

16
772
50.70

OLD SERIES, { CONTINUATION OF THE { NEW SERIES,
VOL. XXVI. { BULLETIN OF THE NUTTALL ORNITHOLOGICAL CLUB. { VOL. XVIII.

The Auk

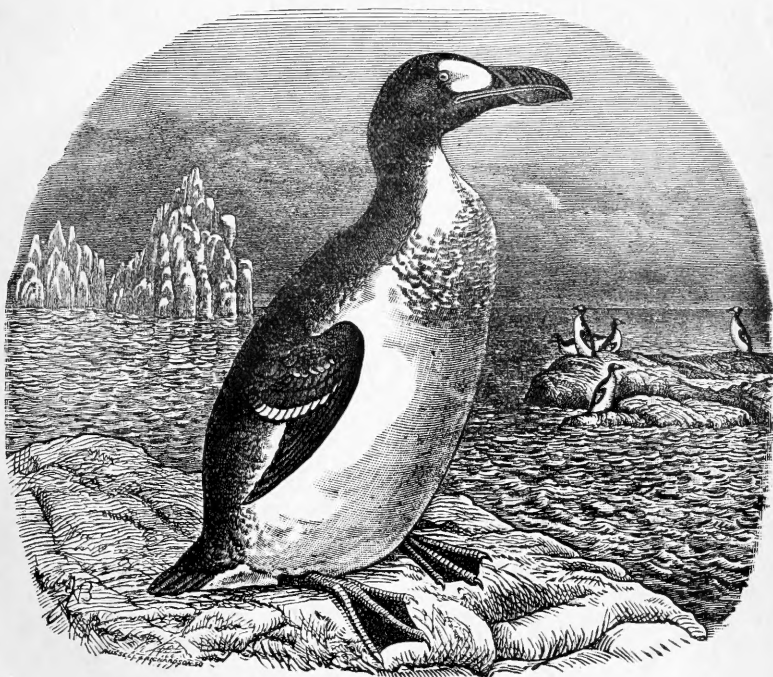
A Quarterly Journal of Ornithology

EDITOR

J. A. ALLEN

ASSOCIATE EDITOR

FRANK M. CHAPMAN



VOLUME XVIII

PUBLISHED BY

The American Ornithologists' Union

CAMBRIDGE, MASS.

1901

188975



3 Birds

CONTENTS OF VOLUME XVIII.

NUMBER I.

	PAGE.
IN MEMORIAM: ELLIOTT COUES. By <i>D. G. Elliot, F. R. S. E., etc.</i> (Plate I.)	I
IN MEMORIAM: GEORGE BURRITT SENNETT. By <i>J. A. Allen.</i> (Plate II.)	11
BIRDS OF SAN MIGUEL ISLAND. By <i>Outram Bangs.</i>	24
A LIST OF BIRDS OF THE DISTRICTS OF PARRY SOUND AND MUSKOKA, ONTARIO. By <i>James H. Fleming.</i>	33
DESCRIPTIONS OF FIVE NEW BIRDS FROM MEXICO. By <i>E. W. Nelson.</i>	46
THE SEQUENCE OF MOULTS AND PLUMAGES OF THE LARIDÆ (GULLS AND TERNS). By <i>Jonathan Dwight, Jr., M. D.</i>	49
EIGHTEENTH CONGRESS OF THE AMERICAN ORNITHOLOGISTS' UNION. By <i>John H. Sage.</i>	63
REPORT OF THE COMMITTEE ON THE PROTECTION OF NORTH AMERICAN BIRDS FOR THE YEAR 1900. By <i>Wilmer Stone.</i>	68
RESULTS OF SPECIAL PROTECTION TO GULLS AND TERNS OBTAINED THROUGH THE THAYER FUND. By <i>William Dutcher.</i>	76

GENERAL NOTES.

The Paroquet Auklet in California, 104; On the Southern Limit of the Winter Range of Bonaparte's Gull (*Larus philadelphia*), 104; Mother Carey's Chicken, 105; The Yellow-Billed Tropic Bird in the Hawaiian Islands, 105; The Old Squaw at San Francisco, 105; The Emperor Goose in the Interior of California, 105; Nesting of Cory's Bittern at Toronto, Ontario, 106; Nesting of Cory's Bittern (*Ardea neoxena*) and Other Notes, 106; Sexual Difference in Size of the Pectoral Sandpiper (*Tringa maculata*), 107; Great Gray Owl in Wyoming, 107; Breeding of the Alder Flycatcher (*Empidonax traillii alnorum*) near Plainfield, New Jersey, 108; The Raven in Polk County, North Carolina, 108; Song of the Western Meadowlark, 108; Occurrence of the Mexican Crossbill (*Loxia curvirostra stricklandi*) at Neligh, Nebraska, 109; An Addition to the A. O. U. Check-List, 109; Sequences of Plumages in the Black-throated Blue Warbler, 110; *Granatellus venusta* in Sinaloa, 110; Maryland Yellow-throat at Sea, 110; The Breeding of the Hermit Thrush on Martha's Vineyard Island, 111; The Hermit Thrush on Martha's Vineyard, Mass., 111; Notes from Ontario, 112; Two Interesting Records from New Mexico, 112.

RECENT LITERATURE.

Dwight's 'Sequences of Plumages and Moults of the Passerine Birds of New York,' 214; Grinnell's 'Birds of the Kotzebue Sound Region,' 119; Sharpe's 'Hand List of the Genera and Species of

Birds,' Vol. II, 120; Dubois's 'Synopsis Avium,' 121; Shelley's 'Birds of Africa,' 122; 'Audubon Bird Chart No. 2,' and 'Common Birds, Second Series,' 123; Transportation and Sale of Game,' 123; Publications Received, 124.

NOTES AND NEWS.

Notices concerning 'The Auk,' 126; Death of Dr. Gustav Hartlaub, 127; Conference of Audubon Societies, 127; 'Bird-Lore's Course of Bird Study, 128; Proposed Amendments to the A. O. U. By-Laws, 128.

NUMBER II.

	PAGE.
NESTING HABITS OF LECONTE'S SPARROW. By <i>P. B. Peabody</i> . (Plate III.)	129
ON THE OCCURRENCE, IN MASSACHUSETTS, OF CERTAIN RARE OR INTERESTING BIRDS. By <i>William Brewster</i>	135
THE CERULEAN WARBLER (<i>Dendroica cerulea</i>) AS A SUMMER RESI- DENT IN BALTIMORE COUNTY, MARYLAND. By <i>Frank Coates</i> <i>Kirkwood</i>	137
TWO RACES OF THE VARIED THRUSH. By <i>Joseph Grinnell</i>	142
ON A COLLECTION OF BIRDS MADE BY MR. T. R. THOMPSON AT THE CAY LOBOS LIGHTHOUSE. By <i>J. Lewis Bonhote, B. A., F. Z.</i> <i>S. L.</i>	145
A VISIT TO AUDUBON'S BIRTHPLACE. By <i>O. Widmann</i>	150
A STUDY OF THE GENUS MACRORHAMPHUS. By <i>Reginald Heber</i> <i>Howe, Jr.</i>	157
BIRDS OF PREY AS OCEAN WAIFS. By <i>H. W. Henshaw</i>	162
DESCRIPTION OF A SUPPOSED NEW SUBSPECIES OF PARUS FROM NEW MEXICO. By <i>Francis J. Birtwell</i>	165
THE PTERYLOSIS OF PODARGUS: WITH NOTES ON THE PTERYLOG- RAPHY OF THE CAPRIMULGI. By <i>Hubert Lyman Clark</i>	167
REPUBLICATION OF DESCRIPTIONS OF NEW SPECIES AND SUBSPE- CIES OF NORTH AMERICAN BIRDS. No. II. By <i>J. A. Allen</i>	172
NEW SUBSPECIES OF NORTH AMERICAN BIRDS. By <i>Wilfred H.</i> <i>Osgood</i>	179
THE TWO RACES OF <i>Saxicola ænanthe</i> . By <i>Leonhard Stejneger</i>	186
THE LONG-TAILED JAY. By <i>Joseph Grinnell</i>	188

GENERAL NOTES.

Brünnich's Murre in Lewis and Jefferson Counties, 188; Habits of the Gooney, 189; Audubon's Shearwater (*Puffinus auduboni*) on the Coast of Virginia, 189; The Mexican Cormorant in Colorado, 189; A Virginia Record for the American Eider (*Somateria dresseri*), 189; Early Occurrence of the Black Scoter in Maryland and Virginia, 190; The Purple Gallinule in Massachusetts in the Breeding Season, 190; Occurrence of Baird's Sandpiper in Sus-

sex, England, 190; Ruffed Grouse in Snow, 190; The Passenger Pigeon, 191; The Occurrence of the Ground Dove in Virginia, 192; Rachitis in Young Red-shouldered Hawks, 192; New Name for *Nyctala*, 193; The Pileated Woodpecker in Connecticut, 193; *Milvulus* versus *Muscivora*, 193; Variation in Size in the Wood Pewee, 194; The Meadowlark (*Sturnella magna*) at Rangely, Maine, 194; The European Starling in Connecticut, 194; Snow Bunting at Sea, 195; Montana Redpolls, 195; *Acanthis linaria rostrata* and *Xanthocephalus xanthocephalus* in Connecticut, 195; Deformity of Maxilla in the House Sparrow, 195; The Loggerhead Shrike in New Brunswick, 196; The Scientific Name of the Southern Yellow-throat, 197; The Correct Name for the Florida Yellow-throat, 198; Probable Breeding of the Red-bellied Nuthatch near Boston, 198; The Newfoundland Veery (*Hylocichla fuscescens fuliginosa*) in Massachusetts, 198; Notes from Northern New York, 199; Florida Bird Notes, 199; Notes from the Magdalen Islands, 199; New Brunswick Notes, 201; Birds observed during a Steamer voyage from San Francisco to Victoria, B. C., 201; Occurrence of *Tringa maculata* and other American Birds in Hawaii, 202; Notes on the Moulting of *Spinus pinus* and of *Hirundo erythrogaster*, 203; To Remove Fat from Bird Skins, 204.

RECENT LITERATURE.

Barrington's 'The Migration of Birds at Irish Stations,' 205; Gätke's 'Helgoland,' Second German Edition, 206; Pollard's 'Birds of My Parish,' 207; Collett on the Skull and Auricular Openings in North European Owls, 207; Merriam and Preble on the Summer Birds of Western Maryland, 208; Loomis on California Water Birds, 208; Grinnell on Alaskan Birds, 209; Mrs. Eckstorm's 'The Bird Book,' 209; Mrs. Eckstorm's 'The Woodpeckers,' 210; Shufeldt's Contributions to our Knowledge of the Osteology of Birds, 211; Chapman on the Genus *Sturnella*, 212; Eaton's 'Birds of Western New York,' 212; Publications Received, 213.

CORRESPONDENCE.

Early Editions of Wilson's Ornithology, 219.

NOTES AND NEWS.

Obituary—Gustav Hartlaub, 219; Baron Edmund de Sélvs-Longschamps, 219; George A. Boardman, 319; Captain John Clifford Brown, 220; James MacKinlay, 221; Audubon Whelock Ridgway, 221; New Ornithological Journals, 222; U. S. Biological Survey, 222; Delaware Valley Ornithological Club, 223; Prof. Alfred Newton's Royal Society Medal, 224; New York State Audubon Society, 224; A. O. U. Committee on Bird Protection, 224.

NUMBER III.

	PAGE.
BENDIRE'S THRASHER. By <i>Herbert Brown</i>	225
BIRDS OF THE BLACK HILLS. By <i>Merritt Cary</i>	231
UNPUBLISHED LETTERS OF WILLIAM MACGILLIVRAY TO JOHN JAMES AUDUBON. By <i>Ruthven Deane</i>	239
THE RESIDENT LAND BIRDS OF BERMUDA. By <i>Outram Bangs</i> and <i>Thomas S. Bradlee</i>	249
A NEW GROUND DOVE FROM WESTERN MEXICO. By <i>Outram Bangs</i>	257
THE MONTEREY HERMIT THRUSH. By <i>Joseph Grinnell</i>	258
THE WINTER BIRDS OF PEA ISLAND, NORTH CAROLINA. By <i>Louis B. Bishop, M. D.</i>	260
A NEW SHARP-TAILED FINCH FROM NORTH CAROLINA. By <i>Louis B. Bishop, M. D.</i>	269

GENERAL NOTES.

Holbæll's Grebe on San Francisco Bay, 270; The Question of the Generic Name *Gavia*, 270; Occurrence of the Glossy Ibis at Washington, D. C., 271; The Red Phalarope (*Crymophilus fulicarius*) on the Coast of South Carolina, 272; An Additional Note on the Genus *Macrorhamphus*, 272; *Tringa solitarius cinnamomeus* — A Correction, 272; European Lapwing in the Bahamas, 272; Nesting of the Hairy Woodpecker near Washington, D. C., 272; The Vermilion Flycatcher in Florida, 273; Bachman's Sparrow in Virginia, 273; *Piranga rubra* in Massachusetts, 273; Bell's Vireo and the Sandhill Crane in New Hampshire, 274; Bachman's Warbler (*Helminthophila bachmanii*) Rediscovered near Charleston, South Carolina, 274; Sprague's Pipit (*Anthus spraguei*) again on the Coast of South Carolina, 275; The Wheatear Not a Bird of Maine, 275; Bird Notes from Pueblo Co., Colorado, 276; Corrections to Birds of Parry Sound and Muskoka, 276.

RECENT LITERATURE.

Norton on Birds from Labrador, 277; Howe and Allen's Birds of Massachusetts, 278; Morris's Birds of Springfield, Mass., and Vicinity, 279; McGregor's 'List of the Land Birds of Santa Cruz County, California,' 279; Torrey's 'Everyday Birds,' 279; Proceedings of the Delaware Valley Ornithological Club, 280; Stejneger on the Wheatear's (*Saxicola*) Occurring in North America, 281; Bangs on a New Meadowlark from South America, 281; Brewster and Bangs on a New Bécard from Lower Uruguay, 281; Shufeldt's 'Osteology of the Herodiones,' 281; Chapman on a New Race of the Great Blue Heron, 282; Grinnell on Two Races of the Red-breasted Sapsucker, 282; Strong's 'Quantitative Study of Variation in the Smaller North American Shrikes,' 283; Stone 'On Molt and Alleged Colour-change in Birds,' 283; Seton-Thompson and Hoffmann's 'Bird Portraits,' 283; Gould's 'Louis Agassiz,' 284; Ridgway on 'New Birds of the Families Tanagridæ and Icteridæ,' 285; Buri on the Anatomy and Rela-

tions of the Swifts, 285; Herrick's 'The Home Life of Wild Birds,' 286; Heck's 'Living Pictures of the Animal Kingdom,' 286; Mrs. Bignell's 'Mr. Chupes and Miss Jenny,' 287; Publications Received, 288.

CORRESPONDENCE.

The So-called Cancelled Fasciculus of Cassin's Illustrations, 290.

NOTES AND NEWS.

Obituary: Baron Edmund de Selys-Longschamps, 290; Barbara Jordan, 291; Memorial to William McGillivray, 291; Nebraska Ornithologists' Union, 292; Announcements of New Publications, 293.

TENTH SUPPLEMENT TO THE A. O. U. CHECK-LIST OF NORTH AMERICAN BIRDS 295

NUMBER IV.

	PAGE.
AN ORNITHOLOGICAL MYSTERY. By <i>William Brewster</i>	321
NESTING HABITS OF THE ANATIDÆ IN NORTH DAKOTA. By <i>A. C. Bent</i> . (Plates IV-VI.)	328
A PRELIMINARY LIST OF THE SUMMER BIRDS OF MOUNT MANSFIELD, VERMONT. By <i>Arthur H. Howell</i>	337
THE ALDER FLYCATCHER (<i>Empidonax traillii aliorum</i>) AS A SUMMER RESIDENT OF EASTERN MASSACHUSETTS. By <i>J. A. Farley</i>	347
ON A COLLECTION OF BIRDS MADE BY W. W. BROWN, JR., AT DAVID AND DIVALA, CHIRIQUI. By <i>Outram Bangs</i>	355
THE CLASSIFICATION OF BIRDS. By <i>Hubert Lyman Clark</i>	370
A LIST OF THE HAWAIIAN BIRDS IN THE ST. LOUIS COLLEGE COLLECTION, HONOLULU, H. I., INCLUDING RECORDS OF SEVERAL NORTH AMERICAN SPECIES. By <i>William Alanson Bryan</i>	382
NESTING HABITS OF THE EVENING GROSBEEK (<i>Coccothraustes vespertina</i>). By <i>Francis J. Birtwell</i> . (Plate VII.)	388

GENERAL NOTES.

Capture of Sabine's Gull in Wisconsin, 392; Snowy Heron in Alberta, 392; A New Bird for the State of Ohio, 392; A Band-tailed Hawk's Nest—An Arizona Incident of Biographical Interest, 392; Nesting of the American Rough-legged Hawk in North Dakota, 393; *Melanerpes erythrocephalus* Breeding near Boston, 394; Discovery of the Egg of the Black Swift (*Cypseloides niger borealis*), 394; A Rare Record for Eastern New York, 395; *Acanthis linaria rostrata* in the Outer Hebrides, 395; The Migratory Movements of the Lapland Longspurs in North America, 396;

The Western Savanna Sparrow in North Carolina, 397; The Hooded Warbler in Massachusetts, 397; Nesting of the Carolina Wren (*Thryothorus ludovicianus*) in Southern Massachusetts, 397; Massachusetts Bird Notes, 398; Maine Bird Notes, 400; Ontario Notes, 401; Additional Notes on the Birds of Okanogan (Chelan) County, Washington, 402; Manuscript of Emmons's Catalogue of Massachusetts Birds, 403.

RECENT LITERATURE.

Pycraft on the Morphology of the Cassowaries and their Allies, 405; Bangs on New American Birds, 406; Bangs on Birds from the Liu Kiu Islands, 407; Chapman on New Birds from Peru, 407; Grinnell on New California Birds, 407; Babson's Birds of Princeton, New Jersey, 408; Selous's 'Bird Watching', 408; Publications Received, 409.

CORRESPONDENCE.

Early Migration of Wild Geese, 411.

NOTES AND NEWS.

Nineteenth Congress of the A. O. U., 412; Obituary: Newton Dexter, Francis J. Birtwell, 413; An Australasian Ornithologists' Union, 414; The Bird Club of Princeton University, 415; Announcements of New Publications, 415; University of Nebraska Expedition of 1901, 416.

INDEX.	417
CONTENTS.	iii
OFFICERS AND MEMBERS OF THE A. O. U.	ix

LIST OF PLATES.

Plate I. Elliott Coues	(Frontispiece).
" II. George B. Sennett.	Facing page 12
" III. Map of Parry Sound and Muskoka, Ontario	" 33
" IIIa. Nests of Leconte's Sparrow	" 129
" IV. Nest of Mallard	" 332
" V. Nests of Gadwall and Baldpate	" 334
" V. Nests of Baldpate	" 336
" VI. Nests of Evening Grosbeak	" 388

OFFICERS AND COMMITTEES OF THE AMERICAN ORNITHOLOGISTS' UNION. 1900-1901.

	Expiration of Term
MERRIAM, C. HART, <i>President</i>	November, 1901.
CORY, CHARLES B., BATCHELDER, C. F., } <i>Vice-Presidents</i>	" 1901.
SAGE, JOHN H., <i>Secretary</i>	" 1901.
DUTCHER, WILLIAM, <i>Treasurer</i>	" 1901.

ADDITIONAL MEMBERS OF THE COUNCIL.

CHAPMAN, FRANK M.....	November, 1901.
DEANE, RUTHVEN.....	" 1901.
DWIGHT, JONATHAN, JR.,	" 1901.
FISHER, A. K.....	" 1901.
NELSON, E. W.....	" 1901.
ROBERTS, THOMAS G.....	" 1901.
STONE, WITMER.....	" 1901.
ALLEN, J. A.....	} Ex-Presidents.
BREWSTER, WILLIAM.....	
ELLIOT, D. G.....	
RIDGWAY, ROBERT.....	

EDITORIAL STAFF OF 'THE AUK.'

ALLEN J. A., <i>Editor</i>	November, 1901.
CHAPMAN, FRANK M., <i>Associate Editor</i>	" 1901.

COMMITTEES.

Committee on Publications.

MERRIAM, C. HART, <i>Chairman</i> .	ALLEN, J. A.
SAGE, JOHN H., <i>Secretary</i> .	CHAPMAN, FRANK M.
DUTCHER, WILLIAM.	

Committee of Arrangements for the Meeting of 1901.

MERRIAM, C. HART, <i>Chairman</i> .	CHAPMAN, FRANK M.
SAGE, JOHN H., <i>Secretary</i> .	DUTCHER, WILLIAM.
DWIGHT, JONATHAN, JR.	

MEMBERS¹ OF THE AMERICAN ORNITHOLOGISTS'
UNION. OCTOBER, 1901.

ACTIVE MEMBERS.

[Omission of date indicates a Founder.]

	Date of Election.
ALDRICH, Hon. CHARLES, Des Moines, Iowa.....	—
ALLEN, Dr. J. A., Am. Mus. Nat. Hist., New York City.....	—
ANTHONY, A. W., 814 Savier St., Portland, Ore.....	1895
BARROWS, Prof. W. B., Agricultural College, Ingham, Mich.....	1883
BATCHELDER, CHARLES FOSTER, Cambridge, Mass.....	—
BELDING, LYMAN, Stockton, Cal.....	1883
BICKNELL, EUGENE P., 32 Nassau St., New York City.....	—
*BREWSTER, WILLIAM, Cambridge, Mass.....	—
BROWN, NATHAN CLIFFORD, 85 Vaughan St., Portland, Me.....	—
CHADBOURNE, Dr. ARTHUR P., 225 Marlborough St., Boston, Mass.....	1889
CHAPMAN, FRANK M., Am. Mus. Nat. Hist., New York City.....	1888
COOKE, Prof. W. W., State College, Pa.....	1884
*CORY, CHARLES B., 160 Boylston St., Boston, Mass.....	—
DEANE, RUTHVEN, 30 Michigan Ave., Chicago, Ill.....	1883
DUTCHER, WILLIAM, 525 Manhattan Ave., New York City.....	1886
DWIGHT, Dr. JONATHAN, Jr., 2 East 34th St., New York City.....	1886
ELLIOT, DANIEL G., Field Columbian Museum, Chicago, Ill.....	—
FAXON, Dr. WALTER, Mus. Comp. Zoöl., Cambridge, Mass.....	1896
FISHER, Dr. ALBERT K., Dept. of Agriculture, Washington, D. C....	—
FOSTER, LYMAN S., 30 Pine Street, New York City.....	1888
GILL, Prof. THEODORE N., Smithsonian Institution, Washington, D. C.....	1883
GRINNELL, Dr. GEORGE BIRD, Audubon Park, New York City.....	1883
HENSHAW, HENRY W., Hilo, Hawaiian Islands.....	1883
LAWRENCE, NEWBOLD T., 51 Liberty St., New York City.....	1883
LOOMIS, LEVERETT M., California Acad. Sci., San Francisco, Cal.....	1892
LUCAS, FREDERIC A., U. S. Nat. Mus., Washington, D. C.....	1892
McILWRAITH, THOMAS, Hamilton, Ontario.....	—
MEARNS, Dr. EDGAR A., U. S. A., Fort Adams, Newport, R. I.....	—

¹ Members of the Union and Subscribers to 'The Auk' are requested to promptly notify WILLIAM DUTCHER, Treasurer, 525 Manhattan Ave., New York City, of any change of address.

* Life Member.

MERRIAM, Dr. C. HART, Dept. of Agriculture, Washington, D. C.	—
*MERRILL, Dr. JAMES C., U. S. A., Army Med. Mus., Washington, D. C.	1883
NEHRLING, H., 254 21st St., Milwaukee, Wis.	1883
NELSON, E. W., Dept. of Agriculture, Washington, D. C.	1883
PALMER, WILLIAM, Smithsonian Institution, Washington, D. C.	1898
PURDIE, HENRY A., 60 Pinckney St., Boston, Mass.	—
RICHMOND, Dr. CHARLES W., Smithsonian Institution, Washington, D. C.	1897
RIDGWAY, Prof. ROBERT, Smithsonian Institution, Washington, D. C.	—
ROBERTS, Dr. THOMAS S., 1603 4th Av., So. Minneapolis, Minn.	1883
*SAGE, JOHN H., Portland, Conn.	1883
SAUNDERS, WILLIAM E., 352 Clarence St., London, Ontario.	1883
SHUFELDT, Dr. ROBERT W., 502 W. 142d St., New York City.	—
STEJNEGER, Dr. LEONHARD, Smithsonian Institution, Washington, D. C.	1884
STONE, WITMER, Acad. Nat. Sci., Philadelphia, Pa.	1892
*TRUMBULL, GURDON, 970 Asylum Ave., Hartford, Conn.	1888
WIDMANN, OTTO, Old Orchard, Mo.	1884

HONORARY MEMBERS.

BERLEPSCH, Count HANS VON, Münden, Germany.	1890
BLANFORD, Dr. WILLIAM T., 72 Bedford Gardens, Kensington, W., London, England.	1895
BOCAGE, Prof. J. V. BARBOZA DU, Royal Museum, Lisbon.	1883
CABANIS, Prof. Dr. JEAN, Alte Jacobsstrasse, 103 a, Berlin.	1883
DRESSER, HENRY EELES, 28 Luensborough Terrace, London, W., England.	1883
FINSCH, Dr. OTTO, Zoölogical Museum, Leyden, Holland.	1883
GIGLIOLI, Dr. HENRY HILLYER, Director Royal Zoölogical Museum, Florence.	1883
HARTLAUB, Dr. GUSTAV, Bremen.	1883
HUME, ALLAN OCTAVIAN, The Chalet, Kingswood Road, Upper Nor- wood, London, S. E.	1883
MEYER, Dr. A. B., Director of the Royal Zoöl. Museum, Dresden.	1900
NEWTON, Prof. ALFRED, Magdalene College, Cambridge, Eng.	1883
REICHENOW, Dr. ANTON, Königl. Mus. für Naturkunde, Invaliden Str., 43, Berlin.	1891
SALVADORI, Prof. Count TOMMASO, Royal Zoölogical Museum, Turin, Italy.	1883
SAUNDERS, HOWARD, 7 Radnor Place, Hyde Park, London, W.	1884

*Life Member.

SCLATER, Dr. PHILIP LUTLEY, 3 Hanover Sq., London, W.....	1883
SHARPE, Dr. RICHARD BOWDLER, British Museum (Natural History), Cromwell Road, London, S. W.....	1883
WALLACE, Prof. ALFRED RUSSEL, Corfe View, Parkstone, Dorset, England.....	1883

CORRESPONDING MEMBERS.

ALFARO, ANASTASIO, San José, Costa Rica.....	1888
ALTUM, Dr. C. A., Eberswalde, Germany.....	1884
ANDERSON, Dr. JOHN, India Museum, Calcutta.....	1884
BLASIUS, Dr. RUDOLPH, Brunswick, Germany.....	1884
BLASIUS, Dr. WILHELM, Brunswick, Germany.....	1884
BRYANT, WALTER E., Santa Rosa, Calif.....	1900
BULLER, Sir WALTER LAWRY, Wellington, New Zealand.....	1883
BUREAU, Dr. LOUIS, École de Médecine, Nantes, France.....	1884
BUTLER, Lieut.-Col. E. A., Brettenham Park, Bildeston, Suffolk, England.....	1884
BÜTTIKOFER, Dr. J., Zoölogical Gardens, Rotterdam, Holland.....	1886
CLARKE, WM. EAGLE, Science and Art Museum, Edinburgh.....	1889
COLLETT, Prof. ROBERT, Zoölogical Museum, Christiania, Norway..	1883
COOPER, Dr. J. G., Haywards, California.....	1884
DALGLEISH, JOHN J., Brankston Grange, Bogside Station, Stirling, Scotland.....	1883
DAVID, L'Abbé ARMAND, Rue de Sèvres, 95, Paris.....	1883
DOLE, SANFORD B., Honolulu, Hawaiian Ids.....	1888
DUBOIS, Dr. ALPHONSE, Museum Nat. History, Brussels.....	1884
DUGÈS, Prof. ALFREDO, Colegio del Estado, Guanajuato, Mexico....	1884
ECHT, ADOLPH BACHOFEN VON, Nussdorf, near Vienna.....	1883
EVANS, ARTHUR H., 9 Harvey Road, Cambridge, Eng.....	1899
FATIO, Dr. VICTOR, Geneva, Switzerland.....	1884
FEILDEN, Lieut.-Col. H. W., West House, Wells, Norfolk, Eng.....	1884
FERRARI-PEREZ, Prof. FERNANDO, Naturalist Mexican Geol. Expl. Commission, Pueblo, Mexico.....	1885
FREKE, PERCY EVANS, Step House, Borris, Co. Carlow, Ireland....	1883
FÜRBRINGER, Dr. MAX, Jena, Germany.....	1891
GADOW, Dr. HANS, Zoölogical Museum, Cambridge, England.....	1884
GIRTANNER, Dr. A., St. Galle, Switzerland.....	1884
GODMAN, F. DU CANE, 10 Chandos Street, Cavendish Sq., London..	1883
GODWIN-AUSTEN, Lieut.-Col. H. H., Shalford House, Guilford, Eng- land.....	1884
GRANDIDIER, ALFRED, 6 Rond-Point des Champs Elysées, Paris....	1883
GRANT, WILLIAM R. OGILVIE, 26 Hereford Square, London, S. W...	1899
GURNEY, JOHN HENRY, Keswick Hall, Norwich, England.....	1883

HARTERT, ERNST, Zoölogical Museum, Tring, England.....	1891
HARTING, JAMES EDMUND, Linnæan Society, Burlington House, Piccadilly, London.....	1883
HARVIE-BROWN, JOHN A., Dunipace House, Larbert, Stirlingshire, Scotland.....	1883
HAYEK, DR. GUSTAV VON, Vienna.....	1884
HENSON, HARRY V., Yokohama.....	1888
HOLUB, DR. EMIL, Vienna.....	1884
HUDSON, WILLIAM HENRY, Tower House, St. Luke's Road, Westbourne Park, London, W.....	1895
KNUDSON, VALDEMAR, Kauai, Hawaiian Ids.....	1888
KRUKENBERG, DR. E. F. W., Würzburg, Germany.....	1884
KRÜPER, DR. THEOBALD J., University Museum, Athens, Greece.....	1884
LEGGE, WILLIAM V., Cullenswood House, St. Mary's, Tasmania.....	1891
LEVERKÜHN, PAUL, Sophia, Bulgaria.....	1890
MACFARLANE, ROBERT, Winnipeg, Manitoba.....	1886
MADARÁSZ, DR. JULIUS VON, National Museum, Budapest, Hungary..	1884
MENZBIER, DR. M., Imperial Society of Naturalists, Moscow.....	1884
NAMIYE, M., Tokio.....	1886
NICHOLSON, FRANCIS, 84 Major St., Manchester, England.....	1884
OATES, EUGENE WILLIAM, 1 Carlton Gardens, Ealing, London, W..	1884
ODDI, COUNT E. ARRIGONI DEGLI, University of Padua, Italy.....	1900
OUSTALET, DR. EMILE, Jardin des Plantes, 55 Rue de Buffon, Paris..	1888
PALMÉN, PROF. J. A., Helsingfors, Finland.....	1883
PHILIPPI, DR. R. A., Santiago, Chili.....	1884
RADDE, DR. GUSTAV FERDINAND, Tiflis, Russia.....	1884
RAMSEY, E. P., Sydney, New South Wales.....	1884
RINGER, FREDERIC, Nagasaki, Japan.....	1888
ROTHSCHILD, HON. L. WALTER, Zoöl. Museum, Tring, England.....	1898
SCHALOW, DR. HERMAN, 15 Schleswiger Ufer, Berlin, N. W.....	1884
SHELLEY, CAPT. G. E., Tower House, Reigate, Surrey, England.....	1884
THEEL, DR. HJALMAR, University of Upsala, Upsala, Sweden.....	1884
TRISTRAM, REV. CANON H. B., The College, Durham, England.....	1884
TSCHUSI ZU SCHMIDHOFFEN, COUNT VICTOR RITTER VON, Hallein, (Villa Tännenhof), Salzburg, Austria.....	1884
WATERHOUSE, F. H., 3 Hanover Square, London, W.....	1889
ZELEDON, DON JOSÉ C., San José, Costa Rica.....	1884

ASSOCIATE MEMBERS.

ABBOTT, CLINTON GILBERT, 336 W. 71st St., New York City.....	1898
ADAM, (MRS.) WILLIAM L., Pittsfield, Mass.....	1900
ADAMS, EMILY B., 167 Maple St., Springfield, Mass.....	1900

ADAMS, Mrs. EMMA S., 40 Scott St., Chicago, Ills.....	1899
AIKEN, CHARLES EDWARD HOWARD, Colorado Springs, Colo.....	1898
ALLEN, CLARENCE JONES, 176 Biddle St., Milwaukee, Wis.....	1899
ALLEN, FRANCIS H., 4 Park St., Boston, Mass.....	1888
ALLEN, GLOVER M., 44 Perkins Hall, Cambridge, Mass.....	1896
ALLISON, ANDREW, 630 Pine St., New Orleans, La.....	1897
AMES, J. H., 96 Bay St., Toronto, Can.....	1895
ARCHER, W. C., 45 Chambers St., N. Y. City.....	1888
ARMSTRONG, EDWARD HENRY, 140 Wood St., Providence, R. I.....	1897
ARNOLD, EDWARD, 126 Van Buren St., Battle Creek, Mich.....	1894
ATKINS, JOHN W., Key West, Florida.....	1887
ATKINSON, DANIEL ARMSTRONG, Wilksburg, Pa.....	1899
ATTWATER, H. P., Houston, Texas.....	1891
AVERELL, Miss ELIZABETH BUELL, 325 East Ave., Rochester, N. Y.....	1899
BACON, CARRINGTON C., Imboden, Arkansas.....	1890
BAGG, EGBERT, 424 Genesee St., Utica, N. Y.....	1883
BALL, Miss HELEN AUGUSTA, 43 Laurel St., Worcester, Mass.....	1893
BAILEY, CHARLES E., 21 Middlesex St., Malden, Mass.....	1890
BAILEY, Mrs. FLORENCE MERRIAM, 3221 School St., N. W., Wash- ton, D. C.....	1885
BAILEY, VERNON, Dept. of Agriculture, Washington, D. C.....	1887
BAILY, WILLIAM L., 421 Chestnut St., Philadelphia, Pa.....	1885
BAIRD, Miss LUCY HUNTER, 1708 Locust St., Phila., Pa.....	1899
BAKER, Miss CHRISTINE VIRGINIA, 8 West 57th St., New York City.....	1899
BAKER, Miss EMILIE H., 8 West 57th St., New York City.....	1899
BANGS, EDWARD APPLETON, 22 Pemberton Sq., Boston, Mass.....	1884
BANGS, OUTRAM, 240 Beacon St., Boston, Mass.....	1884
BARBER, CHARLES M., Albuquerque, N. M.....	1900
BARBOUR, Prof. ERWIN H., Univ. of Neb., Lincoln, Nebraska.....	1892
BARLOW, CHESTER, Santa Clara, Cal.....	1894
BARNARD, JOB, 1306 Rhode Island Av., Washington, D. C.....	1886
BARNES, Hon. R. MAGOON, Lacon, Ill.....	1889
BARROLL, Miss NINA LIVINGSTON, 684 Salem Av., Elizabeth, N. J.....	1899
BARRY, Miss AMY FRANCES, 53 Oakland St., Melrose, Mass.....	1898
BARTSCH, PAUL, Smithsonian Institution, Washington, D. C.....	1896
BASKETT, JAMES NEWTON, Box 825, Mexico, Mo.....	1892
BATCHELOR, WILLIAM A., 1109 Kinnickinnic Av., Milwaukee, Wis.....	1899
BATES, Mrs. ABBY FRANCES CALDWELL, Waterville, Maine.....	1894
BAXTER, GEORGE STRONG, Jr., 18 Wall St., New York City.....	1894
BEAL, F. E. L., 315 V. St., N. E., Washington, D. C.....	1887
BEARD, DANIEL CARTER, 204 Amity St., Flushing, N. Y.....	1887
BECK, ROLLO HOWARD, Berryessa, Santa Clara Co., Cal.....	1894
BEEBE, CHARLES WILLIAM, N. Y. Zoölogical Park, 183rd St. and Southern Boulevard, N. Y.....	1897
BEERS, HENRY W., 91 Denver Ave., Bridgeport, Conn.....	1895
BENT, ARTHUR CLEVELAND, Taunton, Mass.....	1889

BERGTOLD, Dr. W. H., 1460 Clayton Av., Denver, Colo.	1889
BERIER, DE LAGNEL, Ridgewood, N. J.	1885
BEYER, Prof. GEORGE E., Tulane Univ., New Orleans, La.	1899
BIDDLE, Miss EMILY WILLIAMS, 2201 Sansom St., Philadelphia, Pa.	1898
BIGELOW, HENRY BRYANT, Cohasset, Mass.	1897
BIGELOW, JOSEPH SMITH, Jr., 251 Commonwealth Av., Boston Mass.	1896
BIGNELL, Mrs. EFFIE, 135 College Av., New Brunswick, N. J.	1899
BISHOP, Dr. LOUIS B., 356 Orange St., New Haven, Conn.	1885
BLACKWELDER, ELIOT, Morgan Park, Cook Co., Ill.	1895
BLATCHLEY, W. S., State Geologist, Indianapolis, Ind.	1895
BOND, FRANK, 822 E. 19th St., Cheyenne, Wyoming.	1887
BOND, HARRY L., Meriden, Iowa.	1890
BOWDITCH, HAROLD, Jamaica Plain, Boston, Mass.	1900
BOWLES, JOHN HOOPER, 401 So. G St., Tacoma, Wash.	1891
BRACKEN, Mrs. HENRY MARTYN, 1010 Fourth St., S. E., Minne- apoli, Minn.	1897
BRADFORD, Mrs. MARY F., 3804 St. Charles Av., New Orleans, La.	1897
BRADFORD, MOSES B. L., Concord, Mass.	1889
BRAISLIN, Dr. WILLIAM C., 217 St. James Place, Brooklyn, N. Y.	1894
BRANDRETH, FRANKLIN, Sing Sing, N. Y.	1889
BRENINGER, GEORGE FRANK, Phoenix, Arizona.	1898
BREWSTER, EDWARD EVERETT, Iron Mountain, Mich.	1893
BRIMLEY, CLEMENT S., New Berne Av., Raleigh, N. C.	1888
BROCK, HENRY HERBERT, M. D., 662 Congress St., Portland, Me.	1894
BROCKWAY, ARTHUR WILLIAM, Lyme, Conn.	1898
BROOKS, Rev. EARLE AMOS, Charlestown, W. Va.	1892
BROOKS, CLARENCE MORRISON, Keene, N. H.	1900
BROWN, EDWARD J., Lemon City, Dade Co., Florida.	1891
BROWN, HERBERT, Yuma, Arizona.	1885
BROWN, HUBERT H., 70 Collier St., Toronto, Ontario.	1889
BROWN, STEWARDSON, Germantown, Philadelphia, Pa.	1895
BROWN, WILMOT W., Jr., Somerville, Mass.	1892
BRUCE, Mrs. MARY EMILY, Easthampton, Mass.	1894
BRUNER, Prof. LAWRENCE, Univ. of Nebraska, Lincoln, Neb.	1899
BRYAN, WILLIAM ALANSON, Bishop Museum, Honolulu, H. Ids.	1898
BUCK, HENRY ROBINSON, Wethersfield, Conn.	1897
BULLARD, CHARLES, 67 Upland Road, Cambridge, Mass.	1896
BULLEY, REGINALD H., Canton, Ohio.	1889
BUNNELL, ALEXANDER STERLING, Berkeley, Calif.	1899
BURGESS, JOHN KINGSBURY, Dedham, Mass.	1898
BURNETT, WILLIAM L., Box 511, Fort Collins, Colo.	1895
BURNS, FRANK L., Berwyn, Chester Co., Pa.	1891
BURTIS, HENRY MOTT, Babylon, N. Y.	1897
BURTON, H. C., 228 South St., New York City.	1893
BUSWELL, WALTER MARIN, Charlestown, N. H.	1897
BUTLER, AMOS W., 52 State House, Indianapolis, Ind.	1885

BUXBAUM, MRS. CLARA E., St. Joseph, Mich.....	1895
CALL, AUBREY BRENDON, Burlington, Vt.....	1894
CAMPBELL, HORATIO NELSON, Jr., Providence, R. I.....	1899
CARPENTER, CHARLES KNAPP, Pecatonica, Ill.....	1894
CARROLL, JAMES J., Waco, Texas.....	1898
CARSON, ROBERT DUNCAN, 419 W. Rittenhouse St., Germantown, Philadelphia, Pa.....	1899
CARY, MERRITT, Care of Univ. of Neb., Lincoln, Neb.....	1898
CASE, MRS. BESSIE B., Evanston, Ill.....	1900
CASE, CLIFFORD M., 54 Babcock St., Hartford, Conn.....	1892
CASH, HARRY A., 54 Spring St., Pawtucket, R. I.....	1898
CHAMBERLAIN, CHAUNCY W., 36 Lincoln St., Boston, Mass.....	1885
CHAPIN, PROF. ANGIE CLARA, Wellesley College, Wellesley, Mass...	1896
CHASE, MRS. AGNES, 5515 Monroe Av., Chicago, Ill.....	1896
CHERRIE, GEORGE K., 27 Fairview Place, Brooklyn, N. Y.....	1891
CHILDS, JOHN LEWIS, Floral Park, N. Y.....	1900
CHUBB, SAMUEL H., 73 W. 118th St., New York City.....	1894
CLARK, AUSTIN HOBART, Newtonville, Mass.....	1899
CLARK, EDWARD B., 304 No. State St., Chicago, Ill.....	1900
CLARK, DR. ERNEST L., Media, Pa.....	1899
CLARK, HUBERT LYMAN, Olivet College, Olivet, Mich.....	1886
CLARK, JOHN N., Box 34, Saybrook, Conn.....	1885
CLARK, JOSIAH H., 238 Broadway, Paterson, N. J.....	1895
CLARKE, MISS HARRIET E., 9 Chestnut St., Worcester, Mass.....	1896
CLEARWATERS, REV. JOHN FRED, Oakland, Ill.....	1895
COALE, H. K., Highland Park, Ill.....	1883
COGGINS, HERBERT LEONARD, 5025 McKean Av., Germantown, Phila., Pa.....	1898
COLBURN, ALBERT E., 1233 G St., Washington, D. C.....	1891
COLLETT, ALONZO M., Denver High School, Denver, Colo.....	1897
COLLINS, JOHN ARTHUR, Jr., Lawrence, Mass.....	1900
COLVIN, WALTER S., Osawatomie, Kansas.....	1896
COMEAU, NAPOLEON A., Godbout, P. Q.....	1885
CONGDON, HERBERT WHEATON, 111 Montague St., Brooklyn, N. Y..	1893
COOK, MISS LILIAN GILLETTE, 56 W. 75th St., New York City.....	1899
COPE, ALBAN, Butler Hospital, Providence, R. I.....	1885
COPE, FRANCIS R., Jr., Dimock P. O., Pa.....	1892
COPELAND, DR. ERNEST, 141 Goldsmith Bldg., Milwaukee, Wis.....	1897
COPELAND, MANTON, Taunton, Mass.....	1900
COUES, DR. WILLIAM PEARCE, 90 Charles St., Boston, Mass.....	1888
COURT, EDWARD J., 3303 17th St., N. W., Washington, D. C.....	1899
COX, ULYSSES O., State Normal School, Mankato, Minn.....	1894
CRAM, R. J., 26 Hancock Ave., W., Detroit, Mich.....	1893
CRANDALL, C. W., Woodside, Queen's Co., N. Y.....	1891
CRAWFORD, JOHN, Lakefield, Minn.....	1899
CROLIUS, MISS ANNE A., 815 Carnegie Hall, New York City.....	1897

CURRIE, ROLLA P., Dept. Insects, U. S. Nat. Mus., Washington, D. C.....	1895
CURRIER, EDMONDE SAMUEL, 909 Franklin St., Keokuk, Iowa.....	1894
DAFFIN, WM. H., Tacony, Philadelphia, Pa.....	1892
DAGGETT, FRANK S., 255 Ramona St., Pasadena, Cal.....	1889
DANIEL, JOHN W., Jr., 1700 19th St., N. W., Washington, D. C.....	1895
DART, LESLIE O., St. Barnabas Hospital, Minneapolis, Minn.....	1898
DAVENPORT, MRS. ELIZABETH BRAXTON, Brattleboro, Vt.....	1898
DAVIS, CLARENCE N., Branchport, N. Y.....	1897
DAVIS, Miss MARY A., 44 W. 93rd St., New York City.....	1898
DAVIS, STEWART, Narragansett Pier, R. I.....	1899
DAVIS, WALTER R., Newton, Mass.....	1900
DAWSON, Rev. WILLIAM LEON, Columbus, O.....	1895
DAY, CHESTER SESSIONS, 280 Newbury St., Boston, Mass.....	1897
DEAN, R. H., La Crosse, Wis.....	1893
DEANE, GEORGE CLEMENT, 80 Sparks St., Cambridge, Mass.....	1899
DEANE, WALTER, 29 Brewster St., Cambridge, Mass.....	1897
DE HAVEN, ISAAC NORRIS, Ardmore, Pa.....	1893
DERBY, RICHARD, No. 2 Beck Hall, Cambridge, Mass.....	1898
DEWEY, Dr. CHARLES A., 53 So. Fitzhugh St., Rochester, N. Y.....	1900
DEWEY, Miss MARGARET, 168 Pearl St., Springfield, Mass.....	1892
DICKINSON, JOSEPH A., Gresham, Nebr.....	1894
DICKINSON, W. S., Miami, Dade Co., Fla.....	1891
DILLE, FREDERIC M., Altona, Boulder Co., Colo.....	1892
DIONNE, C. E., Laval Univ., Quebec, Can.....	1893
DIXON, FREDERIC J., Elm Av., Hackensack, N. J.....	1891
DODGE, CHARLES W., Univ. of Rochester, Rochester, N. Y.....	1900
DODGE, FREDERICK CLINTON, 125 Milk St., Boston, Mass.....	1897
DOUBLEDAY, MRS. FRANK NELSON, 111 E. 16th St., New York City..	1897
DOUGHERTY, Col. WILLIAM E., U. S. A., Manila, P. I.....	1890
DRAPER, Miss DOROTHEA, 19 E. 47th St., New York City.....	1899
DROWNE, FREDERICK PEABODY, 20 Benefit St., Providence, R. I....	1899
DUGMORE, ARTHUR RADCLYFFE, South Orange, N. J.....	1899
DULL, Mrs. A. P. L., 211 No. Front St., Harrisburg, Pa.....	1900
DURFEE, OWEN, Fall River, Mass.....	1887
DUTCHER, Dr. BASIL HICKS, U. S. A., Fort Hancock, N. J.....	1886
DYCHE, Prof. L. L., Lawrence, Kansas.....	1886
EASTMAN, HARRY D., Framingham, Mass.....	1891
EATON, ELON HOWARD, Canandaigua, N. Y.....	1895
EDDY, NEWELL A., 615 North Grant St., Bay City, Mich.....	1885
EDGAR, NEWBOLD, 28 E. 39th St., New York City.....	1891
EDSON, JOHN M., New Whatcom, Washington.....	1886
ELROD, Prof. M. J., Univ. of Montana, Missoula, Montana.....	1892
EMBODY, GEORGE CHARLES, 78 Seymour St., Auburn, N. Y.....	1898
EMERSON, CHARLES J., Stoneham, Mass.....	1896
EMERY, Mrs. ANNIE C., Ellsworth, Me.....	1897

EMLIN, ARTHUR COPE, Awbury, Germantown, Philadelphia, Pa....	1896
EMORY, Mrs. MARY DILLE, Morgantown, W. Va.....	1899
EVANS, ERNEST MERWYN, Awbury, Germantown, Philadelphia, Pa..	1897
EVANS, WILLIAM B., Moorestown, N. J.....	1897
EVERMAN, Prof. BARTON W., U. S. Fish Comm., Washington, D. C.	1883
FANNIN, JOHN, Provincial Museum, Victoria, B. C.....	1888
FARLEY, JOHN A., 17 Russell St., Malden, Mass.....	1892
FARR, MARCUS S., 29 Vandeventer St., Princeton, N. J.....	1900
FARWELL, Mrs. ELLEN DRUMMOND, Lake Forest, Ill.....	1896
FARWELL, Mrs. FRANCIS COOLEY, Lake Forest, Ill.....	1898
FELGER, ALVA HOWARD, 2628 Clay St., Denver, Col.....	1898
FERNALD, ROBERT HEYWOOD, 296 Manhattan Av., New York City..	1890
FERRY, JOHN FARWELL, Lake Forest, Ill.....	1894
FIELD, EDWARD BRONSON, 981 Asylum Av., Hartford, Conn.....	1898
FIELD, EUGENE DWINELL, 68 Beacon St., Hartford, Conn.....	1899
FIELD, THERON R., 737 Clarkson St., Denver, Colo.....	1900
FISHER, Miss ELIZABETH WILSON, 1502 Pine St., Philadelphia, Pa..	1896
FISHER, WALTER KENRICK, Stanford Univ., Calif.....	1899
FISHER, WILLIAM H., 1320 Bolton St., Baltimore, Md.....	1895
FISHER, WILLIAM HUBBELL, Wiggins Block, Cincinnati, Ohio.....	1883
FLANAGAN, JOHN H., 392 Benefit St., Providence, R. I.....	1898
FLEMING, JAMES H., 267 Rusholme Road, Toronto, Can.....	1893
FLETCHER, Mrs. MARY E., Ludlow, Vermont.....	1898
FLINT, HARRY W., Yale National Bank, New Haven, Conn.....	1888
FOOTE, Miss F. HUBERTA, Inwood-on-Hudson, New York City.....	1897
FORBUSH, EDWARD H., Wareham, Mass.	1887
FOSTER, FRANCIS APTHORP, 15 Oxford St., Cambridge, Mass.....	1893
FOWLER, FREDERICK HALL, Palo Alto, Calif.....	1892
FOWLER, HENRY W., Holmesburg, Philadelphia, Pa.....	1898
FOX, Dr. WILLIAM H., 1826 Jefferson Place, Washington, D. C.....	1883
FUERTES, LOUIS AGASSIZ, 13 East Av., Ithaca, N. Y.....	1891
FULLER, CHARLES ANTHONY, Sumner Road, Brookline, Mass.....	1894
GARBUTT, STUART BENNETT, Fort Collins, Colo.....	1898
GARDE, ANDREW EARL, 28 Chestnut St., Willimantic, Conn.....	1899
GAUT, JAMES H., 1407 6th St., N. W., Washington, D. C.....	1899
GESNER, Rev. ANTHON T., Billings, Mont.....	1899
GILLET, LOUIS BLISS, 131 E. 76th St., New York City.....	1895
GILMAN, PHILIP KINGSWORTH, Box 141, Stanford University, Cal..	1897
GLEASON, Rev. HERBERT W., 9 Walnut St., Boston, Mass.....	1894
GLENNAN, Dr. JAMES DENVER, U. S. A., Fort Myer, Va.....	1898
GOLDMAN, EDWARD ALPHONSO, U. S. Dept. Agl., Washington, D. C.	1897
GOODALE, Dr. JOSEPH LINCOLN, 3 Fairfield St., Boston, Mass.....	1885
GOULD, HENRY, 648 Dundas St., London, Ontario.....	1899
GOULD, JOSEPH E., 519 Lookout St., Chattanooga, Tenn.....	1889
GRANGER, WALTER W., Am. Mus. Nat. Hist., New York City.....	1891
GRAY, RALPH W., 79 Marlborough St., Boston, Mass.....	1896

GREEN, MORRIS M., Bay City, Mich.....	1886
GRIFFING, MOSES BOWDITCH, Shelter Island Heights, N. Y.....	1897
GRINNELL, JOSEPH, Palo Alto, Cala.....	1894
HALES, HENRY, Ridgewood, N. J.....	1890
HALL, GARDNER W., 122 Jackson Place, Baltimore, Md.....	1900
HALL, Miss MINNA B., Brookline, Mass.....	1900
HAM, JUDSON BAXTER, Johnson, Vt.....	1894
HAMFELDT, A., 305 Main St., Ottawa, Ill.....	1892
HAMLIN, GEORGE L., Bethel Conn.....	1893
HANKINSON, THOMAS LEROY, 1184 Cascadilla Place, Ithaca, N. Y....	1897
HARDY, MANLY, Brewer, Maine.....	1883
HARRIMAN, Miss CORNELIA, 1 E. 55th St., New York City.....	1899
HARRIMAN, Miss MARY, 1 E. 55th St., New York City.....	1899
HARRIS, WILLIAM C., Utica, N. Y.....	1894
HARTZELL, Prof. JOSEPH CULVER, Ills. Wesleyan Univ., Bloomington, Ill.....	1892
HARVEY, HERBERT A., 113 Main St., Bradford, Pa.....	1899
HATHAWAY, HENRY S., Box 498, Providence, R. I.....	1897
HAVEMEYER, H. O., Jr., So. 4th and Kent Av., Brooklyn, N. Y.....	1893
HAY, WILLIAM PERRY, Howard Univ., Washington, D. C.....	1893
HAZARD, Miss MARY PEACE, Peace Dale, R. I.....	1896
HAZARD, R. G., Peace Dale, R. I.....	1885
HECOX, Miss LAURA J. F., Light House Keeper, Santa Cruz, Cala...	1897
HEDGES, CHARLES F., Miles City, Mont.....	1892
HEIMSTREET, Dr. T. B., 14 Division St., Troy, N. Y.....	1888
HELME, ARTHUR H., Millers Place, Suffolk Co., N. Y.....	1888
HENDRICKSON, W. F., 130 12th St., Long Island City, N. Y.....	1885
HENNINGER, Rev. WALTHER F., Waverly, Ohio.....	1898
HENRY, Miss MARY CATHERINE, 28 Freeland St., Worcester, Mass...	1898
HIGBEE, HARRY G., Hyde Park, Mass.....	1900
HIGGINSON, ALEXANDER HENRY, Lincoln, Mass.....	1899
HILL, JAMES HAYNES, Box 485, New London, Conn.....	1897
HINDSHAW, HENRY HAVELOCK, Johns Hopkins Univ., Baltimore, Md.....	1897
HINE, Prof. JAMES STEWART, State Univ., Columbus, O.....	1899
HINE, Mrs. JANE L., Sedan, Ind.....	1890
HINKLEY, ARTHUR MERRIMAN, Box 54, North Middleboro, Mass....	1898
HINTON, Miss SUSAN McV., 41 W. 32d St., New York City.....	1900
HITCHCOCK, FRANK H., Dept. of Agriculture, Washington, D. C....	1891
HODGE, Prof. CLIFTON FREMONT, Clark Univ., Worcester, Mass....	1899
HOFFMAN, RALPH, Belmont, Mass.....	1893
HOLDEN, EDWARD FREEMAN, 32 Lake Av., Melrose, Mass.....	1896
HOLLAND, Dr. WILLIAM J., 5th and Bellefield Aves., Pittsburgh, Pa...	1899
HOLLISTER, NED, Delavan, Wis.....	1894
HOLSTEIN, OTTO, 910 Ave. C, San Antonio, Texas.....	1898
HOOPES, JOSIAH, West Chester, Pa.....	1889

HOOVER, THEODORE JESSE, Stanford Univ., Cala.....	1898
HORNADAY, W. T., Zoölogical Park, New York City.....	1888
HORTON, Mrs. FRANCES B., Brattleboro, Vt.....	1900
HORN BROOKE, Mrs. ORINDA DUDLEY, Newton, Mass.....	1897
HOWARD, OZORA WILLIAM, Fort Huachuca, Ariz.....	1898
HOWE, REGINALD HEBER, Jr., Longwood, Brookline, Mass.....	1895
HOWELL, ARTHUR H., Dept. of Agriculture, Washington, D. C.....	1889
HUBBARD, GEORGE W., 94 Byers St., Springfield, Mass.....	1900
HUBBARD, Miss MARGARET TUESDALE, Minneapolis, Minn.....	1899
HUBBARD, Mrs. SARA A., 177 Woodruff Av., Flatbush, N. Y.....	1891
HUGHES, Dr. WILLIAM E., 3945 Chestnut St., Philadelphia, Pa.....	1891
HULL, WALTER B., Box 1234, Milwaukee, Wis.....	1889
HUNN, JOHN T. SHARPLESS, 1218 Prospect Av., Plainfield, N. J.....	1895
HUNTER, Miss SUSAN MORRISON, 51 Hunter Av., Newport, R. I.....	1894
HUNTER, W. D., Victoria, Texas.....	1899
INGALLS, CHARLES E., East Templeton, Mass.....	1885
INGERSOLL, ALBERT M., 818 5th St., San Diego, Cala.....	1885
IRVING, JOHN, 550 Park Av., New York City.....	1894
ISHAM, C. B., 30 E. 63d St., New York City.....	1891
JACKSON, THOMAS H., 343 E. Biddle St., West Chester, Pa.....	1888
JACOBS, J. WARREN, Waynesburg, Pa.....	1889
JAMES, Miss ANNIE A., Loveland, O.....	1900
JANNEY, NATHANIEL E., Broad and Chestnut Sts., Phila., Pa.....	1899
JEFFRIES, WILLIAM AUGUSTUS, 78 Devonshire St., Boston, Mass.....	1883
JESURUN, Dr. MORTIMER, Douglas, Wyoming.....	1890
JOB, Rev. HERBERT K., Kent, Connecticut.....	1896
JOHNSON, EVERETT EDWIN, Lewiston, Me.....	1896
JOHNSON, FRANK EDGAR, 747 Warburton Av., Yonkers, N. Y.....	1888
JOHNSON, JAMES HOWARD, So. Sutton, N. H.....	1894
JOHNSON, WALTER ADAMS, 137 W. 103d St., New York City.....	1898
JOHNSON, WILLIAM S., Boonville, N. Y.....	1893
JONES, LYND, College Museum, Oberlin, Ohio.....	1888
JORDAN, A. H. B., Lowell, Wash.....	1888
JORDAN, Prof. DAVID STARR, Stanford University, Cala.....	1885
JUDD, SYLVESTER D., Dept. Agriculture, Washington, D. C.....	1893
KEAYS, JAMES EDWARD, 859 Wellington St., London, Ont.....	1899
KELKER, WILLIAM A., Box 114, Harrisburg, Pa.....	1896
KELLOGG, VERNON L., Stanford University, Cala.....	1888
KENDALL, Dr. WILLIAM C., U. S. Fish Comm., Washington, D. C.....	1886
KENNARD, FREDERIC HEDGE, Brookline, Mass.....	1892
KEYSER, Rev. LEANDER S., 723 So. 5th Av., Atchison, Kan.....	1891
KING, GEORGE GORDON, 62 William St., New York City.....	1888
KIRKWOOD, FRANK C., 1500 Bolton St., Baltimore, Md.....	1892
KITE, NATHAN, 723 N. 44th St., Philadelphia, Pa.....	1899
KNETSCH, ROBERT, Nunda, Ills.....	1898
KNIGHT, ORA WILLIS, 84 Forest Av., Bangor, Me.....	1893

KNOLHOFF, FERDINAND WILLIAM, 28 Winans St., East Orange, N. J.	1897
KNOWLTON, F. H., U. S. Nat. Mus., Washington, D. C.	1883
KNOX, JOHN C., 14 State St., Auburn, N. Y.	1897
KNOX, JOHN COWING, Jackson, Minn.	1899
KOBBE, WILLIAM H., Fort Mason, San Francisco, Cala.	1898
KOCH, Prof. AUGUST, Williamsport, Pa.	1891
KOCH, FREDERIC W., Berkeley, Cala.	1891
KOHN, GUSTAVE, 14 Carondelet St., New Orleans, La.	1886
KOPMAN, HENRY HAZLITT, Covington, La.	1899
KOUMLY, Rev. PIRMIN M., St. Benedict's College, Atchison, Kansas.	1892
KUMLIEN, LUDWIG, Milton, Wis.	1895
LACEY, HOWARD GEORGE, Kerrville, Texas.	1899
LADD, SAMUEL B., Westchester, Pa.	1889
LANO, ALBERT, Aitkin, Minn.	1890
LANTZ, Prof. DAVID ERNEST, Acad. of Sciences, Alma, Kans.	1885
LATIMER, Miss CAROLINE P., 63 Remsen St., Brooklyn, N. Y.	1898
LEE, Miss MARY, 5131 Morris St., Germantown, Pa.	1898
LEUTLOFF, HERMAN C. A., 633 E. 135th St., New York City.	1896
LEVERING, THOMAS HENRY, 1435 Chapin St., Washington, D. C.	1898
LIBBY, ORIN GRANT, 426 Bruen St., Madison, Wis.	1900
LINK, GUSTAV A., 50 Boggs Av., Pittsburgh, Pa.	1899
LLOYD, ANDREW JAMES, 310 Boylston St., Boston, Mass.	1900
LONG, HORACE B., 14 Anna St., Worcester, Mass.	1889
LOOMIS, JOHN A., Paint Rock, Concho Co., Texas.	1887
LORING, J. ALDEN, Zoological Park, New York City.	1889
LOWBER, Miss EMMA WORRELL, 2045 Locust St., Philadelphia, Pa.	1898
LOWE, WILLOUGHBY P., Okehampton, Devon, Eng.	1893
LUDLAM, CHRISTOPHER, Ocean City, Md.	1900
LUSK, RICHARD D., Fort Huachuca, Ariz.	1894
MACDOUGALL, GEORGE R., 112 Wall St., New York City.	1890
MACKAY, GEORGE H., Nantucket, Mass.	1890
MADDOCK, Miss EMELINE, 32 So. 21st St., Philadelphia, Pa.	1897
MAILLIARD, JOHN W., 307 Sansome St., San Francisco, Cala.	1895
MAILLIARD, JOSEPH, San Geronimo, Cala.	1895
MAIRES, Dr. WALTER W., 939 N. 12th St., Philadelphia, Pa.	1899
MAITLAND, ROBERT L., 35 Nassau St., New York City.	1889
MALI, CHARLES M., Verviers, Belgium.	1889
MARSH, DANIEL J., Springfield, Mass.	1894
MASON, HOWARD HARRIS, 325 W. 56th St., New York City.	1897
MASTERMAN, ELMER ELLSWORTH, New London, Ohio.	1895
MATHEWS, Miss CAROLINE, Waterville, Me.	1898
MAULE, WILLIAM MARIS, Collins, Pa.	1897
MCCLINTOCK, Norman, Amberson Av., Pittsburgh, Pa.	1900
MCCOOK, PHILIP JAMES, 32 E. 45th St., New York City.	1895
MCCORMICK, Miss ELIZA, 101 No. Front St., Harrisburg, Pa.	1900
MCGREGOR, RICHARD C., Box 258, Palo Alto, Cala.	1889

McHATTON, Dr. HENRY, Macon, Ga.....	1898
McILHENNY, EDWARD AVERY, Avery's Island, La.....	1894
McKECHNIE, FREDERICK BRIDGHAM, Ponkapog, Mass.....	1900
McLAIN, ROBERT BAIRD, cor. Market & 12th Sts., Wheeling, W. Va..	1893
McNULTY, HENRY A., So. Orange, N. J.....	1900
MEAD, GEORGE S., 2203 Central Av., San Francisco, Cala.....	1898
MEARNS, LOUIS DI ZEREGA, Fort Adams, Newport, R. I.....	1899
MEEKER, Mr. JESSE C. A., 746 E. Main St., Bridgeport, Conn.....	1899
MERRILL, Miss HARRIET BELL, Downer College, Milwaukee, Wis....	1899
MERRILL, HARRY, Bangor, Maine.....	1883
MICKLE, THOMAS McK., Charlotte, N. C.....	1900
MILLER, GERRIT SMITH, Jr., U. S. Nat. Mus., Washington, D. C....	1886
MILLER, JAMES HENRY, Lowville, N. Y.....	1894
MILLER, Miss MARY MANN, 827 De Kalb Ave, Brooklyn, N. Y.....	1898
MILLER, Mrs. OLIVE THORNE, 827 De Kalb Ave., Brooklyn, N. Y....	1887
MILLER, WALDRON DE WITT, Plainfield, N. J.....	1896
MILLS, Prof. WILLIAM C., State Univ., Columbus, O.....	1900
MITCHELL, Mrs. MINA BAKER, Care of Plow Co., Chattanooga, Tenn.	1898
MITCHELL, WALTON I., 1721 Mt. Vernon St., Philadelphia, Pa.....	1893
MONTGOMERY, THOMAS H., Jr., Univ. Pennsylvania, Phila., Pa.....	1899
MOON, JOACHIM RICHARD, 934 Broadway, Camden, N. J.....	1898
MOORE, ROBERT THOMAS, Haddonfield, N. J.....	1898
MOORE, WILLIAM HENRY, Scotch Lake, New Brunswick.....	1900
MORCOM, G. FREAN, 512 Coronado St., Los Angeles, Cala.....	1886
MORRELL, CLARENCE HENRY, Pittsfield, Me.....	1897
MORRIS, GEORGE SPENCER, Olney, Philadelphia, Pa.....	1887
MORRIS, ROBERT O., Springfield, Mass.....	1888
MORSE, GEORGE W., Ashley, Ind.....	1898
MORTON, HOWARD McILVAIN, 316 Clifton Av., Minneapolis, Minn..	1900
MOSHER, FRANK H., 283 Pleasant St., Malden, Mass.....	1898
MURDOCH, JOHN, 195 Walnut Ave., Roxbury, Mass.....	1883
MYERS, Miss LUCY F., "Brookside," Poughkeepsie, N. Y.....	1898
NASH, HERMAN W., Pueblo, Colorado.....	1892
NELSON, JAMES ALLEN, 248 S. 39th St., Philadelphia, Pa.....	1898
NEWBURY, FREDERICK EARL, 82 Westminster St., Providence, R. I..	1897
NEWMAN, STEPHEN M., D. D., 1818 M. St., N. W., Washington, D. C.....	1898
NICHOLS, JOHN M., Portland, Me.....	1890
NICHOLSON, RICHARD R., Winnipeg, Manitoba.....	1900
NORRIS, Rev. JAMES AVERY, Glen Cove, N. Y.....	1894
NORRIS, J. PARKER, 723 Walnut St., Philadelphia, Pa.....	1886
NORTON, ARTHUR H., Westbrook, Maine.....	1890
NORTON, ARTHUR HENRY WHITELEY, San Antonio, Texas.....	1894
NORTON, Prof. RICHARD, "Shady Hill," Cambridge, Mass.....	1888
NOWELL, JOHN ROWLAND, Anderson, S. C.....	1897
OBERHOLSER, HARRY C., Dept. of Agriculture, Washington, D. C....	1888

O'CONNOR, HALDEMAN, 25 No. Front St., Harrisburg, Pa.....	1896
OGDEN, Dr. HENRY VINING, 141 Wisconsin St., Milwaukee, Wis....	1897
OLDS, HENRY WORTHINGTON, Dept. of Agriculture, Washington, D. C.....	1896
OLIVER, HENRY KEMBLE, 2 Newbury St., Boston, Mass.....	1900
O'NEIL, EDWARD, Sewickley, Allegheny Co., Pa.....	1893
OSBORN, CHASE SALMON, Sault Ste. Marie, Mich.....	1893
OSBURN, RAYMOND CARROLL, Fargo College, Fargo, N. D.....	1899
OSBURN, Rev. WILLIAM, 107 University St., Nashville, Tenn.....	1890
OSGOOD, WILFRED HUDSON, Dept. of Agriculture, Washington, D. C.	1893
OWEN, CHARLES C., 340 William St., East Orange, N. J.....	1896
OWEN, Miss JULIETTE AMELIA, 306 No. 9th St., St. Joseph, Mo.....	1897
PAGE, Mrs. ALICE WILSON, Hotel Margaret, Brooklyn, N. Y.....	1896
PAINE, AUGUSTUS G., Jr., Times Building, New York City.....	1886
PALMER, Dr. THEODORE S., Dept. of Agriculture, Washington, D. C.	1888
PALMER, SAMUEL COPELAND, Swarthmore, Pa.....	1899
PARKER, WENDELL PHILIPS, 2 Midland St., Worcester, Mass.....	1897
PATTEN, Mrs. JEANIE MAWRY, 3033 P. St., N. W., Washington, D. C.	1900
PEABODY, WILLIAM RODMAN, 13 Kirkland St., Cambridge, Mass....	1890
PEARSON, T. GILBERT, Guilford College, N. C.....	1891
PENNOCK, CHARLES J., Kennett Square, Chester Co., Pa.....	1888
PERKINS, CHARLES E., Box 854, Hartford, Conn.....	1888
PETERSON, Prof. J. P., West Denmark, Polk Co., Wis.....	1885
PHELPS, Mrs. ANNA BARDWELL, Box 36, Northfield, Mass.....	1899
PHILLIPS, A. H., Princeton, N. J.....	1891
PIERCE, A. K., Renovo, Pa.....	1891
PLIMPTON, Prof. GEORGE L., Tilton, N. H.....	1900
POE, Miss MARGARETTA, 1500 Park Ave., Baltimore, Md.....	1899
POMEROY, FRED ELMER, 164 Holland St., Lewiston, Me.....	1899
POMEROY, HARRY KIRKLAND, Kalamazoo, Mich.....	1894
PORTER, LOUIS H., 55 E. 54th St., New York City.....	1893
POTTER, RAYMOND B., Box 491, Nyack, N. Y.....	1895
PRAEGER, WILLIAM E., Streator, Ill.....	1892
PREBLE, EDWARD A., Dept. of Agriculture, Washington, D. C.....	1892
PRICE, WILLIAM W., Alta, Cala.....	1893
PROCTOR, Dr. F. I., 369 Marlborough St., Boston, Mass.....	1900
PROCTOR, Miss MARY A., Franklin Falls, N. H.....	1900
PURDY, JAMES B., Plymouth, Mich.....	1893
RALPH, Dr. WILLIAM L., U. S. Nat. Mus., Washington, D. C.....	1888
RANN, Mrs. MARY L., Manchester, Iowa.....	1893
RATHBUN, FRANK R., 42½ Franklin St., Auburn, N. Y.....	1883
RAWSON, CALVIN LUTHER, Box 33, Norwich, Conn.....	1885
READ, ALBERT M., 1140 15th St., N. W., Washington, D. C.....	1895
READY, GEORGE HENRY, Phoenix, Ariz.....	1900
REAGH, Dr. ARTHUR LINCOLN, 39 Maple St., West Roxbury, Mass...	1896
REDFIELD, Miss ELISA WHITNEY, 107 No. 34th St., Philadelphia Pa.	1897

REDINGTON, ALFRED POETT, Santa Barbara, Cala.....	1890
REED, J. HARRIS, 4537 Pulaski Av., Germantown, Philadelphia, Pa....	1890
REED, HOWARD S., 2918 Lafayette St., Denver, Colo.....	1894
REED, HUGH DANIEL, Cornell Univ., Ithaca, N. Y.....	1900
RHOADS, CHARLES J., Bryn Mawr, Pa.....	1895
RHOADS, SAMUEL N., Audubon, Camden Co., N. J.....	1885
RICHARDS, Miss HARRIET E., Brookline, Mass.....	1900
RICHARDS, JOHN BION, Fall River, Mass.....	1888
RICHARDSON, JOHN KENDALL, Wellesley Hills, Mass.....	1896
RICKER, EVERETT WILDER, 16 Alveston St., Jamaica Plains, Mass....	1894
RIDGWAY, JOHN L., U. S. Geol. Surv., Washington, D. C.....	1896
RIKER, CLARENCE B., Maplewood, N. J.....	1885
RILEY, JOSEPH H., Falls Church, Va.....	1897
RITCHIE, SANFORD, Dover, Me.....	1900
RIVES, Dr. WILLIAM C., 1723 I St., Washington, D. C.....	1885
ROBINS, Mrs. JULIA STOCKTON, 114 S. 21st St., Philadelphia, Pa....	1895
ROBERTS, Miss ETHEL DANE, 78 Pittsburg Av., Wooster, Ohio.....	1899
ROBINSON, Capt. WIRT, U. S. A., West Point, N. Y.....	1897
RODDY, Prof. H. JUSTIN, State Normal School, Millersville, Pa.....	1891
ROOSEVELT, FRANKLIN DELANO, Hyde Park, N. Y.....	1896
ROOSEVELT, Hon. THEODORE, Oyster Bay, Queens Co., N. Y.....	1888
ROTZELL, Dr. W. E., Narberth, Pa.....	1893
ROWLAND, Mrs. ALICE STORY, 511 W. 7th St., Plainfield, N. J.....	1897
ROWLEY, JOHN, Jr., Am. Mus. Nat. Hist., New York City.....	1889
RUSSEL, HOWLAND, 106 Mason St., Milwaukee, Wis.....	1899
SAGE, HENRY M., care of H. S. Sage & Co., Albany, N. Y.....	1885
SAMPSON, WALTER BEHRNARD, 921 No. Monroe St., Stockton, Cala.....	1897
SARGENT, HARRY CLEVELAND, Chocorua, N. H.....	1900
SAVAGE, JAMES, 134 Abbott St., Buffalo, N. Y.....	1895
SAVAGE, WALTER GILES, Jasper City, Mo.....	1898
SCHALER, JOHN, Stamford, Conn.....	1893
SCHOENEBECK, AUGUST JOHN, Kelley Brook, Wis.....	1898
SCHURR, Prof. THEODORE A., 14 Lake St., Pittsfield, Mass.....	1888
SCHWAB, Rev. LAWRENCE H., 549 W. 156th St., New York City.....	1892
SCUDDER, BRADFORD A., Public Library, Taunton, Mass.....	1893
SEALE, ALVIN, Bishop Mus., Honolulu, H. I.....	1900
SEISS, COVINGTON FEW, 1338 Spring Garden St., Philadelphia, Pa....	1898
SHATTUCK, EDWIN HAROLD, Granby, Conn.....	1898
SHATTUCK, GEORGE CHEEVER, 135 Marlboro St., Boston, Mass.....	1896
SHAW, FREDERICK A., 75 Washburn Av., Portland, Me.....	1900
SHAW, HOLTON A., Grand Forks, N. Dakota.....	1898
SHELDON, CHARLES, Apartado 46, Chihuahua, Mexico.....	1898
SHEPARD, MARSHALL, 280 Amsterdam Av., New York City.....	1899
SHEPPARD, EDWIN, Acad. Nat. Sci., Philadelphia, Pa.....	1892
SHERILL, W. E., Haskell, Texas.....	1896
SHIELDS, ALEXANDER M., Crocker Bldg., San Francisco, Cala.....	1896

SHIELDS, GEORGE O., 23 W. 24th St., New York City.....	1897
SHOEMAKER, FRANK H., Omaha, Neb.....	1895
SHOVE, ELLEN MARIAN, Fall River, Mass.....	1900
SHROSBREE, GEORGE, Public Mus., Milwaukee, Wis.....	1899
SHRYOCK, WILLIAM A., 21 N. 7th St., Philadelphia, Pa.....	1893
SILLOWAY, PERLEY MILTON, Lewiston, Mont.....	1896
SLEEPER, Prof. JOSEPH J., 1035 W. Tioga St., Philadelphia, Pa.....	1900
SLEVIN, THOMAS EDWARDS, 2413 Sacramento St., San Francisco, Cala.....	1900
SMITH, CHARLES PIPER, 246 So. Grant St., West Lafayette, Ind.....	1898
SMITH, HORACE G., 2918 Lafayette St., Denver, Colo.....	1888
SMITH, Dr. HUGH M., 1248 New Jersey Ave., Washington, D. C.....	1886
SMITH, ROBERT WINDSOR, Kirkwood, Ga.....	1895
SMITH, THEODORE H., 22 Essex Ave., Orange, N. J.....	1896
SMITH, S. SIDNEY, 59 Wall St., New York City.....	1888
SMYTH, Prof. ELLISON A., Jr., Polytechnic Inst., Blacksburg, Va.....	1892
SNYDER, WILL EDWIN, Beaver Dam, Wis.....	1895
SORNBORGER, JEWELL D., Cambridge, Mass.....	1888
SOUTHARD, ROBERT HAMILTON, 203 W. 117th St., New York City...	1898
SOUTHWICK, JAMES M., Mus. Nat. Hist., Providence, R. I.....	1896
SPAULDING, FRED B., Lancaster, N. H.....	1894
SPINNEY, HERBERT L., Popham Beach, Me.....	1900
STACK, FREDERICK WILLIAM, Plainfield, N. J.....	1900
STANTON, Prof. J. Y., Bates College, Lewiston, Me.....	1883
STEINMETZ, FRANK JACOB, Carson City, Nev.....	1899
STEPHENS, FRANK, cor. University & Fillmore Aves., San Diego, Cala.....	1883
STEPHENSON, Mrs. LOUISE MCGOWN, Helena, Ark.....	1894
STONE, CLAYTON ELBERT, Lunenburg, Mass.....	1899
STONE, DWIGHT D., Lansing, N. Y.....	1891
STRONG, REUBEN M., 1699 Cambridge St., Cambridge, Mass.....	1889
STUDER, JACOB HENRY, 114 Fifth Ave., New York City.....	1888
STURTEVANT, EDWARD, St. George School, Newport, R. I.....	1896
SUTTON, GEORGE BYRON, Newark Valley, N. Y.....	1896
SWAIN, JOHN MERTON, 319 Commercial St., Portland, Me.....	1899
SWARTH, HARRY S., 512 Coronado St., Los Angeles, Calif.....	1900
TALLEY, Prof. THOMAS WASHINGTON, Tuskegee, Ala.....	1896
TAYLOR, ALEXANDER O'DRISCOLL, 124 Bellevue Ave., Newport, R. I.....	1888
TEST, Dr. FREDERICK CLEVELAND, 4401 Indiana Ave., Chicago, Ill..	1892
THAYER, ABBOTT H., Scarborough, N. Y.....	1896
THAYER, JOHN ELIOT, Lancaster, Mass.....	1898
THOMAS, HOWARD WELLS, 133 W. 63d St., New York City.....	1898
THOMPSON, Miss CAROLINE B., Clapier St., Germantown, Phil., Pa.....	1900
THOMPSON, ERNEST SETON, 144 5th Av., New York City.....	1883
TODD, LOUIS M., Calais Me.....	1887

TODD, W. E. CLYDE, Beaver, Pa.....	1890
TOPPAN, GEORGE L., 321 Main St., Racine, Wis.....	1886
TORREY, BRADFORD, Wellesley Hills, Mass.....	1883
TOWNSEND, CHARLES H., U. S. Fish Comm., Washington, D. C.....	1883
TOWNSEND, WILMOT, 3d Av. and 75th St., Bay Ridge, N. Y.....	1894
TREAT, WILLARD E., Silver Lane, Conn.....	1885
TROTTER, DR. SPENCER, Swarthmore College, Swarthmore, Pa.....	1888
TROTTER, WILLIAM HENRY, 36 No. Front St., Philadelphia, Pa.....	1899
TROY, MISS GERTRUDE ESTELLA, 578 E. 60th St., Chicago, Ills.....	1899
TUTTLE, DR. CARL, Berlin Heights, Ohio.....	1890
UNDERWOOD, WILLIAM LYMAN, Belmont, Mass.....	1900
UTTER, HERBERT LAMB, 792 Hancock St., Brooklyn, N. Y.....	1898
VAN CORTLANDT, MISS ANNE S., Croton-on-Hudson, N. Y.....	1885
VAN DENBURGH, DR. JOHN, Los Gatos, Cal.....	1893
VAN NAME, WILLARD GIBBS, 121 High St., New Haven, Conn.....	1900
VAN NORDEN, WARNER MONTAGNIE, 25 Nassau St., New York City.....	1899
VAN SANT, MISS ELIZABETH, City Hall, Omaha, Neb.....	1896
VAN SCHAICK, MISS FRANCES E., Highland Park, Ills.....	1900
VARICK, MRS. JOHN B., 537 Union St., Manchester, N. H.....	1900
VETTER, DR. CHARLES, JR., 152 Second St., New York City.....	1898
VOELKER, CHARLES A., Adamsford, Del. Co., Pa.....	1897
WALCOTT, ROBERT, 11 Waterhouse St., Cambridge, Mass.....	1893
WALES, EDWARD H., Hyde Park, N. Y.....	1896
WALKER, DR. R. L., 94 Main St., Carnegie, Pa.....	1888
WARREN, DR. B. H., Box 245, Westchester, Pa.....	1885
WATERMAN, WILLIAM, Bigelow, Minn.....	1896
WATERS, EDWARD STANLEY, Water Power Co., Holyoke, Mass.....	1894
WATSON, MISS SARAH R., 5128 Wayne St., Germantown, Phil., Pa.....	1900
WATTERS, ROBINSON CATOR, 9 W. Baltimore St., Baltimore, Md.....	1900
WEBSTER, MRS. ELLEN EMELINE, Franklin Falls, N. H.....	1898
WEBSTER, MRS. MARY P., 1025 5th St., S. E. Minneapolis, Minn.....	1900
WEIR, J. ALDEN, 11 E. 12th St., New York City.....	1899
WENTWORTH, IRVING H., Apartado 104, Matehuala E. de S. L. P., Mexico.....	1900
WEST, LEWIS H., Roslyn, Nassau Co., N. Y.....	1887
WHEELER, EDMUND JACOB, 95 Jefferson Av., New London, Conn.....	1898
WHEELER, JOHN B., East Templeton, Mass.....	1897
WHITAKER, WILLIAM LINCOLN, Cedar Grove, Philadelphia, Pa.....	1894
WHITE, FRANCIS BEACH, 6 Phillips Place, Cambridge, Mass.....	1891
WHITMAN, PROF. CHARLES OTIS, Univ. of Chi., Chicago, Ills.....	1896
WICKS, M. L., JR., 221 W. 2d St., Los Angeles, Cal.....	1890
WILBUR, ADDISON P., 4 Gibson St., Canandaigua, N. Y.....	1895
WILCOX, T. FERDINAND, 115 W. 75th St., New York City.....	1895
WILDE, MARK L. C., 19 W. Chestnut Av., Merchantville, N. J.....	1893
WILLIAMS, J. BICKERTON, 15 Wellington St. E., Toronto, Can.....	1889
WILLIAMS, ROBERT STATHAM, Botanical Garden, New York City.....	1888

WILLIAMS, ROBERT WHITE, Tallahassee, Fla.....	1900
WILLIAMS, W. J. B., Holland Patent, N. Y.....	1893
WILLIAMSON, E. B., Bluffton, Ind.....	1900
WILSON, KARL DENE, Industry, Pa.....	1899
WILSON, SIDNEY S., 1021 Sylvania St., St. Joseph, Mo.....	1895
WINKENWERDER, HUGO AUGUST, 217 Murray St., Madison, Wis.....	1900
WINSLOW, Miss SOPHY, Shore Road and 88th St., Bay Ridge, Brooklyn, N. Y.....	1899
WOLFE, WILLIAM EDWARD, Florence, Colo.....	1900
WOOD, NELSON R., Smithsonian Institution, Washington, D. C.....	1895
WOODRUFF, EDWARD SEYMOUR, 14 E. 68th St., New York City.....	1899
WOODRUFF, LEWIS B., 14 E. 68th St., New York City.....	1886
WOODWORTH, MRS. NELLY HART, 41 Bank St., St. Albans, Vt.....	1894
WORCESTER, Prof. DEAN C., U. S. Philippine Comm., Manila, P. I.....	1895
WORTHEN, CHARLES K., Warsaw, Ill.....	1891
WORTHINGTON, WILLIS W., Shelter Island, Suffolk Co., N. Y.....	1889
WRIGHT, FRANK S., 51 Genesee St., Auburn, N. Y.....	1894
WRIGHT, Mrs. MABEL OSGOOD, Fairfield, Conn.....	1895
WRIGHT, Miss NORA GIRALDA, 387 Plainfield St., Olneyville, R. I....	1896
WRIGHT, SAMUEL, Conshohocken, Pa.....	1895
YORKE, Dr. F. HENRY, Foosland, Ill.....	1891
YOUNG, CURTIS CLAY, 81 So. Hamilton St., Poughkeepsie, N. Y....	1891

DECEASED MEMBERS.

ACTIVE MEMBERS.

Date of Death

BAIRD, SPENCER FULLERTON.....	Aug. 19, 1887
BENDIRE, CHARLES E.....	Feb. 4, 1897
COUES, ELLIOTT.....	Dec. 25, 1899
GOSS, N. S.....	March 10, 1891
HOLDER, JOSEPH B.....	Feb. 28, 1888
JEFFRIES, JOHN AMORY.....	March 26, 1892
SENNETT, GEORGE BURRITT.....	March 18, 1900
WHEATON, JOHN M.....	Jan. 28, 1887

HONORARY MEMBERS.

BURMEISTER, HERMANN.....	May 1, 1892
GÄTKE, HEINRICH.....	Jan. 1, 1897
GUNDLACH, JUAN.....	March 14, 1896
GURNEY, JOHN HENRY.....	April 20, 1890

HUXLEY, THOMAS H.....	June 29, 1895
KRAUS, FERDINAND.....	Sept. 15, 1890
LAWRENCE, GEORGE N.....	Jan. 17, 1895
MILNE-EDWARDS, ALPHONSE.....	April 21, 1900
PARKER, WILLIAM KITCHEN.....	July 3, 1890
PELZELN, AUGUST VON.....	Sept. 2, 1891
SALVIN, OSBERT.....	June 1, 1898
SCHLEGEL, HERMANN.....	Jan. 17, 1884
SEEBOHM, HENRY.....	Nov. 26, 1895
TACZANOWSKI, LADISLAS.....	Jan. 17, 1890

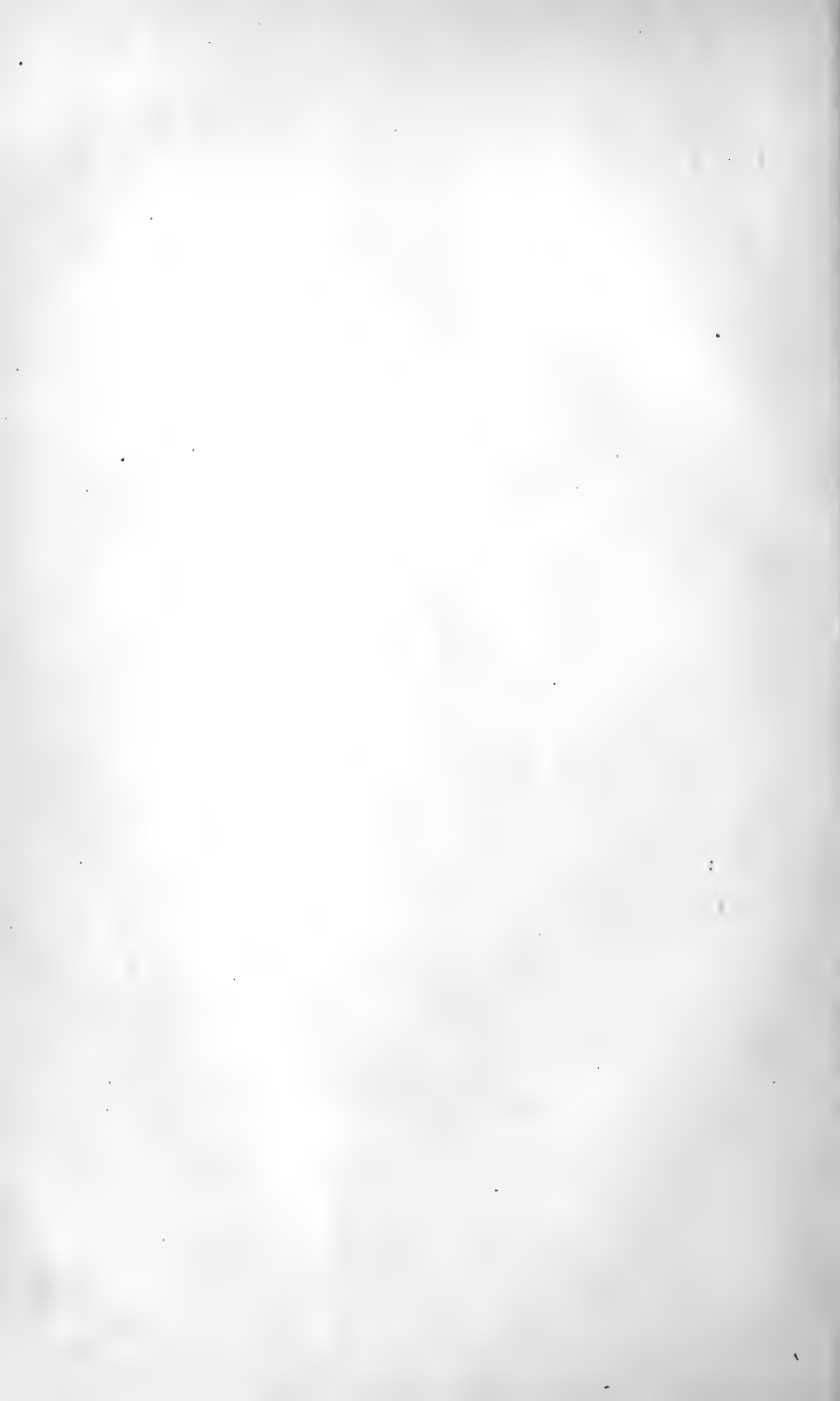
CORRESPONDING MEMBERS.

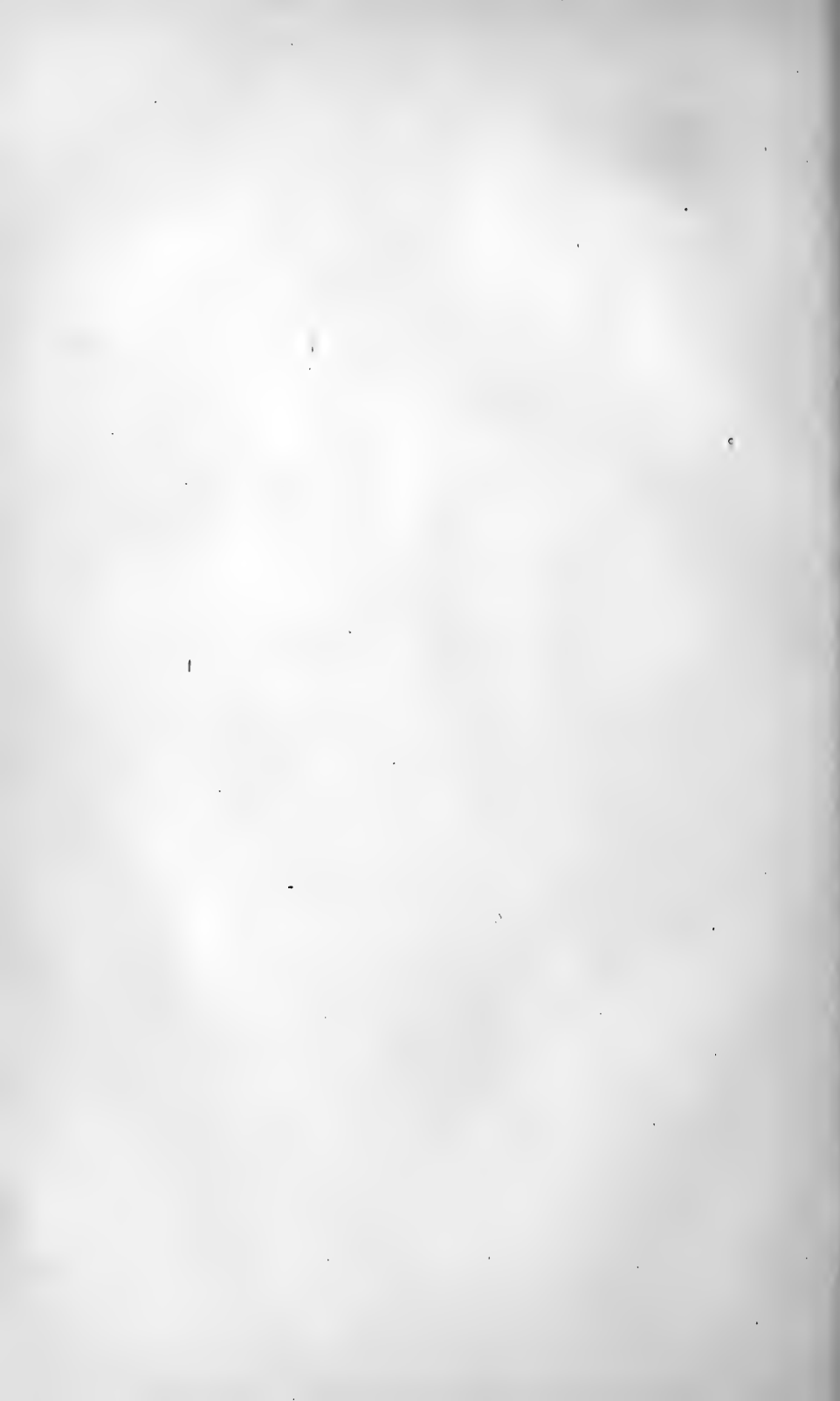
BALDAMUS, EDUARD.....	Oct. 30, 1893
BLAKISTON, THOMAS W.....	Oct. 15, 1891
BOGDANOW, MODEST N.....	March 4, 1888
CORDEAUX, JOHN.....	Aug. 1, 1899
HAAST, JULIUS VON.....	Aug. 15, 1887
HARGITT, EDWARD.....	March 19, 1895
HOMMEYER, E. F. VON.....	May 31, 1889
LAYARD, EDGAR LEOPOLD.....	Jan. 1, 1900
LYTTLETON, THOMAS, LORD LILFORD.....	June 17, 1896
MARSCHALL, A. F.....	Oct. 11, 1887
MALMGREN, ANDERS JOHAN.....	April 12, 1897
MIDDENDORFF, ALEXANDER THEODOR VON.....	Jan. 28, 1894
MOSJISOVICS, F. G. HERMANN AUGUST.....	Aug. 27, 1897
PREJEVALSKI, N. M.....	Oct. 20, 1887
PRENTISS, D. WEBSTER.....	Nov. 19, 1899
PRYER, HARRY JAMES STOVIN.....	Feb. 17, 1888
SCHRENCK, LEOPOLD VON.....	Jan. 20, 1894
SÉLEYS-LONGSCHAMPS, EDMOND DE.....	Dec. 11, 1900
SEVERTZOW, N.....	Feb. 8, 1885
STEVENSON, HENRY.....	Aug. 18, 1888
WHARTON, HENRY T.....	Sept. —, 1895

ASSOCIATE MEMBERS.

ADAMS, CHARLES F.....	May 20, 1893
ALLEN, CHARLES SLOVER.....	Oct. 15, 1893
ATKINS, H. A.....	May 19, 1885
AVERY, WILLIAM CUSHMAN.....	March 11, 1894
BAUR, GEORGE.....	June 25, 1898
BECKHAM, CHARLES WICKLIFFE.....	June 8, 1888
BILL, CHARLES.....	April —, 1897
BIRTWELL, FRANCIS JOSEPH.....	June 29, 1901
BOARDMAN, GEORGE A.....	Jan. 11, 1901

BOLLES, FRANK.....	Jan. 10, 1894
BRACKETT, FOSTER H.....	Jan. 5, 1900
BREESE, WILLIAM L.....	Dec. 7, 1889
BROKAW, L. W.....	Sept. 3, 1897
BROWN, JOHN CLIFFORD.....	Jan. 16, 1901
BROWNE, FRANCIS CHARLES.....	Jan. 9, 1900
CAIRNS, JOHN S.....	June 10, 1895
CAMPBELL, ROBERT ARGYLL.....	April —, 1897
CARTER, EDWIN.....	
COLBURN, W. W.....	Oct. 17, 1899
CORNING, ERASTUS, JR.....	April 9, 1893
COE, W. W.....	April 26, 1885
DAKIN, JOHN A.....	Feb. 21, 1900
ELLIOTT, S. LOWELL.....	Feb. 11, 1889
FAIRBANKS, FRANKLIN.....	April 24, 1895
FOWLER, J. L.....	July 11, 1899
GESNER, A. H.....	April 30, 1895
Goss, BENJAMIN F.....	July 6, 1893
HATCH, JESSE MAURICE.....	May 1, 1898
HOADLEY, FREDERIC H.....	Feb. 26, 1895
HOWLAND, JOHN SNOWDON.....	Sept. 19, 1885
INGERSOLL, JOSEPH CARLETON.....	Oct. 2, 1898
JENKS, JOHN W. P.....	Sept. 27, 1894
JOUY, PIERRE LOUIS.....	March 22, 1894
KUMLIEN, THURE.....	Aug. 5, 1888
LAWRENCE, ROBERT HOE.....	April 27, 1897
LINDEN, CHARLES.....	Feb. 3, 1888
MABBETT, GIDEON.....	Aug. 15, 1900
MARCY, OLIVER.....	March 19, 1899
MARIS, WILLARD LORRAINE.....	Dec. 11, 1895
McKINLAY, JAMES.....	Nov. 1, 1899
MINOT, HENRY DAVIS.....	Nov. 13, 1890
NICHOLS, HOWARD GARDNER.....	June 23, 1896
NORTHROP, JOHN I.....	June 26, 1891
PARK, AUSTIN F.....	Sept. 22, 1893
RAGSDALE, GEO. H.....	March 25, 1895
RICHARDSON, JENNESS.....	June 24, 1893
SELOUS, PERCY SHERBORN.....	April 7, 1900
SLATER, JAMES H.....	Feb. —, 1895
SMALL, EDGAR A.....	April 24, 1884
SMITH, CLARENCE ALBERT.....	May 6, 1896
STOWE, W. H.....	March —, 1895
THORNE, PLATTE M.....	March 16, 1897
THURBER, E. C.....	Sept. 6, 1896
VENNOR, HENRY G.....	June 8, 1884
WILLARD, SAMUEL WELLS.....	May 24, 1887
WOOD, WILLIAM.....	Aug. 9, 1885









Sincerely yours,
Allen Coates.

THE AUK:

A QUARTERLY JOURNAL OF

ORNITHOLOGY.

VOL. XVIII.

JANUARY, 1901.

NO. I.

IN MEMORIAM: ELLIOTT COUES.¹

BORN 9th SEPT. 1842.—DIED 25th DEC. 1899.

BY D. G. ELLIOT, F. R. S. E., ETC.

IN THE life of every nation, society or individual, no matter how peaceful, prosperous or happy the record of the past may have been, no matter how encouraging and bright the future may be for further advancement, increased progress and greater achievements in the path that always leads onward and upward, toward the ultimate fulfillment of the highest destiny that may be attained, in the varying shifting career that all must follow while accomplishing the pilgrimage of earth, yet in the experience of all even amidst the rush of a restless activity, there comes a time to mourn. A time when the daily duties are temporarily neglected or wholly laid aside, when the engrossing pursuits that occupy the thoughts and call for the utmost energies of man's nature cease for the moment to interest the mind, when the smile vanishes and joyous laughter no longer cheers the heart, when the voice sinks to a whisper low and soft, as the sense of some irreparable loss comes with stunning force to overwhelm the soul. To this Society, to all its individual members, and to some of us

¹ An address delivered at the Eighteenth Congress of the American Ornithologists' Union, Cambridge, Mass., Nov. 13, 1900.

in a peculiar and intimate relationship such a time has surely come, for as we are gathered here to-day, one engaging presence, one vitalizing force, one attractive personality, one brilliant mind is no longer in our midst, to grace, strengthen and assist us in our deliberations, and in the accomplishment of duties that must be met. Who shall measure the extent of the loss sustained by various branches of scientific and historical research, by this and kindred societies, by those of us who have parted from an intimate friend and colleague of many vanished years, as well as the younger men just entering upon the scientific field, in the recent death of our former President and late colleague, Elliott Coues. No one occupied a more prominent position in our midst than he and no one held it by a stronger claim founded on exceptional ability, in brilliant work successfully accomplished.

On September 9th, 1842, in the town of Portsmouth, New Hampshire, Elliott Coues was born, and as soon as he could exhibit a preference for any object, his taste for ornithology was manifested, and even when only able to toddle about the nursery, a poster of one of the old style menageries rendered him oblivious to all other attractions and no book nor story interested him unless animals were their subjects. So early did the tastes and preferences that were to be the chief controlling influences of his life declare themselves. When he was eleven years of age his father, Samuel Elliott Coues, removed to Washington, in which city our late colleague was destined to pass a large part of his life, and where some of his most important works were to be written. For a time he attended Gonzaga College, a Jesuit Institution, and where, to one of his ardent temperament, the gorgeous ritual of the Romish church would be apt to make a deep impression, but his was to be an energetic life that demanded a wide field for its activity, and could not be pent amid cloistered shades or cathedral aisles. In his early days he was rather inclined to neglect the classics, replying once to a remonstrance of his father, "I only want just enough of these things to facilitate my other work," but later he appreciated the importance of a thorough knowledge of the ancient tongues and they had no more earnest advocate than himself. At the age of seventeen he entered Columbia College, now Columbian University, took his degree of

A. B. in 1861, Honorary M. A. in 1862, became a Medical Cadet in 1862, M. D. in 1863 and Acting Assistant Surgeon, United States Army, in the same year and Assistant Surgeon in 1864. When he passed his examination for the United States Army medical corps he was obliged to tell them he was not of age, and he was appointed a volunteer surgeon for one year before he could receive his commission and that year he passed at Mount Pleasant Hospital near Washington. For seventeen years he continued in the service of the United States and was made a brevet Captain, resigning in 1881 in order to devote himself entirely to his scientific and literary pursuits.

During his army life he was stationed at various posts, mostly those situated in the western part of the United States, and he was also attached to some of the most important Government Surveys of the Territories and little known parts of our country, such as the one under the command of Dr. F. V. Hayden, and that of the Northern Boundary Commission which surveyed the forty-ninth parallel westward from the Lake of the Woods. In these great expeditions he served as surgeon and naturalist, and gained in the field that intimate knowledge of our birds and mammals which was to make him in the near future one of the most illustrious naturalists of our country and of our time. He had now become so absorbed in his scientific pursuits that the monotonous routine of an army post was most distasteful, and when he was detached from the surveying expeditions and ordered back to his first station at Fort Whipple, Arizona, he endeavored to obtain a different assignment, one more congenial to him and better adapted for his scientific work, and when this proved impossible he resigned from the army and took up his abode in Washington, where he resided until his death.

Although he was a writer on many and various subjects, his first scientific work was done in ornithology, and as early as 1861, when he was but nineteen years of age, he made his debut as an author in a well-conceived and executed paper, that would have been highly creditable to a far more experienced hand, entitled 'A Monograph of the *Tringæ* of North America.' In his scientific studies Coues was fortunate in having for his mentor the late Professor Baird and between them the strongest

friendship existed and which only terminated with the death of the senior naturalist. From this period Coues's contributions to literary, scientific and philosophic subjects never ceased, for his energies were unlimited and he became one of the most prolific writers of our day. In 1869 he was elected Professor of Zoölogy and Comparative Anatomy in Norwich University, Vermont, but the duties of army life prevented him from accepting this position, but after he retired from the service of the United States he accepted the chair of anatomy at the National Medical College in the medical department of Columbian University, Washington, where he lectured acceptably for ten years. He was also one of the contributors to the Century Dictionary, and had editorial charge of General Zoölogy, Biology and Comparative Anatomy, and furnished some 40,000 words to this monumental work as his share of the enterprise; devoting to it the greater part of his labor for seven years. Another immense undertaking to which he devoted some years of painstaking work was a 'Bibliography of Ornithology,' certain instalments of which alone have been published, the greater portion still remaining in manuscript. He also began a 'History of North American Mammals,' but though considerable progress with it was accomplished nothing was ever published.

From 1861 to 1881 he completed 300 works and papers, the major portion devoted to ornithology; and although he always kept up his interest in that science and was more or less an active contributor to it all his life, his later years were more particularly devoted to historical research. The titles to his scientific writings of all kinds, minor papers, reviews and special works, number nearly 1,000, and he was the author or joint author of 37 separate volumes. The work by which he will probably be best known and remembered, and which has had above all others the most important influence on ornithology in our own land, is his 'Key to North American Birds,' a work that in its conception and the masterly manner in which it is carried out in all its details stands as one of the best if not *the* best bird book ever written. His knowledge of North American mammals was as extensive and intimate as was that of our birds, and the 'Fur Bearing Animals,' published in 1877, as well as the Monographs on the Muridæ,

Zapodidæ, Saccomyidæ, Haplodontia and Geomyidæ in the 'North American Rodentia,' also issued in 1877, bear ample witness to this fact. It is impossible, however, in a comparatively brief address to enumerate the titles of his works and to this audience they would seem like twice told tales, for with the more important you are thoroughly familiar, and the minor ones are being constantly met with and referred to by you in the pursuit of your investigations.

We know what he has done in Natural Sciences, and although he rests from his labors, and the eloquent tongue is silent and the still more eloquent pen lies motionless never more to perpetuate the virile thoughts that struggled for expression in the active mind, yet his works remain and speak with no uncertain tones for him. I would, however, pass from the consideration of him as an author and facile writer, and present him to you as the man, as he really was, for although many persons were acquainted with Coues few I believe really knew him. It is now nearly forty years ago, when on a visit to Professor Baird in Washington, one evening, in company with my old friend Dr. Gill, I first met Elliott Coues. He was then in his teens, a student of medicine, frank, simple, honest and confiding, with a boy's generous impulses, and the glorious enthusiasm of the ornithologist manifest in speech and action. The friendship then formed continued without a break or a hasty word ever having been exchanged with tongue or pen throughout all the intervening years. And yet we thought very differently on many subjects; but such was our confidence in each other's honest intention and unreserved frankness that we could, and did many times, argue on different sides, both orally and in writing, with an energetic earnestness that would have been highly dangerous to our continued friendship if we had not understood each other so well. And first among his most eminent characteristics was his love of truth, and he was constantly striving with all the force of his energetic nature to search it out and take its teaching to himself wherever he might find it, careless where it might lead him or what preconceived views or opinions it might overthrow or destroy. He believed with Carlyle that "there is no reliance for this world or any other but just the truth, there is no hope for the world but just so far as men find

out and believe the truth and match their own lives to it." It was therefore in his search for truth and an attempt to apply the principles of physical science to psychical research that in 1880 he became affiliated with the Theosophical Society of India and was elected President of its American Board of Control, and was continued in that office for several years. He was much interested in the subject and investigated its principles and methods with his usual thoroughness, even visiting Europe in company with Madame Blavatsky and other prominent members of the sect, and his connection with this and kindred societies resulted in the production of several publications such as 'Biogen' and the 'Dæmon of Darwin.' But the knowledge that he gained of this interesting but peculiar doctrine was not of that satisfying character as to cause him to hold fast to its tenets, nor to enable him to retain his respect for its leaders, and although he gives no reasons for the action, yet in the memorandum in which he records his election as President in 1885 and his reelection in the following year, with characteristic frankness he states that he was expelled from the Society in 1889. Those of us who have little sympathy with the claims asserted by the disciples of Theosophy can not but regard his expulsion from the Society as having conferred a greater honor upon him than his election to the Presidency, and can easily imagine the action he may have taken in the Council to cause such a result after he finally satisfied himself that the doctrine could not substantiate its claims. He detested shams of all kinds and hurled the full force of his invective against those who had proved themselves unworthy or who strove to appear entitled to more than was their due.

As a critic in certain lines he was unrivaled and exhibited the highest practice of the art in his reviews, dwelling most upon what was meritorious in the treatment of the subject before him, for he believed true criticism was to seek that which was praiseworthy rather than something to condemn. But no one could be more caustic in his treatment, nor wield a sharper weapon, when he found that praise would be misapplied and it would be kinder to act as the skillful surgeon does, create wounds in order that the patient's recovery might be more sure and lasting. Rarely, however, for one who published so much, was he severe in his

writings, though none had the power to be more so, but when from whatever the cause that influenced him he permitted himself to indulge in phrases that would be remembered and might possibly leave a sting, he set down 'naught in malice,' but employed a phraseology that he honestly believed was best suited to the case in hand, and after some such severe articles had been issued, he has spoken to me in the kindest way of the author of the work or act he had so criticised or condemned, apparently entirely unconscious that it could possibly affect any friendly relations or be the means of any estrangement. It was the sentiment advanced, or the conclusion reached, that was the object of his attack, not the individual who was the author. In all his critical reviews there is no thought of self, but only desire to do justice to his subject and to its author, and if anything could be charged against him on this point; it was an evident inclination always to find something to praise.

In his scientific writings he was always extremely lucid, and conservative in his methods, and he had but little sympathy for the hair splitting and microscopic variations in the appearance of animals, that is the joy and delight of some naturalists in these later days. He was a scholar and knew his Greek and Latin, and with a scholar's instinct and abhorrence of incorrect phraseology, he strove with all his might to inculcate not only in his own scientific writings, but in those of others the true principles of etymology and philology, and both by tongue and pen, in the keen analytical style of which he was an undisputed master, he strove with all the force of his energetic personality against the unfortunate and mistaken doctrine that the perpetuation of errors can ever be permissible, much less commendable. He possessed a command of language gained by few and the beauty of his style and his felicity of expression has created numerous pen pictures of the habits and appearances of our wild creatures that have never been excelled by any writer, if indeed they have been equalled.

While a keen and just critic himself, he was very sensitive regarding the opinion of others towards his own productions, and sought the approbation of those who were bound closely to him either by earthly ties or an intimate friendship, or whose knowledge

of the subject under consideration caused their opinion to be of special value. This extreme sensitiveness is best illustrated by an act committed in his youthful days, when after having labored for several years upon a work on Arizona, on reading his manuscript to one, who, if not competent to judge of the importance of his labors, he had the right to expect would exhibit sympathy for his efforts, and who must at least have been impressed with its thoroughness and beauty of diction, yet, was only able to consider its value as a commercial asset and therefore commented upon it so unfavorably and with such strength of expression, that, utterly disheartened at the want of appreciation for that which had been so long a labor of love and of which he was so proud of his ability to produce, on the impulse of the moment he cast the 'copy' into the fire where it was consumed, and then suffered a severe attack of illness in consequence of his loss by his hasty act.

Of a most affectionate disposition he sought and enjoyed the society of his friends and those with sympathetic tastes, and although he possessed strong convictions and firm opinions, yet no one more readily yielded to the views of another whose opportunities to reach a correct decision had been greater than his own, and this was always effected with a courtesy that caused his friendly opponent to regret he could not himself yield and reverse their positions. He loved science and scientific work and scorned to employ his talents and his knowledge merely for financial considerations, and although he could command large sums for his labor, he preferred to devote himself to pure science which, if less remunerative pecuniarily, achieves a more lasting result, and one of greater honor.

After all these years of scientific work his thoughts and labors turned to a new channel, that of historical research, and the last eight or ten years of his life were devoted to editing the journals of the early explorers of our continent, and he made many long and wearisome journeys over the various routes taken by these hardy pioneers in order to familiarize himself with the country traversed and locate the many places mentioned, but which had no designation on any published map. His former army life and his great experience as a naturalist eminently fitted him for this task, and probably no one could have proved himself so compe-

tent to fulfill this duty. The first of these works was that of the Expedition of Lewis and Clarke which appeared in 1893, followed in 1895 by the Expedition of Zebulon M. Pike. In 1897 came the Henry & Thompson Journals, in 1898 appeared the Fowler Journal and the Narrative of Charles Larpentuer, forty years a Fur Trader on the Upper Missouri; and during this year The Diary of Francisco Garces, on the trail of a Spanish Pioneer, in all 15 volumes. All of these books bear the impress of his most conscientious care and wonderful minuteness of annotation, and it is to Coues more than to any other, that the original sources of the early explorations of the western portion of our country, beyond the Mississippi, are preserved.

It was during an arduous journey in New Mexico and Arizona in the summer of 1899, undertaken, as he wrote me, as a "still hunt for old Spanish MSS." and to refresh his memory of the country described by Francisco Garces, and render still more effective his editing of the Diary in his possession that Coues's splendid physique and robust health that for so long seemed to defy fatigue and exposure gave way, and he was brought to Santa Fé in a rather critical condition, where for a month he was very ill, but in September he came to Chicago. He seemed to be getting better and at my last interview with him, during which his condition was freely discussed, although he fully appreciated the gravity of his case, yet he expressed the hope, and perhaps he thought it was clearly among the possibilities, that he might be present at the last meeting of this Society in Philadelphia. Regarding him, as I then did, as in a critical condition I could not share this hope, although I encouraged him in his belief, or what seemed to be his belief, for Coues had been too long a skilled medical practitioner to try and deceive himself, but from his references to his attendant physician it was clearly apparent that he preferred to advance the opinion of his medical adviser, of whom he spoke in the highest terms, rather than any of his own. He was greatly changed in appearance, but the old fire and enthusiasm, that I had so often admired and not infrequently contended with in friendly conflict during so many years, was not a whit abated, and he spoke with all his old time interest of the work he had himself in view and of that of others. But the voice was feeble

and the frame was weak, and he was filled with a restlessness that was foreign to him. But when I bade him an adieu, which was to be our last on earth, he was cheerful and spoke hopefully of meeting soon again. As you all know, his condition became more serious after he arrived at his home in Washington and an expert examination at Johns Hopkins Hospital in Baltimore gave but little hope for the preservation of his life. During these last days I received a number of letters from him explaining frankly his condition and how few were his chances for life, and just before submitting to the operation came one virtually bidding me farewell and announcing the close of our correspondence that had extended over many years. On the sixth of December the operation was performed and for a short time there was a probability that his life would be prolonged, but it was not to be, for he had finished his work and he was to rest from his labors. Throughout his illness he exhibited the natural bravery of spirit habitual to him; not a murmur or complaint of the excessive and lasting pain, but gentle and courteously appreciative of every attention, and at the last overcoming for an instant the weakness that denoted the approach of that moment when his freed spirit should depart and soar above all earthly things, he raised himself in his bed, and with all the old time vigor of voice exclaimed, "Welcome! oh, welcome beloved death," and sinking backwards on the pillow he was at rest. Nevermore shall you welcome to your midst this courteous gentleman, who was the considerate friend, the able counsellor, the chivalrous debater, the one most capable of leadership, yet always willing to yield to another, the trained scientist, the accomplished anatomist, the able naturalist, the conscientious historian. His was a life of intense activity and that which his hand found to do he did with all his might; and of none can it be more appropriately said, "*Nihil tetigit quod non ornavit.*"

Coues, as may be readily supposed, was the recipient of many scientific honors, and he was an Honorary or Active member of a very large number of societies, both in this country and in Europe, and at the time of his election to our National Academy he was, I believe, its youngest member. The list of scientific societies with which he was connected numbers between fifty and

sixty, far too many for me to attempt to give their titles at this time, yet none of them was so distinguished but that it received as well as conferred an honor by having his name upon its rolls. As a naturalist Coues will always hold the highest rank in the estimation of all who are familiar with his works, and in that galaxy of eminent names which sheds so great a brilliancy on the scientific annals of our own land, none shall appear in the years to come more lustrous than that of our late distinguished colleague and friend. But the brilliant mind no longer teems with thoughts of earth, and the hand that executed its commands lies motionless and we, who are drawing near to that shining portal through which he has so lately passed, and from whose farther side no steps are ever retraced by any one of mortal birth, may never look upon his like again, whose pen was the 'pen of a ready writer,' fit instrument to convey and render permanent the eloquence of thought, beauty of diction, and facility of expression, of Nature's illustrious Disciple and Interpreter.

IN MEMORIAM: GEORGE BURRITT SENNETT.¹

BORN JULY 28, 1840,—DIED, MARCH 18, 1900.

BY J. A. ALLEN.

¹
SINCE our last meeting the American Ornithologists' Union has lost two of its Active Members, Elliott Coues and George B. Sennett. Dr. Coues's eminent services to science and literature have been ably commemorated in the memorial address by my esteemed friend and colleague, Mr. Elliot.

Dr. Coues, by education and through favoring circumstances, was a trained naturalist, endowed with mental gifts that enabled him to take the fullest advantage of the opportunities for research

¹ Read at the Eighteenth Congress of the American Ornithologists' Union, Cambridge, Mass., Nov. 13, 1900.

that fell to his lot, and thus to leave an indelible impress upon the history of the science to which he was primarily devoted.

Mr. Sennett was a man of marked business ability, and the manufacturing interests in which he was engaged left him through most of his life, little opportunity for scientific research; but he, too, impelled by the instincts of a true naturalist, has left his mark upon the progress of American ornithology, and has contributed not a little in the way of 'bricks and straw' to the construction of that edifice, for the perfection of which we are all lending our efforts, each in proportion to his opportunities and endowments.

George Burritt Sennett was born in Sinclairville, Chautauqua County, New York, July 28, 1840, and died at Youngstown, Ohio, March 18, 1900. He passed most of his life, however, in Erie and Crawford Counties, Pennsylvania. His ancestry on his father's side was Scotch and on his mother's side, English. He was the only child of Pardon Sennett, a successful business man, and a pioneer in the iron interests of western Pennsylvania, he at one time owning and operating three blast furnaces — at Erie, Mercer and Middlesex, Pennsylvania.

George B. Sennett was graduated from the Erie Academy, and later passed four years at a preparatory school in Delaware County, New York, where he fitted for Yale College. After creditably passing his entrance examination, however, the partial failure of his eyes, and the opportunity for travel abroad offered him by his father, led him to abandon his college course for a sojourn of four years in Europe. He traveled through Austria, Bavaria and Germany, residing for a considerable time in Vienna and Nuremberg, where he studied the German language; he also spent a year in Paris, there, under a special instructor, acquiring a fair knowledge of French. In later years he always referred with satisfaction to this long sojourn abroad, the information and experience thus gained proving valuable to him in his subsequent business career.

Soon after his return to this country, in 1865, he began the manufacture of oil-well machinery at Meadville, Pennsylvania, including, later, a new type of engine of his own invention. In 1896 he moved his extensive works to Youngstown, Ohio, and



*Yours very truly
Geo. C. Smith*



shortly before his death had reorganized his business as a stock company, of which he was the president and manager. In this way he hoped to become later so far relieved from business details that a large part of his time could be devoted to his old love, the pursuit of ornithology.

Mr. Sennett appears to have begun to take an active interest in the scientific study of birds about 1873 or 1874. This is attested by numerous specimens in his collection collected by himself at Erie, Pennsylvania, during this latter year. According to information kindly furnished me by Mr. Chapman, Mr. Sennett attributed the special awakening of his interest in birds to Dr. Coues's 'Field Ornithology,' which was published in 1874, a copy of which he bought as soon as he became aware of its appearance. This naturally led to correspondence with Dr. Coues, and later to their personal acquaintance and to the close relationship disclosed in Dr. Coues's editorial supervision of Mr. Sennett's papers on Texan ornithology, published in 1878 and 1879.

Mr. Sennett's first ornithological expedition was made in the spring of 1876, when he visited western Minnesota for the special purpose of ornithological investigation. The trip was very successful, as shown by the large series of specimens, especially of water birds, taken on this trip and still in his collection. He appears, however, never to have published anything relating especially to this season's work.

His second expedition was to the Lower Rio Grande region of Texas. As this later became his chosen field, the following transcript from his paper giving the ornithological results of his first trip to this region will be of interest. Under date of Erie, Pa., December 1, 1877, he writes, in his letter of transmittal, as follows: "Last winter, having inclination and leisure to prosecute the study of birds in a more extended field than was open to me at home, I began to look about for a suitable locality. As is always the case when real desire for study arises, avenues of investigation opened in all directions; but the weight of influence drew me to the Rio Grande. Arranging with Mr. F. S. Webster, of Troy, N. Y., to go as my assistant, and securing a complete outfit, I set out for Texas on February 23d of the present year. My plan was to work down the lower coast of Texas, and arrive

at Brownsville, as a base of future operations, before the breeding season had fairly commenced. On the evening of the 20th of March, after many vexatious delays, we arrived at Brownsville, our objective point. The country worked over lay between Point Isabel, on the coast, near the mouth of the Rio Grande, and a point a few miles above Hidalgo, embracing a distance of a hundred miles by road or three hundred miles by river. We were exactly two months on the southern border. Much valuable time was lost in going up and down the river, in procuring means of conveyance, and in acquainting ourselves with the country. The annoyances also were not few. On some days the weather was so intensely hot that birds were apt to spoil before we could prepare them

"The result of the trip was the securing of some five hundred birds, three of which are new to our fauna and one new to science; about a thousand eggs, many of which are new or rare; a few mammals, nearly all of which proved interesting; a number of alcoholic preparations of birds, mammals, and reptiles; and quite a collection of insects, principally Lepidoptera."

His report on this expedition forms a paper of 66 pages and is entitled, 'Notes on the Ornithology of the Lower Rio Grande of Texas, from observations made during the season of 1877 Edited, with Annotations, by Dr. Elliott Coues, U. S. A.' It was published in February, 1878, in Volume IV, of the 'Bulletin' of the United States Geological and Geographical Survey of the Territories (Hayden). It consists of an annotated list of 150 species, in some instances the annotations amounting to very full biographies of a number of species previously little known. The new species referred to is the *Parula nigrilora*; and the species added to the United States fauna are: (1) *Myiarchus crinitus erythrocerus*, now known as *Myiarchus mexicanus* (Kaup), previously taken, however, but not then recorded, by Dr. J. C. Merrill; (2) *Glaucidium ferrugineum*, now known as *Glaucidium phalaenoides*; and (3) *Æchmoptila* (Coues, n. g.) *albifrons*, now *Leptotila albifrons*, first recorded by Coues in July, 1877, on the basis of a specimen taken by Mr. Sennett at Hidalgo, in May, 1877. Several other species of Mr. Sennett's list had been made known as birds of the United States only the previous year through Dr. J. C. Merrill's work at Brownsville.

In the spring of the following year Mr. Sennett made a second trip to practically the same region, covering the months of March, April and May, 1878, although only about two months were spent in actual field work in Texas. He had as his assistant on this expedition Mr. J. H. Sanford of Grant County, Minnesota. The ornithological results of this trip were published in November, 1879, in Volume V of the same journal (pp. 371-440), forming a paper of 70 pages, entitled 'Further Notes on the Ornithology of the Lower Rio Grande of Texas, from observations made during the Spring of 1878,' edited and technically annotated by Dr. Coues. This list includes 168 species, adding 43 to his first list, and making a total of 193 species for the two expeditions, the result of about four months work in the field. About the same number of birds and eggs were obtained as on the first trip, with, in addition, a similar miscellaneous collection of mammals, reptiles, fishes and insects. The following five species of birds were added to the United States fauna, namely, (1) *Ornithion imberbe*, (2) *Pitangus derbianus*, (3) *Crotophaga sulcirostris*, (4) *Buteo albicaudatus* (now *Buteo albicaudatus sennetti*), and (5) *Scops asio enano* (now *Megascops asio trichopsis*). While edited, as was the former paper, by Dr. Coues, Mr. Sennett himself furnished most of the technical notes, Dr. Coues supplying only those relating to questions or nomenclature and synonymy. That he already had an excellent grasp of the technicalities and generalities of the subject is evident from his treatment of such species as *Lophophanes atricristatus*, *Auriparus flaviceps*, *Spermophila moreleti*, and especially of *Myiarchus crinitus erythrocerus*, *Crotophaga sulcirostris*, and *Meleagris gallopavo*. Under the latter, in discussing the Rio Grande form of the Wild Turkey, he suggests that "a var. *intermedia* " may have to be recognized, and in other cases foreshadowed, as under *Spermophila moreleti*, changes in nomenclature and the status of forms that have since been established.

Mr. Sennett's first paper on the birds of the Lower Rio Grande region showed him to be a field observer of unusual intelligence, and fully alert to every point of interest that came within his range of observation; while in the second paper he gave evidence of the expertness in discrimination and soundness of judgment so manifest in his later technical papers.

In 1882 Mr. Sennett made a third visit to Texas, arriving at Corpus Christi April 21, and continuing his work along the coast, chiefly in Nueces Bay, till May 12. He met there Captain B. F. Goss, of Milwaukee, Wisconsin, and had as his assistant on this trip Mr. J. M. Priour, who remained for some years in his employ as a collector in Texas and northeastern Mexico. Special attention was given on this trip to the water birds found breeding on the coast of Texas; and although his work was very successful, resulting in large collections of birds and birds' eggs, and a well-filled notebook, he never published anything relating to it.

Although this was his last visit to Texas, he did not relinquish this interesting field, continuing his work there through collectors employed by him to complete his Texas collections, he having early formed the plan of making Texas his special field, and of eventually publishing a work on the ornithology of the lower Rio Grande region of Texas and Mexico. In pursuance of this plan he enlisted the services of Mr. William Lloyd, who collected extensively for him in western Texas, in 1887. In this same year he sent Mr. J. M. Priour to the region of the lower Brazos River, and later to explore the coast region, or Tamaulipan district, of northeastern Mexico. Mr. Priour made a wagon trip from Corpus Christi to Tampico in 1888, amassing large collections, which threw much light on the faunal character of this then little known region, and helped to establish the boundaries of the Tamaulipan Fauna. As the country about Tampico proved very unhealthful, Mr. Priour nearly lost his life there from a tropical fever. The next season, 1889, to enable him to recuperate and to continue his work in a more salubrious region, Mr. Sennett sent him to the eastern base of the Sierra Madra, where for several months he collected in the vicinity of Monterey. The results of these important expeditions unfortunately still remain unpublished. It was Mr. Sennett's intention to work up this material and publish thereon at the earliest opportunity, but each year business exactions demanded more and more of his time and strength, so that he never obtained the necessary leisure to enable him to seriously or consecutively take up the task, which he looked upon as merely preliminary to his contemplated great work upon the ornithology of the Rio Grande region.

His proposed monograph of the birds of this region, for which he had been for so many years gathering material, at a very considerable outlay of both time and money, remains still unwritten. It was designed to be a quarto, with numerous colored and other illustrations, and quite a number of the colored plates had been prepared, the drawings having been made by Mr. Ernest Seton-Thompson several years ago. It is therefore peculiarly sad that when the time had nearly arrived when he could to a large extent lay aside business cares and devote his energies to the completion of the work that lay so near to his heart, that death should so suddenly terminate his career while still at the prime of his intellectual and physical powers, and his enthusiasm for scientific work unabated. It is, however, expected that through the liberality of Mrs. Sennett, who was devotedly attached to his interests, and especially interested in his scientific work, provision will be made for the preparation and early publication of his work on Texas birds.

As shown by the bibliography of his writings appended to this memorial, numbering some thirty titles, Mr. Sennett was not a prolific writer, but all of his papers are real contributions to science, and indicate that if he had been free to pursue his scientific aspirations, untrammelled by business interests, he would most certainly have attained enviable prominence as an investigator.

In addition to Mr. Sennett's visits to Minnesota and Texas, already detailed, he made, in 1886, two vacation trips to the mountains of western North Carolina, which form the basis of a paper, entitled 'Observations in Western North Carolina Mountains in 1886,' published in 'The Auk' for July, 1887. He also collected and observed birds for many years about his home in northwestern Pennsylvania. His first formal paper appeared in 1878, and related to his first Texas journey; his last paper was published in 1892, and is entitled 'Description of a New Turkey,' and is based on his Texas collections.

In 1883 Mr. Sennett deposited his collections of birds and mammals in the American Museum of Natural History, later presenting to the Museum his collection of mammals, numbering several hundred specimens, mostly from Texas and eastern Mexico.¹

¹ See Allen, J. A., 'On a Collection of Mammals from Southern Texas and Northeastern Mexico,' Bull. Am. Mus. Nat. Hist., Vol. III, No. 2, 1889, pp. 219-228. — An annotated list of 31 species. *Dipodops sennetti*, sp. nov.

It was his custom at this time, and till about 1896, to spend his winters in New York, and from about 1885 to 1893 he was able at this season to devote considerable time to ornithological work, — especially during the years 1884 to 1890, when most of his later ornithological investigations were made. In return for the storage and care of his collections on the part of the Museum, they were made freely available for scientific use, not only to the officers of the Museum, but to all specialists who might desire to consult them in their investigations. This harmonious coöperation was of great importance to the Museum, which further profited through the generous gift of specimens to supply desiderata for exhibition. As already implied, the collection, numbering over 8000 well prepared skins and nearly as many nests and eggs, is composed principally of material from Texas and north-eastern Mexico, and hence possesses special value as an exponent of the bird fauna of this portion of North America.

Mr. Sennett, though not a Founder, was one of the original members of the American Ornithologists' Union, having been elected at its first Congress held in New York City in 1883. In 1886 he was made Chairman of its Committee on the Protection of North American Birds, which position he held till 1893, or for seven years. He took a very active part in the work of the Committee, which, during the year 1886-87 held over twenty meetings at which a quorum was present, besides several informal meetings. It also prepared and distributed, under his direction, two large 'Bulletins' on bird protection, and drafted a stringent law for the protection of birds, which was afterward enacted with little change by the State of New York, and later by other States. Mr. Sennett contributed an important paper to the Committee's first Bulletin on the 'Destruction of the Eggs of Birds for Food,' as startlingly exemplified along the coast of Texas in the destruction of the eggs of Pelicans, Cormorants, Gulls, Terns, and Herons. In 1890 he delivered an address on 'Bird Legislation' before the State Board of Agriculture of Pennsylvania, which was published in the Board of Agriculture Report for that year. In this address the general subject of bird protection was admirably presented, with recommendations for future legislation by the State.

Mr. Sennett also took an active part in the work of the Linnaean Society of New York as long as he made that city his place of winter resident, and for three years (1887-89) was its President. He was rarely absent from its meetings, and took a prominent part in the presentation and discussion of papers.

As a public-spirited citizen, Mr. Sennett did much for the improvement of the town of Meadville, Pa., where his iron works were situated, during the two terms of his administration as Mayor, in 1877 to 1881. During this period many improvements in drainage, lighting, and paving were introduced, and new water-works were constructed, Meadville during this period passing from the status of a country village to a full-fledged city. To this work Mr. Sennett gave much time and energy, making a special study of the latest and best authorities on sewerage and other sanitary problems.

As regards his scientific work, already so favorably mentioned, it may be added that he was so conservative and thorough in his investigations that little that he has done will need revision. As evidence of this may be cited the ten new species and subspecies of North American birds described by him, all of which have found place in the A. O. U. Check-List. Aside from ornithology, he took a general interest in other departments of natural history, especially in mammals and insects, which he always collected when opportunity favored. These were presented to various scientific institutions, among which may be mentioned Cornell University, the American Museum of Natural History, and the State Cabinet at Albany.¹

My personal acquaintance with Mr. Sennett was made in 1878, shortly after his return from his second Texas trip, when he paid me the compliment of a brief call at my home in Cambridge, Mass. I knew him only casually from that time till the autumn of 1885, when I became intimately associated with him at the American Museum of Natural History in New York City. This associa-

¹ In 1884 the late J. A. Lintner published a partial report on the Lepidoptera collected on his first two Texas trips in Volume IV of 'Papilio' (pp. 135-147). This partial list numbers 61 species, four of which were described as new, and one, *Ecpantheria sennettii*, was named for Mr. Sennett.

tion continued for a considerable portion of each year for the following ten years, becoming interrupted later in consequence of Mr. Sennett's business engagements, which left him very little time for work on his collections at the Museum. This long association was marked by the utmost cordiality in all our relations. He was always genial, generous and just, liberal minded, and scrupulously conscientious. In this estimate of his character I am sure I voice the sentiments of all those who knew him most intimately. Of fine physique, and, up to the last few years of his life, possessed of robust health, his future seemed to promise a long period of activity and usefulness. During the winter of 1897, however, he suffered a severe attack of pneumonia, and for some time there seemed little chance of his recovery. Although surviving this nearly fatal illness, he never fully regained his health, and the complication of diseases from which, after a short illness, he died, was clearly traceable to the earlier attack. In his untimely death science has lost an earnest worker, the American Ornithologists' Union a worthy and devoted member, and those who were his intimate scientific associates a valued personal friend.

BIBLIOGRAPHY OF THE ORNITHOLOGICAL WRITINGS OF

GEORGE B. SENNETT.

1878. [Title not accessible.] < *The Country*, July 13, 1878, p. 184.

1878. Notes on the Ornithology of the Lower Rio Grande, Texas, from Observations made during the Season of 1877. Edited, with Annotations, by Dr. Elliott Coues, U. S. A. < *Bull. U. S. Geol. and Geograph. Survey Terr. (Hayden)*, IV, pp. 1-66. Feb. 5, 1878.

An annotated list of 151 species observed on the southern border of Texas, including much important biographical matter respecting species previously little known.

1878-79. Later Notes on Texas Birds. < *Science News*, I, No. 1, pp. 57-59, Dec. 15, 1878; No. 2, pp. 106, 107, Feb. 1, 1879; No. 3, pp. 120, 121, Feb. 15, 1879; No. 4, pp. 132-134, March 1, 1879; No. 5, pp. 151-153, March 15, 1879.

A series of five short preliminary papers giving quite extended and important biographical notes on 27 species of Texas birds, based on his observations made in the spring of 1878.

1879. Further Notes on the Ornithology of the Lower Grande of Texas, from Observations made during the Spring of 1878. Edited, with

Annotations, by Dr. Elliott Coues, U. S. A. < *Bull. U. S. Geol. and Geograph. Survey Terr. (Hayden)*, V, pp. 371-440. Nov. 30, 1879.

Notes on 168 species, with much wholly new information on many of them.

1880. An Unusual Flight of Whistling Swans (*Cygnus americanus*) in Northwestern Pennsylvania. < *Bull. Nutt. Orn. Club*, V, April, 1880, pp. 125, 126.

Flocks of a dozen to thirty-five seen in Crawford, Mercer, Venango, and Warren Counties, March 22, 1879, so loaded with ice that they were nearly unable to fly; a number were shot and a few were taken alive.

1882. Capture of the Golden Eagle (*Aquila chrysaetos canadensis*) in Crawford County, Pennsylvania. < *Bull. Nutt. Orn. Club*, VII, Jan. 1882, p. 58.

1882. Chaparral Cock (*Geococcyx californianus*). < *Ornithologist and Oologist*, VI, Jan. 1882, p. 86.

Mainly on the color of its eggs.

1882. "Fork-tailed Flycatcher." < *Orn. and Oöl.* VI, Feb. 1882, p. 93.

In correction of an error by another writer in a previous number of 'O. and O.'

1884. Nest and eggs of Couch's Tyrant Flycatcher (*Tyrannus melancholicus couchi*). < *Auk*, I, Jan. 1884, p. 93.

Found at Lomita Ranch, Rio Grande, Texas.

1884. Black-throated Auk (*Synthliborhamphus antiquus*) in Wisconsin. < *Auk*, I, Jan. 1884, pp. 98-100.

Shot on Lake Koshkonong, Wisconsin, by Rev. G. S. Gordon of Milwaukee.

1886. Ipswich Sparrow in Texas. < *Auk*, III, Jan. 1886, p. 135.

Said to have been taken at Dallas, Texas, by Mr. Clothrie Pierce; correctness of the locality afterwards questioned.

1887. Some undescribed Plumages of North American Birds. < *Auk*, IV, Jan. 1887, pp. 24-28.

Relates to the immature plumages of 10 species.

1887. Descriptions of Two New Subspecies of Titmice from Texas. < *Auk*, IV, Jan. 1887, pp. 28-30.

Parus atricristatus castaneifrons and *Parus bicolor texensis*.

1887. Observations in Western North Carolina Mountains in 1886. < *Auk*, IV, July, 1887, pp. 240-245.

An annotated list of 29 species, of which 8 are for the first time recorded for the region.

1888. Notes on the *Peucaea ruficeps* Group, with Descriptions of a New Subspecies. < *Auk*, V, Jan. 1888, pp. 40-42.

Peucaea ruficeps scottii, subsp. nov., Pinal County, Arizona.

1888. Descriptions of a New Species and Two New Subspecies of Birds from Texas. < *Auk*, V, Jan. 1888, pp. 43-46.

Psaltiriparus lloydii, *Nyctidromus albigollis merrilli*, *Parus carolinensis agilis*.

1888. Unexpected Occurrence of certain Shore Birds in Texas in Midsummer and in Breeding Plumage. <Auk, V, 1888, p. 110.
Five species of northern breeding Limicolæ found at Corpus Christi, Texas, in summer.
1888. Dichromatism in the genus *Nyctidromus*. <Auk, V, April, 1888, pp. 205-206.
1888. A New Form of Clapper Rail. <Auk, V, July, 1888, pp. 305-306.
Rallus longirostris scottii, subsp. nov.
1888. An Addition to the List of North American Birds. <Auk, V, July, 1888, p. 319.
Rallus longirostris caribæus Ridgw., recorded from Galveston and Corpus Christi, Texas.
1889. First Description of the Egg of *Glaucidium phalænoides*, Ferruginous Pygmy Owl. <Auk, VI, 1889, pp. 70, 71.
From near Victoria, Tamaulipas, Mexico.
1889. *Troglodytes ædon*, House Wren, Breeding in a Sand Bank. <Auk, VI, Jan. 1889, p. 76.
At Erie, Pa.
1889. The Clapper Rails of the United States and West Indies compared with *Rallus longirostris* of South America. <Auk, VI, April, 1889, pp. 161-166.
A critical study of the group, — 7 species and subspecies.
1889. A New Species of Duck from Texas. <Auk, VI, July, 1889, pp. 263-265.
Anas maculosa, now *Anas fulvigula maculosa*.
1889. *Micropallas whitneyi*, Elf Owl, taken in Texas. <Auk, VI, July, 1889, p. 276.
Taken in Hidalgo County, Texas, by Mr. F. B. Armstrong.
1890. A New Wren from the Lower Rio Grande, Texas, with notes on Berlandier's Wren of Northeastern Mexico. <Auk, VII, Jan. 1890, pp. 57-60.
Thryothorus ludovicianus lomitensis, subsp. nov.
1890. The King Eider (*Somateria spectabilis*) at Erie, Pennsylvania. <Auk, VII, Jan. 1890, pp. 88, 89.
A flock of 15 to 20 in Erie Bay, Nov. 30, 1889.
1890. Bird Legislation. <Report of Board of Agriculture of Pennsylvania for 1889 (1890). Also separate, pp. 1-12.
An address read before the State Board of Agriculture of Pennsylvania, at the annual meeting of the Board for the year 1889. A general review of the subject of protective bird legislation, with submission of a draft of 'An Act for the Protection of Birds, their Nests and Eggs.'
1892. Description of a New Turkey. <Auk, IX, 1892, pp. 167-186, pl. iii.
Meleagris gallopavo ellioti = [*M. gallopavo*] *intermedia* Sennett, 1879.

SPECIES AND SUBSPECIES DESCRIBED

BY GEORGE B. SENNETT.

1. *Anas maculosa*, Auk, VI, 1889, 263.
2. *Rallus longirostris scottii*, Auk, VI, 1889, 165.
3. *Meleagris gallopavo ellioti*, Auk, IX, 1892, 167, pl. iii=*Meleagris gallopavo* var. *intermedia*, 1879, tentatively proposed in Bull. Geol. and Geogr. Survey Terr. (Hayden), V, 1879, 428.
4. *Nyctidromus albigollis merrilli*, Auk, V, 1888, 44.
5. *Peucea ruficeps scottii*, Auk, V, 1888, 42.
6. *Thryothorus ludovicianus lomitensis*, Auk, VII, 1890, 58.
7. *Parus bicolor texensis*, Auk, IV, 1887, 29.
8. *Parus atricristatus castaneifrons*, Auk, V, 1887, 28.
9. *Parus carolinensis agilis*, Auk, V, 1888, 46.
10. *Psaltiriparus lloydi*, Auk, V, 1888, 43.

SPECIES AND SUBSPECIES NAMED FOR

GEORGE B. SENNETT.

Birds.

1. *Buteo albicaudatus sennetti* Allen, Bull. Am. Mus. Nat. Hist., V, 1893, 144.
2. *Chordeiles virginianus sennetti* Coues, Auk, X, 1888, 37.
3. *Ammodramus maritimus sennetti* Allen, Auk, V, 1888, 286.
4. *Harporhynchus longirostris sennetti* Ridgw., Proc. U. S. Nat. Mus., X, 1888, 506.

Mammals.

- Dipodops sennetti* Allen, Bull. Am. Mus. Nat. Hist., III, No. 2, April, 1891, 226.

Insects.

- Ecpantheria sennettii* Lintner, Papilio, IV, 1884, 147.

BIRDS OF SAN MIGUEL ISLAND, PANAMA.

BY OUTRAM BANGS.

LYING well within the Bay of Panama is a little group of islands known as the Archipelago de las Perlas. By far the largest of these is San Miguel or Ray Island. The others are small and all are so close together that the birds are probably much the same on all.

San Miguel is distant about twenty miles from the nearest point on the main and about sixty from Panama. It is about fifteen miles long, irregularly oblong in shape, and made up of a series of low hills clothed in luxuriant tropical forest that reaches almost to high water mark. The island has a hot and unhealthy climate, and is inhabited solely by negro pearl divers who are very independent of the Panama government and run the affairs of the island to suit themselves.

As nothing was known of the birds and mammals of Archipelago de las Perlas my brother and I decided to let Mr. W. W. Brown, Jr., visit it.¹ Accordingly toward the end of April, 1900, Mr. Brown reached San Miguel Island, where he stayed till the middle of May, collecting birds and mammals in the most vigorous manner.

Birds were scarce on the island, both in actual numbers and in number of species, and Mr. Brown took but forty-two species there. Besides these he saw no species of which he did not get specimens, except some Terns and two kinds of Boobys. The latter were said by the inhabitants to breed on some of the smaller islands of the group.

The birds of San Miguel are for the most part quite like those of the adjacent main. Four species, however, a Tanager, a Woodpecker, a Hummingbird, and a Tyrant bird are well marked island forms, and a few others are slightly different — too slightly to warrant separation — from the mainland stock. From the

¹ I have found record of but one bird from there; this is *Asturina ruficauda*, Pearl Island, Bay of Panama, Capt. Kellett and Lieut. Wood, Cat. Birds in British Mus., Vol. I, p. 205.

formation of the coasts of Panama, which infold in a semicircle the Archipelago de las Perlas, one would not expect to find the birds, especially those of strong flight, of the islands very different. Undoubtedly many are carried across from the main in storms, and some execute this journey of their own will. While Mr. Brown lay becalmed in the Bay of Panama, in the little schooner in which he took passage to San Miguel Island, he saw on several different occasions small green Hummingbirds, which he afterwards recognized as *Chlorostilbon assimilis*, pass the vessel flying from the main straight for the Archipelago.

The following list of the birds of San Miguel Island can not be assumed to be complete, still, during his three weeks stay there, in the breeding season, Mr. Brown took specimens of every species of land birds that he saw. Many migrants must also touch the island in their passage to and from the north, but Mr. Brown was rather late for these, and the Kingbird and the Water Thrush were the only two non-breeding species that he took.

Drs. Ridgway and Richmond have, with extreme kindness, examined the whole collection, confirming my identifications and comparing specimens in cases where I had not the necessary material.

Crypturus soui modestus (Cab.).—One young male, May 6. This skin is just like one of about the same age taken at Loma del Leon, Panama, by Mr. Brown.

Ortalis cinereiceps (Gray).—Two specimens, an adult male from San Miguel Island, April 29, and a female from Pedro Gonsales Island, shot by a pearl diver and brought to Mr. Brown, May 8.

Leptotila verreauxi Bonap.—Two specimens, a male taken April 20, and a female taken April 25.

Columbigallina rufipennis (Bonap.).—Two males, May 1, and May 3.

Nyctanassa violacea (Linn.).—One female, taken May 7.

Agamia agami (Gmel.).—One male, taken May 8.

Butorides virescens (Linn.).—One male, taken May 4. This specimen is not typical *virescens*, the wing-coverts being edged with rusty as in the Cuban form, *B. brunescens*.

Ictinia plumbea (Gmel.).—One adult female, April 20.

Scops brasiliانا (Gmel.).—Two specimens, a pair, taken from a hole in a dead tree, May 8. The female had apparently not yet laid her eggs. These skins have been identified by Dr. Ridgway as true *brasiliانا*.

Amazona salvini (Salvadori).—One adult male, taken April 25. Only once did Mr. Brown see this Parrot; then a small bunch of four or

five lit in a tree near him. He tried to get in position to kill more than one at a shot but was unable to do so before they took alarm, and he had to content himself with a single individual.

Crotophaga ani Linn. — One adult male, taken April 30.

Nyctidromus albicollis (Gmel.). — One female, April 29.

Ceryle torquata (Linn.). — One adult male, May 8.

Ceryle inda (Linn.). — Two males, May 4.

Malanerpes seductus,¹ sp. nov.

Fourteen specimens, twelve adults, including both sexes, and two nearly full grown young, the male taken April 25, the female, May 6.

Type from San Miguel Island, Panama, ♂ adult, No. 4892, coll. of E. A. and O. Bangs. Collected April 27, 1900, by W. W. Brown, Jr.

Specific characters.—An island form of the *M. wagleri* series. Similar in general to *M. wagleri* Salv. and Godm. of Panama, but slightly smaller and differing in the following details of coloration: scarlet belly patch more extensive, reaching under tail-coverts, many of these feathers being tipped and edged with scarlet, and extending forward to breast; rest of under parts (throat, breast and sides) reddish buff, some of the feathers of chin, throat and malar region, in the male tipped with scarlet (in *M. wagleri* the under parts—throat, breast and sides—are smoke gray with a yellow suffusion); nasal tufts of male reddish (yellowish in *M. wagleri*).

Measurements.

No.		Sex.	Wing.	Tail.	Tarsus.	Exposed culmen.
4892	Type	♂ ad.	102.	48.	19.	27.
4889	Topotype	♂ ad.	102.	50.	19.	26.
4890	"	♂ ad.	100.5	51.	18.6	26.4
4891	"	♂ ad.	101.	48.	18.6	26.4
4893	"	♂ ad.	102.5	47.5	19.	26.
4894	"	♂ ad.	102.5	50.	18.4	26.6
4895	"	♀ ad.	100.	49.	18.	22.6
4896	"	♀ ad.	100.	49.5	18.2	22.2
4897	"	♀ ad.	99.5	48.	18.2	25.
4898	"	♀ ad.	100.5	49.	18.4	24.2

Remarks.—This new woodpecker was one of the commoner

¹ *Seductus*, remote, living in solitude or apart.

birds of San Miguel Island, Mr. Brown seeing or hearing it every day. It is a very well differentiated island form of *M. wagleri*, at once told by its inferior size, its reddish under parts, and greatly extended scarlet belly patch.

***Phaethornis hyalinus*,¹ sp. nov.**

Three specimens, two males, one female, April 20, and May 5.

Type from San Miguel Island, Panama, ♂ adult, No. 4922, Coll. of E. A. and O. Bangs. Collected May 5, 1900, by W. W. Brown, Jr.

Specific Characters.—Like *P. anthophilus* except in the color of the back, which in the new form is bottle-green, without a trace of the pale bronzy-green of the same part in *P. anthophilus*. Feathers of upper parts very little edged with buffy, so that the back and rump are not only darker, but much more evenly green than in *P. anthophilus*.

Color.—Pileum dusky; upper parts, from cervix to upper tail-coverts, dark, shining bottle-green; a few feathers of rump and upper tail-coverts very narrowly edged with buffy; supraorbital and supra-auricular regions buffy white; suborbital region blackish; side of neck mixed grayish buffy and bottle-green; chin and throat grayish white, with longitudinal dusky streaks in middle part, clear grayish white at sides; breast suffused with dull smoke-gray; belly pale drab-gray, shading toward buff on sides and under tail-coverts; wings purplish brown; wing coverts mostly bottle-green; tail dark shining bottle-green with subterminal black bar and white tip; two central rectrices much elongated (in two specimens, marked as males; very little prolonged in one marked "female?"); culmen black, mandible black at end, "basal two thirds cadimum orange" (Nos. 4922 and 4924), or "orange chrome" (No. 4923).²

Measurements.

No.		Sex.	Wing.	Tail.	Culmen.
4922	Type	♂ ad.	59.4	55.4	34.8
4923	Topotype	♂ ad.	61.	56.2	35.
4924	"	"♀?"	56.	36.4	32.

Remarks.—The three specimens upon which this new hum-

¹ *Hyalinus*, glass-green.

² Notes made by Mr. Brown from the fresh specimens.

mingbird is based are in fine plumage, showing no sign of wear. They differ so much in the shade of green of the back and tail, as well as in the greatly reduced amount of buffy edgings of the plumage above from all examples of *P. anthophilus* that I have seen, that I do not hesitate to give the form a name. Whether or not it is an island form, confined to San Miguel, I am unable to say. I, however, can not find that *P. anthophilus* has ever been recorded from so far north as Panama.

Amizillis edwardi (Delattre & Bourcier).—Nine adults, both sexes, April and May.

Chlorostilbon assimilis Lawr.—Seven adults, six males, one female, April and May.

Mionectes oleagineus (Licht.).—Two specimens, a pair, taken April 20. These examples agree exactly in color with South American specimens and not with the form I have lately described from Loma del Leon, Panama.¹ The wings are, however, a little short for true *oleagineus* and a little long for *parvus*.

Ornithion pusillum (Cab. & Heine).—Two males, April 29 and May 4. These are in bad plumage and are just beginning to moult. They are very dark, especially on the back, but this dull coloring is probably due to the condition of the feathers, as otherwise they are perfectly referable to true *pusillum*.

Elænia pagana subpagana ScL. & Salv.—Four males in worn, faded plumage, April and May, and one young in nestling plumage, May 2.

Elænia sordidata,² sp. nov.

Fourteen specimens, adults of both sexes—many in worn faded plumage, others in fairly good plumage—April and May.

Type from San Miguel Island, Panama, ♂ adult, No. 4864, Coll. of E. A. and O. Bangs. Collected April 30, 1900, by W. W. Brown, Jr.

Specific Characters.—Most like *E. sororia* Bangs of the Santa Marta region of Colombia, differing from that form in broader, flatter bill; narrower white wing-bars; grayer, less olivaceous coloring of back; and smaller concealed white crown patch. Wing, tail and tarsus averaging shorter than in *sororia*, bill averaging longer (as well as broader and flatter).

¹ *Mionectes oleagineus parvus* Bangs, Proc. New Eng. Zool. Club, Vol. II, pp. 20-21, Sept. 20, 1900.

² *Sordidatus*, in dirty clothes, meanly dressed.

Color.—Upper parts grayish hair-brown, forehead not darker than back, the long feathers of crown slightly darker in the middle part; a concealed white crown patch—small, but present and of about the same size in both sexes; rather narrow wing-bars, and edgings of primaries, secondaries and tertials soiled yellowish white; throat dull grayish white; breast, sides and flanks pale, dull olivaceous; belly and under tail-coverts pale yellow; lining of wing buff-yellow.

Measurements.

No.		Sex.	Wing.	Tail.	Tarsus.	Exposed culmen.
4864	Type	♂ ad.	74.	62.	15.4	11.4
4854	Topotype	♂ ad.	70.	60.	15.8	—
4855	"	♂ ad.	75.	62.5	16.4	11.6
4859	"	♂ ad.	68.	59.	16.	11.
4861	"	♂ ad.	73.	64.	16.	11.8
4863	"	♂ ad.	68.	59.	15.4	11.
4856	"	♀ ad.	73.	61.5	16.4	12.
4857	"	♀ ad.	70.	59.	16.	12.
4858	"	♀ ad.	69.	60.	16.	11.
4860	"	♀ ad.	68.	58.	15.2	10.4
4862	"	♀ ad.	69.	60.5	15.6	11.

Remarks.—As no *Elenia* of this style has been recorded from Panama, it is rather strange to find a form so close to *E. sororia* inhabiting San Miguel Island. I fancy that in fresh plumage the color differences between the two forms would be more marked; as it is they show well in series. The new form is grayer above and the contrast between head and back is less than in *E. sororia*. *E. sordidata* has also a smaller white crown patch, and less white in the wings, while the size and shape of bill and the length of wing, tail and tarsus are noticeably different in the two forms.

E. sordidata was not an uncommon bird on San Miguel, frequenting low brush. Its breeding season was well advanced, but Mr. Brown did not notice any young about during his stay on the island.

Our series of *E. sororia* from the Santa Marta region of Colombia is so extensive that I have been able to compare specimens killed on exactly the same dates and in precisely corresponding plumage with the series from San Miguel Island of the new form.

Elænia placens *Scl.*—One adult male, taken May 5.

Sublegatus arenarum (*Salvin*).—Five specimens, four males, one female, April and May.

These skins are inseparable from southern examples, that have been called *S. glaber* *Scl. & Salv.*, and substantiate the opinion of Messrs. Salvin and Godman (*Biol. Cent. Am.*, Vol. II, p. 37), that the species must be known as *S. arenarum*. The type locality of *S. arenarum* (described as *Elainea arenarum*) is Punta Arenas, Costa Rica.

Myiobius nævius (*Bodd.*).—One adult male, May 7.

Myiarchus panamensis *Lawr.*—Twelve adults, both sexes, April and May.

In the San Miguel Island series the wings seem to average a trifle shorter and the back is very slightly darker in color, than in a series from Loma del Leon, Panama, but these differences are not enough to warrant separating the island bird by name.

Tyrannus tyrannus (*Linna.*).—One female, taken April 27, a migrant. This is a small billed example, and therefore a bird that would breed far north.

Tyrannus melancholicus satrapa (*Licht.*).—Ten adults, both sexes, April and May.

Cercomacra maculicaudis (*Scl.*).—Eleven adults, both sexes, April and May.

Drymophila intermedia (*Cab.*).—Two adult males, April 30 and May 1. These agree exactly with southern specimens (Venezuela and Colombia). San Miguel Island, however, appears to be the most northern record for the species.

Thamnophilus doliatus nigricristatus (*Lawr.*).—Six adults, two males and four females, April and May. The two males are extreme examples of the black-capped form — *nigricristatus*.

Vireo chivi agilis (*Licht.*).—Four specimens, two pairs, all taken April 29. This was an uncommon bird on the island, and in one place Mr. Brown found these two pairs. He thinks he saw no others during his stay.

The color of the back is rather darker than usual, but the birds are in worn plumage and in all other respects agree with mainland specimens of *agilis*.

Thryophilus galbraithi *Lawr.*—Eight adults, both sexes, April and May.

These examples are almost imperceptibly more reddish on the back than mainland birds.

Seiurus noveboracensis (*Gmel.*).—One female, taken April 29, a migrant.

Dendroica vieillotii *Cassin.*—One male, taken May 7, in rather worn plumage.

Cœreba mexicana columbiana (*Cab.*).—Fourteen specimens, adults of both sexes and three nearly full grown young, just emerging from nestling plumage, taken April 20, May 4, and May 5.

Cyanerpes cyaneus (Linn.).—Two males, taken April 30.

***Rhamphocelus limatus*,¹ sp. nov.**

Thirteen specimens, adults of both sexes, April and May.

Type from San Miguel Island, Panama, ♂ adult, No. 4990, coll. of E. A. and O. Bangs. Collected May 4, 1900, by W. W. Brown, Jr.

Specific Characters.—Most nearly like *R. dimidiatus*, but smaller; bill smaller; colors rather duller throughout; adult male with the black belly patch (so conspicuous a marking in *R. dimidiatus*) almost wanting; thighs dark reddish brown, instead of black; wings dull brownish black instead of jet black; adult female with interscapulum duller and browner, therefore whole head and back more nearly uniform.

Color.—Adult ♂ head and scapulars dark crimson, the feathers blackish basally; rump and upper tail-coverts intense scarlet vermilion; wings brownish black, the lesser coverts and some of the middle coverts edged with dull dark crimson; greater coverts, secondaries and tertials edged with brick red; throat and jugulum dull crimson; breast, sides and under tail-coverts scarlet vermilion (not so intense as rump)—the lower part of the feathers, just above their slaty bases orange; tibia dark reddish brown; on central portion of belly some of the feathers are brick red with blackish slate bases, forming a small, slightly darker belly patch, varying a little in size and darkness in different individuals—very different from the large, pronounced black belly patch of *R. dimidiatus*; tail black; lining of wing black; feet black; bill slate black; base of lower mandible French gray.

Adult ♀, head all round, and back brown—crown darkest, dusky, back walnut brown; forehead, chin and a few scattering feathers on sides of head dark liver brown; wing and tail dusky brown; rump, upper tail-coverts, breast, belly and under tail-coverts dull red, most intense on upper breast and upper tail-coverts; lining of wing dull cinnamon; bill dark horn color.

No.		Sex.	Wing.	Tail.	Tarsus.	Exposed culmen.
4990	Type	♂ ad.	77.	69.5	21.2	15.2
4991	Topotype	♂ ad.	79.	70.	21.	15.
4992	"	♂ ad.	77.	70.	20.2	15.
4993	"	♂ ad.	78.5	68.5	21.	15.
4994	"	♂ ad.	76.	67.	20.8	15.2
4995	"	♂ ad.	76.5	67.	20.2	15.
4996	"	♂ ad.	77.	68.	20.	15.2
4997	"	♂ ad.	78.	67.	21.	15.
4998	"	♂ ad.	76.	68.	20.	14.8
4999	"	♀ ad.	73.5	65.	20.4	15.
5000	"	♀ ad.	73.	66.	20.	15.

¹ *Limatus*, elegant, refined.

Remarks.—This handsome little *Rhamphocelus* is a strongly characterized island form of the *dimidiatus* series, differing in addition to its small size in the greatly reduced and less black belly patch, browner wings and rather duller general coloration. It was found by Mr. Brown generally distributed over San Miguel Island, but like all the birds of the island, in small numbers. All the specimens taken were in breeding condition.

The discovery of *R. limatus* on San Miguel Island adds the fifth species of *Rhamphocelus* described from Panama within a few years—*R. festæ*, *R. inexpectatus*, *R. chrysopterus*, and *R. dunstalli*, not to mention *R. costaricensis* from Costa Rica!

***Tanagra cana diaconus* (Less.).**—Seven adult males, April and May. These are indistinguishable from Panama birds generally.

***Saltator albicollis isthmicus* (Scl.).**—Fifteen specimens, both sexes, April and May. These birds were breeding; a female taken May 7 had an egg in the oviduct, others had laid their sets. All are in worn, very dull plumage, and at first sight look very different from a series taken in March at Loma del Leon. Closer inspection shows the duller plumage to be due to season, and the form of San Miguel Island is probably in no wise different from the mainland bird.

***Volatinia jacarini splendens* (Vieill.).**—Two adults, a pair taken April 20. These two specimens have larger bills, but in all other ways agree with *splendens*. It is not worth while to separate the form of San Miguel on this character alone, though it appears to be a slightly differentiated island race.

***Oryzoborus funereus* Scl.**—Three specimens, a male and two females taken April 21, April 27, and May 2.

A LIST OF THE BIRDS OF THE DISTRICTS OF
PARRY SOUND AND MUSKOKA, ONTARIO.

BY JAMES H. FLEMING.

PARRY SOUND, and Muskoka are two districts lying to the east of the Georgian Bay in the Province of Ontario. The formation is Laurentian; the country is still largely covered with forest; though a proportion of the better land has been cleared, rock, lake and forest are what appear most prominently to the casual observer. These districts form the west slope of the watershed that finds its height in the Algonquin National Park, not far outside the east boundary of Parry Sound. The districts are drained by the French River (the northern boundary of Parry Sound), the Magnetawan, the Muskoka, and on the south, the Severn; all these run nearly west, and with assistance of many tributaries and lesser rivers carry off the surplus water into the Georgian Bay and thus to Lake Huron.

The forest, with the exception of white pine, most of which has been cut, is still largely in its primitive state, and forms a breeding shelter for many species of birds, that in the older parts of Ontario are only migrants, or, at the most, casual breeders. Many resident species find their limit here, appearing only in the more southern parts of Ontario when driven by stress of food. Although such a breeding ground, the forest seems to contain few if any birds, and only around the settlements are birds much in evidence. With the gradual clearing of the land birds that were formerly unknown in the districts are working gradually northward, though without displacing the forest species.

Of the ornithology of Parry Sound, as far as I know, nothing has been printed, and of Muskoka little beyond the notes published several years ago by Mr. A. Kay in the 'Transactions' of the Canadian Institute and the 'Biological Journal' of Ontario; Mr. Kay, whose long residence in Muskoka makes his notes of exceptional value, has allowed me to make full use of them; I have also made full use of the valuable notes furnished by Mr. P. A. Tavernier, principally relating to Lake Muskoka, about 30 species

of Muskoka birds being added on his authority. To Mr. E. F. Handy, of Emsdale, the success of my work in Parry Sound is largely due, he having been my constant companion during all my collecting trips in that district. Much work remains to be done on Lake Nipissing, and on the Georgian Bay.

The position, and when possible, the altitudes of the principal points mentioned are given below, as follows: ¹

Station.	Latitude.	Longitude.	Height above Sea.
Gravenhurst	44° 54'	79° 20'	770 feet
Huntsville	45° 19'	79° 8'	
Parry Sound	45° 19'	80° 0'	635 "
Emsdale	44° 30'	79° 14'	
Burks Falls	45° 30'	79° 18'	
North Bay	46° 34'	79° 30'	

Gravenhurst, mean temperature, summer, 64.8°; year, 41.4°.

Parry Sound, " " " 63.5, " 40.6.

The map gives only the larger lakes and takes in only a portion of the French River which, with Lake Nipissing, forms the northern boundary of Parry Sound.

1. *Colymbus holboëllii*. HOLBÆLL'S GREBE. — Mr. Kay had one taken at Windemere, on Lake Rosseau.

2. *Colymbus auritus*. HORNED GREBE. — Reported from Lake Muskoka, by Mr. Tavernier.

3. *Podilymbus podiceps*. — PIED-BILLED GREBE. — Breeds in both districts, but does not appear to be abundant.

4. *Gavia imber*. LOON. — Abundant summer resident, breeding in most of the lakes.

5. *Uria lomvia*. BRÜNNICH'S MURRE. — A straggler taken at the town of Parry Sound in December, 1897; Mr. Kay took one at Port Sydney.

6. *Larus leucopterus*. ICELAND GULL. — Mr. Kay reports having taken one on April 6, 1898, at Port Sydney; it was a female and is now in his collection.

7. *Larus argentatus smithsonianus*. AMERICAN HERRING GULL. — Common in both districts; breeds. At Sand Lake I noticed a curious habit these Gulls have of roosting at night on some dead pines that stood on a small island in the lake.

¹ From the reports of the Meteorological Service.

8. *Larus delawarensis*. RING-BILLED GULL.—Common in the Georgian Bay, breeds as far in as the Muskoka Lakes.

9. *Oceanites oceanicus*. WILSON'S PETREL.—Mr. Tavernier recorded one taken several years ago on Lake Muskoka; it was identified by Mr. Ridgway, and is now in my collection.

10. *Pelecanus erythrorhynchos*. AMERICAN WHITE PELICAN.—I recorded one taken on Lake Nipissing, in 'The Auk,' Vol. XVII, p. 177.

11. *Merganser americanus*. AMERICAN MERGANSER.—Common, breeds.

12. *Merganser serrator*. RED-BREADED MERGANSER.—Reported as wintering at Port Sydney by Mr. Kay. Breeds in both districts.

13. *Lophodytes cucullatus*. HOODED MERGANSER.—Reported as resident at Port Sydney by Mr. Kay. Breeds in both districts.

14. *Anas boschas*. MALLARD.—Reported by Mr. Tavernier, at Beaumauris.

15. *Anas obscura*. BLACK DUCK.—Generally distributed; breeds in suitable localities in both districts.

16. *Nettion carolinensis*. GREEN-WINGED TEAL.—Occurs in the larger bodies of water.

17. *Querquedula discors*. BLUE-WINGED TEAL.—Reported at Beaumauris by Mr. Tavernier.

18. *Spatula clypeata*. SHOVELLER.—Mr. Tavernier reports having seen one from Muskoka.

19. *Dafila acuta*. PINTAIL.—Mr. Tavernier reports one from Muskoka.

20. *Aix sponsa*. WOOD DUCK.—A common summer resident, breeds.

21. *Aythya americana*. REDHEAD.—I have met with this duck in both districts.

22. *Aythya marila*. AMERICAN SCAUP DUCK.—Reported from Muskoka by Mr. Tavernier.

23. *Aythya affinis*. LESSER SCAUP DUCK.—Occurs not uncommonly in the autumn.

24. *Clangula clangula americana*. AMERICAN GOLDEN-EYE.—Reported from Muskoka by Mr. Tavernier.

25. *Charitonetta albeola*. BUFFLE-HEAD.—Reported from Beaumauris by Mr. Tavernier.

26. *Harelda hyemalis*. OLD-SQUAW.—Mr. Kay records one taken at Port Sydney on April 26, 1890; and I heard of no further records for Muskoka till March, 1899, when, according to Mr. Tavernier, several were picked up at Beaumauris on the ice, in the last stages of starvation.

27. *Oidemia perspicillata*. SURF SCOTER.—A young bird taken at Beaumauris by Mr. Tavernier.

28. *Chen hyperborea nivalis*? GREATER SNOW GOOSE? A small flock of Snow Geese were seen at Emsdale, in the spring of 1898, and about a year later Mr. Handy saw a flock of about seven pass north over Emsdale.

29. *Branta canadensis*. CANADA GOOSE.—Considerable flocks pass north and south on their migrations but rarely alight.
30. *Botaurus lentiginosus*. AMERICAN BITTERN.—Generally distributed; reported as common at Beaumauris, by Mr. Tavernier; Mr. Kay found it breeding at Port Sydney.
31. *Ardetta exilis*. LEAST BITTERN.—I have not yet met with this Bittern in Parry Sound; I saw one at Washago in May, 1899; Mr. Tavernier saw one at Beaumauris; Wm. Melville records one taken at Gravenhurst.
32. *Ardea herodias*. GREAT BLUE HERON.—An abundant breeding bird.
33. *Nycticorax nycticorax nævius*. BLACK-CROWNED NIGHT HERON.—I saw one at Washago in May, 1899, and another a few days later on the Magnetawan River, between Burks Falls and Emsdale.
34. *Grus americana*. WHOOPING CRANE.—A pair were seen by Mr. Handy at Emsdale in 1895; he was attracted by their loud cries and watched them for some time as they hovered over, evidently undecided where to go.
35. *Grus mexicana*. SANDHILL CRANE.—Mr. Tavernier reports one taken at Beaumauris several years ago; it is now in the hotel there.
36. *Rallus virginianus*. VIRGINIA RAIL.—Mr. Kay reports it from Port Sydney. Reported from Gravenhurst by Wm. Melville, and at Beaumauris by Mr. Tavernier.
37. *Gallinula galeata*. FLORIDA GALLINULE.—Reported from Beaumauris by Mr. Tavernier.
38. *Fulica americana*. AMERICAN COOT.—Reported from Beaumauris by Mr. Tavernier.
39. *Philohela minor*. AMERICAN WOODCOCK.—Mr. Handy saw one near Kearney in 1896; Wm. Spreadborough in Prof. Macoun's list of Canadian birds, refers to a pair that bred near Bracebridge.
40. *Gallinago delicata*. WILSON'S SNIPE.—A pair breed regularly at Emsdale, also reported at Beaumauris by Mr. Tavernier.
41. *Totanus melanoleucus*. GREATER YELLOW-LEGS.—Passes through both districts during migrations. Several years ago a flock was seen at Emsdale during a snowstorm.
42. *Helodromas solitarius*. SOLITARY SANDPIPER.—A summer resident in both districts; not common.
43. *Actitis macularia*. SPOTTED SANDPIPER.—Plentiful everywhere, even breeding on the rocky shores of the smaller forest lakes.
44. *Numenius hudsonicus*. HUDSONIAN CURLEW.—The only record I have is of one found on June 4, 1897, in a Duck Hawk's nest at Beaumauris, by Mr. Tavernier.
45. *Ægialitis vocifera*. KILLDEER.—Occurs regularly at Emsdale; probably breeds at Muskoka.
46. *Canachites canadensis*. CANADA GROUSE.—Local and much scarcer than it was some years ago. I have a specimen from Rosseau,

Mr. Tavernier has seen specimens taken at Beaumauris, and Mr. Handy regards it as scarce at Emsdale.

47. *Bonasa umbellus togata*. CANADIAN RUFFED GROUSE.—Both districts are essentially partridge country; they are plentiful everywhere, particularly in the unsettled parts of the country.

48. *Lagopus lagopus*. WILLOW PTARMIGAN.—Two were shot at Calander, eight miles south of North Bay, in December, 1896; Mr. Handy heard of some the same winter at a place not far from Burks Falls, but their presence in Parry Sound was, I believe, due to an unusual migration that occurred that season.

49. *Pediæcetes phasianellus*. SHARP-TAILED GROUSE.—In October of 1896 a southern migration of this Grouse took place. They spread themselves over both districts. The two or three previous records I had regarded as belonging to the prairie form which is found at Port Arthur; but those taken in 1896 are, I believe, true *phasianellus*.

50. *Ectopistes migratorius*. PASSENGER PIGEON.—Once abundant in both districts, breeding; now, if it occurs at all, only in such small numbers as to escape detection.

51. *Zenaidura macroura*. MOURNING DOVE.—Mr. Tavernier heard one at Beaumauris in May, 1898, and Mr. Handy reported a pair at Emsdale in 1899.

52. *Elanoides forficatus*. SWALLOW-TAILED KITE.—Mr. Kay reports one as having been seen at Port Sydney on July 15, 1897; it sailed several times about his place, and was distinctly seen.

53. *Circus hudsonius*. MARSH HAWK.—Generally distributed; breeds in suitable places in both districts.

54. *Accipiter velox*. SHARP-SHINNED HAWK.—Generally distributed, scarce. A nest taken by Mr. Handy at Emsdale, on May 18, 1893, contained one egg.

55. *Accipiter cooperii*. COOPER'S HAWK.—Reported as rare at Beaumauris by Mr. Tavernier.

56. *Accipiter atricapillus*. AMERICAN GOSHAWK.—Never a scarce bird, the number of breeding birds has greatly increased since the autumn of 1896, when the districts were invaded by considerable flights of this hawk; since that date the number of pairs breeding in the districts has noticeably increased.

57. *Buteo borealis*. RED-TAILED HAWK.—Not a common Hawk; breeds.

58. *Buteo lineatus*. RED-SHOULDERED HAWK.—Generally distributed and fairly common; breeds.

59. *Buteo latissimus*. BROAD-WINGED HAWK.—Common; a large number breed. I took a nest with three eggs at Emsdale on May 27 1897.

60. *Archibuteo lagopus sancti-johannis*. AMERICAN ROUGH-LEGGED HAWK.—Sparingly distributed in Parry Sound as a migrant; reported at Port Sidney by Mr. Kay.

61. *Aquila chrysaetos*. GOLDEN EAGLE.—Previous to 1897 I was aware of only one record for Muskoka; since March of that year I have received several from Parry Sound.

62. *Haliaeetus leucocephalus alascanus*. NORTHERN BALD EAGLE.—A common resident, breeds. I believe this bird is the northern form.

63. *Falco peregrinus anatum*. DUCK HAWK.—A pair nest on Lake Muskoka regularly; Mr. Tavernier took a set of four eggs from the nest on May 24, 1898; the bird is scarce in both districts.

64. *Falco columbarius*. PIGEON HAWK.—Scarce; a pair bred for some years, regularly, on an island in Lake Joseph.

65. *Falco sparverius*. AMERICAN SPARROW HAWK.—A common breeding species, abundant in both districts.

66. *Pandion haliaetus carolinensis*. AMERICAN OSPREY.—Generally distributed; not common inland. I met with a nest in the center of a large herony, in Parry Sound.

67. *Asio wilsonianus*. AMERICAN LONG-EARED OWL.—I have one taken by Mr. Handy at Emsdale, and Mr. Kay has taken one at Port Sydney; but it can only be regarded as a straggler.

68. *Asio accipitrinus*. SHORT-EARED OWL.—The only records I have heard of are of two found at Port Sydney by Mr. Kay.

69. *Syrnium nebulosum*. BARRED OWL.—A common resident; breeds.

70. *Scotioptex cinerea*. GREAT GRAY OWL.—Sometimes abundant in the winter.

71. *Nyctala tengmalmi richardsoni*. RICHARDSON'S OWL.—Mr. Kay has met with one or two at Port Sydney.

72. *Nyctala acadica*. SAW-WHET OWL.—Not common at Emsdale; reported as resident at Port Sydney by Mr. Kay.

73. *Megascops asio*. SCREECH OWL.—Rare at Emsdale; Mr. Kay reports it as resident at Port Sydney.

74. *Bubo virginianus*. GREAT HORNED OWL.—A common breeding species; resident.

75. *Bubo virginianus subarcticus*. WESTERN HORNED OWL.—I have a specimen taken at Rosseau.

76. *Bubo virginianus saturatus*. DUSKY HORNED OWL.—Large numbers of Horned Owls come into the districts every winter from the north, probably from Hudson Bay; among them are some as dark as the dark Labrador form.

77. *Nyctea nyctea*. SNOWY OWL.—This Owl is found in both districts in the winter, but is not common, except in years of unusual migrations.

78. *Surnia ulula caparoch*. AMERICAN HAWK OWL.—I have had specimens from both districts; it is rare and not by any means a regular winter visitor. Mr. J. Huges Samuel took a female at Scotia Junction on December 14, 1898.

79. *Coccyzus americanus*. YELLOW-BILLED CUCKOO.—I have met with it nesting at Rosseau, and I believe it occurs at Emsdale.

80. *Coccyzus erythrophthalmus*. BLACK-BILLED CUCKOO.—Generally distributed over both districts; breeds.

81. *Ceryle alcyon*. BELTED KINGFISHER.—Abundant everywhere; breeds.

82. *Dryobates villosus leucomelas*. NORTHERN HAIRY WOODPECKER.—One of the commonest resident woodpeckers; very fond of wind-brakes and burnt lands as breeding grounds.

83. *Dryobates pubescens medianus*. DOWNY WOODPECKER.—An abundant resident species, usually nesting in the woods.

84. *Picoides arcticus*. ARCTIC THREE-TOED WOODPECKER.—A common resident in Parry Sound, rarer in Muskoka. This Woodpecker has a habit of sometimes nesting in colonies. I saw the nests of such a colony near Sand Lake in 1896; there were six or seven nests, each cut into the trunk of a living cedar, just below the first branch, and usually eight or ten feet from the ground. The cedars were in a dense forest, overlooking a small stream that empties into Sand Lake. Four eggs seems to be the full set. The young are hatched by the first of June.

85. *Picoides americanus*. AMERICAN THREE-TOED WOODPECKER.—Rare, only appearing in the winter; Mr. Handy sent me a pair taken at Emsdale, and it has been recorded from Muskoka.

86. *Sphyrapicus varius*. YELLOW-BELLIED SAPSUCKER.—A common breeding species, perhaps the commonest of the Woodpeckers in the summer.

87. *Ceophlæus pileatus abieticola*. NORTHERN PILEATED WOODPECKER.—Resident in both districts; not plentiful.

88. *Melanerpes erythrocephalus*. RED-HEADED WOODPECKER.—One of the species that is increasing with the settlement of the country. Mr. Kay speaks of it as rare at Port Sydney in 1890, but increasing rapidly; in 1893 it was rare at Emsdale, but has become much commoner.

89. *Colaptes auratus luteus*. NORTHERN FLICKER.—Abundant; breeds.

90. *Anrostomus* ³ *vociferus*. WHIP-POOR-WILL.—Fairly common in Muskoka; I have not met with it in Parry Sound.

91. *Chordeiles virginianus*. NIGHTHAWK.—Common summer resident; breeds.

92. *Chætura pelagica*. CHIMNEY SWIFT.—Abundant; breeds.

93. *Trochilus colubris*. RUBY-THROATED HUMMINGBIRD.—Plentiful during migrations. The males arrive at Emsdale soon after the 15th of May, the females a few days later; I think some go further north but a great many remain to breed.

94. *Tyrannus tyrannus*. KINGBIRD.—Abundant in the settled districts; breeds.

95. *Myiarchus crinitus*. CRESTED FLYCATCHER.—Reported as common at Beaumauris on May 12, 1898, by Mr. Tavernier; I believe it will be found distributed in the summer over both districts.

96. *Sayornis phœbe*. PHŒBE.—Abundant summer resident; breeds.

97. *Contopus borealis*. OLIVE-SIDED FLYCATCHER.—In the spring of 1894 I found this Flycatcher not uncommon in the country between Kearney and Sand Lake; they frequented the tops of the highest dead pines.

98. *Contopus virens*. WOOD PEWEE.—A common breeding species.

99. *Empidonax flaviventris*. YELLOW-BELLIED FLYCATCHER.—A common and widely distributed species; breeds.

100. *Empidonax traillii alnorum*. ALDER FLYCATCHER.—I took a male at Emsdale on May 29, 1899. Mr. Kay has taken the nest of this species at Port Sydney.

101. *Empidonax minimus*. LEAST FLYCATCHER.—The most abundant of the small Flycatchers; breeds.

102. *Otocoris alpestris*. HORNED LARK.—Mr. Lambe of Toronto has a specimen taken at Gravenhurst.

103. *Otocoris alpestris praticola*. PRAIRIE HORNED LARK.—An abundant breeding resident. Mr. Kay gives 1887 as the date of its first appearance at Port Sydney.

104. *Pica pica hudsonica*. AMERICAN MAGPIE.—One was seen at Port Sydney by Mr. Kay, Dr. Brodie, and Mr. H. Brown, in the summer of 1898.

105. *Cyanocitta cristata*. BLUE JAY.—One of the most abundant resident birds.

106. *Perisoreus canadensis*. CANADA JAY.—Common in Parry Sound, reported by Mr. Kay as a winter resident only in Muskoka.

107. *Corvus corax principalis*. NORTHERN RAVEN.—A common resident in Parry Sound; rarer in Muskoka.

108. *Corvus americanus*. AMERICAN CROW.—Abundant about the settlements. On one occasion I saw Crows feeding in the same field with a pair of Ravens, but usually they do not intermingle.

109. *Dolichonyx oryzivorus*. BOBOLINK.—One of the species that is finding its way northward. I saw a female at Emsdale in May, 1899; she was seen later in the summer with a male and a brood of young. Mr. Tavernier saw the first one at Beaumauris in August, 1897, and reported them as increasing in 1898.

110. *Molothrus ater*. COWBIRD.—I first saw this bird at Emsdale on May 26, 1899, about a dozen of both sexes; Mr. Kay gives 1889 as the year of their first appearance at Gravenhurst. Mr. Tavernier reported them as common at Beaumauris on April 22, 1898.

111. *Agelaius phœniceus*. RED-WINGED BLACKBIRD.—Common in marshy districts along the larger rivers.

112. *Sturnella magna*. MEADOWLARK.—Mr. Kay puts its first appearance in Muskoka about 1863, and regards it as becoming common at Port Sydney; it occurs at Beaumauris.

113. *Icterus galbula*. BALTIMORE ORIOLE.—Mr. Kay gives 1887 as the year of its first appearance at Port Sydney, and Mr. Tavernier refers to it as increasingly common at Beaumauris.

114. *Scolecophagus carolinus*. RUSTY BLACKBIRD.—Assembling in large flocks in the autumn. I am not aware that they breed in either district.

115. *Quiscalus quiscula æneus*.—BRONZED GRACKLE.—A common breeding species; at Kearney they nest in old Woodpecker holes.

116. *Coccothraustes vespertinus*. EVENING GROSBEAK.—Sometimes appears in large flocks in winter; it comes into Parry Sound much more regularly than is supposed. A flock remained at Emsdale till the end of the first week of May, 1897, feeding on the seeds of the sumach.

117. *Pinicola enucleator canadensis*. PINE GROSBEAK.—A common winter resident, sometimes appearing in immense flocks. In September, 1898, I saw small flocks feeding on the tops of the highest pines.

118. *Carpodacus purpureus*. PURPLE FINCH.—A common resident in both districts.

119. *Loxia curvirostra minor*. AMERICAN CROSSBILL.—Resident in both districts; they gather in immense flocks and come into the settlements or about the lumber shanties.

120. *Loxia leucoptera*. WHITE-WINGED CROSSBILL.—Not as abundant as the former; a resident in both districts.

121. *Acanthis hornemannii exilipes*. HOARY REDPOLL.—I examined one taken by Mr. Kay at Port Sydney.

122. *Acanthis linaria*. REDPOLL.—An abundant winter visitor, often remaining till the beginning of May.

123. *Acanthis linaria holbœllii*. HOLBÖLL'S REDPOLL.—A specimen taken by Mr. Kay at Port Sydney on April 14, 1890 (a male) was indentified at the Smithsonian Institution as this subspecies.

124. *Acanthis linaria rostrata*. GREATER REDPOLL.—Among a number of Redpolls from Parry Sound, examined by Mr. Ridgway, were specimens intermediate between this species and *A. linaria*. I have, however, seen typical specimens from Muskoka.

125. *Astragalinus tristis*. AMERICAN GOLDFINCH.—An abundant resident in both districts.

126. *Passer domesticus*. HOUSE SPARROW.—Up to a few years ago this sparrow was seen only in the larger towns; it is now found in many of the smaller settlements. I saw a flock at Sand Lake in October, 1900, and shot a single bird in an uninhabited clearing of not more than half an acre, fully three miles in the bush, from the last house.

127. *Spinus pinus*. PINE SISKIN.—I have often met with immense flocks; they keep together till May when they either disperse or disappear. In the winter the flocks are joined by Redpolls and Goldfinches.

128. *Passerina nivalis*. SNOWFLAKE.—Abundant in the winter, the last leave for the north soon after the first of May, and some are back by the first of October.

129. *Calcarius lapponicus*. LAPLAND LONGSPUR.—The only record I am aware of is that of a flock reported by Wm. Melville at Gravenhurst on April 29, 1890, and published in the 'Biological Review' of Ontario.

130. *Poœcetes gramineus*. VESPER SPARROW.— One of the commonest summer residents.

131. *Ammodramus sandwichensis savanna*. SAVANNA SPARROW.— Reported by Mr. Tavernier as common at Beaumauris on April 22, 1898. I have not met with it in Parry Sound.

132. *Zonotrichia leucophrys*. WHITE-CROWNED SPARROW.— A fairly common migrant; they go further north to breed.

133. *Zonotrichia albicollis*. WHITE-THROATED SPARROW.— A common migrant; a good many breed. I took a nest near Sand Lake on May 25, 1897. It was placed under some dead ferns on the flat grassy bank of a stream, and was lined with moose hair; there were four eggs in the set. I took a nest some years ago at Rosseau, built about three feet up in a raspberry bush.

134. *Spizella monticola*. TREE SPARROW.— A regular winter resident. Common at Sand Lake in October, 1900.

135. *Spizella socialis*. CHIPPING SPARROW.— A common summer resident, usually breeding about the settlements.

136. *Spizella pusilla*. FIELD SPARROW.— Mr. Kay took one at Port Sydney in the summer of 1890.

137. *Junco hyemalis*. SLATE-COLORED JUNCO.— A common breeding resident, very fond of nesting near old bush roads.

138. *Melospiza fasciata*. SONG SPARROW. — Abundant; breeds.

139. *Melospiza georgiana*. SWAMP SPARROW.— One taken at Beaumauris on May 14, 1898, by Mr. Tavernier is the only record I am aware of.

140. *Passerella iliaca*. FOX SPARROW.— Regarded as rare at Port Sydney in 1888, by Mr. Kay; reported as common on September 7, 1896, at Beaumauris by Mr. Tavernier.

141. *Pipilo erythrophthalmus*. TOWHEE.— First seen at Port Sydney by Mr. Kay in 1887, they bred there in 1891; reported as rare at Beaumauris in 1897 by Mr. Tavernier.

142. *Zamelodia ludoviciana*. ROSE-BREASTED GROSBEAK.— A common summer resident, breeding usually in second growth hardwood.

143. *Cyanospiza cyanea*. INDIGO BUNTING.— A fairly common summer resident; arrives later than most species.

144. *Piranga erythromelas*. SCARLET TANAGER.— A common summer resident; breeds in hardwood bush.

145. *Progne subis*. PURPLE MARTIN.— Reported as increasingly common at Bracebridge, and in the settled parts of Muskoka by Mr. Tavernier.

146. *Hirundo erythrogastra*. BARN SWALLOW.— Abundant summer resident; breeds.

147. *Tachycineta bicolor*. TREE SWALLOW.— Abundant summer resident. I have met with them nesting in deserted Woodpecker holes.

148. *Clivicola riparia*. BANK SWALLOW.— An abundant summer resident.

149. *Ampelis garrulus*. BOHEMIAN WAXWING.— Occurs rarely in both districts in the winter.

150. *Ampelis cedrorum*. CEDAR WAXWING.—Common resident, usually nesting along the banks of streams.

151. *Lanius borealis*. NORTHERN SHRIKE.—A not uncommon winter resident. I met with them at Sand Lake in October, 1900.

152. *Lanius ludovicianus*. LOGGERHEAD SHRIKE.—Reported as common at Beaumauris by Mr. Tavernier.

153. *Vireo olivaceus*. RED-EYED VIREO.—A very common summer resident.

154. *Vireo philadelphicus*. PHILADELPHIA VIREO.—A not uncommon bird in Parry Sound. I believe they breed, as they are always paired by the middle of May.

155. *Vireo gilvus*. WARBLING VIREO.—I have taken it several times at Emsdale in May; Mr. Tavernier has taken one at Beaumauris.

156. *Vireo flavifrons*. YELLOW-THROATED VIREO.—One taken at Beaumauris by Mr. Tavernier.

157. *Vireo solitarius*. BLUE-HEADED VIREO.—Not uncommon in both districts in May; they probably remain to breed.

158. *Mniotilta varia*. BLACK AND WHITE WARBLER.—A common summer resident.

159. *Helminthophila rubricapilla*. NASHVILLE WARBLER.—A summer resident, breeding in swampy places.

160. *Helminthophila peregrina*. TENNESSEE WARBLER.—On May 18, 1897, I took one of these Warblers in a large alder swamp near Emsdale, and saw several more in the same place on May 22. They continued common till the 26th, when I saw only one. I have not since met with this Warbler in Parry Sound, and I have no Muskoka records.

161. *Compsothlypis americana usneæ*. NORTHERN PARULA WARBLER.—A common summer resident; they arrive about the middle of May and for the first two weeks keep to the highest trees.

162. *Dendroica æstiva*. YELLOW WARBLER.—I took a male at Emsdale on May 27, 1899, the only one I have seen in Parry Sound; it was not uncommon at Rosseau in 1887, and Mr. Tavernier regards it as common at Beaumauris.

163. *Dendroica cærulescens*. BLACK-THROATED BLUE WARBLER.—An abundant summer resident. I took a nest on June 8, 1894. It was on the side of a hill in a dense hardwood bush, and was placed on the fallen branch of a dead hemlock, shaded by the horizontal branch of a seedling maple.

164. *Dendroica coronata*. MYRTLE WARBLER.—Fairly common in the spring.

165. *Dendroica maculosa*. MAGNOLIA WARBLER.—An abundant summer resident.

166. *Dendroica pensylvanica*. CHESTNUT-SIDED WARBLER.—An abundant summer resident.

167. *Dendroica castanea*. BAY-BREASTED WARBLER.—Not abundant; I have met with it only during migration.

168. *Dendroica blackburniæ*. BLACKBURNIAN WARBLER.—A common summer resident.

169. *Dendroica virens*. BLACK-THROATED GREEN WARBLER.—A common summer resident; breeds. Mr. Kay refers to it as only just becoming common at Port Sydney in 1890.

170. *Dendroica vigorsii*. PINE WARBLER. One taken by Mr. Tavernier on April 30, 1898, is the only record I have for either district.

171. *Seiurus aurocapillus*. OVEN-BIRD.—One of the most abundant summer residents; breeds on the ground, usually in the open hardwood bush.

172. *Seiurus noveboracensis*. WATER-THRUSH.—A pair taken by Mr. Kay at Port Sydney on May 24, 1889, is the only record I have for either district.

173. *Geothlypis philadelphia*. MOURNING WARBLER.—A fairly common summer resident; one of the latest arrivals in the spring.

174. *Geothlypis trichas*. MARYLAND YELLOW-THROAT.—A fairly common summer resident; arrives about the same time as the Mourning Warbler.

175. *Wilsonia pusilla*. WILSON'S WARBLER.—The only record I have is that of a male I took on the Magnetewan River, near Emsdale, on May 20, 1897.

176. *Sylvania canadensis*. CANADIAN WARBLER.—A common summer resident.

177. *Setophaga ruticilla*. AMERICAN REDSTART.—One of the most common summer residents.

178. *Anthus pensilvanicus*. AMERICAN PIPIT.—Reported as common at Beaumauris in the autumn by Mr. Tavernier; Mr. Kay saw some at Port Sydney on August 15, 1890; they occur regularly in Muskoka, and were common at Sand Lake in October, 1900.

179. *Galeoscoptes carolinensis*. CATBIRD.—An abundant summer resident, breeding usually on the edge of the forest or in gardens of the settlers.

180. *Harporhynchus rufus*. BROWN THRASHER.—Mr. Kay records one from Port Sydney, taken on May 7, 1890; I am sure it occurs at Emsdale but have never been able to take one.

181. *Troglodytes ædon*. HOUSE WREN.—Common summer resident; breeds in hollow fence posts or stumps, and under the roofs of houses.

182. *Anorthura hiemalis*. WINTER WREN.—A common species; breeds.

183. *Certhia familiaris fusca*. BROWN CREEPER.—A very common resident; breeds.

184. *Sitta carolinensis*. WHITE-BREASTED NUTHATCH.—A common resident. I found a nest on May 24, 1893, at Emsdale; it was in a natural hollow in a large maple, and about thirty feet from the ground. The six eggs were laid on the rotten wood and surrounded by a few of the bird's feathers.

185. *Sitta carolinensis*. RED-BREASTED NUTHATCH.—A common resident; breeds.

186. *Parus atricapillus*. CHICKADEE.—An abundant breeding resident.

187. *Parus hudsonicus*. HUDSONIAN CHICKADEE.—Mr. Kay saw a pair at Port Sydney in November, 1892; I have looked for it carefully in Parry Sound but without success.

188. *Regulus satrapa*. GOLDEN-CROWNED KINGLET.—An abundant winter resident. On two occasions I have met with birds in May, that from their actions must have been nesting.

189. *Regulus calendula*. RUBY-CROWNED KINGLET.—A common resident in the autumn and winter.

190. *Hylocichla mustelinus*. WOOD THRUSH.—I have one taken at Emsdale on May 17, 1897; in September, 1898, near the narrows of Lake Joseph I came across a flock feeding on choke cherries; I counted seventeen and there were probably more in the flock. Dr. Brodie says they were common in June at Port Sydney.

191. *Hylocichla fuscescens*. WILSON'S THRUSH.—An abundant breeding resident.

192. *Hylocichla ustulatus swainsonii*. OLIVE-BACKED THRUSH.—A common summer resident; breeds.

193. *Hylocichla aonalaschkæ pallasii*. HERMIT THRUSH.—A common summer resident. I took a nest on May 17, 1897, which was built among dead leaves at the base of a dead iron-wood sapling, and contained four eggs.

194. *Merula migratoria*. AMERICAN ROBIN.—Common about the settlements. Reported as occurring at Gravenhurst in the winter of 1889-90, in Trans. Canadian Institute, Vol I, p. 19.

195. *Saxicola œnanthe*. WHEATEAR.—A female was taken at Beaumauris on September 24, 1896, by Mr. Tavernier. It was among a flock of Titlarks. The bird was identified by Mr. Ridgway, and is the first record for Ontario.

196. *Sialia sialis*. BLUEBIRD.—Again becoming commoner; formerly it was one of the common birds.

DESCRIPTIONS OF FIVE NEW BIRDS FROM MEXICO.

BY E. W. NELSON.

THE birds described below form a part of the Biological Survey collection.¹

I wish to express my obligations for courtesies extended to me by Mr. Wm. Brewster of Cambridge, Mass., and by Mr. Robert Ridgway and Dr. Chas. W. Richmond of the U. S. National Museum, during the preparation of this paper.

Glaucidium palmarum, new species. TEPIC PIGMY OWL.

Type No. 155,955, ♀ ad., U. S. National Museum, Biological Survey Collection. From Arroyo de Juan Sanchez, Territory of Tepic, Mexico. Collected April 5, 1897, by E. W. Nelson and E. A. Goldman.

Distribution. — Known only from type locality.

Description of type. — Top of head and nape brownish isabella thickly marked with transversely oval whitish spots — largest and clearest white on nape; middle of back plain bistre brown; upper surface of wings and tail and upper tail-coverts nearly Prout's brown of Ridgway; tertials and wing-coverts spotted with white or rusty white; outer edges of primaries and secondaries spotted with same; tail feathers marked with five transverse series of large rounded white spots; ear-coverts buffy whitish barred with brown; chin, malar area and under tail-coverts white; sides of breast and feathers of tarsus rusty brownish; rest of underparts white heavily streaked with rusty brownish.

Dimensions of type. — Wing, 87; tail, 56; culmen, 9; tarsus, 21.

Notes. — This bird is smaller and more rusty brown with a more heavily spotted crown than *G. gnoma* or its northern subspecies. Through the courtesy of Mr. Wm. Brewster I have compared the type of the present species with his series of *G. gnoma* from Chihuahua and *G. gnoma hoskinsii* of Lower California. It agrees closely in size with *Glaucidium fisheri* but differs widely in color, also in tail and crown markings. The type of *G. palmarum* was shot in the midst of a palm forest on a low ridge near the sea coast south of San Blas, Tepic.

¹ All measurements are in millimeters.

Colinus minor, new species. LEAST BOB-WHITE.

Type No. 166,362, ♂ ad., U. S. National Museum, Biological Survey. Collection, from Palenque, Chiapas, Mexico, collected June 1, 1900, by E. W. Nelson and E. A. Goldman.

Distribution.—Grassy plains of Chiapas near Palenque, the adjacent parts of Tabasco, and probably thence into adjoining border of Guatemala.

Description of type.—Broad superciliary stripe from base of bill to sides of nape, chin and throat white; rest of head and broad collar around lower border of white throat patch, black; top of shoulders, sides of breast and underparts of body chestnut rufous, with broad maculated edgings of black and gray on shoulders and narrower edgings of black on underparts, changing to black and white spots on under tail-coverts; feathers of back and rump with blackish centres and maculated borders of dark gray and brown; scapulars and upper tail-coverts blotched with black and finely maculated with black, brown and gray; upper side of tail slaty gray finely marked near tips with whitish.

Dimensions of type.—Wing, 93; tail, 53; culmen, 13; tarsus, 28.

Notes.—This species is most like *Colinus godmani* but is decidedly smaller and differs considerably in the distribution of the black and rufous; however, material from intermediate parts of their ranges may prove these differences to be of only subspecific value. The females are paler and more distinctly barred on underparts than in *C. godmani*.

Empidonax trepidus, new species. CHANCOL FLYCATCHER.

Type No. 154,593, ♂ ad., U. S. National Museum, Biological Survey Collection. From Hacienda Chancol, Guatemala, collected January 5, 1896, by E. W. Nelson and E. A. Goldman.

Distribution.—Highlands of Chiapas and Guatemala.

Description of type.—Top of head and nape olive with a dark grayish shade; back paler more greenish olive; ring around eye yellowish white; sides of head and neck, pectoral band and sides of breast olive gray with wash of yellowish; chin and throat grayish white with pale yellowish suffusion; abdomen and under tail-coverts dull yellow; wings brownish gray; wing-coverts broadly tipped with pale brownish gray, sometimes shaded with yellowish, forming two well-marked wing bands; outer web of outer tail feather much paler than inner web.

Dimensions of type.—Wing, 73; tail, 66; culmen, 11; tarsus, 17.

Notes.—This species is closely related to *Empidonax affinis*

Swains. and *E. pulverius* Brewst. From the former it may be distinguished by its duller, grayer color, especially on underparts. From *E. pulverius* it differs mainly in its much smaller size and rather darker, grayer color. We secured seven specimens of this bird on the highlands of Chiapas, Mexico, and Guatemala, where it is probably resident. The distribution of the three fly-catchers named above is as follows:

Empidonax pulverius Brewster. — Pine forests of the Sierra Madre of western Mexico from Chihuahua to Jalisco, Zacatecas, and across to Tamaulipas.

Empidonax affinis Swain. — Pine-forested slopes of mountains on southern border of the Mexican tableland from the Valley of Mexico to Mt. Orizaba and the Sierra Madre of Guerrero.

Empidonax trepidus. — Pine-forested slopes of the highlands in Chiapas and Guatemala.

Phœnicothraupis littoralis, new species. TABASCO ANT
TANAGER.

Type No. 166,208, ♂ ad., U. S. National Museum, Biological Survey Collection. From Frontera, Tabasco, Mexico, collected March 4, 1900, by E. W. Nelson and E. A. Goldman.

Distribution. — From heavy coastal forests of Tabasco north to southern Tamaulipas.

Subspecific characters. — The adult male differs from *P. salvini* mainly in its much more vivid poppy red underparts, especially on throat and breast; upperparts clearer, more vinaceous red; crest deeper richer scarlet. The females differ still more, having a strong reddish suffusion on underparts with distinct traces of red crest on crown. Size about as in *P. salvini* but bill larger.

Dimensions of type. — Wing, 105; tail, 92; culmen, 19; tarsus, 28.

Notes. — True *P. salvini* appears to be a bird of the forested foothills being replaced in the lower coast lowlands by the species described above. At first I proposed to treat this bird as a subspecies of *P. salvini*, but in view of the absence of any specimens showing intergradation between the widely different females of the two it is probably safest to consider them as full species until the contrary is proved.

Heleodytes zonatus restrictus, new subspecies. TABASCO
WREN.

No. 166,601, ♂ ad., U. S. National Museum, Biological Survey Collection. From Frontera, Tabasco, Mexico, collected April 26, 1900, by E. W. Nelson and E. A. Goldman.

Distribution. — Wooded coast plains of Tabasco.

Subspecific characters. — Differs from typical *H. zonatus* (from mountain slopes of Vera Cruz) mainly in much heavier and transversely broader black spotting on under side of neck and breast; rest of lower parts much more dingy buff, heavily barred and spotted on sides and flanks with black; back more like that of *zonatus* but with little or no traces of rusty buff suffusion.

Dimensions of type. — Wing, 92; tail, 95; culmen, 24; tarsus, 29.

Notes. — The very heavy black spotting and barring on the underparts with the dull dingy shade of buff on the crissum renders this form very readily distinguishable from typical *H. zonatus*. Its range appears to be restricted to the wooded coast lowlands while we found *H. zonatus* only on the wooded slopes of the cordillera in Vera Cruz and Tabasco. We obtained ten specimens of this new form at Frontera.

THE SEQUENCE OF MOULTS AND PLUMAGES OF
THE LARIDÆ (GULLS AND TERNS).

BY JONATHAN DWIGHT, JR., M. D.

THE importance of the moulting of birds from the standpoint of the systematist becomes apparent if we stop to consider that each moult marks a point of transition from one plumage to another and is therefore a key to their relationship. It is, however, not far from the truth to say that the natural sequence of plumages and moults is but imperfectly understood in many species, while the times of year at which moults occur and the areas of feathers involved in partial moults, especially of young birds, are matters still offering a wide field for investigation.

The moulting of the Gulls and Terns has received little attention save at the hands of C. L. Brehm in 1854, although their plumage has been elaborately discussed by many writers, especially Saunders and Coues. It is my present purpose to point out as clearly as circumstances permit the relation that exists between the different stages of plumage and moult of these interesting birds. It would be far easier to do this if the age of the specimens in hand could be accurately known, but unfortunately there are limits to the physiological and osteological evidences of immaturity even in fresh birds, while dried skins tell us nothing of age unless they chance to show transition stages at a period of active moult. Such specimens in my own collection as I have studied while fresh have enabled me to follow details of moult obscured or completely lost in museum specimens, and I have had opportunity afforded me, through the courtesy of Dr. J. A. Allen, of examining the large series in the American Museum of Natural History. Mr. Wm. Brewster has also given me opportunity of examining his extensive collection, so that I have been able not only to trace successive stages of plumage in a large number of species of Gulls and Terns, chiefly North American, but in many cases I have found specimens in the midst of moult which fill the gaps between the stages. As a result of my studies I can confidently affirm that these birds conform to the same laws of plumage development that operate in other species. These I have so fully explained in a recent article (*Annals N. Y. Acad. Sci.*, XIII, 1900, pp. 74-345, pll. vii), intended to be the first of a series but delayed in publication, that I need only refer to it. Among the *Laridæ* will be found the same definite sequence of plumages and moults as in other species. Adults wear a winter or autumnal and a nuptial, summer or breeding plumage separated by postnuptial and prenuptial moults, while young birds pass from the downy or natal plumage to the juvenal and first winter dresses by a postnatal and a postjuvenal moult respectively. The moults occur at definite periods, and the feather growth spreads from definite points in the feather tracts, so that nothing is a matter of chance unless it be the arrested development that befalls all organisms and occasions in birds the retention of old feathers among those that are replaced by new at the time of a partial moult. So it often happens that some plum-

ages are made up of parts of several earlier ones, a fact that has given rise, no doubt, to the old idea that a color change was in progress.

It may be well to briefly outline the order of renewal in the Laridæ although it does not differ materially from that of other groups of birds. The dorsal feathers at the root of the neck are apt to be the first to show renewal, but almost simultaneously new feathers begin to appear on the humeral tracts, on the anterior parts of the head, at the sides of the breast, on the flanks and at fresh points on the back, the new growth tending to spread backwards from these initial points with some indication of alternate feather replacement. New feathers begin to show along the cubital borders of the wings, and the proximal primary is lost early in the moult. The others fall in succession, the inner primaries more rapidly than the outer, and each gains nearly full length before the next is lost. When only three or four remain, the distal secondary succumbs to moult, followed rapidly by the others, so that the proximal is lost before the distal primary is fully grown. The growth of this primary marks very nearly the completion of the moult, although the rectrices are often a little later, the middle pair falling usually coincidently with the distal secondary, followed by adjacent pairs, except that the outer pair may precede the one adjacent and that almost the whole tail may be lost at once in some cases. The last feathers to be renewed may be found at many points, especially on the forehead, nape, interramal space, posterior parts of the body and in the median wing-coverts. If the moult be partial only the back, head and neck are affected, together with, perhaps, the cubital borders of the wings and the tertiaries, and sometimes apparently little more than the anterior part of the back succumbs. It is important to know the relative order in feather growth because partial moults, beginning at the same points as complete ones, extend somewhat irregularly for only a limited distance from them.

All of the species of Gulls and Terns appear to belong to the class of birds in which the adults moult twice every year. The Terns undergo two complete moults in a year and while the Gulls also undergo two, the prenuptial is incomplete and never includes the remiges and rectrices, or the wings and tail. Further than this, two groups of Gulls may be recognized, (1) the smaller species

with an extensive prenuptial moult, which acquire adult plumage at the first postnuptial, and (2) the larger species, with a more limited prenuptial, which acquire few if any signs of adult plumage until the second postnuptial change. The postnuptial moult, beginning directly after the breeding season, proceeds more rapidly than the prenuptial, which is rather a leisurely affair, beginning sometimes, especially in the case of the Gulls, as early as mid-winter. Young birds regularly by an incomplete postjuvenal moult pass into a first winter plumage which, among the Terns, is scarcely different from the adult winter dress; among the smaller Gulls it is recognizable in most species by black-banded tails and dusky cubital bands, the remains of juvenal dress, and among the larger Gulls it is of quite a different pattern and color from the mature plumage of adults. The postjuvenal moult seldom manifests itself before the end of September or much later, and in the larger species proceeds so leisurely that it sometimes appears to overlap the first prenuptial, beginning as early as February or March.

It is an interesting question whether young birds breed before their second summer. A considerable number of immature birds of different species are certainly found in summer south of their breeding range, but their numbers do not seem to warrant the conclusion that all young birds do not breed the first summer. It is more probable that they are the less vigorous individuals of the species. They have been credited with remaining in winter plumage, but this impression needs qualification, for I have examined, while fresh, eight specimens of the Arctic Tern (*Sterna paradisæa*), and three of the Kittiwake Gull (*Rissa tridactyla*), which show clearly evidences of a recent prenuptial moult, only instead of assuming nuptial dress they have reverted to the winter plumage. I secured these birds on Sable Island, Nova Scotia, between June 5 and 11, 1894, and dissection showed that they were neither breeding nor about to do so. The Terns were of course in the plumage once described as "*Sterna portlandica*," and were easily distinguishable among thousands of Common, Arctic and Roseate Terns already breeding, by their white foreheads, dusky cubital bands, short tails and black feet and bills. Attention was often drawn to them by their single harsh croak

seldom uttered as they circled among the clouds of Terns in the proportion of perhaps one to one thousand. The Kittiwakes were obtained from a small flock, and it is of interest that this species does not breed within several hundred miles of Sable Island. Birds of several other species in a similar first nuptial plumage have occasionally been taken, but their significance has not been understood. We may attribute the lateness of their prenuptial moult to lack of vigor, if we please, and it is possible some of the midsummer birds that we have supposed were adults passing by an early postnuptial moult to winter plumage are really immature birds, but for further light on this point we must look to field observers. As such birds assume in early summer a winter dress, it is possible that their moult is really a first postnuptial, no further feather change occurring for a year, but it seems more probable that a postnuptial moult takes place later when they assume for the third time in succession a plumage that is certainly of the winter type. The Kittiwakes cited, and some museum specimens of several other species, seem to point to a similar sequence among Gulls.

Much might be said upon the subject of wear, under which I include all the destructive results of abrasion and bleaching, but suffice it here to direct attention to a couple of points. One is the extremely marked fading of the buff edgings of plumages of young birds, especially the juvenal, in which the buff often becomes white; and the other is loss of the 'frosting' or 'silvering' on the wings of many species, which produces black primaries. The 'frosting' is due to elongated, curved and frilled barbules on the distal sides of the barbs, and when the barbules are worn off their black basal portion becomes conspicuous. As a rule the fourth primary of each wing appears to suffer most, the third, second and first or distal blackening later in the order indicated.

We may now take up in their natural sequence the plumages and moults of a Tern, of a small Gull and of a large Gull, the three chosen being typical of all the others, and I begin with the Tern, as the number of recognizable plumages are fewer owing to the complete double or semiannual moult.

The sexes among the Laridæ are fortunately alike in all plumages, only to the more salient features of which reference will be made.

***Sterna hirundo* Linn. COMMON TERN.**

1. *Natal Down*.—This covers the chicks thickly and is yellowish with black spots or mottling above and a dusky area on the chin and sides of the throat.

2. *Juvenal Plumage* acquired by a complete postnatal moult shortly after leaving the egg. Dusky markings and buff edgings are conspicuous above, the lower parts being a clear white. The forehead is pale brown blending into a dull black occiput. Buffs and browns later become dull white by fading and the blacks become brownish. The forking of the tail is much less than that of adults and the rectrices are more rounded, darker and tipped with dusky or buff markings, which become largely lost by wear. A couple of rows of lesser coverts along the cubital border of the wing form a dull black band. The flesh-colored bill and feet, after first brightening, begin to darken.

In Nova Scotia young birds are on the wing before the first of August but often not till considerably later, and the birds of the Virginia coast do not seem to be very much earlier. The misfortunes to eggs and broods must be held responsible for the extreme variations in the times of moult of this as well as other species of terns. Some, if not all terns, young as well as adults, migrate southward before beginning to moult, as is proved by specimens taken in juvenal and nuptial dress far south of their breeding grounds.

3. *First Winter Plumage* acquired by a partial postjuvenal moult, limited to the body feathers, and sometimes a few of the lesser wing-coverts. The new mantle is gray except for the dusky cubital bands. The forehead is white and the occiput black, with some tendency to streaking on the crown. The bill and feet become wholly black. Save for the less forked, darker tail and traces of buff on the retained wing-coverts, young birds closely resemble adults. The change to this plumage is not apt to begin before the end of September on the Atlantic coast.

4. *First Nuptial Plumage* acquired by a complete first prenuptial moult, which explains the freshness of all the feathers of breeding birds. The lateness of this moult in some birds is indicated by over fifty specimens (some of which appear to be

adults) taken in Florida between May 28 and June 3, which vary from birds with the first primary barely grown to those still retaining two or three of the old primaries and a number of old rectrices and body feathers. The black cap is now assumed, the dusky cubital bands disappear, and the bill and feet become chiefly coral red. The significance of certain birds which reassume the winter plumage has already been discussed.

5. *Second Winter Plumage* acquired by a complete first post-nuptial moult, as a rule not earlier than September. This dress is hardly distinguishable from that of the first winter, and the bill and feet turn black before the moult is completed.

6. *Second Nuptial Plumage* acquired by a complete second pre-nuptial moult. The older birds are probably represented by the specimens with longer, more attenuated lateral rectrices which are paler than those of young birds, but it is difficult to say how much the slight differences are due to age, and how much to individual variations. Young and old are not distinguishable after the first prenuptial moult, and later plumages and moults are but repetitions of winter and nuptial changes.

What is true of sequence in *Sterna hirundo* is evidently true of all the North American Terns and probably of other species, of which I have seen but few specimens. Most species are black-capped in nuptial dress. *S. hirundo*, *S. paradisæa* and *S. dougalli* assume in winter white foreheads gradually blending into dull black occiputs; *S. maxima*, *S. elegans* and *S. sandwichensis aculeata* have a distinctly black and white streaked crown between the white forehead and black occiput; *S. caspia* has the whole cap streaked with black and white, black predominating; *S. forsteri*, *S. antillarum*, *S. fuliginosa*, *S. anæsthesia*, *Geochelidon nilotica* and *Hydrochelidon nigra surinamensis* have caps largely white anteriorly and gray posteriorly. The winter mantle appears to be regularly somewhat paler than the nuptial, strikingly so in the Black Tern. In this species the sootiness is foreshadowed even in the natal down, while the black and white mottling during the progress of moults is a very conspicuous feature. In *Anous stolidus* the winter dress differs from the nuptial chiefly on the crown, which is nearly as brown as the rest of the plumage, only a narrow white supralocular line remaining.

The period of the prenuptial moult on the Atlantic coast covers the months of February, March, April and May, large species like *S. maxima* and those with a southern breeding range moulting chiefly in the first two of these months and other species later. The postnuptial moult begins in July in some species and not till September in others. The postjuvenal moult seldom begins before the postnuptial and often not till October. The species are all so harassed on their breeding grounds that the natural season of moult is doubtless much extended when eggs or young are swept away by the elements or the equally ruthless hand of man.

I have examined the type specimen of "*Sterna pikei*" which has correctly been identified as *S. paradisæa*. The bird is apparently assuming winter dress with dusky cubital coverts, retaining only one primary of the old plumage. The broken bill seems to be in transition from the carmine nuptial to the black winter color. "*Sterna havelli*" is of course the winter plumage of *S. forsteri*, and such birds as are found in summer in this dress will probably prove to be non-breeding, like "*S. portlandica*."

To illustrate the plumages and moults of the smaller Gulls I might choose any one of several species of which I have seen full series. I have selected the following as a typical species.

***Larus philadelphia* (Ord). BONAPARTE'S GULL.**

1. *Natal Down*.—Much like that of *Sterna hirundo*, yellowish with dusky mottling above.

2. *Juvenal Plumage* acquired by a complete postnatal moult. The upper surface is decidedly brown with paler edgings, a blackish brown band extends along the cubital border of the wing into the tertiaries, the secondaries have dusky markings, the primaries show little white, their coverts being partly black, and the tail is white with a broad subterminal black band, the rectrices being tipped with buff. The sides of the head are white with a dull black auricular patch and an anteorbital spot, and the rest of the lower parts are white with a brownish wash on the sides of the neck and breast. The bill and feet are black.

3. *First Winter Plumage*, acquired by a partial postjuvenal moult late in September and October which involves only the body

feathers, just as in *S. hirundo*. A blue-gray mantle and paler head are assumed, the retained wing markings and banded tail of the juvenal dress characterizing young birds until their first postnuptial moult.

4. *First Nuptial Plumage*, acquired by a partial first prenuptial moult during March and April on the Atlantic coast. Much of the body plumage is renewed, the mantle and lower parts resembling the winter dress, while the deep plumbeous hood is partly, and probably in many birds fully acquired. I have examined early May specimens from New York which still show new growth of feathers at the usual points. Some specimens appear to reassume the winter dress, or merely a dusky somewhat mottled head, analogous to the change in "*Sterna portlandica*."

5. *Second Winter Plumage* acquired by a complete first postnuptial moult, beginning about the middle of July in New York and fully a month earlier in California. Maine specimens show the beginning of the moult early in August. It is doubtful whether birds that appear on our coasts very early have been breeding birds, and the same question may be raised in regard to other species. At this moult birds assume adult characters, a wholly gray mantle, a white tail, and primaries showing large white areas extending to the outer webs, obvious even with the wings closed.

6. *Second Nuptial Plumage* assumed by a partial second prenuptial moult at which the full dark hood replaces the grayish white one outlined on the winter dress. It is unnecessary to trace later plumages, which resolve themselves into successive adult winter and adult nuptial dresses.

Species that moult precisely like *L. philadelphia* are *L. atricilla*, *L. franklinii*, *L. ridibundus*, *Rodostethia rosea*, *Xema sabinii* and *Rissa tridactyla*. All of these I have examined and find that the dark-banded juvenal tail and wings are retained until the first postnuptial moult when young and old become practically indistinguishable. The bill in several species reddens or becomes yellow in summer, changing to black or plumbeous in winter. The adult postnuptial moult is seldom completed before October in any of these species, and the postjuvenal often occurs still later. *Rissa tridactyla* is peculiar in assuming a juvenal mantle that is gray without distinct edgings, and the first winter mantle is

also gray, the black nuchal patch usually being obliterated by new feathers. The claim of a color-change without moult in *Larus ridibundus* is not substantiated by a series of specimens taken throughout the year. In first winter plumage there is a brownish crown patch and occipital band concealed by white or gray feather tips, much as in *L. philadelphia*, and as these wear off the brown comes more into view, but at the same time new darker brown feathers grow. A specimen in the midst of a second (or later) prenuptial moult (Amer. Museum No. 54632, ♀, March 6, England) shows new growing feathers not only on the head but elsewhere; the forehead anteriorly still retains the worn white plumage of the winter dress. Another bird (Amer. Museum No. 26977, ♀, March 25, France) has acquired the full brown hood of new feathers, some of them still pushing out from their sheaths. If such feathers were recolored how is their perfect structure to be explained?

We come now to a third type of moult which is peculiar to all of the larger Gulls, and I have chosen as a representative species

Larus argentatus Brünn. HERRING GULL.

1. *Natal Down*. — Grayish above with obscure mottling on the back and black spots on the head and throat, paler below.

2. *Juvenal Plumage* acquired by a complete postnatal moult. Above grayish brown with whitish and buffy edgings; below plumbeous with inconspicuous whitish mottling, the head and neck paler and tending to streaking. The primaries are uniformly brownish black. The rectrices are similar but basally, and the outer one slightly, mottled with grayish white. The bill is plumbeous and the feet flesh-colored.

3. *First Winter Plumage* acquired by a limited postjuvenal moult which is apparently either suppressed in some individuals or postponed till the prenuptial period. The worn and faded juvenal dress is replaced on the back, head, and sides of breast by a similar plumage, which, however, is somewhat grayer and more mottled. November specimens are most apt to show this growth, which is very gradual and easily overlooked.

4. *First Nuptial Plumage* acquired by a limited first prenuptial moult in March, the renewal being over the same areas affected by the postjuvinal. It is extremely difficult to obtain enough specimens to show the limits of these two moults, which may possibly represent but one. It may be that some birds moult either at one period or the other and not at both, but at all events moulting birds may be found both in spring and fall. Mottled brown feathers and rarely gray ones are assumed at both times and it seems proper to recognize two moults analogous to those occurring in adults. Specimens have been reported as breeding in juvenal dress, but it is possible such birds have been in either first or second nuptial plumages.

5. *Second Winter Plumage* acquired by a complete postnuptial moult, chiefly in August on the Atlantic coast. An immature dress is assumed, the mantle being largely pearl gray but mixed with mottled brownish feathers, especially on the wing-coverts. The lower parts are largely white but much clouded with dusky edgings. The white head, neck and rump are heavily streaked. The tail is white heavily sprinkled centrally with dusky brown. The secondaries are similarly mottled. The primaries are dull black, sometimes with small white apical spots, the first usually with traces of a subapical spot, sometimes with none. The amount of individual variation seems to be within reasonable limits, the average of which I have here indicated.

6. *Second Nuptial Plumage* acquired by a limited second prenuptial moult in March or April, the back getting new gray feathers and the head and neck becoming white clouded a little with brownish gray. The bill becomes yellow. These birds unless closely examined would pass for adults.

7. *Third Winter Plumage* acquired by a complete second postnuptial moult. A mantle wholly pearl gray is now assumed, the lower parts and the tail becoming pure white. The customary winter streaking of the head and neck is reduced. The primaries are tipped with white, the first having a large white subapical spot, and the second sometimes shows signs of one. The moult is at its height about the first of September.

8. *Third Nuptial Plumage* acquired by a limited third prenuptial moult, at its height in March. A pure white head, neck and breast

and a gray back are acquired. The feet in adults remain flesh-colored.

9. *Fourth Winter Plumage*, acquired by a complete third postnuptial moult. This is practically like the third winter or later winter plumages, and although the age of birds after the second postnuptial moult can only be inferred from their plumage, it is probable that the white spots of the primaries, especially of the first, increase with age. The size of the bill and the whiteness of the head in winter also increase. As a progressive increase in these matters can be demonstrated at the time of three moults, it is logical to assume, within certain limits, a continued increase, and so in older birds we would expect a fusion of the two terminal areas of white on the first primary. The presence of a divided white area is the chief character on which the American subspecies *smithsonianus* rests, and unless differences from the European birds can be found in all of the stages of plumage just indicated the separation rests on a very slender basis. Is the European bird always marked by one white area? It is not difficult to pick out a series of American birds showing all gradations from a first primary with a small white spot to one that ends in a broad dash of white, and I believe that the scarcity of the whiter-tipped specimens is due rather to the diminishing numbers of older birds and their increasing wariness than to the straggling to America of Old World birds.

The question of age has not been sufficiently taken into account by the systematists who have attached undue importance to the spots and spaces of white and gray found on the wings of gulls. There is no question but that there is a progressive increase, with age, of white or gray areas in many species. The white spot of the first primary grows larger in a number of species at successive moults, and in many of the species the blackness of the feather shaft through it is gradually lost. The size and proportions of the bill also vary with age, while its color varies both with age and with season, being dark in winter and usually yellow in summer. These matters should be weighed in studying the affinities of the gulls. The larger ones may be conveniently divided into three classes: those with black primaries, those with white, and those with gray. In all three the sequence of plumages and moults

is nearly identical with that of *Larus argentatus*, as I have determined by series of birds of several species taken at important transition points of the moults.

Of the first class, in juvenal plumage the primaries are wholly dull black with a similar tail, the body feathers being more or less gray or brown, the darkest species of those examined being *L. heermanni*, with *L. marinus*, *L. occidentalis*, *L. californicus* and *L. argentatus* somewhat lighter. *L. delawarensis*, *L. canus* and *L. brachyrhynchus* are similar in plumage except for their banded tails, the first species differing from all the others in its dusky spotted body plumage. At the postjuvenal and first prenuptial moults the faded dress is partly exchanged for one less brown, the smaller species apparently sometimes assuming a few bluish gray feathers on the back. At the first postnuptial moult, the black primaries and tail are reassumed, and in those species which, when adult, have spotted primaries, there is often the suggestion of a white spot on the first primary. The new tail is speckled with gray, being white basally and laterally; in banded species the band becomes narrower but does not disappear as is usual in gulls of the type of *L. philadelphia*. The body plumage acquired is largely white, veiled with brown, except that the gray mantle, mixed with speckled feathers, is now apparent. *S. heermanni* remains wholly dark. Birds pass their second winter in this plumage, which varies in the proportion of adult characters according to the individual. The second prenuptial moult adds to the grayness of the mantle and to the whiteness of the head and lower parts, and birds would pass for adults were it not for the wings and tails. When these are again renewed at the second postnuptial moult the first primary shows a spot and the rectrices become wholly white or with but a touch of darker color. Later than this we can scarcely follow differences of plumage. The nuptial and the winter mantles hardly differ, and the brown streaking of the head in winter appears to diminish with age, while the areas of white on the wings apparently increase, as well as the proportions of the whole bird.

The gulls which have white primaries when adult, *viz.*, *L. glaucus*, *L. barrovianus* and *L. leucopterus*, do not in juvenal plumage differ very much from *L. argentatus*, being of a uniform

deep gray color with buffy edgings. They are paler, however, and the primaries are deep gray instead of black. The limited moults of the body feathers during the winter, together with fading, effect a slight paling. At the first postnuptial moult pale brown, sometimes partly mottled remiges and rectrices are acquired and a similar brown variegated body plumage. The primaries are very nearly white. A specimen of *L. glaucus* (Amer. Mus. No. 64144, September 1, Greenland) in fresh plumage, still showing the sheaths of the first primary and several rectrices, seems to prove that the brown mottled dress is a second winter plumage, and not a first as generally supposed. This is the plumage that later, at the second prenuptial moult, acquires a sprinkling of pearl gray feathers. Not till the second postnuptial moult are the white primaries and partly pearl gray mantle assumed. This seems to be the sequence of these plumages, as well as may be judged from material that gives only slight clues as to age. We may suppose the absolutely white "*Larus hutchinsii*" to be an extremely adult *glaucus* similar to occasional nearly pure white specimens of *leucopterus*. There is at all events nothing about such birds, which are rare, to suggest immaturity.

We come lastly to consider the gulls with gray-patterned primaries, which include *L. glaucescens*, *L. kumlieni* and *L. nelsoni*. In juvenal plumage *glaucescens* is only a trifle darker than *glaucus*, though distinguishable by size, and like it appears to assume a similar first winter and first nuptial dress by limited renewal of body feathers. At the first postnuptial moult a similar brown mottled dress seems to be assumed with pale primaries while part of the gray mantle and a white head are added at the second prenuptial moult. The first gray-patterned primaries and white tail are apparently not acquired until the second postnuptial moult, together with the first adult plumage. There is of course possibility of error in examining series, large or small, and it may be that the mottled specimens of both *glaucus* and *glaucescens* are exceptions, while the majority of the birds acquire a more adult plumage at the first postnuptial moult, as does *argentatus*, *occidentalis*, etc. Do we know I may ask, how great is the proportion of immature birds of the former two species as compared with the latter?

Without the examination of further material I cannot determine definitely the status of *kumlieni* and *nelsoni*, but I am of opinion that the former is a plumage of *leucopterus* after the second postnuptial moult, and the latter is possibly a similar stage of *glaucescens*. This question and many others present themselves as we learn what bearing age has in modifying plumage and proportions of the Gulls. I think the specific distinctness of *L. barrovianus* from *glaucus* is open to doubt, and *brachyhynchus* is likely to prove merely a variety of *canus*, while *L. schistisagus*, *L. affinis*, *L. cachinnans* and *L. vegæ*, on further study, may perhaps show new affinities.

My sketch of the sequence of moults and plumages of the Gulls and Terns has necessarily been superficial in many respects, but at least we have gained enough insight into the usual course of their changes of plumage to see that plumages are definite entities acquired along definite lines of development. It seems to me that, with all the material available for study at the present day, we should avoid classing together, as in the past, unrelated stages of "immature" plumage and specify precisely what stage we mean unless we wish to subject ourselves to the lurking suspicion that our knowledge or our methods have not kept pace with our scientific zeal.

EIGHTEENTH CONGRESS OF THE AMERICAN ORNITHOLOGISTS' UNION.

THE EIGHTEENTH CONGRESS of the American Ornithologists' Union convened in Cambridge, Mass., Monday evening, November 12, 1900. The business meeting was held in Mr. William Brewster's museum, and the public sessions, commencing Tuesday, November 13, and lasting three days, were held in the Nash Lecture-room of the University Museum.

BUSINESS SESSION.—The meeting was called to order by Vice-President Merriam, in the absence of the President, Mr. Robert

Ridgway. Eighteen active members were present. The Secretary's report gave the membership of the Union at the opening of the present Congress as 748, constituted as follows: Active, 46; Honorary, 16; Corresponding, 65; Associate, 621.

During the year the Union lost seventy-eight members — ten by death, twenty-three by resignation, and forty-five were dropped for non-payment of dues. The members lost by death were Dr. Elliott Coues,¹ an Active Member, and one of the Founders of the Union, who died at Baltimore, Md., December 25, 1899, at the age of 57; George B. Sennett,² also an Active Member, who died in Youngstown, Ohio, March 18, 1900, aged 59 years; Prof. Alphonse Milne-Edwards,³ an Honorary Member, who died in Paris, April 21, 1900, at the age of 64; Dr. D. Webster Prentiss,⁴ one of the Founders of the Union, and for twelve years an Active Member, who died in Washington, D. C., November 19, 1899, aged 56 years. Owing to failing health he resigned his Active Membership in 1895, and on the acceptance of his resignation he was reelected as a Corresponding Member; and Edgar Leopold Layard,⁵ also a Corresponding Member, who died in Devon, England, January 1, 1900, in his 76th year. Also the following Associates; Foster H. Brackett,⁶ who died in Dorchester, Mass., January 9, 1900, aged 37; Francis C. Browne,⁷ who died in Framingham, Mass., January 9, 1900, aged 70; John A. Dakin,⁸ who died February 21, 1900, in Syracuse, N. Y., at the age of 48; Percy S. Selous,⁹ who died in Greenville, Mich., April 7, 1900; Charles C. Marble,¹⁰ who died in Chicago, September 25, 1900, aged 52; Edwin Carter, of Breckenridge, Colo.

¹ For an obituary notice, see *Auk*, XVII, p. 91, also Memorial Address in the present number.

² For an obituary notice, see *Ibid.*, p. 193, also Memorial Address in this number.

³ For an obituary notice, see *Ibid.*, pp. 320-321.

⁴ For an obituary notice, see *Ibid.*, pp. 91-92.

⁵ For an obituary notice, see *Ibid.*, pp. 321-322.

⁶ For an obituary notice, see *Ibid.*, p. 197.

⁷ For an obituary notice, see *Ibid.*, pp. 194-196.

⁸ For an obituary notice, see *Ibid.*, pp. 196-197.

⁹ For an obituary notice, see *Ibid.*, p. 322.

¹⁰ For an obituary notice, see *Ibid.*, p. 404.

The report of the Treasurer showed the finances of the Union to be in a satisfactory condition.

Dr. C. Hart Merriam was elected President; Charles B. Cory and Charles F. Batchelder, Vice-Presidents; John H. Sage, Secretary; William Dutcher, Treasurer. Frank M. Chapman, Ruthven Deane, E. W. Nelson, Witmer Stone, Drs. A. K. Fisher, Jonathan Dwight, Jr., and Thos. S. Roberts, were elected members of the Council. Dr. A. B. Meyer, of the Royal Museum, Dresden, was elected an Honorary Member, and Count E. Arrigoni Degli Oddi, University of Padua, Italy, and Walter E. Bryant, of Santa Rosa, Calif., Corresponding Members. Seventy new members were added to the list of Associates. The usual reports of Standing Committees were received.

A change in the By-Laws was proposed whereby the present class of Active Members shall be known as Fellows; the present class of Associate Members to be known as Associates, and to establish a class of membership intermediate between Fellows and Associates to be known as Members. The matter will be brought up for final action at the next Congress of the Union.

A letter was read from Miss Juliette A. Owen, of St. Joseph, Mo., an Associate Member, donating an additional \$100 to the Union. This will be added to a fund, the income of which is to be used for the advancement of the science of ornithology.

PUBLIC SESSION. FIRST DAY.—The meeting was called to order by the President, Dr. Merriam.

The first paper of the morning was a Memorial Address on the Hon. Geo. B. Sennett, an Active Member, by Dr. J. A. Allen. Mr. D. G. Elliot followed with a Memorial Address on Dr. Elliott Coues, also an Active Member, and a former President of the Union.

The reading of scientific communications began with a paper by Dr. Jonathan Dwight, Jr., on 'The Sequence of Moults and Plumages of the Laridæ (Gulls and Terns).' Remarks followed by Dr. T. S. Palmer, and the author.

Next came 'A Study of the Genus *Sturnella*,' by Mr. Frank M. Chapman. Remarks followed by the Chair, Mr. William Palmer, and the author.

The fifth title was 'The Moults of the North American Shore Birds (*Limicolæ*),' by Dr. Jonathan Dwight, Jr. Remarks followed by the Chair, and by Dr. Allen.

The opening paper of the afternoon session was by Judge John N. Clark, entitled 'Dooryard Ornithology.'

The concluding papers of the day, both illustrated by lantern slides, were as follows:

'The Season of 1900 at the Magdalen Islands; with remarks on Bird Photography,' by the Rev. H. K. Job.

'Field Notes on a few New England Birds,' by William Brewster.

SECOND DAY.—The meeting was called to order by the President, Dr. Merriam.

'The "American Ornithologists' Union" of 1840-45,' by Witmer Stone, was the first paper of the morning.

The second title was 'Notes on the Spring Migration (1900) at Scarborough, N. Y.,' by Louis Agassiz Fuertes.

The third paper was entitled 'Among the Terns at Muskeget, and on the New Jersey Coast,' by Mr. Wm. L. Baily. It was illustrated by lantern slides.

Next came an 'Exhibition of lantern slides of Birds, Birds' Nests, and Nesting Haunts, from Nature,' by Dr. Thos. S. Roberts. Remarks followed by Dr. Merriam.

The fifth paper was 'On the Value of careful Observations of Birds' Habits,' by Edward H. Forbush.

The afternoon session was devoted to the following papers — all being illustrated by lantern slides, viz.:

'Bird Studies with a Camera,' by Mr. Frank M. Chapman.

'Notes on a Nest of Massachusetts Brown Creepers,' by Dr. A. P. Chadbourne.

'Natural History of the Alaska Coast,' by Dr. C. Hart Merriam.

THIRD DAY.—The meeting was called to order by the President, Dr. Merriam.

Mr. Witmer Stone, Chairman of the Committee on Protection of North American Birds, read the report of his committee for the previous year. This was followed by Mr. William Dutcher on the 'Results of Special Protection to Gulls and Terns obtained through

the Thayer Fund.' These reports are published in this number of 'The Auk,' and will be issued as a pamphlet to be sold at a low price for general distribution.

The third title was 'The Enforcement of the Lacey Act,' by Dr. T. S. Palmer.

Resolutions were adopted thanking the authorities of Harvard University for the use of the Nash Lecture-room as a place for meeting, and for other courtesies tendered to the Union, and to the Nuttall Ornithological Club for the very cordial welcome and most generous hospitality extended to the visiting members.

Owing to want of time for their presentation in full the following papers were read by title:

'The Pterylosis of *Podargus*; with Further Notes on the Pterylography of the Caprimulgidæ,' by Hubert Lyman Clark.

'Impressions of Some Hawaiian Birds,' by H. W. Henshaw.

'A Visit to the Birthplace of Audubon,' by O. Widmann.

'Aptosochromatism. A reply to Drs. Dwight and Allen,' by Francis J. Birtwell.

'On the breeding habits of Leconte's Sparrow,' by P. B. Peabody.

'Breeding of the Cerulean Warbler near Baltimore,' by Frank C. Kirkwood.

The Union then adjourned to meet at the American Museum of Natural History, New York City, November 11, 1901.

JNO. H. SAGE,
Secretary.

REPORT OF THE COMMITTEE ON THE PROTECTION OF NORTH AMERICAN BIRDS FOR
THE YEAR 1900.

THE past year has been perhaps the most notable one in the annals of bird protection since the present Committee was established.

As was the case last year, I propose in this report to consider only the work that has come immediately before the Committee. I must, however, congratulate the Audubon Societies on the excellent work they are accomplishing, without which the more serious undertakings of this Committee could not have been carried through. The societies now exist in no less than twenty-two States of the Union, and so widely has their influence been extended that we rarely find persons to-day who have not heard of the movement for bird protection, and every proposed act of legislation now finds the way paved for its progress and willing hands extended everywhere to aid it.

The strengthening of these existing Audubon Societies and the establishment of additional organizations of this kind in our remaining States, especially in the South, cannot be too strongly encouraged. The part played by 'Bird-Lore,' and its editor, Mr. Frank M. Chapman, in furthering the work of the Audubon Societies and in maintaining a bond of union between them cannot be too strongly commended. Besides new Audubon Societies in the States of Delaware, Maryland, South Carolina, Florida and Kentucky, four established during the year, the Committee has also been informed of the organization at Buffalo, N. Y., of a similar society, 'The Bird Protective Society of America. Referring those interested in the work of the Audubon Societies to 'Bird-Lore,' where their reports appear, we will now consider the work of your Committee during the past year.

The close of the year 1899 marked a great increase in the demand for gulls, terns and other sea birds for millinery purposes, and information reached your chairman of efforts made by millinery agents at various points along our coasts to encourage collecting for the millinery trade. In one case postal cards offering a

regular scale of prices for the birds were sent to postmasters all along the Gulf Coast, with requests to place them in the hands of gunners or fishermen.

Through the agency of Dr. T. S. Palmer of the U. S. Department of Agriculture, this matter was brought to the attention of the Secretary of Agriculture, who in turn reported it to the Postmaster General, and a warning was issued in the regular postal instructions to all postmasters in the United States not to lend their aid to such trade, as it was in many States unlawful.

This matter, thanks to the public press, was well advertised throughout the country and attracted considerable attention. Shortly afterward Mr. Abbot H. Thayer, a member of the Union, communicated with your chairman, and learning that the Committee was unable to take active measures toward protecting the terns and gulls, owing to lack of funds, generously offered to raise money for this purpose. An appeal prepared by Mr. Thayer, was signed by a number of prominent members of the Union and widely published. This brought immediate response, and a substantial fund was soon at the command of your Committee. Being unable to personally attend to the details of this work your chairman enlisted the services of Mr. William Dutcher who kindly undertook the entire work and who will report on the results that have been accomplished.

Early in the year millinery activity also manifested itself in Delaware where the services of gunners were enlisted to obtain crows and blackbirds for the trade. While the existing laws did not protect these species, the danger of killing other protected birds and game was pointed out in a circular issued by your chairman, and citizens of Delaware were called upon to do what they could to prevent this outrage. These circulars were sent to every post office in the State. Mr. A. D. Poole of the Delaware Game Protective Association took an active interest in the matter and in company with your chairman visited Gov. Tunnell who heartily endorsed what had been done and assured us of his coöperation in case the laws were transgressed.

The way in which the newspapers of the country took this matter up and spread it from the Atlantic to the Pacific with more or less elaboration is an instance of the work of the Audu-

bon Societies in interesting the general public in bird protection. The Pennsylvania Railroad also lent us its aid by notifying its agents to exercise great care not to ship from the State any birds killed contrary to law, as they would thereby be liable to prosecution under the laws of Delaware.

The immediate result was the prevention of the filling of this contract for crows and blackbirds, and it does not seem likely that another effort of the same kind will be made in the near future. Furthermore, the citizens were greatly agitated over the matter of bird protection, a Delaware Audubon Society was organized, and there is promise of better laws being passed in the near future.

This agitation was the means of bringing your chairman into direct communication with Mr. Charles W. Farmer of the Millinery Merchants' Protective Association, embracing nine tenths of the leading firms in America. Mr. Farmer protested against the alleged exaggerations of the newspapers and assured your Committee that no firm would think of buying small American birds of any description.

In the course of considerable correspondence your chairman suggested that if the use of any sort of American wild bird was tabooed by the millinery trade, it would go a long way toward stopping the newspaper criticism, which would undoubtedly continue as long as any of our native birds were shot for decoration.

This resulted in the proposition from the milliners that they would refuse henceforth to deal in any American birds or foreign birds closely resembling American species, as gulls, terns, etc., reserving two seasons to dispose of stock on hand, providing that this Committee and the Audubon Societies would pledge themselves not to use their influence on behalf of legislation against the importation of foreign birds, or feathers of ostrich or domestic fowls. Messrs. Chapman and Dutcher met a Committee of the milliners and discussed the matter, after which the proposition was formally presented and published. It was unfortunately badly framed and did not clearly set forth the agreements that the milliners intended to offer, so that although adopted by a mail vote of your Committee, subject to certain alterations agreed to at the above conference, strongly advocated by the editor of 'Bird-Lore,' and favored by the directors of some of the Audubon

Societies, it was nevertheless opposed by other of the Audubon Societies and by the editor of the Audubon Department of 'Bird-Lore.' As the milliners naturally required the agreement of *all* the bird protective organizations this action stopped the negotiations. This result was much regretted by your chairman and other members of the Union who have been active in dealing with the practical side of bird protection, especially legislation. And it was regretted that the proposition could not have been presented in a more favorable form and considered more on its merits.

As it happens, however, there is great hope that we are about to obtain the same results as would have ensued from the ratification of this agreement without making any concessions.

During the last session of Congress great efforts were made by various game protective associations, headed by Mr. G. O. Shields, to force the passage of the so called Lacey Bill. This act is supplementary to the State game and bird laws and forbids shipment of illegally killed birds from one State to another, while birds coming into a State, even though killed legally, cannot be sold in that State if the law there forbids the sale of that sort of bird. The possibilities of prosecutions of millinery agents for receiving sea birds killed contrary to law in other States are easily seen. Your chairman and many members of the Committee exerted all their influence in behalf of this bill, and were ably seconded by the Audubon Societies. To the gratification of all, it became a law in May last.

Already several seizures of gulls have been made under this or State laws, most notably that of 2600 gulls and terns in the possession of Charles E. Pontier, manager for Dumont and Co., Baltimore, Md. This was accomplished through the efforts of the State Game and Fish Protective Association of Maryland, represented by Mr. Frank C. Kirkwood of the Union and other officers, with the able assistance of Dr. T. S. Palmer of the U. S. Department of Agriculture, to whom is entrusted the supervision of the provisions of the Lacey Act. These birds were sold at public auction according to State law, on condition that the purchaser keep them in his own possession.

To guard against further dealing in these goods Dr. Palmer and

your chairman have notified a number of wholesale milliners that the goods are contraband and can only be purchased at the risk of prosecution. The criminal case against Dumont & Co. is still pending. Dr. Palmer reports further: "The seizure of the birds at once attracted attention and the results are likely to be far-reaching.

"One of the largest wholesale millinery firms in Baltimore requested an official inspection of their stock and agreed to abandon the sale not only of gulls and terns but also of grebes, pelicans, herons and other birds protected by State or Federal law. I interviewed practically all the wholesale milliners in the city and without exception they took the same ground and promptly withdrew these birds from sale. Judging by the action of these dealers, I believe that the wholesale trade in native plume birds in Baltimore has practically ceased for the time being, and a beginning has been made for similar action in other States." Later, conference with wholesale dealers in Boston, New York, and Philadelphia resulted in the agreement not to purchase any more gulls, terns, herons, pelicans or grebes, so that the prospects for eliminating all American birds from the millinery trade are very bright.

The effect of the Lacey Act on the selling of imported game birds in Pennsylvania and other States where the selling of such birds is prohibited will probably require a judicial decision. Many dealers contend that the law cannot affect the sale of birds legally killed in other States. As this is exactly what the Lacey Act was intended to do, however, there is very little doubt but that it will be upheld. So far as Philadelphia is concerned, it has already resulted in a great reduction in the sale of game birds.

Beside the aggressive work described I would call attention to the valuable publications prepared by Dr. T. S. Palmer and issued by the U. S. Department of Agriculture, namely, 'A Review of Economic Ornithology in the United States,' 'A list of Organizations concerned in the Protection of Game'; 'Legislation for the Protection of Birds other than Game Birds' (a compilation of existing State laws), and 'A Compilation of State Laws governing the Sale and Transportation of Game' (the latter in connection with Mr. H. W. Olds).

These publications are of the utmost importance to all inter-

ested in bird and game preservation and cannot help but bring the various organizations into closer touch. In connection with cage birds, Mrs. Edw. Robins reports that in a conversation with one of the largest bird dealers in Philadelphia he voluntarily told her, without any idea that he was talking to one of your Committee, that his firm had recently shipped to Germany 150 Bluebirds, 300 Cardinals, and 500 Mockingbirds, and stated that all the large importers were also exporters, that this was one of the necessities of the trade. This, it seems to me, is one of the strongest arguments against the clause allowing the keeping of native cage birds which exists in the Pennsylvania law and that of many other States.

While considering cage birds another provision of the Lacey Act should be noticed; namely, the prohibiting of the importation of foreign birds and mammals unless under permit from the Department of Agriculture. This is merely a safeguard against the introduction of such a pest as the English Sparrow. This species, together with the Starling, are now absolutely forbidden entry into this country, although there is no trouble about importing other species if the proper permit is requested.

Respecting bird protection in Illinois, Mr. Ruthven Dean of your Committee, reports as follows:

"Illinois has not been idle in the past year in taking every possible step towards the protection of our game and song birds. Much credit is due to our Game Commissioner, H. W. Loveday, and his many deputies for their untiring efforts and many arrests and prosecutions. There have now been appointed throughout the State 274 wardens and deputy wardens and the results of their work will be felt in every county.

"The Commissioner states in his coming report that many of the wardens in the service are business men of means who have not accepted the positions for gain, but simply because they love the birds and desire to see them protected. The close watch kept at all railroad stations by the wardens during the past year has stopped, to a large degree, the shipping of game out of season to points within the State.

"During the year that the new law has been in effect there has been a total of 142 convictions out of 203 cases brought to trial

for the shooting or shipping of game birds out of season, and shooting and trapping song or insectivorous species. The Audubon Society, in conjunction with the Game Commissioner, has had the game laws printed on a 14 x 19 poster and mailed to the postmasters of 2500 offices in the State, with a request from the Governor to place them in a conspicuous position where they would be certain to strike the eye of the public.

"On July 23, 1900, Game Commissioner Loveday, assisted by two deputies, engaged in a novel raiding expedition in Chicago, visiting some twelve bird stores and seizing from two to three hundred caged birds, largely Mockingbirds and Cardinals. The case was not brought to trial until September, and for some unknown reason the Justice has not yet rendered his decision. We trust it will favor the prosecution, as it is a case of much importance for the future."¹

Mrs. Florence Merriam Bailey has sent the following in regard to plume hunting in southern Texas:

"While working in Texas last spring Mr. Bailey and I spent two weeks in the neighborhood of Corpus Christi. In talking with the settlers we gradually discovered that we were in the heart of a plume hunting district. The discovery was gradual, as the people seemed afraid to talk to us at first, apparently on account of a rumor of some prohibitory legislation in the North. As an old bird hunter said afterwards, the report was that 'they were n't going to buy any more birds — there was some law about it.'

"So absolutely is the southern plume hunting business controlled by the northern market that this rumor had held up the trade, and it was only as time went by without its confirmation that the hunters prepared to start out again.

"As they watched our work the people came to talk quite freely to us and we learned a good deal about the number of birds killed, the principal kinds taken, and the prices paid for them. One man boasted — moved perhaps by the small number of birds we found it important to shoot — that he and another plume hunter had, in 1889, shot 816 birds in five days, and 1,023 in six to seven days.

¹ Since this was put in type, Mr. Dean has informed that the case was decided in favor of the Game Commissioner, and the dealer fined \$100.

The 1,023, he said, were mainly Terns, Yellow-legs, Avocets, and Willets. Another old hunter, watching the skinning, assured us that he knew a man who could skin 600 birds in a day! The process he said consisted in ripping off the skin and stuffing in a big wad of cotton. The principal birds taken, he told us, were water birds, and he added that any white-breasted birds would be bought by the dealers. We learned, incidentally, that strikingly colored land birds were also marketed, among them Jackdaws, Vermilion Flycatchers, and Nonpareils.

"Of the water birds sold the old hunter named over the Least Tern, the Black Tern, Wilson's Tern, the 'big White Gull' as he called it, the Black Skimmer, Great Blue Heron, Long-billed Curlew, Willet, and Avocet.

"In quoting the market prices he said the great Blue Heron brought 40 cents; the Jackdaw, 9 cents; big white gulls, 18 cents; wings of the Long-billed Curlew, 7 cents; the Black Tern, 5 cents; Wilson's Tern, 18 cents; and the Least Tern, 20 cents, its price having been 25 cents before the report came that they were not going to buy any more birds.

"'Eggers,' as well as plume hunters, abounded in the neighborhood. One man had an egg collector's check-list which he used.

"The eggers and millinery men together had almost driven the Pelicans from the neighborhood. One thousand Pelicans had formerly bred on Dimmitt Island, we were told, but although we went over it carefully in the height of the breeding season, not a nest was to be found on the island, and we saw only six Pelicans in the neighborhood, and those flying over, a pitiful band contrasted with the hordes which had been driven from their homes.

"A million birds of various kinds had formerly nested on Bird Island, some miles below Dimmitt, we were told, and as these are not wholly exterminated, and the State law of Texas in that section protects gulls, terns, herons, pelicans and a goodly number of land birds, it is to be hoped that the Lacey bill may still save some of the birds on the island by stopping the millinery trade in the North. For it is upon the northern market that bird protectors should center their efforts. The plume hunters themselves, as we found them, are mainly poor settlers in a country where it is hard to make a living, and they shoot the birds merely to add a little to the meagre

support they can give their families. Moreover, they generally sell through middlemen who reap the real profits of the trade. It would be both cruel and useless to prosecute this class of hunters. The middlemen and the rich millinery firms are the ones who should be made to pay the penalty for their disregard of the laws."

From other members of the Committee brief reports, generally of an encouraging nature, have been received, and in closing I would refer to the large amount of correspondence that has been necessitated in the course of the year's work, especially by Dr. T. S. Palmer and your chairman. The answering of innumerable inquiries concerning legislation and methods for bird protection; the calls for coöperation in assisting in the passage of bird laws, and the warnings sent out to all who advertise game, birds, or millinery material, have all assisted in spreading the interest in bird and game protection; and I think we may feel well satisfied with the results of the most momentous year's work that we have yet accomplished.

WITMER STONE,
Chairman.

RESULTS OF SPECIAL PROTECTION TO GULLS AND TERNs OBTAINED THROUGH THE THAYER FUND.

IN beginning this report on the special protection work of the past year, great credit should be given to our fellow-member, Abbott H. Thayer, for the very important part contributed by him to the result. The thought of this special protection was his alone, and his unflagging and unaided energy and tact, secured the sinews of war, a fund of over \$1400, with which wardens were paid; without this fund, nothing could have been accomplished. Where he should have received encouragement, *i. e.*, among the ornithologists, he met with discouragement, for he was told that it was impossible to raise any funds for the work. By his personal courage and faith, he accomplished what others said could not be done.

The primary object of the work was to enforce the laws for the protection of the birds that breed upon the marshes and islands along the middle Atlantic coast, and more particularly the Gulls and Terns. The territory it was purposed to cover was that portion of Virginia lying north of Cape Charles at the mouth of Chesapeake Bay, comprising the counties of Northampton and Accomack, all of Maryland bordering on Chincoteague Bay, the coast line of New Jersey, the two colonies of Terns in New York, and the coast of Maine. The Massachusetts tern colonies have been very thoroughly protected during the past season, as heretofore, by our member, Mr. George H. Mackay.

As the territory to be protected was, with the exception of Long Island, N. Y., entirely new to the Committee, its first effort was to locate the places where the colonies of gulls and terns still existed. The Committee not having the time at its disposal, nor caring to spend any portion of the fund for preliminary visits to the several States, was forced to obtain the necessary information entirely by correspondence.

As this report will cover protection work in five States, each with different laws, it is deemed best to treat each one separately.

VIRGINIA.

At intervals of a few miles on the Atlantic coast, the General Government has located life-saving establishments. During the summer months, when the breeding birds most need protection, the crews of the stations are off duty, the Captain alone remaining in charge of the house and apparatus. In Virginia the breeding grounds are located near these stations and the Committee was fortunate enough to interest and engage the services of eight of the Captains to act as wardens. That they very effectually protected the birds breeding on the marshes and beaches near them will appear later.

The bird laws of Virginia consist of a series of special county acts, and as the protection work was entirely confined to the counties of Northampton and Accomack, cognizance was taken of only the local statutes for the said counties, which are as follows:

“It shall be unlawful for any person to shoot, or in any manner

kill or destroy the bird known as the gull or striker, before the first day of September, or take its eggs later in the season than the twentieth of July."

As it was useless to attempt to protect either the birds or eggs until the close season commenced, the wardens were, prior to that date, fully informed of the exact text of the law and were instructed to absolutely enforce its provisions from the first to the last day of the close season on all the birds breeding or living near their stations. Just prior to the end of the close season, our member, Mr. Frank C. Kirkwood, volunteered to make a trip to each of the stations in Virginia and the one in Maryland, which he did at much personal discomfort. The trip lasted from August 20 to 29, inclusive, and was made in a twenty-five foot sharpie, a shallow, flat-bottomed sail boat. When Mr. Kirkwood was fortunate enough to reach a life-saving station at night he was comfortably housed, but on several occasions the night was spent at anchor, his couch being the bottom of the boat and his covering a portion of the sail or the sky. Sleep was almost impossible, for if he retired under the sail he was almost suffocated with the heat, and when he threw it off, life was unendurable owing to the swarms of mosquitoes. High and head winds, fog, rain, mosquitoes, and on one occasion a temperature of 119° in the sun at 7 A. M., were some of the difficulties Mr. Kirkwood had to overcome during his trip, and on his return to his home he was laid up with a sharp attack of malaria as the result of his fatigue and exposure. Mr. Kirkwood reported that he was very well pleased with the results of the work done by the eight wardens, that he, in the main, found them interested, and that the reports they severally made to him could be depended upon.

On his return Mr. Kirkwood submitted a long written report from which I quote the following interesting details:

Isaacs Island.

Captain Hitchens gave me the following estimates:

Common Tern (*Sterna hirundo*).—Thousands bred, about twice as many as last year.

Black Skimmer (*Rynchops nigra*).—2,000 to 3,000.

Black-headed Gull (*Larus atricilla*).—A few. Used to be a great breeding place for them, but none have bred of late years.

Smiths Island.

American Oyster-catcher (*Hæmatopus palliatus*).—6 pairs. Only two pairs last year.

Wilson's Plover (*Ægialitis wilsonia*).—Some.

Willet (*Symphemia semipalmata*).—8-10 pairs.

Clapper Rail (*Rallus crepitans*).—1,000 or more.

North end of Smiths Island.

Common Tern (*Sterna hirundo*). 50-100,—first in 10 years.

Laughing Gull (*Larus atricilla*). 100-150; none last year.

American Oyster-catcher (*Hæmatopus palliatus*). 3 pairs; 2 pairs last year.

Wilson's Plover (*Ægialitis wilsonia*). A few.

Clapper Rail (*Rallus crepitans*). Numerous in marshes all along to Cobb's Island.

Willet (*Symphemia semipalmata*). A few all along the island; 6 pairs on the south end.

Royal Tern (*Sterna maxima*). About 12 pairs had remained all summer at a point about two miles south of the north end of the island but he had not seen any eggs or young.

Gull-billed Tern (*Gelochelidon nilotica*). A few.

Capt. Hitchens is well informed regarding birds, and his conversation impressed me strongly that he was thoroughly in earnest and would do all he could to protect the breeding birds.

Cobbs Island.

Capt. Andrews estimated the numbers of birds breeding as follows:

Common Tern (*Sterna hirundo*).—About 200.

Gull-billed Tern (*Gelochelidon nilotica*).—About 1,000.

Laughing Gull (*Larus atricilla*).—About 1,000.

Black Skimmer (*Rynchops nigra*).—About 4,000.

Willet (*Symphemia semipalmata*).—Only 2 pairs.

Wilson's Plover (*Ægialitis wilsonia*).—Only 2 pairs.

American Oyster-catcher (*Hæmatopus palliatus*).—About 12 pairs.

At the time of my visit only the Black Skimmers were to be found at their nesting places, two in number. About two thousand five hundred birds were found at the southern end. A few young birds barely able to fly were seen. The second nesting place was estimated to have about one thousand five hundred birds; here also a few young were found in all stages up to those ready to fly, while quite a number of young birds were seen flying with the adults, showing that while this more northern breeding place may have been robbed some early in the season, the other had evidently escaped. Altogether the evidence fairly showed that the birds had been protected. As Cobbs Island is out of the track of the summer visitor and rather difficult to get to, I see no reason why the birds should not again breed numerous here. On my way north I stopped on one of the little marshes marked on the chart and counted thirty-nine Laughing Gull nests, and as immature gulls and terns were seen flying round the island the prospects seem fair. Capt. Andrews says he stopped two or three gunning parties that came early in the season and that none came afterwards.

Hog Island.

Capt. Johnson reported that he had protected Laughing Gulls (*Larus atricilla*), Terns or Strikers (*Sterna hirundo et antillarum*), Willet (*Symphemia semipalmata*), and Clapper Rails (*Rallus crepitans*). The numbers were hard to estimate, but there were a great many of all the species, and that the increase during the season had been large. He feels sure that there has been a less number of birds and eggs destroyed this summer than for a number of years past. One party had prepared to shoot Laughing Gulls for market but Capt. Johnson notified the Commonwealth and the plume hunter received a letter that stopped him at once. There were no further violations of the law. I believe Capt. Johnson to be entirely in sympathy with the movement to protect the birds.

Paramores Beach.

Capt. Richardson is a man thoroughly in earnest and very conscientious, and I am confident that he can be relied upon; he

reports having protected the following birds: Laughing Gulls (*Larus atricilla*), Clapper Rails or Marsh Hens (*Rallus crepitans*), Willet (*Symphemia semipalmata*), and Terns or Big and Little Strikers (*Sterna hirundo et antillarum*). About a thousand of each species arrived in the spring. He stated with evident pleasure that he had not seen a bird killed or egg taken unlawfully during the season. He also reports that there is a growing sentiment among the resident boatmen that the birds must have protection, and he adds: "Personally, I am a great lover of birds and the seasons would lose their charm for me were they gone."

Wachapreague, Cedar Island.

Capt. Savage expressed himself as entirely in accord with our objects and stated that no shooting had been done near his station. The species that breed there are Laughing Gulls (*Larus atricilla*), Clapper Rails (*Rallus crepitans*), Black Skimmers or Flood Gulls (*Rynchops nigra*), Terns or Strikers (*Sterna hirundo*), and Willet (*Symphemia semipalmata*). He states that every one concedes that all the species mentioned are much more plentiful than they have been for some years, hence we must conclude that the efforts that are being made for their protection have resulted in much good.

Metomkin Island.

Capt. Taylor was at first afraid to act on account of his being a United States officer, but after a long conversation he decided that we were not asking anything that would conflict with his duties, and that he is now willing to inform all parties of the law and report all infringements. The only birds breeding near his station are the Clapper Rail (*Rallus crepitans*), and Willet (*Symphemia semipalmata*).

Wollops Island.

Capt. Whealton was thoroughly in sympathy with our movement and stated that he had stopped all summer shooting from a club

house close to his station, and in the early part of the season had stopped two negroes who were egging on the marsh, and that since then the birds had not been troubled so far as he knew.

The species protected were Clapper Rails or Mud Hens (*Rallus crepitans*), Willet (*Symphemia semipalmata*), Laughing or Black-headed Gulls (*Larus atricilla*), Terns or Big and Little Strikers (*Sterna hirundo et antillarum*), and it is probable that the increase in numbers was very material.

The Committee feel very much encouraged with the results obtained by the past season's efforts and especially with the very earnest and conscientious labors performed by the wardens at their respective stations. A movement has already been started to have the American Ornithologists' Union law passed in Virginia so that the birds will be protected at all seasons of the year.

MARYLAND.

The Maryland law is very satisfactory; the portion referring to the gulls and terns is as follows:

"No person shall, in this State, at any time shoot or in any manner catch or kill, expose for sale, sell or buy, or have in possession, alive or dead, any herring gull or mackerel gull, or gull of any description, under a penalty of not less than one (\$1.00) dollar nor more than five (\$5.00) dollars, for each such bird, so shot, caught, killed, exposed for sale, sold, bought or had in possession; and no person shall under like penalty, have in his or her possession, offer for sale or wear, the skins, plumage, wings, or feathers of any of the birds, the catching or killing of which is prohibited by this section. It is also unlawful to molest or destroy the nests of any of the aforesaid birds, under a penalty of not more than twenty-five (\$25.00) dollars for each offense."

The only place in Maryland where a colony was found was on Robbins Marshes, Bacon Island, and Egg Beaches, near North Beach. Mr. Simeon B. Harman, an old resident, was appointed warden. The Common Tern or Mackerel Gull (*Sterna hirundo*) was the only species protected and the colony was not a large one. Mr. Harman reports that only once was he called upon to

prevent shooting, and three times, eggling. He also reports that "the Protective Association is a grand success and I can already see as the result of four months protection that the birds are fifty per cent more numerous this fall than last year."

NEW JERSEY.

Our member Mr. W. L. Baile had charge of the work done in New Jersey. During the season he made a number of trips, first to ascertain where colonies of birds bred, later to oversee the work of the two wardens appointed, and, finally, to observe the results of the season's work. He furnished a detailed report from which has been extracted the following interesting facts: The breeding grounds were in Cape May County, from Cape May to Ocean City, a coast line of about thirty-five miles. The species primarily protected were Laughing Gulls (*Larus atricilla*) and Common Terns (*Sterna hirundo*), although the other breeding birds, such as Osprey (*Pandion haliaëtus carolinensis*), Clapper Rails (*Rallus crepitans*), etc., were included.

On Blue Fish Meadows, lower end of Seven Mile Beach, he found about two hundred and fifty pairs of Laughing Gulls, and on Poor House Flats, a mile further north, about thirty pairs. June 30, he visited the smaller colony and found about twenty young on the wing and most of the nests with from two to three eggs each nearly ready to hatch. On Blue Fish Meadows three colonies, about one hundred yards apart, were found. As they were approached, about five hundred old birds mounted into the air together with about one hundred young birds. The males seemed to be sitting together on the extensive tracts of 'crash' and arose first, followed by the females which were flushed from the nests, one at a time, after the males sounded the alarm. The nests, about two hundred in number, were all undisturbed, the eggs in many cases being just hatching. Among the gulls' nests were scattered many nests of Clapper Rails, probably for the protection given them from Crows. At 8 P. M., just at dusk, the males all flew out to sea in a straight line, high up in the air. The warden, Capt. Charles Wright, said that this was a regular habit, and that the birds did

not return until dawn. The nests were scattered along the banks of small creeks in the high grass and were substantially built on the 'crash.' The increase was probably seven or eight hundred birds from the two colonies, as there were two broods raised, although the first one was not large, owing to two very heavy storms which occurred in the latter part of May, when many eggs were washed away or destroyed.

A colony of nine pairs of the Common Tern were found on the upper end of Gull Island, in Great Sound, back of Seven Mile Beach, and fourteen pairs on Peck's Beach, fifteen miles north of Blue Fish meadows. He visited these colonies on June 30 and found twenty-three eggs in the first locality, one ready to hatch. The second colony was visited July 2 where forty-one eggs were found, one nest containing five eggs. On July 16 both colonies were visited again, and it was found that most of the eggs had hatched; eight young were found that were a day or two old.

In conclusion, it is believed that we have accomplished wonders with the Laughing Gulls, as fully one thousand young have been raised, the first brood flying about June 30 and the second about August 22, when young were still seen that could not fly. The increase of terns was small, as the colonies did not exceed fifty pairs of old birds.

The two wardens have done excellent work in posting the warning cards in stores, boat landings, gunners' resorts and railway stations. The posters have kept many persons away from the breeding grounds.

The bird laws of New Jersey are very unsatisfactory, protection to gulls and terns being given only from May 1 to September 1. The Audubon Society of New Jersey could not do a better or more important work than to have the American Ornithologists' Union law enacted in their State.

CONNECTICUT.

Mr. James Haynes Hill reports on the Terns of Connecticut, Fishers Island, N. Y., and Long Island Sound, as follows, his report being here given in full.

"Starting at Goose Island, between Guilford and Faulkners Island, the point farthest west from which I have received information, I regret to say that the Goose Island Colony, about which you made special inquiry, and which was the largest colony of Roseate Terns (*Sterna dougalli*), about five hundred pairs, on the Connecticut coast, is now a thing of the past. Some years ago a house was built on Goose Island, and having been inhabited, the terns were dispersed, and probably distributed themselves over the other islands in the Sound, nesting with colonies of Wilson's Terns (*Sterna hirundo*).

"Following the coast line eastward, the next island on which the terns nested is Waterford Island, a small, low, sandy islet near the east shore of Niantic Bay. Here I observed, on June 20, eight pairs of Wilson's (*Sterna hirundo*) nesting (3 nests with 3 eggs, 5 with 2), and they successfully hatched and brought up their broods, as on my subsequent visit on July 25 I saw fourteen young. Still traveling eastward one comes to Two Tree Island, about one mile from Millstone Point. It is a small, rocky, sandy island, where I found on June 20 eleven pairs of Wilson's Terns nesting (3 nests with 3 eggs, 5 with 2, 4 with 1) this year. Mr. Philip J. McCook, an Associate Member of the Union, whose summer home is on Niantic Bay, has also observed the nesting birds on both islands.

"Following the shore until you arrive at Noank, there is a low sandy island called Liddy's Island, where on June 18 I found seven pairs of birds nesting (2 nests with 3 eggs, 4 with 2, 1 with 1). On my visit July 4 I could see only five young, and think the birds must have been disturbed.

"These small colonies of Wilson's Terns are the only ones that I know of nesting in Connecticut waters; I have looked, and have inquired about the beaches, and find no terns nesting on the mainland, save a colony of Wilson's, about eighty birds, noted by J. B. Canfield of Bridgeport, Associate Member of the Union, and Clarence H. Watrous of Chester, Conn., to whom I am indebted for this important information. There may be an island or two to the eastward or westward of Guilford where possibly some terns may nest, but I have no way of obtaining present information about them; possibly some other members of the

Union may have noted nesting birds. The islets I have mentioned on the Connecticut shore were not used as nesting places, as far as I have observed, prior to the scattering of the colony at Great Gull Island. Few are aware that they are now so used, and it may be owing to this fact that they are not greatly molested.

"Unfortunately there is no Connecticut law protecting gulls and terns, as they do not come under the head of song or insectivorous or game birds. It is our purpose to send in a petition to put gulls, terns and ospreys in the protected list at the next session of the legislature.

"NEW YORK.

"At the eastern end of Fishers Island, about two or three miles distant from the Connecticut shore is Wicopesset, a small, sandy, rocky island. Here a colony of about three hundred Wilson's and a few Roseate Terns nest. With this colony I noticed six or seven Laughing Gulls, but they have never been known to nest on this island as far as my observations extend. This island is about one half mile from the eastern point of Fishers Island, and the waters about it are usually quite boisterous, owing to the strong tides; being exposed to the ocean, it is quite difficult to reach and protect.

"On June 18 I found six sets of 3 eggs, 22 of 2, 17 of 1, and indications were that more birds intended nesting. Unfortunately I was unable to make a landing on my visit to this island July 4, on account of the rough weather, but we are under the impression that at least one hundred or one hundred and twenty-five young were successfully raised in spite of the depredations of the egg thieves. Two warning notices were put up on this island on the first of June. It was impossible to make any provision for protecting the birds on this island this year, as its area does not permit a camp without disturbing the birds, and the nearest house is two miles distant. If this island, though limited in area, could be fully protected, it would be one of the best breeding grounds on the Sound. Perhaps a person tenting on East Point with a boat handy could give the desired protection.

"On the eastern shore is a small, rocky island near East Harbor, called by the natives Little Pine Island. Here there were, on June 18, five pairs of Terns nesting (2 nests with 3 eggs, 3 with 2); all were hatched. Further to the westward one finds Flat Hammock, a low, sandy, shingly, crescent-shaped island near the ⁷/₈ South Dumpling, and about three quarters of a mile from North Dumpling Light, kept by Capt. J. T. Fowler, and a little over a mile from Fishers Island. Flat Hammock is the largest breeding ground of the terns on Fishers Island Sound. On June 24, Capt. Fowler counted 783 eggs in singles, twos and threes. On June 27, I went over and recounted, to verify the number, and found 92 nests with 3 eggs, 213 with 2, 27 with 1, 1 with 4, and one white egg, making in all 734; and we think we may have missed quite a number. We noted 14 or 15 young, and many eggs were 'pipped,' in all representing a colony of 700 birds. Notices were also put up on this island early in June, and I engaged Capt. Fowler to become the guardian of the terns. With protection for one month, from June 15 to July 15, the terns did well and we estimated the number of birds hatched to be between four and five hundred, mostly Wilson's. This is a larger number than were ever before successfully raised. We note that between the first of June and July is the time when the eggers, boating parties and summer boarders at Fishers Island commit most of their depredations on the poor defenseless terns. On two or three windy days, it was impossible for Capt. Fowler to reach the island, and quite a number of eggs were taken by the aforesaid, navigating larger craft. On the whole, the partial protection given the terns, shows what could be accomplished if full protection were afforded the birds, as they have no enemies save man. I would also add that the number of nesting birds on these two islands increased from one or two dozen pairs to between six and seven hundred birds in 1897, and without any doubt they were a portion of the great colony of terns which left Great Gull Island that year.

"I am of the opinion that if, another season, some one were located on South Dumpling, the birds would receive better protection, as it is only about two or three minutes row from there to the Flat Hammock, and even row boats could be

easily seen approaching the island. Flat Hammock and Wicopesset birds should certainly receive full protection, being the two largest colonies on Long Island Sound except those on Gardiners Island.

"In June, 1899, the Terns of both Wicopesset and Flat Hammock were persecuted by plume hunters from Long Island. Andrew E. Garde, an Associate Member of our Union, who went to the island, ascertained the true state of affairs. He found several dead terns that had been wounded and had died on Flat Hammock, and I was afraid they had left the locality altogether; but on July 17, I received information through Mr. Ray, that a large colony of terns was nesting on South Beach on Fishers Island, and another at Barleyfield, Cove Beach, on the same island. I was overjoyed and immediately went over and investigated and found large numbers of nesting birds on both beaches.

"The shooting on this island is leased to the Fishers Island Sportsman's Club, and the gamekeeper of the club guards the game faithfully. As there is no shooting allowed on the island save by the Club, the plume hunters did not dare follow the terns to their new nesting places. The terns are intelligent enough to know that there is a place of refuge in case of need.

"In the breeding season of 1900 the terns went back to their old breeding grounds at Flat Hammock and Wicopesset.

"In regard to Plum Island, as there is a garrison there in care of the Government coast defense works, on which work still continues, the birds have been driven away from their old nesting place. This information is derived from Capt. Clark, who lives on the island, and Capt. Jas. F. Smith of the steamer 'Manhanset,' which touches daily at the island.

"Great Gull Island, the old and famous breeding place of the terns, owing to the garrison and buildings on it, is still totally deserted by the terns; only a few essayed to use one of the extreme points for nesting purposes, but as the soldiers gave them a warm reception they sought safer and more peaceful quarters.

"I regret to report that the plume hunters have also relentlessly followed the terns, and have shot them on their feeding-grounds, the waters of the 'Race,' the waterway between Great

Gull Island and Race Rock Lighthouse, leading from Long Island Sound to the ocean; here there are large numbers of schools of bluefish, mackerel and menhaden, as well as of the smaller fry, smelts and capelin. Some of the fishermen from Long Island and Connecticut, not content with a good catch of bluefish, the schools of which are indicated by the darting and hovering terns, seek to add to their sport and to enrich their own and the plume dealers' pockets by shooting their feathered benefactors, which they sell at ten cents each. Such destruction should be stopped, or the terns will be exterminated, as the birds are killed while caring for their young.

"Robbed of their eggs and shot by plume hunters on their breeding and feeding grounds at the north, shot all along their line of migration, slaughtered in their winter homes in southern waters, the thought of it all makes one heartsick, and the wonder is that any terns are left.

"You may count on me as a champion of the terns, gulls and ospreys in this locality, and I shall use every means in my power to protect them."

The other colonies of Terns left in New York State are located on Gardiners Island, and are doubtless a portion of the colony which was driven from Great Gull Island when that place was occupied by the Government as the site for one of the new fortifications.

This Gardiners Island colony divided into two parts, one locating at the north and the other at the south end of the island. Two wardens were employed, as the colonies are quite large and some distance apart. Capt. C. W. Rackett looked after the north colony, and reports that early in the season two parties attempted to take eggs, and succeeded in getting about fifty before he could prevent them. He warned them that arrest would follow any further attempt at eggging, after which he was not troubled by any further efforts to disturb the birds. He estimates that at the end of the season there were at least two thousand or more birds in the colony. He also states that the terns or, as he calls them, Blue Fish Gulls, are of the greatest value to the fishermen when they are looking for school-fish, such as bluefish, weak fish, bonita, etc. These predatory fish are chasing the small fry which they drive to the surface.

The gulls hover over the spot to feed on the small fish, thus showing the fishermen where the schools of food fish are.

The south colony was cared for by Capt. H. S. Miller, who reports that a few parties came to egg, but he informed them of the law, and that the American Ornithologists' Union would prosecute any person or persons who infringed it. Subsequently he had no trouble with poachers. He estimates that the colony contained more than two thousand birds at the end of the season, Sept. 20, when the southward migration commenced.

The law in New York is the same as in New Jersey; terns being classed with "web-footed wild fowl," which are only protected from May 1 to September 30.

MAINE.

The coast of Maine was considered by the Committee as the most important in the special field to be worked, for the reason that it was supposed to have suffered less from the destructive work of the feather hunters than any other portion of the coast, except perhaps for the preceding twelve months. Rumors that large numbers of gulls (*Larus argentatus smithsonianus*) had been shot there during the season of 1899 had come to our notice, but it was thought that some large colonies still existed, and an investigation proved this to be a fact. Scattered along this beautiful and picturesque coast may still be found large numbers of both terns (*Sterna hirundo et paradisæa*) and gulls (*L. a. smithsonianus*) which, if protected, will in a few years resume their former abundance; but no measure of protection that can be given to the birds, even by paid and faithful wardens, will be sufficient if the citizens of Maine do not insist upon the immediate passage of a thoroughly effective law. The present statute is lamentably deficient inasmuch as it does not protect any species of gulls in the slightest degree. Terns, on the other hand, are protected by a late act. The Committee, when it undertook to protect the gulls, was confronted with the lack of a statute to aid them, and were therefore compelled to ascertain who were the owners in fee of the various islands on which the colonies were located. These ownerships were ascertained through the medium of lawyers and tax commis-

sioners. The two largest gull colonies are located on No-mans-land and Great and Little Duck Islands. The first two islands are owned by citizens of Maine, and in each instance the owners were secured as wardens. By applying the law against trespass, the Committee was enabled to absolutely protect the gulls breeding on these islands during the past season. Little Duck Island is owned by a resident of Brooklyn, N. Y., Mr. A. B. Richardson, who very gladly gave the Committee a full power of attorney to act for him after he was informed of the nature of our efforts. Mr. Driscoll, the owner and warden of Great Duck Island, was given authority to prevent trespass on the adjoining island, Little Duck. Seven paid wardens were employed in the State, and in addition three light-keepers volunteered their services, with the consent of the Lighthouse Board at Washington, D. C.

Mr. J. Merton Swain, a member of the American Ornithologists' Union, who resides in Portland and who is particularly well informed regarding the birds of his vicinity, very kindly relieved the Committee of all details of work in his locality.

In Casco Bay there are only two colonies of terns left, which breed on Bluff and Stratton Islands. These were cared for by Capt. George E. Cushman who was regularly appointed a warden by the Game Commissioners of Maine, his salary being paid from the Thayer fund. He rendered excellent service, and reports that about five hundred birds arrived on May 25 and that the colony, he should judge, doubled itself during the season ending September 20; he only had occasion to arrest one man who had shot and had in his possession eight birds; he was convicted and paid his fine into the State Treasury. On another occasion he prevented shooting, and he also feels confident that no eggs were taken. Warning notices were supplied by the Committee and were posted at this breeding ground and the villages adjacent. This was also done along the whole coast, some hundreds of large posters being distributed in this manner.

Mr. H. L. Spinney of the Sequins Island Lighthouse, at the mouth of the Kennebec River, states that the extermination of the terns of Sagadahoc County was completed in 1896. He writes: "I am much gratified to note during the past season the obvious results of the protection now being given. During a number of

days in August I noticed more terns about the mouth of the river and the adjacent shores than I had seen for four years past. It gave me much satisfaction, and I hope that they may soon again locate on their old breeding grounds in this locality."

Captain Geo. D. Pottle, Keeper of the Franklin Island Lighthouse, protected the terns on three small islands near him, *viz.*, Eastern and Western Egg Rock and Shark Rock; he estimates that at the end of the season there was an increase of one thousand pairs in the three colonies. He reports trouble with only one party who was after birds and he was prevented from getting any by the vigilance of Mr. Pottle. On ten occasions persons were prevented from taking or destroying the eggs; he states that the people are about evenly divided in sentiment as to whether the birds should be protected or not. Some persons believe that all wild things are given to man to be used or abused as the individual sees fit. The Committee finds this view largely obtains along the whole coast, although the agitation during the past few years regarding bird protection is gradually developing a change of sentiment.

About twenty miles south of Rockland lies a small rocky islet known as Matinicus Rock. For ages past this has been an ideal home for sea birds. The only other occupants of this rock are the lighthouse keepers and their families. The writer of this report visited this rock in July and found in Capt. James E. Hall a warm friend of the birds. The whole island being a government reservation, the head keeper of the light has authority to prevent any persons from disturbing the birds breeding there. From 500 to 700 pairs of terns were found, quite a large number of Spotted Sandpipers (*Actitis macularia*), about 75 pairs of Black Guillemots (*Cephus grylle*), and two pairs of Puffins (*Fratertcula arctica*). This island is a titanic mass of granite blocks, the south side being very precipitous. Even during the most quiet weather it is extremely difficult to land upon and thus will always be a home for sea birds. At the date of the writer's visit, July 19, nearly all of the young terns were out of the egg, only two nests with eggs being found. The young birds were in all stages from the downy chick to those able to fly a few feet, the majority, however, being able to accompany the old birds in

flight. The young birds that could not fly well were extremely restless and would not permit a very near approach, so it was almost impossible to get a good photograph of them. They could run rapidly and therefore it was necessary to take instantaneous camera shots at them. Hundreds of old birds were in the air over the head of the writer, screaming their displeasure at his intrusion and giving warning to the young birds that were hidden in the scant herbage or among the boulders. While the parent birds were uttering the warning cry the young would not move. Large numbers of the old birds were carrying in their bills small fish, not over one or two inches long, of a bright silvery color.

Penobscot Bay is an immense sheet of water dotted with thousands of rocky islands varying in size from a ledge only exposed at low tide to islands containing some thousands of well timbered acres. There are numerous small colonies of terns scattered about on the smaller islands and ledges. The largest of these colonies of terns were found on Trumpet, Ship, Barge, Lower Mark and Green Islands and Saddle Back Ledge. These colonies vary in size from two hundred pairs each on Trumpet and Ship Islands down to a few pairs on the others. None of these islands were located so that it was possible to afford them any special protection, as they are too far apart for one warden to oversee and too far from the nearest inhabited islands. On Trumpet Island evidences were seen showing that a party had visited the place and had enjoyed fried terns' eggs or a tern's egg omelet. This island was a low, flat, grass-covered mound with a wide margin of sand and large cobble. Nests were found on the sandy beach above the normal high tide mark and also on the grassy upland. At the date of the visit, July 4, no young birds were found in any stage, probably because all the first clutches of eggs had been taken. It was noticed also that all these unprotected birds were much wilder than the terns on Matinicus Rock where they are practically undisturbed. On Green Island a young tern was found July 9, on the cobble, which beautifully illustrated protective coloration. It was almost stepped upon before it was seen, and during the whole time that a tripod camera was being set up, moved about, focused and plates exposed from two different positions, it did not move even so

much as an eyelid. Three persons were close by watching the young bird and overhead was the parent tern warning the young one not to move.

At the mouth of Narraguagus Bay on Douglass Island, a colony of terns numbering some two thousand was protected by Charles Huckins. He reports that he experienced no trouble whatever during the season and that the normal increase in the colony took place. The island was well posted and the notices caused a number of persons to apply to Mr. Huckins to ascertain the exact text of the law.

The only other colony of terns protected was a small one on Libby Island, at the mouth of Machias Bay. This was under the care of warden Capt. M. W. Ackley of Cutler. This island having a lighthouse upon it makes it a very easy one to protect.

The Committee believes that it is perfectly feasible and entirely possible for terns on the coast of Maine to become as abundant as formerly. The present law protects them, and should your Committee be continued, it is intended to enforce the law by paid wardens, and also to endeavor to enlist the sympathies and activities of citizens of Maine, especially those resident along the coast, in the preservation of the beautiful and graceful sea swallows that add so much to the charm of the littoral scenery.

Herring Gulls are probably more numerous than terns on the Maine coast although many more gulls than terns were shot during the season of 1899. The writer had a long interview with an Indian, a member of the Quoddy tribe, who stated that not less than ten thousand were killed last year; he said that the gulls were shot entirely for millinery purposes and that they were not all the big white gulls (*L. argentatus smithsonianus*), but some were smaller. These were probably Ring-bills (*Larus delawarensis*), Kittiwakes (*Rissa tridactyla*), and Bonaparte's (*Larus philadelphia*), that were secured during migration; he was asked particularly whether many of the smallest white gulls (terns) were shot and he replied "No," because they did not bring so large a price. He informed the writer that purchasing agents from New York and Boston millinery firms visited the Maine coast in 1899 to secure gull-plumage. The competition between these agents was so keen that the price which started at four dollars per dozen soon rose to

twelve dollars per dozen. It requires an average of four large gulls to make a dozen pieces, which allows for waste caused by dirt, blood and badly shot birds. Two wings are counted as one piece, the back another, and a strip on each side of the breast bone, from the neck to the under tail-coverts, as two more; a perfectly clean bird thus making four commercial 'pieces' in the millinery trade. The Indian also stated the best time to secure them was while the old birds were on the nesting ground, as they were then in finer plumage, and it was easier to get them. They were secured in various ways, some by shooting, although this was the least desirable, as it necessitated washing the skin to cleanse it from blood and dirt; further, when shooting many birds fell in the water, which was undesirable as it reduced the value of the skin. The favorite way was to snare the birds on or near the nests, and also to set a trawl line with hooks baited with fish. This line was set on the land in a clean grassy place, so the birds when caught were not soiled. A live decoy gull was sometimes secured to the top of a small spruce on an island where the birds were in the habit of congregating and many were secured by shooting those that came to the decoy. This Indian was a mason by trade, but he stated that he could make so much more money shooting gulls, and that it was so much pleasanter work, that he abandoned his trade to become a gull hunter. He was asked whether the Indians would continue to shoot gulls this season and he replied that there did not seem to be such an active demand for them now, and that there had been a law passed that prevented their being taken on the breeding grounds. He probably mistook the work done by your Committee for a new law. The Indians were in the habit of going in parties of half a dozen or less and camping on or near the breeding grounds while in pursuit of the gulls, locating at all the different places where the gulls nested.

Your Committee found twelve colonies of Herring Gulls, and all were protected. The most eastern one was on Old Man Island, at the entrance to Machias Bay. This island is a precipitous mass of rock, rising from the ocean without the slightest semblance of a beach, and is covered with a growth of small spruce trees. About two hundred and fifty pairs of gulls nested there and were cared for by Capt. Ackley. The writer tried to get on the island

July 14, but although it was a very calm day with hardly any sea on, yet it was found impossible to land. The heave of the ocean was so great that oftentimes the spray would dash many feet in the air when a wave broke on the rocks. Capt. Ackley also protected a new colony of about twenty-five pairs of gulls on Shot Island. This is the first year that any have bred there. A colony of about two hundred pairs lived on The Brothers Island. Quite early in the season the Indians succeeded in killing about fifty gulls before the warden heard of their arrival. Fortunately the Indians had camped on Spragues Neck, the owner of which, Mr. Eben Sears, of Boston, Mass., at the request of your Committee, had given a power of attorney to Capt. Ackley. He therefore had no difficulty in driving them from the neighborhood entirely and no further trouble occurred during the season.

In Mooseabec Reach stands a tall cylindrical rock whose flat apex must contain an area of half an acre. The sides are so precipitous that it is impossible for anything without wings to reach the top. The writer passed close by it on the steamer 'Frank Jones' about 5 A. M. July 16. The whole top of the rock was so white with gulls that it looked as though it were covered with a blanket of snow. The pilot of the steamer told the writer that the gulls were never disturbed there, because no one could get at them, and he added: "I am glad of it, for many and many a time in a dense fog or in the darkness, the gulls have told me that I was on the true course." Their cries were always vented on the approach of the steamer whether in daylight, darkness, or fog. He thought that the destruction of that colony of gulls would be a distinct menace to navigation.

A colony of about eighteen hundred pairs of gulls is located at the mouth of Narraguagus Bay, on Egg Rock and Nash Island; these were cared for by Mr. Charles Huckins, who reports that he had no trouble, and that the protection given them resulted in a very material increase in the colony.

Great Duck and Little Duck Islands are located due south from Mount Desert Island and are some six or seven miles out to sea from South West Harbor. Both of these islands contain colonies of gulls, the larger one numbering some two thousand pairs and the smaller about three hundred pairs. Both were

under the care of Mr. D. Driscoll, the owner of Great Duck Island. On the south end of Great Duck the United States has a small reservation and a lighthouse. The head keeper, Capt. Stanley, is an ardent bird lover and protector of the gulls, some of which breed almost at his doorstep. The Indians attempted early in the season to kill gulls on these islands but were driven away by the warden. There is no doubt but that a large increase in both colonies was made during the past season as the result of the special protection given to them. Mrs. Stanley, the wife of the light-keeper, owns and runs a beautifully located and well kept summer hotel at South West Harbor. To her the Committee is under very great obligations for the active part she took in furnishing us with valuable information and aid in the work. Her intelligent knowledge of the birds and love for them made it especially pleasant for the writer to talk with her. She stated that the breeding gulls arrive regularly each year about March 27, hardly ever varying twelve hours from that date. They are not mated when they arrive, and for at least a month they daily have great meetings and caucuses until all are mated. No nest building is commenced until the mating is completed, and the laying season usually commences about May 27, or fully two months after their arrival on the breeding grounds. The nests are very crude and rough affairs when built in the trees, simply a mass of sticks, and within the last few years a few feathers have been added. The gulls are very easily tamed; on one occasion her children found some young birds that had lost their parents. These were brought to the light-station and were fed and cared for until they were grown to full size. Even then, although they were strong of wing and mixed in with the other birds when off feeding, they came regularly every day and sat in a row on the piazza of the lighthouse and called for food.

On another occasion they brought up a brood of four orphaned gulls and took them to the hotel when they went there for the summer. The birds lived on a ledge of rocks near the hotel grounds and were so tame that the guests of the house could pick them up and handle or hold and feed them as though they were domestic animals. They remained with them until late in the season and were finally wantonly shot by some passing gun-

ners, who left them lying on the rocks as an evidence of their wicked cruelty.

In response to the question whether the dark colored birds ever mated with the white birds, Mrs. Stanley said that they did when they were two years old. Her reason for this belief was as follows: On one occasion a young gull had lost one of its legs just above the knee. The wound healed but the bird was a cripple and had to hop and stand on the perfect leg. They fed the bird and it became very tame. In the fall it left with the other gulls and returned with them the next spring, exhibiting its old familiarity. That season, when the bird was only one year old, it did not mate. It remained on and about the island all the season, departing with the others on their southward migration. The following season it returned again and was still partially dark colored. It secured a white mate and raised a brood of young. Mrs. Stanley, to illustrate how the birds have been presecuted in the past, told the writer that a gang of stone cutters from Black Island, where there is a large quarry, came to Duck Island on one occasion and while there gathered up at least two or three bushels of eggs, and after having set up a mark used the eggs as missiles. The warden informed the writer that the Indian hunters claimed to have killed, on the two Duck Islands, during the year 1899, at least twenty-eight hundred gulls. Mrs. Stanley said that this year the number of gulls about the Duck Islands and in South West Harbor showed a very marked decrease over the numbers in 1899 and before. All of the garbage from the hotel is taken out into the harbor and is dumped on the ebb tide. Some hundreds of gulls were always awaiting the dumping hour, but this year the flock was exceedingly small in comparison with the numbers prior to 1899.

In South West Harbor are two docks where large quantities of cod and other fish are cured and packed. The entrails are thrown overboard and the gulls were in the habit of congregating there to feed on the refuse. Men and boys would gather on the docks and wantonly shoot the birds for sport. This has now been stopped. Mrs. Stanley said that Petrels (*Oceanodroma leucorhoa*) were very numerous on Great Duck Island but that none were ever seen during daylight, but as soon as it was dark they could

be seen flying about the light and could be heard uttering their peculiar cry which sounded very much like "Johnnie-put-your-jacket-on." While passing from one building to another with a lantern in her hand large numbers of the petrels would be attracted, some coming so close as to strike her with their wings.

In Penobscot Bay there are four small colonies of gulls. The largest of these numbers about two hundred pairs and is located on Heron Island. This colony shows evidences of having been disturbed a great deal in the past, as the birds were very wild. About half of the nests were built in trees, which were all low, flat-topped spruces. The writer visited the colony July 2 and found only a few nests containing young birds; while at Great Duck Island seven days later all the young were hatched. There is no doubt but that the birds on Heron Island had been robbed of all of the eggs first laid. Evidences of eggs having been used for throwing at a mark were visible, or else they had been broken to compel a fresh laying. While on this island a curious instance of bird psychology was noticed. A photograph of very young birds was desired but it was impossible to find young birds of any size in ground nests. If, after they were found, they were replaced by hand in the nest they would immediately leave it and run to hide. Three very young birds were then carefully removed from a tree nest and placed in a ground nest, where they remained perfectly quiet during the time that it took to set up a camera, focus, and expose two plates, after which they were returned to their tree home. These young birds were certainly governed in their actions by a change of habit caused by the ancestors for some generations back, having changed from ground nesting to tree nesting. The old birds when on the breeding grounds, have four different notes, the most common being a loud *kak-kak-kak*; another was a deeper, two-note call; still another was a note almost like the *honk* of a Wild Goose, while still another resembled in some degree the whistle of a Red-tailed Hawk. The young birds uttered a low weak squeal.

The other colonies are located on Spirit and Black Horse Ledges and Little Spoon Island, and are all small ones, there being not over fifty or seventy-five pairs of birds on each of the

latter islands and a lesser number on the first mentioned. Special protection could not be given these four gull colonies, for the same reason that prevented protection of the terns in Penobscot Bay. If a satisfactory law is passed by the next legislature it may be possible during the coming breeding season to do some good by thoroughly posting these islands with warning notices.

A few Double-crested Cormorants (*Phalacrocorax dilophus*) were seen on Black Horse Ledge, but their nests could not be found. This ledge is well out to sea and is almost impossible to land upon except during the calmest weather.

The largest colony of Herring Gulls (*L. a. smithsonianus*) in the State of Maine is located on the island of No-mans-land. This island has an area of about twelve acres and is situated about a mile from Matinicus Island, some seventeen miles south of Rockland. It is, like all the islands on the Maine coast, very rocky, with practically no beach, and is consequently difficult to land upon. It is about half covered with spruce and fir trees of moderate size and is well carpeted with red-top grass, clover and weeds. It is an ideal home for gulls and about twenty-five hundred to three thousand pairs breed there. The writer visited this island July 18 and 20, spending some hours there on each day. The birds have been faithfully and thoroughly protected by the owner of the island, Capt. Mark Young. Your Committee have no doubt but that the increase of this gull colony was entirely normal during the year 1900. The island is so far from the mainland that it is not visited by the natives or by summer tourists. The entire population of the adjoining Matinicus Island numbers only about two hundred and fifty people, all of whom are either friends or relatives of the warden, consequently they respect the wish of Capt. Young to carry out the instructions of the American Ornithologists' Union Committee that not an egg should be taken for any purpose, and that not a bird should be killed. The writer visited No-mans-land first on July 18, and on approaching the shore in a dory was saluted by the cries of thousands of anxious gulls. It was a wonderful sight to see these great white birds in such clouds all over the island. The noise was deafening but at the same time was inspiring. Such a sight once seen can never be forgotten and it is worth a long journey to view. There is probably no place on the Atlan-

tic coast south of Newfoundland where such hosts of birds the size of Herring Gulls can be seen at one time. In whatever direction one looked the air seemed to be filled with gulls, and it was a puzzle to the photographer where to point his camera; however, a photograph can only give a faint idea of the bird hosts that could be seen. Efforts were made to photograph individual flying birds at closer range but the surfeit of subjects was distracting. On reaching the crest of the island, the large painted notice of Capt. Mark Young, in full view from every direction, was seen warning all persons to 'keep off' and forbidding the firing of guns or taking eggs. The result of this protection was everywhere visible, for a walker had to step with care or he would be in danger of crushing a young bird that was hiding in the grass. The most immature birds usually selected some cover under which to hide, sometimes going so far under the shade of a stump or log that they looked like balls of chinchilla-colored yarn. Others were content with a more exposed position closer to the nest in which they were hatched. The young seen in the grass were in all stages of downy plumage, some just showing feathers mixed in the down, others further advanced, still others that had almost left the downy stage, and others whose flight feathers were quite large. In the last stage before flight the birds were tailless but the plumage was perfect, the down having entirely disappeared. They were large strong birds and could run through the grass and among the spruces as fast as a man could. It was only by cornering one on a ledge of rocks that a photograph was secured.

To show how perfect the protection on this island had been it is only necessary to state that but one nest containing a set of eggs was found; further, large numbers of young of the year were seen sitting on tide ledges or in flight with groups of adult birds. A nest was found containing a single egg, which illustrates one of the causes of mortality among the young birds. On July 18 this egg was partially hatched, one wing of the young bird having appeared. It had been exposed long enough to be perfectly dry and downy. The chick was heard inside peeping but did not seem able to break through the inside membrane of the egg, which may have been abnormally tough. Two days later this nest was visited, and the young chick was found, but it was dead. From its ap-

pearance it had died only a short time before. Some other dead birds were found on the island but they were always very small ones. After passing the downy stage the mortality seems to be very slight. The writer wishing to get some photographs of the old birds concealed himself among the spruces and almost immediately the adult birds commenced to settle on the trees or on the ground among the nestlings, and the cries ceased to a large degree. The slightest movement or the appearance of the hider was sufficient to alarm the gulls and at once clouds of them were in the air again. Invariably on alighting, either on the ground or in a tree top, the gulls would elevate both wings preparatory to folding them. It was certainly a most beautiful and impressive sight to see these superb white birds perched singly or in groups on the spruce tops, and it forcibly impressed itself upon the mind of the writer that if every feather-wearing woman could only see them there she would never again ask to see them perched upon a bonnet. The birds are too grand to be used for any other purpose than that intended by nature.

The Island of No-mans-land is so admirably situated for a breeding place for Herring Gulls that it would be a wise move on the part of the Commonwealth of Maine to purchase it and set it aside in perpetuity as a reservation and home for the gulls. However, this would be useless unless at the same time a law was passed giving them absolute protection at all times and making it a misdemeanor to kill one.

One of the principal industries of the male population of Matinicus Island is the catching and curing of codfish. While on the fish wharf one day, the writer took a bucket of cod livers and, although not a gull or tern was in sight, commenced to throw them one by one into the water. It was only a moment or so when a tern appeared, and with light, graceful darts to the surface would daintily pick up pieces of liver. Soon others appeared, and with them gulls, until in a very short time a mixed flock of terns and gulls were gathered numbering nearly a hundred. A cod liver is about two inches wide and six inches long, but a gull will take a whole one down at a single gulp. The contrast between the light, airy movements of the terns and the heavy splash of the gulls, which made the spray fly, was very marked.

How impossible it is to fairly estimate the numbers of birds on a breeding ground during daylight is evident from the fact that very many of them must be away seeking food. On the return trip from Matinicus to Rockland, late in the afternoon, all the gulls seen on the starboard side of the boat, and which were flying toward No-mans-land, were counted; they were found to number over one hundred. If the island is used as a center of distribution, and lines of birds radiate from it in all directions, as is probably the case, some estimate of the number of absent birds can be formed. Some of the counted birds were seen almost up to the mouth of Rockland Harbor, thus showing how long a distance they travel in search for food. The estimate of the numbers of a colony, made an hour or two after daylight and before sundown, is very apt to be a conservative one, for it cannot include the birds that are away acting as scavengers of the sea.

Respectfully submitted for the Committee,

WILLIAM DUTCHER.

New York City, N. Y., November 1, 1900.

PROTECTION COMMITTEE FOR 1901.

WITMER STONE, Chairman, Academy of Natural Sciences, Philadelphia, Pa.

WILLIAM DUTCHER, 525 Manhattan Ave., New York, N. Y.

DR. T. S. PALMER, Biological Survey, Dept. of Agriculture, Washington, D. C.

A. H. THAYER, Scarborough, N. Y.

RUTHVEN DEANE, 24 Michigan Ave., Chicago, Ill.

E. H. FORBUSH, 17 Russell St., Malden, Mass.

J. MERTON SWAIN, 319 Commercial St., Portland, Me.

JAS. HAYNES HILL, New London, Conn.

F. C. KIRKWOOD, 1500 Bolton St., Baltimore, Md.

PROF. M. J. ELROD, Univ. of Montana, Missoula, Mont.

PROF. GEO. E. BEYER, Tulane University, New Orleans, La.

FRANK BOND, 822 E. 19th St., Cheyenne Wyoming.

MRS. LOUISE MCGOWN STEPHENSON, Helena, Ark.

WM. L. BAILY, 423 Chestnut St., Philadelphia, Pa.

O. WIDMANN, Old Orchard, Mo.

W. OTTO EMERSON, Haywards, Cal.

MRS. FLORENCE MERRIAM BAILEY, Washington, D. C.

MRS. EDW. ROBINS, 114 So. 21st St., Philadelphia, Pa.

MRS. OLIVE THORNE MILLER, 628 Hancock St., Brooklyn, N. Y.

LEVERETT M. LOOMIS, Acad. of Sci., San Francisco, Cal.

A. W. ANTHONY, Taylorsville, Cal.

WILLIAM PALMER, U. S. National Museum, Washington, D. C.

Sub-committee on Laws.

WILLIAM DUTCHER and DR. T. S. PALMER.

GENERAL NOTES.

The Paroquet Auklet in California.—In the collection of the California Academy of Sciences there are five specimens of *Cyclorhynchus psittaculus* from the bay and ocean at San Francisco. Three of these were captured by Dr. John Hornung—a male, Jan. 10, 1895, and a male and female, Jan. 8, 1899. The remaining two specimens (a male and female) were secured by Mr. William J. Hackmeier, Dec. 17, 1899. The white feathers behind the eyes are well developed in the three January specimens. So far as I am aware this species has not been recorded from California waters.—LEVERETT M. LOOMIS, *California Academy of Sciences, San Francisco*.

On the Southern Limit of the Winter Range of Bonaparte's Gull (*Larus philadelphia*).—In the first edition of the A. O. U. Check-List the habitat of *Larus philadelphia* is given as follows: "Whole of North America, breeding mostly north of the United States; south in winter to Mexico and Central America." In the second edition the closing clause is omitted and the following substituted: "Not yet recorded from south of the United States, though reported from the Bermudas."

Nevertheless, it has long been a matter of record (Lawrence, *vide* Grayson, Mem. Bost. Soc. Nat. Hist., Vol. II, 1874, p. 317) that this species occurs at least as far south as Mazatlan, Sinaloa. A recent instance of occurrence is not lacking to confirm this record, there being in the collection of the California Academy of Sciences three specimens from

Mazatlan taken by Mr. P. O. Simons in December, 1896. — LEVERETT M. LOOMIS, *California Academy of Sciences, San Francisco.*

Mother Carey's Chicken. — Knowing that the Wilson's Petrel (*Oceanites oceanicus*) migrates for the breeding season, through the autumn until March perhaps, to the South Atlantic, I was interested to note during my return voyage from Liverpool — November 17, I think it was — in mid-Atlantic, that the familiar Petrels which I had hitherto seen only solitary or unattached, were now flying in flocks of two dozen or so. The bird seemed to be the Mother Carey's Chicken of our New England summer coast waters, but did not appear singly. I could detect no special southward movement, but the ship might well have interrupted this course among birds which fly so low. It might be interesting to add my observation, that both in August and in November, the only other bird which might be met with at any hour of the voyage from landfall to landfall was a Shearwater, presumably *Puffinus major*.

If anyone has observations counter to this last I should gladly hear of them. — REGINALD C. ROBBINS, *Boston, Mass.*

✓ **The Yellow-billed Tropic Bird in the Hawaiian Islands.** — This Tropic Bird (*Phaëton americanus*) or 'Kooi,' as the natives call it, is rather common upon the windward side of the island of Hawaii where it breeds in holes in the cliffs. I have secured three specimens and have seen many more. So far it is the only Tropic Bird I have been able to discover on Hawaii, although there is little reason to doubt that both *P. æthereus* and *P. rubricauda* occur, at least casually. None of the present day natives of Hawaii whom I have questioned appear to know anything of the Red-tailed Tropic Bird, although Mr. Wilson states that he shot several specimens of this species in the caldera of Kilauea. Both Kauai and Niihau are inhabited by *P. rubricauda*, while, according to Wilson, Mr. Perkins found *P. æthereus* breeding in the cliffs about Honolulu. It thus appears that the Hawaiian Islands are unusually favored in having three resident species of Tropic Birds. — H. W. HENSHAW, *Hilo, Hawaii.*

The Old Squaw at San Francisco. — A female *Harelda hyemalis* (No. 12892, Calif. Acad. Sci.) was taken by Dr. John Hornung at San Francisco, December 26, 1898. Notices of the occurrence of this duck in California are so few as to render an additional capture worthy of note. — LEVERETT M. LOOMIS, *California Academy of Sciences, San Francisco.*

The Emperor Goose in the Interior of California. — In the fall of 1895, Mr. Lyman Belding presented to the California Academy of Sciences an immature specimen of *Philacte canagica*, which had been shot by a market hunter on November 1 of that year near Gridley, in Butte County, on Butte Creek, a tributary of the Sacramento River.

October 8, 1900, Mr. Thomas E. Slevin found in one of the San Francisco markets another immature Emperor Goose, which he obtained for the Academy. This bird probably came also from the San Joaquin-Sacramento Valley—the chief source from which the supply of geese is drawn for the San Francisco markets.

The only other record for California appears to be the one by Mr. Townsend (Auk, Vol. III, p. 491) reporting a specimen taken by Mr. Charles Fiebig at Humboldt Bay.—LEVERETT M. LOOMIS, *California Academy of Sciences, San Francisco*.

Nesting of Cory's Bittern at Toronto, Ontario.—Although Cory's Bittern was at first believed to be only a straggler at Toronto, the taking of young birds, together with the continued presence of this bittern, led many to believe that the eggs would eventually be found in Toronto marsh; but it was not till 1898 that a nest was discovered. On June 15 of that year, Mr. George Pierce, while collecting in Ashbridge's marsh, Toronto, took a female of *Ardetta neoxena* from her nest. The nest was described as simply a mass of last year's reeds, and contained one egg. Soon after the bird was taken Mr. J. H. Ames saw it and noticed that the abdomen was much swollen; next day I examined the bird, it having in the meantime been partially skinned, and the body cut open, exposing a fully developed egg, unfortunately broken. I compared the broken egg with the one found in the nest, and they agreed perfectly in color; other eggs in the ovary showed signs of development. The color of the eggs was much darker than the average of Toronto taken sets of *A. exilis*, though I have since seen a set as dark. The body, with the broken egg undisturbed, was preserved in alcohol, and, together with the other egg, is now in the possession of Mr. Ames; the skin is in my collection.

Mr. Ames and myself have thought it better to separately record the facts as we found them; the correct identity of the eggs of Cory's Bittern being of sufficient importance to warrant great care being used.—JAMES H. FLEMING, *Toronto, Ontario*.

Nesting of Cory's Bittern (*Ardetta neoxena*) and Other Notes.—On the evening of June 15, 1898, I was in Mr. Geo. Pierce's store when he returned from a collecting trip on Ashbridge's Bay; he brought in with him a female Cory's Bittern and egg. I at once took the opportunity of examining it and found that the abdomen was very much swollen, which suggested that it contained more eggs, and which afterwards proved to be correct. I had no opportunity of comparing the eggs with those of *A. exilis*. The egg measured 1.30 x 1.00.

On December 2, 1898, a female immature Iceland Gull (*Larus leucop-terus*) was taken in Toronto. It was afterward sent to me by a friend and is now in my collection.

On May 11, 1900, while on a collecting expedition, I took a male Prairie Warbler (*Dendroica discolor*) in full plumage.

On November 3, 1900, my son took a Purple Sandpiper (*Tringa maritima*) in Ashbridge's Bay. There were three in the flock, and the other two have been since taken.

On September 1, 1900, a Yellow Rail (*Porzana noveboracensis*) was taken at Toronto and brought to me alive. It is thriving, and it is very interesting to hear its different calls.—J. H. AMES, *Toronto, Ontario*.

Sexual Difference in Size of the Pectoral Sandpiper (*Tringa maculata*).—In connection with my note in 'The Auk' (Vol. XVI, April, 1899, p. 179), I have lately run across the following reference which seems of interest. From John Murdoch's account of the birds observed at Point Barrow, Alaska (see Lt. P. H. Ray's Report of the Expedition, 1885, p. 111) I quote the following: "There is frequently a great disparity of size between the two sexes. A comparison of the large series we collected shows that the average length of the female is about three quarters of an inch less than that of the male, but that the smallest female was fully an inch and a half shorter than the largest male. The difference in size is so marked that the natives noticed it and insisted that the small females were not Aibwúkia, but Niwiliwilúk (*Ereunetes pusillus*.)" Certainly such facts should be in our manuals.—REGINALD HEBER HOWE, JR., *Longwood, Mass.*

Great Gray Owl in Wyoming.—During the latter part of last month, September, 1900, in company with my brother, the State Engineer, I visited the Alpine Lake region of the western slopes of the lofty Wind River Mountains. On the 26th we were at the hunting lodge of Wm. Wells, one hundred and fifty miles north of the Oregon Short Line railroad. This lodge is known to the post office department as Wells post office, and is the end of the mail route which carries the mail by stage from Opal station three times a week. Among the trophies of the hunt, with which the walls of Mr. Wells's lodge are decorated, I noted a Great Gray Owl (*Scotiaptex cinerea*). The bird was one of the largest of the species, the wing measuring $19\frac{1}{2}$ ins. and the tail 13 ins.

Inquiry developed the fact that Mr. Wells killed the bird with his snowshoe pole in April, 1899. He stated the snow at the time was between three and four feet deep and as he was returning home on his snowshoes he saw the bird sitting in a low spruce tree not far from the lodge. He approached easily, and knocked the bird from its perch with his snowshoe pole, as stated above. Mr. Wells said further that it was the first and only owl of the kind he had seen during a residence of several years at the lodge.

I make this note because this is the first Great Gray Owl I have met with in Wyoming. Two of the hunters' guides employed by Mr. Wells, told me they had seen this owl in the mountains, but as they had never killed the bird I am inclined to question their identification. However, I think it quite probable the Great Gray Owl may be a rare winter resident

in the higher mountainous and densely wooded tracts of the northern half of the State. Wells post office is located in the margin of a dense pine and spruce forest at the western base of the lofty Wind River range of mountains, in Uinta County, Wyoming, and its elevation, by aneroid barometer, taken the day we were there, was 8,000 feet. — FRANK BOND, *Cheyenne, Wyo.*

Breeding of the Alder Flycatcher (*Empidonax traillii alnorum*) near Plainfield, New Jersey. — During a visit to Ash Swamp, three miles east of Plainfield, Union County, New Jersey, on the 19th, 20th, and 21st of July, 1899, I was surprised to find the Alder Flycatcher (*Empidonax traillii alnorum*) a common species there.

My identification was confirmed by Dr. Jonathan Dwight, Jr., who examined a bird-of-the-year secured on August 6, 1899.

Circumstances pointed to its breeding here, and my experience during the past summer proves that it does so, for on every visit to the swamp I found the shy little flycatchers among the alders. These dates include May 30, June 17 and 24, and July 8, 15, 22 and 29.

The species is rather numerous and generally distributed throughout the swamp (which is less than one square mile in area), frequenting chiefly the alders along the streams and edges of the woods. Elsewhere in the vicinity of Plainfield I have found it only during the migrations.

I have not yet succeeded in finding an occupied nest, but discovered a deserted nest containing one egg, which may belong to this species. On July 29 I came upon one of these birds with a brood of full-grown young and saw one of the latter fed by its parent.

I believe this to be the first positive record of the breeding of this species south of northwestern Connecticut.

Its three congeners of the eastern United States all occur in this vicinity. The Least Flycatcher is a common summer resident, the Green-crowned Flycatcher is a rare summer resident, and the Yellow-bellied Flycatcher is a fairly common transient visitor.

The avi-fauna of this region is decidedly Carolinian. — W. D. W. MILLER, *Plainfield, N. J.*

The Raven in Polk County, North Carolina. — On the morning of February 15, 1897, I saw a Raven as it passed over the mountain village of Tryon, Polk County, N. C. Tryon is said to have an elevation of about 1500 feet, and is situated on a ridge leading up from the Piedmont Region to the peaks of Melrose and Hogback, the latter in South Carolina. — LEVERETT M. LOOMIS, *California Academy of Sciences, San Francisco.*

Song of the Western Meadowlark. — Referring to the comment of G. S. Mead in his letter of August 18, 1900, printed in the October number of 'The Auk,' relative to the musical ability of *Sturnella magna neg-*

lecta, I wish to add a paragraph in commendation of the bird. On Monday, Oct. 1, 1900, I was at Big Piney post office, Wyoming, seventy-five miles north of the Oregon Short Line railroad. Early in the morning I was attracted to the wreckage of an old waterwheel in North Piney Creek just back of the post office, by a sweet and continuous vocal effort of some bird. I believed the singer was a Meadowlark for some of the notes were familiar, but I was in doubt, never having heard the song before. I approached, carelessly, and soon discovered a Western Meadowlark perched upon the topmost paddle of the old wheel singing — well singing an aria from the song-book of Nature. To me the performance was exceedingly creditable; but owing to the surroundings and the season of the year, its actual musical value may have been overestimated. The performance was continuous for over three minutes when the bird joined a small flock that was foraging industriously for breakfast along the bank of the creek.

This example of continuous vocal effort of the Western Meadowlark is the first and only one of my experience and while Mr. Mead's suggestion — that there may be individuals of surpassing vocal powers, is of doubtful value, nothing can be more certain than that continuous bursts of song are of rare occurrence. May I be permitted to add, also, that during nineteen years' residence in Wyoming my observation of the spring and summer song of the Western Meadowlark has forced the conclusion that there is no such thing as a distinctive vocal utterance of the race. One would almost be safe in asserting that no two larks sing alike, so great is the range of individual effort. While the songs of all of the Western Larks vary greatly from that of the eastern form the lack of uniformity will insure to the promoters of the taxonomic value theory final and certain confusion.—FRANK BOND, *Cheyenne, Wyo.*

Occurrence of the Mexican Crossbill (*Loxia curvirostra stricklandi*) at Neligh, Nebraska. — It is interesting, to say the least, to note the occurrence of this southwestern bird at Neligh, Nebraska, several hundred miles east of its normal range. A large female was taken by myself on December 9, 1898, just at dusk, while it was perched on the head of a sunflower (*Helianthus annuus*) feeding industriously upon the seeds. The only other birds in the near vicinity at the time were a few Common Redpolls (*Acanthis linaria*). There was a fair amount of snow on the ground at the time, but no heavy storms had occurred to account for the bird straggling so far from its usual range. The specimen is now in my collection. — MERRITT CARY, *Neligh, Neb.*

An Addition to the A. O. U. Check-List. — Several years ago I submitted to Mr. Brewster three specimens for comparison with the type of *Dendroica nigrifrons*, and he reported that they belonged to that Warbler. The three specimens form a part of a series of eleven males, in the collection of the California Academy of Sciences, taken in the latter part of May

and during June, 1894, in the Huachuca and Chiricahua Mountains, Arizona, by Mr. W. W. Price and his assistants.

Comparing this series with several males of *D. auduboni* in very high breeding plumage from the Sierra Nevada of Central California, I find that the gap between *D. auduboni* and *D. nigrifrons* is nearly bridged over. — LEVERETT M. LOOMIS, *California Academy of Sciences, San Francisco*.

Sequence of Plumages in the Black-throated Blue Warbler. In my paper on the Molting of Birds (Proc. Acad. Nat. Sci. Phila., 1896, 159) I erroneously stated that the young males of *Dendroica caerulescens* in the first winter plumage were brown like the adult female. Attention was called to this error by Mr. Wm. Palmer in reviewing my paper in 'The Auk' (1896, p. 242). As I find, however, that many persons still regard some of the brown fall birds as young males it may be well to call attention to an interesting specimen in my collection, secured in Wyoming County, Pennsylvania, July 14, 1900. This bird is molting from the juvenal to the first winter plumage, the olive brown feathers of the earlier dress being seen on the back, sides of the body and under the tail, while most of the remaining feathers are of the black, blue and white plumage of the 'old male.' The flight feathers are not shed at this molt. All the feathers of the throat are frosted with white. This character as well as the olive edgings to the wing feathers will serve to distinguish males of the year from old birds. — WITMER STONE, *Academy of Natural Sciences, Philadelphia, Pa.*

Granatellus venustus in Sinaloa.—The California Academy of Sciences possesses three specimens of this rare Warbler collected by Mr. P. O. Simons in Sinaloa. Two of the birds were secured at Tatemalis — a male, June 4, and a female, June 17, 1897. The third example (a male) was obtained April 10, of the same year at Rosario.

The following is a description of the female: Above drab with top of head tinged with wood brown, deepening toward forehead; above ear-coverts a broad line of buff, extending nearly to the middle of the upper eyelid; ear-coverts wood brown, lores paler; wings broccoli brown; tail brown with three lateral feathers tipped with white, the outer web of outer one almost wholly white; lower parts whitish, with a broad buff band across chest; sides of body washed with buff; under tail-coverts largely tinged with buff; wing 2.15 in.; tail 2.50; exposed culmen .46; tarsus .75. — LEVERETT M. LOOMIS, *California Academy of Sciences, San Francisco*.

Maryland Yellow-throat at Sea.—On August 19, 1900, at about 3 P. M. when my ship, the 'Saxonia,' eastward bound, was about 305 miles East $\frac{1}{2}$ South from Boston Light, a small bird flew up from astern and spent several hours perched in various parts of the upper works. It was lively, generally shy, plump and apparently happy. It took no interest in finely

chopped meat, nor crumbs nor meal. Wishing to ascertain its identity exactly, I whistled the well-known "*wichity wichity*" tune of the Maryland Yellow-throat (*Geothlypis trichas*). On hearing this tune, the bird though fully 50 feet away, flew toward me almost without hesitation till it perched within four feet of my lips. Having eyed me seriously for a while it withdrew to a little distance and soon lost interest in my whistling.

Thus identified, the bird must have been the Maryland Yellow-throat—a male in fall plumage, a dress which in any case I think I know accurately. Now the interest of this occurrence lies in the fact that the position of the ship (and the matter grew hourly worse while the bird staid aboard) was well to the eastward of a line drawn from Nova Scotia to any land on this side of the Atlantic, even Bermuda. And I do not suppose these warblers migrate direct from Newfoundland to Bermuda nor the West Indies. There had been no noticeable hard weather; the migrant was fresh; and I must conclude (with Mr. Brewster) that my Yellow-throat was a lost bird. It would be well to record all such instances of sheer error in migration. In this case the only point in doubt would be whether it was a young bird in its first attempt.—REGINALD C. ROBBINS, *Boston, Mass.*

The Breeding of the Hermit Thrush on Martha's Vineyard Island.—Mr. H. V. Greenough took on July 27, 1900, a female Hermit Thrush (*Hylocichla guttata pallasii*) near Tashmoo Lake, West Chop, Martha's Vineyard, Mass. The bird was heard singing, and a number of others of its kind were seen, evidently of one family. The bird taken is in very worn breeding plumage. This is the first breeding record I believe for this island.—REGINALD HEBER HOWE, JR., *Longwood, Mass.*

The Hermit Thrush on Martha's Vineyard, Mass.—Apropos of Mr. Reginald Heber Howe's record of the Hermit Thrush on Martha's Vineyard the following may be of interest. In a list of birds read before the Delaware Valley Ornithological Club, Feb. 2, 1899, the writer gave the Hermit Thrush as a summer resident on Martha's Vineyard. My first experience with this bird was in August, 1897, while camping on the western shore of Lake Tashmoo, a small brackish pond in the northern part of the island. Our camp was situated upon a small promontory which projects into the lake for about one hundred yards. Extending between this point and the shore is a cove-shaped marsh covered with sphagnum and freshened by numerous springs. On the side of the marsh near the shore the bank ascends abruptly for eight or ten feet and then slopes gradually back, at no place reaching a height of fifty feet. Covering the point and extending half a mile back from the shore is a grove of yellow pines. Here and there they have been cleared away, giving place to an undergrowth of bay, high bush huckleberry, and various species of oak. Further back from the shore the pines have so intergrown as to make it almost impenetrable. Bordering on these is an oak

growth which where it encroaches upon the pines makes a dense and well-shaded woods.

Early in the morning we would invariably find several Hermit Thrushes near the springs. Soon, however, they would retire to the deep woods whence we could hear their songs until late in the afternoon.

During each of the following summers I have made many trips to this locality, the earliest and latest dates being June 24 and September 27. Of all the days spent there I can only recall one instance, a dark cloudy day late in August, upon which I neither heard nor saw a Hermit Thrush.

Although the writer has never found a nest he has seen the young birds repeatedly and feels quite confident that at least three pairs nested there during the past summer.

So far my experience leads me to believe that this "boreal island," occupying less than one square mile, is the only spot where the Hermit Thrush nests on Martha's Vineyard.—HERBERT L. COGGINS, *Germantown, Pa.*

Notes from Ontario.—In 'The Auk' for October, 1898, I reported the finding of the nest and eggs of the Solitary Sandpiper (*Totanus solitarius*) on Simcoe Island, Ontario. Since that time careful inquiry has revealed the fact that this bird is a constant summer resident about Kingston, and that it breeds pretty regularly is probable. This summer I spent a month (August) on the Petewawa River, a hundred and fifty miles north of Kingston. This river runs through an uninhabited district and rises in Algonquin Park, which is reserved by the Ontario Government for the protection of game. The whole of the southern branch of the Petewawa was investigated, and nearly everywhere the Solitary Sandpiper was encountered, singly, and in small flocks, the flocks consisting invariably of two parent birds and this season's young. On the 4th of August the young were more than half grown, and able to fly well. Although the Sandpipers were so easily approached in this unfrequented district, that it was a simple matter to identify them, still in order to leave no doubt, a specimen (adult) was taken from one of the flocks. No Spotted Sandpipers were seen.

The Petewawa district is extremely rich in Warblers, many of the rarer ones undoubtedly breeding there, but among the common birds it was interesting to find the Maryland Yellow-throat. A brood of Hermit Thrushes was seen, and the Great Horned Owl was extremely common.

Near Renfrew, ninety miles north of Kingston, Bartramian Sandpipers (*Bartramia longicauda*) were noted in the fields. I have now traced this bird in Eastern Ontario over a region nearly a hundred miles square.—C. K. CLARKE, M. D., *Rockwood Hospital, Kingston, Ontario.*

Two Interesting Records from New Mexico.—During the fall while collecting about Albuquerque, N. M., two birds new to the fauna of the Territory have come before the writer's notice, accounts of which doubtless are of interest.

Xema sabinii.—October 7, 1900, while shooting ducks along the banks of the Rio Grande, a small flight of gulls was observed, the birds passing just out of gunshot directly down the stream, near enough to note the presence of a dark collar-like marking upon the fore-breast. The next day, a pair of wings was brought to me by a local gunner taken from a gull shot the preceding day from a small flock which wheeled in over a small pond. These, sent to Dr. Ridgway, were identified by him as belonging to *Xema sabinii*, the first record of this wandering species for New Mexico being thus made; and I doubt not that the birds observed by myself the day before were of the same species.

Bubo virginianus arcticus.—On November 18, Mr. C. M. Barber discovered a freshly killed owl hanging to a tree at Bernalillo, N. Mex., where it had been recently hung, presumably by some gunner. Presenting it to me the next day, I was surprised to find the bird a handsome example of the Arctic Horned Owl (*Bubo virginianus arcticus*). The entire middle belly and abdomen, including vent and under tail- and wing-coverts, and a large mass covering the throat and fore breast are pure immaculate white; the entire under parts are largely of that color, the markings comparatively few and distinct; the face is nearly pure white as well as the entire feathering of the lower limbs, and concealed white occupies a large portion of the broad webs of the flight feathers.

Comparison with examples of *B. v. subarcticus* and of var. *saturatus*, both of this region, betrays marked distinction.

That these three Horned Owls should occur here, together, is not a little remarkable. All occupy the lower elevations in the colder weather, *i. e.*, counting the *arcticus* example cited. But during the breeding season, *saturatus* is found as the bird of the higher timber belts, and *subarcticus* dwells lower.

The presence of the single specimen of *arcticus* may be variously suggested. The bird *may* live near the timber limits of the highest ranges, this specimen having been driven lower or wandered there. It may have, also, wandered from the northern regions. Hardly could it have been driven across the continent by inclement weather, but readily could have been forced to the river valley by the fierce storm which raged for three days, beginning with its capture, and which piled the ranges with snow.

—FRANCIS J. BIRTWELL, *Albuquerque, N. M.*

RECENT LITERATURE.

Dwight's 'Sequence of Plumages and Moults of the Passerine Birds of New York'.¹—The present paper is in all respects the most important contribution to the study of plumages and moults that has yet appeared, and is in fact a monograph of the subject it treats, which will serve as a standard work of reference for a long time to come. The treatise comprises 287 pages of text and seven half-tone plates of photographs and photomicrographs of feathers illustrating various methods of abrasion, etc.

The subject of the work is treated under several subheadings, 'Indoor Study of Moults,' 'Process of Moults,' 'Early Plumages and Moults of Young Birds,' 'Sequence of Plumages and Moults,' 'Color Facts *versus* Color Theories,' 'Outdoor Study of Moults,' 'Plumages and Moults of New York Species' (188 pp.), 'Bibliography' (27 pp.).

Under the first of these are considered the fundamental principles of moulting, wear, or feather disintegration, and the determination of age by osteological characters. 'The last is a most important matter which has never before been clearly set forth, but with Dr. Dwight's explanation all collectors should in future be able to distinguish at once between the 'bird of the year' and the adult in every late summer or autumn specimen, and thus add immensely to the value of their materials. The principal point in Dr. Dwight's explanation will bear repetition: "It is simply this,—the prominent frontal bones of the young bird are thin and transparent showing the brain beneath, while those of the adult are thicker and flecked with whitish dots, which show even better as black dots, when, with the brain removed, the skull is held up to the light." The value of the primary coverts as an index of age is also frequently dwelt upon, as they retain the characters of immature plumage longer than any other feathers.

Under 'Process of Moults' the various feather tracts of the bird are considered with great detail and it is demonstrated that there is much more symmetry in the moult on the body than had previously been supposed. The apparent irregularity is due to the fact that the moult begins almost simultaneously in a number of different tracts, spreading independently in each of them from a central point or focus. Dr. Dwight aptly likens the progress of this moult to a rising tide gradually spreading over a number of small islands. The length of time required for the complete postnuptial moult is also discussed, a question that has occasioned considerable difference of opinion. Dr. Dwight estimates it at about one month to six weeks, as a rule. Under 'Sequence of Plumages and Moults' is a most careful discussion of this whole subject, resulting

¹The Sequence of Plumages and Moults of the Passerine Birds of New York. By Jonathan Dwight, Jr. Reprinted from the *Annals New York Acad. Sci.*, Vol. XIII, pp. 73-360, pl. i-vii, Oct. 31, 1900.

in a tabulated series of terms, which are adopted in the succeeding pages and which should be followed by all future investigators, both for the sake of uniformity and because the terms seem to be the best that can be suggested. This scheme is as follows:

<i>Plumages.</i>	<i>Moult.</i>
1. Natal [= Down].	Postnatal.
2. Juvenal [= "First Plumage."]	Postjuvenal.
3. First Winter.	First Prenuptial.
4. First Nuptial.	First Postnuptial.
5. Second or Adult Winter.	Second or Adult Prenuptial.
6. Second or Adult Nuptial.	Second or Adult Postnuptial.
etc.	etc.

In the chapter on 'Color Facts *versus* Color Theories,' the advocates of 'Aptosochromatism' are considered, and if they have hitherto deceived themselves by thinking that they had still a leg to stand upon, surely it has been knocked from under them by the present paper! Dr. Dwight very aptly concludes this discussion as follows: "Years ago a theory was current that swallows hibernated beneath the mud of ponds. The fact that they could not do it and did not do it is a lesson that our modern color-change theorists would do well to take to heart."

Under 'Out-door Study of Moults' we find much of interest and many important suggestions. The connection between moult and migration is considered as well as the difference between the postjuvenal moult of birds of the first and second brood of a single pair. It is ingeniously suggested in this connection that the first brood, being stronger and more precocious than the second, probably often assume a more advanced first winter plumage than their younger brothers, anticipating in part perhaps the normal plumage of the succeeding nuptial season, which would account for many apparent anomalies.

In considering the preponderance of young in autumn Dr. Dwight advances the plausible suggestion that "the old birds take better care of themselves and the young most frequently fall victims to our powder and shot. Anyone who has chased a family of Towhees along a hedge row will be prepared to admit that it is the parents who skip along at the head of the procession.... and in the autumn do we not find adult Wood Pewees and Scarlet Tanagers almost inaccessible at the very tops of the tallest trees?" This he regards as the *main* cause of the scarcity of fall adult specimens rather than earlier migration and other elements that are operative to a certain extent.

Prefixed to the main chapter of the work is a classification of New York Passerine birds according to the moult. From this we learn that 52 species moult twice a year while 81 have but a single moult. Of the first class, however, 21 moult only to a very limited extent in spring, and

in 14 others the spring moult is largely suppressed after the first year. The only species which have a complete moult twice a year are the Bobolink, Long and Short-billed Marsh Wrens and Sharp-tailed Sparrow,¹ the last being for the first time added to this category by Dr. Dwight.

In the body of the paper the species are considered systematically, following the nomenclature of the Second Edition of the A. O. U. Check-List. From one to three pages are devoted to each species, the plumages being described in numbered paragraphs, beginning with the natal down. The juvenal and one or more of the succeeding plumages are described in detail and the others contrasted with them, while the part played by each moult or by wear in producing the various plumages is carefully considered. The color of the natal down in many birds is here given for the first time, as also descriptions of many juvenal plumages. The only species in which Dr. Dwight was unable to examine specimens in juvenal plumage are *Alauda arvensis*, *Carduelis carduelis*, *Ammodramus nelsoni*, *Passerella iliaca*, *Dendroica palmarum*, and *Geothlypis agilis*.

In his preliminary remarks Dr. Dwight says: "There may be little that is quite new in these pages, for many have traversed the subject before me, but no one has taken just my point of view, and my work has been on absolutely independent lines. Nothing whatever has been taken at second hand." While all this is of course true, nevertheless Dr. Dwight has elaborated the subject to such an extent, and made his work so nearly complete in all but a few species, that it is to be regretted that a slightly different treatment was not adopted, *i. e.*, that more frequent reference was not made through the body of the text to the work of others, so that the large number of new facts set forth by Dr. Dwight should be properly emphasized and the mistakes and erroneous suppositions of others specifically pointed out, when they are corrected. Some apparently authentic "second hand information" might also have been included with advantage where it supplements or differs from the author's experience. This is the only criticism that can well be advanced against this admirable piece of work.

In order to point out more clearly the many new facts first brought forward by Dr. Dwight, the writer will take the liberty of making a comparison with a paper of his own² covering much the same ground, and

¹ As illustrating the importance of having specimens taken just at the right time, which Dr. Dwight emphasizes, I may state that when preparing my paper (see below) I examined a series of 104 of these birds and found that while they moulted the tail and body feathers in spring the primaries were apparently retained. Specimen number 105, however, secured after my paper was published, showed the complete moult!

² The Molting of Birds with Special Reference to the Plumages of the Smaller Land Birds of Eastern North America. Proc. Acad. Nat. Sci. Phila., 1896 (Apr. 14), pp. 108-165.

which seems to be the only other general paper on the subject. It should be borne in mind that in this paper, owing to lack of space, no attempt was made to describe all the plumages of the species studied, a knowledge of the ordinary ones being taken for granted. Furthermore, the first and second winter and first and second nuptial plumages were not regarded as different plumages unless *easily distinguishable*. In fact, "plumage" indicated, as it frequently does, one of the several *recognizable* dresses that a bird assumes; while Dr. Dwight uses the term in a more exact sense to indicate *every* dress that the bird assumes through its life, and carries his descriptions of the several plumages on as long as any difference whatever can be detected.

Making allowance for this it is interesting, especially to 'aptosochromatomaniacs,' to learn that out of 112 species treated in both papers, studied independently and mainly from different material, we reached, in 71 cases, exactly the same conclusions as to moults and plumages. In 11 other species neither had sufficient material to reach definite conclusions, and in 30 cases Dr. Dwight has been able to prove that a partial spring moult occurred or did not occur when the insufficient material at my command led me to think otherwise. He has also shown that certain species moulted flight feathers when I had failed to detect it.

Dr. Dwight, in the course of his investigation, examined some 15,000 specimens while I examined probably 8000, and neither of us found the slightest indication of any change in plumage other than that produced by moult or wear.

Considering now the apparently new points brought forward by Dr. Dwight, which either correct or supplement statements of previous writers, we have first the addition of 11 birds to those which renew the flight feathers at the postjuvenile moult:—*Sturnus vulgaris*, *Passer domesticus*, *Melospiza fasciata*, *Ammodramus maritimus*, *Petrochelidon lunifrons*, *Clivicola riparia*, *Stelgidopteryx serripennis*, *Progne subis*, *Hirundo erythrogastra*, *Vireo noveboracensis*, and *Icteria virens*.

Some of the Swallows require confirmation in the shape of moulting specimens from the tropics, and the apparent prenuptial moult of *Hirundo erythrogastra* is also left for future confirmation. In this connection a specimen recorded by me should be mentioned, which appears to be an adult that has just assumed the winter plumage and which has short outer rectrices, demonstrating that a prenuptial moult of these feathers at least must take place.

With regard to the Song Sparrow Dr. Dwight shows that some individuals moult only part of the primaries at the postjuvenile moult and that the Indigo Bird occasionally does the same thing, thus accounting for some of the curious autumnal specimens of this species that have been taken. A number of birds are shown to have a prenuptial moult every year in which it was previously thought to be suppressed after the first season. In the case of the Pine Finch no mention is made of the prenuptial moult which undoubtedly takes place in the first year.¹

¹ See Auk, 1897, p. 320.

One of the most interesting points in the paper is the explanation of the brightening of the winter plumage of the Purple Finch, Crossbill, etc., in which the winter feathers are shown to have red barbs and gray barbules. The latter being very largely lost in spring leave only the red elements of the feathers and the whole plumage is thereby brightened. The author likewise claims that all Purple Finches assume the red plumage at the first postnuptial moult, and that none remain always in the brown state, as had been supposed by some. The former idea that some male White-throated Sparrows never attained the brightest coloration of the species is also disproven. On the contrary, there is a regular prenuptial moult, and all old males are dull in winter, the highly plumaged winter specimens being apparently precocious young which have anticipated the prenuptial moult at the postjuvenal.

Mottled breeding Crossbills are shown to be birds of the previous year that have undergone a postjuvenal moult of varying extent in different individuals, and all males at the first prenuptial moult become uniform red, which color is not again lost.

The abrasion of the tips of the feathers in the Snowflake Dr. Dwight regards as due to the more rapid chemical disintegration of the light areas and not to their more delicate nature and looser construction, as stated by Mr. Chapman and the writer.

The case of the Orchard Oriole, the long-standing puzzle in the study of moult, is still unsolved in all its details, but Dr. Dwight advances excellent arguments in support of his theory that the chestnut and black plumage is acquired at the first postnuptial moult, the green mottled birds being all in the first nuptial plumage, the difference being due to individual precocity. In fact Dr. Dwight thinks that every one of our Passerine birds can and in most cases probably does assume the adult plumage at the end of the first nuptial season.

The Flycatchers (except *Myiarchus* and *Sayornis*), like the Swallows, still await more specimens from the tropics before their moults can be understood, owing to the fact that they migrate before the change takes place.

The above are merely some of the most important discoveries made by Dr. Dwight, but his whole paper teems with exact information, original in many of its details, and it should be carefully studied by every one interested in the subject.

The time is about past when a collector was content to call breeding birds 'adults' and all others 'immature.' The fact already outlined is now clearly established that every species has a definite sequence of plumages, each corresponding to a certain period of its life, and through which each individual goes.

By the aid of Dr. Dwight's work it is now possible to tell the exact nature of the plumage of all our specimens, and systematic works of the future must needs adopt the nomenclature of plumages herein set forth if they would be up to date.

The few points left unsettled will, we trust, be cleared up in the near

future. Meantime all ornithologists owe Dr. Dwight a debt of gratitude for one of the most important contributions to recent ornithological literature.—W. S.

Grinnell's '*Birds of the Kotzebue Sound Region*.'¹—This is the first brochure of a new series of publications, the '*Pacific Coast Avifauna*,' by the Cooper Ornithological Club of California.

The region with which Mr. Grinnell deals "includes the district coastwise between Cape Prince of Wales and Hope Point, and thence eastward to the headwaters of the streams flowing into Kotzebue Sound," and consists of the "valleys of the Noatak, Kowak, Selawik and Buckland Rivers, as well as several smaller streams, all of which empty into Kotzebue Sound." Mr. Grinnell, in a schooner yacht, reached the vicinity of Cape Blossom July 9, 1898, with a company of prospectors "to explore the Kowak Valley for gold or any other valuable resource this little-known country might afford." They were provided with lumber and machinery for the construction of a stern-wheel steamer for use on the larger streams of the region. While the expedition proved unsuccessful in its search for gold, it afforded Mr. Grinnell excellent opportunity for ornithological work during the year or more spent in this interesting region, the results of which are here detailed.

After describing the character of the country visited, the author gives an extensively annotated list of the birds observed, numbering 113 species, which is followed by a bibliography of Kotzebue Sound ornithology, and a '*Checklist of the Birds of the Kotzebue Sound Region*,' numbering 150 species, based on the authorities cited in the bibliography, supplemented by his own observations. A map of the region shows the localities visited.

Mr. Grinnell's paper is thus a most valuable contribution to Alaskan ornithology. His notes on many of the birds met with are quite extended, sometimes occupying several pages, and greatly increase our knowledge of their breeding habits and seasons of arrival and departure, and there are also important technical notes. His accounts of the two species of Ptarmigan, the Willow Ptarmigan and the Rock Ptarmigan, are especially full and interesting, and include valuable notes on the moulting of these species, and the use of the black ocular stripe in the Rock Ptarmigan. He says: "The natives say this black is so the Rock Ptarmigan, which live on the mountains where the snow covers the ground till midsummer, will not be blinded by the intense glare. The natives themselves, in the spring before going out on a days hunt, thoroughly blacken the region around their eyes and across the nose, with soot, to prevent snow-blind-

¹ *Birds of the Kotzebue Sound Region, Alaska.* By Joseph Grinnell.—*Pacific Coast Avifauna* No. 1, Cooper Ornithological Club of California, Santa Clara, Cal., Nov. 14, 1900. Roy. 8vo, pp. 1-80, and map.

ness. This is certainly an interesting suggestion, for on May 28, at the snow line on the Jade Mountains, as before stated, the males were still in white plumage, except the useful transocular black."

In speaking of the Willow Ptarmigan, he says that late in the fall of 1898, before any snow had fallen, he found "these white birds very conspicuous wherever they were." They were also then very shy, but later, after the snow came, "would allow of a much closer approach, but were correspondingly difficult to discover." When the sky was overcast with a dense haze, he says, obscuring the direct rays of the sun, but with an intense even light, the Ptarmigan "were extremely hard to distinguish against the blank whiteness of the landscape. Only some movement of the black bill or eye could betray their presence, and often I have unknowingly approached the birds on the snow within a few yards. . . . But on a clear day, when the sun shines unobstructedly, even white objects are brought out in relief by their dark shadows. The Ptarmigan are then discernible for several hundred yards."

Speaking of the moult of this species he says: "The male Willow Ptarmigan thus undergoes at least three distinct moults during the year, though but one of these, that in the fall, is complete,"—a pleasing confirmation of Dr. Dwight's recent conclusion from a study of museum specimens (Auk, XVII, p. 163). Notwithstanding Mr. Grinnell's study of these birds in the field, from fresh specimens, throughout the year, it ought to be a suggestive fact to those who believe that Ptarmigan change color without moult that Mr. Grinnell makes no reference to such a change, but ascribes the seasonal changes of color to moult, and has the hardihood to point out just how they take place.

Mr. Grinnell considers the Alaskan Spruce Partridge as inseparable from the Labrador form (*Canachites canadensis labradorius* Bangs). The Alaskan form of the Northern Shrike is here separated as a new subspecies, under the name *Lanius borealis invictus*.

The Cooper Ornithological Club is to be congratulated upon having secured so interesting and valuable a paper as Mr. Grinnell's 'Birds of the Kotzebue Sound Region' as their opening article for their new 'Pacific Coast Avifauna' series.—J. A. A.

'Sharpe's' Hand List of the Genera and Species of Birds,' Vol. II.—In 'The Auk' for January, 1900 (pp. 79–81), we had the pleasure of calling attention to the first volume of this indispensable work. We then stated so fully the character of the work that we have now merely to chronicle the appearance of Volume II¹ and briefly state its scope. The first volume included the orders I–XXVII of Dr. Sharpe's classification, or all the members of the class, living and extinct, from the Saururæ to the end of the Strigiformes. The present volume records the Psittaci

¹ Volume II, London, 1900. 8vo, pp. i-xxv+1-312.

and what are known generally as 'Picarian' birds, or Sharpe's Orders XXVIII-XXXIII, the Woodpeckers standing at the end of the series as a 'suborder' Pici of his Piciformes. According to statistics given in the preface, Volume II includes 454 genera and 2861 species, making for the two volumes 1284 genera and 6487 species. Compared with Gray's 'Hand list' of 1871, we have an estimated increase of about 500 genera and 1500 species during the thirty years that have passed since the publication of Gray's work.

Dr. Sharpe calls attention to his having "reverted to the old-fashioned name of *Cypselus* for the Swifts, instead of *Apus* of Scopoli," affirming: "For my own part I gladly accept any excuse which restores such a well-known name as *Cypselus*." His excuse is that Scopoli used the name *Apos* for a group of Crustacea in the same work in which he employed *Apus* for the Swifts, *Apos* also having some 80 pages precedence. Although doubtless words of wholly different origin, their 'correct' latinization, it is claimed, would give the same form, *Apus*, for both. But the two names were not thus written originally, and were enough different in form to give no real inconvenience. It is here, as in so many other cases, only the 'emendation' rule that gives rise to trouble. But Dr. Sharpe would even go further, and, citing the case of *Pica* and *Picus*, says, "but I think that even in this case it may perhaps be better to suppress *Pica* as the generic name of the Magpies;" yet, in speaking of *Cypselus*, a few lines later, he says, "and I can only regret that equally good reasons cannot be found to replace some of the old-fashioned generic names which recent research proves to have been antedated." Although *Pica* comes into the category of "old-fashioned generic names," we fear its fate when our author reaches it in the 'Hand-list.'—J. A. A.

Dubois's 'Synopsis Avium.'—Since our notice of Part I of this useful work (Auk, XVII, p. 81), Parts II, III and IV¹ have appeared, carrying the work to p. 288 and pl. vi. Part II contains the Pici, Heterodactylæ, Amphibolæ, Anisodactylæ, and Macrochires; Part III, the Macrochires, Tracheophonæ, and Oligomyodæ; Part IV, the Tyrannidæ, Hirundinidæ, Ampelidæ, Paramythidæ, and part of the Muscicapidæ. The number of genera thus far treated is 747, and the number of species, 4014, with 909 additional subspecies. As shown by the names of the groups just cited, the nomenclature of the higher groups is very different from that employed in the British Museum 'Hand-List,' and the method of treatment is also quite different, Dubois's 'Synopsis' being closely modelled after Gray's 'Hand-list'; but it gives fuller references, and being well brought down to date, will prove a most helpful manual of reference for all workers in systematic ornithology. We are glad to see the work

¹ Fascicule II, 1900, pp. 81-160, pl. ii; Fascicule III, 1900, pp. 161-244, pll. iii and iv; Fascicule IV, 1900, pp. 225-288, pll. v and vi.

making such satisfactory progress, the author having thus far well kept his promise to bring out the work in quarterly parts till completed.—J. A. A.

Shelley's '*Birds of Africa*,'¹—This work on the Birds of Africa, by an author so well known as Captain Shelley, promises to be one of the most important of recent faunal publications on ornithology. The work has for its scope all of Africa south of 1° N. lat., and Madagascar. The first volume, published in 1896, consists of a list of the species and higher groups, and may be called, as the author says, a '*Nomenclator Avium Æthiopicarum*.' The number of species is 2534, and includes the generic synonymy and references to the authorities for the species names as adopted, to the British Museum '*Catalogue of Birds*,' and to works where the species have been figured. The list begins with the Passeres, or Passeriformes, and ends with the Struthioniformes.

Volume II was issued in two parts during the year 1900. In the preface to this volume the author states, after some remarks on the classification adopted, his method of treatment to be as follows: "With regard to the synonymy of the species: I begin with what I consider to be the most correct name: quote the '*Catalogue of the Birds of the British Museum*,' where full synonymy is given in detail, and add only such references which have not appeared in that great work. I follow on with a description of the plumage, taken, when possible, from the specimens in the British Museum, . . . and finish with all the details I can find regarding the distribution and habits of the species which I consider to be of interest. The colored plates are intended to illustrate, in the best possible style, . . . all the hitherto unfigured, or incorrectly figured, species" of the Æthiopian Region. The fourteen plates in volume I illustrate 29 species, and are of a high grade of excellence. The heavy paper and clear and pleasing typography of the text leave nothing to be desired in the way of book-making.

Volume II gives descriptions and biographies of 169 species, beginning with the genus *Pitta* and ending with *Anthus*, and includes keys for the higher groups as well as for the species. The biographical matter is naturally variable in amount, being quite extended in the case of well-known species, and necessarily meagre in others.

¹ The | *Birds of Africa*, | comprising all the species which occur | in the | Æthiopian Region. | By | G. E. Shelley, F. Z. S., F. R. G. S., &c. | (late Grenadier Guards), | Author of '*A Handbook to the Birds of Egypt*', '*Monograph of the Sun-birds*,' etc. | — | Vol. I. | List. | — | London: | Published for the Author by | R. H. Porter, 18 Princes Street, Cavendish Square, W.—4to, Vol. I, 1896, pp. i-viii + 1-196; Vol. II, Part 1, 1900, pp. 1-160, pll. i-vii; Part 2, 1900, pp. i-vii + 161-348, pll. viii-xiv. Price, Vol. I, 10s 6d net; each part of Vol. II, 21s net.

Just how many volumes this magnificent work is intended to make is not stated, but the remaining parts, we are told, will probably be issued in yearly volumes. We trust nothing will prevent its early completion as planned.—J. A. A.

'Audubon Bird Chart No. 2,' and 'Common Birds, Second Series.'—The prominence given by the press to the efforts of the Audubon Societies to discourage the use of birds for millinery purposes, has so largely confined the knowledge of the public to this side of their work, that we are glad to call attention to its educational influence, well illustrated by the publication under the auspices of the Massachusetts Audubon Society of its 'Audubon Bird Chart No. 2,' and the accompanying letterpress by Mr. Hoffmann, entitled 'Common Birds, Second Series.'¹ Like Bird Chart No. 1,² which was issued in 1898, it contains life size figures of twenty-six common birds, drawn in colors by Mr. Edward Knobe and reproduced by the Prang Educational Company. While somewhat stiff in outline, the birds, in the main, are posed in characteristic attitudes, and have been lithographed with such remarkable success that but few plates published in this country approach them in accuracy of coloring. The birds represented on the Chart are treated biographically by Mr. Ralph Hoffmann in an accompanying pamphlet of twenty pages. The two combined, therefore, furnish an effective means for becoming acquainted with the appearance and habits of twenty-six species of birds, and they may be heartily commended to students, and especially to teachers.—F. M. C.

Transportation and Sale of Game.—As the 'Lacey Act,' approved May 25, 1900, supplements the existing State laws for the protection of birds and game, "by prohibiting the shipment from one State to another of birds killed in violation of local laws, and by subjecting birds brought into a State to the same restrictions as those prescribed for birds produced within the State," it becomes important to know the provisions of all the local laws on the subject of game and bird protection, which vary not only in different States, but often in different parts of the same State. To render such knowledge generally accessible, a Report² on the subject has been issued by the U. S. Department of Agriculture, forming

¹ Audubon Bird Chart No. 2. Prang Educational Co., Boston and New York. Price, \$1.30.

Common Birds: Second Series. By Ralph Hoffmann. Massachusetts Audubon Society, Boston, 12mo, pp. 20.

² Bulletin No. 14, U. S. Department of Agriculture, Division of Biological Survey. Laws Regulating the Transportation and Sale of Game. By T. S. Palmer and H. W. Olds, Assistants, Biological Survey, Prepared under the directions of Dr. C. Hart Merriam, Chief of Biological Survey. Washington: Government Printing office. 1900.—8vo, pp. 89, pll. i-ix (= maps and dia-

'Bulletin No. 14' of the Biological Survey, entitled 'Laws Regulating the Transportation and Sale of Game.' It has been prepared by Dr. T. S. Palmer, in charge of the immediate supervision of matters relating to game under the Lacey Act, with the assistance of Mr. H. W. Olds. It forms a pamphlet of about ninety pages, with nine maps and diagrams, showing the open and close seasons for various kinds of game in the different States, etc. The pamphlet consists of (1) a general discussion of legislation regulating seasons, shipment, and sale (pp. 11-44), and (2) a digest of Federal and State laws regulating transportation and sale of game. Thus in a small and convenient compass may be found, clearly arranged, every kind of information desired respecting the protection afforded game animals, game birds, and non-game birds in any part of the United States. It represents a vast amount of labor, with results of the highest importance to all interested in any way in the protection, capture, sale, and transportation of game, and of millinery supplies derived from wild birds.—J. A. A.

Publications Received.—Barrington, Richard M. The Migration of Birds at Irish Light Stations. London: R. H. Porter, 8vo, 1900.

Bishop, Louis B. Birds of the Yukon Region with notes on other species. (N. Am. Fauna, No. 19, pp. 47-100, Oct. 6, 1900.)

Dubois, Alphonse. Synopsis Avium, fasc. iv, 1900.

Dwight, Jonathan, Jr. The Sequence of Plumages and Moults of the Passerine Birds of New York. (Annals N. York Acad. Sci., XIII, pp. 73-360, pl. i-vii, Oct. 31, 1900.)

Finsch, Otto. Meine Beobachtungen über Fregattvögel (*Fregata aquila* L. s. *ariel* Gould). (Orn. Monatschrift des Deut. Ver. zum Schutze der Vogelwelt, XXV, No. 11, pp. 446-452.)

Grinnell, Joseph. Birds of the Kotzebue Sound Region. (Pacific Coast Avifauna No. 1, Cooper Orn. Club.)

Hinde, Sydney L. On Further Collections of British East African Birds. With Notes by R. Bowdler Sharpe. (Ibis, July, 1900.) (2) On Birds observed near Machako's Station, in British East Africa. With Notes by R. Bowdler Sharpe. (Ibis, Oct. 1900.)

Howe, Reginald Heber, Jr. Notes on Rhode Island Ornithology, I. No. 4, Oct. 1900.

Jackson, F. J. List of Birds obtained in British East Africa. With Notes by R. Bowdler Sharpe. Part I. (Ibis, Oct. 1899.)

Leverkühn, P., und R. Blasius. Ornithologische Beobachtungen aus dem Herzogthum Braunschweig 1885-1894. (Ornis., VIII, Heft 4, pp. 373-476.)

Leverkühn, Paul. Eine Reise nach Finnland. (Allgemeinen Zeitung Nos. 154, 155, July, 1898.) Also ten other papers.

McGregor, Richard C. New Alaskan Birds. (The Condor, III, No. 1, advanced sheet, Nov. 25, 1900).

Pollard, Evelyn H. *The Birds of my Parish.* London: John Lane, crown 8vo, 1900.

Salvadori, T. *Viaggio del Dr. A. Borelli nel Matto Grosso e nel Paraguay.* (Boll. dei Mus. di Zool. ed Anat. Comp. dell. R. Univ. di Torino, XV, No. 378, Aug. 1900.)

Sharpe, R. Bowlder. (1) *Hand-List of the Genera and Species of Birds.* Vol. II, 1900. (2) *On a Collection of Birds made by A. M. Farquhar, R. N., in the New Hebrides.* (Ibis, April, 1900.) (3) *On a Collection of Birds obtained by Mr. H. S. H. Cavendish in Mozambique.* (Ibis, Jan. 1900.) (4) *Aves [of Christmas Island].* (From 'Christmas Island Monograph,' pp. 37-50, pll. iii-vi.)

Shelley, G. E. *The Birds of Africa, Vol. I, Part 2, 1900.*

Shufeldt, R. W. *Professor Collett on the Morphology of the Cranium and the Auricular Openings in the North-European Species of the Family Strigidae.* (Journ. of Morph., XVII, No. 1, 1900, pp. 119-176, pll. xv-xx.)

Tschusi zu Schmidhoffen, Vict. Ritter von. (1) *Bemerkungen über einige Vögel Madeira's.* (Orn. Jahrb., XI, Heft. 5-6, 1900.) (2) *Neuere Nachrichten über den Bartgeier (*Gypaëtus barbatus* (L.) in Tyrol.* (*Ibid.*) (3) *Sibirische Tannenheher auf der Wanderung.* (*Ibid.*) (4) *Ornithologische Notizen.* (*Ibid.*)

Actes de la Soc. Scient. du Chili, IX, livr. 4, 5, X, livr. 1, 2.

American Journ. Sci., Oct.-Dec., 1900.

Anales del Museo Nac. de Montevideo, III, fasc. 14, 1900.

Annals of Scottish Nat. Hist., No. 36, Oct., 1900.

Aquila, VII, 1900.

Bird-Lore, II, No. 6, Dec., 1900.

Birds and Nature, VIII, Nos. 3-5, Oct.-Dec., 1900.

Bulletin Brit. Orn. Club, No. LXXIV, Oct., 1900.

Condor, The, II, No. 6, 1900.

Forest and Stream, LV, Nos. 14-26, 1900.

Knowledge, XXIII, Nos. 180-181, 1900.

Naturalist, The, A Month. Journ. Nat. Hist. for North of England, Nos. 525-527, 1900.

Ornithologisches Jahrbuch, XI, No. 6, 1900.

Ornithologische Monatsberichte, VIII, Nos. 10-12, 1900.

Ornithologische Monatsschrift, Index der zweiten Zwölf Jahrgänge 1888-1899.

Ottawa Naturalist, XIV, No. 8, 1900.

Our Animal Friends, XXVIII, Nos. 2-4, 1900.

Proceedings Acad. Nat. Sci. Philadelphia, Pt. 2, 1900.

Proceedings Indiana Acad. Sci., 1898 and 1899.

Science, (2) XII, Nos. 301-310, 1900.

Zoölogist, The, (4), Nos. 45-47, 1900.

NOTES AND NEWS.

'THE AUK', beginning with the present number, will be issued by the Union, and not through a publisher, as heretofore. Mr. William Dutcher, Treasurer of the A. O. U., will act as its Business Manager. Hence all correspondence relating to subscriptions, changes of address, advertisements, and the sale of any of the publications of the Union, should be addressed to William Dutcher, 525 Manhattan Ave., New York, N. Y.

At the last meeting of the A. O. U., held in Cambridge, Mass., a Finance Committee was established to take charge, under instructions from the Council, of its business affairs, and especially to provide funds for carrying on its publications. This Committee consists of Mr. Ruthven Deane, Chairman, the Treasurer and Secretary of the Union, the Editor of 'The Auk,' and Mr. William Brewster.

Notice to Contributors.—Complaint has justly been made of the habitual late appearance of 'The Auk,' which has heretofore been issued from one to two or three weeks after the ostensible date of publication, —the first day of the month of date of the respective numbers. Great effort has been made to correct this evil, which is not by any means wholly due to the dilatoriness of either the editors or the printer, except that the former have been too lenient with tardy contributors. It has been customary to receive contributions up to as late as the tenth day of the month preceding the date of publication, and frequently long-promised articles —often also the longest in the number—have not reached the editors until the time had arrived when the whole number should have been in type and 'made up.'

This is to give notice that in future all 'copy' for general articles must reach the editors six weeks before the date of their desired appearance, and all contributions to the department of 'General Notes' and 'Recent Literature' must be in the editor's hands by the first of the month preceding the date of publication of the number for which such contributions are intended; otherwise they will be held over for the following issue. In other words, articles intended for the April number should be sent in not later than the middle of February, and minor contributions by the end of the month, and as much earlier, especially in the case of the former, as may be practicable.

IT HAS been decided to publish the lists of Officers and Members of the Union in the October number of 'The Auk' instead of in the January number, as heretofore. In this way it will be possible to give the status of the Union in respect to membership with greater exactness than can be done at the beginning of the year, before all the members-elect have had time to qualify.

A CONFERENCE of Audubon Society delegates, representing nine Societies, was held in Cambridge, Mass., on the afternoon of Nov. 15, 1900, in conjunction with the A. O. U. Congress, the whole day being devoted to the subject of Bird Protection. The morning session of the A. O. U. was wholly occupied with the annual report of the A. O. U. Committee for the Protection of Birds, a general report on the work of the Committee being made by its Chairman, Mr. Witmer Stone, followed by special reports by Mr. William Dutcher on the protection of Gulls and Terns through aid of the Thayer Fund, and by Dr. T. S. Palmer on the legal aspects of the subject, with special reference to the Lacey Act, its provisions and scope. The Stone and Dutcher reports are given in full in the present number of this journal. We regret that Dr. Palmer's very interesting and encouraging report of what has already been accomplished through the enforcement of the Lacey Act for the suppression of traffic in the skins and plumage of birds for millinery purposes cannot be given with equal fulness. At the conclusion of these reports the Union adjourned, to enable its members to attend the Conference of Audubon Societies.

The Conference was opened by an introductory address by Dr. C. S. Minot; Mr. Ralph Hoffmann spoke of the desirability of coöperation on the part of the several societies, and of federation to secure greater unity of action; Mrs. Mabel Osgood Wright, President of the Connecticut Society, gave an account of the method adopted by this Society to awaken interest in bird protection, namely, the preparation of a series of traveling lectures, accompanied by series of finely colored lantern slides, and a lantern; the cost of furnishing such means of instruction the Society had found to be a most satisfactory investment. In explanation of their character and purpose, Mrs. Wright read the lecture entitled 'The Birds About Home,' illustrated with seventy colored slides. Mr. Frank M. Chapman, in speaking on 'What Can we do for Our Members,' referred to the remarkable success that had attended the introduction of bird-study into the Chautauqua course, under the direction of Mrs. Florence Merriam Bailey, and urged that the Audubon Societies organize similar classes as a prominent feature of their work. Miss Justice of the Pennsylvania Society reported that this method had already been tried in that State with excellent results. Dr. T. S. Palmer of the District of Columbia Society gave an account of the methods employed by that Society to provide teachers trained for nature-study work. Finally a Committee was appointed to formulate plans for the federation of the Audubon Societies, and the Conference adjourned to meet in New York City in 1901, during the Congress of the A. O. U. to be held there in the second week of November.

The Conference brought out the evident fact that the lines of greatest usefulness for the Audubon Societies are not emotional or sentimental but educational and practical,—to make known the value of birds to man, and to perfect legal measures for their protection.

IF EVIDENCE were needed that 'Bird-Lore' successfully fills its double rôle of a magazine "devoted to bird study and bird protection," it is undoubtedly furnished in the greatly increased size of the magazine and its program for a course in bird-study outlined and initiated in the number for December, 1900. Its chief feature during the coming year will be a series of articles and 'lesson-outlines' on 'Birds and Seasons.' It is the editor's hope that this may be a "starting point in the development of an idea which includes a school of popular ornithology, with a summer encampment where both class-room and field instruction could be given by a corps of experienced teachers." If "To know birds is to love them," as one author has happily said, we cannot have a better safe-guard for our birds than the kind of bird-study here contemplated.

AT THE last Congress of the A. O. U. steps were taken to amend the By-Laws of the Union in reference to the classes of membership. When the Union was founded in 1883, the list of 43 Active Members then admitted, either as Founders or as original members, included all of the ornithologists in North America who had attained any degree of prominence, and the limitation of the Active list to 50 members did not then seem unwise. During the last fifteen years North American ornithology has advanced with unlooked for rapidity, so that the number of prominent workers in this field has now greatly increased. Hence each year the competition for the few vacancies in the Active list has necessarily resulted in the raising of the standard for admission, and finally to the recognition that the limit of 50, while ample fifteen years ago, is now too narrow. It has also become apparent that the large and constantly increasing body of Associate Members contains very diverse material, which should be reclassified. In view of these facts it has been deemed wise to segregate from this material a new class of members, enrolment in which shall be a recognition of noteworthy work in ornithology.

The amendments to the By-Laws, duly proposed and approved at the last meeting, but which will come up for final adoption or rejection at the next annual Congress, it is hoped will satisfactorily meet the new conditions. They are (1) the increase of the Active list from 50 to 75; (2) the constitution of a new class of members, also limited to 75, to be elected from the present class of Associates; (3) the change of names of the classes of members, as follows: (a) Active Members to Fellows, and Honorary and Corresponding Members to Honorary and Corresponding Fellows; (b) Associate Members to Associates; (c) giving to the new class the designation of Members. There is apparently little doubt of the ratification of the amendments at the next Congress.



FIG. 1. NEST OF LECONTE'S SPARROW, SHOWING LOCATION.



FIG. 2. NEST OF LECONTE'S SPARROW, SHOWING STRUCTURE.

THE AUK:

A QUARTERLY JOURNAL OF
ORNITHOLOGY.

VOL. XVIII.

APRIL, 1901.

No. 2.

NESTING HABITS OF LECONTE'S SPARROW.

BY P. B. PEABODY.

Plate III.

THIS weird, mouse-like creature I met in the Red River Valley of Kittson County, Minnesota, on May 27, 1896. Two specimens were taken in a timothy field redeemed from marshy meadow, and swarming at the time with Red-winged Blackbirds, Soras, Western Savanna Sparrows, Wilson's Phalaropes, and Bobolinks, along with the water fowl and other larger birds. I had previously met Leconte's Sparrow, several times, on the prairies of Eastern Kansas. It proved to be abundant during 1896 in the Red River Valley, the season being a wet one. It was especially common along the stretches of willow-dotted meadow prairie, this sort of habitat proving to be its favorite one. Not, however, until the summer of 1897 did I become really familiar with the ways of this most elusive bird. This proved to be the season of its apparent greatest abundance, of late, and most of my time afield was spent in the study of Leconte's Sparrow.

Subsequent seasons have shown that constant and very critical attention must be paid to the habits of this bird if one would become familiar with its summer life. One might, for example, search its familiar haunts day after day during the daytime, at the beginning of the period of its arrival in the North, without detecting the

slightest evidence of its presence. One must learn just what sort of 'cover' is favored by the bird or he will fail to flush it even with minutest search, as the bird, save during the early and the late hours of the day, even in the height of its courtship, is conspicuously silent. I may state, in illustration of this fact, that I have searched a whole day, on favorable ground, without meeting the bird; while at dusk after starting home, I counted fifteen distinct recurrences of its note along the wayside in going two miles through the meadows.

The date of its springtime arrival, as noted for the past four years, will show how elusive this sparrow is, these dates being April 28, May 12, April 25, and June 2. Probably about the 20th of April, in average seasons, will find *A. lecontei* at the International Boundary Line. By the 12th of May it has grown common, if it is to become common; and it practically leaves northern Minnesota by the 10th of October, though a few stragglers may be found somewhat later.

Most of its time is spent in the dense dead grass, though it feeds, in the morning and at sunset, where the living grass is scanty. At rare intervals during the day, in breeding time, the male may be seen peering above the grass-tops, as he clings to some slender willow stem, trilling his thin, wiry, yet intensely penetrating and not unmusical *r-r-t'-sz-z-z-t*; with which laconic, cicada-like note he also greets the rising sun and the closing day. I have detected but two other notes: the sharp and exceedingly shrill *tsip* which is ceaselessly iterated, at short intervals when an intruder is near the nest, and the love-note which the male bird trills as he balances himself on tremulous wings a dozen feet or so above the ground, impetuously reeling out a dry, creaky *éélree-éélree-éélree-éélree*. This note must be rarely indulged in, as I recall having heard it but twice.

Leconte's Sparrow nests where dead grass is thickest. All along the Red River are still wide stretches of prairie, the lowland sections of which abound in lower spots with luxuriant growths of heavier grass and vetch. It is in such places that Leconte's Sparrow breeds. This bird is exceedingly local. Every such bit of meadow as I have described will have its pair of birds; and an expert can repeatedly flush the male, and at times the female,

from this patch at almost any time of day. Few observers can be aware of how persistent is this sparrow in its well-known skulking habit. Repeatedly when driving through these meadow spots, in search for nests, I have caught a glimpse of a Leconte fairly under my buggy wheels; and on dismounting and making a careful search with my hands, have caught perhaps a second sight of the fearless bird only four or five feet away without flushing it. I have never found any indication that this incessant skulking has any exclusive connection with the nesting season. It is this habit which makes the bird so difficult to secure. If one should discover a Leconte's Sparrow perching, as above described, and see him instantly dive into the grass, one must run with all speed to the spot if he wishes to see the bird again. Its flight when flushed is, in the main, short, fitful, and undulating, having characteristics of its own, yet somewhat resembling the flight of the Short-billed Marsh Wren, of whose society Leconte's Sparrow seems to be fairly fond.

There seems a wide range as to the date when nest-building begins, as will appear from the following list of nests found.

1. June 5, three eggs, one of Cow-bird; incubation advanced.
2. May 30, five eggs; incubation none.
3. May 31, four eggs; incubation begun.
4. May 31, five eggs; incubation none.
5. June 3, three eggs, and one of Cowbird; incubation, trace.
6. June 3, five eggs; incubation, trace.
7. May 29-June 5, five eggs; incubation four days.
8. June 5, one egg, one of Cowbird; soon deserted.
9. June 5, five eggs; incubation nearly completed.
10. June 9, four young, just hatched; one egg hatching.
11. July 6, two dead eggs, one half-grown Cowbird.
12. June 5, nest recently deserted; shells of fresh eggs.
13. June 5, one egg, fresh; nest deserted.
14. June 5, a nest of the previous year, found while investigating a pair of birds that surely had a nest within a few feet. Female apparently sitting.

I should add, regarding nest 5, that the nest was left for photographing on June 23, and that when the nest was taken, July 9, it contained a Cowbird's egg. This, and a previous finding connected with a Towhee's nest, containing three eggs by the

same Cowbird, a fourth being subsequently added after all the eggs had been removed, reflects upon the intelligence of that arrant parasite, which is nowhere more numerous than in the Red River Valley. Three nests of the above, it will be noted, contained eggs of the Cowbird. From this it is fairly clear that the Cowbird must, in many cases at least, find nests for the deposition of her own eggs by persistent searching, backed by a highly developed instinct.

As regards both the nest and the eggs, there are marked points of difference between Leconte's Sparrow and any of its congeners. The normal nest is unique among the nests of Minnesota-breeding sparrows. It would seem to be built, in the main, as follows: where dead and fallen grass is thickest, the bird interweaves dead grasses among the standing stems, thus forming a rude nest. Within this is placed the nest proper; this is an exquisitely neat, well-rounded and deeply-cupped structure, composed uniformly of the very finest grasses. In all but two of the nests noted above, there was a more or less thick covering of fallen dead grass; all the nests except these two were in the lowland. The average nest is placed with the base about eight inches above the ground. One of the lowland nests noted barely touched the ground, however, while the two upland nests were half sunk into the earth, being thus, in situation and surroundings, somewhat like nests of the Western Savanna Sparrow, though somewhat smaller and relatively deeper.

The eggs are usually distinct from those of any other of our northern sparrows. While abnormal eggs are shaped and colored like certain blue-grounded and umber-clouded eggs of the Song Sparrow, the normal eggs of *A. lecontei* are much more rounded than any eggs allied to them, having, in the main, a ground color strikingly resembling that of a certain type of the eggs of the Yellow-headed Blackbird, being of a mottled bluish-gray tint with few distinct spots. They have, also, the same tendency to dark streaks and hair-lines about the apex that characterize the eggs of that species. There is a marked uniformity in the dimensions of eggs of the same set. In one set the dimensions are $.73 \times .53$; in another, $.69 \times .53$. Others are, $.77 \times .54$, and $.68 \times .55$. One set shows marked differences in size, namely $.65-.71 \times .52-.57$.

The average of 27 specimens is $.715 \times .542$. My tables show a marked uniformity in the shorter, and an equally marked divergence in the longer, diameters.

In coloration, the eggs of the same set show a marked uniformity. This is the more striking since the range of coloration is very great. Set 1 is most beautiful, its three eggs being so overclouded with a marbling of rich dark brown that the ground color is quite obscured; while set 2, taken the following year, has the ground-color of a clear, pale blue, with exquisite gray-brown stipplings and hair-lines about a very narrow area at the apex.

In brief, normal nests of Leconte's Sparrow are located in dense fallen grass, well concealed, with the bottom about eight inches above the ground; the deep-cupped and remarkably neat nest will generally have a few of the standing stems interwoven with the outer nest material; the eggs are well rounded, as a rule with clear markings, tending to cluster at the apex. Add to these facts the further one that, to one who is familiar with this bird in the hand, there should be no great difficulty in recognizing *A. lecontei* instantly as it is flushed, identification being not so difficult as we have been led to suppose.

To the fourteen nests here catalogued should be added, probably, a fifteenth. It was located, like the other upland nests noted, near the margin between the meadow and the upland. It was but scantily hidden, and its (small) eggs were, in shape and color, like blue-tinted eggs of the Song Sparrow. The parent was exceptionally wild. Failing to establish identity clearly by flushing, I set a trap which was sprung by the bird. My final attempt to shoot the parent resulted in her flushing at long range and escaping my shot, only to desert the nest. This nest, however, in structure and in size, is undoubtedly referable to this species, as the bird was too small for a Savanna Sparrow. This would give only one fifth of the nests found as upland nests; that sort of location proving thus to be exceptional.

The conditions of the finding of nest 1 were so novel, yet so characteristic, that one may be pardoned for adding the story here. While crossing, in my buggy, an area of about an acre of prairie that was densely carpeted with heavy grass, laid smoothly down by the snow of the previous winter, my sight was arrested by a

sparrow, flying heavily, with a sort of hovering manner, two hundred feet away. Moving slowly and deviously, as if in search, it soon alighted and ran tortuously on foot for a hundred feet and suddenly disappeared into the dead grass. Driving as close as I dared, to flush the bird, I suddenly caught sight of her sitting on the grass, just back of my rear buggy wheel, and only five feet from me. Thus she sat for fully five seconds. A mat of grass at least two inches thick lay over the nest. There was no visible opening. The wheel had passed within two inches of the eggs.

For the benefit of those who have never seen the young of this sparrow, just from the nest, it may be added, that they have a ground color appreciably paler than that of the parents and of an olive-yellow tinge; while the young-of-the-year, in October, are still paler with a most exquisite hoary bloom over the entire plumage. This bloom fades within a few hours after death.

As regards distribution and relative abundance, a few words may be added. Wherever I have traversed in the region of the Red River Valley, previous to the present season, any haunts favorable to Leconte's Sparrow, I have always found it more or less uniformly distributed. On the contrary, during the season of 1900, which was most exceptionally dry, no birds were seen or heard until June 2; ¹ and the only birds found during the entire summer were restricted to some six pairs, all found on an area covering hardly more than a square mile. And the dry weather had, apparently, affected not only the abundance of the bird, but its breeding conditions. Having come to regard this sparrow as an exclusively meadow-and-prairie bird, I was astonished, in October of 1900, to find it in a meadow, among the spruce swamps at Hibbing, a hundred miles northwest of Duluth. Two birds were flushed three times, and perhaps three birds were seen; all within a very narrow area. I am confident that these birds were only migrants. But little that is authentic and circumstantial has as yet been recorded concerning the summer life of Leconte's Sparrow. It now remains for field observers in Minnesota, the Dakotas, Manitoba and Assiniboia to define for us, accurately, the range of this bird's summer home.

¹ Baird's Sparrow, usually abundant in the Red River Valley, was this season entirely absent.

ON THE OCCURRENCE, IN MASSACHUSETTS, OF
CERTAIN RARE OR INTERESTING BIRDS.

BY WILLIAM BREWSTER.

EUROPEAN WIDGEON (*Marca penelope*). — Mr. James T. Clark, the well-known Boston taxidermist, has recently shown me a mounted specimen of this species which was shot in Monponsett Pond, near Halifax, Massachusetts, October 20, 1899, by a Mr. Shindler who keeps a small shooting shanty or house for the accommodation of sportsmen who visit the pond in pursuit of water fowl. The *M. penelope* came in to decoys in company with a small flock of American Widgeon of which several were killed at the same time and two, an adult male and female, sent to Mr. Clark for preservation with the European bird. The latter is a fine old male in remarkably handsome plumage. The creamy white of the forehead and crown is strongly tinged with chestnut; the sides of the head are rich chestnut finely spotted with green. Mr. Clark tells me that the bird was very fat and that its stomach contained a few freshwater shells and a quantity of seeds of aquatic grasses. It is, I believe, the first specimen that has ever been reported from any part of New England.

EUROPEAN TEAL (*Nettion crecca*). — On February 26, 1896, Mr. Clark brought to me in the flesh, in fresh condition, an adult male European Teal which he had received on the 24th from Rev. E. A. Phillips of Sagamore, Massachusetts. Mr. Phillips said that the bird had been caught, a few days previous to the date on which he sent it, in a steel trap and that, in company with two other Teal of similar appearance (but probably belonging to the American species), it had been seen repeatedly in the same place. This is, I believe, only the second known instance of the occurrence of the European Teal in New England, the first being that of the bird, also an adult male, taken by Mr. George H. Mackay at Muskeget, March 16, 1890 (see Auk, VII, 1890, p. 294). Both specimens are now in my collection.

AMERICAN WHITE-FRONTED GOOSE (*Anser albifrons gambeli*). — Mr. Clark has also obtained for me a male of this species in fully

mature plumage. He received it in the flesh November 26, 1897. It was taken a few days before this date at Plymouth, Massachusetts. Mr. Paul W. Gifford who shot the bird reported that it came in alone to his decoys and that it appeared to be very weak. Mr. Clark on skinning it found that it was so thin as to be almost emaciated. I saw it soon after it was mounted and Mr. Clark attempted to purchase it for me but Mr. Gifford would not then part with it. He placed it on a desk in his office in Boston where the rats got at it and ate off both its feet with most of the legs and a part of one wing. In this mutilated condition the bird has just come into my possession. Save for the injuries just mentioned it is a remarkably handsome specimen.

CLAPPER RAIL (*Rallus crepitans*).— I am still further indebted to Mr. Clark for a finely mounted specimen of the Clapper Rail which has an interesting history. It was taken November 30, 1895, at East Orleans, Massachusetts, by Mr. John Greenough Rodgers who started it on the edge of a marsh during a snow storm. It flew a short distance and plunged into a snow bank. Mr. Rodgers, seeing the hole by which it had entered, thrust in his hand and pulled it out. He sent it to a Mr. Seaver who kept it alive for a day or two. It ate at first but finally refused all food and died, when Mr. Seaver took it to Mr. Clark who found it much emaciated. It is a male, quite typical of the form *crepitans*, and in fresh and remarkably perfect autumn plumage.

AMERICAN OYSTER-CATCHER (*Hematopus palliatus*).— Mr. Charles A. Hardy of Auburndale, Massachusetts, has very generously contributed to my New England collection an adult male Oyster-catcher which, with a female, also said to be an adult and probably the mate of the first, he shot at Chatham, Massachusetts, August —, 1899. He writes me that "they came in beautifully to decoys and my whistle and were the only ones I have ever seen there," *i. e.*, at Chatham. Both specimens were skinned by Mr. M. Abbott Frazar; the female remains in Mr. Hardy's possession. I have an impression that a brief mention of the capture of these birds has already appeared in print, but my assistant, Mr. Walter Deane, has searched in vain for such a record.

AMERICAN BARN OWL (*Strix pratincola*).— Although Massachusetts records of this owl have multiplied of late, there is per-

haps still room for one of a bird which was taken at Worcester, Massachusetts, May 23, 1891, by a young son of Mr. Charles K. Reed, the well-known taxidermist. Mr. Reed mounted the bird and afterwards sold it to Mr. John E. Thayer in whose collection, at Lancaster, Massachusetts, it has been for some time. A few months since, Mr. Thayer, learning that I was anxious to obtain a New England example of the Barn Owl, most generously sent me this Worcester bird with his compliments. The specimen, a male, is well mounted and in fine condition in every way.

THE CERULEAN WARBLER (*DENDROICA CÆRULEA*) AS A SUMMER RESIDENT IN
BALTIMORE COUNTY, MARYLAND.

BY FRANK COATES KIRKWOOD.

As a live bird the Cerulean Warbler was unknown to me until June 11, 1899. That year they were noted until August 15, and a nest supposed to be of this species was found. In 1900 it was carefully watched for and recorded from April 29 to August 19, and a nest with four eggs was collected on June 10.

Ravenshurst farm, where I have spent nearly every Sunday and occasionally other days for the last twelve years, is situated at the head of Dulany's Valley in Baltimore County and is thirteen miles N. N. E. from the centre of Baltimore City. The house stands at an elevation of 480 feet above tide-water and a sharp declivity in front of it gives an uninterrupted view of the entire length of the valley (lowest point 170 feet above tide), with Towson, seven miles from Baltimore City, on the horizon at the other end, on an elevation of about 500 feet. Near Towson, at a similar elevation, is the point, where Mr. J. Hall Pleasants on July 14, 1893, collected the adult and immature male birds recorded in 'The Auk' (Vol. X, 1893, p. 372). This remained as our only Maryland Record until the present.

My experience during the last two summers leads me to suppose that the species has a decided preference for high open

woods clear of underbrush, and if this is so it would account for the scarceness of the species. Between our orchard and the pike, extending a considerable distance, is a strip of original growth timber, about 150 feet wide, from which the underbrush has been cleared, while across the pike is a large tract of woods. On the other side of the orchard, about one eighth of a mile distant from the strip mentioned, is another piece of woods from which the hogs have cleared the underbrush. This also has considerable woods in its original state, on one side. It is in these two pieces of woods that the birds have summered. The trees are principally chestnuts, with oaks, hickorys, tulip trees, etc.

The following items are taken verbatim from my pocket notebook and were made with the aid of a strong field-glass. Had the birds been round previously I assuredly would have known it, but my first note is as follows:

June 4, 1899. In gate woods, hear a strange warbler song but fail to see bird.

June 11. In company with Mr. F. A. Saunders, who is visiting me, the strange song of the 4th is identified as that of the Cerulean. We heard it in the woods west of the pike and in response to our 'squeaking' the bird came within twenty-five feet of us, perching on a bare branch. We then kept quiet and it leisurely hunted the lower branches of the tree for about ten minutes, occasionally singing. Subsequently we heard the song of this species in three or four different parts of the woods, but whether the same individual or not we could not say.

June 18. One singing in gate woods. It seemed to prefer the bare or dead twigs of the lower branches of the trees some twenty-five to forty feet up. During the forenoon it sang incessantly with its feathers fluffed out. From 4.20 P. M. to dusk heard it off and on. Once while it was singing some short distance off I was watching another sitting silent on a dead twig with its feathers fluffed out.

During the forenoon in the gate woods a female Redstart was observed pulling material out of a nest saddled on a chestnut branch. Investigation showed a warbler's nest of some kind ready for eggs, but it was not a Redstart's, and no other bird was

seen near it though it was watched for a long time. It was placed on lowest branch but one, five feet out from tree and thirty-five feet, eight inches up from ground. It was completely gone on 25th.

June 25. See one singing in different trees in gate woods. Once it dressed its feathers, sitting on a dead twig and singing all the time, otherwise it was hunting slowly like a Worm-eating Warbler. It would sing for about twenty minutes and then fly off; and we could not locate it until it started to sing again. On one occasion while watching it singing, heard another about one hundred yards off.

July 2. Singing as I enter gate woods; it stopped at 10.18 A. M., flew to another tree, sang a few times and stopped. Commenced again at 11.04 and sang eight minutes, when it came down from branches to a nearly rotten stump not two feet high and hunted round it for several minutes, then flying off. Sings again from 11.31 for ten minutes (12.15 to 12.45 in house for dinner). Do not hear it again until 5.45 P. M., it then sings right along to 6.15, when I go to supper.

July 3. At 9.15 A. M. sings several times; 9.25, sings four or five times, 9.31 started and sings nineteen minutes. It then flies from top of one high chestnut to another and chased a Goldfinch out of sight. A few minutes later it was singing again and kept on incessantly, first in one tree then in another until I get a stiff neck and leave at 11 A. M.

July 4. Sang from 9.21 A. M. for eighteen minutes, and from 9.59 for seven minutes. Do not hear it again until 7.27 P. M., when it sang for twelve minutes; later it sang off and on until 7.32, when I heard last song for the day.

July 9. See one, with only slight indications of a collar on either side. Singing off and on all day in gate woods.

July 16. 9.46 A. M., sang for about twenty minutes; rather more sluggish than usual.

July 27. Singing in pig woods.

July 30. One sings eight to ten times in woods west of pike near point where it was first seen on June 11.

Aug. 10. One singing in pig woods.

Aug. 13. One singing in pig woods.

Aug. 15. One singing in gate woods.

Apr. 29, 1900. One singing on bare branch of apple tree; finally flies into pig woods.

May 6. Watch one singing in pig woods and hear another at same time; later hear one in gate woods where it is also singing in afternoon.

May 7. One singing at house this morning.

May 13. Two singing at once in pig woods. See pair, male and female, in gate woods.

May 20. Forenoon singing in pig woods; afternoon singing in gate woods.

May 27. While watching male singing as it flies after female in pig woods, hear another singing in the distance.

June 3. Forenoon singing in pig woods; about noon singing in gate woods; afternoon don't hear it at all.

June 4. One singing in pig woods.

June 10. Hear one singing in gate woods and in a minute or two see it chasing a female Redstart round top of a low oak, jerking out its song all the time. Happening to look directly overhead, see nest on lowest branch of a tulip tree, and going to one side see female on nest; 3 P. M., one singing in gate woods; a little later one singing in pig woods.

June 17. One singing in pig woods.

June 18. One singing in pig woods.

June 20. Two singing at once, nearly all day, in pig woods.

July 15. Watch one singing in pig woods and hear another at same time.

Aug. 19. See two or three and hear two or three others singing immature or imperfect (?) songs in pig woods.

I have given the above memoranda verbatim as made at the time and it will be noted that only twice was the species found in the dense woods. This does not prove that they may not have been there often enough, only that I did not observe them there, while I was almost certain to find them in either one or other of the two open pieces.

In habits this bird considerably resembles the Worm-eating Warbler, being rather slow and sedate in its movements. It will also sit for long periods motionless and silent, on a dead twig

under the branches proper of the high trees. Here it also to a considerable extent does its hunting. Its song is so distinctive that after being once recognized it can never be confused with that of any other bird. Although recognizing the impossibility of portraying bird songs, I venture on the following which, however, is

— ^ ^ ^ — ^ ^ ^ — — —
we ch ch ch ch we je je je

not very satisfactory. It also gives its song in a low tone as if it whispered it, and unless the bird is carefully watched the observer might be led to believe that he heard a second bird singing in the distance. I have watched a bird sing thus between each regular song, at other times it would not give it at all, or only occasionally, while on two or three occasions I heard it given for quite a while to the exclusion of the regular song, and quite often have heard it given two or three or even more times in succession between regular songs.

The nest found on June 18, 1899, could not at that time be definitely stated to be a Cerulean's, as only the Redstart that demolished it was seen at it. It was, however, an exact counterpart of the nest collected on June 10, 1900. This latter nest contained four eggs, very slightly incubated. Their ground color is a pale grayish with a slight bluish cast, marked with pale reddish specks and spots, nearly all being on the larger end. One egg, however, has also some fairly large blotches of a much lighter reddish round the girth. Underlying this on the larger ends of all are lilac spots of different shades.

The nest is made of brown bark fibre, with some fine grass stems among it, and is finished inside with a few black horse-hairs. Outside it is finished with gray shreds of bark, spider web, and a few small fragments of newspaper that had been water-soaked. It measured, inside $1\frac{3}{4}$ inches across by 1 inch deep; outside $2\frac{1}{2}$ inches across. As the branch sloped, one part of the rim is within $\frac{3}{4}$ of an inch of it, while the opposite part is $1\frac{3}{4}$ inches above it, the material comes down on one side of branch to $2\frac{1}{4}$ inches below the rim. On this side a tiny twig arches out from branch and extending to the rim is imbedded in the nest, and the leaves which grew from its top shaded the nest. On the other side the material merely came down to the branch, which meas-

ured one inch in diameter at this point. Just clear of the nest on the lower side a twig one half an inch in diameter slopes away from the nest but does not support it in any way. The end of the branch was broken off, as often occurs with the tulip tree, and the nest was placed near this end, 15 feet out from the tree and 48 feet 6 inches up from ground. There was but one branch growing lower on this tree and it was on the other side, so that there was a clear space between the nest and the ground. The nest would answer in every particular for the original of the one described on page 360 of the October, 1900, number of 'The Auk,' collected in western Ontario by Mr. W. E. Saunders, whose brother was with me when I first identified this species.

TWO RACES OF THE VARIED THRUSH.

BY JOSEPH GRINNELL.

Hesperocichla nœvia nœvia (Gmelin) Ridgway.

Turdus nœvius GMELIN, Systema Naturæ, Tom. I, 1788, p. 817.

Hesperocichla nœvia RIDGWAY, Proc. U. S. Nat. Mus., Vol. III, 1880, p. 166.

Type, ♀ ad., No. 1222, coll. J. G., Sitka, Alaska, July 2, 1896; collected by J. Grinnell.

Description — Back, scapulars and rump bistre; upper tail-coverts brightening into vandyke brown; upper surface of tail dark Prout's brown; top of head and cervix dark mummy brown abruptly outlined posteriorly against the color of back. Dark parts of outer surface of closed wing seal brown; tips of greater and middle wing-coverts, and spot composed of outer webs of primaries near their base, tawny ochraceous; edging of outer webs of terminal third of primaries and secondaries hazel. Foreneck tawny, brightest laterally on malar region; lores and auriculars same as top of head, perhaps slightly grayish; feathers of auriculars with narrow ochraceous shaft-streaks; longitudinal stripe from above eye along upper margin of auriculars, and spot on lower eyelid ochraceous; complete pectoral band raw umber; remainder of under parts posterior from pectoral band tawny ochraceous; feathers of sides with crescent-shaped tips of light sepia; flanks nearly uniform light sepia with a perceptible raw umber tinge; middle of belly white with a faint buffy

tinge; feathers of lower tail-coverts basally sepia, laterally tawny and terminally buff. Tips of under wing-coverts and bar on inside of closed wing pale buff. Lower surface of wings and tail light sepia. Small wedge at tip of inner web of one outer tail-feather pale buff.

Measurements of Type.—Wing, 4.75; tail, 3.60; tarsus, 1.25; middle toe with claw, 1.17; culmen, .78; bill from nostril, .60. Primary formula, 4-3-5-2-6-7-8-9-10-1.

Range.—Northwest coast region; in summer, the Sitkan District; south in winter along the coast as far as central California (Santa Cruz Mountains).

***Hesperocichla nævia meruloides* (revived name), new subspecies.**

Orpheus meruloides SWAINSON, Fauna Boreali-Americana, 1831, Birds, p. 187.

Type.—♀ ad., No. 3986, coll. J. G., Kowak River, Alaska, May 22, 1899; collected by J. Grinnell.

Description.—Back and scapulars drab gray washed with sepia; rump clear mouse gray; upper tail-coverts and upper surface of tail hair brown; top of head and cervix bistre, shading posteriorly into color of back. Dark parts of outer surface of closed wing varying from clove brown to sepia; light tips of middle and greater wing-coverts and edgings of primaries buff. Foreneck ochraceous; lores and auriculars hair brown; post-ocular stripe and small spot on lower eyelid cream buff; complete pectoral band hair brown washed with isabella color; under parts immediately posterior to pectoral band rather pale tawny ochraceous, fading behind into the pure white of the lower abdominal region; feathers of sides tipped with hair brown crescents which condense on flanks into a patch of the same; lower tail-coverts basally olive, laterally ochraceous and terminally white. Tips of under wing-coverts and bar on inside of closed wing white. Lower surface of wings and tail dark drab gray. White wedges at ends of inner webs of three outer tail-feathers; wedge of outermost tail-feather one half inch in length; those on the other two successively smaller.

Measurements of Type.—Wing, 5.10; tail, 3.80; tarsus, 1.30; middle toe with claw, 1.22; culmen, .82; bill from nostril, .63. Primary formula, 3-4-5-2-6-7-8-9-10-1.

Range.—In summer the interior of northern Alaska (eastward to the Mackenzie River?); wintering abundantly in southern California.

As is evident on comparing the above descriptions, well-marked differences exist in the case of the female between the Varied Thrush breeding in the humid Sitkan District and that of the

dryer interior region of northern Alaska. The Sitkan race is characterized by a predominance of deep browns, restriction of white or light markings, and by a shorter and more rounded wing. The northern and interior race has a much grayer and paler coloration, greater extension of white markings, and a longer and more pointed wing. Unfortunately I have no male birds from Sitka, except juveniles; but three spring males from the Kowak Valley, when compared with late winter males from northern California taken along with females referable to *nevvia*, are of a lighter slate color dorsally and slightly paler tawny beneath. The females of this species appear to be much more subject to protective coloration, so-called, than the males, and it is therefore reasonable to expect climatic variations to be more pronounced in the females than in the males, especially when the climate of the *summer* habitat is of an extreme nature. In the winter home of the Varied Thrushes there is also a different distribution of the two races, but their latitudinal relation is reversed. Thirty-five skins from Los Angeles County, California, are all but one referable strictly to *meruloides*, while the majority of the winter skins from the coast region of central and northern California are near *nevvia*. So that *meruloides*, although its summer habitat is northernmost, goes farthest south in winter, and its migration route is much the longest. *Nevvia* apparently has a much shorter migration route, probably at most between the latitudes of Sitka and Monterey. The wing-contour seems to offer a criterion by which to judge the length of the annual migration of a bird. By the study of further material I hope to arrive at some more definite conclusions in this regard.

Now, as to the correct nomenclature of the two forms here described, I have had some trouble. *Turdus nevius* of Gmelin is briefly described from specimens taken at Nootka Sound, Vancouver Island. As this is rather within the Sitkan District, I have applied Gmelin's name to the race breeding in that region. I have not seen the description of Pallas's *Turdus aureoreus* from Kadiak Island. But the birds from there are probably nearer the Sitkan race, unless they occur only as migrants from further north. For the present, *Turdus aureoreus* may be left as a synonym of *nevvia*. *Orpheus meruloides* of Swainson was described from a

single male specimen taken at Fort Franklin, $65\frac{1}{4}^{\circ}$ N. Lat. I have seen no skins from the Mackenzie River region, but judging from the similarity in climatic and floral conditions, I feel fairly certain that the Varied Thrushes of the Kowak Valley and Mackenzie Valley must be similar. An examination of parallel races of other species points toward the same conclusion. I have therefore revived the name *meruloides* for this northern form, in preference to proposing a new name.

ON A COLLECTION OF BIRDS MADE BY MR. T. R.
THOMPSON AT THE CAY LOBOS
LIGHTHOUSE, BAHAMAS.

BY J. LEWIS BONHOTE, B. A., F. Z. S. L.,

Member of the British Ornithologist's Union.

SOME two years ago when staying at Nassau, Bahamas, I was struck by the ease with which birds could be observed on their migrations at certain times of the year. It therefore occurred to me that it might be of interest if records could be obtained from the various lighthouses round the group of the many species annually passing there on migration. I wrote to Mr. Chapman of the Natural History Museum in New York and through him obtained from Dr. A. K. Fisher of the U. S. Biological Survey at Washington a number of schedules similar to those which were being circulated throughout the Lighthouses of North America. These together with various instructions were sent round to all the lighthouses of the Bahama group, but, I regret to say, have not brought forth much result. Several keepers have written promising their assistance but although they are kept supplied with schedules only one collection has as yet come to hand, the results of which I append below; before doing so, however, I would convey my thanks to Mr. Chapman and Dr. Fisher for kindly procuring me the schedules, and to Mr. Theo. R. Thomp-

son for all the trouble he has taken in collecting and forwarding such interesting observations.

Cay Lobos, the island from which these specimens have been received, is a small cay, situated in $22^{\circ} 27' N.$ lat. and $77^{\circ} 35' E.$ long., about 40 miles north of the coast of Cuba. The schedules have been very carefully filled up by Mr. Theo. Thompson, the light-keeper, who has taken great pains to give as much information as possible, which may prove of great interest if further material is received from other localities. The observations include some 24 species, most of which I have identified from wings, etc., which were collected; of those species marked with an asterisk, however, I have not seen specimens, but have added in parentheses the local name from which I felt justified in identifying them; this still leaves a few records unidentified, which I will mention here, as the local names may possibly be known to some of your members.

"On the 26th November a Woodpecker killed itself against the light. On the 25th February, and again on the 3d May a Bittern was observed on the Cay; between the 26th March and 5th April the following birds were seen, *viz.*: — Snipe, Pigeon, Kingfisher, Chipchip."

Redshanks also arrived to the number of about 900 on the 28th March, and Mr. Thompson adds a note to the effect that "these birds sleep on the Cay every night, and a few breed there." It is in fact the only bird recorded as nesting on the island.

Mniotilta varia.

No. 5, 25th March, 1900, midnight.

Nos. 11 and 12, 2nd and 3rd May, 9 P. M. to 4 P. M.

Parula americana.

No. 4, ♂ and ♀, 1st March.

No. 5, ♂, 25th March.

No. 11, ♂ and ♀, 1st and 2nd May.

Helminthotherus vermivorus.

No. 6, 5th April.

Dendræca cærulescens.

- No. 9, ♀, 26th April, 2 A. M.
No. 10, ♂, 1st May, 2 A. M.
No. 11, ♂ ♀, 2nd May, 9 P. M. to 4 A. M.
No. 12, ♂ ♀, 3rd May, 9 P. M. to 4 A. M.

Dendræca coronata.

- No. 3, 24th November.
No. 4, 1st March, 2 A. M.

Dendræca striata.

- No. 8, ♂ ♀, 25th April, 2 A. M.
No. 10, ♂ ♀, 1st May, 2 A. M.
No. 11, ♂ ♀, 2nd May, 2 A. M.
No. 12, ♂, 3rd May, 9 P. M. to 4 A. M.
No. 14, ♀, 17th May, 8 P. M.

Dendræca tigrina.

- No. 11, 2nd May, 9 P. M.

Dendræca discolor.

- No. 5, ♂, 25th March.
No. 12, 3rd May.

Seiurus aureocapillus.

- No. 11, 2nd May.
No. 14, 17th May.

Seiurus noveboracensis.

- No. 11, 2nd May.
No. 14, 17th May.

Geothlypis trichas.

- No. 10, ♂, 26th April.
No. 11, ♂, 2nd May.
No. 12, ♂ ♀, 3rd May.

Setophaga ruticilla.

No. 11, ♂, 2nd May.

No. 12, ♀, 3rd May.

No. 14, ♀, 17th May.

* **Certhiola**, sp. ? (Banana bird.)

11th May, 2 A. M.

Vireo calidris.

No. 5, 25th March.

Vireo olivaceus.

No. 11, 2nd May.

Ammodramus savannarum.

No. 11, 2nd May.

Dolichonyx oryzivorus.

No. 11, ♂ ♀, in ad. plumage, 2nd May.

No. 13, ♂ ♀, in ad. plumage, 11th May, midnight.

Tyrannus griseus.

No. 11, 11th May.

Coccyzus minor.

No. 3, ♂, 24th Nov., 1899, 2 A. M.

* **Crotophaga ani**. (Rain Crow.)

A few observed on the Cay on 29th April and again on the 4th May.

Plegadis falcinellus.

No. 5, immature, 22nd February; shot in the daytime. This is the first recorded instance of this bird within the Bahama group.

* ***Sula fiber.*** (Booby.)

On 14th March 5 birds passed over the station at 5.40 P.M. from the west and did not stop.

* ***Graculus dilophus.*** (Cormorant.)

On the 1st May, and again on the 18th, a pair of Cormorants, presumably of this species, visited the Cay for 2 or 3 days.

* ***Tachypetes aquilus.*** (Man-of-War.)

24th Nov., 1899.

* ***Phaëthon flavirostris.*** (Egg Bird.)

1st March.

Extracts from Schedules.

<i>Date.</i>	<i>Name of Bird.</i>	<i>Weather.</i>	<i>Wind.</i>	<i>Side of Light struck.</i>
Nov. 24, 1899	<i>T. aquilus</i> . . .	Squally	S.W. 3	N.
" 25, "	<i>D. coronata</i> . . .	Fog & Rain	S.W. 3	N.W.
March 1, 1900	<i>D. coronata</i> . . .	Foggy	N.	W.
" 25, "	<i>M. varia</i> , <i>P. americana</i> , <i>D. discolor</i> , <i>V. calidris</i>	"	S.E. 1	S.W.
April 25, "	<i>D. striata</i> . . .	Misty	Calm	N.W.
" 26, "	<i>D. cærulescens</i> . . .	"	S.E. 1	S.W.
May 1, "	<i>D. cærulescens</i> , <i>D. striata</i> , <i>G. trichas</i> . . .	Clear	S.E. 2	S.W.
" 2, "	<i>M. varia</i> , <i>P. americana</i> , <i>D. cærulescens</i> , <i>D. striata</i> , <i>D. tigrina</i> , <i>S. aureocapillus</i> , <i>S. noveboracensis</i> , <i>G. trichas</i> , <i>S. ruticilla</i> , <i>V. olivaceus</i> , <i>A. savannarum</i> , <i>D. oryzivorus</i> , <i>T. griseus</i> . . .	Very Cloudy	S.E. 1	
" 3, "	<i>M. varia</i> , <i>D. cærulescens</i> , <i>D. striata</i> , <i>D. discolor</i> , <i>G. trichas</i> , <i>S. ruticilla</i>	Raining	S.W. 4 N.E. 4	N.W. S.
" 11, "	<i>D. oryzivorus</i> . . .	"		
" 17, "	<i>D. striata</i> , <i>S. aureocapillus</i> , <i>S. noveboracensis</i> , <i>S. ruticilla</i> .	"	S. 1	N.W.

A VISIT TO AUDUBON'S BIRTHPLACE.

BY O. WIDMANN.

ON THE afternoon of February 26, 1897, I left New Orleans on the East Louisiana R. R. bound for Mandeville, St. Tammany Co., La.

In a straight line Mandeville is only twenty-five miles due north of New Orleans, on the opposite side of Lake Pontchartrain, but by rail the distance is nearly twice as great. The road follows the lake shore through salt water marshes to a point where the lake is only five miles wide, which it crosses on a trestle to the north shore. From there it goes through pine flats north to Pearl River and thence west to the little town of Mandeville, a fashionable bathing place and a frequented summer resort for the inhabitants of the Crescent City. In summer a steamboat line connects the two places, with Milneburg, a suburb of New Orleans, as the starting point.

On the day I left New Orleans the gardens were full of flowers, and in the outskirts a variety of wild flowers were in bloom. Willows and cypresses were covered with young green, and sycamores, sweet gum and others were opening their leaf-buds. On the Mississippi River hundreds of Gulls, Herring and Ring-billed, mostly the latter, were flying up and down and among the numerous ships in the harbor. In the region of the stockyards and abattoirs groups of Black and Turkey Vultures were alighting at the water's edge or soaring in the air above. Looking over the vast cane fields on the other side of the river a faint cloud of White-bellied Swallows could be seen melting into the gray of the horizon.

In the outskirts, a troop of about a hundred Cowbirds was attending a herd of cattle, resting under a huge oak tree, and on the close-cut sward of a meadow an equally large number of Pipits were busily engaged in gathering the necessary means of sustenance for their slender little bodies. Audubon and others were right in surnaming him *ludovicianus*; he is one of the most conspicuous winter birds of Louisiana.

In the marsh a number of Hawks were seen from the car win-

dow. An old Bald Eagle was sitting fearlessly in a tree not far from the train; several Marsh and Sparrow Hawks, and a Rough-legged Hawk, chasing a Marsh Hawk. On the lake only a few Cormorants and Gulls were seen, and long before the train had reached its destination night's lowering shroud excluded farther observation.

The bathing season opens only on the first of May, and at the time of my visit Mandeville presented a picture of grateful tranquillity. The long row of villas fronting the lake looked as if entirely deserted by man. The lawns, the shrubs and trees were occupied by a set of tenants, who take them only for the winter and pay no rent. Yellow-rumped Warblers, White-throated and Chipping Sparrows were the most conspicuous of these winter sojourners but a closer inspection revealed the presence of a score of temporary frequenters of these quiet retreats. The streets, where the stores and dwellings of the stationary population are, are wide and lawn-like; roaming domestic animals keep down all superfluous vegetation with the exception of a few palmettoes, young pines and an occasional blackberry bush. We walk on a green, soft carpet of grass, beset with innumerable bluets (*Houstonia cærulea*). Cardinals, Mockingbirds, Carolina and Bewick's Wrens are in the gardens and on the bird-house sits the Martin with his dear old warble of joy. The owner of the place tells me that the first came February 14, which is not early for southern Louisiana, as in other years they have been known to return from one to two weeks earlier.

Artesian wells furnish the town with an abundance of good water, which runs in rivulets through the streets toward the lake.

On a vacant lot, well within town, a troop of 35 to 40 Meadow-larks is sporting fearlessly and in good cheer; some are singing, others feeding, all seem quite at home in this little town and well pleased with their Louisianian winter quarters. From the thickety border of a slough or bayou, which runs through town, comes the song of the Maryland Yellow-throat and the feline alarm of the Catbird. A Thrasher lights on a garden fence and four female Towhees are hopping in the street, while from the brush comes the warning note of the male.

On a stately water oak, which is now putting forth its catkins

a flock of Bronzed Grackles alights. They sit still for a minute, scanning the surroundings, and then come down into the fenced garden lot to feed. They are mostly males, winter visitants from the North. They go in flocks from place to place and to the common roost at night. The single Grackles which we meet in town are not the Bronzed, but of a different kind with many-colored blotches on their back and a slight difference in the voice. In the early morning, before the hordes of Bronzed Grackles have reached the town from their roosting quarters in the distant marsh, the resident Purple Grackle, which spends the night in trees in town, is in undisputed possession of its breakfast table in the streets.

March 1 found me on the road leading from Mandeville to Fontainebleau, the plantation where Audubon was born May 4, 1780, while his parents were the guests of Marquis de Mandeville Marigny, who lived here in great style, the owner of 500 slaves, mainly employed in the cultivation of sugar cane.

It is only two miles over a good road and the early morning is nice and cool and pleasant for a walk. The Martin is the first to greet us as we leave the hotel at 6 A. M., but there is bird-life everywhere. From the neighboring yards comes the song of the Carolina and Bewick's Wren. In the magnolias which shade the garden are Ruby-crowned Kinglets with their betraying *terek*, and White-throated Sparrows are hopping over the flower beds as thickly as English Sparrows in big cities. The long double row of live and water oaks, which shade the drive along the lake, is alive with Yellow-rumps; and Sapsuckers (*Sphyrapicus varius*) hide behind their trunks.

It is 6.20 now, and several flocks of Bronzed Grackles are passing over, coming from the marsh in the east and going for the cultivated and wooded region in the west.

From the railing of one of the numerous wooden bridges, which lead out to the bath-houses, 200 yards from shore, a Kingfisher drops upon his finny prey, and a little farther out over a hundred Coots and Grebes are gamboling in the shallow water of the lake.

The song of a Chippy comes from a large yard and a big flock flies up into a tree; they like the company of their own species, always go in flocks and do not mix much with other sparrows.

At the eastern edge of town a bayou joins its murky waters with the lake, and vegetation is luxuriant in its realm. Hoary water tupelos (*Nyssa uniflora*) and long-whiskered cypresses (*Taxodium distichum*) skirt its banks, and cat-tails, pitcher plants and mud-plantains fill its bed. The Winter Wren has here his home, and Swamp Sparrows keep him company. The Phœbe pays them frequent visits. Black and Turkey Vultures are not among the early risers; several of them are still roosting lazily in the tupelos, not more than twenty feet above the ground, in perfect unison, both species on one branch.

Shining far through underbrush and timber the yellow jasmine (*Gelsemium sempervirens*) is seen to rear its fragrant golden flowers on twining stem through bushes high up into trees. The shrub-like red buckeye (*Æsculus pavia*) grows here in clusters and is far advanced. Its leaves are nearly of full size and some of its flower buds are ready to break open; only two days more of warm, sunshiny weather and the first Hummingbird will suck its nectar, as the opening of this flower is the signal for the appearing of this impatient little midge.¹

Here we leave the lake shore and follow the road through wooded, partly cultivated, land eastward. Reaching the corner of an old worm fence, which encloses a large field, lately ploughed, we stop to jot down a lot of species, some of which we have not yet met to-day. Scattered through the weeds along the fence a gathering of Fringillidæ attracts our first attention. They are mostly Field Sparrows, but there are others, too; there are Song and Swamp Sparrows, Towhees, and White-throated Sparrows. Through the fence rails slips a House Wren in and out, and from a tangle of brambles comes the sharp alarm note of the Cardinal and the *teorit* of a Thrasher. Out on the ploughed ground thirty or more small birds are walking, running, jumping, sometimes taking short flights in pursuit of winged insects; they are Pipits, the animators of Louisianian winter scenery. But there are other, larger birds near and among them, also running over the ground and taking short flights; these are Killdeers. While we are still taking in the beauties of the landscape with its varied

¹ The first Hummer was seen at Mandeville, March 3.

bird life, a noise is heard over our heads, and looking up we are just in time to see a troop of Pine Siskins (*Spinus pinus*) falling into a leafing sweet gum (*Liquidambar styraciflua*). They came in this tree to rest, but only long enough to see a second troop arrive to take their place. Soon all are off, and we follow their example. A Hermit Thrush, silent and solitary, flies up from the ground and hides behind a tree nearby. Following the road through timber we are struck with its painful silence and are glad to have it broken by the Fish Crows from the lake shore not far off.

Soon we come to another, larger bayou, crossed by a bridge, on which we stop to admire the exquisite scenery. A picturesque cypress, draped with streaming moss (*Tillandsia usneoides*) and its free upper branches softly clothed with newly produced green. This stately cypress in the center is flanked with tupelos of only half its height and smothering under a heavy burden of moss. Upon this hoary background stand in bold relief a few red maples (*Acer rubrum drummondi*) filled with brilliant crimson fruit and supported by a base of different shades of green, willows mixed with scarlet-berried hollies, almost to the waters' edge, an inky, green-black, sluggish water, fifty feet in width. In the overflow, on oozy ground, a troop of Rusty Blackbirds searches after food and others are concerting in the tree-tops; the males are uniformly black, the females gray, nothing rusty can be seen about them. A few young Red-winged Blackbirds, males and females, are among them.

At last we reach the gate of Fontainbleau and behold a vast extent of barren land; weeds and vines, mingled in places with sprouts from stumps, and scattering trees; herds of horses and cattle, and in a distance of almost a mile a few low, uninteresting buildings. The transformation of a first-rate sugar plantation into a third-rate stock farm has left no trace of its former splendor.

The foundation of the mansion, in which Audubon first saw the light of day, is still there, but the walls have crumbled into a heap of bricks, which fill the cellar. The whole is overgrown with rank vegetation, crowned by trees rooted in the ruin.

From the large sugarhouse, which has two chimneys and some of the walls still standing, a broad avenue leads straight down to the

former landing place on the lake. This avenue is shaded by two rows of immense live-oaks, twelve on each side. Between every two trees and in a line with their trunks there stood at Audubon's time a cabin for two families having one big chimney in common; one of these chimneys is still standing, but all others are only a heap of disintegrating bricks, showing the transitoriness of all earthly things. Man's handiwork is all changed, but Nature's grandeur is the same; the trees, the lake, and the waves that strike its shore; the Mockers sing as cheerfully as it did then, and the Vultures soar as dreamily as of old.

While coming through the wild pasture land we noticed but few birds. Several Song Sparrows emerged from their recesses, looked with astonishment at the intruder, and disappeared. A small troop of Grass Finches (*Poocetes gramineus*) was surprised, feeding in the road, and a number of Flickers started from the ground. A Sparrow Hawk kept moving from tree to tree, and the wandering voices of Goldfinches and Purple Finches were in the air. Of especial interest was the meeting with a troop of Common Crows (*Corvus americanus*), which are not abundant so far south, at least not at this date. Scattered over the cheerless waste were several Mockingbirds and Shrikes, all earnestly engaged in the pursuit of game. Perched on the top of a stout weed and in a hawk-like attitude, scrutinizing the surrounding ground, they resemble each other very much. Both whip their tail, and both spring upon their prey in the identical manner, and also in their musical reveries the listener is struck with a strange semblance.

After 9 A. M. the sun is pretty warm on the Gulf Coast, even on the first of March, and when the Pine Warbler's song reaches our ear from the adjacent woods, we can not resist the temptation to invade the privacy of its domain. Before we enter the woods we cast another look upon the scene we leave: a scene of dreary desolation, whose gloom neither the sun's rays nor the arrival of a hungry drove of White-bellied Swallows can dispel. And to complete the dismal picture a number of Turkey Vultures are drawing ominous circles through the blue above. While the woods in the watery region near the lake are bare deciduous trees of many kinds, those farther back on drier soil are made up chiefly

of the long-leaved pine (*Pinus australis*) with an undergrowth of palmetto, young pines and blackberry bushes. These pines are hung with moss, but much less so than the trees on damper ground. Our Pine Warbler has been singing all the while its simple ditty at the rate of once every ten seconds. It is one of those vexatious songs, which tax our patience not a little. Sometimes you think it comes from nearby on the ground, when really the bird is way off in a tree-top. He is the only songster in these woods at present, and with him census-taking is an easy task, resulting in the sweeping annotation: A common and industrious songster in the pine woods. Besides his song he has various calls, one of which recalls the twittering of Swifts.

Often when we are trying to discover the indefatigable musician, or when we follow his flycatching antics in the outer branches, we notice scales of bark dropping from on high beside a tree. This is the work of the Red-cockaded Woodpecker (*Dryobates borealis*); the pineries are his home and, though he makes but little noise and hugs seclusion on the off-side of the trunk, the flying chips of bark betray his whereabouts. But to-day the Red-cockaded are not silent; they chirp and chase and quarrel and frolic and, when they light against a tree, they make the bark fly with a vim, as if putting all their mirth and passion in that bill, emitting all the time a note which reminds one strongly of a Robin's.

The Pine Warbler, the Red-cockaded Woodpecker and the Brown-headed Nuthatch form a triumvirate group, truly characteristic of these piny woods. When you see one, you will soon hear or see the other. The first of March is mating time with all of them, the most favorable days for observation. At other times an inconspicuous little midge, the Nuthatch draws to-day as much attention as the other members of the coalition. What he lacks in size, he makes up in restlessness and noise. With squeaking notes they chase each other through the woods, or measure trees by nervous hops out to the farthest end; a violent emotion sways their diminutive bodies and allows them to rest only long enough to emit a little song, a few really musical notes, the last of which recalls one of the Goldfinch's. Thus they follow each other from branch to branch, from tree to tree, until at last the impetuous knight carries his prize, and peace ensues once more in these

usually silent woods. They are not void of bird life, but the resident birds, if not excited, are not loud, and the winter guests from northern lands are naturally very quiet among strangers in the fremd.

Soft *peos* of the Tufted Tit are heard sometimes, but the species does not seem to be so loud as farther north. Its cousin and companion, the Carolina Chickadee, is also heard from time to time, but the Woodpeckers, the Downy, the Hairy, and the Red-bellied, do not say much, while the Sapsucker says still less. With the exception of the Flicker, the Sapsucker is the most numerous of its tribe, and you are just as likely to find him with the Kinglets and Yellow-rumps in the magnolia of your garden, or with the Robins and Cedar-birds in the hollies at the bayou, as in the deep pine woods. Rather surprising at first is the presence of a bevy of Bob-whites and a troop of Meadowlarks in the pine woods, but they appear to feel themselves as much at home there as the Flicker in the marsh or meadow.

The bird fauna generally is quite varied in Louisiana at the first of March, though migration from the south has not yet set in. Of the species which regularly leave the State in winter only the Martin has returned, but migration begins soon after and becomes brisk by the middle of the month.

A STUDY OF THE GENUS *MACRORHAMPHUS*.

BY REGINALD HEBER HOWE, JR.

EVER since Thomas Bell and George N. Lawrence in 1852, in the 'Annals' of the New York Lyceum of Natural History (Vol. V, pp. 1-5), recognized that long- and short-billed forms of this genus existed, ornithologists have either been loath (Coues, Birds of the Northwest, p. 477) to accept the two forms, or have been puzzled to identify many specimens in the collections.

A month or two ago while examining some fifteen specimens of this genus in search of a male Long-billed Dowitcher, the fact of

the tremendous sexual variation in size of the Dowitchers was brought to my notice. So very marked was this sexual variation in specimen after specimen examined, and so weak did any color difference appear, that I was at first strongly led to believe that the species *griseus* represented the males and *scolopaceus* the females of one and the same species. Only after the examination of many breeding specimens, over thirty in number, did I become convinced that a subspecific difference exists. I believe, with Dr. Ridgway (Bull. N. O. C., Vol. V, pp. 157-160) that *scolopaceus* should stand as a subspecies and out of which rank I cannot see why it was taken, as intergrades unquestionably exist. I have examined over two hundred and fifty specimens of the genus *Macrorhamphus* with the result that I find that *adults* of the two species, in summer or winter plumages, are to be determined almost invariably by the criterion of *bill measurement alone*, and if in breeding plumage to be even more easily separated. I have been also able from the large series before me to more definitely fix both the breeding ranges and the migratory route of the two forms.

In regard to the sexual variation shown in the order Limicolæ, it is interesting to note that in the Pectoral Sandpiper (*Tringa maculata*) (see Auk, Vol. XVI, p. 179, and Vol. XVIII, p. 107), the *males* exceed the females in size, while in the present genus the *reverse* is true. The Wilson's Snipe (*Gallinago delicata*), American Woodcock (*Philohela minor*), the genera *Limosa* and *Numenius*, all show this latter type of sexual variation to a greater or less degree.

Macrorhamphus griseus Gmelin.

Geographical Breeding Range.—The breeding range of this species is given as "within the Arctic Circle" in Chapman's 'Hand-book' (p. 155), based on what data, other than hypothetical, I am ignorant. We know, however, from various sources¹ that it breeds in Ungava. Its breeding range I think can be safely said to be to the north and northeast of Hudson Bay, from the 55th parallel northward to Greenland,² probably also a little

¹ Turner, Birds of Labrador, 1885, p. 246; Stearns, Bird Life in Labrador, 1886, p. 53.

² Arctic Manual and Instructions, 1875.

to the northwest of it, perhaps to the 100th meridian of longitude.¹ Reek's mention² of it as breeding in Newfoundland is too vaguely stated for recognition.

Migratory Routes.—The migratory route of this species, as will be seen by the accompanying map, is down the Atlantic coast, becoming less marked as it progresses southward, until at the Carolina's it seems to pass in the main off the coast, perhaps to the West Indies and Bermuda where it has been recorded.³

The specimens obtained in the Western States are no doubt stragglers, offshoots from the main migration; those from Lower California and Mexico, wintering birds.

Characteristics of summer plumage: Adults.—Upper parts black, the feathers *lightly* edged with *white* or buffy, hardly altering the almost black appearance of the back and crown. Uppermost tail-coverts white, *spotted* with black; tail feathers white barred with black and *white*, the median ones rarely with *pale* buff. Breast *yellowish* rufous, *spotted* well down on the abdomen.

Characteristics of plumage in transition stages.—*M. griseus* can be generally distinguished by the black and *white* barred tail feathers, and *yellowish* shade of rufous underparts, as long as any of this color is perceptible. Also by the *spotted*, not barred, uppermost tail-coverts.

Characteristics of plumage in winter.—*M. griseus* can generally be told by the close *spotting* of the uppermost tail-coverts.

Characteristic plumage of young.—Upper parts fuscous bordered and barred with *buff*, breast paler, very faintly marked.

Measurements.⁴

Adults males	Bill (culmen)	2.01–2.32	(ave. 2.21+)
“ females ⁵	“ “	2.35–2.56	(ave. 2.44+)
Young males	“ “	2.04–2.31	
“ females	“ “	— 2.40	

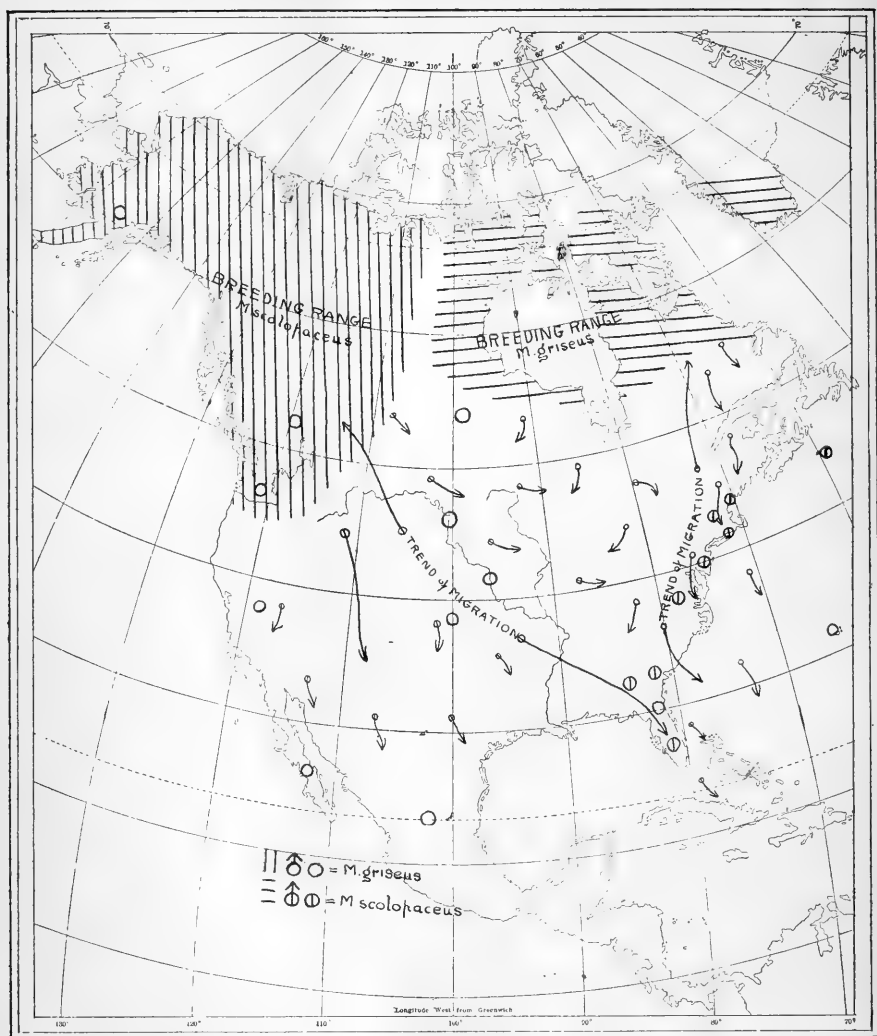
¹ Wright, teste Macoun, Birds of Canada, Part I, pp. 153, 154.

² Canadian Nat., Vol. V, new series, 1870, p. 294.

³ Cory, Cat. of West Indian Birds, p. 92; Reid, Birds of Bermuda, Bull. U. S. Nat. Mus., No. 25, 1884, pp. 233, 234.

⁴ Taken from breeding specimens or birds having attained or still in the breeding plumage, either in proximity of their breeding grounds or from the centre of their migration routes, and which were absolutely identifiable from their coloration.

⁵ In one extreme specimen, perhaps wrongly sexed, 2.21.



Map showing Breeding Ranges and Migration Routes of *Macrorhamphus griseus* and *M. griseus scolopaceus*.

Macrorhamphus griseus scolopaceus (Say).

Geographical Breeding Range.—This form seems almost confined to Alaska in the breeding season, certainly extending no farther east than the 110th meridian of longitude or south of the 48th parallel of latitude in British Columbia.

Migratory Routes.—The trend of the migration route of *scolopaceus*, as shown on the accompanying map, seems to be in a north-westerly-southeasterly direction in the main to the east of the Rocky Mountains. Offshoots from the main route reach the Pacific and Atlantic coasts, on the latter not uncommonly from Sable Island southward. Perhaps a few work up the coast from Florida where they are by far the most common of the two forms on migrations, especially in November and February.

Characteristics of summer plumage: Adults.—Upper parts black, the feathers *strongly* edged and marked with deep *rufous*; this is especially so in young birds, giving the back and crown a *mottled* black and *rufous* effect. Uppermost tail-coverts white generally *barred* with black, outer tail feathers white barred with black, median ones barred with black and *rufous*. Breast *salmon*; throat spotted with round arrow-shaped markings; breast and flanks *barred* with black.

Characteristics of plumage in transition stages:—*Scolopaceus* can be distinguished well into the autumn and in the early spring by the barred *rufous* and black median tail feathers, and *salmon* tinge of the breast coloring.

Characteristics of plumage in winter.—*M. g. scolopaceus* can generally be told by the *barred* uppermost tail-coverts.

Characteristics of plumage of young.—Upperparts black, heavily bordered and marked with *deep rufous*; tips of the median tail feathers barred with black and *rufous*; throat whitish, faintly marked; breast light salmon lightly marked with *arrow*-shaped spots of dusky, abdomen pale salmon.

Measurements.

Adult males ¹	Bill (culmen)	2.23–2.71	(ave. 2.45+)
“ females ¹	“ “	2.40–3.04	(ave. 2.71+)
Young males	“ “	1.90 ² –2.59	
“ females	“ “	— 2.67	

¹ Extreme specimens of males measure 2.11 and 2.80 (the latter perhaps erroneously sexed); of an extreme female 3.08.

² Still showing down.

For the use of specimens or generous assistance my thanks are due to Messrs. William Brewster, Walter Deane, H. B. Bigelow, Outram Bangs, Witmer Stone, Drs. J. A. Allen, Robert Ridgway, Jonathan Dwight, Jr., Walter Faxon, Louis B. Bishop, Mr. A. H. Norton, and others.

BIRDS OF PREY AS OCEAN WAIFS.

BY H. W. HENSHAW.

It is no unusual event, as every ornithologist knows, for land birds to board ships, when a greater or less distance off land, or to be seen from their decks as they wing an aimless course over the ocean. It is fair to infer that such known cases are very few, compared to the number of birds that are forced off land by unfriendly gales and that finally perish miserably in the depths of ocean unseen of human eye. After once losing sight of land, few of the comparatively weak-winged land birds are likely ever to regain it, and no doubt many of the powerful-winged species become hopelessly lost when once the friendly land has faded from view. The ocean is no friend to the land bird, but annually exacts its deadly toll with unfailing certainty.

Two unusually interesting instances of birds taking refuge on board ships have recently come to my notice, and, as they possess special interest to American ornithologists, I here record them. Both cases have been communicated by Capt. Peter Johnson of the bark 'Roderick Dhu' which sails between San Francisco and Hilo.

In May or June of 1897 a brown hawk boarded the 'Dhu' when some 200 miles outward bound from Hilo and, as one sure of its rights, took through passage to California. The bird chose the end of the starboard royal for its perch, and maintained its place all the way over, save when it made excursions from the ship after "small birds." Just what the latter were is not certain, though the Captain surmised, with much probability, that they

were petrels. The hungry hawk seemed able to descry its prey when a long distance off, for it frequently flew out of sight on its predatory excursions but, sooner or later, it always returned to the same perch.

Though the certain identification of this "brown hawk" is not possible, there can be little doubt that it was the Hawaiian *Buteo solitarius*.

This particular individual must have been more expert at catching birds than its fellows usually are in Hawaii, for during the voyage it was seen to return to the ship from at least a dozen successful bird catching expeditions. Necessity is indeed a sharp spur. Though the Io sometimes catches birds in Hawaii, the occasions are comparatively rare, rats and mice, the larvæ of the sphinx moths, and large spiders constituting by far the larger part of its food.

That the prey of this particular individual consisted of birds there is not the slightest doubt, for the feathers plucked from the body of its victims frequently floated to the deck below. The litter thus made excited the wrath of the mate who more than once suggested shooting the hawk by way of retaliation. Fortunately this was not done, and, about the time when the California coast was sighted, Io left the ship flying landwards and was seen no more. Possibly it was shot later by some enterprising collector, and may yet figure again in ornithological literature.

The particular interest of the voluntary (in part at least) voyage to California of this particular hawk appears when are recalled the facts relating to the specimen described in 1879 by Mr. Ridgway as *Onychotes gruberi*. This bird, as Mr. Ridgway himself has shown, is a typical *B. solitarius*. At first supposed to have been shot near San Francisco, if I remember correctly, the presence of this specimen in a California bird collection was afterwards otherwise accounted for, and the occurrence of the species in California as an accidental visitor was discredited. The facts here recorded, however, considerably increase the probability that the specimen upon which *Onychotes gruberi* was based actually reached California alive, possibly by the same means as the individual here mentioned.

Buteo solitarius, though sluggish of movement and slow of wing,

is a powerful flier, like its congeners, and I have little doubt of its ability, unaided, under favorable conditions, to fly from Hawaii to the California coast (about 2000 miles), provided a straight course was maintained—a most unlikely supposition. The chances, however, of an individual actually making this long flight are of course extremely slight.

In October, 1900, when some 500 miles to the northwest of the Hawaiian Islands, the 'Dhu' was boarded by an owl, which, from its size and description can have been no other than the Short-eared Owl (*Asio accipitrinus*). The bird alighted in the rigging, and was so fagged as to be easily caught by hand. It was placed in a coop but would eat nothing and died in a week or so.

The chief point of interest regarding this waif is as to the place it came from. Its proximity to the Hawaiian Islands when it flew aboard the ship may be thought to indicate that it was blown out to sea from one of these, every member of the group being inhabited by this species.

Upon the other hand, the season of the year, the direction of the wind (which was from the northeast), and the evident exhaustion of the bird point to the possibility, if not the probability, that the owl was from the northeast and was of American origin.

There is little doubt that the owls which originally stocked Hawaii came from America and, although the island residence of the species has been long enough to firmly fix the owl in Hawaiian mythology and even to elevate it to a place in the Hawaiian Pantheon, it has not sufficed to impress upon it distinctive or varietal characters.

My own opinion upon this latter point is entitled to but little weight, since I have had no opportunity to directly compare island birds with specimens from the mainland; but so far as I can judge the island specimens are not distinguishable. In confirmation of this opinion I quote the following remarks of Dr. Stejneger: "The four specimens of Short-eared Owls from the Hawaiian islands before me do not justify the retention of *Asio sandwichensis* as a separate race." (Proc. U. S. Nat. Museum, p. 85, 1887.) Mr. Scott B. Wilson states that this opinion was shared by the late Mr. J. H. Gurney (*Birds of the Hawaiian Islands*).

So far as I am aware there is no evidence to show that the owls

of the Hawaiian Islands are migratory. I have little doubt, as stated above, that the island strigine stock was derived from America; probably from Alaska. The occurrence of the bird above mentioned, 500 miles at sea and under the circumstances narrated, is most reasonably accounted for on the supposition that it had flown from the Alaskan coast, from which, at this season, thousands of plovers, turnstones, ulili, and ducks are migrating to the islands. An owl might readily follow the track of these birds, and be piloted directly to the islands which, otherwise, there would be small chance indeed of its reaching.

Once here, however, the wanderer is likely to remain, though, of course, it is impossible to say that a stray bird from the mainland might not choose to return home in the spring when it would find plenty of plovers and other birds bound for its own home.

It must not be forgotten, however, that the Short-eared Owl breeds abundantly upon the islands, where its distribution is local and the pairs seem to inhabit the same locality indefinitely. New additions from America (and these probably are few in number and arrive at long intervals) are much more likely to mate with the island birds already established than to part company with them and to undertake the hazardous experiment of a return. The islands appear to be well adapted to the habits of this, the only owl that so far has reached them, and although persecution of late years has diminished its numbers it is still far from uncommon.

DESCRIPTION OF A SUPPOSED NEW SUBSPECIES OF *PARUS* FROM NEW MEXICO.

BY FRANCIS J. BIRTWELL.

IN THE valley of the Rio Grande, about Albuquerque, New Mexico, during a residence covering two winters, the writer has noticed a peculiarity existing among the chickadees which pass through in the brief migrations from the high mountains and those wintering in the valley.

In brief, while the migrants are of the normal colors as well as those birds wintering in the cedar covered foothills about twelve miles from the valley, and those breeding among the mountain parks of the Pecos River Forest Reserve, the winter residents of the valley are heavily melanistic, and no ordinary chickadee appears to occupy the valley in the cold months with them. In the early spring the melanistic birds vanish and are not observed again until the next cold weather. These statements are also supported by the results of twenty-one years observations of Mr. W. H. Cobb of Albuquerque, about that city, which collectively considered, oppose the possible suggestion that the melanistic birds are but occasional examples of melanism.

Examinations of a large series of specimens show the strange birds to be peculiar to the Rio Grande valley alone, in the vicinity of Albuquerque. Sixty specimens kindly loaned from the National Museum exhibit no examples or even transition forms and these embrace specimens of various seasons from California, Nevada, Oregon, Utah, Colorado, Arizona and New Mexico. The nearest approach to the supposed new form is from Palmer Lake, Colorado, but the resemblance is slight.

As shown by these specimens and by others, as well as many collected personally, the winter form of the valley deserves at least subspecific recognition. Specific rank is possible, but the birds belong to the *gambeli* series and bear the same relation to *Parus gambeli* as *Bufo borealis calurus* bears to *borealis*.

It is proposed to describe the new form as follows:

***Parus gambeli thayeri*, subsp. nov.**

Type, No. 226, author's collection, adult, sex?, Albuquerque, N. M., Dec. 27, 1900.

Habitat (so far as known): Valley of the Rio Grande, near Albuquerque, in winter.

Subsp. char.—Similar to *Parus gambeli*, but whole body markings, including the white of head and underparts, the black head areas, the ashy shade of the dorsum and the wings and tail, overcast with dull, heavy melanistic effects. In the type specimen the underparts are blackish slate slightly tinged with tawny on the sides, and this intensity represents the average example as observed by me. Bill and feet as in *gambeli*, black.

Measurements: Length, 4.85 in.; extent, 8.00; wing, 2.60; tail, 2.45; tarsus, .62; culmen, .30.

Compared with all available material the new form is clearly recognized at a glance, and with those specimens from northern California, Oregon, and Nevada, having very light underparts shaded with ochraceous, especially so.

I take pleasure in naming this peculiar bird after my generous friend Colonel John E. Thayer of Lancaster, Mass.

THE PTERYLOSIS OF *PODARGUS*: WITH NOTES ON THE PTERYLOGRAPHY OF THE CAPRIMULGI.

BY HUBERT LYMAN CLARK.

THROUGH the kindness of Mr. F. A. Lucas of the National Museum, a very fine alcoholic specimen of *Podargus* recently came into my hands for the study of its pterylosis. Unfortunately there is no label with it to indicate either the species or the locality. It is not likely, however, that specific variations in the pterylosis of this genus are any greater than among the other Caprimulgi, where they really amount to very little. Nitzsch says that the pterylosis of *Podargus gigas* is entirely like that of *Caprimulgus*, excepting the dorsal tract, but as his examination was probably of a dried skin, it is not surprising that he overlooked some very important differences. As a matter of fact the pterylosis of *Podargus* is very distinctive and shows some very interesting and important peculiarities.

The front part of the head at the base of the upper mandible is densely feathered and this tract continues backward over the crown as a broad median band. On each side of this, just above the eye, is a single very distinct row of contour feathers. The back of the head is very fully feathered and the upper cervical tract is strong, and divides into two forks which extend to the end of the shoulder blades. The dorsal tract is forked for a much greater distance than in any North American goatsucker; its two

branches are slender and nearly parallel. The humeral tracts are strongly developed and unite over the shoulder with the ventral tracts. The femoral tracts are very large and in the specimen before me consist of two very distinct parts: an outer band which runs forward from near the base of the tail, along the posterior side of the femur, and *directly across the tibia, just above the middle*, and a large patch on the femur just above this band. The latter patch is made up of about fifty short, thick and very oily feathers, as the new feathers were just appearing here. It is possible that these patches had recently been moulted, but there were no young feathers anywhere else on the bird, and I am inclined to think that in the great reduction or absence of the oil-gland, these patches furnish the oil for preening the plumage. (The examination of a few skins would soon settle this point.) There is a small but distinct pteryla on the front of the tibia. The lower cervical tract is narrow and forked far up on the throat. On the chin the feathering is confined to about five somewhat separated rows, which form a longitudinal band with convex sides in the middle of the infra-mandibular space. The ventral tracts are wide on the breast but narrow on the belly, and are connected with the hypopterum by a very large and evident 'hook' of feathers, on the sides. The oil-gland is entirely wanting in the specimen before me. The feet are feathered only to the tarsal joint. The filoplumes are very long and slender. There is no true down. The aftershaft is reduced to a mere scale only about 1 mm. long and bearing no barbs, but the barbs of the two sides of the feather meet at its base. There are no rectal bristles. The rectrices are 10 in number, the middle pair longest, the outer shortest. The alula contains 4 feathers. The wing is aquincubital and there are 14 secondaries. The primaries are 10 in number, of which the sixth, seventh and eighth are longest. Nitzsch gives only 21 remiges to *Podargus*, but there are clearly 24 in the specimen before me.

Just before Mr. Lucas sent me *Podargus*, a very good male Chuck-wills-widow (*Antrostomus carolinensis*) came into my possession, and the examination of its pterylosis proved of considerable interest. It differs very decidedly from that of the Whip-poorwill, quite as much so as from any of the North American

Caprimulgi. There are ten longitudinal rows on the crown and their arrangement is somewhat as in *Nyctidromus*. The pterylosis of the head, however, differs from that of all other North American genera in the much greater density of feathering on the front and sides of the forehead, and on the back of the crown. The median band on the front of the crown is also broader and denser than in the smaller Caprimulgi. The row of pinnate rictal bristles is very prominent. The upper cervical tract forks very widely: the branches are narrow and are indistinctly connected with the ends of the humeral tracts. The dorsal tract is deeply forked anteriorly and well-defined. It is also forked at the base of the oil-gland, so that there is a distinct apterium there, as in some of the owls. The femoral tracts are rather large but are entirely confined to the femurs. The ventral tracts are broad on the breast and narrow gradually on the belly, each longitudinal row being successively shorter, beginning with the innermost. The 'hook' connecting this tract with the hypopterygium is very prominent. The feathering of the infra-mandibular region is very sparse, consisting of 9 longitudinal rows. The tarsus is feathered nearly to the toes in front. Aftershafts are large, the oil-gland is bare, the filoplumes are long and down feathers are wanting. There are 10 rectrices, of which the middle pair are longest. There are 10 primaries (8, 7, 9, 6, 5, 4, 3, 10, 2, 1), 14 secondaries and 3 feathers in the alula. The wing is aquincubital. Judged from the pterylosis alone, there is no justification for uniting the Chuck-wills-widow and the Whip-poorwill in the same genus, for they differ quite as markedly as any other two American genera. We may therefore refer the former to *Antrostomus* and the latter to *Caprimulgus*, though it may be the European species of *Caprimulgus* do not agree with it in detail. It is impossible to determine from Nitzsch's figure.

Podargus and *Antrostomus* are much larger than any of the American genera which have been examined hitherto and several of their peculiarities (as for example the large number of secondaries) are doubtless due to their greater size. But in most, if not all of the points in which they differ from other Caprimulgi, they seem to approach the owls, and thus confirm the opinion which I expressed in 1894 (Proc. U. S. Nat. Mus., Vol. XVII, p. 572) that, judged by their pterylography, "the Caprimulgi are related

to the Striges and not very distantly either." This intermediate position of *Antrostomus* and *Podargus* will be made more evident by the following table (Table A) in which the characters of these two genera are contrasted with those of the other North American Caprimulgi and the Owls. The characters in which all these groups agree, as the absence of down, the aquincubital wing, etc., have purposely been omitted from this table.

It will readily be seen that with the exception of the sternal tracts and the number of primaries, no sharp line can be drawn pterylographically between the Caprimulgi and the Striges, *Antrostomus* and *Podargus* furnishing just such intermediate characters as might be expected from their size and habits. As there are still many interesting genera to be examined, even these two differences may prove to be inconstant, and the accumulated evidence thus confirms the view that Goatsuckers and Owls are near relatives.

Nitzsch says that the pterylography of the Caprimulgidæ is very close to that of *Cypselus* but he must have expected to find a resemblance or it never would have occurred to him. Thanks again to Mr. Lucas, I have had the opportunity of examining the pterylography of ten species of Swifts. The different genera resemble each other very closely but I find very few important resemblances between the Cypseli and Caprimulgi and some striking differences. Indeed the general pattern of the pterylosis is strikingly different and there seems to be no connecting links. The contrast will be made clear by the table (Table B).

A full report on the pterylography of the swifts is in preparation; the only reason for referring to it here is to emphasize the fact that the nearest relatives of the Caprimulgi are not to be sought among the so-called Cypseliformes or Macrochires, but much more probably among the nocturnal birds of prey.

TABLE A.

	Median Band on Crown	Feathering of Fore-head.	Sternal Tracts.	'Hooks' on Sides.	Femoral Tract.	Tibial Tracts.	Apertium in front of oil-gland.	Feathering of Tarsus	Rictal Bristles.	No. of Primaries.	Longest Primaries.	No. of Secondaries.	No. of Alula Feathers.	No. of Rectrices.	After-shafts.
North American Caprimulgi . .	Narrow.	Sparse.	Single, broad.	Weak.	Clearly marked; confined to femur.	Wanting.	Wanting.	Partial or none.	Simple, usually present.	10.	8, 9, 7, and 10.	12-13.	3.	10.	Present.
Antrostomus . .	Rather narrow.	Rather dense.	do.	Rather strong.	do.	do.	Present.	Considerable.	Pinnate.	10.	8, 7, 9, and 6.	14.	3.	10.	do.
Podargus . .	Rather broad.	Dense.	do	Strong.	In 2 parts; lower crosses tibia.	Present.	Wanting.	None.	Wanting	10.	6, 7, 8, and 5.	14.	4.	10.	Practically wanting.
American Striges	Broad.	Very dense.	Separate from and overlapping ventrals, narrow.	do.	Strong; crosses tibia.	Sometimes present.	Present.	Very considerable.	do.	11.	6, 7, 8, and 5 or 9, 8, 7, and 10.	13-16.	4.	10-12.	Wanting.

TABLE B.

	Pterylosis of Crown.	Nuchal Apertium.	Upper Cervical Tract.	Humerals and Femorals.	Sternal and Ventrals.	Condition of Wing.	Longest Primaries.	No. of Secondaries.	No. of Alula Feathers.
Caprimulgi.	Sparse; in longitudinal rows.	Wanting.	Narrow, forked, separate from dorsal tract.	Completely separate.	Broad; narrowing posteriorly.	Aquincubital.	Usually 8, 9, and 7; rarely 6, 7, and 8, or 10, 9, and 8.	12-14.	3-4.
Cypseli.	Dense; no longitudinal rows.	Present.	Broad; united with dorsal tract.	Clearly united.	Rather broad; narrowed at each end.	Quincubital or Aquincubital.	10, 9, and 8.	8-11.	2-3.

The groups agree in having 10 primaries, 10 rectrices, a bare oil-gland, an aftershaft, and no down.

REPUBLICATION OF DESCRIPTIONS OF NEW SPECIES AND SUBSPECIES OF NORTH AMERICAN BIRDS. NO. II.

BY J. A. ALLEN.

THE first series of these descriptions was published in 'The Auk' for October, 1899 (XVI, pp. 338-350), in response to requests therefor, as there stated. The first installment covered the years 1897, 1898, and most of 1899, and included those added in the Ninth Supplement to the Check-List (see Auk, XVI, 1899, pp. 97-133). The present installment covers the year 1900, with a few species published in the latter part of 1899.

In this 'republication,' as explained in the introduction to the first installment, the original diagnoses or descriptions are given in full, in the exact words of the author, unless otherwise indicated by the omission of marks of quotation, with such additional remarks as are necessary to a proper presentation of the case.

Colymbus dominicus brachypterus (Chapman).

Colymbus dominicus brachypterus CHAPMAN, Bull. Am. Mus. Nat. Hist. XII, 1899, 256, Dec. 23, 1899.

"*Char. subsp.* — Similar to *Colymbus dominicus* Linn., but with shorter wings and bill, less fuscous on the sides and flanks, and whiter underparts.

"*Description of type.* — (No. 11, Coll. George B. Sennett, male, Lomita Ranch, Lower Rio Grande, Texas, April 27, 1878. Collected by George B. Sennett.) — Head and neck all around plumbeous, the crown greenish; the throat black, some of the feathers tipped with whitish; back fuscous with slight greenish reflections; wing-coverts, tertials, and exposed part of outer primaries fuscous; basal portion of inner web of first primary white, this white increasing in extent on each succeeding feather until it wholly occupies the seventh to twelfth feathers, when it decreases and is replaced by fuscous; neck slaty, breast washed with brownish, fainter on the sides; sides and flanks washed with fuscous; rest of underparts silvery white, through which the darker bases of the feathers show only slightly. Wing, 3.80; tarsus, 1.25; middle toe, 1.78; culmen, .82; depth of bill at nostril, .30 in.

"*Description of female*, No. 12, Collection of George B. Sennett, Lomita,

Texas, April 27, 1878. — Similar to the male, but whiter below and slightly smaller. Wing, 3.78; tarsus, 1.10; middle toe, 1.62; culmen, .68; depth of bill at nostril, .25 in.

"This, the northern continental form of *Colymbus dominicus*, is to be distinguished from *dominicus* by its whiter underparts, smaller bill, and shorter wing; while from *C. d. brachyrhynchus* it may be known by its larger bill, shorter wing, and whiter underparts."

Arenaria morinella (Linn.).

RUDDY TURNSTONE.

Tringa morinella LINN. Syst. Nat. ed. 12, 1766, 249. Based on the "Turn-stone, or Sea-Dottrel" of Catesby.

Arenaria morinella W. PALMER, Fur Seals and Fur-Seal Islands of the North Pacific Ocean, Pt. III, 1899, 412-418.

"Adult ♂, *breeding plumage*. — Similar in pattern to *A. interpres*, but smaller and general color above chestnut with sides of interscapulars black; scapulars for the most part chestnut, the outer feathers broadly tipped with black and slightly with white, longer feathers blackish olive irregularly tipped with chestnut; body, head, and neck as in *interpres*, but the black of the breast less extensive and narrower, white areas on head more extensive, and the black streaking on top of head with whiter edgings; wings with more extensive white areas; tertials various shades of clove brown, rarely blackish, broadly blotched, margined and tipped with chestnut with white tips; lesser wing coverts pale dusky olive, with much less black and more white posteriorly than in *interpres*; median coverts extensively chestnut with little or no blackish centers; long coverts chestnut with black blotches or narrow bands near the tips of the feathers; tail as in *interpres*, but usually less broadly banded and [bands] less sharply defined; legs and feet deep orange-red strongly and broadly crossed at the joints with blackish; bill black.

"Adult ♀, *breeding plumage*. — Similar to the male in pattern, but larger and more subdued in color, grayer with white of head and neck obscured with dusky; chestnut of mantle obscured with dark streaking; chestnut all over much less rich than in males; pileum less strongly black, with wider rufous edgings; median wing coverts, mixed grayish and pale chestnut with dark sometimes black center streaks; much grayer and less black than in ♀ *interpres*; tail band as in ♂ but duller; long tertials more plain colored, less positively chestnut-tipped and margined; feet and tarsi as in ♂."

The immature plumages are fully described, and altogether six quarto pages are given to the description and discussion of the species.

Geographical range.—"America from the Arctic regions north of Hudson Bay and westward to the Mackenzie River, along the Atlantic watershed, though generally coastwise, to Patagonia and the Falkland Islands. Rare on the Pacific slope. Breeds about Hudson Bay, northward and eastward."

A. morinella is stated to be smaller than *A. interpres*, with chestnut prevailing above instead of black, and with the feet orange-red instead of vermilion. *A. interpres* is mainly Old World, but extends to Alaska and Greenland, *A. morinella* being its North American representative.

Asio accipitrinus mcilhennyi Stone.

Asio accipitrinus mcilhennyi STONE, Proc. Acad. Nat. Sci. Phila. 1899, 478.

"Very much paler than specimens from Pennsylvania and have the tawny tints largely replaced by white. The lower surface is white with a slight buff suffusion in some examples, while the dark stripes on the breast average narrower than in more southern specimens. The females are slightly darker than the males. In measurements they agree pretty well with specimens from the United States."

Type locality, Point Barrow, Alaska.

The Point Barrow specimens are regarded "as representing a distinct geographic race, probably ranging southeastward over the arctic barren grounds."

Cyanocitta stelleri carbonacea Grinnell.

COAST JAY.

Cyanocitta stelleri carbonacea GRINNELL, Condor, II, Nov. 1900, 127.

"*Subsp. char.*—Intermediate in size and coloration between *C. stelleri* and *C. stelleri frontalis*. Dorsal surface sooty-black as in *stelleri*, but with blue on the forehead nearly as extended as in *frontalis*. Tint of blue of posterior lower parts paler than in *stelleri*, and extending further forward into pectoral region, as in *frontalis*."

Type locality, Stevens's Creek Cañon, Santa Clara Co., California.

Range, "Coast region of Oregon and California, from the Columbia River south to Monterey County."

Sturnella magna argutula Bangs.

FLORIDA MEADOWLARK.

Sturnella magna argutula BANGS, Proc. N. Engl. Zool. Club, I, 20, Feb. 28, 1899.

"*Type*, from Dunedin, Hillsboro Co., Florida.

"*Subspecific characters*. — Size, much less than in true *S. magna*, though the proportions remain about the same; yellow of under parts more intense; upper parts much darker in color, the central areas of feathers being much greater in extent and the light edges much less; tail and wings darker, the barring on middle rectrices, and on secondaries, tertials and wing-coverts, much wider and more pronounced. The general effects produced by these differences are, in *S. magna magna*, a larger bird with paler yellow under parts and a lighter brown back; in *S. magna argutula* a small bird with deeper yellow under parts and a very dark brown back.

"*Size*. — Type, ♂ adult: wing, 113.4; tail, 72.6; tarsus, 41.2; exposed culmen, 35 mm. Topotype, No. 226, ♀ adult: wing 100.2; tail, 68; tarsus, 36; exposed culmen, 28.6 mm."

"*Geographical Distribution*. — *S. magna argutula* reaches "its extreme differentiation in peninsular Florida," but "extends along the Gulf coast to Louisiana, and thence up the Mississippi Valley to Indiana and Illinois."

Leucosticte kadiaka McGregor.

Leucosticte kadiaka MCGREGOR, Condor, III, Jan. 1901, 8. Separates issued Nov. 25, 1900.

"*Spec. char.* — Similar to *Leucosticte griseonucha* but with smaller bill and smaller, weaker feet and claws."

Type locality, Karluk, Kadiak Island, Alaska. Known only from Kadiak Island.

Melospiza melodia cleonensis McGregor.

MENDOCINO SONG SPARROW.

Melospiza melodia cleonensis MCGREGOR, Bull. Cooper Orn. Club, I, Sept.-Oct., 1899, 87.

"*Subsp. char.* — Size of *M. m. samuelis* but lighter and more rusty; black markings of back more restricted; spots of breast broadly edged with rusty; black on side of head and neck entirely replaced by rusty reddish brown."

Type locality, Westport, Mendocino Co., California.

Range, "Coast of Mendocino County."

Melospiza sanaka McGregor.

Melospiza sanaka MCGREGOR, Condor, III, Jan. 1901, 8. Separates issued Nov. 25, 1900.

"*Sp. char.* — Similar to *Melospiza cinerea* but bill longer and more slender, middle toe with claws shorter."

Type locality, Sanak Island, Alaska.

Range, "Sanak and Popoff Islands, Alaska."

Zamelodia melanocephala microrhyncha Grinnell.

WESTERN BLACK-HEADED GROSBEAK.

Zamelodia melanocephala microrhyncha GRINNELL, Condor, II, Nov. 1900, 128, figs. 1-4, bill.

"*Subsp. char.* — In both sexes, as compared with *Z. melanocephala* from southern Arizona, bill much smaller and differently proportioned; wings and tail somewhat shorter; ♂ with fore parts, rump, sides and crissum darker brown, almost tawny of Ridgway's Nomenclature of Colors; white tipping of median wing-coverts broader."

Type locality, Buckthorn Cañon, Sierra San Gabriel, Los Angeles, Co., California.

Range, "Pacific Coast region of the United States, including California, Oregon, and Washington."

Pipilo maculatus falcifer McGregor.

Pipilo maculatus falcifer MCGREGOR, Condor, II, March, 1900, 43.

"*Subspecific characters.* — Terminal white spot of outer tail feather considerably shorter (less than one inch) than in *megalonyx*; claws much longer and heavier than in *oregonus*; under tail-coverts darker than in *atratus*; rump more or less grayish, upper tail-coverts tipped with pale buff."

Type locality, Palo Alto, California.

Range, "San Francisco Bay region."

Hirundo erythrogastra unalaschkensis (Gmelin).

ALASKAN SWALLOW.

Hirundo erythrogastra unalaschkensis W. PALMER, Fur Seals and Fur-Seal Islands of the North Pacific Ocean, Pt. III, 1899, p. 422.

"Similar to *H. erythrogastra*, but larger, with longer wings and tail and relatively smaller bill; white areas of tail, larger, with narrow white outer edgings to the feathers."

Seen by Mr. Palmer near the village of St. George on May 28, 1890, and at Black Bluffs, St. Paul, on June 4; nest found at Unalaska on August 13, and three young and a pair of adult birds taken there.

Mr. Palmer adopts the name *unalaschkensis* from Gmelin, Gmelin's name being based on Latham.¹ Latham's description is as follows:

"Length four inches and a half. Bill very short, dusky: the plumage above dull black, without gloss: beneath, and sides of the head, dusky ash-colour, the last darkest: rump dirty white: tail forked: each feather round at the end: legs dusky.

"Inhabits *Aoonalashka*."—Latham, General Synopsis of Birds, Vol. II, Pt. ii, 1783, p. 571. Described from a specimen in the Leverian Museum.

According to Sharpe (Mon. Hirundinidæ, Intro., 189, p. xl) Gmelin's *Hirundo unalaschkensis*, "has not since been identified," and, it hardly need be added, is never likely to be. That it is not a form of *Hirundo erythrogaster* is perfectly evident. Hence if the form proves to be recognizable it will have to be rechristened, Gmelin's name being untenable in this connection

Lanius borealis invictus Grinnell.

NORTHWESTERN SHRIKE.

Lanius borealis invictus GRINNELL, Pac. Coast Avif. No. 1, Nov. 1900, 54.

"Description.—Lower surface white; foreneck, crissum and lower abdomen immaculate, otherwise distinctly and narrowly barred with varmiculate blackish markings, two such bars being discernible on each feather, upper surface (except irregularly where washed with clay color) French gray merging on rump and scapulars into whitish; superciliary stripe and brow white; lores and upper two thirds of auriculars black, excepting a faint admixture of grayish in middle of lores and next to lower eyelid. Wings and tail blackish, edged with lighter; all the tail feathers white for an inch or more at base; outer web of outer tail feather completely white, and inner web white for terminal 1.50; second feather, 1.05; third, .80; fourth, .35, and remaining two pairs only narrowly tipped with white. White patch on wing formed by white bases of primaries; secondaries tipped with whitish."

Differs from *Lanius borealis* in "larger size, paler coloration dorsally, and greater extent of white markings."

Type locality, Kowak River, Alaska. Range, in summer, "Alaska, thus

¹ *Hirundo unalaschkensis* GMELIN, Syst. Nat. I, 1788, 1025. Based on "Aoonalashka Swallow. Latham, syn. II, 2, p. 571, n. 15."

restricting true *borealis* to the eastern portion of North America. In winter *invictus* comes south as far as the northwestern United States." A specimen is recorded from Quincy, California, and another from Lac Qui Parle County, Minnesota.

Parus rufescens barlowi Grinnell.

BARLOW'S CHICADEE.

Parus rufescens barlowi GRINNELL, Condor, Nov. 1900, 127.

"*Subsp. char.*—Similar to *P. rufescens neglectus*, but the sides pure smoked gray without a trace of rusty."

Type locality, Stevens's Creek Cañon, Santa Clara Co., California.

Range, "Coast Range of California south from San Francisco Bay to Monterey County."

Chamæa fasciata intermedia Grinnell.

INTERMEDIATE WREN-TIT.

Chamæa fasciata intermedia GRINNELL, Condor, II, July, 1900, 86.

Description.—Back and upper tail-coverts sepia, shading into hair brown on nape and top of head. Loes and small spots on upper and lower eyelids pale gray. Throat and breast cinnamon rufous, fading posteriorly into pale vinaceous cinnamon on middle of belly. Feathers on breast with faint dusky shaft-streaks. Sides, flanks and lower tail-coverts brownish olive. Under wing-coverts and axillars pale vinaceous cinnamon. Wings and tail clove brown, the feathers with slightly paler edgings."

Type locality, Palo Alto, Santa Clara Co., California. Range, "the San Francisco Bay region."

Intermediate in characters, as in geographical range, between *C. fasciata* and *C. fasciata phæa*.

Merula migratoria achrustera Batchelder.

Merula migratoria achrustera BATCHELDER, Proc. N. Engl. Zoöl. Club, I, 104, March 6, 1900.

"*Type*, from Raleigh, North Carolina, ♂ ad., No. 6433, Coll. C. F. Batchelder, taken June 8, 1894, by H. H. and C. S. Brimley.

"*Subspecific characters.*—Size considerably less than in *M. migratoria*. Colors in general much lighter and duller.

"Adult male in breeding season: whole top and sides of head and nape dull black, wing-coverts and rump dull gray, tinged with olive brown

rather than ashy, feathers of the back having hardly ever any trace of the black central markings often shown by *migratoria*. Remiges dark olive brown, lighter and browner than in *migratoria*. Throat white, streaked with black, the streaks fewer, smaller, and less intensely black than in *migratoria*. Breast, sides, axillars, and most of the under wing-coverts light reddish brown of a slightly deeper shade than 'tawny ochraceous' of Ridgway, whereas in *migratoria* these parts range from Ridgway's 'cinnamon-rufous' nearly to his 'burnt sienna.' Feathers of the belly partly of the color of the breast, partly white. Flanks, legs and under tail-coverts white, mixed with gray.

"The differences between the females of the two forms are so closely parallel to those of the males that a description of them is unnecessary."

The measurements given show the southern form to be considerably smaller than the northern.

Geographical range.—"Probably all the Robins breeding in the Carolinas and Georgia, outside of the mountain region of these States, will prove to belong to the new form, while those that pass the summer among the mountains, and in the low country of the adjacent region to the north may be expected to be variously intermediate between it and true *migratoria*."

NEW SUBSPECIES OF NORTH AMERICAN BIRDS.

BY WILFRED H. OSGOOD.

IN identifying birds collected while working in the interests of the Biological Survey, on the coast of British Columbia and Alaska during the past season, comparisons have been made which have led to the discovery of several well marked undescribed subspecies. Several of these which do not come within the scope of special reports now in preparation are here described. For the freedom of the Biological Survey and the National Museum collections, and for generous criticism, I am indebted to Dr. C. Hart Merriam and Mr. Robert Ridgway. For the loan of specimens I thank Mr. Joseph Grinnell and Mr. F. H. Fowler of Palo Alto, California.

**Lagopus leucurus altipetens,¹ subsp. nov. SOUTHERN
WHITE-TAILED PTARMIGAN.**

Type from Mt. Blaine, Colorado. No. 69774 U. S. National Museum, ♀ ad. Collected Sept. 3, 1874, by C. E. Aiken.

Characters.—Adult in fall plumage similar to *Lagopus leucurus*, but general color of upperparts buff instead of gray; adult in summer plumage indistinguishable in color from *leucurus*; wings and tail decidedly longer than in *leucurus*.

Color.—Adult male in fall plumage: Upper parts pale cinnamon rufous, back, rump and upper tail-coverts finely dotted and vermiculated with brownish black; head and neck all around somewhat lighter with broader vermiculation and spotting; breast, sides and flanks similar to back but darker; occasional feathers of breast with broad bars or median areas of white; middle of abdomen, under tail-coverts, tail and wings pure white.

Measurements.—The southern bird is considerably the larger as will be seen by the following table. Measurements are in millimeters.

		Locality.	Wing.	Tail.	Bill from nostril.	Tarsus.
Lagopus leucurus	♀	Cook Inlet, Alaska	162	103	10	30
"	♀	Glacier Bay, "	165	102	9	31
"	♀	White Pass, "	166	97	9	29
"	?	Nahanna Mts., N. W. T.	167	104		31
"	?	² Rocky Mts., lat. 54° N.	172	102		31
Lagopus l. altipetens	♀	Mt. Audubon, Colo.	184	114	10	31
"	♀	Mt. Blaine, "	188	119	9.5	29
"	♂	" " "	182	120	9.5	31
"	♂	Bald Mt. "	189	115	9	30
"	♂	San Juan Mts. "	180	110	9	33

Remarks.—Until the present year the northern White-tailed Ptarmigan has been represented in the National Museum collection only by specimens in summer plumage or in white winter plumage. During the past season, however, I secured an adult female in fall plumage in the mountains on the south side of Turnagain Arm, Cook Inlet, Alaska. Before skinning this bird, it was evident to me that it was different from any ptarmigan that I had ever seen before. Consequently it was one of the first birds

¹ Altipetens = seeking the heights.

² These are the measurements of Swainson's type expressed in millimeters.

which I sought to identify on my return from the field. On comparing it with fall specimens from the mountains of Colorado it was immediately seen to be a dusky grayish bird tinged with olivaceous and therefore very markedly different from the cinnamon rufous Colorado bird. It is also much smaller than the Colorado bird and agrees in this respect with three other northern specimens from White Pass, and Glacier Bay, Alaska, and Nahanna Mountains, N. W. T., respectively.

The name *leucurus* seems to be applicable to this small northern form. The measurements given by Swainson indicate the smaller bird and one of the specimens which he describes is said to be "in the act of assuming its winter dress" and to have "the base of the whole upper plumage blackish grey" which exactly describes the Cook Inlet bird above referred to and could not possibly apply to any of the Colorado birds. In summer plumage the two forms are distinguishable only by size.

***Anorthura hiemalis helleri*, subsp. nov. KADIAK WINTER
WREN.**

Type from English Bay, near Kadiak, Kadiak Island, Alaska. No. 167276 U. S. Nat. Mus., Biological Survey Collection, ♂ ad. Collected Oct. 3, 1900, by W. H. Osgood and E. Heller. Orig. No. 538.

Characters.—Slightly larger and paler colored than *Anorthura hiemalis pacifica*; otherwise similar.

Distribution.—At present known only from the type locality.

Color.—Adult male in fall plumage: Upperparts paler than in *A. h. pacifica*, general effect cinnamon brown, lightest on head, neck and interscapulars, deepening somewhat on back and rump; upper tail-coverts and rump faintly barred with dusky; scapulars spotted indistinctly with whitish and faintly barred with dusky; outer web of secondaries and inner primaries brighter than back, distinctly barred with black, outer webs of outer primaries isabella color broadly barred with black; median and greater wing-coverts with pale subterminal spots. Underparts between cinnamon and isabella color, palest on middle of breast and abdomen; flanks, abdomen and crissum barred with brownish black and dull white; tail like edge of secondaries.

Measurements.—Type of *A. h. pacifica*: Wing, 45; tail, 29; exposed culmen, 11.5; tarsus, 16. Average of 4 adults from Seattle, Wash.: Wing, 46; tail, 33; exposed culmen, 11.5; tarsus, 17. Average of 3 adults of *A. h. helleri* from Kadiak: Wing, 48.5; tail, 36; culmen, 12; tarsus, 17.5.

Remarks.—The Kadiak Winter Wren is merely another illustration of the tendency of west coast birds which range as far north as Kadiak to become pale in their northern habitat. The present form tends in slight degree toward *Anorthura alascensis*, but not sufficiently to affect its specific rank. Specimens from the Alaska Peninsula would be of great interest but the gap between *helleri* and *alascensis* is too great to make the existence of intergradation probable. The type of *pacifica* from Simiahmoo, Washington, is in winter plumage and thus quite comparable with fall birds from Kadiak. Its upper parts are almost clear burnt umber, very different from the Kadiak birds which are cinnamon brown with a pale filmy wash over it producing an effect somewhat between the cinnamon and broccoli brown of Ridgway. Five specimens of *helleri* have been examined, three taken in August and two in October. An immature bird from Kadiak is indistinguishable from the same plumage of *pacifica*.

The Kadiak wren is named in honor of Mr. Edmund Heller, my field assistant, to whom much of the success of the past season's work is due.

***Certhia familiaris zelotes*,¹ subsp. nov. SIERRA CREEPER.**

Type from Battle Creek, Tehama Co., California. No. 170708 U. S. Nat. Museum, ♀ ad. Collected Oct. 23, 1898, by R. C. McGregor.

Distribution.—Southern Cascade Mountains of Oregon and Sierra Nevada of California.

Characters.—Similar to *Certhia f. occidentalis* but colors more dusky and less rufescent; rump decidedly contrasted with rest of upper parts; similar to *Certhia f. montana* but much darker; light centers of feathers on head and back much reduced.

Color.—Top of head and back clove brown or between clove brown and sepia, streaked with creamy white; rump and upper tail-coverts between chestnut and hazel of Ridgway (in *montana* the color is cinnamon rufous); wings more nearly black than in any other form, spotted with creamy white; throat nearly pure white; breast slightly creamy; sides, flanks, and crissum lightly washed with fulvous.

Measurements.—A series of measurements of all the specimens available indicates that of the three western forms *occidentalis* is slightly the largest with no appreciable difference between *montana* and *zelotes*.

¹ Zelotes = an imitator.

Remarks.— This subspecies has generally been included under the name *occidentalis* but it seems to be more similar to *montana* and its characters might be considered intermediate between those of these two. They are perfectly constant throughout its range, however, so that the form is easily recognizable. The three western forms may be diagnosed as follows:

C. f. montana.— General colors grayish, light centers of feathers of back and top of head broad and conspicuous; rump in contrast with back. *Distribution.* Rocky Mountains from New Mexico north to Alaska.

C. f. zelotes.— General colors dusky; light centers of feathers of back and top of head much reduced; rump in contrast with back. *Distribution.* Cascade Mts. of Oregon and Sierra Nevada of California.

C. f. occidentalis.— General colors rufescent; rump blending with back. *Distribution.* Pacific Coast from Sitka, Alaska, to Marin County, California.

***Hylocichla aonalaschkæ verecunda*,¹ subsp. nov. COAST
HERMIT THRUSH.**

Type from Cumshewa Inlet, Moresby Island, Queen Charlotte Islands, British Columbia. No. 166901, U. S. National Museum, Biological Survey Collection. ♀ ad. Collected June 22, 1900, by W. H. Osgood and E. Heller. Orig. No. 429.

Distribution.— Islands and coast of British Columbia and southeastern Alaska; south in winter to California.

Characters.— Similar to *Hylocichla aonalaschkæ* but darker and richer colored; essentially a brownish bird rather than a grayish olivaceous one.

Color.— Type in breeding plumage: Nape and back brownish olivaceous somewhat between the raw umber and broccoli brown of Ridgway; forehead, top of head and rump slightly browner than back; upper tail-coverts and tail Mars brown to burnt umber; throat and breast spotted and streaked as in *H. aonalaschkæ*, but with ground color very much more buffy; sides and flanks grayish olivaceous.

Measurements.— Average of 4 adult females from Queen Charlotte Islands, B. C., and Sitka, Alaska: Wing, 82; tail, 70; culmen, 13; tarsus, 28. Average of 4 adult females of *H. aonalaschkæ* from Kadiak, Alaska: Wing, 84; tail, 72; culmen, 13; tarsus, 28.

Remarks.— Although the Hermit Thrush has not been found by recent collectors on the island of Unalaska and although

¹ *Verecunda* = shy, modest, retiring.

the absence of the alder brush¹ makes it improbable that it ever has been or ever will be found there, it seems necessary to use the name *aonalaschkæ* for the Hermit Thrush which breeds nearest to Unalaska. An exactly parallel case is found in *Passerella iliaca unalascensis* which has been restricted in the same manner.² Birds from Nushagak and Kukak Bay on the Alaska Peninsula may therefore be taken as typical examples of *H. aonalaschkæ*. These do not seem to differ from numerous specimens from Kadiak but they are decidedly paler and grayer than those from Sitka and the Queen Charlotte Islands. It is therefore necessary to name the southern form, which corresponds in character and in geographic distribution to such subspecies as *Passerella iliaca townsendi*, and *Junco hyemalis oregonus*. Specimens from the vicinity of Lynn Canal and Yakutat are somewhat intermediate though nearer to *aonalaschkæ*. Both *aonalaschkæ* and *verecunda* are found in California in winter and they differ at this season in practically the same way and to the same degree that they do in summer. Winter specimens of both forms from the same locality (Fort Klamath, Oregon) are in the National Museum collection and both are represented at least as far south as San Bernardino, California.

The name *Turdus nanus* which was proposed by Audubon in 1839 has been applied to the western Hermit Thrushes, but a careful examination of the facts connected with this name seems to prove that it should be used for the eastern bird. The most conclusive proof is the original plate (No. 419, fig. 1) which though imprinted *Turdus minor* is cited under *Turdus nanus*. It shows a bird with brown sides which is absolutely diagnostic of the eastern bird. The text also indicates that the original material was practically all eastern. In order to understand the case thoroughly it may be best to quote from Audubon. Prefacing the proposal of the name *nanus* he says:³ "It is ex-

¹ It is possible that alders may be found on some remote parts of the island, in which case the occurrence of both *Hylocichla* and *Passerella* would be probable.

² Cf. Ridgway, Auk, XVII, 30, Jan., 1900.

³ Orn. Biog., V, 204, 1839.

tremely rare in our Atlantic districts, where, however, I have procured a few individuals. Indeed, the first intimation which I received respecting it was from my friend Dr. Charles Pickering of Philadelphia, who, having procured one had kept its wings and head, the smallness of which, struck me at once. I was then far from imagining that its native haunts were the valleys of the Columbia River, from which, however, I have since received it through the kindness of my friend Dr. Townsend, who has also sent me its measurements, 'length 6 inches, alar extent 9.'"

From this it seems that Audubon's material consisted of several eastern specimens procured by himself, one eastern specimen from Dr. Pickering of Philadelphia and one western specimen from Dr. Townsend, the eastern material thus being in excess of the western. The description of *nanus* except the measurements, is almost a verbatim reprint of that given under *Turdus minor*¹ no difference of color whatever being claimed. In the measurements given under *nanus* the extent of the wings is stated to be $9\frac{1}{2}$ inches, so the specimen measured in this connection could not have been the Columbia River specimen which was alluded to previously as measuring but 9 inches in 'alar extent.' If we then eliminate the Columbia River specimen there remain only the eastern ones for the basis of the name.

Therefore it seems that Audubon's description of *T. nanus* was entirely based on exceptionally small specimens of the eastern Hermit Thrush and since this name antedates *Turdus pallasii* Cabanis,² the proper name for the eastern Hermit Thrush is *Hylocichla aonalaschkæ nanus* (Aud.).³ If additional evidence should show the name *nanus* applicable to the western form, which seems improbable, then it would stand for the bird here described as *verecunda*.

¹ Orn. Biog., Vol. I, 304-305, 1831.

² Wiegman Archiv., 1847, I, 205, 1847.

³ The combination *Turdus unalascae nanus* was used by Coues in 1883, *Avifauna Columbiana*, p. 34.

THE TWO RACES OF *SAXICOLA ÆNANTHE*.

BY LEONHARD STEJNEGER.

WHEN preparing my paper 'On the Wheatears (*Saxicola*) occurring in North America' (Proc. U. S. Nat. Mus., XXIII, No. 1220, p. 473-481) in which I have demonstrated the existence in this hemisphere of two forms, viz., *Saxicola ænanthe* in Alaska and *Saxicola ænanthe leucorhoa* in Greenland, I wrote to my friend Dr. R. Bowdler Sharpe for the wing measurement of certain African specimens in the British Museum. The answer came too late to be incorporated in the paper quoted, but the facts contained in it are so interesting that I take this means of publishing them and thus further strengthen the claims of the two races for recognition.

The measurements kindly sent by Dr. Sharpe, for which I hereby extend my cordial thanks, are as follows:

Saxicola ænanthe.

1 ♂	Ashi Kisa, Interior of British East Africa.	Lord	
	Delamere coll.		Wing 94 mm.
6 ♂♂	Ashi Kisa, Interior of British East Africa.	Lord	
	Delamere coll.		" 97-99 "
1 ♀	Ashi Kisa, Interior of British East Africa.	Lord	
	Delamere coll.		" 94 "
5 ♂♂	British East Africa, F. J. Jackson coll.		" 95-97 "
2 ♀♀	British East Africa, F. J. Jackson coll.		" 90-97 "
Total 16	specimens from East Africa		" 90-99 "
	Average		" 94.5 "

Saxicola ænanthe leucorhoa.

1 ad.	Gambia, West Africa	Wing 104. mm.
-------	-------------------------------	---------------

These figures, it will be seen, fully substantiate my contention that there are two races, one with the wing normally not exceeding 100 mm., and one with the wing normally not shorter than 100 mm., and that the latter is confined to the extreme west of Europe

and Africa migrating in summer to Greenland and adjacent countries to breed. In the paper quoted I stated "that out of a total of 122 typical *Saxicola ananthe* only 5 have the wing 100 or 101 mm., while of 45 *Saxicola leucorhoa* none measure less than 100 mm. In other words, only 4 per cent of the small race exceed 99 mm., while none of the larger are below 100. In the whole series of 165 birds, consequently, only 3 per cent of the specimens are intermediate." This statement can now be modified to the effect that of a total of 138 typical *S. ananthe* only 3.6 per cent of the small race exceed 99 mm., while of 46 specimens of the larger race none are below 100 mm., and that consequently out of the whole series of 182 birds only 2.75 per cent are intermediate.

It is also interesting to note that the average of the extremes of Dr. Sharpe's measurements of the small race, viz., 94.5 mm., is identical with the average of the 65 specimens measured by me as shown in the diagram (*op. cit.*, p. 481) and that the West African specimen of the larger race is identical with the average of 28 specimens as shown in the same diagram. There is consequently every reason to conclude that the results deducible from the diagram in question are founded in Nature.

It is then pretty safe to say, that the short-winged *Saxicola ananthe* in Alaska goes to India in winter, and that the long-winged *S. ananthe leucorhoa* from Greenland winters in West Africa.

THE LONG-TAILED JAY.

BY JOSEPH GRINNELL.

Aphelocoma californica immanis, new subspecies.

Subsp. Char.—In coloration similar to *Aphelocoma californica*, but size greater and tail proportionately much longer.

Type.—♂ ad., No. 4582, coll. J. G.; Scio, Oregon, January 9, 1901; collected by A. G. Prill and procured for me by B. J. Bretherton.

Habitat.—Willamette Valley, Oregon (Scio and Salem).

MEASUREMENTS¹ OF SPECIMENS.

No., Coll. J. G.	Sex.	Date.	Locality.	Wing.	Tail.	Tarsus.	Culm.	Bill from Nostril.	Depth of Bill.
4585	♂	March 30, '00	Scio, Oregon	127	151	44	27	20	10.5
4582	♂	Jan. 9, '01	" "	133	165	44	28	21.5	10
4586	♀	Feb. 8, '01	" "	125	152	42	28	20.5	10
4583	♀	March 3, '00	" "	129	150	41	27	21	10

¹ In millimeters.

GENERAL NOTES.

Brünnich's Murre in Lewis and Jefferson Counties, New York.—On Nov. 29, 1900, I had an adult male specimen of *Uria lomvia* brought to me by a farmer who stated he caught him alive in a mud hole near his home. This is, I believe, the first instance of the capture of this species in Lewis County.

A few days later, Dec. 4, I received another from a gunner at Redwood, Jefferson County, who stated there was quite a large flock of them on the lake at that place. This specimen had eight small black bass in its stomach, the largest three inches long.—JAMES H. MILLER, *Lowville, Lewis Co., N. Y.*

Habits of the Gooney.—My attention has been called to recent notes by Messrs. Henshaw and Mead on the habits of a Pacific species of Albatross, or Gooney, as the species of *Diomedea* are almost universally called by sailors in the North Pacific.

As to whether the species roost on the yards of vessels or spend the night resting on the water, I can say that I have never known an Albatross to attempt to alight on the spars of a ship, and I very much doubt their so doing although Gulls and Boobies often rest for hours on the yards or in the shrouds. I have often beguiled the weary hours of a 'trick' on deck at night, by watching the albatrosses as they tacked to and fro in the wake of the vessel. When there was sufficient moonlight I have seen them pass and light near the course of the vessel, and then, after having dropped astern some distance, they would come straggling along to pass and alight as before. Even on the darkest nights they may sometimes be seen against the sky as they follow in the wake of vessels, and it is my opinion that they follow until they feel the need of rest, probably several days, and make no attempt to find a vessel that has passed beyond the limits of their horizon.

Gulls also will, at times, follow the same vessel for several days if the course taken is near the coast, but they soon drop the deep sea craft. I once noted a *Larus glaucescens* with distinctive markings which followed the coast steamer from San Diego to San Francisco for nearly three days.—A. W. ANTHONY, *Portland, Oregon*.

Audubon's Shearwater (*Puffinus auduboni*) on the Coast of Virginia.—A Shearwater from Cobb's Island, sent me several years ago by Capt. C. H. Crumb, taken, according to the label, on September 1, 1893, proves to be of this species.

For the following additional particulars regarding these Shearwaters, I am indebted to Mr. William Palmer. Mr. Palmer informs me that during his return voyage from Havana, last August, on the way north to Cape Hatteras, great numbers of them were to be seen for about a day and a half. Early in October, Mr. Palmer again saw several at Virginia Beach, Va. It seems possible that this bird may occur not infrequently off the Virginia coast.—WILLIAM C. RIVES, M. D., *Washington, D. C.*

The Mexican Cormorant in Colorado.—A specimen of this species (*Phalacrocorax mexicanus*), an adult male, was taken Oct. 15, 1899, at Smith's Lake, fourteen miles north of Denver, Colorado.—A. H. FELGER, *Denver, Colorado*.

A Virginia Record for the American Eider (*Somateria dresseri*).—On Dec. 28, 1900, a female American Eider (*Somateria dresseri*) was taken on Broadwater Bay, near Cobb's Island, Virginia. So far as I am able to learn this bird has not been previously recorded south of the Capes of Delaware.—HENRY BRYANT BIGELOW, *Cohasset, Mass.*

Early Occurrence of the Black Scoter in Maryland and Virginia.—On Aug. 26, 1900, I came across a male and four females of the Black Scoter just inside the surf at Gargathy Inlet, Accomac County, Virginia. They were quite tame and allowed of close approach. On being flushed they flew outside the breakers and pitched. On Aug. 29 I reached Ocean City, Maryland, and saw 20 in a bunch just outside the surf. Capt. Christopher Ludlam, a most careful observer, told me that he had first observed them at this point on Aug. 27, when a bunch of about 100 were just outside the surf. On Aug. 30 I saw a bunch of about 20, and possibly the same bunch of about 20 on the 31st. These were carefully observed through a strong field glass, so the identity is assured.—F. O. KIRKWOOD, *Baltimore, Md.*

The Purple Gallinule in Massachusetts in the Breeding Season.—In August, 1899, I saw at the farm of Mr. A. J. Severance in Rowley, Mass., a mounted specimen of the Purple Gallinule (*Ionornis martinica*). The bird was caught in June, 1897, by a cat at a pond in the adjoining town of Boxford. Another bird, supposed to be of the same species and the mate, was seen at the pond. This appears to be the second record of the occurrence of *Ionornis martinica* in Essex county, the specimen previously noted being preserved in the collection of the Peabody Academy of Science at Salem.

Another hitherto unpublished record of *Ionornis martinica* in Massachusetts is that of a beautiful specimen which I saw in the flesh in April, 1890, at the stall of W. W. Palmer, Faneuil Hall Market, Boston. The bird had been caught in a muskrat trap at Chatham.—J. A. FARLEY, *Mal-den, Mass.*

Occurrence of Baird's Sandpiper in Sussex, England.—An immature female of *Heteropygia bairdi* (Coues) was shot by Mr. Michael J. Nicoll, on the shingle to the west of Rye Harbor, on the 11th of November, 1900. The bird was seen in the flesh by the present writer on the day following, and upon examination it soon became obvious that it was a stranger. Upon being submitted to Mr. Ernst Hartet, the accomplished ornithologist of Tring Museum, it was pronounced to belong to the above species. Baird's Sandpiper is not known to have previously occurred in the British Islands. The specimen was exhibited by Mr. Hartet at a meeting of the British Ornithologists' Club, on 21st Nov., 1900. (Bull. B. O. C., Vol. XI., p. 27).

It may be added that Mr. Nicoll's curiosity was aroused by the strange cry and flight of the bird. He states that when approached it flew some distance, and then, after rising, it suddenly dropped to the ground.—W. RUSKIN BUTTERFIELD, 4, *Stanhope Place, St. Leonard's-on-Sea, England.*

Ruffed Grouse in Snow.—From records in the snow I have come to the possibly trite conclusion that the Ruffed Grouse (*Bonasa umbellus*),

when not scared from the ground, will often deliberately clamber to some stump, or other eminence, in order to get good wing-space below its body for the first stroke in flight. The awkwardness of a leap from the level I found beautifully illustrated upon a flat piece of fresh soft snow some three inches in depth. Here, at the bird's spring, its entire form from tip of tail just to the swell of the throat, and from tip to tip of both wings, had pressed a mould some inch or two deep. This mould measured eighteen inches long and twenty inches in spread. Even the primaries of both wings were perfectly distinct, struck hard and clean. At a distance of eleven inches in front of this wing-beat the primaries had again struck into the snow, an inch in depth, as the wings met below the bird's body on the second stroke. The tips of these marks at their deepest were, I think, about four inches apart, showing that the bird normally needs an air-space below the body of almost the wing's full length. On firm ground the legs might push to this height; but on soft snow this manner of departure could hardly have been premeditated. These observations were made at Beverly Farms, Mass.—REGINALD C. ROBBINS, *Boston, Mass.*

The Passenger Pigeon.—Since the year 1871 I had not seen a Wild Pigeon until 1896, when, near the Bay of Quinte, I saw a pair. The following year in the same vicinity, I saw from four to six birds on several occasions and during the next two years I saw about the same number. The past season I had not the opportunity of observation.

In 1898 I wrote in 'The Globe,' the leading daily paper of Canada, asking any one who had seen Wild Pigeons, during recent years, to make it known. This elicited many replies through 'The Globe' and by personal letters.

There was a general agreement as to a total disappearance about 1870, continuing until 1895. A few stated they had seen an occasional bird earlier. The reports were from all parts of Ontario and Manitoba. Mr. D. C. Black, Appin, Ont., writes: "I saw nine in a wheat field near the village of Glencoe, and they are the first I have seen in twenty-five years. They did put me in mind of the olden times. When I was a boy I used to spend a great deal of my time trying to strike them with sticks. They have often taken half a day, crossing over our farm, flying very low, as they seemed to be very tired. . . . To see a few of them is to me as seeing a dear old friend."

I think we may fairly conclude that the Wild Pigeon abruptly became very rare about 1870 (it is probable there was a diminution during the previous decade), and that there has been an increase in their number in recent years.

I am not aware of any satisfactory explanation of the phenomena. It is not improbable, some epidemic disease, spreading more rapidly on account of the immense number of individuals, nearly exterminated the

species. In such a case, we might expect to see them again, in large numbers. This would be analogous to what we see in insects, *Danaüs archippus* for instance.

The food supply has certainly become less. In this connection it is interesting to observe, that in the district where I have seen Wild Pigeons recently, there are some white oak trees and though they are mostly second growth, they succeed quite a forest of old oaks. There has, in this locality probably, been a continuous supply of mast. Mr. S. D. Woodruff of St. Catharines, Ont., writes, that he learned from sea captains that immense numbers of pigeons perished in the Gulf of Mexico, being exhausted by contrary winds and dense fogs. He says the experience of several ship masters was having "myriads of the pigeons alight on the vessel and rigging, and having to cast them off into the sea."—G. C. TREMAINE WARD, *Napance, Ont., Can.*

The Occurrence of the Ground Dove in Virginia.—While on a visit near Lynchburg, Campbell County, I flushed and killed a bird which upon examination proved to be this species (*Columbigallina passerina*). This is, I believe, the first instance of this kind occurring in this State. The bird was shot on November 4, 1900, and was a female in fine condition. It is now in the collection of Bertram Roberts of Washington, D. C.—PERCY W. SHUFELDT, *Washington, D. C.*

Rachitis in Young Red-shouldered Hawks.—May 26, 1900, Mr. A. H. Verrill informed me that he had that morning taken four downy young Red-shouldered Hawks (*Buteo lineatus*) from a nest near New Haven, wishing to raise them for photographic purposes. He fed them on butcher's meat, and they grew in size and weight, and juvenal plumage soon began to show. May 31 one was so weak that it was put to death, and the others seemed out-of-sorts, though gaining in size and plumage. They were unable to lift themselves to their feet, and seemed to suffer pain when handled. Their characteristic attitude was with the feet thrust forward. These symptoms increased and on June 11 two died.

In preparing them for specimens I found they showed well-marked evidence of rickets. Subcutaneous fat was present in large amounts, but the muscles were flabby and anæmic and the ligaments lax. The epiphysial cartilage was somewhat enlarged, the long bones deformed and unusually soft and flexible, and the tibiae of both birds showed subperiosteal fractures at the point where the weight of the body would come when seated. Doubtless their attempts at standing aided in causing these fractures.

As Mr. Verrill and I were at this time collecting in western Connecticut, I suggested giving the surviving hawk bird-bodies as a change in diet, thinking that possibly these young birds had been unable to assimilate the lime necessary for calcification of the bones from meat alone. Under this treatment the surviving bird improved somewhat, but died on June 15, showing on dissection a condition similar to the others.

As a young Red-shouldered Hawk, which some years ago I fed on meat, died showing similar symptoms, and later nine young Ferruginous Rough-legs flourished on a diet of bird and mammal bodies, it seems probable that these birds require bone in their food to attain healthy growth, especially as it is known that young mammals will die of rickets if fed from birth on meat alone. — LOUIS B. BISHOP, M. D., *New Haven, Conn.*

New Name for *Nyctala*.—The generic name of Richardson's and the Saw-whet Owls, *Nyctala* Brehm, 1828, is preoccupied by *Nyctalus* Bowdich, 1825, for a genus of mammals, and as no other term appears to be available I will propose *Cryptoglaux* (κρυπτος, hidden, and γλαύξ, an owl), with *Strix tengmalmi* Gmelin as the type. The species in our list will thus stand as *Cryptoglaux tengmalmi richardsoni* (Bonap.), and *Cryptoglaux acadica* (Gmelin). — CHARLES W. RICHMOND, U. S. National Museum, Washington, D. C.

The Pileated Woodpecker in Connecticut.—Late last December, Mr. Charles S. Starr, a recent graduate of Yale, saw in Cornwall, western Connecticut, what was undoubtedly a Pileated Woodpecker. He describes it as a large black bird nearly the size of a Crow, with a crimson patch on the back of its head, and some white markings, also having a very long bill. It was clinging to the trunk of a dead tree, pecking, and climbing up spirally. It moved by short hops, and was slow and irregular in flight. I think he has described the species very satisfactorily. Its occurrence in this State is now, I think, very uncommon. — HERBERT K. JOB, *Kent, Conn.*

***Milvulus* versus *Muscivora*.**—The generic name *Muscivora* has commonly been applied to that group of Neotropical flycatchers of which *Todus regius* Gmelin is the type and earliest described species. A careful investigation, however, shows that the name *Muscivora* was originally employed by Lacépède (Discours du Cours d'Hist. Nat., 1799, p. 5) for the "Mouche-rolles" of Buffon, which include several species of Old and New World flycatchers, among them *Tchitrea paradisi*, *Tchitrea mutata*, *Milvulus tyrannus* and *Milvulus forficatus*, but not *Muscivora regia*, this last having been placed by Buffon among the "Gobe Mouches," the group Lacépède (*loc. cit.*) calls *Muscicapa*. *Todus regius* (= *Muscivora regia* auct.) can, therefore, in no case be considered the type of *Muscivora*. What that type is was first determined by Fischer, who, in 1813 (*Zoognosia*, I, p. 54), selected *Muscicapa forficata* (= *Milvulus forficatus* auct.). Since *Milvulus* Swainson (*Zool. Journ.*, III, 1827, p. 165) is thus antedated by *Muscivora* it must of course give place.

The next available generic name for *Todus regius* and its allies is *Onychorhynchus* Fischer (*Zoognosia*, I, 1813, pp. 31, 42), type by implication *T. regius*. The species of these two genera will therefore now stand as follows:

Muscivora forficata (Gmelin).

Muscivora tyrannus (Linnæus).

Onychorhynchus regius (Gmelin).

Onychorhynchus swainsoni (Pelzeln).

Onychorhynchus mexicanus (Sclater).

Onychorhynchus occidentalis (Sclater).

—HARRY C. OBERHOLSER, *Washington, D. C.*

Variation in Size in the Wood Pewee.—The Wood Pewee (*Horizopus virens*) throughout the whole breadth of its breeding range, from Florida to Newfoundland, shows a nice gradation in size from *large* examples in the south, to *small* examples in the north. This fact seems worthy of comment as the northern examples of a species are generally characterized by being larger. The greater size of the southern bird has heretofore been commented upon by Mr. C. J. Maynard (*in verbis*). The birds from the north average, *Males*: Wing, 3.30—; tarsus, .52; bill (from nostril to tip), .38—; width of bill (at nostrils), .26+. Extremes: Wing, 3.18 to 3.42; tarsus, .46 to .54; bill, .30 to .43; bill (wd.), .25 to .29. *Females*: Wing, 3.15; tarsus, .49+; bill, .38+; bill (wd.), .25+. Extremes: Wing, 3.11 to 3.18; tarsus, .45 to .53; bill, .36— to .40; bill (wd.), .24 to .27. Those from the South (arbitrary dividing line, Lat. 42°), *Males*: Wing, 3.41+; tarsus, .53+; bill, .40—; bill (wd.), .28+. Extremes: Wing, 3.30 to 3.55; tarsus, .51 to .57; bill, .39 to .43; bill (wd.), .27 to .32. *Females*: Wing, 3.17+; tarsus, .52+; bill, .38+; bill (wd.), .27+. Extremes: Wing, 3.08 to 3.45; tarsus, .50 to .58; bill, .37 to .40; bill (wd.), .25 to .29. These measurements were taken from a series of thirty-two specimens.

It is also interesting to note that both the figures by Catesby and Abbot (Auk, XIII, p. 104), show the pronounced hook and larger size of the southern bird's bill. For the use of specimens my thanks are due to Drs. Walter Faxon and C. W. Richmond, Messrs. Witmer Stone, William Brewster, H. B. Bigelow, and others. — REGINALD HEBER HOWE, JR., *Longwood, Mass.*

The Meadowlark (*Sturnella magna*) at Rangeley, Maine.—Although the Meadowlark has been found at several localities in northern New England the capture of a male at Rangeley, Maine, April 21, 1897, by Mr. Ernest L. Haley, is perhaps worth recording. The specimen, which is in high spring plumage, has been recently purchased for me by Mr. M. Abbott Frazar, to whom I am also indebted for the above data. — WILLIAM BREWSTER, *Cambridge, Mass.*

The European Starling in Connecticut.—December 3, 1900, I took a male Starling (*Sturnus vulgaris*) in North Haven, Conn. The bird was alone late in the afternoon, and flew from up the river into some trees near the edge of the Quinnipiack Marshes. I judged from its actions that it was looking for the blackbirds which every autumn roost in large numbers in the rushes near where it was shot, and with which it may have

associated before they left for the South. Mr. W. H. Hoyt tells me that three Starlings have been taken recently from a flock that is spending the winter on Noroton Hill, near Stamford.—LOUIS B. BISHOP, M. D., *New Haven, Conn.*

Snow Bunting at Sea.—About noon on November 17, 1900, a Snow Bunting (*Plectrophenax nivalis*) was observed at sea by Mr. Paul du Chaillu and myself, on board the American line steamer 'New York.' The bird approached from a southwesterly direction and alighted in the rigging, flying in a rather labored manner. The vessel was then 260 miles east of Sandy Hook and 50 miles distant from the eastern end of Nantucket, the nearest land. The weather was fair.—HUGH M. SMITH, M. D., *Washington, D. C.*

Montana Redpolls.—A small series of Redpolls collected by Mr. Charles T. Hodges at Miles City and Fort Keogh, Montana, during the winter of 1899–1900 has come recently into my possession. The majority are specimens of *Acanthis linaria*, but there are three skins of *A. l. rostrata*, two of *A. l. holbællii*, and two of *A. hornemannii exilipes*.

The Greater Redpoll was taken on March 1 and 6, the Holbæll's (which Prof. Ridgway has examined) on March 2, and the Hoary, on February 26 and March 12. I can find previous records for only *Acanthis linaria* from Montana.—LOUIS B. BISHOP, M. D., *New Haven, Conn.*

***Acanthis linaria rostrata* and *Xanthocephalus xanthocephalus* in Connecticut.**—In a small collection of bird skins given me some time ago by Dr. W. H. Hotchkiss of this city I find two skins of the Greater Redpoll. They were taken by Dr. Hotchkiss near New Haven on December 17, 1878, and are, I believe, the only specimens of this subspecies so far recorded from Connecticut.

In the same collection was an unlabelled skin of a female Yellow-headed Blackbird, which Dr. Hotchkiss told me he was certain was shot near New Haven in June, 1878. In this connection it may be well to report that another female of this species was taken on Monomoy Island, Mass., September 8, 1897, by Mr. W. B. Revere, and given to me while in the flesh.—LOUIS B. BISHOP, M. D., *New Haven, Conn.*

Deformity of Maxilla in the House Sparrow.—The accompanying illustrations show the overgrowth of maxilla after loss of mandible in a male *Passer domesticus*. The photograph was taken by Mr. A. H. Verrill, who shot the bird in his yard in New Haven, December 10, 1900, and brought it to me in the flesh.

The culmen measures .60 inch from nostril against an average of .39 inch in five normal males of this species. The maxilla measures .16 inch in depth at tip on the right side, but had been worn off on the left where all that was left of the mandible approached it. The normal outer cov-

ering of the bill persists at the base in the form of a triangle, the apex extending .31 inch along the culmen; this portion thus showing much the shape of a normal maxilla. On the rest this outer layer has disappeared, doubtless from effort of the bird to scoop up food. Mr. Verrill said he saw it attempt to pick up pieces of cracker in this manner.

Of the mandible only a fragment .28 inch long (measured from the commissural angle) at the base of the left ramus is present, the rest having



been lost through some accident. The wound had healed, leaving the tongue exposed. Most of the feathers on the upper throat and malar region have been worn away, and the plumage in general was dirty, rumpled and matted, as the bird was of course unable to preen. The body was emaciated, but there was a little subcutaneous fat, and a partial molt was in progress. The stomach contained a little white sand, and a soft, whitish substance, probably cracker.

That this bird in its crippled condition after the loss of the mandible succeeded in living the time necessary for the great overgrowth of the maxilla seems to me very remarkable. Mr. W. H. Hoyt of Stamford has shown me a mounted Parrot (*Amazona leucocephala*) in which the mandible had grown over the maxilla and extends for more than one third of an inch upwards, but this bird lived in captivity. — LOUIS B. BISHOP, *M. D.*, *New Haven, Conn.*

The Loggerhead Shrike in New Brunswick.—On different occasions broods of young shrikes have been seen near here, and the writer always supposed they were the Northern Shrike (*Lanius borealis*), as that was the only species of shrike in Chamberlain's list of New Brunswick Birds. But two years ago on writing to Mr. F. M. Chapman of their occurrence, he suggested that they were *Lanius ludovicianus*. Since that date no young have been observed, but during the past summer, at two different times, shrikes were seen that, I was most certain, were the Loggerhead,

but having no gun I was unable to obtain a specimen for close inspection. On the 15th of January while calling on a taxidermist friend, I saw what was without a doubt a Loggerhead Shrike, that had been taken near here, yet he did not know it to be anything uncommon, as he is very poorly informed in ornithology. This is probably a new addition to the birds of New Brunswick, and for which a keen lookout will be kept in future — WM. H. MOORE, *Scotch Lake, York Co., N. B.*

The Scientific Name of the Southern Yellow-throat. — Mr. Chapman's disagreement (Auk, Oct., 1900, p. 389) with my acceptance of *Geothlypis trichas roscoe* (Aud.), brings up an interesting nomenclatural question well worth discussing. I have never seen *trichas* in a cypress tree, but I have seen *roscoe* often. This is not of course evidence that Audubon shot a *roscoe* but neither is Mr. Chapman's idea that the bird was a *trichas* because it was high up in a cypress and the time September. It should be remembered that Audubon knew little about subspecies and nothing about their values, and therefore his action in reversing a former view is not surprising. Also, previous to the publication of Dr. Hasbrouck's paper, and Mr. Brewster's name for the western bird, all were considered as *trichas*. My conclusion on the subject was based on ideas not thought necessary to discuss in a long paper but I will do so now that the issue has been raised.

Hasbrouck definitely and rightly separated the southern bird and would have given a new name but for the existence of the name *Sylvia roscoe*. It seemed reasonable from the evidence before him that Audubon's bird under the circumstances was the southern form. Chapman brought forward no additional evidence concerning the distribution of these birds and has not disproved the early view of Audubon, or Hasbrouck's action. The known eastern distribution of these birds for hundreds of miles beyond the limits set for it by Chapman, and the existence of Gulf specimens referable to the same form, renders Hasbrouck's acceptance of Audubon's name logical and reasonable. It should be, scientifically speaking, necessary that positive evidence should be acquired before upsetting a name so well established as Hasbrouck's, yet Mr. Chapman furnished none in his paper and none since.

There is no taint on Hasbrouck's name; it is not a homonym, nor is there a particle of evidence to prove or even tending to show, that it is a synonym of *G. trichas trichas*. It is really necessary to dispose logically of the older name by *evidence*, not opinion. I consider that there are three things which should prevent acceptance of Mr. Chapman's name, and that the burden of proof rests with Mr. Chapman, not with the other side. It is necessary to prove that *Sylvia roscoe* is a synonym of *G. trichas trichas*. It is necessary to prove that the southern bird does not exist in the cypress swamps of Mississippi. It is necessary to show that another form occurs in that State that in all probability is Audubon's bird. Until

the certainty of either of these premises is shown, priority and fairness demands that *G. t. roscoe* should stand. I think now, as I thought long ago, that the publication of *G. t. ignota* was unnecessary and should be ignored until proof, not opinion, is produced to set aside the older name. —WILLIAM PALMER, *Washington, D. C.*

The Correct Name for the Florida Yellow-throat.—Accepting Mr. Palmer's line of argument, in the preceding note, as the logical one by which to determine the proper name of the Florida Yellow-throat, I would ask him on what ground he ignores Audubon's statement that the bird he described as *Sylvia roscoe* was a young Maryland Yellow-throat? Audubon was more discriminating than Mr. Palmer evidently believes him to have been and until his identification of *Sylvia roscoe* has been *proved* to be erroneous we are not justified in rejecting his views.

It may be added, that all the facts in the case strongly suggest that Audubon's type was a migrant. Hence, even if it be later discovered that the breeding Yellow-throats of western Mississippi are identical with the resident Florida form, it by no means follows that Audubon's name *roscoe* is applicable to them. In short, we shall be warranted in reversing Audubon's decision only after an examination of his type, and as this probably does not exist, there will doubtless never be a reason for refusing to accept his conclusions.—FRANK M. CHAPMAN, *American Museum of Natural History, New York City.*

Probable Breeding of the Red-bellied Nuthatch near Boston.—I am requested by Mr. F. H. Mosher to report that he saw in June, 1899, in Medford, Mass., a Red-bellied Nuthatch (*Sitta canadensis*) busily engaged in catching and carrying away larvæ, presumably to its young. Mr. Mosher failed, however, to locate the supposed nest, for the Nuthatch, as he was tracing it through the woods, was set upon by a Wood Pewee and driven out of sight.

On other occasions during the summer of 1899, this species was observed in this locality by Mr. Mosher.—J. A. FARLEY, *Malden, Mass.*

The Newfoundland Veery (*Hylocichla fuscescens fuliginosa*) in Massachusetts.—On the 27th of last September I shot a specimen of this lately described bird in Lanesboro, Berkshire Co., Mass.,—the first example taken in this State. The four autumnal records for New England fall within the narrow limits of five days (Sept. 23–27), and indicate a migration through this region considerably later than the departure of the native Veeries for the South. In 1889 I killed a Veery in Waltham, Mass., on the extraordinarily late date, Oct. 5. This bird was unfortunately not preserved, but without much doubt it belonged to the race *fuliginosa*. —WALTER FAXON, *Museum of Comparative Zoölogy, Cambridge, Mass.*

Notes from Northern New York.—At Chateaugay Lake, Clinton Co., N. Y., on Dec. 24, I saw a typical specimen of *Uria lomvia* which had been shot on the lake just before it was closed by the ice—that is, about Dec. 12 or 13, 1900.

On the 24th also I found the body of a Great Blue Heron (*Ardea herodias*), from which the wings had been cut off, lying on top of the snow on the margin of the lake. As the last heavy snow in that section fell on Dec. 12, 1900, the bird could not have been killed before that date. The plumage was immature.—GEO. C. SHATTUCK, *Boston, Mass.*

Florida Bird Notes.—The greatest migration of birds that I have ever witnessed occurred here during about two hours of the morning of Jan. 31. The movement was composed exclusively of White-bellied Swallows, thousands of which passed headed south; wind fresh S. W., thermometer 80°. This migration was evidently caused by a cold wave in the upper portion of the State.

Ruby-throated Hummingbirds have been with us all winter, also Bonaparte's Gulls. This is the first season I have observed the latter here.—E. J. BROWN, *Lemon City, Florida.*

Notes from the Magdalen Islands.—I had the pleasure the past season, with Mr. C. S. Day, of spending three weeks at the Magdalen Islands. We devoted most of the time to Coffin Island and East Point, as being least known, arriving there on June 12. For four days we were isolated from the world at the wonderful Bird Rocks. The following are a few of the more noteworthy of many observations.

On June 13 Mr. Day was so fortunate as to flush a Least Sandpiper (*Tringa minutilla*) from her nest with four half-incubated eggs. The nest was a mere hollow in the 'barrens,' just back from the edge of a slough, among sparse growth of coarse grass and moss, the structural part consisting of simply a few dry bayberry leaves. The eggs were of a light grayish buff, marked rather sparsely, except at the crown, where there was a thick mass of spots and blotches. The markings were of a rich dark brown, verging on blackish at the crown, with occasional subdued lilac. In size they varied only from 1.18 to 1.20 inches in length, and from .82 to .88 in breadth. The owners were both present, and so exceedingly tame that I photographed one of them upon the nest. The love song is beautiful, a mellow twittering, emitted as the bird circles about. I met the species several times, and it is considered by the fishermen a regular and frequent breeder.

The same is their opinion regarding both the Scaup Ducks. I saw Scaups occasionally, and finally discovered a nest of the Greater Scaup (*Aythya marila nearctica*) with nine eggs, June 29, on a small island in "the Great Pond," flushing the female at very close quarters. The nest was a bed of down in the grass, the eggs fresh and notably larger than the many of the Lesser Scaup I have found in the West, ranging in

length, with one exception, from 2.50 to 2.60 inches, and in breadth from 1.70 to 1.80. In color they were almost exactly like some eggs of the Bittern that I had just taken, with a little more of an olive tinge. None of the books give this species as nesting in eastern North America, so perhaps this is the first known instance. As in the case of the Lesser Scaup, it would appear to be a late breeder. Only a few rods away, on another 'nubble,' were nests and eggs of a belated Dusky Duck, and of a habitually late-breeding Red-breasted Merganser. I also found a nest of the Blue-winged Teal on June 16, the young alive in the shell.

The Bittern, the Horned Grebe and the Rusty Grackle breed abundantly in the swamps and ponds near East Point. Of the first I found one nest with six eggs, the books giving five as the maximum. At the time of our arrival the young Rusty Grackles had just left the nests. These are very similar to nests of the Robin, and are built low down in the spruces, usually near the ends of thick boughs. I found this species only near East Point, in clumps of spruces on wet ground by the ponds. Piping and Ring-necked Plover were breeding abundantly on the long sand-bar between Grand Entry and Grindstone, but were almost wholly absent at East Point.

The stay on Bird Rock was fascinating beyond compare, amid the whirring multitudes of sea-birds. One morning we rowed over to and climbed North Bird, inspecting the Gannet colony on top. For the sake of the cause of bird-protection, I will here say that I was witness to the landing of a party of fishermen on Great Bird, after they had taken everything on North Bird that they could reach or shoot, who fired raking shots again and again into the masses of birds upon their nests, mowing them down like grass, to leave them there dead or dying, — a most horrible and pathetic sight. Will not our committee on bird-protection, the Audubon Society, and individual friends of the birds, use their influence to induce the Canadian authorities to forbid or restrict the looting of the Bird Rocks, and make the keeper of the light a warden?

In all I noted 65 species on the islands, 52 of these, at least, undoubtedly breeding. Curiously, staying mostly about East Point, I failed to find a number of the small land-birds that others have reported, but, as I had hoped, this was counterbalanced by the water-birds. Comparing my list with those of Cory, Brewster, Bishop, and Young, I have three species not recorded by them: — Barn Swallow, Mourning Warbler, and Glaucous Gull. The first of these is now common, and perhaps has come in there quite recently.

Five more species seem to be unrecorded in the breeding-season (June), namely, Bonaparte's Gull, Eider, Lesser Yellow-legs, Saw-whet Owl, and Tree Swallow. Of these last only the Saw-whet was proved to breed, by my finding a dead fledgling in a Flicker's hole. Fishermen declared that the Bonaparte's Gull breeds, but all I saw were in immature plumage.— HERBERT K. JOB, *Kent, Conn.*

New Brunswick Notes.—Lincoln's Sparrow (*Melospiza lincolni*) was observed near Fredericton, N. B., on August 10, 1900, and a Cardinal Grosbeak (*Cardinalis cardinalis*) at Scotch Lake on August 20, the second occurrence of this species here known to me. Three male Purple Finches (*Carpodacus purpureus*) were observed at Scotch Lake on February 4, 1901, and seven Goldfinches (*Astragalinus tristis*) at the same place on February 15. Our ordinary winter birds have been very scarce. — WM. H. MOORE, *Scotch Lake, York Co., N. B.*

Birds observed during a Steamer Voyage from San Francisco to Victoria, British Columbia.—*September 8, 1898.* Midday; within sight of the surf off Point Reyes, California; clear and calm. Several Western Gulls were near the steamer and a Black-footed Albatross followed in its wake. A small flock of shore birds, apparently Northern Phalaropes, passed by, flying northward instead of southward.

North of Point Reyes, about ten miles offshore. A few Dark-bodied Shearwaters were skimming over the surface. A Pink-footed Shearwater, as it coursed about, came near the ship, and five Black-footed Albatrosses followed astern.

As the afternoon advanced a brisk breeze developed. Black-footed Albatrosses continued in attendance; several Pink-footed Shearwaters were passed by the way.

September 9. Morning; about seven miles off Rogue River, Oregon; sea like glass. Cassin's Auklets were abundant in companies on the water. An Olive-sided Flycatcher and a Mourning Dove alighted on the vessel. Several other doves were seen. Five Black-footed Albatrosses accompanied us. The list of birds was further increased by a company of Western Gulls, two Pelagic Cormorants, a Tufted Puffin, a Loon, and a Dark-bodied Shearwater.

North of Cape Blanco; twenty miles offshore; land hidden from view. An American Pipit and a Red-breasted Nuthatch came aboard; there being no better substitute for a tree the Nuthatch hunted for food on one of the masts. Several Tufted Puffins were sighted and six Black-footed Albatrosses bore us company.

September 10. Morning; near Cape Flattery; smoky from forest fires; the ocean without a ripple. A Sandwich Sparrow and a Yellow Warbler boarded the ship; we passed a small band of Dark-bodied Shearwaters resting on the water.

Between 10 and 11 A.M., a Townsend's Warbler, a Wilson's Warbler, several Yellow Warblers, and an American Pipit sought refuge on the deck.

Strait of Juan de Fuca; 2 P.M.; land hidden by smoke. A Red-shafted Flicker appeared and alighted on the stays supporting the smokestack, completing the list of the birds of the voyage. — LEVERETT M. LOOMIS, *California Academy of Sciences, San Francisco.*

✓ **Occurrence of *Tringa maculata* and Other American Birds in Hawaii.**

—The following brief notes are in line with those published by the writer in 'The Auk' for July, 1900, and tend to show that a greater number of American littoral species find their way annually to the Hawaiian Islands than hitherto has been supposed.

***Tringa maculata*.** PECTORAL SANDPIPER. — Mr. George C. Hewitt shot a specimen of this Sandpiper at Kaalualu on the Kau coast, Oct. 14, 1900. Later in the month he procured a second example in the same locality, kindly sending both specimens in alcohol to the writer for identification. This, I believe, is the first record of the bird in the islands. For the present, at least, we must regard its presence here as accidental.

***Charadrius squatarola*.** BLACK-BELLIED PLOVER. — A specimen of this Plover was shot by Mr. Hewitt late in October near Kaalualu. This is the first recorded instance of the occurrence of the bird in the Hawaiian Islands, though no doubt its casual appearance is to be looked for in flocks of its relative, the Golden Plover.

***Calidris arenaria*.** SANDERLING. — I mention this species merely to note that Mr. Hewitt shot a specimen on the Kau coast in October, and that early in the same month two individuals visited the Hilo Beach and remained there for more than a fortnight where I watched them daily feeding unconcernedly within a few yards of the houses. As I have elsewhere stated, the species is to be regarded as an annual winter visitor, though in small numbers.

***Bernicla*, sp.?** — In October at least two distinct bands of American Geese were seen on a number of occasions near Hilo, and a number were killed, none of which, however, was the writer fortunate enough to see. Probably there were twelve or fourteen individuals altogether. Both *B. nigricans* and *B. minima* are quoted by Wilson (Birds of the Hawaiian Islands, Introduction, p. xxv) from Kauai on the authority of Palmer, Mr. Rothschild's collector. In time no doubt all the species of geese from the west coast of America will be recorded from the islands as accidental visitors. That any considerable number of geese will ever seek winter quarters in the islands is more than doubtful, since suitable feeding grounds of sufficient extent are not found here.

***Dafila acuta*.** PINTAIL. — I cannot learn that this duck is ever very common on the island of Hawaii. It is, however, to be classed with the Shoveller as an annual winter migrant, though by no means so common as that species. A few are obtained each year by sportsmen.

***Graculus*, sp.?** — A cormorant made its appearance the last week in November in Hilo Harbor, where, apparently it has established headquarters, wandering from here along the coast to the south for several miles. Mr. Pratt, who has seen and shot cormorants in California many times, is my informant, and he has seen the individual in question several times at close range. It is, of course, impossible to conjecture the species. — H. W. HENSHAW, *Hilo, Hawaii*.

Notes on the Moulting of *Spinus pinus* and of *Hirundo erythrogaster*.

—In the January 'Auk,' Mr. Stone has so pleasantly reviewed my paper on 'The Plumages and Moults of the Passerine Birds of New York,' that it is evident we are in complete accord as to the facts and conclusions which we have each reached working along independent lines. There are, however, two species, the Pine Finch and the Barn Swallow, about which there is yet a word to be said. Mr. Stone appears to be correct in claiming a prenuptial moult in the Pine Finch, but it is ordinarily so extremely limited that I considered it as the irregular renewal, found in spring in so many species, which scarcely deserves the name of a distinct moult. Two of Mr. Stone's Pennsylvania birds taken in May show more evidence of growth of new feathers about the head and throat, and even of new tertiaries, than I would have suspected from the other material I have studied. The re-examination of nearly 150 specimens, taken every month in the year, shows that birds of April, May and June are exceedingly worn. Among seven April and eleven May specimens, I find so little evidence of the growth of a few new feathers, and only on the throat, that Mr. Stone's specimens which I have examined are indeed a surprise to me, and suggest unusual precocity. As, however, this species is subject to a considerable amount of wear, it is probable that it belongs with those species having a very limited first prenuptial moult which is not repeated a second year, and the wear, quickly affecting the new feathers, obliterates evidences of moult.

Mr. Stone and I do not quite agree about the Barn Swallow (*Hirundo erythrogaster*), for he speaks of an "apparent prenuptial moult," basing his opinion on a bird (Phila. Acad. Nat. Sci. No. 28576, September 1, Pennsylvania), which he considers an adult after the postnuptial moult, and therefore requiring a prenuptial moult to produce the attenuated lateral rectrices of the breeding bird. The specimen in question has been kindly loaned to me, and I am satisfied it is a young bird in fresh juvenal plumage, for the slight forking of the tail and the green tinge of the back with reddish-brown edgings on the rump, nape and wing-coverts are characteristic of a dozen other young birds in my own collection. The green tinge, by the way, is peculiar to the young of all our Swallows, and of other birds with iridescent feathers, like Crows and Blackbirds, in which adults are usually bluer or purpler than young birds. Here is a case where immaturity might be shown by softening the skin and examining the ossification of the skull.

Three other interesting Barn Swallows have been sent to me by Mr. Stone. Two of them have already been noticed in his valuable paper on moult, and I agree with him that two of them (Phila. Acad. Nat. Sci., No. 28574, August 7, Pennsylvania, and No. 28577, September 1, Pennsylvania), are adults just beginning the postnuptial moult, which, doubtless, would have been completed after they had reached winter quarters, or perhaps while on the journey thither. The same sort of feather renewal takes place among some of the Tyrannidæ, Laridæ, Limicolæ and others

of strong flight, and the body feathers are very apt to precede in their growth the remiges and rectrices, although in the two specimens cited, the rectrices are already partly renewed. The third specimen (Phila. Acad. Nat. Sci., No. 15661, French Guiana), is unfortunately undated, but it is evidently passing from the juvenal plumage by what must be called a postjuvenal moult. The worn first primary, inner secondaries and a few of the rectrices, together with a green-tinged back, indicate a young bird. The crown now worn brown also indicates juvenal plumage, while new feathers are breaking from their sheaths, both on the head and throat. These birds all bear out my conclusion that adult Swallows moult earlier than young birds which undergo a complete postjuvenal moult, often in midwinter. It is, on the whole, expedient to speak of a postjuvenal moult and not of a prenuptial, even in those species which are late in assuming a first winter dress, which then becomes that of the first summer simply through wear. This sequence of plumages obtains largely both among the North American Hirundinidæ and Tyrannidæ, and I am glad of this opportunity of calling attention to it.

I would also correct here a slip of Mr. Stone's pen at page 118 of his review in 'The Auk,' where he has inadvertently credited the Cross bills with a "prenuptial" moult, meaning of course, the postnuptial.—
JONATHAN DWIGHT, JR., *New York City.*

To Remove Fat from Bird Skins.—Fat on sea and water birds is especially difficult to get rid of. It means long and tedious scraping, often with unsatisfactory results. Benzine, sulphuric ether, alkalies and other solvents of grease and oils, are either unpleasant to use, dangerous in a room with fire or lamp, evaporate rapidly or are expensive, and after all only dissolve the contiguous layer of fat at each application, often leaving the skin in bad condition.

One day, when almost on the point of throwing away in despair a hopelessly fat specimen, which had been scraped until nearly disintegrated, and, after having been treated with cornmeal, sawdust and plaster of Paris, still showed oil when pinched, the idea occurred to me of using an absorbent at a sufficiently high temperature to melt out the oil and absorb it at the same time. Some plaster of Paris was put in a bread tin, heated on top of the stove until fairly hot to the hand, and then a thick layer was spread on the bird skin. This was pressed down and manipulated until a sufficient time seemed to have elapsed, when it was carefully brushed off. The result exceeded my expectation. A second application practically removed all the oil. Since then I have continued using this method with success.

The skin must, of course, be first scraped so as to break the fat-containing tissues and as much fat as possible scraped off, using cornmeal or sawdust as an absorbent while operating. After this the hot absorbent may be applied. The skin may seem very dry after the operation, but this is really only on the surface, and going over it with a damp

sponge or cloth will moisten it enough to make the necessary amount of arsenic adhere and to keep the skin pliable until stuffed.

Fine sawdust or cornmeal may be used by taking care to stir while heating, but plaster of Paris gives the best results, as it can be heated to a much higher temperature than anything organic, and with no trouble. On birds of dark colored plumage, however, plaster must be applied in such a manner as not to come in contact with the feathers, as it will usually stick to them enough to lighten the shade.—JOSEPH MAILLIARD, *San Geronimo, Marin Co., Cal.*

RECENT LITERATURE.

Barrington's 'The Migration of Birds at Irish Light Stations.'¹—In this volume of nearly 1000 pages we have the results of observations, continuously and systematically carried on, at the Irish light-stations from 1881 to 1897, or for a period of eighteen years. Observations appear to have been made at some fifty lighthouses and lightships, the returns embracing about a thousand schedules and "about thirty thousand separate observations," and over two thousand specimens. The elaboration of this enormous amount of information involved years of labor, and Mr. Barrington makes acknowledgment to Mr. C. B. Moffat for important aid in its analysis. A list of the light stations is given as part of the introductory matter, which is immediately followed by 'Analysis of the Irish Migration Reports, 1881-1897' (pp. 1-262), the reports being summarized for each of the species observed, these summaries sometimes occupying several pages for a single species, including comment on the various facts reported.

The species number about 170, and are treated in systematic sequence. Following this is a statement of 'Some of the Principal Points of

¹ The | Migration of Birds | as observed at | Irish Lighthouses and Lightships | including | the Original Reports | from 1888-97, now published for the first time, and | an Analysis | of these and of the previously published Reports from 1881-87. | Together with | an Appendix | giving the measurements | of about 1600 wings. | By | Richard M. Barrington, M. A., L. L. B., F. L. S., | Member of the British Ornithologist's Union, and of the British Association | Committee for obtaining Observations on the Migration of | Birds at Lighthouses and Lightships. | London: | R. H. Porter, 7 Princes Street, Cavendish Square, W. | Dublin: | Edward Ponsonby, 116 Grafton Street. [1900.]—Svo, pp. i-xxv. + 1-285 + 1-667, map and text cuts. Only 350 copies printed.

Interest,' 'Some General Remarks,' and 'Various Tables,' the latter referring to a great variety of facts bearing on the subject of migration. The 'Reports on the Migration of Birds as observed at Lighthouses and Lightships on the Irish Coast, 1888-1897 inclusive' occupy over six hundred pages (pp. 1-619), and are followed by an 'Appendix' (pp. 621-660), giving 'Measurements of Wings of Birds obtained at Irish Light-Stations,' the birds having been killed by striking the lanterns and sent in for identification.

It is needless to say that we have here an enormous amount of information on the migration of birds along the Irish coasts, which is clearly presented in much detail. While of great interest in a local sense, it is perhaps not to be expected that it will by itself have a very important bearing upon the larger questions involved in the general problem of migration. The measurement of wings has shown that the longer-winged examples of a species are the first to arrive in spring, and in some cases also in autumn; but "neither the wings nor the statistics afford any sufficient clue to enable one to determine positively in any given species whether the young birds precede the old ones or not . . . There is one point in favor of the supposition that the old birds are in the van of the advancing army in autumn — viz., that in the majority of cases the longer-winged birds come first" (p. 264). Some evidence is presented to show that different species of birds follow different migration lines in their journey across Ireland, some having a wide migration route and others a more restricted one; while the line of direction also varies in different species.

Ornithologists are certainly indebted to Mr. Barrington for his long and arduous labor in collecting such a mass of observations, and to him and his friend Mr. Moffat for their reduction to such a state of order as to be available for study by other workers in the same field. The cost of this work, including its publication in a neat and convenient form, must be, as the author intimates, largely a labor of love, the edition being limited to 350 copies.—J. A. A.

Gütke's 'Helgoland,' Second German Edition.¹—The second German edition of this well-known work, issued in 16 parts during 1899 and 1900, has been completed, and forms a volume of much the same size and appearance as the first edition. It is brought out, as before, under the editorship of Dr. R. Blasius of Braunschweig, who states in his preface that the original text has not been changed, and that all interpolations are enclosed in brackets or take the form of footnotes signed by the editor. The for-

¹ Die | Vogelwarte Helgoland. | Von | Heinrich Gütke, | weiland | . . .
[=5 lines of titles] Herausgegeben | von | Professor Dr. Rudolf Blasius. |
Zweite vermehrte Auflage. | [Cut] Grün ist das Land, Roth ist die Kant', |
Weiss ist der Sand, Das sind die Farben von Helgoland. | Braunschweig 1900.
| Druck und Verlag von Joh. Heinr. Meyer. Roy. 8vo, pp. i-xvi + 1-654.
Frontispiece, portrait of Gütke, and various text illustrations.

mer seem to consist mainly of additions to the bibliographical citations, through references to the British Museum 'Catalogue of Birds' and to the new edition of 'Naumann.' The editor's important footnotes supplement the text by the addition of various new facts that have been made public since the publication of the original edition in 1891. As a short notice of the original edition was promptly given in this journal (VIII, 1891, pp. 299, 300), and very full notices of the English translation published in 1895 (*Auk*, XII, 1895, pp. 322-346, and XIII, 1896, pp. 137-153), little need be said in the present connection beyond announcing the completion of this second beautifully printed edition of 'Helgoland.'—J. A. A.

Pollard's 'Birds of my Parish.'¹—In the great procession of popular bird books that marks the present period it would seem that there is scant room for originality in the case of the later claimants for attention. That the field is not yet exhausted is well shown by the author of the 'Birds of my Parish,' which combines in a peculiar way fresh field notes with a large amount of information about the traits and behavior of captive individual birds of quite a number of the commoner British species. This is mixed with a deal of small talk of the imaginative order supposed to be said by the birds themselves. It is all very entertaining, if possibly trivial and unimportant as 'ornithology'; but the author is so thoroughly in sympathy with the feathered household pets thus brought before us, and also so much at home with the birds in their free surroundings, that this singular mixture of bird lore and 'bird talk' is decidedly pleasant reading. The scene is the "parish of Haquford in East Anglia," an area of some 1600 acres. "This small parish in Norfolk can boast," says the author, "to my present knowledge of . . . 76 varieties. None of these are very rare or uncommon birds, but the better one knows birds, the better one loves them." Much is pleasantly said of these wild birds in the regular orthodox style of ornithology, while much more is told entertainingly of pet Bullfinches, Goldfinches, Chaffinches, Jackdaws, etc., sandwiched with imaginary soliloquies and conversations by the birds themselves, doubtless also intended to impart information and inspire sympathy.—J. A. A.

Collett on the Skull and Auricular Openings in North European Owls.—Dr. Collett's important paper on the asymmetry of the skull and auditory structures in the Owls of Northern Europe, originally published in Norwegian in 1881, has now been made more readily accessible to English readers by Dr. Shufeldt's recent translation,² with which the text figures

¹ The Birds | of my Parish | — | By Evelyn H. Pollard | With Illustrations | — | John Lane : The Bodley Head | London and New York. MDCCCC, —Crown 8vo, pp. i-xiii, 15-295, 6 photogravure plates. Price, \$1.50.

² Professor Collett on the Morphology of the Cranium and the Auricular Openings in the North-European Species of the Family Strigidae. By R. W. Shufeldt, M. D. *Journ. of Morphology*, Vol. XVII, No. 1, 1900, pp. 119-176. pll. xv-xx.

and lithographic plates have been reproduced. This paper, though the facts it presents, after the lapse of twenty years, have ceased to be novel, has lost little of its interest and importance, and is well worthy of a new lease of life in an English dress. Dr. Shufeldt has therefore done a distinct service to ornithology in thus placing the paper so conveniently before English readers. He has also added a few footnotes, and given, at the close, a résumé of recent views of taxonomers on the systematic position and relationships of the Owls.—J. A. A.

Merriam and Preble on the Summer Birds of Western Maryland.—This brochure from the Reports of the Maryland Geological Survey¹ consists of two papers; the first, by Dr. C. Hart Merriam (*l. c.*, pp. 291–293), treats of ‘The Life Zones and Areas of Allegany County,’ and deals with the general floral and faunal features of the region; the second, by Mr. E. A. Preble (pp. 294–307), gives an annotated list of ‘The Summer Birds of Western Maryland,’ numbering 100 species, and all are believed to breed in the region. According to Dr. Merriam, “The fauna of Allegany County is a mixture of Carolinian and Alleghanian species and comprises, so far as known, no boreal islands. The Potomac Valley, and valleys of the principal streams, are Carolinian; the upland, Alleghanian.” In Garret County, above 2600 feet, “cold sphagnum and alder swamps abound,” which “contain a strong admixture of high Transition and even Boreal species. . . . The cutting off of the spruce and hemlock from these small boreal islands lets in the hot sun and results, in numerous instances, in changing the fauna and flora from Canadian to Alleghanian.”

We are surprised to notice a number of typographical errors in the technical names, for which doubtless the authors are not responsible. The paper is a valuable contribution to our knowledge of the faunal character and summer range of the birds of western Maryland.—J. A. A.

Loomis on California Water Birds.²—This is No. V of Mr. Loomis’s series of papers on ‘California Water Birds,’ and gives the results of his observations made in the vicinity of Monterey from May 1 to June 12, 1897. A ‘Summary of Movements’ for this period of observation is given, followed by some further discussion of the ‘Cause of Return

¹ The Fauna and Flora. The Life Zones and areas of Allegany County. The Summer Birds of Western Maryland. By C. Hart Merriam and Edward A. Preble, Biological Survey, U. S. Dept. Agriculture. Maryland Geological Survey, Allegany County Report, pp. 291–307. Nov., 1900.

² California Water Birds. No. V. Vicinity of Monterey in May and early June. By Leverett M. Loomis, Curator of the Department of Ornithology. Proc. California Acad. of Sciences, 3d Ser., Zoöl., Vol. II, No. 5, pp. 349–363. Issued Nov. 24, 1900.

Migration,' and an annotated list of the 36 species observed (pp. 355-363). He says, "Subspecific names are omitted; otherwise the nomenclature conforms to the A. O. U. 'Check-List,' second edition and eighth and ninth supplements." So when we read (p. 357): "I have examined the specimen upon which Dr. Cooper based his California record of *Uria lomvia* (Proc. Calif. Acad. Sci., Vol. V, p. 414; Auk, III, p. 126) and find it is an immature *Uria troile*," we must understand the reference to *U. troile* to mean *U. troile californica*! There is more or less comment on the transition stages of plumage of various species observed, but no reference to the condition of the specimens as regards moulting, which, in some of the species at least, must have been in progress. The paper is a valuable contribution to a better knowledge of the local movements and spring migration of Pacific Coast water birds. — J. A. A.

Grinnell on Alaskan Birds.¹—This paper records 21 species from the Pribilof Islands, based on specimens in the collection of the Leland Stanford University, adding two species, namely, *Totanus melanoleucus* and *Saxicola ananthe*, to the list of previously recorded species, which now number 72. Four are recorded from Amagkak Island, 4 from Belkovski Bay, 3 from Unga Island, 19 from Kadiak Island, and 18 from Prince William Sound. A new subspecies of Savanna Sparrow is described from Kadiak Island, under the name *Ammodramus sandwichensis xanthophrys*. The *Leucosticte kadiaka* McGregor is considered to be a subspecies of *L. tephrocotis*, and *griseonucha* is believed to be also merely a subspecies of *tephrocotis*, he having specimens in hand which "indicate an almost complete gradation" between them. Of the Barn Swallow he says: "The Alaska skins I have examined (Kotzebue Sound and Sitka) do not seem to differ on an average in wing measurements and extent of white markings on the tail, from United States specimens," and the specimen recorded from Nutchuk, Prince William Sound, "does not appear to answer to the characters assigned by Palmer (*cf. antea*, p. 176) to *unalaschensis*.—J. A. A.

Mrs. Eckstorm's 'The Bird Book.'²—This is one of D. C. Heath and Company's 'supplementary reading' books for schools. To quote from the preface: "The arrangement of the book has two ends in view: to adapt the study to the school year, and to present it so that when the pupil begins field work he shall be able to do it with some general idea of what is

¹ Record of Alaskan Birds in the Collection of the Leland Stanford Junior University. By Joseph Grinnell. The Condor, Vol. III, No. 1, Jan. 15, 1901, pp. 19-23.

² The Bird Book | By | Fannie Hardy Eckstorm | — | Boston, U. S. A. | D. C. Heath & Co., Publishers. | 1901. — Sm. 8vo., pp. xii + 276, with 26 pll. and 30 text figures. Price, 60 cents.

worth observing." The work is divided into four parts, entitled: Part I, 'Water-birds in their Homes: Little Studies in Environment' (pp. 3-64); Part II, 'Structure and Comparison: Little Stories in Differentiation' (p. 67-118); Part III, 'Problems in Bird Life: Little Studies in Zoölogical Theory' (pp. 121-172); Part IV, 'Some Common Land-Birds: Little Studies in the Art of Observation' (pp. 175-259); and an Appendix (pp. 263-276). Each part consists of a number of topics, to mention a few of which under each will suffice to give an idea of the scope and mode of treatment. Thus, in Part I, we have 'Among the Reeds and Rushes,' treating of the Grebe and Loon; 'An Alaskan Island—The Ancient Murrelet,' and eight or ten other sketches. In Part II, such matters as 'Comparing Bones,' 'The foot of a Swimming Bird,' 'A Feather,' 'Comparing Feet,' 'Comparing Bills,' etc.; in Part III, 'The Basis of Classification,' 'How Birds are named,' 'A Subspecies,' 'Protection by Color,' 'Distribution,' 'Migration,' etc.; in Part IV, 'About Birds' Drinking,' 'How a Hawk eats his Food,' 'How the Shrike hunts,' 'A Dead Beat—the Cowbird,' etc. The Appendix gives 'Zoögeographical Divisions of the World' (with a map of those of North America), 'Hints on observing Birds,' etc., including, finally, a list of books on North American ornithology, consisting of about 70 well selected titles. While there is a very full table of contents, there is unfortunately no index, which, in such a work, is an important and surprising omission.

The book as a whole is well planned for its purpose, and fills a new rôle in the list of popular bird books; the topics are well chosen and the whys and wherefores of many points in bird philosophy are attractively and intelligently presented. A lapsus here and there will not escape the critical reader, as on p. 134, where there seems to be a little confusion as to east and west in reference to the races of Crow Blackbirds; but the few slips of a semi-technical character really detract little from the usefulness of this very excellent little book.—J. A. A.

Mrs. Eckstorm's 'The Woodpeckers.'¹—This little book treats of the family of Woodpeckers as represented in North America, dealing with their habits and structure in an intelligent and orderly way, in a series of sixteen short chapters, the character of which may be gathered from such headings as 'How to know a Woodpecker,' 'How the Woodpecker catches a Grub,' how he 'courts his mate,' 'makes a house,' etc., with four chapters on his 'tools'—his bill, foot, tail, and tongue, etc. A special chapter is also devoted to each of several leading species, as the Flicker, the Downy Woodpecker, the Yellow-bellied Sapsucker, the Red-headed Woodpecker, and the Californian Woodpecker. Then there is a

¹ The Woodpeckers | By | Fannie Hardy Eckstorm | With Illustrations | [Vignette] Boston and New York | Houghton Mifflin and Company | The Riverside Press, Cambridge | 1901—Square, 12mo. pp. viii + 132, 5 col. pll. and 22 text cuts. Price, \$1.00.

chapter on 'acquired habits,' and on the 'argument from design,' and finally an Appendix (pp. 114-127) comprising a 'Key to the Woodpeckers of North America,' and 'Descriptions of North American Woodpeckers.' There is also a good index. The book evinces a thorough familiarity with woodpecker life and structure, gained through personal observation and study, and ability to impart such knowledge clearly and in an attractive way without any sacrifice of scientific accuracy. The book is thus well adapted to instruct and inspire amateurs, whether youthful or of more advanced years. Of the illustrations it is enough to say that the five colored plates are by Fuertes, and the text illustrations from drawings by J. L. Ridgway.—J. A. A.

Shufeldt's Recent Contributions to our Knowledge of the Osteology of Birds.¹—In the first of these papers Dr. Shufeldt briefly reviews the osteological characters of the Sand Grouse, concluding that they belong where they are usually placed, between the Pigeons and Gallinaceous Birds, and form a suborder, the Pterocles.

In the Osteology of the Woodpeckers we are given a somewhat detailed and comparative account of the osteology of the North American Woodpeckers, which though somewhat uneven in its method of treating the various portions of the skeleton, forms a good work of reference. It is to be regretted that a single species was not selected for description and the various parts described in detail, the points wherein other species differed from this being noted. This would have condensed the paper and not only have saved much repetition, but enabled the user of this paper to at once find the information of which he is in search. This method is practically followed in discussing the sternum, and it is very convenient; when we wish to know the condition of the cranium in respect to the extent to which it is pitted by the roots of the feathers we are obliged to turn over page after page. Still it is most welcome to have the information in one paper, and the summary of characters towards the end of the paper condenses the general characters of the group into two pages. The question of the vomer is gone over and most will agree with Dr. Shufeldt that when this bone is present it is in its proper place, that the irregular ossifications are neither vomers nor palatines, but adventitious ossicles. Among other points well brought out is the great difference in the length and disposition of the hyoid. It may be noted that the first

¹ On the Systematic Position of the Sand Grouse (Pterocles; Syrrhaptes). By R. W. Shufeldt. *American Naturalist*, XXXV, No. 409, January, 1901, pp. 11-16.

On the Osteology of the Woodpeckers. By R. W. Shufeldt, M. D. *Proc. Am. Phil. Soc. Phila.*, XXXIX, No. 164, pp. 578-622, pl. ix.

On the Osteology of the Striges. (Strigidae and Bubonidae). By R. W. Shufeldt, M. D. *Proc. Am. Phil. Soc.*, XXXIX, No. 164, pp. 665-722, pll. x-xvii.

metatarsal of *Picoides* is present, though concealed beneath the skin, as noted by Beddard.

The 'Osteology of the Striges' is not up to the standard of the paper on the Woodpeckers, for the descriptive matter is too long and too much scattered to be readily used; moreover we lack the summary of characters at the end, this not being compensated for by the fact that the main characters are given on two or three pages at the outset. — F. A. L.

Chapman on the Genus *Sturnella*.¹—With the aid of a much larger series of specimens than has been available to previous writers on the subject, Mr. Chapman has been able to furnish the most valuable contribution to the history of this perplexing genus that has yet appeared. After characterizing the various races of Meadowlarks hitherto described, and pointing out the striking differences between the arid (*neglecta*) and the humid (*magna*) groups, the author considers the question of inter-relationships between the two. His conclusions are that the two groups were originally evolved in Mexico, *neglecta* occupying the table land and *magna* the lower humid areas, their relationships here being simply that of well marked geographic races.

Subsequently the two spread northward, *neglecta* covering the western United States and *magna* the eastern region. Still later the two forms, which in the north were quite distinct, have converged and intermingled, thus accounting for the presence of typical *magna* and *neglecta*, as well as intermediates or 'hybrids', side by side in Minnesota and Texas, a fact which is well established.

Due credit is given throughout the paper to Mr. E. W. Nelson, whose careful collecting in Mexico has cleared up the obscurity which had previously prevailed as to the relationships of the two forms in the south.

In emphasizing the fact that the main difference between the *magna* and *neglecta* groups is one of depth of color Mr. Chapman points out that the form recently described as *S. magna hoopesi* should be associated with the latter in spite of the extent of yellow on the sides of the throat. Unless it is deemed advisable to consider the above groups as representing two distinct species, no change in nomenclature is necessary.

Several interesting half-tones from photographs of skins and feathers illustrate the paper, and show clearly the contrast between the light and dark birds. — W. S.

Eaton's 'Birds of Western New York.'²—Mr. Eaton's list relates to "the western portion of New York State, extending eastward through the 'Finger Lake' region," and consisting of three east and west belts,

¹ A Study of the Genus *Sturnella*. By Frank M. Chapman, Bull. Am. Mus. Nat. Hist., Vol. XIII, 1900, pp. 297-320.

² Birds of Western New York. By Elon Howard Eaton. Proc. Rochester Acad., Vol. IV, pp. 1-64. Feb. 15, 1901.

varying in elevation. The northern belt, "lying along the southern shore of Lake Ontario, and about Oneida, Cayuga and Seneca Lakes," is the lowest. The middle belt is more elevated, consisting of high, rolling plains, "their lowest elevation of 1000 feet being along an irregular line from Buffalo to Syracuse." The southernmost consists of the northern extremity of the Alleghany Plateau, ranging in elevation from 1500 to 2000 feet, and draining southward. This southern belt is the coldest and faunally the most northern, while the northern belt is the warmest and faunally the most southern, "the influence of altitude, and the modifying effects of the Great Lakes, combining to transpose the normal positions of the life zones." There thus results a peculiar juxtaposition of species in many localities, Canadian and Carolinian species being found breeding side by side, as the Hooded Warbler and the Red-bellied Woodpecker in the same localities with the Junco and the Blackburnian, Black-throated Blue, Canadian, and Mourning Warblers.

Mr. Eaton's list numbers 297 "definitely recorded" species, 18 species "with indefinite" or doubtful records, 2 species now exterminated, and 2 introduced foreign species. The list has evidently been prepared with great care, and is briefly but quite satisfactorily annotated. The main list is followed by a very extended 'Hypothetical List' of 55 species. While, as the author states, "many of these birds are more liable to be found here than the accidental species which have actually been captured," it is rather stretching the function of such a list to include such accidental Old World 'waifs and strays' as the Corn Crake, Ruff, and other species of that category.

The 'Introductory' (pp. 1-15) gives a very clear account of the physical and faunal characteristics of the region, much explanatory matter relating to the general character and make-up of the lists, a summary, a bibliography, and 'Migration and Residence Tables,' by means of which the seasons of occurrence and relative abundance of all the species are shown graphically. This application of a well-known graphic method we have never before seen introduced into a faunal list; and now that its utility is so evident the wonder is that it has not been tried before.

While the use or non-use of capitals in certain connections, and matters of punctuation in general, are perhaps mere trifling matters of taste we trust that certain recent innovations in such matters, here followed, will not be often repeated; the saving of space, if that be an object, thus accomplished is certainly trifling, and hardly offsets the shock it gives one to see names of groups or of species printed with a lower case initial when used in headings and subtitles. — J. A. A.

Publications Received. — Bangs, Outram. A New Meadowlark from South America. (Proc. New Engl. Zool. Club, II, pp. 55, 56, Feb. 15, 1901.)

Barrett-Hamilton, G. E. H. Notes on the Birds observed during Three Visits to Kamchatka in 1896 and 1897. (Ibis, April, 1900, pp. 271-298.)

Blasius, Rudolf. Dr. Gustav Hartlaub. (Zeitsch. für Orn., Jan., 1891).
Brewster, William. A Study of a Lincoln Sparrow. (Bird-Lore, II, Aug. 1900.)

Brewster, William, and Outram Bangs. Description of a New Bécard from Lower Uruguay. (Proc. New Engl. Zoöl. Club, II, pp. 53, 54, Feb. 15, 1901.)

Chapman, Frank M. A Study of the Genus *Sturnella*. (Bull. Am. Mus. Nat. Hist., XIII, 1900, pp. 297-320.)

Clarke, Wm. Eagle. Bird Migration in Great Britain and Ireland. — Third Interim Report of the Committee. (Separate, pp. 1-11.)

Crockett, Ingraham. A Year Book of Kentucky Woods and Fields. 16mo, pp. 112, illustrated. Buffalo, Chas. Wells Moulton, 1901.

Eaton, Elon Howard. Birds of Western New York. (Proc. Rochester Acad. Science, IV, 1901, pp. 1-64.)

Eckstorm, Mrs. Fannie Hardy. (1) The Bird Book. 16mo, pp. v + 276, illustrated. D. C. Heath & Co., Boston, 1901. Price, 60 cents. (2) The Woodpeckers. 16mo, pp. viii + 131, 5 col. pll. Houghton, Mifflin & Co., Boston and New York, 1901. Price, \$ 1.00.

Grinnell, Joseph. (1) Record of Alaskan Birds in the Collection of the Leland Stanford Junior University. (Condor, III, No. 1, Jan. 1901.) (2) Two Races of the Red-breasted Sapsucker. (*Ibid.*, III, No. 1, Jan. 1901.) (3) New Races of Birds from the Pacific Coast. (*Ibid.*, II, No. 6, Nov., 1900.)

Jacobi, Arnold. (1) Lage und Form biographischer Gebiete. (Zeitsch. d. Gesells. f. Erdkunde zu Berlin, XXXV, Heft 3, 1900.) (2) Verbreitung und Herkunft der höhern Thierwelt Japans. (Zool. Jahrb., XIII, Heft 5, 1900.) (3) Die Aufnahme von Steinen durch Vögel. (Arbeiten aus der Biol. Abth. für Land- und Forstwirthschaft am K. Gesundheitsamte, I, Heft 2, 1900.)

Loomis, Leverett M. California Water Birds, No. V. — Vicinity of Monterey in May and early June. (Proc. Cal. Acad. Sci., 3d Ser., Zoöl., II, No. 5, 1900.)

Merriam, C. Hart. The Life Zones and Areas of Allegany County. (Maryland Geol. Surv., Allegany County Report, 1900, pp. 290-293.)

Palmer, T. S. Report of the Acting Chief of the Biological Survey for 1900. (Ann. Rep. U. S. Dept. Agr., 1900, pp. 35-48.)

Palmer, T. S., and H. W. Olds. Laws regulating the Transportation and Sale of Game. (Bull. No. 14, U. S. Dept. Agr., Divis. Biol. Survey, 1900.)

Preble, Edward A. The Summer Birds of Western Maryland. (Maryland Geol. Surv., Allegany County Report, 1900, pp. 294-307.)

Salvadori, Tommaso. Elenco degli Scripti di Tommaso Salvadori, 1863-1900. 4to, pp. 16, 1900.

Schalow, Herman. (1) Ueber die Herausgabe einer ornithologischen Bibliographie Deutschlands. (Journ. f. Orn., Jan. 1901.) (2) Rede zur Fünfzigjahrfeier der Deutschen Ornithologischen Gessellschaft in der

Festsitzung am 6. October 1900 zu Leipzig. (Journ. f. Orn., Jan. 1901).

Shufeldt, R. W. (1) A Remarkable Growth on the Bill of a Curlew (*Numenius arquatus*). (Ornis, Bull. du Com. Orn. Intern.) (2) On the Osteology of the Woodpeckers. (Proc. Am. Phil. Soc., XXXIX, No. 164, pp. 570-622, 1900.) (3) On the Osteology of the Striges. (*Ibid.*, pp. 665-722, pll. x-xvii.) (4) On the Systematic Position of the Sand Grouse (*Pterocles; Syrrhaptes*). (Am. Nat., Jan., 1901.) (5) Some Favorite Game Birds. (Shooting and Fishing, Dec. 1900.) (6) Photographing Nests and Nestlings. (Saturday Evening Post, Dec. 15, 1900.)

Stejneger, Leonhard. On the Wheatears (*Saxicola*) in North America, (Proc. U. S. Nat. Mus., XXIII, No. 1220, pp. 473-481.

Actes de la Soc. Scient. du Chile, X, livr. 3, 4.

Anales del Mus. Nac. de Montevideo, II, fasc. xvi, xvii, III, fasc. xviii.

Annals of Scottish Nat. Hist., No. 37, Jan., 1901.

Annual Report U. S. Dept. Agr., 1900.

American Ornithology, I, No. 2, Feb., 1901.

Bird-Lore, III, No. 1, Jan.-Feb., 1901.

Birds and Nature, IX, Nos. 1-3, 1901.

Bittern, The, Vol. I, No. 1, Jan., 1901.

Bulletin British Orn. Club, Nos. LXXV-LXXVII, 1901.

California Academy of Sciences, Occas. Papers, Nos. VI, VII; Proc., Zoöl., I, Nos. 1, 2, 4, 5, 6, Botany, I, Nos. 6-10, II, Nos. 1 and 2, Geology, I, Nos. 5-9.

Condor, The, III, No. 1, Jan.-Feb., 1901.

Forest and Stream, LVI, Nos. 1-12, 1901.

Knowledge, XXIII, Nos. 182-185.

Naturalist, The, A Monthly Journ. Nat. Hist. for North of England, Nos. 528-530, 1901.

Ornithologisches Jahrbuch, XII, Heft 1, Jan.-Feb., 1901.

Ornithologische Monatsberichte, IX, Nos. 1-3, 1901.

Ornithologische Monatschrift, XXVI, Nos. 1-2, 1901.

Osprey, The, V, Nos. 1, 2, Sept.-Dec., 1900.

Ottawa Naturalist, XIV, Nos. 9-12, 1901.

Our Animal Friends, XXVIII, Nos. 5-7, 1901.

Petrel, The, I, No. 1, 1901.

Proceedings Acad. Nat. Sci. Philadelphia, 1900, Part iii, Sept.-Dec.

Proceedings and Trans. Nova Scotia Inst. Sci., X, pt. 2, 1899-1900.

Records of the Australian Museum, III, No. 8, Dec., 1900.

Science, (2) Nos. 311-324, 1901.

Transactions Wisconsin Acad. Sciences, Arts, and Letters, XII, part 2, 1900.

Wilson Bulletin, New Series, VII, No. 4, 1900.

Zoölogist, The, (4) Nos. 48-50, 1901.

CORRESPONDENCE.

Early Editions of Wilson's Ornithology.

EDITORS OF 'THE AUK.'

Dear Sirs:—The following notes concerning the early editions of Wilson's 'American Ornithology' may interest some of the readers of your journal. The original edition, as is well known, was published in nine folio volumes at Philadelphia, during the years 1808 to 1814. Wilson died on the 23d of August, 1813, while the eighth volume was in the press. The eighth and ninth volumes were published in 1814, under the superintendence of George Ord, who furnished the text that accompanies the few plates Wilson had drawn for the ninth volume.

Two hundred copies of Vol. I were published in September, 1808. On the 21st of that month Wilson started on a tour through the New England States to exhibit his book and solicit subscribers, and soon afterward he travelled south on the same mission as far as Savannah, Ga. On his return to Philadelphia, in 1809, the subscription list was large enough to warrant the publication of three hundred additional copies of the first volume.

The second edition of Vol. I bears the original date 1808, although it was not published till 1809, and there is nothing on its face to distinguish it from the original issue, until the two are collated. It then appears that the second issue is truly a new edition; that the text was all reset, and that the author seized the opportunity thus offered to make certain additions to the text and to correct some errors and carelessly written passages. As an example: an alteration of the text that occurs on page 33, in the biography of the Wood Thrush, is the result of knowledge acquired by Wilson during his trip to South Carolina and Georgia in the winter of 1808-09, after the first edition had been published. In the first edition the passage in question reads thus: "Tho' it is believed that some of our birds of passage, and among them the present species, winter in the Carolinas, yet they rarely breed there; and when they do, they are certainly vocal." In the second edition this is replaced by the following: "I have myself searched the woods of Carolina and Georgia, in winter, for this bird, in vain, nor do I believe that it ever winters in these states." Again, on page 34, referring to the Hermit Thrush, Wilson adds to the text in the second edition the statement that he has found this bird numerous in the myrtle swamps of Carolina in the depth of winter.

With regard to the text of subsequent editions of Wilson: Ord's "re-print" of 1824 (bearing date of 1808) of course follows the amended text of Wilson's second issue of the first volume, so do Harrison Hall's edition

(1828), Jardine's (1832), and the various reprints of Jardine, such as Brewer's (1840), and those published by Chatto & Windus (1876), etc. The editions published by Porter & Coates (Phila., 1871, 1878), are printed from Hall's edition of 1828-29. Jameson's edition (1831) alone, so far as I have observed, reproduces the text of the first edition of Vol. I.

The last three volumes of Wilson's work were not so carefully elaborated as the earlier volumes. Ord therefore subjected these volumes to a careful revision and published them in a second edition,—Vols. VII, VIII, in 1824, Vol. IX in 1825. In the second edition of these volumes Ord introduced extensive additions to the text of Wilson and important changes in the nomenclature, while the sketch of the author's life, prefixed to the ninth volume, was enlarged from 36 pages to 198 pages. The changes in the nomenclature are tabulated in the editor's prefaces to the second edition; but the alterations and additions to the text are often indistinguishable without a collation of the two editions.

While issuing the second edition of Vols. VII-IX, Ord reprinted the rest of the volumes, I-VI, in 1824, retaining on their title-pages the dates of the original edition of these volumes, viz. 1808-12. Comparison of the "reprints" with original copies of Vols. I-VI reveals the fact that the re-issue is far from being a mere reprint of the first edition. In the edition princeps Wilson made certain emendations of the nomenclature, etc., at the eleventh hour, in the indexes to the several volumes, and more particularly in the 'List of the Land Birds of the United States,' which appeared in the sixth volume, in 1812. In the reprint of 1824 Ord incorporated most of these emendations in their proper places in the text, and in a few instances introduced changes of his own. These reprints, then, taken together with the 1824-25 edition of Vols. VII-IX, strictly speaking, constitute the second or Ord edition of the 'American Ornithology,' the true date of which is 1824-25.

Two of Ord's amendments in these so-called reprinted volumes affect the nomenclature. Twice had Wilson applied the same name to two different birds. In Vol. VII the Sora Rail is called *Rallus virginianus*: in Vol. VI the same name is given to the Virginia Rail. The Slate-colored [Sharp-shinned] Hawk is described under the name *Falco pennsylvanicus* on p. 13 of Vol. VI, while on p. 92 of the same volume the Broad-winged Hawk figures by the same name. In the reprint of 1824, the Sora Rail appears as *Rallus carolinus*, the name of the Broad-winged Hawk is changed to *Falco latissimus*. The latter specific name is the one sanctioned by the A. O. U. Check-List, in which it is credited to Wilson, 1812, instead of Ord, 1824. During the same year, 1824, Bonaparte (Journ. Acad. Nat. Sci. Phila., III, 348) drew attention to Wilson's double use of the name *pennsylvanicus* in the genus *Falco*, and proposed the name *wilsoni* for the Broad-winged Hawk; but in a footnote he courteously withdrew this name in favor of *latissimus* on being told by Ord that he had chosen this name in his forthcoming reprint of Wilson. Both of these names, however, are anticipated by *Sparvius platypterus*, a name

assigned to the "Broad-winged Hawk" of Wilson by Vieillot in 1823 (Encycl. Méthod., Ornithol., III, 1273). The correct name of this bird, therefore, is *Buteo platypterus* (Vieill.).

The history of the Ord reprints was well understood by contemporary writers, but as time went on confusion arose from the false dates on their titles. So early as 1853, Cassin, in his 'Illustrations of the Birds of California, Texas, etc.,' p. 101, declared that only the last three volumes of Wilson were republished, and that the names *pennsylvanicus* and *latissimus* as applied to the Broad-winged Hawk occurred in different copies of the original edition. He therefore inferred that the latter name was substituted by Wilson himself, while the sheets were going through the press. Cassin further affirmed that Mr. Ord told him that he had nothing to do with either of the names in question,—a lapse of memory not remarkable in a man who at the time Cassin wrote had numbered more than three score and ten years. As a matter of fact, a *Falco latissimus* copy of Vol. VI bears within itself indisputable proof that it could not have been printed in 1812. It was in the sixth volume that Wilson inserted his 'General Index of the Land Birds,' which included some species to be treated of in later volumes of the work. The places for the volume and page references in such cases were necessarily left blank, with notice to the reader that the blanks might be filled up in MS. after the publication of the later volumes. Now in those copies in which the name *Falco latissimus* appears, these blank spaces are occupied by printed references to the pagination of subsequent volumes, including the ninth, which was not only printed, but written (by Ord himself) after Wilson was in his grave.

Sets purporting to be the original edition are sometimes made up by combining volumes belonging to the first and second editions. When this mixture involves the first six volumes, which bear the same ostensible dates in both editions, a convenient ear-mark for detecting the Ord reprints will be found in the printers' signatures. The signature of the sheet following Z is a double A. In the original edition the double letter is a small capital and lower case (Aa),—in the 1824 reprints it is capital and small capital (AA).

WALTER FAXON.

Cambridge, Mass.

NOTES AND NEWS.

DR. GUSTAV HARTLAUB, an Honorary Member of the American Ornithologists' Union, died at his home in Bremen on Nov. 20, 1900, in the 87th year of his age. From memorial notices by Dr. Rudolf Blasius (*Zeitschrift für Orn.*, Jan. 1901) and Dr. Moritz Lindeman (*Orn. Monatsb.*, Jan. 1901) we learn that Dr. Hartlaub was born in Bremen, Nov. 8, 1814, his father being the head of one of the oldest and most prominent mercantile houses of that city, and also a senator. He received his early education at the Bremen training school, and later studied medicine and natural history at the universities of Bonn, Berlin, and Göttingen. After receiving his medical degree he traveled in Austria, Holland, France, England and Scotland, studying in Vienna, Leyden, Paris, London and Edinburgh. He then settled in Bremen as a practising physician, following his profession till his death, and visiting the Alps of Northern Italy and Switzerland for a few weeks in summer for rest and recreation.

As regards his ornithological work, for twenty-five years (1846-1871) he wrote for Troschel's '*Archiv für Naturgeschichte*' the '*Berichte über die Leistungen in Naturgeschichte der Vögel*,' the most useful and valuable record of ornithological literature for this period. In 1857, appeared his '*System der Ornithologie Westafrika's*,' the first general work on the birds of that region, and still one of the most useful. His '*Beitrag zur Fauna Centralpolynesiens*' followed in 1867, and his '*Die Vogel Madagaskars und der benachbarten Inselgruppen*' in 1877. His lesser ornithological writings number several hundred titles, published mainly in the '*Journal für Ornithologie*' and in the '*Abhandlungen*' of the Bremen Natural History Society. He was greatly interested in geographical exploration and exerted his great influence in behalf of numerous German expeditions of this character. He was president for many years of the Bremen Natural History Society, and also of the *Deutsche Ornithologische Gesellschaft*. His services to descriptive ornithology have been eminent, his name having long been one of the most prominent in the literature of the science.

BARON EDMOND DE SÉLYS LONG-SCHAMPS, a Corresponding Member of the American Ornithologists' Union, died at his home in Biège, Belgium, Dec. 11, 1900, in the 87th year of his age. A notice of his life and scientific work will be given in a subsequent number of this journal.

MR. GEORGE A. BOARDMAN, an Associate Member of the American Ornithologists' Union, died at his home at Calais, Maine, Jan. 11, 1901, at the age of 83 years. He was born in Newburyport, Mass., Feb. 5, 1818, and went with his parents to Calais in 1828. His ancestors came from

Yorkshire, England, and settled in Newbury, Mass., in 1637. Mr. Boardman, for over thirty years, was engaged in the lumber business on the St. Croix River, retiring from active business in 1871. He was well known as an enthusiastic naturalist and sportsman, and was a warm friend of the late Dr. T. M. Brewer and Professor Baird, and of many later and less prominent naturalists. It was his habit for many years to spend his winters in Florida, stopping at Washington, New York, and other points on the journey to and from Maine to his winter home, to renew acquaintance with his many naturalist and other friends.

The present writer first made his acquaintance at Jacksonville, Florida, in December, 1868, and later the same winter passed a few days with him at Enterprise, on Lake George. He had already become familiar with the bird life of Florida, where for many years it was his habit to collect specimens and take field notes, giving liberally of his specimens to Professor Baird for the Smithsonian Institution, and sharing his field notes with other workers. As early as 1862 he published a 'Catalogue of the Birds found in the Vicinity of Calais, Maine, and about the Islands at the mouth of the Bay of Fundy' (Proc. Boston Soc. Nat. Hist., IX, pp. 122-132), an annotated list of 231 species. His collection of Maine birds is notably complete, numbering it is said, 278 species (*cf.* Forest and Stream, Aug. 5, 1899), and comprising some 2500 specimens, mounted and in skins, besides a large collection of eggs. He was a frequent contributor to 'Forest and Stream' and other natural history journals, including the 'American Naturalist' and the 'Bulletin of the Nuttall Ornithological Club,' and up to the last days of his life is said to have contributed, "statedly, every week," to the Calais 'Times,' "an article on such natural history subjects as engage the interest of the household readers and inform them of the peculiar places which familiar creatures of the fields and swamps and woods occupy in the animal kingdom."

Mr. Boardman was a man of genial and attractive personality, and after his retirement from business, some thirty years ago, devoted much of his leisure to travel and natural history pursuits, his interests in such matters having a wide scope.

CAPTAIN JOHN CLIFFORD BROWN, United States Volunteers, an Associate Member of the American Ornithologists' Union, died January 16, 1901, at Los Angeles, California, of dysentery contracted in the Philippines. Captain Brown was born at Portland, Maine, March 28, 1872. He early showed a strong taste for electrical science, and made a special study of this at the Massachusetts Institute of Technology, of Boston, where he graduated with very high rank in 1893. Almost immediately thereafter he was employed by the New York Telegraph and Telephone Company in its engineer department. His advancement was rapid, and, at the breaking out of the war with Spain, he occupied a position of responsibility not often given to so young a man. He had, however, been a member of the Seventh Regiment for several years, and he believed it

his duty to go to the war. He went as a captain in the Eighth New York. It should be said that he went eagerly; for he was a born soldier, — a tall, lithe, very handsome man, of the pronounced blonde type, quiet, fearless, and a natural leader. He was kept at Chickamauga and elsewhere in the South throughout the war, serving, after the Eighth was mustered out, as a lieutenant in the Two-Hundred-and-Third, in his eagerness to see active service. After the latter regiment was also mustered out, he enlisted, on June 22, 1899, in the engineer corps of the regular army, and was at once sent to the Philippines.

Brown was the only man of the engineers who went with General Young on the famous 'hike' from a point near Manila through Luzon to Vigan on the north coast. He won the highest commendations from his superiors, including General Young, for gallantry and for efficiency as an engineer throughout that most arduous expedition. All of the maps of the route followed were drawn by him, under almost inconceivable difficulties, and are beautiful examples of field drafting.

Returned to Manila, Brown was put in charge of the building of a bridge at Paranaque. It is characteristic of him that he worked upon this bridge for weeks while so ill that he should have been in hospital. He stuck to the work until it was finished, and thus made his death certain. Had he lived, he would soon have received the commission in the regular army which he coveted.

Captain Brown was always a lover and student of birds. While living at Portland, he wrote a number of interesting notes which were published in 'The Auk.' — N. C. B.

JAMES MACKINLAY, of Pictou, Nova Scotia, an Associate Member of the American Ornithologists' Union, died at his home on November 30, 1899. Mr. MacKinlay was born in Pictou on June 16, 1819, and throughout his life was an ardent student of birds. His collection, containing many rare and interesting specimens, was presented by him, some years before his death, to the Pictou Academy, where it is now on exhibition.

AUDUBON WHELOCK RIDGWAY, only son of Robert Ridgway, died in Chicago, Feb. 22, 1901, of pneumonia. Although not a member of the American Ornithologist's Union he had taken up the study of birds, and at the time of his death was assistant in the department of ornithology in the Field Columbian Museum, a position to which he was appointed in November 1900. During this short term of service he had, in addition to the varied work connected with the museum, prepared a list of desiderata among the birds of Illinois, and named a large collection of Philippine Island birds. Although having so brief a time in which to prove his ability, he performed the duties of his position to the complete satisfaction of his employers, both the Director of the museum and the Curator of the Department of Ornithology highly commending his efforts.

Mr. Ridgway was born at Washington, D. C., May 15, 1877, and was in his twenty-fourth year. He was very popular among the young folks of his acquaintance, hundreds of whom have in his death met with a personal bereavement. — C. W. R.

'THE WESTERN ORNITHOLOGIST,' we regret to see, has passed out of existence, its publisher, Mr. Charles C. Tryon, having entered the service of the U. S. Army. It appears, however, to have a worthy successor in 'THE BITTERN, a Bi-monthly Magazine devoted exclusively to Ornithology and Oölogy,' edited and published by Mr. Glen M. Hathorn, of Cedar Rapids, Iowa, with Mr. Carl Fritz Henning of Boone, Iowa, as associate editor. Mr. Henning was formerly associate editor of 'The Western Ornithologist,' and will have charge of the review department of 'The Bittern.' The first number, dated January, 1901, gives promise of a successful career, being typographically pleasing and well-filled with creditable matter, including a number of excellent half-tone illustrations. We wish our new contemporary the success it so well deserves.

'AMERICAN ORNITHOLOGY' is the title of a new monthly illustrated magazine, "for the home and school," published by Charles K. Reed, 75 Thomas St., Worcester, Mass., and edited by C. Albert Reed. A feature of the magazine is the publication of "the life history of four or five birds" in each number, with illustrations of the birds and their eggs. The magazine is well printed and the illustrations are excellent.

'THE PETREL, an illustrated monthly magazine devoted to Ornithology and Oölogy,' comes to us from Palestine, Oregon, the first number bearing date January, 1901. It is edited by John William Martin, and presents a very attractive appearance. It contains a number of interesting articles by well-known writers and several full-page half-tone illustrations of nests and eggs, including those of the American Eared Grebe, the Western Grebe, and the American Coot. We extend to each of these new comers a cordial welcome and our best wishes.

THE WORK of the Biological Survey, U. S. Department of Agriculture, is of special interest to biologists as well as to the agriculturist. From the Annual Report of the Acting-Chief of the Survey, Dr. T. S. Palmer, for the year ending June, 1900, we gather the following: Field work was carried on in southern Texas, particularly along the Gulf coast from Corpus Christi to Brownsville and west to Laredo along the lower Rio Grande, by Mr. Vernon Bailey and Mr. H. C. Oberholser. The work of outlining the life zones in California was continued in the Coast Range, and carried southward to San Francisco Bay, under the personal direction of Dr. Merriam, Chief of the Biological Survey, and work was also continued on the west slope of the Sierra Nevada, from Sierra Valley to the Yosemite. Work was continued in Alaska, chiefly near the coast, by Mr. W. H. Osgood, and Mr. E. A. Preble was sent on what proved to

be a very successful expedition to the region about the southern end of Hudson Bay.

Investigation of the economic relations of birds was continued as usual, both in the field and in the laboratory, the contents of some 2000 bird stomachs having been examined; special field investigations were also continued, by Dr. S. D. Judd and Prof. F. E. L. Beal. The enforcement of the Lacey Act, specially consigned to the Department of Agriculture, added greatly to the work and responsibilities of the Biological Survey, and the prompt and thorough measures taken by the Acting-Chief, Dr. Palmer, are already a matter of record in this journal.

The publications of the Survey, both economic and technical, have been carried on with vigor, and include several numbers of the 'Farmers' Bulletins,' and four numbers of the 'North American Fauna.' There were also reprints of several 'Bulletins,' including three reprints of the Farmers' Bulletin No. 54, on 'Common Birds in their relation to Agriculture,' aggregating 70,000, and making a total issue of more than 200,000 copies of this important document. In addition to all this was of course the laborious routine work, including the distribution of schedules and the writing of some 2000 letters.

THE DELAWARE VALLEY ORNITHOLOGICAL CLUB held its annual meeting at the Academy of Natural Sciences, Philadelphia, January 3, 1901. Dr. Spencer Trotter spoke on 'Birds observed in Nova Scotia' and Mr. Samuel N. Rhoads on 'The Economic Value of Hawks and Owls.' Mr. Wm. L. Bailly exhibited a number of lantern slides of birds and nests photographed from nature.

The officers elected for the ensuing year are: President, Charles J. Pennock; Vice-President, William A. Shryock; Secretary, Henry W. Fowler; Treasurer, Stewardson Brown. The average attendance for the past year was twenty, and among the more interesting communications may be mentioned the following: 'Winter Bird Life at Cape Charles, Va.,' by Geo. Spencer Morris; 'Notes on the Birds of Palm Beach, Fla.,' by Dr. W. E. Hughes; 'The Earliest Describers of our Birds,' by Witmer Stone; 'Resemblances in Bird Songs,' by Samuel N. Rhoads; 'Shorebirds observed at Stone Harbor, N. J.,' by D. N. McCadden and Dr. J. F. Prendergast; 'Crossbills in New Jersey,' by Wm. B. Evans; 'A Season's Observations of the New Jersey Gull Colonies,' by Wm. L. Bailly; 'Breeding of the Hermit Thrush on Martha's Vineyard,' by H. W. Coggin; 'Recent Capture of Ivory-billed Woodpeckers in Florida,' by C. J. Pennock. The club has recently elected as an Honorary Member, Dr. Samuel W. Woodhouse.

PROFESSOR ALFRED NEWTON, F. R. S., has recently been awarded by the Royal Society one of the Royal medals in recognition of his eminent services to ornithology. In presenting the medal the President,

Lord Lester, paid to the recipient the following high tribute: "Professor Newton has devoted himself for the last fifty years to the study of ornithology; and the 'Dictionary of Birds' may well be called the résumé of his labors. Professor Newton's work is eminently critical—a model of careful and cautious criticism of everything pertaining to his favorite branch of science. The 'Dictionary of Birds' is the acknowledged standard work on ornithology, the progress of which science in this country is due mainly to his critical, suggestive, and stimulating influence. His personal labors refer chiefly to historical, systematic, and faunistic questions. It is by his untiring efforts that the vexed question of nomenclature and synonymy has been practically settled and has been put on its present footing. He is also one of the leading authorities in the modern branch of zoögeography, which owes some of the most important modifications and generalizations to him. Lastly, it is only fair to mention that he is one of the few zoölogists among his contemporaries who, from the first, embraced the doctrine of evolution according to Darwinian principles."

THE Fifth Annual meeting of the Audubon Society of New York State was held in the large lecture hall of the American Museum of Natural History on March 8, 1901. The President, Morris K. Jesup, presided. The exercises included the annual election, Mr. Jesup being re-elected to the office of President, and Miss E. H. Lockwood to that of Secretary-Treasurer, and addresses by Hon. Charles R. Skinner, Dr. T. S. Palmer, William Dutcher, and Frank M. Chapman. Mr. Skinner spoke of the 'Educational Value of Bird Study' which, with the study of the more common forms of animal and plant-life about us, he characterized as of greater importance than the study, in a foreign tongue, of events which transpired 2000 years ago. He emphasized especially the elevating, purifying influence of contact with nature and heartily endorsed all educational work which would tend to give us a practical knowledge of creatures with which we daily come in contact. Dr. Palmer spoke of the necessity for laws designed to protect non-game as well as game birds, and explained in detail the relation of the Federal to State Laws; the most important provision of the Federal law making an animal subject to the laws of whatever State or Territory it chanced to be in.

Mr. Chapman reviewed the work of the Audubon Societies and commented on the remarkable results they had accomplished with only limited means. Mr. Dutcher exhibited a series of slides, made by himself on the Maine coast during July, 1900, and showing certain of the larger colonies of Herring Gulls which had been protected from the demands of feather hunters by wardens whose services Mr. Dutcher had secured by means of the Thayer Fund.

THE A. O. U. COMMITTEE ON BIRD PROTECTION stands ready to investigate any illegal killing of birds duly reported to any member of the Committee. For a list of the members for the present year see 'The Auk' for Jan., 1901, pp. 103, 104.

THE AUK:

A QUARTERLY JOURNAL OF ORNITHOLOGY.

VOL. XVIII.

JULY, 1901.

No. 3.

BENDIRE'S THRASHER.

BY HERBERT BROWN.

BENDIRE'S THRASHER (*Harporhynchus bendirei*) differs materially from its cactus haunting kin. Beyond the structure and composition of the external nests they have but little in common. Its habitat in Arizona is confined largely to the central southern portions of the Territory. It seldom or never leaves the flat country for the rough and barren hills as do the *H. palmeri*. They are smaller, prettier, less common, migratory and strangely silent. At rare intervals, when disturbed from their nest, I have heard them *tirup, tirup, tirup* in a sort of reproachful disapproval of being molested, but it could be a delightful songster if it would. Once, and only once, I heard one in a grand outburst of song. I had to positively convince myself that I was not mistaken, and I was not. I then realized that if unsung melodies were sweet, this feathered grace would queen the plains.

During the winter months an occasional one can be found in their usual habitat, but, as a whole, they go south bodily on the first fall storm of wind or rain. The return migration is more gradual, but always of uncertain date. I have known the difference of a full month to exist in their homecoming in two succeeding years. This was probably due to climatic conditions further south. I infer this from the fact that the latest arrival of which I have record was made during an early spring in southern Arizona.

The first week in March will frequently find them nesting, and the middle of April preparations for a second brood are well under way, but, taken over a long series of years, the beginning of April generally sees them busy with their first house making. I have never been able to fully determine the exact number of families raised by one pair of birds during a season. Of two there can be no question, but a third is in doubt, although I have known the nesting season to last three full months and a half. To be more exact, February 24 is the earliest and July 18 the latest record I have in mind for one year. February 9 is the date of their earliest known arrival, but at that time they were gathered in small flocks and were not mated.

With rare exceptions four eggs are the maximum number laid. I have examined probably 500 nests, two only of which contained more. They had five eggs each. Four is not an unusual number, but three is a normal set. The 32 sets of which measurement and descriptions are given can be taken as showing the general average, although they were selected with a view to coloration and size irrespective of the number of eggs to the set.

To the late Major Charles E. Bendire I am indebted for the following measurements and description of the 101 specimens here enumerated.

No. in set, 4	1.11 x .78	1.08 x .78	1.07 x .76	1.08 x .77
" 3	1.10 x .73	1.05 x .73	1.06 x .75	
" 3	.98 x .74	.97 x .72	.97 x .72	
" 3	1.05 x .81	1.01 x .80	1.00 x .81	
" 3	1.01 x .77	1.05 x .78	1.04 x .78	
" 3	1.03 x .81	.99 x .82	1.05 x .82	
" 3	.95 x .73	1.00 x .73	.93 x .71	
" 3	.98 x .78	1.00 x .79	1.01 x .78	
" 3	1.03 x .78	1.02 x .78	1.03 x .78	
" 3	1.02 x .75	1.00 x .75	1.08 x .76	
" 3	1.13 x .77	1.11 x .77	1.11 x .78	
" 4	1.03 x .79	1.06 x .78	1.05 x .79	1.06 x .80
" 3	.99 x .72	1.01 x .73	1.02 x .73	
" 4	1.00 x .78	.99 x .77	.97 x .80	1.02 x .78
" 4	1.06 x .78	1.07 x .77	1.09 x .77	1.03 x .78
" 3	1.14 x .74	1.09 x .77	1.04 x .75	
" 3	1.03 x .80	1.00 x .83	1.05 x .80	
" 4	1.00 x .76	1.01 x .78	1.00 x .78	1.01 x .79

No. in set	3	1.13 x .76	1.10 x .77	1.06 x .78	
"	3	1.02 x .76	1.04 x .76	1.05 x .75	
"	2	1.05 x .75	1.03 x .74		
"	3	1.07 x .79	1.11 x .78	1.09 x .80	
"	3	1.12 x .78	1.12 x .77	1.05 x .78	
"	2	1.15 x .79	1.16 x .77		
"	3	1.03 x .77	1.07 x .78	1.02 x .76	
"	3	1.08 x .77	1.05 x .78	1.08 x .73	
"	3	1.10 x .81	1.10 x .83	1.10 x .81	
"	4	.90 x .75	.92 x .75	.97 x .75	.92 x .73
"	4	1.13 x .81	1.10 x .81	1.12 x .83	1.10 x .81
"	3	.96 x .74	1.04 x .77	.96 x .73	
"	2	1.20 x .80	1.17 x .79		
"	4	1.14 x .77	1.11 x .77	1.16 x .77	1.16 x .77

Average size of above 101 specimens, 1.05 x 0.75 inches. A further measurement of 47 additional specimens, making a total of 148, gave an average size of 1.03 x .75.

The ground color in the majority of the 148 specimens varies from a pale gray green to a greenish white, the former predominating. In a single set it is a clear pale green with a bluish tinge. Most of the eggs are irregularly spotted and blotched with well defined markings of tawny ecru drab, fawn color and vinaceous buff. These markings are generally heaviest about the larger end of the egg; in some specimens the spots run longitudinally. In this type about three fourths of the eggs examined can be included. They resemble, in the style of marking, the eggs of *Mimus polyglottos*, somewhat, although the eggs themselves look quite different. In about 20 per cent. the ground color is somewhat clouded over and partially obscured by the markings, which are finer, less pronounced, giving the egg a uniform pearl gray and pale greenish gray appearance till closely looked at. In an occasional specimen, the markings are simply fine pinpoints, as in the smaller spotted eggs of *Harporhynchus rufus*.

In about five per cent. of the eggs, the ground color is grayish or pinkish white with scarcely a trace of green, and the egg is heavily and uniformly spotted with longitudinal markings of pale salmon color and lavender, bearing a striking resemblance to some eggs of *Myiadestes townsendi*, excepting in size. A single egg has a distinct wreath about the larger end.

The shape of these eggs varies a great deal, the most common form being an elongate ovate, varying from this to ovate, short ovate and elliptical ovate.

The nest is small and daintily constructed by comparison with those of other thrashers. It is less compactly built than that of *H. palmeri*, but the manner of construction is common to all Arizona thrashers. There is an external nest of sticks, few or many, the nest proper of grass and lined with any soft material conveniently obtainable. I have measured at least 200 of them, of which the following may be taken as a fair sample. They are from my field notes and are largely without selection.

Nest in tasaja, 40 inches from the ground to the top of the nest. It has a light frame of sticks, the nest proper being made of green grass, lined with horse hair, rootlets and feathers. External diameter 6 inches, depth $3\frac{1}{2}$ inches. Inside, across the top, 3 inches, depth 3 inches, bottom ovate. This nest contained three eggs.

Nest in cholla, 36 inches from the top of the nest to the ground. But few twigs were used in its construction, the bulk of the material being dried grass. External diameter 6 inches, depth 5 inches. Inside, across the top, $3\frac{1}{2}$ inches, bottom 3 inches, depth $3\frac{1}{2}$ inches. It contained three eggs.

Nest in fork of tasaja, about 4 feet to the top of the nest from the ground. A few twigs on the outside, apparently to give strength, the nest proper being made of and lined with dried wire grass. External diameter, across the top, 6 inches, depth to point of fork $7\frac{3}{4}$ inches. Inside across the top, $3\frac{1}{2}$ inches, across the bottom $2\frac{3}{4}$ inches, average depth 2 inches, corners rounded. It contained four eggs.

Nest in cholla, $2\frac{1}{2}$ feet to the top of the nest from the ground. This nest is supported by an upright branch, against which no sticks have been placed, but they were built against the opposite side of the nest. The nest proper was made of dried grass and lined with a few feathers. Outside measurement, across the top, 7 inches, depth 5 inches. Inside, across the top, $3\frac{1}{2}$ inches, depth $2\frac{1}{4}$ inches, bottom ovate. This nest contained four eggs. They were very small and finely marked.

Nest on west side of a low bushy cholla, near the top. It is

built against a large arm of the bush from which the thorns have been broken off. The sticks, as usual in such cases, have been placed on the opposite side of the nest from the branch against which it has been built. Outside diameter 7 inches, depth $3\frac{1}{2}$ inches. Inside, across the top, $3\frac{3}{8}$ inches, across the bottom $2\frac{1}{2}$ inches. It contained four green eggs faintly blotched with brown.

Nest in tasaja, about 4 feet from the top to the ground. The external stick nest is unusually large. It extends above the grass, of which the inside nest is constructed, 4 inches on one side and $2\frac{3}{4}$ inches on the other, with a narrow opening on the south side through which the birds enter and leave the nest. Outside diameter $12 \times 8\frac{1}{2}$ inches, depth 11 inches. Inside, across the top of the grass nest, 3 inches, depth of same $1\frac{1}{2}$ inches. Eggs three, very small.

Nest in tasaja, $4\frac{1}{2}$ feet to the top of the nest from the ground. Nest placed under an arm of the bush near the top. Outside diameter, across the sticks, 10 inches, depth $6\frac{1}{2}$ inches. The stick nest reaches about 2 inches above the nest proper. The diameter across the top of inside nest is $3\frac{1}{2}$ inches, bottom 3 inches. Lined with grass, wool and fibrous bark. It contained two pinkish colored eggs.

Nest on north side of a slender tasaja, 3 feet 8 inches from the ground to the top of the nest. Outside nest is made of creosote and thorn twigs. Outside diameter is $7\frac{1}{2} \times 6$ inches, depth $5\frac{1}{2}$ inches. Inside, across the top, $3\frac{1}{2} \times 3\frac{1}{4}$ inches, and 3 inches deep. Bottom ovate. It contained four eggs. In shape and markings they had the appearance of being diminutive eggs of the Gambel Quail.

Nest in tasaja, about 30 inches from the ground to the top of the nest. Outside nest made of light thorn twigs, inside of grass and lined with rootlets and hair. Outside diameter $5\frac{1}{4}$ inches, depth 4 inches. Inside diameter across the top $3\frac{1}{2}$ inches, bottom drawn in and rounded to $2\frac{1}{2}$ inches, depth 2 inches. It contained four eggs.

Nest in tasaja, 22 inches from the ground to the top of the nest. Outside nest is made of sticks, inside of grass and lined with rootlets and feathers. Outside diameter $7 \times 5\frac{1}{2}$ inches. Inside nest, across the top, $2\frac{1}{4}$ inches, depth $1\frac{1}{2}$ inches. The bottom was thickly padded with fine grass. It contained two eggs.

Nest built on north side of a flowering tasaja, about 5 feet above the ground. It was placed on the top of an old nest. Outside diameter 7 inches, but drawn in to about 5 inches near the top, depth 9 inches. Inside, across the top, $3\frac{1}{2}$ inches, bottom 3 inches, depth $1\frac{3}{4}$ inches. It contained three eggs.

This nest is a flimsy concern. It is hung in the arms of a cholla about 4 feet from the ground. Outside measurement 7×5 inches. Inside, across top and bottom, $3\frac{1}{2}$ inches, depth $2\frac{1}{2}$ inches. Sides of the nest thin and open. It was sparsely lined with dry wire grass. It contained three eggs.

Nest in cholla about 50 inches from the ground. It was made of sticks, green weeds and grass, and lined with rootlets and feathers. The top diameter of the nest cavity is $3\frac{1}{4}$ inches, depth $1\frac{1}{2}$ inches, bottom oval. This nest contained three eggs and is curiously constructed.

Nest in cholla, about 5 feet to the top of the nest, from the ground. It is made of sticks, lined with grass, grass roots and feathers. Outside diameter 6 inches, depth 4 inches. Inside diameter, across the top, 3 inches, depth $1\frac{1}{2}$ inches, sides straight, bottom flat. It contained 3 eggs, large and coarsely marked.

Nest in mesquite tree, about 12 feet from the ground. It is made of sticks lined with grass and the inside bark of dead cactus. The outside measurement across the top is 7 inches, depth 5 inches. Inside measurement, across the top of cavity, $3\frac{1}{2}$ inches, bottom $3\frac{1}{4}$ inches, depth 2 inches. This nest was remarkable from the fact that it contained 5 eggs.

Nest in tasaja, 40 inches from the ground to the top of the nest. The external nest of sticks measured 11×7 inches, depth 6 inches, across the top of the cavity $3\frac{3}{4} \times 3\frac{1}{4}$, across the bottom 3 inches, lined with dead grass, weeds, horsehair and wool. It contained 4 eggs.

Nest in tasaja, about 40 inches to the top of the nest from the ground. Nest made of dead twigs and lined entirely with shredded rope. Outside diameter $6\frac{1}{2}$ inches, depth 4 inches. Inside diameter across the top of cavity $3\frac{1}{2}$ inches, across the bottom 2 inches, depth $2\frac{1}{4}$ inches. This nest contained 3 eggs.

The foregoing will give a fair idea of the size and character of the nests. It will be observed that the larger portion of the nests

are in tasajas. This is a species of cactus for which, for the want of a better name, I am obliged to use that of the Mexicans. The word means "dry or jerked beef" which in color and shape the tasaja somewhat resembles. The spines, although innumerable, are short and the branches spreading and open. The cholla is the characteristic cactus of the desert. It is a mass of barbed spines and is the favorite nesting place of *H. palmeri*, but not of *H. bendirei*. Taking 50 nests in succession 34 of them were placed in tasajas, 11 in chollas, 3 in tesota bushes, 1 in a mesquite tree and one in a willow tree. These results are from the Fort Lowell district. In other sections of country less characteristic of the cacti I have found them largely inclined to tree nesting, but never at any great height from the ground. This was Capt. Bendire's experience also. The highest I ever saw one placed was in a willow about 20 feet up. I also saw one in a tasaja the bottom of which was not more than 6 inches from the ground.

BIRDS OF THE BLACK HILLS.

BY MERRITT CARY.

• For several years it had been my desire to take a trip to the western part of the Black Hills—especially to that portion which is bounded on the east by the Timber Reserve, and slopes off gradually to the west and southwest until it merges into the arid sagebrush plains of central Wyoming. In selecting this field I hoped to meet with two distinct faunas, and to be as nearly as possible on the dividing line between the two faunal regions.

Accordingly, the 29th of May, 1899, found me very pleasantly situated at the ranch of an old friend, fourteen miles southeast of Newcastle, Wyo., in a branch of the beautiful Gillette Cañon. The scenery here is picturesque in the extreme, the hills to the eastward being within the Reserve, and clothed with heavy forests of pine; while to the westward the foothills are almost devoid of timber, but covered with a heavy growth of 'wait-a-bit' brush, the uniform greenish-gray color of which contrasts strongly with the red sandstone rocks. To the southwest the Elk Mountain

range is seen as a succession of ridges, finally culminating in Elk Mountain, which raises its huge mass to an elevation of some fifty-seven hundred feet.

It was in this ideal situation that I spent the first half of June, both in 1899 and 1900, in studying and collecting the fauna and flora of the region. Unfortunately, however, the season was too backward in 1899 for any egg collecting. The majority of the birds were just commencing to build nests when I left, on the 11th of June.

Before going to Newcastle in 1899, I had stopped over a day at Hot Springs and Edgemont, S. Dak., respectively, and in the list I give the birds observed at all three localities, with brief notes as to their habits, distribution, etc.

The season was much earlier in 1900, and the nesting season was at its height in the early part of June. On this account my notes for 1900, concerning the habits of certain species, are much more copious than those for 1899. A goodly number of species not noted in 1899 were abundant in 1900.

In the following list localities are mentioned only in connection with species observed at Hot Springs and Edgemont, S. Dak. The reference in all other cases is to the immediate vicinity of Campbell's Ranch, fourteen miles southeast of Newcastle.

1. *Querquedula discors*. BLUE-WINGED TEAL.—Several pairs seen on a creek south of Buffalo Gap, S. Dak., where they were doubtless breeding.
2. *Numenius longirostris*. LONG-BILLED CURLEW.—Frequently seen on the tablelands, where they breed.
3. *Ægialitis vocifera*. KILLDEER.—On plowed fields, in Gillette Cañon.
4. *Dendragapus obscurus*. DUSKY GROUSE.—The ranchmen informed me that when hunting in the higher portions of the hills they frequently shot these grouse.
5. *Pediocetes phasianellus campestris*. PRAIRIE SHARP-TAILED GROUSE.—I noted but two specimens, one in 1899 and one in 1900.
6. *Centrocercus urophasianus*. SAGE GROUSE.—Very common in the sage brush, both in the foot-hills and on the plains.
7. *Zenaidura macroura*. MOURNING DOVE.—In 1899 I did not once see it within the Hills, but the birds were abundant along the Elkhorn R. R. south of Buffalo Gap, S. Dak. In 1900 doves were frequently seen at the ranch.
8. *Cathartes aura*. TURKEY VULTURE.—Frequently seen and doubtless breeds.

9. *Accipiter velox*. SHARP-SHINNED HAWK.—Said to be abundant, and very destructive to poultry in fall, winter and spring. I found a nest in one of the cañons back of the ranch on June 8, 1899, which contained two fresh eggs. The parent birds were shy, but frequently uttered their alarm notes. The nest was typical of the species, about thirty feet up in a pine. Before leaving the nesting-site I secured both of the old birds. Upon visiting the nest again on June 11, 1900, I found it to be occupied by another pair, and took a fresh set of five eggs.

10. *Buteo borealis*. RED-TAILED HAWK.—Seen but once, on June 5, 1900.

11. *Buteo borealis kriderii*. KRIDER'S RED-TAIL.—I saw but three of these hawks, one in 1899 and two in 1900.

12. *Buteo swainsoni*. SWAINSON'S HAWK.—By far the most abundant of the larger hawks. A common breeder in the timber along the Cheyenne River, as it is along the smaller streams.

13. *Aquila chrysaëtos*. GOLDEN EAGLE.—Fairly common throughout the region. I saw several old nests in the most inaccessible places on the cañon walls, and a ranchman told me of a pair that were then (June 8, 1899) nesting near the ranch, thirty miles southeast of Newcastle, but I did not have time to visit the nest.

14. *Falco sparverius*. AMERICAN SPARROW HAWK.—Common breeder throughout the region. Exceeds all the other hawks in point of numbers. Nesting appeared to be just commencing on June 9, 1900.

15. *Asio wilsonianus*. AMERICAN LONG-EARED OWL.—A pair of these owls had a nest about thirty feet up in a large pine in one of the cañons, and when I visited the site, on June 3, 1900, the nest contained young birds.

16. *Nyctala acadica*. SAW-WHET OWL. On June 11, 1900, while walking down the rocky bed of a deep cañon, three of these little owls flushed from the thick top of a small cedar, where they had been taking their noonday siesta, and alighted farther down the cañon. I secured one of them, which proved to be an immature bird, with the breast and belly of a deep fawn color.

17. *Megascops asio maxwelliæ*. ROCKY MOUNTAIN SCREECH OWL.—I saw a Screech Owl in the heavy timber which was probably of this variety.

18. *Bubo virginianus*. GREAT HORNED OWL.—Two young were killed near Soper's Ranch, thirty miles southeast of Newcastle, on June 13, 1900.

19. *Speotyto cunicularia hypogæa*. BURROWING OWL.—Common in prairie dog towns.

20. *Ceryle alcyon*. BELTED KINGFISHER.—Sweet's Ranch, six miles southeast of Newcastle — one individual on the sawmill pond.

21. *Dryobates villosus hyloscopus*. CABANIS'S WOODPECKER.—Frequently seen in the cañons.

22. *Dryobates pubescens medianus*. — DOWNY WOODPECKER. — In same situations as last.

23. *Picoides arcticus*. ARCTIC THREE-TOED WOODPECKER.— But two examples of this species were seen, one on June 2, 1899, and the other, which I secured, on June 11, 1900. This latter bird, an adult male, had the feathers of its under parts matted together with pitch which it had rubbed from the pine trunks. Both birds were seen in the heavy timber, and it is quite probable that the species breeds in the hills.

24. *Melanerpes erythrocephalus*. RED-HEADED WOODPECKER.— The most abundant woodpecker in the Hills.

25. *Melanerpes torquatus*. LEWIS'S WOODPECKER.— This fine woodpecker is common in the Hills, and is partial to the burnt timber on the sides of cañons. They are frequently seen to launch into the air from a dead stub in such a situation, and, after a few aerial evolutions, to return to their former perch. Whether or not the woodpecker is catching an insect at such times I am unable to state, but it is my firm belief that such is the case. I have found Lewis's Woodpecker at all times to be an extremely wary bird, and very difficult of approach.

26. *Colaptes auratus luteus*. NORTHERN FLICKER.— Fairly common. I found a nest containing nine fresh eggs on June 4, 1899.

27. *Colaptes cafer*. RED-SHAFTED FLICKER.— Common throughout the Hills.

28. *Phalænoptilus nuttallii*. POOR-WILL.— The monotonous notes of these birds were heard every night at the ranch.

29. *Chordeiles virginianus henryi*. WESTERN NIGHTHAWK.— It is quite probable that the nighthawks observed were of this variety. Ranchmen informed me that eggs were often found in July.

30. *Aeronautes melanoleucus*. WHITE-THROATED SWIFT.— Abundant, both at Hot Springs and Newcastle, where they were breeding in June in the most inaccessible cracks and crevices on the face of sandstone cliffs. The ranchmen have styled these birds 'twitter-twitters' and 'nightflyers.'

31. *Selasphorus platycercus*. BROAD-TAILED HUMMINGBIRD.— Two hummingbirds were seen at the ranch in the latter part of May, 1900, and as a very accurate description of the birds was given me I have no hesitancy in listing the species.

32. *Tyrannus tyrannus*. KINGBIRD.— Fairly common along Beaver Creek, seven miles from Newcastle, where the trees are mostly boxelders.

33. *Tyrannus verticalis*. ARKANSAS KINGBIRD.— Frequently seen at Hot Springs, where it spends much of its time perched upon telephone wires.

34. *Sayornis phæbe*. PHÆBE.— Noted but once, on Beaver Creek.

35. *Sayornis saya*. SAY'S PHÆBE.— This interesting flycatcher is quite common in the cañons where its sweet but somewhat melancholy notes may be heard at all hours of the day. The favorite perch of this bird is a boulder in the bottom of a cañon, from which it darts forth every few moments to capture a passing insect. While in the air the

black tail is very prominent. But one nest was found, containing two eggs, on June 11, 1899, which was situated on a small ledge in a recess of the cañon wall. This nest, which was composed almost entirely of moss, was remarkably shallow, the center being not more than two thirds of an inch lower than the edges.

36. *Contopus richardsonii*. WESTERN WOOD PEWEE.—Frequently seen, but no nests were found. The monotonous *pē-a-wee* of this bird was heard almost every morning and evening during my stay in 1900. The species frequents the heavy timber in the cañons.

37. *Empidonax traillii*. TRAILL'S FLYCATCHER.—Partial to the 'wait-a-bit' brush in the rocky heads of cañons. Here this sly little flycatcher is frequently seen catching insects around the rim-rock on a hot day, uttering at short intervals its sharp *ke-wick, ke-wick*.

38. *Empidonax virescens*. ACADIAN FLYCATCHER.—I took an adult male on Pine Ridge, Sioux County, Neb., about fifteen miles from the northwestern corner of the state, on May 26, 1900. The species is probably occasionally found within the Hills.

39. *Empidonax minimus*. LEAST FLYCATCHER.—A common breeder in chokecherry thickets in the cañons. The nests were very thick-walled and compact, averaging four inches in height, and two and a half inches inside diameter. The nesting material used was coarse grass and weed-leaves; the lining of fine grass, horse hair, fibers and plant down. An incomplete set of two pure white eggs was taken on June 15 from a nest in Hop Cañon.

40. *Otocoris alpestris arenicola*. DESERT HORNED LARK.—Occasionally seen on the tablelands.

41. *Pica pica hudsonica*. AMERICAN MAGPIE.—Plenty of old nests were seen in 1899, but although common before my arrival, I did not see one during my stay of two weeks in 1900.

42. *Perisoreus canadensis capitalis*. ROCKY MOUNTAIN JAY.—A common bird in the higher parts of the Hills, especially so in the Reserve. The deer hunters claim they can nearly always locate a deer by a certain note which this jay utters, greatly resembling the words 'Here-it-is,' 'Here-it-is.' I myself did not hear this note, but it is quite probable that the birds are noisier than usual when a deer is near, just as is the case with crows when a flock of ducks is feeding near them. Troops of fully grown young of this species were seen on June 12, 1899, and June 12 and 13, 1900.

43. *Corvus americanus*. AMERICAN CROW.—A small flock at L. A. K. Ranch, on Beaver Creek, in 1900.

44. *Nucifraga columbiana*. CLARKE'S NUTCRACKER.—Two of these noisy birds were seen on Elk Mountain at an elevation of 5500 feet, on June 9, 1899, in company with a troop of Rocky Mountain Jays. Their notes are very harsh and discordant, something like *k-r-r-aw*.

45. *Cyanocephalus cyanocephalus*. PIÑON JAY.—This bird is universally disliked by ranchmen on account of the damage it does to growing

crops, and large numbers are killed and poisoned. It is very difficult to get within gunshot of these jays in summer, but I was told that in cold weather, when driven to the ranches by hunger, they become very bold, even entering the kitchen of the ranch house in quest of food. When ravaging the crops Piñon Jays go about in immense flocks, and always keep sentinels posted to warn them of impending danger. Fully grown young birds were common on June 4. Piñon Jays are partial to the foothills, and are seldom seen back in the heavy timber.

46. *Agelaius phoeniceus*. RED-WINGED BLACKBIRD.—A few seen near Hot Springs.

47. *Sturnella magna neglecta*. WESTERN MEADOWLARK.—Abundant at Hot Springs, Edgemont and Newcastle—breeds.

48. *Icterus galbula*. BALTIMORE ORIOLE.—Breeding at Edgemont.

49. *Icterus bullocki*. BULLOCK'S ORIOLE.—Common at Edgemont, where it breeds.

50. *Scolecophagus cyanocephalus*. BREWER'S BLACKBIRD.—Usually seen in the vicinity of springs.

51. *Quiscalus quiscula æneus*. BRONZED GRACKLE.—Occasional.

52. *Pinicola enucleator canadensis*. PINE GROSBEAK.—Hot Springs, May 28, 1899; Newcastle, June 8, 1900.

53. *Loxia curvirostra minor*. AMERICAN CROSSBILL.—Both at Hot Springs and Newcastle, in the latter locality around springs. Did not appear to be breeding.

54. *Loxia curvirostra stricklandi*. MEXICAN CROSSBILL.—Am quite certain that I saw two of these birds at Hot Springs, as I was very close to them at the time.

55. *Astragalinus tristis*. AMERICAN GOLDFINCH.—Common around creeks and springs.

56. *Spinus pinus*. PINE SISKIN.—Seen but once or twice. Its presence in June would indicate that it breeds within the Hills.

57. *Poœcetes gramineus confinis*. WESTERN VESPER SPARROW.—A Vesper Sparrow was seen, and was probably of this variety.

58. *Chondestes grammacus strigatus*. WESTERN LARK SPARROW.—A common breeder. A nest containing five slightly incubated eggs was found on June 14, 1900. The nest was on the ground, and composed of coarse grass, the lining being of finer grass and horsehair. Eggs similar to those of *C. grammacus*.

59. *Spizella socialis*. CHIPPING SPARROW.—Abundant throughout the region, and breeds. Fresh sets were found from June 3 to 14, 1900. The nest is usually in small pines and cedars in the cañons.

60. *Spizella pallida*. CLAY-COLORED SPARROW.—Several seen at Hot Springs.

61. *Junco aikenii*. WHITE-WINGED JUNCO.—Common about the ranch. Several families of young birds seen on June 11, 1900.

62. *Pipilo erythrophthalmus*. TOWHEE.—Once at Hot Springs, in 1899.

63. *Pipilo maculatus arcticus*. ARCTIC TOWHEE.—Abundant, and breeds. Two nests were found, the first on June 3, 1900, containing four fresh eggs; the second, on June 13, containing four young. Both nests were on the sloping side of a cañon, about six feet from the bottom, beside small rocks. They were composed of pine needles and lined with fine grass.

64. *Zamelodia melanocephala*. BLACK-HEADED GROSBEAK.—Breeding at Edgemont.

65. *Passerina amoena*. LAZULI BUNTING.—Several seen at Sweet's Ranch, where the species doubtless breeds.

66. *Calamospiza melanocorys*. LARK BUNTING.—Common south of Hot Springs, and along the B. & M. R. R. from Edgemont to Newcastle.

67. *Piranga ludoviciana*. LOUISIANA TANAGER.—Very common at the ranch in 1899. Numbers of these tanagers were seen feeding on the maggots in an old carcass, in company with Robins, White-winged Juncos, Chipping Sparrows and Audubon's Warblers. Scarcely two male tanagers were alike in regard to the coloration of the head, some having the crown, occiput, lores and auriculars a very deep crimson-red, while in others, doubtless young males, these parts were merely tinged with orange-red. In 1900 tanagers were not common until June 15.

68. *Petrochelidon lunifrons*. CLIFF SWALLOW.—Breeding abundantly at Hot Springs.

69. *Hirundo erythrogastra*. BARN SWALLOW.—Common breeder under the sheds at the ranch.

70. *Tachycineta bicolor*. TREE SWALLOW.—Abundant. These swallows were carrying away feathers from the barn-yard on June 10, and were probably commencing nest-building at that time.

71. *Lanius ludovicianus excubitorides*. WHITE-RUMPED SHRIKE.—Seen but once.

72. *Vireo olivaceus*. RED-EYED VIREO.—Common at Hot Springs, Edgemont and Newcastle.

73. *Vireo gilvus swainsoni*. WESTERN WARBLING VIREO.—Fairly common and breeds. Two nests which I examined on June 15, 1900, were each situated in upright crotches of chokecherry trees, four or five feet from the ground. Each nest was neatly constructed of coarse grass and fibers, and lined with fine grass and hair. A full set of four fresh eggs was secured from each nest.

74. *Vireo solitarius plumbeus*. PLUMBEOUS VIREO.—Frequently seen, but very shy.

75. *Dendroica aestiva*. YELLOW WARBLER.—Common at Hot Springs and Edgemont; also seen on Beaver Creek.

76. *Dendroica auduboni*. AUDUBON'S WARBLER.—Abundant at Hot Springs and Newcastle, where its sprightly notes were almost continually heard. This warbler was just commencing nest building on June 15, 1900, boldly coming to the dooryard in search of material.

77. *Geothlypis tolmiei*. MACGILLIVRAY'S WARBLER.—Fairly common in the berry thickets in the cañons, where it doubtless breeds.

78. *Geothlypis trichas occidentalis*. WESTERN YELLOW-THROAT.—Abundant in the brush along Beaver Creek.

79. *Icteria virens longicauda*. LONG-TAILED CHAT.—Usually found in the shrubbery at the bottom of small cañons.

80. *Setophaga ruticilla*. AMERICAN REDSTART.—Fall River Cañon, near Hot Springs.

81. *Galeoscoptes carolinensis*. CATBIRD.—Seen but a few times on Beaver Creek.

82. *Harporhynchus rufus*. BROWN THRASHER.—Breeding on Beaver Creek.

83. *Salpinctes obsoletus*. ROCK WREN.—The lively notes of this species were frequently heard around the rim rock.

84. *Troglodytes ædon aztecus*. WESTERN HOUSE WREN.—Breeding both at Hot Springs and Newcastle.

85. *Sitta carolinensis aculeata*. SLENDER-BILLED NUTHATCH.—Frequently seen in the heavy timber.

86. *Sitta canadensis*. RED-BREASTED NUTHATCH.—One on Elk Mountain on June 8, 1899, and probably breeds there.

87. *Parus atricapillus septentrionalis*. LONG-TAILED CHICKADEE.—Rather common.

88. *Myadestes townsendii*. TOWNSEND'S SOLITAIRE.—I saw one of these birds at Horseshoe Bend, in the Timber Reserve.

89. *Hylocichla ustulata swainsoni*. OLIVE-BACKED THRUSH.—Hot Springs, May 28, 1899. Several seen.

90. *Merula migratoria*. AMERICAN ROBIN.—Breeding abundantly at Hot Springs, Edgemont and Newcastle.

91. *Sialia arctica*. MOUNTAIN BLUEBIRD.—Common at Hot Springs and Newcastle, breeding at the latter place in dead pines, from four to thirty feet above the ground. One nest was found in the barn at the ranch, and contained five highly incubated eggs, on June 4, 1899.

UNPUBLISHED LETTERS OF WILLIAM MACGILL-
LIVRAY TO JOHN JAMES AUDUBON.

BY RUTHVEN DEANE.

THE publication of the letters of ornithologists of fame has met with much favor of late, and we cannot add to the list any of more real value and interest, than those of William MacGillivray, whose reputation as an ornithologist and a teacher of natural history, has always been valued so highly. I am under great obligations to Miss M. R. Audubon, in whose possession the original letters are, for the privilege of presenting them here.

It has been known for several years that Audubon had selected MacGillivray to assist him in the technical part of his 'Birds of America,' and these letters are therefore of peculiar interest, as they treat principally upon the progress of its publication and show the high regard in which he held his friend Audubon. It is a very fitting time to publish these letters, for only a few months ago a mural tablet to the memory of William MacGillivray was unveiled at Marischal College, Aberdeen, Scotland, where he was Professor of Natural History and Lecturer on Botany from 1841 to 1852, and where a tombstone was erected at his grave. A reference to the 'In Memoriam' published on that occasion, will be found in this number of 'The Auk.'

During the past few years I have made very careful search for a likeness of MacGillivray, but have not met with success. My correspondent, the Rev. Dr. James Farquharson, of Edinburgh, who was a student under MacGillivray, writes me that the only likeness which exists is a small water-color which he had taken of himself a short time before his death, but unfortunately this fails to convey an idea of the man, and to present it as the likeness of MacGillivray would be utterly misleading.

No. 1.

Edinburgh, 22 Warriston Crescent
7th May, 1831

Dear Sir,

I received your letter of the 30th ulto. in due time. Agreeably to your desire I called upon Mr. Neill, but did not find him, and so went to Prof. Jameson who informed me that the election of your friends had not yet taken place, but would be proposed at next meeting. I also called at Mr. Kidd's, but did not find him. With respect to the review, I can only say that if Mr. Lockhart is so doubtful as to my powers, he may doubt as long as he lists. I shall not submit any essay of mine to his judgment. If you had informed me that he or the conductor of my other review would print a notice of your works, I should have agreed to write one with pleasure, but under existing circumstances I shall not, it being repugnant to my feelings and contrary to my practice and principles to sue for favor with any man. I have already written three reviews of your books which have been printed, and when I am applied to for a fourth I shall write it too, with "an elegance of style, a power of expression, and knowledge of the subject" equal to those usually displayed by the editor of the Quarterly.

I have settled with Mr. Boyd about the volume which I am to write for him. Prof. Jamieson sent a flaming eulogy of my translation of Richard W. Blackwood, and wishes me to undertake the translation of a Latin work on Zoology, for the use of his class; nothing that has happened to me for ten years has surprised me more than his having said to you that I did not deserve to be mentioned in your book. I have been collecting birds for description, and looking over my old manuscript, and before you return I expect to have my views on the classification of objects of Natural History published, and perhaps a synopsis of British Quadrupeds and Birds. My translation of Richard has been recommended by Prof. Jameson to his pupils, adopted by Dr. Graham as his text book, and praised, as I am informed, in the newspapers. They say Wilson has said nothing of your biography in the last number of the magazine, which, however, I have not seen, and I am in-

formed his brother means to mention your works in his review only in a brief manner. You will see that Mr Cheek has given a number of extracts besides the short review. There has been a good deal of excitement here on account of the election. Mrs Mac Gillivray and the children are in good health. I am just about to commence a series of desperate jobs which will occupy me till winter. As I understood your proposals respecting the Birds of Britain to have ended in nothing, and as you do not allude to the subject, I shall suppose all our ideas to have dispersed, and shall think of the matter myself. At the same time I do not think large and expensive works commendable, as they are beyond the reach of those who are most deserving, and most likely to profit by the inspection of them — the *poor* enthusiasts. One person asked me who had written the review, and I told him I was not at liberty to say who wrote it; another told me he knew the moment he saw it who had written it, and a third said directly that I had written it. I told my brother about the Golden Eagle, but I know it will be extremely difficult for him to get one, as he resides on an island where there are few aquiline visitors.

Since writing the above, I have called again at Kidd's but did not find him. His landlady however informed me that she did not think he had any intention of going to London.

With respectful compliments to Mrs Audubon and sincere thanks for your and her kindness, and best regards from Mrs Mac Gillivray,

I remain, Dear Sir, yours truly

W. MacGillivray

No. 2.

Edinburgh, 11 Gilmore Place

16th June, 1834

Dear Sir

I received your letter yesterday and have the pleasure of answering it. If you send me twenty or twenty-five articles, I can revise them without the books to which you refer, and without your own presence, provided your descriptions be full, and

the drawings or plates sent to me. The skins and books might be consulted afterward, when we might go over the articles in company. Should you come here for the purpose, it would not, I believe, be necessary for you to stay more than three weeks or so. On the other hand I might possibly save you the trouble, by going to London, or I might go there for some weeks during the printing; but of this we can speak afterward. To be methodical I should like twenty-five birds, that is description of birds, by your first parcel; but I cannot state precisely at what time they might be revised, only I think were you to send them, you might make a trip to France and be back before I should be done. With respect to printing it seems to me very doubtful that you can get it done in London better or cheaper than here. The best way is to get estimates. If the work were post 8vo., I imagine it would sell much more extensively, but I suppose you have determined to continue it of the same size. You ask about lodgings here. Two doors from me there are good accommodations; but I am sorry, that my own nest which is in a garden, among pear-trees, is rather small. I am sorry that you have resolved to reside in London, that ugly forest of brick buildings swarming with vermin of all genera, species, and varieties, and should like much to see you, that you might condemn one half of my drawings and approve of the rest. I do not think there is anything else in your letter to be answered.

I can begin to revise immediately.

Send, if convenient, 25 articles.

Books are not necessary at present; or if any be, mention them and I can get them here.

Skins are not necessary either.

Please say when you wish the business done.

Address for security, parcels or packages to W. MacGillivray Conservator of the Museum, College of Surgeons, Nicholson Street, Edinburgh; letters, to 11 Gilmore Place, Ed.

Please offer my best regards to Mrs Audubon.

I have the honor to be, Dear Sir

Your obedient servant

W. MacGillivray

No. 3.

Edinburgh, 11 Gilmore Place
18th July, 1834.

Dear Sir

I received from Mr. Neill yours of the 9th along with a parcel of 25 descriptions of birds, and now report progress. I commenced my operations on the 1st of July, and have transcribed and corrected eighteen articles, one *for* each day, but not one *on* each, the work of Sunday being transferred to Monday. This volume will certainly be much richer and more interesting. It will also be larger. You wish to know my opinion as to the improvement of your style. It seems to me to be much the same as before, but the information which you give is more diversified & more satisfactory.

Your first volume is only beginning to be known. Chambers has reprinted many of the sketches, and Hunt has one in a late number. Had it been of the post 8vo size, in two volumes it would have gone off in style; but your imperial size and regal price do not answer for radicals, or republicans either. Could you *sacrifice* the first volume, reprint it of a small size and continue the series so to the end? In suggesting this, I firmly believe that my only object is to let the book have fair play. Lizars has sold five or six thousand copies of some of his ill-written compilations; and if you were to issue yours in a similar style—not of writing but of printing—with 20 wood cuts or engravings in each volume, I am certain it would spread over the land like a flock of migratory pigeons. Even without the embellishments it would fly, but were you to give it those additional wings, it would sweep along in beautiful curves, like the night-hawk or the purplebreasted swallow.

I have often thought that your stories would sell very well by themselves, and I am sure that with your celebrity, knowledge and enthusiasm, you have it in your power to become more *popular* than your glorious pictures can make you of themselves, they being too aristocratic and exclusive. Excuse me for putting down my thoughts just as they occur, and for wandering from my subject, which was the progress of the manuscript.

Be assured I shall get on as quickly as possible, because I am anxious to do so for your sake, and find great pleasure in reading your descriptions. At the present moment however I cannot venture to fix a period, and you have not requested me to do so.

Four months ago I heard from a naturalist for the first time that you had been attacked in a London journal, which afforded me an explanation of an expression used by you in your letter from Charleston. He promised to look out the numbers for me but I have not yet seen them. Perhaps the best place for your answer would be the preface to your second volume.

I have the honor to be, Dear Sir

Your obedient servant

W. MacGillivray

No. 4.

Edinburgh, 11 Gilmore Place

Monday, 28th July, 1834.

Dear Sir

Yours of the 24th, I received on the evening of the 26th. That evening I called on Mr. Kidd, & did not find him at home. Today however, I succeeded, but he informed me that he could not deliver the drawings as they were yet unfinished. The paper on the Goshawk, which you say you wrote for Sir Wm. Jardine, I never heard of before, and if it be the one to which you refer in your last letter, as in a box or a sealed parcel, I have it not. You left nothing of any kind with me excepting the skins of 2 birds, and a stuffed Gannet. You ask when the printing may commence, but the question cannot be answered by me. If you had sent the articles in order from 1 to 50, with the corresponding number of tales and descriptions of scenery, the printing might have been commenced tomorrow, and gone on straight to the end without any impediment. I have finished looking over 25 of your articles, and tonight commence the next parcel, which will, I expect, be done on the 20th of August; in the next parcel I wish you would send those of the first 50 that have not yet come, along with as many more as will make up the 25. If you think of publishing in small size, and reprinting the first volume of the same, the second

volume might still come out first, or both might come out together, in which case the first might be improved and perhaps enlarged. Can you inform me where Mr. Gould has described a Wagtail formerly confounded with the Yellow Wagtail, and which I am informed he has named *moracilla neglecta*? I have found the bird here in abundance in some meadows near the town, and thought at first that I had discovered a new species. It is, like the Grey Wagtail, a most elegant bird, but it has a conical elongated bill, and a long slightly arched hind claw. Now that your American birds are completed I suppose you will have at the European or the British. In the latter case what will become of mine? However, I have resolved, God willing, to go through with my task. I have at least 20 drawings superior to anything in the way ever seen by me, excepting always "The Birds of America," and so good that one might look at them without disgust even after seeing yours. With best respects to Mrs. Audubon,

I have the honor to be, dear Sir,

Your obedient servant

W. MacGillivray.

No. 5.

Edinburgh. 11 Gilmore Place
19th August 1834

Dear Sir

I regret that I have caused you so much uneasiness. Your letter of the 5th August, accompanied by a parcel of descriptions of birds came duly to hand, as did your subsequent letter, but I have been out of town on urgent business and only returned late last night. I have seen Mr. Kidd twice today, and informed him of your wishes.

The College of Surgeons are so urgent with me to have the Catalogue of their Museum printed by the 1st of November that it will be quite impossible for me to go to London before December, because after the catalogue is done, the registration of students which occupies three weeks commences. If it be really necessary that we should meet, I apprehend under these circumstances that you will be obliged to come north, which perhaps

will not be extremely inconvenient, as you say you must be in Manchester. I really wish that I could go to London, and so save you the trouble of coming down, and give myself the pleasure of a little relaxation from my labors; but I have no prospect of being able to do so as I have said, till December. On the other hand it would be expedient that you should determine as to the mode of printing, because I think the technical description of the birds might be rendered more readable were you to reprint the first volume—that is less *formal*, and as to the Biography—I mean your own—if you honor me with the revisal of it, it would be well that we should converse on the subject. I will endeavor to see Mr. Kidd in a day or two.

I have the honor to be, dear Sir,

Your obedient servant

Wm. MacGillivray

No. 6.

Edinburgh 11 Gilmore Place

Tuesday, July 1836

My dear Friend

Your letter, which I received on Saturday evening, afforded me very great pleasure. I have been thinking of you ever since, but have scarcely had time to write until this moment, when I have just arrived from Leith, where I have been delivering a Botanical lecture. I have two lectures there weekly, one at the Young Ladies' Institution, and an excursion on Saturday from twelve till eight. The composition of these lectures, and the drawings necessary for illustrating them, occupy nearly the whole of my time at present, but they will all be over before the end of the month. I have done very little otherwise since I saw you, although I have been generally, in very good health. Craigie's death had a strong effect upon me, and I believe my views of life and its occupations have been a good deal changed by it. It was upon him especially that I had set my hopes. However I am reconciled to my condition. The girls have ever since been particularly anxious to do what they could to assist or please me. My drawings of birds have been stationary for some

time past. I have no one now that you are away, to show them to, or to stimulate me to go on with them. I shall long for your return, but the thought that you will be here several years will, I am assured, keep up my spirits. It gives me the greatest pleasure to be informed by you that I shall hear occasionally from you when on your perambulations, and I hope I shall have resolution and gratitude enough to enable me to write regularly in return. I have not yet been able to see the Wilsons, John and Jemmy, but I will endeavor to do so soon. The memorandums which you desire with reference to collections to be made, I cannot send now, but when I write in a few days, I shall say something on the subject, although I am not aware that I have anything to communicate respecting which you are ignorant. The great object is to have specimens of all the birds in spirits, as well as skins. You desire to know how I am "going on with the world." The world and I are not exactly as good friends as you and I, and I am not particularly desirous of being on familiar terms with it. I have got rather into difficulties this year, but I do not exactly know the state of my affairs, and must take a few days among the hills by myself before I can understand how I am situated. I cannot write more at present. Present my best regards to Mrs. Audubon and the young gentlemen and accept for yourself and them the best wishes of Mrs. MacGillivray.

I remain, Dear Sir, your sincere friend and obedient servant
Wm. MacGillivray

No. 7.

Edinburgh, 16 Minto Street,
Newington
4th November 1836

Dear Madam.

At the same moment that Mrs. MacGillivray received your very welcome letter of the 27th ulto. I received one not less welcome from Mr. Audubon, dated New York Oct. 8th. Although you are of course aware of his plans, and it is therefore unnecessary for me to transcribe his letter, I may yet present an epitome of its contents, in case there may be something new to you. He mentions

having got twelve subscribers, two at Salem, four at Boston, and six at New York. At the Ac. of Nat. Sciences at Philadelphia he saw the collections of Messrs. Nuttall and Townsend, and ascertained that they had procured forty new species of birds. Mr. Nuttall afterward presented him with six other species. The birds in spirits for the new edition are upwards of 200, besides 20 large jars, which Mr. Bachman has filled. They intended to remain at Phila. and at Great Egg Harbor some days, and then proceed to Charleston, whence, accompanied by Mr. Harris, they were to search the shores of the gulf of Mexico as far as Sabine River.

We have removed from Gilmore Place to Newington, which is a much more pleasant situation in every respect. My young baby, who has received the name of Audubon, is thriving and the other children are in good health, as is Mrs. MacGillivray. Dr. Aitkin is very well, preparing for his winter classes which begin five days hence. We had a very unexpected fall of snow last week, which however remained only three days. Provisions are expected to be dear this winter, on account of the badness of the summer and autumn, although in the lower districts I believe, the crops were all got in safely.

I have in hand just now a work on British Birds on a larger scale than that on the Rapacious species, and was anxious for the specimens of the wild Turtle Dove and the Black Dove, which Mr Audubon could not procure in London. I have desired my bookseller, Mr. Scott of Scott, Webster & Geary, Charterhouse Square, to procure for me among the dealers all my desiderata, there will be several plates representing the digestive organs, and a few skeletons with a multitude of wood-cuts, and I expect the first volume to be out by the middle of March at the latest. I have scarcely done anything in the way of money making since you left this, but must brush up, otherwise I shall be gazetted as an insolent book-maker. In the meantime I have plenty of offers, indeed if I had three heads and six hands, I have work enough for all.

I must endeavor to get through as much as possible before Mr Audubon comes back, which I hope will be about this time next year, when we shall have plenty of pickles. By the bye, it will certainly be necessary for him to take a small house for the

express purpose of dissecting, otherwise the odour of the rum will bring the excisemen upon us.

Please present my best regards to Mr. Victor, and be assured that, negligent as I am as to writing, I ever cherish a lively remembrance of you all, being perfectly assured that with him after whom my dearest William Craigie was named, you are my best friends. Pray God to keep you all and send us a happy meeting first in Edinburgh and finally in Heaven.

I have the honor to be, dear Madam

Your most obedient servant

W. MacGillivray.

THE RESIDENT LAND BIRDS OF BERMUDA.

BY OUTRAM BANGS AND THOMAS S. BRADLEE.

APART from a few sea birds that breed in Bermuda, there are but some ten species of birds¹ that are resident in the islands. Three of these — the House Sparrow, the European Goldfinch, and the Bob-white — have been introduced by man. Thus the indigenous ornithology of Bermuda includes but seven species of Land Birds — the Ground Dove, the Florida Gallinule, the Crow, the White-eyed Vireo, the Bluebird, the Catbird, and the Cardinal.

Many species of North American birds visit Bermuda, more or less regularly, on migration, and a few unexpected stragglers, such as the Corn Crake, the English Snipe, the Sky Lark, and the Wheatear have been taken there, but except in the cases of a few species, Bermuda does not lie in the regular line of migration and the coming and going of North American migrants are matters of much uncertainty.

In the various lists of the birds of Bermuda that have been pub-

¹ The Great Blue Heron and the Red-tailed Hawk are said to each have bred once in Bermuda. See Capt. Savile G. Reid's 'List of the Birds of Bermuda,' Bull. U. S. Nat. Mus., No. 25, 1884, pp. 220-221 and p. 242.

lished, the indigenous species have always been regarded as identical with continental birds. We have not had an opportunity of comparing specimens of the Bermuda Crow or the Gallinule, but of the other five resident birds all except the Bluebird are well marked, easily recognized island species peculiar to Bermuda.

The present joint article is the result of work done in the field by Bradlee, who spent the entire season just past from November till April at Hamilton, and had there excellent opportunities of studying the birds in life. The specimens he took were sent to Boston, most of them in the meat, and were critically compared by Bangs, with their continental relatives. The work of both is combined in the following short accounts of the different Bermuda Land Birds.¹

Colinus virginianus (Linn.).

QUAIL; BOB-WHITE.

Capt. Savile G. Reid, in his list of the Birds of Bermuda,² says the Quail was common prior to 1840, but became extinct in Bermuda about that time. It was reintroduced in 1858 or 1859.

The Quail is not abundant in Bermuda; two coveys were seen during the season just past, and others were heard of. The birds were very tame, and allowed themselves to be approached to within a few yards without taking alarm.

Columbigallina bermudiana Bangs & Bradlee, sp. nov.

BERMUDA GROUND DOVE.

Type, from Hamilton, Bermuda, ♂ adult, No. 39134 Coll. Museum of Comparative Zoölogy, Cambridge, Mass. Collected Jan. 30, 1901, by T. S. Bradlee.

Characters. — Size very small, smaller than *C. bahamensis* Maynard; bill *wholly black*, exceedingly small and slender (more so than in any other form of the *C. passerina* series); colors pale and ashy as in *C.*

¹ Measurements are in millimeters. Names of colors are those of Ridgway's 'Nomenclature of Colors.'

² Bull. U. S. Nat. Mus., No. 25, Contributions to the Natural History of the Bermudas, 1884, p. 226, 227.

bahamensis and *C. passerina pallescens* (Baird), but even paler and grayer throughout than in either; back of ♂ smoke gray, of ♀ between smoke gray and broccoli brown; forehead and ground color of breast, in ♂, vinaceous pink.

Measurements.

No.	Sex.	Wing.	Tail.	Tarsus.	Exposed culmen.
39134 (Type) Mus. Comp. Zoöl.	♂	83	56	14.8	10.6
1 Bradlee Coll.	♂	78	55	14.2	9.8
4164 Bangs Coll.	♂	81	57	14.8	10.6
39135 Mus. Comp. Zoöl.	♀	81	56	15	10.8
2 Bradlee Coll.	♀	80	56	15	11.4
3 Bradlee Coll.	♀	78.5	56	15	11.2
4 Bradlee Coll.	♀	80	54.5	14.4	10.2
4165 Bangs Coll.	♀	80	55.5	15	10.8

The eight specimens upon which we base the Bermuda Ground Dove were taken at Hamilton in March and February; they have been very carefully compared with large series of the other races of *C. passerina*. The small size, very slender, short, wholly black bill, and the pale, gray coloring of the Bermuda bird are very distinctive characters, and it is perhaps one of the most easily recognized forms of the whole *C. passerina* series. In the freshly killed specimens the bill is wholly brownish black, without a trace of yellowish or orange; the foot and tarsus are flesh color.

The bird is abundant; throughout the autumn and early winter it is found in small flocks of from six to twelve individuals, but in the first part of January it begins to pair, and from then on is not so often seen.

Gallinula galeata (Licht.).

FLORIDA GALLINULE.

The Gallinule is resident in Bermuda and is also said to occur on migration. Although it may be commoner in the large marshes, it was seen only on one or two occasions during the season of 1900-1901.

Vireo bermudianus *Bangs & Bradlee, sp. nov.*

BERMUDA WHITE-EYED VIREO; "CHICK-OF-THE-VILLAGE";
"CHICK-CHOO-WILLIO."

Type, from Hamilton, Bermuda, ♀ adult, No. 39131, Museum of Comparative Zoölogy. Collected Jan. 30, 1901, by T. S. Bradlee.

Characters.—In general similar to *V. noveboracensis* (Gmel.). Wing much shorter (the wing of *V. noveboracensis* often reaching 65 mm. in length); tarsus longer; general coloration much grayer, less yellow and olivaceous. The color varies much individually; in extreme examples the whole upper parts are olive gray, only slightly shaded with olive green on rump and sides of interscapulum; the supra-loral region pale grayish yellow; wings and tail edged with olive gray; lower surface dull grayish white, sides and flanks olive gray faintly tinged with dull olive green; wing-bands pure white. The other extreme approaches more nearly to *V. noveboracensis* except that the back and head are always much more suffused with olive gray, and the sides and flanks always dull olive green, not sulphur-yellow. The usual style of coloration is about halfway between these extreme examples.

Measurements.

No.	Sex.	Wing.	Tail.	Tarsus.	Exposed Culmen.
39131 Mus. Comp. Zoöl. <i>Type</i> .	♀	58	46	20.4	10.6
1 Bradlee Coll.	♀	59	46.5	20.4	11
2 "	♀	59	47	20.2	11
3 "	—	58	45	20.6	10.4
4 "	—	59	46.5	20.2	10.4
8 "	—	59.5	47	20.2	10.4
10 "	♂	58	45	21	10.6
11 "	♂	59.5	47	20.4	10.8
4162 Bangs Coll.	♂	59.5	47	21	11
4161 "	♂	59	48	21	10.6

The ten specimens were all taken at Hamilton, in November, December, January, February and March. Though it varies much in color, the Bermuda Vireo can always be told from *V. noveboracensis* by its shorter wing and longer tarsus. The colors also, though they sometimes approach those of *noveboracensis*, are never the same, the Bermuda bird always having more gray in the back

and never any trace of sulphur-yellow on sides and flanks. So far as we know the peculiarities of the Bermuda Vireo have never even been alluded to in any of the various lists of the birds of these islands, though Mr. Wm. Brewster in describing *Vireo noveboracensis maynardi* from Key West, Florida,¹ said "two Bermuda specimens show only slight, and perhaps accidental, peculiarities" from *V. noveboracensis*.

The notes and song of *V. bermudianus* are not at all the same as those of *V. noveboracensis*. The usual note is a harsh scolding or querulous mew, often varied by a clear warble — *chic-hù-chic-a-choo-choo-weeeo*; *chic-choo-choo-weeeo-weet*, its song being surprisingly varied. It is one of the familiar birds of the islands, very tame and found everywhere, and very different in all its ways from its shy, retiring continental relative, *V. noveboracensis*.

The iris in *V. bermudianus* is *white* as in *V. noveboracensis* and not, "brownish, brownish gray, or gray" as stated by Capt. Reid.

Corvus (americanus Aud.?).

CROW.

Capt. Reid in his list of Birds of Bermuda gives a good account of the habits, etc., of the Crow in Bermuda (pp. 204, 205). It is, however, doubtful if the Bermuda crow is *Corvus americanus*. Its notes are said to be different, more like those of the European Carrion Crow (*Corvus corone* Linn.) — a hoarse, raven-like croak.

During the season of 1900-1901, crows were seen but seldom and never more than three together at any one time. They were shy and their notes were not heard distinctly.

Galeoscoptes bermudianus *Bangs & Bradlee*, sp. nov.

BERMUDA CATBIRD; "BLACKBIRD."

Type, from Hamilton, Bermuda, ♀ adult, No. 39130 Museum of Comparative Zoölogy. Collected Mar. 1, 1901, by T. S. Bradlee.

¹ Auk, IV, April, 1887, pp. 148, 149.

Characters.—Much smaller throughout than *G. carolinensis*. Wing and tail shorter. Primaries much shortened, in the closed wing extending only about 15 mm. beyond secondaries. All the wing feathers, primaries, secondaries and tertials much narrower than in *G. carolinensis*. Rectrices also narrower. Bill shorter and more slender, culmen slightly less decurved. Colors about the same, perhaps averaging slightly darker gray below.

Measurements.

No.	Sex.	Wing.	Tail.	Tarsus.	Exposed Culmen.
39130 Mus. Comp. Zoöl. <i>Type.</i>	♀	88	89	27.4	15.4
1 Bradlee Coll.	♂	88	90	27	15.4
2 “	—	90	95	27.2	15.4
3 “	♀	88	87	27	15.8
4163 Bangs Coll.	♂	85	88	26.8	15.8

Five specimens were taken at Hamilton in November, December, January and March. In general appearance the Bermuda Catbird much resembles true *G. carolinensis*, but on closer examination one is at once struck by the peculiar wing, with its short primaries and narrow feathers. The tail is also much shorter and composed of much narrower feathers. The shortening of the wing is a common character in island birds of feeble flight, that are no longer called upon to perform long migrations. In the Catbird of Bermuda it is carried to a great extent, and the wing has a very feeble look.

The Bermuda Catbird has habits and notes very similar to those of the Catbird of the continent. It is very common about the houses and gardens.

Sialia sialis (Linn.).

BLUEBIRD.

The resident Bluebird of Bermuda does not differ to any appreciable extent, from that of the continent of North America generally. Perhaps it averages rather brighter, clearer blue, less purplish above, and the blue seems to be slightly more extended

onto the malar region. But in both these characters it is equalled by occasional specimens from the United States. The color of the back of the male is more like that of the resident bird of south Florida, *Sialia sialis grata* Bangs, but this well marked form has, besides, a very much larger bill and heavier foot and tarsus.

Measurements.

No.	Sex.	Wing.	Tail.	Tarsus.	Exposed Culmen.
39128 Mus. Comp. Zoöl.	♂	98	63	20	11
39129 "	♂	95.5	62	19.8	10.8
1 Bradlee Coll.	♂	100	67.5	19.2	10.2
2 "	♂	101	67	19.4	11
3 "	♂	99.5	65	19.6	10.8
4166 Bangs Coll.	♂	103	65	19.2	11.2

The above measurements, taken from six specimens collected at Hamilton in November, January, February and March, show the proportions to be just as in true *S. sialis*.

Besides being resident in Bermuda, the Bluebird is said to often appear in numbers on migration; possibly some of these remain and breed and thus counteract any tendency to vary that the island birds might develop if wholly cut off from the main body of the species.

The Bluebird is very abundant in Bermuda, and in autumn and winter is gregarious, being seen in flocks of ten or a dozen.

After the hurricane of 1899 there was a noticeable decrease in the number of Bluebirds, but they have now regained their former numbers.

Carduelis carduelis (Linn.).

GOLDFINCH.

Introduced, but just when seems to be uncertain, Capt. Reid mentions seeing one on April 5, 1875, that was very wild and that he supposed was an escaped cage bird.

The Goldfinch is now a common bird in Bermuda, but is exceedingly shy and wary.

Two specimens were secured during the season just past.

Passer domesticus (Linn.).

HOUSE SPARROW.

Introduced in 1874 (a few some time before that date), it is now exceedingly abundant throughout the islands.

Cardinalis bermudianus *Bangs & Bradlee*, sp. nov.

BERMUDA CARDINAL; "RED BIRD."

Type, from Hamilton, Bermuda, ♂ adult, No. 39132, Museum of Comparative Zoölogy. Collected Mar. 2, 1901, by T. S. Bradlee.

Characters.—Wing short, shorter even than in *C. cardinalis floridanus* Ridgw; proportions otherwise (except those of bill) about as in *C. cardinalis cardinalis*. Bill peculiar; bright vermillion in color; short, stout and abruptly pointed; culmen much curved; upper mandible grooved, angle very abrupt, and edge *very much lobed*; lower mandible equal in depth to upper. Colors of ♂ very bright, lower parts orange-vermillion (vermillion in *C. cardinalis cardinalis*) top of head and crest also orange-vermillion. Colors of ♀ much as in *C. cardinalis floridanus*, — much intermixed with red on breast and cheeks, — red of crest paler, more of an orange red.

Measurements.

No.	Sex.	Wing.	Tail.	Tarsus.	Exposed Culmen.
39132 Mus. Comp. Zoöl.	♂	92	99	24.2	17.4
1 Bradlee Coll.	♂	93	100	25	17
2 " "	♂	92	98	25	17
4159 Bangs Coll.	♂	90.5	95	25	17
4158 " "	♂	92.5	94.5	24	17
39133 Mus. Comp. Zoöl.	♀	90	94	25	17
3 Bradlee Coll.	♀	89	91	24.4	16.6
4 " "	♀	89.5	92	23.8	16.6
5 " "	♀	91	95	23.8	17
6 " "	♀	90	95	24	16.6
4160 Bangs Coll.	♀	89.5	91	23.2	16.6

This fine series of eleven specimens was taken at Hamilton in November, December, January, February and March. There is little individual variation in important characters; some males, as usual in any series of Cardinals, are much brighter than others, but all are orange-vermilion in color. The curious bill of the Bermuda Cardinal is very characteristic, at once separating it from any of the other forms. The grooving of the upper mandible is more pronounced in some specimens than in others, but all show it to some extent. It is rather a singular fact that none of the other red-billed Cardinals have grooved upper mandibles, while the Venezuelan Cardinal (*C. phoeniceus* Gould) that has a whitish brown bill has a grooved mandible.

The Bermuda Cardinal is abundant everywhere in the islands. On January 6, 1901, it was heard singing its "spring song" for the first time — *woo-oo-it*; *woo-oo-it*; *woo-oo-it*.

A NEW GROUND DOVE FROM WESTERN MEXICO.

BY OUTRAM BANGS.

A SHORT time ago my brother and I came into possession of two skins of a Ground Dove, that were collected by P. O. Simons, in the summer of 1897, in Sinaloa, Mexico — one at Los Rables, the other at Escuinapa. In size and proportions these two specimens agree with true *Columbigallina rufipennis* (Bp.), but differ much from that bird in the general pallor of their coloration; the underparts are much paler vinaceous, and the rich vinaceous chestnut of back and wings of *C. rufipennis* is replaced in the Sinaloa form by pinkish vinaceous.

The type locality of *Talpacotia rufipennis* Bp.¹ is Carthagera, and the range of the species is usually given as from Guiana, Venezuela, and Colombia north to Orizaba and Colima, Mexico. Thus Sinaloa is beyond (northwest of) the known geographic

¹ Bonaparte, *Consp. Av.*, II, p. 79.

range of true *C. rufipennis*, and the *pale* northwestern form of the rufous-winged Ground Dove may be known as,

***Columbigallina rufipennis eluta*,¹ subsp. nov.**

Type from Escuinapa, Sinaloa, Mexico, ♂ adult, No. 3947, Coll. of E. A. & O. Bangs. Collected July 25, 1897, by P. O. Simons.

Characters.—Size and proportions as in true *C. rufipennis*. Colors all much paler. Adult ♂, summer plumage: Front and supercilium drab; crown pale olive gray; cervix, back and wings (except primaries and bastard wing) pale vinaceous, palest on sides of neck, and with a slight olivaceous tinge on back, the wing feathers, as usual, irregularly spotted with black; rump and upper tail-coverts strong vinaceous; primaries rufous, dusky at tips and along outer margins; bastard wing black with rufous patches in the middle of the feathers; tail black, the outer rectrices with buffy white terminal markings on outer webs, and slightly tipped with brownish, middle rectrices vinous hazel; throat whitish, rest of under parts dull vinaceous pink; axillars and most of under wing-coverts black.

Measurements.

No.	Locality.	Sex.	Date.	Wing.	Tail.	Tarsus ²	Exposed culmen.
3947.	Mex. Sinaloa, Escuinapa.	♂ ad.	July 25, 1897	89.	66.5	15.5	12.
3948.	Mex. Sinaloa, Los Rables.	♂ ad.	Aug. 22, 1897	88.	68.	16.	11.4

THE MONTEREY HERMIT THRUSH.

BY JOSEPH GRINNELL.

***Hylocichla aonalaschkæ slevini*, new subspecies.**

Subsp. Char.—In general coloration extremely pale and ashy, nearly as much so as *H. a. sequoiensis*, but size even less than in *H. a. verecunda*.

¹ Elutus, washed out, insipid.

² The tarsus is somewhat feathered on upper part of outer side, as in true *C. rufipennis*, and the other members of the subgenus or group *Talpacotia*.

Coloration.—Above hair brown slightly browner on top of the head; upper tail-coverts and tail isabella color. Ground color of underparts and sides of head white, except a scarcely discernible tinge of cream buff across the breast; sides and flanks faintly washed with drab gray. Spots on breast sepia, small in size and few in number; a series extends on each side up to the ramus of the lower mandible forming two malar stripes which enclose an immaculate throat patch. Outer surface of closed wing isabella color.

Type.—♂ ad., No. 14096, Coll. California Academy of Sciences; collected by T. E. Slevin in the vicinity of Point Sur, Monterey County, California, May 9, 1898.

Range.—Breeds in the cloudy coast belt of California, from southern Monterey County northward, locally at least, to Sonoma County. A typical specimen (No. 967, Coll. J. G.) taken at Pasadena, California, April 25, 1896, and another (No. 10662, Coll. C. A. S.) obtained on Santa Margarita Island, Lower California, Feb. 8, 1888, evidently indicate points along the migration route of this race.

Measurements.—The following table shows the average length in millimeters of the wings and tails of all available summer adults from the localities named.

			Wing	Tail		Wing	Tail
<i>H. a. aonalaschkæ</i>	Kadiak Island, Alaska.	4 ¹ ♀ ♀	84	72	1 ♂	90	76
<i>H. a. verecunda</i>	Sitka, Alaska.	9 ♀ ♀	83	70	4 ♂ ♂	86	73
<i>H. a. slevini</i>	Coast Belt of California.	3 ♀ ♀	81	69.	7 ♂ ♂	84	71
<i>H. a. sequoiensis</i>	Sierras of California.	1 ♀	91	74	5 ♂ ♂	95	80
<i>H. a. auduboni</i>	Chiricahua Mts. Arizona.	2 ♀ ♀	99	81	4 ♂ ♂	104	84

Remarks.—The Sierra Thrush described by Mr. Belding² seems to me a well-characterized race. It differs from *auduboni* in decidedly smaller size, and from *aonalaschkæ*, *verecunda*, *slevini* and *nanus* in larger size and paler coloration. The type of *audu-*

¹ *Fide* Osgood, Auk, XVIII, April, 1901, pp. 183-185.

² *Turdus sequoiensis* BELDING, Pr. Cal. Ac. Sc. II, June 1889, p. 18.

Hylocichla aonalaschkæ sequoiensis FISHER, Condor II, Nov. 1900, p. 138.

boni, from Fort Bridger, Utah, measured,¹ as reduced to millimeters: wing 106, tail 91. And all the southern Rocky Mountain examples I have access to have the wing longer than 100 in the male. It is of especial value in the determination of the western races of the Hermit Thrush, that there seems to be but little individual variation in the measurements of a series from a single locality. For instance, the extremes among the 9 females of *verecunda* from Sitka are: wing, 82 to 85; tail, 68 to 72.

Probably most of the summer records of *auduboni* from the interior of California refer to *sequoiensis*, while the winter records in some cases seem to be based on large males of the olivaceous *aonalaschkæ*, which winters abundantly in the interior and southern portions of the State. The bright brown-backed, buffy-breasted *verecunda*, as shown by many specimens examined, passes the winter principally in the cloudy coast belt. It is the prevailing form in winter in the San Francisco Bay region and Santa Cruz Mountain district. Both *sequoiensis* and *slevini* evidently winter entirely south of California.

At the suggestion of Mr. L. M. Loomis, the subspecies herein described is named for Mr. T. E. Slevin of San Francisco, a quiet but ardent bird-student.

THE WINTER BIRDS OF PEA ISLAND, NORTH CAROLINA.

BY LOUIS B. BISHOP, M. D.

BLEAK and dreary seemed Pea Island — a monotonous sand-flat with promontories of marsh-grass, its dull level broken only by a few scattered buildings and here and there a low sand hillock — as I watched it on the afternoon of February 7, 1901, from a small boat which two colored boatmen had succeeded in getting hard aground on the flats that stretched for miles into Pamlico Sound.

¹ BAIRD, Rev. Am. Bds., June 1864, p. 17.

Regarding the general character of the place, I had found little to change my views when I left for home on the morning of February 18, but I was more than once surprised at the birds which made these marshes and flats a winter home.

Pea Island lies between Oregon and New Inlets, separating part of Pamlico Sound from the ocean, and is about 30 miles north of Hatteras. It is about five miles long by one mile in width, and along the center stand the dead stumps of cedars, showing its once greater elevation. But I was told these stumps have looked the same for over one hundred years, and now at high tide their roots and most of the island are covered; little but the crest of the ocean beach, a few sandhills covered with a sparse growth of beach grass, and islands of salt marsh showing that there is land beneath the waves.

In storms and by very high tides these too are covered, and only the few buildings show above the water. I was told that the water had been at times a foot deep on the floor of the clubhouse, although this building is situated on the highest land on the Pamlico Sound shore, and elevated several feet from the ground. At such times great destruction of life among the smaller land birds would seem probable, and the wild fowl that find a congenial winter home, with abundant food easily obtained in the shallow water of the Sound, can be shot from the clubhouse veranda.

At the time of my visit some unknown cause, for food was abundant — possibly the unusual saltiness of the water from the long drought — had made the Geese and Redheads desert these waters, and the Brant, able to feed through the low tides, kept so far offshore that trying to shoot them was useless.

In the marshes, of which a number are each several acres in extent, often intersected by broad or narrow channels, compose most of the sound shore of the island, may be found in places patches of low bushes, showing no sign of life in winter, and broad stretches of a sharp-pointed marsh grass, apparently the same that compose the salt marshes of western Florida. Our northern marsh grass occurs also, and in sufficient quantity to keep about twenty horses and cattle in good condition, though left to forage for themselves all winter. Not a tree is now growing on Pea Island,

but the vegetation on Roanoke Island—lying about ten miles northwest—two species of pine, live oaks, cypresses, with a dense undergrowth of myrtle, bay and laurel, bound into impenetrable thickets by smilax—would show one had entered a southern fauna were the sharp-pointed marsh-grass insufficient. Bodie Island, a larger island of much the same character as Pea Island, but with more abundant vegetation, and lying north of the latter, contains at its southern end a large marsh. This seemed a typical resort for Wilson's Snipe, but five men and two dogs failed to find one there though hunting carefully.

The weather was, as a rule, clear and warm during my stay; only once did the thermometer fall to 26° at 8 A. M., and on two mornings it registered 50° at that hour. There were two or three stormy days, but no very severe gale, so I think it safe to consider the land and shore birds found were normal winter residents. Many other species, especially of ducks and water birds, are known to occur at Pea Island in winter, but I have included only those of which I saw specimens during my visit.

Among the birds found moulting in only one species was there any sign of renewal of the primaries and rectrices, and in most only a few scattered pin feathers, most frequent about the head and neck.

Regarding migration, the interesting fact appears that of 20 specimens of the *Limicolæ*, representing five species, omitting *Ægialitis vocifera*, collected at what must be nearly the northern limit of their winter range, 18 were males and only 2 females, while of seven Ipswich Sparrows (*Ammodramus princeps*), at nearly their southern winter limit, all were females. This adds strength to my former belief that in migrating birds the bulk of the males remain farther north than the females in winter, for I do not think that with any of these birds the northward movement had commenced.

In studying the migration of birds it seems to me that too little weight has been laid on the origin of the different species and genera, whether they are Boreal types, developed probably in the Holarctic Zone, or autochthonous in temperate or tropical North America, different rules of migration, and different causes, probably operating in these two classes. The distribution of the subspecies of one species, and the species of one genus during the different seasons, will aid in understanding both causes and rules.

Boreal forms, of which *Otocoris*, *Calcarius* and *Acanthis* are good examples, forced south in winter by lack of food, seem to move in regular order, keeping individually about the same north and south relations to the bulk of the species, or wander in large flocks in search of food, as *Ampelis*, *Loxia* and *Pinicola*.

In the other class will be found species developed either in the Austral Zone of North America or the American Tropics, which, originally forced north in summer for reproduction by the crowding of life in the tropics, repeat this movement yearly through the continued operation of the primary cause and the formation also of habit. In these birds it appears that those breeding farthest north, though appearing at midway stations in the fall after the birds of the same species breeding there have left, pass as far or farther south in winter. Birds of the genera *Hesperocichla*, *Hylocichla*, *Junco*, *Leucosticte*, *Zonotrichia*, *Melospiza*, *Passerculus*, *Ammodramus*, *Dendroica* and *Vireo* will illustrate this. In the spring these northernmost breeding birds seem to pass the half-way stations, as a rule, when the birds breeding there are already at home. This movement I think I have noticed in species of the genera *Quiscalus*, *Agelaius*, *Icterus*, *Melospiza*, and *Ammodramus*. On the basis of this Dr. Coues separated *Dendroica caerulescens cairnsi* before he had seen a bird from the summer habitat of this subspecies.

Austral birds as a class would then pass north in summer chiefly because their winter homes and the intermediate stations are already occupied, and return in winter toward the original habitat of the species. Boreal birds on the other hand, forced south originally and each year by the lack of food in their homes in winter, would return north when approaching summer makes it possible, and in strong-flying species might readily develop the habit of long journeys, as is shown by the boreal *Limicolæ*.

I do not wish to claim that these rules will hold with all species; I offer them simply as a contribution to the study of migration.

1. *Gavia imber*. LOON.—A young female, in which the first nuptial plumage is appearing on the back, wing-coverts, rump and tail-coverts, was taken on February 15. The feathers of the head and neck still show the downy texture and the black tipping on the side of the throat characteristic of the first winter plumage.

2. *Larus marinus*. BLACK-BACKED GULL.—I thought I saw one or two in young plumage among the flocks of Herring Gulls, and Mr. C. R. Hooker told me he saw an adult on the 15th. Mr. Hooker is perfectly familiar with the species.

3. *Larus argentatus smithsonianus*. AMERICAN HERRING GULL.—Abundant, but shy as a rule. None were taken. I was told that large numbers are caught in the shad nets, and that after storms as many as 100 killed in this manner have been found in a single morning.

4. *Larus philadelphia*. BONAPARTE'S GULL.—An adult male, taken on January 28, was still in a condition to save on my arrival. I saw none during my stay.

5. *Merganser serrator*. RED-BREASTED MERGANSER.—A few were seen in small flocks or alone, but none taken.

6. *Anas obscura*. BLACK DUCK.—Common but shy, coming to the marshes to feed at night and in stormy weather. An adult female had the bill yellowish olive-buff; the nail of bill and interramal space of mandible black; tarsi and toes ochraceous buff, nails and center of palmations blackish. I think the coloring of the tarsi and toes in this species depends on age and sex, and is not distinctive of a different race, as has been suggested. An adult male in very high plumage, having recurved feathers on the tail-coverts like the Mallard (*Anas boschas*), taken at New Haven, Jan. 14, 1901, had the tarsi and toes bright rufous.

7. *Aythya americana*. REDHEAD.—Flocks were frequently seen flying over the Sound, but none taken.

8. *Aythya marila*. SCAUP DUCK.—Flocks were seen while crossing Pamlico Sound and occasionally from the island. None were taken during my visit, but a number had been shot a few days previous.

9. *Charitonetta albeola*. BUFFLE-HEAD.—Fairly common in small flocks but keeping well offshore. An adult male had the bill plumbeous washed with black; nail of maxilla yellowish, interramal space of mandible black; tarsi, toes and palmations vinaceous buff, nails black.

10. *Harelda hyemalis*. OLD-SQUAW.—I saw several small flocks in Pamlico Sound on February 7, and again on the 18th.

11. *Oidemia deglandi*. WHITE-WINGED SCOTER.—The same remarks apply to this species.

12. *Chen hyperborea nivalis*. GREATER SNOW GOOSE.—Among the decoy geese was a fine specimen of this species in full plumage, and almost as large as a male Canada Goose. It was taken in the gray plumage of the first winter on Pea Island in January, 1900. I saw no others, but learned that a number are shot each winter at the southern end of Bodie Island.

13. *Branta canadensis*. CANADA GOOSE.—Not common during my stay, although we sometimes saw twenty flocks or more in a day. Up to the last of January they had been abundant. That the male is much larger than the female does not seem generally recorded. A young female taken February 13 was very thin, and still retained the brownish feathers in the

black of the neck, and particularly at the junction with the pale breast, which are significant of immaturity. Mr. J. B. Etheridge, the manager of the Pea Island Club assures me that these geese keep in families throughout the winter, and that if both old birds are shot the young will return to the decoys, but if one old bird escapes it will guide the young to safety.

14. *Branta bernicla*. BRANT.—The most abundant sea-fowl but staying well offshore in large rafts, probably because the water was so low from lack of rain that they were able to reach the bottom a long distance from land. It may not be known to all that Canada Geese and Brant, though feeding on a plant growing on the bottom, do not dive, taking their food only in water so shallow that they can reach the bottom with their long necks by tilting their white afterparts in the air. The effect of a flock changing thus from black to white is very peculiar. As the tide rises they swim toward the shore, keeping always in water where they can reach the bottom.

Sailing to Roanoke Island on February 18, we saw thousands of Brant, and noticed three dead ones, caught by their necks in the shad-nets which are set in the shallow water of this part of Pamlico Sound as thickly as nets in a tennis field. The wind freshening as we sailed we were obliged to cut four of these nets to avoid capsizing.

Young Brant may be distinguished from adults as late as the middle of April by the white tips to the wing-coverts which persist long after the brownish head and throat have become glossy black, and the white feathers on the sides of the neck have appeared.

15. *Botaurus lentiginosus*. AMERICAN BITTERN.—A female was taken on February 11.

16. *Ardea herodias*. GREAT BLUE HERON.—I saw one on the 8th, and one on Bodie Island on the 16th.

17. *Rallus crepitans*. CLAPPER RAIL.—A male was taken on the 13th and another on the 16th. From what comparisons I have been able to make I think these birds intermediate between *crepitans* and *waynei*, but somewhat nearer the former.

18. *Rallus crepitans waynei*. WAYNE'S CLAPPER RAIL.—A female taken on Feb. 9 and a male on the 11th. Mr. Brewster has kindly examined them and pronounces them typical of this form. The female is much the smaller bird, and was moulting in the contour feathers.

The iris of the male was raw sienna; culmen slate-black, tip of mandible slate, base of tomial maxilla ochraceous, rest of bill clay color; tibiae, tarsi and toes dark broccoli brown, tibiae washed in front with buff-yellow; nails clay color.

In habits these birds are like *crepitans*, keeping closely to the thick marsh grass, and are with great difficulty flushed even by a dog.

19. *Rallus virginianus*. VIRGINIA RAIL.—A female was taken on Feb. 9. It was moulting and had the ovary on the right side.

20. *Tringa minutilla*. LEAST SANDPIPER.—I took a male on the seventh that was alone in the marsh. Another of this species taken on the 11th was with other sandpipers on the flats.

21. *Tringa alpina pacifica*. RED-BACKED SANDPIPER.—This was the most abundant sandpiper on the island, feeding in large flocks on the flats. Eight collected were all moulting; and I find it rare to take a Red-backed Sandpiper between the first of September and the last of May that does not show pin-feathers. Two only were females, and both of them and three of the males were in first winter plumage. Young of this species do not moult the feathers of the rump and upper tail-coverts in fall, and by the pale orange rufous tips to these feathers may be distinguished from adults with pale gray edgings, sometimes as late as April.

22. *Ereunetes occidentalis*. WESTERN SANDPIPER.—Common with the other sandpipers on the flats. Four collected, of which two were moulting, were all males, with bills longer than the extreme of female *pusillus*.

23. *Calidris arenaria*. SANDERLING.—Almost as common as the Red-backed Sandpiper—flocks of 30-40 being often seen—and feeding with them on the flats. Of six collected all were males, three young and three adult, and only one was moulting.

The young Sanderling also does not moult the rump and upper tail-coverts in the fall, and may be distinguished in February by the broad dark centers of these feathers in place of the narrow central dark stripe of the adults. The first winter plumage is also a trifle darker than the adult.

24. *Totanus melanoleucus*. GREATER YELLOW-LEGS.—A single bird of this species I saw and heard on February 12.

25. *Squatarola squatarola*. BLACK-BELLIED PLOVER.—Twenty or thirty were living on the flats, but were very shy. The only one taken was a young moulting male.

Young may be separated from adults at this season by the presence on the feathers of the lower neck and breast of a dark distal shaft-streak, while these feathers in adults are tipped or washed with brownish. The white of the forehead is broader also in adults.

26. *Ægialitis vocifera*. KILLDEER.—A few were wintering about the channels running into the marshes on the northern part of the island. In two females, taken Feb. 16, the ova were noticeably enlarged, pointing probably to adjacent breeding grounds.

27. *Cathartes aura*. TURKEY VULTURE.—A few were seen daily, feeding on the bird bodies washed upon the shore. An adult male caught in a trap set for a Bald Eagle had the iris broccoli brown; the bill white; bare part of head vinaceous with white caruncles; tarsi and toes dirty white mixed with black, nails black.

28. *Circus hudsonius*. MARSH HAWK.—One or two seen daily. An adult female, taken Feb. 13, was feeding on the decaying body of a goose. The iris and cere were canary yellow; bill black becoming cinereous toward base; tarsi and toes chrome-yellow; nails black.

29. *Haliaeetus leucocephalus*. BALD EAGLE.—Common, sometimes several being in sight at one time. Two in immature plumage were taken on Feb. 4 and 5. The majority seen were adults, and were feeding on the dead fish and birds along the shore.

30. *Otocoris alpestris*. HORNED LARK.—A male and two females were taken on Feb. 7 and 8, but no others seen. The male was moulting.

31. *Agelaius phoeniceus*. RED-WINGED BLACKBIRD. Two were taken from a flock of about a dozen females on Bodie Island, Feb. 16. One had the crimson shoulders and salmon throat characteristic probably of maturity, the other the dull ochraceous shoulders and pale buffy throat of the young.

32. *Sturnella magna*. MEADOWLARK.—Common. Of a male and female taken the latter alone showed pin-feathers.

33. *Scolecophagus carolinus*. RUSTY BLACKBIRD.—A single male called at the clubhouse for a few minutes on the evening of Feb. 17, and returned to be collected before we sailed the next morning.

34. *Quiscalus major*. BOAT-TAILED GRACKLE.—I saw one male on Feb. 10, and five males near Oregon Inlet on the 16th. This bird is locally known as the 'Jack-daw.'

35. *Passerina nivalis*. SNOWFLAKE.—I found a flock of three on Feb. 14. Two were males and one a female, and all were moulting. If, as Dr. Dwight states, the whiter birds are adults, these were young birds, and I find the following characteristic differences in plumage at different ages. Males and females in first winter differ chiefly in the males having white on inner web of third rectrix. Adult males differ from young males by more white on wings and wing-coverts. Adult females differ from young females by whiter wings and white on inner web of third rectrix. Adult females differ from young males by the blacker interscapulars of the latter. Adult males differ from adult females by whiter wings and wing-coverts, and by having the dark markings of the interscapulars, wings and tail blacker.

36. *Ammodramus princeps*. IPSWICH SPARROW.—Rather common. Six were collected on Pea Island, and I think I saw others. On Bodie Island I took one and saw several in a short walk. All taken were females, and only one showed moult.

37. *Ammodramus sandwichensis savanna*. SAVANNA SPARROW.—The most common bird on the island, living in the weeds and dry grass about the sandhills. Six males and nine females were collected, one of the latter alone showing moult.

38. *Ammodramus caudacutus*. SHARP-TAILED SPARROW.—Following the last in numbers, this species kept closely to the marshes and could seldom be obtained except on the wing. None were moulting. Ten males and nine females taken seem to show two distinct races,—a dark, highly-colored bird, with strongly contrasted plumage, both above and below, and a paler, duller-colored bird, with little contrast in the plumage, especially of the back, which apparently represents *caudacutus* of New

England, closely resembling December birds from Connecticut. The dark birds have the dark markings below blacker and more conspicuous, the feathers of the crown and interscapulars darker, almost black in some specimens, in marked contrast to the hind neck, and pale interscapular edgings, and the buffy markings everywhere approach ochraceous in tint.

In length of wing and tail the two forms average the same, but the females of the dark race have slightly longer bills. Measurements of 114 specimens of *Ammodramus caudacutus*, *A. nelsoni*, and *A. n. subvirgatus*, lead me to think length of bill one of the best diagnostic characters of these birds.

The dark race was by far the more common, six males and eight females, and one bird of indeterminable sex, being referable to it, against four males and one female to true *caudacutus*.

39. *Ammodramus nelsoni*. NELSON'S SPARROW. — Common, frequenting the same marshes as the Sharp-tail, and even more difficult to flush. While on the wing I could usually distinguish it by its smaller size and brown color. Three males, six females and one of doubtful sex were taken. One of the males is intermediate with *subvirgatus*, having the plumage of this form, but the measurements of *nelsoni*. One female, which I am obliged to call *nelsoni* for lack of any other name, is very highly colored, ochraceous replacing buff throughout the plumage, and buff replacing white. None taken showed moult.

40. *Junco hyemalis*. SLATE-COLORED JUNCO. — A male, the only one seen, was taken on Feb. 8.

41. *Melospiza melodia*. SONG SPARROW. — A moulting male was taken on Feb. 8, but no others observed. This bird was renewing one of the central tail feathers, and was the only bird taken showing moult of remiges or rectrices.

42. *Cistothorus marianæ*. MARIAN'S MARSH WREN. — I took a typical male of this species in a marsh on Feb. 8, but hunt as I might I could not find another. The grass of the marsh seemed the same as that which this bird and Scott's Rail frequent at the mouth of the Anclote River, Florida.

The presence of this species, the Boat-tailed Grackle and Wayne's Clapper Rail on Pea Island in winter would point to the probability that this island belongs in the Semitropical Strip of Dr. Merriam's Austro-perian Belt, which is a part, as I understand it, of the Louisianian Fauna of Dr. Allen.

A NEW SHARP-TAILED FINCH FROM NORTH
CAROLINA.

BY LOUIS B. BISHOP, M. D.

Ammodramus caudacutus diversus, subsp. nov.

SOUTHERN SHARP-TAILED SPARROW.

Type.—Adult female, No. 5661, Coll. of L. B. Bishop, Wanchese, Roanoke Island, North Carolina, May 10, 1901; L. B. B.

Subspecific characters.—Similar to *Ammodramus caudacutus* but darker, with the color in stronger contrast. The dark markings above are much broader and darker, varying from dark chestnut to black on the head, scapulars, interscapulars and tertiaries, in nuptial plumage, and the pale edgings of the interscapulars are buffy instead of whitish. The feathers of the rump and tail are rich brownish olive instead of pale grayish olive, and have broader dark shaft-streaks. The ochraceous of the superciliary and malar stripes is much brighter, and the dark markings of the breast and flanks blacker.

Measurements.—Type: length, 5.94; wing, 2.12; tail, 2.04; bill from nostril, .36 inches. Average of 7 males: length, 5.73; wing, 2.30; tail, 2.09; bill from nostril, .37 inches. Average of 10 females: length, 5.57; wing, 2.20; tail, 2.03; bill from nostril, .37 inches.

Twenty Sharp-tailed Sparrows which I collected on Pea Island, North Carolina, last February, I was surprised to find separable into two very distinct forms as described on page 367 of this number of 'The Auk.' Returning to Pea Island in May I took on the southern end of Roanoke Island a single female of the dark form on the 10th, and a male and female on Pea Island on the following day. On Roanoke they appeared to be common, but I found no others I was certain were of this species on Pea Island, in the few hours I was able to devote to the search.

These three birds differ from Connecticut specimens of *A. caudacutus* taken in May so widely that, considering them in connection with the two forms common on Pea Island in winter, it seems necessary to describe them as a new subspecies. As Gmelin's *Oriolus caudacutus* was based on Latham's 'Sharp-tailed Oriole,' and this bird was described and figured from a specimen in Mrs. Blackburn's collection that was taken in New York, it is evidently the dark, southern form which requires a name.

Two Sharp-tailed Sparrows I took near Tarpon Springs, Florida, in the early spring of 1897, are referable to the new race.

In general plumage *A. c. diversus* has the richest coloring of any of the group, including even spring specimens of *A. nelsoni*. Typical examples of this form in winter resemble very closely some specimens of *nelsoni* in the coloring of the upper parts — much more than they resemble typical examples of *A. caudacutus* — but may be easily distinguished from the former at any season by their larger size, longer bill and very conspicuous dark stripes on the breast and flanks.

In measurement *diversus* and *caudacutus* are practically the same, and intermediates in coloring occurred on Pea Island in winter.

GENERAL NOTES.

Holboëll's Grebe on San Francisco Bay. — On November 30, 1900, three Grebes, which were strange to me, were seen swimming near the shore of the Presidio, one of which I shot. The bird proved to be *Colymbus holboëllii* in adult plumage and a female. No others have been seen by me since this date, although a great part of my time is spent upon the lower bay. The only other specimen I know of is a male, No. 1867 of the collection of the California Academy of Sciences, taken December 25, 1882, at Oakland. The Academy also has a single specimen taken at Monterey on December 31, 1894, which is labeled a female and is No. 1433, a record of which is found in 'California Water Birds,' No. II, on page 14. Mr. Leverett M. Loomis, in his extensive work off Monterey, has found this bird very uncommon. It seems to be very rare on lower San Francisco Bay, that is, that portion bounded by the ocean and where the bay branches to spread north and south. It is possible, but not probable, that it occurs on other portions of the bay. — WM. H. KOBBE, *Fort Mason, San Francisco, Cal.*

The Question of the Generic Name *Gavia*. — In the September, 1900, number of the 'Ornithologische Monatsberichte' (Vol. VIII, page 135), Dr. Anton Reichenow claims that the name *Gavia* Forster is a synonym of *Urinator* Cuvier, basing his assumption on the use of the name *Gavia* for a species of Gull by S. G. Gmelin in his 'Reise durch Russland' (Vol. I, page 152).

An examination of Gmelin's work shows that he used the name *Larus* for the Gulls systematically throughout his 'Reise' and only in one instance makes use of the name *Gavia*, and in this case merely as a quasi citation from Brisson, and having no reference whatever to *Gavia* Möhring. The passage in which *Gavia* is used, so far as it has any bearing on the case in point, is as follows: "*Gavia ridibunda phaenicopos*. Die Grosse Lach-Möve. Sie ist von Brisson schön beschrieben worden, und ich habe bey ihr nur zwey Anmerkungen zu machen. Die eine betrifft den Unterschied des Geschlechts, und diese besteht in Schnabel. . . ."

On referring to Brisson I find in Vol. VI of his 'Ornithologie,' page 196, that he describes a Gull to which he applies the name *Gavia ridibunda phaenicopos*, to which Gmelin here refers. Brisson, however, did not recognize a genus *Gavia*, but placed all the Gulls under *Larus*, beginning in every case his diagnoses "*Larus supernæ cinereus*," etc., as the case might require. Brisson's genus *Larus* is his genus "No. CII," under which he has 15 species, the technical name of 5 of which begins with the name *Larus* and the remaining 10 with the name *Gavia*, an eccentricity not confined to the genus *Larus*, and of no nomenclatural significance (see, for example, under Brisson's genus *Anser*, where *Cygnus* and *Bernicla* are employed in place of *Anser*).

The use of the name *Gavia* by Gmelin is merely in the sense of a reference to Brisson, he nowhere adopting *Gavia* in a generic sense for any Gull. It is evident, therefore that by no fair construction can *Gavia* be considered as established in a generic sense by S. G. Gmelin in 1770, and that it, "therefore, must be considered as a mere synonym of *Larus*."—J. A. ALLEN, *American Museum of Natural History, New York City*.

Occurrence of the Glossy Ibis at Washington, D. C.—A specimen of the Glossy Ibis (*Plegadis autumnalis*) was shot by a hunter near Washington, D. C., September, 1900, and brought to the taxidermist shop of Mr. A. E. Colburn, to be mounted, where I examined it while it was in the flesh and absolutely identified it.

So far as I can learn, this is the first instance of the occurrence of this species in the District of Columbia. — JOHN W. DANIEL, JR., *Lynchburg, Va.*

The Red Phalarope (*Crymophilus fulicarius*) on the Coast of South Carolina.—An adult male of this far northern species was captured alive near the town of Mount Pleasant, S. C., in an exhausted state, by Mr. W. D. Hamlin on December 4, 1900, and presented to the writer. Upon preparing the specimen I found it to be greatly emaciated, but the plumage was entirely unworn. As far as I am aware this is the most southerly record of this bird for the Atlantic coast. — ARTHUR T. WAYNE, *Mount Pleasant, S. C.*

An Additional Note on the Genus *Macrorhamphus*.—It is well to remember in connection with the breeding range of *M. griseus* given in my recent paper on this genus (Auk, XVIII, pp. 157-162), that in 'Fauna Boreali-Americana,' Swainson and Richardson state that the species breeds from the shores of Lake Superior northward, a fact which at that time was probably true. I am also lately in receipt of, and here permitted to record, two young specimens of *M. g. scolopaceus* (Nos. 167026, 167027 U. S. Nat. Mus.) through the kindness of Mr. Edward A. Preble. They were taken by him at Button Bay, near Fort Churchill, Hudson Bay, on July 31, 1900. The Dowitchers were, he writes me, "abundant in the pools on grassy tundra," and were moving southward. The fact of their presence in such numbers would go to show that this subspecies, after breeding, ranges over the country eastward to the shore of Hudson Bay before migrating, or even perhaps breeds as far east as this point. It is, I think, not improbable that the extreme eastern limit of their breeding range will prove to be Hudson Bay rather than the 110th meridian, and that *M. griseus* in the breeding season is confined to the east and north of the Bay. In any case the occurrence of this form near Button Bay explains why they not uncommonly reach the Atlantic coast on migrations. — REGINALD HEBER HOWE, JR., *Longwood, Mass.*

***Tringa solitarius cinnamomeus* — A Correction.**—In the 'Preliminary List of the Birds of Okanogan County, Washington' (Auk, Vol. XIV, 1897, p. 172), an entry was incorrectly made under this head. The note should refer to the Spotted Sandpiper (*Actitis macularia*). — W. LEON DAWSON, *Columbus, O.*

European Lapwing in the Bahamas. — A Lapwing (*Vanellus vanellus*) was shot on Hog Island, Bahamas, B. W. I., in November, 1900; it was obtained from the shooter by Mr. H. H. Thompson of Nassau and sent to me for identification. The bird is in fairly good plumage; the primaries are not in any way worn. An Indian winter specimen in my collection is identical in plumage. — J. H. FLEMING, *Toronto, Ontario.*

Nesting of the Hairy Woodpecker near Washington, D. C. — A nest of the Hairy Woodpecker (*Dryobates villosus*) was examined by Mr. Edward J. Court and myself, near Mount Pleasant, Washington, D. C., April 9, 1900. It was situated in a cavity of an oak tree, some thirty-five feet up, and even at this early date contained five young, just hatched. The parent birds were present and were positively identified. The young were taken and preserved in formalin by Mr. Court and are still in his collection.

As instances of the breeding of this species in the District of Columbia are rare, this may be worthy of record. — JOHN W. DANIEL, JR., *Lynchburg, Va.*

The Vermilion Flycatcher in Florida. — On the 25th of March, 1901, late in the afternoon of a very damp, cloudy day, I shot a male Vermilion Flycatcher (*Pyrocephalus rubineus mexicanus*) on a marsh three miles from Tallahassee, Fla. The gaudy plumage of the bird attracted my attention and after several efforts to approach it close enough to shoot I finally took a chance shot at it on the wing, with the desired result. When first discovered it was sitting quietly on a barbed-wire fence, near the water, at short intervals launching out after some passing insect and invariably returning to the same perch. The bird was in excellent condition. Upon examination of the gizzard I found small black and green beetles therein. Is this not the first record of the occurrence of this species in Florida? I find no mention of it in Chapman's 'Handbook of Birds of Eastern North America,' nor in Cory's 'List of the Birds of Florida.' — R. W. WILLIAMS, JR., *Tallahassee, Fla.*

Bachman's Sparrow in Virginia. — In May, 1897, I took a pair of Bachman's Sparrows (*Peucaea aestivalis bachmani*), together with their nest and eggs, in this locality, which was the first instance of the occurrence of the species in the State. On April 27 of this year, while out collecting, I again met with the species. This time only one bird was seen and probably it had just arrived from the South. It was running among some grass tufts which grew alongside a fence leading into a body of small pines. On my nearer approach, it perched upon a grass tuft and was collected. It is now in my collection.

I learn from Mr. Rufus Barringer, of Charlottesville, Va., that the species is fairly common in Albemarle County, where Mr. Barringer has taken its nest and eggs; it seems to be a fairly abundant summer resident in this county (Campbell) where it nests in old fields, which are grown up in weeds and scrub pines. No doubt it also occurs and breeds in the southeastern part of the State, but its retiring nature and habit of skulking in the grass cause it to be very easily overlooked. — JOHN W. DANIEL, JR., *Lynchburg, Va.*

Piranga rubra in Massachusetts. — On May 12, 1901, while walking in Newton, I heard the call of the Summer Tanager and on going in pursuit soon came up with the bird. It was not in red plumage, but from a certain streaky, splashy, unsettled appearance, the orange-red being very bright in spots, I took it for an immature male. This, however, is a matter of very inexpert opinion. As to the identity of the bird as *Piranga rubra*, there could be no doubt. I had it under my glass (an eight-power Zeiss) for some time at short range, under the most favorable conditions; and while thus under observation it uttered again and again its very peculiar and thoroughly characteristic polysyllabic signal, with which I am fairly familiar from having heard it often at the South. According to Messrs Howe and Allen's 'Birds of Massachusetts' this may count as the sixth Massachusetts record. — BRADFORD TORREY, *Wellesley Hills, Mass.*

Bell's Vireo and the Sandhill Crane in New Hampshire.—Mr. Ned Dearborn of Durham, New Hampshire, has kindly given me permission to publish the following interesting notes:—

BELL'S VIREO (*Vireo belli*). On November 19, 1897, Mr. Dearborn was driving along a country road in Durham when his attention was attracted by a small bird which was hopping actively about among some poison ivy vines that had overrun a stone wall. As it looked unfamiliar he shot it. I have since examined it carefully and it proves to be a perfectly typical example of *V. belli*, a species not hitherto reported, I believe, from any part of New England.

SANDHILL CRANE (*Grus mexicana*). Mr. Dearborn tells me that he has recently purchased a Sandhill Crane of Mr. J. S. Turner, a taxidermist at Portsmouth, New Hampshire, who asserts that the bird was killed at Lovell's Pond, Wakefield, New Hampshire, in either 1896 or 1897, and brought to him in the flesh in fresh condition, but he has forgotten the name of the man who shot it nor can he remember the exact date. Mr. Turner has lived in Portsmouth many years and bears an excellent local reputation for reliability of statement. The specimen is mounted and was still encased in winding cotton, with the neck-wire projecting uncut through the top of the head, when Mr. Dearborn first saw it. With the Bell's Vireo above mentioned it is now preserved in the collection of the State Agricultural College at Durham. There are, as far as I can ascertain, no previous records of the occurrence of the Sandhill Crane in New Hampshire during the past century, although Belknap, writing in 1792 (Hist. N. H., III, 1792, p. 169) mentions it without comment in his list of the birds of that State.—WILLIAM BREWSTER, *Cambridge, Mass.*

Bachman's Warbler (*Helminthophila bachmanii*) **Rediscovered near Charleston, South Carolina.**—I am pleased to announce the capture of an adult male of this interesting Warbler, by myself, near the village of Mount Pleasant, S. C., on the morning of May 15, 1901. I heard the song of what I was almost sure was a Parula Warbler singing lazily, and out of mere curiosity I went to locate the singer. I found the singer near the top of a sweet gum, but was unable to identify him positively as the morning was dark and cloudy. He flew from his perch to the low bushes, which formed the dense undergrowth, and was so restless and active that I could scarcely follow him except by the incessant song which he uttered at the rate of fifteen times a minute. At last I had a plain view of him as he sat upon a dead pine twig with his breast towards me, when I realized that it was the bird I had been looking for in this State for eighteen years. There was no mistake, as it was not the first Bachman's Warbler I had ever seen or shot. I watched the bird closely for thirteen minutes as I was sure his mate was setting or building a nest near at hand, as he kept singing in one locality and did not wander far off, but the temptation was too great to lose such a rare prize and I fired and killed the first Bach-

man's Warbler which has ever been taken in this State since Dr. Bachman took the type specimen near Charleston in July, 1833. After I had killed the bird I hunted for the female and nest for several hours, but was unsuccessful. In the afternoon I again visited the place and with the help of a friend, Lieut. J. D. Cozby, we searched for the female and nest, but could find neither. No doubt whatever exists in my mind that this bird was breeding and that his mate was incubating or else building a nest, as the sexual organs of the male proved that procreation was going on. This bird was certainly not a migrant as the migration of *wood-land* birds had passed. The *latest* migrant, the Gray-cheeked Thrush, was last noted May 13, when a single bird was seen. I am positive that I have heard this song nearly every summer in the same localities where the male was found, but I always keep out of such places after April 10 on account of the myriads of ticks and red bugs which infest them. Then, too, such places are simply impenetrable on account of the dense blackberry vines, matted with grape vines, fallen logs piled one upon another, and a dense growth of low bushes. In these jungles the rattle-snake is at home and the stoutest heart would quail.—ARTHUR S. WAYNE, *Mount Pleasant, S. C.*

Sprague's Pipit (*Anthus spragueii*) again on the Coast of South Carolina.—It is with much pleasure that I am again able to record the capture of this interesting bird. The first specimen was recorded in 'The Auk,' Vol. XI, 1894, p. 80. I shot the specimen I now record on November 17, 1900.

When first seen the bird was mistaken for the Grass Finch, but upon approaching it too closely it flew upward in circles until it was nearly out of vision when I realized that it was a veritable Sprague's Pipit. I continued to watch this mere speck in the heavens hoping that it would again alight. Suddenly the bird pitched downward and alighted in a grassy field. I hastened to the spot and as it flushed I shot it. The specimen is an adult female, and, like the first one taken, is in fine unworn plumage.

This second specimen was captured within a quarter of a mile of the spot where I shot the first specimen on November 24, 1893. The capture of this second specimen seems to warrant the belief that this bird is something more than a mere wanderer or accidental visitor.—ARTHUR T. WAYNE, *Mount Pleasant, S. C.*

The Wheatear Not a Bird of Maine.—In a recent article, Dr. Stejneger (*cf.* Stejneger, Proc. U. S. Nat. Mus., Vol. XXIII, p. 473) cites the Wheatear (*Saxicola ænanthe*) as a bird recorded from Maine. Now as I have shown (*cf.* Knight, List of Birds of Maine, p. 141) there are no valid grounds for admitting this species to the avifauna of the State.

Careless and ignorant writers of the past have recorded the species in

question from Maine, owing to their failure to carefully read the title of Mr. Boardman's list, upon the authority of which they made their supposed records, and many other species as well as this one were cited upon the same grounds and their own ignorance of the exact boundary line between Maine and New Brunswick. Almost invariably Grand Menan birds have been given a place in New England bird lists, which shows the ignorance of geography exhibited by the authors.

I have in my possession a letter from Mr. Boardman in which he states that he has in his possession two specimens of the Wheatear, one taken at *Grand Menan, New Brunswick*, and the other taken on *Indian Island, New Brunswick*. This letter was written in 1896, and gives corrections of many other records made by geographical ignoramuses. Through Mr. Boardman's aid all these erroneous Maine records were straightened out and corrected and may be found in the 'List of the Birds of Maine.' — ORA W. KNIGHT, *Bangor, Me.*

Bird Notes from Pueblo Co., Colorado. — I recently spent a few weeks eighteen miles southwest of Pueblo, in which district I have passed ten winters. I was surprised to find the following birds which I have never known to winter there before: Jan. 7. A flock of Mourning Doves (*Zenaidura macroura*), about 40 in number, were seen feeding amongst some sunflowers. Jan. 8. A Western Meadowlark (*Sturnella m. neglecta*) was seen in company with some Mountain Bluebirds (*Sialia arctica*). Jan. 14. A pair of Sparrow Hawks (*Falco sparverius*) were observed. Jan. 12. Two Rock Wrens (*Salpinctes obsoletus*) were seen amongst some rocks not more than ten yards from where I was standing. — WILLOUGHBY P. LOWE, *Seward, Nebraska.*

Corrections to Birds of Parry Sound and Muskoka. — The following corrections should be made to my 'List of the Birds of the Districts of Parry Sound and Muskoka, Ontario,' published in the January number of the current volume of 'The Auk':

Page 35, No. 12, *Merganser serrator*. "Breeds in both districts" should read, Probably breeds in both districts.

" 35, " 13, *Lophodytes cucullatus*, requires the same correction.

" 44, " 180, *Harporhynchus rufus*. Mr. Kay informs me that Brown Thrashers are fairly common in Port Sydney.

" 45, " 188, *Regulus satrapa*. "An abundant winter resident" should read, Probably a winter resident.

" 45, " 189, *Regulus calendula*, "and winter" is a slip and should be struck out.

Regulus satrapa certainly occurs in Muskoka till late in December, but the testimony as to its being a winter resident is so conflicting that I have thought it best to qualify my reference to it.

I have been asked why the railroad lines on the map published with my paper should be so heavily shaded; I had hoped to be able to give some information about the influence of railroads on the migrations or settlement of birds in a new country, but found my data insufficient; however, I hope at some future time to have the aid of Mr. P. A. Tavernier, and be able to go into the matter more fully. — J. H. FLEMING, *Toronto, Can.*

RECENT LITERATURE.

Norton on Birds from Labrador.¹—Although only 32 species are here recorded, Mr. Norton has given an interest to his paper aside from the mere records of the 95 specimens obtained by the Bowdoin College Expedition of 1891. Of especial interest is his discussion of the case of *Fratercula arctica* in reference to the changes of plumage and of the form and markings of the bill with age. Mr. Norton has compared the American bird with specimens from Spitzbergen, Norway, the Orkney Islands, and other European localities, and finds that there is a slight but constant difference in the size of the bill between the European and American birds. He adds that the type locality of *Alca arctica* is clearly the "northern oceans of Europe," and that if the American bird be separated its proper name will be *Mormon glacialis* of Temminck. He also considers that the Spitzbergen form is separable from true *arctica*, and proposes for it the name *F. arctica naumanni*. The differences in the size and form of the bill are illustrated by a table of measurements and figures (pl. ii).

In reference to the Labrador Spruce Grouse, described by Bangs in 1899 as *Canachites canadensis labradorius*, Mr. Norton claims that it is the bird previously named *canace* by Linnæus in the 12th edition of the 'Systema Naturæ.' He concludes that the name *Canachites canadensis* (Linn.) must be restricted to the Spruce Grouse of Labrador and Hudson Bay, while "*Canachites canadensis canace* (Linn.) must be brought forward for the form inhabiting portions of Canada, the northern United States, and New Brunswick."

The species are annotated with reference to the phases of plumage they present, and record is also made of the occurrence of *Otocoris alpestris praticola* at Chateau Bay, its first record for Labrador. — J. A. A.

¹ Birds of the Bowdoin College Expedition to Labrador in 1891. By Arthur H. Norton. Proc. Portland Soc. Nat. Hist., Vol. II, pp. 139-158 and pl. ii. Published May 20, 1901.

Howe and Allen's *Birds of Massachusetts*.¹—Messrs. Howe and Allen in a special work of about 150 pages have given us an excellent summary of the bird fauna of Massachusetts. It is in most respects so well done that we wish we could give it unqualified approval. Under the heading 'Faunal Areas of Massachusetts' the topographical features of the State are described and the life zones are discussed at some length with, naturally, little that is new in relation to this feature of the subject. Then follows an 'Annotated List of the Species' authentically recorded as found in the State, numbering 362, followed by supplemental lists of the extirpated species, numbering 4, and extinct species, numbering 2, and a list of 15 introduced species, while 15 are entered under the heading 'Erroneously Recorded.' Two additional species are placed in an 'Apocryphal List.'

The annotations include not only the usual notes on the relative abundance and times of migration, but detailed records for special localities, so that "individuals working in restricted portions of this topographically varied State will have, in many cases, annotations applicable to their particular region." No species is admitted into the 'List' that has not an authentic record, great care having been taken in this respect to weed out all unauthenticated species. The 'List' has thus several unusual features of utility and trustworthiness. We regret, therefore, all the more that the authors have taken it upon themselves to rearrange the 'List' according to their own preference of sequence, so that the ordinary student, familiar with the arrangement of the A. O. U. 'Check-List,' will find himself greatly at sea with the new order in the present catalogue. We also regret to notice that the authors have made "various changes in orthography for the sake of consistency." In other words they have in numerous instances departed from the usual orthography in a number of bird names, without, apparently, any uniform system of emendation, but simply 'emending' as they happened to feel like it. Their emendations, therefore, while not radical or numerous, are sufficient to give a distasteful flavor to their work; also certain suggested changes in nomenclature have been adopted, some of which are of doubtful advisability. The innovations in these respects serve, however, to give the work a certain personality, which is doubtless pleasing to the authors.

A bibliography and an index complete the work, the bibliographical list being restricted, as said by the authors, to papers relating exclusively to Massachusetts birds. — J. A. A.

¹The | *Birds of Massachusetts* | By | Reginald Heber Howe, Junior, | and | Glover Morrill Allen | Members of the Nuttall Ornithological Club | and | Associate Members of the American Ornithologists' Union | Published by Subscription | Cambridge, Massachusetts | 1901. 8vo, pp. 1-154.

Morris's Birds of Springfield, Mass., and Vicinity.¹—Much credit is due Mr. Morris for his excellent list of 'The Birds of Springfield and Vicinity.' Several pages are given to a description of the physical features of the region in question, which embraces an area of about 25 miles' radius from Springfield, thus including the eastern slope of the Berkshire Hills and the isolated elevations known as Mount Tom, Mount Holyoke and Nonoctuck, in the valley of the Connecticut near Northampton.

The number of species listed as authentically recorded from the vicinity of Springfield is 255, while four others are mentioned as probably occurring; five additional introduced species are listed and two are stated to have become extirpated. The list is satisfactorily annotated and gives evidence of care and thoroughness in its preparation. Some 60 species are added to the list published by J. A. Allen in 1865, which had reference, however, to a much smaller area than the present list. We note no omissions or erroneous identifications, and commend the list as a valuable addition to the faunal papers relating to the ornithology of New England.—J. A. A.

McGregor's 'List of the Land Birds of Santa Cruz County, California.'²—This list appears to be based primarily on an unpublished list of the birds of Santa Cruz County by Mr. W. Otto Emerson, and a published list of the birds of the same county by Mr. Henry Keading, supplemented by notes made in the field by Mr. T. J. Hoover and the writer. Also other published lists have been utilized. Mr. McGregor says: "The present list is of local interest only, but it is hoped that it may be of assistance to those engaged in faunal work and form a foundation for a future and more complete exposition of the Santa Cruz avifauna."

The description of the physical characteristics of the region is furnished by Mr. Walter K. Fisher. This is followed by the list proper, which includes 139 species, with pertinent annotations. Reference is duly made to previously published records, which are cited as authorities for statements in the text.—J. A. A.

Torrey's 'Everyday Birds.'³—Mr. Torrey's 'Everyday Birds' consists of a series of twenty-one chapters, seventeen of which relate to special birds or groups of birds, and four to more general subjects. The

¹The | Birds of Springfield | and Vicinity | By Robert O. Morris | Springfield, Mass. | Published by Henry R. Johnson | 1901.—8vo, pp. 54.

²A List of the Land Birds of Santa Cruz County California. By Richard C. McGregor. Pacific Coast Avifauna, No. 2, pp. 1-22, May 15, 1901.

³Everyday Birds | Elementary Studies | By | Bradford Torrey | With Twelve Illustrations in | Colors after Audubon, and | Two from Photographs | [Vignette] | Boston and New York | Houghton, Mifflin and Company | The Riverside Press, Cambridge | 1901.—Square 12mo, pp. 106. Price, \$1.00.

first seventeen sketches are brief summaries of the habits of the common or 'everyday birds' found throughout the eastern States. Of course, there is very little that is new in these pleasant notes, they deriving their chief interest and value from their authorship, being drawn up in the felicitous language of an author who always writes in a pleasing vein, whatever the subject.

The character of the other sketches in 'Everyday Birds' is indicated by their titles, namely: 'Birds for Everybody,' 'Winter Pensioners,' 'Watching the Procession,' and 'Southward Bound.' Although the plates reproduced are from poor chromo-lithographs, they are so far worse than the originals that in many cases they bear little resemblance to the birds they are intended to portray (see, for example, the Song Sparrow); besides, they border on the hackneyed, having been previously reproduced in various connections in recent years, but the text is so fresh and readable and is written in such sympathy with the subject that bird lovers will enjoy perusal of Mr. Torrey's sketches, and cannot consider their ornithological libraries complete without including 'Everyday Birds.'—J. A. A.

Proceedings of the Delaware Valley Ornithological Club.¹—This little brochure records the activity of this well known ornithological club for the year 1900, giving in addition to the minutes of the meetings held three short formal papers, as follows: (1) 'Some Observations on the Habits of Crossbills (*Loxia c. minor*) observed at Hanover, N. J., May 4-6, 1900,' by William B. Evans; (2) 'Recent Capture of the Ivory-billed Woodpecker (*Campephilus principalis*) in Florida'; by Charles J. Pennock; (3) 'Bird Language an index of Family Relationship,' by S. N. Rhoads. Mr. Pennock records the capture of three specimens of the Ivory-billed Woodpecker on the Gulf coast of western Florida, near Saint Marks, in April, 1899.

Mr. Rhoads calls attention to well known facts regarding the similarity of the notes and songs of closely related birds, and urges the importance of their resemblance as an indication of descent and relationship. The minutes of the meetings contain many interesting records of more or less rare birds, observed chiefly in Pennsylvania and New Jersey.—J. A. A.

Stejneger on the Wheatears (*Saxicola*) Occurring in North America.²—The conclusions reached in this paper have already been stated in substance by Dr. Stejneger in the last issue of 'The Auk' (Vol. XVIII, pp.

¹Abstract of the Proceedings of the Delaware Valley Ornithological Club of Philadelphia. For the year 1900. Published by the Club. 1901. pp. 15.

²On the Wheatears (*Saxicola*) occurring in North America. By Leonhard Stejneger, Curator, Division of Reptiles and Batrachians. Proc. U. S. Nat. Mus., Vol. XXIII, No. 1220, pp. 473-481. March, 1901.

186, 187), so that little remains to be said in reference to the paper beyond the statement that the whole matter is discussed at length and the full synonymy given for the two forms of the Wheatear (*Saxicola ænanthe* and *S. æ. leucorhoa*), both recognized by Dr. Stejneger as occurring in North America, the former in Greenland and northeastern North America, and the latter in Alaska. The distribution of both forms is carefully worked out, with tables of measurements showing the length of wing, etc.—J. A. A.

Bangs on a New Meadowlark from South America.¹—Mr. Bangs describes as new a Meadowlark collected at San Sebastian and El Mamon in the Sierra Nevada de Santa Marta, Colombia, previously referred by him to *S. meridionalis* Sclater. The type locality of *S. meridionalis* is the Bogota region of Colombia, and the species is distinguished by its very long bill and dark coloration, while the new *S. magna paraliis* is a pale race from the coast region of northeastern Colombia.

Brewster and Bangs on a New Bécard from Lower Uruguay.²—This species is based on specimens collected by Mr. Walter B. Barrows in 1880 and previously left unidentified, being recorded in Mr. Barrow's list of birds of Lower Uruguay, published in Vol. VIII of the 'Bulletin of the Nuttall Ornithological Club' and Vol. I of 'The Auk' as "*Pachyrhamphus*, sp. incog." Though nearest *polychropterus* it is considered quite distinct and is named *P. notius*.—J. A. A.

Shufeldt's 'Osteology of the Herodiones.'³—As stated by the author in the Introduction, this is a reprint of Dr. Shufeldt's 'Osteological Studies on the Subfamily Ardeinæ,' published in 'The Journal of Comparative Medicine and Surgery' in 1899, to which is prefixed a summary of various recent classifications proposed by different authors for the group, supplemented by an account of the osteology of the Wood Ibis and other North American species of Ibises and the Spoonbill. He then gives his own views on the taxonomy of the suborder Herodiones, in which the North American families stand as in the A. O. U. 'Check-List,' he associating with them the Scopidæ, Balænicipidæ and Ciconiidæ, as has been commonly done by previous authors.

¹ A New Meadowlark from South America. By Outram Bangs. Proc. New Engl. Zoöl. Club, Vol. II, pp. 55, 56. Feb. 15, 1901.

² Description of a New Bécard from Lower Uruguay. By William Brewster and Outram Bangs. Proc. New Engl. Zoöl. Club, Vol. II, pp. 53, 54. Feb. 15, 1901.

³ Osteology of the Herodiones. By Dr. R. W. Shufeldt. Annals of the Carnegie Museum, Vol. I, pp. 158-249, pll. v-vi, and 43 text figures. April, 1901.

As already stated the new matter relates especially to the North American species of Ibises and Spoonbills. The paper is well illustrated with text cuts and two plates, only a few of which appear here for the first time. — J. A. A.

Chapman on a New Race of the Great Blue Heron.¹—From certain fragments of Herons that have been in the American Museum of Natural History for several years it was evident that a strongly marked undescribed form of the Great Blue Heron existed on the Northwest Coast, but it was not until recently that Mr. Chapman was able to secure proper material for its description. The Northwest Coast Heron is, as would be expected, very much darker and more deeply colored throughout than its relatives from other parts of North America. The type of the new form is from Queen Charlotte Island, and has been named by Mr. Chapman *Ardea herodias funnini*, in recognition of assistance rendered him in securing material for his paper by Mr. John Fannin, the well-known Director of the Victoria Museum.

In addition to describing the new form, Mr. Chapman calls attention to the status of *Ardea wardi*, commonly recognized as a distinct species, which Mr. Chapman very clearly shows intergrades with the northern *Ardea herodias*. Mr. Chapman considers that birds from the lower Rio Grande are not separable from the Florida birds which bear the name *wardi*. — J. A. A.

Grinnell on Two Races of the Red-breasted Sapsucker.²—The two forms here recognized are *Sphyrapicus varius ruber* and *S. v. daggetti*, new subspecies. The range of the former is given as the Northwest Coast region of North America, south to the Santa Cruz Mountains, while the new form is from Pasadena, California, the range of which is given as southern California and the west slope of the Sierra Nevada north at least to Amador County. Not only has Mr. Grinnell separated a new form of Red-breasted Sapsucker, but claims to have found evidence of intergradation between the eastern *S. varius* and *S. ruber* of the Pacific Coast, thus reverting to the view held by Mr. Ridgway in 1873, when all the forms of the genus *Sphyrapicus* were made subspecies of *S. varius*. — J. A. A.

¹ A New Race of the Great Blue Heron, with Remarks on the Status and Range of *Ardea wardi*. Bull. Am. Mus. Nat. Hist., Vol. XIV, pp. 87–90. April 15, 1901.

² Two Races of the Red-breasted Sapsucker. By Joseph Grinnell. The Condor, Vol. III, No. 1, p. 12. Separates issued Jan. 15, 1901.

Strong's 'Quantitative Study of Variation in the Smaller North American Shrikes.'¹—This is an attempt to employ statistical methods in the study of variation in a group of birds, and to apply the "precise criterion of species" of Davenport to a problem of bird classification. The group of birds chosen for this purpose is the Shrikes of the *Lanius ludovicianus* group. The material employed consists of 174 skins, which include only specimens properly available for such a purpose. Specimens showing mutilations or lacking data as to sex have been rejected.

The characters especially considered are length of wing, length of tail, length of bill, depth of bill, curvature of bill, and color. The methods employed are too abstruse for description in the present connection, and the interested reader is referred to Dr. Strong's paper for a clearer understanding of his manner of procedure. The paper is illustrated by numerous diagrams showing 'frequency polygons' for all the characters considered. In the quantitative determination of color the Bradley and Milton "color-top" was employed, the mechanism and use of which is duly described. He considers that "one of the most important results reached is the determination of the relative variability of different characters in a group of birds representing geographical areas of considerable size."

Some of his remarks near the close of the paper are worthy of careful consideration. Speaking of the various races of the *L. ludovicianus* group, he says: "I believe that *migrans* is as worthy of recognition as *gambelli*. Whether it is profitable to encumber nomenclature with the names of these races, based on slight variations, is a question which is worthy of further consideration.

"The power of discriminating fine shades of color varies in different persons, and it can be highly developed by education. At the present time there is much activity among certain systematists in the production of new subspecies for geographical varieties, which long experience and special adeptness enable them to distinguish. A variation, no matter how slight, that can be correlated with geographical range is considered to warrant an addition to nomenclature; but the discovery and description of geographical races can be carried on almost *ad infinitum*." In regard to the use of the method of the 'precise criterion,' he says, he does not argue for its universal use, but believes that it is both "desirable and practicable to employ it in certain problems of taxonomy," such, for instance, as the one he has in hand. While the ordinary work of classification does not require the precision in treatment furnished by purely

¹ Contributions from the Zoölogical Laboratory of the Museum of Comparative Zoölogy at Harvard College. No. 121. A Quantitative Study of Variation in the Smaller North-American Shrikes. By R. M. Strong. With eight figures. American Naturalist, Vol. XXXV, April, 1901, pp. 271-298.

quantitative methods, he believes that the problems of race distinction "need the precision of the Precise Criterion."

"The contention," he continues, "that quantitative methods are less useful than those ordinarily employed because of the large amount of material required, is mischievous, for it argues that generalizations professing precision are possible by methods that are not precise," and the present tendency of hair splitting among certain ornithologists is timely and well warranted. If the hair splitters were compelled to adopt the laborious method of the 'precise criterion' system, it would doubtless prove a wholesome check upon their prolificness. In the matter of naming geographical forms which in many cases at least, will ultimately be relegated to the limbo synonymy.—J. A. A.

Stone 'On Moults and Alleged Colour-change in Birds.'¹—This paper is a reply to some criticisms of Mr. Stone's paper on moults, published in the Proceedings of the Philadelphia Academy in 1896, by Mr. J. L. Bonhote in 'The Ibis' for October 1900. Mr. Stone maintains an admirable attitude in reference to the advocates of direct change of pigment in mature feathers, and his statements should do much toward encouraging a careful consideration of the subject by his critics. Mr. Stone says: "It has now been *demonstrated* that at least many (and apparently all) individuals of every species of bird in Eastern North America which undergoes a spring change of plumage accomplish that change by a moult. If the same thing is not true of European birds, we have certainly a strange state of affairs." Mr. Stone very justly complains that the papers of Mr. Bonhote and others who defend color change are lacking in respect to data as to the condition of the specimens examined.

Mr. Stone's paper, in fact, is a brief summary of the results attained by investigations on this side of the Atlantic in reference to how birds acquire the colors of the nuptial dress, and of the methods employed in these investigations. It would seem that this candid statement of the case should lead to careful consideration of the evidence supposed to be antagonistic to the results obtained by extended and careful study of the subject by American ornithologists.—J. A. A.

Seton-Thompson and Hoffmann's 'Bird Portraits.'²—'Bird Portraits' consists of 20 half-tone reproductions of drawings by Ernest Seton-Thompson, with descriptive text by Mr. Hoffmann. The birds whose portraits are here given consist of the following species: Song Sparrow, Flicker,

¹ On Moults and Alleged Colour-change in Birds. By Witmer Stone. The Ibis, April, 1901, pp. 177-183.

² Bird Portraits | By Ernest Seton-Thompson | With Descriptive Text | By Ralph Hoffmann | Boston | Ginn & Company | The Athenæum Press | 1901—4to, pp. 40, with 20 half-tone plates.

Brown Thrasher, Barn Swallow, Chimney Swift, Kingbird, Baltimore Oriole, Wood Thrush, Scarlet Tanager, Rose-breasted Grosbeak, Redstart, Ruby-throated Hummingbird, Bob-white, Goldfinch, Blue Jay, Brown Creeper, Butcher Bird, Golden-crowned Kinglet, Herring Gull, and Chickadee.

The excellence of the drawings, although not here published for the first time, is a sufficient *raison d'être* for the book; their fidelity to nature and delicacy of touch will render 'Bird Portraits' a never failing source of pleasure. The accompanying text by Mr. Hoffmann consists of brief well written biographies of each subject, giving the characteristics of the birds portrayed. While not sufficiently comprehensive to serve as a manual of the birds of any particular locality, the work is one that will prove a favorite with all nature lovers who can appreciate birds and art. — J. A. A.

Gould's 'Louis Agassiz.'¹ — Although not especially an ornithologist, Louis Agassiz, the great naturalist and the great teacher, has an interest and charm for all students of nature. In this little volume of 150 small pages we have an admirably condensed account of his life,— brief, authentic and fascinating. Although of Europe by birth, he was an American by adoption. Apropos of this, the author says: "The most valuable legacies of scientific men are left to the whole world, with no restraint of place and little of time. But there are a few gifts which they leave, as other men leave them, to one country or to one community. And whatever in Agassiz's gift was necessarily thus restricted we find to-day in America, not in Europe. At Cambridge stands his Museum; at twenty places on our coasts are the summer schools which have succeeded to his Penikese; and in the American world is the transmitted enthusiasm which passes from teacher to scholar,— the fire that may light up a whole generation which has forgotten the source where it was kindled."

At the present time when summer schools and marine laboratories for teachers are taken as a matter of course, it may be well to recall the fact that the first of the series was that established by Agassiz on the Island of Penikese in 1872. Agassiz's method of teaching natural history was not through books nor by memorizing the observations of others, but by direct appeal to nature and the cultivation of the powers of observation. This method was an innovation, and a most happy one, as the work of the students trained under his direction has abundantly demonstrated. The general public, and especially all lovers of nature, should feel indebted to Miss Gould for her excellent epitome of the life of the great teacher. — J. A. A.

¹The Beacon Biographies of Eminent Americans. Edited by M. A. De Wolfe Howe. Louis Agassiz. By Alice Bache Gould. Boston: Small, Maynard & Company, 1901.

Ridgway on 'New Birds of the Families Tanagridæ and Icteridæ.'¹—This is the seventh of Mr. Ridgway's series of papers describing new forms of American birds, the preceding six having been published in 'The Auk,' Vols. XV-XVII (1898-1900). In the present paper Mr. Ridgway characterizes of the family Tanagridæ one new genus, *Iridophanes* (type, *Dacnis pulcherrima* Sclater), and one new species and five new subspecies belonging to other genera of the family. Of the family Icteridæ he characterizes two new genera, *Pseudagelaius* (type, *Agelaius imthurmi* Sclater), and *Xanthopsar* (type, *Oriolus flavus* Gmelin), and one new species and eight new subspecies. Four of the subspecies occur in the United States, namely, (1) *Icterus cucullatus sennetti*, from the Lower Rio Grande Valley; (2) *Agelaius phœniceus fortis*, ranging during migrations from Montana and the Indian Territory to and including the Rocky Mountains and southward to Arizona and northern Chihuahua; (3) *Agelaius phœniceus neutralis*, ranging from the Great Basin Region of the United States northward to eastern British Columbia and southward to northern lower California; (4) *Agelaius phœniceus caurinus*, from the Northwest Coast District, ranging from British Columbia to northern California.

Unfortunately Mr. Ridgway has adopted the name *Scaphidurus* Swainson for the Boat-tailed Grackles, named *Megaquiscalus* by Cassin, Mr. Ridgway overlooking the fact that *Scaphidurus* is a pure synonym of *Quiscalus*, Swainson supposing *Quiscalus* to be untenable on account of its supposed prior use in botany.—J. A. A.

Buri on the Anatomy and Relations of the Swifts.¹—Dr. R. Buri, of Bern, has recently published a lengthy paper² giving the results of an extended study of the wings of *Cypselus melba* and others of the Coracornithes; special attention has been given to the nerves of the wings, this portion of the anatomy having been worked out in the most painstaking manner. Dr. Buri's observations all go to confirm the correctness of the view that the nearest allies of the Swifts are the Hummingbirds, but they also point to a somewhat closer alliance with the Colies than has been generally suspected and to a more distant alliance with the Caprimulgidæ. Unfortunately Dr. Buri had no specimen of *Macropteryx*, for it is quite probable that nervation of this generalized and interesting genus shows

¹ New Birds of the Families Tanagridæ and Icteridæ. Proc. Wash. Acad. Sci., III, pp. 149-155. April 15, 1901.

² Zur Anatomie des Flügele von *Micropus melba* und einigen anderen Coracornithes; zugleich Beitrag zur Kenntniss der systematischen Stellung der Cypselidæ. Von Dr. Rud. O. Buri, Prosektor am veterinär-anatomischen Institut der Universität Bern. Mit 6 Tafeln. Abdruck aus der Jenaischen Zeitschrift für Naturwissenschaft. Bd. XXXIII, N. F. XXXI, 1900. Jena, Gustav Fischer, 1900.

affinities with the Goatsuckers. Dr. Buri's paper is of interest from the fact that it shows that the minute details of the anatomy of the Swifts and Hummingbirds bear out the conclusions based on their grosser anatomy and external characters. — F. A. L.

Herrick's 'The Home Life of Wild Birds.'¹—Mr. Herrick has succeeded in adding one more to the many attractive books illustrated by bird photography, and through the use of certain new methods, which he duly describes, has succeeded in bringing together a very large number of wonderfully striking and pleasing pictures of bird life. He describes at some length his methods, which are original and novel, securing pictures from life at such close range that the details are given with great distinctness. The work embraces fourteen chapters, the headings of which very clearly suggest the character and scope of the work. These chapter headings are as follows: (1) 'A New Method of Bird Study and Photography'; (2) 'Illustrations of the Method: The Cedar Bird, the Baltimore Oriole, the Redwing Blackbird and the Kingbird'; (3) 'Tent and Camera: The Tools of Bird-Photography'; (4) 'The Robin at Arm's Length, A Study of Individuality'; (5) 'The Cedar Bird'; (6) 'Red-eyed Vireos'; (7) 'The Nest-hole of the Bluebird'; (8) 'Minute Observations on Catbirds'; (9) 'The Rearing of the Night Hawk'; (10) 'The Kingfishers and their King Row'; (11) 'Care of Young and Nest'; (a) 'Brooding and Feeding Young (b) Cleaning the Nest'; (12) 'The Force of Habit'; (13) 'Fear in Birds and Taming Wild Birds without a Cage.' In these chapters he takes the reader into his confidence and reveals to him the secrets of his success. Certain families of birds, as for example, of the Kingbird, Cedar Bird, Red-winged Blackbird, etc., are vividly placed before the reader throughout the nesting period, and the method of their daily life is recorded with great detail, so that we have the life histories of a series of our common birds illustrated from the time of hatching to the period when they are able to shift for themselves.

Mr. Herrick's 'The Home Life of Wild Birds' is a most valuable addition to the literature relating to bird photography and the habits of birds during the interesting period of rearing the young.—J. A. A.

Heck's 'Living Pictures of the Animal Kingdom.'²—As the explanatory title indicates, the subject of the present volume is not exclusively

The Home Life of Wild Birds | A New Method of | the Study and |
Photography of Birds | By | Francis Hobart Herrick | — | With 141 Original
Illustrations From Nature | By the Author | — | G. P. Putman's Sons | The
Knickerbocker Press | New York and London | 1901—4to, pp. xix + 148.
Photogravure frontispiece and 140 half-tone text figures.

² Living Pictures of the Animal Kingdom from Instantaneous Photographs
taken of the most magnificent specimens in Zoological Gardens. Edited with

ornithological, but birds of varied and striking types form a prominent feature of the illustrations and text. The illustrations are excellent reproductions of photographs from life and are exceedingly attractive and instructive, in many instances there being little to suggest that the subjects were captives. The text is brief, but sufficient to give the reader a good idea of the bird or mammal illustrated, its leading traits, affinities and distribution being generally indicated.

The birds include Laughing and other Gulls, various species of Herons, Storks, Flamingoes, Cranes, Geese, Pelicans, Hawks and Eagles. The mammals, for the most part, are the large and more striking forms of ruminants. The work will be of especial interest and value to artists and taxidermists. There is apparently nothing, however, to indicate that the work is a translation and republication of a work of similar title recently issued in Berlin, but the fact of its previous appearance in German will not make it any the less welcome or valuable to English readers. — J. A. A.

Mrs. Bignell's 'Mr. Chupes and Miss Jenny.'¹ — Mrs. Bignell's little book is dedicated "To the Audubon Societies, in Recognition of Their Work in the Cause of Bird Protection," and this dedication in a measure gives the key to the book. It is not only a biography of two Robins that came into the author's possession, but contains incidentally comment on a wide range of topics connected more or less with the relation of man to animate nature. The first captive, 'Mr. Chupes,' was an unfortunate baby robin that had fallen from the nest, and had been somewhat injured by the fall, and afterward reared and cared for by its kind captor, with whom it lived for five years, displaying a surprising degree of affection for its mistress, and a marvelous amount of intelligence under varied conditions of environment. The second of the two pets, 'Miss Jenny,' was rescued from a baker's establishment, in a very bedraggled and dilapidated condition. Under more congenial surroundings and intelligent care she soon recovered her health and a proper, tidy appearance, and for years was the inseparable companion of 'Mr. Chupes.' The history of these two pet birds is a revelation of the mental traits and capabilities of two individuals of the same species as diverse in temperament and behavior as would be looked for in birds of the most distant genetic relationship. Although Mrs. Bignell's history of the behavior of these two birds under

Explanatory Remarks by Dr. L. Heck, Director of the Berlin Zoological Gardens. The Saalfield Publishing Co., New York, Akron, O., and Chicago. Oblong folio, pp. 196, illustrated title page and about 200 half-tone illustrations in the text.

¹ Mr. Chupes and Miss Jenny | The Life Story | of Two Robins | By | Effie Bignell | New York | The Baker and Taylor Company | 33-37 East Seventeenth Street, New York, 1901 | 12mo, pp. 1-250, with 8 full-page half-tone plates.

such, as we might say, unnatural conditions, forms a good-sized book, the author is such a keen and intelligent observer, and has made such excellent use of her opportunities for the study of bird psychology, that the record is fascinating from beginning to end, and is marked by wholesome and elevating sentiment. Her theme is the thread on which is hung much that relates to cognate matters, all told in a style simple and effective. 'Mr. Chupes and Miss Jenny' is, therefore, a unique and important contribution both to popular and scientific ornithology. — J. A. A.

Publications Received. — **Bignell**, Effie. Mr. Chupes and Miss Jenny, the Life Story of Two Robins. The Baker and Taylor Co., New York. 12mo, pp. 250, illustrated. Price, \$1.00.

Chapman, Frank M. A New Race of the Great Blue Heron, with Remarks on the Status and Range of *Ardea wardi*. (Bull. Am. Mus. Nat. Hist., XIV, 1901, pp. 87-90. April 15, 1901.

Finsch, O. (1) Zur Catalogisirung der Ornithologischen Abtheilung, II. (Notes from the Leyden Museum, XXII, pp. 129-161.) (2) Zur Catalogisirung der Ornithologischen Abtheilung, V. (*Ibid.*, pp. 193-224.) (3) Ueber eine neue Treron-art von den Kangean-iseln. (*Ibid.*, p. 162.) (4) Ueber eine Dritte Sendung Vogelbälge aus Central-Borneo (Mahkam). (*Ibid.*, pp. 163-178.)

Gould, Alice Bache. Louis Agassiz. Boston, 1901. Small, Maynard & Co. Price, 75 cts.

Heck, L. Living Pictures of the Animal Kingdom. Saalfeld Pub. Co., New York, Akron and Chicago, 1901.

Herrick, Francis H. The Home Life of Wild Birds. G. P. Putnam's Sons, New York and London, 1901. Price, \$2.50 net.

Howe, Reginald Heber, Jr., and Allen, Glover Morrill. The Birds of Massachusetts. Cambridge, 1901. 8vo.

Jackson, F. J., and Sharpe, R. Bowlder. List of Birds obtained in British East Africa. Part II. (Ibis, Jan., 1901, pp. 33-97.)

Lemon, Mrs. F. E. Tenth Annual Report, Society for the Protection of Birds, 1901. 8vo., pp. 56.

McGregor, Richard C. A List of the Land Birds of Santa Cruz County, California. (Pacific Coast Avifauna, No. 2. May 15, 1901.)

Morris, Robert A. The Birds of Springfield and Vicinity. Henry R. Johnson, Springfield, Mass., 1901. 8vo., pp. 54.

Norton, Arthur K. Birds of the Bowdoin College Expedition to Labrador in 1891. (Proc. Portland Soc. Nat. Hist., II, pp. 139-158, 1901.)

Palmer, T. S. Protection of Birds and Game Directory of State Officials and Organizations for 1901. (Circular No. 33, U. S. Depart. Agric., Div. of Biol. Surv.)

Sharpe, R. Bowlder. On the Birds Collected during the Mackinder Expedition to Mount Kenya. (Proc. Zool. Soc., 1900, pp. 596-609.)

Shufeldt, R. W. (1) Osteology of the Herodiones. (Ann. Carnegie

Mus., pp. 158-249, 1901.) (2) Osteology of the Penguins. (Journ. Anat. and Phys., XXXV, pp. 390-404, pl. xxxviii.) (3) Notes on the Osteology of *Scopus umbretta* and *Balaniceps rex*. (*Ibid.*, pp. 405-412, pl. xxxix.)

Rey, Eugène. Die Eier der Vögel Mitteleuropas, 9-11 Lieferung.

Ridgway, Robert. New Birds of the Families Tanagridæ and Icteridæ. (Proc. Wash. Acad. Sci., III, pp. 139-155. April 15, 1901.)

Seton-Thompson, Ernest, and Hoffman, Ralph. Bird Portraits. Ginn & Co., Boston, 1901. 4to, 20 pll.

Stone, Witmer. On Moults and Alleged Colour-change in Birds. (Ibis, April, 1901, pp. 177-183.)

Strong, R. M. A. Quantitative Study of Variation in the Smaller North American Shrikes. (American Naturalist, XXXV, 1901, pp. 271-298.)

Torrey, Bradford. Everyday Birds. Houghton, Mifflin & Co., Boston and New York, 1901. Sq. 12mo. Price, \$1.00.

Abstract of Proc. Delaware Valley Orn. Club, for 1900, 1901.

Actes de la Société Scient. du Chili, X, livr. 5.

Annals of Scottish Nat. Hist., No. 38, April, 1901.

Aquila, VIII, Nos. 1-2, Feb. 1901.

Bird-Lore, III, Nos. 2 and 3, 1901.

Birds and Nature, IX, Nos. 4 and 5, 1901.

Bulletin Brit. Orn. Club, Nos. LXXVIII and LXXIX, 1901.

Condor, The, III, Nos. 2 and 3, 1901.

Canadian Record of Science, VIII, No. 5, 1901.

Forest and Stream, LVI, Nos. 12-24, 1901.

Journal of the Cincinnati Soc. Nat. Hist., XIX, Nos. 7 and 8, 1901.

Journal of the Maine Orn. Soc., III, Nos. 1 and 2, 1901.

Knowledge, XXIV, Nos. 186 and 187, 1901.

Naturalist, The, A Monthly Journal Nat. Hist. for North of England, Nos. 531-533, 1901.

Ornithologische Monatsberichte, IX, Nos. 4-6, 1901.

Ornithologische Monatschrift, XXVI, Nos. 3-4, 1901.

Osprey, The, V, Nos. 3 and 4, 1901.

Ottawa Naturalist, XV, Nos. 1 and 2, 1901.

Proceedings of the Acad. Nat. Sci., Phila., 1901. Part 4.

Science, (2) Nos. 325-337, 1901.

Transactions Wisconsin Acad. Sci., Arts and Letters, XIII, Part 1, 1900.

Wilson Bulletin, New Series, VIII, No. 1, 1901.

Zoölogist, The, (4) Nos. 51-53, 1901.

CORRESPONDENCE.

The So-called Cancelled Fasciculus of Cassin's Illustrations.

EDITORS OF 'THE AUK':—

Dear Sirs:—In the Bibliographical Appendix to Coues's 'Birds of the Colorado Valley,' there appears this citation: "1853. CASSIN, J. Untitled fasciculus of his Illustrations of the Birds of Texas, California," etc. Then follow these notes: "The first part issued of this work was a trial or specimen number, which was cancelled as unsatisfactory, and is therefore scarcely citable. Several bound copies, however, are extant; they bear no title, date, or imprint, and are not paged. They consist of 15ll. of text and 5 pll., representing *Xanthura luxuosa*, *Melanerpes formicivorus*, *Chamaea fasciata*, *Lophophanes atricristatus*, and *Crytonyx masena*. See 1853-55 and 1856, Cassin, J."

There is a copy of the fasciculus in the Library of the Academy of Natural Sciences of Philadelphia, and an examination will show that the preceding citation and notes are erroneous in almost every respect. To begin with, the fasciculus has a paper cover bearing the following title: 'Illustrations | of the | Birds of California, Texas, | and | British and Russian America. | Intended to comprise all the species of North America except Mexico, not figured by | former American authors, and to serve as | a supplement | to the octavo edition of | Audubon's Birds of America. | By | John Cassin, | . . . and | Henry L. Stevens, | . . . To be completed in thirty numbers, published monthly. | Philadelphia: | King & Baird, Printers, No. 9 Sanson Street. | 1852.

From this it will be seen that not only is there a title, but its wording is quite different from Cassin's 'Illustrations,' (1853-55); that the work has a joint authorship; and that the date of publication is 1852.

The pages are numbered at the bottom, each species separately, *i. e.*, the text relating to the Mexican Jay is numbered 1-4, and the synopsis of the genus *Parus*, 1-5. In the later work six pages are devoted to the Mexican Jay, while the synopsis of the genus *Parus* is reduced to four, showing that the text was considerably changed in this issue.

It is not likely that the fasciculus under consideration was cancelled as unsatisfactory, at least as far as the plates are concerned, as they are superior to those of the later work, and were drawn and lithographed by Henry L. Stephens; those in the later work (1853-55) were drawn by Geo. G. White and Wm. E. Hitchcock, and lithographed, printed and colored by J. T. Bowen. The earlier plates, five in all, are not numbered, and if numbered according to their insertion would compare as follows with those in the first part of the later work:

Cassin and Stevens, 1852.

- [1] *Cyanocorax luxuosus* (Lesson).
- [2] *Melanerpes formicivorus*
(Swainson).
- [3] *Chamæa fasciata* (Gambel).
- [4] *Lophophanes atricristatus*
(Cassin).
- [5] *Crytonyx Massena* (Lesson).

Cassin, 1853.

- 1. *Cyanocorax luxuosus* (Lesson).
- 2. *Melanerpes formicivorus*
(Swains.).
- 3. *Lophophanes atricristatus*
(Cassin).
- 4. *Cyrtonyx Massena* (Lesson).
- 5. *Larus Heermanni* (Cassin).

The present copy bears in pencil, in Cassin's handwriting, this note :
"Suppressed number."

It is evident that this "suppressed number" must be cited as a separate work, distinct from Cassin's 'Illustrations, etc.' (1853-55), as it differs in so many respects from it, and has a joint authorship. The suppression of a work does not mean that it is not citable as long as one or more copies exist in a place of reference.

WILLIAM J. FOX,

Academy of Natural Sciences of Philadelphia.

NOTES AND NEWS.

BARON EDMOND DE SÉLYS LONGSCHAMPS, whose death at the age of 87 was announced in the last number of this journal (XVIII, p. 219) was born at Paris, May 25, 1813, though a descendant of an eminent family of Liège, Belgium, of which country he was not only a citizen but where he was prominent in political affairs, being successively councilor, deputy, senator, vice-president, and finally president of the Belgian Senate. His scientific writings cover a wide field, he being a recognized authority on the Odonata (dragon-flies), and wrote extensively on mammals and birds. His first paper, on the birds and insects of Belgium, was published in 1831, when he was eighteen years of age, and was followed by a long series of contributions to scientific literature, including reviews and briefer notices as well as many original monographs, for the most part relating to Vertebrates. In 1839 he contributed a notable paper to the 'Revue Zoologique' on the classification of Passerine birds, and in 1844 appeared his 'Faune Belge,' part one being devoted to the Vertebrate Fauna of Belgium, birds occupying pp. 45-108. A most noteworthy contribution to mammalogy was his 'Etudes de Micromammalogie,' published in 1839,—a work so much in advance of the time that its great merits were

not then duly appreciated, but in these days of minute discrimination of characters it takes the high rank justly its due. Baron Sélys was thus eminent both as a naturalist and as a statesman, and distinguished among his fellow citizens for his courtesy and sincerity of character.

BARBARA JORDAN, daughter of President Jordan of Stanford University, died at Palo Alto September 13, 1900. She was born Nov. 10, 1891, being just as old as the University itself. The little girl was a born ornithologist. Before any one had thought of teaching her, she knew all the forest trees of the Sierras by name and the birds of the university campus by their songs. Afterwards she extended this knowledge to an acquaintance with all the song birds of the United States as represented in her little collection. Her books on birds have been made the nucleus of a large library of ornithology presented to Stanford University as the "Barbara Jordan Library of Birds."

TO WILLIAM MACGILLIVRAY, the well-known author of a 'History of British Birds,' and as the acknowledge coadjutor of Audubon in the preparation of his great work on American birds, and hence an especially interesting personage to American ornithologists, a memorial tablet was unveiled at Marischal College, Aberdeen, Scotland, with appropriate commemorative addresses by Dr. John Forbes White, Principal Marshall Lang, and others, some of whom had been his pupils at Aberdeen. High tributes were paid to his moral worth and high scientific attainments in a wide field of research, and especially to the ability with which he filled the Chair of Natural History in Marischal College and University from 1841 to 1852, when at the early age of fifty-six he was laid to rest in the New Calton Burying Ground of Edinburgh. Said Dr. White, in his presentation address: "Had sufficient money been at our disposal, we should have adopted the suggestion of Sir John Struthers and founded a gold medal in MacGillivray's memory in the University. But, failing in this, we have had to content ourselves with a monument at his grave by Mr M'Glashen, of Edinburgh, in fine Peterhead granite, about nine feet high. The design would have pleased MacGillivray. Near the foot is a good-size golden eagle, the royal bird loved by the ornithologist, the extinction of which in the Scottish Highlands he deeply lamented. It fittingly suggests the lofty aspirations of MacGillivray. The eagle is finely executed in bronze by Mr. D. W. Stevenson, R. S. A., from a splendid drawing of the bird by MacGillivray himself, now the property of the British Museum. The monument is adorned with Celtic ornament, which befits the tombstone of our naturalist, who held that Gaelic was the most beautiful language in the world. In the center is a fine Iona Cross, symbol of the earnest faith of the reverent MacGillivray. The bronze tablet is made by 'The Guild of Handicraft' of London, from the design of Mr. Ashbee, whose work is well known. It is adorned with artistic representations of

some of the flowers and animals which were the friends of the man whose memory we wish to honor. The inscription reads: 'In memory of William MacGillivray, M. A., LL. D., born 1796, died 1852. Author of a 'History of British Birds' and other standard works in Natural Science; Professor of Natural History and Lecturer on Botany in Marischal College and University from 1841 to 1852. Erected in 1900, together with a monument at his grave in New Calton Cemetery, Edinburgh, by his relatives and surviving students, who affectionately cherish his memory, and by others desirous of doing honor to his character as a man and to his eminence as a naturalist.'

MacGillivray is best known as an ornithologist, but he was an authority, and published extensively, on botany, geology and conchology. That he was much in advance of his times in his liberality of thought is shown by Professor Trail's address, in which he quotes the following from MacGillivray's 'Manual of Botany,' published in 1840: "There is nothing absolutely certain as to species, much less as to the groups into which they are disposed, as genera, families, orders, tribes, and the like. We merely agree to consider as species individual plants which closely resemble each other in the structure and form of their organs. Such species, however, often pass into each other by gradations, which render it impossible to draw a line of demarcation, and thus all species are more or less arbitrary. We know from observation that all assumed species undergo changes from climate, cultivation, and other influences;" And this nearly twenty years before the appearance of Darwin's 'Origin of Species'! To him," says Prof. Trail, "Nature study in schools would have brought delight as the promise of a better state of education. I think that of him, as of few men can be said: 'Blessed are the pure in heart, for they shall see God.'"

DR. W. L. RALPH, Honorary Curator of the Section of Birds' Eggs in the U. S. National Museum, it has been officially announced, has undertaken the continuation of the work entitled 'Life Histories of North American Birds,' begun by the late Major Charles Bendire. It may be added in this connection that Dr. Ralph desires to obtain as much information as possible regarding the life-history of each species, and any pertinent facts of original observation will be of particular interest to him, especially in so far as they relate to those species which in the Check-list of the American Ornithologists' Union are numbered from 514 to 635 inclusive.

It is hardly necessary to say that the great task left unfinished by Major Bendire has fallen into good hands, and will, we trust, be carried forward to completion in due time. Dr. Ralph is especially qualified for the work, and is worthy of every assistance that can be rendered him.

TENTH SUPPLEMENT TO THE AMERICAN ORNITHOLOGISTS' UNION CHECK-LIST OF
NORTH AMERICAN BIRDS.

THE Ninth Supplement to the A. O. U. Check-List was published in January, 1899 (*Auk*, XVI, pp. 97-133). The present Supplement gives a report of the action of the Committee on questions affecting the Check-List that have arisen during the period from January, 1899 to April, 1901, and on many of the cases deferred for final action at the 1899 meeting of the Committee.

Owing to lack of material, it was found necessary to defer final action on many questions, as shown in the subjoined list of deferred cases. All questions affecting the status of genera and subgenera were also deferred. While the Committee has raised, in previous Supplements, a number of the groups recognized originally as subgenera in the Check-List to the rank of genera, and is of the opinion that still others should be thus raised, it seemed better to defer this phase of the subject till the whole matter can be taken up in its entirety.

As the 10th edition of Linnæus's '*Systema Naturæ*' is adopted as the starting point of binomial nomenclature, it is not considered necessary to notice the many discrepancies due to the adoption of the 12th edition of this work as the starting point, as in Sharpe's '*Hand-List of Birds*' (Vols. I and II) and elsewhere, nor to consider cases already settled by the Committee after careful consideration, unless new evidence is brought forward adverse to the Committee's ruling.

The members of the Committee present at the session were Allen, Brewster, Merriam and Ridgway; the session was held in Washington, April 10-18, 1901. Much of the work of the Committee, however, had been previously apportioned among the members, so that nearly all the questions of nomenclature and the status of many of the recently described species and subspecies had been carefully investigated by different members of the Committee in advance of the session.

As in the previous Supplements, the numbers at the left of the

scientific names furnish the means of easy collation of the Supplement with the Check-List. The interpolated species and subspecies are numbered in accordance with the provision made therefor in the Code of Nomenclature (p. 14, last paragraph).

	{	C. HART MERRIAM, <i>Chairman</i> .
		J. A. ALLEN.
		CHARLES F. BATCHELDER.
Committee		WILLIAM BREWSTER.
		CHARLES B. CORY.
		WALTER FAXON.
	ROBERT RIDGWAY.	

I. ADDITIONS TO THE CHECK-LIST, AND ACCEPTED CHANGES IN NOMENCLATURE.

51. **Colymbus dominicus** (LINN.). This becomes
Colymbus dominicus brachypterus CHAPMAN.

Colymbus dominicus brachypterus CHAPMAN, Bull. Am. Mus.
Nat. Hist. XII, 1899, 256.

GEOG. DIST.—Southern Texas and Lower California, south to Panama.

- 86c. **Fulmarus glacialis rodgersi** (CASS.). This becomes
86.1. **Fulmarus rodgersi** CASS.

Cf. SALVIN, Cat. Bds. Brit. Mus. XXVI, 1898, 486.

126. **Pelecanus fuscus** LINN. This becomes
Pelecanus occidentalis (LINN.).

Pelecanus onocrotalus occidentalis LINN. S. N. ed. 12, I,
1766, 215.

Pelecanus occidentalis RICHMOND, Auk, XVI, April, 1899,
178.

As stated by Richmond (*l. c.*) the name *fuscus* was not used by Linnæus in a nomenclatural sense and has no standing.

GENUS **AJAJA** REICH. (Check-List, 2d ed. p. 66). The original spelling is **Ajaia**, which form of the word should replace *Ajaja* in the Check-List.

194a. **Ardea herodias fannini** CHAPMAN.

Northwest Coast Heron.

Ardea herodias fannini CHAPMAN, Bull. Am. Mus. Nat. Hist. XIII, 1901, 87.

[B—, C—, R—, C—.]

GEOG. DIST.—Queen Charlotte Islands and coast region of British Columbia.

210.1. **Rallus crepitans waynei** BREWSTER.

Wayne's Clapper Rail.

Rallus crepitans waynei BREWSTER, Bull. N. Engl. Zool. Club, I, 1899, 50.

[B—, C—, R—, C—.]

GEOG. DIST.—South Atlantic coast, from North Carolina to Florida.

[269.1.] **Eudromias morinellus** (LINN.).

Dotterel.

Charadrius morinellus LINN. S. N. ed. 10, I, 1758, 150.

Eudromias morinellus BREHM, Vögel Deutschl. 1831, 545.

[B—, C—, R—, C—.]

GEOG. DIST.—Northern Europe and northern Asia, south in winter to the Mediterranean and northern Africa. Accidental at King Island, Alaska (*cf.* Stone, Proc. Acad. Nat. Sci. Phila. 1900, 22).

283.1. **Arenaria morinella** (LINN.).

Ruddy Turnstone.

Tringa morinella LINN. S. N. ed. 12, I, 1766, 249.

Arenaria morinella W. PALMER, Fur Seals and Fur Seal Isl. N. Pac. Oc. III, 1899, 408, 412.

[B 515 *part*, C 406 *part*, B 509 *part*, C 598 *part*.]

GEOG. DIST.—Arctic America, from the Mackenzie River eastward, southward in migration, chiefly coastwise, to Patagonia and the Falkland Islands.

The range of *A. interpres* thus becomes restricted to the Old World, Greenland, and western Alaska.

[B 460, *part*, C 380, *part*, R 472, *part*, C 555, *part*.]

298a. **Canachites canadensis labradorius** BANGS.

Labrador Spruce Grouse.

Canachites canadensis labradorius BANGS, Proc. N. Engl. Zool. Club, I, 1899, 31.

[B 460 *part*, C 380 *part*, R 472 *part*, C 555 *part*.]

GEOG. DIST.—Labrador.

298b. **Canachites canadensis osgoodi** BISHOP.

Alaska Spruce Grouse.

Canachites canadensis osgoodi BISHOP, Auk, XVII, April, 1900, 114.

[B—, C—, R—, C—.]

GEOG. DIST.—Upper Yukon region and thence northwest to Prince William Sound and Cook Inlet.

304a. **Lagopus leucurus altipetens** OSGOOD.

Southern White-tailed Ptarmigan.

Lagopus leucurus altipetens OSGOOD, Auk, XVIII, April, 1901, 180.

[B 469 *part*, C 388 *part*, R 476 *part*, C 570 *part*.]

GEOG. DIST.—Southern Rocky Mountains (Colorado, New Mexico, etc.).

Lagopus leucurus is the northern form, occurring in the Northwest Territory, Alaska, etc.

[314.1.] **Columba squamosa** BONN.

Columba squamosa BONNATERRE Tabl. Enc. Méth. I, 1790,
234.

[B —, C —, R —, C —.]

GEOG. DIST. — West Indies; accidental at Key West, Florida
(cf. Atkins, Auk, XVI, July, 1899, 272; recorded as *Columba
corensis*).

GENUS **PSEUDOGRYPHUS** RIDGWAY (Check-List, 2d ed.,
p. 124). This becomes

GENUS **GYMNOGYPS** LESSON.

Gymnogyps LESSON, Écho du Monde savant, sér. 2, VI, 1842,
1037. Type, *Vultur californianus* SHAW.

Pseudogryphus is thus a synonym of *Gymnogyps* (cf. RICHMOND,
Condor, III, 1901, 49), and No. 324 will therefore stand as

324. **Gymnogyps californianus** (SHAW).

Vultur californianus SHAW, Nat. Misc. IX, 1797, pl. ccci.

Gymnogyps californianus LESSON, Écho du monde savant, sér.
2, VI, 1842, 1037.

343. **Buteo latissimus** (WILS.). This becomes
Buteo platypterus (VIEILL.).

Sparvius platypterus VIEILL. Encycl. Méthod. Ornithol. III,
1823, 1273.

Buteo platypterus FAXON, Auk, XVIII, April, 1901, 218.

Falco latissimus dates from Ord, 1824, instead of from
Wilson, 1812, as formerly supposed, and is thus antedated
by one year by *platypterus* Vieill. (Cf. FAXON, Auk,
XVIII, April, 1901, pp. 217, 218.)

368b. **Syrnium nebulosum helveolum** BANGS.

Texas Barred Owl.

Syrnium nebulosum helveolum BANGS, Proc. N. Engl. Zool. Club, I, 1899, 31.

[B —, C —, R 397a part, C 477 part.]

GEOG. DIST. — Southern Texas.

375a. **Bubo virginianus pallescens** STONE.

Western Horned Owl.

Bubo virginianus pallescens STONE, Am. Nat. March, 1897, 236.

This is a new name for *Bubo virginianus subarcticus* (Hoy) of the Check-List, *subarcticus* being a synonym of *B. v. arcticus* (Swains.). Cf. Eighth Suppl., Auk, XIV, 1897, 134.

GENUS **RHYNCHOPSITTA** BONAP.

Rhynchopsitta BONAP. Rev. et Mag. Zool. VI, 1854, 149.

Type, *Macrocerus pachyrhynchus* SWAINS.

382.1. **Rhynchopsitta pachyrhyncha** (SWAINS.).

Thick-billed Parrot.

Macrocerus pachyrhynchus SWAINS. Phil. Mag. I, 1827, 439.

Rhynchopsitta pachyrhyncha BONAP. Rev. et Mag. Zool. VI, 1854, 149.

GEOG. DIST. — Central Mexico, northward, casually, to the Chiricahua Mountains. (Cf. Lusk, Condor, II, 1900, 129.) Formerly No. 16 of the Hypothetical List (Check-List, 2d ed., p. 330).

401a. **Picoides americanus alascensis** (NELSON). This becomes

Picoides americanus fasciatus BAIRD.

Picoides americanus var. *fasciatus* BAIRD, Cooper's Bds. Cal. I, 1870, 385.

Picoides a. alascensis proves to be a synonym of *P. a. fasciatus*, of earlier date. (Cf. BANGS, Auk, XVII, April, 1900, 128, 132.)

413. **Colaptes cafer** (GMEL.). This becomes

Colaptes cafer collaris (VIGORS).

Colaptes collaris VIGORS, Zoöl. Journ. IV, 1829, 354.

Colaptes cafer collaris NELSON, Auk, XVII, April, 1900, 123.

The true *Colaptes cafer* is restricted to the tableland and mountains of Mexico (*cf.* NELSON, *l. c.*).

429.1. **Trochilus violajugulum** JEFFRIES.

This becomes No. 16.2 of the Hypothetical List, on the probability that the still unique type was a hybrid or an otherwise abnormal specimen.

GENUS **AMAZILIA** REICH. (Check-List, 2d ed., p. 177).

This becomes

GENUS **AMIZILIS** GRAY.

Amizilis GRAY, List Gen. Bds. 1840, 14. Type (by elimination) *Orthorhynchus amazili* LESS.

Amizilis Gray (1840) antedates *Amazilia* Reich. (1849).

Cf. OBERHOLSER, Proc. Acad. Nat. Sci. Phila. 1899, 207.

Nos. 438 and 439 will now stand as follows:

438: **Amizilis tzacatl** (DE LA LLAVE).

Trochilus tzacatl DE LA LLAVE, Registro Trimestre, II, 1833, 48.

Amizilis tzacatl RICHMOND, Auk, XVI, Oct. 1899, 324.

439. **Amizilis cerviniventris** (GOULD).

Amazilius cerviniventris GOULD, P. Z. S. 1856, 150.

Amizilis cerviniventris OBERHOLSER, Proc. Acad. Nat. Sci. Phila. 1899, 207.

458a. **Sayornis nigricans semiatra** (VIGORS).

Western Black Phoebe.

Muscicapa semiatra VIGORS, Zoöl. Beechey's Voyage, 1839, 17.
Sayornis nigricans semiatra NELSON, Auk, XVII, April, 1900,
 125.

GEOG. DIST. — Pacific coast of the United States and Mexico, from Oregon to Colima, eastward to Arizona. *S. nigricans* thus becomes restricted in the United States to Texas, New Mexico, and southeastern Arizona (cf. NELSON, l. c.).

464.2. **Empidonax insulicola** OBERHOLSER.

Santa Barbara Flycatcher.

Empidonax insulicola OBERHOLSER, Auk, XIV, July, 1897,
 300.

[B —, C —, R —, C —.]

GEOG. DIST. — Santa Barbara Islands, California.

478b. **Cyanocitta stelleri macrolopha** (BAIRD). This becomes

Cyanocitta stelleri diademata (BONAP.).

Cyanogarrulus diadematus BONAP. Consp. Av. I, 1850, 377.

Cyanocitta stelleri diademata RIDGW. Auk, XVI, July, 1899,
 256, footnote.

483. **Xanthoura luxuosa** (LESS.). This becomes

Xanthoura luxuosa glaucescens RIDGW.

Xanthoura luxuosa glaucescens RIDGWAY, Auk, XVII, April,
 1900, 28.

GEOG. DIST. — Lower Rio Grande Valley.

485a. **Perisoreus obscurus griseus** RIDGW.

Gray Jay.

Perisoreus obscurus griseus RIDGW. Auk, XVI, July, 1899,
 255.

[B —, C —, R —, C —.]

GEOG. DIST. — British Columbia, Washington, Oregon, and northern California, east of the Coast and Cascade Ranges.

498a. **Agelaius phœniceus longirostris** (SALVAD.). This becomes

Agelaius phœniceus sonoriensis RIDGW.

No. 498a will stand as in the Check-List, 2d ed., p. 205. (Cf. NELSON, Auk, XVII, 1900, 125.) *Agelaius longirostris* is not positively identifiable, and in any case could hardly have come from western Mexico, as alleged.

544b. **Ammodramus rostratus halophilus** (MCGREGOR).

Lagoon Sparrow.

Ammodramus halophilus MCGREGOR, Auk, XV, July, 1898, 265.

Ammodramus rostratus halophilus A. O. U. COMM.

[B—, C—, R—, C—.]

GEOG. DIST. — Salt marshes in the vicinity of Abreojos Point, Lower California.

554a. **Zonotrichia leucophrys intermedia** RIDGW. This becomes

Zonotrichia leucophrys gambelii (NUTT.).

Fringilla gambelii NUTTALL, Man. I, 2d ed. 1840, 556.

Zonotrichia leucophrys gambellii COUES, Key, 1872, 556.

Cf. RIDGWAY, Auk, XVI, Jan. 1899, 36.

554b. **Zonotrichia leucophrys gambellii** (NUTT.). This becomes

Zonotrichia leucophrys nuttalli RIDGW.

Zonotrichia leucophrys nuttalli RIDGWAY, Auk, XVI, Jan. 1899, 36.

Cf. RIDGWAY, *l. c.*

581. **Melospiza fasciata** (GMEL.). This becomes

Melospiza melodia (WILSON).

The name *Fringilla fasciata* Gmelin (1788) given to the Song Sparrow, being preoccupied by *Fringilla fasciata* Müller (1776), given to the Pine Finch (cf. OBERHOLSER, Auk, XVI, 1899, 183) it becomes necessary to revert to the long familiar name of Wilson as the tenable specific designation of the Song Sparrow, which, with its subspecies, will stand as follows:

581. **Melospiza melodia** (WILSON).

Fringilla melodia WILSON, Am. Orn. II, 1810, 125, pl. xvi.

Melospiza melodia BAIRD, B. N. Am. 1858, 477.

- 581a. **Melospiza melodia fallax** (BAIRD).

Zonotrichia fallax BAIRD, Proc. Acad. Nat. Sci. Phil. 1854,
119.

Melospiza melodia var. *fallax* COUES, Key, 1872, 139.

- 581b. **Melospiza melodia montana** (HENSHAW).

Melospiza fasciata montana HENSHAW, Auk, I, July, 1884,
224.

Melospiza melodia montana OBERHOLSER, Auk, XVI, April,
1899, 183.

- 581c. **Melospiza melodia heermanni** (BAIRD).

Melospiza heermanni BAIRD, B. N. Am. 1858, 478.

Melospiza melodia var. *heermanni* COUES, Key, 1872, 139.

- 581d. **Melospiza melodia samuelis** (BAIRD).

Ammodramus samuelis BAIRD, B. N. Am. 1858, 455.

Melospiza melodia var. *samuelis* RIDGW. Hist. N. Am. Bds.
II, 1874, 18.

581c. **Melospiza melodia morphna** OBERH.

Melospiza melodia morphna OBERHOLSER, Auk, XVI, April, 1899, 183. (= *Fringilla guttata* NUTTALL, 1840, preoccupied by *Fringilla guttata* VIEILLOT, 1817. Cf. OBERHOLSER, l. c.).

581f. **Melospiza melodia rufina** (BONAP.).

Passerella rufina BONAP. Consp. Av. I, July 15, 1850, 477.
Melospiza melodia var. *rufina* COUES, Key, 1872, 139.

581g. **Melospiza melodia rivularis** (BRYANT).

Melospiza fasciata rivularis BRYANT, Proc. Cal. Acad. Sci. 2d ser. I, Sept. 29, 1888, 197.
Melospiza melodia rivularis OBERHOLSER, Auk, XVI, April, 1899, 183.

581h. **Melospiza melodia graminea** (TOWNS.).

Melospiza fasciata graminea TOWNSEND, Proc. U. S. Nat. Mus. XIII, 1890, 139.
Melospiza melodia graminea OBERHOLSER, Auk, XVI, April, 1899, 183.

581i. **Melospiza melodia clementæ** (TOWNS.).

Melospiza fasciata clementæ TOWNSEND, Proc. U. S. Nat. Mus. XIII, 1890, 139.
Melospiza melodia clementæ OBERHOLSER, Auk, XVI, April, 1899, 183.

581j. **Melospiza melodia juddi** (BISHOP).

Melospiza fasciata juddi BISHOP, Auk, XIII, April, 1896, 132.
Melospiza melodia juddi A. O. U. COMM.

581k. **Melospiza melodia merrilli** (BREWST.).

Melospiza fasciata merrilli BREWSTER, Auk, XIII, Jan. 1896, 46.
Melospiza melodia merrilli A. O. U. COMM.

588d. **Pipilo maculatus atratus** RIDGW.

San Diego Towhee.

Pipilo maculatus atratus RIDGW. Auk, XVI, July, 1899, 254.

[B —, C —, R —, C —.]

GEOG. DIST. — Southern coast district of California, south of Sierra Fernando and Sierra San Gabriel, and south into Lower California.

591d. **Pipilo fuscus carolæ** MCGREGOR.

Northern Brown Towhee.

Pipilo fuscus carolæ MCGREGOR, Bull. Cooper Orn. Club, I, 1899, 11.

[B —, C —, R —, C —.]

GEOG DIST. — Northwestern California.

656.1. **Dendroica nigrifrons** BREWSTER.

Black-fronted Warbler.

Dendroica nigrifrons BREWSTER, Auk, VI, April, 1899, 94.

[B —, C —, R —, C —.]

GEOG. DIST. — Sierra Madre of Chihuahua, Mexico, north to the Huachuca and Chiricahua Mountains, Arizona. (Cf. LOOMIS, Auk, XVIII, Jan. 1901, 109.)

681c. **Geothlypis trichas arizela** OBERH.*Geothlypis trichas arizela* OBERHOLSER, Auk, XVI, July, 1899, 257.[B 170 *part*, C 97 *part*, R 122 *part*, C 141 *part*.]

GEOG. DIST. — Pacific coast region, from southern British Columbia to northern Lower California, west of the Cascades and Sierra Nevada; in winter south to Cape St. Lucas and Tepic.

719c. **Thryomanes bewickii cryptus** OBERH.*Thryomanes bewickii cryptus* OBERHOLSER, Proc. U. S. Nat. Mus. XXI, 1898, 425.[B —, C 48a *part*, R 61b *part*, C 72 *part*.]

GEOG. DIST. — Texas, except the extreme western part, and probably north to Kansas, and south to Tamaulipas and Nuevo Leon, Mexico.

719*d*. **Thryomanes bewickii charienturus** OBERH.

Thryomanes bewickii charienturus OBERHOLSER, Proc. U. S. Nat. Mus. XXI, 1898, 435.

[B —, C —, R —, C —.]

GEOG. DIST. — Coast region of southern California, north to about Pasadena; south to about latitude 28°, Lower California; Santa Catalina Island, Cal.

719*e*. **Thryomanes bewickii calophonus** OBERH.

Thryomanes bewickii calophonus OBERHOLSER, Proc. U. S. Nat. Mus. XXI, 1898, 440.

[B —, C 48*b* *part*, R 61*a* *part*, C 73 *part*.]

GEOG. DIST. — Pacific slope, from Oregon to southern Vancouver Island and valley of Fraser River, British Columbia.

722*b*. **Anorthura hiemalis helleri** OSGOOD.

Kadiak Winter Wren.

Anorthura hiemalis helleri OSGOOD, Auk, XVIII, April, 1901, 181.

[B —, C —, R —, C —.]

GEOG. DIST. — Kadiak Island, Alaska.

723.1. **Anorthura meligera** OBERH.

Aleutian Wren.

Anorthura meligera OBERHOLSER, Auk, XVII, Jan., 1900, 25.

[B —, C —, R —, C —.]

GEOG. DIST. — The westernmost islands of the Aleutian group, Alaska.

726d. ***Certhia familiaris zelotes*** OSGOOD.

Sierra Creeper.

Certhia familiaris zelotes OSGOOD, Auk, XVIII, April, 1901,
182.

[B 275 part, C 42 part, R 55 part, C 62 part.]

GEOG. DIST. — Cascade Mountains of Oregon and the Sierra Nevada of California.

No. 726c, *Certhia f. occidentalis* RIDGW., thus becomes restricted to the Pacific coast region, from Sitka, Alaska, to Marin County, California.736. ***Certhia familiaris fusca*** (BARTON). This becomes***Certhia familiaris americanus*** (BONAP.), and will stand as in the Check-List, first and second editions. The change from *C. f. americana* to *C. f. fusca* in the Ninth Supplement proves to have been unwarranted. (Cf. OBERHOLSER, Auk, April, 1899, 185.)742b. ***Chamæa fasciata phæa*** OSGOOD.

Coast Wren-Tit.

Chamæa fasciata phæa OSGOOD, Proc. Biol. Soc. Wash. XIII,
1899, 41.

[B —, C —, R —, C —.]

GEOG. DIST. — Coast region of Oregon and California from Astoria, Oregon, to Marin County, California.

749a. ***Regulus calendula grinnelli*** W. PALMER.

Sitkan Kinglet.

Regulus calendula grinnelli W. PALMER, Auk, XIV, 1897,
399.

[B —, C —, R —, C —.]

GEOG. DIST. — Sitka district, Alaska.

758c. **Hylocichla ustulata almæ** OBERH.

Alma's Thrush.

Hylocichla ustulata almæ OBERHOLSER, Auk, XV, Oct. 1898,
304.

[B —, C —, R —, C —.]

GEOG. DIST.—Yukon Basin, south to the Rocky Mountain region, and west to Utah and eastern Nevada.

761b. **Merula migratoria achrustera** BATCHELDER.

Southern Robin.

Merula migratoria achrustera BATCHELDER, Proc. N. Engl.
Zoöl. Club, I, 1900, 104.

[B 155 part, C 1 part, R 7 part, C 1 part.]

GEOG. DIST.—The Carolinas and Georgia.

765a. **Saxicola œnanthe leucorhoa** (GMEL.).

Greenland Wheatear.

Motacilla leucorhoa GMEL. S. N. I, ii, 1788, 966.

Saxicola œnanthe leucorhoa STEJNEGER, Proc. U. S. Nat.
Mus. XXIII, No. 1220, 1901, 476.

[B 157 part, C 15 part, R 21 part, C 26 part.]

GEOG. DIST.—Greenland, adjacent portions of North America, and Iceland, migrating, by way of the British Islands and France, to western Africa.

The North American range of *S. œnanthe* is thus restricted to Alaska. (Cf. STEJNEGER, *l. c.*, and Auk, XVIII, April, 1901, 187.)

II. PROPOSED CHANGES IN NOMENCLATURE NOT
ACCEPTED.

Gavia FORSTER, 1788, vs. *Gavia* S. G. Gmelin, 1770 (Ninth Supplement, Auk, XVI, 1899, p. 98. Cf. REICHENOW, Orn. Monatsb. VIII, Sept. 1900, 135).

S. G. Gmelin used the generic name *Larus* for the Gulls throughout his work (Reise Russl.) and evidently did not introduce *Gavia* (l.c. I, 1770, 152) in a nomenclatural sense, but merely cited *Gavia ridibunda phœnicopos* as the name under which Brisson described the bird then under comment. (Cf. ALLEN, Auk, XVIII, July, 1901, —.) *Gavia* will thus stand as used in the Ninth Supplement.

- 40a. ***Rissa tridactyla pollicaris*** vs. *Rissa tridactyla* (cf. SAUNDERS, Cat. Bds. Br. Mus. XXV, 1896, 305).

The two forms are considered as fairly entitled to recognition. (Cf. CHAPMAN, Bull. Am. Mus. Nat. Hist. XII, 1899, 227.)

159. ***Somateria mollissima borealis*** vs. *Somateria mollissima* (cf. ELLIOT, Wild Fowl, 1898, 294).

The status of the two forms is retained as in the 'Check-List. (Cf. CHAPMAN, Bull. Am. Mus. Nat. Hist. XII, 1899, 235.)

258. ***Symphemia semipalmata inornata*** vs. *Symphemia s. speculifera* (cf. ELLIOT, Auk, XVI, 1899, 230).

The name *speculifera* Pucheran is considered as not satisfactorily identifiable.

- 310a. ***Meleagris gallopavo fera*** vs. *Meleagris fera* (cf. ELLIOT, Auk, XVI, July, 1899, 232).

- 310b. ***Meleagris gallopavo osceola*** vs. *Meleagris fera osceola* (cf. ELLIOT, *ibid.* 232).

- 310c. ***Meleagris gallopavo intermedia*** vs. *Meleagris intermedia* (cf. ELLIOT, *ibid.* 232).

The Committee fails to recognize the necessity of making any change in the names of the subspecies of *Meleagris*. (Cf. Ninth Supplement, Auk, XVI, 1899, p. 108.)

385. ***Geococcyx californianus*** vs. *G. mexicanus* (GMEL.). (Cf. SHARPE, Hand List Bds. II, 1900, 174.)

Phasianus mexicanus GMELIN relates to *Geococcyx affinis*, and not to *G. californianus*.

- 501*b*. ***Sturnella magna neglecta*** vs. *Sturnella ludoviciana* (cf. BANGS, Proc. N. Engl. Zool. Club, I, 1899, 20).

The description by Brisson, on which *Sturnus ludoviciana* Linn. is based, does not satisfactorily apply to *S. m. neglecta*, aside from the improbability of Brisson having specimens at that early date collected within the range of *neglecta*. The attempt to revive the name from Swainson is contrary to current usage in similar cases.

- Quiscalus* VIEILL.** (1816) vs. *Scaphidura* SWAINS. (1827).
(Cf. RIDGWAY, Proc. Wash. Acad. Sci. III, 1901, 151).

Scaphidurus was proposed as a substitute for *Quiscalus*, which was erroneously supposed to be preoccupied in botany, and is consequently a pure synonym of *Quiscalus*. *Scaphidurus* as reinstated by Ridgway (*l. c.*)=*Megaquiscalus* Cassin.

519. ***Carpodacus mexicanus frontalis*** vs. *C. m. obscurus* (cf. OBERHOLSER, Auk, XVI, 1899, 186).

As *Fringilla frontalis* Vieillot, 1817, is simply the reference of *Loxia frontalis* Lath. to the genus *Fringilla*, and not a new name, *Fringilla frontalis* Say, 1824, is obviously not invalidated.

- 534*a*. ***Passerina nivalis townsendi*** vs. *Passerina townsendi* (cf. W. PALMER, Fur Seals and Fur Seal Islands N. Pac. Oc. III, 1899, 423; GRINNELL, Condor, III, 1901, 20.)

The proposed change is not deemed necessary.

- 719.1. ***Thryomanes leucophrys*** vs. *Thryomanes bewickii leucophrys* (cf. OBERHOLSER, Proc. U. S. Nat. Mus. XXI, 1898, 443.)

The reasons given for the proposed change are not considered satisfactory.

- 725*b*. ***Cistothorus palustris griseus*** BREWSTER vs. *Cistothorus griseus* (cf. WAYNE, Auk, XVI, Oct. 1899, 362).

The proposed change is deemed inadvisable at present.

III. SPECIES AND SUBSPECIES NOT ACCEPTED.

Fulmarus glacialis columba ANTHONY, Auk, XII, Oct. 1895, 372. Considered as not separable from *Fulmarus rodgersi*.

Alopochen ægyptiacus (LINN.). = *Chenalopex ægyptiacus* auct.
Cf. KIRKWOOD, Auk, XVII, Jan. 1900, 64.

Examples of this species are so often brought to this country alive that it seems unwise to admit the species to the Check-List as an Old World straggler, the probabilities being that the few specimens of apparently wild birds thus far taken have escaped from aviaries.

Asio accipitrinus mcilhennyi STONE, Proc. Acad. Nat. Sci. Phila. 1899, 478.

Considered as merely the pale phase of *A. accipitrinus*, of wide and irregular distribution, but liable to occur anywhere, and by no means rare on the Atlantic coast.

Picoides americanus bacatus BANGS, Auk, XVII, April, 1900, 136.

Regarded as a synonym of *Picoides americanus* Brehm, which is taken in the same sense as heretofore in the Check-List.

Picoides americanus labradorius BANGS, Auk, XVII, April 1900, 138.

Considered as not separable from *Picoides americanus* Brehm.

Sayornis saya yukonensis BISHOP, Auk, XVII, April, 1900, 115.

The differences claimed are considered too slight and inconsistent for recognition in nomenclature.

Cyanocitta stelleri carbonacea GRINNELL, Condor, II, 1900, 127.

Not considered worthy of recognition by name.

Aphelocoma californica immanis GRINNELL, Auk, XVIII, April, 1901, 188.

Differences too slight to warrant recognition in nomenclature.

Leucosticte kadiaka MCGREGOR, Condor, III, 1901, 8. Separates issued Nov. 25, 1900.

Considered not separable from *Leucosticte griseonucha*.

Acanthis cannabina (LINN.). Cf. THAYER, Auk, XVII, Oct. 1900, 388.

The specimen here recorded was doubtless an escaped cage-bird.

Amphispiza belli clementæ RIDGWAY, Auk, XV, July, 1898, 230.

Not satisfactorily distinguishable from *A. belli*.

Zamelodia melanocephala microrhyncha GRINNELL, Condor, II, 1900, 128.

Alleged characters too slight to require recognition in nomenclature.

Pipilo maculatus falcifer MCGREGOR, Condor, II, 1900, 43. Not separable from *Pipilo maculatus atratus* RIDGW.

Hirundo erythrogastra unalaschkensis (GMEL.). Cf. W. PALMER, Fur Seals and Fur Seal Isl. N. Pac. Oc. III, 1899, 422.

Not separable from *H. erythrogastra*. As to the name *Hirundo unalaschkensis* Gmelin, cf. ALLEN, Auk, XVIII, April, 1901, 177.

Lanius borealis invictus GRINNELL, Pac. Coast Avifauna, I, 1900, 54.

Characters too slight and inconstant for recognition in nomenclature.

Dendroica coronata hooveri MCGREGOR, Bull. Cooper Orn. Club, I, 1899, 31.

The alleged differences are too slight and inconstant.

Thryomanes bewickii eremophilus OBERHOLSER, Proc. U. S. Nat. Mus. XXI, 1898, 427.

Not distinguishable from *Thryomanes bewickii bairdi*.

Thryomanes bewickii drymæcus OBERHOLSER, Proc. U. S. Nat. Mus. XXI, 1898, 437.

Not separable from *Thryomanes b. spilurus*.

Thryomanes bewickii nesophilus OBERHOLSER, Proc. U. S. Nat. Mus. XXI, 1898, 442.

Not separable from *Thryomanes b. spilurus*.

Thryothorus cerroensis ANTHONY, Auk, XIV, April, 1897, 166.

Not separable from *Thryomanes leucophrys*.

Parus gambeli thayeri BIRTWELL, Auk, XVIII, April, 1901, 166.

Based on specimens of *Parus gambeli* stained by contact with tree trunks blackened by fire.

Parus rufescens barlowi GRINNELL, Condor, II, 1900, 127.

A synonym of *Parus rufescens neglectus*.

Hylocichla fuscescens fuliginosa HOWE, Auk, XVII, July, 1900, 270.

Considered as a synonym of *H. f. salicicola*.

IV. DEFERRED FOR FURTHER INVESTIGATION.

The names printed in heavy-faced type are already in the Check-List.

Many of the following cases were deferred on account of lack of material for their proper consideration; others involve questions of nomenclature as well as ornithology that require careful consideration.

Cyclorrhynchus vs. *Phaleris* (cf. GRANT, Cat. Bds. Br. Mus. XXVI, 1898, 607.

51a. **Larus argentatus smithsonianus** vs *L. argentatus* (cf. KNIGHT, Auk, XVII, 1900, 63; DWIGHT, *ibid.* XVIII, 1901, 58-61).

It seems desirable to examine a large number of European specimens before deciding the case.

- 86a. **Fulmarus glacialis minor** vs. *Fulmarus glacialis* (cf. SALVIN, Cat. Bds. Brit. Mus. XXV, 1896, 426; CHAPMAN, Bull. Am. Mus. Nat. Hist. XII, 1899, 229).
94. **Puffinus stricklandi** vs. *Puffinus griseus* (cf. SALVIN, Cat. Bds. Br. Mus. XXV, 1896, 386).
120. **Phalacrocorax dilophus** vs. *Phalacrocorax auritus* (cf. GRANT, Cat. Bds. Br. Mus. XXVI, 1898, 373).
121. **Phalacrocorax mexicanus** vs. *Phalacrocorax vigua mexicanus* (cf. GRANT, l. c. 378-383).
- 123a, 123b. **Phalacrocorax pelagicus robustus et resplendens** vs. *Phalacrocorax pelagicus* (cf. GRANT, l. c. 361).
124. **Phalacrocorax urile** vs. *Phalacrocorax bicristatus* (cf. GRANT, l. c. 358).
127. **Pelecanus californicus** vs. *Pelecanus fuscus californicus* (cf. GRANT, Cat. Bds. Br. Mus. XXVI, 1898, 478).
- Olor** vs. *Cygnus* (cf. ELLIOT, Auk, XVI, July, 1899, 226-229).
193. **Ardea wardi** vs. *A. herodias wardi* (cf. CHAPMAN, Bull. Am. Mus. Nat. Hist. XIV, 1901, 88).
211. **Rallus crepitans** vs. *Rallus longirostris crepitans* (cf. RIDGWAY, Man. N. Am. Bds. 1896, 137, 587).
- 211a. **Rallus crepitans saturatus** vs. *Rallus longirostris saturatus* (cf. RIDGWAY, l. c.).
- 211.1. **Rallus scottii** vs. *Rallus longirostris scottii* (cf. RIDGWAY, l. c. 587).

Rallus levipes BANGS. Bull. N. Engl. Zoöl. Club, I, 1899, 45.

- 216.1. **Porzana coturniculus** (cf. McLAIN, Bull. Cooper Orn. Club, I, 1899, 99).

Specimens recently received from California, but not yet critically determined, seem to indicate that it would be premature to take the action proposed, namely, to remove the species from the Check-List.

- [230.1.] **Gallinago major** (GMEL.) vs. *Gallinago media* (cf. OBERHOLSER, Auk, XVI, 1899, 179).

The name *media* from either Frisch or Gerini is clearly not tenable, these authors being not consistently binominal.

323. **Macrorhamphus scolopaceus** vs. *Macrorhamphus griseus scolopaceus* (cf. HOWE, Auk, XIII, April, 1901, 161).

- 277a. **Ægialitis meloda circumcincta** vs. *Æ. meloda*.

Again deferred, the case not having been reinvestigated, through oversight.

287. **Hæmatopus bachmani** vs. *H. niger* (PALLAS). (Cf. SHARPE, Hand-List Bds. I, 1899, 147.)

Meleagris gallopavo merriami NELSON, Auk, XVII, April, 1900, 120.

317. **Zenaida zenaida** vs. *Zenaida meridionalis* (cf. FORBES & ROBINSON, Bull. Liverpool Mus. I, 1899, 36).

358. **Falco richardsoni** vs. *Falco columbarius richardsoni* (cf. BISHOP, N. Am. Fauna, No. 19, 1900, 75).

Strigidae vs. *Aluconidae* (cf. COUES, Auk, XVII, Jan. 1900, 65).

Strix vs. *Aluco* (cf. COUES, l. c.).

377. **Surnia ulula** vs. *Surnia ulula doliata* (PALL.). Cf. SHARPE, Hand-List Bds. I, 1899, 296.

Pkoides arcticus tenuirostris BANGS, Auk, XVII, April, 1900, 131.

Antrostomus vs. *Caprimulgus* (cf. CLARK, Auk, XVIII, April, 1901, 169).

450. **Myiozetetes texensis** vs. *Myiozetetes similis texensis* (cf. NELSON, Auk, XVII, April, 1900, 124.

Contopus CAB. vs. *Horizopus* OBERH. (cf. OBERHOLSER, Auk, XVI, Oct. 1899, 331).

Contopus richardsonii saturatus BISHOP, Auk, XVII, April, 1900, 116.

Agelaius phœniceus fortis RIDGWAY, Proc. Wash. Acad. Sci. III, 1901, 153.

Agelaius phœniceus neutralis RIDGWAY, *ibid.*

Agelaius phœniceus caurinus RIDGWAY, *ibid.*

501a. **Sturnella magna neglecta** vs. *Sturnella neglecta* (cf. OBERHOLSER, Proc. U. S. Nat. Mus. XXII, 1900, 231; CHAPMAN, Bull. Am. Mus. Nat. Hist. XIII, 1900, 297-320).

501a. **Sturnella magna hoopesi** STONE, vs. *Sturnella magna mexicana* (cf. CHAPMAN, Bull. Am. Mus. Nat. Hist. XIII, 1900, 298, 303).

Sturnella magna argutula BANGS, Proc. N. Engl. Zoöl. Club, I, 1899, 20.

Icterus cucullatus sennetti RIDGWAY, Proc. Wash. Acad. Sci. III, 1901, 152.

Loxia curvirostra bendirci (RIDGWAY). Cf. MERRIAM, N. Am. Fauna, No. 16, 1899, 123.

- 514a. **Amphispiza belli nevadensis** vs. *A. nevadensis* (cf. GRINNELL, Auk, XV, 1898, 59; FISHER, *ibid.* 190).

Melospiza fasciata caurina RIDGWAY, Auk, XVI, Jan. 1899, 36.

Melospiza fasciata cooperi RIDGWAY, *ibid.* 35.

Melospiza fasciata pusillula RIDGWAY, *ibid.* 35.

Melospiza fasciata ingersolli MCGREGOR, Bull. Cooper Orn. Club, I, 1899, 35.

Melospiza melodia cleonensis MCGREGOR, *ibid.* 87.

Melospiza melodia kenaiensis RIDGWAY, Auk, XVII, Jan., 1900, 29.

Melospiza sanaka MCGREGOR, Condor, III, Jan. 1901, 87. (Separates issued Nov. 25, 1900).

Passerella iliaca fuliginosa RIDGWAY, Auk, XVI, Jan. 1899, 36.

Passerella iliaca annectens RIDGWAY, Auk, XVII, Jan. 1900, 30.

Passerella iliaca insularis RIDGWAY, *ibid.* 30.

Passerella iliaca townsendi RIDGWAY, *ibid.* 30.

612. **Petrochelidon lunifrons** SAY vs. *P. pyrrhonota* (VIEILL.). (Cf. SHARPE & WYATT, Mon. Hirun. II, 523, *et. seq.*).

Lanius ludovicianus migrans W. PALMER, Auk, XV, July, 1898, 248.

While the form appears entitled to recognition there are questions of synonymy in the case which are likely to affect the name.

Geothlypis trichas brachidactyla (SWAINS.), W. PALMER, Auk, XVII, July, 1900, 221.

- 681b. **Geothlypis trichas ignota** vs. *G. t. roscoe*. (Cf. W. PALMER, Auk, XVII, July, 1900, 221; CHAPMAN, *ibid.* 389; PALMER and CHAPMAN, *ibid.* XVIII, April, 1901, 197, 198.)

Salpinctes obsoletus pulverius GRINNELL, Auk, XV, 1898, 238.

- 740a. **Parus hudsonicus stoneyi** vs. *Parus h. evura* (cf. GRINNELL, Pac. Coast Avifauna, I, 1900, 60).

Parus hudsonicus evura COUES. (Cf. BISHOP, Auk, XVII, April, 1900, 118.)

Chamaea fasciata intermedia GRINNELL, Condor, II, 1900, 86.

- 742a. **Chamaea fasciata henshawi** vs. *C. fasciata*. (Cf. OSGOOD, Proc. Biol. Soc. Wash. XIII, 1899, 41.)

Hylocichla aonalaschkæ verecunda OSGOOD, Auk, XVIII, April, 1901, 183.

Hesperocichla naevia meruloides (SWAINS.). (Cf. GRINNELL, Auk, XVIII, April, 1901, 142.)

In addition to the above, action was deferred in reference to the following generic and subgeneric names, most of which are in the Check-List as representing subgeneric groups. Many of them should doubtless be raised to generic rank, but it seems desirable to defer the matter till the whole list can be more carefully considered than was possible at the recent sessions of the Committee.

Actodromas Kaup.

Ægialeus Reichenb.

Ancylocheilus Kaup.

Aristonetta Baird.

Arquatella Baird.

Astur Lacép.

Asyndesmus Coues.

Buteola Bonap.

Butorides Blyth.

Centurus Swains.

Charitonetta Stejn.

Chroicocephalus Eyton.

Coturniculus Bonap.

Cymochorea Coues.

Dichromanassa Ridgw.

Dytes Kaup.

21 *Eudomychura Oberh. (= Micruria Grant).*

Exanthemops Elliot.

Florida Baird.

Fuligula Steph.

Herodias Boie.

Hesperiphona Bonap.

Heteropygia Coues.

Hierofalco Cuvier.

Hydranassa Baird.

Hydrocoleus <i>Kaup.</i>	Passerculus <i>Bonap.</i>
Iridoprocne <i>Coues.</i>	Pelidna <i>Cuvier.</i>
Limonites <i>Sharpe.</i>	Phœbetria <i>Reichenb.</i>
Lophophanes <i>Kaup.</i>	Picicorvus <i>Bonap.</i>
Nuttallornis <i>Ridgw.</i>	Podasocys <i>Coues.</i>
Nyctanassa <i>Reichenb.</i>	Proctopus <i>Kaup.</i>
Ochthodromus <i>Reichenb.</i>	Pseuduria <i>Sharpe.</i>
Ortygops <i>Heine.</i>	Psiloscopus <i>Coues.</i>
Oxyechus <i>Reichenb.</i>	Tachytriorchis <i>Kaup.</i>
Pallasicarbo <i>Coues.</i>	Telmatodytes <i>Cab.</i>

ERRATA.

Check-List, 2d ed., p. 34, No. 99, in the reference "Auk, III, July 1886, 300," for 300 read 390.

Ninth Supplement, Auk, XVI, 1899, p. 125. The second reference under 722a should be

Anorthura hiemalis pacifica RIDGW. Proc. U. S. Nat. Mus. VI, 1883, 94.

Ninth Supplement, Auk, XVI, 1899, 111. Insert above No. 435 the following:

GENUS **ATTHIS** REICH.

Atthis REICHENBACH, Aufz. der Colib. 1853, 12. Type, *Ornysmia heloisa* LESS. & DE LATTRE.

THE AUK:

A QUARTERLY JOURNAL OF
ORNITHOLOGY.

VOL. XVIII.

OCTOBER, 1901.

No. 4.

AN ORNITHOLOGICAL MYSTERY.¹

BY WILLIAM BREWSTER.

“Even yet thou art to me
No bird: but an invisible Thing,
A Voice, a mystery.” — *Wordsworth*.

IN these days of multitudinous bird observers, when so many of the questions that both perplexed and stimulated the students of twenty-five or thirty years ago have been set finally at rest, it is refreshing to happen on an ornithological mystery; one, moreover, possessing no slight interest and importance since it concerns a bird which is known to the ornithologists of eastern Massachusetts, as the Cuckoo was to Wordsworth, *only by its voice*.

At about six o'clock on the afternoon of June 7, 1889, I heard in Cambridge, among the dense beds of cat-tail flags which surround Pout Pond, some bird notes, rail-like in character but wholly new to me. They proved equally so to Mr. Walter Faxon and Mr. Bradford Torrey, whom I took to the place later that same evening. Together we listened to the bird for upward of an hour during which he was rarely silent for more than a minute or two at a time. As we were unable to obtain any clue to his identity, and as his song invariably began with a series of *kick-kicks* we christened him the ‘Kicker’ by which name he has since been known among the Cambridge ornithologists.

✓ For identification, see note at that time in the *Auk*.

Reynard and Hart, *Cassinia*, Nov. 56-57, p. 66; Nov., 1887, p. 8-9.

In the course of the following fortnight, most of which Mr. Faxon and I devoted to searching for 'Kickers,' two more birds were heard in another part of the Fresh Pond Swamps, two in the meadows bordering Beaver Brook (one near the Waverly Oaks, the other in Rock Meadow, Belmont), one on the edge of Great Meadow, East Lexington, three in the Neponset River meadows near Readville, one on the banks of the Sudbury River just above Concord, and *five* in a meadow near the mouth of West Brook in Sudbury.

Most of the birds just mentioned were in very wet meadows or swamps, either among the wild grasses which grow so luxuriantly in such places, or in beds of tall rushes or cat-tail flags. We sometimes heard them in the early forenoon or late afternoon and once or twice at high noon, when the sun was shining brightly. As a rule, however, they did not begin calling before sunset and were seldom in full cry until twilight had fallen, after which their notes were uttered almost incessantly, at short, regular intervals, certainly far into the night and probably up to daybreak the next morning. From this it will appear that their haunts were similar to those of the Carolina and Virginia Rails and their periods of greatest activity to an even larger degree, nocturnal.

Their voices, also, were unmistakably rail-like. Their notes varied considerably in number — as well as somewhat in form and quality — not only with different birds but with the same individual at different times. The commonest forms were as follows: —

Kik-kik-kik, quèeah.

Kik-kik-kik, ki-quèeah.

Kik-ki-ki-ki, ki-quèeah.

Kìc-kìc, kic-kic, kic-kic, kic-kic, ki-queeah.

The *kic-kic* notes were very like those which the Virginia Rail uses to call together her scattered young, but they were at least thrice as loud. Although usually given in rather rapid succession they were sometimes divided by distinct if short intervals (indicated above by commas) into groups of twos or occasionally of threes. These pauses gave them the effect of being uttered with a certain degree of hesitancy or in a tentative spirit, as if the bird were clearing its throat or attuning its voice to exactly the right pitch before venturing on what was evidently his supreme

effort, the terminal *quèeah*. This note, which might perhaps be as well rendered by *quèer*, or even simply *kèeer*, and which was occasionally doubled and sometimes wholly omitted, formed the only really characteristic and at all times unmistakable part of the song. It was a shrill, slightly tremulous squeal or crow, given with exceeding emphasis and vigor and reminding us by turns of the rolling chirrup which a chipmunk makes just as he dives into his hole, of the sudden outcry of a half-grown chicken when it is pecked by one of its companions, or of the crow of a young rooster. Near at hand it seemed louder than the *kic-kic* notes but the latter carried much the further — sometimes to a distance of fully half-a-mile when the air was damp and still — whereas the crow, under the most favorable conditions, could not be heard at more than half that distance.

That the notes just described constitute what, from the standpoint of the ornithologist, must be regarded as a true song seems obvious from the fact that they were uttered at such frequent and regular intervals, often for hours at a time. Indeed, the bird when engaged in producing them could not well have found opportunity for doing anything else. It is probable, however, that he often changed his position during his brief periods of silence, for his voice varied more or less in intensity or volume with successive utterances, the increase and decrease in volume being usually graduated but sometimes rather abrupt. Ordinarily every fourth or fifth repetition came especially loud and full but occasionally a particularly distinct utterance immediately succeeded an exceptionally faint one. Perhaps the bird while singing faced in different directions, making a quarter turn after each series of calls, as the Woodcock does while peeping; or he may have been merely running about in the grass calling at times in open spaces, at others among or beneath herbage sufficiently dense to muffle the sound of his voice. The general effect of his song, while certainly far from musical, was not displeasing and the terminal crow had a delightfully merry or rather joyous quality as if the bird, reveling in the rare June weather amid the lush grass of his favorite meadows, were altogether too happy to contain himself. Indeed, there were times when this note, rising above the croaking of innumerable frogs and the rustling of wind among the reeds, sounded like a shrill, exultant little cheer.

Needless to say we spared no efforts to get a sight of the bird while he was singing in the early evening twilight or, sometimes with the aid of a keen-nosed dog, to flush him by day from the rank vegetation of his difficult haunts, but all such attempts proved futile; and when his singing season waned and finally came to its close, about the end of June, we had obtained no definite evidence as to his identity.

So far as we know the 'Kicker' has never since returned to any of the localities above mentioned but I noted one at Falmouth, Massachusetts, in 1890, and in the extensive marshes opposite my camp on the Concord River (about two miles below the town centre of Concord) one was singing on the evening of June 22, 1892, and another nearly every evening from May 18 to June 12, 1898; while I heard at least three and I think four different birds in these meadows during the last week of June, 1901.

The Falmouth bird began singing shortly after sunset on June 25, near a house at which I had arrived late that afternoon. Whenever I was awake during the following night his merry little crow came distinctly to my ears through the open windows of my room, at the usual short, regular intervals. On the previous evening I had traced the sound to its source, and by a rough process of triangulation had fixed the position of the bird at about the centre of a fresh water meadow that lay just behind the beach ridge in the bottom of a bowl-shaped hollow surrounded by sandy, upland fields and pastures. Early the next morning I examined the place more carefully. The meadow scarce exceeded an acre in extent. Most of it was comparatively dry, and having been burned over the previous autumn or winter was covered only by a short and rather sparse growth of young grass but the course of a sluggish brook and the edges of some intersecting ditches which imperfectly drained it had escaped the fire and were bordered by fringes of tall grasses, weeds and cat-tail flags, representing the growths of several successive seasons. These belts of cover, although dense enough to be impervious to the eye, were so very narrow that it was an easy matter to search them thoroughly and I soon satisfied myself that they sheltered no nest of any kind, not even a sparrow's; after which I turned my attention to the open ground. I had scarce begun to scan attentively its level,

brilliantly green surface when I saw, only a few paces away, a light yellowish object which I took, at first, to be the crown of an old straw hat, but which, on nearer inspection, proved to be a nest unlike any that I had ever before found. It was a domed structure, somewhat resembling that made by our field mouse but flatter and broader. The materials, also, were coarser and more skilfully and substantially put together, being firmly interwoven about the edges with the stems of the surrounding grasses. The dome was composed wholly of the stalks and blades of coarse grasses, perfectly dry and bleached to a dull yellowish hue. I examined this nest for some time before I could discover its entrance, for the slightly arched top seemed at first to unite everywhere with the sides and bottom. But by stooping low I at length detected in the side towards the east a circular hole of about the size of that made by our Downy Woodpecker, and sheltered above by a sort of hood which projected out over it from the edge of the dome. Leading directly to this opening was a well-worn run-way over which, for a distance of five or six inches from the nest, the short living grasses had been bent down and loosely intertwined so as to form an effective yet inconspicuous screen. On still closer examination I found that the nest was certainly that of some bird, for the interior was roomy and carefully finished while the bottom had that unmistakable saucer shape common to most birds' nests. The lining was of coarse, dry grass blades neatly and smoothly arranged. Apparently the structure was only just completed for it was quite empty and there were no signs to indicate that it had ever contained eggs or young.

Mr. Faxon saw it *in situ* a few days later. I kept it under close observation for a week or more but although I was careful not to disturb it, even by tramping down the grass by which it was surrounded, it must have been deserted immediately after my first visit for no eggs were laid in it. Nor was the 'Kicker' heard again in that locality. He was the only bird of any kind that I found in or near the meadow, which, by the way, was overrun by cats and dogs belonging to houses in the immediate neighborhood. No doubt some of these animals either killed or drove away both him and his mate.

Thus much for the history of a case which, in respect to its difficulties, is without parallel in the experience of those of us who have been engaged in its investigation. In formulating the inferences which its consideration suggests, I shall endeavor to keep well within limits justified by the evidence which, although largely of a circumstantial or even purely negative character, is, nevertheless, not without its value and significance.

In the first place the habits, haunts and especially the voice of the 'Kicker' indicate that he is a Rail of some kind. He cannot be either the Carolina or Virginia Rail for Mr. Faxon and I have been long familiar with all the sounds regularly made by these birds. Moreover, the 'Kicker' has been heard in the Fresh Pond Swamps during one season only, while the Carolina and Virginia Rails are abundant there every summer. The only other Rails known or likely to occur in summer in the fresh water marshes of southern New England are the King and the Little Black Rails.¹ The notes of the King Rail, as described by those who have heard them in the Southern or Mississippi Valley States, are wholly unlike those of our 'Kicker.' Robinson, as quoted by Gosse, in 'Birds of Jamaica' (1847, p. 376), says of the Little Black Rail:—"The negroes in Clarendon call it *Cacky-quaw*, by reason of its cry, which consists of three articulations; the negroes in Westmoreland call it *Johnny Ho*, and *Kitty Go* for the same reason." He also says that two birds which were brought to him alive gave a "very low" cry which "resembled that of a Coot, when at a great distance." Mr. March, on the other hand, states (Proc. Acad. Nat. Sci. Phila., 1864, p. 69) that the Jamaica bird utters a "*chi-chi-cro-croo-croo* several times repeated in sharp, high-toned notes, and heard at a considerable distance." None of our 'Kicker's' utterances so much as even suggest "*Cacky-quaw*," "*Johnny Ho*" or "*Kitty Go*"; but his *kic-kic-kic*, *ki quèeah* is not very unlike Mr. March's rendering, and when we consider the local variations to which the notes of so many species of birds are subject, it seems not improbable that the songs of the Little Black Rails which inhabit Jamaica may

¹ There are no good reasons for suspecting that the Yellow Rail ever breeds in any part of New England.

be more or less different from those of the birds which occur in the United States.

Reverting once more to the nest found at Falmouth, I do not hesitate to assert that almost without question it was built by a Rail of some kind. Its position, its component materials, the general character of its construction, and above all, the cleverly concealed run-way by which the birds approached and left it, all point plainly to such an assumption. If this be granted the final conclusion that the nest belonged to the Little Black Rail is inevitable. The small size of the entrance hole and run-way leaves, indeed, no room for doubt on this point. Moreover, the nest, in every essential respect, was apparently closely similar to the nest of the Little Black Rail which Mr. J. N. Clark found at Saybrook, Connecticut, as well as to the one examined by Mr. E. W. Nelson in Illinois.

Of the Saybrook nest Mr. Clark says:—"This nest was situated about forty rods back from the shore of the river, on the moist meadow, often overflowed by the spring tides. The particular spot had not been mowed for several years, and the new grass, springing up through the old, dry, accumulated growths of previous years, was thick, short, and not over eight or ten inches in height . . . The nest after the complement of eggs were deposited in it resembled that of the common Meadow Lark, it consisting of fine meadow grasses loosely put together, with a covering of the standing grasses woven over it and a passage and entrance at one side." (Clark, *Auk*, I, October, 1884, p. 394).

Mr. Nelson's nest "was placed in a deep cup-shaped depression in a perfectly open situation on the border of a marshy spot, and its only concealment was such as a few straggling *carices* afforded. It is composed of soft grass blades loosely interwoven in a circular manner. The nest, in shape and construction, looks much like that of a meadow lark." (Nelson, *Birds N. E. Ill.*, Bull. Essex Ins., VIII, p. 134).

It is undeniable, however, that the evidence relating to the Falmouth nest fails to establish any certain connection between its original owner and the 'Kicker.' That the two were really one and the same seems probable enough but the identity of the 'Kicker' cannot be regarded as definitely established until some-

one, more fortunate than Mr. Faxon and I have been, succeeds either in shooting or in getting a good view of the bird while it is in the act of uttering its characteristic notes. On the whole I am glad, rather than the reverse, to be compelled to leave the matter thus unsettled for I should not like to feel that even so thoroughly worked a region as that immediately about Cambridge is wholly without the charm which attends all mysteries.

NESTING HABITS OF THE ANATIDÆ IN NORTH DAKOTA.

BY A. C. BENT.

Plates IV-VI.

From photographs by the author.

I SPENT the last few days of May and the first half of June of the present year, accompanied by Rev. Herbert K. Job, of Kent, Conn., and part of the time, by Dr. Louis B. Bishop, of New Haven, Conn., in the lake region of central North Dakota, principally in the vicinity of Devils Lake, along the Sheyenne River to the southward, through Nelson County and in Steele County. The prairie region naturally comprises by far the greater part of, in fact, nearly all, of the territory covered by our observations. Throughout the eastern portion of North Dakota, particularly in the Red River Valley, where the land is flat and level, and in Steele County, we found the prairie under complete cultivation and sown with wheat or flax wherever the land was level enough or dry enough for the purpose. In these farming districts the meadow lands, too wet for cultivation, were generally mowed for hay. In many cases sloughs and small pond holes were drained for irrigation purposes or to make meadow land; so that bird life was confined to the larger sloughs, the tree claims, and the occasional strips of uncultivated prairie. Farther west, from Nelson County westward, there is much less cultivated land and the wild rolling land of the virgin prairie is only here and there broken by farms with a few hundred acres of wheat fields surrounding each farmhouse. Here we could drive for miles over the un-

broken surface of the prairie, uninterrupted by fences or hills, and not be confined to the section-line roads of the more thickly settled portions of the State. The prairie grass was short and offered very little resistance to the light buckboard, in which we travelled, drawn by a pair of unshod bronchos. In the hollows, where the ground was wet or marshy, the grass grew longer and thicker so that such places had to be avoided.

The bird life of the prairie is not so rich in species nor are the individuals so closely crowded together as in the timbered regions or the sloughs, but certain characteristic species were quite evenly distributed everywhere. The Western Meadowlark and the Chestnut-collared Longspur were probably the commonest species, the rich song of the former and the delightful, warbling flight song of the latter being constantly heard on all sides. The Lark Bunting was common locally and was certainly one of the most conspicuous species met with; the striking black and white plumage of the male and his rich and varied flight song made this one of the most interesting species. Franklin's Gulls were often seen flying over the prairie in scattered flocks to and from their feeding grounds. Bartramian Sandpipers were scattered about in pairs, nesting in the short prairie grass. Occasionally a pair of Prairie Hens were flushed, and once a flock of seven was seen, but this species was not nearly so common as we expected to find it. The Marsh Hawk and the Short-eared Owl were the characteristic Raptores of the open prairies, though other species were common near the timber belts. Burrowing Owls were seen only occasionally. Western Nighthawks were common everywhere. Bobolinks, McCown's Longspurs, Western Vesper Sparrows, Western Savanna Sparrows and Baird's Sparrows were scattered about over the prairies, the first two being fairly abundant locally.

The timbered regions are confined to the shores of the larger lakes, to a narrow strip along the Sheyenne River, and to the 'tree claims,' small patches of trees set out by the early settlers near the farms.

The principal timber trees are swamp oaks, elms, cottonwoods, and box elders. The oaks and elms form the heaviest timber and serve as nesting sites for Ferruginous Rough-legs, Swain-

son's and Krider's Hawks, the largest of them seldom growing to over 40 or 50 feet in height. In these narrow belts of timber bird-life fairly swarmed; Bronzed Grackles were by far the most abundant in certain sections and Mourning Doves were abundant everywhere. Arkansas Kingbirds, always noisy and quarrelsome, made themselves universally conspicuous, and the lively song of the Western House Wren was constantly heard in the timber. Common Kingbirds, Black-billed Cuckoos, Baltimore Orioles, Rose-breasted Grosbeaks, Purple Martins and Yellow Warblers were common and evenly distributed throughout the timber. Clay-colored Sparrows were very common about the edges of the timber, nesting in the 'badger brush' or 'buck brush' which is the commonest shrub in this region. Cowbirds were also very abundant on the prairie near the timber and laid their eggs in all the smaller birds' nests. Many other species were less commonly noted, but space will permit the mention of only the most characteristic species.

In the sloughs the bird-life was not as rich in species, but fully as rich in individuals. The larger sloughs are shallow lakes with open water in the deeper, central portions and in the shallower parts, where the water is from one to three feet deep, overgrown with tall rank reeds or sedges, often higher than a man's head, and with thick patches of cat-tail flags. The smaller sloughs are often entirely overgrown with reeds and flags, showing open water only in small scattered patches or in the deeper channels. The two characteristic species of the sloughs are the Yellow-headed Blackbirds and the American Coots. The Blackbirds fairly swarmed in all the sloughs and the constant din of their monotonous notes soon became very tiresome. The Coots were constantly playing about in the water among the reeds, amusing us with their curious antics. Pied-billed Grebes nested in the more open portions of the sloughs among the scattered reeds, and Black Terns were constantly hovering overhead. Bitterns and Night Herons were occasionally seen, Virginia and Sora Rails nested in the short grass around the shallower edges of the sloughs; Killdeers, Marbled Godwits, Western Willets and Wilson's Phalaropes were flying about the shores and were probably nesting not far off.

Red-winged Blackbirds nested abundantly on the outskirts and Long-billed Marsh Wrens were breeding in the thick flags.

The alkaline lakes form still another feature of this interesting region. The larger lakes are, most of them, more or less alkaline, and the drinking water in many of the towns is sufficiently alkaline to have a flat, unpleasant taste, making it unfit to drink for persons not accustomed to it. The strongly alkaline lakes are met with occasionally in the prairies, more commonly in the western part of the State. No vegetation of any kind grows in these lakes and the shores are lined with thick, heavy, sticky mud, very difficult to walk through and covered with a whitish alkaline deposit.

These mud flats form excellent feeding grounds for the migrating Limicolæ and in the wilder portions of the state the Avocets select such places for their breeding grounds. The Golden Plover migrate through this country in large numbers; the last of them were just about leaving when we arrived. Semipalmated, White-rumped, and Pectoral Sandpipers were often seen in small flocks about the lakes, as well as in the sloughs and on the prairies, also a few Yellow-legs and Turnstones; possibly these were barren or young birds not intending to breed this season.

These alkaline lakes are evidently not distasteful to the ducks, as we often saw large numbers of Mallards, Pintails, and Shovellers swimming about in them. In fact every body of water that we passed was frequented more or less by the commoner species of the Anatidæ.

With this brief summary of the general characteristics of the region, we will proceed to take up the nesting habits of the ducks in detail.

Lophodytes cucullatus (Linn.). HOODED MERGANSER.

This is one of the rarer ducks in the region we visited though it is fairly common along the timbered portion of the Sheyenne River. I shot one specimen in Steele County on June 12, which proved to be a young male in the plumage resembling the female. We saw a flock of six in Nelson County on June 15, and a single bird there on the 16th. These birds were probably not breeding birds, as they were in the larger lakes a long distance from any timber. Dr. Bishop and Mr. Job visited the Sheyenne River

timber on June 18, where they found the Mergansers common and breeding. The birds were probably all hatched by this time, as they found only broken egg shells in the hollow trees used for nesting purposes.

Anas boschas Linn. MALLARD.

Although the Mallard is a common duck in North Dakota, it is not nearly as common as I expected to find it and is certainly outnumbered by at least three species, the Blue-winged Teal, the Pintail, and the Shoveller. It is quite generally and evenly distributed, however, all over the prairie region and scattered pairs were seen almost everywhere in suitable localities. It is an early breeder, many of the broods being hatched out before June 1, though we found fresh eggs on May 31, and one set of 13 eggs, apparently heavily incubated, on June 15. The female is very courageous in the defense of her young. We had a striking illustration of this fact on May 30, when we surprised one of these birds with her brood of young in a little pondhole in the timber; although the young were well hidden in the surrounding grass and bushes, the old bird was flapping about within a few feet of us, splashing and quacking loudly, frequently rising and circling about us, then dropping into the pond again, showing every symptom of anxiety and interest in our movements and being totally regardless of her own safety. But the young were too well concealed for us, so we left the anxious mother in peace.

The locality chosen by the Mallard for its nest is generally on or near the edge of a slough or lake, either among dry dead flags where the ground is dry or only slightly marshy, or upon the higher land not far from the water and among thick dry reeds. Two of the nests we found were on an island in a lake, placed on the ground in the middle of a patch of tall dry reedlike grass locally called 'queen of the prairie,' which grows higher than a man's head. One of these nests, containing 10 fresh eggs on May 31, is shown in the photograph (Plate IV, Fig. 1).

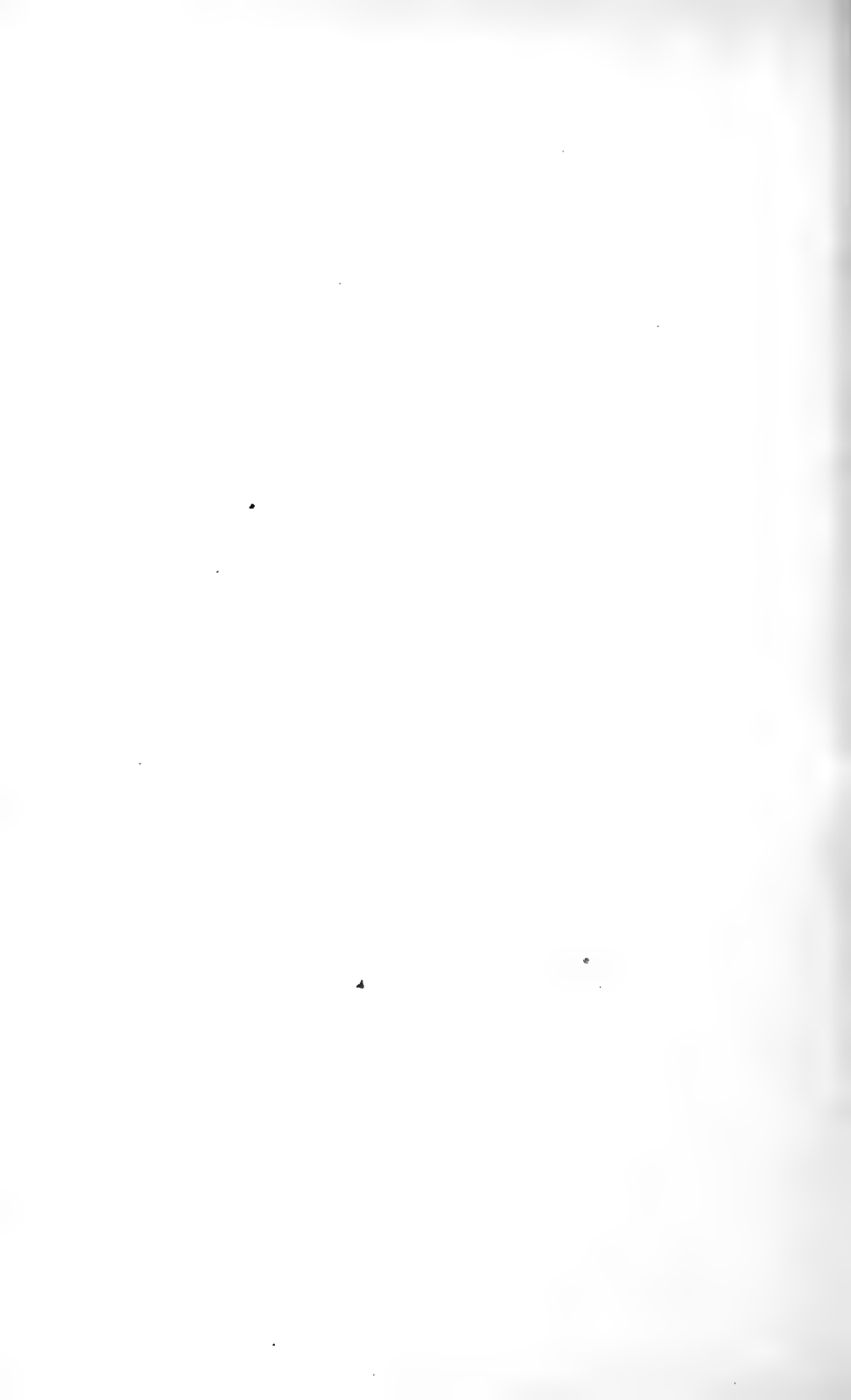
Our guide, a collector of considerable experience, informed us that they also nested on the open prairies but we did not find any nests in such locations.



FIG. 1. NEST AND EGGS OF MALLARD.



FIG. 2. NEST AND EGGS OF GADWALL.



The nest is well hidden and consists of a hollow in the ground well lined with broken dry reeds or flags, apparently picked up in the immediate vicinity, well mixed with dark gray down and a few feathers from the bird's breast; the down is thickest around the edges of the nest and increases in quantity as incubation advances. The nests we found contained from 10 to 13 eggs. The eggs are elliptical ovate in shape and vary in color from a light greenish buff to a light grayish buff, with very little lustre.

The measurements of 22 eggs in my collection exhibit the following figures: Length, 2.36 to 2.07; breadth, 1.66 to 1.52; average, 2.27 by 1.61 inches.

The eggs of the Mallard can be easily mistaken for those of the Pintail, but they will average slightly larger, a little lighter in color and are not quite so much elongated. The female Mallard when flushed can be readily distinguished from the Pintail by its larger size, shorter neck and by its blue speculum with conspicuous white borders.

***Chaulelasmus streperus* Linn. GADWALL.**

The Gadwall is not one of the commonest ducks though we found it fairly abundant in the vicinity of the larger lakes, where it breeds on the islands together with the Baldpates and Lesser Scaup Ducks, the latter two species, however, far outnumbering it even here. The nest is always placed on dry ground but not very far from the water. A hollow is scooped in the ground and well lined with strips or pieces of reeds, bits of dry grass and weed stems, or whatever material can be most easily gathered in the vicinity, mixed with down from the birds' breast and profusely lined with dark gray down around the eggs. Seven nests of this species, found on two small islands on June 15, 1901, were located as follows: Nest No. 1 was in the prairie grass on the higher part of the island, which was at that time about one foot high and growing thickly all over the island except for a few small clumps of wild rose bushes in full bloom and two patches of the tall 'queen of the prairie' reeds referred to under the preceeding species. This nest contained seven eggs, apparently fresh. Nest No. 2 was well concealed in a narrow strip of 'queen of the

prairie' reeds growing tall and thick along the bank where it sloped down to the beach. It was partially arched over by the prostrate stems of the dead reeds of last years growth, as shown in the photograph (Plate IV, Fig. 2).

Very little down was used in the construction of this nest, which contained 11 nearly fresh eggs. The parent bird was shot for identification. Nest No. 3 was not far away in a more open place in the same patch of reeds. It was well made of strips and broken pieces of the reeds mixed with down and profusely lined with down around the edges. The nest contained 10 eggs in which incubation was considerably advanced. The location and structure of the nest is illustrated in the photograph (Plate V, Fig. 1).

The other four nests were found on a neighboring island, somewhat smaller, about two acres in extent, high and rocky at one end with thick clumps of wild rose bushes growing among numerous boulders, and flat at the other end partially covered with prairie grass and partially bare, except for scattered clumps of rank weeds. About 100 pairs of Ring-billed Gulls were breeding on this island and large numbers of Common Terns. Two of the Gadwalls' nests were in the prairie grass and two were in small clumps of the rank weeds. One of these latter two is now in my collection; it was well made of dry grass and weed stems and thickly lined with dark gray down, particularly around the edges; it contained 11 nearly fresh eggs of the Gadwall and one egg of the Lesser Scaup Duck, which was breeding abundantly on both of these islands.

Baldpates were also breeding abundantly here and we experienced considerable difficulty, at first, in identifying the nests of the Gadwall. These ducks are all close sitters, and after shooting a few birds we soon learned to identify them as we flushed them from the nests. The females of the two species resemble each other very closely, but the Gadwall is considerably darker on the back and rump, whereas the Baldpate is lighter and shows conspicuous light patches in the wings as she flies away. There is also a great similarity between the eggs of the two species, but there is a slight and fairly constant difference; the Gadwall's eggs are nearly oval in shape, shorter and more rounded than those of the



FIG. 1. NEST AND EGGS OF GADWALL.



FIG. 2. NEST AND EGGS OF BALDPATE.

Baldpates, and of a dull creamy white color, whiter and less creamy than the Baldpates'. The down in the nest of the Gadwall is also somewhat darker than in that of the Baldpate. But these differences are slight and variations bring the species very close together, so that it is necessary to shoot the bird or have a clear view of her to make identification sure.

The following figures are taken from the measurements of 21 eggs in my collection: Length, 2.18 to 2.00; breadth, 1.59 to 1.52; average, 2.08 by 1.55 inches.

***Mareca americana* (Gmel.). BALDPATE.**

In the vicinity of the larger lakes this is a very common species, where it breeds abundantly on the islands with the foregoing species. We found no less than 15 nests of this species on these islands on June 15, and probably there were more nests which we did not find, as it was raining very hard when we explored the island where they were breeding most abundantly, so we made only a hurried search of about half an hour, finding 12 nests in this short time. The Baldpate is a late breeder, very few of the eggs being laid before June 1, and the majority of the sets are not completed until the second week in June or later. The nests are all built on dry ground in a slight hollow generally well lined with bits of dry grass and weed stems, with a plentiful supply of light gray down surrounding the eggs which increases in quantity as incubation advances. The bird frequently covers the eggs with the down when she leaves the nest, completely concealing them and making the nest almost invisible even in an open situation. The eggs, which are from 8 to 12 in number, are creamy white in color, varying from deep cream to nearly white, and are in shape nearly elliptical ovate. The shell is clear, smooth, rather thin and somewhat glossy, resembling in color and texture certain types of hen's eggs. The eggs closely resemble those of the Gadwall, but are generally more elongated and of a purer, deeper cream color. The female Baldpate can also be distinguished from the female Gadwall by its lighter color and whitish wing patches.

The description of a few types of nests of the Baldpate may be of interest; these were all found on the island referred to above.

Nest No. 1, May 31, 1901, was in the centre of a thick clump of golden-rod growing on the beach; it was lined with dried leaves and rubbish, with very little down around the eight fresh eggs. This nest is shown in the photograph (Plate V, Fig. 2).

Nest No. 2, May 31, 1901, was in the centre of a clump of thistles near the upper edge of a stony beach; it contained eight fresh eggs which were laid on the bare stones, one of them plainly visible in the centre of the nest, and surrounded by a little down. Although we flushed the bird from the nest the set was incomplete, for we found 10 eggs in this nest on June 15. The photograph (Plate VI, Fig. 1) illustrates this nest.

Nest No. 3, May 31, 1901, 11 eggs, was on the higher part of another island in rather tall prairie grass; it was profusely lined with down, mixed with bits of dry grass and weeds. The set must have been complete even at this early date for some of the eggs were heavily incubated. The accompanying photograph (Plate VI, Fig. 2) gives a fair idea of this nest.

On this same island we found another nest containing 10 eggs, well concealed among the 'queen of the prairie' reeds. The same day on the third island we found four more nests; one set of six eggs and one of eight eggs, were well concealed under the wild rose bushes, one set of 10 eggs in the prairie grass, and a set of 11 eggs under a little dead brush in the open, completely covered with the down which served to conceal them admirably, though in plain sight. The twelve nests found on this island on June 15, were mostly under the rose bushes among the rocks and contained from 9 to 11 eggs. One of these nests also contained a White-winged Scoter's egg and one an egg of the Lesser Scaup Duck, both of which species were nesting on the island.

The following figures are taken from the measurements of 24 eggs in my collection: Length, 2.37 to 2.03; breadth, 1.60 to 1.47; average, 2.17 by 1.53 inches.

(*To be continued.*)



FIG. 1. NEST AND EGGS OF BALDPATE.



FIG. 2. NEST AND EGGS OF BALDPATE.

A PRELIMINARY LIST OF THE SUMMER BIRDS
OF MOUNT MANSFIELD, VERMONT.

BY ARTHUR H. HOWELL.

IN selecting a desirable point in northern New England to study the bird life, I chose Mt. Mansfield for the double reason that it is the highest mountain in the State of Vermont, and that its fauna is comparatively little known. Indeed, our knowledge of the avifauna of the entire northern portion of the State is very limited, for although two State lists of birds have been published, neither of them meets the requirements of a modern scientific list compiled from authentic records. The first, by Zadoch Thompson, published in 1842, is long since out of date¹; the second, by Dr. Hiram A. Cutting, is a nominal list of 191 species; many of which are evidently admitted on insufficient evidence. The annotations consist, in the main, of very general statements, and contain numerous glaring inaccuracies.²

Numerous scattered notes from the State have appeared in the ornithological magazines, but the only faunal list is that by Dr. F. H. Knowlton, treating of the birds of Brandon.³ Brandon lies in the west-central portion of the State, in the Champlain Valley, and the list is therefore valuable as indicating the fauna of the Alleghanian portions of the State. It furnishes very little information, however, concerning the birds that breed in the Canadian zone, and since it was published in a local newspaper, is quite inaccessible to all but a very few persons.

The list herewith presented is intended to be merely a preliminary one, and is offered chiefly as a contribution to our knowledge of the breeding ranges of Canadian species. I made two trips to Mt. Mansfield, the first in 1899, from June 14 to 24, the second in 1900, from June 23 to July 2. Observations covering

¹ See History of Vermont, Natural, Civil and Statistical, pp. 56-112. Burlington, 1842.

² See Catalogue of the Birds of Vermont, Eighth Vermont Agric. Report, pp. 211-229. Montpelier, 1884.

³ See 'The Brandon Union,' Dec. 13, 1878; revised list, Feb. 10, 1882.

such a limited period are necessarily incomplete, and I am fortunate in being able to supplement my notes by those of Mrs. Carrie E. Straw, who resides in Stowe, five miles from the mountain. I am indebted, also, to Mr. Bradford Torrey and to Mr. Clayton E. Stone, for notes on Mansfield birds.

Mr. Torrey has written a charming account of his visit to the mountain, in which he mentions more or less casually eleven species, giving considerable space to Bicknell's Thrush (under the name of the Gray-cheeked) and several other characteristic species. His article,¹ and a note of his on Bicknell's Thrush in 'The Auk,'² seem to be the only published records from this region.

The mountain rises abruptly from the Champlain Valley, some twenty miles to the eastward of Lake Champlain, and about thirty-five miles south of the Canadian boundary. It extends nearly north and south, and is made up of two principal peaks, united by a comparatively level ridge about two miles in length — "the ridge-pole of Vermont," Mr. Torrey styles it. The northern peak is the higher, its altitude, as determined by the U. S. Coast and Geodetic Survey, being 4364 feet. Viewed from the east, the profile of the mountain presents somewhat the appearance of a man's face turned to the sky. This fancy has given rise to the local names for the peaks, the southern one being 'The Nose,' the northern one, 'The Chin.'

On the northeast, separating Mansfield from Sterling Mountain, is Smugglers' Notch, a famous collecting ground for the botanists since Pringle made known the resources of its rugged cliffs. Though of less interest than the mountain proper, the Notch proved a fruitful locality for birds, as well as for mammals and plants. Several species of birds, notably the Mourning Warbler and the Solitary Vireo, were found almost exclusively in this region. The summit yielded a number of species not found at lower altitudes, among which Bicknell's Thrush was the commonest and most interesting.

On the southeast lies Stowe Valley, whence a wagon road

¹ See 'The Foot-Path Way,' pp. 90-110.

² Vol. VII, p. 194.

ascends the mountain, reaching the summit at the base of the cliff which forms 'The Nose.' I was located during both of my trips at the house of Mr. George Harlow, which stands on a small plateau or step of the mountain, several hundred feet above the valley proper, and only a short distance from the point where the road enters the forest.

The altitudes given in the present paper are only approximately correct, since I have the exact figures for only two points: Stowe Valley (548 ft.), and the summit of 'The Chin,' (4364 ft.). The woods at the east base of the mountain along the Smugglers' Notch road, are assumed to be at about 1000 feet altitude; the ridge at the point where the wagon road terminates (frequently referred to as 'the summit') is probably about 4000 feet.

The Mansfield region, in its faunal relationships, is almost pure Canadian, the few Alleghanian species found in the valley being extremely rare.

The following mammals, nearly all of them characteristic of the Canadian zone, were the most common species:

Sciurus hudsonicus gymnicus — Red Squirrel.

Tamias striatus lysteri — Northern Chipmunk.

Peromyscus canadensis — Canadian White-footed Mouse.

Eutamias gapperi — Red-backed Vole.

Zapus insignis — Woodland Jumping Mouse.

Zapus hudsonius — Meadow Jumping Mouse.

Erethizon dorsatus — Canada Porcupine.

Lepus americanus — Varying Hare.

Blarina brevicauda — Short-tailed Shrew.

Sorex fumeus — Smoky Shrew.

Sorex personatus — Masked Shrew.

The flora has been so thoroughly treated in several botanical papers¹ that I need do no more here than refer to the characteristic trees. The forest at the base of the mountain consists of a heavy mixed growth of deciduous trees, with a good sprinkling of evergreens. The commonest species are the sugar maple (*Acer saccharum*), beech (*Fagus americana*), yellow birch (*Betula lutea*),

¹See especially 'The Flora of Mt. Mansfield,' Bot. Gazette, XX, pp. 72-75 (1895).

paper birch (*Betula papyrifera*), red spruce (*Picea rubra*), hemlock (*Tsuga canadensis*) and balsam fir (*Abies balsamea*).

The undergrowth, in places quite dense, is made up of the young trees of the above named species, with the addition of the mountain maple (*Acer spicatum*), striped maple (*Acer pennsylvanicum*), 'witch-hopple' (*Viburnum alnifolium*), etc. This mixed growth covers the lower slopes of the mountain, the maples, beeches and hemlocks becoming less numerous at the higher altitudes, until at about 3000 feet, they entirely disappear, and the forest is composed of spruces and firs with a few birches intermixed. A dense growth of stunted spruces and firs covers the more sheltered portions of the summit, and reaches well down toward the Notch. Alders (*Alnus alnobetula*) grow abundantly, both at the summit and on the less precipitous cliffs in the Notch.

In the list which follows, the species preceded by an asterisk are given on the authority of Mrs. Straw. Among the birds which I confidently expected to find, but did not, are the Olive-sided Flycatcher and the Winter Wren, both of them common species in the Franconia Mountains in New Hampshire.

1. * *Ardea herodias*. GREAT BLUE HERON. — Rare and local.
2. *Actitis macularia*. SPOTTED SANDPIPER. — A few seen along the streams in the valley.
3. *Bonasa umbellus togata*. CANADIAN RUFFED GROUSE. — Quite numerous, both in the valley and on the mountain throughout the Canadian zone. Those observed were chiefly females with young, for whose safety they showed great solicitude. Although no specimens were secured, it is safe to refer the birds to the Canadian form.
4. *Falco sparverius*. SPARROW HAWK. — One observed in the maple woods near the base of the mountain.
5. * *Megascops asio*. SCREECH OWL. — Common resident.
6. * *Bubo virginianus*. GREAT HORNED OWL. — Resident.
7. * *Coccyzus erythrophthalmus*. BLACK-BILLED CUCKOO. — Common.
8. * *Ceryle alcyon*. KINGFISHER. — Common.
9. *Dryobates villosus*. HAIRY WOODPECKER. — A single specimen was noted on the mountain, near the upper edge of the tall timber.
10. * *Dryobates pubescens medianus*. DOWNY WOODPECKER. — Not uncommon.
11. *Sphyrapicus varius*. YELLOW-BELLIED SAPSUCKER. — Two were seen in the valley (one in Stowe village), and a few in the maples on the lower slopes of the mountain.
12. *Ceophlæus pileatus abieticola*. NORTHERN PILEATED WOOD-

PECKER. — Mr. Clayton E. Stone of Lunenburg, Mass., writes me that he "saw two of these birds in the fall of '98, and heard several others, one in Johnson, and two in Craftsbury." They doubtless occur in the environs of Mansfield.

13. * *Melanerpes erythrocephalus*. RED-HEADED WOODPECKER. — Mrs. Straw says of this bird: "rare; saw two in June, 1896."

14. * *Colaptes auratus luteus*. NORTHERN FLICKER. — Common.

15. * *Antrostomus vociferus*. WHIP-POOR-WILL. — Rare and local.

16. * *Chordeiles virginianus*. NIGHTHAWK. — Not common.

17. *Chætura pelagica*. CHIMNEY SWIFT. — Common; occurs on the mountain nearly to the summit.

18. *Trochilus colubris*. RUBY-THROATED HUMMINGBIRD. — Numerous in the maple woods at the base of the mountain. I noticed several females stealing the cotton which I had placed on the bushes to mark my mammal traps.

19. *Tyrannus tyrannus*. KINGBIRD. — Not uncommon in the valley.

20. *Myiarchus crinitus*. CRESTED FLYCATCHER. — I thought I heard the notes of this bird on two or three occasions, but was not near enough to make the record certain. Mrs. Straw has observed them a few times.

21. * *Sayornis phœbe*. PHŒBE. — Common.

22. *Contopus virens*. WOOD PEWEE. — A few were heard in the valley at the base of the mountain, and others at about 2000 feet.

23. *Empidonax flaviventris*. YELLOW-BELLIED FLYCATCHER. — This species inhabits the deep woods well up the mountain side (approximately from 2500 to 3500 feet altitude). On these steep slopes, shaded by a dense growth of spruces, and strewn with immense moss-covered logs and huge boulders, the birds find a congenial home. Of inconspicuous appearance and without any very characteristic notes, they do not readily attract attention. I observed them but three or four times, and secured only one, shot from a tall dead tree standing by the side of the mountain road.

24. *Empidonax traillii alnorum*. ALDER FLYCATCHER. — Apparently rare, as I saw but two or three, these in a wet scrubby pasture at the foot of the mountain; one specimen was secured. Their notes are not loud, but are recognizably different from those of the other Flycatchers.

25. *Empidonax minimus*. LEAST FLYCATCHER. — Common; their sharp notes were frequently heard at various points in Stowe Valley.

26. * *Otocoris alpestris praticola*. PRAIRIE HORNED LARK. — Mrs. Straw reports that these birds have appeared in some numbers in Stowe Valley within quite recent years, having been first noticed in 1898. The present season (1901) several pairs have nested and as many as 25 young have been seen. They disappeared early in July.¹

27. *Cyanocitta cristata*. BLUE JAY. — Observed sparingly from the base of the mountain to about 3000 feet altitude.

¹ Concerning the eastward extension of their breeding range, compare Faxon and Hoffman, 'The Birds of Berkshire Co., Mass.,' p. 32.

28. *Perisoreus canadensis*. CANADA JAY. — Mr. Bradford Torrey records one seen on the mountain.¹ I did not observe the species.

29. *Corvus americanus*. AMERICAN CROW. Common.

30. *Dolichonyx oryzivorus*. BOBOLINK. — Numerous in the meadows of the valley.

31. *Molothrus ater*. COWBIRD. — Not common. Observed only once — at Moscow, seven miles from the mountain.

32. *Agelaius phœniceus*. RED-WINGED BLACKBIRD. — Said to be quite common. I observed them in small numbers at Moscow.

33. *Icterus galbula*. BALTIMORE ORIOLE. — Rare and local; seen chiefly in the village streets.

34. *Carpodacus purpureus*. PURPLE FINCH. — Not very common, though I saw them several times at the foot of the mountain, and also part way up.

35. *Loxia (curvirostra minor?)* CROSSBILL. — I observed (in 1899) several flocks of a dozen or more Crossbills, probably of this species, flying about over the summit. They were very restless, and never alighted near enough for positive identification.

36. *Astragalinus tristis*. AMERICAN GOLDFINCH. — Common in Stowe Valley.

37. *Spinus pinus*. PINE SISKIN. — Three or four observed in the small spruces near the summit of the mountain. They were quite unsuspicious, allowing me to approach within a few feet of them.

38. *Poœetes gramineus*. VESPER SPARROW. — Abundant; the commonest singer in the valley.

39. *Ammodramus sandwichensis savanna*. SAVANNA SPARROW. — In 1899, several pairs were breeding in the pastures at the base of the mountain; in 1900, I noted the species but once or twice.

40. * *Ammodramus savannarum passerinus*. GRASSHOPPER SPARROW. — Mrs. Straw says of this species: "First seen June 5, 1899 — remained all summer."

41. *Zonotrichia albicollis*. WHITE-THROATED SPARROW. — The White-throat is one of the commonest and most characteristic birds of the region. Although heard occasionally at the base of the mountain, it is on the bleak and wind-swept stretches near the summit that his clear notes ring out most frequently, and with greatest effect.

42. *Spizella socialis*. CHIPPING SPARROW. — Common in the valley.

43. * *Spizella pusilla*. FIELD SPARROW. — Mrs. Straw reports it as a regular breeder, she having found the nest both in 1898 and 1899.

44. *Junco hyemalis*. SLATE-COLORED JUNCO. — Like the White-throat, the Junco is common at various points from the base of the mountain to the summit, but is rather more abundant than the former at the lower levels. I frequently saw them flying about on the highest part of 'The Chin.'

¹ The Foot-Path Way, p. 100.

45. *Melospiza melodia*. SONG SPARROW. — Common in the valley.
 46. *Zamelodia ludoviciana*. ROSE-BREADED GROSBEAK. — Noted several times in the maple woods at the base of the mountain, and once (a breeding pair) at an altitude of about 2000 feet.
 47. *Cyanospiza cyanea*. INDIGO BIRD. — Observed a few times in Stowe Valley; said to be not uncommon.
 48. *Piranga erythromelas*. SCARLET Tanager. — I heard the notes of the Tanager a number of times in the woods at the base of the mountain.
 49. *Chelidon erythrogaster*. BARN SWALLOW. — Common in the valley.
 50. * *Clivicola riparia*. BANK SWALLOW. — Common.
 51. *Ampelis cedrorum*. CEDAR BIRD. — Said to be common. I observed them but once — four individuals on a dead tree near the summit of the mountain.
 52. * *Lanius ludovicianus migrans*. MIGRANT SHRIKE. — Rare and local. Mrs. Straw saw young birds June 23, 1896; the species nested the two following seasons.
 53. *Vireo olivaceus*. RED-EYED VIREO. — Common in the valley and on the lower slopes of the mountain to at least 2500 feet altitude.
 54. *Vireo gilvus*. WARBLING VIREO. — A few heard in Stowe Valley.
 55. *Vireo solitarius*. SOLITARY VIREO. — None were observed in 1899, but very possibly they were overlooked. In 1900, I heard them a number of times, and after some difficulty, secured one specimen — a breeding female.
- Although the males move about considerably while feeding and singing, they were apparently confined to three localities, a half mile or more apart, and I concluded that there were probably but three pairs breeding in the section of country that I explored. Their habitat is the heavy mixed growth, at the east base of the mountain; the specimen taken was on a dry ridge clothed with spruces, firs, and hemlocks. They are rather shy, and have a habit of moving restlessly from point to point, always keeping well out of sight, but singing at frequent intervals.
56. * *Mniotilta varia*. BLACK-AND-WHITE WARBLER. — Common.
 57. *Helminthophila rubricapilla*. NASHVILLE WARBLER. — Several times I heard a song from the spruces near the top of the mountain (3500 feet) which I feel sure came from this species, though I was unable to get even a glimpse of the singer. Mr. Torrey writes me that he heard several during his visit.
 58. *Compsothlypis americana usneæ*. PARULA WARBLER. — Quite common, inhabiting the lower slopes of the mountain to about 2500 feet altitude.
 59. *Dendroica æstiva*. YELLOW WARBLER. — Not uncommon in the valley.
 60. *Dendroica cærulescens*. BLACK-THROATED BLUE WARBLER. — Very common on the lower slopes of the mountain from the base to

about 2000 feet. They inhabit the more open deciduous woods, the males singing most frequently about the openings where a few trees have been cut out, and sprouts and fallen logs cover the ground. I started a female from a little bush on the edge of a clearing, where she had commenced to build her nest, a foot above the ground.

61. *Dendroica coronata*. MYRTLE WARBLER. — Quite common in the stunted spruces at the summit, but not observed elsewhere.

62. *Dendroica maculosa*. MAGNOLIA WARBLER. — Heard sparingly at the base of the mountain. They inhabit, among other places, the small firs and spruces on the edges of the pastures.

63. *Dendroica pennsylvanica*. CHESTNUT-SIDED WARBLER. — Common in the open spots about the edges of the woods at the base of the mountain, and for a short distance up the slopes.

64. *Dendroica striata*. BLACK-POLL WARBLER. — Numerous in the region of stunted trees on the upper slopes, though none were seen on the extreme summit. They sang usually on the tops of the spruces, and from these breezy heights, the song sounded even weaker than when we hear it from passing migrants in the low country.

65. *Dendroica blackburniæ*. BLACKBURNIAN WARBLER. — Fairly common, ranging apparently with the hemlocks (for which they show a decided preference) from the base to about 2500 feet.

66. *Dendroica virens*. BLACK-THROATED GREEN WARBLER. — Less common than the preceding species; it occupies much the same area, but ranges a little higher.

67. *Seiurus aurocapillus*. OVENBIRD. — Perhaps the commonest and most conspicuous bird in the open maple woods on the lower slopes; does not range much above 2000 feet. Several nests were found on the very edge of the mountain road.

68. *Geothlypis philadelphia*. MOURNING WARBLER. — Quite common in the brushy clearings and thickets around the base of the mountain. I shot one in the thick woods a short distance up the slope, but nearly all that I noted were along the road leading through Smugglers' Notch.

They are extremely shy, and only two or three times was I able to obtain even a glimpse of them, although by approaching stealthily, I could get fairly close. The song is characteristic, though it bears a strong resemblance to that of the Kentucky Warbler.

69. *Geothlypis trichas*. MARYLAND YELLOW-THROAT. — Observed a few times in Stowe Valley; said to be not uncommon.

70. *Wilsonia canadensis*. CANADIAN WARBLER. — Common in the thickets in the deciduous woods, ranging nearly throughout the Canadian zone. Although they keep well concealed in the shrubbery and do not move about much, their odd song, uttered at frequent intervals, serves to indicate their presence.

71. *Setophaga ruticilla*. REDSTART. — Seen but twice — at the base of the mountain.

72. *Galeoscoptes carolinensis*. CATBIRD. — Occurs rather commonly along the streams in the valley.

73. **Troglodytes aëdon*. HOUSE WREN. — Rare ; Mrs. Straw reports that she has not seen them for a number of years.

74. *Anorthura hyemalis*. WINTER WREN. — Mr. Torrey writes me that he noted them several times during his visit in 1885, on the upper part of the mountain. I was disappointed not to find them, but I am certain they were not there in 1899 or 1900, for although the birds might be overlooked, the song is not likely to escape notice.

75. *Certhia familiaris americana*. BROWN CREEPER. — Only one observed, near the upper edge of the timber.

76. **Sitta carolinensis*. WHITE-BREASTED NUTHATCH. — Common.

77. *Sitta canadensis*. RED-BREASTED NUTHATCH. — Observed but once — a little group of four in the spruces near the summit.

78. *Parus atricapillus*. CHICKADEE. — Fairly common on the lower slopes.

79. *Regulus satrapa*. GOLDEN-CROWNED KINGLET. — Their song was heard on several occasions in the heavy timber at the base and once at about 2500 feet altitude. It is a prolonged bubbling warble, rather lacking in musical quality.

80. *Hylocichla mustelina*. WOOD THRUSH. — In 1899, I heard the song and alarm note of this species several times, in the damp maple woods at the base. Once I saw the bird near enough to recognize it, but did not secure it. I think there were at least two pairs nesting there that year, but in 1900 I could find no trace of them, nor have they been observed in Stowe Valley by Mrs. Straw, so they are probably irregular in their occurrence there.¹

81. *Hylocichla fuscescens*. WILSON'S THRUSH. — Common in the valley ; I heard them most often in the alders along the streams, but they also occupy the maple woods at the base of the mountain, in company with the Olive-backs and the Wood Thrushes.

82. *Hylocichla aliciae bicknelli*. BICKNELL'S THRUSH. — This is the commonest and most characteristic species at the summit of the mountain. It is really abundant in the extensive tracts of stunted firs and spruces surrounding the northern peak ('The Nose') and its range extends down into the upper edge of the tall timber — to about 3000 feet altitude — where it overlaps the range of the Olive-back.

During the seven trips that I made to the summit, I was constantly on the alert for a sight of the birds, and although I frequently heard them all about me, so shy were they that I saw them probably less than a

¹ That their occurrence in northern Vermont is not unusual is evidenced by a record from Willoughby Lake, by F. H. Allen (St. Johnsbury, 'Caledonian,' Sept. 11, 1896; quoted by Faxon and Hoffman in 'Birds of Berkshire Co., Mass.,' p. 10).

dozen times. The glimpses I had of them were either at long range, or cut short by the sudden departure of the bird into the dense cover of the evergreens, so that close study of their habits was impossible.

This was in marked contrast to the experience of Mr. Bradford Torrey, who visited the mountain in 1885. He says they were "never out of hearing and seldom long out of sight, even from the door step."¹ His visit, however, was at the time the young were leaving the nest, while I was there during the period of incubation, which may account for the difference in their familiarity. His surmise, based on the testimony of a friend, that the birds had left the mountain the following year would seem to be disproved by my experience. It is very improbable that a species so well established would entirely desert a favorable locality for no apparent cause; it seems more likely that his friend for some reason had overlooked them.

They sing at any time of day, though most frequently toward evening. The song is quite unlike any of the other thrush songs, resembling the Veery's somewhat in form, though not in quality of tone, which is like that of a fine, high-pitched reed. It is not so loud, or so clear as either the Olive-back's or the Veery's, and unlike the former, does not change its pitch perceptibly. The syllables *weé-á-weé-á-weé-chi-chi-weé*, whistled through the closed teeth, will give a faint conception of its character. The opening notes, *wee-a*, repeated two or three times, are smooth and flowing, and are followed by two staccato notes; the closing note resembles the opening ones, and is without special emphasis. The last three notes taken together form the characteristic portion of the song, and are frequently given by themselves without the prelude.

I am aware that the above description of the song differs in some respects from that given by Mr. Brewster, but it is not at all remarkable that the birds of another colony should sing a somewhat different song. The call note, which is frequently uttered, sometimes from a lofty perch, though usually in the thicket, is a rather harsh *cheep*. I did not hear the Veery note, *phen*, spoken of by Mr. Brewster.

83. *Hylocichla ustulata swainsonii*. OLIVE-BACKED THRUSH. — This is the commonest Thrush on the lower slopes of the mountain, ranging from the base to the upper limits of the heavy timber, above which it is replaced by *bicknelli*. Although quite shy, and therefore rarely seen, its beautiful rich song — in my opinion second only to that of the Hermit — was heard at frequent intervals during my trips up the mountain, sometimes as many as three of the singers being within hearing at once.

84. *Hylocichla aonalaschkæ pallasii*. HERMIT THRUSH. — During my first visit to the mountain in 1899, I listened in vain for the Hermits, and in 1900, I heard but one. They are certainly not numerous at the base of the mountain where I stayed, and I am quite sure there were none

¹ The Foot-Path Way, p. 95, 1896.

on the mountain or along the Notch road. Mr. Torrey writes me, however, that at the time of his visit in 1885, he heard the Hermit near the summit, "singing freely."

Mrs. Straw reports them as rather common at certain points lower down the valley.

85. *Merula migratoria*. AMERICAN ROBIN.—Abundant, especially in the valley. I was surprised to observe a good many in the heavy timber along the Notch road, far from clearings. I saw one also at the summit.

86. *Sialia sialis*. BLUEBIRD.—Rather uncommon; observed at the base of the mountain and at Moscow.

THE ALDER FLYCATCHER (*EMPIDONAX TRAILLII ALNORUM*) AS A SUMMER RESIDENT OF EASTERN MASSACHUSETTS.

BY J. A. FARLEY.

CERTAIN facts in the life-history of the Alder Flycatcher contribute to create the general impression that the bird is an exceedingly rare summer resident of eastern Massachusetts. Its chosen haunts are not too often in the eye of the world; it is not a vociferous species; and its manner of securing an existence keeps it for the most part out of view of the casual observer. Furthermore, the species being well known to arrive toward the end of the spring migration, an Alder Flycatcher, appearing late in May in the capacity of a returned summer resident, has doubtless been often mistaken for a migrant still northward bound. *E. t. alnorum* therefore, while always breeding sparingly, is not so rare a summer bird in the eastern part of Massachusetts as it is commonly supposed to be.

The Alder Flycatcher occurs in summer at various localities in Essex and Middlesex counties. I have noted it in the breeding season at Crane Neck Pond in Groveland, in northern Essex County, and so near Boston as Fresh Pond, Cambridge; also in the towns of Wilmington, Lynnfield, and Wakefield. In one locality in Essex County the bird is plainly increasing in numbers.

The Alder Flycatcher arrives in eastern Massachusetts about May 20. By the thirtieth of the month it has always reappeared on its breeding grounds. These are bushy meadows grown (or growing) up more or less thickly with alders. The lower growth in such places consists of wild roses (*Rosa*), sweet gale (*Myrica gale* L.), and other swamp shrubbery, together with the usual mixed meadow herbage. Mingled with the alders will be young swamp maples and birches and oftentimes scattering white cedars. The whole forms a thick, at times almost choked, expanse of meadow growth. The wild roses in which the Flycatcher is so fond of nesting seem to be almost as much an essential in its summer home as the alders themselves. The bird builds its nest year after year in the same favorite spot which may be of quite limited area. In a small meadow in the town of Lynnfield, where five years elapsed between the taking of two nests (June 16, 1895, and June 27, 1900), I recall that the second nest was placed in almost identically the same spot as the first. Two other nests (of other seasons) I also found in the same area, which was less than an acre in extent.

The erroneous idea¹ that the Alder Flycatcher is a very shy bird appears to obtain. This is due to the fact that its feeding-habits rather than any inherent shyness cause it to hug closely its favorite alders and other coverts. Besides keeping quite habitually within copse or thicket, with the general scope of its activity circumscribed by at least their outer fringes, it does not as a rule perch or fly high. The thick foliage of June and July aid materially in its concealment, so that it is not always easy to get even a momentary glimpse of the bird which may be calling and flying about within a few yards. The exceptions to the general rule that the Alder Flycatcher is *par excellence* a bird of copse and undergrowth are the little creature's infrequent short flights out into the open, and its brief visits to some favorite vantage-point above the line of foliage, for the deliverance of its harsh cry. But the emphatic preachment of the small protagonist of the alders is quite as apt to be heard while the performer is perched unseen

¹ This in spite of the fact that long ago the species was reported by Mr. Brewster to be "retiring but not shy." (Hist. N. A. Birds, 1874, p. 371.)

within his thicket and but a few feet from the ground. It should be further noted that the Alder Flycatcher is most in evidence during the days following its arrival from the South, and before the breeding season is well advanced. In May and June one may be now and then seen flying about freely from tree-top to tree-top in its home meadow. The Alder Flycatcher in eastern Massachusetts is no shyer than most other small birds. It is scarcely shyer than the Least Flycatcher, although a more restless bird than its orchard-loving cousin. The Alder Flycatcher does not hesitate to fly about from one bosky clump to another in its meadow. But when arrived at the concealing growth, it may remain a long time therein before venturing forth again.

The familiar cry, or song, of the Alder Flycatcher is usually described as having two or more syllables; and this indeed is the effect produced upon the ear of the listener at a distance of fifty yards, or even less, from the bird. But, as is the case with some other bird utterances, a wrong apprehension is gained of the peculiar note, unless it be heard close at hand. As ordinarily heard it may be written *rhi-bhee*, or even *rhi-bhea*, the second syllable being much emphasized. But when the bird calls within a few feet of the listener, this song is found in reality to consist of but *one* harsh explosive syllable. Of an indescribable *timbre*, it may be written *r-r-rhee* (or perhaps *r-r-rhea*, but with the final *a* in this case very slightly touched upon).

The minor notes of the Alder Flycatcher, like its harsh cry, are perfectly characteristic and unlike the notes of any other bird. They are of two sorts, the common low *pip* or *pep*, which to some ears may more resemble *peep*, and the softly whistled whisper (or whispered whistle), *pip-whee* or *pip-whing*. There is an interval between the two syllables of this soft song, and the last is accented. Its peculiar softness may be perhaps better expressed by *wheeo* rather than by *whee* or even *whing*. Although among the softest of bird utterances this song, when closely analyzed, will be found to be essentially a much subdued variant of the loud, harsh *r-r-rhee*, being similar in kind but exceedingly less in degree. Both the *pips* (*peps*) and the *pip-(pep-)whees* are sometimes uttered a half-dozen or more times in rapid succession. When quarreling with another bird, the Alder Flycatcher pro-

duces excited fighting notes which resemble the corresponding utterances of the Least Flycatcher. The *pips* are then louder than usual and somewhat approach in tone the *whits* of the Least.

In its summer home the Alder Flycatcher is one of the quietest of birds. After a long interval of silence, during which it has uttered not a sound of any sort, the bird may *pep* freely for a little while, interspersing the whistled *pep-whees* or the *whees* (*wheeos*) alone without the introductory *pep*. But the intervals are long between such spells of vociferousness.

The soft *pep-wheel* (*whing*) must be sharply listened for by the unaccustomed ear. It is a faint little cry that rarely rises above the gentle rustle of the alder and maple leaves as they are stirred by the June zephyrs.

With reference to its manner of nesting the Alder Flycatcher, in eastern Massachusetts at least, might well be given the additional name of Bush Flycatcher. So far as I have observed, it nests invariably in a bush, selecting most often a wild rose, or clump of rose shoots or sprays—usually *Rosa carolina* L.¹ The nest is often overshadowed by the alders which are scattered here and there in clumps in the bushy meadow. But it is as likely to be placed in unshaded shrubbery in the full glare of the sun. When in the open, it is more or less hid, however, by the mingled mass of wild roses, sweet gale, and other bushes rising breast-high all about it. It is often in the thickest jungle of such growth where tall, waving ferns vie in height with the predominating tangle of rose bushes that the Alder Flycatcher hides away its nest.

The height of the nest from the ground is from two to four feet. It is placed rather loosely, at times even flimsily, in an upright crotch or rather fork, or else between independent twigs that furnish a similar support. In either case the nest is suspended in a characteristic and peculiar way. I have never seen it set snugly down into a crotch after the manner of the Least Flycatcher. It is, instead, supported between twigs or prongs. It gets its chief support, as a rule, from two main shoots which

¹ I recall finding a nest once in a small shrub of meadow sweet (*Spiraea salicifolia* L.).

often grow from the ground independently of each other, but which will be sometimes members of one bush, forming in this case a long crotch or fork. When the slender shoots or sprays are distinct, springing separately from the ground, but growing close together at different inclinations, they furnish at best but an indifferent support to the nest. The general effect of the nest of the Alder Flycatcher thus placed is that of a somewhat loose, somewhat unfinished, not very securely fastened structure. The enlisting of separate, independent sprays in support of the nest is a marked feature of the Alder Flycatcher's nest architecture. One spray is usually superfluous, being only slightly tied to the nest and lending a support which is more apparent than real. But this feature seems to be an essential in the bird's architectural scheme and is almost always present.

The nest itself is in its body a fairly compact but not very neat structure. It is composed almost wholly of fine dried grasses with lining of the same material but of a finer (sometimes of the finest) sort. Some nests have in addition to the grasses fibrous strips of *Asclepias* woven around and through their structure. In one case I noticed on the outside of a nest some weather-worn material from a tent caterpillar's web. The outside of the nest always shows more or less loose odds and ends in the shape of long, narrow grasses and *Asclepias* strips 'stringing' down below or projecting in various directions. This unfinished appearance of the lower outside of the nest, although varying in degree in different examples, invariably characterizes the Alder Flycatcher's style of architecture. Together with the peculiar manner of support of the nest, it so strongly characterizes the structure that he who runs may read. The nest is unmistakable, even without eggs, and whether old or new. I have noted two types of nests — one, large, round, and thick-walled with diameter great in proportion to depth but still not a shallow structure; the other, smaller and shallower, inclining more to the sparrow-style, being of coarser construction within and without.

A beautiful nest which I found in 1895 in Essex County merits description because, in addition to being the handsomest structure of the Alder Flycatcher that I have seen, it is typical (although in a somewhat exaggerated way) of the general architecture of the

species. The nest was three and one-half feet from the ground in a clump of the swamp rose (*Rosa carolina* L.), being one foot below the top of the bush. The nest is large, representing the extreme in size. Its inside depth is two and one-eighth inches; outside depth, three inches; outside diameter, three and three-eighths inches; inside diameter, one-half inch less. It is composed of fine grasses and strips of *Asclepias*, the latter woven into the body of the structure as well as wound about the outside and over the rim. It is deeply-cupped and thickly-walled, with rim slightly curving over and in on one side. The lining is composed of the finest of hair-like, dried, yellow grasses. A pretty effect is obtained by the use of a very delicate grass which, projecting above the rim, shows the finest of tassels.

The nest is mainly supported by a single long fork in which it is suspended basket-like. An additional slight but practically fictitious support is lent by a third slender shoot springing independently from the ground, the nest being tied in the flimsiest manner possible to a very small sprig of the same. The long fork in which the nest hangs is formed by the main stem of the rose bush and a long slender upright branch springing therefrom at three feet from the ground. There is a space of two and one-half inches between the parting of this fork and the lowest outside point of the nest hanging therein above. A very fine twig from the long, slender branch runs directly up beneath the nest and helps to horse it up. The nest is strongly tied on one side to the main stem and two twigs springing therefrom. On the opposite side the long slender branch and one twig supply two additional points of support, there being in all, therefore, five main points of contact from which the structure hangs. A basket-like effect is obtained and this is enhanced by the profuse use of *Asclepias* on the outside of the nest, this being in fact the chief material used in its construction. This nest has in common with all others that I have seen the usual, characteristic, loose, unfinished, even ragged, appearance outside and below. But the long grasses and especially the fibrous strips of *Asclepias* hang or string down in the present case in unusual quantity and length. Much of this reaches down six inches below the nest. Some of it extends down for one foot. A studied air of disarrangement,

of negligence, of elegant confusion, is thus secured. The decorative effect is heightened by the silvery *Asclepias*, which, in addition to entering so largely into the body of the nest, causing it to shine flax-like, streams down and out therefrom in what might be termed a fibrous cascade. In greatest possible contrast to the disarranged, silvery-gray exterior is the round, deeply-hollowed interior with its exquisite yellow lining of finest grass. The excessive use of *Asclepias* in this nest is exceptional. In another respect the nest is scarcely typical, as it is more firmly held in its bush than the average structure of the Alder Flycatcher.

The looser style of suspension is well shown by another nest in my collection. This is characteristically held up by two tall, slender, entirely distinct rose shoots which grew in a thick jungle of wild roses and sweet gale. Each of the shoots is divided, the larger into two twigs and these in their turn into two smaller twigs which join in partially supporting the nest. The other main, separate shoot supports one side of the structure only with a long, frail, slender spray, which, as usual, subdivides at the nest into several small twigs, the whole taken together giving but a slight support to the grass basket suspended between them. I watched these tall, slender, swamp rose sprouts as they blew over in their clump, bending under the gusts of a high June south-west wind as it swept across a broad meadow. The nest-sprays bent over at an angle of at least forty-five degrees, but were stiffened by the general mass of surrounding growth, so that the nest hung safely in its flimsy fastening and the eggs remained within their shallow cup.

The eggs of the Alder Flycatcher are usually of a creamy white (less often of a dead white), with markings of different shades of brown, these being chiefly at the large end and often forming a broken ring. The markings are generally of a pale, reddish brown, approaching flesh-color if paler than usual, and verging on yellowish if running to the darker extreme. The markings are in spots (often very fine) and small blotches. A few minute dots of a very dark brown, almost black in fact, which have no apparent relation to the general color-scheme, also appear. The eggs are often beautiful objects, especially when the brown of the

markings approaches yellowish and lilac. With this shade appears a ground of creamy pink. Sets of eggs collected in the same locality show considerable variation, and the eggs of a set often differ much among themselves. A peculiar set of three in my collection, taken July 3, 1900, represents the minimum in measurements, and may be described as follows: No. 1 is of a dull dead white and is nearly immaculate, having only a very few scattered, minute, dark brown dots at the larger end; No. 2 has at the larger end, in addition to the very fine dusting of dark dots, a single abnormally large blotch of pale brown, with overlaying fine tracery and dots of a very dark brown; No. 3 is of a creamy ground color and is beautifully marked after the typical style with a fairly complete ring of pale brown blotches having darker centres, and with dark brown (almost black) round dots interspersed among the blotches, a rich effect being thus secured. The eggs of this set average $.67 \times .52$. But the average size of eggs of *alno-rum* appears to be about $.71 \times .55$.

The Alder Flycatcher lays sets of three or four eggs, four being the commoner number. It completes its nest and begins laying about the middle of June. But sometimes it will not begin laying until a week later. I have taken very slightly incubated eggs on June 18, and fresh eggs as late as July 3. But this latter date is exceptional. By the middle of July or earlier the young flycatchers are out of the nest.

In the matter of its behaviour at the nest the Alder Flycatcher, in contrast to its general habits, may be fairly considered shy. It is not a close sitter. I have tried repeatedly to catch the female on her eggs but never but once succeeded in so doing. In this exceptional case the bird undoubtedly trusted to the effective concealment of the nest by the very thick clump of wild roses in which it was placed. I stood for several seconds beside this unseen nest before the bird flew. After being flushed the female flycatcher is chary about showing herself in the neighborhood of the nest. So, too, the male. The low *pep* of protest somewhere near will be often the only evidence of the Flycatchers' connection with their nest.

Considerable patience has frequently to be exercised if one hides and awaits the return of the female. She may return within five

or ten minutes or delay for a half-hour. When finally appearing, whether soon or late, she does not indulge in any preliminary hopping or perching in near-by bushes or in the nest-bush itself, but flies straight to the nest and goes on in a twinkling. She often flies through the shrubbery unseen, appearing suddenly and unexpectedly at the nest, and going on the eggs like a flash. But she will frequently leave the eggs again after remaining on but a minute or two, returning after a brief interval for another short stay, and so continuing restless and nervous as long as the intruder remains in the neighborhood.

ON A COLLECTION OF BIRDS MADE BY W. W.
BROWN, JR., AT DAVID AND DIVALA, CHIRIQUI.

BY OUTRAM BANGS.

MR. W. W. BROWN, JR., has lately sent to my brother and me 1183 bird skins, the result of about 58 days collecting during the whole of the month of November and parts of October and December, 1900, at David and Divala, two towns, about thirty miles apart, situated in the heavily forested lowlands of Chiriqui. The birds were all taken in the cool tropical forest or on the plantations at about 200 feet above sea level. This splendid collection contains six forms that appear to be new, and some of the other birds belong to species exceedingly rare or altogether wanting in American Museums, so that it seems worth while to publish the following complete list of the lot.

Though he was entirely without assistance, Mr. Brown sent home, beside this large collection of birds, many mammals, and the result shows with what energy he worked in the unhealthy, tropical climate of this fever-stricken region. At David and Divala, Mr. Brown tells me, there is a great difference between the temperatures in the daytime and at night. The days are excessively hot and the nights cool. In the deep forest, however, under the shade of the red rubber tree and the gigantic Spanish

cedar, where the atmosphere is laden with moisture, the air is always cool and damp.

To the student of American birds the ornis of Chiriqui is of exceptional interest, containing many forms peculiarly its own, and different from the representative form from either north of it — in Central America proper — or south of it, in Panama. Some years ago Arcé made extensive collections of birds in Chiriqui and from the results of his work many of the peculiar forms of the region were made known by Messrs. Salvin and Godman and others; but still more remain to be described. Most of Arcé's material, which is of very poor quality, went to England and American collections are badly off for birds from the Chiriqui region. The following list fills many a gap in the joint series of American birds that the various collections of this country could produce if all were brought together.

I am under the greatest obligation to the authorities of the United States National Museum for allowing me unrestricted use of the collection of birds there, while I was in Washington identifying many of the species in the present collection, and to both Dr. Robert Ridgway and Dr. C. W. Richmond for their unfailing kindness and wise counsel.

Tinamus castaneiceps Salvadori. — Seven specimens, both sexes, taken at Divala, in November and December. The type locality of this species is Volcan de Chiriqui.

Crypturus soui modestus (Cab.). — Three specimens, both sexes, Divala, November and December. These are extreme examples of this race, with dark grayish throat and a conspicuous dark band across the breast.

Penelope cristata (Linn.). — One adult ♂, Divala, December 8.

Ortalis cinereiceps (Gray). — One adult ♂, Divala, December 14.

Odontophorus castigatus,¹ sp. nov.

Seven specimens, both sexes, one young, Divala, November and December.

Type. — Divala, Chiriqui, adult ♂, No. 7642, Coll. of E. A. and O. Bangs. Collected Dec. 8, 1900, by W. W. Brown, Jr.

Characters. — Nearest to *O. marmoratus* Gould; colors deeper, more olivaceous, less grayish, throughout; crest and top of head dark brown instead of light chestnut; throat and upper breast much darker, less grayish; hind neck and upper back dark olivaceous brown instead of grayish.

¹ *Castigatus*, shut in, confined within small limits.

Color.—Adults, sexes alike; narrow frontal band, narrow band below eye and chin chestnut; top of head dark sepia, gradually becoming blackish on the long feathers of the crest; hind neck and upper back dark olive-brown slightly vermiculated with a paler, grayer shade of the same color; lower back and rump bistre, gradually darkening on upper tail-coverts to olive, somewhat irregularly marked throughout with small dusky and tawny-olive spots; scapulars and tertials much varied, grayish near shafts, and blotched and marked with blackish, olive, and rich reddish olive, the longer feathers with conspicuous tawny-olive tips; primaries dark hair-brown, notched and marked on outer webs with buff; secondaries hair-brown marked and barred on outer web with dull yellowish brown; all the smaller wing-coverts are hair-brown, marked on both webs with dull yellowish brown and with small whitish terminal and dusky subterminal spots; whole inside of wing hair-brown; throat olive slightly speckled with whitish toward chin; breast bistre, the feathers slightly barred with dusky and yellowish; belly, flanks, and sides paler than breast and with a grayish cast in middle of belly, the feathers more varied with dusky and yellowish markings; under tail-coverts olive slightly marked and spotted with dull yellowish and dusky; tail dark olive, thickly vermiculated and speckled with dull yellowish brown; “bill and feet black; bare skin round eye bright red.”¹

Young similar to adults, except top of head and crest rather more rusty and bill reddish instead of black.

Measurements (in millimeters).

No.		Sex.	Wing.	Tail.	Tarsus.	Exposed culmen.
7642	Type	♂ ad.	148.	71	42.	18.
7643	Topotype	♂ ad.	145.	70.	40.	18.
7644	“	♀ ad.	141.	67.	41.	18.
7645	“	♀ ad.	145.	66.	41.	17.5

Remarks.—In the national Museum Collection are examples of *O. marmoratus* from the Bogota region (the type locality of the species) and from Panama, which do not appear to differ in any way, but all Chiriqui examples (the present series, and one specimen in National Museum collected by Arcé) are very much darker in color and otherwise different, and represent quite a distinct form. There are many other cases among the birds of this region of a species ranging from Bogota to Panama without change, but in Chiriqui being replaced by a different, representative form.

¹ Note made by Mr. Brown from the fresh specimens.

Columba rufina Temm. & Knip. — One adult ♀, Divala, December 16.
Columba nigrirostris ScL. — Two males, Divala, November 4 and December 12.

Zenaidura macroura (Linn.). — Three females, Divala, November.

Columbigallina rufipennis (Bp.). — Two specimens, ♂ and ♀, Divala, December.

Claravis pretiosa (Ferrari-Perez). — One adult ♂, Divala, December 15.

Leptotila verreauxi Bp. — Three specimens, both sexes, Divala, November and December.

Leptotila rufinucha ScL. & Salv. — Two specimens, ♂ and ♀, Divala, December.

Geotrygon montana (Linn.). — One ♂, Divala, November 26.

Aramides cayanae chiricote (Hartl.). — Two specimens, ♂ and ♀, Divala, November.

Oxyechus vociferus (Linn.). — Three specimens, both sexes, Divala, November and December.

Bartramia longicauda (Bechst.). — One ♀, Divala, November 30.

Asarcia variabilis (Linn.). — Two adult males, Divala, December.

Dendrocygna discolor ScL. & Salv. — Two specimens, ♂ and ♀, Divala, December. Neither of these is quite in fully adult plumage, but both belong to the South American species, which thus extends to Chiriqui.

Spatula clypeata (Linn.). — One ♀, David, October 16.

Ibycter americanus (Bodd.). — One adult ♀, Divala, December 8.

Micrastur zonothorax (Cab.). — One adult ♀, Divala, December 12. Dr. Ridgway is of opinion that this specimen is best referred here. It, however, may not be typical of the South American species. Unfortunately the bird is so very rare that there is not a specimen in the National Museum, and I believe not one in this country.

Geranospizias niger (Du Bus). — One adult ♂, Divala, November 24.

Rupornis ruficauda (ScL. & Salv.). — Two adult females, Divala, November.

Cerchneis sparveria (Linn.). — Three males, Divala, November.

Megascops brasiliensis (Gmel.). — One adult ♂, Divala, December 11.

Megascops vermiculatus Ridgw. — One adult ♂, Divala, December 8.

M. brasiliensis has a very extensive range, throughout which it does not vary, and in many places, as here, another species of much more local distribution occurs with it.

Lophotrix stricklandi (ScL. & Salv.). — One adult ♀, Divala, December 11.

Ciccaba nigrolineata (ScL.). — Two adult females, Divala, December.

Speotyto cunicularia hypogæa (Bp.). — One adult ♀, Divala, December 13.

Ara macao (Linn.). — One adult ♂, Divala, December 1.

Conurus finschi Salv. — Two specimens, ♂ and ♀, Divala, December.

The type locality of the species is Bugaba, Chiriqui. These two examples are probably young. They agree in every way with the description of the adult except in having green instead of red foreheads.

Conurus ocularis *Scl. & Salv.*—Twelve specimens, both sexes, Divala and David, October, November and December.

Brotogerys jugularis (*Müll.*).—Thirty-four specimens, both sexes, Divala and David, October, November and December.

Amazona virenticeps *Salvadori*.—Two specimens, ♂ and ♀, Divala, December 16.

Amazona panamensis *Cab.*—One adult ♂, Divala, December 3.

Amazona salvini *Salvadori*.—Five specimens, both sexes, Divala, November and December.

Pionus menstruus rubrigularis (*Cab.*).—Eight specimens, both sexes, Divala and David, October and December.

Pionopsittacus hæmatotis *Scl. & Salv.*—Eight specimens, both sexes, November and December.

Ceryle torquata (*Linn.*).—Three specimens, both sexes, Divala, November and December.

Ceryle amazona (*Lath.*).—Two males, Divala, December.

Ceryle americana septentrionalis *Sharpe*.—Seven specimens, both sexes, Divala, October, November and December.

Ceryle superciliosa stictoptera *Ridg.*—One (♀ ?), Divala, December 15. This bird is typical *stictoptera*, those collected by Mr. Brown in Panama do not approach it in the least, but are true *superciliosa*.

Momotus lessoni *Less.*—Twenty-seven specimens, both sexes, Divala and David, October and November.

Nyctidromus albicollis (*Gmel.*).—Four specimens, both sexes, Divala, November and December.

Antrostomus carolinensis (*Gmel.*).—Two females, Divala, November and December.

Phaethornis longirostris (*Less. & Delattre*).—Two males, Divala, November and December. These are much darker below than is usual in true *P. longirostris* of Guatemala or in examples from Panama, which seem to be about the same as Guatemalan specimens. They probably represent a local race worth recognizing by name, but I prefer to wait for more specimens before deciding this point.

Florisuga mellivora (*Linn.*).—One ♀, Divala, December 6.

Agyrtria decora (*Salv.*).—Seven specimens, both sexes, Divala, November.

This very local species is exceedingly rare in collections. All the specimens taken were in autumnal or young plumage, the males having some blue feathers in the throat, but the throat patch not well defined.

Amizilis fuscicaudata (*Fraser*).—Two males, Divala, November.

Hylocharis eliciæ (*Bourc. & Muls.*).—Three males, Divala, November and December.

Chlorostilbon assimilis *Lawr.*—Two males, young and adult, Divala, November 12.

Thalurania columbica venusta (Gould).—One adult ♂, Divala, December 13.

The type locality of the subspecies is Volcan de Chiriqui, and the form extends from Chiriqui to Costa Rica. I have examined many specimens from the latter country, and an enormous series of true *T. columbica* from various places in Colombia. *T. columbica venusta* is a perfectly valid form; the adult ♂ can always be told from the adult ♂ of true *T. columbica* by its wholly purple interscapulum, and wholly black back of head.

Floricola superba pallidiceps (Gould).—One adult ♂, Divala, November 10.

Trogon massena Gould.—Nine specimens, both sexes, Divala, November and December.

Trogon bairdi Lawr.—Twelve specimens, both sexes, Divala, November and December.

Trogon atricollis tenellus (Cab.).—Nine specimens, both sexes, Divala, November and December.

Trogon caligatus Gould.—One ♂, Divala, December 5.

Piaya cayana thermophila (Scl.).—Three specimens, both sexes, Divala, October and November.

Diplopterus navius (Linn.).—Three males, Divala, November and December.

Crotophaga ani Linn.—Five specimens, both sexes, Divala, December.

Rhamphastos tocard Vieill.—Two specimens, ♂ and ♀, Divala and David, October and November.

Pteroglossus frantzii Cab.—Five specimens, both sexes, Divala and David, October and November.

Galbula melanogenia Scl.—Thirty-four specimens, both sexes, Divala and David, October, November and December.

Bucco dysoni Scl.—One adult ♂, Divala, November 19.

Malacoptila panamensis Lafr.—Twenty specimens, both sexes, Divala, November and December.

Melanerpes chrysauchen Salv.—Three males, Divala, November. The type locality of the species is Bugaba, Chiriqui.

Melanerpes wagleri Salv. & Godm.—Eleven specimens, both sexes, Divala and David, October, November and December.

Veniliornis ceciliæ (Malh.).—One ♀, Divala, November 9.

Campophilus guatemalensis buxans,¹ subsp. nov.

Two adults, ♂ and ♀. Divala, November.

Type.—Divala, Chiriqui, adult ♂, No. 7803, Coll. of E. A. & O. Bangs. Collected Nov. 26, 1900, by W. W. Brown, Jr.

Characters.—A southern form of *C. guatemalensis*, distinguished by smaller size; deeper yellow under side of wing; much more yellowish,

¹ *Buxans*, of the color of boxwood.

less whitish underparts; the black bands on underparts all narrower and less well marked; the black of under side of neck more restricted — not reaching so far over breast; and the light colored stripes on sides of neck yellower — less purely white — and more restricted.

Color. — Adult ♂, head all round crimson, a small brownish patch just over opening of ear; upper parts dull brownish black; two narrow yellowish white stripes, extending from the red of head down sides of neck to end of interscapulum; jugulum black; lower breast and rest of under parts buff-yellow, crossed by numerous black bands, which become less well marked on middle of belly; lining of wing and whole under surface of wing feathers, except the ends which are blackish, strong yellow (a shade about between maize yellow and buff yellow); bend of wing slightly touched with red; under side of tail and outer edges of primaries olive.

Adult ♀, similar to male, but throat black, and a large black patch on top of head, which usually includes much of the crest; no red on bend of wing.

Measurements (in millimeters).

No.		Sex.	Wing.	Tail.	Tarsus.	Exposed culmen.
7803	Type	♂ ad.	187.	113.	35.	48.5
7804	Topotype	♀ ad.	187.	114.	35.5	47.5

Remarks. — The Guatemalan Ivory-bill as it ranges southward gradually becomes smaller, with lighter bill, and darker, more yellowish, less whitish, underparts and under side of wing. The two examples in the present collection are from farther south than any other specimens I have seen and represent the form *C. guatemalensis buxans* in its extreme. The northern extreme — true *C. guatemalensis* — occurs in southern Mexico, Guatemala, etc., and to this form all of the various names that have been given to the species seem to apply. As has been said before, it is a larger bird with more black on under side of neck and breast, heavier black bands crossing lower breast, belly etc., and whitish or yellowish white under side of wings and ground color of under parts.

Picumnus granadensis Laf. — One adult ♂, Divala, November 16.

Colaptes pilaris Cab. — One adult ♀, David, October 15.

Todirostrum cinereum (Linn.). — Three specimens, both sexes, Divala and David, October and November.

Platyrhynchus superciliaris Lawr. — One adult ♀, Divala, November 20. The type locality of this species is Panama.

Mionectes assimilis dyscolus,¹ subsp. nov.

Six specimens, both sexes, Divala, October, November and December.

Type.—Divala, Chiriqui, adult ♀, No. 7958, Coll. of E. A. & O. Bangs. Collected Dec. 6, 1900, by W. W. Brown, Jr.

Characters.—Slightly smaller than true *M. assimilis*; bill smaller; throat less gray; color of underparts more greenish, less buff.

Colors.—Sexes alike; whole upper parts, including edges of wing feathers and upper surface of tail, olive-green; no wing bars (at least in the adult plumage); tertials tipped with pale oil green; chin greenish gray gradually becoming dull olive-green on breast; middle of belly and under tail-coverts buffy olive-yellow; sides and flanks darker, more shaded with olive-green; bend of wing olive-yellow; lining of wing buff-yellow; wing feathers, except the outer margins, dusky; bill (in dried specimens) blackish, basal part of lower mandible paler-horn color.

Measurements (in millimeters).

No.		Sex.	Wing.	Tail.	Tarsus.	Exposed culmen.
7958	Type	♀ ad.	61.	48.	15.2	13.8
7957	Topotype	♀ ad.	59.	45.	15.	13.2
7959	"	♂ ad.	61.5	48.5	15.4	13.2
7960	"	♂ ad.	59.	44.	15.	13.4
7961	"	♂ ad.	62.	49.	15.	—

Remarks.—I have already expressed my belief that *Mionectes oleagineus* and *M. assimilis* are distinct species. The more specimens I examine the more convinced am I that this is so. True *M. oleagineus* of northern South America is a very different bird from true *M. assimilis* of southern Mexico and Guatemala, and the two forms that come from regions nearest together—*M. oleagineus parvus* of Panama, and *M. assimilis dyscolus* of Chiriqui—show no sign of intergrading, but are quite as distinct as are the two typical forms.

Ornithion pusillum (Cab. & Heine).—One ♂, Divala, November 7.

Tyranniscus parvus Lawr.—Two specimens, ♂ and ♀, Divala, November.

Tyrannulus reguloides Ridgw.—One adult ♀, Divala, November 20. This specimen agrees exactly with the type of *T. reguloides*, from the lower Amazon and is very different from *T. elatus* of Guiana and Colombia. It is rather strange that the Chiriqui bird should prove to belong

¹ *Dyscolus*, of a bad temper, peevish.

here, and this fact would seem to indicate that *T. reguloides* is a coastal form extending from the lower Amazon to Chiriqui, being replaced farther inland along its range by *T. elatus*. The specimen measures: wing, 47; tail, 39; tarsus, 12; culmen, 6.4 mm.

Elænia pagana subpagana *Scl. & Salv.*—Ten specimens, both sexes, Divala and David, October and November.

Sublegatus arenarum (*Salv.*).—One ♂, David, October 19.

Myiozetetes similis superciliosus (*Bp.*).—Nineteen specimens, both sexes, Divala and David, October, November and December.

Myiozetetes granadensis *Lawr.*—One ♀, Divala, December 15.

Rhynchocyclus æquinoctialis (*Scl.*).—One ♀, Divala, December 8.

Myiodynastes audax nobilis *Scl.*—Two specimens, ♂ and ♀, Divala, December.

Megarhynchus pitangua (*Linn.*).—Two males, Divala, October and November.

Myiobius sulphureipygius (*Scl.*).—Three specimens, both sexes, Divala, November and December.

Myiobius erythrurus (*Cab.*).—Three specimens, both sexes, Divala, November and December.

Empidonax flaviventris *Baird.*—One male, Divala, November 30.

Empidonax trailli (*Aud.*).—Three males, Divala, October and November.

Empidonax minimus *Baird.*—One ♂, David, October 16.

Horizopus richardsonii (*Swains.*).—Two specimens, ♂ and ♀, Divala, November 4, David, October 16.

Myiarchus panamensis *Lawr.*—Nine specimens, both sexes, Divala and David, October and November.

Myiarchus crinitus (*Linn.*).—Six specimens, both sexes, Divala, November and December. These, like all other birds taken in winter in Central America that I have seen, belong to the small billed northern form, I called *boreus*. The large billed, smaller race, true *M. crinitus*, of Florida, Georgia, etc., probably does not go so far south to spend the winter.

Tyrannus melancholicus satrapa (*Licht.*).—Fourteen specimens, both sexes, Divala and David, October, November and December.

Milvulus tyrannus (*Linn.*).—Seven specimens, both sexes, Divala and David, October and December.

Milvulus forficatus (*Gmel.*).—Five specimens, both sexes, Divala, November and December.

Pipra mentalis ignifera,¹ subsp. nov.

Fifteen specimens, both sexes, Divala, November and December.

Type.—Divala, Chiriqui, adult ♂, No. 7823, Coll. of E. A. and O. Bangs. Collected Nov. 30, 1900, by W. W. Brown, Jr.

¹ *Ignifer*, firebearing.

Characters.—A southern form of *P. mentalis*, distinguished by the red of the head being much more intense, less mixed with orange; by having deeper yellow thighs and under wing-coverts; and by the black of the body being rather more intense.

Color.—Adult ♂: Intense black; whole top and sides of head vivid scarlet-vermilion, the bases of the feathers orange; chin and thighs deep gamboge-yellow, in one or two specimens (very old ones?) shot with orange-vermilion; under wing-coverts pale lemon yellow; inner margins of secondaries and tertials yellowish white. Adult ♀: Above dull oil-green; throat, belly and under wing-coverts olive yellow; breast oil-green; thighs wax yellow; primaries and secondaries and rectrices dusky, margined with green; inner margins of secondaries and tertials buffy white.

Measurements (in millimeters).

No.		Sex.	Wing.	Tail.	Tarsus.	Exposed culmen.
7823	Type	♂ ad.	59.	25.5	15.	10.
7819	Topotype	♂ ad.	59.5	26.	15.	10.
7822	"	♂ ad.	58.5	26.	15.	10.
7824	"	♂ ad.	59.	27.	15.4	9.8
7825	"	♂ ad.	59.5	25.5	15.2	10.
7827	"	♀ ad.	60.	25.5	15.	10.
7828	"	♀ ad.	58.5	24.5	14.8	9.8
7829	"	♀ ad.	59.5	26.	14.8	10.

Remarks.—The type locality of true *Pipra mentalis* Scl. is Oaxaca, Mexico. I have examined a large series of this form, from many points in southern Mexico and northern Central America, and find very little variation among them. I have also seen a large number of specimens of the southern form, here named *P. mentalis ignifera*, from many places in southern Central America, and Chiriqui; they also differ very little among themselves. The line between the two forms seems very sharply drawn, though the characters that separate them are slight, consisting chiefly in the different shades of color of the head, thighs and under wing-coverts of the male. These differences, however, are perfectly constant, and are easily seen on comparison.

Pipra velutina Berl. — Eighteen specimens, both sexes, Divala, October, November and December.

Pipra leucorrhoea Scl. — Three males, Divala, November and December. "Iris brown."¹

¹ Note made by Mr. Brown from fresh specimens.

Chiroxiphia lanceolata (Wagl.).—Two males, Divala, December 17, and David, October 16.

Manacus aurantiaca (Salv.).—Twenty-five specimens, both sexes, Divala, October, November and December. The type locality of the species is Bugaba, Chiriqui.

*Scotothorus*¹ *veræpaci* (Scl.).—Two specimens, ♂ and ♀, Divala, December.

Pachyrhamphus cinereiventris Scl.—Three specimens, both sexes, Divala, October, November, and December.

Lathria unirufa (Scl.).—One ♀, Divala, October 27.

Lipaugus holerythrus Scl. & Salv.—Five specimens, both sexes, Divala, November and December.

Attila sclateri Lawr.—Two specimens, ♂ and ♀, Divala, December 11.

Chasmorhynchus tricarunculatus J. & E. Verr.—Thirty-four specimens, adults of both sexes, and young males in every stage of plumage, from a dress closely resembling that of the adult ♀ to that which differs only from the adult ♂ in having a few green feathers irregularly mixed in the brown and white of body and head, Divala, October and December.

Myrmotherula menetriesii (d'Orb.).—Four males, Divala, November and December.

Dryophila boucardi Scl.—Seven specimens, both sexes, Divala, November and December.

Cercomacra crepera,² sp. nov.

Four specimens, both sexes, Divala, November.

Type.—Divala, Chiriqui, adult ♂, No. 7913, Coll. of E. A. & O. Bangs. Collected Nov. 24, 1900, by W. W. Brown, Jr.

Characters.—Similar to *C. tyrannina* except in being very much darker in color throughout.

Color.—Adult ♂, upper parts slate black, a large concealed white dorsal patch; under parts slate gray darkest on breast and becoming dull olive on flanks, lower belly and under tail-coverts; lesser and middle wing-coverts tipped with white, the greater coverts slightly so; rectrices barely tipped with whitish; lining of wing mostly white. Adult ♀, similar to ♀ of *C. tyrannina*, but darker throughout, the ochraceous of under parts several shades darker, the brownish olive of back darker and more dusky, and the wings and tail darker reddish brown.

¹ *Scotothorus* (cf. Oberholser, Proc. Acad. Nat. Sci. Phila. 1899, pp. 208–209), *Heteropelma* Bp. being preoccupied.

² *Creper*, dusky, dark.

Measurements (in millimeters).

No.		Sex.	Wing.	Tail.	Tarsus.	Exposed culmen.
7913	Type	♂ ad.	60.	55.	22.4	16.4
7916	Topotype	♂ yg.	62.	60.	24.	17.
7915	"	♀ ad.	61.	61.	24.	16.4
7914	"	♀ ad.	61.	54.	23.	16.6

Remarks. The type locality of *Cercomacra tyrannina* is Bogota; from this region north to Panama the form extends without change. Specimens collected by Mr. Brown at Loma del Leon, precisely matched skins from the type locality. In Nicaragua and Chiriqui the present form replaces *C. tyrannina*, and the two may prove only subspecifically distinct, but the differences in color are so marked that it seems best, for the present at least, to regard them as distinct species.

I am a little astonished that this bird, which is not rare in Nicaragua and Chiriqui, and is often found in collections from these countries, should not have been named before, it is so noticeably different in color from *C. tyrannina*.

Gymnocichla nudiceps (Cassin).—Seven males, Divala, October, November and December.

Formicarius umbrosus Ridgw.—One ♀, not fully adult, Divala, December 11.

Thamnophilus transandeanus Scl.—Thirteen specimens, both sexes, Divala, October, November and December.

Thamnophilus doliatus (Linn.).—Thirteen specimens, both sexes, Divala and David, October, November and December. The races of this species are rather difficult to understand. Birds from Chiriqui and northward have the general appearance of true *T. doliatus* of Guiana, but from the region lying between the ranges of these two comes the quite different black-crested *T. doliatus nigriristatus*. The northern bird has been called *T. doliatus affinis* (Cab. & Heine), but Bonaparte's name *T. rutilus*, based on a female from Guatemala, appears to be the proper name of the race, should it prove distinct. I do not use it here because, so far, in spite of its curious distribution, I have been unable to find any satisfactory way of distinguishing it even as a subspecies.

Thamnophilus punctatus Cab.—Fourteen specimens, both sexes, Divala and David, October, November and December. The females are, of course, the so-called *T. bridgesi*. Mr. Cherrie, was, I believe the first to discover that *T. punctatus* and *T. bridgesi* are but the male and female of one and the same species.

Gymnophrys bicolor olivaceus Ridgw.—Two specimens, ♂ and ♀, Divala, November and December.

Myrmelastes intermedius (Cherrie).—Three specimens, both sexes, Divala, November.

Grallaria perspicillata Lawr.—Four specimens, both sexes, Divala, October, November and December.

Dendrocolaptes sanctithomæ (Lafr.).—Two specimens, ♂ and ♀, Divala, November.

Dendroornis lacrymosa Lawr.—Two males, Divala, November and December.

Dendroornis nana Lawr.—Seven males, Divala, October, November and December.

Picolaptes lineaticeps ScL.—Six specimens, both sexes, Divala and David, October, November and December.

Dechonychura typica Cherrie.—Two specimens, ♂ adult and ♀ young, Divala, December. Mr. Brown was fortunate in securing two examples of this very rare bird, known before only by the type specimen and one specimen from Panama—both in the National Museum.

Dendrocincla anabatina ScL.—Three males, Divala, November and December.

Automolus exsertus,¹ sp. nov.

Six specimens, both sexes, Divala, November and December.

Type.—Divala, Chiriqui, adult ♀, No. 7868, Coll. of E. A. & O. Bangs. Collected Nov. 29, 1900, by W. W. Brown, Jr.

Characters.—Related to *A. cervinigularis* and *A. pallidigularis*. Size about as in the former (larger than *A. pallidigularis*). Colors different from those of either; breast not mottled; the underparts, breast, belly, and sides are browner and more olivaceous; the back much more olivaceous, less rufous; the throat is about the same color as in *A. cervinigularis*.

Color.—Superciliary stripe and orbital ring tawny ochraceous; back rich raw umber, head slightly darker, the feathers scaly in appearance; upper tail-coverts and tail ferruginous-chestnut; wings burnt umber; throat buff; breast not mottled, about tawny olive, shading to raw umber on sides and flanks and to ferruginous on under tail-coverts.

Measurements (in millimeters).

No.		Sex.	Wing.	Tail.	Tarsus.	Exposed culmen.
7868	Type	♀ ad.	90.	73.	24.	24.
7869	Topotype	♀ ad.	89.	72.	25.	23.6
7872	"	♀ ad.	91.5	76.	24.4	23.
7870	"	♂ ad.	91.	76.5	24.2	23.

¹ *Exsertus*, evident, conspicuous.

Remarks.—*Automolus exsertus* must not be confused with a form described by Messrs. Salvin & Godman from the same general region, but from higher altitudes in the Cordillera de Chiriqui. This bird, *A. fumosus*, belongs to the *rubiginosus* group, which is distinguished by lacking a superciliary stripe; *A. exsertus* belongs with *A. cervinigularis* and *A. pallidigularis*, with a conspicuous superciliary stripe, but is a very well marked form, differing in lacking the mottling of the breast and being of a more olivaceous color throughout. In size it is nearest to *A. cervinigularis* and in color rather nearer to *A. pallidigularis*, though different in this respect from either.

Xenops genibarbis Ill.—Four specimens, both sexes, Divala, November.

Stelgidopteryx ruficollis uropygialis (Lawr.). Five males, Divala, November and December. These specimens differ a good deal individually, —two are true *S. uropygialis*, exactly like Panama birds, the other three approach *S. ruficollis fulvipennis* of southern Mexico and Guatemala, in varying degrees.

Tachycineta albilinea (Lawr.).—One adult ♀, David, October 16.

Vireo flavifrons Vieill.—One ♀, Divala, November 7.

Hylophilus flavipes viridiflavus (Lawr.).—Two males, one from Divala, November 5, the other from David, October 17.

Cyanocorax affinis zeledoni Ridgw.—Four specimens, both sexes, Divala, November and December.

Troglodytes inquietus Baird.—Four males, Divala, November. One in nestling plumage was taken November 17.

Thryothorus fasciiventris melanogaster (Sharpe).—Nine specimens, both sexes, one in nestling plumage, Divala, November and December. The type locality of the form is Bugaba, Chiriqui; it seems to be fairly well differentiated from the Panama form, *T. f. albigularis* (Scl.).

Thryophilus rufalbus castanonotus (Ridg.).—Two males, Divala, December 2, and David, October 22.

Thryophilus modestus (Cab.).—Three specimens, both sexes, Divala, October and November.

Rhodinocichla rosea (Less.).—Sixteen specimens, adults of both sexes, and two young, Divala, November and December.

Merula leucauchen (Scl.).—Two specimens, ♂ and ♀, Divala, December.

Merula grayii casius (Bp.).—Seven specimens, both sexes, Divala and David, October, November and December.

Polioptila bilineata Bp.—One ♀, Divala, November 5.

Anthus rufus parvus (Lawr.).—Two males, Divala, December 3.

Basileuterus leucopygius veraguensis Sharpe.—One adult ♂, Divala, November 18.

Geothlypis formosa (Wils.).—One ♂, Divala, December 7.

Seiurus aurocapillus (Linn.).—Two specimens ♂ and ♀, Divala, December.

Dendroica aestiva (Gmel.).—Nine specimens, both sexes, Divala, October 28–November 26, David, October 17.

Dendroica pensylvanica (Linn.). — Six specimens, both sexes, Divala, November 4–November 18.

Helminthophila peregrina (Wils.). — One ♀, Divala, October 29.

Protonotaria citrea (Bodd.). — Two males, Divala, December 10, and David, October 16.

Mniotilta varia (Linn.). — Three females, Divala, November 5 and December 7.

Cœreba mexicana (Scl.). — Four males, including one in nestling plumage, Divala, October and November.

Cyanerpes cyaneus carneipes (Scl.). — Sixteen specimens, both sexes, Divala, November and December.

Cyanerpes lucida (Scl. & Salv.). — One young male, Divala, November 16.

Chlorophanes spiza guatemalensis Scl. — One adult ♂, Divala, October 29.

Dacnis ultramarina Lawr. — One adult ♂, Divala, November 2.

Euphonia crassirostris Scl. — Seven specimens, both sexes, Divala, October and November.

Euphonia gracilis (Cab.). — Two specimens, ♂ and ♀, Divala, November 5 and December 6.

Euphonia luteicapilla (Cab.). — Twenty-three specimens, both sexes, Divala and David, October, November and December. Three adult males in this series have white, in varying amount, in the tail.

Calospiza larvata fanny (Lafr.). — Fifteen specimens, both sexes, Divala, November and December.

Tanagra cana diaconus (Less.). — Thirty-three specimens, both sexes, Divala and David, October, November and December.

Piranga rubra (Linn.). — Twenty specimens, both sexes, Divala, October, November and December.

Ramphocelus dimidiatus Lafr. — Twenty-three specimens, both sexes, Divala and David, October, November and December. These skins, as also the ones taken at Loma del Leon, Panama, by Mr. Brown, are referable to true *R. dimidiatus*, differing only from South American examples in averaging a trifle larger, and in the belly patch being not of quite such an intense black. They do not approach in any way *R. dimidiatus isthmicus* Ridgw. of western Panama.

Ramphocelus passerinii Bp. — One hundred and fifty-one specimens, both sexes, Divala and David, October, November and December.

Tachyphonus nitidissimus Salv. — Two adult males, Divala, December. The type locality of the species is Bugaba, Chiriqui.

Lanio melanopygius Salv. & Godm. — Nine specimens, both sexes, Divala, November and December.

Eucometes spodocephala (Bp.). — One adult ♂, Divala, December 16.

Saltator intermedius Lawr. — Ten specimens, both sexes, Divala, October and November.

Arremon aurantirostris Lafr. — Ten specimens, both sexes, one young

in nestling plumage, Oct. 27, Divala, October, November, and December.

Arremonops conirostris (Bp.). — Six specimens, both sexes, Divala, November and December.

Sporophila aurita (Bp.). — Five specimens, both sexes, Divala, October and November.

Volatinia jacarina splendens (Vieill.). — One adult ♂, Divala, November 17.

Icterus galbula (Linn.). — Two males, Divala, December 9.

Sturnella magna inexpectata Ridgw. — One ♀, David, October 16.

Amblycercus holosericeus (Licht.). — Nine specimens, both sexes, Divala, November and December.

Cacicus microrhynchus (Scl. & Salv.). — Five males, Divala, November and December.

Ostinops decumanus (Pall.). — One adult ♂, Divala, November 12.

Zarhynchus wagleri (Gray). — Three specimens, both sexes, Divala, November and December.

Cassidix oryzivora mexicana (Less.). — One adult ♂, David, October 15.

THE CLASSIFICATION OF BIRDS.

BY HUBERT LYMAN CLARK.

THERE is a good old saying that "fools rush in where angels fear to tread," and the writer is aware that in approaching such a very complex subject as the classification of birds, without far more experience than he has had, he is laying himself open to a very prompt and simple classification under the above given rule. His only plea is that a simple classification of birds, one comparable with the classification of other animals, is greatly to be desired, and he believes that in the field of pterylography a way to such an end may be found. If one takes the trouble to examine the classifications of birds as given in the most recent elementary zoölogies, and compares them with classifications by ornithologists like Gadow or Sharpe, it will be perfectly obvious that general zoölogists prefer to cling to the old, worn-out 'orders' of Cuvier and his immediate successors, than attempt to introduce their students to the score or more 'orders' of present-day authorities. The belief is very general among zoölogists that the *orders* of birds

do not correspond with the *orders* of other classes, being based on far less important structural conditions. That there is good ground for such belief is shown by the fact that the class Crustacea, with as many species as Aves, is very generally grouped in a dozen orders or less; the Gastropod Mollusks, with nearly fifty per cent more species than Aves, are almost universally included in *three* orders; while the schemes for avian classification contain twenty orders or more, or, worse still, are divided into *gens*, *super-orders*, *super-families*, and other indefinite groups which, to an elementary student only makes "confusion worse confounded." That this is a real difficulty in giving ornithology its proper place in a course of zoölogy, other teachers besides myself can testify.

The cause of this trouble, it seems to me, is to be found in the importance that has been placed on characters which are by no means fundamental in the structure of birds. Originally the orders of birds were based on characters of the bill and feet; but it was long ago recognized that those characters are very unreliable, because so readily modified according to habits and food. In seeking more stable characters, ornithologists turned to the skull and other parts of the skeleton, the muscles, the wings, and even the viscera. But as our knowledge of avian anatomy has increased, we have been forced to admit that in all these points, changes of habit are soon followed by changes of structure, and it becomes a matter of great difficulty to trace real relationship. Owing to the large number of possible combinations of characters, which ornithologists regard as of more or less importance, the comparatively homogeneous group of birds has been split up into numberless orders. The remedy is to be found in a rearrangement of avian characters, with a careful estimate of their relative value, so that those that are least liable to change shall be accorded the most weight. In Gadow's well-known scheme for the classification of birds, published in 1892, he made use of more than forty characters, to determine the mutual relationship of the groups. A careful examination of this list shows a very large number which are of slight value because of their marked tendency to be easily modified, while others are omitted which ought to be of great value because of their slight tendency to vary. For example, there are no characters of which use is made, connected with the reproductive, ex-

cretory or central nervous system. It may be said that these systems are too uniform throughout the class to be of any value in classification, but it is very possible that a more intimate acquaintance with their structure will make them of very great value.

The question now confronts us, What characters are of the most importance in determining the relationship between two birds, and what are of the least value? There can be little question that the least valuable characters are those connected with the form and external characters of the bill and feet. Somewhat more valuable, but still very uncertain, are the characters of the wings and tail, and hardly more valuable is the nature of the plumage, such as the presence or absence of down, aftershaft, tuft on oil-gland, etc. The arrangement of viscera, muscles, and blood-vessels, are of some value, but probably less than the characters offered by the skeleton. It must be borne in mind, however, that the skeleton, and especially the skull, would be very liable to marked changes, accompanying changes in the bill, feet or wings, so that skeletal characters are by no means as indicative of real relationship as many writers assume. Certain characters connected with breeding, as the condition of the young when hatched, are of considerable importance; but there is reason to believe that even these are rapidly modified under changed conditions. As already suggested, the structure of the urino-genital organs, and the central nervous system would probably be very slowly modified, and ought therefore to furnish some very valuable fundamental characters. It is the purpose of this paper to show that the arrangement of the contour feathers, that is, the *pattern of the pterylosis*, is a similar character, in that it is only slowly modified, and therefore serves as a most important clue to the relationship of the various groups of birds.

The general opinion among ornithologists at the present time is that the pterylosis offers us little assistance in determining the relationship of birds, because it is believed that the arrangement of the feathers is governed largely by the shape of the body, and that the distribution of the tracts depends to a considerable degree on the habits of the bird. It is hard to see how this opinion has arisen, for there is much evidence to the contrary. If one will compare a plucked Swift and Swallow, a Colie and Cuckoo, an

Auk and a Loon, it will at once appear that though the body shape is very similar, the pterylosis is strikingly different, while on the other hand, birds with very differently shaped bodies, sometimes have the pterylosis very much alike; for example, a Goose and Petrel, or (on the dorsal surface) a Loon and a Flamingo. That the pattern of the pterylosis is very slightly modified by changes in habit, is admirably shown in the Water-ouzels, where the feather tracts are similar to those of the Thrushes, although the habits of the bird have caused the development of a dense coat of down over the whole body, a condition unique among the Passeres. In the light of these facts it is clear that we cannot assume that the pattern of the pterylosis is a recently acquired and unstable character, and we must look for further evidence as to its value. An examination of some Hummingbird embryos, just before hatching, shows that the characteristic pterylosis is, even then, clearly marked out. This would seem to indicate a deep-seated character, for otherwise the feathers ought to appear uniformly on the back and underneath, and only assume the characteristic arrangement with the growth of the bird. A good illustration of the fact that the line of development of a special form of pterylosis would appear in the embryology of the bird is afforded by the Swallow, which, as is well-known, has a very characteristic and peculiar saddle-shaped dorsal tract. In a large series of young Eave Swallows (*Petrochelidon fulva*) from Jamaica, ranging in age from embryos which are just assuming the form of a bird up to those large enough to fly, I find that the dorsal tract as first marked out is much more like that of Swifts, than like the adult Swallow; that is, it is first a broad, dorsal patch with a small central apterium. Later on, it begins to assume more the condition characteristic of the adult, but that condition is not fully attained until the bird is able to fly. It seems to me that the young Hummingbirds, and the young Swallows together, show that the pattern of the pterylosis follows the same laws of heredity as other characteristics, and the later modifications of the pattern appear later in the development of the individual. Thus the Hummingbirds, being nearer the ancestral form in the pattern of the pterylosis, show that pattern from the start, while the Swallows, being more specialized, simply pass through that stage in the develop-

ment of their own characteristic pattern. A similar illustration is found in a comparison of the embryos of a Rail (*Rallus longirostris*) with those of a Heron (*Ardea tricolor*) which shows that the two, just before hatching, have very similar pteryloses, which are distinctly heronlike. A more important point shown by the Heron embryos, is that the powder-down tracts are a more recent acquirement than the pattern of the pterylosis, for only one of the three pairs is indicated at all, and the presence of that pair is shown only by the peculiar color and appearance of the skin. The pair present is the femoral. I thought I could find indications of the ventral pair, but those near the furcula are entirely wanting.

These facts, though few in number, seem to me to indicate very strongly that in the pattern of the pterylosis we have a character which has changed but slowly, and is liable to little variation, and is therefore of primary importance in seeking the proper classification of birds. Indeed there is little reason why the *general pattern* should change, for necessary differences in the thickness of the feather-coat would naturally be brought about simply by widening or narrowing the main tracts. That this is the case is readily seen by comparing the tracts of a Goose and a Petrel, where the pattern is essentially the same, but the tracts of the more active bird are much narrower. In the taxonomy of the Crustacea, a class characterized by a segmented external skeleton and jointed biramose appendages, the division into orders is based on the number and arrangement of segments and appendages; and in other classes of animals the primary divisions are based on variations in the principal character of the class. It is both fitting and desirable, therefore, that the great class Aves should have its orders based on variation in its striking character, — the body covering of feathers. Such orders would be clearly equivalent to the orders of other groups.

But is it possible to adopt any such standard and arrive at any definite results in the classification of birds? After a careful study of Nitzsch's work, and a review of my own in connection with it I find there are eight distinct, and, in general, easily recognized patterns of pterylosis in the class of birds. There are, besides, two very distinct groups of birds which have no apteria, but have

the body uniformly covered with feathers. It would be possible, therefore, to divide birds according to the pterylosis into ten orders, nine of which belong in the subclass generally known as Carinatae. The group Ratitae have so many characters in common which distinguish them from other birds, it is a convenience to regard them as a subclass, of equal rank with the Carinatae. So far as the pterylosis is concerned, they comprise, however, only a single order. This type of pterylosis may well be called

STRUTHIONIFORM.

Adult without apteria or oil-gland; plumage soft and lax, intermediate between down and contour-feathers.

In the Carinatae, the adults all have contour feathers, the pterylae are generally clearly defined, and the oil-gland is usually present. If distinct apteria are wanting, the oil-gland is well developed. The following are the patterns of the pteryloses of the Carinate birds.

SPHENISCIFORM.

Adult without apteria, but with oil gland; plumage dense.

This style of pterylosis is characteristic of the Penguins.

COLYMBIFORM.

Upper and lower cervical tracts not separate until near shoulder.

Upper cervical tract deeply forked but branches not diverging.

Dorsal tract broad, separate from cervical, and without any apterium.

Humeral tract broad and distinct.

Femoral tracts small, mostly separate from dorsal.

Sternals broad, directly continuous with branches of the lower cervical, which is quite deeply forked; and with no side branch.

Ventrals *very* broad, directly continuous with sternals; ventral apterium narrow but broadest behind.

This style is characteristic of the Loons and Grebes.

ANSERIFORM.

Upper cervical tract not separated from lower until near shoulder; forked, branches diverging somewhat.

Dorsal tract directly continuous with upper cervical, thus enclosing a more or less elongated apterium.

Humeral tracts broad and strong, sometimes connected with the dorsal.

Femoral tracts large, united with dorsal.

Sternals directly continuous with lower cervicals, and usually with a prominent side-branch.

Ventrals very broad, directly continuous with sternals; ventral apterium very narrow, and not notably broader behind.

This style characterizes the Petrels, Albatrosses, Pelicans and other totipalmate birds, Auks, Geese, Ducks and Swans.

FALCONIFORM.

Upper cervical tract well-marked, usually narrow; strongly forked between the shoulders; slightly or not at all connected with the dorsal tract; branches diverging.

Dorsal tract very variable, either broad or narrow, forked or solid.

Humeral tracts strong but not very broad.

Femoral tracts wanting or very weak; the feathering of the tibia is usually very full and a strongly marked patch sometimes crosses the head of the tibia and runs along the femur a distance.

Lower cervical tract considerably forked.

Sternals very strongly marked.

Ventrals narrow but widely separated on belly; wider on the breast and more or less fused with the sternals; sometimes united only at the furcula (*Asio*), sometimes also touching at edge of sternum (*Strix*), and sometimes united the full length of the breast (*Pandion*).

This style is shown by Vultures, Hawks, Owls, and other birds of prey; and probably Parrots also.

PELARGIFORM.

Upper cervical tract divided very deeply on the neck but the branches not diverging.

Dorsal tract solid or deeply forked (toward rear), more or less connected with cervical.

Humeral tracts well marked.

Femoral tracts long but narrow, and not very strong.

Lower cervical tract similar to upper but the division is not so deep, and the branches tend to diverge.

Sternals broad (compared with the other tracts), continuous with or separate from the lower cervical.

Ventrals broad and continuous with the sternals, sometimes separated from the latter, for some distance, joining near the furcula.

This type characterizes the Rails, Cranes, Storks, Herons, Bustards, and Flamingoes.

CHARADRIIFORM.

Upper cervical tract sharply defined, not very deeply forked, the branches diverging.

Dorsal tract more or less forked (toward rear), slightly if at all connected with forks of upper cervical.

Humeral tracts narrow.

Femoral fairly strong, usually narrow and distinct.

Lower cervical tract very deeply forked, continuous with sternals.

Sternals moderate in size but strong.

Ventrals narrow or only moderately wide, well separated on the belly, joining the sternals on the breast usually near the furcula.

This type is shown by the Gulls, Terns, Plovers, Snipes, Sandpipers, etc.

GALLIFORM.

All the tracts broad, but usually well defined.

Upper cervical tract usually more or less merged with the dorsal, but sometimes more or less distinctly forked.

Dorsal tract broad, sometimes very broad posteriorly; often with a mid-dorsal apterium; occasionally connected with the femorals.

Humeral tracts broad and very strong.

Femoral tracts very large, sometimes uniting with the dorsal.

Lower cervical tract rather deeply forked, the branches continuous with the sternal tracts.

Sternals very strong, widest anteriorly, connected with ventrals near furculum or not at all.

Ventrals narrow, not widely separated on belly, narrowest anteriorly, united posteriorly in front of anus.

This type is shown by the Gallinaceous Birds, Curassows, and Tinamous.

COLUMBIFORM.

Upper cervical tract wide, strongly forked between shoulders, often united with lower cervical, until near the shoulders.

Dorsal tract very broad and diffuse, fairly separable from cervical, but inseparable from femorals.

Humeral tracts very broad and strong.

Femoral tracts large, not distinct from dorsal.

Lower cervical tract slightly or not at all forked, continuous with the sternals.

Sternals broad, completely united with the ventrals.

Ventrals broad, not widely separated, but not united posteriorly.

This type is clearly shown by the Pigeons and Sand Grouse.

PASSERIFORM.

Upper cervical tract narrow, well-defined, and continuous with the dorsal tract.

Dorsal tract not clearly distinguished from the cervical, more or less widened (often enclosing a prominent apterium), generally narrowed as it approaches the tail. The dorsal tract is frequently distinctly divided into two parts, the anterior of which is usually forked; less commonly the posterior part is forked.

Humeral tracts moderate, frequently narrow.

Femoral tracts usually weak and small, sometimes wholly wanting, and sometimes quite clearly defined.

Lower cervical tract more or less forked.

Sternals usually strong and well-marked.

Ventrals rather narrow, widely separated on belly, and not reaching the anus; usually not separated from sternals, but sometimes partly distinct.

This type is shown to a greater or less degree by all those birds, usually classed as Cuculiformes, Coraciiformes and Passeriformes. Its varieties are fairly constant and may assist in the arrangement of these groups in suborders and families.

The following table will help to make the character of the ten types more easily grasped, but it must be borne in mind that this arrangement is very artificial and is in no sense a 'Key.'

[illegible]

These ten types are so constant and in general so easily recognized, it seems to me they might well be made the central characters of ten orders; and we should find that such orders are not unnatural groups, but are characterized by many other important features. For example, the birds with the charadriiform pterylosis are nidifugous, schizognathous, with two carotids and aquincubital wings. There are, perhaps, other characters, but I have not attempted to determine them all. Such a group might well be called the Charadriiformes. Or the birds with the falconiform pterylosis are all nidicolous, desmognathous, with aquincubital wings, two carotids and epignathous, cered bill, and may well be designated as Falconiformes. That it is not unnatural to associate the Parrots with raptorial birds, will appear to anyone who will examine Gadow's comparison of the two groups, which shows that out of forty characters they have twenty-nine in common, including those which seem to me must be granted to be of the most significance.

It is of interest to see how basing classification primarily on the pterylosis will affect the position of certain doubtful forms. As is well known, the Tinamous will belong with the Galliformes and the Sand Grouse with the Columbiformes. The Flamingo is distinctly pelargiform. *Opisthocomus* is not at all galliform, but, curiously enough, is quite distinctly falconiform. The Bustards are clearly pelargiform and thus quite separate from the Charadriiformes. *Psophia*, on the other hand, is apparently more like Plover than Stork. The Auks are not nearly related to the Gulls and Terns, but are not far from the Petrels, and very possibly the Penguins are merely a further specialized shoot of the same branch.

It would give a very wrong impression, were I to close this paper without referring to any of the difficulties which lie in the way of making such use of the pterylosis for a primary character, as I have suggested. The number of orders would not be reduced thereby as much as was to be hoped, but ten is certainly better than twenty. More important than this, however, is the fact that the orders are by no means equally well-defined. The Anseriformes, for example, are difficult to characterize except by the very distinctive pterylosis, while the Colymbiformes and Galli-

formes are quite easily defined, with many important characters. A greater difficulty still is found in the fact that certain birds, such as *Buceros* and *Colius*, have a pterylosis so peculiar it is hard to compare it with any of the types. Moreover, various birds show a pattern of pterylosis, which at first glance is more like some totally different group, than like their admittedly nearer allies. Such, for example, are the Albatross, *Opisthocomus*, and Goatsuckers, all of which are strikingly falconiform!

These difficulties, however, are none of them insuperable, when we consider three important facts. First of all, our knowledge of pterylography is very deficient; Nitzsch's work is based so largely on dried skins that his figures are often faulty, and conclusions drawn from them are liable to error; for example, his statements regarding *Podargus* and the relationship between the Goatsuckers and Swifts, are not borne out by examination of better material than he possessed. Secondly, the study of the development of the tracts has not yet received any attention, while, as I have already shown, it is a most important factor in determining the type of pterylosis and the value of the pterylographical characters. Finally, the pattern of the pterylosis must not be regarded as an infallible guide, but must be followed with caution. Although it is a deep-seated character, it is by no means beyond modification and even radical change, and where its leading is dubious, it must be controlled by the evidence offered by other characters. Some use in taxonomy has been made hitherto of certain pterylographical characters, but only in a small way, and it is my desire to call the attention of ornithologists to the great value that the *entire pterylosis pattern* has in classification.

A LIST OF THE HAWAIIAN BIRDS IN THE ST. LOUIS
COLLEGE COLLECTION, HONOLULU, H. I.,
INCLUDING RECORDS OF SEVERAL
NORTH AMERICAN SPECIES.

BY WILLIAM ALANSON BRYAN.

THE isolated position of the Hawaiian Islands has long made them of great interest to ornithologists in general, while American observers, especially since the newly awakened interest in the group, have come to look upon them as an important outlying station where the occurrence of some of the wide-ranging continental forms may be studied with advantage.

The local observer finds the study of the indigenous avifauna is made much more interesting by noting the rare visitors which from time to time come to our shores, since they may be taken as indicating the probable direction whence the native birds have come, and in this way aid in tracing out their affinities.

The dearth of competent observers in remote places has always been deplored. It is on account of this fact that I gladly availed myself of the opportunity offered to carefully examine the interesting collection of Hawaiian birds, which for the most part has been brought together through the painstaking efforts of Mr. M. Newell, and which is now in the possession of St. Louis College, Honolulu.

Brother Matthias, as Mr. Newell is familiarly known to the Catholic brotherhood, came to the Islands some seventeen years ago from San Antonio, Texas, where he had already gained the local title of 'Rattlesnake-catcher,' owing to his zeal in the various branches of natural history. From the Brothers at the college I learn that after a year's residence in Honolulu he moved to Wailuku on Maui, where he spent fourteen years in the Catholic mission in Iao valley. It is at this point that most of the collection noted below was made. From Wailuku Mr. Newell was removed to Hilo on Hawaii, where he still carries on his work and observations.

I cannot too earnestly call attention to the value and importance which attaches to a local collection of the rare and curious birds

which come into the hands of persons scattered about these islands. There are still a number of sea and shore birds which should be taken here.

I take this opportunity to thank the authorities of the college for the generous assistance they have rendered in placing the records of the museum as well as the specimens at my disposal, and especially to Brother Mark and Brother Alfred am I indebted for much additional matter.

1. *Larus barrovianus*. POINT BARROW GULL.—[193, ♂. *Larus argentatus*.¹] So far as I am aware this is a record of the fifth bird which has been actually taken on the islands, though it is reported as having been seen on a number of occasions. However, the liability to confound one gull with another, especially among immature and winter birds seen on the wing, is very great and such evidence must be regarded as unsatisfactory. This bird, as well as the species following, were referred to *L. argentatus* in the museum catalogue. The specimen seems to be an immature winter bird, as there is considerable streaking and mottling with pale brown about the head and neck; the mantle is clouded and mottled with brown; the upper and under tail-coverts are marked with brown, while the tail-feathers are scarcely marked, being almost uniform with the primaries, which are just off from white. The mounted specimen measures: wing, 16.50; tail, 6.25; culmen, 2.10; tarsus, 2.60; midtoe, 2.75; depth of bill at base, .65; depth at gonys, .75.

2. *Larus californicus*. CALIFORNIA GULL.—[13, ♀. *Larus canus*. Mounted: Bro. Matthias.] This, the first specimen taken here, was secured probably on Maui and seems to correspond with the descriptions of the young in winter or immature birds. The head and neck are much streaked with grayish brown; the basal portion of the beak is lighter than the tip, which is blackish. There is some gray on the mantle and scapulars, but the whole back has a mottled appearance. The tail-coverts are much barred and the tail-feathers, brownish for the most part, have faint white tips. The primaries are umber brown with no white tips. The grayish wedges begin to show on the fourth primary and there is some indication of whitish on the tip. The underparts are brownish white without any distinct mottling. Wing, 16.50; tail, 6.40; tarsus, 2.25; midtoe and claw, 2.10; culmen, 2.10; depth of bill at gonys, .70. This is not an unexpected visitor since it frequents the greater part of the western coast of North America.

¹ The names, numbers, and notes enclosed within brackets are taken from the Records of the College cabinets of St. Louis College, Honolulu, Island of Oahu, H. I.

3. *Larus delawarensis*. RING-BILLED GULL.—[197, ♂. Mtd. Bro. Matthias.] This is unmistakably an immature bird since the head is streaked with dusky brown and the gray of the mantle is more or less interrupted by the buffish white assumed by certain phases of the young.

The secondaries are gray at their bases with darker centers and pale borders. The primaries are black without white tips, while there still remain a few brown feathers about the bend of the wings. The tail-feathers are white basally with a dark brown subterminal bar followed by whitish tips. Bill lighter towards the base but crossed by a broad black band in the region of the gonys followed by a lighter tip. This bird inhabits the whole of North America, wintering along both coasts, hence it is not to be greatly wondered at that it should at intervals stray to these islands. The mounted bird measures: wing, 14.25; tarsus, 2.00; mid-toe and claw, 1.70; tail, 5.30; culmen, 1.50; depth of bill at gonys .50.

A second specimen of *Larus delawarensis* has been recently taken in the Hawaiian Islands. It was secured by Mr. G. P. Wilder of Honolulu on the coast of the island of Molokai, near the landing of Haunakakai, on the first of February, 1901, during the time of the kona (*i. e.*, southerly) storm which prevailed for some three weeks. The bird (B. P. B. M. No. 9892) was kindly presented to the museum by Mr. Wilder. It seems to be an immature winter specimen with the head and neck white, somewhat streaked with brownish.

4. *Larus franklinii*. FRANKLIN GULL.—[195, ♂. Mtd. by Bro. Matthias.] This most interesting specimen appears without further note. It is the first record of *L. franklinii* in this portion of the ocean. The bird is almost if not quite mature and agrees closely with the winter phase of plumage, the head being flecked with white, showing the most white on the throat, mottling the plumbeous of the head and neck. The characteristic elongated white patches, one above, the other below, the eye, are conspicuous. The mantle is blue gray. Wing, 11.25; tail, 4.25; tarsus, 1.47; midtoe and claw, 1.50; culmen, 1.25; depth of bill at base, .30; depth at gonys, .32. The specimen differs from *L. philadelphia*, the Black-headed Gull which might be expected to stray down from the California coast, in its larger measurements, reddish feet and legs, darker mantle, totally different wing pattern, different coloration of the tail, etc. Thus the Hawaiian Islands may be added to the habitat of this species.

5. *Sterna lunata* Peale. GRAY WIDE-AWAKE.—[190,—?] From the record I copy the following note: "The bird belonged to Mr. J. J. Williams who, when it died, brought it to the college. There it was skinned and sent to Bro. Matthias at Wailuku, who mounted it." The specimen probably came from Laysan or some of the more western islands of the group.

6. *Diomedea nigripes*. BLACK-FOOTED ALBATROSS.—[40, ♀; 41, ♂.] The record states, "these two specimens were brought from Laysan Island by Mr. J. J. Williams." Brother Mark informs me that they kept the birds alive quite a time before they were finally dispatched and mounted by Bro. Matthias.

7. *Æstrelata hypoleuca* *Salvin.* BONIN PETREL. — A specimen in fine adult plumage and well mounted.

8. *Phaëthon lepturus* *Lacép. & Daudin.* WHITE-TAILED TROPIC BIRD. — [♂ and ♀ No. 2; Juv., No. —?; Tropic Bird; native name 'Koaë.'] The three birds, two fine adults and the young, taken on Maui, show the following measurements:

Sex.	Length.	Wing.	Tail.	Cent. tail feathers.	Tarsus.	Toe.
♂	27.50	10.25	4.40	17.80	80.	1.40
♀	27.50	10.40	4.40	17.50	77.	1.42
Juv.	15.50	10.00	4.40	—	72.	1.35

9. *Anas wyvilliana* *Scl.* HAWAIIAN DUCK; KOLOA MAOLI. — [43, ♀, mounted.]

10. *Spatula clypeata*. SHOVELLER. — [36, ♂, mounted, Bro. Matthias; passes by the name of 'Broad-bill' or Shoveller.] So far as I am able to make out, this is typical *S. clypeata* in the fully adult plumage.

11. *Dafila acuta*. PINTAIL; KOLOA MAPU. — [37, ♀, 37a, ♂. It passes as Pintail or Sprigtail.]

12. *Charitonetta albeola*. BUFFLE-HEAD. — [No. —? ♀, mounted, Bro. Matthias.] The bird is in perfect winter plumage. This is the first record of the capture of this wide-ranging form in the Hawaiian Islands, though it is common enough along the west coast of America; breeding far north. The specimen was shot on the island of Maui.

13. *Nesochen sandvicensis* (*Vig.*). HAWAIIAN GOOSE; NENE. — [45, 189 ♀, mounted. The natives call the bird Nene.]

14. *Branta nigricans*. BLACK BRANT. — [35, ♀. Brant.] The records state: "This individual had for a number of months been the bane of the hunters that were wont to shoot the ducks that frequent the ponds in the neighborhood of Spreckelsville and Kahului. This goose made herself obnoxious by giving alarm at the least danger, thus causing the ducks to fly away. She was continually in their company." This specimen is in fully adult plumage and is the second to be taken here.

15. *Nycticorax nycticorax nævius*. BLACK-CROWNED NIGHT HERON; 'AUKU KOHILI.' — [10, ♂, Speckled Heron; Hawaiians call it Auku. 29, ♀, caught in Ieo Valley, Maui, by Mr. Anton Foustino. The Hawaiian name is Auku kohili, when it is grown. 39, ♂.]

The young and adult of this form have long puzzled the Kanaka as well as the Haoli ornithologists. It is with some reluctance that they now admit that they are one and the same species.

16. *Proganula palmeri* *Froh.* LAYSAN RAIL. — [♀, 'Wingless' Rail.]

17. *Gallinula sandvicensis* *Streets.* HAWAIIAN GALLINULE; ALAE. — [18, ♂. Mud-hen.]

18. *Porphyrio melanotus* *Newt.* — [23, ♂. 'Sultana Bird.' Caught in Waialua, Oahu, by 'Kauka' Wilder.] This bird is said to have been introduced into the islands. I have not been able so far to find out who brought it here.

19. *Fulica alai* *Peale.* HAWAIIAN COOT; ALAE KEOKEO. — [32, ♂. Mud-hen.] This adult mounted specimen measures, wing, 7.10; tail, 1.50; tarsus, 1.80; midtoe and claw, 3.00; hindtoe, 1.00; bill, with shield, 2.00.

20. *Crymophilus fulicarius*. RED PHALAROPE. — This interesting specimen makes the third record of this species being taken on the group.

21. *Himantopus knudseni* *Stejn.* HAWAIIAN STILT; AEO. — [6, ♂. Stilted Plover.]

22. *Tringa acuminata* (*Horsf.*). SHARP-TAILED SANDPIPER. — [194, ♀. Mounted by Mr. Newell.] This specimen, one in the Bishop Museum, and one listed by Dr. Schauinsland from Laysan, are the only ones that have come to notice, though it will without doubt be taken from time to time in company with the winter shore birds from the mainland. The specimen is an adult winter bird.

23. *Heteractitis incanus* (*Gmel.*). WANDERING TATLER; ULILI. — [26, ♀. Ulili. Caught at the Mailuku streams, Maui.]

24. *Limosa lapponica baueri* (*Naum.*). PACIFIC GODWIT. — Though the specimen is without data it was probably secured by Mr. Newell on Maui. A specimen in possession of Mr. Francis Gay, the one listed by Dr. Schauinsland from Laysan, and the present specimen furnish the basis on which the record of the species on the islands depends. The two which I have examined are winter visitors.

25. *Calidris arenaria*. SANDERLING; HUNAKAI. — [22, ♂, mounted by Bro. Matthias].

26. *Charadrius dominicus fulvus*. PACIFIC GOLDEN PLOVER; KOLEA. — [21, ♀; 34, ♂; 216, ♂. Hawaiians call this bird Kolea.] The specimens are in various seasonal plumages.

27. *Arenaria interpres*. TURNSTONE; AKEKEKE. — [33, ♀; 21, ♀. Turnstone. Hawaiians know it by the name of Ukeke, Ukekeke and Akekeke.]

28. *Lophortyx californica*. CALIFORNIA PARTRIDGE. — [185, ♂.] This species has been introduced from the mainland, and was formally, I am told, more abundant than of late years.

29. *Phasianus torquatus* *Gmel.* RING-NECK PHEASANT. — [185, ♂.] Introduced.

30. *Turtur chinensis* (*Scop.*). CHINESE TURTLE-DOVE. — [4, ♂. Singapore Dove.] Introduced.

31. *Buteo solitarius* *Peale.* HAWAIIAN HAWK; IO. — [188. This bird was shot in Kona, Hawaii, by Emil Wuske (a German taxidermist) and the skin preserved and sent to the college museum.] The bird is adult. Wing, 11.25; tail, 6.25; tarsus, 2.50; midtoe and claw, 1.75; culmen, 1.25.

32. *Asio accipitrinus*. SHORT-EARED OWL; PUEO. — [24, ♀. The Hawaiians call it Pueo.]

33. *Corvus hawaiiensis* Peale. HAWAIIAN CROW; ULALÁ.—[No.—? ♀, Hawaii, April 8, 1896; No.—? No data.] The two crows are mounted. From them I take the following measurements:

Sex.	Wing.	Tail.	Tarsus.	Mid-toe.	Culmen.	Depth of bill.
♀	13.00	8.50	2.15	2.30	2.45	1.15
—	13.10	8.50	2.45	2.20	2.00	1.00

34. *Acridotheres tristis* (Linn.). MINA.—[1 pair, mounted. This is a pest introduced by Dr. Hillebrand.] There are in all ten specimens of this species in the collection. The bird has a rather unenviable reputation in the islands. Experiments are under way at the Bishop Museum whereby it is hoped to establish more nearly the exact relation which the Mina bears to his friends and foes.

35. *Vestiaria coccinea* (Forster.). IWI.—[25, ♀.] This is a young bird and the change of plumage exhibited is very interesting. There is also an adult specimen in the collection from Maui.

36. *Himatione sanguinea* (Gmel.). APAPANE.—[No. 14, ♂. This bird is common all over the group and furnishes the crimson feathers for decorative purposes. It is also called Akapane.] This specimen is from Maui. The feathers, however, were not used nearly as extensively as were those of the previous species.

37. *Chlorodrepanis wilsoni* (Roths.). MAUI AMAKIHI.—[No. 17, ♂, No.—? Amakihi, *Drepanis flava*. By some collectors the name of the Amakihi is said to be *H. stejnegeri*. I am not able to state how the name of the Kauai bird should have been given to the Maui bird. Perhaps 'off hand.'

38. *Oreomyza newtoni* (Roths.).—An adult bird with the breast bright lemon yellow, the upper parts olive green, and with a straight bill.

39. *Oreomyza flammea* (Wilson). KAKAWAHIE.—A male bird in rich scarlet plumage. It probably came into the collection through Mr. Flood from Molokai, which, I believe, is the only place where it has been thus far taken.

40. *Hemignathus procerus* Cab. KAUI AKIALOA.—[No.—? Hanapepe Valley, Kauai.] This specimen seems to have come from Mr. Gay's collection.

41. *Hemignathus affinis* Roths.—[From Maui. ♀.]

42. *Heterorhynchus wilsoni* Roths.—[Nukupuu. Brilliant Half-bill. Kona, Hawaii, 4000–5000 ft.]

43. *Psittacirostra psittacea* Gmel. OU.—[Ou. Hawaii. *P. psittacea*, ♂.]

44. *Rhodacanthis palmeri* Roths.—An adult ♂.

45. *Moho nobilis* (Merrem.) O-O.—[O-o. Hawaii. *A. nobilis*, ♂.]

NESTING HABITS OF THE EVENING GROSBEEK
(*COCCOTHRAUSTES VESPERTINUS*).BY FRANCIS J. BIRTWELL.¹

Plate VII.

Photographs from nature by the author.

JUNE 5, 1901, Willis, New Mexico. — Bright and pleasant, temperature 70° F. In company with Olivia I took a short stroll on the bench west of the cabin. There the slope showed abundant signs of avian activity. Evening Grosbeaks were abundant and common, their shrill whistles not infrequently preventing the identification of other sounds. Both males and females were present, and I observed several feeding upon the ground, where they hopped very sparrow-like.

June 6. — Evening Grosbeaks were common, apparently doing nothing but shriek.

June 11. — Olivia and I to-day went up, as usual, to the bench. The usual birds were seen and nothing important noted except the two finds of the day. A male and female Black-headed Grosbeak flew to the ground, and, a moment later, came back, the female first, bearing nesting material. Both flew to a large limb of a great pine tree by the trail, where the material was undoubtedly deposited. I was, however, unable to see distinctly.

June 18. — I shot a female *Coccothraustes vespertinus*; bill apple-green, legs light brown. The stomach was filled with hairless caterpillars about half an inch long.

June 20. — Our last finds to-day were the most important I have ever made, ornithologically; and the secret of the shrieking Evening Grosbeaks about the slopes is explained. The quick flight of a female (closely followed by a male) bearing nesting material

¹ From the Field Notes of Francis J. Birtwell, Pecos River Forest Reserve, Summer of 1901. Copied and completed by his wife, Olivia M. Birtwell.

[This article has a peculiarly sad interest, owing to the fact that the author met with a fatal accident while conducting these investigations. See 'Notes and News' in the present number of 'The Auk.' — *Edd.*]



FIG. 1. NEST AND EGGS OF EVENING GROSBEAK. $\frac{1}{2}$ natural size.



FIG. 2. EVENING GROSBEAK ON NEST. Photographed in Situ.

directed me to a tree growing almost in the yard, — a pine; and, as I watched, the bird descended to her nest, situated on a horizontal limb overhanging the road. We had hardly finished watching the pair, the male of which did absolutely no work whatever but whistled peculiar, sharp notes from a tree near, when we noticed a similar performance which led us to an immense spruce-tree growing near by, where the female settled upon a nest near the end of a swaying limb. She remained there for some minutes, the male whistling meanwhile and flying about from tree to tree. Then she left and both fed about the vicinity. Many times she returned to the nest, apparently unfreighted, and we left them feeding about the trees near by.

June 22. — During the night some mystic power gifted my eyes as well as Olivia's, for every lump on a tree that we looked at to-day turned into a nest and every bird with any pretensions or right to be breeding offered introduction to its home with implied invitations for future calls. This latter, however, was not necessary.

It began by my supposed Black-headed Grosbeak's nest of the 11th turning into that of the Evening Grosbeak, and throughout the morning the pair of birds entertained us royally. The female sat upon the nest, on and off, and during the former periods, the male howled encouragingly near in tones only the avian ear could deem *dulce*. Then from the nest, with curious, soliciting cries and fluttering wings, like a great overgrown nestling, she followed him about and by the patient bird was regularly fed. He was willing, however, for when I ceased, it was easy to lead her back to the nest, from which he departed to shriek about the neighboring trees when she had settled herself.

All three Evening Grosbeak's nests are within 100 yards of each other, and, since several other pairs are about, we infer that the species breeds gregariously and somewhat uniformly, too.

After supper, just before dusk, we revisited the scene of the morning's operations to observe the evening attitude of the birds. All the Grosbeaks were silent and apparently absent.

June 23. — Olivia and I visited again the Vale of Vespertina, as we have named the place where Coccothraustes and so many birds abound, — the slope behind the cabin. I was yet too lamed from

climbing to get to my Grosbeak's nest so we merely watched the wonderful avian life going on about us in the musical, deep-voiced pines.

The Grosbeaks were all silent and came into the trees from distances. At times the coaxing voices of the females were heard and a shrill whistle or two, but the silence was noticeable. I found two more nests (Grosbeak's), one at the end of a spruce limb near the others, the other similarly placed but farther back some hundreds of yards. The birds were seen on and off the nests at various times. The nest of the great pine, taken for the nest of *Habia melanocephala*, had the bird sitting. With shot I cut the twigs off all about, but she merely elevated her head. The climb is risky and I am married. Unless I am forced I shall not attempt to collect the set but will secure specimens of young later on.

June 26.— The actions of the Grosbeaks assured us that the sets of eggs were complete and should be taken without further delay. Accordingly this morning we went to the spruce tree where the nest was discovered June 20, as recorded in the notes for that day. The male bird approached the vicinity of the nest several times as we prepared for the climb, uttering his sharp call, and the female answered, at intervals, with her querulous note from the nest.

The tree was about seven feet in circumference and studded for some distance from the ground with short, barkless limbs, of which some would support a man's weight and some had to be chopped off in making the ascent. Measurements showed the height of the nest above the ground to be 41 feet. The birds had evidently selected the location of their domicile with a view to doing as little work as possible. It was visible from no direction but the one from which we had discovered it and was placed flatly upon the horizontal branch with a smaller fork propping it on one side and heavy clusters of needles surrounding it. It was composed of flimsy material and a very little of it; the floor so thin as to barely cover the underlying branch.

From the only resting-place, the fork made by the tree-trunk and the branch next above the one on which the nest rested, Mr. Birtwell scooped the eggs, one by one, from the nest with a tiny

net on the end of a trout-rod and loosened the nest from the bough. There were four eggs, in color, size, form, texture and markings indistinguishable from those of the Red-winged Blackbird.

The sitting bird left her trust only when the cries of warning from her mate became most frantic, and the pair were loudly assisted by two other Grosbeaks, who flew madly about with them. Only the female was taken, the male perching far out of harm's way.

The next nest, the one found in the spruce tree June 25, was harder to get. As we approached the tree, but ten rods from the other, all the Grosbeaks in the neighborhood seemed to have taken the alarm and to keep a corresponding silence. This nest was not so well hidden. From the ground we could see the sitting bird, seemingly calm in her dizzy cradle, which swayed in the gentle breeze at the end of the long, slender branch, 46 feet above us. Moreover, a fact important to the egg-crank, there was no branch above or below the nest for some distance. Only a small twig helped to hold the frail structure in place.

With a long rope tied to himself and the tree trunk, Mr. Birtwell crawled out on the all too small branch to a point where he could reach with outstretched hand to loosen the precious, egg-filled nest, and placed it between his teeth. Thus burdened, he cautiously backed to comparative safety and there packed the three blue treasures in cotton. The owners of this nest had to mourn alone, no others of their tribe appearing. Both birds were, with difficulty, shot. Both flew. The female was found in hiding, standing behind a small gray weed. The male eluded us and, as we had at least one more Grosbeak's nest to collect, we determined that the next must furnish a male bird, if it took a day's work.

As may be conjectured, this nest was more strongly built than the first, the difference being in the greater amount of material used and the more secure fastening to the bough. But certain it is that the Evening Grosbeak puts little work into the building of her nest. The outside is of a few rather coarse sticks. Usnea is wadded together next and fine rootlets make the lining.

Both sets of eggs were slightly incubated so that we concluded that the second set of three was complete.

GENERAL NOTES.

Capture of Sabine's Gull in Wisconsin.—On Oct. 7, 1900, a local sportsman brought me a fine specimen of *Xema sabini* which he had killed that morning from a boat in the center of Delavan Lake. The bird is a male, young-of-the-year, and was alone. — N. HOLLISTER, *Delavan, Wis.*

Snowy Heron in Alberta.—I have recently mounted a fine adult male Snowy Heron (*Ardea candidissima*), shot on May 11, 1901, near Pincher Creek, about 90 miles south of Calgary. The bird was in good condition, and is a very unusual record, I presume, for this locality.

Last fall I secured two fine specimens of Ross's Snow Goose (*Chen rossii*); they appear to pass right through this district on their migrations. — G. F. DIPPIE, *Calgary, Alberta.*

A New Bird for the State of Ohio — *Ardea cærulea*.—On August 1, 1901, I observed two birds of this species on the banks of the old arm of the Scioto River, one of which I shot after an exciting chase of about three hours. It proved to be a young male of *Ardea cærulea* (Little Blue Heron), being pure white in color, but having the tips of the first seven quills of each wing of a slate blue color. It had the following measurements: Extent, 93 cm.; wing, 25.5 cm.; tarsus, 9 cm.; bill, 6.5 cm.; tail, 11 cm.; length without bill, 48.2 cm. On August 3 another specimen, a young female, was brought in to me by a man who wanted it mounted; it was shot on Sunfish Creek, Pike Co., Ohio. A third specimen was also shot there, while a fourth, also a young female, was brought to me on August 16, shot on the banks of the Scioto River, while four more were seen at the same time. Dr. Wheaton, writing in 1882, states that the *Ardea cærulea* "probably occurs in the southern portion of the State, but had not been positively identified within the State's limits." As I have not seen anything else in print to prove the existence of this species in the State, I believe I am correct in heralding it as a new bird for the State. The number of specimens—four shot (two in my collection, two mounted for other parties) and four seen, making eight in all—is, under these circumstances, certainly remarkable, while the age of the birds, as also the time of the year, would make it highly probable that they had been bred in the State. — W. F. HENNINGER, *Waverly, Ohio.*

A Band-tailed Hawk's Nest—An Arizona Incident of Biographical Interest.—In a small cañon in the western foothills of the Rincon Mountains, about twenty-one or twenty-two miles east of Tucson, stands a medium sized cottonwood tree in which hawks have nested for many years. The old stick pile on which so many generations of birds have been raised has become quite bulky through its annual accretion. In the spring of 1886 I was told by parties coming in from the San Pedro

that a pair of "black hawks" had taken possession of the old nest. As such birds were not common thereabouts the statement was worth looking into. I reached the tree just before sundown and to my delight I found things as represented and that one bird then occupied the nest. It was black sure enough, and resented interference with many angry screams as it circled above the tree. It proved to be a male Band-tailed Buzzard (*Buteo abbreviatus*). Unfortunately the female, although seen at a distance, failed to respond to the cries of her mate, and what was still more unfortunate the nest contained no eggs. It had been newly lined with leaves from the tree and was apparently ready for housekeeping. I waited till noon the day following in the hope of being able to make a closer acquaintance with the mate of the bird I then had, but had to leave without being thus privileged.

I subsequently learned from the late Major Chas. E. Bendire that he had, during the spring of 1872, climbed this same cottonwood tree and had examined the nest in question. He was at that time camped on the Rillito and had, while scouting, seen the nest. Some days later, as no hostile Indians were known to be about, he returned to the tree and climbed to the nest, which is located in a fork of the tree about 40 feet up. While examining the nest he happened to look in the direction of the opposite hill and saw an Indian watching him from behind a giant cactus with which the hills thereabouts are thickly covered. To be caught meant a lingering death at the stake, to escape, under the circumstances, seemed almost impossible, but he did. He pretended not to have seen the Indian and after having apparently satisfied himself about the nest he slowly descended the tree, but no sooner did his feet touch the ground than he made a run for his horse which was tied a short distance below. As he did so about thirty Indians gave chase, but he fortunately got away. — HERBERT BROWN, Yuma, Arizona.

Nesting of the American Rough-legged Hawk in North Dakota. — The nesting of the American Rough-legged Hawk (*Archibuteo lagopus sanctijohannis*) within the borders of the United States is so rare an occurrence that it may be worth while to record the breeding of a pair of these birds in Nelson County, North Dakota, this year. Our guide, Mr. Alfred Eastgate, a naturalist and taxidermist of considerable experience, who is quite familiar with this species, which is abundant there in winter, told us that the pair had nested in this vicinity for several years. We first saw the nest on June 4, 1901, as we were driving along near a narrow strip of timber on the edge of a lake. The nest was conspicuously located in an isolated swamp oak at the end of the timber, so that it could be plainly seen from a distance, and as we drew near we could see the head of the hawk as she sat upon the nest. Although the nest was only thirty feet from the ground the hawk would not leave it until we rapped on the tree, when she flew slowly off and perched on a tree near by; we had a good look at her at short range which left no doubt in our minds as to the

identification. She was in full dark plumage, the darkest phase I have ever seen in this species, and the feathering on the tarsi was clearly noted. The nest was a large one, measuring two feet in diameter by one foot deep outside, the inner cavity measuring nine inches across by four inches deep. It was built in a crotch of the main trunk of the tree, resting partially on some smaller branches; it was made of large sticks and lined with pieces of dry flags and shreds of the same, with a few sprigs of green leaves. It contained two fresh eggs which we left for future reference, supposing that the set was incomplete. We visited the locality again on June 7 and had another good look at the bird, sitting on a fence-post, but there were still only two eggs in the nest.

As we had to leave this vicinity on the following day we collected the set of two eggs, which is now in the collection of Rev. H. K. Job of Kent, Conn. Mr. Job visited the locality again on June 20 but found the nest deserted. — A. C. BENT, *Taunton, Mass.*

Melanerpes erythrocephalus Breeding near Boston.— On the 26th of June, 1901, I saw a pair of Red-headed Woodpeckers feeding their young in Newton, Mass., the nest being in a dead stump at a height of twenty or twenty-five feet from the ground. According to Messrs. Howe and Allen's 'Birds of Massachusetts' this would seem to be the first nest ever recorded from eastern Massachusetts, although Mr. Brewster, in his edition of Minot, speaks of one found in Brookline in 1878. — BRADFORD TORREY, *Wellesley Hills, Mass.*

Discovery of the Egg of the Black Swift (*Cypseloides niger borealis*).— On the morning of June 16, 1901, I, with a companion, started out with the intention of taking a few sets of Cormorants' eggs on the cliffs a few miles west of Santa Cruz, California. On reaching the locality, I noticed a pair of Black Swifts flying about over the cliffs, much lower than they usually fly. One bird rose high in the air and struck off in a bee line, at the rate of a mile a minute. I then resumed my search for the Cormorants, which I found on the face of the cliff, where the shore line turns sharply inland and about where the Swifts had been seen.

After throwing clods and stones for some time, to flush the cormorants in order to ascertain whether the nests contained full sets, we then, with the aid of a rope ladder and a pole and dipnet, took two sets of Baird's Cormorant containing four eggs each and one of Brandt's Cormorant containing three eggs, from nests situated about 25 or 30 feet from the top of the cliff.

After moving my ladder a little, I proceeded to reach out and down for a more distant set of Baird's Cormorant eggs when suddenly, right from under the pole and not more than three or four feet from my hand, a Black Swift flew out and down toward the water and passed around the angle toward the ocean. It did not rise above the cliff, in the immediate

vicinity, as my companion above the cliffs did not see it at all, though I called to him to watch if it came above.

I then moved my ladder a little closer and went down farther so that my face was about a foot and a half from the egg which the Swift had just left. It was placed on a shelf or crevice in the lower edge of a projection standing out perhaps four or five feet from the main wall and about ninety feet from the breakers below. This crevice was four or five inches high, five or six inches deep, and about twenty inches long, very narrow at one end, and about thirty feet from the top of the cliff, twenty feet of which is earth sloping back to the level land above. This portion of the cliff was wet and dripping constantly, causing tufts of grass to grow here and there, where there was earth enough to support the roots. It was just behind one of these tufts of grass, in a slight depression in the mud, formed no doubt by the bird, that the egg was laid. I did not disturb the egg or nest, not going nearer than a foot and a half, intending to return a week later to get possibly a full set, which I did, but found things just as I had left them a week before and no Swifts were in sight. I took the egg, and peeled off the nest, grass and all, and have it in my collection.

I have since concluded that the set was complete, as when preparing the egg I found that incubation was advanced about two or three days. Another reason for believing that the bird had laid her complement of eggs and was sitting, was the fact of her being so difficult to flush, as all birds sit closer as incubation advances. — A. G. VROOMAN, *Santa Cruz, Cal.*

A Rare Record for Eastern New York. — On August 29, 1901, I took a fine specimen of the Olive-sided Flycatcher (*Contopus borealis*) on Shelter Island, N. Y. It was a female in young-of-the-year plumage, shot from a tall dead tree in a woodland clearing. This bird must have been reared not far from this locality, as it is not likely it had wandered far at this early date. It is the first specimen of the species I ever saw living, and a rare record for Long Island. — W. W. WORTHINGTON, *Shelter Island Heights, N. Y.*

***Acanthis linaria rostrata* in the Outer Hebrides.** — The occurrence of a third example of the so-called Mealy Redpoll in the Island of Barra, one of the Outer Hebrides, led me to request my friend, Mr. W. L. McGillivray — a nephew of the late distinguished ornithologist, and a gentleman much interested in birds — to allow me to examine this and the other specimens of this bird in his possession with a view to ascertaining to what species or subspecies of *Acanthis* the birds obtained in this far western island belonged. I was much interested to find that all three examples were referable to the form described by Dr. Stejneger (*Auk*, I, p. 153) as *Acanthis linaria rostrata* (Coues) — a bird which has not hitherto been recorded for Great Britain, though several specimens have been obtained on islands off the west coast of Ireland.

The Barra specimens were captured on the 8th of October, 1896, on the 10th of November, 1898, and on the 13th of October, 1900. Their wing measurements range from 3.02 to 3.08 ins. — WM. EAGLE CLARKE, *Museum of Science and Art, Edinburgh*.

The Migratory Movements of the Lapland Longspurs in North America. — The winter migratory movements of the Lapland Longspur (*Calcarius lapponicus*) have been little understood by me, or by those persons whom I have consulted. I have, to satisfy myself, during the past month gathered together all obtainable data for North America, and have been thus able to explain their seemingly erratic movements, and I present the results thinking they may interest others.

The Lapland Longspur (*Calcarius lapponicus*) and the Alaskan Longspur (*C. l. alasensis*) breed in North America approximately north of the 60th parallel from Ungava (Nachvak) to Alaska, the subspecies being confined to the country west of the 120th meridian. They nest during the months of June and July, reaching their breeding grounds in late May. By the last of August (Aug. 20) they begin their southward migration across southern Canada, occurring most abundantly in the central portions of their route (Manitoba). This is true of both their southward and northward journeys. They reach southern Labrador, Manitoba, and British Columbia in September, occurring in these localities apparently only as fall and spring migrants. After entering the United States the ranks of *Calcarius lapponicus* become more crowded into the central States as the eastern and western limits of their migratory route narrow, determined by the Alleghany and Rocky mountains. Stragglers only reach the Atlantic coast south of Ipswich, Massachusetts, and there are no records for the Alaskan Longspur south of Canada on the Pacific coast, the Cascade and Sierra Nevada mountains proving an effectual barrier, as this subspecies is not recorded from California to my knowledge but seems to migrate down between the Rocky and the last named mountains through the Great Basin, and wanders during the winter to Colorado and western Kansas. Along the 47th parallel (Montana, North Dakota, Wisconsin, Minnesota, and Michigan) the Lapland Longspur is a late September and October migrant, while to the south of the 40th parallel it occurs as a winter resident in large numbers as far south as the 37th parallel, occurring even occasionally in northern Texas (Gainsville). The wedge shape of the southern migration between the east and west mountain ranges explains why the Longspurs do not occur regularly all along the southern Pacific coast and on the Atlantic coast south of Massachusetts: a puzzle in the latter case, as formerly viewed from my local standpoint of Massachusetts alone.

The spring northward migration is exactly the reverse of the southward fall movement, the birds reaching the 47th parallel in late March, April and even May, and the 55th parallel in May.

As is the case with all birds during their migrations, stragglers are left along the way either from exhaustion, injury or for less apparent reasons, so that we have winter records for Nova Scotia, Vermont and Wisconsin, due to some of the above causes, and for the same reasons we also have late May records for Longspurs in the southernmost States in which they winter.—REGINALD HEBER HOWE, JR., *Longwood, Mass.*

The Western Savanna Sparrow in North Carolina.—In looking over the Savanna Sparrows in the collection of the Philadelphia Academy of Natural Sciences, my attention was called to a marked variation from the typical eastern form exhibited by the birds of the Hoopes Collection. This series, consisting of fourteen birds, was taken in the vicinity of Raleigh, North Carolina by H. H. and C. S. Brimley. The difference consists principally in the shorter and more finely pointed bill and in a less degree by the grayer plumage. A comparison established the fact that these specimens were identical with breeding birds of what is probably the western form (*Ammodramus sandwichensis alaudinus*) taken in North Dakota.

The dates of capture of the specimens from North Carolina are as follows:

Jan. 5, 1883.	April 30, 1890.
Jan. 14, 1888.	May 1, 1890.
Dec. 29, 1890.	April 17, 1891.
Nov. 11, 1891.	April 1, 1892.
Oct. 17, 1892.	April 21, 1892.
Dec. 20, 1892.	May 1, 1893.
Jan. 7, 1893.	May 11, 1893.

The fact that these records can be arranged in two groups, separated by the months of February and March, suggests that the birds are transients. Again, their numbers and the extended period of time during which they were taken negative the theory that they are stragglers.

These records should be interesting in connection with the observations of Mr. Loomis who has recorded the occurrences of western birds in Chester County, South Carolina.—HERBERT L. COGGINS, *Germantown, Pa.*

The Hooded Warbler in Massachusetts.—On the fifth of this month (September, 1901) I identified an adult male Hooded Warbler (*Wilsonia mitrata*) in a line of old privet bushes in the Harvard Botanical Garden of this city. Although I did not kill the bird, there is no doubt as to its identity, for I was often not more than five feet from it and easily made out every characteristic of the species. I know of no other record of this species for Massachusetts.—ARTHUR C. COMEY, *Cambridge, Mass.*

Nesting of the Carolina Wren (*Thryothorus ludovicianus*) in Southern Massachusetts.—My young friend Mr. Henry S. Forbes has kindly

given me permission to publish the following interesting extracts from two letters which he has lately sent me.

In his first letter, dated at Naushon on July 7, 1901, he says: "This afternoon I had a most exciting bird experience. As I was riding through the Naushon woods I heard a peculiar whistle wholly new to me. I dismounted, tied my horse and followed up the sound. The author I found was a bird of Wren-like appearance and of about the size of a Song Sparrow but shorter and stouter. It had a nervous habit of squatting and jerking its body whenever it gave utterance to its whistled notes. Presently its mate came with food in her bill and I went off to let both birds settle down. As I was watching the male from a distance he suddenly began a most delicious song. A few minutes later I found the nest which contained three or four young nearly ready to fly. It was placed on the ground in a hole among some dry leaves, under the dead branches of a fallen tree, and was partly roofed over with leaves. I did not examine the interior of the nest closely as I did not wish to disturb the young. I thought at the time the birds must be Carolina Wrens and on coming home found that Mr. Chapman's description corresponded in almost every respect with what I had seen and heard. His representation of the song as *whee-udel, whee-udel* seems to me very good indeed."

Under date of August 12, 1901, Mr. Forbes writes again as follows: "Yesterday to my surprise a pair of Carolina Wrens appeared in the garden behind our house and stayed there all day. The male (I suppose sang several times and uttered a variety of queer notes, but the song did not seem to have quite the same ring as when I heard it in the deep woods. I wonder if this is the same pair and if so where the young are. When I revisited the nest a week after I found it, the whole family had left the vicinity. I saw more clearly on this pair, the white or yellowish line above the eye which the young in the nest had."

Mr. Minot's record (Bull. N. O. C., Vol. I, No. 3, Sept., 1876, p. 76) of a pair of Carolina Wrens which he saw in Roxbury about July 4, 1876, and that by Dr. Brewer (*Ibid.*, Vol. III, No. 4, Oct., 1878, p. 193), of a bird taken in Lynn on July 6, 1878, have of course already led us to suspect that the species occasionally breeds in eastern Massachusetts, but Mr. Forbes is, I believe, the first observer who has been fortunate enough to definitely establish the fact. There would seem to be no reason why the birds should not continue to resort to Naushon, for the grand old forest which covers so large a part of that island is admirably suited to their requirements.

— WILLIAM BREWSTER, *Cambridge, Mass.*

Massachusetts Bird Notes. — *Ionornis martinica*. — Another instance of the occurrence of this species in northern Essex County has come to my notice. In June of the present year I saw at the residence of Mrs. Wm. S. Horner of Georgetown a mounted specimen of the Purple Gallinule. Mrs. Horner informs me that the bird was shot by a local gunner in the spring "several years ago" (probably not less than ten years) in a

meadow in Byfield parish, town of Newbury. The locality is not many miles from the pond where the pair of Purple Gallinules was seen in June, 1897, as I have already recorded in 'The Auk' (April, 1901, p. 190).

Dendroica blackburniæ. — The peculiar behaviour, akin to that of many ground-nesting species, of a female Blackburnian Warbler whose nest with three young and an infertile egg I found on June 21 of this year in Lynnfield, a small town near Boston, may be worthy of note. The nest was at the end of a long branch of a hemlock, being 18 feet out from the trunk and 30 feet from the ground. Before any attempt was made to crawl out on the branch, the female, alarmed doubtless by a slight movement of the limb, suddenly tumbled out of the nest and fell, in fluttering, fledgling style, straight down through the foliage to the ground, recovering herself at the last moment before touching the earth and flying up into the underbrush. The helpless way in which she fell led me to believe for a moment that a full-grown young bird had dropped out of the nest. Even when there were young in a nest, I never before noticed such behaviour on the part of a tree warbler nesting at such a height.

Dendroica blackburniæ is a rare but regular breeder in the town of Lynnfield. It also probably breeds in the adjoining well-wooded towns of Middleton and North Reading, as I have observed the species in summer in both places.

The Lynnfield Blackburnian's nest above referred to agrees with a nest of the same species taken in Winchendon, Mass., by Mr. Brewster in resembling "rather closely the nest of the Chipping Sparrow" (Auk, Oct., 1888, p. 392). It is composed of fine hemlock twigs and lined with a few pine needles. It was set firmly in among twigs and was beautifully concealed from view above by a long, full-leaved, horizontal spray, which, arching over within two inches of the structure, made a miniature A-tent for the sitting bird.

Progne subis. — Mr. A. H. Kirkland, late entomologist to the Massachusetts State Board of Agriculture, informs me that while observing the ravages of the fire-worm (*Rhopobota vacciniana* Pack.) in the cranberry bogs of Plymouth and Barnstable counties, he found the Purple Martins feeding freely on the imago of the pest. The Martins were abundant at many of the bogs, a Martin box on a pole being, according to Mr. Kirkland, "apparently as much a necessary adjunct to a well-regulated bog as a dyke or a cranberry house."

As two broods of the imago of the fire-worm are on the wing during the summer, and as the female imago are most active before laying their eggs, the benefits accruing to the cranberry grower from the presence of the Martins are obvious. Mr. Kirkland states that the cranberry growers estimate that in a term of years they lose fifty per cent of their crops because of the damage done by injurious insects, chief among which is the fire-worm.

Colaptes auratus. — The instance of the nesting of the Flicker (*C. auratus*) within a building, as recorded in the Monograph of the Flicker (Wilson

Bulletin, No. 31), reminds me of a somewhat similar case which came to my notice in June, 1897. A barn in Lynnfield, unoccupied and seldom visited, was frequented by Flickers, several holes being made by them in the sides of the building. All the holes that I saw were made where a seam was formed by two boards. A pair of the Flickers nested in the barn laying their eggs on some hay. I did not myself see the eggs in position but the facts in the case were later furnished me by Mr. J. W. Ross, the owner of the property.

A pile of hay some five or six feet high occupied one corner of the barn. The Flicker laid her eight eggs on this hay pile, making a slight depression. The eggs were laid close to the side of the barn and about one foot below the hole made therein by the birds.

Mr. Ross visited his barn at infrequent intervals and thinks that this will explain why the Flickers nested therein. On the occasion of one visit in May the bird flew from her eggs on the hay and made her escape through one of the holes. Two of the eight eggs were taken by boys, but the others hatched and Mr. Ross believes that the young were safely reared. This instance of the Flicker nesting within a building differs from that recorded in the 'Wilson Bulletin' in that the Massachusetts bird utilized hay for a nesting-place while in the other case the eggs were laid on boarding. — J. A. FARLEY, *Malden, Mass.*

Maine Bird Notes. — The Swallow Roost, of which I gave an account some years ago (Auk, Jan., 1895, p. 48) has moved to another location within two or three years.

I think the first impulse to change was given by the felling of most of the willows which they were wont to frequent. From time to time trees had been cleared away, but this cutting was on more wholesale lines and not to the Swallows' liking. There was, however, sufficient small willow growth farther back on the point for roosting, but they did not take to it, and though the banks are again thick with new growth they have not returned.

The next summer after the cutting of the trees they would collect, yet in smaller and smaller numbers, and go through some of their evolutions, either in memory of old times or from force of habit, and then depart half a mile southeast to the Kennebec River. I have been told by people living close by, that there had been for some time a smaller roost on an island in the Kennebec, seven or eight hundred feet long and covered by a thicket of willows with an occasional elm tree. It was to this roost that the Messalonskee Swallows joined themselves. Here are performed by a countless host similar interesting manœuvres to those before described and by the same kinds of Hirundinidæ.

I have never seen any suggestion of Martins (*Progne subis*) being night birds, but a few years ago, about ten o'clock of a bright moonlight night in August — my note-book says August 8 — I was resting in a hammock outdoors, when I heard the calls of Martins. A few minutes later my husband coming up the walk said, "Did you hear that?"

"Hear what?" I asked evasively.

"Well, I heard Martins if I ever heard them!" he replied, "and, moreover, I saw them. I looked up quickly and there were some flying across the face of the moon."

June 15, 1900, Mr. Bates, walking home from a train that reached Waterville between two and three in the morning, without having a thought of Swallows, suddenly heard them in the air above. Again it was bright moonlight.

In a flock of fifteen or twenty Robins (*Merula migratoria*) that has been about our neighborhood for the last few weeks is a handsome albino. The upper parts, except the breast, are entirely white, allowing for a tinge suggestive of not being quite clean; but the tail shows some dark feathers underneath. The breast is lighter than usual, a flesh color on the sides with a deeper shade through the center, and the bill seems very yellow in contrast to the white plumage. It is both surprising and amusing to see it run along and hop, hop, hop as every Robin does while seeking his food on the ground and to mark the twitch of tail and alarm note of *tut, tut!* as it flies up to a near by tree.

While at the island of Southport, on the Maine coast, this summer from July 20 to August 17, we heard the White-winged Cross-bills (*Loxia leucoptera*) singing in a manner to which the bird books we have so far consulted do not give due credit. The song of one on the west side from the top of a spruce tree excited our admiration, but at the cape where coniferous trees abound, the chorus from a number made us think of a bird store let loose. The song seemed much richer, louder and more prolonged than that of the Goldfinch, — more like a Canary's outpour with all the calls, trills, warbles and choppings. It was given on the wing as well as from the tree-tops, and the birds were very tame, alighting on the ground near us. We heard the bird also from the steamer singing at Christmas Cove and at Pemaquid. A number of bird lovers were agreed in calling it a rarely beautiful song, and that the bird should be placed high up in the list of sweet singers. — ABBY F. C. BATES, *Waterville, Maine*.

Ontario Notes. — Some time ago Gulls were said to breed regularly on the islands in Lake Ontario, but for fifteen or twenty years they have deserted even such isolated spots as Pigeon Island, and it is doubtful if they breed at any point about the lake or its islands. They were said to breed commonly on islands in many of the inland lakes of the Province of Ontario, and Gull Lakes are to be found everywhere, with a tradition that gulls bred there in the past. One of the best known of these Gull Lakes is in Clarendon township, about eighty miles north of Kingston. It was said to have an island called Gull Rock on which some hundreds of birds bred. The Rev. C. J. Young and I determined to investigate the truth of this statement, and on May 30, 1901, succeeded in reaching the lake after a very rough and unpleasant trip, and discovered that Gull Rock may have furnished a foothold for one or two pairs of gulls many years ago, but no

authentic record of gulls breeding at this spot during a period of twenty or twenty-five years existed. The rock is nothing but a granite boulder some ten or twelve feet across, and Gull Lake is remarkable chiefly for the absence of gulls. In a lonely little pond called Pine Lake we found two pairs of Herring Gulls (*Larus argentatus*) breeding on small rocks (May 31). Their nests were carefully constructed of dried moss and grass, and in addition one had several pine cones imbedded in its walls.

The first nest found was about two feet and a half from the water, and was placed in a hollow in the rock. It contained three eggs almost hatched. The second nest was almost on a level with the water, and contained but one egg, quite fresh. The birds were much annoyed at our intrusion and perched on pine trees while we were photographing the nest and examining the surroundings. The fact that the egg in the second nest was fresh led us to suppose that a tragedy had overtaken the first nest, as a violent gale would certainly cause the sea to sweep the rock on which the birds had established themselves. It is more than probable that the Herring Gulls breed on the islands in many of the lonely northern lakes of Ontario.

In a former issue of 'The Auk' I reported the Green Heron (*Butorides virescens*) as breeding on the shores of Charleston Lake; this year I have found it breeding in a bay on Loughboro Lake, twenty miles north of Kingston, and from reports given have not the slightest doubt that it will be found at various points along the so-called Rideau Canal. — C. K. CLARKE, M. D., Kingston, Ontario.

Additional Notes on the Birds of Okanogan (Chelan) County, Washington. — Okanogan County as constituted at the time of the publication of the 'Preliminary List' (Auk, April, 1897, pp. 168-182) has since been divided, the northern portion retaining the name. The southern half, Chelan County, embraces the region south of the Methow divide and also the Wenatshee valley which used to belong to Kittitas County.

This change effects only a few species given in the list of 1897. The rest were recorded in what is now Chelan County. The exceptions are, *Habia melanocephala*, *Setophaga ruticilla*, and *Troglodytes aëdon aztecus*.

During the summer of 1900, Prof. Lynds Jones of Oberlin, O., and myself visited Chelan County. We spent a couple of days at the foot of Lake Chelan, and were intending to put in at least four weeks in the high mountains west of the lake, paying special attention to the mountain avifauna. A disastrous camp-fire which occurred during the first week of our stay obliged us, however, to abandon our plans and to make a rather hurried exit. Our list of additions to the Chelan County records is therefore quite meagre and still to be accounted 'preliminary.'

The following new species were recorded:

Tringa bairdii. BAIRD'S SANDPIPER. — A single individual was seen feeding on the shore and floating ice blocks of the glacier lake on Wright's Peak. A similar bird was seen in the same situation in August, 1895; but not thoroughly identified as this one was.

Accipiter atricapillus striatulus. WESTERN GOSHAWK. — One specimen taken in the Stehekin valley.

Falco richardsonii. RICHARDSON'S MERLIN. — First noted on the Chelan River; was afterwards twice seen in the mountains.

Stellula calliope. CALLIOPE HUMMINGBIRD. — A few were made out with indifferent success. They are not to be counted as nearly so common as the Rufous.

Loxia leucoptera. WHITE-WINGED CROSSBILL. — A flock of a dozen was seen at an altitude of 7000 feet on Wright's Peak.

Stelgidopteryx serripennis. ROUGH-WINGED SWALLOW. — Several individuals were distinguished from the abundant Bank Swallows at the foot of Lake Chelan. This bird can hardly be rare, and its omission before was doubtless due to oversight.

Certhia familiaris occidentalis. CALIFORNIA CREEPER. — Not uncommon in the high mountains. No specimens were taken but there is little doubt that the birds are an overflow from the Pacific slope; since they were continuously present from the high regions east of the divide as we moved west over the range and down into the lowland forests of the Puget Sound country.

Parus rufescens. CHESTNUT-BACKED CHICKADEE. — The appearance of this bird is also to be counted an overflow of a typical coast form. A single troop was seen and a specimen obtained in the valley of the Stehekin.

Besides these eight new records two species are to be transferred from the 'hypothetical list' of 1897.

Larus philadelphia. BONAPARTE'S GULL. — Seen on the Columbia near Wenatchee.

Helminthophila rubricapilla gutturalis. CALAVERAS WARBLER. — Repeatedly seen. A set of three fresh eggs was taken from a brushy draw well up in the mountains, on July 22. — Rev. W. LEON DAWSON, *Columbus, O.*

Manuscript of Emmons's Catalogue of Massachusetts Birds. — Through the generosity of Miss M. R. Audubon, I have recently come into the possession of the original manuscript of Dr. Ebenezer Emmons's Catalogue of the Birds of Massachusetts. This will be of more particular interest to the ornithologists of New England, as it was the first attempt at a scientific list of Massachusetts Birds.

In Dr. J. A. Allen's 'List of the Birds of Massachusetts, with Annotations'¹ he says: "The first and formal list of the birds of the state was prepared by Dr. Ebenezer Emmons, and published in 1833 in Prof. Hitchcock's 'Report on the Geology, Mineralogy, Botany and Zoology of Massachusetts' (pp. 545-551). This contained one hundred and sixty species, all but two of which were valid. Excluding the two synonyms, all but

¹ Bulletin of the Essex Institute, Vol. X, p. 3, 1878.

one (*Rhynchops nigra*) have since been confirmed as inhabitants of the state. This list was only very sparingly annotated, but symbols were employed to indicate whether the species were rare or common, resident or migratory, or whether known to breed in the state. This list, so far as it goes, is remarkably free from errors."

The manuscript is written by Dr. Emmons in ink, in a small and cramped hand, and covers seven pages of foolscap, and on comparing it carefully with the list as it appears in Hitchcock's Report, I find it is practically an exact transcript. The two footnotes in the Report, referring to the Red-bellied Woodpecker—"Takes the place of the *P. auratus* in the western part of the State of New York"—and the Wild Turkey, "Frequently met with on Mount Holyoke. E. H."; do not, however, appear in the manuscript. On the back of the list, at the head of the eighth page, Dr. Emmons has written the following letter to Prof. Hitchcock, submitting the list to him.

"Sir.—I have done the best I can with the Catalogue. It is much more satisfactory to myself in the 1st Sub-Class. In the 2d I have been obliged to obtain my information mostly in Museums, &c. But in general it is, I think, accurate. I might have added a few more species, but I choose rather to omit some than commit the opposite error. You see my form and arrangement, it is, of course, at your disposal to alter as you see fit to make it conform to your general plan. The systematic form I should certainly prefer to an alphabetic one. My observations you are at liberty to suppress. Errors you will, of course, be good enough to rectify &c. The English names I would print in italic.

Yours truly

E. EMMONS.

On the bottom of the same page is the following letter addressed to John J. Audubon from Prof. Hitchcock:

"Amherst, Mass. March 22d, 1833.

MR. AUDUBON—*Dear Sir*—I send you Dr. Emmons' Catalogue of our birds, to which, as I hear from G. A. Greene, Esq., you have generously consented to add some notes. When you have prepared them will you be so good as to leave them, along with this Catalogue, with John Tappen Esq. No. 74 State St., Boston, and greatly oblige

Yours respectfully and obediently,

EDWARD HITCHCOCK."

The whole list, including the letters, was then folded and sealed, with-out envelope, and addressed to "John J. Audubon, Care of Dr. George Parkman, Boston, Mass."

I wrote to Prof. Chas. H. Hitchcock of Hanover, N. H., son of the late Edward Hitchcock, asking if he knew who the gentlemen mentioned in his father's letter to Audubon were. In his reply of Dec. 17, 1900, he writes,

"John Tappen was one of the solid men of Boston, a philanthropist, greatly interested in anti-slavery and church extension, next door neighbor and friend of Edward Everett and my father's particular friend. Of Mr. Greene I have no especial knowledge. His name occurs in connection with the forwarding of scientific work."

There is nothing in the Emmons list to show that Audubon added any notes to it.—RUTHVEN DEANE, *Chicago, Ill.*

RECENT LITERATURE.

Pycraft on the Morphology of the Cassowaries and their Allies.¹—In this important paper, which appears as the second part of Rothschild's 'Monograph of the Genus *Casuarius*,' Mr. Pycraft has endeavored to ascertain, so far as possible, the relations of the *Casuariidæ* to the remaining 'Struthious' forms and the position of these with regard to the *Carinatae*. We entirely agree with the author that the attempt has not been fruitless, and we heartily second Mr. Pycraft's thanks to Mr. Rothschild for entrusting the work to his hands.

The bulk of the paper is devoted to a description of the pterylosis and anatomical characters of the various forms under consideration, presented in Mr. Pycraft's usual clear and concise style. The repetition of the detailed descriptions of anatomical characters that have been given by other writers has been purposely and advantageously omitted, but a list of these papers is appended; while practically all the information is given that one would be likely to use. Moreover there is a carefully prepared key to the osteology of the *Palæognathæ*, based on the characters afforded by the adult skeleton, in which are set forth the distinctive characters of the existing genera and species of Struthious birds and *Apteryges* as shown by the skull, vertebral column and limbs. The *Dinornithidæ*, *Æpyornithidæ* and *Crypturi* are diagnosed as to family characters only.

The gist of the paper is to be found in the introductory remarks and final discussion of the phylogeny of the *Palæognathæ*. In the union of the *Tinamous* and 'Ratitæ,' which the author regards as a real need, he is in accord with Gill, and with Stejneger and other American ornithologists who have long held that while the division of birds into *Ratitæ* and *Carinatae* might be convenient it was not founded on a good morphological

¹On the Morphology and Phylogeny of the *Palæognathæ* (*Ratitæ* and *Crypturi*) and *Neognathæ* (*Carinatae*). By W. P. Pycraft. Trans. Zool. Soc., London, Vol. XV, Part V, No. 6, pp. 149-290, pll. xlii-xliv, December, 1900.

basis. Abroad, the effect of conservatism has been such, that, aside from Garrod and Fürbringer, Merrem's divisions, which had the sanction of adoption by Huxley, have been almost universally retained, and even Gadow in his Classification of the Vertebrata keeps the Tinamous in an order next the fowls. We are therefore glad to see these birds placed by Mr. Pycraft where we believe them to belong and where a strict osteological diagnosis puts them.

Mr. Pycraft uses the antithetical terms Palæognathæ and Neognathæ to designate the two main groups into which he divides existing birds, the former comprising the 'Ratite' birds and Tinamous, the latter including all other birds.

The Neognathous type of palate is considered to have been derived from the Palæognathous, the Tinamous presenting a stage somewhat intermediate between the two, and the palate of *Rhea* indicating how the change may have been brought about; furthermore the ægithognathous and schizognathous types of skull are but modifications of the dromæognathous, and the desmognathous a secondary modification of the schizognathous. This last may, we think, be accepted without question, but the former statement should at present be received with a little caution owing to our exceedingly imperfect knowledge of early birds. It may not be amiss here to say that the skull of *Hesperornis*, as shown by a specimen in the University of Kansas, was devoid of basipterygoid processes and that the arrangement of the bones of the palate appears to have been very peculiar.

The palæognathæ are regarded as polyphyletic probably tri-phyletic, while the neognathæ have been derived as a diverging branch from that stock which gave rise to *Rhea*, *Dinornis* and *Æpyornis*. *Dromæus* is the most primitive of living birds, with *Casuaris* not far distant, while *Struthio* is perhaps derived from the same ancestral stock as these two and is not far removed. *Apteryx* is looked upon as quite distinct from the others, and *Rhea* as the most highly specialized of the large forms.

Such are some of the conclusions reached by Mr. Pycraft, and we are promised a discussion of the phylogeny of the Neognathæ later.—F. A. L.

Bangs on New American Birds.—During the last few months Mr. Outram Bangs has described a number of new American birds additional to those recently characterized by him in 'The Auk.' These include a new Honey Creeper from San Miguel Island, Panama,¹ which he has named *Cæreba cerinoclunis*; a new *Phaëthornis* (*P. longirostris susurrans*) from the Santa Marta region of Colombia²; a new *Ortalis* (*O. struthopus*) from San Miguel Island, Bay of Panama³; and a new form of the Red-

¹ Proc. New Engl. Zoölogical Club, II, pp. 51, 52. Feb. 8, 1901.

² *Ibid.*, pp. 63-65. July 31, 1901.

³ *Ibid.*, pp. 61, 62. July 31, 1901.

tailed Hawk (*Buteo borealis umbrinus*) from Florida,¹ based on a single specimen collected at Myakka, Manatee County. He thinks it may be only a straggler to Florida from Cuba. Mr. Bangs has also described a new subspecies of *Stelgidopteryx* (*S. ruficollis æqualis*) from Santa Marta, Colombia,² and passed in review the other members of the *ruficollis* group, namely, *S. uropygialis* Lawr., and *S. fulvipennis* (Scl.), which he looks upon as merely subspecies of *S. ruficollis*.

In conjunction with Mr. Brewster, he has also distinguished a new form of *Aithurus* from Jamaica,³ which these authors have named *Aithurus scitulus*, distinguished from *A. polytmus* by smaller size, darker colors, and a much shorter, wholly black bill.—J. A. A.

Bangs on Birds from the Liu Kiu Islands.⁴—A collection of 107 specimens recently received by the Museum of Comparative Zoölogy, was found to comprise 56 forms, of which six are described by Mr. Bangs as new. The paper forms an important addition to our knowledge of the ornithology of these little known islands.—J. A. A.

Chapman on New Birds from Peru.⁵—A small collection of birds made by Mr. H. H. Keays, for the American Museum of Natural History, at Inca Mines, southeastern Peru, proved of exceptional interest, containing, besides several rare species, six forms that Mr. Chapman has characterized as new. These are *Chlorochrysa fulgentissima*, *Malacothraupis castaneiceps*, *Euphonia xanthogastra brunneifrons*, *Chlorospingus flavigularis parvirostris*, *Ochthæca keaysi*, and *Terenura xanthonota*.—J. A. A.

Grinnell on New California Birds.—In recent numbers of 'The Condor' Mr. Joseph Grinnell continues to distinguish local forms among the birds of California, characterizing in the May-June issue (pp. 65, 66), two new forms of the Yellow-throat, under the names of *Geothlypis trichas scirpicola* and *G. t. sinuosa*, the former being a "permanent resident" of the fresh-water tulé beds of Los Angeles County and the latter a "permanent resident" of the salt marshes about San Francisco Bay. *G. t. sinuosa* is thus a further refinement of *G. t. arizela* Oberh., which Mr. Grinnell allows a wide range on the Pacific slope in the breeding season,—from "Central California to British Columbia."

¹ *Ibid.*, pp. 67-69. July 31, 1901.

² *Ibid.*, pp. 57-60. July 31, 1901.

³ *Ibid.*, pp. 47-50. Feb. 8, 1901.

⁴ On a Collection of Birds from the Liu Kiu Islands. By Outram Bangs. Bull. Mus. Comp. Zool., XXXVI, No. 8, pp. 255-269. July, 1901.

⁵ Descriptions of Six apparently New Birds from Peru. By Frank M. Chapman. Bull. Am. Mus. Nat. Hist., XVI, pp. 225-228. Sept. 12, 1901.

In the July-August issue of 'The Condor' (pp. 92, 93) he describes a new Song Sparrow as *Melospiza melodia sanctæcrucis*, with the range: "Along the fresh-water streams heading in the Santa Cruz Mountain region, from San Francisco south to Monterey Bay." He comments at some length on the intricacies of the Song Sparrow problem in California, which he rightly considers is as yet far from settled. — J. A. A.

Babson's Birds of Princeton, New Jersey.¹ — The area embraced in the present list is included within "an eight mile radius" of Princeton, and comprises the greater part of Mercer County and the southern portions of Middlesex and Somerset Counties. The introduction defines the boundaries of the region, describes its physical characteristics, and summarizes its principal ornithological features, including a classification of the species in accordance with the nature of their occurrence, they being grouped into the following eight categories: Permanent Residents, Summer Residents, Summer Visitants, Winter Residents, Winter Visitants, Regular Transients, Irregular Transients, and Accidental Visitors. There is in addition a list of the species found breeding, with the earliest dates at which nests containing eggs have been found.

This is followed by the 'Annotated List of Birds,' numbering 230 species. The arrangement and nomenclature is that of the A. O. U. Check-List. The annotations are satisfactorily full and explicit, the list having been evidently compiled with great care and discrimination. The list is based primarily on the author's own observations, which cover four years, but indebtedness is acknowledged to Dr. Marcus Stultz Farr, Dr. Alexander Hamilton Phillips, and Mr. W. E. D. Scott, all of Princeton University, and to whom frequent reference is made in the annotations. The list is exceptionally free from typographical errors, and is tastefully printed, and forms in every way a most creditable initial number of the 'Bulletin' of a 'Bird Club' from which much good work may be confidently expected. — J. A. A.

Selous's 'Bird Watching'² — As the author explains, this work, "with one or two insignificant exceptions," is a record of his own observations; "all that I have seen which I have included in this volume," he says, "was noted down by me either just after it had taken place or whilst it actually was taking place," much of it being transcripts from his note-books.

¹ The Birds of Princeton, New Jersey, and Vicinity. By William Arthur Babson, B. S., Princeton University. Bulletin of the Bird Club of Princeton University, Vol. I, No. 1, pp. 7-82, Sept., 1901.

² Bird Watching | By | Edmund Selous | [Vignette] London | J. M. Dent & Co., Aldine House | 29 & 30 Bedford Street, W. C. | 1901 — 8vo, pp. xii + 347, 6 photogravure pls. and several text cuts. Price, \$3.00. (Macmillan Company, 66 Fifth Ave., New York.)

And for this reason, he says, he has called his book 'Bird Watching.' In a certain sense it is unique, and forms a most valuable record of patient and minute observations of wild British birds in a state of nature. The scope of the work may be indicated by the following transcript of the headings of the twelve chapters: I, Watching Great Plovers, etc.; II, Watching Ringed Plovers, Redshanks, Pewits, etc.; III, Watching Stock-Doves, Wood-Pigeons, Snipe, etc.; IV, Watching Wheatears, Dabchicks, Oyster-catchers, etc.; V, Watching Gulls and Skuas; VI, Watching Ravens, Curlews, Eider-Ducks, etc.; VII, Watching Shags and Guillemots; VIII, Watching Birds at a Straw-stack; IX, Watching Birds in the Greenwoods; X and XI, Watching Rooks; XII, Watching Blackbirds, Nightingales, Sand-Martins, etc.

The amount of original and interesting information here brought together renders the book noteworthy and important, but it is perhaps marred a little, and certainly greatly swelled in volume, by the author's propensity to theorize and philosophize on what he has seen, especially where the observations do not furnish proper basis for speculative digressions.

In the first place the author is a strong believer in the efficacy of 'sexual selection,' and it is consequently from this point of view that he interprets the behavior of the birds he has so carefully watched. His arguments, he seems himself willing to admit, are here and there a little far-fetched and inconclusive, and to this extent they had better have been wholly omitted from an otherwise excellent book. Lack of space forbids a detailed reference to particular instances, and also prevents the transcription here of many passages in illustration of the author's admirable descriptions of what he has seen amid the wild crags of the sea-coast, on the moorlands, or in the 'greenwoods.' His felicity of description often makes readable, and even gives special interest, to what might easily become a dull recital if rendered by a less gifted narrator. But in general, to the bird lover, the incidents possess in themselves an interest that gives a charm to the pages of 'Bird Watching.'

The photogravure and text illustrations are from drawings by the well-known bird artist J. Smit, and, having been doubtless made under the author's careful supervision, are probably as good substitutes for the truthful pictures of the camera as could be well devised.

A very full index renders the contents of the book readily available.

'Bird Watching,' it may be added, forms a volume of the 'Haddon Hall Library' series, edited by the Marquess of Granby and Mr. George A. B. Dewar. — J. A. A.

Publications Received. — **Bangs,** Outram. (1) On a Collection of Birds from the Liu Kiu Islands. (Bull. Mus. Comp. Zoöl., XXXVI, No. 8, July, 1901.) (2) A New Honey Creeper from San Miguel Island, Panama. (Proc. N. Engl. Zoöl. Club, II, pp. 51-52, Feb. 8, 1901.) (3) Notes on the American Rough-winged Swallows, with Description of a new Sub-

species. (*Ibid.*, pp. 57-60, July, 1901.) (4) A New *Ortalis* from the Archipelago de las Perlas, Bay of Panama. (*Ibid.*, pp. 61, 62, July 31, 1901.) (5) A New *Phaethornis* from the Santa Marta Region of Colombia. (*Ibid.*, pp. 63-65, July 31, 1901.) (6) On an apparently Unnamed Race of *Buteo borealis*. (*Ibid.*, pp. 67-69.)

Bocage, J. V. Barboza du. Aves da Guiné Portugueza. (Jorn. de Sci. Math., Phys. e Nat., (2) VI, No. 6, Maio, 1901.)

Bonhote, J. L. On the Birds collected during the Skeat Expedition to the Malay Peninsula, 1899-1900. (Proc. Zool Soc. Lond., 1901, pp. 57-81.)

Brewster, William, and Bangs, Outram. On an overlooked species of *Aithya*. (Proc. N. Engl. Zool. Soc., II, pp. 47-50, Feb. 8, 1901.)

Chapman, Frank M. Descriptions of Six apparently New Birds from Peru. (Bull. Am. Mus. Nat. Hist., XIV, pp. 225-228. Sept. 12, 1901.)

Dubois, Alphonse. Synopsis Avium, fasc. 5 and 6, 1900.

Finsch, O. Systematische Uebersicht der Vögel der Südwest-Inseln. (Notes from the Leyden Mus., XXII, pp. 225-301, pll. iii-v, 1901.)

Grinnell, Joseph. (1) The Pacific Coast Yellow-throats. (Condor, III, No. 3, pp. 65, 66, May 15, 1901.) (2) The Santa Cruz Song Sparrow with notes on the Salt Marsh Song Sparrow. (*Ibid.*, No. 4, pp. 90, 93, July 15, 1901.)

Herman, Otto. A Madarak Hasznáról es Káráról. Budapest, 1901. 8vo, pp. 280, numerous half-tone plates.

Meyer, A. B., and Heller, K. M. Aepyornis Eier. (Abhandl. u. Berichte d. Königl. Zool.-und Anthrop.-Ethn. Mus. zu Dresden, IX, No. 7, 1901, pp. 8, pll. 2.)

Meyer, Adolph F. A Field Key to our Common Birds. . . found in Eastern Wisconsin. Milwaukee, 1901, pp. 22. Price, 10 cents.

Salvadori, Tommaso. Intorno ad alcuni Uccelli delle Spitzberghe. (Boll. dei Mus. di Zool. ed Anat. comp. della R. Università di Torino, XVI, 1901.)

Selous, Edmund. Bird Watching. London, J. M. Dent & Co., and New York, the Macmillan Company. 8vo. pp. xii + 347, illustrated. Price, \$3.00.

Shelley, G. E. On some Collections of Birds from the Protectorate of British Central Africa, received in 1899 and 1900. With an Introduction by P. L. Sclater. (Ibis, April, 1901, pp. 161-177.)

Shufeldt, R. W. The Osteology of the Cuckoos (Coccyges). (Proc. Amer. Philos. Soc., XL, No. 165, 1901, pp. 4-51, pll. i and ii.) (2) Osteology of the Penguins. (Journ. Anat. and Phys., XXV, April, 1901, pp. 390-404, pl. xxxviii.) (3) Notes on the Osteology of *Scopus umbretta* and *Balaniceps rex*. (*Ibid.*, pp. 405-414, pl. xxxix.) (4) On the Osteology of the Pigeons (Columbæ). (Journ. of Morph., XVII, No. 3, 1901, pp. 487-512, pll. A and B.) (5) On the Osteology and Systematic Position of the Screamers (*Palamedea*, *Chauna*). (Am. Nat., June, 1901, pp. 455-461.) (6) On the Osteology and Systematic Position of the Alcæ. (*Ibid.*, July,

- 1901, pp. 541-551, with 1 plate.) (7) Applied Photography. Application No. 21.—To Oölogy. (The Photogram, June, 1901, pp. 154, 156.) (8) British and American Jays. (Pop. Sci. News, July, 1901, pp. 148-150.)
- Anales del Museo Nac. de Montevideo*, IV, entr. xix, 1901.
- Annals*, The, of Scottish Nat. Hist., No. 39, July, 1901.
- Australian Museum*, Report of, for 1899.
- Bird-Lore*, III, No. 4, July-August, 1901.
- Birds and Nature*, X, Nos. 1, 2, June, Sept., 1901.
- Bulletin of the Bird Club of Princeton University*, I, No. 1, Sept., 1901.
- Bulletin of the British Orn. Club*, XI, Nos. lxxx and lxxxi, May and June, 1901.
- Condor*, The, III, Nos. 4 and 5, July-August, and Sept.-Oct., 1901.
- Forest and Stream*, LVI, Nos. 25, 26, LVII, Nos. 1-12, 1901.
- Journal*, The, of the Maine Orn. Soc., III, No. 3, July, 1901.
- Knowledge*, XXVI, Nos. 188-191, June-Sept., 1901.
- Notes on Rhode Island Ornithology*, II, No. 3, July, 1901.
- Naturalist*, The, A Month. Journ. of Nat. Hist. for North of England, Nos. 534-536, July-Sept., 1901.
- Ornithologische Monatsberichte*, IX, Nos. 7-9, July-Sept., 1901.
- Ornithologische Monatsschrift*, XXVI, Nos. 5-8, May-August, 1901.
- Ornithologisches Jahrbuch*, XII, Heft 2-5, March-Oct., 1901.
- Osprey*, The, V, Nos. 5-7, May-July, 1901.
- Ottawa Naturalist*, The, XV, Nos. 3-5, June and July, 1901.
- Our Animal Friends*, XXVIII, Nos. 11, 12, XXIX, No. 1, July-Sept., 1901.
- Proceedings of the California Acad. Sci.*, (3) Zoöl., II, Nos. 7-10, III, No. 1, 1901.
- Science*, N. S., XIII, Nos. 338, 339, XIII, Nos. 340-351, 1901.
- Transactions of the Nat. Hist. Soc. Glasgow*, VI, pt. 1, 1899-1900.
- Wilson Bulletin*, N. S., VIII, Nos. 2 and 3, May and August, 1901.
- Yearbook of the U. S. Depart. Agric. for 1900*.
- Zoölogist*, The, (4), V, Nos. 54-56, June-August, 1901.

CORRESPONDENCE.

Early Migration of Wild Geese.

EDITORS OF 'THE AUK':—

Dear Sirs:—Upon the 30th day of August, when in longitude 54° E. and latitude 45° N. (approximately), upon S. S. 'Minneapolis' bound from London to New York, I saw and pointed out to several of my fellow-passengers, three flocks of Geese flying due south, as near as could be

judged from the angle at which we saw them. They were very large flocks, and were unfortunately too distant to make their identity sure. That they were of the goose tribe was shown by their manner of flying, the V-formation being very perfect, and, as the flocks had upwards of a hundred in each, the long lines were not always perfectly steady, but waved slowly up and down like a blade of kelp in deep water. They may have been brant, or they may have been any one of the greater ducks, but they certainly were not gulls of any sort, and my belief is they were Canada Geese. I am very familiar with the flight of geese, and these flocks had all of the characteristics I have been accustomed to attribute to this regular migrant.

My question is, where were they bound at such an early date? They were heading into an open sea, and unless they changed their course, I do not believe they would have even sighted the Azores Islands. They may have been following some favorite great circle, or an upper air current not recognizable from the sea level.

The question was further brought home to me this morning (Sept. 17) by seeing from my window at half past seven o'clock, at Peace Dale, R. I., eight Wild Geese, near enough to be sure of, also flying south in an irregular manner, as if they had begun their fall migration. The date strikes me as being very early, and the suggestion of an early winter is undoubtedly conveyed to those wise in weather signs.

I should be glad if you could inquire through the columns of 'The Auk' for other notes of the southward flight of geese this year, and especially if anyone can suggest the probable destination of the flocks seen at sea.

ROWLAND G. HAZARD,

Peace Dale, R. I.

NOTES AND NEWS.

THE NINETEENTH ANNUAL CONGRESS of the American Ornithologists' Union will be held at the American Museum of Natural History, New York City, beginning on the evening of Monday, November 11, 1901. The evening session will be for the election of officers and members and for the transaction of the usual routine business. Final action will also be taken on the proposed amendments to the By-Laws, relating to the classes of membership, as approved at the last meeting of the Union (see *Auk*, Jan., 1901, p. 128). Tuesday and the following days, the sessions will be for the presentation and discussion of scientific papers, and will be open to the public. Members intending to present communications are requested to forward the titles of their papers to the Secretary, Mr. John H. Sage, Portland, Conn., so as to reach him not later than November 8.

In connection with the A. O. U. Congress there will be a conference of representatives of the Audubon Societies, for the purpose of forming plans for more effective coöperation.

NEWTON DEXTER, for a time an Associate Member of the American Ornithologists' Union, died suddenly of apoplexy, at Seaconnet Point, near Providence, R. I., July 27, 1901. His father was Samuel Dexter, of the eminent Rhode Island family of that name, and his mother was the daughter of James Fenner, a former governor of Rhode Island. He was educated at the Lyons Grammar School of Providence, where he prepared for Brown University, but gave up his college course for a period of foreign travel. He early displayed great interest in natural history pursuits, and especially in ornithology. He was an ardent sportsman-naturalist, and although he acquired an excellent knowledge of birds, and collected extensively, he published very little. In 1865 he was one of the volunteer assistants who accompanied the elder Agassiz on his well-known expedition to Brazil, and a large part of the extensive collection of birds obtained on this expedition was due to the industry and enthusiasm of Mr. Dexter. Later he traveled extensively in the Far West, while it was still an 'Indian country,' and during recent years he usually spent his winters in Florida, hunting and fishing, and collecting more or less incidentally. He was very modest and unassuming, avoiding publicity, and pursued his natural history investigations for the pleasure he took in them, publishing very few of the results. He presented from time to time many rare birds to various natural history museums, and was especially interested in the Roger Williams Park Museum of Providence. An intimate friend of his writes of him: "He was a staunch friend, genial and liberal in disposition, and careful to disguise his many kind acts."

FRANCIS J. BIRTWELL, an Associate Member of the American Ornithologists' Union, died at Willis, N. M., June 28, 1901. Mr. Birtwell was spending the summer at this quiet mountain resort in the Pecos River forest reserve that he might complete his book, 'The Ornithology of New Mexico,' and record a series of careful investigations on the influence of food and environment on the plumages of birds.

It was in an attempt to secure a valuable nest some 65 feet from the ground that the young scientist lost his life.

Mr. Birtwell was born in London, Eng., in September, 1880, and came to this country at an early age. From the Boston high schools he entered Bussey Institute, and from here had arranged to become a student in the Lawrence Scientific School, Harvard University; but, while studying, in the summer of 1899, in the Brooklyn Biological Laboratory, he found he was the victim of tuberculosis, and went to New Mexico. He was in the Territorial University for the next two years. Next year he was to have taken a degree at the Territorial College of Agriculture, where they "needed a man of his earnest ability." 'The Ornithology of New Mexico' had been accepted as a thesis for graduation.

During his brief life, Mr. Birtwell had been an industrious ornithologist. From his earliest youth he evinced a remarkable interest in the study of birds, which attracted the attention of local ornithologists. He was an active member of the Nuttall Ornithological Club. He founded the Elliott Coues chapter of the Agassiz Society of Jamaica Plain, of which he was president until leaving for the west. He was the founder and first president of the Roxbury High School branch of the Agassiz Association, was a charter member of the American Bird Restorers' Association, and, for two years, kept the records of bird migration for his section for the Department of Agriculture at Washington. Through the friendship of Dr. Coues, he became a member of the A. O. U. He was a contributor to 'The Auk,' 'The Osprey,' 'The Nidologist,' 'Science,' 'Popular Science,' the Boston 'Transcript,' and the Dorchester 'Beacon.'

The Dorchester 'Beacon' speaks of him as "an exceptionally brilliant young man, — a man possessed of a deep and thorough knowledge of the flora and fauna of his country, and a finished, graceful and interesting writer. . . . His contributions throbbed with love of Nature in her every form. His latest and, alas that we must say, his last contribution to the 'Beacon,' dated Albuquerque, Jan. 15, was reminiscent of the old Back Street woods and a plea for the salvation of the few remaining fields and woods of Dorchester." Dr. Coues wrote of an article young Birtwell had submitted to him that he knew of no other boy of his age who could have written so ably, and he predicted for him a great future.

At the time of the crusade against the House Sparrow in Mayor Quincy's administration in Boston, young Birtwell was the principal speaker in denunciation of the bird.

In May last, Mr. Birtwell was married to Miss Olivia Morton, a native of Iowa.

The peculiar conditions affecting faunal life in New Mexico were of especial interest to Mr. Birtwell. Though he had, in his few years, accomplished much, "his keen powers of observation, his independence of thought," and "his tireless zeal" made him "a young man whose career promised to be of great service to ornithology." — O. M. B.

AN AUSTRALASIAN ORNITHOLOGISTS' UNION, we are pleased to note, has recently been inaugurated and will hold its "first General Meeting at Adelaide in October or November," for the election of officers and permanent organization. The objects of the Society, as stated in its 'Provisional Rules,' are "the advancement and popularization of the Science of Ornithology, the protection of useful and ornamental avifauna, and the editing and publication of a magazine or periodical, to be called 'The Emu,' or such magazine or periodical as the Society may from time to time determine upon." The financial year of the Union began the 1st of July, 1901, and the first number of 'The Emu' is to be issued early in October. A 'general meeting' is to be held annually, "in the capital of one or other of the

different States, such capital to be decided at the previous Annual Meeting." In purposes and methods this second 'A. O. U.' is planned on much the same lines as our own A. O. U., and we wish it equal success.

THE BIRD CLUB OF PRINCETON UNIVERSITY was organized early during the present year with the following officers: President, William Arthur Babson, B. S.; Vice-Presidents, Edward Wallace Scudder and John Rogers Williams; Secretary-Treasurer, Daniel Minor Rogers; Recorder, Charles Frederic Silvester. Its activity is evinced by the 'Bulletin of the Bird Club of Princeton University,' the first number bearing date September, 1901. "The Club will issue further Bulletins at such intervals as the accumulation or importance of original matter may warrant." The first number consists of 82 pages, giving a list of the officers and members of the Club, and an excellent annotated list of the birds of Princeton, as already noted (p. 408). Mr. W. E. D. Scott is editor of the 'Bulletin.'

DANA ESTES AND COMPANY of Boston announce in their list of fall publications the long expected new edition of the late Dr. Coues's 'Key to North American Birds.' The work, we understand, had been completely rewritten, and left in readiness for publication by its lamented author, and will contain a large number of wholly new illustrations, made expressly for the work, by Mr. Fuentès.

AN 'INDEX-VOLUME' to the 'Zoölogical Record' will soon be published, at the subscription price of 15 shillings (10 shillings to subscribers to the 'Zoölogical Record'). The index volume will cover the volumes XVII-XXXVII (1880-1900) of the 'Zoölogical Record,' and will include not only all of the new generic and subgeneric names, but such names as were omitted in the previous volumes, as well as those omitted from Scudder's well-known 'Nomenclator Zoölogicus,' published in 1882. Thus zoölogists may have at their disposal (in the 'Nomenclator Zoölogicus' and the new Index together) a complete list of all names of genera and subgenera used in Zoölogy up to the end of 1900. The subscription-list will be closed on the 1st of December, 1901, but a limited number of copies will be placed on sale at the price of £1 per copy.

A WORK entitled 'A Manual of the Birds of Iceland,' by the Rev. H. H. Slater, is announced for early publication by David Douglas, 10 Castle St., Edinburgh. It will embody the results of Mr. Slater's fifteen years' observations on the birds of Iceland. The subscription price is 5s net.

THE large collection of birds' eggs, nests and skins brought together by Miss Jean Bell of Ridley Park, Pa., has been purchased by Mr. John Lewis Childs, of Floral Park, New York. It is said to contain about 30,000 eggs and 1000 nests, and is reported to be one of the finest and

most complete private collections of North American birds' eggs extant. It includes many rarities, and is rich in large sets of comparatively rare species, the collection having been formed through the combination of several noteworthy private collections.

THE EXPEDITION sent out by the Department of Entomology and Ornithology, University of Nebraska, during the summer of 1901 spent the interim between May 25 and July 27 in the Pine Ridge region of north-west Nebraska, and consisted of the following members: Prof. Lawrence Bruner, Mr. J. C. Crawford, Jr., Mr. M. A. Carriker, Jr., and the writer. Prof. Bruner and Mr. Crawford spent but a short time in camp however, being called back to Lincoln by official duties.

The ornithological work was very successful and of considerable importance. Especially is this true in regard to breeding records, of which several new ones were added to the already large number of Nebraska breeders. The ranges of a number of birds were considerably extended, and various notes of interest in regard to the western species gathered.

A goodly number of sets of eggs, skins and photographs of birds, their nests and eggs are the result of the season's collecting, and will go to enrich the Department collection. A few general notes as to some of the more important results might be of interest; but for more specific details the 'Proceedings' of the third Meeting of the Nebraska Ornithologists' Union should be consulted.

Several colonies of White-throated Rock Swifts were found breeding in cracks and crevices on the face of almost inaccessible cliffs, and a number of their rare sets secured—eighteen eggs in all.

The breeding of the Sage Grouse, Brewer's Blackbird, Western Warbling Vireo, McCown's Longspur, Louisiana Tanager, Piñon Jay and Western Lark Sparrow was definitely established, although in each case confined to a comparatively small area in the extreme northwestern corner of the State.

Among other interesting things the Mockingbird was found breeding on Antelope and Indian Creeks, near the South Dakota line.

All of these additional breeding records, range-extensions, etc., will be of great value in a revised work on Nebraska birds. — MERRITT CARY
Neligh, Nebr.

INDEX TO VOLUME XVIII.

[New generic, specific and subspecific names are printed in heavy-faced type.]

- ACANTHIS** *cannabina*, 313.
 hornemanni exilipes, 41, 195.
 linaria, 41, 109, 195.
 linaria holbællii, 41, 195.
 linaria rostrata, 41, 195, 395.
Accipiter *atricapillus*, 37.
 atricapillus striatulus, 403.
 cooperi, 37.
 velox, 37, 233.
Acridotheres *tristis*, 387.
Actitis *macularia*, 36, 92, 272, 340.
Actodromas, 319.
Æchmoptila *albifrons*, 14.
Ægialitis *meloda*, 316.
 meloda circumcincta, 316.
 vocifera, 36, 231, 266.
 wilsonia, 79.
Aeo, 386.
Aeronautes *melanoleucus*, 234.
Æstrelata *hypoleuca*, 385.
Agamia *agami*, 25.
Agelaius *imthurni*, 286.
 longirostris, 303.
 phœniceus, 40, 236, 267, 342.
 phœniceus caurinus, 286, 317.
 phœniceus fortis, 286, 317.
 phœniceus longirostris, 303.
 phœniceus neutralis, 286, 317.
 phœniceus sonoriensis, 303.
Agyrtria *decora*, 359.
Aithurus *polytmus*, 407.
 scitulus, 407.
Aix sponsa, 35.
Ajaia, 297.
Ajaja, 297.
Akekeke, 386.
Alae, 385.
Aldaia *arvensis*, 116.
Albatross, Black-footed, 201, 384.
Alca *arctica*, 277.
Allen, Glover Morrill, see Howe,
 Reginald Heber, Jr.
Allen, J. A. In memoriam: George
 Burritt Sennett, 11-23; republi-
 cation of descriptions of new
 species and subspecies of North
 American birds, No. II, 172-185;
 the question of the generic name
 Gavia, 270.
Alopochen *ægyptiacus*, 312.
Aluco, 316.
Aluconidae, 316.
Amazilia, 301.
Amazilius *cerviniventris*, 301.
Amazona *panamensis*, 359.
 salvini, 25, 359.
 virenticeps, 359.
Amblycercus *holosericeus*, 370.
American Ornithologists' Union,
 Eighteenth Congress of, 63-67;
 Report of Committee on Protec-
 tion North American Birds, 68-
 104; Tenth Supplement to the
 American Ornithologist's Union
 Check-List of North American
 Birds, 295-320; Nineteenth Con-
 gress of, announcement, 412.
Ames, J. H., nesting of Cory's
 Bittern (*Ardeetta neoxena*) and
 other notes, 106.
Amizilis, 301.
 edwardi, 28.
 fuscaudata, 359.
 cerviniventris, 301.
 cerviniventris chalconota, 436.
 tzacatl, 301.
Ammodramus *caudacutus*, 267.
 caudacutus diversus, 269.
 halophilus, 303.
 lecontei, 129-134.
 maritimus, 117.
 maritimus sennetti, 23.
 nelsoni, 116, 268.
 princeps, 262, 267.
 rostratus halophilus, 303.
 samuelis, 304.
 sandwichensis alaudinus, 397.
 sandwichensis savanna, 42,
 267, 342.
 sandwichensis xanthophrys
 209.
 savannarum, 148, 149.

- Ammodramus savannarum*, passerinus, 342.
Ampelis cedrorum, 43, 343.
 garrulus, 42.
Amphispiza belli clementæ, 313.
 belli nevadensis, 318.
 nevadensis, 318.
Anas boschas, 35, 332.
 fulvigula maculosa, 22.
 maculosa, 22, 23.
 obscura, 35, 264.
 wyvilliana, 385.
Anatidæ, 328, 331.
Ancylocheilus, 319.
Anorthura, 320.
 hiemalis, 44, 345.
 hiemalis helleri, 181, 307.
 hiemalis pacifica, 320.
 meligera, 307.
Anous stolidus, 55.
Anser albifrons gambeli, 135.
 Anthony, A. W., habits of the
 Gooney, 189.
Anthus pensilvanicus, 44.
 rufus parvus, 368.
 spraguei, 275.
Antrostomus, 317.
 carolinensis, 168, 359.
 vociferus, 39, 341.
Apapane, 387.
Aphelocoma californica immanis,
 188.
Apos, 121.
Apus, 121.
Aquila chrysaetos, 38, 233.
 chrysaetos canadensis, 21.
Ara macao, 358.
Aramides cayanae chiricote, 358.
Archibuteo lagopus sancti-johannis,
 37, 393.
Ardea carulea, 392.
 candidissima, 392.
 herodias, 36, 199, 265, 340.
 herodias fannini, 282, 297.
 tricolor, 373.
 wardi, 282, 315.
Ardetta exilis, 36.
 neoxena, 106.
Arenaria interpres, 298, 386.
 morinella, 173, 297.
Aristonetta, 319.
Arquatella, 319.
Arremon aurantirostris, 369.
Arremonops conirostris, 370.
Asarcia variabilis, 358.
Asio accipitrinus, 38, 164, 386.
 accipitrinus mcilhennyi, 174,
 312.
 sandwichensis, 154.
 wilsonianus, 38, 233.
Astragalinus tristis, 41, 201, 236,
 342.
Astur, 319.
Asturina ruficauda, 24.
Asyndesmus, 319.
Atthis, 320.
Attila sclateri, 365.
 Audubon Society of New York
 State, fifth annual meeting of,
 224.
 Auk, Black-throated, 21.
 Auklet, Cassin's, 201.
 Paroquet, 104.
 Auku kohili, 385.
Auriparus flaviceps, 15.
 Australasian Ornithologists' Union,
 414.
Automolus exsertus, 367.
 Avocet, 75, 331.
Aythya affinis, 35.
 americana, 35, 264.
 marila, 35, 264.
 marila nearctica, 199.
 BABSON, William Arthur, notice of
 his 'Birds of Princeton, N. J.,'
 408.
 Baldpate, 333, 335.
 Bangs, Outram, birds of San
 Miguel Island, Panama, 23-32; a
 new Ground Dove from Western
 Mexico, 257; notice of his paper
 on a new Meadowlark from South
 America, 281; on a collection of
 birds made by W. W. Brown, Jr.,
 at David and Divala, Chiriqui,
 355-370; notice of papers by, on
 new American birds, 406, notice
 of his paper on birds from the
 Liu Kiu Islands, 407. See also
 Brewster, William.
 Bangs, Outram, and Bradlee,
 Thomas S., the resident land
 birds of Bermuda, 249-257.
 Barrington, Richard M., notice of
 his 'The Migration of Birds at
 Irish Light Stations,' 205.
Bartramia longicauda, 112, 358.
Basileuterus leucopygius verag-
 uensis, 368.
 Bates, Abby F. C., Maine bird
 notes, 400.
 Bent, A. C., nesting habits of the
 Anatidæ in North Dakota, 328;
 nesting of the Rough-legged
 Hawk in North Dakota, 393.

- Bernicla, sp., 202.
 minima, 202.
 nigricans, 202.
- Bigelow, Henry Bryant, a Virginia record for the American Eider (*Somateria dresseri*), 189.
- Bignell, Effie, notice of her 'Mr. Chupes and Miss Jenny,' 288.
- Bird, Cedar, 343.
 Indigo, 343.
 Red, 256.
 Sultana, 386.
 Yellow-billed Tropic, 105.
- Bird Club of Princeton University, 415.
- Birtwell, Francis J., two interesting records from New Mexico, 112; description of a supposed new subspecies of *Parus* from New Mexico, 165-167; nesting habits of the Evening Grosbeak (*Coccothraustes vespertinus*), 388-391; obituary of, 413.
- Bishop, Louis B., rachitis in young Red-shouldered Hawks, 192; the European Starling in Connecticut, 194; Montana Redpolls, 195; *Acanthis linaria rostrata* and *Xanthocephalus xanthocephalus* in Connecticut, 195; deformity of maxilla in the House Sparrow, 195; the winter birds of Pea Island, North Carolina, 260-268; a new Sharp-tailed Finch from North Carolina, 269.
- Bittern, American, 36, 200, 265.
 Cory's, 106.
 Least, 36.
- Blackbird, 253.
 Brewer's, 236, 416.
 Red-winged, 40, 154, 236, 261, 331, 342.
 Rusty, 41, 154, 200, 267.
 Yellow-headed, 195, 330.
- Bluebird, 45, 249, 254, 347.
 Mountain, 238, 276.
- Boardman, George A., obituary of, 219.
- Bobolink, 40, 329, 342.
- Bob-white, 249, 250.
 Least, 47.
- Bonasa umbellus togata, 37, 340.
- Bond, Frank, Great Gray Owl in Wyoming, 107; song of the Western Meadowlark, 108.
- Bonhote, J. Lewis, on a collection of birds made by Mr. J. R. Thompson at the Cay Lobos Lighthouse Bahamas, 145-149.
- Botaurus lentiginosus, 36, 265.
- Bradlee, Thomas S., see Bangs, Outram.
- Brant, 265.
 Black, 385.
- Branta bernicla, 265.
 canadensis, 36, 265.
 nigricans, 385.
- Brewster, William, on the occurrence, in Massachusetts, of certain rare or interesting birds, 135-137; the Meadowlark (*Sturnella magna*) at Rangeley, Maine, 194; Bell's Vireo and the Sandhill Crane in New Hampshire, 274; an ornithological mystery, 321-328; nesting of the Carolina Wren (*Thryothorus ludovicianus*) in southern Massachusetts, 397.
- Brewster, William, and Bangs, Outram, notice of their paper on a new Bécard from Lower Uruguay, 281; do., on a new *Aithurus* from Jamaica, 410.
- Brotogerys jugularis, 359.
- Brown, E. J., Florida bird notes, 199.
- Brown, Herbert, Bendire's Thrasher, 226-231; a Band-tailed Hawk's nest,—an Arizona incident of biographical interest, 392.
- Brown, John Clifford, obituary of, 220.
- Bryan, William Alanson, a list of the Hawaiian birds in the St. Louis College collection, Honolulu, H. I., including records of several North American species, 382-387.
- Bubo virginianus, 38, 233, 340.
 virginianus arcticus, 113.
 virginianus pallescens, 300.
 virginianus subarcticus, 38, 113, 300.
 virginianus saturatus, 38, 113.
- Bucco dysoni, 360.
- Buffel-head, 35, 264, 385.
- Buri, Rud. O., notice of his paper on the anatomy and relations of the Swifts, 286.
- Bunting, Indigo, 42.
 Lark, 237, 329.
 Lazuli, 237.
 Snow, 195.

- Buteo abbreviatus*, 393.
albicaudatus, 15.
albicaudatus sennetti, 15, 23.
borealis, 37, 233.
borealis krideri, 233.
borealis umbrinus, 407.
latissimus, 37, 299.
lineatus, 37, 192.
platypterus, 218, 299.
solitarius, 163, 386.
swainsoni, 233.
Buteola, 319.
Butorides, 319.
 virescens, 25, 402.
 Butterfield, W. Ruskin, occurrence
 of Baird's Sandpiper in Sussex,
 England, 190.

CACICUS microrhynchus, 370.
 Cack-y-quaw, 326.
Calamospiza melanocorys, 237.
Calcarius lapponicus, 41, 396.
 lapponicus alascensis, 396.
Calidris arenaria, 202, 266, 386.
Calospiza larvata fanny, 369.
Campophilus guatemalis buxans,
 360.
Canachites canadensis, 36, 277.
 canadensis canace, 277.
 canadensis labradorius, 120,
 277, 298.
 canadensis osgoodi, 298.
Cardinal, 153, 201, 249.
 Bermuda, 256.
Cardinalis bermudianus, 256.
 cardinalis, 201.
Carduelis carduelis, 116, 255.
Carpodacus mexicana frontalis, 311.
 purpureus, 41, 201, 342.
 Cary, Merritt, occurrence of the
 Mexican Crossbill at Neligh,
 Neb., 109; birds of the Black
 Hills, 231-238; Nebraska Univer-
 sity Expedition of 1901, 416.
Cassidix oryzivora mexicana, 370.
Catbird, 44, 151, 238, 249, 345.
 Bermuda, 253.
Cathartes aura, 232, 266.
Centrocercus urophasianus, 232.
Centurus, 319.
Ceophloeus pileatus, 193.
 pileatus abieticola, 39, 340.
Cepphus grylle, 92.
Cerchneis sparveria, 358.
Cercomacra crepera, 365.
 maculicaudis, 30.
Certhia familiaris americana, 308,
 345.
Certhia familiaris fusca, 44, 308.
 familiaris occidentalis, 403.
 familiaris zelotes, 182, 308.
Certhiola sp.?, 148.
Ceryle alcyon, 39, 233, 340.
 amazona, 359.
 americana septentrionalis,
 359.
 inda, 26.
 superciliosa stictoptera, 359.
 torquata, 26, 359.
Chaetura pelagica, 39, 341.
Chamaea fasciata, 291, 292, 319.
 fasciata henshawii, 319.
 fasciata intermedia, 178, 319.
 fasciata phæa, 308.
 Chapman, Frank M., the correct
 name for the Florida Yellow-
 throat, 198; notice of his 'A
 Study of the Genus *Sturnella*,'
 212; notice of his paper on a new
 race of the Great Blue Heron,
 etc., 282; notice of his paper on
 new birds from Peru, 407.
Charadrius dominicus fulvus, 386.
 morinellus, 297.
 squatarola, 202.
Charitonetta, 319.
 albeola, 35, 264, 385.
Chasmorhynchus tricarunculatus,
 365.
Chat, Long-tailed, 238.
Chaulelasmus streperus, 333.
Chelidon erythrogaster, 343.
Chenalopex ægyptiacus, 312.
Chen hyperborea nivalis, 35, 264.
 rossi, 392.
Chickadee, 45, 345.
 Barlow's, 178.
 Chestnut-backed, 403.
 Hudsonian, 45.
 Long-tailed, 238.
Chick-choo-willio, 252.
Chick-of-the-village, 252.
Chicken, Mother Carey's, 105.
Chiroxiphia lanceolata, 365.
Chlorochrysa fulgentissima, 407.
Chlorodrepanis wilsoni, 387.
Chlorophanes spiza guatemalensis,
 369.
Chlorospingus flavigularis parvi-
 rostris, 407.
Chlorostilbon assimilis, 28, 359.
Chondestes grammacus strigatus,
 236.
Chordeiles virginianus, 39, 341.
 virginianus henryi, 234.
 virginianus sennetti, 23.

- Chroicocephalus, 319.
Chuck-wills-widow, 168.
Ciccaba nigrolineata, 358.
Circus hudsonius, 37, 266.
Cistothorus griseus, 311.
 marianæ, 268.
 palustris griseus, 311.
Clangula clangula americana, 35.
Claravis pretiosa, 358.
Clark, Hubert Lyman, the ptery-
 losis of *Podargus*, with notes on
 the pterylography of the Capri-
 mulgi, 167-171; the classification
 of birds, 370.
Clarke, C. K., notes from Ontario,
 112; Ontario notes, 401.
Clarke, Wm. Eagle, *Acanthis linaria*
 rostrata in the Outer Hebrides,
 395.
Clivicola riparia, 42, 117, 343.
Coccothraustes vespertinus, 41, 388-
 391.
Coccyzus americanus, 38.
 erythrophthalmus, 39, 340.
 minor, 148.
Cock, Chaparral, 21.
Cœreba cerinoclunis, 406.
 mexicana, 369.
 mexicana colombica, 30.
Coggins, Herbert L., the Hermit
 Thrush on Martha's Vineyard,
 Mass., 111; the Western Savanna
 Sparrow in North Carolina, 397.
Colaptes auratus, 399.
 auratus luteus, 39, 234, 340.
 cafer, 234, 301.
 cafer collaris, 301.
 collaris, 301.
Colinus minor, 47.
 virginianus, 250.
Collett, Robert, see Shufeldt, R. W.
Colopterus pilaris, 361.
Columba nigristrois, 358.
 rufina, 358.
 squamosa, 299.
Columbigallina bermudiana, 250.
 rufipennis, 25, 358.
 rufipennis eluta, 258.
 passerina, 192.
Colymbus auritus, 34.
 dominicus, 296.
 dominicus brachypterus, 172,
 296.
 holbœllii, 34, 270.
Comey, Arthur C., the Hooded
 Warbler in Massachusetts, 397.
Compsothlypis americana usnea,
 43, 343.
Contopus, 317.
 borealis, 40, 395.
 richardsonii, 234.
 richardsonii saturatus, 317.
 virens, 40, 341.
Conurus finschi, 358.
 ocularis, 359.
Coot, American, 36, 330.
 Hawaiian, 386.
Cormorant, Mexican, 189.
 Pelagic, 201.
Corvus americanus, 40, 155, 234,
 253, 342.
 corax principalis, 40, 108.
 hawaiiensis, 387.
Coturniculus, 319.
Coues, Elliott, memorial of, with
 portrait, 1-11.
Cowbird, 40, 150, 330, 342.
Crake, Corn, 249.
Crane, Sandhill, 36, 274.
 Whooping, 36.
Creeper, Brown, 44, 345.
 California, 403.
 Sierra, 182, 308.
Crossbill, 342.
 American, 41, 236.
 Mexican, 109, 236.
 White-winged, 41, 403.
Crotophaga ani, 26, 148, 360.
 sulcirostris, 15.
Crow, 253.
 American, 40, 155, 235, 249,
 342.
 Fish, 154.
 Hawaiian, 387.
Crymophilus, 314.
 fulcarius, 271, 386.
Cryptoglaux, 193.
 acadica, 193.
 tengmalmi richardsoni, 193.
Crypturus soui modestus, 25, 356.
Cuckoo, Black-billed, 39, 330, 340.
 Yellow-billed, 38.
Curlew, Hudsonian, 36.
 Long-billed, 75, 232.
Cyanerpes cyaneus, 31.
 cyaneus carneipes, 369.
 lucida, 369.
Cyancephalus cyanocephalus, 234.
Cyanocitta cristata, 40, 342.
 stelleri carbonacea, 174, 312.
 stelleri diademata, 302.
 stelleri macrolopha, 302.
Cyanocorax affinis zeledoni, 368.
 luxuosa, 292.
Cyanogarrulus diadematus, 302.
Cyanospiza cyanea, 42, 343.

- Cyclorhynchus psittaculus*, 104.
Cygnus americanus, 21.
Cymochorea, 319.
Cypseloides niger borealis, 394.
Cypselus, 121.
 melba, 286.
Cyrtonyx massena, 291, 292.

DACNIS pulcherrimus, 286.
 ultramarinus, 369.
Dafila acuta, 35, 202, 385.
Daniel, John W., Jr., occurrence of the Glossy Ibis at Washington, D. C., 271; nesting of the Hairy Woodpecker near Washington, D. C., 272; Bachman's Sparrow in Virginia, 273.
Dawson, W. Leon, *Tringa solitaria cinnamomeus* — a correction, 272; additional notes on the birds of Okanogan (Chelan) County, Washington, 402.
Deane, Ruthven, unpublished letters of William MacGillivray to John James Audubon, 239-249; manuscript of Emmons's Catalogue of Massachusetts birds, 403.
Dechonychura typica, 367.
Delaware Valley Ornithological Club, 223; notice of 'Proceedings' of, 280.
Dendragapus obscurus, 232.
Dendrocincla anabatina, 367.
Dendrocolaptes sanctithomæ, 367.
Dendrocygna discolor, 358.
Dendroica æstiva, 43, 237, 343, 368.
 auduboni, 237.
 blackburniæ, 44, 344, 399.
 cærulescens, 43, 110, 137-142, 147, 149, 343.
 castanea, 43.
 coronata, 43, 147, 149, 344.
 coronata hooveri, 313.
 discolor, 106, 147, 149.
 maculosa, 43, 344.
 nigrifrons, 109, 306.
 palmarum, 116.
 pennsylvanica, 43, 344, 369.
 striata, 147, 149, 344.
 tigrina, 147, 149.
 vieillotii, 30.
 vigorsii, 44.
 virens, 44, 344.
Dendroornis lacrymosa, 367.
 nana, 367.
Dexter, Newton, obituary of, 413.
Dichromanassa, 319.

Diomedea nigripes, 384.
Diplopterus nævius, 360.
Dippie, G. F., Snowy Heron in Alberta, 392.
Dolichonyx oryzivorus, 40, 148, 149, 342.
Dotterel, 297.
Dove, Bermuda Ground, 250.
 Ground, 192, 249.
 Mourning, 37, 201, 232, 276, 330.
Dowitcher, Long-billed, 157-160.
Drymophila boucardi, 365.
 intermedia, 30.
Dryobates borealis, 156.
 pubescens medianus, 39, 233, 340.
 villosus, 272, 340.
 villosus hyloscopus, 233.
 leucomelas, 39.
Dubois, A., notice of Parts II-IV of his 'Synopsis Avium,' 121.
Duck, American Scaup, 35.
 Black, 35, 264.
 Dusky, 200.
 Greater Scaup, 199.
 Hawaiian, 385.
 Lesser Scaup, 35, 333, 334, 336.
 Scaup, 264.
 Wood, 35.
Dutcher, William, Report of the Committee on the Protection of North American Birds, 68-104.
Dwight, Jonathan, Jr., the sequence of moults and plumages of the Laridæ (Gulls and Terns), 49-63; review of his 'Sequence of Plumages and Moults of the Passerine Birds of New York,' 114; notes on the moulting of *Spinus pinus* and of *Hirundo erythrogaster*, 203.
Dytes, 319.

EAGLE, Bald, 151, 267.
 Golden, 21, 38, 233.
 Northern Bald, 38.
Eaton, Elon Howard, notice of his 'Birds of Western New York,' 212.
Eckstorm, Mrs. Fannie Hardy, notice of her 'The Bird Book,' 209; notice of her 'The Woodpeckers,' 210.
Ectopistes migratorius, 37, 191.
Eider, American, 189, 200.

- Eider, King, 22.
Elania pagana subpagana, 28, 363.
 placens, 30.
 sordidata, 28.
Elainea arenarum, 30.
Elanoides forficatus, 37.
Elliott, D. G., in memoriam: Elliott
 Coues, 1-11.
Empidonax flaviventris, 40, 341,
 363.
 minimus, 40, 235, 341, 363.
 traillii, 235, 363.
 traillii alnorum, 40, 108, 341,
 347-355.
 trepidus, 47.
 virescens, 235.
Ereunetes occidentalis, 266.
 pusillus, 107.
Eucometes spodocephala, 369.
Eudomychura, 319.
Eudromias morinellus, 297.
Euphonia crassirostris, 369.
 gracilis, 369.
 luteicapilla, 369.
 xanthogastra brunneifrons,
 407.
Exanthemops, 319.

FALCO columbarius, 38.
 columbarius richardsoni, 316.
 latissimus, 217.
 pennsylvanicus, 217.
 peregrinus anatum, 38.
 richardsoni, 316, 403.
 sparverius, 38, 233, 276, 340.
 wilsoni, 217.
Farley, J. A., the Purple Gallinule
 in Massachusetts in the breeding
 season, 190; probable breeding
 of the Red-bellied Nuthatch near
 Boston, 198; the Alder Fly-
 catcher (*Empidonax traillii alno-
rum*) as a summer resident of
 eastern Massachusetts; 347-355;
 Massachusetts bird notes, 398.
Faxon, Walter, the Newfoundland
 Veery (*Hylocichla fuscescens ful-
ginosa*) in Massachusetts, 198;
 early editions of Wilson's Orni-
 thology, 216-218.
Felger, A. H., the American Cor-
 morant in Colorado, 189.
Finch, Grass, 155.
 Pine, 203.
 Purple, 41, 201, 342.
Fleming, James H., a list of the
 birds of the Districts of Parry
 Sound and Muskoka, Ontario,
 33-45; nesting of Cory's Bittern
 at Toronto, Canada, 106; Euro-
 pean Lapwing in the Bahamas,
 272; corrections to birds of Parry
 Sound and Muskoka, 276.
Flicker, Northern, 39, 234, 341.
 Red-shafted, 201, 234.
Floricola superba pallidiceps, 360.
Florida, 319.
Florisuga mellivora, 359.
Flycatcher, Acadian, 235.
 Alder, 40, 108, 341, 347-355.
 Chancol, 47.
 Couch's Tyrant, 21.
 Crested, 39, 341.
 Fork-tailed, 21.
 Least, 40, 235, 341.
 Olive-sided, 40, 201, 395.
 Santa Barbara, 302.
 Traill's, 235.
 Vermilion, 75, 273.
 Yellow-bellied, 40, 341.
Formicarius umbrosus, 366.
Fox, William J., the so-called
 cancelled fasciculus of Cassin's
 'Illustrations,' 291.
Fratercula arctica, 92, 277.
 arctica naumanni, 277.
Fringilla fasciata, 304.
 frontalis, 311.
 gambelii, 303.
 melodia, 304.
Fulica alai, 386.
 americana, 36.
Fuligula, 319.
Fulmarus glacialis, 315.
 glacialis minor, 315.
 glacialis rogersi, 296.
 rogersi, 296.

GADWALL, 333.
Galbula melanogenia, 360.
Galeoscoptes burmudianus, 253.
 carolinensis, 44, 238, 345.
Gallinago delicata, 36, 158.
 major, 316.
 media, 316.
Gallinula galeata, 36, 251.
 sandvicensis, 385.
Gallinule, Florida, 36, 249, 251.
 Hawaiian, 385.
 Purple, 190, 398.
Gätke, Heinrich, notice of his
 'Helgoland,' second German edi-
 tion, 206.

- Gavia*, 270, 300.
 imber, 34, 263.
 ridibunda phænicopos, 271, 309.
Geochelidon nilotica, 55, 79.
Geococcyx affinis, 310.
 californianus, 21, 310.
 mexicanus, 310.
Geothlypis agilis, 116.
 formosa, 368.
 philadelphia, 44, 344.
 tolmiei, 238.
 trichas, 44, 111, 147, 197, 344.
 trichas arizella, 306.
 trichas brachydactyla, 319.
 trichas ignota, 198, 319.
 trichas occidentalis, 238.
 trichas roscœ, 197, 198, 319.
 trichas scirpicola, 407.
 trichas sinuosa, 407.
 trichas trichas, 197.
Geotrygon montana, 358.
Geranospizias niger, 358.
Glaucidium ferrugineum, 14.
 palmarum, 46.
 phalænoides, 14, 22.
Godwit, Marbled, 330.
 Pacific, 386.
Golden-eye, American, 35.
Goldfinch, American, 41, 201, 236, 342.
 European, 249, 255.
Gooney, 189.
Goose, American White-fronted, 135.
 Canada, 36, 264, 412.
 Emperor, 105.
 Greater Snow, 35, 264.
 Hawaiian, 385.
 Ross's Snow, 392.
Goshawk, American, 37.
 Western, 403.
Gould, Alice Bache, notice of her 'Louis Agassiz,' 285.
Grackle, Boat-tailed, 267.
 Bronzed, 41, 152, 236, 330.
 Purple, 152.
Graculus dilophus, 149.
 sp., 202.
Grallaria perspicillata, 367.
Granatellus venustus, 110.
Grebe, Holbæll's, 34, 270.
 Horned, 34, 200.
 Pied-billed, 34, 330.
Grinnell, Joseph, notice of his 'Birds of the Kotzebue Sound, Region,' 119; two races of the Varied Thrush, 142-145; the Long-tailed Jay, 188; notice of his 'Record of Alaskan Birds,' etc., 209; the Monterey Hermit Thrush, 258-260; notice of his paper 'Two Races of the Red-breasted Sapsucker,' 282, notice of his paper on new California birds, 407.
Grosbeak, Black-headed, 237.
 Cardinal, 201.
 Evening, 41, 388, 391.
 Pine, 41, 236.
 Rose-breasted, 42, 330, 343.
 Western Black-headed, 176.
Grouse, Alaska Spruce, 298.
 Canada, 36.
 Canadian Ruffed, 37, 340.
 Dusky, 232.
 Labrador Spruce, 277, 298.
 Prairie Sharp-tailed, 232.
 Ruffed, 190.
 Sage, 232, 416.
 Sand, 211.
 Sharp-tailed, 37.
Grus americana, 36.
 mexicana, 36, 274.
Guillemot, Black, 92.
Gull, American Herring, 34, 264.
 Black-backed, 264.
 Black-headed, 79, 82.
 Bonaparte's, 56, 104, 199, 200, 264, 403.
 California, 383.
 Flood, 81.
 Franklin's, 329, 384.
 Glaucous, 200.
 Herring, 58, 90, 94, 150, 402.
 Iceland, 106.
 Kittiwake, 52, 94.
 Laughing, 79, 80, 81, 83.
 Mackerel, 82.
 Point Barrow, 383.
 Ring-billed, 35, 94, 150, 333, 384.
 Sabine's, 113, 392.
 Western, 201.
Gymnocichla nudiceps, 366.
Gymnogyps, 299.
 californianus, 299.
Gymnopithys bicolor olivaceus, 366.
HABIA melanocephala, 402.
Hæmatopus bachmani, 316.
 niger, 316.
 palliatu, 79, 136.

- Haliaetus leucocephalus*, 267.
 leucocephalus alascanus, 38.
Harelda hyemalis, 35, 105, 264.
Harporhynchus bendirei, 225-231.
 longirostris sennetti, 23.
 palmeri, 231.
 rufus, 44, 238, 276.
Hartlaub, Gustav, obituary of, 219.
Hawk, American Rough-legged, 37.
 American Sparrow, 38, 151,
 233, 276.
 Band-tailed, 392.
 Broad-winged, 37, 217, 218.
 Brown, 163.
 Cooper's, 37.
 Duck, 38.
 Hawaiian, 386.
 Krider's Red-tailed, 233, 330.
 Marsh, 37, 151, 266, 329.
 Pigeon, 38.
 Red-shouldered, 37, 192.
 Red-tailed, 37, 233, 249.
 Rough-legged, 151, 393.
 Sharp-shinned, 217, 233.
 Swainson's, 233, 329.
 Sparrow, 340.
Hazard, R. G., early migration of
 Wild Geese, 411.
Heck, L., notice of his 'Living
 Pictures of the Animal King-
 dom,' etc., 287.
Heleodytes zonatus **restrictus**, 49.
Helmintophila bachmani, 274.
 rubricapilla, 43, 343.
 rubricapilla gutturalis, 403.
 peregrina, 43, 369.
Helminthotherus vermivorus, 146.
Helodromas solitarius, 36.
Hemignathus affinis, 387.
 procerus, 387.
Hen, Marsh, Si.
 Prairie, 329.
Henninger, W. F., a new bird for
 the State of Ohio, 392.
Henshaw, H. W., the Yellow-billed
 Tropic Bird in the Hawaiian
 Islands, 105; birds of prey as
 ocean waifs, 162-165; occurrence
 of *Tringa maculata* and other
 American birds in Hawaii, 202.
Herodias, 319.
Heron, Black-crowned Night, 36,
 385.
 Great Blue, 36, 75, 199, 249,
 265, 282, 340.
 Green, 402.
Heron, Little Blue, 392.
 Northwest Coast, 297.
 Night, 330.
 Snowy, 392.
Herrick, Francis Hobart, notice of
 his 'The Home Life of Wild
 Birds,' 287.
Hesperiphona, 319.
Hesperocichla naevia meruloides,
 143, 319.
 naevia naevia, 142.
Heteractitis incanus, 386.
Heteropygia, 319.
 bairdi, 190.
Heterorhynchus wilsoni, 387.
Hierofalco, 319.
Himantopus knudseni, 386.
Himatione sanguinea, 387.
Hirundo erythrogastra, 42, 117, 203,
 237.
 *erythrogastra unalaschken-
 sis*, 176, 313.
 unalaschensis, 177, 209, 313.
Hoffmann, Ralph, notice of his
 'Common Birds; Second Series,'
 123; see also, Seton-Thompson,
 Ernest.
Hollister, N., capture of Sabine's
 Gull in Wisconsin, 392.
Horizopus, 317.
 richardsonii, 363.
 virens, 194.
Howe, Reginald Heber, Jr., sexual
 difference in size in the Pectoral
 Sandpiper (*Tringa maculata*),
 107; the breeding of the Hermit
 Thrush on Martha's Vineyard
 Island, 111; a study of the genus
 Macrorhamphus, 157-162; an
 additional note on the genus
 Macrorhamphus, 272; the mi-
 gratory movements of the Lap-
 land Longspurs in North Amer-
 ica, 396.
Howe, Reginald Heber, Jr., and
 Allen, Glover Morrill, notice of
 their 'The Birds of Massachu-
 setts,' 278.
Howell, Arthur H., a preliminary
 list of the summer birds of Mount
 Mansfield, Vermont, 337-347.
Hummingbird, Broad-tailed, 234.
 Calliope, 403.
 Ruby-throated, 39, 153, 199,
 341.
Hunakai, 386.
Hydranassa, 319.

- Hydrochelidon nigra surinamensis*, 55.
Hydrocoleus, 320.
Hylocichla aliciae bicknelli, 345.
 aonalaschkæ, 184, 260.
 aonalaschkæ nanus, 185.
 aonalaschkæ pallasii, 45, 111, 346.
 aonalaschkæ sequoiensis, 260.
 aonalaschkæ slevini, 258.
 aonalaschkæ verecunda, 183, 319.
 fuscescens, 45, 345.
 fuscescens fuliginosa, 198, 314.
 guttata pallasi, 111.
 mustelina, 45, 345.
 ustulatus almæ, 309.
 ustulatus swainsonii, 45, 238, 346.
Hylocharis eliciæ, 359.
Hylophilus flavipes viridiflavus, 368.

 IBIS, Glossy, 271.
Ibycter americanus, 358.
Icteria virens, 117.
 virens longicauda, 238.
Icterus bullocki, 236.
 cucullatus sennetti, 286, 317.
 galbula, 40, 236, 342, 370.
Ictinia plumbea, 25.
 Iiwi, 387.
 Io, 386.
Ionornis martinica, 190, 398.
Iridophanes, 286.
Iridoprocne, 320.

 JAY, Blue, 40, 342.
 Canada, 40, 342.
 Coast, 174.
 Gray, 302.
 Long-tailed, 188.
 Piñon, 235, 416.
 Rocky Mountain, 235.
 Job, Herbert K., the Pileated Woodpecker in Connecticut, 193; notes from the Magdalen Islands, 199.
 Johnny Ho, 326.
 Jordan, Barbara, obituary of, 293.
Junco aikenii, 236.
 hyemalis, 42, 268, 342.
Junco, Slate-colored, 42, 268, 342.
 White-winged, 236.

 KICKER, 321.
 Killdeer, 36, 153, 232, 266, 330.
 Kingbird, 39, 234, 341.
 Arkansas, 234, 330.
 Common, 330.
 Kingfisher, Belted, 39, 152, 233, 340.
 Kinglet, Golden crowned, 45, 276, 345.
 Ruby-crowned, 45, 152, 276, Sitkan, 308.
 Kirkwood, Frank Coates, the Cerulean Warbler (*Dendroica cerulea*) as a summer resident in Baltimore County, Maryland, 137-142; early occurrence of the Black Scoter in Maryland and Virginia, 190.
 Kite, Swallow-tailed, 37.
 Kittiwake, 94.
 Kitty Go, 326.
 Knight, Ora W., the Wheatear not a bird of Maine, 275.
 Kobbé, Wm. H., Holbøll's Grebe on San Francisco Bay, 270.
 Kolea, 386.
 Koloa maoli, 385.
 Koloa mapu, 385.

 LAGOPUS lagopus, 37.
 leucurus, 181, 298.
 leucurus altipetens, 180, 298.
Lanio melanopygius, 369.
Lanius borealis, 43, 196.
 borealis invictus, 120, 177, 313.
 ludovicianus, 43, 196, 283.
 ludovicianus excubitorides, 237.
 ludovicianus migrans, 283, 318, 343.
 Lark, Desert Horned, 235.
 Horned, 40, 267.
 Prairie Horned, 40, 341.
 Sky, 249.
 Larus affinis, 63.
 argentatus, 58, 314, 402.
 argentatus smithsonianus, 34, 90, 94, 100, 264, 314.
 atricilla, 57, 79, 80, 81, 82.
 barrovianus, 61, 63, 383.
 brachyrhynchus, 61, 63.
 cachinans, 63.
 californicus, 61, 383.
 canus, 61.
 delawarensis, 35, 61, 94, 384.
 franklinii, 57, 384.
 glaucescens, 62, 189.

- Larus glaucus*, 61, 62.
 heermanni, 61, 292.
 hutchinsi, 62.
 kumlieni, 62, 63.
 leucopterus, 34, 61, 106.
 marinus, 61, 264.
 nelsoni, 62, 63.
 occidentalis, 61, 62.
 philadelphia, 56, 94, 104, 264,
 403.
 ridibundus, 57, 58.
 schistisagus, 63.
 vegæ, 63.
Lathria unirufa, 365.
Leptotila albifrons, 14.
 rufinucha, 358.
 verreauxi, 25, 358.
Leucosticte griseonucha, 209.
 kadiaka, 175, 209, 313.
 tephrocotis, 209.
Limicolæ, 331.
Limonites, 320.
Limosa lapponica baueri, 386.
Lipaugus holerythrus, 365.
Longspur, Alaskan, 396.
 Chestnut-collared, 329.
 Lapland, 41, 396.
 McCown's, 329, 416.
Loomis, Leverett M., the Paroquet
 Auklet in California, 104; on the
 southern limit of the range of
 Bonaparte's Gull (*Larus philadel-*
 phia), 104; the Old Squaw at
 San Francisco, 105; the Emperor
 Goose in the interior of Califor-
 nia, 105; the Raven in Polk
 County, North Carolina, 108; an
 addition to the A. O. U. Check-
 List, 109; *Granatellus venustus*
 in Sinaloa, 110; birds observed
 during a steamer voyage from
 San Francisco to Victoria, Brit-
 ish Columbia, 201; notice of his
 'California Water Birds, No. V,'
 208.
Loon, 34, 201, 263.
Lophodytes cucullatus, 35, 276, 331.
Lophophanes, 320.
 atricristatus, 15, 291, 292.
Lophortyx californica, 386.
Lophostrix stricklandi, 358.
Lowe, Willoughby P., bird notes
 from Pueblo County, Colorado,
 276.
Loxia curvirostra bendirei, 317.
 curvirostra minor, 41, 236,
 342.
Loxia curvirostra stricklandi, 109,
 236.
 frontalis, 311.
 leucoptera, 41, 401, 403.
MacGILLIVRAY, William, unpub-
 lished letters of, to John James
 Audubon, 239-249; memorial to,
 293.
MacKinlay, James, obituary of, 221.
Macrocerus pachyrhyncha, 300.
Macrorhamphus griseus, 158, 272,
 316.
 griseus scolopaceus, 161, 272,
 316.
Magpie, American, 40, 235.
Mailliard, Joseph, to remove fat
 from bird skins, 204.
Malacoptila panamensis, 360.
Malacothraupis castaneiceps, 407.
Mallard, 35, 331, 332.
Manacus aurantiaca, 365.
Mareca americana, 335.
 penelope, 135.
Martin, Purple, 42, 152, 157, 330,
 399, 400.
Maui, Amakihi, 387.
McGregor, Richard C., notice of
 his 'List of the Land Birds of
 Santa Cruz County, California,'
 279.
Meadowlark, 40, 108, 151, 157, 194,
 267.
 Florida, 174.
 Western, 108, 236, 276, 329.
Megaquiscalus, 286, 311.
Megarhynchus pitangua, 363.
Megascops asio, 39, 340.
 asio maxwelliæ, 233.
 asio trichopsis, 15.
 brasiliensis, 358.
 vermiculatus, 358.
Melanerpes chrysauchen, 360.
 erythrocephalus, 39, 234, 341,
 394.
 formicivorus, 291, 292.
 seductus, 26.
 torquatus, 234.
 wagleri, 360.
Meleagris fera, 310.
 fera osceola, 310.
 gallopavo, 15.
 gallopavo ellioti, 22, 23.
 gallopavo intermedia, 15, 22,
 23, 310.
 gallopavo merriami, 316.
 intermedia, 310.

- Melospiza fasciata*, 42, 117, 304.
fasciata caurina, 318.
fasciata clementæ, 305.
fasciata cooperi, 318.
fasciata graminea, 305.
fasciata ingersolli, 318.
fasciata juddi, 305.
fasciata merrilli, 305.
fasciata montana, 304.
fasciata pusillula, 318.
fasciata rivularis, 305.
georgiana, 42.
heermanni, 304.
melodia, 268, 304, 343.
melodia clementæ, 305.
melodia cleonensis, 175, 318.
melodia fallax, 304.
melodia graminea, 305.
melodia heermanni, 304.
melodia judii, 305.
melodia kenaiensis, 319.
melodia merrilli, 305.
melodia montana, 304.
melodia morphna, 305.
melodia rivularis, 305.
melodia rufina, 305.
melodia samuelis, 304.
melodia sanctæcrucis, 408.
sanaka, 175, 318.
Merganser americanus, 35.
serrator, 35, 264, 276.
Merganser, American, 35.
 Hooded, 35, 331.
 Red-breasted, 35, 200, 264.
 Merlin, Richardson's, 403.
 Merriam, C. Hart, notice of his
 'The Life Zones and Areas of
 Allegany County,' Maryland, 208.
Merula grayii casius, 368.
 leucauchen, 368.
 migratoria, 45, 238, 347, 401.
 migratoria achrostrata, 178,
 309.
Micrastur zonorhox, 358.
Micropallas whitneyi, 22.
 Miller, James H., Brünnich's Murre
 in Lewis and Jefferson Counties,
 New York, 188.
 Miller, W. D. W., breeding of the
 Alder Flycatcher (*Empidonax*
 traillii alvorum) near Plainfield,
 New Jersey, 108.
Milvulus, 193.
 forficatus, 193, 363.
 tyrannus, 193, 363.
 Mina, 387.
Mionectes oleagineus, 28.
Mniotilta varia, 43, 146, 343, 369.
 Mockingbird, 151, 155, 416.
 Moho nobilis, 387.
Molothrus ater, 40, 342.
Momotus lessoni, 359.
 Moore, Wm. H., the Loggerhead
 Shrike in New Brunswick, 196;
 New Brunswick notes, 201.
Mormon glacialis, 277.
 Morris, Robert O., notice of his
 'The Birds of Springfield [Mass.]
 and Vicinity,' 279.
Motacilla leucorhoa, 309.
 Murre, Brünnich's, 34, 188.
Muscicapa semiatra, 302.
Muscivora, 193.
 forficata, 194.
 regia, 193.
 tyrannus, 194.
Myiadestes townsendii, 238.
Myiarchus crinitus, 39, 341, 363.
 crinitus erythrocerus, 14, 15.
 panamensis, 30, 363.
Myiobius erythurus, 363.
 nævius, 30.
 sulphureipygius, 363.
Myiodynastes audax nobilis, 363.
Myiozetetes granadensis, 363.
 similis superciliosus, 363.
 similis texensis, 316.
 texensis, 316.
Myrmelastes intermedius, 367.
Myrmotherula menetriesii, 365.
 NELSON, E. W., descriptions of five
 new birds from Mexico, 46-49.
 Nene, 385.
Nesochen sandvicensis, 385.
Nettion carolinensis, 35.
 crecca, 135.
 Newton, Alfred, award of Royal
 Medal to, by the Royal Society,
 223.
 Night-hawk, 39, 341.
 Western, 234, 329.
 Nonpareil, 75.
 Norton, Arthur H., notice of his
 paper 'Birds of the Bowdoin
 College Expedition to Labrador
 in 1891,' 277.
Nucifraga columbiana, 235.
Numenius hudsonicus, 36.
 Nutcracker, Clarke's, 235.
 Nuthatch, Brown-headed, 156.
 Red-bellied, 198.
 Red-breasted, 45, 201, 238,
 345.

- Nuthatch, Slender-billed, 238.
White-breasted, 44, 345.
Nuttallornis, 320.
Nyctala, 193.
 acadica, 38, 233.
 tengmalmi richardsonii, 38.
Nyctanassa, 320.
 violacea, 25.
Nyctea nyctea, 38.
Nycticorax nycticorax nævius, 36,
 385.
Nyctidromus albigollis, 26, 359.
 albigollis merrilli, 21, 23.

ORERHOLSER, Harry C., *Milvulus*
 versus *Muscivora*, 193.
Oceanites oceanicus, 35, 105.
Ochthodromus, 320.
Ochthæca keaysi, 407.
Odontophorus castigatus, 356.
Oidemia deglandi, 264.
 perspicillata, 35.
Old-squaw, 35, 105, 264.
Olor, 315.
Onychorhynchus, 193.
 mexicanus, 194.
 occidentalis, 194.
 regius, 194.
 swainsoni, 194.
Onychotes gruberi, 163.
Oreomyza flammea, 387.
 newtoni, 387.
Oriole, Baltimore, 40, 236, 330, 342.
 Bullock's, 236.
Oriolus flavus, 286.
Ornismia helosa, 320.
Ornithion imberbe, 15.
 pusillum, 28, 362.
Orpheus meruloides, 143, 144.
Ortalis cinereiceps, 25, 356.
 struthopus, 406.
Orthorhynchus amazili, 301.
Ortygops, 320.
Oryzoborus funereus, 32.
Osprey, American, 38, 83.
Ostinops decumanus, 370.
Otocoris alpestris, 40, 267.
 alpestris arenicola, 235.
 alpestris praticola, 40, 277,
 341.
Oven-bird, 44, 344.
Owl, American Barn, 136.
 American Hawk, 38.
 American Long-eared, 38,
 233.
 Arctic Horned, 113.
 Barred, 38.
 Owl, Burrowing, 233, 329.
 Dusky Horned, 38.
 Great Gray, 38, 107.
 Great Horned, 38, 233, 340.
 Richardson's, 38, 193.
 Rocky Mountain Screech,
 233.
 Saw-whet, 38, 193, 200, 233.
 Screech, 38, 340.
 Short-eared, 38, 164, 329, 386.
 Snowy, 38.
 Tepic Pigmy, 46.
 Texas Barred, 299.
 Western Horned, 300.
Oxyechus, 320.
 vociferus, 358.
Oyster-catcher, American, 79, 136.

PACHYRHAMPHUS cinereiventris,
 365.
 notius, 281.
Pallasicarbo, 320.
Palmer, T. S., and H. W. Olds,
 notice of their 'Laws regulating
 the transportation and sale of
 Game,' 123.
Palmer, William, the scientific
 name of the southern Yellow-
 throat, 197.
Pandion haliaëtus carolinensis, 38,
 83.
Parrot, Thick-billed, 300.
Partridge, Alaskan Spruce, 120.
 California, 386.
Parula americana, 146.
 nigrilora, 14.
Parus atricapillus, 45, 345.
 atricapillus septentrionalis,
 238.
 atricristatus castaneifrons,
 21, 23.
 bicolor texensis, 21, 23.
 carolinensis agilis, 21, 23.
 gambeli thayeri, 166, 314.
 hudsonicus, 45.
 hudsonicus evura, 319.
 hudsonicus stoneyi, 319.
 rufescens, 403.
 rufescens barlowi, 178, 314.
Passerculus, 320.
Passer domesticus, 41, 117, 195, 256.
Passerella iliaca, 42, 116.
 iliaca annectens, 318.
 iliaca fuliginosa, 318.
 iliaca insularis, 318.
 iliaca townsendi, 318.
 rufina, 305.

- Passerina amœna*, 237.
 nivalis, 41, 267.
 nivalis townsendi, 311.
 townsendi, 311.
 Peabody, P. B., nesting habits of
 Leconte's Sparrow, 129-134.
Pediœcetes phasianellus, 37.
 phasianellus campestris, 232.
Pelecanus californicus, 315.
 erythrorhynchos, 35.
 fuscus, 296.
 fuscus californicus, 315.
 occidentalis, 296.
 onocratalus occidentalis, 296.
 Pelican, American White, 35.
 Pelidna, 320.
 Penelope cristata, 356.
Perisoreus canadensis, 40, 342.
 canadensis capitalis, 235.
 obscurus griseus, 302.
Peteroglossus frantzii, 360.
 Petrel, Bonin, 385.
 Wilson's, 35, 105.
Petrochelidon fulva, 373.
 lunifrons, 117, 237, 318.
 pyrrhonota, 318.
Peucæa æstivalis bachmani, 273.
 ruficeps scottii, 21, 23.
 Pewee, Western Wood, 235.
 Wood, 194, 341.
Phaëthon æthereus, 105.
 americanus, 105.
 flavirostris, 149.
 lepturus, 385.
 rubricauda, 105.
Phaëthornis hyalinus, 27.
 longirostris, 359.
 longirostris susurrans, 406.
Phalacrocorax auritus, 315.
 bicristatus, 315.
 dilophus, 101, 315.
 mexicanus, 189.
 pelagicus, 315.
 pelagicus robustus, 315.
 urile, 315.
 vigna mexicanus, 315.
Phalænoptilus nuttallii, 234.
 Phalarope, Northern, 201.
 Red, 271, 386.
 Wilson's, 330.
Phasianus mexicanus, 310.
 torquatus, 386.
 Pheasant, Ring-necked, 386.
 Philacte canagica, 105.
 Philohela minor, 36, 158.
 Phœbe, 39, 234, 341.
 Say's, 234.
 Phœbe, Western Black, 301.
 Phæbetria, 320.
Phœnicotherapis littoralis, 48.
Piaya cayana thermophila, 360.
 Pica, 121.
Pica pica hudsonica, 40, 235.
Picicorvus, 320.
Picoides americanus, 39.
 americanus alascensis, 300.
 americanus bacatus, 312.
 americanus fasciatus, 300.
 americanus labradorius, 312.
 arcticus, 39, 234.
 arcticus tenuirostris, 317.
Picolaptes lineaticeps, 367.
Picumnus granadensis, 361.
 Picus, 121.
 Pigeon, Passenger, 37, 191.
 Wild, 191.
Pinicola enucleator canadensis, 41,
 236.
 Pintail, 35, 202, 331, 332, 333, 385.
Pionopsittacus hæmatotis, 359.
Pionus menstruus rubrigularis, 359.
Pipilo erythrophthalmus, 42, 236.
 fuscus carolæ, 306.
 maculatus arcticus, 237.
 maculatus atratus, 306.
 maculatus falcifer, 176, 313.
 Pipit, American, 44, 150, 153, 201.
 Sprague's, 275.
Pipra leucorrhœa, 364.
 mentalis ignifera, 363.
 velutina, 363.
Piranga erythromelas, 42, 343.
 ludoviciana, 237.
 rubra, 273, 369.
Pitangus derbianus, 15.
Platyrhynchus superciliaris, 361.
Plectrophenax nivalis, 195.
Plegadis autumnalis, 271.
 falcinellus, 148.
 Plover, Black-bellied, 202, 266.
 Golden, 331.
 Pacific Golden, 386.
 Wilson's, 79.
Podargus, pterylosis of, 167-171.
 gigas, 170.
Podasocys, 320.
Podilymbus podiceps, 34.
Polioptila bilineata, 368.
 Pollard, Evelyn H., notice of her
 'Birds of my Parish,' 207.
Poœcetes gramineus, 42, 155, 342.
 gramineus confinis, 236.
 Poor-will, 234.
Porphyrio melanotus, 386.

- Porzana coturniculus, 316.
 noveboracensis, 107.
Preble, Edward A., notice of his
 'The Summer Birds of Western
 Maryland,' 208.
Proctopus, 320.
Proganula palmeri, 385.
Progne subis, 117, 399, 400.
Protonotaria citrea, 369.
Psaltiriparus lloydii, 21.
Pseudagelaius, 286.
Pseudogryphus, 299.
Pseuduria, 320.
Psiloscops, 320.
Psittacirostra psittacea, 387.
Ptarmigan, Southern White-tailed,
 180, 298.
 White-tailed, 180.
 Willow, 37, 120.
Publications received, 124, 213, 289,
 409.
Pueo, 386.
Puffin, Arctic, 92.
 Tufted, 201.
Puffinus auduboni, 189.
 griseus, 315.
 major, 105.
 stricklandi, 315.
Pycraft, W. P., notice of his memoir
 on the Morphology of the Casso-
 waries, etc., 405.
Pyrocephalus rubinus mexicanus,
 273.

QUAIL, 250.
Querquedula discors, 35, 232.
Quiscalus, 286, 311.
 major, 267.
 quiscula æneus, 41, 236.

RAIL, Clapper, 22, 79, 80, 81, 83'
 136, 265.
 Carolina, 326.
 King, 326.
 Laysan, 385.
 Little Black, 326.
 Sora, 217, 330.
 Virginia, 217, 265, 326, 330.
 Wayne's Clapper, 265.
 Yellow, 107.
Rallus carolinus, 217.
 crepitans, 79, 80, 81, 82, 83,
 136, 265, 315.
 crepitans waynei, 265, 297,
 373.
 longirostris, 22.
 longirostris caribæus, 22.

Rallus longirostris crepitans, 315.
 longirostris saturatus, 313.
 longirostris scottii, 22, 23.
 scottii, 315.
 virginianus, 36, 217, 265.
Ralph, W. L., notice of his contin-
 uation of 'Life Histories of North
 American Birds,' 294.
Raven, Northern, 40.
Redhead, 35, 264.
Redpoll, 41, 195.
 Greater, 41, 195.
 Hoary, 41, 195.
 Holbæll's, 41, 195.
 Mealy, 395.
Redstart, 344.
 American, 44, 238.
Regulus calendula, 45, 276.
 calendula grinnelli, 308.
 satrapa, 45, 276, 345.
Rhamphastos tocar, 360.
Rhamphocelus dimidiatus, 369.
 limatus, 31.
 passerini, 369.
Rhodacanthis palmeri, 387.
Rhodenocichla rosea, 368.
Rhynchocyclus æquinoctialis, 363.
Rhynchops nigra, 403.
Rhynchopsitta, 300.
 pachyrhyncha, 300.
Richmond, Charles W., new name
 for *Nyctala*, 193.
Ridgway, Audubon Whelock, obitu-
 ary of, 221.
Ridgway, Robert, notice of his
 'New Birds of the Families Tana-
 gridæ and Icteridæ, 286.
Rissa tridactyla, 52, 57, 94, 310.
 tridactyla pollicaris, 310.
Rives, William C., Audubon's
 Shearwater (*Puffinus auduboni*)
 on the coast of Virginia, 189.
Robbins, Reginald C., Mother
 Carey's Chicken, 105; Maryland
 Yellow-throat at sea, 110; Ruffed
 Grouse in snow, 190.
Robin, American, 45, 238, 347, 401.
 Southern, 309.
Rodostethia rosea, 57.
Rough-leg, Ferruginous, 329.
Rupornis ruficauda, 358.
Rynchops nigra, 79, 81.

SAGE, John H., Eighteenth Con-
 gress of the American Ornithol-
 ogists' Union, 63-67.
Salpinctes obsoletus, 238, 276.

- Salpinctes obsoletus pulverius*, 319.
Saltator albicollis isthmicus, 32.
 intermedius, 369.
Sanderling, 202, 266, 386.
Sandpiper, Baird's, 190, 402.
 Bartramian, 112, 329.
 Least, 199, 266.
 Pectoral, 107, 158, 202, 331.
 Purple, 107.
 Red-backed, 266.
 Semipalmated, 331.
 Sharp-tailed, 386.
 Solitary, 36, 112.
 Spotted, 36, 92, 112, 272, 340.
 Western, 266.
 White-rumped, 331.
Sapsucker, Red-breasted, 282.
 Yellow-bellied, 39, 152, 340.
Sayornis nigricans semiatra, 301.
 phæbe, 39, 234, 341.
 saya, 234.
 saya yukonensis, 312.
Saxicola ænanthe, 45, 186, 209, 275, 281.
 ænanthe leucorhoa, 186, 281.
 309.
Scaphidurus, 286, 311.
Scolecophagus carolinus, 41, 267.
 cyanocephalus, 236.
Scops asio enano, 14.
 brasiliensis, 25.
Scoter, Black, 190.
 Surf, 35.
 White-winged, 264, 336.
Scotiaptex cinerea, 38, 107.
Scotothorus verapacis, 365.
Sea-dottrel, 173.
Seiurus aurocapillus, 44, 147, 149, 344, 368.
 noveboracensis, 30, 44, 147, 149.
Selasphorus platycercus, 234.
Séleys-Longschamps, Baron Edmond de, obituary of, 219, 292.
Selous, Edmund, notice of his 'Bird Watching,' 408.
Sennett, George Burritt, memorial of, with portrait, 11-23.
Seton-Thompson, Ernest, and Hoffmann, Ralph, notice of their 'Bird Portraits,' 284.
Setophaga ruticilla, 44, 148, 149, 238, 344, 402.
Sharpe, R. Bowdler, notice of the second volume of his 'Hand List of the Genera and Species of Birds,' 120.
Shattuck, Geo. C., notes from northern New York, 199.
Shearwater, Audubon's, 189.
 Dark-bodied, 201.
 Pink-footed, 201.
Shelley, G. E., notice of his 'Birds of Africa,' 122.
Shoveller, 35, 331, 332, 385.
Shrike, Loggerhead, 43, 196.
 Migrant, 343.
 Northern, 43.
 Northwestern, 177.
 White-rumped, 237.
Shufeldt, Percy W., the occurrence of the Ground Dove in Virginia, 192.
Shufeldt, R. W., notice of his translation of Collett's 'Morphology of the Cranium and the Auricular Openings in the North-European Species of the Family Strigidae,' 207; notice of recent contributions by, to our knowledge of the osteology of birds, 211; notice of his 'Osteology of the Herodiones,' 281.
Sialia arctica, 238, 276.
 sialis, 45, 254, 347.
Siskin, Pine, 41, 154, 203, 236, 342.
Sitta canadensis, 45, 198, 238, 345.
 carolinensis, 44, 345.
 carolinensis aculeata, 238.
Skimmer, Black, 75, 79.
Smith, Hugh M., Snow Bunting at sea, 195.
Snipe, English, 249.
 Wilson's, 36, 158.
Snowflake, 41, 267.
Solitaire, Townsend's, 238.
Somateria dresseri, 189.
 mollissima, 310.
 mollissima borealis, 310.
 spectabilis, 22.
Sparrow, Bachman's, 273.
 Baird's, 329.
 Chipping, 42, 151, 236, 342.
 Clay-colored, 236, 330.
 English, 152.
 Field, 42, 153, 342.
 Fox, 42.
 Grasshopper, 342.
 House, 41, 195, 249, 256.
 Ipswich, 21, 262, 267.
 Lagoon, 303.
 Leconte's, 129-134.
 Mendocino Song, 175.
 Nelson's, 268.

- Sparrow, Sandwich, 201.
Savanna, 42, 267, 342.
Sharp-tailed, 267.
Song, 42, 154, 268, 343.
Southern Sharp-tailed, 269.
Swamp, 42, 153.
Tree, 42.
Vesper, 42, 342.
Western Lark, 236, 416.
Western Savanna, 329, 397.
Western Vesper, 236, 329.
White-crowned, 42.
White-throated, 42, 152, 342.
Sparvius platypterus, 217, 299.
Spatula clypeata, 35, 358, 385.
Speotyto cunicularia hypogæa, 233, 358.
Spermophila moreleti, 15.
Sphyrapius ruber, 282.
varius, 39, 340.
varius daggetti, 282.
varius ruber, 282.
Spinus pinus, 41, 154, 203, 236, 342.
Spizella monticola, 42.
pallida, 236.
pusilla, 42, 342.
socialis, 42, 236, 342.
Sporophila aurita, 370.
Squatarola squatarola, 266.
Stejneger, Leonhard, the two races of *Saxicola ananthe*, 186, 187; notice of his paper on the North American Wheatears, 280.
Stelgidopteryx ruficollis, 407.
ruficollis æqualis, 407.
ruficollis fulvipennis, 407.
ruficollis uropygialis, 368
serripennis, 117, 403.
uropygialis, 407.
Stellula calliope, 403.
Sterna anæstetha, 55.
antillarum, 55, 80, 81, 82.
caspia, 55.
dougalli, 55, 85.
elegans, 55.
forsteri, 55.
fuliginosa, 55.
havelli, 56.
hirundo, 54, 78, 79, 80, 81, 82, 83, 85, 90.
lunata, 384.
maxima, 55, 56, 79.
paradisæa, 52, 55, 90.
pikei, 56.
portlandica, 52.
sandwichensis aculeiflida, 55.
Stilt, Hawaiian, 386.
Stone, Witmer, sequence of plumages in the Black-throated Blue Warbler, 110; notice of his paper 'On Moults and Alleged Colour Change in Birds,' 284.
Strigidae, 316.
Striker, Big, 81, 82.
Little, 81, 82.
Strix, 316.
Strong, R. M., notice of his 'A Quantitative Study of Variation in the Smaller North American Shrikes,' 283.
Sturnella ludoviciana, 310.
magna, 40, 194, 267, 317.
magna argutula, 174, 317.
magna hoopesi, 317.
magna inexpectata, 370.
magna mexicana, 317.
magna neglecta, 109, 236, 276, 311, 317.
magna paralius, 281.
meridionalis, 281.
Sturnus vulgaris, 117, 194.
Sublegatus arenarum, 30, 363.
glaber, 30.
Sula fiber, 149.
Surnia ulula, 316.
ulula caparoch, 38.
ulula doliata, 316.
Swallow, Alaskan, 176.
Bank, 42.
Barn, 42, 200, 203, 237, 343.
Cliff, 237.
Eave, 373.
Rough-winged, 403.
Tree, 42, 200, 237.
White-bellied, 150, 199.
Swallow roosts, 400.
Swan, Whistling, 21.
Swift, Black, 394.
Chimney, 341.
White-throated, 234, 416.
Sylvania canadensis, 44.
Sylvia roscoe, 197, 198.
Symphemia semipalmata, 79, 80, 81, 82, 83.
semipalmata inornata, 310.
semipalmata speculifera, 310.
Synthliboramphus antiquus, 21.
Syrnium nebulosum, 38.
nebulosum helveolum, 299.
TACHYCINETA albilinea, 368.
bicolor, 42, 199.
Tachypetes aquilus, 149.
Tachyphonus nitidissimus, 369.

- Tachytriorchis, 320.
 Talpacotia rufipennis, 257.
 Tanager, Louisiana, 237, 416.
 Scarlet, 42, 343.
 Summer, 273.
 Tabasco Ant, 48.
 Tanagra cana diaconus, 32, 369.
 Tatler, Wandering, 386.
 Tchitreia mutata, 193.
 paradisi, 193.
 Teal, Blue-winged, 35, 200, 232, 332.
 European, 135.
 Green-winged, 35.
 Telmatodytes, 320.
 Terenura xanthogastra, 407.
 Tern, Arctic, 52.
 Black, 75, 330.
 Common, 54, 78, 79, 82, 83-
 90, 333.
 Gull-billed, 79.
 Least, 75.
 Roseate, 85, 90.
 Royal, 79.
 Wilson's 75, 85-90.
 Thalurania columbica venusta, 360.
 Thamnophilus doliatus, 366.
 doliatus nigricristatus, 30.
 punctatus, 366.
 transandeanus, 366.
 Thrasher, Bendire's, 225-231.
 Brown, 44, 151, 153, 238.
 Thrush, Alma's, 309.
 Bicknell's 338, 345.
 Coast Hermit, 183.
 Hermit, 45, 111, 154, 216, 346.
 Monterey Hermit, 258.
 Olive-backed, 45, 238, 346.
 Varied, 142.
 Wilson's, 45, 345.
 Wood, 45, 216, 345.
 Thryomanes bewickii calophonus, 307.
 bewickii charienturus, 307.
 bewickii cryptus, 306.
 bewickii drymæcus, 314.
 bewickii eremophilus, 313.
 bewickii leucophrys, 311.
 bewickii nesophilus, 314.
 leucophrys, 311.
 Thryophilus modestus 368.
 rufalbus castanonotus, 368.
 Thryothorus cerroensis, 314.
 fasciiventris melanogaster, 368.
 ludovicianus, 397.
 ludovicianus lomitensis, 22, 23.
 Tinamus castaneiceps, 356.
 Tit, Tufted, 157.
 Todirostrum cinereum, 361.
 Todus regius, 193.
 Torrey, Bradford, *Piranga rubra* in Massachusetts, 273; notice of his 'Everyday Birds,' 279; *Melanerpes erythrocephalus* breeding near Boston, 394.
 Totanus melanoleucus, 36, 209, 266.
 solitarius, 112.
 Towhee, 151, 153, 236.
 Arctic, 237.
 Northern Brown, 306.
 San Diego, 306.
 Tringa acuminata, 386.
 alpina pacifica, 266.
 bairdii, 402.
 maculata, 107, 158, 202.
 minutilla, 199, 266.
 morinella, 173, 297.
 solitarius cinnamomea, 272.
 Trochilus colubris, 39, 341.
 tzacatl, 301.
 violajugulum, 301.
 Troglodytes ædon, 22, 44, 345.
 ædon aztecus, 238, 402.
 inquietus, 368.
 Trogon atricollis tenellus, 360.
 bairdi, 360.
 caligatus, 360.
 massena, 360.
 Turdus auduboni, 260.
 aureus, 144.
 minor, 184, 185.
 nævius, 144.
 nanus, 184, 185.
 pallasii, 186.
 Turkey, Wild, 404.
 Turnstone, 173, 331, 386.
 Ruddy, 173, 297.
 Turtle-dove, Chinese, 386.
 Turtur chinensis, 386.
 Tyranniscus parvus, 362.
 Tyrannulus reguloides, 362.
 Tyrannus griseus, 148.
 melancholicus couchi, 21.
 melancholicus satrapa, 30, 363.
 tyrannus, 30, 39, 234, 341.
 verticalis, 234.
 ULALA, 387.
 Ulili, 386.
 Uria lomvia, 34, 188, 199, 209.
 troile, 209.
 troile californica, 209.

- VEERY, Newfoundland, 198.
Veniliornis ceciliae, 360.
Vestiaria coccinea, 387.
Vireo bellii, 274.
 bermudianus, 252.
 calidris, 148, 149.
 chivi agilis, 30.
 flavifrons, 43, 368.
 gilvus, 43, 343.
 gilvus swainsoni, 237.
 olivaceus, 43, 148, 149, 237, 343.
 philadelphicus, 43.
 solitarius, 43, 343.
 solitarius plumbeus, 237.
Vireo, Bell's 274.
 Bermuda White-eyed, 252.
 Blue-headed, 43.
 Philadelphia, 43.
 Plumbeous, 237.
 Red-eyed, 43, 237, 343.
 Solitary, 333, 343.
 Warbling, 43, 343.
 Western Warbling, 237, 416.
 Yellow-throated, 43.
Volatinia jacarini splendens, 32, 370.
Vrooman, A. G., discovery of the egg of the Black Swift, 394.
Vultur californianus, 299.
Vulture, Black, 150, 153.
 Turkey, 150, 153, 232, 266.
WARBLER, Audubon's, 237.
 Bachman's, 274.
 Bay-breasted, 43.
 Black and White, 43, 343.
 Blackburnian, 44, 344, 399.
 Black-fronted, 109, 306.
 Black-poll, 344.
 Black-throated Blue, 43, 110, 343.
 Black-throated Green, 44, 344.
 Calaveras, 403.
 Canadian, 44, 344.
 Cerulean, 137-142.
 Chestnut-sided, 43, 344.
 Hooded, 397.
 Macgillivray's, 238.
 Magnolia, 43, 344.
 Mourning, 44, 338, 344.
 Myrtle, 43, 344.
 Nashville, 43, 343.
 Northern Parula, 43.
 Parula, 343.
 Pine, 44, 156.
Warbler, Prairie, 106.
 Tennessee, 43.
 Townsend's, 201.
 Yellow, 43, 201, 236, 330, 343.
 Yellow-rump, 151, 152.
 Wilson's, 44, 201.
Ward, G. C. Tremaine, the Passenger Pigeon, 192.
Water-ouzel, 373.
Water-Thrush, 44.
Waxwing, Bohemian, 42, Cedar, 42.
Wayne, Arthur T., the Red Phalarope (*Crymophilus fulicarius*) on the coast of South Carolina, 271; Bachman's Warbler (*Helminthophila bachmanii*) rediscovered near Charleston, S. C., 274; Sprague's Pipit (*Anthus spragueii*) again on the coast of South Carolina, 275.
Wheatear, 45, 186, 249, 275, 280.
 Greenland, 309.
Whip-poor-will, 39, 341.
Wide-awake, Gray, 384.
Widgeon, European, 135.
Widmann, O., a visit to Audubon's birthplace, 150-157.
Willet, 75, 79, 80, 81.
 Western, 330.
Williams, R. W., Jr., the Vermilion Flycatcher in Florida, 273.
Wilsonia canadensis, 344.
 mitrata, 397.
Woodcock, American, 36, 158.
Woodpecker, American Three-toed, 39.
 Arctic Three-toed, 39, 233.
 Cabanis's, 233.
 Downy, 39, 157, 233, 340.
 Hairy, 157, 272, 340.
 Ivory-billed, 280.
 Lewis's, 233.
 Northern Hairy, 39.
 Northern Pileated, 39, 340.
 Pileated, 193.
 Red-bellied, 157, 341, 404.
 Red-cockaded, 156.
 Red-headed, 39, 233, 394.
 Yellow-bellied, 39.
Worthington, W. W., a rare record for eastern New York, 395.
Wren, Aleutian, 307.
 Berlandier's, 22.
 Bewick's, 151, 152.
 Carolina, 151, 152, 397.
 House, 22, 44, 153, 345.

- Wren, Kadiak Winter, 181, 307.
 Long-billed Marsh, 331.
 Marian's Marsh, 268.
 Rock, 238, 276.
 Tabasco, 49.
 Western House, 238, 330.
 Winter, 44, 153, 345.
 Wren-tit, Coast, 308.
 Intermediate, 178.
- XANTHOCEPHALUS xanthocephalus,
 195.
 Xanthoura luxuosa, 302.
 luxuosa glaucescens, 302.
 Xema sabinii, 57, 113, 392.
 Xenops genibarbis, 368.
- YELLOW-LEGS, 331,
 Greater, 36, 266.
- Yellow-legs, Lesser, 200.
 Yellow-throat, Florida, 198.
 Maryland, 44, 110, 112, 151,
 344.
 Southern, 197.
 Western, 238.
- ZAMELODIA ludoviciana, 42, 343.
 melanocephala, 237, 402.
 melanocephala microrhyn-
 cha, 176, 313.
 Zarhynchus wagleri, 370.
 Zenaidura macroura, 37, 232, 276,
 358.
 Zonotrichia albicollis, 42, 342.
 fallax, 304.
 leucophrys, 42.
 leucophrys gambellii, 303.
 leucophrys intermedia, 303.
 leucophrys nuttalli, 303.

ERRATA:

- Page 45, line 1 at top, for '*Sitta carolinensis*' read *Sitta canadensis*.
 Page 45, line 12 from top, for '*mustelinus*' read *mustelina*.
 Page 126, line 6 from bottom, for 'published' read publish.
 Page 190, lines 9 and 12, for 'Hartet' read Hartert.
 Page 190, line 15, for 'November' read October.
 Page 193, line 9 from top, for 'Bowdish' read Bowdich.
 Page 283, line 6 from top, for '174' read 294.
 Page 283, line 15 from top, for 'Bradley and Milton' read Milton
 Bradley.
 Page 284, line 10 from top, for 'prolificness. In' read prolificness in.
 Page 289, line 3 from bottom, for 'Bowlder' read Bowdler.
 Page 297, line 11 from top, '210.1' should read 211b.
 Page 301, lines 6-9 from bottom should read:
 439. *Amizilis cerviniventris chalconota* (OBERH.),
Amazilia cerviniventris chalconota OBERHOLSER, Auk, XV, Jan.
 1898, 32.
Amazilis cerviniventris chalconota OBERHOLSER, Proc. Acad. Nat.
 Sci. Phila. 1899, 208.
 Page 308, line 11 from top, for No. '736' read 726.

Old
Series, }
Vol. XXVI

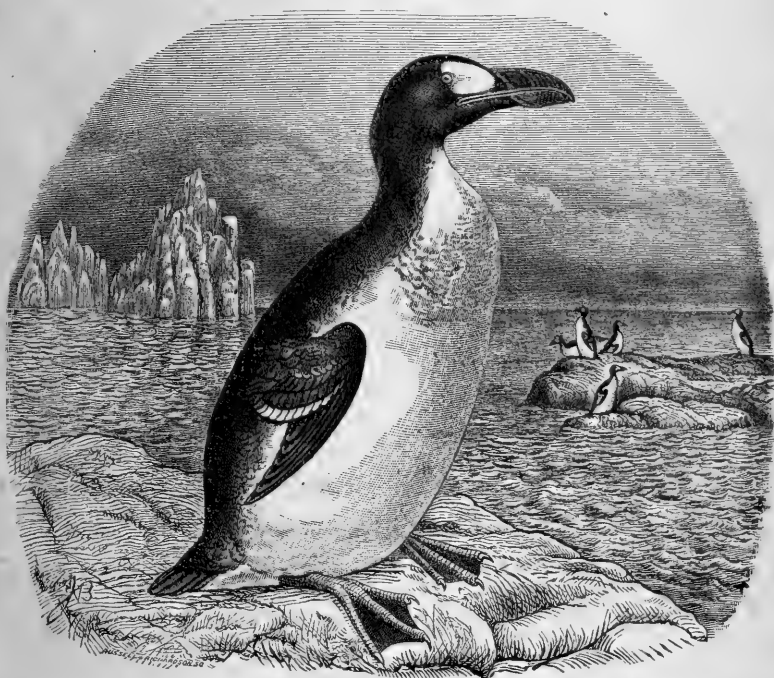
CONTINUATION OF THE
BULLETIN OF THE NUTTALL ORNITHOLOGICAL CLUB

{ New
Series,
Vol. XVIII

The Auk

A Quarterly Journal of Ornithology

Vol. **XVIII** — JANUARY, 1901 — No. 1



PUBLISHED BY

The American Ornithologists' Union

CAMBRIDGE, MASS.

CONTENTS.

PAGE

IN MEMORIAM: ELLIOTT COUES. By <i>D. G. Elliot, F. R. S. E., etc.</i>	1
IN MEMORIAM: GEORGE BURRITT SENNETT. By <i>J. A. Allen.</i>	11
BIRDS OF SAN MIGUEL ISLAND. By <i>Outram Bangs.</i>	24
A LIST OF BIRDS OF THE DISTRICTS OF PARRY SOUND AND MUSKOKA, ONTARIO. By <i>James H. Fleming.</i>	33
DESCRIPTIONS OF FIVE NEW BIRDS FROM MEXICO. By <i>E. W. Nelson.</i>	46
THE SEQUENCE OF MOULTS AND PLUMAGES OF THE LARIDÆ (GULLS AND TERNS). By <i>Jonathan Dwight, Jr., M. D.</i>	49
EIGHTEENTH CONGRESS OF THE AMERICAN ORNITHOLOGISTS' UNION. By <i>John H. Sage.</i>	63
REPORT OF THE COMMITTEE ON THE PROTECTION OF NORTH AMERICAN BIRDS FOR THE YEAR 1900. By <i>Witmer Stone.</i>	68
RESULTS OF SPECIAL PROTECTION TO GULLS AND TERNS OBTAINED THROUGH THE THAYER FUND. By <i>William Dutcher.</i>	76

GENERAL NOTES.—The Paroquet Auklet in California, 104; On the Southern Limit of the Winter Range of Bonaparte's Gull (*Larus philadelphia*), 104; Mother Carey's Chicken, 105; The Yellow-Billed Tropic Bird in the Hawaiian Islands, 105; The Old Squaw at San Francisco, 105; The Emperor Goose in the Interior of California, 105; Nesting of Cory's Bittern at Toronto, Ontario, 106; Nesting of Cory's Bittern (*Ardea neoxena*) and Other Notes, 106; Sexual Difference in Size of the Pectoral Sandpiper (*Tringa maculata*), 107; Great Gray Owl in Wyoming, 107; Breeding of the Alder Flycatcher (*Empidonax traillii alorum*) near Plainfield, New Jersey, 108; The Raven in Polk County, North Carolina, 108; Song of the Western Meadowlark, 108; Occurrence of the Mexican Crossbill (*Loxia curvirostra stricklandi*) at Neligh, Nebraska, 109; An Addition to the A. O. U. Check-List, 109; Sequences of Plumages in the Black-throated Blue Warbler, 110; *Granatellus venustus* in Sinaloa, 110; Maryland Yellow-throat at Sea, 110; The Breeding of the Hermit Thrush on Martha's Vineyard Island, 111; The Hermit Thrush on Martha's Vineyard, Mass., 111; Notes from Ontario, 112; Two Interesting Records from New Mexico, 112.

RECENT LITERATURE.—Dwight's 'Sequences of Plumages and Moults of the Passerine Birds of New York,' 114; Grinnell's 'Birds of the Kotzebue Sound Region,' 119; Sharpe's 'Hand List of the Genera and Species of Birds,' Vol. II, 120; Dubois's 'Synopsis Avium,' 121; Shelley's 'Birds of Africa,' 122; 'Audubon Bird Chart No. 2,' and 'Common Birds, Second Series,' 123; 'Transportation and Sale of Game,' 123; Publications Received, 124.

NOTES AND NEWS.—Notices concerning 'The Auk,' 126; Conference of Audubon Societies, 127; 'Bird-Lore's' Course of Bird Study, 128; Proposed Amendments to the A. O. U. By-Laws, 128.

'THE AUK,' published as the Organ of the AMERICAN ORNITHOLOGISTS' UNION, is edited by Dr. J. A. ALLEN, with the assistance of Mr. FRANK M. CHAPMAN.

TERMS:—\$3.00 a year, including postage, strictly in advance. Single numbers, 75 cents. Free to Honorary Members, and to Active and Associate Members of the A. O. U. not in arrears for dues.

Subscriptions and Advertisements should be addressed to 'THE AUK,' 30 BOYLSTON STREET, CAMBRIDGE, MASS., or to WILLIAM DUTCHER, Business Manager, 525 MANHATTAN AVE., NEW YORK, N. Y. Foreign Subscribers may obtain 'THE AUK' through GURNEY AND JACKSON, 1 PATERNOSTER ROW, LONDON.

All articles and communications intended for publication, and all books and publications for notice, should be sent to Dr. J. A. ALLEN, AMERICAN MUSEUM OF NATURAL HISTORY, CENTRAL PARK, NEW YORK CITY.

Manuscripts for general articles should reach the editor at least six weeks before the date of the number for which they are intended, and manuscripts for 'General Notes' and 'Recent Literature' not later than the first of the month preceding the date of the number in which it is desired they shall appear.

AUTHORS' SEPARATES.

Authors of general articles will receive 25 separates of their articles gratis. Additional copies may be ordered, if desired, but *such orders must always accompany the manuscript.* The prices of separates are as follows:

No. of copies.	Number of pages of article.							Covers and Title
	2	4	8	12	16	24	32	
50	\$.90	\$1.35	\$2.20	\$2.70	\$3.60	\$5.80	\$6.80	\$1.00
75	1.00	1.44	2.40	2.80	3.80	6.20	7.20	1.25
100	1.15	1.56	2.60	3.00	4.00	6.60	7.60	1.50

Old
Series,
Vol. XXVI

CONTINUATION OF THE
BULLETIN OF THE NUTTALL ORNITHOLOGICAL CLUB

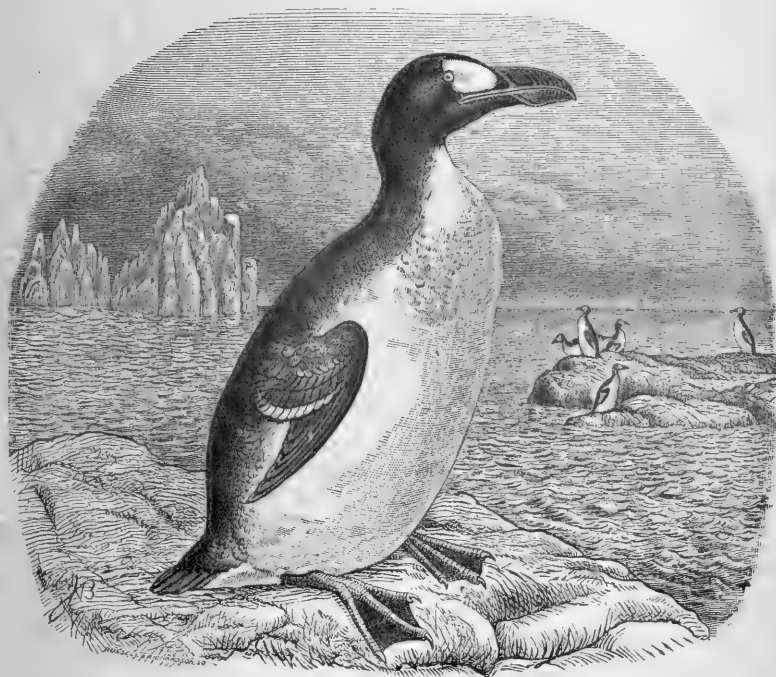
New
Series;
Vol. XVIII

The Auk

A Quarterly Journal of Ornithology

Vol. XVIII — APRIL, 1901—

No. 2



PUBLISHED BY

The American Ornithologists' Union

CAMBRIDGE, MASS.

CONTENTS.

	PAGE
NESTING HABITS OF LECONTE'S SPARROW. By <i>P. B. Peabody</i> . (Plate III.)	129
ON THE OCCURRENCE, IN MASSACHUSETTS, OF CERTAIN RARE OR INTERESTING BIRDS. By <i>William Brewster</i>	135
THE CERULEAN WARBLER (<i>Dendroica cerulea</i>) AS A SUMMER RESIDENT IN BALTIMORE COUNTY, MARYLAND. By <i>Frank Coates Kirkwood</i>	137
TWO RACES OF THE VARIED THRUSH. By <i>Joseph Grinnell</i>	142
ON A COLLECTION OF BIRDS MADE BY MR. T. R. THOMPSON AT THE CAY LOBOS LIGHT-HOUSE. By <i>J. Lewis Bonhote, B. A., F. Z. S. L.</i>	145
A VISIT TO AUDUBON'S BIRTHPLACE. By <i>O. Widmann</i>	150
A STUDY OF THE GENUS MACRORHAMPHUS. By <i>Reginald Heber Howe, Jr.</i>	157
BIRDS OF PREY AS OCEAN WAIFs. By <i>H. W. Henshaw</i>	162
DESCRIPTION OF A SUPPOSED NEW SUBSPECIES OF PARUS FROM NEW MEXICO. By <i>Francis J. Birtwell</i>	165
THE PTERYLOSIS OF PODARGUS: WITH NOTES ON THE PTERYLOGRAPHY OF THE CAPRIMULGI. By <i>Hubert Lyman Clark</i>	167
REPUBLICATION OF DESCRIPTIONS OF NEW SPECIES AND SUBSPECIES OF NORTH AMERICAN BIRDS. No. II. By <i>J. A. Allen</i>	172
NEW SUBSPECIES OF NORTH AMERICAN BIRDS. By <i>Wilfred H. Osgood</i>	179
THE TWO RACES OF <i>Saxicola ananthe</i> . By <i>Leonhard Stejneger</i>	186
THE LONG-TAILED JAY. By <i>Joseph Grinnell</i>	188
GENERAL NOTES.—Brünnich's Murre in Lewis and Jefferson Counties, N. Y., 188; Habits of the Gooney, 189; Audubon's Shearwater (<i>Puffinus auduboni</i>) on the Coast of Virginia, 189; Mexican Cormorant in Colorado, 189; A Virginia Record for the American Eider (<i>Somateria dresseri</i>), 189; Early Occurrence of the Black Scoter in Maryland and Virginia, 190; The Purple Gallinule in Massachusetts in the Breeding Season, 190; Occurrence of Baird's Sandpiper in Sussex, England, 190; Ruffed Grouse in Snow, 190; The Passenger Pigeon, 191; The Occurrence of the Ground Dove in Virginia, 192; Rachius in Young Red-shouldered Hawks, 192; New name for <i>Nyctala</i> , 193; The Pileated Woodpecker in Connecticut, 193; <i>Alcedo</i> versus <i>Muscivora</i> , 193; Variation in Size in the Wood Pewee, 194; The Meadowlark (<i>Sturnella magna</i>) at Rangeley, Maine, 194; The European Starling in Connecticut, 194; Snow Bunting at Sea, 195; Montana Redpolls, 195; <i>Acanthis linaria rostrata</i> and <i>Xanthocephalus xanthocephalus</i> in Connecticut, 195; Deformity of Maxilla in the House Sparrow, 195; The Loggerhead Shrike in New Brunswick, 196; The Scientific Name of the Southern Yellowthroat, 197; The Correct Name for the Florida Yellowthroat, 198; Probable Breeding of the Red-bellied Nuthatch near Boston, 198; The Newfoundland Veery (<i>Hylocichla fuscescens fuliginosa</i>) in Massachusetts, 198; Notes from Northern New York, 199; Florida Bird Notes, 199; Notes from the Magdalen Islands, 199; New Brunswick Notes, 201; Birds observed during a Steamer voyage from San Francisco to Victoria, B. C., 201; Occurrence of <i>Tringa maculata</i> and other American Birds in Hawaii, 202; Notes on the Moulting of <i>Spinus pinus</i> and of <i>Hirundo erythrogaster</i> , 203; To Remove Fat from Bird Skins, 204.	
RECENT LITERATURE.—Barrington's 'The Migration of Birds at Irish Stations,' 205; Gätke's 'Helgoland,' Second German Edition, 206; Pollard's 'Birds of My Parish,' 207; Collett on the Skull and Auricular Openings in North European Owls, 207; Merriam and Preble on the Summer Birds of Western Maryland, 208; Loomis on California Water Birds, 208; Grinnell on Alaskan Birds, 209; Mrs. Eckstorm's 'The Bird Book,' 209; Mrs. Eckstorm's 'The Woodpeckers,' 210; Shufeldt's Contributions to our Knowledge of the Osteology of Birds, 211; Chapman on the Genus <i>Sturnella</i> , 212; Eaton's 'Birds of Western New York,' 212; Publications Received, 213.	
CORRESPONDENCE.—Early Editions of Wilson's Ornithology, 219.	
NOTES AND NEWS.—Obituary—Gustav Hartlaub, 219; Baron Edmund de Sélys-Longschamps, 219; George A. Boardman, 219; Captain John Clifford Brown, 220; James MacKinlay, 221; Audubon Whelock Ridgway, 221. New Ornithological Journals, 222; U. S. Biological Survey, 222; Delaware Valley Ornithological Club, 223; Prof. Alfred Newton's Royal Society Medal, 224; New York State Audubon Society, 224; A. O. U. Committee on Bird Protection, 224.	

'THE AUK,' published as the Organ of the AMERICAN ORNITHOLOGISTS' UNION, is edited by Dr. J. A. ALLEN, with the assistance of Mr. FRANK M. CHAPMAN.

TERMS:—\$3.00 a year, including postage, strictly in advance. Single numbers, 75 cents. Free to Honorary Members, and to Active and Associate Members of the A. O. U. not in arrears for dues.

Subscriptions and Advertisements should be addressed to 'THE AUK,' 30 BOYLSTON STREET, CAMBRIDGE, MASS., or to WILLIAM DUTCHER, Business Manager, 525 MANHATTAN AVE., NEW YORK, N. Y. Foreign Subscribers may obtain 'THE AUK' through GURNEY AND JACKSON, 1 PATERNOSTER ROW, LONDON.

All articles and communications intended for publication, and all books and publications for notice, should be sent to Dr. J. A. ALLEN, AMERICAN MUSEUM OF NATURAL HISTORY, CENTRAL PARK, NEW YORK CITY.

Manuscripts for general articles should reach the editor at least six weeks before the date of the number, for which they are intended, and manuscripts for 'General Notes' and 'Recent Literature' not later than the first of the month preceding the date of the number in which it is desired they shall appear.

Old
Series, }
Vol. XXVI

CONTINUATION OF THE
BULLETIN OF THE NUTTALL ORNITHOLOGICAL CLUB

{ New
Series,
Vol. XVIII

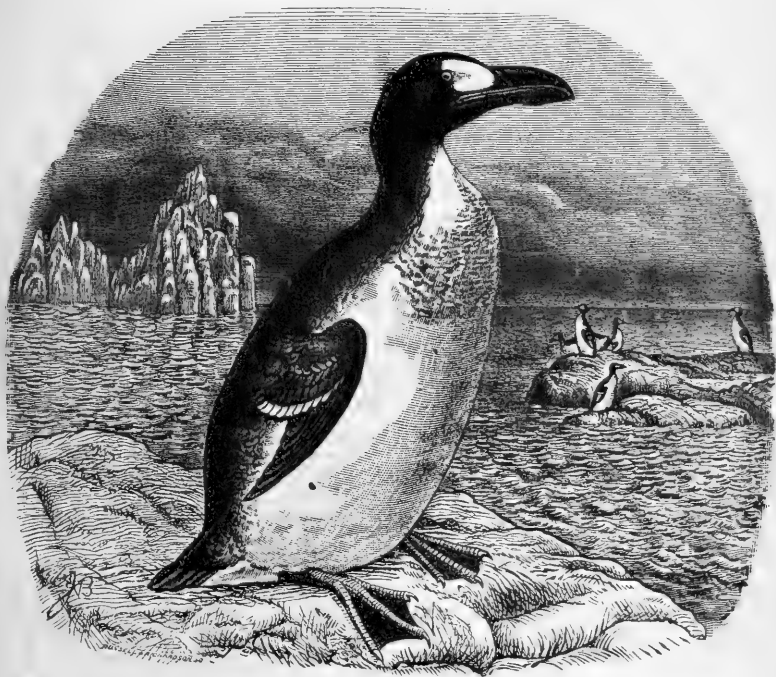
The Auk

A Quarterly Journal of Ornithology

Vol. **XVIII**

—JULY, 1901—

No. 3



PUBLISHED BY

The American Ornithologists' Union

CAMBRIDGE, MASS.

Entered as second-class mail matter in the Post Office at Boston, Mass.

CONTENTS.

	PAGE
BENDIRE'S THRASHER. By <i>Herbert Brown</i>	225
BIRDS OF THE BLACK HILLS. By <i>Merritt Cary</i>	231
UNPUBLISHED LETTERS OF WILLIAM MCGILLIVRAY TO JOHN JAMES AUDUBON. By <i>Ruthven Deane</i>	239
THE RESIDENT LAND BIRDS OF BERMUDA. By <i>Outram Bangs</i> and <i>Thomas S. Bradlee</i>	249
A NEW GROUND DOVE FROM WESTERN MEXICO. By <i>Outram Bangs</i>	257
THE MONTEREY HERMIT THRUSH. By <i>Joseph Grinnell</i>	258
THE WINTER BIRDS OF PEA ISLAND, NORTH CAROLINA. By <i>Louis B. Bishop, M. D.</i>	260
A NEW SHARP-TAILED FINCH FROM NORTH CAROLINA. By <i>Louis B. Bishop, M. D.</i>	269
 GENERAL NOTES.—Holboell's Grebe on San Francisco Bay, 270; The Question of the Generic Name <i>Gavia</i> , 270; Occurrence of the Glossy Ibis at Washington, D. C., 271; The Red Phalarope (<i>Crymophilus fulvicarius</i>) on the Coast of South Carolina, 271; An Additional Note on the Genus <i>Macrorhamphus</i> , 272; <i>Tringa solitarius cinnamomeus</i> —A Correction, 272; European Lapwing in the Bahamas, 272; Nesting of the Hairy Woodpecker near Washington, D. C., 272; The Vermilion Flycatcher in Florida, 273; Bachman's Sparrow in Virginia, 273; <i>Piranga rubra</i> in Massachusetts, 273; Bell's Vireo and the Sandhill Crane in New Hampshire, 274; Bachman's Warbler (<i>Helminthophila bachmanii</i>) Rediscovered near Charleston, South Carolina, 274; Sprague's Pipit (<i>Anthus spraguei</i>) again on the Coast of South Carolina, 275; The Wheatear Not a Bird of Maine, 275; Bird Notes from Pueblo Co., Colorado, 276; Corrections to Birds of Parry Sound and Muskoka, 276.	
 RECENT LITERATURE.—Norton on Birds from Labrador, 277; Howe and Allen's Birds of Massachusetts, 278; Morris's Birds of Springfield, Mass., and Vicinity, 279; McGregor's List of the Land Birds of Santa Cruz County, California, 279; Torrey's 'Everyday Birds,' 279; Proceedings of the Delaware Valley Ornithological Club, 280; Stejneger on the Wheatear's (<i>Saxicola</i>) Occurring in North America, 280; Bangs on a New Meadowlark from South America, 281; Brewster and Bangs on a New Bécard from Lower Uruguay, 281; Shufeldt's 'Osteology of the Herodiones,' 281; Chapman on a New Race of the Great Blue Heron, 282; Grinnell on Two Races of the Red-breasted Sapsucker, 282; Strong's 'Quantitative Study of Variation in the Smaller North American Shrikes,' 283; Stone, 'On Moults and Alleged Colour-change in Birds,' 284; Seton-Thompson and Hoffmann's 'Bird Portraits,' 284; Gould's 'Louis Agassiz,' 285; Ridgway on 'New Birds of the Families Tanagridæ and Icteridæ,' 286; Burd on the Anatomy and Relations of the Swifts, 286; Herrick's 'The Home Life of Wild Birds,' 287; Heck's Living Pictures of the Animal Kingdom, 287; Mrs. Bignell's 'Mr. Chupes and Miss Jenny,' 288; Publications Received, 289.	
 CORRESPONDENCE.—The So-called Cancelled Fasciculus of Cassin's Illustrations, 291.	
 NOTES AND NEWS.—Obituary: Baron Edmund de Sélys Longschamps, 292; Barbara Jordan, 293; Memorial to William McGillivray, 293; Announcements of New Publications, 293.	
 TENTH SUPPLEMENT TO THE A. O. U. CHECK-LIST OF NORTH AMERICAN BIRDS 295.	

'THE AUK,' published as the Organ of the AMERICAN ORNITHOLOGISTS' UNION, is edited by Dr. J. A. ALLEN, with the assistance of Mr. FRANK M. CHAPMAN.

TERMS:—\$3.00 a year, including postage, strictly in advance. Single numbers, 75 cents. Free to Honorary Members, and to Active and Associate Members of the A.O.U. not in arrears for dues.

Subscriptions and Advertisements should be addressed to 'THE AUK,' 30 BOYLSTON STREET, CAMBRIDGE, MASS., or to WILLIAM DUTCHER, Business Manager, 525 MANHATTAN AVE., NEW YORK, N. Y. Foreign Subscribers may obtain 'THE AUK' through GURNEY AND JACKSON, 1 PATERNOSTER ROW, LONDON.

All articles and communications intended for publication, and all books and publications for notice, should be sent to Dr. J. A. ALLEN, AMERICAN MUSEUM OF NATURAL HISTORY, CENTRAL PARK, NEW YORK CITY.

Manuscripts for general articles should reach the editor at least six weeks before the date of the number for which they are intended, and manuscripts for 'General Notes' and 'Recent Literature' not later than the first of the month preceding the date of the number in which it is desired they shall appear.

Old
Series, }
Vol. XXVI

CONTINUATION OF THE
BULLETIN OF THE NUTTALL ORNITHOLOGICAL CLUB

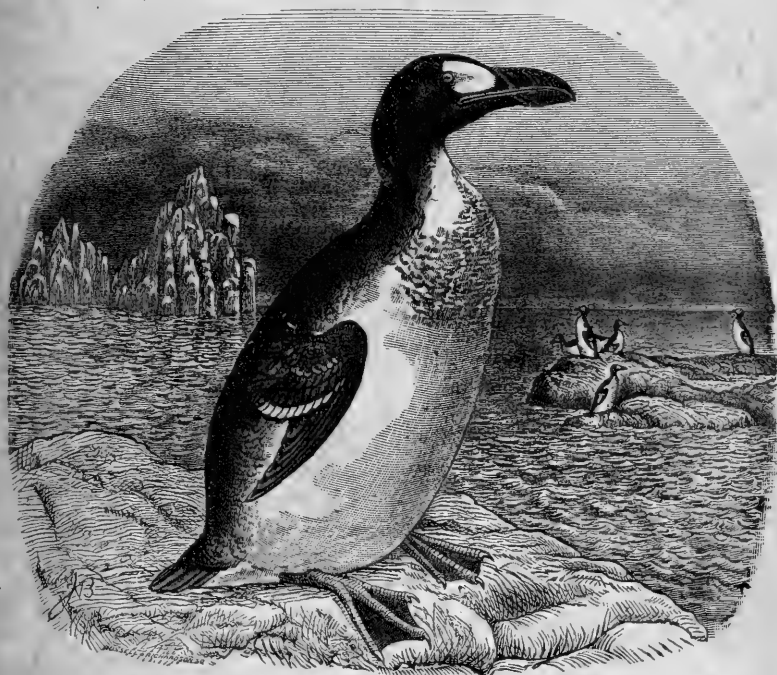
{ New
Series,
Vol. XVIII

The Auk

A Quarterly Journal of Ornithology

Vol. XVIII —OCTOBER, 1901—

No. 4



PUBLISHED BY

The American Ornithologists' Union

CAMBRIDGE, MASS.

CONTENTS.

	PAGE
AN ORNITHOLOGICAL MYSTERY. By William Brewster.	321
NESTING HABITS OF THE ANADYR IN NORTH DAKOTA. By A. C. Bent. (Plates I'-I'V.)	328
A PRELIMINARY LIST OF THE SUMMER BIRDS OF MOUNT MANSFIELD, VERMONT. By Arthur H. Howell.	337
THE ALDER FLYCATCHER (<i>Empidonax traillii alpinus</i>) AS A SUMMER RESIDENT OF EASTERN MASSACHUSETTS. By J. A. Farley.	347
ON A COLLECTION OF BIRDS MADE BY W. W. BROWN, JR., AT DAVID AND DIVALA, CHILQUI. By Outram Bangs.	355
THE CLASSIFICATION OF BIRDS. By Hubert Lyman Clark.	370
A LIST OF THE HAWAIIAN BIRDS IN THE ST. LOUIS COLLEGE COLLECTION, HONOLULU, HI. I., INCLUDING RECORDS OF SEVERAL NORTH AMERICAN SPECIES. By William Alanson Bryan.	382
NESTING HABITS OF THE EVENING GROSEBEAK (<i>Coccythraustes vespertinus</i>). By Francis J. Birtwell. (Plate VII.)	388
GENERAL NOTES.— Capture of Sabine's Gull in Wisconsin, 392; Snowy Heron in Alberta, 392; A New Bird for the State of Ohio, 392; A Band-tailed Hawk's Nest, 392; Nesting of the American Rough-legged Hawk in North Dakota, 394; <i>Melanerpes erythrocephalus</i> Breeding near Boston, 394; Discovery of the Egg of the Black Swift (<i>Cypseloides niger borealis</i>), 394; A Rare Record for Eastern New York, 395; <i>Acanthis linaria rostrata</i> in the Outer Hebrides, 395; The Migratory Movements of the Lapland Longspur in North America, 396; The Western Savanna Sparrow in North Carolina, 397; The Hooded Warbler in Massachusetts, 397; Nesting of the Carolina Wren (<i>Thryothorus ludovicianus</i>) in Southern Massachusetts, 397; Massachusetts Bird Notes, 398; Maine Bird Notes, 400; Ontario Notes, 401; Additional Notes on the Birds of Okanogan (Chelan) County, Washington, 402; Manuscript of Emmons's Catalogue of Massachusetts Birds, 403.	
RECENT LITERATURE.— Pycraft on the Morphology of the Cassowaries and their Allies, 405; Bangs on New American Birds, 406; Bangs on Birds from the Bill Kiu Islands, 407; Chapman on New Birds from Peru, 407; Grinnell on New California Birds, 407; Babson's Birds of Princeton, New Jersey, 408; Selous's Bird Watching, 408; Publications Received, 409.	
CORRESPONDENCE.— Early Migration of Wild Geese, 411.	
NOTES AND NEWS.— Nineteenth Congress of the A. O. U., 412; Obituary: Newton Dexter, Francis J. Birtwell, 413; An Australian Ornithologists' Union, 414; The Bird Club of Princeton University, 415; University of Nebraska Expedition of 1906, 416.	
INDEX	417
CONTENTS	iii
OFFICERS AND MEMBERS OF THE A. O. U.	ix

'THE AUK,' published as the Organ of the AMERICAN ORNITHOLOGISTS' UNION, is edited by Dr. J. A. ALLEN, with the assistance of Mr. FRANK M. CHAPMAN.

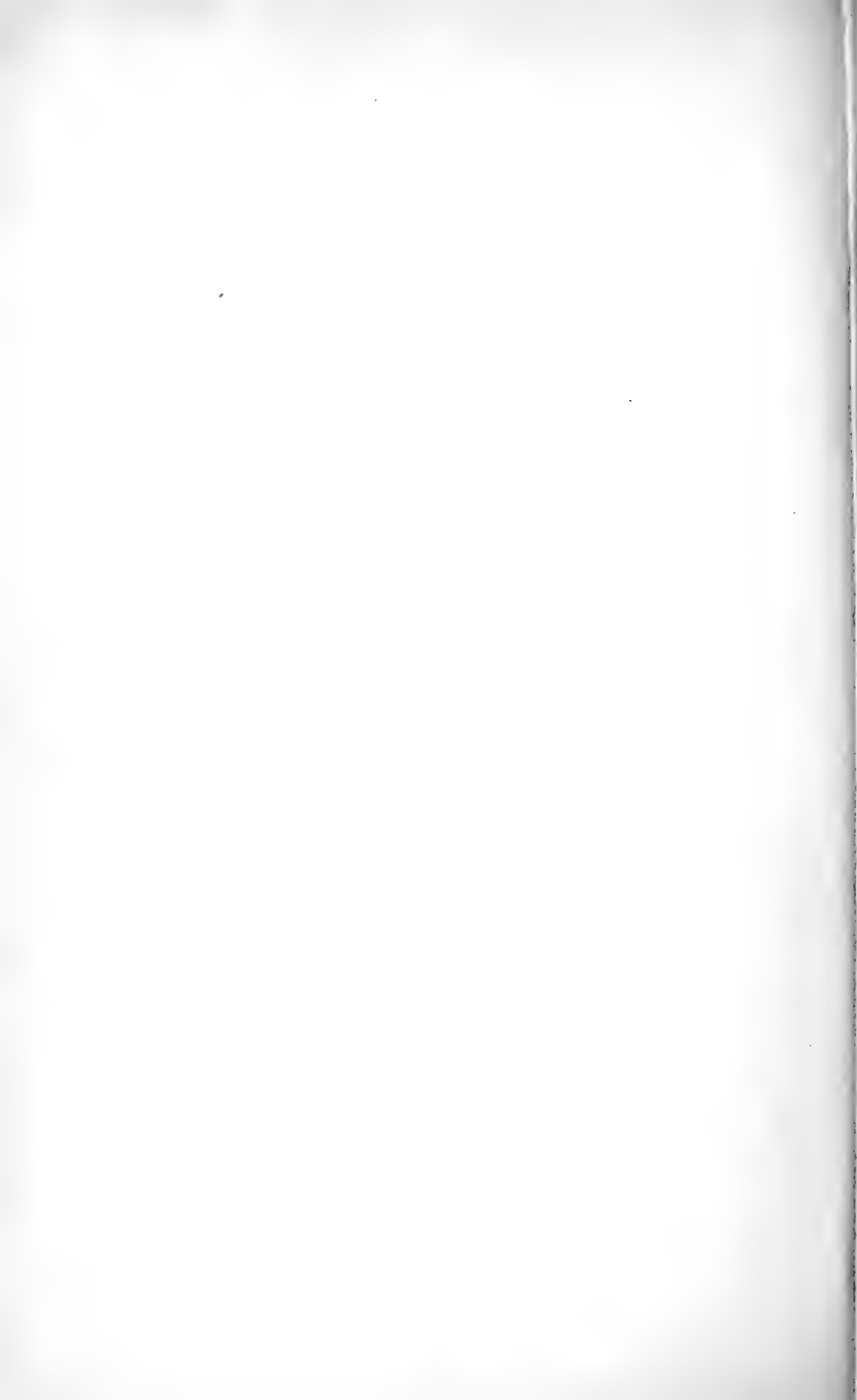
TERMS:— \$3.00 a year, including postage, strictly in advance. Single numbers, 75 cents. Free to Honorary Members, and to Active and Associate Members of the A. O. U. not in arrears for dues.

Subscriptions and Advertisements should be addressed to 'THE AUK,' 30 BOYLSTON STREET, CAMBRIDGE, MASS., or to WILLIAM DUTCHER, Business Manager, 525 MANHATTAN AVE., NEW YORK, N. Y. Foreign Subscribers may obtain 'The Auk' through GURNEY AND JACKSON, 1 PATERNOSTER ROW, LONDON.

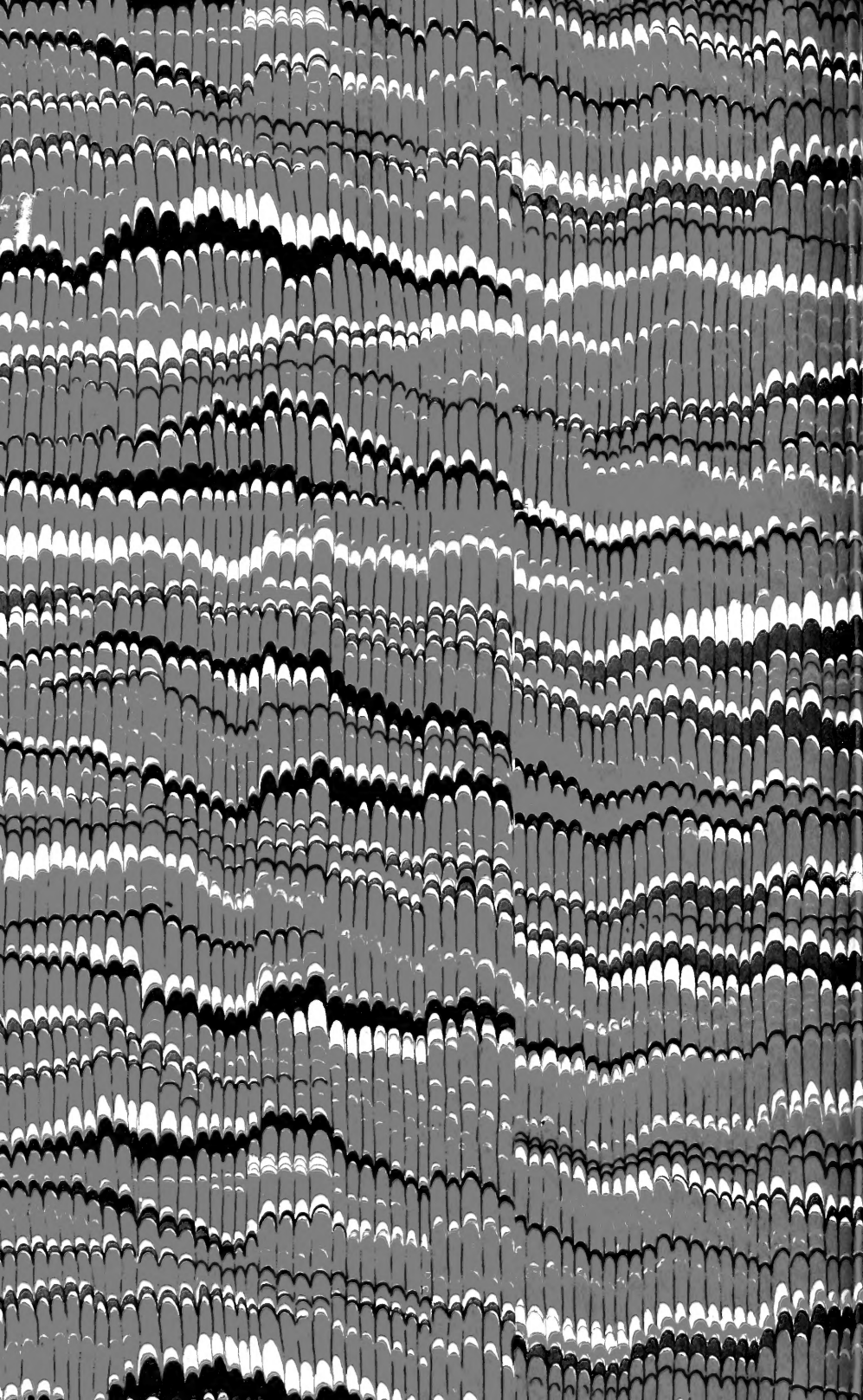
All articles and communications intended for publication, and all books and publications for notice, should be sent to Dr. J. A. ALLEN, AMERICAN MUSEUM OF NATURAL HISTORY, CENTRAL PARK, NEW YORK CITY.

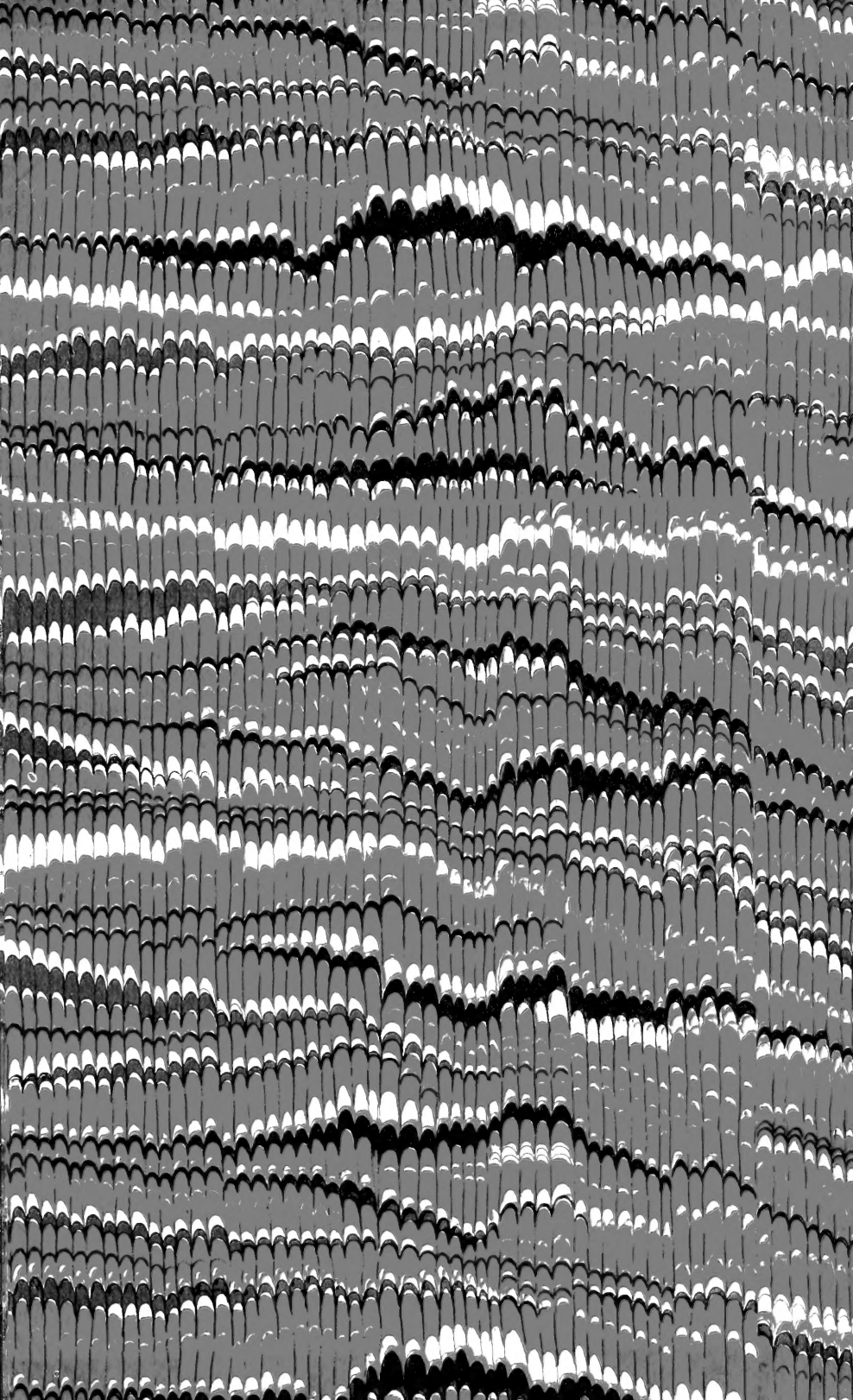
Manuscripts for general articles should reach the editor at least six weeks before the date of the number for which they are intended, and manuscripts for 'General Notes' and 'Recent Literature' not later than the first of the month preceding the date of the number in which it is desired they shall appear.











SMITHSONIAN INSTITUTION LIBRARIES



3 9088 01204 1489