of Paridae from the Pleistocene and °Holocene

1. *Parus cristatus* Linnaeus. FRANCE: Orgnac (Mourer-Chauviré, 1975, Docum. Lab. Géol., Fac. Sci. Lyon, no. 64 p. 206). UKRAINE: Novgorod-Seversk? (Zubareva, 1950, Trudi Inst. Zool. Akad. Nauk Ukrainoskoi RSR, vol. 4, pp. 80, 94, pl. 3, fig. 13).

2. *Parus major* Linnaeus. ENGLAND: Chudleigh Cave (Bell, 1922, Naturalist, nos. 787-788, p. 251); Merlin's Cave (Lambrecht, 1933, Handb. Palaeorn., p. 768). FRANCE: Combe-Grenal (Mourer-Chauviré, 1972, Etudes Quaternaires, Mém. no. 1, p. 360); Rond-du-Barry (Mourer-Chauviré, 1974, Anthropologie, vol. 78, no. 1, p. 38); Campalou and °Rond-du-Barry (Mourer-Chauviré, 1975, Doc. Lab. Géol., Fac. Sci. Lyon, no. 64, p. 206). CZECHOSLOVAKIA: Volyn (Lambrecht, 1933, op. cit., p. 788); Veruncius (Skutil and Stehlík, 1939, Ornitholog, vol. 6, no. 2-4, p. 22); Stránská skála? (Jánossy, 1972, Anthropos, vol. 20 (n.s. 12), p. 60). HUNGARY: Puska-poros (Lambrecht, 1916, Barlangkutató, vol. 4, p. 206); Remetehegy (Lambrecht, 1916, Mitt. Jahrb. Kgl. Ungar. Geol. Reichsanst., vol. 22, p. 403); Hundsheim? (Jánossy, 1974, Sitzb. Osterr. Akad. Wiss., math.-naturw., pt. 1, vol. 182, no. 6-8, p. 212). RUMANIA: Püspökfördő [Betfia]

(Čapek, 1917, Barlangkutató, vol. 5, p. 30). UKRAINE: Novgorod-Seversk (Zubareva, 1950, Trudi Inst. Zool. Akad. Nauk Ukrainskoi RSR, vol. 4, pp. 80, 94, pl. 3, fig. 16); Syuren I, °Azil, °Tardenuaz, °Murzak-Koba, and °Alimovsk (Voinstvenski, 1967, Prirodnaya Obstanovka i Fauny Proshlogo, pt. 3, pp. 31, 34, 35, 37, 58). ISRAEL: Abu-Usba Cave? (Bar-Yosef and Tchernov, 1966, Israel Jour. Zool. vol. 15, p. 134).

3. *Parus caeruleus* Linnaeus. ENGLAND: Carnforth Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 403). AUSTRIA: Mixnitz (Lambrecht, 1933, op. cit., p. 788). CZECHOSLOVAKIA: Stránská akála (Skutil and Stehlík, 1939, Ornitholog, vol. 6, nos. 2-4, p. 22). UKRAINE: Tardenuaz and °Alimovsk (Voinstvenski, 1967, Prirodnaya Obstanovka i Fauny Proshlogo, pt. 3, pp. 35, 58).

4. *Parus ater* Linnaeus. ENGLAND: Chudleigh Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 403). CZECHOSLOVAKIA: Volyn (Lambrecht, 1933, op. cit., p. 788). UKRAINE: °Alimovsk (Voinstvenski, 1967, Prirodnaya Obstanovka i Fauny Proshlogo, pt. 3, p. 58).

5. *Parus lugubris* (Temminck). RUMANIA: Püspökfürdő [Betfia] (*Parus lugubris fossilis* Čapek, 1917, Barlangkutató, vol. 5, pp. 31, 72, type rostrum from Gunz-Mindel state, tentatively named).

6. *Parus montanus* Conrad. FRANCE: Jean Pierre at Saint-Thibaud-de-Couz (Mourer-Chauviré, 1975, Doc. Lab. Géol., Fac. Sci. Lyon, no. 64, p. 206).

7. *Parus palustris* Linnaeus. HUNGARY: Puskaporos (Lambrecht, 1916, Barlangkutató, vol. 4, p. 206). AUSTRIA: Hundsheim? (Jánossy, 1974, Sitzb. Österr. Akad. Wiss., math.-naturw., pt. 1, vol. 182, no. 6-8, p. 212). RUMANIA: Püspökfürdő [Betfia] (Čapek, 1917, Barlangkutató, vol. 4, p. 72).

8. *Parus gambeli* Ridgway. CALIFORNIA: Rancho La Brea? (A. H. Miller, 1929, Univ. Calif. Publ. Geol. Sci., vol. 19, no. 1, p. 10, pl. 1, fig. d).

9. *Parus rufescens* Townsend. CALIFORNIA: Carpinteria? (A. H. Miller, 1932, Univ. Calif. Publ. Geol. Sci., vol. 21, no. 7, p. 176, pl. 14, fig. d).

10. *Aegithalos caudatus* (Linnaeus). FRANCE: L'Escale at Saint-Estève-Janson? and Le Lazaret at Nice (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 205). ITALY: Grotte du Prince at Grimaldi? (Mourer-Chauviré, 1975, Doc. Lab. Géol., Fac. Sci. Lyon, no. 64, p. 205). RUMANIA: Püspökfürdő [Betfia] (Čapek, 1917, Barlangkutató, vol. 5, p. 72). POLAND: Nietoperzowa Cave? (Bochenski, 1974, Birds Late Quaternary Poland, pp. 117, 200). UKRAINE: °Azil (Voinstvenski, 1967, Prirodnaya Obstanovka i Fauny Proshlogo, vol. 3, p. 34).

11. *Remiz pendulinus* (Linnaeus). FRANCE: L'Escale at Saint-Estève-Janson (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 206).

### Family SITTIDAE (Bonaparte)

*Sittinae* Bonaparte, 1831, Saggio di una Distribuzion Metodica degli Animali Vertebrati, p. 49 (subfamilia; type *Sitta* Linnaeus).—*Sittinae* Sundevall, 1872, Tentamen, p. 47 (familia).—*Sittidae* Seebohm, 1890, Birds Japanese Empire, p. 92 (family).

*Climacterinae* Cabanis, 1850, Mus. Heineanum, pt. 1, p. 94 (subfamilia; type *Climacteris* Temminck).—*Climacteridae* Mayr, 1963, Emus, vol. 63, no. 1, p. 1 (family). Position tentative.

*Tichodromeae* Bonaparte, 1853 (séance du 31 Oct.), C.R. Acad. Sci. Paris, vol. 37, no. 18, p. 644 (series; type *Tichodroma* Illiger).—*Tichodrominae* Gray, 1869 (after May 10), Hand-List Gen. Sp. Birds, pt. 1, pp. xii, 184 (subfamily).—*Tichodromainae* Delacour and Vaurie, 1957 (Oct. 31), Los Angeles Co. Mus. Contr. Sci., no. 16, p. 5 (subfamily).—*Tichodromadinae* Vaurie, 1959, Birds Palearctic Fauna, Passeriformes, p. 534 (subfamily).

*Salporminae* [sic] Mayr and Amadon, 1951 (Apr. 2), Amer. Mus. Novit., no. 1496, pp. 23, 37 (subfamily; type *Salpormis* Gray).—*Salpormitinae* [sic] Delacour and Vaurie, 1957 (Oct. 31), Los Angeles Co. Mus. Contr. Sci., no. 16, p. 5 (subfamily).—*Salpormithinae* Greenway, 1967, in Peters, Check-list Birds World, vol. 12, p. 159 (subfamily). Position tentative.

*Neosittinae* Delacour and Vaurie, 1957 (Oct. 31), Los Angeles Co. Mus. Contr. Sci., no. 16, p. 5 (subfamily; type *Neositta* Hellmayr). Position tentative.

- Daphoenosittinae* Delacour and Vaurie, 1957 (Oct. 31, Los Angeles Co. Mus. Contr. Sci., no. 16, p. 5 (subfamily; type *Daphoenositta* DeVis). Position tentative.  
*Rhabdomithidae* Greenway, 1967, in Peters, Check-list Birds World, vol. 12, p. 161 (family; type *Rhabdomis* Reichenbach). Position tentative.

### Neospecies of Sittidae from the Pleistocene and \*Holocene

1. *Sitta europaea* Linnaeus. ENGLAND: Chudleigh Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 403); Langwith Bassett and Merlin's Cave (Lambrecht, 1933, Handb. Palaeorn., p. 788). FRANCE: Rond-du-Barry (Mourer-Chauviré, 1974, Anthropologie, vol. 78, no. 1, p. 38); Combe Grenal (Mourer-Chauviré, 1975, Doc. Lab. Géol., Fac. Sci. Lyon, no. 64, p. 207, pl. 17, fig. 11); Couze station in Lalinde commune (Mourer-Chauviré, 1976, op. cit., fasc. 2, p. 505). DENMARK: Haag (O. Winge, 1903, Vidensk. Meddel. naturh. Foren., vol. 6, p. 104). SWITZERLAND: Grotte de Cotencher (Dubois and Stehlin, 1932, Mém. Soc. Pal. Suisse, vol. 52, p. 29); Ettingen (Lambrecht, 1933, Handb. Palaeorn., p. 788). CZECHOSLOVAKIA: Stránská skála and Balcárka (Skutil and Stehlík, 1939, Ornitholog, vol. 6, nos. 2-4, p. 22). UKRAINE: Tardenuaz? and Krementsa (Voinstvenski, 1967, Prirodnaya Obstanovka i Fauny Proshlogo, pp. 35, 43); \*Pololia (Burchak-Abramovich, 1968, Fossil Birds in Caves of USSR, p. 240).
2. *Sitta canadensis* Linnaeus. CALIFORNIA: Carpinteria (A. H. Miller, 1932, Univ. Calif. Publ. Geol. Sci., vol. 21, no. 7, p. 176, pl. 14, fig. e). VIRGINIA: Natural Chimneys (Wetmore, 1962, Smithsonian Misc. Coll., vol. 145, no. 2, p. 13).
3. *Sitta* cf. *carolinensis* Latham. POLAND: Rock-shelter above Niedostepna Cave (Bocheński, 1974, Birds Late Quaternary Poland, pp. 109, 200, fig. 70-71).
4. *Sitta pygmaea* Vigors. CALIFORNIA: Carpinteria (A. H. Miller, 1932, Univ. Calif. Publ. Geol. Sci., vol. 21, p. 177, pl. 14, fig. a).
5. *Sitta pusilla* Latham. FLORIDA: Reddick (Hamon, 1964, Florida Geol. Surv., Geol. Bull., no. 44, p. 193).
6. *Tichodroma muraria* (Linnaeus). ITALY: Grotta dei Colombi (Lambrecht, 1933, Handb. Palaeorn., p. 788). POLAND: Mamutowa Cave? and Rock-shelter in Puchacza cave (Bocheński, 1974, Birds Late Quaternary Poland, pp. 115, 200, fig. 72).

### Family CERTHIIDAE (Vigors)

- Certhiidae* Vigors, 1825, Trans. Linn. Soc. London, vol. 14, p. 452 (family; type *Certhia* Linnaeus).—*Certhinae* Bonaparte, 1831, Saggio di una Distribuzione Metodica degli Animali Vertebrati, p. 49).—*Certhidae* Bonaparte, 1838, Geogr. Comp. List Birds Eur. N. Amer., p. 10.—*Certhianae* G. R. Gray, 1840 (before Apr.), List Genera Birds, p. 18 (subfamily).—*Certhiidae* Bonaparte, 1850, Conspectus Generum Avium, pt. 1, p. 224.

### Neospecies of Certhiidae from the Pleistocene

1. *Certhia familiaris* Linnaeus. ENGLAND: Chudleigh Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 403). RUMANIA: Püspökfürdő [Betfia] (Čapek, 1917, Barlangkutató, vol. 5, p. 71). UKRAINE: Alimovsk (Voinstvenski, 1967, Prirodnaya Obstanovka i Fauny Proshlogo, vol. 3, p. 58).

### Family CAMPEPHAGIDAE (Vigors)

- Campephagina* Vigors, 1825, fide Gray (subfamily; type *Campephaga* Vieillot).—*Campephaginae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, p. 34 (subfamily).—*Campophaginae* Sundevoall, 1872, Tentamen, pt. 1, p. 21 (familia).—*Campophagidae* Sharpe, 1879, Cat. Birds Brit. Mus., vol. 4, p. 6 (family).—*Campephagidae* Newton, 1896, Dictionary of Birds, p. 70 (family).  
*Ceblepyrinae* Swainson, 1832, Fauna Boreali-Americana, pt. 2, p. 108 (subfamily; type *Ceblepyris* Cuvier, 1817, a junior synonym of *Campephaga* Vieillot, 1810).  
*Pericrocotinae* Sundevall, 1872, Tentamen, pt. 1, p. 26 (familia; type *Pericrocotus* Boie).

No fossil record.

### Family PYCNONOTIDAE (Gray)

- Brachypodinae* Swainson, 1832, Fauna Boreali-Americana, pt. 2, p. 152 (subfamily; type *Brachypus* Swainson, 1824, preoccupied by *Brachypus* Meyer, 1815).—*Brachypodidae* Cabanis, 1851 (Jan.), Mus. Heineanum, pt. 1, p. 107 (familia).
- Pycnonotinae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, p. 28 (subfamily; type *Pycnonotus* Kuhl).—*Pycnonotidae* Blyth, 1849, Cat. Birds Mus-Asiatic Soc., p. 206 (family).—*Pycnonotinae* Sundevall, 1872, Tentamen, pt. 1, p. 20 (familia).
- Phyllornithinae* Cabanis, 1847, Arch. für Naturg., Jahrg. 23, vol. 1, pt. 2, p. 326 (subfamilia; type *Phyllornis* Temminck, 1829, a junior synonym of *Chloropsis* Jardine and Selby, 1826).—*Philornithidae* Wallace, 1874, Ibis, p. 406 (family).
- Izodinae* Blyth, 1849, fide Gray (subfamily; type *Izos* Temminck).
- Aegithininae* Gray, 1869, Hand-list Gen. Sp. Birds, pt. 1, pp. xvii, 314 (subfamily; type *Aegithina* Vieillot).—*Aegithininae* Sundevall, 1872, Tentamen, pt. 1, p. 8 (familia).
- Spizixidae* Oberholser, 1919 (Jan. 4), Jour. Washington Acad. Sci., vol. 9, no. 1, p. 15 (family; type *Spizixos* Blyth).
- Chloropseidae* Wetmore, 1960 (23 June), Smithsonian Misc. Coll., vol. 139, no. 11, pp. 19, 31 (family; type *Chloropsis* Jardine and Selby).

### Neospecies of Pycnonotidae from the Pleistocene

1. *Pycnonotus barbatus* (Desfontaine). ISRAEL: Mugharet-el-Zuttiyeh? (Bate, 1927, in Turville-Petre, Researches in Prehistoric Galilee 1922-1926, p. 28); Oumm Qatafa Cave, Kebara, El-Zuttiyeh Cave, and Abu-Usba Cave (Tchernov, 1962, Bull. Research Council Israel, vol. 1, no. 3, pp. 104, 106, 113).

### Family CINCLIDAE (Cabanis)

- Cinclinae* Cabanis, 1847, Archiv. für Naturg., Jahrg. 23, vol. 1, pt. 1, p. 205 (subfamilia; type *Cinclus* Borkhausen).—*Cinclidae* Bonaparte, 1850, Conspectus Generum Avium, pt. 1, p. 251 (familia).—*Cinclinae* Sundevall, 1872, Methodi naturalis avium disponendarum Tentame, pt. 1, p. 5 (familia).
- Hydrobatidae* Gray, 1869, Hand-list Gen. Sp. Birds, pt. 1, pp. xv, 266 (family; type *Hydrobata* Vieillot, 1816, a junior synonym of *Cinclus* Borkhausen, 1797).—*Hydrobatinae* Gray, 1869, Hand-list Gen. Sp. Birds, pt. 1, pp. xv, 266 (subfamily).

### Neospecies of Cinclidae from the Pleistocene and \*Holocene

1. *Cinclus cinclus* (Linnaeus). ENGLAND: Chudleigh Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 403). JERSEY: St. Brelade's Cave (Bell, 1922, Naturalist, no. 787-788, p. 251). FRANCE: Abîmes de la Fage at Noailles (Chauviré, 1965, C. R. Soc. Géol. France, no. 1, p. 8); Rond-du-Barry at Sinzelles (Mourer-Chauviré, 1974, Anthropologie, vol. 78, no. 1, p. 38); La Carrière at Gerd, Soulabé at Montseron, Le Colombier at Vallon-Pont-d'Arc?, La Colombière at Neuville-sur-Ain, Campalou at Saint-Nazaire-en-Royans, Le Blot at Cerzat, Pech de l'Azé at Cerzac, Baum de Gigny at Gigny-sur-Suran, and Le Lazaret at Nice (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 195, pl. 16, figs. 14-15). CORSICA: Grotta de Funtanedu? (E. T. Newton, 1921, Proc. Zool. Soc. London, pt. 2, p. 230). SWITZERLAND: \*Pfahlbauten von Robenhäuser (Milne-Edwards, 1871, Ois. Foss. France, vol. 2, p. 599). AUSTRIA: Guenushöhle and Schusterlucke (Lambrech, 1933, Handb. Palaeorn., p. 780). CZECHOSLOVAKIA: Balcárka and Katerinská (Skutil and Stehlík, 1939, Ornitholog, vol. 6, no. 2-4, p. 22). HUNGARY: Pilisszántó Lambrecht, 1915, Mitt. Jahrb. Ungar. Geol. Anst., vol. 23, pp. 480, 505); OTTO Herman Höhle (Lambrech, 1916, Aquila, vol. 22, p. 190).

\* C. R. Gray (1841, List Gen. Birds, ed. 2, p. 85) proposed the subfamily name *Cinclinae* for *Cinclus* Moehring, 1752, a senior synonym of *Arenaria* Brisson, 1760. As Moehring was a prebinomial author, his genera have no nomenclatorial validity. Therefore Gray's improper use of *Cinclinae* for the turnstones (*Arenaria*) does not preclude the later use of *Cinclinae* for the dippers.

## Family TROGLODYTIDAE (Swainson)

*Troglodytaenae* Swainson, 1832, Fauna Boreali-Americana, pt. 2, p. 316 (subfamily; type *Troglodytes* Vieillot).—*Troglodytinae* Swainson, 1837, Nat. Hist. Classif. Birds, vol. 2, pp. 131, 319.—*Troglodytidae* Slater, 1862, Cat. Coll. Amer. Birds, p. 16—*Troglodytinae* Sundevall, 1872, Tentamen, pt. 1, p. 13 (familia).

*Campylorhynchinae* Baird, 1858, Rept. Expl. Surv. R. R. Pacific, vol. 9, pp. xix, 343, 354 (subfamily; type *Campylorhynchus* Spix).

Genus *Cistothorus* Cabanis

*Cistothorus* Cabanis, 1850, Museum Heineanum, vol. 1, p. 77 (type *Troglodytes stellaris* Naumann, Recent).

1. *Cistothorus brevis* Brodkorb

*Cistothorus brevis* Brodkorb, 1957 (Feb. 26), Jour. Paleontology, vol. 31, no. 1, p. 133, pl. 20, figs. 10-13 (type from Reddick, right humerus, Brodkorb no. 788; referred coracoids, ulnas, tibiotarsi).—Hamon, 1964, Florida Geol. Surv., Geol. Bull., no. 44, p. 194 (femur).

MIDDLE UPPER PLEISTOCENE (Reddick beds). FLORIDA: Marion County: Dixie Lime Products Company mine, 1 mi SE Reddick.

## Neospecies of Troglodytidae from the Pleistocene and \*Holocene

1. *Troglodytes troglodytes* (Linnaeus). ENGLAND: Chudleigh Cave (Bell 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 403). FRANCE: Orgnac-l'Aven, Le Lazaret, and Deux Avens at Vallon-Pont-d'Arc (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 196, pl. 17, fig. 1). UKRAINE: \*Tardenuaz and \*Kremetsa (Voinstvenski, Prirodnaya Obstanovka i Fauny Proshlogo, pt. 3, p. 35); \*Podolia (Burchak-Abramovich, 1968, Fossil Birds in Caves of USSR, p. 240).

2. *Troglodytes aëdon* Vieillot. ILLINOIS: \*Meyer Cave? (Parmalee, 1967, Nat. Speological Soc. Bull., vol. 29, no. 4, p. 130). FLORIDA: Reddick (Brodkorb, 1957, Jour. Palaeontology, vol. 31, no. 1, p. 136, Hamon, 1964, Florida Geol. Surv., Geol. Bull. no. 44, p. 144); Haile (Ligon, 1966, Bull. Florida State Mus., vol. 10, no. 4, p. 50).

3. *Salpinctes obsoletus* (Say). IDAHO: Jaguar Cave (L. Miller, 1965, Tebiwa, vol. 8, no. 1, p. 19). NEW MEXICO: Shelter Cave (Howard and A. H. Miller, 1933, Condor, vol. 35, no. 1, p. 16).

4. *Salpinctes mexicanus* (Swainson). NEW MEXICO: Shelter Cave (Howard and A. H. Miller, 1933, Condor, vol. 35, no. 1, p. 16).

5. *Campylorhynchus brunneicapillus* (Lafresnaye). CALIFORNIA: McKittrick? (A. H. Miller, 1937, Condor, vol. 39, p. 250).

6. *Cistothorus platensis* (Latham). FLORIDA: Haile (Ligon, 1966, Bull. Florida State Mus., vol. 10, no. 4, p. 150).

## Family MUSCICAPIDAE Vigors

*Muscicapidae* Vigors, 1825, Trans. Linn. Soc. London, vol. 14, p. 435 (type *Muscicapa* Brisson).—*Muscicapinae* Swainson, 1832, Fauna Boreali-Americana, pt. 2, p. 200 (subfamily).—*Muscicapinae* Sundevall, 1872, Tentamen, pt. 1, p. 25 (familia).

*Merulidae* Vigors, 1825, Trans. Linn. Soc. London, vol. 14, p. 435 (type *Merula* "Ray" = Leach, after Aug. 30, 1816, a junior synonym of *Turdus* Linnaeus, 1758, and preoccupied by *Merula* Koch, before July, 1816).—*Merulina* Vigors, Zool. Jour., vol. 2, p. 396.

*Cossyphina* Vigors, 1825, Zool. Jour., vol. 2, p. 396 (type *Cossypha* Vigors).

*Saxicolina* Vigors, 1825, Zool. Jour., vol. 2, p. 396 (type *Saxicola* Bechstein).—*Saxicolinae* Swainson, 1832, Fauna Boreali-Americana, pt. 2, p. 200.—*Saxicolidae* Baird, 1864 (June), Review of American Birds, sig. 1, pp. 61, 453 (family).—*Saxicolinae* Sundevall, 1872, Methodi Naturalis Avium Disponendarum Tentamen, pt. 1, p. 4 (familia).



- Turdinae* Bonaparte, 1831, Saggio di una Distribuzione Metodica degli Animali Vertebrati, p. 31 (subfamily; type *Turdus* Linnaeus).—*Turdidae* Bonaparte, 1838, Geogr. Comp. List Birds Eur. and N. Amer., p. 11.—*Turdinae* Sundevall, 1872, Methodi Naturalis Avium Disponendarum Tentamen, pt. 1, p. 4 (familia).
- Pachycephalinae* Swainson, 1832, Fauna Boreali-Americana, pt. 2, p. 492 (subfamily; type *Pachycephala* Vigors).—*Pachycephalinae* Sundevall, 1872, Tentamen, pt. 1, p. 16 (familia).
- Leiotrichanae* Swainson, 1832, Fauna Boreali-Americana, pt. 2, p. 400 (subfamily; type *Leiothrix* Swainson).—*Leiotrichanae* Swainson, 1837, Nat. Hist. Classif. Birds, vol. 2, pp. 71, 249.—*Liotrichidae* Cabanis, 1847, Arch. f. Naturg., Jahrg. 23, vol. 1, pt. 2, p. 323 (familia).—*Liotrichinae* Bonaparte, 1850, Conspectus Generum Avium, pt. 1, p. 332.
- Crateropodinae* Swainson, 1832, Fauna Boreali-Americana, pt. 2, p. 156 (subfamily; type *Crateropus* Swainson, 1831, a junior synonym of *Turdoides* Cretzschmar, 1826).—*Crateropodinae* Sundevall, 1872, Tentamen, pt. 1, p. 9 (familia).
- Orthonychinae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, p. 19 (subfamily; type *Orthonyx* Temminck).—*Orthonychinae* Bonaparte, 1850, Conspectus Generum Avium, pt. 1, p. 216 (subfamilia).
- Trimalinae* G. R. Gray, 1841, List of Genera of Birds, ed. 2, p. 36 (subfamily; type *Timalia* Horsfield).—*Timaliinae* Bonaparte, 1840, Conspectus Generum Avium, pt. 1, p. 216.—*Timaliidae* Wallace, 1874, Ibis, p. 406.—*Timaliini* Delacour, 1946, Oiseaux, vol. 16, p. 7 (tribe).
- Erythacinae* G. R. Gray, 1846 (May), Genera of Birds, vol. 1, p. 177 (subfamily; type *Erithacus* Linnaeus).
- Luscinidae* G. R. Gray, 1848 (Aug.), Genera of Birds, vol. 1, p. 161 (family; type *Luscinia* Linnaeus).—*Luscininae* G. R. Gray, 1848 (Aug.), Genera of Birds, vol. 1, p. 171 (subfamily).—*Lusciniinae* Sundevall, 1872, Methodi Naturalis Avium Disponendarum Tentamen, pt. 1, p. 3 (familia).
- Eupetinae* Bonaparte, 1850 (March), Conspectus Generum Avium, pt. 1, sig. 32, p. 251 (subfamily; type *Eupetes* Temminck).—*Eupetidae* G. R. Gray, 1869, Hand-list Gen. Sp. Birds, pt. 1, pp. xv, 267 (family).—*Eupetinae* Sundevall, 1872, Tentamen, pt. 1, p. 12 (subfamilia).
- Napodinae* Cabanis, 1850, Museum Heineanum, pt. 1, sig. 10, p. 76 (subfamily; type *Napodes* Cabanis, 1850, a junior synonym of *Timalia* Horsfield, 1820).
- Myiagrinae* Cabanis, 1850, Museum Heineanum, pt. 1, sig. 7, p. 56 (subfamily; type *Myiagra* Vigors and Horsfield).—*Myiagrinae* Sundevall, 1872, Tentamen, pt. 1, p. 24 (familia).
- Garrulacinae* Bonaparte, 1853 (séance du 31 Oct.), C. R. Acad. Sci. Paris, vol. 27, no. 18, p. 644 (subfamilia; type *Garrulax* Lesson).
- Miminae* Bonaparte, 1853, C. R. Acad. Sci. Paris, vol. 37, p. 644 (subfamily; type *Mimus* Boie).—*Miminae* Sundevall, 1872, Tentamen, pt. 1, p. 14 (familia).—*Mimidae* Sharpe, 1891, Review of Recent Attempts to Classify Birds, p. 87 (family).
- Paradoxornithinae* G. R. Gray, 1855, Cat. Gen. Subgen. Birds Brit. Mus., p. 82 (subfamily; type *Paradoxornis* Gould).—*Paradoxornithidae* Wetmore, Smithsonian Misc. Coll., vol. 89, no. 13, pp. 2, 10 (family).
- Ptilogonidinae* Baird, 1858, Rept. Expl. Surv. R. R. Pacific, vol. 9, pp. xix, 316, 318 (subfamily; type *Ptilogonyx* Swainson).—*Ptilogonydinae* Slater, 1862, Cat. Coll. Amer. Birds, p. 47.—*Ptilogonatidae* Ridgway, 1901, Bull. U. S. Nat. Mus., no. 50, pt. 1, p. 21 (family).—*Ptilogonatidae* Ridgway, 1904, op. cit., pt. 3, pp. viii, 113.—*Ptilogonatinae* Arvey, 1948, Wilson Bull., vol. 61, no. 3, p. 198.
- Chamaeinae* Baird, 1858, Rept. Expl. Surv. R. R. Pacific, vol. 9, pp. xix, 343, 370 (subfamily; type *Chamaea* Gambel).—*Chamaeadae* Baird, 1864 (July), Review Amer. Birds, p. 75 (family).—*Chamaeidae* Coues, 1878, Birds Colorado Valley, pp. xi, 108.—*Chamaeinae* Ridgway, 1887, Man. N. Amer. Birds, p. 588.—*Chamaeini* Delacour, 1946, Oiseaux, vol. 16, p. 7 (tribe).
- Myiadestinae* Baird, 1866 (May), Review of American Birds, sig. 26, pp. 408, 417, 462 (subfamily; type *Myiadestes* Swainson).
- Henicurinae* Sundevall, 1872, Tentamen, pt. 1, p. 5 (familia; type *Henicurus* Cabanis, i.e. *Enicurus* Temminck).
- Myiophoninae* Sundevall, 1872, Tentamen, pt. 1, p. 5 (familia; type *Myiophonus* Temminck).
- Copsychinae* Sundevall, 1872, Tentamen, pt. 1, p. 8 (familia; type *Copsychus* Wagler).

- Brachypteryinae* Sundevall, 1872, Tentamen, pt. 1, p. 10 (familia; type *Brachypteryx* Horsfield).  
*Toxostominae* Sundevall, 1872, Tentamen, pt. 1, p. 13 (familia; type *Toxostoma* Wagler).  
*Ficedulinae* Sundevall, 1872, Tentamen, pt. 1, p. 23 (familia; type *Ficedula* Brisson).  
*Platystirinae* Sundevall, 1872, Tentamen, pt. 1, p. 23 (familia; type *Platystira* Jardine and Selby).  
*Muscipetinae* Sundevall, 1872, Tentamen, pt. 1, p. 25 (familia; type *Muscipeta* Cuvier).  
*Rhipidurinae* Sundevall, 1872, Tentamen, pt. 1, p. 25 (familia; type *Rhipidura* Vigors, and Horsfield).—*Rhididuridae* Oliver, 1955, New Zealand Birds, ed. 2, pp. 9, 491 (family).—*Rhipidurinae* Delacour and Vaurie, 1957 (Oct. 31), Los Angeles Co. Mus. Contr. Sci., no. 16, p. 5 (subfamily).  
*Timeliidae* Sharpe, 1874, Cat. Birds Brit. Mus., vol. 4, p. 7 (type *Timelia* Sundevall, 1872, a junior synonym of *Timalia* Horsfield, 1821).  
*Falunculidae* Sundevall, 1874, Öfversigt Kongl. Vetenskaps-Akad. Förhandl., no. 3, p. 30 (familia; type *Falunculus* Vieillot).  
*Picathartinae* Lowe, 1938, Ibis, ser. 14, vol. 2, p. 267 (subfamily; type *Picathartes* Lesson).—*Picathartidae* Bannerman, 1951, Birds Tropical West Africa, vol. 8, p. 465 (family).—*Picathartini* Mayr and Amadon, 1951 (April 2), Amer. Mus. Novitates, no. 1496, pp. 18, 36 (tribe).  
*Pelleomini* [sic] Delacour, 1946, Oiseaux, vol. 16, p. 14 (tribe; type *Pellorneum* Swainson).—*Pellorneini* Delacour, op. cit., p. 22.  
*Pomatorhinini* Delacour, 1946, Oiseaux, vol. 16, p. 15 (tribe; type *Pomatorhinus* Horsfield).  
*Turdoidini* Delacour, 1946, Oiseaux, col. 16, p. 19 (tribe; type *Turdoides* Cretzschmar).—*Turdoididae* Williams, 1963, Field Guide Birds E. and Central Africa, p. 187 (family).  
*Cinclosomatini* Mayr and Amadon, 1951 (April 2), Amer. Mus. Novitates, no. 1496, pp. 18, 36 (tribe; type *Cinclosoma* Vigors and Horsfield).  
*Zeledoniidae* Ridgway, 1907, Bull. U. S. Nat. Mus., no. 50, pt. 4, pp. viii, 885 (family; type *Zeledonia* Ridgway).  
*Palaeosciniidae* Howard, 1957 (June 28), Los Angeles County Mus. Contr. Sci., no. 9, p. 15 (family; type *Palaeoscinis* Howard).  
*Monarchinae* Delacour and Vaurie, 1957 (Oct. 31), Los Angeles County Mus. Contr. Sci., no. 16, p. 5 (subfamily; type *Monarcha* Vigors and Horsfield).  
*Panurinae* Deignan, 1964, Check-list Birds of World, vol. 10, pp. ix, 430 (subfamily; type *Panurus* Koch).

### Subfamily MYADESTINAE Baird

- Myadestinae* Baird, 1866.  
*Palaeosciniidae* Howard, 1957.

#### Genus *Palaeoscinis* Howard

- Palaeoscinis* Howard, 1957 (June 28), Los Angeles County Mus. Contr. Sci., no. 9, p. 6 (type by original designation *Palaeoscinis turdirostris* Howard).

#### 1. *Palaeoscinis turdirostris* Howard

- Palaeoscinis turdirostris* Howard, 1957 (June 28), Los Angeles County Mus. Contr. Sci., no. 9, p. 6, figs. 1-2 (type from Tepusquet Creek, skeleton impression, Los Angeles Mus. no. 2604).

MIDDLE MIOCENE (Mohnian stage, Monterey formation). CALIFORNIA:  
 Santa Barbara County: San Rafael Mountains: west side Tepusquet Creek, NE  
 1/4 of NW 1/4, section 15, Township 10 North, Range 31 West.

Neospecies of Muscicapidae from the Pleistocene and °Holocene  
Subfamily Miminae

1. *Toxostoma rufum* (Linnaeus). PENNSYLVANIA: New Paris (Guilday, Martin, and McCrady, 1964, Bull. Nat. Speleol. Soc., vol. 26, no. 4, pp. 134, 143). VIRGINIA: Natural Chimneys (Wetmore, 1962, Smithsonian Misc. Coll., vol. 145, no. 2, p. 13). FLORIDA: Reddick (Hamon, 1964, Florida Geol. Surv., Geol. Bull., no. 44, p. 194); Haile (Ligon, 1966, Bull. Florida State Mus., vol. 10, p. 150).
2. *Toxostoma ocellatum* (Sclater). MEXICO: Valley of Tequiquiac? (Storer, 1954, Wilson Bull., vol. 66, no. 2, p. 144).
3. *Toxostoma redivivum* (Gambel). CALIFORNIA: Rancho La Brea (A. H. Miller, 1929, Univ. Calif. Publ., Bull. Dept. Geol., vol. 19, p. 11; 1937, Condor, vol. 39, no. 1, p. 250).
4. *Toxostoma bendirei* (Coues). CALIFORNIA: McKittrick (A. H. Miller, 1937, Condor, vol. 39, no. 1, p. 250).
5. *Toxostoma dorsale* (Henry). NEW MEXICO: Shelter Cave? (Howard and A. H. Miller, 1933, Condor, vol. 35, no. 1, p. 16).
6. *Oreoscoptes montanus* (Townsend). CALIFORNIA: McKittrick and Rancho La Brea (A. H. Miller, 1937, Condor, vol. 39, p. 250). NEW MEXICO: Shelter Cave (Howard and A. H. Miller, 1933, Condor, vol. 35, no. 1, p. 16).
7. *Mimus polyglottos* (Linnaeus). FLORIDA: Reddick (Hamon, 1964, Florida Geol. Surv., Geol. Bull. no. 44, p. 194); Haile (Ligon, 1966, Bull. Florida State Mus., vol. 10, p. 150). DOMINICAN REPUBLIC: °Cerro de San Francisco (Bernstein, 1965, Quart. Jour. Florida Acad. Sci., vol. 28, no. 3, p. 279). BAHAMAS: °Abaco Island (Conklin, 1971, Quart. Jour. Florida Acad. Sci., vol. 33, no. 3, p. 238). PUERTO RICO: Cueva Catedral and Cueva Clara (Wetmore, 1922, Bull. Amer. Mus. Nat. Hist., vol. 46, p. 325).
8. *Mimus gundlachi* Cabanis. BAHAMAS: °Gordon Hills Cave, Crooked Island, (Wetmore, 1938, Auk, vol. 55, no. 1, p. 52); Banana Hole, New Providence (Brodkorb, 1959, Bull. Florida State Mus., vol. 4, no. 11 p. 365).
9. *Mimus saturninus* (Lichtenstein). BRAZIL: Lapa da Escrivania and Lapa da Lagoa do Sumidouro (O. Winge, 1887, E Museo Lundii, vol. 1, no. 2, p. 49).
10. *Margarops fuscatus* (Vieillot). BAHAMAS: Great Exuma Island (Wetmore, 1937, Bull. Mus. Comp. Zool., vol. 80, no. 12, p. 441). PUERTO RICO: °Cueva Catedral and °Cueva Clara (Wetmore, 1922, Bull. Amer. Mus. Nat. Hist., vol. 46, p. 325).
11. *Dumetella carolinensis* (Linnaeus). WISCONSIN: °Raddatz rock shelter? (Parmalee, 1959, Wisconsin Archeologist, vol. 40, no. 2, p. 85).

Subfamily Turdinae

12. *Erithacus rubecula* (Linnaeus). IRELAND: Kesh Cave, Newhall Cave, and Edenvale Cave (Lambrecht, 1933, Handb. Palaeorn., p. 779). ENGLAND: Clevedon Cave, Chudleigh Cave, Lóngcliffe Cave, Langwith Bassett Cave, and Merlin's Cave? (Lambrecht, 1933, Handb. Palaeorn., p. 779). FRANCE: Fontéchavade? (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 199). CORSICA: Grotta di Funtanedu (E. T. Newton, 1921, Proc. Zool. Soc. London, pt. 2, p. 230). ITALY: Buca Tana di Maggiano (Lambrecht, 1933, Handb. Palaeorn., p. 779). DENMARK: Oexnebjerg (O. Winge, 1903, Vidensk. Meddel. naturh. Foren., vol. 6, p. 105). HUNGARY: Lambrecht Cave (Jánossy, 1963, Acta Zoologica, vol. 9, p. 295). UKRAINE: Syuren I, °Azil, °Tardenuaz, °Chernigov, and °Alimovsk (Voinstvenski, 1967, Prirodnyaya Obstanovka i Fauny Proshlogo, vol. 3, pp. 31, 34, 35, 49, 58). ISRAEL: Oumm Qatafa Cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, p. 100).
13. *Erithacus luscini* (Linnaeus). ENGLAND: Langwith Bassett Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 403); Chudleigh Cave (Bell, 1922, Naturalist, nos. 787-788, p. 251). FRANCE: Abîmes de la Fage and °Arago actuel (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 199). ITALY: Buco della Volpe sopra Rovenna (Portis, 1888, Mem. Accad. R. Torino, ser. 2, vol. 38, p. 197); Grotta d'Equi (Lambrecht, 1933, Handb. Palaeorn., p. 779). SWITZERLAND: °Grotte de Cotencher (Dubois and Stehlin, 1932, Mém. Soc. Pal. Suisse, vol. 52, p. 29). GERMANY: Westeregeln bei Magdeburg (Lambrecht, 1933, Handb. Palaeorn., p. 779). UKRAINE: °Krementsa and °Rasponintsy (Voinstvenski, 1967, Prirodnyaya Obstanovka i Fauny Proshlogo, vol. 3, pp. 43, 44).

14. *Erithacus megarhynchos* Brehm. UKRAINE: °Azil, °Tardenuaz, and °Perevoloka (Voinstvenski, 1967, Prirodnyaya Obstanovka i Fauny Proshlogo, vol. 3, pp. 34, 35, 45). ISRAEL: Hayonim Cave (Bar-Yosef and Tchernov, 1966, Israel Jour. Zool., vol. 15, p. 132).

15. *Erithacus suecicus* (Linnaeus). CZECHOSLOVAKIA: Volyn (Lambrecht, 1933, Handb. Palaeorn., p. 779); Stránská skála (Skutil and Stehlik, 1939, Ornitholog, vol. 6, nos. 2-4, p. 22). POLAND: Rebielice? (Jánossy, 1974, Acta Zoologica Cracoviensia, vol. 19, no. 21, p. 558). UKRAINE: caves (Burchak-Abramovich, 1968, Fossil Birds in Cave of USSR, p. 237). ISRAEL: Kebara Cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, no. 3, p. 106); Abu-Usba Cave (Bar-Yosef and Tchernov, 1966, Israel Jour. Zool., vol. 15, p. 134).

16. *Phoenicurus phoenicurus* (Linnaeus). IRELAND: Kesh Cave, Newhall Cave, and Edenvale Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 403). ENGLAND: Clevedon Cave, Chudleigh Cave, Longcliffe Cave, and Langwith Bassett Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 403). FRANCE: Grotte de Lherm (Lambrecht, 1933, Handb. Palaeorn., p. 779); Lunel-Viel, Fontêchevade?, Abri Lafaye at Bruniguel, Le Blot at Cerzat, and °Rond-du-Barry (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 199). CORSICA: Grotta di Funtanadu (E. T. Newton, 1921, Proc. Zool. Soc. London, pt. 2, p. 230). DENMARK: Soelager (O. Winge, 1903, Vidensk. Meddel. naturh. Foren., vol. 6, p. 104). AUSTRIA: Hundsheim? (Jánossy, 1974, Sitzb. Österr. Akad. Wiss., math.-natw., pt. 1, vol. 182, no. 6-8, p. 212). CZECHOSLOVAKIA: Volyn? (Lambrecht, 1933, Handb. Palaeorn., p. 779). UKRAINE: °Azil (Voinstvenski, 1967, Prirodnyaya Obstanovka i Fauny Proshlogo, vol. 3, p. 34). ISRAEL: Kebara Cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, no. 3, p. 106).

17. *Phoenicurus ochruros* Gmelin. POLAND: Zytina Skala? (Bochenski, 1974, Birds Late Quaternary Poland, pp. 117, 200). ISRAEL: Kebara Cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, no. 3, p. 106); Abu-Usba Cave (Bar-Yosef and Tchernov, 1966, Israel Jour. Sci., vol. 15, p. 134).

18. *Sialia sialis* (Linnaeus). ILLINOIS: °Meyer Cave (Parmalee, 1967, Nat. Speleological Soc. Bull., vol. 29, no. 4, p. 130). FLORIDA: Reddick (Hamon, 1964, Florida Geol. Surv., Geol. Bull., no. 44, p. 195).

19. *Sialia mexicana* Swainson. CALIFORNIA: Carpinteria (A. H. Miller, 1932, Univ. Calif. Publ. Geol. Sci., vol. 21, no. 7, p. 179, pl. 13, fig. i; pl. 14, fig. i); Rancho La Brea? (A. H. Miller, 1929, Univ. Calif. Publ., Bull. Dept. Geol. Sci., vol. 19, p. 11).

20. *Cercomela melanura* (Temminck). ISRAEL: °Ubeidiya? (Tchernov, 1968, Prelim. Invest. Birds Pleist. Deposits °Ubeidiya, p. 24).

21. *Saxicola rubetra* (Linnaeus). IRELAND: Kesh Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 403). ENGLAND: Carnforth Cave and Chudleigh Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 403); Merlin's Cave? (Lambrecht, 1933, Handb. Palaeorn., p. 779). FRANCE: Abîmes de la Fage at Noailles, Orgnac l'Aven, Le Lazaret at Nice, Salpêtre de Pompignan, Rond-du-Barry, Baume de Gigny at Gigny-sur-Suran?, and °Arago actuel at Tautavel (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 197). CORSICA: Grotta di Funtanadu (E. T. Newton, 1921, Proc. Zool. Soc. London, pt. 2, p. 230). CZECHOSLOVAKIA: Holubic (Lambrecht, 1933, Handb. Palaeorn., p. 779). RUMANIA: Püspökfürdő [Betfia] (Čapek, 1917, Barlangkutató, vol. 5, p. 30). UKRAINE: Syuren I, °Alimovsk, and °Okunevki (Voinstvenski, 1967, Prirodnyaya Obstanovka i Fauny Proshlogo, vol. 2, pp. 31, 58, 59).

22. *Saxicola torquata* (Linnaeus). GERMANY: Voigtstedt (Jánossy, 1965, Pal. Abhandl., part A, vol. 2, p. 355). CZECHOSLOVAKIA: Holubic (Lambrecht, 1933, Handb. Palaeorn., p. 779). RUMANIA: Püspökfürdő [Betfia] (Lambrecht, 1933, Handb. Palaeorn., p. 779). ISRAEL: Hayonin Cave? (Bar-Yosef and Tchernov, 1966, Israel Jour. Sci., vol. 15, p. 132).

23. *Oenanthe isabellina* (Temminck). BELGIUM: Grotte Marie-Jeanne? (Ballmann, 1973, Gerfaut, vol. 63, p. 11).

24. *Oenanthe leucura* (Gmelin). FRANCE: °Arago actuel at Tautavel (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 198).

25. *Oenanthe oenanthe* (Linnaeus). ENGLAND: Ightham Cave (E. T. Newton, 1894, Quart. Jour. Geol. Soc. London, vol. 50, p. 191, pl. 10, figs. 13-14); Clevedon Cave and Langwith Bassett Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 403); Chudleigh Cave and °Glastonbury (Bell, 1922, Naturalist, nos. 787-788, p. 251); Merlin's Cave (Lambrecht, 1933, Handb. Palaeorn., p. 779). FRANCE: Teyjat (Lambrecht, 1933, Handb. Palaeorn., p. 779); La Balazière at Vers, Aurensan?, La Colombière at Neuville-sur-Ain, Campalou at Saint-Nazaire-en-

Royans, Le Blot at Cerzat, Grotte de Cottier at Retournac, Rond du Barry, Grotte Simard at Puymoyen, and Baum de Gigny at Gigny-sur-Suran (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 198). CORSICA: Grotta di Funtanedu and Grotta di Brietta (E. T. Newton, 1921, Proc. Zool. Soc. London, pt. 2, p. 230). GERMANY: Kleine Scheuer im Lonetal (Lambrecht, 1933, Handb. Palaeorn., p. 779). AUSTRIA: Hundsheim? (Jánossy, 1974, Sitzb. Österr. Akad. Wiss., math.-natw., pt. 1, vol. 182, no. 6-8, p. 212). CZECHOSLOVAKIA: Malenice (Lambrecht, 1933, Handb. Palaeorn., p. 779); Stránská skála (Jánossy, 1972, Anthropos, vol. 20 (n.s. 12), p. 60). POLAND: Volyn (Lambrecht, 1933, Handb. Palaeorn., p. 779). UKRAINE: Syuren I (Tugarinov, 1937, Trav. Sect. Soviet. Asso. Internat. Étude Quat., pt. 1, pp. 103, 112); Kiik-Koba, Adzhi-Koba, Tankov, °Azil, °Novgorod-Seversk, °Chernigov, °Kiev, and °Alimovsk (Voinstvenski, 1967, Prirodnaya Obstanovka i Fauny Proshlogo, vol. 3, pp. 25, 28, 30, 34, 40, 49, 51, 53, 58). ISRAEL: Kebara Cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, no. 3, p. 106); Abu-Usba Cave on Mt. Carmel (Bar-Yosef and Tchernov, 1966, Israel Jour. Zool., vol. 15, p. 134).

26. *Monticola saxatilis* (Linnaeus). FRANCE: Grottes inférieure et supérieure d'Aurensan (Bouchud, 1972, Bull. Asso. Franç. Étude Quatern., vol. 1, pp. 52, 54, 56); Abîmes de la Fage at Noailles (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 198, pl. 17, fig. 2). HUNGARY: Puskaporos (Lambrecht, 1916, Barlangkutató, vol. 4, p. 206).

27. *Monticola solitarius* (Linnaeus). FRANCE: Fort du Serrat-d'en-Vacquer near Perpignan? (Paris, 1912, Rev. Franç. d'Orn., vol. 4, p. 285); Rousillon (Lambrecht, 1918, Aquila, vol. 24, p. 216); Grotte du Lazaret at Nice and Combe Grenal at Domme (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 198).

28. *Zoothera dauma* (Latham). MONACO: L'Observatoire (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 202). ITALY: Grotte du Prince at Grimaldi (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 202). CORSICA: Grotta di Funtanedu? (E. T. Newton, 1921, Proc. Zool. Soc. London, pt. 2, p. 230).

29. *Catharus minimus* (Lafresnaye). FLORIDA: Reddick (Hamon, 1964, Florida Geol. Surv., Geol. Bull., no. 44, p. 195).

30. *Catharus ustulatus* (Nuttall). CALIFORNIA: Carpinteria? (A. H. Miller, 1932, Univ. Calif. Publ. Geol. Sci., vol. 21, no. 7, p. 178). UTAH: °Loper ruin (Hargrave, 1960, Univ. Utah Anthr. Papers, no. 44, p. 239).

31. *Catharus guttatus* (Pallas). CALIFORNIA: Carpinteria? (A. H. Miller, 1932, Univ. Calif. Publ. Geol. Sci., vol. 21, no. 7, p. 178).

32. *Turdus torquatus* Linnaeus. SPAIN: Caverna de Santimamiñe (Villalta, 1964, Speleon, vol. 15, p. 98). FRANCE: Grotte du Lazaret at Pierre-Châtel (Desbrosses and Mourer-Chauviré, 1973, Quart., p. 153); Abri Suard at La Chaise, La Balazzière at Vers, Grotte Jean Pierre at Saint-Thibaud-de-Couz, and Baume de Gigny at Gigny-sur-Suran (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 200); Grotte de Cottier at Retournac (Mourer-Chauviré, 1976, op. cit., fasc. 2, p. 472). MONACO: L'Observatoire (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 200). SWITZERLAND: Schlossfelsen von Virseck near Basel, Kaltthrunental, Thierstein, and Ermitage (Lambrecht, 1933, Handb. Palaeorn., p. 788). GERMANY: Raumgrotte (Lambrecht, 1933, Handb. Palaeorn., p. 778). HUNGARY: Lambrecht Cave? (Jánossy, 1963, Acta Zoologica Cracov., vol. 9, p. 308). CZECHOSLOVAKIA: Certova díra (Čapek, 1910, Ber. V. internat. ornith. Kongr. Berlin, p. 940). POLAND: °Rock-shelter above Niedostepna Cave and °Mamutowa Cave? (Bochenski, 1974, Birds Late Quaternary Poland, pp. 120, 122, 200, fig. 76).

33. *Turdus merula* Linnaeus. IRELAND: Doneraile Cave, Edenvale Cave, Newhall Cave, and Kesh Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 403). ENGLAND: Ightham fissure (E. T. Newton, 1899, Quart. Jour. Geol. Soc. London, vol. 55, no. 219, p. 420); Clevedon Cave, Chudleigh Cave, and Langwith Bassett Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 403); Merlin's Cave (Lambrecht, 1933, Handb. Palaeorn., p. 778). GIBRALTAR: Devil's Tower (Bate, 1928, Jour. Roy. Anthr. Inst., vol. 58, p. 104). SPAIN: Caverna de Santimamiñe, Cueva de la Campana, and Avenc del Geant (Villalta, 1964, Speleon, vol. 15, p. 98). FRANCE: Balme-les-grottes (Chauviré, 1963, C. R. Sommaire Soc. Géol. France, fasc. 2, p. 53); Grotte du Lazaret at Nice (Mourer-Chauviré, 1964, Bull. Mus. Anthropol. Préhist. Monaco, no. 11, pp. 62, 64, 76, 78); Abîmes de la Fage (Chauviré, 1965, C. R. Soc. Géol. France, no. 1, p. 8); Les Romains at Pierre-Châtel (Desbrosses and Mourer-Chauviré, 1973, vol. 23-24, pp. 153, 155); Rond du Barry

and °Rond du Barry at Sinzelles (Mourer-Chauviré, 1974, *Anthropologie*, vol. 78, no. 1, p. 38); Mas Rambault at Frontignan [?, see p. 266], L'Escale at Saint-Estève-Janson, Lunel Viel, Ognac-l'Aven, Abri Suard at La Chaise, Fontéchevadé at Montbron, Aldène at Cesseras?, Eden Roc at Vaison-la-Romaine, Salpêtre de Pompignan, Grotte Tournal at Bize, La Crouzade at Gruissan, La Balauzière at Vers, La Carrière at Gerde, Soulabé at Montseron, Les Trois Frères at Montescieu-Avantès, Balazuc, Deux Avens at Vallon-Pont-d'Arc, La Colombière at Neuville-sur-Ain, Campalou at Saint-Nazaire-en-Royans, Jean Pierre and °Jean Pierre at Saint-Thibaud-de-Couz, Jaurens at Nespouls, Combe Grenal at Domme, Pech de l'Azé at Carsac, Gare de Couze at Lalinde, Grotte Simard at Puymoyen, Grand Caveau and °Grand Caveau at Flavigny-sur-Ozerain, Baume de Gonvillars and °Baume de Gonvillars, La Roche plate at Saint-Mihiel?, and °Arago actuel (Mourer-Chauviré, 1975, *Doc. Lab. Géol. Fac. Sci. Lyon*, no. 64, p. 200). MONACO: Grotte de l'Observatoire (Lambrecht, 1933, *Handb. Palaeorn.*, p. 778). CORSICA: Toga? (Lydekker, 1891, *Proc. Zool. Soc. London*, p. 472, fig. 2); Grotta di Funtanedu, Grotta di Brietta, and Gradicchia Cave (E. T. Newton, 1921, *Proc. Zool. Soc. London*, pt. 2, p. 230). SARDINIA: Grotta del Capo (E. T. Newton, 1921, *Proc. Zool. Soc. London*, pt. 2, p. 230). ITALY: Oliveto? (Portis, 1888, *Mem. Accad. R. Torino*, ser. 2, vol. 38, p. 198); Grotte de Grimaldi, Grotte du Prince, Grotta dei Colombi, Buca del Bersagliere, Grotte d'Equi, and Buca Tana di Maggiano (Lambrecht, 1933, *Handb. Palaeorn.*, p. 778). SWITZERLAND: Ermitage and Felsen bei Birseck near Basel (Lambrecht, 1933, *Handb. Palaeorn.*, p. 778). LUXEMBURG: Oetrange (Ferrant and Friant, 1940, *Faune pléist. d'Oetrange*, p. 200, pl. 15). GERMANY: St. Wolfgang Cave and Kastelhang Cave (Lambrecht, 1933, *Handb. Palaeorn.*, p. 778). CZECHOSLOVAKIA: Balcarova cave and Certova díra (Čapek, 1910, *Ber. V. internat. ornith. Kongr. Berlin.*, p. 938); Stránska cave, Sipka, Kulna, Veruncina, and Katerinská (Skutil and Stehlik, 1939, *Ornitholog.*, vol. 6, nos. 2-4, p. 22). AUSTRIA: Gudenus cave and Schusterlucke? (Lambrecht, 1933, *Handb. Palaeorn.*, p. 778). HUNGARY: Somlyóhegy and °Somlyóhegy (Lambrecht, 1912, *Aquila*, vol. 19, pp. 286, 303, 306); °Legény cave near Pilisszentlélek (Lambrecht, 1933, *Handb. Palaeorn.*, p. 778). POLAND: °Raj Cave (Bochenski, 1974, *Birds Late Pleistocene Poland*, pp. 124, 200). RUMANIA: Püspökfürdő and °Püspökfürdő [Betfia] (Lambrecht, 1912, *Aquila*, vol. 19, p. 286). GREECE: Nesakia on Cerigo Isle (E. T. Newton, 1921, *Proc. Zool. Soc. London*, pt. 2, p. 230). UKRAINE: Kiik-Koba, Syuren I, °Azil, °Tardenuaz, °Syuren II, °Murzak Koba, °Shan-Koba, °Nizhnee Krivche, °Krementsa, °Rasponinta, °Chernigov, °Kiev, and °Alimovsk (Voinstvenski, 1967, *Prirodnaya Obstanovka i Fauny Proshlogo*, vol. 3, pp. 25, 31, 34, 35, 37, 38, 42, 43, 49, 51). MOLDAVIA: °Trinka (Voinstvenski, 1967, *Prirodnaya Obstanovka i Fauny Proshlogo*, vol. 3, p. 47). RUSSIA: °Zhiguley Cave on River Volga (Burchak-Abramovich, 1968, *Fossil Birds Caves USSR*, p. 242). AZERBAIJAN: Binagady (Burchak-Abramovich, 1963, *Ornitologiya*, vol. 4, p. 463). GEORGIAN USSR: Gvardzilas-Klde (Burchak-Abramovich, 1966, *Peshchery Gruzii Speleolog. Sbornik*, vol. 4, p. 96); °Darkweti (Bendukidze, *Tezisi Dokl. IV Vsesouz. Sov. Izuchan. Chetvert. Perioda*, p. 88). ISRAEL: Oumm Qatafa Cave and Kebara Cave? (Tchernov, 1962, *Bull. Research Council Israel*, vol. 11, no. 3, pp. 100, 104, 106); °Ubeidiya? (Tchernov, 1968, *Prelim. Invest. Birds Pleist. Deposits Ubeidiya*, p. 24).

34. *Turdus pilaris* Linnaeus. IRELAND: Kesh Cave and Edenvale Cave (Bell, 1915, *Zoologist*, ser. 4, vol. 19, no. 893, p. 403); Chudleigh Cave (Bell, 1922, *Naturalist*, nos. 787-788, p. 251). PORTUGAL: Gruta de Furninha (Villalta, 1964, *Speleon*, vol. 15, p. 97). BELGIUM: Trou de Sureau (Lambrecht, 1912, *Aquila*, vol. 19, p. 304); Trou de la Naulette, Trou de Chaleux, Trou des Nutons, and Trou du Frontal (Lambrecht, 1933, *Handb. Palaeorn.*, p. 777). FRANCE: Grotte du Lazaret at Nice (Mourer-Chauviré, 1964, *Bull. Mus. Anthropol. préhist. Monaco*, no. 11, pp. 62, 78); Abîmes de la Fage (Chauviré, 1965, *C. R. Soc. Géol. France*, no. 1, p. 8); Combe-Grenal (Mourer-Chauviré, 1972, *Etudes Quaternaires*, *Mém. no. 1*, p. 360); Lunel-Viel, Arago and °Arago actuel, Cap de la Biehle, La Balauzière, Soulabé, Jean Pierre and °Jean Pierre at Saint-Thibaud-de-Couz, Les Fées at Châtelperron, Laugerie Haute Est at Les Eyzies, La Roche Plate?, Baum de Gigny, Baum de Gonvillars, and °Baum de Gonvillars (Mourer-Chauviré, 1975, *Doc. Lab. Géol. Fac. Sci. Lyon*, no. 64, p. 199). MONACO: Grotte de l'Observatoire? (Lambrecht, 1933, *Handb. Palaeorn.*, p. 777). CORSICA: Grotta di Funtanedu (E. T. Newton, 1921, *Proc. Zool. Soc. London*, pt. 2, p. 230). ITALY: Buco della Volpe above Rovenna? (Portis, 1888, *mem. Accad. R. Torino*, ser. 2, vol. 38, p. 197); Grotta d'Equi, and °Buca Tana di Maggiano (Lambrecht, 1933, *Handb. Palaeorn.*, p. 777). SWITZERLAND: Schweizerbild bei Schaffhausen,

Schlossfelsen von Birseck, and Kesslerloch (Lambrecht, 1933, Handb. Palaeorn., p. 777). GERMANY: Breitenberg Cave (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 199). CZECHOSLOVAKIA: Balcarová skála, Sipka, and Certova díra (Čapek, 1910, Ber. V. internat. ornith. Kongr. Berlin, p. 938); Holubic and Zuzlawitz? (Lambrecht, 1933, Handb. Palaeorn., p. 777); Stránská skála, Kulna, Veruncina, Katerinska, and Predmost (Skutil and Stehlík, 1939, Ornitholog, vol. 6, nos. 2-4, p. 22). AUSTRIA: Schusterlucke (Lambrecht, 1912, Aquila, vol. 19, p. 304); Hundsheim? (Jánossy, 1974, Sitzb. Osterr. Akad. Wiss., math.-nat., pt. 1, vol. 182, no. 6-8, p. 212). HUNGARY: Puszkaporos (Kormos, 1911, Mitt. Jahrb. ungar. Geol. Anst., vol. 19, p. 151); Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. ungar. Geol. Anst., vol. 23, p. 480); Kies-Grube? (Lambrecht, 1916, Aquila, vol. 22, p. 195); Balla Cave and Peskó Cave (Lambrecht, 1912, Aquila, vol. 19, p. 276); Bajót and Pálffy Cave (Lambrecht, 1913, Aquila, vol. 20, p. 425); Remetehegy (Lambrecht, 1914, Aquila, vol. 21, p. 90); Kalten-Szamos Valley (Lambrecht, 1916, Aquila, vol. 22, p. 194); \*Remetehegy (Lambrecht, 1916, Mitt. Jahrb. Kgl. Ungar. Geol. Reichsanst., vol. 22, no. 6, p. 403); O-Ruzsin, Süttő, Hidegszamos in Siebenbürgen, and \*Legény Cave near Pilisszantlelék (Lambrecht, 1933, Handb. Palaeorn., p. 777); \*Visegrád (Bökonyi and Jánossy, 1966, Vertebrata Hungarica, vol. 7, p. 92); Breitenberg cave (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 199). RUMANIA: Curata cave (Jánossy, 1965, Vertebrata Hungarica, vol. 7, p. 113). POLAND: \*Manutowa cave? (Bochenski, 1974, Birds Late Quaternary Poland, pp. 122, 200). UKRAINE: Syuren I and \*Syuren II (Tugarinov, 1937, Trav. Sect. Soviét. Asso. Internat. Etude Quat., pt. 1, pp. 103, 112); Tankov, \*Tardenuz, and \*Alimovsk (Voinstvenski, 1967, Prirodnaya Obstanovka i Fauny Proshlogo, vol. 3, pp. 30, 35, 58).

35. *Turdus iliacus* Linnaeus. [*T. musicus* Linnaeus suppressed by International Commission]. IRELAND: Kesh Cave, Edenvale Cave, Bantick Cave, and Newhall Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 402). ENGLAND: Clevedon Cave, Chudleigh Cave, Longcliffe Cave, and Langwith Bassett Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 402). PORTUGAL: Gruta de Furninha (Lambrecht, 1933, Handb. Palaeorn., p. 778). MALLORCA: Cueva de Son Bauzá? (Ballmann and Adrover, 1970, Acta Geologica Hispanica, vol. 5, no. 2, p. 62). BELGIUM: Trou du Frontal and Trou du Sureau (Lambrecht, 1933, Handb. Palaeorn., p. 778). FRANCE: \*Grotte de l'Hortus (Mourer-Chauviré, 1972, Etudes Quaternaires, Mém. no. 1, p. 290); Les Romains at Pierre-Châtel (Desbrosse and Mourer-Chauviré, 1973, Quartär, p. 153); Rond du Barry (Mourer-Chauviré, 1974, Anthropologie, vol. 78, no. 1, p. 38); Le Vallonnet at Roquebrune-Cap-martin?, L'Escale at Saint-Estève-Janson, Lunel-Viel, Abîmes de la Fage at Noailles, Orgnac 3 at Orgnac-l'Aven, Le Lazaret at Nice, La Chaise, Fontêchevade at Montbrun, Soulabé at Montseron, Saint-Romans?, Campalou at Saint-Nazaire-en-Royans, Pech de l'Azé at Carsac, Grotte Simard at Puymoyen, Le Placard at Vilhonneur, Les Tanières de Vergisson, Jean Pierre and \*Jean Pierre at Saint-Thibaud-de-Couz, Grand Caveau and \*Grand Caveau at Falvigny-sur-Ozerain, Baume de Gonvillars and \*Baume de Gonvillars, and \*Arago actuel at Tautavel (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 201). MONACO: Grotte de l'Observatoire (Lambrecht, 1933, Handb. Palaeorn., p. 778). ITALY: Grotte de Grimaldi and Caverna d'Equi (Lambrecht, 1933, Handb. Palaeorn., p. 778); Grotte du Prince (Mourer-Chauviré, 1976, Doc. Lab. Géol. Fac. Lyon, no. 64, fasc. 2, p. 363). SWITZERLAND: Kesslerloch, Thierstein?, and Schweizersbild bei Schaffhausen (Lambrecht, 1933, Handb. Palaeorn., p. 778). CZECHOSLOVAKIA: Balcarova skála (Čapek, 1910, Ber. V. internat. ornith. Kongr. Berlin, p. 938); Holubice and Bulovka near Kosir (Lambrecht, 1933, Handb. Palaeorn., p. 778); Certova díra, Sipka, Holstyn, and Katerinská (Skutil and Stehlík, 1939, Ornitholog, 1939, vol. 6, no. 2-4, p. 22). AUSTRIA: Hundsheim? (Jánossy, 1974, Sitz. Osterr. Akad. Wiss., math.-nat., pt. 1, vol. 182, no. 6-8, p. 212). HUNGARY: Somlyóhegy (Lambrecht, 1912, Aquila, vol. 19, p. 286); Sütto (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 201). RUMANIA: Püspököfűrdő [Betfia] (Lambrecht, 1912, Aquila, vol. 19, p. 286). UKRAINE: \*Nizhnee Krivche and \*Rasponints (Voinstvenski, 1967, Prirodnaya Obstanovka i Fauny Proshlogo, vol. 3, pp. 42, 44); Murzan-Koba Cave (Burchak-Abramovich, 1968, Fossil Birds in Caves of USSR, p. 237). RÚSSIA: \*Zhiguley Cave (Burchak-Abramovich, 1968, Fossil Birds in Caves of USSR, p. 242). GEORGIAN SSR: Krivachanska Cave (Burchak-Abramovich, 1968, Fossil Birds in Caves of USSR, p. 239).

36. *Turdus philomelos* Brehm. [*T. erectorum* Turton is a suppressed senior synonym. Much of the literature is under the name *T. musicus* (not of Linnaeus) and hence is often confused

with that of *T. iliacus*.) IRELAND: Kesh Cave, Edenvale Cave, Bantick Cave, and Newhall Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 402). ENGLAND: Ightham? (E. T. Newton, 1894, Quart. Jour. Geol. Soc. London, vol. 50, p. 191); Clevedon Cave, Chudleigh Cave, and Langwith Bassett Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 402); Grimes Cave, \*Dowkabottom Cave, and \*London Wall (Bell, 1922, Naturalist, no. 787-788, p. 251); Merlin's Cave (Lambrecht, 1933, Handb. Palaeorn., p. 777). BELGIUM: Trou du Sureau (Lambrecht, 1912, Aquila, vol. 19, p. 304); Trou du Frontal (Lambrecht, 1933, Handb. Palaeorn., p. 777). PORTUGAL: Gruta de Furninha (Lambrecht, 1933, Handb. Palaeorn., p. 777). SPAIN: Caverna de Santimamiñe and Caverna de Lumentxa (Villalta, 1964, Spéleon, vol. 15, p. 97). FRANCE: \*Grotte de l'Hortus (Mourer-Chauviré, 1972, Etudes Quaternaires, Mém. no. 1, p. 290). CORSICA: Grotta di Funtanedu? (E. T. Newton, 1921, Proc. Zool. Soc. London, pt. 2, p. 230). SARDINIA: bone breccia (Milne-Edwards, 1871, Ois. Foss. France, vol. 2, p. 597); Monte San Giovanni? and Pietro Tampoia? (Lydekker, 1891, Proc. Zool. Soc. London, p. 472, pl. 37, figs. 6, 8). MALTA: Ghar Dalam Cave? (Lambrecht, 1933, Handb. Palaeorn., p. 777). ITALY: Buco della Volpe above Rovenna (Portis, 1888, Mem. Accad. R. Torino, ser. 2, vol. 38, p. 197); Grotta Romanelli, Caverna d'Equi, Bucca del Tasso, and Grotta di Cucigliana (Lambrecht, 1933, Handb. Palaeorn., p. 777). SWITZERLAND: Salève? (Lambrecht, 1933, Handb. Palaeorn., p. 777). CZECHOSLOVAKIA: Balcarova skála, Sipka, and Certova díra (Capek, 1910, Ber. V. internat. ornith. Kongr. Berlin, p. 938); Katerinská (Skutil and Stehlík, 1939, Ornithology, vol. 6, no. 2-4, p. 22); Stránska skála (Jánossy, 1972, Anthropos, vol. 20 (n.s. 12), p. 60). AUSTRIA: Schreiberwand Cave (Lambrecht, 1933, Handb. Palaeorn., p. 777). HUNGARY: Puskaporos? (Kormos, 1911, Jahrb. Kgl. ungar. Geol. Reichsanst., vol. 19, p. 151); Balla cave (Lambrecht, 1912, Aquila, vol. 19, p. 276); Oregkö cave bei Bajót (Kormos and Lambrecht, 1914, Barlangkutató, vol. 2, p. 106); Remetehegy (Lambrecht, 1914, Aquila, vol. 21, p. 90); Pilisszántó and \*Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. ungar. Geol. Anst., vol. 23, p. 480); Otto Herman Cave (Lambrecht, 1916, Aquila, vol. 22, p. 189); O-Ruzzsin, Pálffy cave, Süttő, \*Devence, and Legénybarlang bei Pilisszentlélek (Lambrecht, 1933, Handb. Palaeorn., p. 777). POLAND: Raj Cave, \*Niedostepna Cave, and \*Zytnia Cave? (Bochenski, 1974, Birds Late Quarternary Poland, pp. 125, 127, 200, fig. 77). RUMANIA: \*Somlyóhegy bei Püspök-fürdő [Betfia] (Lambrecht, 1912, Aquila, vol. 19, p. 276); Püspökfürdő [Betfia] (Čapek, 1917, Barlangkutató, vol. 5, pp. 30, 71). UKRAINE: Kiik-Koba, Grotto Chokurcha, Syuren I, \*Syuren II, \*Kremetsa, \*Zaporozhya, \*Alimovsk, \*Murzak-Koba, \*Perevoloka, and \*Kiev (Voinstvenskiy, 1967, Prirodnyaya Obstanovka i Fauna Proshlogo, vol. 3, pp. 25, 31, 37, 43, 45, 51, 53, 58); \*Uzhn Donguzlausk (Burchak-Abramovich and Zalkin, 1971, Bull. Moscow Obsch. Ispit. Prirodi, vol. 76, no. 5, p. 55). RUSSIA: \*Zhiguley Cave on River Volga (Burchak-Abramovich, 1968, Fossil Birds in Caves of USSR, p. 242). ISRAEL: Kebara Cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, no. 3, pp. 106, 113); \*Ubeidiya (Tchernov, 1968, Prelim. Invest. Birds Pleist. Deposits \*Ubeidiya, p. 24). AZERBAIJAN: Binagady (Burchak-Abramovich, "1963", 1962, Ornitologiya, vol. 4, p. 463).

37. *Turdus viscivorus* Linnaeus. IRELAND: Doneraile Cave, Kesh Cave, and Edenvale Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 402). ENGLAND: Wye Valley Cave, Chudleigh Cave, and Grimes Cave? (Bell, 1915, Zoologist, ser. 4, vol. 19, p. 402); \*London Wall (Bell, 1922, Naturalist, no. 787-788, p. 250); Merlin's Cave (Lambrecht, 1933, Handb. Palaeorn., p. 777). FRANCE: Lacombe-Thayac and Teyjat (Lambrecht, 1933, Handb. Palaeorn., p. 777); Le Morin at Passac-sur-Dordogne (Chauviré, 1965, 89 Congr. Soc. Savantes, p. 255); Combe-Grenal at Domme, Grottes de l'Hortus and \*Grottes de l'Hortus at Valflaunès (Mourer-Chauviré, 1972, Etudes Quaternaires, Mém. no. 1, pp. 279, 292, 360, figs. 5-6); Rond du Barry and \*Rond du Barry at Sinzelles (Mourer-Chauviré, 1974, Anthropologie, vol. 78, no. 1, p. 38); Les Valerots at Nuits-Saint-Georges?, L'Escale at Saint-Estève-Janson, Lunel-Viel, Abîmes de la Fage at Noailles, Orgnac-l'Aven, L'Arago at Tautavel, Le Lazaret at Nice, Pech de l'Azé at Carsac, Fontéchevadé at Montbron, Pié Lombard at Turrettes-sur-Loup, Eden Roc at Vaison-la-Romaine, Salpêtre de Pompignan, Grotte Journal at Bize, La Balauzière at Vers, Soulabé at Montseron, Aurensan supérieure, Espélugues at Lourdes, Deux Avens at Vallon-Pont-d'Arc, Saint Romans?, Abri Gay at Poncin, Campalou at Saint-Nazaire-en-Royans, La Colombière at Neuville-su-Ain, Jean Pierre and \*Jean Pierre at Saint-Thibaud-de-Couz, Cottier at Retournac, Grotte Simard at Puymoyen, and Baum de Gonvillars (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 201). MONACO: L'Observatoire? (Mourer-Chauviré, 1975, Doc. Lab.



Géol. Fac. Sci. Lyon, no. 64, p. 202). BELGIUM: Trou de Sureau (Lambrecht, 1912, *Aquila*, vol. 19, p. 304); Trou de Frontal (Lambrecht, 1933, *Handb. Palaeorn.*, p. 777); Grotte Marie-Jeanne? (Ballmann, 1973, *Gerfaut*, vol. 63, p. 11). DENMARK: Soelager (O. Winge, 1903, *Vidensk. Meddel. naturh. Foren.*, vol. 6, p. 104). SPAIN: Cueva de la Campana (Villalta, 1964, *Speleon*, vol. 15, p. 97). GIBRALTAR: Devil's Tower (Bate, 1928, *Jour. Roy. Anthr. Inst.*, vol. 58, p. 104). MALLORCA: Son Bauzá cave? (Ballmann and Adrover, 1970, *Acta Geológica Hispanica*, vol. 5, no. 2, p. 62). CORSICA: Grotta di Funtanedu (E. T. Newton, 1921, *Proc. Zool. Soc. London*, pt. 2, p. 595); Grotta dei Colombi? (Lambrecht, 1933, *Handb. Palaeorn.*, p. 777). SWITZERLAND: Ermitage, Ettingen, Felsen bei Birseck, and \*Bsetzi bei Thayingen) (Lambrecht, 1933, *Handb. Palaeorn.*, p. 777). CZECHOSLOVAKIA: Sipka and Certova díra (Čapek, 1910, *Ber. V. internat. Orn. Kongr. Berlin*, p. 939); Balčárka cave and Veruncina cave (Skutil and Stehlik, 1939, *Ornitholog.*, vol. 6, no. 2-4, p. 22); Volyn (Lambrecht, 1933, *Handb. Palaeorn.*, p. 777); Stránska skála? (Jánossy, 1972, *Anthropos*, vol. 20, p. 60). AUSTRIA: Schreiberwand caves (Lambrecht, 1933, *Handb. Palaeorn.*, p. 777). HUNGARY: Puskaporos (Kormos, 1911, *Mitt. Jahrb. ungar. Geol. Anst.*, vol. 19, p. 151); Peskő (Lambrecht, 1912, *Aquila*, vol. 19, p. 281, pl. 4, fig. 30); Pálffy cave (Lambrecht, 1913, *Aquila*, vol. 20, p. 428); Remetehegy (Lambrecht, 1915, *Mitt. Jahrb. ungar. Geol. Anst.*, vol. 23, p. 480); Otto Herman cave and Kiskevély cave (Lambrecht, 1916, *Aquila*, vol. 22, p. 189); Solymarér Felsspalte (Lambrecht, 1933, *Handb. Palaeorn.*, p. 777); Istállóskő (Jánossy, 1954, *Aquila*, vol. 55-58, p. 215); Csév Passage (Jánossy, 1959, *Ann. Mus. Hungaricae*, vol. 51, p. 117); \*Lambrecht Cave? (Jánossy, 1963, *Acta Zool. Acad. Sci. Hungaricae*, vol. 9, fasc. 3-4, pp. 295, 308); \*Visegrád (Bökönyi and Jánossy, 1966, *Vertebrata Hungarica*, vol. 7, p. 92). YUGOSLAVIA: Krapina (Lambrecht, 1915, *Barlangkutatás*, vol. 3, p. 118); Drazica (Lambrecht, 1916, *Aquila*, vol. 22, p. 189). RUMANIA: Püspökfurdő [Betfia] (Čapek, 1917, *Barlangkutatás*, vol. 5, p. 30). POLAND: Zamkowa Cave (Bochenski, 1974, *Birds Late Pleistocene Poland*, pp. 128, 200). UKRAINE: \*Azil, \*Tardenuaz, \*Rasponintsy, \*Kiev, \*Alimovsky (Voinstvenski, 1967, *Prirodnaýa Obstanovka i Fauna Proshlogo*, vol. 3, pp. 34, 35, 44, 51, 58); Tash-Air cave near Bakchisaray (Burchak-Abramovich, 1968, *Fossil Birds Caves of USSR*, p. 243). MOLDAVIA: \*Starye Druitory (Voinstvenski, 1967, *Prirodnaýa Obstanovka i Fauna Proshlogo*, vol. 3, p. 46). RUSSIA: Zhiguley cave on River Volga (Burchak-Abramovich, 1968, *Fossil Birds in Caves of USSR*, p. 242). GEORGIAN SSR: \*Darkweti (Bendukidze, 1973, *Tezisi Doklad. Vsesouz. Sov. Izuchen. Chetvert. Periodi*, p. 88).

38. *Turdus plumbeus* Linnaeus. BAHAMAS: Great Exuma Island (Wetmore, 1937, *Bull. Mus. Comp. Zool.*, vol. 80, p. 441); \*Abaco Island cave (Conklin, 1971, *Quart. Jour. Florida Acad. Sci.*, vol. 33, no. 3, p. 238). DOMINICAN REPUBLIC: Cerro de San Francisco and \*Cerro de San Francisco (Bernstein, 1965, *Quart. Jour. Florida Acad. Sci.*, vol. 28, no. 3, p. 280). PUERTO RICO: \*Cueva Catedral, \*Cueva Clara, \*Cueva Toraño, and \*Cueva San Miguel (Wetmore, 1922, *Bull. Amer. Mus. Nat. Hist.*, vol. 46, p. 326).

39. *Turdus migratorius* Linnaeus. CALIFORNIA: Carpinteria (A. H. Miller, 1932, *Univ. Calif. Publ. Geol. Sci.*, vol. 21, no. 7, p. 178, pl. 13, figs. h, k); Rancho La Brea (Howard, 1962, *Los Angeles Co. Mus. Contr. Sci.*, no. 58, p. 23). NEVADA: Smith Creek Cave (Howard, 1952, *Bull. So. Calif. Acad. Sci.*, vol. 51, pt. 2, p. 54). IDAHO: \*Weiss rock shelter (L. Miller, 1963, *Bull. So. Calif. Acad. Sci.*, vol. 62, pt. 4, p. 181). ARIZONA: \*Indian site 35 mi. 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). TEXAS: Miller's Cave in Llano County (Weigel, 1967, *Texas Jour. Sci.*, vol. 19, p. 108). OHIO: \*Indian Hills (Mayfield, 1972, *Condor*, vol. 74, no. 3, p. 345). NEW YORK: \*Cole quarry (Moore, 1973, *Bull. N.Y. Arch. Assn.*, no. 58, p. 33). PENNSYLVANIA: \*Sheep rock shelter (Guilday and Parmalee, 1965, *Pennsylvania Archaeologist*, vol. 35, no. 1, p. 39). VIRGINIA: Natural Chimneys (Wetmore, 1962, *Smithsonian Misc. Coll.*, vol. 145, no. 2, p. 14). FLORIDA: Vero Beach (Weigel, 1963, *Florida Geol. Surv., Spec. Publ.*, no. 10, p. 30). Reports from Verrezzi, Italy (Milne-Edwards, 1871, *Ois. Foss. France*, vol. 2, p. 595) and Grottes de Menton, France (Lambrecht, 1933, *Handb. Palaeorn.*, p. 778 ex Rivière) must refer to some Palearctic species.

### Subfamily Leiothrichinae

40. *Garrulux davidi* (Swinhoe). CHINA: Chou Kou Tien? (Howard, 1939, *Fortschritte der Paläont.*, vol. 2, p. 314).

41. *Turdoides squamiceps* Cretzschmar. ISRAEL: Oumm Qatafa Cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, no. 3, p. 100).

### Subfamily Chamaeinae

42. *Chamaea fasciata* (Gambel). CALIFORNIA: Carpinteria (A. H. Miller, 1932, Univ. Calif. Publ. Geol. Sci., vol. 21, no. 7, p. 177, pl. 13, fig. f).

### Subfamily Muscicapinae

43. *Miro australis* (Sparrman). NEW ZEALAND: Martinborough Cave (Yaldwyn, 1956, Rec. Dominion Mus., vol. 3, p. 3); Pyramid Valley Swamp? (Scarlett, 1955, Rec. Canterbury Mus., vol. 6, no. 4, p. 263).
44. *Muscicapa striata* Pallas. BELGIUM: Grotte Marie-Jeanne? (Ballmann, 1973, Gorfaut, vol. 63, p. 12). AUSTRIA: Hundsheim? (Jánossy, 1974, Sitz. Osterr. Akad. Wiss., math.-nat., pt. 1, vol. 182, no. 6-8, p. 212). UKRAINE: °Tardenuaz and °Alimovsk (Voinstvenski, 1967, Prirodnyaya Obstanovka i Fauny Proshlogo, vol. 3, pp. 35, 58). ISRAEL: Oumm Qatafa Cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, p. 100).
45. *Muscicapa hypoleuca* Pallas. FRANCE: Grotte de l'Hortus and °Grotte de l'Hortus (Mourer-Chauviré, 1972, Etudes Quaternaires, Mém. no. 1, pp. 280, 290); Les Romains at Pierre-Châtel (Desbrosse and Mourer-Chauviré, 1973, Quartär, p. 153); Mas Rambault at Frontignan?, Orgnac-l'Aven, and Deux Avens at Vallons-Pont-d'Arc (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 205).
46. *Muscicapa albicollis* Temminck. FRANCE: L'Escale at Saint-Estève-Janson, Caune de L'Arago and °Arago at Tautavel, Grand Caveau and °Grand Caveau at Flavigny-sur-Ozerain (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 205, pl. 17, fig. 10). UKRAINE: °Syuren II shelter (Voinstvenski, 1967, Prirodnyaya Obstanovka i Fauny Proshlogo, vol. 3, p. 37).

### Family SYLVIIDAE (Vigors)

- Sylviana* Vigors, 1825, fide Gray (type *Sylvia* Scopoli, 1769).—*Sylviidae* Vigors, 1825, Trans. Linn. Soc. London, vol. 14, p. 435.—*Sylvinae* Bonaparte, 1831, Saggio di una Distribuzione Metodica degli Animali Vertebrati, p. 4.—*Sylvianae* Bonaparte, 1838, Geogr. Comp. List Birds Eur. N. Amer., p. 38.—*Sylviidae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, p. 19 (family).—*Sylviinae* G. R. Gray, 1840 (before Apr.), op. cit., p. 20 (sub-family).—*Sylviidae* Baird, 1864, Review Amer. Birds, p. 64.—*Sylviinae* Sundevall, 1872, Tentamen, pt. 1, p. 15 (familia).
- Philomelinae* Swainson, 1832, Fauna Boreali-Americana, p. 200 (subfamily; type *Philomela* Swainson, 1832, a junior synonym of *Ficedula* Brisson, 1790).
- Calamoherpinae* Bonaparte, 1838, Geogr. Comp. List Birds Eur. N. Amer., p. 11 (subfamily; type *Calamoherpe* Boie, 1822, a junior synonym of *Acrocephalus* Naumann, 1819).—*Calamodytinae* Gray, 1869, Hand-list Gen. Sp. Birds, pt. 1, pp. xiii, 206 (subfamily; type *Calamodyta* Myer, 1815, = *Acrocephalus* Naumann, 1819).
- Malurinae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, p. 19 (subfamily; type *Malurus* Vieillot).—*Maluridae* Bonaparte, 1850, Conspectus Generum Avium, pt. 1, p. 216.—*Malurinae* Sundevall, 1872, Tentamen, pt. 1, p. 7 (familia).
- Rhacnemididae* Cabanis, 1847, Archiv für Naturg., Jahrg. 23, vol. 1, pt. 1, p. 204 (apparently not based on generic name).
- Polioptilinae* Baird, 1858, Rept. Expl. Surv. R. R. Pacific, vol. 9, pp. xix, 379 (sub-family; type *Polioptila* Sclater).—*Polioptilidae* Ridgway, 1904 (Dec. 31), Bull. U.S. Nat. Mus., no. 50, pt. 3, p. 693 in text (family tentatively proposed).
- Regulinae* Baird, 1858, Rept. Expl. Surv. R. R. Pacific, vol. 9, pp. xix, 207, 226 (sub-family; type *Regulus* Cuvier).—*Regulidae* Lilljeborg, 1866, Proc. Zool. Soc. London, p. 17.
- Cisticolinae* Sundevall, 1872, Tentamen, pt. 1, p. 6 (familia; type *Cisticola* Kaup).
- Bradypterinae* Sundevall, 1872, Tentamen, pt. 1, p. 7 (familia; type *Bradypterus* Swainson).
- Phyllopeustinae* Sundevall, 1872, Tentamen, pt. 1, p. 15 (familia; type *Phyllopeustes* Meyer, an emendation of *Phyllopeuste* Boie).

- Calamodytinae* Sundevall, 1872, Tentamen, pt. 1, p. 15 (familia; type *Calamodyta* Meyer).  
*Ptenoedinae* Sundevall, 1872, Tentamen, pt. 1, p. 16 (familia; type *Ptenoedus* Cabanis).  
*Acanthizinae* Sundevall, 1872, Tentamen, pt. 1, p. (familia; type *Acanthiza* Vigors and Horsfield).—*Acanthizidae* Royal Australasian Ornithologists' Union, 1926, Official Check-list Birds of Australasia, ed. 2, p. 75.  
*Acanthopneustae* Seebohm, 1881, Cat. Birds Brit. Mus., vol. 5, p. 38 (type *Acanthopneuste* Blasius, a junior synonym? of *Phylloscopus* Boie).  
*Phylloscopinae* Ridgway, 1904 (Dec. 31), Bull. U. S. Nat. Mus., no. 50, pt. 3, pp. 693, 694 (subfamily; type *Phylloscopus* Boie).  
*Hylidae* Bannerman, 1923, Ibis, ser. 11, vol. 5, p. 704 (family; type *Hylia* Cassin).  
*Priniidae* Roberts, 1940, Birds South Africa, p. 274 (family; type *Prinia* Horsfield).

### Neospecies of Sylviidae from the Pleistocene and \*Holocene

- Phylloscopus collybita* (Vieillot). FRANCE: Deux Avens at Vallon-Pont-d'Arc (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 204, pl. 17, fig. 8). CZECHOSLOVAKIA: Holubic (Lambrecht, 1933, Handb. Palaeorn., p. 776); Stránská skála (Skutil and Stehlík, 1939, Ornitholog, vol. 6, nos. 2-4, p. 22). ISRAEL: Abu-Usba Cave? (Bar-Yosef and Tchernov, 1966, Israel Jour. Zool., vol. 15, p. 134).
- Phylloscopus trochilus* (Linnaeus). CORSICA: Gratta di Funtanedu (E. T. Newton, 1921, Proc. Zool. Soc. London, pt. 2, p. 230). CZECHOSLOVAKIA: Holubic (Lambrecht, 1933, Handb. Palaeorn., p. 776); Stránská skála (Skutil and Stehlík, 1939, Ornitholog, vol. 6, nos. 2-4, p. 22).
- Phylloscopus bonelli* (Vieillot). FRANCE: Combe Grenal at Domme (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 204, pl. 17, fig. 9).
- Acrocephalus schoenobaenus* (Linnaeus). UKRAINE: \*Alimovsk (Voinstvenski, 1967, Prirodnyaya Obstanovka i Fauny Proshlogo, pt. 3, p. 58). ISRAEL: Abu-Usba Cave (Bar-Yosef and Tchernov, 1966, Israel Jour. Zool., vol. 15, p. 134); 'Ubeidiya? (Tchernov, 1968, Prelim. invest. birds in Pleist. deposits of 'Ubeidiya, p. 24).
- Acrocephalus arundinaceus* (Linnaeus). FRANCE: Ornac-l'Aven? (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 202). HUNGARY: Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. Ungar. Geol. Anst., vol. 23, p. 481). UKRAINE: Kiev (Voinstvenski, 1967, Prirodnyaya Obstanovka i Fauny Proshlogo, pt. 3, p. 51).
- Acrocephalus palustris* (Bechstein). FRANCE: Combe Grenal at Domme? (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 202). RUMANIA: Püspökfürdő? [= Betfia] (Capek, 1917, Barlangkutató, vol. 5, p. 30).
- Acrocephalus paludicola* (Vieillot). FRANCE: Les Romains at Pierre-Châtel (Desbrosse and Mourer-Chauviré, 1973, Quartär, p. 153).
- Sylvia atricapilla* (Linnaeus). FRANCE: Les Romains at Pierre-Châtel (Desbrosse and Mourer-Chauviré, 1973, Quartär, p. 153); Abîmes de la Fage, Orgnac-l'Aven, Deux Avens at Vallon-Pont-d'Arc, Jean Pierre at Saint-Thibaud-de-Couz, Combte Grenal, Puy Moyen, \*Saint-Thibaud-de-Couz, and \*Arago actuel (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 203, pl. 17, fig. 5). CZECHOSLOVAKIA: Volyn? (Lambrecht, 1933, Handb. Palaeorn., p. 776). UKRAINE: \*Tardenuaz and \*Alimovsk (Voinstvenski, 1967, Prirodnyaya Obstanovka i Fauny Proshlogo, pt. 3, p. 35, 58). ISRAEL: 'Ubeidiya? (Tchernov, 1968, Prelim. invest. birds in Pleist. deposits of 'Ubeidiya, p. 24).
- Sylvia communis* (Latham). ENGLAND: Chudleigh Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 403). FRANCE: Grotte supérieure d'Aurensan? (Bouchud, 1972, Bull. Asso. Franç. Etude Quatern., vol. 1, p. 5). Abîmes de la Fage, Le Lazaret at Nice, Abri Campalou at Saint-Nazaire-en-Royans?, Jean Pierre and \*Jean Pierre at Saint-Thibaud-de-Couz (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 204, pl. 17, fig. 6). RUMANIA: Püspökfürdő [= Betfia] (Capek, 1917, Barlangkutató, vol. 5, p. 30). UKRAINE: \*Tardenuaz (Voinstvenski, 1967, Prirodnyaya Obstanovka i Fauny Proshlogo, pt. 3, p. 35).
- Sylvia curruca* (Linnaeus). HUNGARY: Ó-Ruzsin (Lambrecht, 1933, Handb. Palaeorn., p. 776).
- Sylvia nisoria* (Bechstein). FRANCE: Saint-Estève-Janson? and Orgnac-l'Aven (Mourer-Chauviré, 1975, Doc. Lab. Geol. Fac. Sci. Lyon, p. 203). UKRAINE: \*Tardenuaz (Voinstvenski, 1967, Prirodnyaya Obstanovka i Fauny Proshlogo, pt. 3, p. 35).

12. *Sylvia hortensis* Gmelin. FRANCE: Combe Grenal at Domme and °Grotte Jean Pierre at Saint-Thibaud-de-Couz (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 203, pl. 17, fig. 4).
13. *Sylvia sarda* Temminck. MALLORCA: °Son Bauzá cave? (Ballmann and Adrover, 1970, Acta Geológica Hispanica, vol. 5, no. 2, p. 62).
14. *Agrobates galactotes* (Temminck). ISRAEL: Oumm Qatafa Cave and Kebare Cave (Tchernov, 1962, Bull. Res. Council Israel, vol. 11, p. 100).
15. *Locustella naevia* Boddaert. CZECHOSLOVAKIA: Holubic (Lambrecht, 1933, Handb. Palaeorn., p. 776); Stránská skála (Skutill and Stehlík, 1939, Ornitholog, vol. 6, nos. 2-4, p. 22).
16. *Regulus regulus* (Linnaeus). FRANCE: °Rond du Barry at Sinzelles (Mourer-Chauviré, 1974, Anthropologie, vol. 78, no. 1, p. 38). AUSTRIA: Niederösterreich? (Lambrecht, 1933, Handb. Palaeorn., p. 788). POLAND: Nietoperzowa Cave? (Bocheński, 1974, Birds Late Quaternary Poland, pp. 129, 200).
17. *Mohoua albicilla* (Lesson). NEW ZEALAND: °Awakino-Mohoenui area (Medway, 1971, Notornis, vol. 18, p. 218).
18. *Sylvia melanocephala* (Gmelin). FRANCE: Orgnac-l'Aven (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 204, pl. 17, fig. 7).
19. *Sylvia hortensis* (Gmelin). FRANCE: Combe Grenal at Domme and °Jean Pierre at Saint-Thibaud-de-Couz (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 203, pl. 17, fig. 4).
20. *Hippolais icterina* (Vieillot). FRANCE: Combe Grenal at Domme (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 203, pl. 17, fig. 3).

### Family PRUNELLIDAE Richmond

- Accentorinae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, p. 22 (subfamily; type *Accentor* Bechstein, 1802, preoccupied by *Accentor* Bechstein, Sept. or later, 1797, the latter a junior synonym of *Cinclus* Borkhausen, 1797.—*Accentorinae* Sundevall, 1872, Tentamen, pt. 2, p. 30 (familia).—*Accentoridae* Hartert, 1910, Vögel der paläarktischen Fauna, vol. 1, pp. xlvii, 761.
- Prunellidae* Richmond, 1908 (Dec. 16), Proc. U. S. Nat. Mus., vol. 35, no. 1656, p. 585 footnote (family; type *Prunella* Vieillot, 1816).

### Neospecies of Prunellidae from the Pleistocene and °Holocene

1. *Prunella collaris* (Scopoli). FRANCE: Grotte des Romains at Pierre-Châtel (Desbrosse and Mourer-Chauviré, 1973, Quartär, vol. 23-24, p. 153); Grotte du Lazaret at Nice, Fontêchevade at Montbron, and Le Colombier at Vallon-Pont-d'Arc (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 196); Grotte de Cottier at Retournac (Mourer-Chauviré, 1976, op. cit., fasc. 2, p. 472). ITALY: Buco della Volpe sopra Ravenna? (Portis, 1888, Mem. Accad. R. Torino, ser. 2, vol. 38, p. 197); Caverna d'Equi (Lambrecht, 1933, Handb. Palaeorn., p. 780); Grotte du prince at grimaldi (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 196). SWITZERLAND: °Grotte de Cotencher (Dubois and Stehlin, 1932, Mém. Soc. Pal. Suisse, vol. 52, p. 29). CZECHOSLOVAKIA: Stránská skála (Jánossy, 1972, Anthropos, vol. 20, p. 60).
2. *Prunella modularis* (Linnaeus). ENGLAND: Ightham fissure (E. T. Newton, 1899, Quart. Jour. Geol. Soc. London, vol. 55, no. 219, p. 420); Chudleigh Cave, Langwith Bassett Cave, and °Caervent (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 403); Merlin's Cave (Lambrecht, 1933, Handb. Palaeorn., p. 780). FRANCE: Le Lazaret at Nice (Mourer-Chauviré, 1976, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, fasc. 2, p. 336). UKRAINE: Adzhi-Koba, Syuren I, °Tardenuaz, and °Rukomysh (Voinstvenski, 1967, Prirodnaia Obstanovka i Fauna Proshlogo, vol. 3, pp. 28, 31, 45).

### Family MOTACILLIDAE (Vigors)

- Motacillina* Vigors, 1825, fide Gray (type *Motacilla* Linnaeus).—*Motacillidae* Boie, 1826, Isis von Oken, fide Gray.—*Motacillinae* Bonaparte, 1831, Saggio di una Distribuzione Meto-

dica degli Animali Vertebrati, p. 47.—*Motacillinae* Swainson, 1832, Fauna Boreali-Americana, pt. 2, p. 200 (subfamily).—*Motacillinae* Sundevall, 1872, Tentamen, pt. 1, p. 26 (familia).

*Anthinae* Bonaparte, 1850 (March), Conspectus Generum Avium, vol. 1, sig. 31, p. 247 (subfamilia; type *Anthus* Bechstein).

### Neospecies of Motacillidae from the Pleistocene and °Holocene

1. *Motacilla alba* Linnaeus. [Includes *Motacilla lugubris* Temminck and *M. yarrellii* Gould]. IRELAND: °Kesh Cave and Edenvale Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 403). ENGLAND: Langwith Bassett Cave, Chudleigh Cave, and Ightham Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 403). FRANCE: Balme-les-grottes (Chauviré, 1963, C. R. Sommaire Soc. Géol. France, fasc. 2, p. 53); Grotte de l'Hortus at Valflaunès (Mourer-Chauviré, 1972, Etudes Quaternaires, Mém. no. 1, p. 280); Lunel-Viel, Orgnac-l'Aven, Saint-Romans?, Rond du Barry at Sinzelles, Laugier Haute Est at Les Eyzies, Grotte Simard at Puymoyen, and °Arago actuel at Tautavel (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 191). CORSICA: Grotta di Funtanedu? (E. T. Newton, 1921, Proc. Zool. Soc. London, pt. 2, p. 230). CZECHOSLOVAKIA: Zechovice and Holubic (Lambrecht, 1933, Handb. Palaeorn., p. 778); Kulna (Skutil and Stehlík, 1939, Ornitholog, vol. 6, nos. 2-4, p. 22). HUNGARY: Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. ungar. Geol. Anst., vol. 23, pp. 480, 506). ROMANIA: Püspök-fürdő [Betfia] (Čapek, 1917, Barlangkutatás, vol. 5, p. 30). POLAND: Niedostepna rock-shelter? (Bochenski, 1974, Birds Late Quaternary Poland, pp. 131, 200). UKRAINE: °Novgorod-Siverskii (Zubareva, 1950, Trudi Inst. Zool. Akad. Nauk Ukrainsk. RSR, vol. 4, pp. 80, 92, pl. 3, fig. 15); °Azil and °Alimovsk (Voinstvenski, 1967, Prirodnaya Obstanovka i Fauny Proshlogo, vol. 3, pp. 34, 40, 58). ISRAEL: Kebara Cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, no. 3, p. 106); Abu-Usba Cave? (Bar-Yosef and Tchernov, 1966, Israel Jour. Sci., vol. 15, p. 134); °Ubeidiya? (Tchernov, 1968, Prelim. Invest. Birds Pleist. Deposits °Ubeidiya, p. 20).

2. *Motacilla cinerea* Tunstall. UKRAINE: °Alimovsk (Voinstvenski, 1967, Prirodnaya Obstanovka i Fauny Proshlogo, vol. 3, p. 58).

3. *Motacilla flava* Linnaeus. FRANCE: Abîmes de la Fage at Noailles and Grotte Simard at Puymoyen (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 191); Grotte de Cottomet at Retournac (Mourer-Chauviré, 1976, op. cit., fasc. 2, p. 472).

4. *Anthus campestris* (Linnaeus). FRANCE: Mas Rambaut at Frontignan?, Abîmes de la Fage at Noailles, Pié Lombard at Turrettes-sur-Loup, and °Arago actuel at Tautavel (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 190). HUNGARY: Pilisszántó? (Lambrecht, 1915, Mitt. Jahrb. ungar. Geol. Anst., vol. 23, pp. 481, 506). UKRAINE: Adzhikoba, Syuren I, °Novgorod-Seversk, and °Chernigov (Voinstvenski, 1967, Prirodnaya Obstanovka i Fauny Proshlogo, vol. 3, pp. 28, 31, 41, 49).

5. *Anthus trivialis* (Linnaeus). FRANCE: Grotte de l'Hortus and °Grotte de l'Hortus at Valflaunès (Mourer-Chauviré, 1972, Études Quaternaires, Mém. no. 1, pp. 280, 292); Abîmes de la Fage at Noailles (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 190). HUNGARY: Kalten-Szamos-Tal (Lambrecht, 1916, Aquila, vol. 22, p. 194); Puskaporos (Lambrecht, 1916, Barlangkutatás, vol. 4, p. 206). CZECHOSLOVAKIA: Stránská skála? (Jánosy, 1972, Anthropos, vol. 2, p. 60). POLAND: Niedostepna rock-shelter? (Bochenski, 1974, Birds Late Quaternary Poland, pp. 130, 200). UKRAINE: Syuren I and °Alimovsk (Voinstvenski, 1967, Prirodnaya Obstanovka i Fauny Proshlogo, vol. 3, pp. 31, 58).

6. *Anthus pratensis* (Linnaeus). IRELAND: °Kesh Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 403). ENGLAND: Ightham fissure? (E. T. Newton, 1894, Quart. Jour. Geol. Soc. London, vol. 50, p. 191); Langwith Bassett Cave and Chudleigh Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 403). FRANCE: Grotte du Lazaret at Nice (Mourer-Chauviré, 1964, Bull. Mus. Anthropol. préhist. Monaco, no. 11, pp. 64-78); °Roquefure at Bonnieux (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 190). CORSICA: Grotta di Funtanedu (E. T. Newton, 1921, Proc. Zool. Soc. London, pt. 2, p. 230). SWITZERLAND: Schlossfelsen cave near Basel? (Lambrecht, 1933, Handb. Palaeorn., p. 789). CZECHOSLOVAKIA: Volyn (Lambrecht, 1933, Handb. Palaeorn., p. 789). HUNGARY: Puskaporos? (Kormos, 1911, Mitt. Jahrb. ungar. Geol. Anst., vol. 19, p. 151). ISRAEL: Kebara Cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, pp. 106, 113).

7. *Anthus cervinus* (Pallas). AUSTRIA: Hundsheim? (Jánossy, 1974, Sitzb. Österr. Akad. Wiss., math.-nat., pt. 1, vol. 182, no. 6-8, p. 212). POLAND: Rebielice (Królewskie? (Jánossy, 1974, Acta Zool. Cracov., vol. 19, no. 21, p. 558).

8. *Anthus spinoletta* (Linnaeus). [Includes *A. petrosus* (Montagu)]. ENGLAND: Langwith Bassett Cave and Chudleigh Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 403). FRANCE: Abîmes de la fage at Noailles, Abri Suard at La Chaise?, Le Lazaret at Nice, Fontéchevade at Montbron?, and Deux Avens at Vallon-Pont-d'Arc (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 191, pl. 16, fig. 10); Pech de l'Azé at Carzac (Mourer-Chauviré, 1976, op. cit., fasc. 2, p. 492). CORSICA: Grotta di Funtanedu (E. T. Newton, 1921, Proc. Zool. Soc. London, pt. 2, p. 230). HUNGARY: O-Ruzsin (Lambrecht, 1933, Handb. Palaeorn., p. 789).

### Family BOMBYCILLIDAE (Swainson)

*Bombycillinae* Swainson, 1832, Fauna Boreali-Americana, pt. 2, p. 237 (subfamily; type *Bombycilla* Brisson).—*Bombycillidae* Baird, 1858, Rept. Expl. Surv. R.R. Pacific, vol. 9, pp. xix, 316 (family).

*Ptilionidinae* Baird, 1858, Rept. Expl. Surv. R.R. Pac., vol. 9, pt. 2, pp. xix, 318 (subfamily; type *Ptiliogonys* Swainson, 1827).—*Ptiliogonitidae* Ridgway, 1901, Bull. U. S. Nat. Mus., no. 50, pt. 1, p. 21 (family).

*Ptilogonydinae* Sclater, 1862, Cat. Coll. Am. Birds, p. 41 (subfamily; type *Ptilogonys* Swainson, 1842).—*Ptilogonatinae* Baird, Review Amer. Birds, pp. 401, 408 (subfamily).—*Ptilogonatidae* Ridgway, 1904, Bull. U. S. Nat. Mus., no. 50, pt. 4, pp. viii, 113 (family).

*Hypocoliinae* Delacour and Amadon, 1949, Ibis, vol. 91, p. 427 (subfamily; type *Hypocolius* Bonaparte).

### Neospecies of Bombycillidae from the Pleistocene and \*Holocene

1. *Bombycilla garrula* (Linnaeus). FRANCE: Lherm (Lambrecht, 1933, Handb. Palaeorn., p. 780); Orgnac-l'Aven (Mourer-Chauviré, 1975, Docum. Lab. Géol. Fac. Sci. Lyon, no. 64, pl. 16, figs. 12-13). ITALY: Grotte du Prince at Grimaldi (Lambrecht, 1933, Handb. Palaeorn., p. 780). BELGIUM: Grotte-Marie-Jeanne? (Ballmann, 1973, Gerfaut, vol. 63, p. 11) CZECHOSLOVAKIA: Balcárka (Skutil and Stehlík, 1939, Ornitholog, vol. 6, no. 2-4, p. 22).

2. *Bombycilla cedrorum* Vieillot. CALIFORNIA: Rancho La Brea (A. H. Miller, 1929, Univ. Calif. Publ., Bull. Dept. Geol. Sci., vol. 19, no. 1, p. 12, pl. 1, fig. a); Carpinteria (A. H. Miller, 1932, op. cit., vol. 21, no. 7, p. 180, pl. 14, fig. h). ILLINOIS: \*Meyer cave (Parmalee, 1967, Nat. Speleological Soc. Bull., vol. 29, no. 4, p. 130).

### Family DULIDAE (Sclater)

*Dulinae* Sclater, 1862, Cat. Coll. Amer. Birds, p. 41 (subfamily; type *Dulus* Vieillot).—*Dulidae* Ridgway, 1901, Bull. U. S. Nat. Mus., no. 50, pt. 1, p. 22 (family).

### Neospecies of Dulidae from the Pleistocene

1. *Dulus dominicus* (Linnaeus). DOMINICAN REPUBLIC: Cerro de San Francisco (Bernstein, 1965, Quart. Jour. Florida Acad. Sci., vol. 28, no. 3, p. 280).

### Family ARTAMIDAE Blyth

*Artamidae* Blyth, 1849, Cat. Birds Mus. Asiatic Soc., p. 199 (family; type *Artamus* Vieillot).—*Artaminae* Bonaparte, 1850, Conspectus Generum Avium, pt. 1, p. 343 (subfamilia).—*Artaminae* Sundevall, 1872, Tentamen, pt. 1, p. 21 (familia).

No fossil record.

### Family LANIDAE Swainson

*Laniidae* Swainson, 1824, fide Gray (type *Lanius* Brisson).—*Lanianae* Swainson, 1824, fide Gray.—*Laniadae* Vigors, 1825, Trans. Linn. Soc. London, vol. 14, p. 435 (family).—

- Laniinae* Swainson, 1832, Fauna Boreali-Americana, pt. 2, p. 105 (subfamily).—*Lanidae* Bonaparte, 1838, Geogr. Comp. List Birds Eur. N. Amer., p. 26.—*Laniinae* Sundevall, 1872, Tentamen, pt. 1, p. 17 (familia).
- Malaconotinae* Cabanis, 1850, Museum Heineanum, pt. 1, p. 67 (subfamily; type *Malaconotus* Swainson).—*Malaconotinae* Sundevall, 1872, Tentamen, pt. 1, p. 12 (familia).
- Euricerotinae* Bonaparte, 1850 (March), Conspectus Generum Avium, vol. 1, pt. 1, sig. 12, p. 92 (subfamilia; type *Euryceros* Lesson, 1830).—*Eurycerotinae* Bonaparte, 1850 (Nov.), op. cit., sig. 53, p. 423 (subfamilia; same type).
- Prionopidae* Sharpe, 1877, Cat. Birds Brit. Mus., vol. 3, p. 272 (type *Prionops* Vieillot).—*Prionopinae* Mayr and Amadon, 1951, Amer. Mus. Novitates, no. 1496, p. 37 (subfamily).
- Vangidae* Shelley, 1896, Birds Africa, vol. 1, p. 48 (family; type *Vanga* Vieillot).
- Laniariinae* Shelley, 1896, Birds Africa, vol. 1, p. 53 (subfamily; type *Laniarius* Vieillot).
- Aerocharidae* Sharpe, 1903, Hand-list Gen. Sp. Birds, vol. 3, pp. xi, 275 (family; type *Aerocharis* Gistel, 1848, a junior synonym of *Euryceros* Lesson, 1831).
- Pityriasiidae* Mayr and Amadon, 1951, Amer. Mus. Novitates, no. 1496, p. 37 (subfamily; type *Pityriasis* Lesson).—*Pityriasiinae* Rand, in Peters, 1960, Check-list Birds World, vol. 9, p. 364.
- Hypositidae* Wetmore, 1930 (Jan. 8), Proc. U. S. Nat. Mus., vol. 76, no. 2821, p. 7 (family; type *Hypositta* Newton).—*Hypositinae* Amadon, 1951 (Apr. 2), Amer. Mus. Novitates, no. 1496, pp. 24, 37 (subfamily).

### Genus *Lanius* Linnaeus

*Lanius* Linnaeus, 1758, Syst. Nat., ed. 10, vol. 1, p. 93 (type *Lanius excubitor* Linnaeus, Recent).

#### 1. *Lanius miocaenus* Milne-Edwards

*Lanius miocaenus* Milne-Edwards, 1871, Ois. Foss. France, vol. 2, sig. 49, p. 391, figs. 1-3 (types from near Langy, 2 humeri, Paris Mus.).

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

#### Neospecies of Laniidae from the Pleistocene and \*Holocene

1. *Lanius collurio* Linnaeus. ENGLAND: Ightham? (E. T. Newton, 1899, Quart. Jour. Geol. Soc. London, vol. 55, no. 219, p. 420). FRANCE: Combre Grenal at Domme (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 191, pl. 16, fig. 11); CZECHOSLOVAKIA: Holubic (Lambrecht, 1933, Handb. Palaeorn., p. 780). HUNGARY: Remetehegy (Lambrecht, 1914, Aquila, vol. 21, pp. 90, 96, 97).

2. *Lanius minor* Gmelin. HUNGARY: Polgárdi (Lambrecht, 1912, Aquila, vol. 19, p. 286); Pilisszántó and \*Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. ungar. geol. Anst., vol. 23, pp. 480, 505, 508). RUMANIA: Püspökfürdő [Betfia] (Čapek, 1917, Barlangkutató, vol. 5, p. 21).

3. *Lanius ludovicianus* Linnaeus. CALIFORNIA: Rancho La Brea (L. Miller, 1912, Univ. Calif. Publ., Bull. Dept. Geol., vol. 7, no. 5, p. 78); McKittrick (A. H. Miller, 1937, Condor, vol. 39, no. 6, p. 250). ARIZONA: \*Wupatki Pueblo (Hargrave, 1939, Condor, vol. 41, no. 5, p. 209). NEW MEXICO: Shelter Cave (Howard and A. H. Miller, 1933, Condor, vol. 35, no. 1, p. 16). FLORIDA: Arredondo (Brodkorb, 1959, Bull. Florida State Mus., vol. 4, no. 9, p. 283); Reddick (Hamon, 1964, Florida Geol. Surv., Geol. Bull., no. 44, p. 195).

4. *Lanius cristatus* Linnaeus. UKRAINE: Syuren I, \*Kara-Koba, \*Novgorod-Seversk, and \*Okunevki (Voinstvenski, 1967, Prirodna Obstanovka i Fauna Próshlogo, pt. 3, pp. 31, 36, 41, 59).

5. *Lanius excubitor* Linnaeus. ENGLAND: Chudleigh Cave (Bell, 1922, Naturalist, no. 787-788, p. 251). FRANCE: Fonte chevarde at Montbron (Mourer-Chauviré, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 194). AUSTRIA: Schreiberwand cave (Lambrecht, 1933, Handb. Palaeorn., p. 780). SWITZERLAND: Ettingen? (Lambrecht, 1933, Handb. Palaeorn., p. 780). ISRAEL: Oumm Qatafa Cave and Kebara Cave (Tchernov, 1962, Bull. Res. Council Israel, vol. 11, p. 100); \*Ubeidiya? (Tchernov, 1968, Prelim. Invest. Birds Pleist. Deposits \*Ubeidiya, p. 21).

6. *Lanius senator* Linnaeus. FRANCE: Le Lazaret at Nice (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 114). HUNGARY: Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. ungar. Geol. Anst., vol. 23, pp. 480, 506, 508); Puskaporos (Lambrecht, 1916, Barlangkutatás, vol. 4, p. 206). ISRAEL: Oumm Qatafa Cave? (Tchernov, 1962, Bull. Res. Council Israel, vol. 11, p. 100); Hayonim Cave (Bar-Yosef and Tchernov, 1966, Israel Jour. Zool., vol. 15, p. 132).

7. *Lanius nubicus* Lichtenstein. ISRAEL: Oumm Qatafa Cave (Tchernov, 1962, Bull. Res. Council Israel, vol. 11, no. 3, p. 100).

### Family STURNIDAE Vigors

Sturnidae Vigors, 1825, Trans. Linn. Soc. London, vol. 14, p. 445 (type *Sturnus* Linnaeus).—*Sturninae* Swainson, 1832, Fauna Boreali-Americana, pt. 2, p. 274 (subfamily).—*Sturninae* Sundevall, 1872, Tentamen, pt. 1, p. 40 (familia).

*Lamprotornina* Stephens, 1826, Shaw's Gen. Zool., vol. 14, p. 54 (type *Lamprotornis* Temminck, 1820).—*Lamprotorninae* Swainson, 1832, Fauna Boreali-Americana, pt. 2, p. 274 (subfamily).—*Lamprotornithinae* Bonaparte, 1850, Conspectus Generum Avium, pt. 1, p. 414.

*Buphaginae* Swainson, 1837, Nat. Hist. Classif. Birds, vol. 2, pp. 131, 320 (subfamily; type *Buphaga* Latham = *Buphagus* Brisson).—*Buphaginae* Sundevall, 1872, Tentamen, pt. 1, p. 41 (familia).

*Graculinae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, p. 39 (subfamily; type *Gracula* Linnaeus).

*Promeropinae* Gray, 1840 (before Apr.), List of Genera of Birds, p. 12 (subfamily; type *Promerops* Brisson).—*Promeropidae* Gray, 1847 (June), List of Genera of Birds, ed. 2, p. 95 (family).

*Ptiloturinae* Cabanis, 1850, Museum Heineanum, pt. 1, p. 103 (subfamilia; type *Ptiloturus* Swainson, 1837, a junior synonym of *Promerops* Brisson, 1760).

*Juidinae* Gray, 1855, Cat. Genera and Subgen. Birds, p. 65 (subfamily; type *Juida* Lesson, 1831, a junior synonym of *Lamprotornis* Temminck, 1820).

*Eulabetinae* Gray, 1855, Cat. Genera and Subgen. Birds, p. 67 (subfamily; type *Eulabes* Cuvier, 1829, a junior synonym of *Gracula* Linnaeus, 1758).

### Genus † *Necropsar* Slater

*Necropsar* "H. H. Slater, MS," A. Günther and E. Newton, 1879, Philos. Trans., vol. 168, p. 427 (type by monotypy *Necropsar rodericanus* "H. H. Slater").

#### 1. *Necropsar rodericanus* Slater

*Necropsar rodericanus* "H. H. Slater, MS," A. Günther and E. Newton, Philos. Trans., vol. 168, p. 427, pl. 42, figs. A-C (type postcranial skeleton, Cambridge Univ.).

HOLOCENE. RODRIGUEZ ISLAND.

### Neospecies of Sturnidae from the Pleistocene and \*Holocene

1. *Onychognathus tristranii* (Slater). ISRAEL: Oumm Qatafa Cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, no. 3, p. 100); Kebara Cave? (Tchernov, 1962, op. cit., pp. 106, 108, 127, 131, pl. 2, figs. 15-16; pl. 6, figs. 10-11).

2. *Sturnus roseus* (Linnaeus). FRANCE: Fontéchevade at Montbron, Grotte Simard at Puymoyen, and \*Baume de Gonvillars (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 214, pl. 17, fig. 16). ITALY: Grotta dei Colombi? (Lambrecht, 1933, Handb. Palaeorn., p. 785). HUNGARY: Felsnische Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. ungar. Geol. Anst., vol. 23, pp. 481, 508). UKRAINE: \*Alimovsk (Voinstvenski, 1967, Prirodnaia Obstanovka i Fauna Proshlogo, vol. 3, p. 58).

3. *Sturnus unicolor* Temminck. FRANCE: Lespugue and Fontéchevade at Montbron? (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 214).



4. *Sturnus vulgaris* Linnaeus. IRELAND: Knockninney Cave (Lydekker, 1891, Ibis, ser. 6, vol. 3, no. 11, p. 384); Bantick Cave, Edenvale Cave, Newhall Cave, Knockmore Cave, and Grimes Cave? (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 404). ENGLAND: Chudleigh Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 404); Merlin's Cave (Lambrecht, 1933, Handb. Palaeorn., p. 784). GIBRALTAR: Forbes quarry (Lambrecht, 1933, Handb. Palaeorn., p. 784). FRANCE: Grotte du Lazaret (Mourer-Chauviré, 1964, Bull. Mus. Anthrop. préhist. Monaco, no. 11, pp. 61-78); \*Grotte de l'Hortus at Valflaunès (Mourer-Chauviré, 1972, Etudes Quaternaires, Mém. no. 1, pp. 280, 289); Lunel Viel, Le Lazaret at Nice, Fontêchevade at Montbron, Soulabé at Montseron, Deux Avens at Vallon-Pont-d'Arc, Les Fées at Chatelperron, Laugerie Haute Est aux Eyzies, and Gare de Couze at Lalinde (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, pp. 213, 214). MONACO: Grotte de l'Observatoire (Lambrecht, 1933, Handb. Palaeorn., p. 784). CORSICA: Grotta di Funtanedu? (E. T. Newton, 1921, Proc. Zool. Soc. London, pt. 2, p. 231). MALTA: Ghar Dalam cave (Fischer and Stephan, 1974, Zeitschr. geol. Wiss. Berlin, vol. 2, no. 4, p. 520). ITALY: Grotta Romanelli and Grotta dei Colombi? (Lambrecht, 1933, Handb. Palaeorn., p. 784). SWITZERLAND: \*lake-dwellings (Milne-Edwards, 1871, Ois. Foss. France, vol. 2, p. 599). \*DENMARK (Loeppenthin, 1967, Danske ynglefugle i fortid og nutid, fig. 46, 47, 492, 577). GERMANY: Beilstein Cave (Lambrecht, 1933, Handb. Palaeorn., p. 784). CZECHOSLOVAKIA: Stránská skála (Skutil and Stehlík, 1939, Ornitholog, vol. 6, no. 2-4, p. 22). HUNGARY: Bajót Cave (Lambrecht, 1913, Aquila, vol. 20, p. 433); Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. ungar. geol. Anst., vol. 23, p. 481); Otto Herzman cave and Kiskevély cave (Lambrecht, 1916, Aquila, vol. 22, p. 190); Puskaporos (Lambrecht, 1916, Barlangkutató, vol. 4, p. 206); Remetehegy (Lambrecht, 1916, Mitt. Jahrb. Kgl. ungar. Geol. Reichsanst., vol. 22, p. 403); Lambrecht Cave and \*Lambrecht Cave (Jánossy, 1963, Acta Zool. Acad. Sci. Hungaricae, vol. 9, fasc. 3-4, pp. 295, 297, 309). POLAND: Raj Cave (Bochenski, 1974, Birds Late Quaternary Poland, pp. 132, 200). RUMANIA: Curata Cave (Jánossy, 1965, Vertebrata Hungarica, vol. 7, p. 113). UKRAINE: Syuren I (Tugarinov, 1937, Trav. Sect. Soviét. Asso. Internat. Etude Quat., pt. 1, pp. 101, 102); Adzhi-Koba, \*Novgorod-Seversk, \*Rasponints, \*Kiev, and \*Zaporozhya (Voinstvenski, 1967, Prirodnaya Obstanovka i Fauna Proshlogo, vol. 3, pp. 27, 41, 44, 51, 52, 57, 59). RUSSIA: \*Zhiguley Cave and \*Upper Don River caves (Burchak-Abramovich, 1968, Fossil Birds in Caves of USSR, p. 242). ISRAEL: 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, no. 3, p. 100); Hayonim Cave and Abu-Usba Cave (Bar-Yosef and Tchernov, 1966, Israel Jour. Zool., vol. 15, p. 132); \*Ubeidiya (Tchernov, 1968, 1968, Prelim. Invest. Birds Pleist. Deposits Ubeidiya, p. 22).

### Family MELIPHAGIDAE Vigors

- Meliphagidae* Vigors, 1825, Trans. Linn. Soc. London, vol. 14, p. 463 (family; type *Meliphaga* Lewin).—*Meliphaginae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, p. 15 (subfamily).—*Meliphagidae* Bonaparte, 1850, Conspectus Generum Avium, pt. 1, p. 389 (familia).—*Meliphaginae* Bonaparte, 1850, Conspectus Generum Avium, pt. 1, p. 389 (subfamilia).—*Meliphaginae* Sundevall, 1872, Tentamen, pt. 1, p. 49 (familia).
- Myzomelinae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, p. 15 (subfamily; type *Myzomela* Vigors and Horsfield).
- Manorhinae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, p. 16 (subfamily; type *Manorhina* Vieillot).
- Melithreptinae* Gray, 1841, List of Genera of Birds, ed. 2, p. 21 (subfamily; type *Melithreptus* Vieillot).—*Melithreptidae* Wetmore, 1934, Smithsonian Misc. Coll., vol. 89, no. 13, p. 11.
- Philedoninae* Sundevall, 1872, Tentamen, pt. 1, p. 51 (familia; type *Philedon* Cuvier, *Philemon* Vieillot).

### Neospecies of Meliphagidae from the Pleistocene and \*Holocene

1. *Prosthemadera novaeseelandiae* (Gmelin). NEW ZEALAND: Pyramid Valley swamp (Scarlett, 1955, Rec. Canterbury Mus., vol. 6, p. 263; Martinborough Cave V (Yaldwyn, 1956, Rec. Dom. Mus., vol. 3, p. 4); \*Swiss Cheese (Medway, 1967, Notornis, vol. 14, p. 160); Awakino-Mahoenui area (Medway, 1971, Notornis, vol. 18, p. 218).

2. *Anthornis melanura* (Sparrman). NEW ZEALAND: Awakino-Mahoenui area (Medway, 1971, *Notornis*, vol. 18, p. 218).

### Family CALLAEATIDAE (Gray)

*Callaeatinae* Gray, 1841, *List Genera Birds*, p. 00 (subfamily; type *Callaeas* Forster).—*Callaeidae* Stonor, 1942, *Ibis*, p. 1 (family).—*Callaeadidae* Oliver, 1955, *New Zealand Birds*, ed. 2, pp. 10, 519.—*Callaeatidae* Amadon, 1962, in Peters, *Check-list Birds World*, vol. 15, p. 157 note.

*Philesturnidae* Oliver, 1955, *New Zealand Birds*, ed. 2, pp. 10, 512 (family; type *Philesturnus* Geoffroy St.-Hilaire, 1832, a junior synonym of *Creadion* Vieillot, 1816).

### Neospecies of Callaeatidae from the Pleistocene and °Holocene

1. *Callaeas cinerea* (Gmelin). NEW ZEALAND: Pyramid Valley Swamp (Scarlett, 1955, *Records Canterbury Mus.*, vol. 6, no. 4, p. 263); °Martinborough Cave (Yaldwyn, 1956, *Records Dominion Mus.*, vol. 3, pt. 1, p. 3); °Robbers Hole (Medway, 1967, *Notornis*, vol. 14, p. 160); °Awakino-Mahoenui area (Medway, 1971, *Notornis*, vol. 18, p. 218).

2. *Heterolocha acutirostris* (Gould). NEW ZEALAND: °Waingongoro (Lydekker, 1891, *Cat. Foss. Birds Brit. Mus.*, p. 5, fig. 1); °Awakino-Mahoenui area (Medway, 1971, *Notornis*, vol. 18, p. 218). Exterminated by feather-hunters; last seen December 28, 1907.

3. *Creadion carunculatum* (Gmelin). NEW ZEALAND: Pyramid Valley Swamp (Scarlett, 1955, *Records Canterbury Mus.*, vol. 6, no. 4, p. 263); °Martinborough Cave (Yaldwyn, 1956, *Records Dominion Mus.*, vol. 3, pt. 1, p. 4); °Awakino-Mahoenui area (Medway, 1971, *Notornis*, vol. 18, p. 218).

### Family NECTARINIIDAE (Vigors)

*Nectariniidae* Vigors, 1825, *Trans. Linn. Soc. London*, vol. 14, p. 463 (family; type *Nectarinia* Illiger).—*Nectarinidae* Boie, 1826, *Isis von Oken*, fide Gray.—*Nectarininae* G. R. Gray, 1840 (before Apr.), *List of Genera of Birds*, p. 12 (subfamily).—*Nectariniidae* Bonaparte, 1850, *Conspectus Generum Avium*, pt. 1, p. 402 (familia).—*Nectariniinae* Sundevall, 1872, *Tentamen*, pt. 1, p. 48 (familia).—*Nectariniidae* Gadow, 1884, *Cat. Birds Brit. Mus.*, vol. 9, p. 1 (family).

*Cinnyridae* Vigors, 1825, *Trans. Linn. Soc. London*, vol. 14, p. 463 (family; type *Cinnyris* Cuvier).

*Arachnotherinae* Cabanis, 1850, *Museum Heineanum*, pt. 1, p. 104 (subfamilia; type *Arachnothera* Temminck).

### Family PARDALOTIDAE (Bonaparte)

*Pardalotinae* Bonaparte, 1850, (30 Apr.), *Conspectus Generum Avium*, vol. 1, pt. 2, sig. 42, p. 334 (subfamilia; type *Pardalotus* Vieillot).

*Dicaeidae* Bonaparte, 1853 (séance du 31 Oct.), *C. R. Acad. Sci. Paris*, vol. 37, no. 18, p. 664 (familia; type *Dicaeum* Cuvier).—*Dicaeinae* Bonaparte, 1853, loc. cit. (subfamilia).

*Paramythiidae* Sclater, 1893, *Ibis*, p. 244 (type *Paramythia* DeVis).

No fossil record.

### Family ZOSTEROPIDAE (Bonaparte)

*Zosteropinae* Bonaparte, 1853, *C. R. Acad. Sci. Paris*, vol. 37, p. 644 (subfamilia; type *Zosterops* Vigors and Horsfield).—*Zosteropidae* Sharpe, 1891, *Review Recent Attempts Classify Birds*, p. 86.

No fossil record.

## Family VIREONIDAE (Swainson)

- Vireoninae* Swainson, 1837, Nat. Hist. Classif. Birds, vol. 2, p. 249 (subfamily; type *Vireo* Vieillot).—*Vireoninae* Cabanis, 1847, Archiv für Naturg., Jahrg. 23, vol. 1, no. 2, p. 321 (subfamilia).—*Vireonidae* Sclater, 1862, Cat. Coll. Amer. Birds, p. 43 (family).—*Vireoninae* Sundevall, 1872, Tentamen, pt. 1, p. 14 (familia).
- Hylophilinae* Sundevall, 1872, Tentamen, pt. 1, p. 12 (familia; type *Hylophilus* Temminck).
- Vireolaniidae* Pycraft, 1907, Proc. Zool. Soc. London, p. 352 (type *Vireolanius* DuBus).—*Vireolaniinae* Blake, 1968, in Peters, Check-list Birds World, vol. 14, p. 108 (subfamily).
- Cyclarhidae* Pycraft, 1907, Proc. Zool. Soc. London, p. 352 (type *Cyclarhis* Swainson).—*Cyclarhinae* Blake, 1968, in Peters, Check-list Birds World, vol. 14, p. 103 (subfamily).

## Neospecies of Vireonidae from the Pleistocene and \*Holocene

1. *Cyclarhis gujanensis* (Gmelin). BRAZIL: Lapa da Escrivania? (O. Winge, 1887, E. Museo Lundii, vol. 1, no. 2, p. 49).
2. *Vireo calidris* (Linnaeus). DOMINICAN REPUBLIC: Cerro de San Francisco (Bernstein, 1965, Quart. Jour. Florida Acad. Sci., vol. 28, no. 3, p. 280). PUERTO RICO: \*Cueva Cathedral (Wetmore, 1922, Bull. Amer. Mus. Nat. Hist., vol. 46, p. 328).
3. *Vireo olivaceus* (Linnaeus). ILLINOIS: \*Miller Cave? (Parmalee, 1967, Nat. Speleological Soc. Bull., vol. 29, no. 4, p. 130).
4. *Vireo solitarius* (Wilson). BAHAMAS: \*Abaco Island cave (Conklin, 1971, Quart. Jour. Florida Acad. Sci., vol. 33, no. 3, p. 238).
5. *Vireo griseus* (Boddaert). FLORIDA: Haile (Ligon, 1966, Bull. Florida State Mus., vol. 10, no. 4, p. 150).
6. *Lawrencia nana* (Lawrence). DOMINICAN REPUBLIC: Cerro de San Francisco? (Bernstein, 1965, Quart. Jour. Florida Acad. Sci., vol. 28, p. 280).

## Family COEREBIDAE (Gray)

- Sylvicolinae* Bonaparte, 1838, Geographical and Comparative List of Birds of Europe and North America, p. 20 (subfamily; type *Sylvicola* Swainson, 1827, preoccupied by *Sylvicola* Harris, 1792, by *Sylvicola* Humphrey, 1797, and by *Sylvicola* Hübner, 1810).—*Sylvicolidae* Cabanis, 1847, Archiv für Naturgeschichte, Jahrg. 23, vol. 1, pt. 2, p. 315 (familia).—*Sylvicoleae* Bonaparte, 1853 (read 31 Oct.), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 644 (section).
- Caerebinae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, p. 13 (subfamily; type "Caereba Briss," i.e. *Coereba* Vieillot).—*Caerebidae* Bonaparte, 1850 (15 May), Conspectus Generum Avium, vol. 1, pt. 2, sig. 50, p. 399).—*Coerebidae* Gray, 1869, Hand-list Gen. Sp. Birds, pt. 1, pp. ix, 116.—*Coerebinae* Sclater, 1886 (after May 7), Cat. Birds Brit. Mus., vol. 11, pp. xi, 2, 29 (subfamily).—*Coerebini* Beecher, 1951 (Dec. 21), Wilson Bull., vol. 63, no. 4, p. 286 (tribe).
- Mniotiltinae* G. R. Gray, 1848 (Dec.), Genera of Birds, vol. 1, p. 195 (subfamily; type *Mniotilta* Vieillot).—*Mniotiltidae* Baird, 1858, Rept. Expl. Surv. R. R. Pacific, vol. 9, pp. xix, 235 (section).—*Mniotiltidae* Sclater, 1862, Cat. Coll. Amer. Birds, p. 25 (family).—*Mniotiltidae* Ridgway, 1902 (Oct. 16), Bull. U. S. Nat. Mus., no. 50, pt. 2, p. 428 (section).
- Setophageae* Bonaparte, 1853 (read 31 Oct.), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 644 (section; type *Setophaga* Swainson).—*Setophaginae* Baird, 1864 (Nov.), Review Amer. Birds, sig. 11, pp. vi, 166 (subfamily).—*Setophaginae* Sundevall, 1872, Tentamen, pt. 1, p. 27 (familia).—*Setophagae* Ridgway, 1902 (Oct. 16), Bull. U. S. Nat. Mus., no. 50, pt. 2, p. 430 (section).
- Helmithereae* Bonaparte, 1853 (read 31 Oct.), C. R. Acad. Sci. Paris, vol. 37, no. 18, p. 644 (section; type *Helmitheros* Rafinesque).
- Geothlypeae* Baird, 1858, Rept. Expl. Surv. R. R. Pacific, vol. 9, pp. xix, 240 (section; type *Geothlypis* Cabanis).—*Geothlypinae* Baird, 1864 (Nov.), Review Amer. Birds, sig. 11, pp. vi, 166 (subfamily).

- Icterieae* Baird, 1858, Rept. Expl. Surv. R. R. Pacific, vol. 9, pp. xix, 248 (section; type *Icteria Vieillot*).—*Icterianae* Baird, 1864 (Nov.), Review Amer. Birds, sig. 11, pp. vi, 166 (subfamily).—*Icteriinae* G. R. Gray, 1869, Hand-list Gen. Sp. Birds, pt. 1, pp. xx, 384 (subfamily).—*Icteriinae* Sundevall, 1872, Tentamen, pt. 1, p. 28 (familia).—*Icteriae* Ridgway, 1902 (Oct. 16), Bull. U.S. Nat. Mus., no. 50, pt. 2, p. 430 (section).
- Vermivoreae* Baird, 1858, Rept. Expl. Surv. R. R. Pacific, vol. 9, pp. xix, 251 (section; type *Vermivora Swainson*).
- Henicocichlinae* Sclater, 1862, Cat. Coll. Amer. Birds, p. 25 (subfamily; type *Henicocichla Agassiz*, 1846 = *Enicocichla* Gray, 1840, a junior synonym of *Seiurus Swainson*, 1827).—*Enicocichlinae* G. R. Gray, 1869, Hand-list Gen. Sp. Birds, pt. 1, p. 249 (subfamily).
- Siureae* Baird, 1864 (Nov.), Review Amer. Birds, sig. 11, p. 166 (section; type *Siurus Strickland*, 1841 = *Seiurus Swainson*, 1827).
- Teretristeae* Baird, 1864 (Nov.), Review Amer. Birds, sig. 11, p. 166 (section; type *Teretristis "Cabanis"* = *Teretristris Cabanis*, 1855).
- Trichadinae* G. R. Gray, 1869, Hand-list Gen. Sp. Birds, pt. 1, pp. xiv, 242 (subfamily; type *Trichas Swainson*, 1827, a senior synonym of *Geothlypis Cabanis*, 1847, but apparently preoccupied by *Trichas Gloger*, 1827).
- Dendroecinae* Sundevall, 1872, Tentamen, pt. 1, p. 26 (familia; type *Dendroeca* Gray).—*Dendroicae* Ridgway, 1902 (Oct. 16), Bull. U.S. Nat. Mus., no. 50, pt. 2, p. 429 (section; type *Dendroica* Gray).
- Arbelorhinae* Sundevall, 1872, Tentamen, pt. 1, p. 48 (familia; type *Arbelorhina Cabanis*, new name for *Caereba Vieillot*).
- Helinaiae* Ridgway, 1902 (Oct. 16), Bull. U.S. Nat. Mus., no. 50, pt. 2, p. 428 (section; type *Helinaia Audubon*, a synonym of *Helmitheros Rafinesque*).
- Compsothlypidae* Oberholser, 1919 (Apr. 11), Proc. Biol. Soc. Washington, vol. 32, p. 46 (family; type *Compsothlypis Cabanis*, 1850, a junior synonym of *Parula Bonaparte*, 1838).
- Parulidae* American Ornithologists' Union, 1947 (July 22), Auk, vol. 64, no. 3, p. 451 (family; type *Parula Bonaparte*).—*Parulinae* Mayr and Amadon, 1951 (Apr. 2), Amer. Mus. Novitates, no. 1496, pp. 27, 37 (subfamily).

### Neospecies of Coerebidae from the Pleistocene and \*Holocene

1. *Coereba flaveola* (Linnaeus). PUERTO RICO: Cueva Catedral (Wetmore, 1922, Bull. Amer. Mus. Nat. Hist., vol. 46, p. 329).
2. *Mniotilta varia* (Linnaeus). TEXAS: Miller's Cave? (Weigel, 1967, Texas Jour. Sci., vol. 19, no. 1, p. 108).
3. *Protonotaria citrea* (Boddaert). BAHAMAS: \*Abaco Island cave (Conklin, 1971, Quart. Jour. Florida Acad. Sci., vol. 33, no. 3, p. 239).
4. *Limnothlypis swainsonii* (Audubon). DOMINICAN REPUBLIC: Cerro de San Francisco? (Bernstein, 1965, Quart. Jour. Florida Acad. Sci., vol. 28, no. 3, p. 281).
5. *Vermivora pinus* (Linnaeus). BAHAMAS: \*Abaco Island cave (Conklin, 1971, Quart. Jour. Florida Acad. Sci., vol. 33, no. 3, p. 239).
6. *Dendroica coronata* (Linnaeus). PUERTO RICO: Cueva Catedral (Wetmore, 1922, Bull. Amer. Mus. Nat. Hist., vol. 46, p. 329).
7. *Dendroica tigrina* (Gmelin). BAHAMAS: \*Abaco Island cave (Conklin, 1971, Quart. Jour. Florida Acad. Sci., vol. 33, no. 3, p. 239).
8. *Dendroica adelaidae* (Baird). PUERTO RICO: Cueva Catedral (Wetmore, 1922, Bull. Amer. Mus. Nat. Hist., vol. 46, p. 329).
9. *Geothlypis trichas* (Linnaeus). FLORIDA: Reddick (Brodkorb, 1957, Jour. Paleontology, vol. 31, no. 1, p. 136); Haile (Ligon, 1966, Bull. Florida State Mus., vol. 10, no. 4, p. 151).
10. *Seiurus auricapillus* (Linnaeus). ILLINOIS: \*Meyer Cave? (Parmalee, 1967, Nat. Speleological Soc. Bull., vol. 29, no. 4, p. 130). BAHAMAS: \*Abaco Island cave (Conklin, 1971, Quart. Jour. Florida Acad. Sci., vol. 33, no. 3, p. 239). DOMINICAN REPUBLIC: Cerro de San Francisco (Bernstein, 1965, Quart. Jour. Florida Acad. Sci., vol. 28, no. 3, p. 281).
11. *Wilsonia citrina* (Boddaert). BAHAMAS: \*Abaco Island cave (Conklin, 1971, Quart. Jour. Florida Acad. Sci., vol. 33, no. 3, p. 239).

Family TANAGRIDAE (Vigors)<sup>1</sup>

- Tanagrina* Vigors, 1825 (Oct.), Zool. Jour., vol. 2, no. 7, p. 358 (type *Tanagra* Linnaeus).—*Tanagrinae* Bonaparte, 1831, Saggio di una Distribuzione Metodica degli Animali Vertebrati, p. 51 (subfamilia).—*Tanagridae* Boie, 1826, Isis von Oken, fide Gray.—*Tanagrinae* Sundevall, 1872, Tentamen, pt. 1, p. 37 (familia).—*Tanagrae* Ridgway, 1902, Bull. U.S. Nat. Mus., no. 50, pt. 2, p. 2.
- Tangaridae* Boie, 1826, Isis von Oken, vol. 10, p. 973 (type *Tangara* Brisson).—"Tangaras" Lesson, 1828, Manuel d'Ornithologie, vol. 1, p. 152 (famille).
- Thraupinae* Cabanis, 1847, Archiv für Naturg., Jahrg. 23, vol. 1, no. 2, p. 316 (subfamilia; type *Thraupis* Boie).—*Thraupinae* Sundevall, 1872, Tentamen, pt. 1, p. 36 (familia).—*Thraupidae* Wetmore and W. D. Miller, 1926, Auk, vol. 43, no. 3, p. 346.—*Thraupididae* (recte?).
- Euphoniae* Cabanis, 1847, Archiv für Naturg., Jahrg. 23, vol. 1, no. 2, p. 316 (subfamily; type *Euphonia* Desmarest, 1806, a junior synonym of *Tanagra* Linnaeus, 1764).—*Euphoniae* Ridgway, 1902, Bull. U.S. Nat. Mus., no. 50, pt. 2, p. 2.
- Dacnidinae* Cabanis, 1847, Arch. für Naturg., Jahrg. 23, vol. 1, no. 2, p. 325 (subfamilia; type *Dacnis* Cuvier).—*Dacnini* Beecher, 1951 (Dec. 21), Wilson Bull., vol. 63, no. 4, p. 286 (tribe).
- Pitylinae* Cabanis, 1847, Archiv für Naturg., Jahrg. 23, vol. 1, no. 2, p. 329 (subfamilia; type *Pitylus* Cuvier).—*Pityleae* Ridgway, 1901, Bull. U.S. Nat. Mus., no. 50, pt. 1, p. 28 ("group").
- Cyanospizinae* Sclater, 1862, Cat. Coll. Amer. Birds, p. 106 (subfamily; type *Cyanospiza* Baird, 1858, a junior synonym of *Passerina* Vieillot, 1816).—*Cyanospizae* Ridgway, 1901, Bull. U.S. Nat. Mus., no. 50, pt. 1, p. 28 ("group").
- Procnatinae* Sclater, 1862, Cat. Coll. Amer. Birds, p. 54 (subfamily; type *Procnias* Temminck, 1820, preoccupied by *Procnias* Illiger, 1811).—*Procniatidae* Ridgway, 1896 (June 24), Proc. U.S. Nat. Mus., vol. 95, p. 449.
- Hemithraupinae* Sundevall, 1872, Tentamen, pt. 1, p. 28 (familia; type *Hemithraupis* Cabanis).
- Pitylinae* Sundevall, 1872, Tentamen, pt. 1, p. 34 (familia; type *Pitylus* Cuvier).
- Cissopinae* Sundevall, 1872, Tentamen, pt. 1, p. 35 (familia; type *Cissopsis* Vieillot).
- Tachyphoninae* Sundevall, 1872, Tentamen, pt. 1, p. 36 (familia; type *Tachyphonus* Vieillot).
- Rhamphocelinae* Sundevall, 1872, Tentamen, pt. 1, p. 36 (familia; type *Rhamphocelus* Desmeret).
- Lamprotiniae* Sclater, 1886, Cat. Birds Brit. Mus., vol. 11, pp. xiv, 50, 231 (subfamily; type *Lamprotes* Swainson, 1837, a senior synonym of *Compsothraupis* Richmond, 1915, but preoccupied by *Lamprotes* "R. L.", 1817).
- Phoenicophilinae* Sclater, 1886, Cat. Birds Brit. Mus., vol. 11, pp. xiv, 50, 233 (subfamily; type *Phaenicophilus* Strickland).
- Cardinaliae* Ridgway, 1901, Bull. U.S. Nat. Mus., no. 50, pt. 1, p. 28 ("group"; type *Cardinalis* Bonaparte, 1838, preoccupied by *Cardinalis* Jarocki, 1821; a synonym of *Richmondena* Mathews and Iredale, 1918.—*Cardinalinae* Sushkin, 1924 (Nov.), Bull. Brit. Orn. Club, vol. 45, p. 38 (subfamily).
- Catamblyrhynchidae* Ridgway, 1901, Bull. U.S. Nat. Mus., no. 50, pt. 1, p. 19 (type *Catamblyrhynchus* Lafresnaye).—*Catamblyrhynchinae* Mayr and Amadon, 1951, Amer. Mus. Novitates, no. 1496, p. 38.
- Rhodinocichlinae* Ridgway, 1902, Bull. U.S. Nat. Mus., no. 50, pt. 2, p. 431 (subfamily; type *Rhodinocichla* Hartlaub).
- Tersinidae* Ridgway, 1907, Bull. U.S. Nat. Mus., no. 50, pt. 4, p. 880 footnote (family; type *Tersina* Vieillot, 1812, a synonym of *Procnias* Temminck, preoccupied).—?*Tersidae* Ridgway, 1907, Bull. U.S. Nat. Mus., no. 50, pt. 4, p. 880 footnote (type *Tersa* Vieillot; unidentifiable?).—*Tersininae* J. Fisher and Peterson, 1964, World of Birds, p. 232 (subfamily).

<sup>1</sup> The International Commission of Zoological Nomenclature (1968, Bull. Zool. Nomencl., vol. 25, pp. 74-75) placed *Tanagridae* Bonaparte (1838) on the Official Index of Rejected and Invalid Family-Group Names, without mention of the prior family-group names *Tanagrina* Vigors (1825) or *Tanagrinae* Bonaparte (1831), all based on the genus *Tanagra* Linnaeus (1764), which was likewise suppressed. The Commission overlooked the family-group name *Tangaridae* Boie (1826), based on the genus *Tangara* Boie (1826, ex Brisson, 1780). It is deplorable that the Commission continually violates its own fundamental principle, priority.

- Richmondeninae* Wetmore and W. D. Miller, 1926, Auk, vol. 43, no. 3, p. 346 (subfamily; type *Richmondena* Mathews and Iredale).  
*Pyrrhuloxiinae* Mayr and Amadon, 1951, Amer. Mus. Novitates, no. 1476, p. 38 (subfamily; type *Pyrrhuloxia* Bonaparte).

### Neospecies of Tanagridae from the Pleistocene and °Holocene Subfamily Tersiniinae

1. *Tersina viridis* (Illiger). BRAZIL: Lapa da Escrivania (O. Winge, 1887, E. Museo Lundii, vol. 1, no. 2, p. 50).

### Subfamily Tanagrinae

2. *Nesospingus speculariferus* (Lawrence). PUERTO RICO: Cueva Catedral and Cueva Clara (Wetmore, 1922, Bull. Amer. Mus. Nat. Hist., vol. 46, p. 331, figs. 24-25).  
 3. *Spindalis zena* (Linnaeus). BAHAMAS: °Abaco Island cave (Conklin, 1971, Quart. Jour. Florida Acad. Sci., vol. 33, no. 3, p. 239). PUERTO RICO: Cueva Catedral and Cueva Clara (Wetmore, 1922, Bull. Amer. Mus. Nat. Hist., vol. 46, p. 332).  
 4. *Calyptophilus frugivorus* (Cory). DOMINICAN REPUBLIC: Cerro de San Francisco (Bernstein, 1965, Quart. Jour. Florida Acad. Sci., vol. 28, no. 3, p. 281).  
 5. *Phaenicophilus palmarum* (Linnaeus). DOMINICAN REPUBLIC: Cerro de San Francisco (Bernstein, 1965, Quart. Jour. Florida Acad. Sci., vol. 28, no. 3, p. 281).

### Subfamily Pitylinae

6. *Saltator similis* Lafresnaye and d'Orbigny. BRAZIL: Lapa da Escrivania (O. Winge, 1887, E Museo Lundii, vol. 1, no. 2, p. 50).  
 7. *Pyrrhuloxia cardinalis* (Linnaeus). WISCONSIN: °Raddatz rock shelter (Parmalee, 1959, Wisconsin Archeologist, vol. 40, no. 2, p. 85). ILLINOIS: °Meyer cave (Parmalee, 1967, Nat. Speleological Soc. Bull., vol. 29, no. 4, p. 130). FLORIDA: Arredondo (Brodkorb, 1959, Bull. Florida State Mus., vol. 4, no. 9, p. 286); Rock Spring (Woolfenden, 1959, Wilson Bull., vol. 71, no. 2, p. 185); Reddick (Hamon, 1964, Florida Geol. Surv., Geol. Bull., no. 44, p. 199); Haile (Ligon, 1966, Bull. Florida State Mus., vol. 10, no. 4, p. 15).  
 8. *Pheucticus melanocephalus* (Swainson). CALIFORNIA: Rancho La Brea (Dawson, 1948, Condor, vol. 50, no. 2, p. 58).  
 9. *Passerina ciris* (Linnaeus). BAHAMAS: °Abaco Island cave (Conklin, 1971, Quart. Jour. Florida Acad. Sci., vol. 33, no. 3, p. 240).

### Family ICTERIDAE (Vigors)

- Icterina* Vigors, 1825, fide Gray (type *Icterus* Brisson).—*Icterinae* Swainson, 1832, Fauna Boreali-Americana, pt. 2, p. 274 (subfamily).—*Icteridae* Cabanis, 1847, Archiv für Naturg., vol. 1, p. 332 (familia).—*Icterinae* Sundevall, 1872, Tentamen, pt. 1, p. 39 (familia).—*Icteri* Ridgway, 1902, Bull. U.S. Nat. Mus., no. 50, pt. 2, p. 174.  
*Agelaiinae* Swainson, 1832, Fauna Boreali-Americana, pt. 2, p. 274 (subfamily; type *Agelaius* Vieillot).—*Aglainae* [sic] G. R. Gray, 1840 (before Apr.), List Genera of Birds, p. 42 (subfamily).—*Agelaiinae* Baird, 1858, Rept. Expl. Surv. R. R. Pacific, vol. 9, pp. xx, 521 (subfamily).—*Agelaiinae* Sundevall, 1872, Tentamen, pt. 1, p. 38 (familia).—*Agelaiinae* Sclater, 1886, Cat. Birds Brit. Mus., vol. 11, pp. xvi, 308, 330.—*Agelaiiae* Ridgway, 1887, Man. N. Amer. Birds, p. 365.—*Agelaii* Ridgway, 1902, Bull. U.S. Nat. Mus., no. 50, pt. 2, p. 174.  
*Scaphidurinae* Swainson, 1832, Fauna Boreali-Americana, vol. 2, p. 274 (subfamily; type *Scaphidurus* Swainson).  
*Quiscalinae* G. R. Gray, 1840 (before Apr.), List Genera of Birds, p. 41 (subfamily; type *Quiscalus* Vieillot).—*Quiscali* Ridgway, 1902, Bull. U.S. Nat. Mus., no. 50, pt. 2, p. 174.  
*Cacici* Lacépède (type *Cacicus* Lacépède).—*Cacinae* Brodtkorb, 1959, Bull. Florida State Mus., vol. 4, no. 9, p. 283 (subfamily).

- Cassiceae* Bonaparte, 1853, C. R. Acad. Sci. Paris, vol. 37, p. 644 (type *Cassicus* Illiger).—*Cassicinae* Sclater, 1886, Cat. Birds Brit. Mus., vol. 11, pp. xvi, 308, 309 (subfamily).
- Chalcophaninae* Sundevall, 1872, Tentamen, pt. 1, p. 38 (familia; type *Chalcophanes* Wagler, a synonym of *Quiscalus* Vieillot).
- Sturnellinae* Sclater, 1886, Cat. Birds Brit. Mus., vol. 11, pp. xvii, 308, 355 (subfamily; type *Sturnella* Vieillot).—*Sturnellae* Ridgway, 1902, Bull. U.S. Nat. Mus., no. 50, pt. 2, p. 175.
- Cassidices* Ridgway, 1902, Bull. U.S. Nat. Mus., no. 50, pt. 2, p. 173 (group; type *Cassidix* Lesson).
- Molothri* Ridgway, 1902, Bull. U.S. Nat. Mus., no. 50, pt. 2, p. 174 (group; type *Molothrus* Swainson).
- Trupiales* Ridgway, 1902, Bull. U.S. Nat. Mus., no. 50, pt. 2, p. 175 (group; type *Trupialis* Merrem).
- Dolichonyces* Ridgway, 1902, Bull. U.S. Nat. Mus., no. 50, pt. 1, p. 175 (group; type *Dolichonyx* Swainson).—*Dolichonychinae* Blake, 1968, in Peters, Check-List Birds World, vol. 14, pp. ix, 201 (subfamily).

### Genus † *Cremaster* Brodkorb

*Cremaster* Brodkorb, 1959 (May 22), Bull. Florida State Mus., vol. 4, no. 9, p. 284 (type by original designation *Cremaster tyththus* Brodkorb).

#### 1. *Cremaster tyththus* Brodkorb

*Cremaster tyththus* Brodkorb, 1959 (May 22), Bull. Florida State Mus., vol. 4, no. 9, p. 284, figs. 10-12 (holotype from Arredondo II, distal portion of left tibiotarsus, Brodkorb no. 1663; referred humerus and distal part of femur).

MIDDLE UPPER PLEISTOCENE (Arredondo clay). FLORIDA: Alachua County: Arredondo II (Brodkorb, loc. cit.); Haile XIB (Ligon, 1966, Bull. Florida State Mus., vol. 10, no. 4, p. 151).

### Genus † *Pandanaris* A. H. Miller

*Pandanaris* A. H. Miller, 1947 (Jan.), Condor, vol. 49, no. 1, p. 22 (type by original designation *Pandanaris convexa* A. H. Miller).

#### 2. *Pandanaris floridana* Brodkorb

*Pandanaris floridana* Brodkorb, 1957 (Feb. 26), Jour. Paleontology, vol. 31, no. 1, p. 134, text-fig. 1 (holotype from near Reddick, rostrum, Brodkorb no. 294; referred 2 mandibles).—Hamon, 1964, Florida Geol. Surv. Geol. Bull., no. 44, p. 197, fig. 12 (Reddick; descr. coracoid, humerus, ulna, carpometacarpus, femur, tibiotarsus, tarsometatarsus).

MIDDLE UPPER PLEISTOCENE (Reddick beds). FLORIDA: Marion County: Dixie Lime Products Company mine, 1 mi SE Reddick (Brodkorb, loc. cit.). Alachua County: Haile XIB (Ligon, 1966, Bull. Florida State Mus., vol. 10, no. 4, p. 151).

#### 3. *Pandanaris convexa* A. H. Miller

*Pandanaris convexa* A. H. Miller, 1947 (Jan.), Condor, vol. 49, no. 1, p. 22, fig. 4 (holotype from Rancho La Brea, rostrum, Los Angeles Co. Mus. no. K7278).

UPPER UPPER PLEISTOCENE (Rancholabrean tar). CALIFORNIA: Los Angeles County: Los Angeles, pit A.

Genus *Euphagus* Cassin

*Euphagus* Cassin, 1867, Proc. Acad. Nat. Sci. Philadelphia, vol. 18, no. 5, p. 413 (type *Psarocolius cyanocephalus* Wagler, Recent).

4. *Euphagus magnirostris* A. H. Miller

*Euphagus magnirostris* A. H. Miller, 1929 (Dec. 21), Univ. Calif. Publ., Bull. Dept. Geol. Sci., vol. 19, no. 1, p. 14, pl. 1, figs. f, h (holotype from Rancho La Brea, mandible, Univ. Calif. Mus. Paleo. no. 29442; referred 2 femora; tentatively referred tibiotarsi, tarso-metatarsus, mandible). Needs restudy.

UPPER UPPER PLEISTOCENE (Rancholabrean tar). CALIFORNIA: LOS ANGELES COUNTY: Los Angeles: Rancho La Brea.

Genus † *Pyelorhamphus* A. H. Miller

*Pyelorhamphus* A. H. Miller, 1932 (Jan.), Auk, vol. 49, no. 1, p. 39 (type by original designation *Pyelorhamphus molothroides* A. H. Miller).

5. *Pyelorhamphus molothroides* A. H. Miller

*Pyelorhamphus molothroides* A. H. Miller, 1932 (Jan.), Auk, vol. 49, no. 1, p. 39, pl. 4 (holotype from Shelter Cave, mandible, Los Angeles Co. Mus. no. 320; referred rostrum).

QUATERNARY. NEW MEXICO: Dona Ana County: Shelter Cave on Pyramid Peak, west slope of Organ Mountains.

## Neospecies of Icteridae from the Pleistocene and \*Holocene

1. *Psarocolius decumanus* (Pallas). BRAZIL: Salpeter cave near Escrivania (O. Winge, 1887, E. Museo Lundii, vol. 1, no. 2, p. 50).

2. *Icterus galbula* (Linnaeus). CALIFORNIA: Rancho La Brea (A. H. Miller, 1929, Univ. Calif. Publ. Geol. Sci., vol. 19, no. 1, p. 13).

3. *Icterus gularis* (Wagler). YUCATAN: \*Actun Coyok (Fisher, 1953, Cranbrook Inst. Sci. Bull., vol. 33, p. 83).

4. *Icterus dominicensis* (Linnaeus). PUERTO RICO: Cueva Catedral and Cueva Clara (Wetmore, 1922, Bull. Amer. Mus. Nat. Hist., vol. 46, p. 330).

5. *Xanthocephalus xanthocephalus* (Bonaparte). OREGON: Fossil Lake? (Howard, 1946, Carnegie Inst. Washington Publ., no. 551, pp. 190, 192). CALIFORNIA: Rancho La Brea (L. Miller, 1912, Univ. Calif. Publ., Bull. Dept. Geol., vol. 7, no. 5, p. 78). NEW MEXICO: \*Rocky Arroyo (Wetmore, 1932, Condor, vol. 34, no. 3, p. 141); Burnet Cave (C. B. Schultz and E. B. Howard, 1935, Proc. Acad. Nat. Sci. Philadelphia, vol. 87, p. 277).

6. *Agelaius xanthomus* (Sclater). PUERTO RICO: Cueva Clara and Cueva Catedral (Wetmore, 1922, Bull. Amer. Mus. Nat. Hist., vol. 46, p. 330).

7. *Agelaius phoeniceus* (Linnaeus). ONTARIO: Hamilton (Wetmore, 1958, Smithsonian Misc. Coll., vol. 135, no. 8, p. 9). OREGON: Fossil Lake? (Howard, 1946, Carnegie Inst. Washington Publ., no. 551, pp. 189, 192). CALIFORNIA: Rancho La Brea? (L. Miller, 1912, Univ. Calif. Publ., Bull. Dept. Geol., vol. 7, no. 5, p. 78); \*Buena Vista Lake (DeMay, 1942, Condor, vol. 44, no. 5, p. 228). NEVADA: Smith Creek Cave? (Howard, 1952, Bull. So. Calif. Acad. Sci., vol. 51, pt. 2, p. 54). IDAHO: American Falls (Brodkorb, 1963, Quart. Jour. Florida Acad. Sci., vol. 26, no. 3, p. 280). UTAH: \*Sand Dune Cave (Hargrave, 1970, Tech. Ser. Mus. N. Ariz., no. 9, pp. 40, 45). NEW MEXICO: Conkling Cavern (Howard and A. H. Miller, 1933, Condor, vol. 35, no. 1, p. 16). KANSAS: Jones Sink? (Downs, 1954, Condor, vol. 54, p. 213, fig. 5c). IOWA: \*Mill Creek (Hamon, 1961, Plains Anthropologist, vol. 6, p. 211). WISCONSIN: \*Raddatz rock shelter (Parmalee, 1959, Wisconsin Archeologist, vol. 40, no. 2, p. 85).



ILLINOIS: \*Kingston (Baker, 1936, Trans. Illinois State Acad. Sci., vol. 29, no. 2, p. 245); \*Plum Island (Baker, 1941, Trans. Amer. Philos. Soc., n.s., vol. 32, p. 69); Modoc rock shelter (Parmalee, 1956, Illinois State Mus. Rept. Invest., no. 4, p. 53). PENNSYLVANIA: \*Sheep rock shelter (Guilday and Parmalee, 1965, Pennsylvania Archaeologist, vol. 35, no. 1, p. 39). VIRGINIA: Natural Chimneys (Guilday, 1962, Ann. Carnegie Mus., vol. 36, p. 92). FLORIDA: Seminole Field (Wetmore, 1931, Smithsonian Misc. Coll., vol. 85, no. 2, p. 41); Reddick (Brodkorb, 1956, Jour. Paleont., vol. 31, no. 1, p. 136); Arredondo (Brodkorb, 1959, Bull. Florida State Mus., vol. 4, no. 9, p. 283); Itchtucknee River (McCoy, 1963, Auk, vol. 80, no. 3, p. 347); \*Vero Beach (Weigel, 1963, Florida Geol. Surv. Special Publ. no. 10, p. 30). BAHAMAS: \*Abaco Island cave (Conklin, 1971, Quart. Jour. Florida Acad. Sci., vol. 33, no. 3, p. 240). CUBA: Pío Domingo cave? (*Dolichonyx kruegeri* Fischer and Stephan, 1971, Wiss. Zeitschr. Humboldt- Univ. Berlin, Math.-Nat.R., vol. 20, no. 4-5, p. 597, pl. 3, 5, 6, figs. 18-21; holotype right humerus, Univ. Habana no. 877/67; see Aves Incertae Sedis, postea). YUCATAN: \*Actun Lara, \*Actun Coyok, and \*Actun Spukil (H. I. Fisher, 1953, Cranbrook Inst. Sci. Bull., vol. 33, p. 83).

8. *Sturnella magna* (Linnaeus). FLORIDA: Eichelberger Cave (Brodkorb, 1956, Auk, vol. 73, no. 1, p. 136); Reddick (Brodkorb, 1957, Jour. Paleont., vol. 31, no. 1, p. 136); Arredondo (Brodkorb, 1959, Bull. Florida State Mus., vol. 4, no. 9, p. 283); Haile (Ligon, 1966, Bull. Florida State Mus., vol. 10, no. 4, p. 151).

9. *Sturnella neglecta* Audubon. OREGON: Fossil Lake (Howard, 1946, Carnegie Inst. Wash. Publ., no. 551, p. 190). CALIFORNIA: Rancho La Brea and San Pedro (L. Miller, 1912, Univ. Calif. Publ., Bull. Dept. Geol., vol. 7, no. 5, p. 78); Carpinteria (A. H. Miller, 1932, Univ. Calif. Publ. Geol. Sci., vol. 21, no. 7, p. 180, pl. 13, figs. g, j); McKittrick (Miller and DeMay, 1942, Univ. Calif. Publ. Zool., vol. 47, no. 4, p. 68). IDAHO: \*Weiss rock shelter (L. Miller, 1963, Bull. So. Calif. Acad. Sci., vol. 62, pt. 4, p. 182). TEXAS: Miller's Cave? (Weigel, 1967, Texas Jour. Sci., vol. 19, no. 1, p. 108).

10. *Pseudoleistes guirahuro* (Vieillot). BRAZIL: Lapa da Escrivania (O. Winge, 1887, E Museo Lundii, vol. 1, no. 2, p. 50).

11. *Gnorimopsar chopti* (Vieillot). BRAZIL: Lapa da Escrivania (O. Winge, 1887, E Museo Lundii, vol. 1, no. 2, p. 50).

12. *Quiscalus mexicanus* (Gmelin). YUCATAN: \*Actun Lara (H. I. Fisher, 1953, Cranbrook Inst. Sci. Bull., vol. 33, p. 83).

13. *Quiscalus major* (Vieillot). FLORIDA: Seminole Field (Wetmore, 1931, Smithsonian Misc. Coll., vol. 85, no. 2, p. 41); \*Vero Beach (Weigel, 1963, Florida Geol. Surv. Spec. Publ., no. 10, p. 31).

14. *Quiscalus quiscula* (Linnaeus). ONTARIO: Hamilton (Wetmore, 1958, Smithsonian Misc. Coll., vol. 135, no. 8, p. 9). IOWA: \*Mill Creek (Hamon, 1961, Plains Anthropologist, vol. 6, p. 211). ARKANSAS: \*Zebree site (Guilday and Parmalee, 1971, Amer. Midland Naturalist, vol. 86, no. 1, p. 228). ILLINOIS: \*Kingston (Baker, 1936, Trans. Illinois State Acad. Sci., vol. 29, no. 2, p. 245); \*Cahokia (Parmalee, 1957, Trans. Illinois State Acad. Sci., vol. 50, p. 239); \*Meyer Cave (Parmalee, 1967, Nat. Speleolog. Soc. Bull., vol. 29, no. 4, p. 130); \*Apple Creek (Parmalee, Paloumpis, and Wilson, 1972, Illinois State Mus. Rept. Invest., no. 23, pp. 31, 33). OHIO: \*Canter Caves (Goslin, 1955, Ohio Jour. Sci., vol. 55, no. 6, p. 361); \*Indian Hills (Mayfield, 1972, vol. 74, no. 3, p. 345). PENNSYLVANIA: Varner site? (Guilday, 1961, Penns. Archaeologist, vol. 31, p. 122). FLORIDA: Seminole Field (Wetmore, 1931, Smithsonian Misc. Coll., vol. 85, no. 2, p. 41); Reddick (Brodkorb, 1957, Jour. Paleont., vol. 31, no. 1, p. 136); Itchtucknee River (McCoy, 1963, Auk, vol. 80, no. 3, p. 347); Vero Beach (Weigel, 1963, Florida Geol. Surv. Spec. Publ., no. 10, p. 30); Haile (Ligon, 1966, Bull. Florida State Mus., vol. 10, no. 4, p. 151).

15. *Quiscalus niger* (Cassin). PUERTO RICO: Cueva Catedral (Wetmore, 1922, Bull. Amer. Mus. Nat. Hist., vol. 46, p. 331).

16. *Euphagus cyanocephalus* (Wagler). OREGON: Fossil Lake (*Scolecophagus affinis* Shufeldt, 1892, Jour. Acad. Nat. Sci. Philadelphia, vol. 9, p. 418, pl. 15, fig. 10, syntypes 2 left humeri, left coracoid, 3 right ulnae, Amer. Mus. Nat. Hist. no. 3466; see Howard, 1946, Carnegie Inst. Washington Publ., vol. 551, p. 189). CALIFORNIA: Hawver Cave (L. Miller, 1911, Univ. Calif. Publ., Bull. Dept. Geol., vol. 6, no. 16, p. 399; error?, see Wetmore, 1940, Smithsonian Misc., Coll., vol. 99, no. 4, p. 76 note). KANSAS: Kentuck (Galbreath, 1955, Wilson Bull., vol. 67, no. 1, p. 62); Big Springs Ranch (Harrell, 1959, Proc. S. Dakota Acad. Sci., vol. 38, p. 105). IOWA: \*Mille Creek (Hamon, 1961, Plains Anthropologist, vol. 6, p. 211).

17. *Molothrus ater* (Boddaert). OREGON: Fossil Lake? (Howard, 1946, Carnegie Inst. Washington Publ., vol. 551, p. 190). CALIFORNIA: Rancho La Brea (Howard, 1962, Los Angeles Co. Mus. Contr. Sci., vol. 58, p. 23). NEW MEXICO: Shelter Cave (Howard and A. H. Miller, 1933, Condor, vol. 35, no. 1, p. 16). KANSAS: Jones Sink? (Downs, 1954, Condor, vol. 56, p. 214, fig. 5d, f). VIRGINIA: Natural Chimneys (Wetmore, 1962, Smithsonian Misc., Coll., vol. 145, no. 2, p. 14). FLORIDA: Reddick (Hamon, 1964, Florida Geol. Surv. Geol. Bull., no. 44, p. 196); Haile (Ligon, 1966, Bull. Florida State Mus., vol. 10, no. 4, p. 151).

18. *Dolichonyx oryzivorus* (Linnaeus). IOWA: \*Mill Creek (Hamon, 1961, Plains Anthropologist, vol. 6, p. 211). FLORIDA: Reddick (Hamon, 1964, Florida Geol. Surv. Geol. Bull., no. 44, p. 197).

### Family EMBERIZIDAE Vigors

- Emberizidae* Vigors, fide Brehm, 1831, Handbuch der Naturgeschichte aller Vögel Deutschlands, pp. 261, 289 (family; type *Emberiza* Linnaeus).—*Emberizidae* Boie, fide Brehm, 1831, Handbuch, p. 1049.—*Emberizinae* Bonaparte, 1838, Geogr. Comp. List Birds Eur. N. Amer., p. 35 (subfamilia).—*Emberizinae* Sundevall, 1872, Tentamen, pt. 1, p. 33 (familia).  
*Geospizinae* Cabanis, 1847, Archiv für Naturg., vol. 1, no. 2, p. 328 (subfamilia; type *Geospiza* Gould).—*Geospizae* Ridgway, 1901, Bull. U.S. Nat. Mus., no. 50, pt. 1, p. 28 ("group").—*Geospizidae* Swarth, 1929, Proc. Calif. Acad. Sci., ser. 4, vol. 18, p. 29 (family).  
*Spizinae* Bonaparte, 1850, Conspectus Generum Avium, pt. 1, p. 468 (subfamily; type *Spiza* Bonaparte).—*Spizae* Ridgway, 1901, Bull. U.S. Nat. Mus., no. 50, pt. 1, p. 26 ("group").  
*Passerellinae* Cabanis, 1851 (Apr.), Museum Heineanum, pt. 1, p. 131 (subfamilia; type *Passerella* Swainson).  
*Spizellinae* Baird, 1858, Rept. Expl. Surv. R. R. Pacific, vol. 9, pp. xx, 406, 438 (subfamilia; type *Spizella* Bonaparte).  
*Zonotrichiinae* Sclater, 1862, Cat. Coll. Am. Birds, p. 110 (subfamilia; type *Zonotrichia* Swainson).—*Zonotrichinae* Sundevall, 1872, Tentamen, pt. 1, p. 33 (familia).—*Zonotrichiae* Ridgway, 1901, Bull. U.S. Nat. Mus., no. 50, pt. 1, p. 28 ("group").  
*Spermophilinae* Sclater, 1862, Cat. Coll. Amer. Birds, p. 99 (subfamilia; type *Spermophila* Swainson, 1827, preoccupied by *Spermophila* Richardson, 1825).  
*Arremonia* Sundevall, 1872, Tentamen, pt. 1, p. 35 (familia; type *Arremon* Vieillot).  
*Sporophilae* Ridgway, 1901, Bull. U.S. Nat. Mus., no. 50, pt. 1, p. 28 (group; type *Sporophila* Cabanis, 1844, a junior synonym of *Spermophila* Swainson, preoccupied).  
*Calcarieae* Ridgway, 1901, Bull. U.S. Nat. Mus., no. 50, pt. 1, p. 28 (group; type *Calcarius* Bechstein).  
*Calamospizae* Ridgway, 1901, Bull. U.S. Nat. Mus., no. 50, pt. 1, p. 28 (group; type *Calamospiza* Bonaparte).  
*Chondesteae* Ridgway, 1901, Bull. U.S. Nat. Mus., no. 50, pt. 1, p. 28 (group; type *Chondestes* Swainson).  
*Ammodrami* Ridgway, 1901, Bull. U.S. Nat. Mus., no. 50, pt. 1, p. 28 (group; type *Ammodramus* Swainson).  
*Haplospizae* Ridgway, 1901, Bull. U.S. Nat. Mus., no. 50, pt. 1, p. 28 (group; type *Haplospiza* Cabanis).  
*Oryzoborae* Ridgway, 1901, Bull. U.S. Nat. Mus., no. 50, pt. 1, p. 28 (group; type *Oryzoborus* Cabanis).  
*Certhideinae* Ridgway, 1902, Bull. U.S. Nat. Mus., no. 50, pt. 2, p. 431 (subfamilia; type *Certhidea* Gould).

### Genus †*Palaeostruthus* Wetmore

*Palaeostruthus* Wetmore, 1925 (May), Bull. Mus. Comp. Zool., vol. 67, no. 2, p. 192, figs. 3-4 (type by original designation *Palaeospiza hatcheri* Shufeldt).

#### 1. *Palaeostruthus hatcheri* (Shufeldt)

*Palaeospiza hatcheri* Shufeldt, 1913 (Aug. 4), Bull. Amer. Mus. Nat. Hist., vol. 32, art. 16, p. 301, pl. 55, fig. 28 (holotype from Quarry E, Long Island, rostrum; U.S. Nat. Mus., no. 6647).

LOWER PLIOCENE (Republican River Formation). KANSAS: Phillips County: Long Island.

## 2. *Palaeostruthus eurius* Brodkorb

*Palaeostruthus eurius* Brodkorb, 1963 (Feb. 8), Florida Geol. Surv. Spec. Publ., no. 2, Paper no. 4, p. 6, pl. 3, figs. a-b (holotype from Haile VI, distal part of left tarsometatarsus, Brodkorb coll. no. 8502).

MIDDLE PLIOCENE (Alachua Clay). FLORIDA: Alachua County: Haile.

### Genus *Pipilo* Vieillot

*Pipilo* Vieillot, 1816, Analyse nouv. Orn. élémentaire, p. 32 (type *Fringilla erythrophthalma* Linnaeus, Recent).

## 3. *Pipilo angelensis* Dawson

*Pipilo angelensis* Dawson, 1948 (March 16), Condor, vol. 5, no. 2, p. 59, fig. 16 (holotype from Pit A at Rancho La Brea, rostrum, Los Angeles Co. Mus. no. K7291).

UPPER UPPER PLEISTOCENE (Rancholabrean tar). CALIFORNIA: LOS ANGELES COUNTY: Los Angeles: Rancho La Brea.

### Genus *Zonotrichia* Swainson

*Zonotrichia* Swainson, 1832, Fauna Bor.-Amer., vol. 2, p. 493 (type designated by Bonaparte, 1832, *Fringilla pensylvanica* Latham = *F. albicollis* Gmelin, Recent).

## 4. *Zonotrichia robusta* Tonni

*Zonotrichia robusta* Tonni, 1970 (June), Ameghiniana, vol. 7, no. 2, p. 161, fig. 2a-d (holotype from Miramar, rostrum and mandible, Mus. La Plata, no. 63-VII-30-6).

MIDDLE PLEISTOCENE (Miramar Formation, Ensenadensan age). ARGENTINA: Prov. Buenos Aires: Miramar: 900 meters SW of Punta Hermengo.

### Neospecies of Emberizidae from the Pleistocene and \*Holocene

1. *Tiaris bicolor* (Linnaeus). DOMINICAN REPUBLIC: Cerro de San Francisco (Bernstein, 1965, Quart. Jour. Florida Acad. Sci., vol. 28, no. 3, p. 282).

2. *Tiaris olivacea* (Linnaeus). PUERTO RICO: Cueva Catedral (Wetmore, 1922, Bull. Amer. Mus. Nat. Hist., vol. 46, p. 333).

3. *Loxigilla portoricensis* (Daudin). PUERTO RICO: Cueva Catedral (Wetmore, 1922, Bull. Amer. Mus. Nat. Hist., vol. 46, p. 332).

4. *Loxigilla violacea* (Linnaeus). DOMINICAN REPUBLIC: Cerro de San Francisco (Bernstein, 1965, Quart. Jour. Florida Acad. Sci., vol. 28, no. 3, p. 281). BAHAMAS: \*Abaco Island cave (Conklin, 1971, Quart. Jour. Florida Acad. Sci., vol. 33, no. 3, p. 240).

5. *Pipilo erythrophthalmus* (Linnaeus). CALIFORNIA: Carpinteria (A. H. Miller, 1932, Univ. Calif. Publ. Geol. Sci., vol. 21, no. 7, p. 182, pl. 12, fig. f); Rancho La Brea (Dawson, 1948, Condor, vol. 50, no. 2, p. 60). UTAH: \*Catfish Canyon (Hargrave, 1960, Univ. Utah Anthr. Papers, no. 44, p. 239). NEW MEXICO: Conkling Cavern and Shelter Cave (Howard and A. H. Miller, 1933, Condor, vol. 35, no. 1, p. 16). ILLINOIS: \*Meyer Cave (Parmalee, 1967, Nat. Speleol. Soc. Bull., vol. 29, no. 4, p. 131). FLORIDA: Reddick (Brodkorb, 1957, Jour. Pal., vol. 31, no. 1, p. 136); Arredondo (Brodkorb, 1959, Bull. Florida State Mus., vol. 4, 9, p. 286); Haile (Ligon, 1966, Bull. Florida State Mus., vol. 10, no. 4, p. 152); \*Vero Beach (Weigel, 1963, Florida Geol. Surv., Spec. Publ., no. 10, p. 31).

6. *Pipilo fuscus* Swainson. CALIFORNIA: Carpinteria (A. H. Miller, 1932, Univ. Calif. Publ. Geol. Sci., vol. 21, no. 7, p. 182, pl. 12, fig. g. pl. 13, fig. d); Rancho La Brea (Dawson, 1948, Condor, vol. 50, no. 2, p. 60). NEW MEXICO: Shelter Cave (Howard and A. H. Miller, 1933, Condor, vol. 35, no. 1, p. 16).

7. *Calamospiza melanocorys* Stejneger. CALIFORNIA: (A.O.U. Checklist, ed. 5, 1957, p. 585). NEW MEXICO: Shelter Cave (Howard and A. H. Miller, 1933, Condor, vol. 35, no. 1, p. 16). KANSAS: Jones Sink (Downs, 1954, Condor, vol. 56, p. 214, fig. 5 g-h, k-l). SOUTH DAKOTA: \*Black Partizan (Parmalee, 1977, Plains Anthropologist, vol. 22-27, p. 198).
8. *Passerculus sandwichensis* (Gmelin). FLORIDA: Arredondo (Brodkorb, 1959, Bull. Florida State Mus., vol. 4, no. 9, p. 286).
9. *Ammodramus savannarum* (Gmelin). FLORIDA: Haile I (Brodkorb, 1953, Wilson Bull., vol. 65, no. 1, p. 50); Haile XI (Ligon, 1966, Bull. Florida State Mus., vol. 10, no. 4, p. 152). PUERTO RICO: \*Cueva Clara (Wetmore, 1922, Bull. Amer. Mus. Nat. Hist., vol. 46, p. 333).
10. *Ammodramus henslowii* (Audubon). FLORIDA: Reddick (Brodkorb, 1957, Jour. Pal., vol. 31, no. 1, p. 136); Arredondo (Brodkorb, 1959, Bull. Florida State Mus., vol. 4, no. 9, p. 286); Haile XI (Ligon, 1966, Bull. Florida State Mus., vol. 10, no. 4, p. 152).
11. *Poocetes gramineus* (Gmelin). CALIFORNIA: Rancho La Brea (Dawson, 1948, Condor, vol. 50, no. 2, p. 60).
12. *Chondestes grammacus* (Say). CALIFORNIA: Rancho La Brea (Dawson, 1948, Condor, vol. 50, p. 60).
13. *Amphispiza bilineata* (Cassin). CALIFORNIA: Rancho La Brea (Sibley, 1939, Condor, vol. 41, no. 3, p. 126). NEW MEXICO: Shelter Cave (Howard and A. H. Miller, 1933, Condor, vol. 35, no. 1, p. 16).
14. *Amphispiza belli* (Cassin). CALIFORNIA: McKittrick (A. H. Miller, 1937, Condor, vol. 39, no. 6, p. 250); Rancho La Brea (Sibley, 1939, Condor, vol. 41, no. 3, p. 126).
15. *Spizella passerina* (Bechstein). CALIFORNIA: Rancho La Brea (Sibley, 1939, Condor, vol. 41, no. 3, p. 127). FLORIDA: Arredondo (Brodkorb, 1959, Bull. Florida State Mus., vol. 4, no. 9, p. 286).
16. *Spizella arborea* (Wilson). CALIFORNIA: Rancho La Brea? (Dawson, 1948, Condor, vol. 50, no. 2, p. 61).
17. *Spizella pusilla* (Wilson). FLORIDA: Arredondo (Brodkorb, 1959, Bull. Florida State Mus., vol. 4, no. 9, p. 286).
18. *Junco hyemalis* (Linnaeus). ILLINOIS: \*Meyer Cave (Parmalee, 1967, Nat. Speleological Soc. Bull., vol. 29, no. 4, p. 131). VIRGINIA: Natural Chimneys (Wetmore, 1962, Smithsonian Misc. Coll., vol. 145, no. 2, p. 14).
19. *Zonotrichia leucophrys* (Forster). CALIFORNIA: Rancho la Brea (Dawson, 1948, Condor, vol. 50, no. 2, p. 61).
20. *Zonotrichia albicollis* (Gmelin). VIRGINIA: Natural Chimneys (Wetmore, 1962, Smithsonian Misc. Coll., vol. 145, no. 2, p. 14).
21. *Zonotrichia capensis* (Müller). DOMINICAN REPUBLIC: Cerro San Francisco (Bernstein, 1965, Quart. Jour. Florida Acad. Sci., vol. 28, no. 3, p. 282).
22. *Zonotrichia melodia* (Wilson). CALIFORNIA: Rancho La Brea (Dawson, 1948, Condor, vol. 50, no. 2, p. 62). VIRGINIA: Natural Chimneys, 1962, Smithsonian Misc. Coll., vol. 145, no. 2, p. 15).
23. *Zonotrichia iliaca* (Merrem). CALIFORNIA: Carpinteria (A. H. Miller, 1932, Univ. Calif. Publ. Geol. Sci., vol. 21, no. 7, p. 182, pl. 13, fig. a-b); Rancho La Brea (Dawson, 1948, Condor, vol. 50, no. 2, p. 62). PENNSYLVANIA: New Paris (Guilday, Martin, and McCrady, 1964, Bull. Nat. Speleol. Soc., vol. 26, pp. 134, 143). VIRGINIA: Natural Chimneys (Wetmore, 1962, Smithsonian Misc., Coll., vol. 145, no. 2, p. 14).
24. *Plectrophenax nivalis* (Linnaeus). ENGLAND: Merlin's Cave (Lambrecht, 1933, Handb. Palaeorn., p. 785). FRANCE: L'Escalé at Saint-Estève-Janson (?), Abîmes de la Fage at Noailles, La Colombière at Neuville-sur-Ain (Mourer-Chauviré, 1975, Doc. Lab. Géol., Fac. Sci. Lyon, no. 64, p. 208). SWITZERLAND: Thierstein and Kaltbrunnental (Lambrecht, 1933, Handb. Palaeorn., p. 785). CZECHOSLAVAKIA: Certova díra (Čapek, 1910, Ber. V. Intern. Orn. Kongr. Berlin, p. 940). AUSTRIA: Schusterlucke? (Lambrecht, 1933, Handb. Palaeorn., p. 785). HUNGARY: Puskaporos (Kormos, 1911, Mitt. Jahrb. ungar. Geol. Anst., vol. 19, no. 3, p. 151); Remetehegy (Lambrecht, 1914, Aquila, vol. 21, p. 90); Subalyuk Cave (Jánossy, 1962, Aquila, vol. 67-68, p. 185). UKRAINE: Syuren I (Tugarinov, 1937, Trav. Sect. Soviét. Asso. Internat. Étude Quat., pt. 1, pp. 102, 112); Tankov and \*Nizhnee Krivche (Voinstvenski, 1967, Prirodnaya Obstanovka i Fauny Proshlogo, vol. 3, pp. 30, 42). GEORGIAN SSR: Krivchanska Cave (Burchak-Abramovich, 1968, Fossil Birds in Caves of USSR, p. 239).

25. *Emberiza calandra* Linnaeus. ENGLAND: Chudleigh Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 404). FRANCE: Aven l des Abîmes de la Fage at Noailles (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon no. 64 p. 207). GERMANY: Thiede (Lambrecht, 1933, Handb. Palaeorn., p. 785). CZECHOSLOVAKIA: Certova díra (Čapek, 1910, Ber. V. Intern. Orn. Kongr. Berlin, p. 941); Stránská skála and Balcárka (Skutil and Stehlik, 1939, Ornitholog, vol. 6, nos. 2-4, p. 22). POLAND: Volyn? (Lambrecht, 1933, Handb. Palaeorn., p. 785). HUNGARY: Novi III? (Lambrecht, 1912, Aquila, vol. 19, p. 304); Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. ungar. Geol. Anst., vol. 23, p. 481); Puskapóros (Lambrecht, 1916, Barlangkutatás, vol. 4, p. 206). ISRAEL: Oumm Qatafa Cave and Kebara Cave (Tchernov, 1962, Bull. Res. Council Israel, vol. 11, no. 3, p. 100); Hayonim Cave (Bar-Yosef and Tchernov, 1966, Israel Jour. Zool., vol. 15, p. 133). UKRAINE: Adzhi-Koba, Syuren I, \*Azil, \*Tardenuaz, \*Novgorod-Seversk, \*Raspoinits, \*Alimovsk, and \*Okunevki (Voinstvenski, 1967, Prirodnaya Obstanovka i Fauny Proshlogo, vol. 3, pp. 27, 31, 34, 35, 44, 58, 59).

26. *Emberiza citrinella* Linnaeus. IRELAND: Newhall Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 404). ENGLAND: Chudleigh Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 404). FRANCE: Abîmes de la Fage (Chauviré, 1965, C. R. Soc. Géol. France, no. 1, p. 8); Grotte de l'Hortus at Valflaunès (Mourer-Chauviré, 1972, Études Quaternaires, Mém. no. 1, pp. 280, 292); Rond du Barry (Mourer-Chauviré, 1974, Anthropologie, vol. 78, no. 1, p. 39); L'Escale at Saint-Estève-Janson, Orgnac-l'Aven?, Le Lazaret at Nice, Eden Roc at Vaison-la-Romaine?, Salpêtre de Pompignan, Deux Avens at Vallon-Pont-d'Arc, and \*Rond du Barry (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 207). GERMANY: Thiede? (Lambrecht, 1933, Handb. Palaeorn., p. 785). CZECHOSLOVAKIA: Volyn (Lambrecht, 1933, Handb. Palaeorn., p. 785); Stránská skála (Jánossy, 1972, Anthropos, vol. 20, p. 60). HUNGARY: \*Lambrecht Cave (Jánossy, 1963, Acta Zool. Acad. Sci. Hung., vol. 9, p. 295). UKRAINE: \*Azil, \*Tardenuaz, \*Novgorod-Seversk, and \*Krementsa (Voinstvenski, 1967, Prirodnaya Obstanovka i Fauny Proshlogo, vol. 3, pp. 34, 35, 41, 43).

27. *Emberiza schoeniclus* Linnaeus. CZECHOSLOVAKIA: Holubic (Lambrecht, 1933, Handb. Palaeorn., p. 785); Certova díra and Balcárka (Skutil and Stehlik, 1939, Ornitholog, vol. 6, no. 2-4, p. 22). HUNGARY: Puskapóros (Lambrecht, 1916, Barlangkutatás, vol. 4, p. 206). POLAND: Raj Cave? (Bochenski, 1974, Birds Late Quaternary Poland, pp. 136, 201).

28. *Emberiza caesia* Cretzschmar. ISRAEL: Hayonin Cave (Bar Yosef and Tchernov, 1966, Israel Jour. Zool., vol. 15, p. 133); \*Ubeidiya? (Tchernov, 1968, Prelim. Invest. Birds Pleist. Deposits \*Ubeidiya, p. 28).

29. *Emberiza cia* Linnaeus. UKRAINE: \*Azil, \*Tardenuaz, and \*Alimovsk (Voinstvenski, 1967, Prirodnaya Obstanovka i Fauny Proshlogo, vol. 3, pp. 34, 35, 58).

30. *Emberiza hortulana* Linnaeus. FRANCE: Grotte des Romains at Pierre-Châtel (Desbrosse and Mourer-Chauviré, 1973, Quartär, p. 153); Orgnac l'Aven?, Rond du Barry, and \*Rond du Barry (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 207). UKRAINE: Syuren I (Tugarinov, 1937, Trav. Sect. Soviét. Asso. Internat. Étude Quat., pt. 1, pp. 102, 112); Tankov (Voinstvenski, 1967, Prirodnaya Obstanovka i Fauny Proshlogo, vol. 3, p. 30).

31. *Calcarius lapponicus* (Linnaeus). KANSAS: Jones Sink? (Downs, 1954, Condor, vol. 56, p. 214, figs. 5 i-j).

32. *Spiza americana* Gmelin. ILLINOIS: \*Meyer Cave (Parmalee, 1967, Nat. Speleolog. Soc. Bull., vol. 29, no. 4, p. 130).

### Family PASSERIDAE (Illiger)

*Passerini* Illiger, 1811, Prodrum systematis mammalium et avium, pp. 196, 220 (familia; type by tautonomy *Passer* Brisson).—*Passerinae* Bonaparte, 1853, C. R. Acad. Sci. Paris, vol. 37, p. 644 (subfamilia).—*Passeroideae* Stejneger, 1885, Stand. Nat. Hist., vol. 4, p. 481 (superfamily).—*Passeridae* Fürbringer, 1888, Untersuch. Morph. Syst. Vögel, vol. 2, p. 1567 (familia).

*Fringillidae* Vigors, 1825, Trans. Linn. Soc. London, vol. 14, p. 445 (family; type *Fringilla* Linnaeus).—*Fringillinae* Bonaparte, 1831, Saggio di una Distribuzione Metodica degli Animali Vertebrati, p. 00 (subfamily).—*Fringillinae* Swainson, 1832, Fauna Boreali-Americana, pt. 2, p. 243 (subfamily).—*Fringillinae* Sundevall, 1872, Tentamen, pt. 1, p. 32 (familia).—*Fringillae* Ridgway, 1901, Bull. U.S. Nat. Mus., no. 50, pt. 1, p. 28 ("group").

- Fringilloidei* Sushkin, 1924, Bull. Brit. Orn. Club, vol. 45, p. 30 (superfamily).—*Fringilloideae* Hay, 1930, Carnegie Inst. Wash. Publ., no. 390, vol. 2, p. 354 (superfamily).
- Carduelina* Vigors, 1825, fide Brehm (type *Carduelis* Brisson).—*Carduelinae* Sushkin, 1924 (Nov.), Bull. Brit. Orn. Club, vol. 45, p. 38 (subfamily).
- Loxidae* Vigors, fide Brehm, 1831, Naturgeschichte aller Vögel Deutschlands, p. 239 (family; type *Loxia* Brisson).—*Loxinae* Bonaparte, 1838, Geogr. Comp. List Birds Europe N. Amer., p. 38 (subfamily; type *Loxia* Linnaeus).—*Loxtinae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, p. 49 (subfamily).—*Loxianae* G. R. Gray, 1845 (Feb.), Genera of Birds, vol. 2, p. 388 (subfamily).—*Loxtinae* Sundevall, 1872, Tentamen, pt. 1, p. 32 (familia).—*Loxiae* Ridgway, 1901, Bull. U.S. Nat. Mus., no. 50, pt. 1, p. 28 ("group").
- Pyrhulinae* Swainson, 1832, Fauna Boreali-Americana, pt. 2, p. 243 (type *Pyrhula* Brisson).—*Pyrhulae* Ridgway, 1901, Bull. U.S. Nat. Mus., no. 50, pt. 1, p. 28 ("group").
- Coccothraustinae* Swainson, 1837, Nat. Hist. Classif. Birds, vol. 2, pp. 108, 276 (subfamily; type *Coccothrausta* Brisson).—*Coccothraustea* Ridgway, 1901, Bull. U.S. Nat. Mus., no. 50, pt. 1, p. 28 ("group").
- Ploceinae* G. R. Gray, 1840 (before Apr.), List of Genera of Birds, p. 42 (subfamily; type *Ploceus* Cuvier).—*Ploceidae* Cabanis, 1847, Archiv für Naturg., Jahrg. 23, vol. 1, no. 2, p. 330 (familia).—*Ploceinae* Sundevall, 1872, Tentamen, pt. 1, p. 29 (familia).
- Drepaninae* Cabanis, 1847, Archiv f. Naturgeschichte, Jahrg. 23, vol. 1, pt. 2, p. 325 (subfamilia; type *Drepanis* Temminck).—*Drepanidae* Bonaparte, 1853 (31 Oct.), C. R. Acad. Sci. Paris, vol. 37, no. 18, 644 (familia).—*Drepanididae* A. B. Meyer, in Wallace, 1876, Geographische Verbreitung der Thiere, vol. 2, p. 312 (family).—*Drepaniidae* Mayr, 1943, Condor, vol. 45, p. 46 (family).—*Drepaniinae* Amadon, 1950, Bull. Amer. Mus. Nat. Hist., vol. 95, p. 173 (subfamily).
- Spermestinae* Cabanis, 1847, Archiv für Naturg., Jahrg. 23, vol. 1, no. 2, p. 331 (subfamilia; type *Spermestes* Swainson).
- Viduae* Cabanis, 1847, Archiv für Naturg., Jahrg. 23, vol. 1, no. 2, p. 331 (subfamilia; type *Vidua* Cuvier).—*Viduiinae* Bonaparte, 1850, Conspectus Generum Avium, pt. 1, p. 446 (subfamilia).—*Viduiinae* Sundevall, 1872, Tentamen, pt. 1, p. 29 (familia).
- Estreldina* Blyth, 1849, fide Gray (type *Estrelda* Swainson, 1837, a junior synonym of *Estrilda* Swainson, 1827).—*Estreldinae* Bonaparte, 1850, Conspectus Generum Avium, pt. 1, p. 450 (subfamilia).—*Estrildinae* Chapin, 1917, Bull. Amer. Mus. Nat. Hist., vol. 37, art. 9, pp. 243, 251, 273 (subfamily; type *Estrilda* Swainson).
- Chloridinae* Sundevall, 1872, Tentamen, pt. 1, p. 31 (familia; type *Chloris* Moehring).
- Textoridae* Chapin, 1917, Bull. Amer. Mus. Nat. Hist., vol. 37, art. 9, pp. 243, 250, 265 (family; type *Textor* Temminck).
- Bubalornithinae* W. L. Sclater, 1930, Systema Avium Aethiopicarum, pt. 2, pp. xi, 715 (subfamily; type *Bubalornis* Smith).
- Plocepasserinae* W. L. Sclater, 1930, Systema Avium Aethiopicarum, pt. 2, pp. xi, 716 (subfamily; type *Plocepasser* Smith).
- Sporopipinae* W. L. Sclater, 1930, Systema Avium Aethiopicarum, pt. 2, pp. xi, 728 (subfamily; type *Sporopipes* Cabanis).
- Psittirostrinae* Amadon, 1950, Bull. Amer. Mus. Nat. Hist., vol. 95, p. 164 (subfamily; type *Psittirostra* Temminck).

### Genus *Passer* Brisson

*Passer* Brisson, 1760, Ornithologia, vol. 1, p. 36; vol. 3, p. 71 (type *Fringilla domestica* Linnaeus, Recent, designated by Gray, 1841).

#### 1. *Passer predomesticus* Tchernov

*Passer predomesticus* Tchernov, 1962 (Nov.), Bull. Research Council Israel, vol. 11, no. 3, p. 102, text-fig. 1; pl. [3], fig. 22; pl. [6], figs. 15-16 (holotype from Oumm-Qatafa Cave, premaxilla, Zool. Dept., Hebrew Univ., Jerusalem).

UPPER MIDDLE PLEISTOCENE (middle Acheulean). ISRAEL: Mugharet-Oumm-Qatafa in Wadi Khareitoun, near Bethlehem.

Genus *Petronia* Kaup

*Petronia* Kaup, 1829, Skizz. Entw. Nat. Syst., vol. 1, p. 158 (type by tautonomy *Fringilla petronia* Linnaeus, Recent).

2. *Petronia brevirostris* Tchernov

*Petronia brevirostris* Tchernov, 1968, Prelim. Invest. Birds Pleist. Deposits 'Ubeidiya, p. 25, pl. 3, figs. 9-17 (syntypes 67 elements from 'Ubeidiya, layers II-23 and II-24, Hebrew Univ., Jerusalem).

UPPER MIDDLE PLEISTOCENE ('Ubeidiya Formation). ISRAEL: 'Ubeidiya, on SW bank of Sea of Galilee.

## Neospecies of Passeridae from the Pleistocene and °Holocene

1. *Fringilla coelebs* Linnaeus. IRELAND: Kesh Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 404). ENGLAND: Ightham (E. T. Newton, 1899, Quart. Jour. Geol. Soc. London, vol. 55, no. 219, p. 420); Langwith Bassett Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 404); Merlin's Cave (Lambrecht, 1933, Handb. Palaeorn., p. 786). SPAIN: Castelfelers (Vilalta, 1964, Speleon, vol. 15, p. 98). GIBRALTAR: Devil's Tower (Bate, 1928, Jour. Roy. Anthropol. Inst., vol. 58, p. 104). FRANCE: Balme-les-grottes (Chauviré, 1963, C. R. Sommaire Soc. Géol. France, fasc. 2, p. 53); L'Escale at Saint-Estève-Janson, Le Lazaret at Nice, La Balauzière at Vers, Campalou at Saint-Nazaire-en-Royans, Jean Pierre at Saint-Thibaud-de-Couz, Combe Grenal at Domme, Baume de Gonvillars, and °Baum de Gonvillars (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 208); Grotte de Cottier at Retourmac (Mourer-Chauviré, 1976, op. cit., fasc. 2, p. 472). CORSICA: Grotta di Funtanedu (E. T. Newton, 1921, Proc. Zool. Soc. London, pt. 2, p. 231). SARDINIA: Pietro Tampoia cave on Tavolara Island (Lydekker, 1891, Proc. Zool. Soc. London, p. 472). ITALY: Grotta di Cucigliana?, Caverna d'Equi, Buca Tana di Maggiano, and Grotte de Grimaldi (Lambrecht, 1933, Handb. Palaeorn., p. 786); Grotte du Prince (Mourer-Chauviré, 1976, Doc. Lab. Géol. Fac. Sci. Lyon, fasc. 2, pp. 363, 365). SWITZERLAND: Ettingen and Schlossfelsen von Birseck bei Basel (Lambrecht, 1933, Handb. Palaeorn., p. 786). CZECHOSLOVAKIA: Balcarka (Skutil and Stehlik, 1939, Ornitholog, vol. 6, no. 2-4, p. 22); Volyn (Lambrecht, 1933, Handb. Palaeorn., p. 786). HUNGARY: °Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. ungar. geol. Anst., vol. 23, pp. 478, 481, 507). POLAND: Zyttnia Skala? (Bochenski, 1974, Birds Late Quaternary Poland, pp. 132, 200). RUMANIA: Püspökfürdő [Betfia] (Čapek, 1917, Barlangkutató, vol. 5, p. 29). UKRAINE: °Tardenuaz, °Novgorod-Seversk, and °Alimovsk (Voinstvenski, 1967, Prirodnyaya Obstanovka Fauny Proshlogo, vol. 3, pp. 34, 41, 58); Murzan-Koba cave (Burchak-Abramovich, 1968, Fossil Birds Caves USSR, p. 237). ISRAEL: Oumm Qatafa Cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, p. 100); Abu-Usba (Bar-Yosef and Tchernov, 1966, Israel Jour. Zool., vol. 15, p. 134); 'Ubeidiya (Tchernov, 1968, Prelim. Invest. Birds Pleist. Deposits 'Ubeidiya, p. 27).

2. *Fringilla montifringilla* Linnaeus. SWITZERLAND: Grotte de Cotencher (Dubois and Stehlin, 1932, Mém. Soc. Suisse, vol. 52, p. 170). GERMANY: Westeregeln bei Magdeburg? and Zwergloch bei Pottenstein (Lambrecht, 1933, Handb. Palaeorn., p. 786). CZECHOSLOVAKIA: Volyn? (Lambrecht, 1933, Handb. Palaeorn., p. 786). HUNGARY: Remétehegy (Lambrecht, 1914, Aquila, vol. 21, p. 90).

3. *Carduelis chloris* (Linnaeus). IRELAND: Kesh Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 403). ENGLAND: Clevedon Cave and Chudleigh Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 403); Merlin's Cave (Lambrecht, 1933, Handb. Palaeorn., p. 787). FRANCE: Gourdan and Teyjat (Lambrecht, 1933, Handb. Palaeorn., p. 787); Mas Rambault at Frontignan?, L'Escale at Saint-Estève-Janson, and Orgnac-l'Aven (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 208). ITALY: Grotta Romanelli (Lambrecht, 1933, Handb. Palaeorn., p. 787); Grotte du Prince at Grimaldi (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 208). MALTA: Char Dalam cave (Fischer and Stephan, 1974, Zeitschr. geol. Wiss. Berlin, vol. 2, no. 4, p. 519). SWITZERLAND: Birseck and Ermitage (Lambrecht, 1933, Handb. Palaeorn., p. 787). HUNGARY: °Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. ungar. geol. Anst., vol. 23, p. 481). POLAND: Raj cave? (Bochenski, 1974, Birds Late Quaternary Poland, pp. 134,

201). UKRAINE: Adzhi-Koba, Syuren I, °Tardenuaz, °Novgorod-Seversk, and °Alimovsk (Voinstvenski, 1967, Prirodnaya Obstanovka Fauny Proshlogo, vol. 3, pp. 27, 31, 41, 58). ISRAEL: Oumm Qatafa Cave? (Tchernov, 1962, Bull. Research Council Israel, vol. 11, p. 100); 'Ubeidiya? (Tchernov, 1968, Prelim. Invest. Birds Pleist. Deposits 'Ubeidiya, p. 27).

4. *Carduelis carduelis* (Linnaeus). ENGLAND: Chudleigh Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 404). FRANCE: Le Lazaret at Nice, Grotte de Fontéchevade at Montbron, La Colombière at Neuville-sur-Ain, Combe Grenal at Domme?, Baume de Gonvillars, and °Baum de Gonvillars (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 209). UKRAINE: Adzhi-Koba, Syuren I, °Azil, °Novgorod-Seversk, °Nizhnee, °Alimovsk, and °Okunevi (Voinstvenski, 1967, Prirodnaya Obstanovka Fauny Proshlogo, vol. 3, pp. 27, 31, 34, 41, 42, 58, 59). ISRAEL: Oumm Qatafa Cave? (Tchernov, 1962, Bull. Research Council Israel, vol. 11, p. 100); Hayonim Cave and Abu-Usba Cave? (Bar-Yosef and Tchernov, 1966, Israel Jour. Sci., vol. 15, p. 133).

5. *Carduelis spinus* (Linnaeus). FRANCE: Mas Rambault at Frontignan? and Jean Pierre at Saint-Thibaud-de-Couz (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 209). CZECHOSLOVAKIA: Volyn (Lambrecht, 1933, Handb. Palaeorn., p. 787); Balcárka (Skutil and Stehlík, 1939, Ornitholog, vol. 6, no. 2-4, p. 22). ISRAEL: Oumm Qatafa Cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, no. 3, p. 100).

6. *Carduelis pinus* (Wilson). CALIFORNIA: Carpinteria (A. H. Miller, 1932, Univ. Calif. Publ. Geol. Sci., vol. 21, no. 7, p. 181, pl. 13, fig. C); McKittrick (A. H. Miller, 1937, Condor, vol. 39, no. 6, p. 250).

7. *Carduelis tristis* (Linnaeus). CALIFORNIA: Rancho La Brea (Sibley, 1939, Condor, vol. 41, no. 3, p. 127).

8. *Carduelis citrinella* (Linnaeus). FRANCE: Combe Grenal at Domme (Mourer-Chauviré, 1972, Études Quaternaires, Mém. no. 1, p. 360); Rond-du-Barry (Mourer-Chauviré, 1974, Anthropologie, vol. 78, no. 1, p. 39); Abîmes de la Fage at Noailles?, Orgnac-l'Aven, and Salpêtre de Pompignan (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 210, pl. 17, fig. 13).

9. *Carduelis cannabina* (Linnaeus). IRELAND: Kesh Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 404). ENGLAND: Chudleigh Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 404). BELGIUM: Grotte Marie-Jeanne? (Ballmann, 1973, Gerfaut, vol. 63, p. 12). FRANCE: Rond-du-Barry (Mourer-Chauviré, 1974, Anthropologie, vol. 78, no. 1, p. 39); Abîmes de la Fage at Noailles, Grotte de Fontéchevade at Montbron, Campalou at Saint-Nazaire-en-Royans, Baume de Gonvillars, and °Rond-du-Barry (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon., no. 64, p. 209). MALLORCA: Son Bauza cave (Ballmann and Adrover, 1970, Acta Geologica Hispanica, vol. 5, no. 2, p. 62). CORSICA: Grotta di Fontanedu (E. T. Newton, 1921, Proc. Zool. Soc. London, pt. 2, p. 231). ITALY: Verezzi (Milne-Edwards, 1871, Ois. Foss. France, vol. 2, p. 595). GERMANY: Thiede? (Lambrecht, 1933, Handb. Palaeorn., p. 787). CZECHOSLOVAKIA: Volyn (Lambrecht, 1933, Handb. Palaeorn., p. 787). AUSTRIA: Schreiberswand cave (Lambrecht, 1933, Handb. Palaeorn., p. 787). UKRAINE: °Kremetsa and °Alimovsk (Voinstvenski, 1967, Prirodnaya Obstanovka Fauny Proshlogo, vol. 3, pp. 43, 58); Krivchananska Cave (Burchak-Abramovich, 1968, Fossil Birds Caves USSR, p. 239). ISRAEL: Hayonim (Bar-Yosef and Tchernov, 1966, Israel Jour. Zool., vol. 15, p. 133); 'Ubeidiya (Tchernov, 1968, Prelim. Invest. Birds Pleist. Deposits 'Ubeidiya, p. 27).

10. *Carduelis flammea* (Linnaeus). SPAIN: Casteldelfels (Villalta, 1964, Speleon, vol. 15, p. 98). FRANCE: °Rond-du-Barry? (Mourer-Chauviré, 1974, Anthropologie, vol. 78, no. 1, p. 39); Abîmes de la Fage at Noailles, Le Lazaret at Nice, Deux Avens at Vallons-Pont-d'Arc, and Combe Grenal at Domme? (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 209, pl. 17, fig. 12). ITALY: Grotte du Prince at Grimaldi (Lambrecht, 1933, Handb. Palaeorn., p. 787). CZECHOSLOVAKIA: Stránká skála (Skutil and Stehlík, 1939, Ornitholog, vol. 6, no. 2-4, p. 22).

11. *Carduelis canaria* (Linnaeus). FRANCE: Grotte du Lazaret at Nice (Mourer-Chauviré, 1964, Bull. Mus. Anthrop. préhist. Monaco, no. 11, pp. 62-78); L'Escale at Saint-Estève-Janson (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 210). SARDINIA: Pietro Tampoia cave on Tavolara Island (Lydekker, 1891, Proc. Zool. Soc. London, p. 472). ISRAEL: Oumm Qatafa Cave? (Tchernov, 1962, Bull. Research Council Israel, vol. 11, p. 100).

12. *Carpodacus erythrinus* (Pallas). FRANCE: L'Escale at Saint-Estève-Janson and Soulabé at Montseron (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 211). UKRAINE:



\*Chernigov and \*Alimovsk (Voinstvenski, 1967, Prirodnaya Obstanovka Fauny Proshlogo, vol. 3, pp. 49, 58).

13. *Carpodacus rubicilla* (Güldenstädt). GEORGIAN SSR: Gvardzilas-Klde near Chiaturi (Burchak-Abramovich, 1966, Peschery Gruzii Speleologikiy Sbornik, vol. 4, pp. 96, 108, fig. 9).

14. *Carpodacus mexicanus* (Müller). CALIFORNIA: McKittrick (A. H. Miller, 1937, Condor, vol. 39, no. 6, p. 250). NEW MEXICO: Conkling Cavern and Shelter Cave (Howard and A. H. Miller, 1933, Condor, vol. 35, no. 1, p. 16).

15. *Pyrrhula pyrrhula* (Linnaeus). IRELAND: Edenvale Cave, \*Newhall Cave, and Kesh Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 404). FRANCE: Balme-les-grottes (Chauviré, 1963, C. R. Sommaire Soc. Géol. France, fasc. 2, p. 53); Les Romains at Pierre-Châtel (Desbrosse and Mourer-Chauviré, 1973, Quartär, vol. 23-24, pp. 153, 155); Orgnac-l'Aven, Fontèche-vade at Montseron, Jean Pierre at Saint-Thibaud-de-Couz, and \*Jean Pierre at Saint-Thibaud-de-Couz (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 211). SARDINIA: Monte San Giovanni (Lydekker, 1892, Proc. Zool. Soc. London, p. 472). ITALY: Verezzi (Milne-Edwards, 1871, Ois. Foss. France, vol. 2, p. 595). SWITZERLAND: Grotte de Cotencher (Dubois and Stehin, 1932, Mém. Soc. Pal. Suisse, vol. 52, p. 169); Ettingen (Lambrecht, 1933, Handb. Palaeorn., p. 787). AUSTRIA: Mixnitz (Lambrecht, 1933, Handb. Palaeorn., p. 787). GERMANY: Hohlefels bei Ulm (Lambrecht, 1912, Aquila, vol. 19, p. 303); Schelklingen (Lambrecht, 1933, Handb. Palaeorn., p. 787). HUNGARY: Balla-Höhle (Lambrecht, 1912, Aquila, vol. 19, p. 276); Öregkőhöhle bei Bajot (Kormos and Lambrecht, 1914, Barlangkutató, vol. 2, p. 106); Remetehegy (Lambrecht, 1914, Aquila, vol. 21, p. 90); Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. Ungar. Geol. Anst., vol. 23, p. 481); Otto Herman Cave (Lambrecht, 1916, Aquila, vol. 22, p. 190); Puskaporos (Lambrecht, 1916, Barlangkutató, vol. 4, p. 206). CZECHOSLOVAKIA: Stránská skála and Katerinská (Skutil and Stehlík, 1939, Ornitholog, vol. 6, no. 2-4, p. 22).

16. *Coccothraustes coccothraustes* (Linnaeus). IRELAND: \*Newhall Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 404). ENGLAND: Chudleigh Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 404); Merlin's Cave (Lambrecht, 1933, Handb. Palaeorn., p. 787). MAL-LORCA: Son Bauzá cave (Ballmann and Adrover, 1970, Acta Geol. Hispanica, vol. 5, no. 2, p. 62). FRANCE: Grotte du Lazaret (Mourer-Chauviré, 1964, Bull. Mus. Anthropol. préhist. Monaco, no. 11, pp. 64-78); Le Morin at Pessac-sur-Dordogne (Chauviré, 1965, 89 Congrès Soc. Savantes, p. 255); Combe Grenal at Domme, Grotte de l'Hortus and \*Grotte de l'Hortus at Valfaunès (Mourer-Chauviré, 1972, Études Quaternaires, Mém. no. 1, pp. 280, 292, 360, fig. 7); Les Romains at Pierre-Châtel (Desbrosse and Mourer-Chauviré, 1973, Quartär, vol. 23-24, p. 153); Rond-du-Barry at Sinzelles (Mourer-Chauviré, 1974, Anthropologie, vol. 78, no. 1, p. 39); Lunelviel, Orgnac l'Aven, L'Arago at Tautavel?, Salpêtre de Pompignan, Les Balmes de Villereversure, Campalou at Saint-Nazaire-en-Royans, Jean-Pierre at Saint-Thibaud-de-Couz, Grotte de Cottier at Retourmac, Pech de l'Azé at Carsac Les Taniens de Vergisson, Baume de Gonvillars, and \*Baume de Gonvillars (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 211, pl. 17, fig. 15). SARDINIA: Pietro Tampoia on Tavolar Island (Lydekker, 1891, Proc. Zool. Soc. London, p. 472, pl. 37, fig. 7). MALTA: Char Dalam cave (Fischer and Stephan, 1974, Zeitschr. geol. Wiss. Berlin, vol. 2, no. 4, p. 520). ITALY: Grottes de Menton, Grotte du Prince at Grimaldi, Bucca del Tasso, Grotta di Frola, and Caverna delle Arene candida (Lambrecht, 1933, Handb. Palaeorn., p. 787). AUSTRIA: Schusterlucke? (Lambrecht, 1933, Handb. Palaeorn., p. 787). HUNGARY: Otto Herman cave (Lambrecht, 1916, Aquila, vol. 22, p. 190); Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. Ungar. Geol. Anst., vol. 23, p. 481); \*Remetehegy (Lambrecht, 1916, Mitt. Jahrb. Kgl. Ungar. Geol. Anst., vol. 22, p. 403). POLAND: Mamutowa Cave, \*Józefów, and \*Niedzwiedz (Bochenski, 1974, Birds Late Quaternary Poland, pp. 134, 201, figs. 84-85). CZECHOSLOVAKIA: Certova díra (Čapek, 1910, Ber. V Internat. Orn. Kongr. Berlin, p. 940); Stránská skála, Holstýn skála, and Katerinská (Skutil and Stehlík, 1939, Ornitholog, vol. 6, no. 2-4, p. 22). RUMANIA: Püspökfürdő [Betfia] (Čapek, 1917, Barlangkutató, vol. 5, p. 29); O-Ruzsin, Sütto, and \*Devençse (Lambrecht, 1933, Handb. Palaeorn., p. 787); Istállós-kő (Jánossy, 1954, Aquila, vol. 55-58, p. 213). UKRAINE: Adzhi-koba, Syuren I, \*Azil, \*Tarde-nuaz, Kara-Koba, \*Krementsa, \*Alimovsk, and \*Okunevki (Voinstvenski, 1967, Prirodnaya Obstanovka Fauny Proshlogo, vol. 3, pp. 27, 31, 34, 36, 43, 44, 51, 58, 59); Staruni (Burchak-Abramovich, 1973, Tezisi Dokladov k IV Vsesouznomu Soveshchaniu po Izucheniu Chetvertichnogo Perioda, p. 82). ISRAEL: Oumim Qatafa Cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, pp. 100, 102); Hayonim Cave (Bar-Yosef and Tchernov, 1966, Israel Jour. Sci., vol. 15, p. 133).

17. *Coccothraustes vespertinus* Cooper. CALIFORNIA: Rancho La Brea (Dawson, 1948, Condor, vol. 50, no. 2, p. 58).

18. *Pinicola enucleator* (Linnaeus). AUSTRIA: Hundsheim? (Jánossy, 1974, Sitzb. Osterr. Akad. Wiss., math.-natw., pt. 1, vol. 182, no. 6-8, p. 212). HUNGARY: Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. Ungar. Geol. Anst., vol. 23, p. 481); Istállósók? (Jánossy, 1954, Aquila, vol. 55-58, p. 213).

19. *Loxia curvirostra* Linnaeus. FRANCE: Massat (Lambrecht, 1912, Aquila, vol. 19, p. 304); Grotte de Fontéchevade at Montbron (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 210). CZECHOSLOVAKIA: Certova díra (Čapek, 1910, Ber. V. Internat. Ornith. Kongr. Berlin, p. 940); Volyn (Lambrecht, 1933, Handb. Palaeorn., p. 787); Stránská skála (Skutil and Stehlík, 1939, Ornitholog, vol. 6, no. 2-4, p. 22). HUNGARY: Puskaporos (Kormos, 1911, Mitt. Jahrb. Ungar. Geol. Anst., vol. 19, p. 150); Remetehegy (Lambrecht, 1914, Aquila, vol. 21, p. 90); Pilisszántó (Lambrecht, 1915, Mitt. Jahrb. Ungar. Geol. Anst., vol. 23, p. 481); Otto Herman cave (Lambrecht, 1916, Aquila, vol. 22, p. 189); Istállósók (Jánossy, 1954, Aquila, vol. 55-58, p. 213). UKRAINE: Syuren I (Tugarinov, 1937, Trav. Sect. Soviét. Asso. Internat. Etude Quat., pt. 1, pp. 102, 112); Tankov (Voinstvenski, 1967, Prirodnaya Obstanovka Fauny Proshlogo, vol. 3, p. 30). CALIFORNIA: Carpinteria (A. H. Miller, 1932, Univ. Calif. Publ. Geol. Sci., vol. 21, no. 7, p. 181, pl. 14, fig. f-g). NEW MEXICO: Burnet Cave (C. B. Schultz and E. B. Howard, 1935, Proc. Acad. Nat. Sci. Philadelphia, vol. 87, p. 277). ILLINOIS: Meyer Cave? (Parmalee, 1967, Nat. Speleolog. Soc. Bull., vol. 29, p. 130).

20. *Loxia pityopsittacus* Borkhausen. FRANCE: Le Lazaret at Nice (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 211, pl. 17, fig. 14). CZECHOSLOVAKIA: Volyn (Lambrecht, 1933, Handb. Palaeorn., p. 786). UKRAINE: \*Rasponits (Voinstvenski, 1967, Prirodnaya Obstanovka Fauny Proshlogo, vol. 3, p. 44).

21. *Montifringilla nivalis* (Linnaeus). FRANCE: Massat (Lambrecht, 1933, Handb. Palaeorn., p. 786); Grotte du Lazaret at Nice (Mourer-Chauviré, 1964, Bull. Mus. Anthropol. Préhist. Monaco, no. 1, pp. 64-78); Combe Grenal at Domme (Mourer-Chauviré, 1972, Études Quatern., Mém. no. 1, p. 360); Grottes inférieures d'Aurensan (Bouchud, 1972, Bull. Asso. Étude Quatern., vol. 1, pp. 54, 56); Les Romains at Pierre-Châtel (Desbrosse and Mourer-Chauviré, 1973, Quartar, vol. 23-24, p. 153); Rond-du-Barry (Mourer-Chauviré, 1974, Anthropologie, vol. 78, no. 1, p. 39); Grotte de l'Escale at Saint-Estève-Janson?, Abîmes de la Fage at Noailles, Grotte de Salpêtre at Pompignan, La Balauzière at Vers, Grotte de Soulabé at Montseron, Les Trois Frères at Montesquieu-Avantès, La Colombière at Neuville-sur-Ain, Abri Gay at Poncin, Le Blot at Cerzat, Grotte de Cottier at Retournac, Baum de Gigny at Gigny-sur-Suran, and \*Rond-du-Barry (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 213); Abri La Faye at Bruniquel (Mourer-Chauviré, 1976, op. cit., fasc. 2, p. 426). SWITZERLAND: Thierstein (Lambrecht, Handb. Palaeorn., p. 786). CZECHOSLOVAKIA: Stránská skála? (Jánossy, 1972, Anthropos, vol. 20, p. 61). UKRAINE: Syuren I (Voinstvenski, 1967, Prirodnaya Obstanovka Fauny Proshlogo, vol. 3, p. 31).

22. *Petronia petronia* (Linnaeus). FRANCE: Grotte du Lazaret at Nice (Mourer-Chauviré, 1964, Bull. Mus. Anthropol. Préhist. Monaco, no. 11, pp. 62, 64, 72, 78); Grotte de l'Hortus at Valflaunès, and \*Grotte de l'Hortus (Mourer-Chauviré, 1972, Études Quaternaires, Mém. no. 1, pp. 281, 293, 360, fig. 8); \*Rond-du-Barry at Sinzelles (Mourer-Chauviré, 1974, Anthropologie, 1974, vol. 78, no. 1, p. 39); Mas Rambault at Frontignan?, L'Escale at Saint-Estève-Janson, Abîmes de la Fage at Noailles, Eden Roc at Vaison-la-Romaine, Grotte Tournal at Bize, and \*Arago at Tautavel (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 213). UKRAINE: Syuren I and \*Azil (Voinstvenski, 1967, Prirodnaya Obstanovka Fauny Proshlogo, vol. 3, pp. 31, 34). ISRAEL: Oumm Qatafa Cave and Kebara Cave (Tchernov, 1962, Bull. Research Council Israel, vol. 11, p. 100); Hayonim Cave (Bar-Yosef and Tchernov, 1966, Israel Jour. Zool., vol. 15, p. 133).

23. *Passer moabiticus* Tristan. ISRAEL: Oumm Qatafa Cave? (Tchernov, 1962, Bull. Research Council Israel, vol. 11, p. 100).

24. *Passer montanus* (Linnaeus). FRANCE: Le Lazaret at Nice, La Colombière at Neuville-sur-Ain, and Gare de Couze at Lalinde? (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 212). SWITZERLAND: Ermitage and Felsen near Birseck (Lambrecht, 1933, Handb. Palaeorn., p. 786). HUNGARY: Balla (Lambrecht, 1912, Aquila, vol. 19, p. 283). ROMANIA: Püspökfürdő (Betfia) (Čapek, 1917, Barlangkutatás, vol. 5, p. 30). UKRAINE: Adzhi-

Koba, Syuren I, °Azil, °Tardenuaz, and °Alimovsk (Voinstvenski, 1967, Prirodnaya Obstanovka Fauny Proshlogo, vol. 3, pp. 27, 31, 34, 58).

25. *Passer hispaniolensis* (Temminck). SARDINIA: brèches osseuses? (Milne-Edwards, 1871, Ois. Foss. France, vol. 2, p. 597). ISRAEL: Oumm Qatafa Cave? (Tchernov, 1962, Bull. Research Council Israel, vol. 11, p. 100).

26. *Passer italiae* (Vieillot). ITALY: Bucco della Volpe? (Portis, 1888, Mem. Accad. R. Torino, ser. 2, vol. 38, p. 197); Caverna d'Equi (Lambrecht, 1933, Handb. Palaeorn., p. 786).

27. *Passer domesticus* (Linnaeus). IRELAND: °Kesh Cave and °Edenvale Cave (Bell, 1915, Zoologist, ser. 4, vol. 19, no. 893, p. 404). ENGLAND: Langwith Bassett Cave, Chudleigh Cave, and Ightham fissure (Bell, 1915, Zoologist, ser. 4, no. 893, p. 404). FRANCE: °Rond-du-Barry at Sinzelles (Mourer-Chauviré, 1974, Anthropologie, vol. 78, no. 1, p. 39); L'Escale at Saint-Estève-Janson, Abîmes de la Fage at Noailles, Le Lazaret at Nice, La Colombière at Neuville-sur-Ain, Combe Grenal at Domme, and °Arago at Tautavel (Mourer-Chauviré, 1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 212); Gare de Couze? (Mourer-Chauviré, 1976, op. cit., fasc. 2, p. 505). CZECHOSLOVAKIA: Volyn (Lambrecht, 1933, Handb. Palaeorn., p. 786). HUNGARY: Puskaporos? (Kormos, 1911, Mitt. Jahrb. Ungar. Geol. Anst., vol. 19, p. 150); °Remetehegy (Lambrecht, 1916, Mitt. Jahrb. Ungar. Geol. Anst., vol. 22, p. 403). UKRAINE: Syuren I, °Azil, °Fatma-Koba, °Novgorod-Seversk, °Pere-Voloka, °Chernigov, and °Alimovsk (Voinstvenski, 1967, Prirodnaya Obstanovka Fauny Proshlogo, vol. 3, pp. 31, 34, 38, 41, 45, 49, 58, 59). ILLINOIS: °Meyer Cave (Parmalee, 1967, Nat. Speleolog. Soc. Bull., vol. 29, no. 4, p. 130).

## AVES INCERTAE SEDIS

### 1. *Alauda gypsorum* Portis

*Alauda gypsorum* Portis, 1888, Mem. Accad. R. Sci. Torino, ser. 2, vol. 38, p. 186, fig. 4 (holotype from Sinigaglia, skeleton impression, coll. G. Scarabelli-Gommi-Flamini).

LOWER PLIOCENE (Messiniano). ITALY: Sinigaglia.

Generic and familial position uncertain.

### 2. *Alauda major* Portis

*Alauda major* Portis, 1888, Mem. Accad. R. Sci. Torino, ser. 2, vol. 38 p. 190, fig. 11 (holotype from Gabbro, impression of legs, coll. G. Scarabelli-Gommi-Flamini).

LOWER PLIOCENE (Messiniano). ITALY: Toscana: Gabbro.

Generic and familial position uncertain.

### 3. *Anas benedeni* Sharpe

*Anas creccoides* Van Beneden, 1871, Bull. Acad. Roy. Belgique, ser. 2, vol. 32, no. 11, p. 260, figs. 3-6 (syntypes left humerus lacking proximal end, right humerus shaft, proximal part of right ulna, distal part of left ulna, and proximal part of tibiotarsus; no diagnosis, illustrated only; locality not stated but apparently from mouth of River Rupel).—Dollo, 1909, Ann. N. Y. Acad. Sci., vol. 19, no. 4, pt. 1, p. 113 (type locality restricted to Rupelmonde, age Rupelian).—Brodkorb, 1962, Auk, vol. 79, no. 4, p. 706 (left humerus illustrated in fig. 3 designated as lectotype; removed from Anatidae and Anseriformes to Incertae Sedis).

*Anas benedeni* Sharpe, 1899, Hand-list Gen. Sp. Birds, vol. 1, p. 217 (new name for *Anas creccoides* Van Beneden, 1871, preoccupied by *Anas creccoides* King, 1828, Zool. Jour., vol. 4, no. 13, p. 99).—*Anas Benedini* Lambrecht, 1918, Aquila, vol. 24, p. 216 (lapsus).

UPPER OLIGOCENE (Rupelian Sand). BELGIUM: East Flanders: Rupelmonde.

Not anseriform.

### 4. *Anthus boniaskii* Pycraft

*Anthus boniaskii* Pycraft, 1909, Proc. Zool. Soc. London, p. 368, fig. 47 (holotype from Gabbro,

plate and counterplate, with impression of femur, tibiotarsus, tarsometatarsus, and hallux, Brit. Mus.).

LOWER PLIOCENE (Messiniano). ITALY: Toscana: Gabbro, near Livorno.

Needs comparison with *Alauda gypsorum* Portis and *Alauda major* Portis.

#### 5. *Ardea rupeliensis* Van Beneden

*Ardea rupeliensis* Van Beneden, 1873, Patria Belgica, p. 373. (holotype distal part of tibiotarsus, Brussels Mus.?).

UPPER OLILOCENE (Rupelian Sand). BELGIUM: East Flanders: [Rupelmonde?].

Practically a nomen nudum. The entire reference is given below.

"Sous ce nom, nous désignons un oiseau du rupélien dont M. le professeur Dewalque nous a communiqué un tibia bien conservé dans sa partie inférieure; cet os indique un oiseau un peu plus petit que le butor."

As Van Beneden had a very poor record in assigning avian fossils to the correct family or order, we have no assurance that the type is referable to *Botaurus*, or even to the Ardeidae.

#### 6. *Colinus eatoni* Shufeldt

*Colinus eatoni* Shufeldt, 1915 (Feb.), Trans. Conn. Acad. Arts Sci., vol. 19, p. 70, pl. 13, fig. 103 (types shipped from Fort Wallace, western Kansas, but horizon, exact locality, and collector not stated; complete "left" [i.e., right] carpometacarpus and proximal phalanx of index digit, Yale Peabody Mus., no. 949).

LOWER PLIOCENE (Ogallala Formation) or possibly PLEISTOCENE (loess). KANSAS: near Fort Wallace.

Shufeldt said that the type is thoroughly fossilized, nearly white, with small, scattered spots of reddish staining. Bones from the Lower Pliocene Ogallala Formation are similarly preserved. The Ogallala is present in Wallace County, resting upon Cretaceous rocks (the Smoky Hill Chalk) and overlain by Pleistocene loess (Elias, 1931, Univ. Kansas Bull., vol. 32, no. 7, Kansas Geol. Surv. Bull., no. 18, pp. 131-180). That this bird was a contemporary of *Hesperornis* is inconceivable, and the type came almost certainly from the Ogallala or possibly from the loess.

The photograph clearly represents a right carpometacarpus, not a left. Shufeldt often had difficulty in distinguishing rights from lefts.

This is neither a bobwhite quail, nor a phasianid, nor even a member of the order Galliformes. It belongs in the passerine family Icteridae and is close to and perhaps identical with *Sturnella*.

#### 7. *Corvus betfianus* Kretzoi

*Corvus betfianus* Kretzoi, 1962 (Feb.), Aquila, vol. 67-68, p. 172 (holotype from Betfia 5, distal portion of left carpometacarpus, Mus. Oradea, no. 1899 a/4).

MIDDLE LOWER PLEISTOCENE (Biharian). RUMANIA: Betfia 5.

Inadequately described, without measurements or illustration. Mourer-Chauviré (1975, Doc. Lab. Géol. Fac. Sci. Lyon, no. 64, p. 237) suggested it may be a synonym of *Corvus hungaricus*, of which, however, the carpometacarpus is unknown.

#### 8. *Cygnus bilanicus* Laube

*Cygnus bilanicus* Laube, 1909, Lotos, vol. 57, p. 159, pl. 1 (holotype from Preschen, impression of radius, ulna, and incomplete carpometacarpus, Teplitz Mus.).

LOWER MIOCENE (Aquitania plastic clay). CZECHOSLOVAKIA: Preschen, near Bilin, at foot of Erz Mountains.

According to Lambrecht (1933, Handb. Palaeorn., pp. 383, 674), it seems to be a bird of prey, not a swan.

9. *Dakotornis cooperi* Erickson

*Dakotornis cooperi* Erickson, 1975 (Dec. 19), Sci. Publ. Mus. Minnesota, vol. 3, no. 1, p. 1, figs. 1-3 (holotype from Wannagan Creek, right humerus, Science Mus. of Minnesota, no. P74.24.106).

UPPER PALEOCENE (Tongue River Formation). NORTH DAKOTA: Billings County: Wannagan Creek, in NW 1/4, Sec. 18, Township 141 N, Range 102 W).

Type, by original designation of genus *Dakotornis* Erickson and family Dakotornithidae Erickson (loc. cit.).

Described as "closely allied to the ibises, yet similarity to a number of diverse groups is noted." Needs comparison with *Proplegadis fisheri* Harrison and Walker (1971), which is of about the same size and with which it is practically contemporaneous.

10. *Dolichonyx kruegeri* Fischer and Stephan

*Dolichonyx kruegeri* Fischer and Stephan, 1971, Wiss. Zeitschr. Humboldt-Univ. Berlin, Math.-Nat. R., vol. 20, no. 4-5, p. 597, pls. 3, 5, 6, figs. 18-21 (holotype from Pio Domingo Cave, right humerus, Univ. Habana, no. Av. 877/67; paratypes prox. end humerus, juv. humerus, left ulna, 6 tibiotarsi, right tarsometatarsus, nos. Av. 878-887/67).

UPPER PLEISTOCENE (cave deposit). CUBA: Prov. Pinar del Río: Pío Domingo Cave.

This is almost certainly the female of one of the two living Cuban species of *Agelatus*, with which it was not compared.

11. *Eopteryx mississippiensis* O. Meyer

*Eopteryx mississippiensis* O. Meyer, 1887, Ber. Senckenberg. Naturg. Ges. Frankfurt am Main for 1886, p. 14, pl. 2, fig. 22a-c (holotype from Jackson, fragmentary dorsal vertebra, Senckenbergian Mus.?).

UPPER EOCENE (Jackson Formation). MISSISSIPPI: Jackson.

Type by monotypy of genus *Eopteryx* O. Meyer (loc. cit.).

12. *Falco falconellus* Shufeldt

*Falco falconella* Shufeldt, 1915 (Feb.), Trans. Conn. Acad. Arts Sci., vol. 19, p. 40, pl. 15, figs. 139-143 (types from Dry Creek?, unguis phalanx, upper part of "left" [=right] coracoid, distal part of left humerus, pedal phalanx, and fragment of a condyle of a long bone, "belonging to the same individual," Yale Peabody Mus., no. 863).

MIDDLE EOCENE (Bridger Formation). WYOMING: Uinta County: Dry Creek?

Wetmore stated (1936, Proc. U. S. Nat. Mus., vol. 84, no. 3003, pp. 77-78) that the type material included a mammal bone (the last fragment listed above) and representatives of at least three orders of birds, none falconiform and none identifiable.

13. *Fringilla trochanterica* Giebel

*Fringilla trochanterica* Giebel, 1847, Fauna der Vorwelt, vol. 1, pt. 2, p. 15 (type from the Seveckenberg near Quedlingburg, right femur).

PLEISTOCENE. GERMANY: Seveckenberg near Quedlingburg.

According to Lambrecht (1933, Handb. Palaeorn., p. 644), this represents some living species. Giebel compared it with "*Fr.*" *linaria*.

14. *Hirundo fossilis* Giebel

*Hirundo fossilis* Giebel, 1847, Fauna der Vorwelt, vol. 1, pt. 2, p. 18 (types from the Seveckenberg near Quedlingburg, 2 distal fragments of radius, upper part of tarsometatarsus, coracoid, carpometacarpus).

PLEISTOCENE. GERMANY: Seveckenberg near Quedlingburg.

Giebel compared it with the Recent *H. rustica*, with which Lambrecht (1933, Handb. Palaeorn., p. 636) tentatively synonymized it.

15. *Laornis edwardsianus* Marsh

*Laornis edwardsianus* Marsh, 1870 (March), Amer. Jour. Sci., ser. 2, vol. 49, no. 146, p. 206 (holotype from Pemberton Marl Company quarry, distal portion of right tibiotarsus, Yale Peabody Mus. no. 820).—Shufeldt, 1915, Trans. Connecticut Acad. Arts Sci., vol. 19, p. 21, pl. 2, fig. 10 (type restudied).—Cracraft, 1973, Bull. Amer. Mus. Nat. Hist., vol. 151, p. 46, fig. 20 (type restudied).

UPPER CRETACEOUS (lower part of Hornerstown Formation, late Maestrichtian age). NEW JERSEY: Burlington County: Birmingham.

Type by monotypy of genus *Laornis* Marsh (loc. cit.) and family Laornithidae Cracraft (op. cit., p. 44).

Marsh described it in the "Order Natatores" and thought it related to the Anatidae. Shufeldt said it was not a swimmer and implied relationship with cranes or other large waders. Following this lead, Cracraft erected a new family in the suborder Ralli.

Examination of the published photographs shows that the distal end of the external condyle is unnotched, a condition that eliminates the Ralliformes, Ciconiidae, and Phoenicopteriformes. An unnotched condyle is present in the Pelecaniformes, Ardeae, Anseriformes, Accipitriformes, Calliformes, and Charadriiformes, but the photographs are inadequate to permit ordinal assignment of the fossil. If I had to make a guess, it would be Pelecaniformes.

16. *Laurillardia longirostris* Milne-Edwards

*Laurillardia longirostris* Milne-Edwards, 1871, Ois. Foss. France, vol. 2, sig. 47, p. 374, pl. 161, fig. 1 (holotype from Montmartre, skeleton impression, Paris Mus.).

UPPER EOCENE (Gypse de Montmartre). FRANCE: Paris: Montmartre.

Type by original designation of genus *Laurillardia* Milne-Edwards. Apparently a member of one of the higher orders.

17. *Laurillardia munieri* Flot

*Laurillardia munieri* Flot, 1891, Mém. Soc. Géol. France, Paléont. Mém., no. 7, text-fig. 3, pl. 18, fig. 3 (holotype from Montmorency, skeleton impression).

UPPER EOCENE (Gypse de Montmartre). FRANCE: Seine-et-Oise: Montmorency.

18. *Laurillardia parisiensis* Flot

*Laurillardia parisiensis* Flot, 1891, Mém. Soc. Géol. France, Paléont. Mém., no. 7, p. 1, text-fig. 1, pl. 18, figs. 1-2 (type from Montmorency, skeleton impression and counter plate).

UPPER EOCENE (Gypse de Montmartre). FRANCE: Seine-et-Oise: Montmorency.

Flot places the genus between the Turdidae and Sturnidae.

19. *Macrornis tanaupus* Seeley

*Macrornis tanaupus* Seeley, 1866, Ann. Mag. Nat. Hist., ser. 3, vol. 18, p. 110 (holotype from Hordwell, proximal part of right tibiotarsus, Woodwardian Mus.).

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

Type of genus *Macrornis* Seeley (loc. cit.).

Said to be a struthious bird as large as an emu, but showing similarities to some waders and gallinaceous birds.

20. *Marinavis longirostris* Harrison and Walker

*Marinavis longirostris* Harrison and Walker, 1977 (Sept.), Tertiary Research Special Paper, no. 3, p. 6, fig. 1 (holotype from Abbey Wood, fragment of right dentary and associated fragment of left edge of rostrum, Brit. Mus. no. Z4267; paratype terminal hook of premaxilla, no. A4268; referred left carpometacarpus, no. A4233).

LOWER EOCENE (Blackheath beds). ENGLAND: Kent: Abbey Wood.

Type species of genus *Marinavis* Harrison and Walker and family Marinavidae Harrison and Walker (loc. cit.).

Described in order Procellariiformes with similarities to Pelecaniformes. Better material is needed for definite assignment to a major taxon.

### 21. *Metapteryx bifrons* DeVis

*Metapteryx bifrons* DeVis, 1892, Proc. Linn. Soc. New South Wales, ser. 2, vol. 6, p. 453, pl. 23, fig. 8 (holotype from Queensland, juvenile tarsometatarsus, Queensland Mus.).

UPPER PLEISTOCENE (Nototherium beds). QUEENSLAND.

Type by monotypy of the genus *Metapteryx* DeVis.

Described in the family Apterygidae, but almost certainly a partly grown emu.

### 22. *Miocorvus larteti* (Milne-Edwards)

*Corvus larteti* Milne-Edwards, 1871, Ois. Foss. France, vol. 2, sig. 48, p. 381, pls. 151-152, 153, fig. 21 (types from Sansan, tarsometatarsus, tibiotarsus, ends of femur, coracoid, scapula, humerus, ulna, carpometacarpus, phalanges, quadrate).—*Miocorax larteti* Lambrecht, 1933, Handb. Palaeorn., p. 636.—*Miocorvus larteti* Lambrecht, op. cit., p. 1005 (in index).

UPPER MIOCENE (Sansan limestone, Helvetian). FRANCE: Gers: Sansan.

Generic type of *Miocorax* Lambrecht (op. cit., p. 636), preoccupied by *Miocorax* Lambrecht (p. 291) for a cormorant. "Corrected" to *Miocorvus* on p. 1005 (in index) and on p. 1024 (Druckfehler).

Needs restudy.

### 23. *Motacilla humata* Milne-Edwards

*Motacilla humata* Milne-Edwards, 1871, Ois. Foss. France, vol. 2, p. 390, pl. 158, figs. 7-11; pl. 159, figs. 10-11 (type from Langy, tibiotarsus, Paris Mus.).

LOWER MIOCENE (Aquatianian). FRANCE: Allier: environs of Langy.

### 24. *Motacilla major* Milne-Edwards

*Motacilla major* Milne-Edwards, 1871, Ois. Foss. France, vol. 2, p. 391, pl. 158, figs. 1-6; pl. 159, figs. 13-14 (types from Langy, tarsometatarsus, tibiotarsus, Paris Mus.).

LOWER MIOCENE (Aquatianian). FRANCE: Allier: Langy.

Lambrecht (1933, Handb. Palaeorn., p. 641) pointed out that the plate showed the hypotarsus open, unlike the condition in Passeres.

### 25. *Onychopteryx simpsoni* Cracraft

*Onychopteryx simpsoni* Cracraft, 1971 (April), Ibis, vol. 113, no. 2, p. 230, pl. 9 (holotype from Cañadon Hondo, proximal end of right tarsometatarsus, Amer. Mus. Nat. Hist., no. 3188).

LOWER EOCENE (Casamayor Formation). ARGENTINA: Chubut: Cañadon Hondo near Paso Niemann, south of Río Chico del Chubut).

Type by original designation of genus *Onychopteryx* Cracraft (p. 230) and family Onychopterygidae (p. 229). Described in "order" Opisthocomiformes, to which it seems unrelated.

### 26. *Palaeoapterodytes ictus* (Ameghino)

*Apterodytes ictus* Ameghino, 1901, Anales Soc. Cient. Argentina, vol. 51, p. 81 (holotype from Golfo de San Jorge, proximal part of right humerus, Mus. Argentino Ciencias Naturales, Buenos Aires, unnumbered).—Simpson, 1946, Bull. Amer. Mus. Nat. Hist., vol. 87, art. 1, pp. 31, 49 (species indeterminate; pathological?).

*Palaeoapterodytes ictus* Ameghino, 1905, Anal. Mus. Nac. Buenos Aires, vol. 13, p. 120, pl. 3, fig. 16 (descr., meas.).—Lambrecht, 1933, Handb. Palaeorn., p. 229 (holotype seems broken, not atrophied).—Brodkorb, 1963, Bull. Florida State Mus., vol. 7, no. 4, p. 236

(as synonym of *Palaeospheniscus gracilis*).—Simpson, 1972, Amer. Mus. Novitates, no. 2488, p. 29 (holotype is broken and abraded, not pathological, but is indeterminate beyond family level).

MIOCENE (upper Patagonian). ARGENTINA: Golfo de San Jorge.

Type of genus *Apterodytes* Ameghino, 1901 (preoccupied by *Apterodytes* Hermann, 1783).

Type of genus *Palaeapterodytes* Ameghino, 1905 (loc. cit.).

Probably a synonym of an earlier described species of Spheniscidae.

#### 27. *Palaeolestes gorei* DeVis

*Palaeolestes gorei* DeVis, 1911, Ann. Queensland Mus., no. 10, p. 15, pl. 2, figs. 4-6 (holotype from Yandilla, toe phalanx, Queensland Mus.).

UPPER PLEISTOCENE (Darling Downs Clay). AUSTRALIA: Queensland: Yandilla.

Type by monotypy of genus *Palaeolestes* De Vis (loc. cit.).

Described as a member of the Accipitres, but it is doubtfully avian.

#### 28. *Palaeospiza bella* Allen

*Palaeospiza bella* J. A. Allen, 1878 (3 May), Bull. U.S. Geol. Geogr. Surv., vol. 4, no. 2, p. 443, pl. 1 (holotype from Florissant, skeleton on plate and counter plate, now in Mus. Comp. Zool., Harvard Univ.).—Wetmore, 1925, Bull. Mus. Comp. Zool., vol. 67, no. 2, text-figs. 1-2, pls. 1-4 (type restudied).

UPPER MIOCENE (Florissant Lake Beds). COLORADO: Teller County: Florissant.

Type by monotypy of genus *Palaeospiza* Allen (loc. cit.) and family Palaeospizidae Wetmore (op. cit., p. 190).

Usually treated as a primitive oscine passeriform, but even the ordinal assignment may be incorrect.

#### 29. *Palaeotringa vetus* Marsh

*Palaeotringa vetus* Marsh, 1870 (March), Amer. Jour. Sci., ser. 2, vol. 49, no. 146, p. 209 (holotype from Arneytown, three fragments of distal portion of left tibiotarsus, Acad. Nat. Sci. Philadelphia).—Shufeldt, 1915, Trans. Conn. Acad. Arts Sci., vol. 19, p. 24, pl. 8, fig. 59 (type restudied).

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

Appears to be indeterminate.

#### 30. *Pelophilus radoboyensis* Tschudi

*Pelophilus radoboyensis* Tschudi, 1839, Mém. Soc. Sci. Neuchâtel, vol. 2, art. 3, pp. 22, 47, 84, pl. 1, fig. 2 (holotype from Radoboj, impression of legs, K. Hof-Mineralienkabinet, Wien).—*Fringilla?* *radoboyensis* H. von Meyer, 1865 (Aug.), Palaeontographica, vol. 14, no. 3, p. 125, pl. 30, fig. 1 (new name for *Pelophilus radoboyensis* Tschudi).

UPPER MIOCENE (diatomite beds). RUMANIA: Croatia: Radoboj.

The generic type, *Pelophilus agassizi* Tschudi, is a large toad from the Upper Miocene Oeningen chalk of Baden, Germany. *Pelophilus radoboyensis* was also described by Tschudi as a member of the Anura. Meyer renamed it *Fringilla?* *radoboyensis* when he transferred it tentatively to Fringillidae. While it is avian, the family cannot be determined from the very poor figure.

#### 31. *Piscator tenuirostris* Harrison and Walker

*Piscator tenuirostris* Harrison and Walker, 1976 (Dec.), Zool. Jour. Linn. Soc., vol. 59, p. 328, pl. 2, figs. A-D (holotype from Hordle, anterior end of premaxilla, Brit. Mus. no. A146).

UPPER EOCENE (Hordwell beds). ENGLAND: Hampshire: Hordle (Hordwell). Described in Phalacrocoracidae.



32. *Ptenornis* Seeley

*Ptenornis* Seeley, 1866, Ann. & Mag. Nat. Hist., ser. 3, vol. 18, p. 109 (sternal end of right coracoid, Woodwardian Mus., Cambridge; no species name included).  
LOWER TERTIARY. ENGLAND: Isle of Wight: Hempstead.

33. *Sitta*? *cuvieri* Gervais

*Sitta*? *cuvieri* Gervais, 1852, Zoologie et paléontologie française, ed. 1, p. 228, pl. 50, fig. 2 (holotype from Montmartre, obverse and reverse skeleton impression, Paris Mus.).—*Palaegithalus cuvieri* Milne-Edwards, 1871, Ois. Foss. France, vol. 2, p. 378, pl. 161, figs. 2-3 (type restudied).—*Palaegithalus* (?) *cuvieri* Lambrecht, 1933, Handb. Palaeorn., p. 640 (placed in Paridae).

UPPER EOCENE (Gypse de Montmartre). FRANCE: Paris: Montmartre.

Type by monotypy of genus *Palaegithalus* Milne-Edwards (loc. cit.). Family uncertain; does not belong in Sittidae.

34. *Sitta senogalliensis* Portis

*Sitta senogalliensis* Portis, 1888, Mem. R. Accad. Sci. Torino, ser. 2, vol. 38, p. 184, fig. 3 (type from Sinigaglia, skeleton impression lacking legs and pelvis).

LOWER PLIOCENE (Messiniano). ITALY: Sinigaglia.

Needs restudy.

35. *Turdicus tenuis* Kretzoi

*Turdicus tenuis* Kretzoi, 1962 (Feb.), Aquila, vol. 67-68, p. 173 (holotype from Betfia 5, eroded left coracoid, Mus. Oradea, no. 3).

UPPER LOWER PLEISTOCENE (Biharian). RUMANIA: Bihar: Betfia 5.

Size of *Turdus viscivorus*, but more slender; procoracoid long and slender, with double medial margin. Species dubia. Type by monotypy of genus *Turdicus* Kretzoi.

36. *Turdus bresciensis* Giebel

*Turdus bresciensis* Giebel, 1847, Fauna der Vorwelt, vol. 1, pt. 2, pp. 13, 39 (holotype from Rizza, humerus).

UPPER PLEISTOCENE (bone breccia). SARDINIA: Rizza.

The statement that the humerus is similar in size and form to that of *T. merula* or *T. pilaris* cannot qualify as a diagnosis, but Giebel's reference to Rudolph Wagner's illustration (1832, Abhandl. k. bayr. Akad. Wiss., vol. 1, pp. 751-786, pl. 2, fig. 57) saves this from being a nomen nudum. It probably is a synonym of some living species.

## INDICIA AVIUM

Feather impressions, egg shells, and footprints add to our knowledge of the history of birds. Although they are indeterminable specifically, generically, and in some cases at any taxonomic level below class, some have been given generic and specific names. These nomina vana are treated below in three groupings, Plumae, Putamina Ovorum, and Vestigia Avium.

A few of the multitude of names applied to the notorious Triassic and earlier "foot marks of birds (*Ornithichnites*)" are included in the section entitled Nomina non Avium.

## PLUMAE

Three generic and six specific names have been based on feather impressions, none identifiable at those levels.

1. *Archaeopteryx lithographica* Meyer

*Archaeopteryx lithographica* Hermann von Meyer, 1861 (after 11 Oct., before 9 Nov.), Neues Jahrb. Geognos., Geol., Petref.-Kunde, Jahrg. 1861, no. 5, p. 679 (holotype from Solnhofen [now Solnhofen], obverse of left remex, now in Geol.-Pal. Abt., Mus. f. Naturkunde, Berlin; reverse now in Pal. Staatssammlung, München; no descr. but based on short descr. and meas. in Meyer, after 30 Sept. 1861, op. cit., p. 561).—Meyer, 1862, Palaeontographica, vol. 10, pt. 1, p. 53, pl. 8, fig. 3 (descr. holotype feather).—Lambrech, 1933, Handb. Palaeorn., p. 80, fig. 29 (reverse of holotype).—Ostrom, 1970, Science, vol. 170, p. 537 (holotype said to be probably not identifiable at any taxonomic level).

*Archeopteryx* [sic] *lithographica* Owen, 1864, Philos. Trans. Roy. Soc. London, p. 33 (holotype said to be not specifically identifiable).

UPPER JURASSIC (middle Kimmeridgian, Solnhofen limestone). BAVARIA: Solnhofen (exact locality unknown).

Type by monotypy of the nominal genus *Archaeopteryx* Meyer (loc. cit.), the nominal family Archaeopterygidae Huxley (1872) and the nominal order Archaeopterygiformes Fürbringer (1888).

Transferred from Part 1 of the Catalogue. The holotype and only specimen is much smaller than the other known Jurassic remiges.

2. *Fontinalis pristina* Lesquereux

*Fontinalis pristina* Lesquereux, 1883, Rept. U. S. Geol. Surv. Terr., vol. 8, p. 135, pl. 21, fig. 9 (holotype from Florissant, "moss," U. S. Nat. Mus.).—Knowlton, 1916, Proc. U. S. Nat. Mus., vol. 51, p. 245 (type is a feather fragment, not a moss).—Wetmore, 1925, Bull. Mus. Comp. Zool., vol. 67, no. 2, p. 184 (Aves incertae sedis).

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

Type by monotypy of the nominal genus *Fontinalis* Lesquereux.

3. *Ornitholithes bosniaskii* Portis

*Ornitholithes bosniaskii* Portis, 1888, Mem. Accad. R. Torino, ser. 2, vol. 38, p. 189, figs. 9-10 (syntypes from Ancona, 2 feathers in coll. Cav. Sigismondo de Bosniaski; 1 unfigured feather in Museo di Pisa).

LOWER PLIOCENE (Messiniano). ITALY: Prov. Livorno: Ancona.

4. *Ornitholithes faujasi* Zigno

*Ornitholithes faujasi* Zigno [MS.], Omboni, 1885, Atti R. Ist. Veneto Sci. Lett. Arti, ser. 6, vol. 3, p. 772, pl. 12, figs. 1-3 (syntypes from Vèstena Nuova, 2 feathers, Paris Mus.).

MIDDLE EOCENE (Lutetian). ITALY: Verona: Monte Bolca: Vèstena Nuova.

*Ornitholithes* was proposed as a French vernacular by Gervais in his thesis (1844, Remarques sur les Oiseaux Fossiles, pp. 5-7 et seq.) for all fossil remains of birds, whether of bones (for which he erected the form genus *Osteornis* to include those not specifically identifiable), footprints (for which he adopted Hitchcock's form genus *Ornithichnites*), feathers, or eggs. *Ornitholithes* is apparently a translation of *Ornitholithus* Linnaeus (1768, Syst. Nat., ed. 12, vol. 3, p. 157), used in the same sense, although Gervais fails to cite Linnaeus.

The Italian paleontologists Zigno, Omboni, and Portis later used *Ornitholithes* exclusively for fossil feathers. As I have been unable to find an earlier use of this name as a form genus, I hereby designate *O. faujasi* Zigno as type of the form genus *Ornitholithes* Zigno (in Omboni, 1885).

5. *Ornitholithes gabbrensis* Portis

*Ornitholithes gabbrensis* Portis, 1888, Mem. Accad. R. Torino, ser. 2, vol. 38, p. 192, figs. 13-17 (syntypes from Gabbro, 5 feathers in coll. Sigismondo de Boniaski; an additional feather said to be in Museo Geologico di Bologna on authority of Capellini).  
LOWER PLIOCENE (Messiniano). ITALY: Livorno: Gabbro.

6. *Ornitholithes procaccinii* Portis

*Ornitholithes procaccinii* Portis, 1888, Mem. Accad. R. Torino, ser. 2, vol. 38, p. 188, figs. 5-8 (holotype from San Angelo, feather in coll. Prof. Scarabelli, Bologna).  
LOWER PLIOCENE (Messiniano). ITALY: Sinigaglia: San Angelo.

7. *Ornitholithes tenuipennis* Zigno

*Ornitholithes tenuipennis* Zigno [MS.], Omboni, 1885, Atti R. Ist. Veneto Sci. Lett. Arti, ser. 6, vol. 3, p. 772, pl. 13, figs. 4-7 (syntypes from Monte Bolca, 2 feathers in coll. Achille De Zigno; 1 feather in Geol. Coll., Univ. Padova).  
MIDDLE EOCENE (Lutetian). ITALY: Verona: Monte Bolca.

## PUTAMINA OVORUM

Two generic and 10 specific names of birds have been proposed on the basis of egg shells or their fragments, all of ratite size. In the present stage of our knowledge it is very doubtful that assignment finer than family can be made in the absence of association with identifiable osteological remains.

1. *Aepyornis grandidieri* Rowley

*Aepyornis grandidieri* Rowley, 1868 (Apr.), Proc. Zool. Soc. for 1867, pt. 3, p. 892 (holotype from Cape Ste. Marie, egg shell fragment, coll. Alfred Grandidier).  
QUATERNARY. MADAGASCAR: Cape Sainte Marie.

2. *Psammornis lybicus* Moltoni

*Psammornis lybicus* Moltoni, 1928, Ann. Museo Civico Storia Naturale Giacomo Doria, vol. 52, p. 399, fig. (not seen by me, orthography from Lambrecht; holotype from Giarabub, egg shell fragment, Mus. Civico Giacomo Doria, Genoa, no. MSNG 25 172).  
*Psammornis libycus* Sauer, 1969, Bonner Zool. Beiträge, vol. 20, no. 1-3, p. 293, figs. 6-8 (not separable from *Struthio*).  
CENOZOIC (sand dune). LIBYA: Giarabub.

3. *Psammornis rothschildi* Andrews

*Psammornis rothschildi* Andrews, 1911, Ver. 5 Internat. Orn. Kongr. Berlin, 1910, p. 169 (syntypes from east of Touggourt, egg shell fragments, Brit. Mus. no. A 1334, and Tring Mus.).—Sauer, 1969, op. cit., p. 292, figs. 1-5 (not separable from *Struthio*).  
CENOZOIC (sand dune). ALGERIA: Touggourt.  
Type by monotypy of the nominal genus *Psammornis* Andrews.

4. *Struthio anderssoni* Lowe

*Struthio anderssoni* Lowe, 1931 (Oct.), Palaeontologia Sinica, ser. C. vol. 6, fasc. 4, p. 26, text-

fig. 2 (syntypes from banks of Hwang Ho, complete egg shell, Brit. Mus. no. A.1308, and 2 complete egg shells in Tring Mus.).

PLEISTOCENE (loess). CHINA: Honan province: banks of Hwang Ho at Wuan, Ho-Yin-Hsien, Hsin-An-Hsien, and Mien-Chih-Hsien. Shansi province: P'ing-Lu-Hsien (Uppsala Museum).

#### 5. *Struthio indicus* Bidwell

*Struthio indicus* Bidwell, 1904, Ibis, ser. 9, vol. 4, p. 760, fig. 7 (syntypes from Nullas, 3 egg shell fragments in Brit. Mus., 2 in Tring Mus., 1 in Calcutta Mus.).

LOWER PLIOCENE? (Siwalik series). INDIA: Uttar Pradesh: Nullas (on Kain River, SW of Allahabad).

#### 6. *Struthio mongolicus* Lowe

*Struthio mongolicus* Lowe, 1931 (Oct.), Palaeontologia Sinica, ser. C, vol. 6, fasc. 4, p. 34, pl. 4, fig. 5 (syntypes in Uppsala Mus., 15 egg shell fragments from Ertemte, 25 fragments from Olan Chorea, 2 fragments from Doshen, and 1 fragment from Tjel-gol-Tabool; figured fragment is from Olan Chorea).

LOWER PLIOCENE (Ertemte stage). MONGOLIA: Olan Chorea, Ertemte, Doshen, and Tjel-gol-Tabool.

#### 7. *Struthio oshanai* Sauer

*Struthio oshanai* Sauer, 1966, Cimebasia, no. 14, p. 18, figs. 2-15 (holotype from Beisebvlakte, egg shell fragment, State Museum Windhoek, no. PA 15340; 82 referred fragments).

PLIOCENE OR PLEISTOCENE? (well core at depth of 114 feet). NIMBIA (formerly SOUTH WEST AFRICA): Etosha Pan: Beisebvlakte.

#### 8. *Struthiolithus adzalycensis* Roshin

*Struthiolithus adzalycensis* Roshin, 1962, Trudy Odesskogo um-ta im. I. I. Mechnikova, vol. 152, ser. geol.-geog. Nauk, no. 8 (holotype from Buldyka, entire egg shell; reference from Ganya and Kurochkin, 1967, Mesto i Znachenie Iskopaemykh Mlekopitayushikh Moldavii v Kainozoe SSSR, p. 106).

LOWER PLIOCENE. UKRAINE: village of Buldyka (near Odessa).

#### 9. *Struthiolithus alexejevi* Roshin

*Struthiolithus alexejevi* Roshin, 1962, Trudy Odesskogo Mechnikova, vol. 152, no. 8 (holotype from Buldyka, entire egg shell; reference from Ganya and Kurochkin, loc. cit.).

LOWER PLIOCENE. UKRAINE: village of Buldyka (near Odessa).

#### 10. *Struthiolithus chersonensis* Brandt

*Struthiolithus chersonensis* Alexander von Brandt, 1873, Bull. Acad. Sci. St. Petersburg, vol. 18, p. 158 (holotype from near Malinkova, egg shell fragments, present whereabouts unknown).—Lambrecht, 1933, Handb. Palaeorn., p. 104 (history of holotype).—Burchak-Abramovich and Vekua, 1971, Acta Zoologica Cracoviensia, vol. 16, no. 1, p. 22 (age uncertain).

LOWER PLIOCENE? UKRAINE: Kherson province: near village of Malinkova. Type of genus *Struthiolithus* Brandt, by monotypy.

### VESTIGIA AVIUM

This section includes two generic and six specific names based on fossil footprints that are apparently traces of birds of Cretaceous or Tertiary age. It

does not include the numerous Triassic and Jurassic "ornithichnites" originally thought to have been made by birds but now known to be of amphibian or reptilian origin. Naming footprints has muddied the taxonomic literature badly.

1. *Antarctichnus fuenzalidae* Coacevich and Lamperein

*Antarctichnus fuenzalidae* Coacevich and Lamperein, 1970, Inst. Antártico Chileno Ser. Cient., vol. 1, no. 1, p. 68, text-fig. 6, pls. 2-3 (holotype from Peninsula Fildes, 3 imprints of a pair of tracks of both feet, Inst. Antárt. Chileno, no. IRJ 8; 3 paratypes and 7 other trackways).

OLIGOCENE OF MIOCENE (Unit 4 interbedded in volcanic tuff with *Nothofagus* and other plants). SOUTH SHETLAND ARCHIPELAGO: King George Island: 1200 meters south of Base Presidente Frei.

Type by original designation of the nominal genus *Antarctichnus* Coacevich and Lamperein (p. 66). Described in the family Rallidae.

2. *Ignotornis mcconnelli* Mehl

*Ignotornis mcconnelli* Mehl, 1931 (May), Amer. Jour. Sci., ser. 5, vol. 21, no. 125, p. 494, fig. 1 (holotype from near Golden, trackway of 3 left and 3 right footprints, Univ. Colorado Mus., Boulder, no. 17614).

UPPER CRETACEOUS (Dakota Sandstone, Cenomanian age). COLORADO: Jefferson County: 1 1/2 miles northwest of Golden.

Type by original designation of the nominal genus *Ignotornis* Mehl (p. 443). Not certainly avian.

3. *Ornithichnites argenterae* Portis

*Ornithichnites* [sic] *argenterae* Portis, 1879, Atti R. Accad. Sci. Torino, vol. 15, p. 221, pl. 15 (holotype from Argentera, track, Istituto Geologico di Bologna).

UPPER EOCENE (Liguriano). ITALY: Piemonte: Argentera.

Portis consistently misspelled *Ornithichnites* and did not intend to propose a new genus.

4. *Ornithichnites taurinus* Portis

"Ornithichniti di Verrua (collina di Torino)" Portis, 1879, Atti R. Accad. Sci. Torino, vol. 15, p. 381 (descr. bird tracks).

*Ornithichnites* [sic] *taurinus* Portis, 1888, Mem. Accad. R. Torino, ser. 2, vol. 38, p. 201 (holotype from Verrua, but the name is based on the tracks described in 1879).

UPPER EOCENE (Liguriano). ITALY: Piemonte: Verrua Savoja on Collina di Torino.

5. *Ornithoidichnites badensis* Böhm

*Ornithoidichnites badensis* Böhm, 1896, Freiburger Universitäts-Festprogramm zum seibzigsten Geburtstag seiner Königlichen Hoheit des Grossherzogs Friedrich, p. 229, fig. (type from Bellingen, 10.3-toed tracks, Mus. Badischen Geologischen Landesanstalt).

UPPER OLIGOCENE (Cyrene marl, Chattian age). GERMANY: Baden-Württemberg: Kreiss Lörrach: Bellingen.

6. *Urmiornis abeli* Lambrecht

*Urmiornis abeli* Lambrecht, 1938, Palaeobiologica, vol. 6, pt. 2, p. 242, pl. 19 (holotype from Jebel Hamrin, 3 footprints).

PLIOCENE (upper level of lower Fars beds). IRAN: Jebel Hamrin.

## NOMINA NUDA

1. *Anas arcensis* Kretzoi, 1962, *Aquila*, vol. 67-68, p. 170 (hill on Royal Palace grounds, Budapest, Hungary).
2. *Anas crecca* Milne-Edwards, 1871, *Oiseaux Foss. France*, vol. 2, p. 573 (Aquitanian, Lower Miocène, Langy, France).
3. *Anas macroptera* Milne-Edwards, 1871, op. cit., p. 573 (Aquitanian, Langy, France).
4. *Anser brumeli* Milne-Edwards, 1871, op. cit., p. 585 (Helvetian, Middle Miocene, Faluns de Suèvres, France).
5. *Anser eldaricus* Burchak-Abramovich and Gadzier, in Anslanova and Burchak-Abramovich, 1968 (30 July), *Acta Zoologica Cracoviensia*, vol. 13, no. 14, pp. 326, 335 (Upper Sarmatian, Lower Pliocene *Hipparion* fauna, Eldar, Georgian SSR).
6. *Archaeopteryx vicensis* Anonymous, in Lambrecht, 1933, *Handb. Palaeorn.*, p. 80 (Vicenza, Italy). A pterosaur, fide Otto Kleinschmidt.
7. *Ardea effosa* Lepsius, 1887, *Geologie von Deutschland*, p. 623 (Lower Miocene, Weisenau, Germany).
8. *Ardea formosa* Milne-Edwards, op. cit., p. 572 (Aquitanian, Langy, France).
9. *Ardea latipes* Lepsius, 1887, *Geologie von Deutschland*, p. 623 (Lower Miocene, Weisenau, Germany).
10. *Argala arvernensis* Milne-Edwards, 1871, op. cit., p. 572 (Aquitanian, Langy, France).
11. *Biziura latouri* Forbes, 1891, *Trans. New Zealand Inst.*, vol. 24, p. 188 (Quaternary, New Zealand, *Brit. Mus.*). A synonym of Recent *Biziura lobata* (Shaw) fide Harrison and Walker (1970, *Bull. Brit. Orn. Club*, vol. 90, no. 1, pp. 6-10, pl. 1).
12. *Carbo risgoviensis* Oskar Fraas, in Engel, 1908, *Geologischen Handweiser durch Württemberg*, ed. 3, p. 567 (Upper Miocene Ries chalk, the Spitzberg, Germany, Stuttgart Mus.).
13. *Gallus steinheimensis* Theodor Fraas, in Engel, 1908, op. cit., p. 567 (Upper Miocene, Steinheim, Germany, Stuttgart Mus.).
14. *Gypaetus osseticus* Burchak-Abramovich, 1973, *Theses of Reports presented to IV All-Union Conference of Quaternary Period*, p. 82 (paleolithic, Georgian SSR).
15. *Himantopus brevipes* Milne-Edwards, 1871, *Ois. Foss. France*, vol. 2, p. 572 (Aquitanian, Langy, France).
16. *Osteornis scolopacinus* Gervais, 5 Aug. 1844, *Reimarkes sur les Oiseaux Fossiles*, p. 38, cf. also p. 12 (Cretaceous [i.e. Oligocene], Glaris canton, Switzerland, skeleton of passerine bird size of a lark; no descr., based on report by Meyer, 1839, *Jahrb. f. Min.*, pp. 684-685, which also has no descr.). Later called *Protornis glarniensis* Meyer, also a nomen nudum.
17. *Otis agilis* Milne-Edwards, 1871, op. cit., p. 572 (Aquitanian, Langy, France).
18. *Palaeociconia* Romer, 1966, *Vert. Paleontology*, ed. 3, p. 376. An apparent lapsus for *Palaeociconia* Moreno and Mercerat.
19. *Palaortyx media* Milne-Edwards, 1871, op. cit., p. 571 (Aquitanian, Langy, France).
20. *Palaetus rapax* Milne-Edwards, 1871, op. cit., p. 571 (Aquitanian, Langy, France). The generic name is also a nomen nudum.
21. *Parapavo oklahomensis* Stovall and Sandoz, 1936, *Proc. Oklahoma Acad. Sci.*, vol. 16, p. 77 (Chickasha, Oklahoma, horizon not indicated, left tarsometatarsus with complete spur core, Univ. Okla. Mus. Paleo. no. 4500). Abstract only, no description.
22. *Phalacrocorax major* Forbes, 1892, *Trans. New Zealand Inst.*, vol. 24, p. 189 (Pleistocene, New Zealand).
23. *Phasianus nicheti* Gaillard, in Bastin, Apr. 1933, *Bull. Soc. Hist. Nat. Ardennes*, vol. 28, no. 30, p. 52 (Pleistocene, Grotte de Nichet at Fromelennes, Ardennes, France).
24. *Protornis glarniensis* Meyer, 1844, *Jahrb. f. Min.*, p. 338 (Cretaceous [Oligocene], Glaris, Switzerland). Later described as *Protornis glaronensis* Meyer.
25. *Titanornis* Romer, 1966, *Vert. Paleontology*, ed. 3, p. 376. Apparent lapsus for *Titanornis* Brodkorb.
26. *Tomodus* Romer, 1966, *Vert. Paleontology*, ed. 3, p. 376. Preoccupied by *Tomodus* Trautschold, 1879, and by *Tomodus* Davis, 1883. An apparent lapsus for *Tolmodus* Ameghino.

## NOMINA NON AVIUM

This section enumerates taxa described in Aves but belonging elsewhere. It is a witches' brew whose ingredients include a catfish skull, some moss, bones of flying dragons, a wooden fetish, the snout of a crocodile, a rat's foot, the Leviathan's hip bone, toe nails of an anteater, dinosaur traces, bits of the Loch Ness monster, vestiges of the Flood, and other scarce commodities.

I have included names founded on the "bird tracks" described by Edward Hitchcock under the terms *Ornithichnites* and *Ornithoidichnites* as for the most part they were based on described and figured specimens. Many authors have refused to accept these and their binomials as generic and specific terms because his practice of repeatedly changing names was so capricious. Fortunately for avian paleontology all the tracks named by Hitchcock are from deposits that long antedate the origin of birds.

1. *Alabamornis gigantea* Abel, 1906 (Aug. 1), Centralblatt f. Min. Geol. Pal., no. 15, p. 458, figs. 3-4 (Upper Eocene Jackson Formation, Choctaw County, Alabama, U. S. Nat. Mus.). Type by monotypy of the genus *Alabamornis* Abel. Described as the coracoid of a giant penguin, it is the pelvis of *Basilosaurus cetoides* (Owen), a zeuglodon, Cetacea, Basilosauridae (see Lucas, 1900, Proc. U.S. Nat. Mus., vol. 23, p. 327, pls. 5-7; Richmond, 1917, op. cit., vol. 53, p. 575).

2. *Aquila antiqua* Shufeldt, 1913 (4 Aug.), Bull. Amer. Mus. Nat. Hist., vol. 32, art. 16, p. 297, pl. 55, fig. 26 (holotype from Church Buttes, Wyoming, Eocene Bridger Formation, Amer. Mus. Nat. Hist. no. 5164, claw core). Type of genus *Minerva* Shufeldt, 1915, Trans. Conn. Acad. Arts Sci., vol. 19, p. 42, pl. 15, figs. 131-136, 148-152a-b, 154a-i. Shufeldt described it as an eagle, then transferred it to the owls, but Wetmore (1933, Amer. Mus. Novitates, no. 680, p. 1) showed it to be from an edentate mammal, probably of the same species as *Aquila ferox*.

3. *Aquila ferox* Shufeldt, 1913, op. cit., p. 297 (holotype from Henrys Fork, Wyoming, Lower Eocene Bridger Formation, claw core and median phalanx, Amer. Mus. Nat. Hist., no. 5163). Shufeldt also described this as belonging to an eagle and then placed it in his supposed genus of owls, *Minerva*, but it is probably from the same species of edentate mammal as *Aquila antiqua* (see Wetmore, loc. cit.).

4. *Bradycneme draculae* Harrison and Walker, Aug. 1975, Palaeontology, vol. 18, p. 565, text-fig. 1c, pl. 65, figs. 1-5 (holotype from Szénpeterfalva, Hatszeg, Transylvania, Romania, Upper Cretaceous, Maestrichtian, distal end of right tibiotarsus, Brit. Mus. no. A 1588). Type by original designation of genus *Bradycneme* Harrison and Walker (p. 565) and family Bradycnemidae Harrison and Walker (p. 564). Described in order Strigiformes. The holotype had been doubtfully referred to *Elopteryx nopcsai* by Andrews (1913, Geol. Mag., n.s., decade 5, vol. 10, no. 5, p. 195), but it almost certainly represents a theropod dinosaur.

5. *Bucklandium diluvii* C. D. E. Koenig, "1825" = 1838, Icones Fossiles Sectiles, Centuria Prima, fig. 91 (Isle of Sheppey, Kent, England, London Clay, Upper Paleocene, Brit. Mus.). Type by monotypy of genus *Bucklandium*. Originally described as from a web-footed water bird, it is a skull of the oldest known catfish according to A. S. Woodward (1932, Text-book of Palaeontology, 2nd English ed. of Zittel, p. 158).

6. *Caenagnathus collinsi* R. M. Sternberg, Jan. 1940, Jour. Paleontology, vol. 14, no. 1, p. 81, figs. 1-5 (holotype lower jaw from southeast of mouth of Sand Creek, Steepleville area, south-central Alberta, Canada, Pale beds of Belly River series, Upper Cretaceous, Campanian age, Geol. Surv. Canada no. 8776). Type by monotypy of genus *Caenagnathus*, family Caenagnathidae, and order Caenagnathiformes (loc. cit.). *Chaenagnathus* W. K. Gregory (1951, Evolution Emerging, vol. 1, p. 322), and *Caenognathus* and *Caenognathidae* (T. E. White, 1973, Annals Carnegie Mus., vol. 44, no. 9) are misspellings. A coelurosaurian theropod dinosaur near *Oviraptor* in family Ornithomimidae (see Brodkorb, 1976, Smithsonian Contr. Paleobiology, no. 27, p. 67).

7. *Caenagnathus sternbergi* Cracraft, Sept. 1971, Jour. Paleontology vol. 45, no. 2, p. 806, fig. 2 (holotype posterior end of right mandibular ramus, Steeveville locality, Alberta, Upper Cretaceous, Nat. Mus. Canada no. 2690). Somewhat smaller than *C. collinsi*.
8. *Cimoliornis diomedeus* Owen, 1846 (preface dated Feb.), Hist. Brit. Foss. Mam. & Birds, p. 545, figs. 230-231 (Cretaceous Wealden Formation, Neocomian age, near Maidstone, England, distal end of tibia, shaft of wing bone). Type by monotypy of *Cimoliornis* Owen. A pterosaur, possibly synonymous with *Ornithocheirus* Seeley, 1866, over which it has priority.
9. *Cretornis hlavaci* Anton Fritsch, 1881, Sitzungsber. Böhm. Ges. Wiss. for 1880, p. 275 (Upper Cretaceous bird wing bones, Bohemia).—*Cretornis hlavatschi* A. S. Woodward, 1932, Text-Book Palaeontology, 2nd English ed. of Zittel, vol. 2, p. 423 (Pterosauria, Ornithocheiridae).
10. *Diatryma* (?) *filifera* Cockerell, 1923 (16 March), Amer. Mus. Novitates, no. 62, p. 4, fig. 1B-C (Eocene, above Seller's ranch, Roan Creek, western Colorado, 2 slabs with supposed feather impressions). Moss filaments, not feathers (W. N. Edwards, 7 July 1923, Nature, vol. 112, p. 9).
11. *Dromaeus* (?) *sivalensis* Lydekker, 1879, Records Geol. Surv. India, vol. 12, pt. 1, p. 53.—Lydekker, 1884, Palaeontologia Indica, ser. 10, vol. 3, pt. 4, p. 145, figs. 2, 4-6 (Pliocene, western Punjab, India, phalanges 1 and 2 of 4th toe).—Lydekker, 1886, op. cit., preface, p. xxiv ("the phalangeals described on pp. 145-6 . . . really belong to an ungulate mammal allied to *Hippopotamus*").
12. *Gobipteryx minuta* Elzanowski, 1974, Palaeontologia Polonica, p. 104, text-figs. 1-2a, pls. 32-33 (holotype from Khulsan, Nemegt basin, Mongolia, Upper Cretaceous Barum Goyot Formation, Campanian age, badly crushed mandible and skull lacking occipital region, Palaeozool. Inst. Polish Acad. Sci. Warsaw, no. MgR-1/12).—Elzanowski, 4 Nov. 1976, Nature, vol. 264, p. 51, figs. 1-2 (another crushed skull descr.). Type by original designation of genus *Gobipteryx*, family Gobipterygidae, and order Gobipterygiformes (all on p. 104), in superorder Palaeognathae. I believe this is a small dinosaur. The quadrate is totally unlike that of any bird.
13. *Gryphus antiquitatis* Gervais, 1844 (5 Apr.), Remarques sur les Oiseaux Fossiles (Thèse de Géologie), p. 30 (île de Lachow and coasts of Bering Sea; "appartient au groupe des Vautours . . . mais nous ignorons ses caractères;" no descr.).—*Gryphus antiquitatis* [sic] Lambrecht, 1933, Handb. Palaeorn., p. 62. Based on Ami Boué, 1837, Guide du géologue voyageur, vol. 2, p. 256 (not seen by me), but this apparently refers to the woolly rhinoceros, *Coelodonta antiquitatis*.
14. *Heptasteornis andrewsi* Harrison and Walker, Aug. 1975, Palaeontology, vol. 18, p. 566, text-fig. 1C, pl. 65, figs. 6-7; pl. 66, figs. 1-7 (Szénpeterfalva, Hátseg, Transylvania, Romania, Upper Cretaceous, Maestrichtian age, holotype distal end left tibiotarsus, Brit. Mus. no. A 4359; paratype dist. end left tibiotarsus, no. A 1528). Type by original designation of genus *Heptasteornis* (p. 566). Described in order Strigiformes, family Bradycnemidae, but like *Bradycneme* it too is almost certainly a theropod dinosaur and is definitely not avian.
15. *Hypornithes jurassica* Jaekel, 1929, Pal. Zeitschrift, vol. 11, p. 211, fig. 20 (tracks from Upper Jurassic Solnhofen limestone, Bavaria). Type by monotypy of genus *Hypornithes* Jaekel. According to Abel (1930, Palaeobiologica, vol. 3, p. 372) it is identical with *Kouphichnium lithographicum* Oppel, the track of a coelurosaurian dinosaur of the family Comsothgnathidae.
16. *Hypselornis sivalensis* Lydekker, 1891, Cat. Foss. Birds Brit. Mus., p. 354 (Upper Pliocene, Siwalik Hills, India, phalanx 2 or right pedal digit III, Brit. Mus. no. 39733). See also Lydekker, 1884, Palaeontologia Indica, ser. 10, vol. 3, pt. 4, p. 146, pl. 4, fig. 8. Type by monotypy of genus *Hypselornis* Lydekker, described in family Casuariidae. According to Lowe (1929, Ibis, ser. 12, vol. 5, no. 4, p. 571, pl. 18, fig. 3) it is a crocodile.
17. *Laopteryx priscus* Marsh, Apr. 1891, Amer. Jour. Sci., ser. 3, vol. 21, p. 341 (quarry 9, Como Bluff, Albany County, Wyoming, Upper Jurassic Morrison Formation, holotype posterior part of skull, Yale Peabody Mus.).—Simpson, 1926, op. cit., ser. 5, vol. 12, p. 3 (type restudied; Marsh's descr. inaccurate; may be pterosaur rather than bird).—*Laopteryx prisca* Brodkorb, 1971, Avian Biology, vol. 1, p. 29 (gender corrected; angle between basitemporal and occiput resembles pterosaur not bird). Almost certainly a pterosaur.
18. *Larus priscus* Giebel, 1847, Fauna der Vorwelt, vol. 1, p. 31 (the Seveckenberg near Quedlingburg, Germany, diluvium, holotype ankle bone). It is the metatarsus of the living jerboa, *Alactaga jaculus*, Dipodidae, Rodentia (Nehring, 1880, Zeitschr. Naturwiss., vol. 53, p. 524).



19. *Leguasia gigantea* Schlegel, 1858, Verslag. Mededeel. Akad. Wetensch. Amsterdam, vol. 7, p. 142 (Mauritius; type a wooden model, Leiden Mus., based on the account of Le Géant (Francois Leguat, 1708, Voyage et aventures en deux isles desertes des Indes Orientales, p. 171). Type by monotypy of *Leguasia* Schlegel. For discussion see Stresemann (1923, Journ. f. Orn., vol. 71, pp. 158-160; 451-456; 511-512), Lambrecht (1933, Handb. Palaeorn., p. 479), and Greenway (1958, Extinct and Vanishing Birds of the World, p. 109). The bird is fictitious and so apparently is Leguat. The book is an antecedent of Defoe's novel *Robinson Crusoe* (1719).

20. *Lithosteornis* Gervais, 5 Aug. 1844, Remarques sur les Oiseaux Fossiles, p. 7 note (preferable alternate to *Osteornis*, but considered too long a word). In the event that *Lithosteornis* be considered validly proposed, I designate as its type species *Osteornis ardeaceus* Gervais, which is likewise the type of *Osteornis*.

21. *Ornithichnites caudatus* Jaekel, 1929, Pal. Zeitschr., vol. 11, p. 211, fig. 20 (tracks from Solnhofen limestone, Upper Jurassic, Bavaria. According to Abel (1930, Palaeobiologica, vol. 3, p. 372) this is a synonym of *Koupichnium lithographicum* Oppel, 1862, a coelurosaurian dinosaur of the family Compsognathidae.

22. *Ornithichnites crassus* E. Hitchcock. Listed without description by Giebel (1847, Fauna der Vorwelt, vol. 1, pt. 2, p. 36 in text), but I have been unable to trace its place of publication by Hitchcock. It is not in Hay's Catalogues.

23. *Ornithichnites culbertsonii* A. T. King, Dec. 1844 (1845), Proc. Acad. Nat. Sci. Philadelphia, vol. 2, p. 176, fig. 2 ("bird" tracks, Carboniferous, Westmoreland County, Pennsylvania). Amphibia?

24. *Ornithichnites diversus* E. Hitchcock, 1836, Amer. Jour. Sci., Amer. Jour. Sci., vol. 29, pp. 316, 319 (new Red Sandstone, Upper Triassic, Horse Race, Massachusetts, tracks). Reptilia.

25. *Ornithichnites diversus clarus* E. Hitchcock, 1836, Amer. Jour. Sci., vol. 29, pp. 317, 320, fig. (bird tracks, Upper Triassic Newark sandstone, Montague and Horse Race in Gill, probably also Northampton and South Hadley canal). Reptilia.

26. *Ornithichnites diversus platyductylus* E. Hitchcock, 1836, Amer. Jour. Sci., vol. 29, pp. 317, 321, fig. (Triassic bird tracks, Horse Race in Gill, Mass.). Along with *O. diversus* it was later named *Steropoides elegans* E. Hitchcock (1845, Proc. 6th Ann. Meeting Assn. Amer. Geologists & Naturalists, p. 24). Reptilia.

27. *Ornithichnites fulvicoides* E. Hitchcock, 1843, Reports 1st, 2d, 3d Meetings Assn. Amer. Geol. & Nat., p. 258, pl. 11, fig. 3 (Triassic tracks, Massachusetts). Later renamed *Plesiornis minor* E. Hitchcock (1845, Proc. 6th Ann. Meeting Assn. Amer. Geol. Nat., p. 23). *O. fulvicoides* is type of the genus *Deanea* Reichenbach (1852, Avium Systema Naturale, p. xxii). Reptilia.

28. *Ornithichnites gallinuloides* A. T. King, 1845, Proc. Acad. Nat. Sci. Philadelphia for Dec. 1844, vol. 2, p. 176, fig. 1 (Carboniferous bird track, Westmoreland County, Pennsylvania). Amphibia?

29. *Ornithichnites giganteus* E. Hitchcock, 1836, Amer. Jour. Sci., vol. 29, p. 316, fig. (Triassic tracks, Northampton, Mass., Amherst Mus.). It is the type by elimination of *Ornithichnites* Hitchcock, 1836 (Bonaparte, 1856, C. R. Acad. Sci. Paris, vol. 43, no. 18, p. 840). It is the type of *Eubrontes* E. Hitchcock (1845, Proc. 6th Ann. Meeting Assn. Amer. Geol. Nat., p. 23) designated by Hay (1902, Bull. U.S. Geol. Surv., no. 179, p. 543). It is the type by monotypy of *Bellona* Reichenbach (1852, Avium Systema Naturale, p. xxx). Reptilia.

30. *Ornithichnites ingens* E. Hitchcock, 1836, Amer. Jour. Sci., vol. 29, pp. 316, 319, fig. (Triassic tracks, Horse Race in Gill, Mass.). Later called *Steropoides ingens* and *Sillimanianus adamsanus* E. Hitchcock (1845, Proc. 6th Ann. Meeting Assn. Amer. Geol. Nat., p. 24). Reptilia.

31. *Ornithichnites ingens minor* E. Hitchcock, 1836, Amer. Jour. Sci., vol. 29, pp. 316, 319, fig. (Triassic tracks, Horse Race in Gill, Mass.).—*Ornithichnites robustus* E. Hitchcock, 1837, Amer. Jour. Sci., ser. 1, vol. 32, p. 175 (new name for above). Later called *Argoides robustus*. Reptilia.

32. *Ornithichnites minimus* E. Hitchcock, 1836, Amer. Jour. Sci., vol. 29, pp. 317, 325, fig. 9 (Triassic tracks, Horse Race in Gill, Mass.). Renamed *Ornithoidichnites isodactylus* E. Hitchcock (1841, Final Rept. Geol. Mass., vol. 2, p. 496, pl. 45, figs. 38-39). Hay (1902, Bull. U.S. Geol. Surv., no. 179, p. 540) designated *E. minimus* as generic type of *Argoides* E. Hitchcock, 1845. Reptilia.

33. *Ornithichnites minusculus* Hitchcock, in Giebel, 1847, Fauna der Vorwelt, vol. 1,

pt. 2, p. 36 (bird tracks, no descr.). I have been unable to trace this name. *Brontozoum minusculum* Hitchcock, 1858 (Ichnology of New England, p. 65, pl. 11, fig. 1; pl. 40, fig. 2; pl. 41, fig. 1; pl. 42, fig. 3; pl. 47, fig. 2) is much later. Reptilia.

34. *Ornithichnites palmatus* E. Hitchcock, 1836, Amer. Jour. Sci., vol. 29, pp. 317, 324, fig. 15 (Triassic tracks, Horse Race in Gill, Mass.). Later called *Sauroidichnites palmatus* E. Hitchcock (1841, Final Rept. Geol. Mass., vol. 2, p. 483, pl. 34, fig. 15) and still later renamed *Palamopus anomalus* E. Hitchcock (1845, Proc. 6th Ann. Meeting Assn. Amer. Geol. Nat., p. 24). Reptilia.

35. *Ornithichnites tetradactylus* E. Hitchcock, 1836, Amer. Jour. Sci., ser. 1, vol. 29, pp. 317, 323, fig. (Triassic tracks, Horse Race in Gill, Mass.). Later called *Sillimanius tetradactylus* E. Hitchcock (1845, Proc. 6th Ann. Meeting Assn. Geol. Nat., p. 24) and then renamed *Ornithopus gallinaceus* E. Hitchcock (1848, Mem. Amer. Acad. Arts Sci., ser. 2, vol. 3, p. 192, pl. 8, fig. 1). Reptilia.

36. *Ornithichnites tuberosus* E. Hitchcock, 1836, Amer. Jour. Sci., ser. 1, vol. 29, pp. 316, 318, fig. (Triassic tracks, Northampton, Mass., and apparently also Horse Race). Type by monotypy of genus *Cybele* Reichenbach, Avium Syst. Nat., p. xxx). Hitchcock renamed it *Brontozoum loxonyx* (1848, Mem. Amer. Acad. Arts Sci., ser. 2, vol. 3, p. 172, pl. 2, figs. 1-2) and later *Brontozoum validum* (1858, Ichnology of New England, p. 67, pl. 12, fig. 2; pls. 38-51; pl. 57, fig. 3). Reptilia.

37. *Ornithichnites tuberosus dubius* E. Hitchcock, 1836, Amer. Jour. Sci., vol. 29, pp. 316, 318, fig. (Triassic tracks, Northampton, Mass.). Later renamed *Ornithichnites parallelus* E. Hitchcock (1837, Amer. Jour. Sci., ser. 1, vol. 31, p. 175), which was still later referred to his genera *Brontozoum* and *Grallator*. Reptilia.

38. *Ornithodesmus cluniculus* Seeley, 1887, Quart. Jour. Geol. Soc. London, vol. 43, p. 206 (sacrum, Wealden, Lower Cretaceous, Neocomian age, Brook, Isle of Wight, England). Type of genus *Ornithodesmus* Seeley (loc. cit.), designated by Richmond, 1902, Proc. U. S. Nat. Mus., vol. 24, no. 1267, p. 701). Reptilia, Pterosauria, Ornithocheiridae.

39. *Ornithodesmus latidens* Seeley, 1887, Quart. Jour. Geol. Soc. London, vol. 43, p. 220, pl. 12 (skull, Wealden Lower Cretaceous, Isle of Wight). Ornithocheiridae.

40. *Ornithoidichnites cuneatus* E. Hitchcock, 1841, Final Rept. Geol. Mass., vol. 2, pp. 476, 484 (Triassic tracks, Connecticut and New Jersey). Later called *Grallator cuneatus* (E. Hitchcock, 1858, Ichnology of New England, p. 72). I designate *O. cuneatus* as type species of both *Ornithoidichnites* Hitchcock (1841) and *Grallator* Hitchcock (1858), since apparently none has been previously selected. Reptilia.

41. *Ornithoidichnites danae* E. Hitchcock, 1844, Amer. Jour. Sci., vol. 47, p. 306, pl. 3, fig. 5 (Triassic tracks, Massachusetts). Reptilia.

42. *Ornithoidichnites deanii* E. Hitchcock, 1841, Final Rept. Geol. Mass., vol. 2, p. 493, pl. 42, figs. 31-32 (Triassic tracks, Connecticut). Reptilia.

43. *Ornithoidichnites delicatulus* E. Hitchcock, 1841, Final Rept. Geol. Mass., vol. 2, p. 497, p. 45, fig. 40 (Triassic tracks, Connecticut). Later called *Calopus delicatula* E. Hitchcock (1845, Proc. 6th Ann. Meeting Assoc. Amer. Geol. Nat., p. 25). Reptilia.

44. *Ornithoidichnites divaricatus* E. Hitchcock, 1841, Final Rept. Geol. Mass., vol. 2, p. 495, pl. 44, figs. 36-37; pl. 48, fig. 63 (Triassic tracks, Massachusetts).—*Ornithopus loripes* E. Hitchcock, 1848, Mem. Amer. Acad. Arts Sci., ser. 2, vol. 3, p. 193, pl. 7, fig. 3 (new name for the above). Reptilia.

45. *Ornithoidichnites elegans* E. Hitchcock, 1841, Final Rept. Geol. Mass., vol. 2, p. 491, pl. 41, figs. 28-29; pl. 48, figs. 57-62 (Triassic tracks, Massachusetts).—*Steropoides elegans* E. Hitchcock (1845, Proc. 6th Ann. Meeting Assn. Amer. Geol. Nat., p. 24). Reptilia.

46. *Ornithoidichnites elegantior* E. Hitchcock, 1841, Final Rept. Geol. Mass., vol. 2, p. 493, pl. 42, fig. 30; pl. 48, fig. 58 (Triassic tracks, Massachusetts). Reptilia.

47. *Ornithoidichnites expansus* E. Hitchcock, 1841, Final Rept. Geol. Mass., vol. 2, p. 487, pl. 38, fig. 23; pl. 39, fig. 24 (Triassic tracks, Massachusetts). Reptilia.

48. *Ornithoidichnites gracilior* E. Hitchcock, 1841, Final Rept. Geol. Mass., vol. 2, p. 498, pl. 46, fig. 43 (Triassic tracks, Connecticut). He later called it *Sillimanius gracilior* (1845) and *Ornithopus gracilior* (1848). Reptilia.

49. *Ornithoidichnites gracilis* E. Hitchcock, 1841, Final Rept. Geol. Mass., vol. 2, p. 489, pl. 48, fig. 44 (Triassic tracks, Connecticut). Reptilia.

50. *Ornithoidichnites gracillimus* E. Hitchcock, 1844, Amer. Jour. Sci., vol. 47, p. 305,

pl. 3, fig. 4 (Triassic tracks, Massachusetts).—*Hitchcockia gracillima* Reichenbach, 1852, Avium Systema Naturale, p. xx.—*Hitchcockia fulcaria* Reichenbach, 1852, op. cit., p. xxi (new name for the above?). Referred by Hitchcock to his genera *Eubrontes* (1845), *Brontozoum* (1848), *Grallator* (1858), and *Anomoepus* (1865). It is the type species of *Hitchcockia* Reichenbach (1852, op. cit., p. xx). Reptilia.

51. *Ornithoidichnites lyellii* E. Hitchcock, 1843, Reports 1st, 2d, 3d Meetings Assn. Amer. Geol. Nat., p. 257, pl. 11, fig. 1 (Triassic tracks, Massachusetts).—*Fulicopus lyellianus* E. Hitchcock, 1845, Proc. 6th Ann. Meetings Assn. Amer. Geol. Nat., p. 23 (new name for the above). Type species of *Fulicopus* E. Hitchcock (loc. cit.). Later referred by him to his genera *Aethyopus* (1848) and *Amblonyx* (1858). Reptilia.

52. *Ornithoidichnites macrodactylus* E. Hitchcock, 1841, Final Rept. Geol. Mass., vol. 2, p. 494, pl. 43, fig. 35 (Triassic tracks, Horse Race in Gill, Mass.).—*Platypterna deaniana* E. Hitchcock, 1845, Proc. 6th Ann. Meeting Assn. Amer. Geol. Nat., p. 25 (new name).—*Argozoum disparadigitatum* E. Hitchcock, 1848, Mem. Amer. Acad. Arts Sci., ser. 2, vol. 3, p. 186, pl. 6, fig. 3. Reptilia.

53. *Ornithoidichnites parvulus* E. Hitchcock, 1841, Final Rept. Geol. Mass., vol. 2, p. 489, pl. 39, fig. 26; pl. 48, fig. 44 (Triassic tracks, Connecticut).—*Sauroidichnites deweyi* Hitchcock, 1843, Repts. 1st, 2d, 3d Meetings Assn. Amer. Geol. Nat., p. 261, pl. 11, fig. 9 (new name for the above).—*Batrachopus deweyanus* E. Hitchcock, 1845, Proc. 6th Ann. Meet. Assn. Amer. Geol. Nat., p. 25 (new name for *S. deweyi*). Amphibia.

54. *Ornithoidichnites redfieldii* E. Hitchcock, 1844, Amer. Jour. Sci., vol. 47, p. 304, pl. 3, fig. 1 (Triassic tracks, Massachusetts).—*Ornithoidichnites redfieldianus* Hitchcock, 1845, Proc. 6th Ann. Meet. Assn. Amer. Geol. Nat., p. 24 (new name for the above).—*Argoides redfieldianus* E. Hitchcock, 1845, loc. cit. (alternate new name for the above).—*Berecynthia redfieldi* Reichenbach, 1852, Avium Systema Naturale, p. xxx. Type species of *Berecynthia* Reichenbach. Reptilia.

55. *Ornithoidichnites rogersi* E. Hitchcock, 1843, Repts. 1st, 2d, 3d Meetings Assn. Amer. Geol. Nat., p. 256, pl. 11, fig. 7 (Triassic tracks, Massachusetts).—*Sillimanianus rogersianus* E. Hitchcock, 1845, Proc. 6th Ann. Meet. Assn. Amer. Geol. Nat., p. 24 (new name for the above). Reptilia.

56. *Ornithoidichnites sillimanii* E. Hitchcock, 1843, Repts. 1st, 2d, 3d Meets. Assn. Amer. Geol. Nat., p. 256, pl. 11, fig. 2 (Triassic tracks, Connecticut).—*Brontozoum sillimanium* E. Hitchcock, 1847, Amer. Jour. Sci., ser. 2, vol. 4, p. 49 (new name for the above). Reptilia.

57. *Ornithoidichnites tenuis* E. Hitchcock, 1841, Final Rept. Geol. Mass., vol. 2, p. 494, pl. 43, figs. 33-34 (Triassic tracks, Connecticut).—*Platypterna tenuis* Hitchcock, Proc. 6th Ann. Meet. Assn. Amer. Geol. Nat., p. 25 (new name for the above). Reptilia.

58. *Osteornis ardeaceus* Gervais, 5 Aug. 1844, Remarques sur les Oiseaux Fossiles, p. 38, cf. also p. 12 (Wealden Formation, Tilgate Forest, Sussex, England, tarsus, humerus, radius; no descr.; based on Mantell, 1835, Proc. Geol. Soc. London, p. 205). This is only an abstract (without description or illustration) of Cideon A. Mantell's paper read before the Geological Society. Mantell's paper describing the remains was not published until 1837 (Trans. Geol. Soc. London, ser. 2, vol. 5, no. 1, pp. 175-177, pl. 13), and Gervais's thesis presents no evidence that he had seen it. *O. ardeaceus* is thus a nomen nudum with no status in nomenclature.

Gervais proposed *Osteornis* (p. 7) as a catchall for any fossil bird bones whose specific identification seemed impossible. He stated (p. 7, note) that *Lithosteornis* would have been preferable but considered it too long a word. Nevertheless, Gervais (p. 38) proposed three new species in *Osteornis*, *O. ardeaceus*, *O. diomedeus*, and *O. scolopacinus*. Richmond (1902, Proc. U. S. Nat. Mus., vol. 24, p. 701) selected *O. ardeaceus* as the type species, and later (1908, op. cit., vol. 35, p. 618) treated *Lithosteornis* as an alternative name for *Osteornis*. Possibly this would make *Lithosteornis* available if *Osteornis* were found to be preoccupied, but not otherwise. But for present purposes this question is academic, as the type species is a nomen nudum, and the bones attributed to it are from a pterosaur (see Owen, 1846, Quart. Jour. Geol. Soc. London, vol. 2, pp. 96 ff; Romer, 1966, Vertebrate Paleontology, ed. 3, p. 369).

59. *Osteornis diomedeus* Gervais, 5 Aug. 1844, Remarques sur les Oiseaux Fossiles, p. 38, cf. also p. 12 (Cretaceous, near Maidstone, England, humerus and fragmentary tibia). A nomen nudum based on Owen (1840, Proc. Geol. Soc. London, p. 298), an abstract of a paper read before the Geological Society. The paper was later published by Owen (1842, Trans. Geol. Soc. London for 1840, ser. 2, vol. 6, pp. 411-413, pl. 390), but there is no evidence that Gervais had seen it. See *Cimoliornis diomedeus* Owen, discussed above. A pterosaur.

60. *Palaeornis struthionoides* Emmons, 1857, American Geology, p. 148, fig. 114 (Upper Triassic Newark sandstone, Anson County, North Carolina, fragment of "sacrum," present location unknown). Type by monotypy of *Palaeornis* Emmons. Donald Baird (personal communication) writes that it has a high degree of recognizability and consists of the mid-section of the rostrum of a phytosaur (cf. *Rutiodon*), exposed in palatal view, with the lateral margins of the premaxillae destroyed and the empty alveoli filled with matrix. The "cf." was included only as an act of punctiliousness.

61. *Palaeornis cliffi* Mantell, 1835, Philos. Mag., vol. 7, p. 518 (Wealden Lower Cretaceous, Tilgate Forest, Sussex). Type of genus *Palaeornis* Mantell, which is preoccupied by *Palaeornis* Vigors, 1825. A pterosaur, possibly of the genus *Ornithocheirus* Seeley. See Lambrecht, 1933, p. 933; Romer, 1966, p. 369.

62. *Protorhea azarae* Moreno and Mercerat, 5 Aug. 1891, Anal. Mus. La Plata, vol. 1, p. 69, pl. 19, fig. 7 (Pampean stage, Monte Hermoso, Argentina, left femur and phalanges, Museo La Plata). A synonym of the extinct camel *Auchenia lujanensis* Ameghino, and the locality should be Lujan (see Ameghino, 1891, Revista Arge. Hist. Nat., vol. 1, p. 448).

63. *Protornis bavaria* Jaekel, 1929, Pal. Zeitschr., vol. 11, p. 211, fig. 20. (Upper Jurassic tracks, Solnhofen limestone, Bavaria). A compsognathid dinosaur, *Koupidinium lithographicum* Opperl (1862, Pal. Mitteil. Mus. Kgl. Bayer. Staates, vol. 2, pp. 121-125). See Abel (1930, Paleobiologica, vol. 3, p. 372 ff.).

64. *Protornis blumeri* 1865, Umwelt der Schweiz, p. 236, fig. 143 (partial skeleton from Lower Oligocene slate quarries on the Plattenberg, Matt parish, Glarus canton, Switzerland).—Heer, 1876, Primaeval World of Switzerland, vol. 1, p. 249, fig. 143. Transferred from family Halcyonidae (pt. 4, p. 253). The type, whose present whereabouts is unknown, was said to represent the lower mandible, wings, tibiae, tarsi, and toes of a small bird, but the figure almost certainly represents the pelvis, urostyle, arms, and legs of a frog. See also Olson, 1976, Smithsonian Contr. Paleobiol., no. 27, p. 117.

65. *Wyleyia valdensis* Harrison and Walker, Nov. 1973, Palaeontology, vol. 16, pt. 4, p. 721, text-figs. 1-2, pl. 1 (Lower Cretaceous Weald Clay, Henfield, Sussex England, proximal portion of right humerus, Brit. Mus. no. A3658). Type of genus *Wyleyia* Harrison and Walker, by original designation. Almost certainly a reptilian humerus with the epiphysis unfused or eroded.

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