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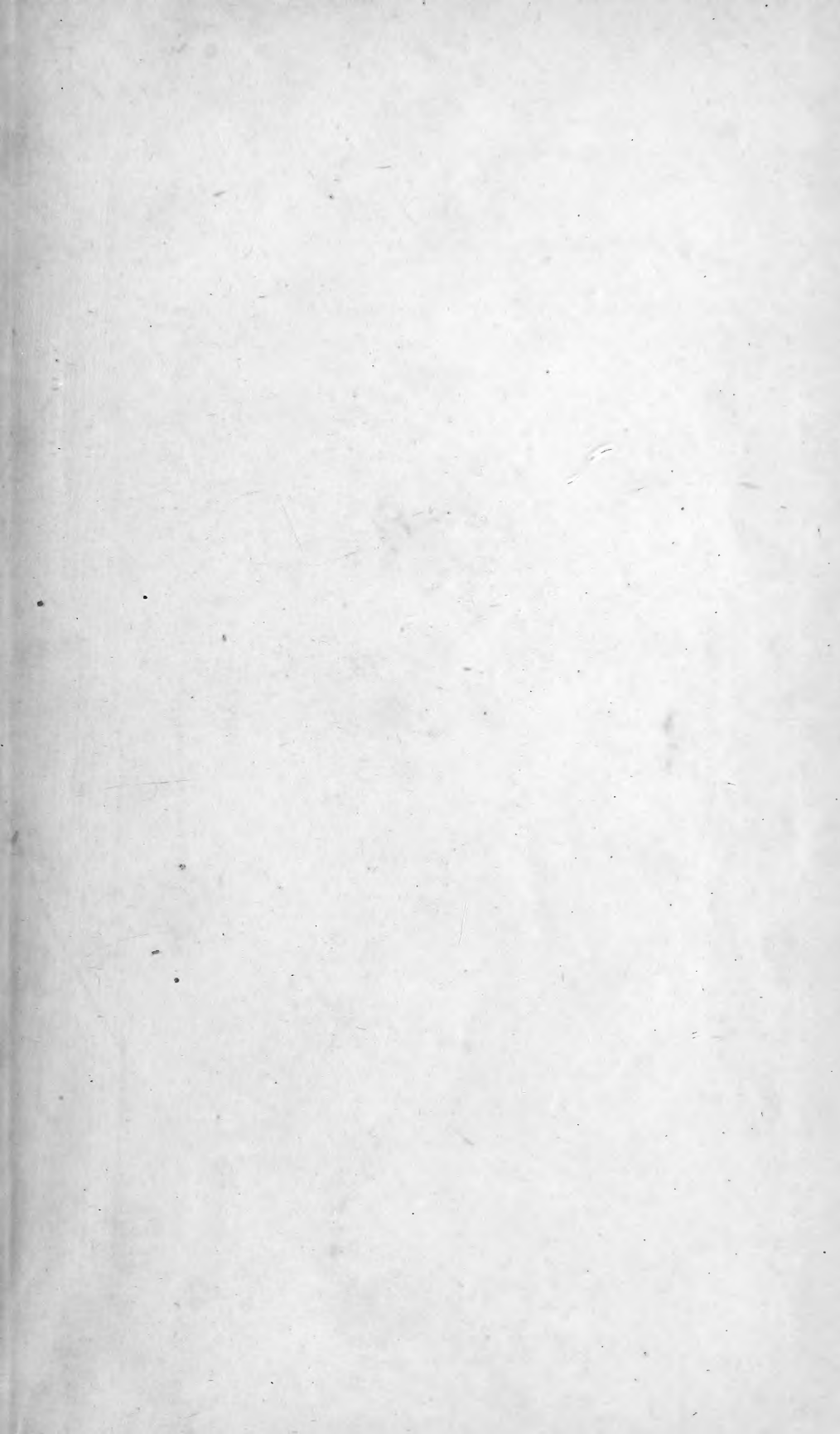
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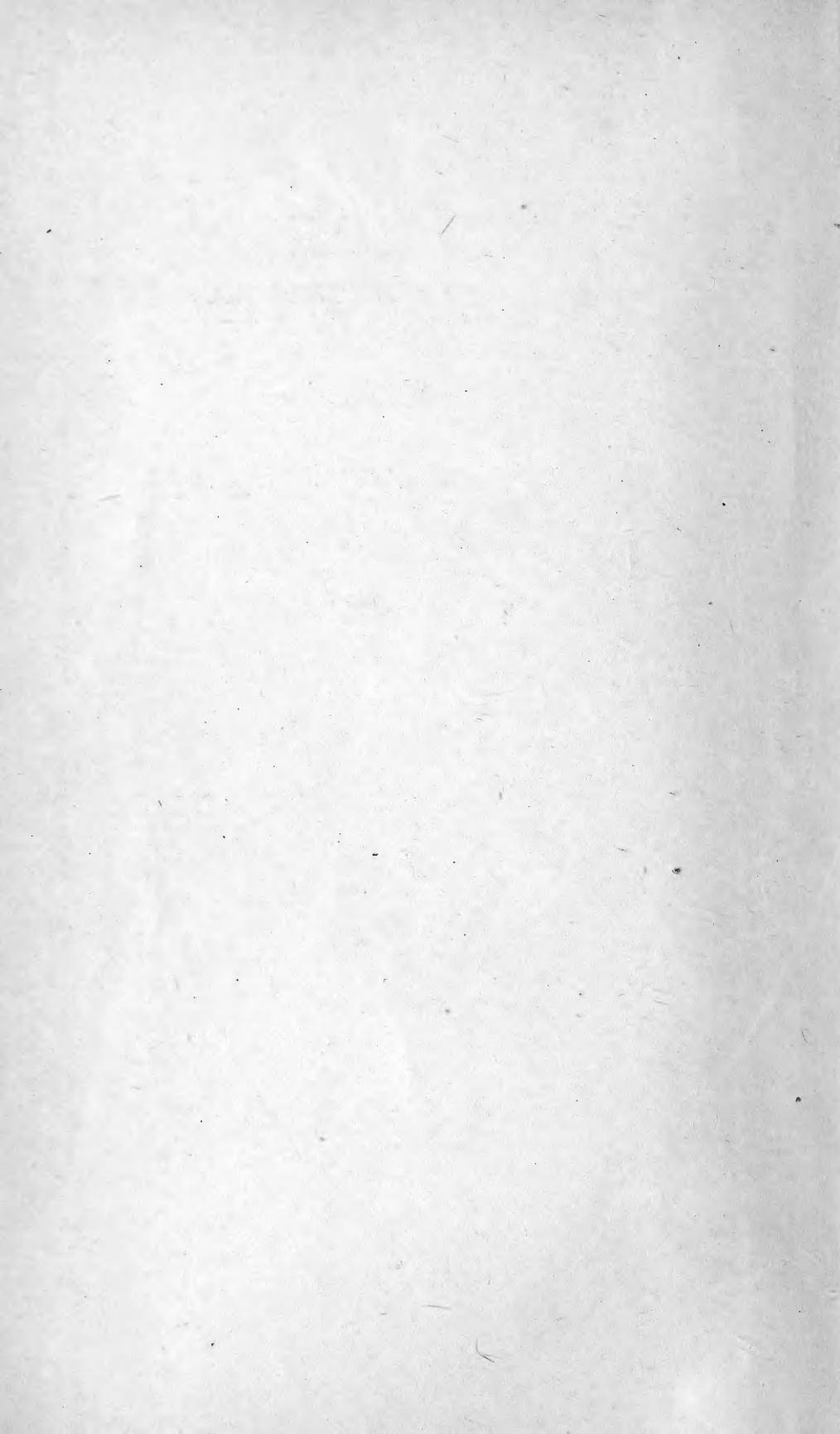
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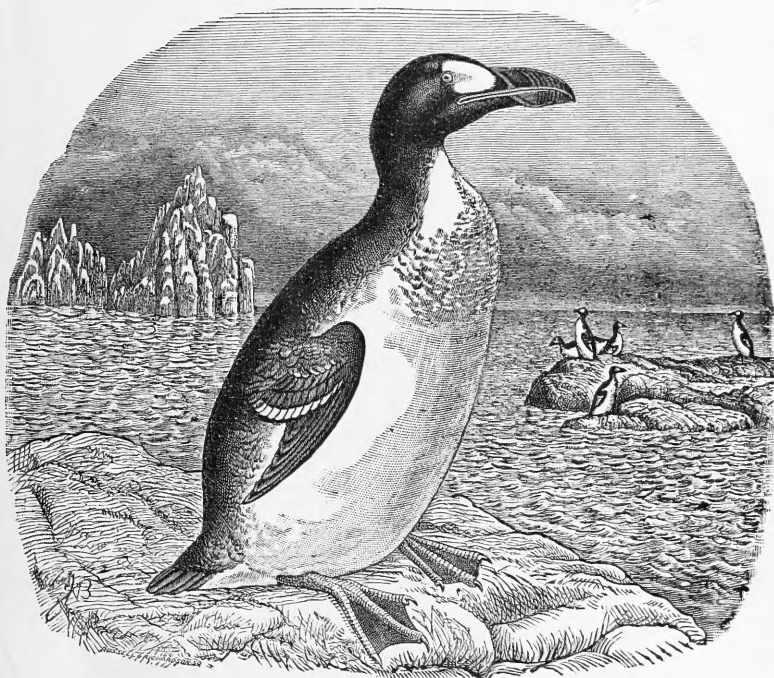
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EDITOR

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MACFARLANE, ROBERT, Winnipeg, Manitoba.....	1886
MADARÁSZ, DR. JULIUS VON, National Museum, Budapest, Hungary.	1884
MENZBIER, DR. M., Imperial Society of Naturalists, Moscow.....	1884
MEYER, DR. A. B., Director of the Royal Zool. Museum, Dresden....	1884
NAMIYE, M., Tokio.....	1886
NICHOLSON, FRANCIS, Oakfield, Ashley Road, Altrincham, England.	1884
OATES, EUGENE WILLIAM, Mandalay, Burma.....	1884
OUSTALET, DR. EMILE, Jardin des Plantes, 55 Rue de Buffon, Paris.	1888
PALMÉN, Prof. J. A., Helsingfors, Finland.....	1883
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TRISTRAM, Rev. Canon H. B., The College, Durham, England.....	1884
TSCHUSI ZU SCHMIDHOFFEN, Count VICTOR RITTER VON, Hallein, (Villa Tännenhof), Salzburg, Austria.....	1884
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BISHOP, DR. LOUIS B., 77 Whitney Ave., New Haven, Conn.....	1885
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BRADFORD, MOSES B. L., Concord, Mass.....	1889
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BRANDRETH, FRANKLIN, Sing Sing, N. Y.....	1889
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BROCK, HENRY HERBERT, M. D., Portland, Me.....	1894
BROOKS, EARLE A., 275 Ridge Av., Allegheny, Pa.....	1892
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DEANE, WALTER, 29 Brewster St., Cambridge, Mass.....	1897
DE HAVEN, ISAAC NORRIS, Ardmore, Pa.....	1893
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DICKINSON, W. S., Tarpon Springs, Fla.....	1891
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DODGE, FREDERICK CLINTON, 125 Milk St., Boston, Mass.....	1897
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DYCHE, Prof. L. L., Lawrence, Kansas.....	1886
EAMES, Dr. EDWIN H., Bridgeport, Conn. ....	1888
EASTMAN, HARRY D., Framingham, Mass.....	1891
EATON, E. 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
EDWARDS, WILLIAM SEYMOUR, Charleston, W. Va.....	1894
ELROD, Prof. M. J., Univ. of Montana, Missoula, Montana.....	1892
EMERSON, CHARLES J., Stoneham, Mass.....	1896
EMERY, Mrs. ANNIE C., Ellsworth, Me.....	1897
EMLEN, ARTHUR COPE, Awbury, Germantown, Philadelphia, Pa...	1896

EVERMANN, Prof. BARTON W., U. S. Fish Comm., Washington, D. C.	1883
FANNIN, JOHN, Provincial Museum, Victoria, B. C.	1888
FANNING, JED FRYE, 216 Spring St., Portland, Me.	1895
FARLEY, JOHN A., Newton, Mass.	1892
FARWELL, Mrs. ELLEN DRUMMOND, Lake Forest, Ill.	1896
FERGUSON, CHAUNCEY COFFIN, Merrimac, Mass.	1894
FERNALD, ROBERT HEYWOOD, 366 Amesbury Av., Cleveland, Ohio.	1890
FERRY, JOHN FARWELL, Andover, Mass.	1894
FISHER, Miss ELIZABETH WILSON, 1502 Pine St., Philadelphia, Pa.	1896
FISHER, WILLIAM H., 1602 Mt. Royal Avenue, Baltimore, Md.	1895
FLEMING, JAMES H., Toronto, Can.	1893
FLINT, HARRY W., Yale National Bank, New Haven, Conn.	1888
FLINT, WILLIAM R., Oakland, Cal.	1890
FOOTE, Miss F. HUBERTA, 105 W. 43d St., New York City.	1897
FORBUSH, EDWARD H., Malden, Mass.	1887
FOSTER, FRANCIS APTHORP, Cambridge, Mass.	1893
FOWLER, FREDERICK HALL, Fort Logan, Colo.	1892
FOWLER, Major J. L., 2d Cavalry U. S. A., Fort Logan, Colo.	1892
FOX, Dr. WILLIAM H., 1826 Jefferson Place, Washington, D. C.	1883
FROST, ALBERT H., 255 W. 74th St., New York City.	1893
FUERTES, LOUIS AGASSIZ, Scarborough, N. Y.	1891
FULLER, CHARLES ANTHONY, Brookline, Mass.	1894
GARMAN, Prof. H., State College, Lexington, Ky.	1893
GAULT, BENJAMIN T., Glen Ellyn, DuPage Co., Ill.	1885
GILL, Miss ELIZA ANNE, Kemper Hall, Kenosha, Wis.	1897
GILLET, LOUIS BLISS, 131 E. 76th St., New York City.	1895
GILMAN, PHILIP KINGSWORTH, Palo Alto, Cal.	1897
GLEASON, Rev. HERBERT W., 728 E. 18th St., Minneapolis, Minn.	1894
GOLDMAN, EDWARD ALPHONSO, Alila, Cal.	1897
GOODALE, Dr. JOSEPH LINCOLN, 3 Fairfield St., Boston, Mass.	1885
GOULD, JOSEPH E., Dennison, Ohio.	1889
GRANGER, WALTER W., Am. Mus. Nat. Hist., New York City.	1891
GRAY, RALPH W., 5 Gloucester St., Boston, Mass.	1896
GREEN, MORRIS M., 706 E. Fayette St., Syracuse, N. Y.	1886
GREGG, Dr. WILLIAM H., Port Chester, N. Y.	1883
GRIFFING, MOSES BOWDITCH, Shelter Island Heights, N. Y.	1897
GRINNELL, JOSEPH, Pasadena, Cal.	1894
HAHN, Rev. BENJAMIN DAVIESE, 266 Union St., Springfield, Mass.	1894
HAINES, EDWIN IRVINE, New Rochelle, N. Y.	1896
HAINES, Dr. SAMUEL S., Moorestown, N. J.	1897
HALES, HENRY, Ridgewood, N. J.	1890
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HAMFELDT, A., Ottawa, Ill.	1892
HAMLIN, GEORGE L., Bethel, Conn.	1893
HAMAND, Miss JENNIE E., Schaller, Iowa.	1897
HANKINSON, THOMAS LEROY, Agricultural College, Mich.	1897

HARGITT, Prof. CHARLES W., 909 Walnut Ave., Syracuse, N. Y.....	1892
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HATCH, JESSE MAURICE, Escondido, Cal.....	1894
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HAVEMEYER, H. O., Jr., 244 Madison Av., New York City.....	1893
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HOFFMAN, RALPH, Belmont, Mass.....	1893
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INGERSOLL, ALBERT M., 818 5th St., San Diego, Cal.	1885
INGERSOLL, JOSEPH CARLETON, Bowie, Md.	1895
INGRAHAM, D. P., Beulah, Colo.	1889
IRVING, JOHN, 550 Park Ave., New York City	1894
ISHAM, C. B., Am. Mus. Nat. Hist., New York City	1891
JACKSON, THOMAS H., West Chester, Pa.	1888
JACOBS, J. WARREN, Waynesburg, Pa.	1889
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JOB, REV. HERBERT K., North Middleboro, Mass.	1896
JOHNSON, ALBERT I., Des Moines, Iowa	1885
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JOHNSON, FRANK EDGAR, Yonkers, N. Y.	1888
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JOHNSON, WM. S., Boonville, N. Y.	1893
JOHNSTON, CHARLES HAVEN LADD, Cambridge, Mass.	1894
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JONES, Prof. MARCUS E., Salt Lake City, Utah	1890
JORDAN, A. H. B., Lowell, Wash.	1888
JORDAN, Prof. DAVID STARR, Stanford University, Cal.	1885
JUDD, ELMER T., Cando, No. Dak.	1895
JUDD, SYLVESTER D., Georgetown Univ., Washington, D. C.	1893
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KAEDING, HENRY BARROILHET, 1616 Steiner St., San Francisco, Cal.	1897
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KNIGHT, ORA WILLIS, 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
KOCH, Prof. AUGUST, Williamsport, Pa.	1891
KOCH, FREDERIC W., Merced, Cal.	1891
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KUMLIEN, LUDWIG, Milton, Wis.	1895
LADD, SAMUEL B., West Chester, Pa.	1889
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LANGE, DR. CHARLES J., 50 Juneau Av., Milwaukee, Wis.	1897
LANGO, ALBERT, Aitkin, Minn.	1890



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LEWIS, WILLIAM H., Pawtucket, R. I.....	1890
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LONG, HORACE B., Worcester, Mass.....	1889
LOOMIS, Miss EDNA, Jackson, Mich.....	1897
LOOMIS, JOHN A., Paint Rock, Concho Co., Texas.....	1887
LORING, J. ALDEN, Dept. of Agriculture, Washington, D. C.....	1889
LOWE, WILLOUGHBY P., Goodpasture, Colo.....	1893
LUHRMAN, JOHN, Jr., 158 Pacific Ave., Jersey City, N. J.....	1893
LUSK, RICHARD D., Tucson, Ariz.....	1894
MACDOUGALL, GEO. R., 112 Wall St., New York City.....	1890
MACKAY, Dr. A. H., Halifax, Nova Scotia.....	1885
MACKAY, GEORGE H., Nantucket, Mass.....	1890
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MALI, CHARLES M., 93 Willow St., Brooklyn, N. Y.....	1889
MARBLE, CHARLES C., 6126 Ingleside Av., Chicago, Ill.....	1897
MARCY, Prof. OLIVER, Evanston, Ill.....	1892
MARSH, DANIEL J., Springfield, Mass.....	1894
MASON, EDWARD CAMPBELL, 76 Johnsons Park, Buffalo, N. Y.....	1888
MASON, HOWARD HARRIS, 34 Mawney St., Providence, R. I.....	1897
MASTERMAN, ELMER ELLSWORTH, New London, Ohio.....	1897
MAULE, WILLIAM MARIS, Swathmore College, Pa.....	1895
MAXON, WILLIAM RALPH, 132 Main St., Oneida, N. Y.....	1894
MAY, FRANK DWIGHT, Jr., 17 Huntington St., Hartford, Conn.....	1894
MAYNARD, COLTON, 1407 15th St., N. W., Washington, D. C.....	1895
MCCOOK, PHILIP JAMES, Cambridge, Mass.....	1895
MCCORMICK, LOUIS M., Glen Island, N. Y.....	1892
MCGREGOR, R. C., Palo Alto, Cala.....	1889
McILHENNY, EDWARD AVERY, Avery, La.....	1894
MCKENZIE, PETER, 4492 St. Catharine St., Montreal, Can.....	1896
McLAIN, ROBERT BAIRD, Palo Alto, Cala.....	1893
MERRIAM, Miss FLORENCE A., 1919 16th St., N.W., Washington, D.C.....	1885
MERRILL, HARRY, Bangor, Maine.....	1883
METCALFE, WILLIAM C., 21 Cortlandt St., New York City.....	1886
MILLER, GERRIT SMITH, Jr., Peterboro', N. Y.....	1886
MILLER, HARRY EDWARD, Derby Conn.....	1892
MILLER, JAMES HENRY, Lowville, N. Y.....	1894
MILLER, Mrs. OLIVE THORNE, 628 Hancock St., Brooklyn, N. Y.....	1887
MILLER, WALDRON DEWITT, Plainfield, N. J.....	1896
MILLS, HARRY C., Unionville, Conn.....	1897

MITCHELL, WALTON I., Santa Fé R. R., East Las Vegas, New Mex...	1893
MOORE, J. PERCY, Wayne, Pa.....	1886
MORCOM, G. FREAN, 406 So. Broadway, Los Angeles, Cala.....	1886
MORISON, GEORGE ABBOT, 34 Shepard St., Cambridge, Mass.....	1896
MORRELL, CLARENCE HENRY, Pittsfield, Me.....	1897
MORRIS, GEORGE SPENCER, Olney, Philadelphia, Pa.....	1887
MORRIS, ROBERT O., Springfield, Mass.....	1888
MORRISON, GEORGE A., Fox Lake, Wis.....	1891
MUMMERY, WALTER S., Flint, Mich.....	1895
MURDOCH, JOHN, Roxbury, Mass.....	1883
NACHTRIEB, Prof. HENRY F., Univ. of Minn., Minneapolis, Minn....	1892
NASH, HERMAN W., Pueblo, Colorado.....	1892
NEAL, ALBERT EDWARD, 98 Exchange St., Portland, Me.....	1896
NEWBURY, FREDERICK EARL, 105 Mathewson St., Providence, R. I....	1897
NICHOLS, EUGENE C., Flushing, N. Y.....	1895
NICHOLS, JOHN M., Peabody, Mass.....	1890
NORRIS, GUY BRUNAUGH, Garden City, Kansas.....	1894
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, Hanover, N. H.....	1894
NORTON, RICHARD, 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, 300 Goldsmith Bldg., Milwaukee, Wis..	1897
OLDS, HENRY WORTHINGTON, Woodside, Md. ....	1896
O'NEIL, EDWARD, Sewickley, Allegheny Co., Pa.....	1893
ORTH, GEORGE S., 341 6th Ave., Pittsburgh, Pa.....	1892
OSBORN, CHASE SALMON, Sault Ste. Marie, Mich.....	1893
OSBURN, Rev. WILLIAM, Nashville, Tenn.....	1890
OSGOOD, FLETCHER, Chelsea, Mass.....	1897
OSGOOD, WILFRED HUDSON, Dept. of Agriculture, Washington, D. C..	1893
OWEN, CHARLES C., East Orange, N. J.....	1896
OWEN, Miss JULIETTE AMELIA, St. Joseph, Mo.....	1897
OWEN, VIRGIL WILLIAMS, P. O. Box 774, Los Angeles, Cala. ....	1894
PAGE, Mrs. ALICE WILSON, 9 Riedesel Ave., Cambridge, Mass.....	1896
PAINÉ, AUGUSTUS G., Jr., 17 W. 45th St., New York City.....	1886
PALMER, Dr. THEODORE S., Dept. of Agriculture, Washington, D. C..	1888
PALMER, WILLIAM, U. S. Nat. Mus., Washington, D. C.....	1888
PALMER, WILLIAM M., 84 Beekman St., New York City.....	1896
PAPE, CHARLES WESLEY, Manhattan, Kansas.....	1896
PARKER, J. GRAFTON, Jr., 100 Washington St., Chicago, Ill.....	1894
PARKER, WENDELL PHILIPS, 89 Lincoln St., Worcester, Mass.....	1897
PATTIE, FRANK BENJAMIN, Valley Spring, Cala.....	1897
PAYNE, E. B., Catlin, Ill.....	1896

PEABODY, Rev. P. B., Hallock, Minn.....	1891
PEABODY, WILLIAM RODMAN, Cambridge, Mass.....	1890
PENNOCK, CHARLES J., Kennett Square, Chester Co., Pa.....	1888
PERKINS, CHARLES E., Hartford, Conn.....	1886
PERRIOR, ALBERT WILLIAM, 316 E. Kennedy St., Syracuse, N. Y....	1897
PERRY, JOSEPH FRANCIS, 198 Pearl St., Providence, R. I.....	1897
PETERSON, J. P., West Denmark, Polk Co., Wis.....	1885
PHELPS, WILLIAM HENRY, Cambridge, Mass.....	1895
PHILIP, HOFFMAN, Metropolitan Club, Washington, D. C.....	1897
PHILLIPS, A. H., Princeton, N. J.....	1891
PIERCE, A. K., Renovo, Pa.....	1891
PIERS, HARRY, "Stanyan," Willow Park, Halifax, N. S.....	1891
POMEROY, HARRY KIRKLAND, P. O. Box 575, Kalamazoo, Mich.....	1894
POPENOE, Prof. EDWIN A., Topeka, Kan.....	1888
PORTER, LOUIS H., 313 W. 75th St., New York City.....	1893
POTTER, RAYMOND B., Nyack, N. Y.....	1895
POWERS, WILLIAM LINCOLN, Gardiner, Maine.....	1895
PRAEGER, WILLIAM E., University of Illinois, Urbana, Ill.....	1892
PRATT, Rev. GEORGE B., 61 Laffin St., Chicago, Ill.....	1895
PREBLE, EDWARD A., Dept. of Agriculture, Washington, D. C.....	1892
PRENTISS, D. W., Jr., 1218 9th St., N. W., Washington, D. C.....	1890
PRICE, WILLIAM W., Stanford University, Cala.....	1893
PURDY, JAMES B., Plymouth, Mich.....	1893
RALPH, Dr. WILLIAM L., 26 Court St., Utica, N. Y.....	1888
RANN, Mrs. MARY L., Manchester, Iowa.....	1893
RATHBUN, FRANK R., 42½ Franklin St., Auburn, N. Y.....	1883
RATHBUN, SAMUEL F., Seattle, Wash.....	1893
RAWSON, CALVIN LUTHER, Norwich, Conn.....	1885
READ, ALBERT M., 1140 15th St., N. W., Washington, D. C.....	1895
REAGH, 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, Beverly, N. J.....	1890
REED, HOWARD S., 1320 Gaylord St., Denver, Colo.....	1894
RHOADS, CHARLES J., Bryn Mawr, Pa.....	1895
RHOADS, SAMUEL N., Haddonfield, N. J.....	1885
RICHARDSON, JOHN KENDALL, Wellesley Hills, Mass.....	1896
RICHARDSON, W. M., Am. Mus. Nat. Hist., New York City.....	1891
RICKER, EVERETT WILDER, Jamaica Plains, Mass.....	1894
RIDGWAY, JOHN L., U. S. Geol. Surv., Washington, D. C.....	1890
RIKER, CLARENCE B., Maplewood, N. J.....	1885
RILEY, JOSEPH H., Falls Church, Va.....	1897
RIVES, Dr. WILLIAM C., 22 W. 33d St., New York City.....	1885
ROBBINS, LINVILLE WADSWORTH, Gardiner, Me.....	1895
ROBINS, JULIA STOCKTON, 114 S. 21st St., Philadelphia, Pa.....	1895
ROBERTS, GEORGE W., West Chester, Pa.....	1891
ROBERTS, W. F., 1421 G St., N. W., Washington, D. C.....	1888

ROBINSON, Lieut. WIRT, U. S. A., Hubbard Park, Cambridge, Mass.	1897
RODDY, Prof. H. JUSTIN, Millersville, Pa.	1891
ROOD, Mrs. E. IRENE, 552 Chestnut St., Chicago, Ill.	1893
ROOSEVELT, FRANKLIN DELANO, Hyde Park, N. Y.	1896
ROOSEVELT, Hon. THEODORE, Oyster Bay, Queens Co., N. Y.	1888
ROTH, PAUL WAGNER, Butler, Pa.	1895
ROTZELL, Dr. W. E., Narberth, Pa.	1893
ROWLAND, Mrs. ALICE STORY, Plainfield, N. J.	1897
ROWLAND, RUSSELL STURGIS, Ann Arbor, Mich.	1895
ROWLEY, JOHN, Jr., Am. Mus. Nat. Hist., New York City	1889
ROZYCKI, STEPHEN, Navy Dept., Washington, D. C.	1894
RUSSELL, WATERMAN S. C., Manchester-by-the-Sea, Mass.	1896
RUSSELL, WILLIAM BLACK, Fiskdale, Mass.	1893
SAGE, HENRY M., Albany, N. Y.	1885
SAMPSON, WALTER BEHRNARD, Stockton, Cala.	1897
SANFORD, FRANK ELWOOD, Supt. Public Schools, La Grange, Ill.	1897
SAVAGE, DAVID LEWIS, Salem, Iowa.	1894
SAVAGE, JAMES, 134 Abbott St., Buffalo, N. Y.	1895
SCHALER, JOHN, Stamford, Conn.	1893
SCHRAGE, E. B., Pontiac, Mich.	1895
SCHURR, THEODORE A., Pittsfield, Mass.	1888
SCHWAB, Rev. LAWRENCE H., 101 Lawrence St., New York City	1892
SCUDDER, BRADFORD A., Taunton, Mass.	1893
SCULL, ANDREW STEWART, 262 Mt. Vernon St., Camden, N. J.	1897
SHARPLESS, ROBERT P., Elgin, Ill.	1894
SHATTUCK, GEORGE CHEEVER, 506 Craigie Hall, Cambridge, Mass.	1896
SHEPPARD, EDWIN, Acad. Nat. Sci., Philadelphia, Pa.	1892
SHERRILL, W. E., Haskell, Texas.	1896
SHIELDS, ALEXANDER M., Crocker Bldg., San Francisco, Cala.	1896
SHIELDS, GEORGE O., 19 W. 24th St., New York City.	1897
SHOEMAKER, FRANK H., Hampton, Iowa.	1895
SHORES, Dr. E. I., West Bridgewater, Mass.	1883
SHRYOCK, WILLIAM A., 823 N. Broad St., Philadelphia, Pa.	1893
SILLOWAY, PERLEY MILTON, Rood House, Ill.	1896
SIMPSON, R. B., Arches, West Va.	1895
SMALL, ALBERTO WILLIAM, Antrim, N. H.	1895
SMALL, ERNEST WILLIAM, Monmouth, Me.	1895
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., Orange, N. J.	1896
SMITH, S. SIDNEY, 59 Wall St., New York City.	1888
SMYTH, Prof. ELLISON A., Jr., Agr. and Mech. Coll., Blacksburg, Va.	1892
SMYTH, HIRAM G., Locust Ave., Troy, N. Y.	1896
SNYDER, WILL EDWIN, Beaver Dam, Wis.	1895
SORNBORGER, JEWELL D., Cambridge, Mass.	1888
SOUTHWICK, E. B., Arsenal Bldg., Central Park, New York City.	1888

SOUTHWICK, JAMES M., Mus. Nat. Hist., Providence, R. I.....	1896
SPAULDING, FRED. B., Lancaster, N. H.....	1894
SPELMAN, HENRY MUNSON, Cambridge, Mass.....	1883
SPRAGUE, JOHN C. 93 Wall St., New York City.....	1891
SPRATT, CHESMAN CHADWICK, North Bridgton, Maine.....	1894
STANTON, Prof. J. Y., Bates College, Lewiston, Me.....	1883
STEPHENS, FRANK, San Diego, Cala.....	1883
STEPHENSON, Mrs. LOUISE MCGOWN, Helena, Ark.....	1894
STICKNEY, MYRON WILDER, 62 George St., Providence, R. I.....	1895
STONE, CLARENCE FREEDOM, Branchport, N. Y.....	1894
STONE, DWIGHT D., Lansing, N. Y.....	1891
STONEBURN, FRED H., Newark, N. J.....	1893
STREATOR, CLARK P., Santa Cruz, Cala.....	1889
STRECKER, JOHN KERN, Jr., Waco, Texas.....	1894
STRONG, REUBEN M., Oberlin, Ohio.....	1889
STUDER, JACOB HENRY, 114 Fifth Ave., New York City.....	1888
STURTEVANT, EDWARD, Brookline, Mass.....	1896
SURFACE, HARVEY ADAM, Cornell University, Ithaca, N. Y.....	1897
SUTTON, GEORGE BYRON, Newark Valley, N. Y.....	1896
SWINBURNE, JOHN, Guernsey, England.....	1887
TALLEY, Prof. THOMAS WASHINGTON, Tallahassee, Fla.....	1896
TATLOCK, JOHN, Jr., Mutual Life Ins. Co., New York City.....	1887
TATUM, JOSEPH WILLIAM, 843 No. 41st St., Philadelphia, Pa.....	1897
TAYLOR, ALEXANDER O'DRISCOLL, 124 Bellevue Ave., Newport, R. I.....	1888
TAYLOR, H. H., 63 Park Place, Bridgeport, Conn.....	1893
TEST, Dr. FREDERICK CLEVELAND, 4048 Indiana Ave., Chicago, Ill.....	1892
THAYER, ABBOTT H., Scarborough, N. Y.....	1896
THOMAS, JOHN, Sharon, Pa.....	1895
THOMPSON, ERNEST E., Tappan, N. Y.....	1883
THOMSON, Prof. GEORGE S., Walden, Colo.....	1892
TODD, LOUIS M., Calais, Me.....	1887
TODD, W. E. CLYDE, Dept. of Agriculture, Washington, D. C.....	1890
TOPPAN, GEORGE L., 294 Newbury St., Boston, Mass.....	1886
TORREY, BRADFORD, Wellesley Hills, Mass.....	1883
TOWNSEND, CHARLES H., U. S. Fish Comm., Washington, D. C.....	1883
TOWNSEND, WILMOT, Bay Ridge, N. Y.....	1894
TREAT, WILLARD E., Silver Lane, Conn.....	1885
TREMBLAY, Dr. JOSEPH EUCLIDE, Esquimaux Point, Quebec, Can.....	1895
TROMBLEY, JEROME, Petersburg, Mich.....	1885
TROSTLER, ISADOR SIMON, 4246 Farnam St., Omaha, Neb.....	1897
TROTTER, Dr. SPENCER, Swarthmore College, Swarthmore, Pa.....	1888
TUTTLE, Dr. CARL, Berlin Heights, Ohio.....	1890
UPHAM, Mrs. MARY C., Marshfield, Wis.....	1897
VAN CORTLANDT, Miss ANNE S., Croton-on-Hudson, N. Y.....	1885
VAN DENBURG, JOHN, Acad. Sci., San Francisco, Cala.....	1893
VAN SANT, Miss ELIZABETH, City Hall, Omaha, Neb.....	1896
VAN WINKLE, EDMUND, Warsaw, Ind.....	1894

VAUGHAN, CLIFFORD WHEATON, 47 W. 83d St., New York City.....	1894
VELIE, DR. J. W., St. Joseph, Mich.....	1886
VICKERS, ERNEST W., Ellsworth, Ohio.....	1896
VILARO, DR. JUAN, Tampa, Fla.....	1888
WALCOTT, ROBERT, 11 Waterhouse St., Cambridge, Mass.....	1893
WALES, EDWARD H., Hyde Park, N. Y.....	1896
WALKER, DR. R. L., Carnegie, Pa.....	1888
WARREN, DR. B. H., West Chester, Pa.....	1885
WARREN, OSCAR BIRD, Hibbing, Minn.....	1892
WATERMAN, WILLIAM, Hay Springs, Neb.....	1896
WATERS, EDWARD STANLEY, Holyoke, Mass.....	1894
WATKINS, L. WHITNEY, Manchester, Mich.....	1894
WEST, JAMES A., Bloomington, Ill.....	1896
WEST, LEWIS H., Roslyn, Queens Co., N. Y.....	1887
WHEELER, REV. HARRY EDGAR, Huntsville, Ala.....	1897
WHEELER, JOHN B., East Templeton, Mass.....	1897
WHITAKER, WILLIAM LINCOLN, Cedar Grove, Philadelphia, Pa.....	1894
WHITE, FRANCIS BEACH, Cambridge, Mass.....	1891
WHITCOMB, MRS. ANNABELL COOK, 721 Franklin St., Milwaukee, Wis.....	1897
WHITMAN, PROF. CHARLES OTIS, Univ. of Chi., Chicago, Ills.....	1896
WHOLEY, W. N., 78 Grape St., Rochester, N. Y.....	1891
WICKS, M. L., JR., Los Angeles, Cal.....	1890
WILBUR, ADDISON P., Canandaigua, N. Y.....	1895
WILCOX, T. FERDINAND, Princeton, N. J.....	1895
WILDE, MARK L. C., Merchantville, N. J.....	1893
WILLIAMS, J. BICKERTON, 32 University St., Montreal, Can.....	1889
WILLIAMS, ROBERT S., 408 1st Ave., S. Minneapolis, Minn.....	1888
WILLIAMS, W. J. B., Holland Patent, N. Y.....	1893
WILSON, MISS LILIAN BARTON, 728 Marcy Av., Brooklyn, N. Y.....	1897
WILSON, SIDNEY S., St. Joseph, Mo.....	1895
WINTLE, ERNEST D., 11 Hospital St., Montreal, Can.....	1887
WOOD, NELSON R., Smithsonian Institution, Washington D. C.....	1895
WOODRUFF, FRANK M., Acad. Sci., Lincoln Park, Chicago, Ill.....	1894
WOODRUFF, LEWIS B., 14 East 68th St., New York City.....	1886
WOODWORTH, MRS. NELLY HART, St. Albans, Vt.....	1894
WORCESTER, PROF. DEAN C., Ann Arbor, Mich.....	1895
WORTHEN, CHARLES K., Warsaw, Ill.....	1891
WORTHINGTON, R. B., Dedham, Mass.....	1893
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, Olneyville, R. I.....	1896
WRIGHT, SAMUEL, Conshohocken, Pa.....	1895
YEATON, ARTHUR CHARLES, Deering, Me.....	1895
YORKE, DR. F. HENRY, Fooseland, Ill.....	1891
YOUNG, CURTIS CLAY, 395 Clermont Ave., Brooklyn, N. Y.....	1891

DECEASED MEMBERS.

ACTIVE MEMBERS.

*Date of Death.*

BAIRD, SPANCER FULLERTON.....	Aug. 19, 1887
BENDIRE, CHARLES E.....	Feb. , 1897
GOSS, N. S.....	March 10, 1891
HOLDER, JOSEPH B.....	Feb. 28, 1888
JEFFRIES, JOHN AMORY.....	March 26, 1892
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
PARKER, WILLIAM KITCHEN.....	July 3, 1890
PELZELN, AUGUST VON.....	Sept. 2, 1891
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
HAAST, JULIUS VON.....	Aug. 15, 1887
HARGITT, EDWARD.....	March 19, 1895
HOMEYER, E. F. VON.....	May 31, 1889
LYTTLETON, THOMAS, LORD LILFORD.....	June 17, 1896
MARSCHALL, A. F.....	Oct. 11, 1887
MALMGREN, ANDERS JOHAN.....	, 1897
MIDDENDORFF, ALEXANDER THEODOR VON.....	Jan. 28, 1894
MOSJISOVICS, F. G. HERMANN AUGUST.....	Aug. 27, 1897
PREJEVALSKI, N. M.....	Oct. 20, 1887
PRYER, HARRY JAMES STOVIN.....	Feb. 17, 1888
SCHRENCK, LEOPOLD VON.....	Jan. 20, 1894
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
AVÉRY, WILLIAM CUSHMAN.....	March 11, 1894
BECKHAM, CHARLES WICKLIFFE.....	June 8, 1888
BILL, CHARLES.....	April —, 1897
BOLLES, FRANK.....	Jan. 10, 1894
BREESE, WILLIAM L.....	Dec. 7, 1889
BROKAW, L. W.....	Sept. 3, 1897
CAIRNS, JOHN S.....	June 10, 1895
CAMPBELL, ROBERT ARGYLL.....	April —, 1897
CORNING, ERASTUS, JR.....	April 9, 1893
COE, W. W.....	April 26, 1885
ELLIOTT, S. LOWELL.....	Feb. 11, 1889
FAIRBANKS, FRANKLIN.....	April 24, 1895
GESNER, A. H.....	April 30, 1895
GOSS, BENJAMIN F.....	July 6, 1893
HOADLEY, FREDERIC H.....	Feb. 26, 1895
HOWLAND, JOHN SNOWDON.....	Sept. 19, 1885
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, 1890
MARIS, WILLARD LORRAINE.....	Dec. 11, 1895
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
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







Chas E Bendire

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# THE AUK:

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NO. I.

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IN MEMORIAM:

CHARLES EMIL BENDIRE.<sup>1</sup>

BORN 27TH APRIL, 1836. DIED 4TH FEBRUARY, 1897.

BY J. C. MERRILL.

*Frontispiece.*

THE AMERICAN ORNITHOLOGISTS' UNION has again suffered the loss of a prominent member and officer, and, in accordance with a standing resolution, the President has called upon the writer to prepare a memorial of the life and work of Charles Emil Bendire, Captain United States Army, retired, brevet Major, who, after an illness of several months, died of Bright's disease at Jacksonville, Florida, on the fourth of February, 1897. This is undertaken not as a perfunctory duty, but as a tribute to one I have known for more than twenty-two years, first as a correspondent, later as an intimate personal friend, our intercourse closing with a letter written by him a few days before his death.

Karl Emil Bender was born at Koenig im Odenwald in the Grand Duchy of Hesse-Darmstadt on April 27, 1836. The eldest of a family of two sons and three daughters, of whom two of the latter now survive, he received private instruction at home up to

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<sup>1</sup> An address delivered at the Fifteenth Congress of the American Ornithologists' Union, at New York, Nov. 10, 1897.

the age of twelve years, and then passed five years at a theological school at Passy, near Paris. Leaving suddenly, it is understood on account of some boyish escapade, he returned to his home for a short time and then, upon the advice of a friend and accompanied by his younger brother Wilhelm, sailed for New York in 1853.

Upon arrival the new world did not meet their glowing expectations, and in a short time Wilhelm Bender sailed for home, but was lost overboard during the voyage.

Not long after this young Bender enlisted, changing his name to Bendire and dropping his middle initial, which he reassumed about fifteen years ago in correspondence and in his published notes; but to the time of his death he was known officially as Charles Bendire and his name so appears upon the title pages of his 'Life Histories.'

As the greater part of Major Bendire's life was passed in the Army, it is fitting to briefly recount his services and stations.

Enlisting at the age of eighteen years on June 10, 1854, he served for five years as a Private and Corporal in Company D, First Dragoons. Remaining out of the service for a year, he again enlisted June 8, 1860, in the 4th Cavalry, serving as Private, Corporal, Sergeant, and Hospital Steward until September 9, 1864, when he was discharged by reason of appointment as 2nd Lieutenant, 2nd Infantry, of date May 18, 1864. He was transferred to the 1st Cavalry September 9, 1864, promoted 1st Lieutenant, November 12, 1864, Captain, February 21, 1873, and placed upon the retired list for disability contracted in the line of duty, April 24, 1886.

He was brevetted 1st Lieutenant, June 11, 1864, for "gallant and meritorious services in the battle of Trevillion Station, Va.," and Major, February 27, 1890, for "gallant services in action against Indians at Canyon Creek, Montana, September 13, 1877."

During his first enlistment his company was stationed in New Mexico — then including Arizona — but he did no collecting then nor during the Civil War, through which he served, as an officer, in the Army of the Potomac.

After the war he passed three months in 1867 at his former home in Germany, and after this — omitting mention of temporary details and duty — he was stationed in Louisiana until December,

1865; at Drum Barracks, California — now San Pedro — until April, 1868; at Fort Lapwai, Idaho, to June, 1871; and at Camp Lowell, Arizona, to January, 1873. He was on recruiting service at St. Louis until September, 1874; at Camp Harney, Oregon, to May, 1878; at Fort Walla Walla, Washington, to May, 1882; at Fort Klamath, Oregon, to September, 1883; in the East for about one year, and at Fort Custer, Montana, to December, 1885, being retired in the following spring.

From this record it will be seen what exceptional facilities Major Bendire enjoyed for collecting birds and studying their habits in regions then but little known to ornithologists. During these years he saw much hard field service which he performed with the care and fidelity that characterized all that he did. It should be recorded that the testimony of those who accompanied him while in the field is unanimous to the effect that he never allowed his interest in birds to interfere in the least with the strict performance of duty; and more than one anecdote is related of his losing valuable specimens through his unwillingness to delay his command for a few moments.

It is probable that while stationed at Fort Lapwai, Idaho, from 1868 to 1871, Major Bendire first began the systematic study and collection of objects of natural history, and that he was led thereto by his fondness for hunting and interest in the haunts and habits of game mammals and birds. During the early period of his work Major Bendire, while a most assiduous and successful oölogist, paid little attention to collecting birds except for the purpose of identifying sets of eggs. This was unfortunate, because he thus failed to add a number of southern species to our fauna in localities where, at a later period, many such were secured by other collectors. Still, he first obtained in the United States several Mexican species and discovered certain new ones, as *Peucea carpalis*, and *Harporhynchus bendirei*; he was also the first to investigate the breeding habits and procure the eggs of a considerable number of our western birds.

Many ornithologists do not, perhaps, realize that Major Bendire was an assiduous collector in other fields and that at the instance of Professor Baird he sent much good material to the National Museum. In addition to the three species of birds that were

dedicated to him, viz.: *Megascops asio bendirei* Brewster, *Loxia curvirostra bendirei* Ridgway, and *Harporhynchus bendirei* Coues, his name will be remembered in other branches of science. Thus, a mammal bears the name *Atophyrax bendirei* Merriam; a fish, *Potamocottus bendirei* Bean, and three fossil trees are *Acer bendirei* Lesquereux, *Rhus bendirei* Lesquereux, and *Marsilea bendirei* Ward. He also first cleared up the life history of the 'Red Fish' of Idaho, showing that the supposed little land-locked red salmon, *Oncorhynchus kennerlyi*, is really the young breeding male or grilse of *Oncorhynchus nerka*.

While in Washington, on leave of absence and on duty from September, 1883, to August, 1884, Major Bendire, at Professor Baird's request, assumed charge, as Honorary Curator, of the Department of Oölogy in the U. S. National Museum, which was in a neglected condition. Most of the eggs of North American land birds were stored without order and very many were of more or less doubtful identification, but the latter have since been eliminated from the collection; the eggs of the water birds were in a somewhat more satisfactory condition, and many are still retained. With his characteristic energy, Major Bendire at once went over this material and incorporated with it his private collection of about 8,000 specimens, which he presented to the Museum, and which is the basis of the present collection of about 52,000 specimens, acquired largely by his personal efforts and by the gifts of his friends and correspondents. This collection is the culmination of Major Bendire's life work as an oölogist; its excellent arrangement, the fine condition and careful identification of the specimens, and the full series of most species being too well known to the members of the Union to need detailed description. There are few of us who have not gladly contributed sets of especially rare eggs, knowing that they would nowhere be of more real scientific use and value than in our friend's custody.

Having rearranged the collection of eggs to his satisfaction and made it available for study while constantly adding to it, he was prepared to undertake a work which he had long had in mind, and which was suggested to him by Professor Baird. This was to be an Oölogy of North American birds, but as notes and material gathered by an extensive correspondence and careful

search of the records were accumulated, it was found advisable to extend the scope of the work which, in its final form, is well described by its title 'Life Histories of North American Birds,' though this name was not decided upon until much of the first volume was written. In the preparation of this volume a great deal of material for the succeeding volumes was gathered, and it should be here recorded that had more encouragement been given to the work in certain quarters, the subsequent volumes would have appeared promptly, and the proposed five, or possibly six, volumes might have been almost, if not quite, completed before the author's lamented death. The resulting loss to American Ornithology is greatly to be deplored, for the two volumes which have appeared fill a place peculiar to themselves and no other publication is in any way a substitute. The first volume, issued in July, 1892, was greeted with the greatest satisfaction by ornithologists, and while it met with scant notice in 'The Auk,' foreign journals gave it a most cordial welcome. This was followed in September, 1896, by the second volume, which fully sustained the author's high reputation, and upon these will rest Major Bendire's secure fame as an ornithologist.

Besides the uniform excellence of the work, two points deserve especial mention, although this is not the place for a general criticism, nor are trite expressions of praise needed to enhance the high appreciation of the work by ornithologists. One is the care exercised in giving the geographical distribution of each form and the extent of its breeding range; these, based upon the latest and most reliable data and the personal identification or reidentification of specimens, are beyond comparison the best ever published. This necessary examination of specimens was most fortunate, for it had much to do with extending the scope of the work as originally planned, and gave the author an enviable position as an ornithologist of sound judgment. The second point is the large amount of fresh, unpublished material incorporated in the 'Life Histories'; much of this is based upon the author's own observations during his long residence in the West supplemented by information derived from his extensive correspondence, the authority and credit for which are carefully given.

A word as to the plates cannot be omitted. No superior work has ever been done, and no praise can be too great to apply to

them. The present writer was in a position to know with what painstaking care and accuracy Major Bendire compared the successive proofs of the plates in the first volume with the individual eggs selected as types, and how often he returned the 'final' proofs to the lithographers for changes in some minute detail that his critical eye detected. It should be stated emphatically that Major Bendire is in nowise responsible for the many serious and inexcusable typographical errors that so disfigure the second volume.

There are few Active Members of the Union who were not personally acquainted with Major Bendire, as he was one of its founders and rarely failed to be present at the annual meetings. On different occasions he was a member of several of the 'Committees, and at the time of his death was one of the Council of the Union.

Major Bendire was not a voluminous writer. His earlier records were mostly in letters to Allen, Baird, Brewer, and Coues, who sometimes, beginning about 1872, published them as special notes, at others brought them together as a local list. Later he wrote more freely over his own signature, publishing brief records as well as longer articles, as on the breeding habits of *Sphyrapicus*, *Passerella*, *Glaucidium*, and others. His correspondence increased to burdensome proportions before his death, but he attended to it faithfully and gladly, not only obtaining good material for his work, but doing much to establish Oölogy on a broader and safer basis, and to impress upon the younger collectors the paramount importance of properly identifying such specimens as they might collect. He was often consulted as to the identification of eggs, and did not hesitate to expose such men as he was convinced were given to fraudulent practices. This detestation of fraud and insincerity was a marked feature of his character. Frank yet reserved, bluff, honest and truthful to bluntness, he had the courage of his convictions, which he did not fail to make clear when occasion required. Simple in habits, unselfish, and always ready to help others, Major Bendire is sincerely mourned, not only by the members of this Union, but by all those to whom he was known only by correspondence or by his secure title to scientific remembrance, his 'Life Histories of North American Birds.'



THE CAYENNE SWIFT, *PANYPTILA CAYENNENSIS*  
(GMELIN).

BY CHARLES W. RICHMOND.

*Plate I.*

THIS elegant little Swift, although described and figured over a century ago, and ranging over a large portion of tropical America, has always been a scarce bird in collections, while its habits and manner of nesting are as yet very imperfectly known. It was introduced to naturalists as the *Martinet à collier, de Cayenne*<sup>1</sup> by Buffon, who gave a recognizable colored figure of it, and Gmelin in 1788 gave it the name *Hirundo cayennensis*.

This species, which is the type of the genus *Panyptila*, ranges from Nicaragua to southeastern Brazil, and from the fact that it has only recently been found to occur in Central America, north of Panama, it is to be expected that future observations will considerably extend the range. The only other species of the genus is the remarkable *P. sancti-hieronymi*, confined, as far as known, to certain mountains of Guatemala. It is very much larger than the first-named species, but of precisely the same coloration. It, also, is very rare in collections, much more so, in fact, than the Cayenne Swift, due to its inaccessible habitat, and to the meteor-like flight, which renders its collection a matter of extreme difficulty.

References to the Cayenne Swift are few and far between in ornithological literature, and information respecting its life history is very meagre indeed. Messrs. Salvin and Godman in reviewing the species recently in their great work on Central American birds,<sup>2</sup> wrote: "We have no specimen from our country, but Salvin was shown by Mr. Lawrence in 1874 a specimen with its nest which was found near the Chagres River by Dr. T. K. Merritt, the discoverer of *Microchera albocoronata*. Writing in 1884, Mr. Lawrence says that the bird was captured in its nest,

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<sup>1</sup> Planch. Enlum., pl. 725, fig. 2.<sup>2</sup> Biol. Cent. Am., Aves, II, p. 371.

the latter being a remarkable structure, composed of some kind of silk-weed, and, being probably waterproof, was used by the bird as a domicile in the rainy season. Its shape was like a sleeve, three or four inches in diameter and nine or ten inches long. This nest was, therefore, somewhat similar to that of *P. sancti-hieronymi* but a good deal smaller, and had probably been attached to a rock in a similar way." The nest of the Guatemalan species is described as follows: "The nest of this species is a remarkable structure, made entirely of the downy seeds of some plant; these are glued together, doubtless by the saliva of the bird, so as to form a long bag-like structure with the opening below. The nest itself is near the top of the inverted bag, and the bird on entering the mouth must climb to the top by its feet. The eggs are not known."

Up to 1892 the Cayenne Swift had not been traced north of Panama, but during the summer of this year while collecting birds in eastern Nicaragua I had the good fortune to find the species quite abundant on the Escondido River, at a point about 50 miles from its mouth. At that locality, on the 'I. P.' plantation, three species of Swifts were common, but from its high-flying habits the *Panyptila* was for a time overlooked. It was not long, however, before the presence of a fork-tailed species was detected, owing to its habit of frequently spreading the tail during flight. On June 28, or about a month after I began to shoot at Swifts, my efforts to bring down a specimen were finally successful.

The great difficulty in securing specimens was not due to the rapid flight of the bird, but to the high altitudes at which they ordinarily passed the time. In fair weather it was utterly impossible to shoot any species of Swift, but on cloudy afternoons or just before dusk, following long rainy spells, all three species would frequently descend within range of our guns. Even under the most propitious conditions for shooting Swifts, it was no easy task to recover the dead birds; those falling in the river were liable to be devoured by voracious fishes, or if dropping elsewhere than on the small grass plot in front of the house were almost certain to be lost in the heavy grass and weeds which grew everywhere. Wounded birds falling some distance away were invariably lost. After many trials, at favorable times between May and October, and an expenditure of about three

hundred cartridges, I was the possessor of nine Cayenne Swifts and about a dozen of the two species of *Chaetura*.

From the little information available, and from my own experience, it would seem that this Swift is rather local in its distribution, a colony of the birds being found in one locality and none at all a few miles distant. Mr. Chapman found them to be common at La Brea in Trinidad<sup>1</sup> but observed none at other localities on that island. The 'I. P.' plantation was the only place in Nicaragua where I noticed them, and none were seen on the Rio Frio in Costa Rica, although a large assemblage of other species was found late one afternoon on that river.

These birds pass the day executing their gyrations high in the air, often considerably above the other species, at times, however, freely associating with them. They work over a considerable area in search of food, usually in loose flocks. One moment many Swifts will be over head, a little later none are to be seen except at the opposite end of the plantation or across the river. In a short time — ten minutes or so — they are back again, and the manœuvre is repeated. Thus while shooting Swifts, we will have many opportunities to bring down birds for a short time, followed by an intermission in which to look for lost ones. In my case the intermission was usually passed in marveling over my inability to shoot specimens with cartridges which had been soaked for a week or more in salt water.

In ordinary flight the tail is closed, and the bird cannot easily be distinguished from the spiny-tailed species, but individuals often pause in their evolutions and soar for a brief interval at which time the tail is widely spread.

The note usually uttered by this Swift is a pleasing, rather long-drawn *chee* or *chee-ee*, at other times a *chee-wee-wee-wee*, given in a shrill pitch. Wounded birds have a squeaky, clicking note, several times repeated.

Although the birds were so numerous, the thought of finding a nest did not occur to me. Nests of many of the tropical birds are so well concealed, so carefully protected from the invasions of snakes, ants, monkeys, and other animals, and the vegetation is so very dense that one has little chance of finding them except

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<sup>1</sup> Bull. Am. Mus. Nat. Hist., VI., 58.

by mere accident. It was, then, quite a surprise to meet with a nest during one of my daily collecting trips. Early in the morning of August 23, while returning from a short tramp, I had almost reached the edge of the forest, when my attention was drawn to a mixed company of birds feeding in an immense tree which stood directly in my path. Among the birds were Montezuma Yellow-tails, two species of Toucans, and some small Parrots. Wounding a Yellow-tail, I was endeavoring to keep it in sight, when a small bird dashed in from an opening in the forest and with an upward sweep disappeared on the trunk of the tree at a point about 70 feet from the ground. Its movements were so sudden and unexpected that by the time I realized just where the bird had disappeared, it had entered its nest, a peculiar structure eight or nine inches long, which was attached to the under surface of the trunk, and so nearly resembled it in its smooth grayish appearance that under other circumstances it would have escaped notice. When first observed, the nest was still quivering from the ingress of the bird, proving it to be of a soft yielding nature. It was attached to the trunk, probably by the saliva of the bird, but this point could not be definitely learned.

It was of almost exactly the same color as the bark; the entrance, at the bottom, was very large, nearly the diameter of the nest at the lower part, which appeared to be about three inches, with a slight bulging at the upper end.

On shooting at the nest there was a struggle inside, which shook it considerably, and presently the bird appeared at the entrance and fell to the ground. To my astonishment, it was a Cayenne Swift, and on dissection proved to be a male. There were no indications that the bird was nesting, and the probabilities are that it was simply using the nest as a place of refuge during rainy weather.

On visiting the place next day with a pair of field glasses, I could determine little concerning the composition of the nest, except that it had the appearance of being stuccoed with some material resembling the bark in color.

The plate accompanying this number of 'The Auk' gives a very life-like figure of the bird and its nest, although the bird in flight, as above mentioned, spreads its tail only at irregular intervals.

WILLIAM SWAINSON TO JOHN JAMES AUDUBON.

(*A hitherto unpublished letter.*)

BY DR. ELLIOTT COUES.

WILLIAM MACGILLIVRAY'S collaboration with Audubon in the production of the 'Ornithological Biography' and of the 'Synopsis' is already well known. The case is properly set forth in Audubon's preface, and still more fully in Audubon's Journals, now in process of publication by Miss M. R. Audubon. I have also had more than one occasion to characterize the happy combination of these two great ornithologists.<sup>1</sup>

But few can be aware that in 1830 there was some chance of William Swainson's becoming Audubon's collaborator, and no little danger that a classification of North American Birds might be made in the mystical jargon of that quinary fad which Macleay, Vigors, and Swainson had taken up. The following letter, which Miss Audubon has kindly allowed me to copy and use, shows that Audubon had made certain propositions to Swainson, touching the latter's collaboration; and that Swainson, who evidently thought no small beer of himself, would enter into no arrangements unless his name should appear as that of co-author with Audubon's. We see him holding off for some such understanding as that which resulted in Swainson and Richardson's 'Fauna Boreali-Americana.'

Having sufficiently shuddered at the thought of what we escaped, we can read at our leisure and pleasure Swainson's stiff declination of Audubon's terms, as follows—the letter being printed literally and punctually true to the original in Swainson's handwriting:

“TETTENHANGER GREEN

2d October 1830

“*My dr Sir*

“I have refrained from replying to your letter until I thought you had returned to London.

“Either you do not appear to have understood the nature of my

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<sup>1</sup> Bull. Nutt. Orn. Club, V, 1880, p. 201; Key N. A. Birds, 2d ed., 1884, p. xxii.

proposition on supplying scientific information for your work, or you are very erroneously informed on the manner in which such assistance is usually given. Dr Richardson, and a hundred others, similarly situated, might with equal justice say that no name should appear but their own; as it would rob them of their fame, because notes are furnished by one or two other persons, your friends would tell you, if you enquired of them, that even *my* name would *add* something to the value of 'The Birds of America'. You pay me compliments on my scientific knowledge, and wished you possessed a portion; & you liken the acquisition of such a portion to purchasing a sketch of an eminent painter — the simile is good. but allow me to ask you, whether, after procuring the sketch, you would mix it up with your own, and pass it off to your friends as your production? I cannot possibly suppose that such would be your duplicity and I therefore must not suppose that you intended I should give all the scientific information I have laboured to acquire during twenty years on ornithology — conceal my name, — and transfer my fame to your pages & to your reputation.

"Few have enjoyed the opportunity of benefiting by the advice and assistance of a scientific friend so much as yourself; and no one, I must be allowed to say, has evinced so little inclination to profit by it. When I call to mind the repeated offers I have made you to correct the nomenclature of your birds, from the first time of our acquaintance, and recollect the dislike you appeared to have to receiving any such information or correction, I cannot but feel perfect surprize at your now wishing to profit by that aid, you have hitherto been so indifferent about.

"Let me however urge upon you one advise which, for your own sake, I should be sorry you despised. It is to characterize yourself, or get some friend to do so for you, all your new species. The specimens, you tell me, are now in England, & the task will be comparatively easy. I urge this, because you may not be aware that a new species, deposited in a museum, is of no authority whatsoever, *until its name and its character are published*. I have repeatedly set my face against such authorities, so has Mr Vigors, so has Ch. Bonaparte, and on this head we are all perfectly unanimous. Unless, therefore, this is done, you will, I

am fearful, loose the credit of discovering nearly all the new species you possess, and this I again repeat, for your own sake I should be sorry for. To me, individually, your not doing so, would rather be advantageous.

“The more a book is quoted, the more is its merits admitted, and its authority established. it was on this account I so repeatedly requested the *use* only, of a copy of your book, that it might have been cited in “Northern Zoology” not having it—I could not therefore mention it

“I shall always be as thankful to you as formerly for any information on the habits, economy, and manners of birds; but, as to *species*, I want not, nor do I ever ask, the opinions of any one. that is quite a different matter, and entertaining peculiar ideas on that subject, you must not feel surprised at my differing from you in almost every instance. My reasons will always be laid before the public. In the present case, we totally differ about *species* of Woodpeckers. I shall not, however propitiate a favourable opinion from you, or any one, by a compliment and therefore I will wait for some species which you yourself will admit, which I shall then give your name to, I am rather glad you did not accept my offer, for I am *now* assisting in bringing out an Octavo edition of Wilson, by Sir W Jardine which will be arranged according to *my* nomenclature.

Yours my dr Sir

Very faithy

W SWAINSON”

Though the proposed literary partnership thus fell through, the two men continued on the most friendly personal terms. Audubon repeatedly speaks handsomely of his friend Swainson in his Journals; they were often together, both in England and in France; each dedicated a new species to the other; and one of the most complimentary reviews Audubon’s work ever received was from Swainson’s pen.

## NOTES ON THE BIRDS OF FORT SHERMAN, IDAHO.

BY J. C. MERRILL,

*Major and Surgeon, U. S. Army.**(Concluded from Vol. XIV, p. 357.)*

**Dolichonyx oryzivorus.**—The well-known song of the Bobolink was heard in July at a ranch on the St. Joseph River, and an old settler told me that the birds were quite common there each year.

**Molothrus ater.**—As in most parts of the Northwest, the Cowbird is rare at Fort Sherman. A single specimen only, a female, was taken May 25, 1896. Among the many nests of small birds examined none contained either egg or young of this parasite.

**Agelaius phœniceus.**—One of the first migrants to appear, as I have seen it on February 22. After remaining two or three weeks these early birds seem to pass on to the north and none are seen until about the first of May when others, apparently the birds nesting here, arrive. Breeds sparingly about the lake, more commonly on the Coeur d'Alène and St. Joseph Rivers.

**Sturnella magna neglecta.**—Arriving early in March, the Meadowlark is very common during the summer. I found it nesting at the summit of Mica Peak.

**Icterus bullocki.**—Breeds sparingly in cottonwoods along the river, especially after it enters Spokane prairie.

**Scolecophagus cyanocephalus.**—A few pairs breed in bushes along the river bank near the fort. Occasionally a small flock may be seen about the stables throughout the winter.

**Coccothraustes vespertinus montanus.**—I am somewhat uncertain as to the true status of this species at Fort Sherman. Mr. Shallis, a local collector, informs me that it usually occurs from May to July and that it is absent during the rest of the year. In 1895 I did not observe any but Mr. Shallis, who knows the bird well, told me that he saw three small flocks about the middle of August. This Grosbeak was first seen by me on May 28, 1896, though their loud whistling notes had been heard a few days earlier. June 1 many were seen in pines and firs across the river, in twos and threes and in irregular flocks; they were restless, whistling constantly, and kept high up in the trees. Common during the next few days, they were scarce but not absent from about June 10 till early in July, when they were again common in small flocks, which at first consisted exclusively of males, joined soon after by females and young. They were now quite tame, coming about the houses and feeding much on the ground, permitting a close approach. I was absent from July 29 until



August 19 and saw none after my return. It is probable that this bird is a common but irregular summer visitor, nesting in the high pines and firs in the hills surrounding the lake, to the borders of which many return as soon as the young are fledged.

**Carpodacus cassini.**—Arriving about the middle of April, this fine songster is one of the most abundant summer birds at Fort Sherman, breeding commonly about the houses as well as on the surrounding hills.

**Loxia curvirostra minor.**—As before stated, the occurrence of the Crossbill at Fort Sherman is irregular; they are sometimes as common and fearless as the English Sparrow. I have seen them in the fort every month in the year, but in summer most of them are in the neighboring hills. On warm bright days in February and March their pleasing song may be heard in every direction, and I have been informed that their nests with eggs have been found here in the former month, placed in tamaracks at a height of thirty or forty feet from the ground. The heavy pines and firs collect and shed the snow to a considerable extent, often leaving a bare spot around the base of the trunk while between scattered trees the snow may be one or two feet in depth. In these bare places, early in March, I have watched male and female Crossbills collect building material, both pine needles and dead grasses, a constant habit being to do this at a considerable distance from the nest for they always carried their loads out of sight, though I have watched them, for several hundred yards when the woods were open enough to permit this. During the latter part of summer there is a marked resumption of their song as heard in early spring. Mr. Brewster informs me that specimens taken here are typical of the former subspecies *bendirei*.

\* **Leucosticte tephrocotis littoralis.**—There is a specimen in a small collection of birds in the local post office. Apparently an irregular fall and winter visitant, known to many of the settlers from its tameness and presence about farm yards. None were seen during the winters of 1894-95 and 1895-96, although careful search was made by myself and others. On November 3, 1896, a flock of about fifty was seen on a hillside near the fort. None were obtained, but they once flew very near to me and they were certainly not *L. atrata*, which Dr. Merriam found in the southern part of the State.

\* **Acanthis linaria.**—A regular winter visitor, but varying greatly in its abundance. Their numbers are much increased about the middle of March by arrivals from the South. I have seen them as late as April 11.

**Spinus tristis.**—A fairly common summer resident.

**Spinus pinus.**—Resident. In summer it occurs quite commonly on Mica Peak, from about 1500 feet above the lake to the summit.

\* **Plectrophenax nivalis.**—An irregular winter visitor, sometimes occurring on the prairies in large flocks.

\* **Calcarius lapponicus.**—A single specimen taken November 13, 1896.

**Poocætes gramineus confinis.**—Breeds sparingly.

**Ammodramus sandwichensis alaudinus.**—Arriving early in May, it

passes through in moderate numbers, a few remaining to breed on the prairie. In September and early in October it is very common, especially so on the marsh.

\* *Ammodramus leconteii*.—A specimen taken on the marsh September 28, 1896. It arose from tall marsh grass and alighted on a neighboring swamp willow, from which a hasty shot dropped it; great was my surprise to pick up a Leconte's Sparrow. I do not think it has previously been taken west of the Rocky Mountains. Careful search on several subsequent days in the same locality failed to reveal other specimens.

*Zonotrichia leucophrys intermedia*.—Fairly common in spring and fall.

*Spizella monticola ochracea*.—Rare in winter.

*Spizella socialis arizonæ*.—Arriving about the last week in April, this Sparrow is one of the commonest summer birds.

*Junco hyemalis connectens*.—Arrives during the last week of February or early in March, many returning from the north about the middle of September. On April 3 a small flock was observed near the top of a large pine tree; they were searching for insects near the ends of the branches, assuming the various attitudes of Titmice for which, although having watched them for some time, I mistook them until one was shot and picked up.

\* *Melospiza fasciata merrilli*.—This new subspecies<sup>1</sup> is a common summer visitor at Fort Sherman, frequenting the shores of the lake and inflowing rivers, and following the smaller streams up to their sources in the surrounding hills. Careful search during two winters failed to reveal the presence of this bird, yet I am inclined to think that a few do pass that season here in favorable localities; and that while the great majority certainly do leave on account of the great depth of snow, their migration is a short one to the southwest, where in eastern Washington and Oregon the snow fall is much less and food more easily obtained in winter. I have seen one as late as December 10, and have heard their song as early as the last week in February; by the middle of March they are fairly common. There is nothing in their notes or general habits to distinguish them from the Song Sparrows of other parts of the country, but their partiality to the immediate vicinity of water is very marked, and most of the nests found during the seasons of 1895 and 1896 were in bushes growing in water. In 1896, a cold, backward season, a female taken April 24 had deposited her eggs and was incubating; and on May 25 a brood of fully fledged young was seen.

All the nests I have found were above the ground, one reason for which is probably the great rise of water in the lake and rivers about nesting time, a rise that yearly destroys many nests of this and other low building species. Various kinds of bushes, and sometimes small trees, are selected as suitable building sites for the nests; sometimes in the dense top of a wild rose on the river bank; sometimes in

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<sup>1</sup>See Auk, XIII, p. 46.

bushes growing in water; a favorite place is among the debris lodged in a bush during high water of the previous year, where the nest is admirably concealed and readily escapes notice. Two nests were found in young cottonwoods where a cluster of small branches grew out from the main trunk. The nests, in whatever situation, are unusually large for a Song Sparrow and composed chiefly of dead leaves and strips of cottonwood bark, deeply cupped and lined with finer materials of the same general kind. The thirty-two eggs collected appear to average a trifle larger than those of other subspecies of the Song Sparrow, and are more uniformly greenish in their general appearance. Two broods are raised; five is the usual number of eggs in the first, three or four in the second. As soon as the young are fledged these birds leave their nesting haunts along the river and are to be found among the willow thickets on the marsh.

\* *Passerella iliaca schistacea*. — A rare migrant, taken in May.

*Pipilo maculatus megalonyx*. — Arriving in April, this bird is generally but sparingly distributed during the summer.

*Zamelodia melanocephala*. — Not uncommon. While examining a nest with eggs on June 25, the male alighted on the bush and sang almost continuously while I was there.

*Passerina amœna*. — Not common.

*Piranga ludoviciana*. — Arrive during the last week in May and are quite common among pines during the migration, though but few breed here. A nest found June 29 was in a small pine about thirty feet from the ground and about six feet from the trunk, on a branch so slender that it seemed as if the weight of the nest and sitting female would break it.

*Petrochelidon lunifrons*. — Common summer visitor, arriving about the last of April and leaving suddenly about the middle of August.

*Chelidon erythrogaster*. — Not observed about the fort or town during the breeding season but occasionally seen about ranches near the prairie.

\* *Tachycineta bicolor*. — Arrive from the middle to the end of March, according to the season, and breed abundantly in cottonwood trees along the lake and river, forming quite a colony at the outlet of the lake.

*Clivicola riparia*. — Many seen July 16 on the Coeur d'Alêne River, the low banks of which in places were perforated by their excavations. Seen only during migrations at the fort.

*Ampelis garrulus*. — An irregular winter visitor, taken in January and March.

*Ampelis cedrorum*. — Arriving irregularly in April and May, the Cedar Bird becomes quite common by the end of the latter month and remains until about the 20th of August. Unlike my previous experience with this species in the West, it is here very tame. Several nests were found in thorn bushes at the edge of the river; these were essentially alike in construction and as compared with eastern ones, rather loose and bulky.

They were composed externally of light colored strips of bark and flood debris, among masses of which they were placed — as are many of those of the Song Sparrow — and very well concealed. They were lined with the long black fibrous moss so common on pine trees in this region, interspersed with a few blades of dry grass, rootlets, and broken pine needles. One nest was built in a cottonwood sapling, and its exterior much resembled a nest of Swainson's Thrush, for which I mistook it until I saw the eggs.

*Lanius borealis*. — Common in the fall, arriving early in November. A few remain throughout the winter.

\* *Vireo olivaceus*. — An abundant summer visitor, arriving about the 20th of May, and frequenting cottonwood and aspen groves in company with the next species, which it much exceeds in numbers. Several nests were found, all within six feet of the ground, in bushes or young trees among larger cottonwoods, in which the birds were to be heard singing throughout the day.

*Vireo gilvus*. — Arrives in May in considerable numbers and breeds somewhat sparingly.

*Vireo solitarius cassinii*. — Arrives about the 10th of May and is soon common in pine woods, to which it shows a marked partiality; breeds in moderate numbers.

\* *Helminthophila rubricapilla gutturalis*. — Not uncommon during May, the song of the male being frequently heard on the hillside across the river. Breeds.

\* *Helminthophila celata lutescens*. — Several specimens taken in May.

*Dendroica æstiva*. — Abundant during the summer, arriving early in May. Of many nests examined the majority contained five eggs or young.

*Dendroica auduboni*. — Arriving about the middle of April, Audubon's Warbler slowly increases in numbers, and by the first of May is common. Many pass through during this month, but not in such numbers as I have seen in other parts of the Northwest, nor does it breed here very commonly. It was not more plentiful on Mica Peak than at lake level. Early in August the fall migration is noticeable and by the 10th is usually well marked, continuing until the end of September. Elsewhere I have found Audubon's Warbler very partial to coniferous trees, and nesting in them almost exclusively. Here a majority of the nests I found were in deciduous trees and bushes, generally but a few feet from the ground. One was in a small rose bush growing at the edge of a cut bank overhanging a road where wagons daily passed close to it. Such nests as were found here, while varying considerably as to exterior, agree in having a lining in which black horse hairs are conspicuous, and in which feathers are loosely attached, not well woven in as is usual in most small nests. Occasionally one was seen in deep woods by the roadside near where hay had been brushed off a load on a passing wagon; this was utilized for the entire nest except lining, making a conspicuous yellow object in the dark green fir or pine in which it was placed.

\* *Dendroica townsendi*. — During the spring of 1895 I frequently heard the note of a *Dendroica* that I could not identify, though much time was devoted to this end. Two or three males were to be heard daily in their respective ranges, which were among large firs growing on the hillside across the river. They seemed to haunt exclusively the tops of these trees, flitting from one to another at such a height as to make their identification by sight impossible, and their capture a very difficult matter. They were active and restless, passing rapidly from tree to tree along the hillside for a few hundred yards and returning over the same route, this habit being observed at all hours of the day. The few shots obtained were at such distances as to be ineffectual. The birds were evidently nesting, the song gradually diminishing in frequency until the end of June when it ceased.

On May 21, 1896, it was again heard and almost daily subsequently. At last, on June 2, a lucky shot brought down a fine male *D. townsendi* which, although not in the act of singing when shot, is, I have little doubt the author of the song. This usually consists of five notes—*deé deé deé*—*dě dě* all, especially the first three, uttered in the peculiar harsh drawl of *D. virens*. Later in the season this song changes somewhat at times—at least I think that both are uttered by the same species—and on June 29, I shot a male in the act of singing this later song, and a few minutes later his mate. Their nest was evidently near as they scolded me with the usual *Dendroica* *chip* of alarm, and the abdomen of the female was denuded. These two birds were among a low growth of firs and pines and were shot without difficulty.

*Geothlypis macgillivrayi*. — Arrives about the middle of May and breeds rather commonly.

*Geothlypis trichas occidentalis*. — Arrives in May, and breeds sparingly. Common in the marshes in September.

*Sylvania pusilla pileolata*. — Taken occasionally in spring and autumn.

*Setophaga ruticilla*. — Abundant summer visitor, arriving about the last of May.

*Anthus pensilvanicus*. — Decidedly rare in spring, a few passing through about the middle of May. In the autumn they are very abundant, returning about the first of September, and a few lingering until early in November. At this season they frequent the dry, open prairies as well as the marshes about the lake, where they gather in large flocks.

*Cinclus mexicanus*. — Fairly common along suitable streams flowing into the lake.

*Galeoscoptes carolinensis*. — Common summer visitor.

*Salpinctes obsoletus*. — A pair found July 2, among the rocks on the summit of Mica Peak, where they were evidently nesting.

\* *Troglodytes aëdon parkmanii*. — Breeds rather commonly. Mr. Brewster informs me that Fort Sherman birds are nearer to *parkmanii* than to *aztecus*.

*Troglodytes hyemalis pacificus*. — Rather common resident; found in

suitable localities at all seasons. A series of skins sent to Mr. Brewster were pronounced by him to be "ultra typical," being darker than birds from the Pacific coast.

*Cistothorus palustris paludicola*. — Rare in autumn, among long grass and swamp willows in the marsh. None appear to breed at this end of the lake.

*Certhia familiaris montana*. — Abundant during winter. This is the only part of the Rocky Mountain region where I have found this species to be other than uncommon. During the month of April they gradually disappear, and only one was seen near the fort during the breeding season. It was not observed on Mica Peak, though it might easily have escaped notice; nor were any seen until about the middle of September, when they again appeared in company with Kinglets and Chickadees. While watching a Creeper one day at a distance of a few feet it suddenly flew and alighted on my leg for a second or two.

*Sitta carolinensis aculeata*. — The least common of the three species of Nuthatch, and usually associating with the Pygmy, but is by no means rare. Breeds rather sparingly about lake level and in the hills.

*Sitta canadensis*. — A common winter resident, breeding less plentifully near the fort and among the surrounding hills. Local specimens have unusually long bills.

*Sitta pygmæa*. — Probably the most abundant resident bird at Fort Sherman, in winter gathering in flocks with the other Nuthatches, Titmice, and Kinglets. Each year one or more pairs placed their nests within the weatherboarding of some of the buildings within the fort, entering through knotholes in the boarding. White-bellied Swallows, Wrens, and Western Bluebirds also did the same.

\* *Parus atricapillus*. — A common resident. Its favorite breeding locality is among the swamp willows on the marsh, where a number of pairs gather each year, nesting in dead willow branches, sometimes scarcely three inches in diameter, and but little above the surface of the water.

In regard to the identification of this species Mr. Brewster writes me as follows:

"After carefully examining your series of Black-capped Titmice from Fort Sherman and comparing them with all the material contained in the National Museum, as well as in my own collection, I have come to the conclusion that they must be referred — at least provisionally — to *Parus atricapillus*. They are of practically the same size and proportion as our eastern bird, save in respect to the bill, which usually — but by no means invariably — is shorter and more conical in shape. In coloring, also, they resemble true *atricapillus* very closely, but as a rule they have less white on the wings and tail, more brownish on the sides, and deeper, clearer black on the crown and throat. These differences, however, are comparatively slight and inconstant, and do not seem to me to entitle the bird to separation under a distinctive name. It is awkward, of course, to cite it as *atricapillus*, but I see no alternative. One thing is certain, namely,

that it is distinctly unlike either *occidentalis* or *septentrionalis*, despite the fact that it occupies a region lying between the respective ranges of these subspecies and far removed from the known western limits of the range of *atricapillus*."

**Parus gambeli.**—Abundant resident. Common in and about the fort in winter, most going to the adjacent hills to breed.

**Parus rufescens.**—This Chickadee is a fairly common resident in the vicinity of Fort Sherman, though more frequently seen in the hills than at lake level. Mr. Brewster informs me that local specimens are "identical in every respect" with skins from the coast of British Columbia.

**Regulus satrapa olivaceus.**—Common resident, especially in winter, most going up the surrounding hills to breed. A brood of fully fledged young seen at the fort on June 19.

**Regulus calendula.**—Arriving about the middle of April, this Kinglet is very abundant by the first of May. A large number pass through to the North, returning in September, but many remain to breed, and until the middle of June the song of the males may be heard in every direction.

**Myadestes townsendii.**—Not uncommon during the migrations, and I found one pair nesting near the summit of Mica Peak. It is an early migrant, arriving about the first of April, and I have taken a specimen as late as December 22.

\* **Turdus fuscescens salicicola.**—Arriving about the twentieth of May, this Thrush is rather common among cottonwoods bordering the lake and river, where its sweet song may be heard towards evening. Nests found here were from two to seven feet above the ground, and in construction were essentially like those of the eastern form.

**Turdus ustulatus swainsonii.**—Breeds rather commonly about the lake and on Mica Peak up to the summit.

**Merula migratoria propinqua.**—Usually arrives during the last week in February and is abundant during the summer.

**Hesperocichla nævia.**—First noted during the first week of March when quite a number of males were found on the hillsides across the river, and also among the thickets under cottonwoods at the outlet of the lake. In 1896 the first were seen on April 3. They were generally flushed from the ground among dead leaves and alighting on a branch, uttered their peculiar *cluck* which, among the dense underbrush or young pines, often first attracted attention to the birds' presence. None were observed in autumn, but their habits are such that they might easily escape notice, and I have little doubt that some breed at no great distance from the fort.

**Sialia mexicana bairdi.**—Arrives late in February or early in March and is abundant during summer. Some specimens taken here are, in coloration, nearer *occidentalis* than *bairdi*.

**Sialia arctica.**—Usually arrives a few days later than the preceding species, and is less common at lake level, but is more generally distributed and more common in the hills. One pair nested on the sheltered corner of a rafter on the hospital porch.

NOTE.— Since most of this paper was put in type, I have received from Dr. C. Hart Merriam some unpublished field notes on Idaho birds made since the appearance of his report upon the subject. He kindly allows me to make the following extracts in order to bring the lists up to date :

*Sphyrapicus thyroideus*.— New to Idaho. Sawtooth City, Mr. Evermann. Near Coeur d' Aléne, August, 1895; Messrs. Bailey and Howell.

*Sayornis saya*.

*Icteria virens longicauda*.— Both recorded as common at Cœur d' Aléne. These three species are therefore to be added to the list of birds found in the vicinity of Fort Sherman.

I may say that early in 1897 about ten pairs of *Oreortyx pictus*, captured near Puget Sound, were liberated near the northern base of Mica Peak, and it was proposed to introduce the Bob White.

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## THE GREAT ROOSTS ON GABBERET ISLAND, OPPOSITE NORTH ST. LOUIS, MO.

BY O. WIDMANN.

FOR certain reasons, probably very 'mity' ones, the Martins (*Progne subis*) are anxious to leave, as early as possible, the narrow quarters in which they rear their brood, and to spend the night in the open air in company with others of their kind. The father absents himself from home at nights before the brood is fully fledged, and when the young are on the wing the mother, too, tries to steal away, but not until it is nearly dark, and when the darlings are safely lodged in the old quarters, and well fed. Of course the parents return with the dawn of day, long before the sun is up, to feed and lead them.

After about a week of practice in catching insects on the wing, the young need no more help from their parents and accompany them to the roost, but the whole family returns to the old home-stead early in the morning, to spend a few hours in play and merry-making. By and by these visits become shorter and shorter,



even irregular, and after the middle of August they cease altogether. To the casual observer the species may now become one of uncertain occurrence, but so much more certain and numerous are they to be found in the evening at their common roost. But where is the roost?

The experience of former years has taught us to look for it in the large willow tracts along the banks of the Mississippi; but it cannot remain long in the same place. The willows must be of a certain age and from ten to twenty feet high. At that period they form a heavy thicket, standing as close together as one sapling to every square foot. Of course not all of these can thrive for many years; many become sickly and succumb, leaving only the strongest to grow to trees. Therefore, if for no other reason, the Martins could not use the same tract for more than a few years.

Twelve years ago the roost was on Arsenal Island, ten miles below the present location; in the meantime it was above the city, near the mouth of the Missouri; the last two seasons it has been on Gabbaret Island, opposite the northern end of St. Louis. The island is nothing but a long and narrow sandbank of extremely variable dimensions according to the stage of the river. The highest part, less than a quarter of a mile in width, and twenty to twenty-five feet above the low water mark, is covered by the willow thicket. During the flood of last spring the whole island was under water, but with the falling of the water during the summer an immense sandbank arose all along its western side, as well as at its foot, and continued growing until with a stage of three feet above low water in September it reached, in places, a width of a quarter of a mile.

On the east the island is separated from the Illinois shore by a narrow and shallow arm of the river, forming large mud flats in July and August, and drying up more and more, as the low stage of water continued through September and October. The highest part of the island, an area of about twenty acres, is where the willows stand thickest, and the number of Martins that resorted there nightly was beyond computation, especially during the latter half of August, when they were most numerous. After the first of September it became soon evident that they were on the

decrease, though still plentiful until a cool spell about the middle of the month, after which only a few hundreds were remaining, and the last were seen on the 24th. In July and August some of the Martins arrive in the vicinity of the roost as early as an hour before sunset, alighting on isolated trees along the shores, or soaring high above the island. Half an hour before sunset some begin to alight on the sandbank, preferably on parts lately exposed and still damp. From now on Martins are pouring in from all sides, sometimes in regular streams, some more or less high, others low over the water, on which innumerable splashes reveal their presence at long distances.

At sunset a glance over the sandbank reminds one involuntarily of a sheet of sticky fly-paper, well covered with flies, so thickly dotted is the sand with Martins on areas of ten to twenty acres in extent. After the sun has set the Martins leave the sand in detachments and begin to mass and revolve above the willows. During the following ten or fifteen minutes there is a constant flying up from the sand and a coming of new arrivals, which take their places on the sand.

While the host on the sand is getting slowly smaller, the cloud above the island grows fast and forms a whirling mass of excited birds, uttering low and short, though melodious, calls; everyone moving in circles of its own, but the whole cloud swinging hither and thither, now low, then high, now contracting, then expanding, sometimes almost disappearing in the distance, then rolling back again in an instant, only to enact another stampede in another direction.

About twenty minutes after sunset the first Martins descend into the willows. This descent reminds one of that of Swifts into a chimney. The revolving cloud becomes funnel-shaped, almost touching the treetops, and a number of birds drop from the funnel into the willows, while the rest of the birds sweep on, rushing out and scattering in all directions, but in a moment all are flowing back, and the performance is repeated again and again until all are down.

During the early part of the evening we notice hardly any other kinds of Swallows among the Martins, but after sunset, when they begin to circle, we become suddenly aware of the presence of a

number of Bank Swallows (*Hirundo riparia*). They arrive low over the water in large droves and immediately mix with the flying Martins, taking part in all their evolutions and manoeuvres, and their squeaky voices become soon prominent amidst the soft notes of Progne.

Just before dark the region along the water's edge is fairly swarming with new arrivals, and in the same degree as the descent of Martins progresses, the proportion of the little Bank Swallows increases until toward the end they constitute the majority of the whirling birds. A few troops even arrive after all are down behind the willow tops, when night is getting ready to cover the island with her protecting wings. But even now are the roosting birds not yet at rest, and there is considerable stir and commotion going on among them. Numbers of restless birds are fluttering among the willow tops, apparently exchanging uncomfortable perches for more desirable ones, and a strange, confused noise is heard.

Martins and Bank Swallows are now sitting promiscuously in the upper branches of the willows, often half a dozen in one treetop and several on one little branch. This good-fellowship lasts throughout the season from the time they leave the nest till their common departure in September.

Swallows belong to our most sociable birds; not only do they vastly congregate among themselves, they also associate with other birds of gregarious habits, especially Blackbirds.

Since the feeding habits of the two families differ widely, the only opportunity for their association is to be found in the roost, and our great Gabberet roost bears splendid witness of such an affiliation, for the same willows that harbor the Martins and Bank Swallows are the nightly resort for thousands of Bronzed Grackles and Cowbirds.

There are plenty of Grackles' roosts scattered over the country, and they are a common occurrence in the larger river bottoms, but the arrival of the big flocks on the island in the evening is nevertheless a very pretty sight and an acceptable prelude to the grand spectacle to follow. They come to the roost pretty early in the evening, when the sun is yet above the horizon, and all the flocks that come from the Missouri side invariably

cross the river at the same spot, flying at a height of several hundred feet until near the island when they swoop down and in a bold curve, almost touching the water, rush over the sandbank and enter the willows at once. Here they begin their usual concerts, and the din of their unmelodious voices may, at a distance, be likened to escaping steam.

Of infinitely more interest than the Grackles are their relatives, the Cowbirds, because, like the Martins, they make themselves interesting at this particular season by their absence from most places where they were common a short time before. That this pronounced socialist and plebeian seeks the company of the aristocratic, high-born, purple-robed Martin may be a fact; the association seems to be intentional, not accidental. Years ago, when on Arsenal Island, the Cowbirds were with them; willow tracts are plentiful along the river, but our Cowbirds choose now that on Gabberet, the one in which the Martins roost. And they do not only roost together in the same thicket, they also visit the same sandbank before retiring.

The Grackles fly directly into the willows, but the Cowbirds, which also arrive in large, unmixed flocks, after alighting at the edge of the willows, come down upon the sand and stay there a few minutes. While the Martins keep more to the water's edge, the Cowbirds prefer the vicinity of the willows, into which they retreat at the approach of danger. In some spots they actually mingle, but the Cowbirds never stay long and have all retired before the Martins descend. Though they are all Cowbirds, no other Blackbirds among them, they show, at this time of molting, such a great variety of dresses, that it is hard to believe they belong all to one species. There are some old males in fine feathers with the chocolate head, but there are others with the chocolate entirely replaced by light gray in sharp contrast with the black of the rest of the body. This is a very striking dress; but there are many others much quainter, though not easily describable, where gray, in some almost whitish, blotches occur irregularly on different parts of the body, which has already assumed the glossy black of the adult male. Then there are the different shades of brown, gray and buff of the old and young females in different stages of molt. The Cowbirds are fre-

quarters of the roost for the same period as the Martins, beginning early in summer and deserting it, with the last Martins, about the middle of September.

About a mile north of this great roost is the Crow's roost, where the Crows of the neighborhood, some 400-500, congregate all summer and form the nucleus of a much larger gathering later in the year.

The mud flats which separate the island from the Illinois mainland are the favorite feeding grounds of the Killdeers (*Ægialitis vocifera*), Spotted, and Solitary Sandpipers (*Actitis macularia* and *Totanus solitarius*), and they roost on the large sandbank, where their voices are heard after nightfall. In daytime, as well as at night, they act as decoys for the hordes of northern Plovers and Waders, which are trooping down the great thoroughfare during August and September. On some days the mud flats are fairly swarming with the most interesting bird life, when Pectoral, Baird's, and Least Sandpipers (*Tringa maculata*, *bairdii* and *minutilla*) feed harmoniously with Semipalmated and Belted Piping Plovers (*Ægialitis semipalmata* and *Æ. meloda circumcincta*) in the same pools.

On September 7 the island enjoyed the visit of a distinguished guest, the Turnstone (*Arenaria interpres*), a lovely bird with a strikingly beautiful dress and melodious voice.

The two most interesting summer sojourners of Gabberet Island are the Song Sparrow (*Melospiza fasciata*) and the Least Tern (*Sterna antillarum*). The former finds here his most southern record for this section of the country, and the latter is remarkable for his good luck in escaping so long the notice of the egg-hog and pot-hunter in close proximity to a big city. The high water of early summer retarded nesting so much that the young were still begging for food in the latter part of August, and the species remained until the second week in September.

THE BREEDING OF THE CAROLINA PAROQUET  
IN CAPTIVITY.<sup>1</sup>

BY DR. NOWOTNY.

AT THE end of October, 1878, I bought a pair of Carolina Paroquets in Vienna. At first they were foolishly shy and very much worried, dashing about and huddling together. Soon, however, by quiet, gentle treatment, they became tame, the female sooner than the male; and in three months I had succeeded in taming them to such an extent that both would take to my hand, the female would fly on my head, and both would take their food from my hand or mouth. Gradually they became tamer, and now they fear me very little; and when I return from some trip, they fairly bow, rejoicing, and at the same time raising up their wings. At first their noise was often unbearable, but this has changed completely. Since the close of their breeding period they seldom scream; I hear only faint, pleasing sounds or angry notes from the female, at times a short call or cackling during copulation. Before and during the breeding period they were passionately fond of chewing up soft wood, especially limbs of poplar as thick as a finger. Every day a perching stick of soft wood one and a half times the thickness of a finger was destroyed. The female was the destroyer, the male being less destructive. This, too, has now changed, but I dare not allow them to remain unwatched when I open the cage (which is done every forenoon). The perch is not molested, but the curtains, wall paper, doors, windows, and the like are not safe from the attacks of the female. The male destroys nothing.

They are very fond of music. When my wife places the zither table near the cage in the evening, lights the lamp and begins to play, then rejoicing, headraising, bowing and wing beating takes place without measure. Similar pleasure was expressed by both when we lit the Christmas tree, December, 1878. The male is

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<sup>1</sup> Translated for 'The Auk' by PAUL BARTSCH from *Die Fremdländischen Stubenvögel, ihre Naturgeschichte, Pflege und Zucht*, by DR. KARL RUSS, Vol. III, pt. 10, pp. 838, *et seq.*

more virtuous than the female. He possesses only good qualities. The female pilfers, is jealous of my attention, jealous of food, and curious. When I hold a hand mirror before her and then move away she flies after it and gazes at her own picture with great interest. They are both very susceptible to praise. They know exactly whether I praise, threaten, or reprimand them, and fly into the cage as soon as I raise my hand, at times, however, with slight resistance. In the cage they are more confident than they are outside, and permit themselves to be taken by the feet, to have their heads scratched, and allow me to play with their bill with my finger, etc.

As to food, they like variety. I have tried many things, and found that they love to eat occasionally hemp, oats (this they preferred shelled), sunflower seed, senegal, glanzsamen [*Phalaris*?], bechnuts, seeds of *Pinus abies*, rice (especially in the ear), maize (especially half ripe), bread, the soft parts of light bread, but only when fresh, and not old, and soaked in water or milk; also many kinds of berries, as berberitzen [*Berberis vulgaris*], schlehen [*Prunus spinosa*], weissdorn [hawthorn], etc. Tidbits for both are the seeds of *Pinus cembra*, fresh cherries, grapes, and rose pods. They are especially fond of the fruit of *Thuja*, but most of all they love the fruit of the sycamore (*Platanus*); with these I have been feeding them from August until now (December), and they do not tire of them. As soon as I enter the room with these, they leave all other food and fly toward me at once, the female perching on my head, the male on my hand, from which he takes the food and flies away with it. The other ball I then give to the female; and now they clean them completely with great zest. I have, however, never been able to observe them swallowing anything, although they whet their tongue on the pulled off material. They may eat and waste burdock, apple seeds, maize, and wheat in their native haunts when forced by hunger; mine refused all these, as well as spinach, lettuce, and other vegetables, also white millet, fruit, ant larvæ, and red millet.

In February, 1879, I desired to allow them to nest. They entered the breeding box, and became more shy, but soon the box was demolished, although made of hard wood. As they made no attempt at nesting, I removed the breeding box after about two

weeks. On May 22, 1879, I separated them, and placed each in a separate cage. This caused much lamentation. May 24 I hung another breeding box in a new square tinned cage; the edges which were turned toward to the cage, as well as its opening, were capped with tin. I lined it with wood shavings mixed with insect powder. I placed the cage, as well as the breeding box, in a gloomy place, and the pair soon became reconciled. On June 17 I noticed a sagging on the female; from this time until the beginning of August she ate much mortar in the morning before she touched food, preferring this to sepia, which she only bedaubed; she also eagerly crushed limbs of poplar (less so those of willow, and other kinds not at all), but scarcely touched soaked feed and ant larvæ. During the entire breeding time she favored the above mentioned food. She lost many feathers from the 17th to the 29th of June, almost daily two or three large ones, and on the 28th of June eight ventral feathers. On June 29 I found two eggs on the bottom of the cage (not in the breeding-box). Both birds sat outside of the box in the cage upon the perch. I placed the eggs in the breeding box, they watching. In the afternoon of the same day, the female sat on the bottom of the cage (the male beside her), having a third egg beneath her. I also took this and placed it in the box, where I found three eggs, four in all. On this day the female lost about twenty ventral feathers. On June 30 a fifth egg lay on the bottom of the cage, and this I likewise removed to the breeding box. At ten A. M. the female bathed her head, and both birds remained outside of the box, as well as the whole day of the 1st of July. This was very aggravating to me. I looked into the breeding box and found that all the eggs had been picked and sucked; very likely this was the first set. They were unable to effect copulation in the beginning, in January, which was now accomplished with ease. Between the 2d and 6th of July the female deposited two more eggs, these being the sixth and seventh. These I took away from them, as I was in doubt of good results, to have them hatched by a hen; they were destroyed, however, through carelessness.

On July 19 the female laid another egg, and soon after, I do not know when, a ninth and tenth. These three were deposited in the breeding box and now both birds sat on them assiduously,



especially the female who was never seen to leave the box. On August 9 I heard a young one scream, and on the 10th two were calling; I do not know when the third was hatched. On the 6th of September I found the smaller of the three young ones on the floor of the cage. I returned it to the breeding box. Soon after I saw the larger one lying on the floor. It is very likely that the old birds had thrown them out of the box. I now removed the nesting box entirely, thinking that the parents did not wish to have them in there and fearing that, if I left them on the floor of the cage and allowed the box to remain, the old ones would remain in it and leave the young ones to perish. I therefore constructed a nest of wood shavings for them on the bottom of the cage and placed both young ones on it (the third one had died in the meantime, perhaps of starvation). The old ones immediately sat near them and fed them well until the 17th of September.

On this day we departed from Vienna for Meran. The two had already attained green wings and tails; the older one also had red feathers above the bill and on the under parts. I placed all four in a transportation box supplied with shavings, and did not allow them to leave my hands during the entire trip, which, however, only lasted twenty-four hours. They arrived very well in Meran, but, alas! the parents refused to feed the young. I now fed them with shelled hemp, light bread and shelled and cut sunflower seed. All seemed well, but on the morning of the 23d of September the younger one appeared as if dead. We warmed it and fed it but the feet remained lax and motionless. At night it was dead. It had a yellow blister in the throat. The oldest one was lively and well. It moved about in the sun and ate heartily. But on the eve of the 24th it was taken sick, presenting similar symptoms, and also died. The old ones remained well; they mated again on the 2nd of October.

My female does not differ from the male either in the color of the inner vane or in the distribution of the orange red; I have only noticed a difference in the fact that its head is round, while that of the male is somewhat flattened; further differences can be noted in their ways; eyes and manner, which cannot be described. The oldest young one had already attained many

dense strong red feathers above the bill at the age of eight weeks. It was very tame at this age and when I placed it on the ground and walked away ten steps, it followed me and crawled upon my shoe. It partook by itself of the offered food. The old birds are very devoted to each other and are always together, and if one flies away the other follows immediately. They stand cold very well, but enjoy having their under parts touched by warm breath, for which purpose they cling to the wires and permit me to breath upon them, pecking me on the nose tenderly at the same time. In the cage I can play with them as I wish and even take them in my hands, but I dare not grasp or close the hand, for then they slip away at once, screaming.<sup>1</sup>

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## DESCRIPTION OF A NEW *AMAZILIA*.

BY HARRY C. OBERHOLSER.

A COMPARISON of specimens of *Amazilia cerviniventris* Gould, from Texas, with examples from the State of Vera Cruz, Mexico, seems to indicate that there exist two geographical races of this species, one of which is without a name. As the type of *A. cerviniventris* came from Cordova, Vera Cruz,<sup>2</sup> it is proposed to characterize the Texas form as

### *Amazilia cerviniventris chalconota*, subsp. nov.

CHARS. SUBSP.—*Amazilia A. cerviniventi affinis, sed abdomine crisso que conspicue dilutioribus; notaeo paulo magis aureo tincto.*

Al., 52–59 (55.2) mm.; caud., 31–38 (33.9) mm.; culm. exp., 20–22 (21) mm.

*Habitat.*—Valley of the Lower Rio Grande, with the coast region of southern Texas, north to Bee County, and south in winter into eastern Mexico.

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<sup>1</sup>Carolina Paroquets have been living in the Zoölogical Garden at Frankfort a. M. for ten to twelve years (according to the report of Dr. Max Schmidt).  
—KARL RUSS.

<sup>2</sup>Gould, Proc. Zoöl. Soc. Lond., 1856, 150.

*Description.*—Type, male adult, No. 134941, U. S. Nat. Mus.; Beeville, Texas, May 29, 1894; F. B. Armstrong.—Upper parts bronze green, the cervix less golden; tips of coronal feathers broadly slate color, giving to the head a dingy appearance; feathers of the superior tail-coverts edged with chestnut. Wings dull, dark, metallic purple; tectrices, except the primary coverts, bronze green like the back. Tail chestnut, the two central rectrices greenish bronze, all the others externally margined, and the outer ones narrowly, the inner broadly, tipped with the same color. Throat and breast glittering green; central portion of abdomen ochraceous buff, lower tail-coverts somewhat darker; two pure white down tufts, one on either side of anal region, these almost wholly concealed by the contour feathers; flanks pale cinnamon rufous, mixed, especially on the anterior portions, with bronze green; under wing-coverts and axillars greenish bronze; edge of wing light cinnamon rufous.

From *Amazilia cerviniventris* this new subspecies may be readily discriminated by the much lighter color of the posterior lower parts, in this respect there being more difference than exists between true *Amazilia cerviniventris* and *A. yucatanensis*. Among the birds from Texas (16 in number) this character is quite constant. The upper parts are appreciably more golden in hue, although this can be regarded as only an average distinction, for some examples of *cerviniventris* are fully as golden bronze above as is *chalconota*. There seems to be little if any difference in size.

A specimen from Hidalgo, Tamaulipas, Mexico, on the Rio Grande, has the abdomen more deeply colored than the Texas birds; in fact, almost as dark as the palest examples of *cerviniventris*. It is thus rather intermediate between *chalconota* and *cerviniventris*, but is apparently nearer the former. A specimen from 'Mexico' (No. 38635, Am. Mus. Nat. Hist.) is quite indistinguishable from some examples of *chalconota*, and, although no date is attached, may very safely be considered a migrant and referred to this form.

Among the Texas specimens there is evident considerable individual variation, part of which is undoubtedly due to age. Some have the posterior lower parts much lighter than others, the type representing in this respect about the average. But even the darkest specimens are easily separable from typical *cerviniventris*. The extent of the bronze on the tail-feathers is quite variable. In one bird (No. 142258, U. S. Nat. Mus.) this color is much

reduced, for, with the exception of the extreme bases of the central feathers, and very narrow edgings to the exterior rectrices, the entire tail is chestnut. In some examples, as in the one just mentioned, this bronze green on the rectrices is partially or wholly replaced by a dark metallic purple, very like the color of the wing quills. Some specimens have the rufous margins to the upper tail-coverts much broader and more conspicuous, this being possibly an indication of immaturity, although in none of the birds examined is this marking entirely absent. The color of the upper parts presents quite an appreciable variation, being in some cases much less golden than in others. Owing to narrower slate colored edging of the feathers on the crown, that part in some specimens is very nearly like the back, although in many it is noticeably even duller than in the type. An individual difference is apparent in also the shade of the throat, some having the green much more yellowish than others.

This Hummingbird was first recorded from the United States by Dr. J. C. Merrill,<sup>1</sup> who captured a specimen at Fort Brown, Texas, in 1876. While it is at some places within our borders an abundant summer resident, its range seems to be quite restricted, for in very few of the numerous papers on the birds of Texas is any mention made of the species. So far as the present writer has been able to ascertain, there are in the State only four localities where *Amazilia c. chalconota* has been taken. These are Fort Brown, Brownsville, Corpus Christi, and Beeville. Of the last mentioned, which is the northernmost record, there appears to be no published account. There are available no specimens from the State of Tamaulipas, in Mexico, so that it is impossible to determine to which form the breeding birds from this region belong.

True *Amazilia cerviniventris* exhibits a range of individual variation similar to that existing in *Amazilia c. chalconota*. Only two of the specimens here referred to *cerviniventris* are with any difficulty to be distinguished from *chalconota*. One of these, from Tlacotalpan, Vera Cruz, is apparently an immature bird; and though somewhat intermediate in the color of the abdomen, seems

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<sup>1</sup> Bull. Nutt. Orn. Club, II, 1877, 26.

be nearer *cerviniventris*. The other example is a female from the same locality, and was taken on May 28, 1894. So far as the color of its posterior lower parts is concerned, it can scarcely be separated from the darker examples of *chalconota*; though the lower tail-coverts are more like *cerviniventris*; but in view of the date and locality it would appear to be considered better as an unusually pale *cerviniventris* than as a belated migrant of *chalconota*.

One specimen of *A. cerviniventris* (No. 38634, Am. Mus. Nat. Hist.) is from Cordova, Vera Cruz, the type locality, and is one of the specimens obtained by Sallé, the collector of Gould's type specimens. It may therefore be regarded as typical of this form. The two darkest birds in the series are respectively from Coatzacoalcos and Tlacotalpan, Vera Cruz, but others from both of these localities are noticeably less deeply colored.

In *Amazilia yucatanensis* the posterior lower parts are almost ferruginous, quite different in appearance from the cinnamon rufous of the two dark Vera Cruz examples of *cerviniventris*; though in respect to the shade of this color, these latter more nearly approach *yucatanensis* than any of the other specimens now at hand. But the extension of bronze green over the breast and sides is very strongly indicated in these two birds, leaving no doubt of their correct identification with *cerviniventris*. Only one example from the *cerviniventris* series shows a marked approach to *yucatanensis* in the lateral extension of the green of the breast. This specimen (No. 155313, U. S. Nat. Mus.) is from Ocozucantla, Chiapas, Mexico, and was collected Aug. 19, 1895. At first sight it shows scarcely more green upon the sides than do the specimens of *Amazilia yucatanensis* examined, but upon close inspection this color is seen to extend as a very slight wash considerably farther back than in *yucatanensis*. Furthermore, this Chiapas bird is so very much duller and paler below than *yucatanensis* that its identity with *cerviniventris* can hardly be questioned. The evidence presented by the specimens above mentioned seems not sufficient to establish intergradation between *cerviniventris* and *yucatanensis*, and both are therefore here accorded full specific rank.

The author's thanks are tendered to Mr. Robert Ridgway for the use of the National Museum series of *Amazilia*; to Dr. C.

Hart Merriam for a similar favor with regard to the collection of the Biological Survey; to Dr. J. A. Allen and Mr. F. M. Chapman for the loan of material from the American Museum of Natural History.

MEASUREMENTS OF *Amazilia cerviniventris cerviniventris*.

	Wing.	Tail.	Exposed Culmen.
Average of ten specimens . . .	55.1	34.9	20.7
Maximum . . . . .	56	37	21.5
Minimum . . . . .	53	34	20

MEASUREMENTS OF *Amazilia cerviniventris chalconota*.

	Wing.	Tail.	Exposed Culmen.
Average of thirteen specimens	55.2	33.9	21
Maximum . . . . .	59	38	22
Minimum . . . . .	52	31	20

TWO NEW BIRDS FROM THE PACIFIC COAST  
OF AMERICA.

BY A. W. ANTHONY.

*Anous stolidus ridgwayi*, subsp. nov. RIDGWAY'S NODDY.

*Subsp. char.*—Much darker and less brown than *A. raussaui*, resembling in this respect *A. galapagensis*, from which it differs in much paler cap.

Type No. 8220, collection A. W. A., Socorro Island, Mexico, May 5, 1897. Chin, throat, neck, and chest uniform deep brownish slate, but darker on the lores and above the eyes. A small white spot on the

upper posterior border of the eyelid. Lower lid white for nearly its entire length. Cap delicate pearly gray, almost silvery white on the anterior portion, in some lights gradually blending with color of nape on the occiput. Rest of plumage deep slaty brown; primaries blackish. Wing, 263 mm. Tail, longest feather, 160; graduation, 53; culmen, 40; depth, 11; tarsus, 25.

*Hab.*, Cocos and Socorro Islands, Pacific Ocean.

Named in honor of Mr. R. Ridgway, whose notes on the Cocos Island birds (*Birds of the Galapagos Archipelago*, p. 645) first called my attention to this undescribed form.

Ridgway's Noddy was nesting in abundance on a small rock almost a mile west of the western end of Socorro Island. After several unsuccessful attempts, a landing was made at the risk of life and limb, and a series of eggs obtained. They were all laid on bare rock without any attempt at nest building; often placed on protruding shelves but little wider than the egg, and how they escaped rolling off into the sea is a mystery. Nearly all of the eggs taken May 12 were fresh, though several downy young ones were seen, together with the hundreds of young Sooty Terns (*Sterna fuliginosa* var. *crissalis* Baird) that swarmed all over the top of the rock. The Noddies were not seen at San Benedicte Island, 35 miles north of Socorro, nor at Clarion Island, 240 miles west.

*Oceanodroma kaedingi*, sp. nov. KAEDING'S PETREL.

*Sp. char.* — Similar to *O. leucorhoa*, but much smaller with much less deeply forked tail. Type No. 8718, coll. A. W. A. At sea near Guadalupe Island, Lower California, July 25, 1897.

General plumage sooty black. Head and neck more plumbeous, greater and median wing-coverts pale sooty brownish. Longer upper tail-coverts white with black shafts. Lateral lower coverts edged with white. Rectrices sooty black, to base.

Wing, 145 mm.; central rectrices, 73; lateral rectrices, 83; tarsus, 21; middle toe and claw, 20; culmen, 15.

*Hab.*, from Socorro and Clarion Islands to Southern California.

There seems to be considerable variation in the extent of the white on the upper tail-coverts in the series before me. A few have the coverts black with whitish patches on the sides, while one has totally black coverts but is otherwise similar to the white-

rumped birds. A parallel example is found in a large series of *O. socorroensis*, the type of which has whitish patches on the sides of the rump (lateral upper coverts). In a series of over 100 skins I only found about 3 per cent. so marked. A few are nearly as white on rump as true *leucorhoa*, but the largest part of the series, fully 95 per cent., have sooty black coverts above and below. Two or more species might easily be made from the series, but unfortunately the light rumped birds are found in the same burrows with the other birds.



## FOUR SEA BIRDS NEW TO THE FAUNA OF NORTH AMERICA.

BY A. W. ANTHONY.

DURING the past spring and summer the following species were noted between San Diego and Cape San Lucas. All are new to our fauna and one, at least, *Phaëthon rubricaudus* is a decidedly unexpected addition to our birds.

On March 17, between San Geronimo Island and Guadalupe Island, a small white-bodied Albatross several times circled about the schooner but left us before any one could obtain a shot. Half an hour later it reappeared and was killed proving to be an adult specimen of *Diomedea immutabilis* Rothschild, described from Laysan Island, between Hawaii and China.

In April, 1887, I saw a white Albatross within five miles of the spot where the above specimen was taken, and the following year two were seen off San Quentin, fifty miles further north. As none were taken the identity is in doubt but I am inclined to think they were the present species.

About Cape San Lucas *Puffinus auricularis* Townsend, was fairly common April 23, and again in early June. Associated with them were two species, one of which agreed very well with



the descriptions of *P. bulleri*, but as none were taken it would be unsafe to venture an opinion as to its identity. The second species was seen again about San Benedicte and Socorro Islands where it was nesting. It proved to be *Puffinus cuneatus* Salvin, heretofore known only from the Bonin Islands south of Japan, Krusenstern Island, and the Hawaiian Islands.

On July 23, a Red-tailed Tropic Bird, *Phaëthon rubricaudus*, was shot a short distance north of Guadalupe Island, thus adding the third species of the genus to our fauna. The Red-tailed Tropic Bird has, I think, heretofore been known only from the South Pacific. Whether it is of regular occurrence in our southwestern waters will be ascertained when we have a better knowledge of the pelagic species of this little known region.

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### SYRNIUM OCCIDENTALE CAURINUM, A NEW OWL FROM THE PUGET SOUND REGION.

BY C. HART MERRIAM.

IN THE last edition of the Check-List of the American Ornithologists' Union (1895), and the second edition of Ridgway's 'Manual of North American Birds' (1896), California is given as the northern limit of range of the Spotted Owl, *Syrnium occidentale*. But in 'The Auk' for January, 1893 (Vol. X, pp. 17-18), Mr. S. N. Rhoads records two specimens from twelve miles east of Tacoma—a locality, by the way, some miles distant from the alleged "western foothills of the Cascades." The only other Puget Sound specimen of which I have any knowledge was killed in the city of Seattle a year or two ago, and was obtained by Mr. Henry W. Hindshaw, who mounted it for the Museum of the University of Washington, where it was recently examined by Dr. A. K. Fisher and myself.

On June 22 of the present year (1897), one of my assistants, Mr. E. A. Preble, killed an adult female at Mt. Vernon, in Skagit

Valley, Washington. A couple of months later I saw a specimen nailed up on a log cabin in the valley of the Soleduc River, at the north base of the Olympic Mountains, and about the same time (the last week of August) saw two living owls in the Olympic Mountains which I believe were unquestionably this species. Owing to the density of the forest and great height of the trees, owls, though common, are seldom seen in this region.

Comparison of the northwestern Spotted Owl with the type specimen of *S. occidentale* shows it to be a well-marked subspecies, differing, like so many birds of the same region, in darker and richer coloration.

*Syrnium occidentale caurinum*, subsp. nov.

*Type* from Mt. Vernon, Skagit Valley, Washington, No. 157473, ♀ ad., U. S. Nat. Mus., Biological Survey Coll. Collected June 22, 1897 by E. A. Preble. Orig. no. 344. Wing 320 mm., tail (middle feathers) 205 mm.

*Characters*.—Similar to *S. occidentale* but everywhere darker. In general the white spots and markings are smaller; the dark areas larger and darker. This is especially noticeable on the head and back where the white spotting is reduced to a minimum. The dark markings on the sides of the breast, flanks and feet are very much darker and more extensive than in *occidentale*. But perhaps the most striking difference is on the wings. The primaries are not only very much darker but the broad whitish tips have disappeared and are represented by an indistinct pale band mixed with a little whitish on the outer side of the vane and on some of the feathers a faint whitish terminal edging. The three or four pale bars nearest the tips of the feathers are also obsolescent.

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THE TERNS OF GREAT GULL ISLAND, N. Y.,  
DURING 1897.

BY J. HARRIS REED.<sup>1</sup>

GREAT GULL ISLAND is the smallest of the group of islands situated at the eastern end of Long Island, and contains about

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<sup>1</sup> Read before the Delaware Valley Ornithological Club, Oct. 21, 1897.

eleven acres. Its shape is long and narrow, with an irregular shore line, especially on the south side, and varies in width from about three hundred feet across its centre, to long narrow ends, making a total length of about three-quarters of a mile. The beach is rough and stony, and contains a great many large boulders scattered along the shore, especially at the east end, where they form, as it were, a broken reef reaching from the main land to the lighthouse, about a mile distant. At low tide these rocks stand well out of the water, and present a very conspicuous appearance, with their white caps, stained and streaked with the excrement of the Terns, from their constant use as resting places from year to year.

The main land rises abruptly from the beach, with a perpendicular bank, from ten to fifteen feet high; its surface is treeless, but is clothed with a coarse growth of grass and wild flowers, and a few small patches of shrubs or low bushes. Much interest has been taken during the last few years, in the protection of the colony of Terns, which makes this island its breeding grounds, and we are informed (Auk, Jan., 1897) that last year their numbers reached about seven thousand pairs of birds. The Lighthouse Board has been called upon to assist in this work, and the keeper of the light has placed rude signs at different points along its banks, with a notice prohibiting the disturbing of their eggs.

During the present year, the United States Government has ordered the erection of a fortification on this island, the work being contracted for by J. W. Hoffman & Co., of Philadelphia, Pa., who last April took possession of the island and made preparation for erecting the work. The plant consisted of a wharf on the north side of the island, about its centre, with a derrick thereon for the unloading of vessels. Five other derricks were also erected at different points on the island, for the construction of the work. Among the buildings erected, were a boiler house, storage house for the cements, tool house, blacksmith shop, oil house, steam concrete mixer, water tanks, cracked stone bin, hay shed and stable for a dozen horses, ice house, commissary, comprising a store, two dining-rooms, two wash rooms, and a kitchen, with sleeping apartments above, eight shanties for the accommodation of a hundred or more workmen, an office for the contractors,

and three shanties for the use of the Government engineers. A line of railroad tracks was also run from the wharf to different parts of the work, for distributing materials with the aid of a small locomotive. A small electric light plant was also run, for the accommodation of the night workmen. Piles of various kinds of materials were also scattered about the island, such as stone, sand, coal, lumber, etc.

The whole plant took up over one-half of the area of the island, leaving only a small portion of the two ends for the accommodation of the Terns, who were compelled to divide themselves into two distinct colonies of about one thousand birds each. In these crowded quarters they congregated and laid their eggs, some in the grass, while others took to the bare patches of sand and tops of the large boulders along the beach. No sooner had the workmen discovered this than they began collecting them for eating purposes, as fast as they were laid. This was principally done by the negroes and Italians, who provided their own meals, and I was told by them that in some instances as many as a dozen eggs were eaten daily, by an individual. A great many were also collected out of curiosity, which were blown and carried away as keepsakes. On one occasion, a New York man visited the island, and collected a large basketful, which he was permitted to take away with him, with a promise not to return again. The crews of the vessels which landed there also participated in this shameful work.

This wholesale robbery was kept up the entire season, and not a Tern's egg was permitted to hatch on the main land during the whole period; and but few, if any, escaped undisturbed among those which nested on the boulders. I would say that it was almost impossible for Capt. Henry P. Field, or any one else, to do any protective work, under the circumstances, this season, for most of the depredations were done about daybreak, before the officials were up. Discouraged with such a reception, fully one-half of the colony of Terns disappeared, probably to breed elsewhere, but about eight hundred birds remained until late in September when they disappeared after the line storm, which occurs at this season.

The Terns at all times seemed to be unsuspecting of harm, and could often be seen sitting on the guy ropes of the derricks about

the work, or flying to and fro overhead, keeping up their continual cries from sunrise to sunset. At low tide they congregated along the beach in search of food, or sunned themselves from the tops of the large boulders. I have observed them at times following up and feeding on the schools of mackerel, which is certainly a beautiful sight, reminding one, as they dodge about each other, of a kaleidoscope in rotation.

The five weeks which I spent on the island, from August 26 to October 1, inclusive, being after the breeding season had closed, my information has been carefully collected from a large number of persons whose statements I have no reason to doubt, and who were not only eye witnesses, but participants in the spoils.

I am also informed by good authority that the Government intends erecting another gun on the east end of the island; if such be the case, it will consume all the earth from the remaining portions of the island, to form the breastworks, which will virtually leave nothing of Great Gull Island beyond the fortifications, and will completely destroy it as a resort for Terns.



## FIFTEENTH CONGRESS OF THE AMERICAN ORNITHOLOGISTS' UNION.

THE FIFTEENTH CONGRESS of the American Ornithologists' Union was held in New York City, November 8-11, 1897. The business meeting took place on the evening of November 8 in the 'Board Room' of the American Museum of Natural History. The public sessions, lasting three days, were held in the Library of the Museum.

BUSINESS SESSION.—The meeting was called to order by Vice-President Dr. C. Hart Merriam, in the absence of the President, Mr. William Brewster. Eighteen Active Members were present. The Secretary's report gave the membership of the Union at the opening of the present Congress as 679, constituted as follows: Active, 46; Honorary, 18; Corresponding, 68; Associate, 547.

During the year the Union lost sixty-two members — seven by death, thirteen by resignation and forty-two were dropped for non-payment of dues. The members lost by death were Heinrich Gütke<sup>1</sup>, an Honorary Member, who died on the Island of Heligoland, January 1, 1897, aged 83 years; and Maj. Charles E. Bendire, U. S. A.,<sup>2</sup> one of the Founders, an Active Member, and a Councillor, who died at Jacksonville, Fla., February 4, 1897, aged 61. Also the following Associates: Capt. Platte M. Thorne, U. S. A.,<sup>3</sup> who died in Rochester, N. Y., March 16, 1897, aged 59; Robert Hoe Lawrence,<sup>4</sup> who died at Danville, Ill., April 27, 1897, aged 35; Charles Bill, of Springfield, Mass., who died in April, 1897; Louis W. Brokaw, who died at Carmel, Ind., September 3, 1897; and Robert A. Campbell of Phoenix, Arizona, particulars of whose death have not yet been received.

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

The officers of the previous year were all re-elected, with Mr. Ruthven Deane as a member of the Council, to fill the vacancy caused by the death of Maj. Bendire. Dr. Charles W. Richmond, Assistant Curator, Department of Ornithology, U. S. National Museum, was elected an Active Member, and eighty-eight new members were added to the list of Associates. As a direct result of the Audubon Society movement, creating a popular interest in the study of birds, more women than usual were elected to associate membership. The usual reports of Standing Committees were received.

**PUBLIC SESSION.** *First Day.* — The meeting was called to order by Vice-President Merriam. Dr. J. A. Allen read a letter from Mr. Morris K. Jesup, President of the American Museum, welcoming the Union to the Museum.

The reading of scientific papers began with one by Mr. Sylvester D. Judd on 'Protective Adaptations of Insects from an Ornitho-

<sup>1</sup> For an obituary notice, see *Auk*, XIV, p. 254.

<sup>2</sup> For an obituary notice, see *Ibid.*, p. 253; also Memorial Address in the present number.

<sup>3</sup> For an obituary notice, see *Ibid.*, pp. 254-255.

<sup>4</sup> For an obituary notice see *Ibid.*, p. 342.

logical Point of View.' Remarks followed by Drs. Allen and Fisher, the author, and the Chair.

Next came a commemorative address prepared by Dr. J. C. Merrill, U. S. A., entitled 'In Memoriam: Charles Emil Bendire.' In the absence of the author, it was read by Mr. D. G. Elliot.

The third title was 'Summer Birds of the West Virginia Spruce Belt,' by Dr. William C. Rives. Remarks followed by Dr. Coues, Messrs. J. A. Dakin, S. N. Rhoads, and the author.

The opening paper of the afternoon session was by Frank M. Chapman, entitled 'Experiences of an Ornithologist in Mexico.' Remarks followed by Messrs. Elliot, Nelson, Oberholser, and the author. The members and visitors then repaired to the Lecture Room of the Museum, where Mr. Chapman illustrated the preceding paper by lantern slides showing characteristic scenes of the life-zones of the State of Vera Cruz. Mr. Chapman then gave an exhibition of lantern slides of 'Birds in Nature' from material contributed by himself and other members of the Union. This was followed by Professor A. S. Bickmore, with colored lantern slides showing recent advances in methods of visual instruction.

*Second Day.*—The meeting was called to order by Vice-President Merriam. The Secretary read a letter from the President, Mr. Brewster, who regretted that ill health prevented his attendance at the Congress.

Dr. Jonathan Dwight, Jr., gave, as the first paper of the morning, 'Is Uniformity in Local Lists Possible?' It was discussed by Drs. Faxon and Allen, Messrs. Baskett, Oberholser, and the author.

The second title was 'Auduboniana and other Matters of present Interest,' by Dr. Elliott Coues. The portfolio carried by John James Audubon in Europe and America, and the original MS. of the first volume of his 'Ornithological Biography' were exhibited by Dr. Coues. Two original bird-drawings by John Woodhouse Audubon, and some unpublished paintings of birds by Louis Agassiz Fuertes were also shown.

The next paper was 'Ten days among the Birds of Northern New Hampshire,' by Judge John N. Clark. Remarks followed by Mr. William L. Baily.

The fourth title was 'Some Notes on Liberian Birds,' by Harry C. Oberholser.

The first paper of the afternoon was 'The Great Roosts on Gabberet Island, opposite North St. Louis,' by Otto Widmann. In the absence of the author, it was read by Mr. Dutcher, who also remarked upon the paper.

The next title was 'The Terns of Gull Island, New York,' by J. Harris Reed. As the author was not present, the paper was read by Mr. Dutcher. Remarks followed by Messrs. Dutcher and Chapman.

The third paper, 'The Petrels of Southern California,' by A. W. Anthony, was read in his absence by Mr. Chapman. Remarks followed by Messrs. Chapman and Osgood, and Dr. Bishop.

Then followed a paper by Rev. H. K. Job, entitled 'The Northern Raven breeding in New England.' In the absence of the author it was read by Mr. W. H. Osgood.

Mr. Chapman gave further information regarding some of the slides shown by him on the previous day.

The fifth title was the 'Breeding Habits of the Common Robin in Eastern Massachusetts,' by Reginald Heber Howe, Jr. The author not being present the paper was read by Mr. Harry C. Oberholser. Remarks followed by Messrs. J. Newton Baskett and Louis Agassiz Fuertes.

Mr. Abbott H. Thayer, the eminent portrait painter, then gave an out-of-door demonstration of the underlying principle of protective coloration, in continuation of his remarks on the subject at the previous Congress. Mr. Thayer showed a pair of decoys with the belly part cut off, so that in lying on the cut-off side they represented crouching birds or mammals. He then repeated upon them the coloring which he had exhibited at Cambridge upon entire decoys (decoys poised a few inches above the ground). This, he said, was to more clearly illustrate what he stated in his first paper on protective coloration, namely, that the normal gradation of the sky's lighting is effaced *by the color gradation of the animal at every point*, the median dorsal line having the darkest markings, so that the gradation toward the white of the belly *begins close to this dorsal line*. Mr. Thayer placed the two decoys side by side on a plank, and covered one of them uniformly with the same dry earth which he spread about it on the plank, so that all of its visible surface and that of the plank on which it



lay were absolutely of one tint — monochrome; yet it was conspicuously visible at a long distance, because of its normal gradation of shading from the sky's light, although there was no underside visible to show a culmination of shadow. The other decoy he painted in imitation of a hare's or snipe's gradation, and so successfully that it became totally invisible at a distance of four or five yards. He explained that the statement in his first paper that not a feather of the upper surfaces of the woodcock and grouse had been artificially colored referred only to the feathers along the median dorsal region.

The skin of a cottontail rabbit was exhibited, showing a most perfect gradation from black hairs of the middle of the back and over the shoulders to the white of the belly.

This communication, in connection with that given at Cambridge a year ago, completes Mr. Thayer's admirable demonstration of his theory of the great underlying principle of protective coloration in animals.

In the evening an illustrated lecture on 'A Naturalist's Expedition to East Africa' was given in the large lecture hall of the Museum by Mr. D. G. Elliot before an audience of some 1200 persons.

*Third Day.*— In the absence of the President and both Vice-Presidents, the meeting was called to order by the Secretary. Ex-President Allen was made Chairman *pro tem.* Before proceeding to the reading of papers, resolutions were adopted thanking the Trustees of the American Museum of Natural History for a place of meeting and for other courtesies tendered to the Union; and to the Linnæan Society of New York for generous hospitalities extended to the Union during its Fifteenth Congress.

The first paper of the morning was by Edwin I. Haines on 'The Summer Birds of the Catskill Mountains, with remarks upon the Faunæ of the Region.' Discussion followed by Messrs. Elliot, Dutcher, and Batchelder, Drs. Coues and Dwight, and the author.

The second paper was 'The Terns of Muskeget Island, Mass.,' by George H. Mackay. In the absence of the author, it was read by Mr. Dutcher. Remarks followed by Mr. Fuertes.

The third title was 'Remarks on an Exhibition of certain

Laridæ,' by Dr. Elliott Coues. Discussion followed by Messrs. Dutcher, Elliot, Fuertes, and the author.

As the opening paper of the afternoon, Mr. William Dutcher, Chairman of the 'Committee on Protection of North American Birds,' read the report of his committee for the past year. The report is published in this number of 'The Auk,' and will be issued separately as a pamphlet for free distribution.

The next title was 'Remarks on a New Theory of the Origin of Bird Migration,' by Dr. J. A. Allen. Discussion followed by Dr. Coues, Mr. Dutcher, and the author.

Dr. Jonathan Dwight, Jr., showed a specimen of a Petrel (*Puffinus assimilis*) new to North America. Remarks followed by Dr. Coues,

An informal talk on the Gyrfalcons was given by Mr. Chapman, who exhibited specimens from Greenland and Labrador. Remarks followed by Dr. W. E. Hughes, who accompanied the first Peary expedition to North Greenland.

The Union then adjourned to meet in Washington, D. C., November 14, 1898.

JNO. H. SAGE, *Secretary.*

*Portland, Conn., Nov. 30, 1897.*

## GENERAL NOTES.

Notes on the Egg of the Marbled Murrelet. — While collecting this season off the Alaskan coast in the Prince of Wales Archipelago, it was my good fortune to take an egg of the Marbled Murrelet (*Brachyramphus marmoratus*), the first I believe that is known to science. My headquarters at that time were at the Indian village of Howkan, on Long Island, near the open end of Dixon's Entrance. The birds had been very abundant all winter and by May had taken on their rusty summer dress. Females taken at that time plainly indicated that they were about to nest, the ovaries containing eggs nearly formed. A careful watch failed to reveal any nesting sites and on inquiring of the Indians about it, they told me that they had always supposed the bird to breed high up on the mountains in hollow trees; one old fellow declared he had found the young in such places. As I had previously noticed the birds flying about high overhead at dusk I resolved to look into the matter, and spent many hours searching for them in the woods, but without success.

One day, the 23d of May, an Indian boy came to the cabin and wanted to borrow my 'scatter gun' to shoot ducks. I gave him the gun and some shells, I also asked him to bring me back some 'divers' if he could. He returned in the afternoon with four Marbled Murrelets and said, in Chinook, that "he thought one had an egg in it," and suiting the action to the word, squeezed the bird's abdomen, and before I could prevent it I heard the egg break between his fingers. On opening the bird I found the remains of a large clear green egg spotted with black and brown, which I patched up the best I could and sent to the Smithsonian Institution.

By a promise of a reward for eggs I soon had all the Indian boys of the place after them. Many of the birds they got had incomplete eggs in them and others had already laid, but I never secured another perfect specimen.

The birds were in the channels the entire summer, and on August 5 I noticed the first young in the immature white plumage, and by the middle of October the old birds had also assumed the winter dress. — GEO. G. CANTWELL, Juneau, Alaska.

[The above mentioned egg, kindly sent to the National Museum by Mr. Cantwell, measures about 2.48 inches (length) and 1.38 (width). In shape it is elongate-ovate. The color is a greenish yellow, with brownish violet and dark brown spots, the latter being larger at the base. — W. L. RALPH.]

Gull Dick. — The American Herring Gull (*Larus argentatus smithsonianus*), known as 'Gull Dick' (see Auk, Vol. IX, p. 227; Vol. X, p. 76;

Vol. XI, p. 73; Vol. XII, p. 76; Vol. XIII, p. 78), was observed for the last time in the vicinity of the Brenton Reef Light-ship on April 7, 1896, making twenty-four summers the bird had passed in this immediate locality. Captain Edward Fogarty, at present in charge of the ship, has known Dick for ten years.

The failure of this bird to put in an appearance as usual in October, 1896, and his continued absence ever since, leaves but little doubt that he is dead, as are all the captains of the Light-ship except the present incumbent, Captain Fogarty. Having recorded this bird's movements while alive for several years past in 'The Auk,' I now feel called upon to record his probable demise.—GEORGE H. MACKAY, *Nantucket, Mass.*

**An Uncommon Gull in Massachusetts.**—On March 24, 1897, I received from Manomet, Plymouth, a specimen of the Glaucous Gull (*Larus glaucus*), shot several days before. It is in nearly full plumage, — creamy white all over, save for faint, indistinct markings of brownish on the wing-coverts and lower parts.—HERBERT K. JOB, *North Middleboro, Mass.*

**Leach's Petrel at Lancaster, N. H.**—October 1, 1897, a pair of Leach's Petrels (*Oceanodroma leucorhoa*) were seen on a small pond in this town; one of them was shot, and its skin is now in my possession. The bird was very fat, and it seems remarkable that it should be found here, at least 100 miles from the nearest coast.—F. B. SPAULDING, *Lancaster, N. H.*

**The Redhead (*Aythya americana*) in post-nuptial Plumage in Autumn.**—On November 10, 1896, I received from Walter I. Jackson of Havre-de-Grace, a male Redhead (*Aythya americana*) shot the day previous on the Susquehanna flats. This bird, for some reason, had failed to moult at the proper time, and appears in the old worn-out feathers characteristic of the post-nuptial period. All the feathers are very short, but those on the head and the tail-feathers show most abrasion, being reduced to less than one-half the usual length. Examination showed the bones perfect and the flesh normal, though without a particle of fat, indicating that the bird was not a 'crippler.' It was flying with the other ducks when shot.—F. C. KIRKWOOD, *Baltimore, Md.*

**The Glossy Ibis in Western New York.**—During the second week of October, 1897, J. W. Ware shot and killed a Glossy Ibis (*Plegadis autumnalis*) in the upper end of the harbor at Dunkirk, N. Y. I have examined the bird carefully and can vouch for its identity. It is an adult bird in excellent plumage, the chestnut and green being very pronounced.—H. D. KIRKOVER, JR., *Fredonia, N. Y.*

**The American Egret at Maplewood, N. J.** — On July 27, 1897, Mr. Alfred Brower, my cousin, shot two specimens of the American Egret (*Ardea egretta*) on his pond in Maplewood, New Jersey. They were both young birds, although full grown. — CHARLES C. OWEN, *East Orange, N. J.*

**Virginia Rail killed by striking a Telephone Wire.** — On September 8, a specimen of the Virginia Rail (*Rallus virginianus*) was found in a yard in the centre of Englewood, N. J. The bird was stunned and had evidently come in contact with a telephone wire. During the day it revived and when I received it the next morning was apparently all right, although occasionally it showed a weakness in the legs, accompanied by an apparent dizziness. It lived for several days, when it was killed and preserved. Several photographs were taken, which are of some value in showing natural positions.

The above is a rather curious incident, as the wire which the bird must have struck is only about fifty feet from the ground, and is in the centre of a town of some six thousand inhabitants. The night was perfectly clear, and it is very hard to account for the bird's presence there. One or two of these birds are killed every year on the Hackensack and English Creek marshes, but they are considered rare. — WM. P. LEMMON, *Englewood, N. J.*

**Baird's Sandpiper (*Tringa bairdii*) on the California Coast.** — I desire to put on record the capture of a male Baird's Sandpiper on the ocean beach south of Pt. Pinos, near Monterey, California, August 25, 1897. Noticing two birds larger than the rest in a small flock of *Tringa minutilla* flying past, I singled out and brought down one with each barrel. One proved to be a male *Arenaria interpres* and the other a male *Tringa bairdii*.

The only other record of the occurrence of this species in California that I have found is one in the 'Catalogue of the Birds in the British Museum,' Vol. XXIV, p. 573. — JOSEPH MAILLIARD, *San Geronimo, Cal.*

**The Greater Yellow-Legs Catching Minnows.** — While hunting along the shore of Lake Chautauqua one day during the first week of October just past, I discovered three Greater Yellow-legs (*Totanus melanoleucus*) wading in about three inches of water. They were evidently feeding, so I stopped to watch them. They would run along with their bills just beneath the surface of the water. After watching them for some time, I killed them. When I cleaned the birds, I found minnows (about 1½ inches in length) in the stomachs of two of them. In looking this matter up in the different works on ornithology, I failed to find any mention of this bird feeding on fish. I recite this incident as a fact of probable interest. — H. D. KIRKOVER, *Fredonia, N. Y.*

**Spotted Sandpiper removing its Young.**—A clearly observed case of the Spotted Sandpiper (*Actitis macularia*) removing its young by flight recently came under my notice, and I place it upon record, as such instances are rarely seen, though they are, perhaps, of tolerably frequent occurrence, as in the case of the Woodcock.

Last summer, in the month of July, I frequently landed on a little rocky islet near the head of the Saguenay River, shortly after it issues from Lake St. John. Each time a Spotted Sandpiper showed much concern for her young, which were often seen running about and were a few days old. On one of these occasions, the mother ran ahead of me to a point of rocks near which I stopped to fish. A few moments later she flew, circling in the usual manner, and as she passed in front of me and within a few feet, I saw one of the young beneath her body, apparently clasped by her thighs; its head was directed forward, somewhat outstretched, and was seen with perfect distinctness. The parent's legs were apparently hanging down as she flew, though I am not positive that what I saw were not the legs of the young. The mother was in sight for about sixty yards, flying heavily and silently, and landed on a large island, though I could not see her at the moment of alighting.—J. C. MERRILL, *Washington, D. C.*

**The 1897 Migration of the Golden Plover (*Charadrius dominicus*) and the Eskimo Curlew (*Numenius borealis*) in Massachusetts.**—Were it not for the reason that I desire to keep up the continuity of my migrating record on these birds, I should scarcely consider the data I have for this season worth recording. Up to August 22, no Golden Plovers or Eskimo Curlews had been observed at Nantucket or adjacent islands. On this date the wind was southwest, with rain commencing at 9.30 o'clock A. M., accompanied at intervals with lightning. I drove all over the western plover grounds but did not see any birds. I was informed that a flock of thirty Golden Plovers had been seen there later in the day. The wind finally came from the northeast and in the evening two or three persons informed me that they had heard the birds passing over the tower. Although on the alert, I did not hear any. Again, after 10.30 at night, a good many birds were reported to have been heard from several points as they passed over head, but none stopped. At Chatham, Cape Cod, Mass., on this same date (August 22), the first Golden Plovers (four) of the season, as far as I know, were shot, and many others were noted as they passed during the day, on migration. This was the *first* movement going south this season.

I again drove all over the western grounds on Nantucket August 23, seeing four Golden Plovers, flying towards the west; later in the day two others were noted. On the 24th, I am informed, three flocks of Plovers were observed at the westward, one of twenty-five, one of fifteen, and one of thirty, the numbers being estimated. A small flock of six Plovers was also observed at Tuckernuck Island. The wind was easterly on this

date, and it rained at intervals from six o'clock A. M. until twelve o'clock noon, at which time the wind changed to southwest and the weather cleared.

One small flock of eight Eskimo Curlews (the only ones noted here for the entire season) was seen well up in the air, flying on migration, headed towards the west. No birds stopped on the islands, and none were killed.

On the afternoon of August 27, a flock of twelve Plovers was seen, and on the 29th, eleven Plovers were domiciled in a certain protected field on the Kimball farm. On September 17, five Plovers were noted at the western end of Nantucket. The ground on the island this season is in poorer condition than usual, owing to the wet weather, which has enabled the grass and weeds to grow profusely; in addition to this, there has been no ground burned off this year.

I made inquiries several times in the Boston markets in order to ascertain if any of the above birds had been sent in from other localities, but could hear of none. Personally, I have not shot any. It is doubtful if over twelve Plovers have been taken during the entire season on Nantucket and adjoining islands, and not an Eskimo Curlew.

I can but regard with solicitude the killing of these birds in such immense numbers, as also the Bartramian Sandpipers, as they pass northward on migration through the Mississippi Valley in the *spring* on their way to their breeding grounds; many of the females having eggs quite well developed in their ovaries at the time. This has been going on for a number of years. (I called attention to it in *Auk*, Vol. VIII, p. 24, January, 1891.) How long can it continue? It has been several years since any considerable numbers of these birds have landed on the Atlantic seaboard during August or September. I believe the danger line has been passed long since. Protection is generally the laggard in the race. Our Western Associates should look to this matter and endeavor to put a stop to such annihilation if possible.—GEORGE H. MACKAY, *Nantucket, Mass.*

**The Turkey Vulture in Connecticut.**—While out driving in Old Lyme, Conn., August 31, I was much surprised to note a Turkey Buzzard (*Cathartes aura*) in company with a Red-shouldered Hawk flying around a small patch of woods. This is the first one I have seen so far north as Connecticut.—ARTHUR W. BROCKWAY, *Lyme, Conn.*

**A Black Vulture near Quebec, Canada.**—On the 28th of October last a Black Vulture (*Catharista atrata*) was killed on the beach at Beauport, about six miles from Quebec; the bird was shot as it was flying towards a carrion. The man who secured the bird thought he had shot a young Eagle, but on seeing its black and unfeathered head and upper neck, I ascertained it was a Black Vulture. This is, I believe, the first record of a bird of this species being found so far north. It was an adult male.—C. E. DIONNE, *Quebec, Can.*

**Black Gyrfalcon** (*Falco rusticolus obsoletus*) in Rhode Island.—In looking over some newly-received bird skins in the collection of Mr. Jas. P. Babbitt of this city, I came across a specimen, a fine female in nearly full plumage, of this rare Falcon, which I succeeded in purchasing and added to my collection. It was shot by Mr. Arthur Scudder at Tiverton, R. I., on December 26, 1896. He was duck shooting from a boat over wooden decoys, and at the time the Gyrfalcon was shot it was hovering over the decoys, as if preparing to pounce upon one of them. I referred it to this form by Ridgway's 'Manual,' and after carefully studying over Mr. William Brewster's five series of Gyrfalcons, I felt still more certain of its identity. — A. C. BENT, *Taunton, Mass.*

**Golden Eagle in New Jersey.**—Mr. J. H. Fleming of Toronto writes me that August 9, 1897, a live immature Golden Eagle (*Aquila chrysaetos*) was offered him for sale by its captor, a colored man, who had recently caught it near Long Branch, New Jersey.—FRANK M. CHAPMAN, *Am. Mus. Nat. Hist., New York City.*

**A New Name for Dryobates v. montanus.**—Since the name *montanus* seems to be preoccupied in the genus, I would suggest that the name *monticola* be adopted for the Rocky Mountain race separated by me under the name of *montanus* (Auk, XIII, 1896, p. 32). So far as I have been able to ascertain, *monticola* has not been used in the genus *Dryobates*. — A. W. ANTHONY, *San Diego, Cal.*

**Sennett's Nighthawk** (*Chordeiles virginianus sennetti*) at Madison, Minn.—August 13, 1891, I secured a Nighthawk that is very much lighter in color than any specimen of *C. v. henryi* that I had ever seen. I was inclined to believe that it was a juvenile of the latter.

On August 15, 1894, I secured another specimen of this very light form. Last spring I sent the latter specimen to Professor Robert Ridgway, who pronounced it *C. v. sennetti*.

As Mr. L. B. Bishop states (Auk, Vol. XIII, p. 134), Sennett's Nighthawk cannot be mistaken for *henryi*. Both of my specimens are very light colored, and lack the white (in ♂) and tawny throat patch (in ♀) of *C. virginianus* and *C. v. henryi*.

My first specimen was a wounded bird when secured. I kept it caged for 24 hours, and when it died and I dissected it I found its stomach full of small insects and a few small grasshoppers.

The following are the data of the two specimens:

Collection Albert Lano, ♂: Length, 9.25; extent, 24.00; wing, 10.00; tail, 4.32. Weight, 2¼ ounces. August 13, 1891. Collected at Madison, Minnesota.

Collection Albert Lano, ♂: Length, 9.00; extent, 22.25; wing, 8.25; tail, 4.00. Weight, 2¼ ounces. Collected at Madison, Minnesota.



It gives me pleasure to add this new species to the list of birds of Minnesota. — ALBERT LANO, *Aitkin, Minn.*

**The Northern Raven breeding in New England.** — During a trip to the outer islands of Penobscot Bay, Maine, I found on June 15, 1897, a brood of three young Ravens (*Corvus corax principalis*), fully fledged and grown, in the possession of two fisherman's boys. They were taken from a nest in a spruce tree on a small uninhabited island about the middle of May, being at that time about ready to fly. One of the old birds was seen hovering at a safe distance. In captivity they each had a wing clipped, and remained at large about the house, though one, wilder than the others, escaped several times to the woods.

One of the boys conducted me to the nest. It was about twenty feet from the ground, two-thirds way up the tree, in a crotch close to the trunk, and was a great accumulation of gnarled, crooked sticks, some of the largest at the bottom being as thick as a man's thumb. Some two feet across on top, its size was about that of the nest of the Red-tailed Hawk. It was deeply hollowed, profusely lined with grass and especially sheep's wool, and emitted a strong, disagreeable odor. On the branches below were caught numerous sticks, which evidently the birds had dropped. A few days later I examined a nest of the Common Crow on a neighboring island from which the young had recently left. It was almost exactly like the Raven's nest, except that smaller sticks were used, wool was entirely absent, and the strong odor was lacking.

I purchased the young, and took them home with me alive. Two of them are still (September 10) in health; the other died August 5 from some bowel trouble. Moulting was first noticed about July 20, when blue-black feathers began to appear in the dull brownish under parts. They are still moulting, the head being the part most affected.

Their habits in captivity are not unlike those of the Common Crow, especially in reference to their hiding of objects. But they manifest more decided carnivorous tastes, preferring flesh to everything else, and tearing up bodies of birds or mammals like veritable hawks. A live young Marsh Hawk incarcerated with them in their roomy cage was next day killed and entirely devoured, save the leg bones and quills. They are very noisy when hungry, and their harsh croaking is audible at a considerable distance. — HERBERT K. JOB, *North Middleboro, Mass.*

**The Starling (*Sturnus vulgaris*) on Long Island.** — The European Starling seems to have successfully established itself on Long Island. In the summer of 1896 I was informed that this bird was nesting in the tower of the Boys' High School Building at Marcy and Putnam Avenues, Brooklyn. Of the accuracy of this report I was unable at the time to acquaint myself personally. Lately, however, the Starlings may be seen perched on, and flying about this tower at almost any time. It is appar-

ently a place in which they have taken up a permanent abode. Flying from these high perches they look not a little like Martins, and might be mistaken for them at a season when the latter birds are present.

A Starling was killed about a year ago in the immediate outskirts of Brooklyn by a boy who knocked it down with a stone. I am unable to give the date.

I first noted the Starling in the field on October 8, this year, when a flock of a dozen or more was seen perched in a tree by the roadside near the Kensington Station. During this and the next month I saw them in this locality several times. Once or twice one or more birds were seen on the piazza roof of a suburban cottage in apparently *friendly* company with English Sparrows. On October 22, about thirty individuals of this species were seen in this neighborhood. Two specimens were shot, the stomachs of which were sent to Dr. Merriam, chief of the United States Biological Survey.

The bill of fare of the Starling has not been materially changed by its transportation to another continent. It enjoys in England at about the same time of year, about the same food. In the one full stomach examined (the other was nearly empty), ninety-five per cent of the contents was animal matter, mainly insects (multipeds and beetles, larval lampyrids, grasshoppers, crickets, ichneumonid, caterpillar), but also included two small pieces of bone, "probably belonging to some batrachian." The five per cent was merely vegetable rubbish. Dr. Merriam kindly stated that the contents of this stomach, examined by Prof. Beal, agree essentially with those of three stomachs taken in England in October.

The bird will doubtless widen its range on Long Island, though its extension in this direction since its introduction into New York City, in 1890, has not as yet been rapid. — WILLIAM C. BRAISLIN, M. D., *Brooklyn, N. Y.*

**The Song of the Western Meadow Lark.** — In 'The Osprey' of July-August, 1897, Rev. P. B. Peabody must refer to me as the recent writer in the 'The Auk,' in connection with the song of the Western Meadow-lark (*Sturnella magna neglecta*). The twelve examples which were copied by me at Gridley, Cal., and published in the 'The Auk' of January, 1896, had been heard year after year by me, some of them at least a thousand times, and were very carefully copied with the help of pitch pipe and paper, and I should have stated in the most positive manner that I had heard them sung perfectly many times, although I had heard them sung imperfectly oftener than otherwise. In the brief note which accompanied those twelve examples of musical notation in 'The Auk,' I said I had heard more *writable* songs at *Gridley* than in any and all other places where I had been in California. The truth is that I have never heard these songs outside of the township of Gridley, excepting two of them which I have heard near Stockton, where, as at Gridley, I have spent much time.

I am not surprised at Mr. Peabody's unsatisfactory comparison of these Gridley songs with the songs of the Minnesota Meadowlark. They do not sing alike, and probably none of our California birds sing or use such language as Mr. Peabody says the Minnesota birds use, for he says those birds say naughty words. Ours never do that, nor do they even use such language as: "*Screeep-a-rip-ple-rip!! Take a little sip!*" nor "*Jehu, jaa-hu drink a little!*" Those Minnesota birds must be totally depraved. Ours are always well behaved.

Possibly Mr. Peabody does not interpret them rightly, and it is quite certain that no two persons would interpret that song language just alike — neither in Minnesota nor in California. Something would probably depend on the mood that happened to possess the interpreter.

So much for language songs. If Mr. Peabody, or any one who has a little knowledge of music, will take 'The Auk' of Jan., 1896, to Gridley, on the ranch of Charles Belding, he or they will hear Meadowlark songs that will just fit the musical notations in it, and there will be no doubt about the song or songs I intended to represent, although the second note in number nine should be *sol*, or a fifth instead of a third; I believe I lost the true pitch in recopying that number.

Several of those twelve songs have a compass of just an octave, and this is a rather common feature of our *Sturnella* songs in different parts of California.

There are several good points in Mr. Peabody's article in 'The Osprey,' and one of them is his suggestion of using the phonograph in reproducing bird songs. With its aid we may have the pleasure of comparing the notes of the Spade-footed Toad, the Burrowing Owl and the Pigmy Owl with those of the Yellow-billed Cuckoo, or those of the Burrowing Owl with the notes of the European Cuckoo.

Dr. Coues says in his 'Birds of the Northwest,' "The hooting of the Burrowing Owl is so similar to the notes of the Yellow-billed Cuckoo that I should have been deceived myself on one occasion had I not been forewarned by my friend Cooper; and secondly, as this gentleman remarks, the noise made by the Spade-footed Toad (*Scaphiopus*) is also very similar."

When I first heard the Pigmy Owl I thought I heard a Yellow-billed Cuckoo, and I was then familiar with the notes of the latter.

Verbal descriptions of bird songs are probably, in most instances, more interesting to the writer of them than to any one else and any one who has been reading such descriptions, without end, during more than half a life time, is apt to weary of them and yearn for something more definite. If the phonograph should prove to be unsatisfactory in reproducing bird songs we might adopt Lieut. Derby's system of using figures as qualifiers: for instance, a middling good bird song would be a fifty beautiful song; an unsurpassingly beautiful song would be one hundred beautiful; anything for even a moderate degree of precision.—LYMAN BELDING, *Stockton, Cal.*

**The White-crowned Sparrow** (*Zonotrichia leucophrys*), on Long Island, N. Y.—I am permitted to record the capture at Parkville, L. I., of the White-crowned Sparrow on April 10, 1897. I consider noteworthy the early date of the record.—WILLIAM C. BRAISLIN, M. D., *Brooklyn, N. Y.*

**Rank of the Sage Sparrow.**—The particular piece of country of interest in the present connection is near the head of the Little Tujunga Cañon, in the mountains of the central part of Los Angeles County, California, at an elevation of 4000 to 6000 feet. It is well on the Pacific side of the divide, but the Mojave Desert is not more than ten miles to the northeast, while the fertile plains of the Pacific slope are about the same distance southwestward. The rolling mountain ridges, especially on their southern sides, are covered with a more or less heavy growth of brush, composed of several kinds of dwarf trees and shrubs, such as manzanita, scrub-oak, greasewood, buckthorn, etc.

In the vicinity of this semi-arid tract of limited extent, I spent the month of July, 1897, collecting birds. Along with *Spizella atrigularis*, *Spizella breweri*, *Chamaea fasciata henshawi*, and others of the brush-loving birds, I was surprised to find quite numerous both *Amphispiza belli* and *A. (belli) nevadensis*. The former is a common bird in the foothills nearer the coast, but the latter I had previously supposed to be exclusively a bird of the sage-brush deserts. Indeed, here its light colors did not well harmonize with the deep shades of the brush, and it was rendered quite conspicuous, much more so than the darker-colored Bell's Sparrow. The Sage Sparrows have evidently extended their range up over the mountains, so that here the habitats of the two forms overlap.

What was most interesting was that the two forms were inhabiting the same locality and breeding, and yet I saw or obtained no specimens of an intermediate character. I secured adults and young of both forms, and none showed any evidence whatever of intergradation or even 'hybridization.' The far lighter tone of coloration of *nevadensis* and its larger size rendered both adults and young readily distinguishable from those of *belli*, even at a long distance. The call-notes of the two birds were slightly different in quality, and the Bell's Sparrow seemed the more retiring, keeping itself groundward among the brush, while the Sage Sparrow was prominent, perching at the tops of the bushes and flying from one to another frequently.

These observations have led me to conclude, as others have surmised, that these two forms are specifically distinct. I have never learned of any intermediate specimens having been taken, and Mr. Walter E. Bryant, who has seen and taken many of these birds, tells me that he has never found an intermediate, and he fully agrees with me as to their distinctness. I therefore propose that these two forms be considered hereafter as separate species. According to the A. O. U. Check-List, the group should, therefore, stand as follows:—

574. *Amphispiza belli* (Cass.).

574a. *Amphispiza belli cinerea* (Townsend).

574. I. *Amphispiza nevadensis* (Ridgw.).

The question might arise as to which species the form *cinerea* belongs as a race. I have learned nothing definite in regard to this, so until someone finds otherwise, it might stand as it is, though the probabilities point toward its relationship with *A. nevadensis*. — JOSEPH GRINNELL, Pasadena, Cal.

**The Blue-winged Warbler (*Helminthophila pinus*) in Eastern Massachusetts.** — On the afternoon of May 15, 1897, while collecting among some scattered bushes and low trees on the edge of a swampy wood in the section of Boston known as Dorchester, near the West Roxbury and Hyde Park lines, I came across a bird of this species. When first seen the bird was sitting on the outer branch of a small bush about ten yards from me. While I was watching, it suddenly flew directly toward me for about ten or twelve feet after an insect, which it caught while on the wing, poising itself for a moment in the air and then returning to the same bush, immediately passing through to the other side where it was lost to view.

Although this species has been taken in West Roxbury and also in Dedham, it is a rare bird in Massachusetts and worthy of note. — FOSTER H. BRACKETT, Boston, Mass.

**Chestnut-sided Warbler in Eastern Kansas.** — While collecting birds on Oct. 12, 1896, I shot an adult male Chestnut-sided Warbler (*Dendroica pensylvanica*) in the fall moult, near Chestnut's Ford on the north bank of the Pottawatomie River, one mile southwest of town. It was feeding among some maple bushes at the water's edge when I first noticed it, being attracted by its familiar note.

There are only two other records, to my knowledge, of the capture of this bird in Kansas, which I quote from Goss. "Taken at Leavenworth in May, 1871, by Prof. J. A. Allen, and near Topeka, May 2, 1873, by Prof. E. A. Popenoe." — WALTER S. COLVIN, Osawatomie, Kans.

**The Aërial Song of the Maryland Yellow-throat.** — The flight song of the Maryland Yellow-throat (*Geothlypis trichas*) one finds stated in many of the leading manuals as never heard until late July or August. This miss-statement, known to be such by many ornithologists, I have never seen questioned.

I have noted this flight song in Eastern Massachusetts as early as May 16, only about a week after their arrival, and heard it off and on throughout the rest of May, June, and July. — REGINALD HEBER HOWE, JR., Longwood, Mass.

**Mockingbird (*Mimus polyglottos*) at Taunton, Mass.** — Mr. A. R. Sharp of this city shot and presented to me a fine specimen of this bird

on Nov. 11, 1897. It proved to be a female in good condition and its stomach contained a number of seeds and part of the skin of a tomato. The plumage showed no signs of wear and tear which would brand it as an escaped cage bird.

It was killed just outside of this city near Mr. Sharp's farm, and was mistaken for a Shrike at the time.

This is very late in the season for a Mockingbird to be found so far north, yet I cannot think that it had recently been in captivity.—A. C. BENT, *Taunton, Mass.*

**Late Nesting of the Carolina Wren in Monongalia Co., W. Va.**—On August 21, 1897, while driving along the road near Morgantown, W. Va. I discovered, among the dangling roots on the upper side of the road, a nest of the Carolina Wren (*Thryothorus ludovicianus*) containing five fresh eggs. The position of the nest very much resembled that of the Louisiana Water Thrush (*Seiurus motacilla*) and had I not got out to positively identify the nest, would not have known it was occupied. The old bird allowed me to approach very closely, placing my hand on the side of the nest before she left. She then fluttered out and down along the side of the road into some bushes.—J. WARREN JACOBS, *Waynesburg, Pa.*

**Hemiura leucogastra (Gould)—A Correction.**—In 'The Auk' for October, 1897 (Vol. XIV, pp. 409, 410) I maintained that Baird's determination of *Troglodytes leucogaster* Gould should be accepted, since Baird had Gould's type before him, while Messrs. Sclater, Salvin, and Godman who determined Gould's bird differently, did not have the advantage of an acquaintance with the type. Mr. H. C. Oberholser has called my attention to the fact that Gould's type afterwards came into the possession of the British Museum (as shown in Vol. VI of the Brit. Mus. Cat. of Birds, p. 285, 1881) and proved to be the *Cyphorhinus pusillus* of Sclater, confirming the determination made by Messrs. Sclater and Salvin in 1873. That Baird had what purported to be Gould's type of *Troglodytes leucogaster* cannot be doubted; that he could have confounded a *Hemiura* and a *Thryothorus* is incredible; the natural inference is that some confusion of labels among the skins received from Gould may have been the cause of Baird's wrong identification.—WALTER FAXON, *Museum of Comparative Zoölogy, Cambridge, Mass.*

**Bicknell's Thrush on Mt. Ktaadn, Maine.**—On June 22 and 23, 1897, I made a short visit to Mt. Ktaadn, Maine, partly for the purpose of ornithological observation. On the 22d I heard three Bicknell's Thrushes (*Turdus aliciae bicknelli*) singing, along the Southwest Slide, and on the 23d I heard the same three and two more besides, one pretty well up the

Slide and the other on the Table Land at an altitude of a few hundred feet lower than the top of the highest peak (5,215 feet). Unfortunately I was unable to obtain a specimen, but a familiarity with the song of this bird acquired in the White Mountains and during the migrations, leaves no doubt whatever in my own mind of the identification. This subspecies has never been reported from Maine, I believe, though it is included in the 'hypothetical' list in Mr. Ora W. Knight's recent list of Maine birds. The only other birds noted on the mountain which I did not also find in the lowlands about there were *Dendroica striata*, which were common along the Slide, and *Dendragapus canadensis*, one female of which I observed on the Slide. Ktaadn affords but little cover for birds, the upper three thousand feet being for the most part very steep and rocky, giving no chance for trees. The trees along the Slide are almost entirely deciduous, and no coniferous woods were to be seen at any height except those in the great South Basin on the northeast side of the mountain, about 2300 feet below the highest summit or about 3000 feet above sea-level. It is quite possible that these Basin woods may have contained some more northern forms, but I was unable to visit them. Some one should go there in the breeding season. The Basin is best visited from the east side. The scrub fir on the Table Land harbored *Turdus aliciae bicknelli* and *Zonotrichia albicollis*, and doubtless *Junco hyemalis* too, but it is too low to make very good cover.—FRANCIS H. ALLEN, *West Roxbury, Mass.*

**Two Species new to the List of Birds found in West Virginia.**—CHUCK-WILL'S-WIDOW (*Antrostomus carolinensis*), ♂ adult. Picked up in a grove, apparently benumbed by cold, by Mr. John H. Crawford, near Lewisburg, Greenbrier Co., W. Va., on April 23, 1897. Now in Mr. Crawford's possession.

SWAINSON'S HAWK (*Buteo swainsoni*), ♂ adult. Shot by Mr. M. M. Collins four miles north of White Sulphur Springs, W. Va., September 16, 1897. This hawk is now being mounted for Mr. M. M. Collins of Covington, Va.

I believe that, heretofore, Nashville, Tenn., has been about the farthest north, in the interior, from which *Antrostomus carolinensis* has been recorded.—THADDEUS SURBER, *White Sulphur Springs, W. Va.*

**LAKE MICHIGAN NOTES.**—*Larus glaucus*. GLAUCOUS GULL.—While walking along the beach of Lake Michigan, east of Millers, Indiana, August 8, 1897, in company with Mr. J. G. Parker, Jr., and Mr. Fred Hilgard, I had the good fortune to take a fine female of this species. It is in the pure white plumage of the young of the second year; it is immaculate, with the exception of a few feathers on the wing-coverts, which are of a pale brownish gray. I believe this is the first record of capture for the Calumet Region and Indiana.

*Tringa canutus*. KNOT. — There has been quite a large flight of Knots this fall, and I have obtained three. The hunters from the gun clubs along the beach have shot a large number of this species, all of which are in the juvenile plumage. One of my birds, taken August 21, shows a wash of pale brick red over the lower parts. It is rather strange that none are observed in the adult plumage. Although the majority of the maritime birds observed are juveniles, there are always (excepting in the case of *T. canutus*) a few adults among them.

*Macrorhamphus griseus*. DOWITCHER. — On August 21 my friend, R. A. Norris, shot an adult of this species, which was flying with a flock of ten or more along the beach at Whiting, Indiana.

*Symphemia semipalmata*. WILLET. — On August 14, at Millers, I obtained five of these birds from a flock of twelve, as they were feeding on a sand bar along Lake Michigan. Much to my surprise they would return to my call, and I could have obtained nearly the whole if I had so desired.

*Ægialitis meloda circumcincta*. BELTED PIPING PLOVER. — This species has become very rare in the last fifteen years, and on hearing that a gentleman had obtained a pair on the 27th of September at Millers, I went down there on the following Saturday. I obtained an adult male, and also found two pairs of young in the down, the mother bird having been shot on the 27th. I was attracted to them by their plaintive piping and found them almost dead from starvation. While this record of finding the young is a rare one, being, I believe, the first one for this region, both the gentleman who shot the old birds and myself regret the taking of the breeding birds. The group is mounted and in the collection of the writer in the Chicago Academy of Sciences.

*Haliaeetus leucocephalus*. BALD EAGLE. — On the 21st of August, at Millers, I obtained a juvenile Bald Eagle and saw five more which had nested in that locality. Even at this late date they were still in the vicinity of the nest, which I found. This is the second brood of Bald Eagles which have nested at Millers this year, and the record is a rather unusual one, the locality being so near the railroads and the city of Chicago. — FRANK M. WOODRUFF, *Chicago Academy of Sciences, Chicago, Ill.*



## RECENT LITERATURE.

**Elliot's Shore Birds, 2d Ed.** — Our extended notice of this work (Auk, Jan. 1896, pp. 64-66) leaves little to be said now, beyond renewing our felicitations on the success which Mr. Elliot's lending a hand to popularize ornithology has achieved, as witnessed by the call for another edition in a year from original date of publication. The second edition remains substantially the same as the first, though, as stated by the author in his new preface, "the letter press has been carefully examined and the few typographical errors that may have existed in the first edition have been corrected. The kindly criticism, also, of my colleagues on these matters has been of considerable assistance. In the Appendix the Key to the Families has been slightly rearranged, but not changing in any way the definitions." The omnipresence if not omnipotence of the printer's devil is displayed in this new preface, which leaves the misprints *Squaturoloa* and *Helodromus* to be corrected in the next edition of this admirable work, which we expect to see in due course. — E. C.

**Elliot's Gallinaceous Game Birds of North America.**<sup>1</sup> — Seldom are the original and next edition of a book on birds published so almost simultaneously as to reach an active reviewer's desk together, but such is the result of a happy conjunction of authorial and publicational ability in the present instance. We understand that the first edition was exhausted in a month; the second immediately appeared. We believe it is identical, except in the appearance of the explaining words on the title-page, there having hardly been time for sandpapering, even had any places needing that process been observed. The plain form of the book is well made in all its appointments, presenting a very attractive appearance, like most of Mr. F. P. Harper's issues; the large paper copies are sumptuous, almost to be styled luxurious.

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<sup>1</sup> The | Gallinaceous | Game Birds | of | North America | including the Partridges, Grouse, Ptarmigan, | and Wild Turkeys; with accounts of their dis- | persion, habits, nesting, etc., and full descrip- | tions of the plumage of both adult and young, to- | gether with their popular and scientific names. | A book written both for those who love to seek these birds afield with | dog and gun, as well as those who may only desire to learn the | ways of such attractive creatures in their haunts | By | Daniel Giraud Elliot, F. R. S. E., etc. | [Etc. 5 lines of titles.] | With forty-six plates | New York | Francis P. Harper | 1897 | — 1 vol., 100 large-paper copies, numbered and signed by author, roy. 8vo, others Svo., both with rubricated title, 1st and 2nd eds. pub. nearly together, Oct. and Nov., 1897; pp. i-xviii, 19-220, pll. 1-46, and colored charts inside back cover.

After what we have said in 'The Auk' regarding Mr. Elliot's 'Shore Birds,' it will suffice to inform our special clientèle that 'Game Birds' is constructed in precisely the same fashion; the subject is changed but not the mode of treatment, and the two books form companion volumes which every sportsman, and all others whom Mr. Elliot describes upon his title page, will delight to possess. If the present work somewhat outstrips the former one in popularity, it will probably be because more persons go into the dry woods and fields than into the "demnition moist, unpleasant" haunts of the *Limicolæ*. Mr. Elliot is happy in giving a formal didactic treatise, satisfactory to the technical expert, an entertaining turn that will make his reputation as a popular writer. Amateurs can always amuse one another, but it takes a professional who knows a great deal to write for people who do not know much in the way they ought to be written for. What the public ought to want is seldom what that huge blundering collective animal does want; and he is a wise man who knows how to take the creature by the ear and keep out of the way of its business end — its heels.

Thus implying if not expressing all that need be conveyed in general regarding the present work, we turn to some particularities which we should hardly bring up if we were not writing in a journal mainly occupied with technicalities. The Turkey Question which we lately raised (Auk, July, 1897, pp. 272-275) seems to have exercised the author's patience, but he falls in line with our contention that *gallopavo* belongs to the Mexican species, and adopts *sylvestris* for the U. S. bird. This is a point of variance from the A. O. U. Check-List but in strict conformity with the A. O. U. Code; the change must be made in our next edition. We should be sorry to see *M. sylvestris ellioti* disappear from our list, but believe its proper name to be *M. s. intermedia*, for reasons which will be apparent on looking up Sennett's record of 1879. There are, no doubt, too many Ptarmigan in the book; Mr. Elliot says so, expressly, as on p. 149; but by a device which we are hardly free to criticise, because we have resorted to it ourselves too often, such a form as Allen's Ptarmigan is capitally affirmed and textually denied. One who will study the latest British Museum Catalogue of these birds will be inclined to suspect that the A. O. U. list of Ptarmigan is shaky in some other case or cases. We are pleased to find the author agreeing with us (Auk, June, 1897, p. 214) on the generic validity of *Lophortyx*, which the A. O. U. were ill-advised to degrade from its long-accustomed rank. Another good point Mr. Elliot scores is insistence upon the generic distinction between *Dendragapus* and *Canachites* — surely he should know what he meant himself when he founded the former genus more than 30 years ago. As we have remarked elsewhere (Science, July 2, 1897, p. 10), *Dendragapus* was founded for the express purpose of distinguishing certain Grouse from certain other Grouse; and for us to use it for the opposite purpose from that intended by its founder "is simply nomenclatural

hocus-pocus, and as such it is puerile, unscientific, and immoral." We shall long stand disconsolate outside the pearly gates of paradise, like the Peri of oriental allegory, if we try to enter the blessed abode of nomenclatural stability on any such shifty tack as that!<sup>1</sup> In some other respects Mr. Elliot ties fire-brands to foxes' tails and turns them loose in the stubble of bad names on our Check-List, with a cool audacity to be expected by those who know him, and to make him a holy terror, something like the undersigned, to those who mistake misspelling for stability of nomenclature. Baird, for example, could he speak now, would thank nobody for perpetuating his blunder of *Pediocetes*; Mr. Elliot corrects it to *Pediacetes*, uniformly with our 'Key' since 1872, unconformably with our Check-List. Of what use is our obnoxious Canon XL, if it cannot be enforced? Tyros and amateurs, virtuosos and ignoramuses, may respect it, because they know no better; but it is a dead letter to such as Mr. Elliot, who will continue to disregard it with imperturbable severity. We trust that the dignified weight of his example will not be lost upon those who have need to feel its force.

Mr. Elliot's two books, 'Shore Birds' and 'Game Birds,' are, we believe, the first appearance of a veteran technician in the distinctive rôle of a publicist. Their success is assured. We point to the *Anseres* as other suitable subjects upon which to exercise a facile pen, and trust that the work required to complete a trilogy may soon appear. —E. C.

**Gibson's 'Studio Neighbors.'**<sup>2</sup>—The late William Hamilton Gibson, as a reporter with pen and brush of the life-histories of our familiar birds, beasts, and flowers, was without a rival. There have been and are greater writers and more talented artists than he, but in no one man was the gift of observing animals and plants and the power of describing what he saw, both verbally and pictorially, so well developed. His death was an irreparable loss to the cause of popular nature study, a loss with which we are impressed anew as we examine this posthumously published volume of his writings. It is only in part devoted to birds, for in the later years of his life Mr. Gibson's attention was largely given to flowers, but the charm with which he invested his subject is well illustrated here in the chapters entitled 'A Familiar Guest' and 'The Cuckoos and the Outwitted Cow-bird.'

While we must regret Mr. Gibson's premature death, we have reason to give thanks for the legacy he has left us. In addition to the present work,

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[<sup>1</sup> See also Science, July 2, 1897, p. 18. — J. A. A.]

<sup>2</sup> My Studio Neighbors | By | William Hamilton Gibson | Illustrated by the Author | [Seal] | New York and London | Harper & Brothers, Publishers—1898. — 8vo., pp. x + 237. Numerous illustrations.

he was the author of some six others,<sup>1</sup> all containing original observations on the habits of our birds.—F. M. C.

'**Bird Neighbors.**'<sup>2</sup>—This is an interesting addition to the rapidly growing list of bird books, designed to popularize ornithology, by an author whose name was previously unknown to naturalists. It is evident, however, that she understands the needs of the audience to whom her book is addressed, and the key-note of the book is to simplify the problem of identification. This is done by grouping the species treated according to their haunts, characteristic habits, season, and finally color. About a page is devoted to the life-history of each species, and here the author shows that not only has she a practical grasp of her subject but also fully appreciates its æsthetic and poetic sides.

Fifty-one of the species are represented in color by plates which have appeared in the Chicago magazine 'Birds.' They are of special interest as showing the most recent development of the three-color printing process. It is evident, however, that poor taxidermy and lack of taste in composition have combined to furnish originals whose faults the process has reproduced with painful accuracy.—F. M. C.

**The New Birdcraft.**<sup>3</sup>—It is not often a reviewer's pleasure to have a publisher accept his advice in so literal and liberal a sense that its soundness is more than vindicated. We would not claim undue credit for the appearance of this beautiful book in its present form, but so fully does it now meet our ideas of what it should have been that we cannot forbear quoting from our review of the first edition<sup>4</sup> with its inharmonious

<sup>1</sup>'Eye Spy'; 'Sharp Eyes'; 'Strolls by Starlight and Sunshine'; 'Happy Hunting Grounds'; 'Highways and Byways'; 'Pastoral Days'—all published by Harper & Brothers.

<sup>2</sup>Bird Neighbors. An | Introductory Acquaintance | with one hundred and fifty | Birds Commonly Found in the gardens, meadows, and | woods about Our Homes. | By | Neltje Blanchan | with Introduction By John Burroughs | and Fifty Colored Plates | New York | Doubleday & McClure Co. | 1897.—8vo., pp. xii + 234, Colorotype plates, 51.

<sup>3</sup>Birdcraft | A Field Book of two hundred Song | Game, and Water Birds | By | Mabel Osgood Wright—Author of 'The Friendship of Nature,' 'Tommy Anne' | 'Citizen Bird,' etc. | With Eighty Full-Page Plates by | Louis Agassiz Fuertes | New York | The Macmillan Company | London: Macmillan & Co., Ltd. 1897 | All rights reserved— | 8vo. pp xvi + 317; colored frontispiece and 79 full-page half-tones.

<sup>4</sup>The Auk, XII, 1895, p. 283.

colored figures, in criticizing which we said: "We can wish Mrs. Wright's book no better fortune than that in the future editions it is sure to reach, it may have illustrations in keeping with the exceptionally high character of the text"; and no better compliment can be paid to either than to add that this hope has been fully realized. Mr. Puertes's drawings, which so vivify the pages of 'Citizen Bird,' are here reproduced for the most part as full-page plates, which in size are obviously more just to the originals than the smaller text figures of the work in which they first appeared.—F. M. C.

**Dixon's Migration of Birds.**<sup>1</sup>—The 'amended edition' of Mr. Dixon's book, 'The Migration of Birds,' is very different from the original, published in 1892 (*cf.* Auk, X, 1893, pp. 70-73). Many of the theories and statements then put forth with so much confidence are now discarded, the book having been not only, as claimed on the title page, "entirely rewritten," but rewritten from a wholly different standpoint. His views are perhaps still subject to change, as he says that in writing the present book he was compelled to modify his views as expressed in his recent work on 'The Migration of British Birds,' published in 1895, wherein he propounded "a hitherto undiscovered Law of Dispersal." This law he looks upon as his "first *original* attempt to solve the problem of bird migration." Although written with the same confidence in his own conclusions as was the first, the present is a vastly better work, both in matter and method, for he now deigns to give his readers references to some of his sources of information. He also displays much greater familiarity with the literature of the subject, and has evidently greatly profited by works that were quite unknown to him, although previously published, when his first book was written. We miss many of the ideas so strikingly Gätkean met with in the first edition, many of which are now not only discarded, but formally controverted at considerable length. Especially is this the case with Gätke's "assumption" that "young birds migrate absolutely before their parents" (p. 113), where several pages are devoted to a critical analysis of Gätke's evidence.

The author states in his preface: "In some respects the present volume may be regarded as an effort to stem the torrent of mystery which bids fair soon to overwhelm the subject of Migration; to explain its varied phenomena by an appeal to natural laws and to common sense; not by the invocation of esoteric influences and supernatural impulses." Again he says (p. 125): "The effort to increase the mystery of Migra-

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<sup>1</sup> The | Migration of Birds: | an attempt to reduce Avian Season Flight to Law. | By | Charles Dixon. | — | Amended Edition. | Entirely rewritten in accordance with the Author's latest Discoveries and | Views respecting the Subject of Avine Dispersal. | — | London: Horace Cox, | Winsor House, Bream's Buildings, E. C. | — | 1897. — Svo, pp. xix + 426, with 2 maps.

tion seems little short of a fascination with some naturalists, and prominent amongst these, we deeply regret to say, must be included such a veteran and accomplished observer as Herr Gätke, whose anti-Darwinian and anti-evolutionistic views may very probably be responsible for the position which he has taken up with regard to this portion especially [of how birds find their way] of the phenomenon of avine season-flight." Consequently it is not surprising to find many pages devoted to an exposure of the fallacies contained in 'Heligoland,' and an attempt to counteract the undesirable effect of copying as "*ex cathedra*" these "wild speculations," and "startling estimates of the speed at which birds fly," into many popular works on the subject of migration. This lament is doubtless widely shared by thoughtful students of the subject.

Mr. Dixon here offers us, however, a new theory of the origin of migration in birds, all previous theories, in his opinion, proving untenable. The new hypothesis is founded on what he claims "to be a hitherto undiscovered law governing the geographical distribution of species," which he terms "the Law of Dispersal." This law is based on the following assumptions: (1) That there was formerly a vast extent of intertropical land, stretching continuously around the globe, in which life originated and from which life has spread in the direction of the poles. A former extensive antarctic continent, which some writers believe once existed, he considers as having no bearing on the question; from his point of view, the former great extension of land must have been equatorial. The very general belief in the comparative permanence of the principal oceans and land masses, held so firmly by nearly all geologists of high standing, he thinks is without foundation, and that this erroneous view is responsible for the mistaken opinions now so generally held on the subject of the origin and cause of migration. (2) He affirms that the Glacial Epoch could not have been the inducing cause of migration in the northern hemisphere; the belief that species began "to retreat or emigrate beyond the influence of the adverse conditions of existence, as the climate changed and became more severe" is absolutely opposed, he says, by all the facts; in other words, as he repeatedly affirms, an emigration southward to escape the adverse conditions of the advancing ice age, is a myth. There was no movement southward of any species; they were simply exterminated; "the only forms that survived this several times repeated glacial invasion were those whose pre-glacial breeding range extended beyond its influence." The current opinion "that species evacuated their northern homes as the glacial periods came on, and returned to them, more or less modified, as the climate ameliorated," is, in his opinion, "an entirely erroneous interpretation of facts." (3) Migration, he claims, is the corollary of emigration; both are due to an effort to increase the breeding range of the species, and the lines of migration are always along the old routes of the gradual range extension of the species. (4) Spring migration is due

entirely to the impulse to breed. (5) The true home of the species is its winter area, this being also its original centre of dispersal. (6) Autumn migration is thus a return to winter haunts or centres of dispersal, under what he terms a nostalgic impulse, or homesickness; scarcity of food, either present or prospective, decrease of temperature, or any other adverse conditions, have nothing whatever to do with the inception of this autumnal movement.

This is a brief outline of Mr. Dixon's premises and conclusions. An analysis of his evidence shows that they rest mainly on personal 'belief,' and novel assumptions unsupported by any considerable array of facts. He makes repeated reference to his study of "pre-glacial distribution," and to his "investigation of post-glacial emigration," as having convinced him respectively that a southern emigration, or a southern migration, "to escape adverse climatic conditions is a myth," and that "range extension trends in only two directions," namely, from the equator towards the poles. Unfortunately the evidence that has led to these convictions is not disclosed, at least in any formal way.

In discussing his 'law of dispersal,' he says it elucidates "almost innumerable facts of dispersal which have hitherto baffled all attempts to explain them." Among these is the absence of tropical forms in temperate latitudes, etc. It is obvious, however, that the influence of temperature in limiting the dispersal of species is a factor in the problem that has either never occurred to him, or else is one which he chooses to studiously ignore throughout his work.

It is, on the whole, perhaps hardly worth while to take Mr. Dixon seriously, inasmuch as he shows no great knowledge, in the first place, of the elements of the problem he proceeds to treat so confidently, which is no less than the origin of life in general and an explanation of its present geographical distribution; yet, so far as his book shows, he has never thought of it in that light. To him it is simply the migration of birds, which involves incidentally questions of their geographical origin and distribution, although he may be supposed to refer to life in general, especially in speaking of his grand discovery of what he terms the "Law of Life's Dispersal." Birds of course are not to be treated as a group apart from the rest of the animal kingdom, but as subject to the same general laws of dispersal as other animals, and even plants. On this an appeal to the geological record is fatal to our author's grand conceptions, who, though referring often to his "preglacial investigations," gives no evidence of knowing anything of either geological or biological conditions prior to the Ice Period. He is thus free to construct, remove, or transpose continents and seas to suit his hypotheses of bird migration, as well as to assume breeding areas that do not exist, simply because there should be such breeding areas to render his theories of both migration and dispersal in any degree tenable.

It is therefore to be regretted that a work so full of information for the

general reader on the various phases of bird migration should be more or less vitiated throughout by the ill-devised theory which pervades and colors an otherwise praiseworthy book,—a work, in other respects, as regards its general character, far in advance of Mr. Dixon's previous one bearing the same title.—J. A. A.

**Marsh on the Affinities of *Hesperornis*.**<sup>1</sup>—Professor Marsh here reaffirms the correctness of his conclusion, published in 1880, that “the Struthious characters, seen in *Hesperornis*, should probably be regarded as evidence of real affinity, and in this case *Hesperornis* would be essentially a carnivorous, swimming Ostrich.” Authors who had not seen the original specimens, says Prof. Marsh, “seem to have accepted without hesitation the striking adaptive characters of the posterior limbs as the key to real affinities,” till soon “the Ratite affinities of *Hesperornis* were seldom alluded to in scientific literature.” He has remained silent, “leaving to future discoveries the final decision of the question at issue.” This decision, Prof. Marsh thinks, is now on record, Prof. Williston having discovered near the original type locality a remarkably perfect specimen of *Hesperornis*, with the feathers in place, showing that *Hesperornis* had “the typical plumage of an Ostrich.” Reference to Prof. Williston's paper (Kansas University Quarterly, Vol. V, No. 1, July, 1896, pp. 53, 54, pl. ii) shows that there is still ground for a difference of opinion as to the Struthious character of the downy feathers found on the tarsus and head of Prof. Williston's specimen of *Hesperornis*.—J. A. A.

**Stone on the Genus *Sturnella*.**<sup>2</sup>—Mr. Stone's paper has relation mainly to the forms referred to *S. magna mexicana*, the Rio Grande Valley phase of which group Mr. Stone now separates as a new subspecies, under the name *S. m. hoopesi*. This form resembles *magna* in the coloration of the lower parts, it lacking the yellow on the malar region, while the upper plumage is lighter even than in *neglecta*, with the tail bars “more distinct than in any of the other races.” True *S. m. mexicana* thus becomes restricted to southern Mexico and Central America, *S. m. hoopesi* taking its place in the A. O. U. Check-List. The Florida bird, which has sometimes been referred to *mexicana*, Mr. Stone finds is not separable from Louisiana examples, and that these latter differ but little from specimens from southern Indiana and southern Illinois. He considers it therefore inadvisable to separate this Gulf coast phase from *magna*.—J. A. A.

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<sup>1</sup>The Affinities of *Hesperornis*. By O. C. Marsh. American Journal of Science, III, April, 1897, pp. 347, 348.

<sup>2</sup>The Genus *Sturnella*. By Witmer Stone. Proc. Acad. Nat. Sci. Phila., 1897, pp. 146-152.



**The Proper Name of the Western Horned Owl.**<sup>1</sup>—In a paper in 'The Auk' for April, 1896 (p. 153), Mr. Stone proposed the name *occidentalis* in place of *subarcticus* Hoy, the latter being a synonym of *arcticus* Swain., selecting a type specimen from Mitchell Co., Iowa. This specimen, however, proved not to belong to the form he intended to name (see Auk, Jan., 1897, p. 134), and he therefore now renames it *pallescens* (*Bubo virginianus pallescens*), selecting as type an example from near San Antonio, Texas.

With this change the Horned Owls would stand in the A. O. U. Check-List as follows:

- 375. *Bubo virginianus* (Gmel.). Great Horned Owl.
- 375 a. *Bubo virginianus pallescens* Stone. Western Horned Owl.
- 375 b. *Bubo virginianus arcticus* (Swains.). Arctic Horned Owl.
- 375 c. *Bubo virginianus saturatus* Ridgw. Dusky Horned Owl.
- 375 d. *Bubo virginianus pacificus* Cass. Pacific Horned Owl.—J. A. A.

'**Nature's Diary.**'<sup>2</sup>—Under this title Mr. Francis H. Allen has brought together a large number of selections from the works of Thoreau, Burroughs, Torrey, Bolles, Lowell, Hawthorne, Emerson, and others—in all 379 quotations from 14 well-known authors—one or more for each day of the year. Nearly two-thirds of the quotations are from Thoreau, and about one seventh from Burroughs. They relate primarily to birds and flowers, but many are general, or relate to the season rather than to any individual species of bird, beast, or plant. The work is not paged, and has no index. The quotations are printed on the left hand page, two days being allotted to each page, and the right hand page is a "Calendar of the arrival of birds and the first blooming of flowers." The locality to which most of the quotations refer is "the neighborhood of Boston. This will doubtless prove a welcome anthology to lovers of nature.—J. A. A.

**Baskett's 'The Story of the Birds.'**<sup>3</sup>—Mr. Baskett's 'Story of the Birds' does not pretend to tell the whole story but attempts "to present in a

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<sup>1</sup> Proper name for the Western Horned Owl of North America. By Wither Stone. American Naturalist, March, 1897, p. 236.

<sup>2</sup>Nature's Diary | Compiled by | Francis H. Allen | "A minstrel of the natural year." | [Seal] Boston and New York | Houghton, Mifflin and Company | The Riverside Press, Cambridge | 1897 | — 12mo. pp. v + about 190ll., un-paged, with 8 photogravure pll.

<sup>3</sup>Appleton's Home Reading Books | — | The | Story of the Birds | By | James Newton Baskett, M. A. | Associate Member of the American Ornithologists' Union | [Vignette] New York | D. Appleton and Company | 1897—12mo, pp. xxx + 263, with 20 full-page illustrations and numerous cuts in the text.

rather unusual yet popular way the more striking features of their probable development." The chapter headings are too numerous to quote in full, but the following will give an idea of the style of treatment: I, A bird's forefathers; II, How did the birds first fly, perhaps? V, The cut of a bird's frock; VI, About a bird's underwear; VII, A bird's outer wrap; VIII, A bird's new suit; IX, 'Putting on Paints and Frills' among the birds; XI, War and weapons among birds; XIV, Freaks of bachelors and benedicts in feathers; XXIII, Tools and tasks among birds; XXV, A little talk on birds' toes; XXVIII, What a bird knows about geography and arithmetic; XXX, A bird's modern kinsfolk.

Mr. Baskett has treated the various topics relating to birds,—their structure, functions and various adaptations,—in a manner likely to interest the general reader, and for the most part has shown a creditable familiarity with his subject. He has, however, a predilection for hypothesis, and thinks every fact relating to habit or structure should be accounted for, and that even a poor theory is better than no theory at all. A good square admission that there are still some things we do not know is not to be tolerated. In the main, however, our author may be taken as a safe leader, and his little book should do much toward enlightening the general reader about birds and their relation to their surroundings. The last 20 pages consist of notes on birds as seen 'Through the Window Pane' of the author's study. The illustrations are largely from Chapman's 'Handbook of Birds of Eastern North America,' to which they are duly credited in the Publishers' Note.—J. A. A.

**Chapman's 'Bird-Life', Colored Edition.**—In the new edition of Chapman's 'Bird-Life' (see Auk, XIV, July 1897, pp. 336-339) the text has been revised, and the size of the book increased to a full octavo, and the plates enlarged and beautifully reproduced in colors, adding greatly to the value of the work as an aid to the identification of the 100 species thus figured. The publication of 'Bird-Life' in its present form thus well meets the demand for a popular work on our common birds, illustrated with colored plates, at a reasonable price.—J. A. A.

**Montgomery's List of the Birds of West Chester, Chester Co., Pa.**<sup>1</sup>—This is a carefully annotated list of 145 species observed in the immediate vicinity of West Chester, Chester County, Pennsylvania, during the years 1885-91, and 1895-97. Most of the observations were made within an area of only five miles' radius from West Chester, and no species is included in the list which was not either taken by the author or seen by him in the

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<sup>1</sup> A List of the Birds of the Vicinity of West Chester, Chester Co., Pennsylvania. By Thomas H. Montgomery, Jr., Ph. D. American Naturalist, 1897, pp. 622-628, 812-814, 907-911.

flesh. For many of the migratory species detailed records are given of the spring arrivals. The list is thus a welcome addition to an exact knowledge of bird distribution in Pennsylvania.—J. A. A.

**Grinnell on the Birds of Santa Barbara, San Nicolas and San Clemente Islands, California.**<sup>1</sup>—This 'Report' forms the first of a series of papers giving the results of the work of a scientific exploring party to the southern Santa Barbara Islands, sent out by the Pasadena Academy of Sciences, in charge of Mr. Grinnell, and mainly through the generosity of Mr. Halett C. Merritt. It also is noteworthy as forming the first brochure of this young Academy. Mr. Grinnell was assisted in his ornithological work by Mr. Horace Gaylord. The report is based on the field notes of the party and on a collection of 450 birds' skins and many eggs, and consists of four separate lists, as follows: (1) 'The Land-Birds observed [May 13-18] on Santa Barbara Island,' numbering 14 species; (2) 'Land-Birds observed [May 19-26] on San Nicolas Islands,' numbering 9 species; (3) 'Land-Birds observed [May 29-June 7] on San Clemente Island,' numbering 25 species; (4) 'Entire list of Water-Birds observed,' numbering 24 species. These lists are quite fully annotated, and give much interesting information regarding the breeding habits of many of the species observed. One new species (*Pipilo clementæ* Grinnell, described in this journal (Vol. XIV, p. 294), was secured, and it is suggested that the Rock Wren observed on San Nicolas Island is worthy of separation from the mainland bird "as a new species." The trip was made during the interval from May 11 to June 9, but the birds observed on a previous trip to San Clemente, March 26 to April 4, are also included. The notes on several of the Water Birds are of special interest.—J. A. A.

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<sup>1</sup>Report on the Birds recorded during a visit to the Islands of Santa Barbara, San Nicolas and San Clemente, in the spring of 1897. By Joseph Grinnell. 'Publication No. 1' of the Pasadena (California) Academy of Sciences. 8vo, pp. 26. August, 1897.

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## CORRESPONDENCE.

### Habits of the Maryland Yellow-throat.

EDITORS OF 'THE AUK':—

*Dear Sirs:*—If the correspondence pages of 'The Auk' are open to minor matters of this kind, I should like to ask if the note on 'Peculiar Nesting of the Maryland Yellow-throat' by Mr. Walton I. Whitehill<sup>1</sup> in the October issue of 1897 makes a correct statement in regard to the Maryland Yellow-throats of Minnesota when it says "the nests are usually to be found in dense woods far from water." This is certainly diametrically opposite to the habits of this bird in the eastern part of its range, for here in New England I am sure that all observers will bear me out in saying that *Geothlypis trichas* is very rarely and perhaps *never* found breeding at any distance from water.

Yours very truly,

FRANCIS H. ALLEN.

*West Roxbury, Mass.*

### The Fauna of Muskeget Island — A Protest.

EDITORS OF 'THE AUK':—

*Dear Sirs:*—In a recent paper on the Terns of Muskeget Island,<sup>2</sup> Mr. George H. Mackay records the extermination of a family of Short-eared Owls that had established themselves on the island during the summer

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<sup>1</sup>[For WHITEHILL read MITCHELL, Whitehill having been printed through error.—EDD.]

<sup>2</sup>Auk, XIV, pp. 380-390. October, 1897.

of 1896. "I devoted much time in trying to shoot them" he says (on page 388); and in a footnote: "All but one were shot before the close of the season."

All friends of bird protection must recognize with gratitude the work done by Mr. Mackay and his associates in protecting the colonies of Terns and Laughing Gulls on Muskeget—work which can scarcely be appreciated by one who has not seen the teeming life which in summer now covers the barren sand hills of the island. But when bird protection results in the destruction of a family of Owls, which, notwithstanding its numerical insignificance, far outweighs in biological interest the largest Tern colony on the entire Atlantic coast, it is necessary to enter a protest.

The vertebrate fauna of Muskeget may be roughly divided into two groups: 1st, animals which there find conditions essentially normal and similar to those to which they are subjected throughout their range; and 2nd, animals which there find essentially abnormal conditions, that is, conditions which distinctly differ from those to which they are elsewhere exposed.<sup>1</sup> To the first class belong most of the breeding birds, among which may be mentioned: *Sterna hirundo*, *S. dougalli*, *S. paradisæa*, *Larus atricilla*, *Ægialitis meloda*, *Actitis macularia*, *Agelaius phœniceus*, *Sturnella magna*, *Ammodramus caudacutus*, *A. sandwichensis savanna*, and *Melospiza fasciata*.<sup>2</sup> The coast form of the common toad probably belongs also in this category. In the second class we find the two mammals of the island, a Vole and White-footed Mouse, and only one bird, the Short-eared Owl. It is to the members of the second class that the chief interest attaches, because they are rapidly undergoing modification to fit them to the needs of their peculiar environment, while no such process is taking place among the inhabitants of the island that find there their normal surroundings. The process of change has progressed furthest with the Vole, *Microtus breweri* (Baird), which is now so much differentiated as to be readily separable from the wide-ranging *Microtus pennsylvanicus* of Nantucket, Martha's Vineyard and the adjacent mainland. The White-footed Mouse, *Peromyscus leucopus* (Rafinesque), is beginning to undergo a series of changes which if not interrupted will doubtless eventually result in the formation of a new species.<sup>3</sup> A similar process would doubtless take place in the Owls if they were strictly protected and allowed to become firmly established on the island, for the bare glaring sand and scant vegetation among which

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<sup>1</sup> A similar classification could probably be made with the plants, but here the preponderance of the first class would be even greater than in the case of the land Vertebrates.

<sup>2</sup> This list is taken from a summary of the Muskeget fauna published in 1896. Miller, Proc. Bost. Soc. Nat. Hist., XXVII, pp. 79-83.

<sup>3</sup> See Miller, Proc. Bost. Soc. Nat. Hist., XXVII, p. 80.

they are there forced to live, places them in a very different environment from that of the rest of their kind. The importance of a careful historical record of a case like this can scarcely be estimated; and are ornithologists and intelligent bird protectors to be reckoned as one with market hunters and idle gunners in destroying the opportunities for obtaining such data?

That the Muskeget environment is sufficiently potent to produce a recognizable local race of the Short-eared Owl is shown by the former existence on the island of such a form. In his 'Birds of Eastern North America' (1881), Mr. C. J. Maynard says (p. 264): "I had an excellent opportunity of studying the habits of these Owls when camping . . . on the island of Muskeget during the early part of July, 1870. . . . During the first few hours of our visit, we discovered two or three huge nests placed in the tops of this dwarfed shrubbery [beach plum bushes], but could not, at first, make out to what birds they belonged. The island was swarming with three species of Terns, and, after a time, we saw a cloud of these birds gathering around some object which was suspended in air, but the Terns were so numerous that we could not see what it was engaged their attention until it moved onward, when we saw that it was a Short-eared Owl. We afterwards found that there was quite a colony of them on the place; in fact, we secured four or five specimens." On page 263, Mr. Maynard says that these specimens are so bleached as to appear nearly white in the distance. Of course, at so early a period in the summer, this bleaching could hardly have been due to a mechanically abraded condition of the plumage, and indeed Mr. Maynard has personally assured me that such was not the case, but that the birds represented a pale, resident race. This race has long since been exterminated. During my three visits to Muskeget in 1892 and 1893, I searched carefully, but unsuccessfully, for the birds, and am confident that I should have found them were they then on the island.

While the Owls unquestionably destroy many Terns, the latter are now so well re-established on Muskeget that a colony of the former would be no more a menace to their welfare than it was thirty years ago; and by helping to offer direct historical proof of the rapidity at which modification may progress under natural conditions, the Terns would be fulfilling a more important end than in gladdening the eye of the visitor to Muskeget, and the heart of the reader of Mr. Mackay's progress report.

Muskeget is probably only one among hundreds of natural biological laboratories. Ornithologists can do valuable work in preserving the natural conditions in such places; but a great danger is that, under the influence of æsthetic and sentimental considerations, bird protection will become so one-sided as to lose its scientific value.

Very truly yours,

GERRIT S. MILLER, JR.

*Peterboro, New York.*

## NOTES AND NEWS.

AS THESE pages go to press we are in receipt, through the kindness of the publishers, of Miss Maria R. Audubon's 'Audubon and his Journals.'<sup>1</sup> A hasty examination of these sumptuously printed volumes is sufficient to show that Miss Audubon has presented us with a work of fascinating interest to all ornithologists and bird-lovers, and one which must also appeal strongly to the sympathies of the general reader. The story of his romantic life, told briefly in the first volume, is of absorbing interest. Following this are the European, Labrador, and Missouri River 'Journals,' and the 'Episodes,' the latter for the first time collectively reprinted from the first three volumes of the 'Ornithological Biographies.' The illustrations include a dozen portraits of Audubon, most of them heretofore unpublished, and also portraits of his wife, and his sons, John and Victor. There are also views of his mill in Kentucky and of his home mansions in Pennsylvania, besides various camp scenes and previously unpublished sketches of birds, including a pencil sketch of Townsend's Bunting. The geographical and zoölogical annotations by Dr. Coues add further interest to the work.

THE AUDUBON SOCIETY of the State of New York held a public meeting in the large lecture hall of the American Museum of Natural History on the afternoon of December 2. Addresses were made by Morris K. Jesup, President of the Museum and of the Audubon Society; Henry S. van Dyke and Frank M. Chapman, of the Society's Executive Committee; George L. Davis, representing the Superintendent of Schools of the city; and A. S. Bickmore of the Museum's Department of Public Instruction.

Mr. Jesup spoke of the work of the Society and its desire to create a public sentiment against feather wearing which will result in the proper enforcement of the laws protecting birds. Dr. van Dyke made a plea for the birds as "messengers of beauty and good cheer," and referred to their place in literature, concluding his eloquent address with the reading of two original bird poems. Mr. Chapman presented statistics showing the alarming extent to which the traffic in feathers has assumed, and urged, as a means of protecting our birds from wanton destruction, that their æsthetic and economic value be made a part of our common school curriculum. Mr. Davis expressed the willingness of the Board of Education to introduce bird-study in their course of instruction and dwelt upon the elevating and humanizing influence of nature studies, while Pro-

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<sup>1</sup> Two vols. 8vo., illustrated. Charles Scribner's Sons, New York. 1897. Price, \$7.50 net.



fessor Bickmore exhibited a series of slides in illustration of a method by which bird-studies could be taught.

The meeting was attended by about 1000 people, doubtless the largest audience which has ever assembled in this country to listen to addresses relating to bird protection, and the interest and enthusiasm shown were excellent evidences of the appreciation of the importance of this subject.

MR. GEORGE K. CHERRIE has resigned his position of Assistant Curator of Ornithology in the Field Columbian Museum and in October sailed for Bolivar, Venezuela, which he proposes to make the base of explorations in the upper Orinoco region for a period of a year or more.

DR. J. BÜTTIKOFER, so well-known for his ornithological work at the Leyden Museum, has resigned his curatorship in that institution and accepted the appointment of Director of the Zoölogical Garden at Rotterdam. He has nearly completed his report on the ornithological results of the Borneo Expedition, which he accompanied as zoölogist.

DR. OTTO FINSCH, the eminent ornithologist and anthropologist, has been appointed, we are informed, to succeed Dr. Büttikofer at the Leyden Museum.

PROF. R. A. PHILIPPI, for forty-three years Director of the National Museum at Santiágo, Chili, and well-known as an authority on Chilean ornithology, has retired from active work at the age of ninety years, his son succeeding him in the office of Director.

WE HAVE learned of the recent death of two of our Corresponding Members, but no details have yet reached us, — namely, Dr. A. J. Malmgren of the University at Helsingfors, Finland, and Dr. A. von Mojsisovics, Professor of Zoölogy and Comparative Anatomy at the University of Gratz, Austria. Some notice will be taken of their ornithological work in a later number of this journal.

THE FINAL plans for the location of the buildings, ranges, dens, aviaries and other enclosures for animals, and the ponds, walks, roadways, entrances, etc., for the Zoölogical Park in South Bronx Park, New York City, were lately submitted by the New York Zoölogical Society (see *Auk*, XIV, July, 1896, p. 344) to the Department of Parks and approved and adopted by the Park authorities. The Society has raised \$65,000 toward the \$100,000 necessary to receive from the city an appropriation of \$125,000 for laying out the grounds and providing drainage and water supply. The funds provided by the Society—namely, \$250,000 to be raised during the three year limit—are to be applied to the erection of buildings and the purchase of collections. It is a work that may well interest people

residing beyond the limits of New York City. The area allotted to the Zoölogical Park is four times larger than that of the largest zoölogical garden in Europe, and with the care that has been bestowed upon the plans, in order to secure the best results attainable, there is no reason why this country should not in due time be in possession of the best zoölogical garden in the world. It is hoped that the necessary financial support will be given the Society. The annual membership fee is \$10; \$200 constitutes the fee for a life membership; a gift of \$1000 renders the donor a patron, while a gift of \$5000 entitles the contributor to be enrolled as a founder. As neither the influence of the Society nor its work will be local, it is quite fitting that its appeal for financial aid should not be restricted within narrow limits. Persons interested in the work of the Society are invited to apply to the Director, Mr. William T. Hornaday, 69 Wall St., New York City, for copies of the Society's 'Bulletins,' giving reports of progress and plans of the work.

AN EDITION of 1000 copies of the report of the A. O. U. Committee on Protection of North American Birds will be reprinted from the present number of 'The Auk' for free distribution.

Owing to the pressure of business engagements Mr. William Dutcher has been compelled to resign from the chairmanship of the Committee and Mr. Witmer Stone has been appointed in his place. The Committee as now constituted is as follows:

WITMER STONE, *Chairman*, Academy of Natural Sciences, Logan Square, Philadelphia, Penn.

GEORGE H. MACKAY, 218 Commonwealth Av., Boston, Mass.

E. H. FORBUSH, Malden, Mass.

WILLIAM DUTCHER, 525 Manhattan Av., New York City.

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

MRS. JULIA STOCKTON ROBINS, 114 South 21st St., Philadelphia, Penn.

MISS FLORENCE A. MERRIAM, 1919 16th St., Washington, D. C.

DR. THEODORE S. PALMER, Biological Survey, Department of Agriculture, Washington, D. C.

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

MRS. E. IRENE ROOD, 552 Chestnut St., Chicago, Ill.

OTTO WIDMANN, Old Orchard, Mo.

MRS. LOUISE MCGOWN STEPHENSON, Helena, Ark.

LEVERETT M. LOOMIS, Academy of Sciences, San Francisco, Cal.

A. W. ANTHONY, San Diego, Cal.

## REPORT OF THE A. O. U. COMMITTEE ON PROTECTION OF NORTH AMERICAN BIRDS.

By a resolution duly carried at the last annual meeting of the American Ornithologists' Union, the Committee on Protection of North American Birds was authorized to increase its numbers from members of the Society, and by such vested authority the following named persons were added to the Committee, viz.: Mr. Otto Widmann, Old Orchard, Mo.; Mr. A. W. Anthony, San Diego, Cal.; Mr. E. H. Forbush, Malden, Mass.; Mrs. E. Irene Rood, Chicago, Ill.; Mrs. Julia Stockton Robins, Philadelphia, Penn.; Miss Florence A. Merriam, Washington, D. C.; Mrs. Olive Thorne Miller, Brooklyn, N. Y.; Mrs. L. M. Stephenson, Helena, Ark., and Dr. T. S. Palmer, Washington, D. C.

All of the members have been actively engaged during the past year in advancing the work of this Committee in its various channels, and we feel that the very largely-increased interest taken in birds and in their protection has been in great measure the result of these efforts.

While thousands of leaflets have been distributed and column after column has appeared in the public press relative to the frightful cruelty necessitated by the use of wild birds' feathers for millinery ornaments, yet the plea of the great majority of the women who still continue to use feathers is that of ignorance. This is largely due, I think, to an unwillingness to assume an individual responsibility. They are like the Buddhist priest who had been preaching strongly against the use of animal food, although he sometimes ate it himself. In explaining what his religion required in the matter, he said: "I must not have any animal killed that I may eat it, yet if it is served at the table in any house where I am staying, and it is not provided expressly for me, but in the ordinary course of things, then I may eat of it, because then I am not personally responsible for the death of the animal." This certainly is the position that women occupy relative to bird slaughter; most of them know of the cruelty, and not only the cruelty but the injury to agricultural interests, yet they excuse themselves, as did the Buddhist priest, by saying: "The

birds are not killed for me personally; they would be killed at any rate." In other words, unless the wearer has a particular bird killed for her particular use, she will not assume any responsibility. It certainly is a curious inconsistency to visit a church or a lecture room and listen to a discourse on some philanthropic subject and note the extreme sympathy displayed by scores of women, while at the same time their hats are decorated with plumes and feathers that could only have been obtained by acts of the extremest cruelty.

The work is extending so rapidly, and interest is becoming so widespread, that it requires a greater amount of labor and time than the members of the Committee should be called upon to give. In fact, the work has now reached such a stage that, if possible, it should be transferred to some individual who could devote his or her whole time to it. The members of the Committee are all engaged in other pursuits, and therefore find it impossible to devote but a small amount of time to the work, and consequently cannot advance it as rapidly as would otherwise be possible; however, notwithstanding these drawbacks, your Committee feels that the year 1897 closes with an ample reward for the labor bestowed, and sees great cause for congratulation in the very greatly increased interest manifested.

With these few introductory statements, your Committee submits a résumé of the work done in each State.

#### MAINE.

Miss Edith J. Boardman of Brunswick, Maine, reports: "We are just about making an attempt to organize an Audubon Society. Professor Leslie A. Lee of Bowdoin College will assist, and we hope that we will be able to report a full organization in a few weeks. A systematic study of birds has not been introduced into the schools of the State, so far as I know, but occasional talks on birds have been given in the schools, and attempts have been made to call the scholars' attention to the subject, and an hour is occasionally given for recitations about them. No steps have been taken, however, towards establishing a Bird Day."

## MASSACHUSETTS.

Audubon work in Massachusetts has advanced more rapidly and has attained a higher degree of efficiency than in any other portion of the country. The Secretary of the Society, Miss Harriet E. Richards, sends the following interesting statement of the work done by that Society during the past year, and of its present status.

“The Massachusetts Audubon Society began to enroll members February 10, 1896, each person paying one dollar for life-membership, excepting teachers and scholars, who paid twenty-five cents. February 10, 1897, the Directors reduced the membership fee to twenty-five cents, and created two new classes of members, viz., Associates, to pay one dollar annually, and Life Associates, to pay not less than twenty-five dollars at one time. The Associates are to be notified of all meetings and to receive all publications by mail. All the publications are free to members upon application. This plan of membership was inaugurated to induce more people to join as working members, and also to insure a permanent fund. While we realized the need of such a work, we did not know that so much interest would be taken in it by all classes, and so many ways opened to extend it.

“March 15, 1897, the day the new membership fee came into operation, the Society had 1284 members, 358 of which were school members. October 15, 1897, there were 1831 members, 364 associates, and 23 life associates. The Society has 110 local secretaries.

“In response to a Bird Day circular that we issued in March, we received letters from about twenty teachers, telling of the success of the plan in their schools. The past year the Secretary has addressed twenty-two clubs, schools, and societies in the interest of the work.

“We have freely distributed a circular stating the purpose of the society; also the following named leaflets: ‘To the Members’; ‘Hints to Bird Students’; ‘To Save Our Birds’; ‘The Baltimore Oriole’; and a card entitled ‘The Bird’s Christmas.’ Also a Bird Day circular, reprinted from the Journal of Education; Miss Merriam’s ‘How Birds affect the Farm and Garden’; Mr.

Chapman's 'The Wearing of Heron's Plumes or Aigrettes'; 'An Artist's Appeal,' by Abbott Thayer, and many of the Government pamphlets. We have also prepared for sale an Audubon Calendar for 1898.

"In June a law was passed by our legislature to prohibit the use of Massachusetts song birds in millinery. It has been impossible to enforce this law, but its enactment has aroused much interest in the subject, and brought to the Society both friends and enemies.

"We are convinced that there is great need of the work, but are certain that it will take time and much patient, earnest effort to accomplish it, and only by the hearty co-operation of all persons interested in birds can we hope to overcome this long-established but barbarous custom of wearing feathers for ornamentation."

In addition to the work of the Massachusetts Audubon Society, Mr. George H. Mackay, of our Committee, has done exceedingly valuable work, which is detailed in his report herewith attached:

"In submitting my report for the year ending November, 1897, I beg leave to state that the number of things calling for experienced attention during the past year has been unusually large.

"After much thought, I formulated a protective bill for our birds in general, based on investigations made in Washington and elsewhere. This bill was presented in the Senate at the beginning of the session (being bill No. 17). After much preliminary work, under adverse conditions — my own senator and the House Chairman and Senate Chairman of the Fish and Game Committee being antagonistic — I succeeded in getting it through the Committee, and afterwards through the Senate, only to meet defeat later on in the House, in consequence of the influence of cold storage and market men, who were strongly opposed to the bill. The work entailed, under the circumstances, having been considerable, the disappointment was commensurate. I shall try it again the coming winter, which will be the third attempt.

"In order to better carry out certain protective work I have had a Deputy Fish and Game Commissioner appointed for the past two years.

"At the hearings given by the Committee on Fisheries and Game on the nineteen bills which were presented, some of them

with adjournments, I was present and spoke at eleven of them as your representative.

“No seriously-objectionable legislation has been enacted during the past year, and the amount of ornithological information which has been imparted to some of our legislators at these hearings has been considerable, and cannot but result in good. Very late in the Session of 1897 a bill prohibiting the wearing of, or having in possession the body or feathers of, any of our birds now protected by law, was enacted. Although making a long argument in its favor, I doubted its efficiency. Complaint having been made to me regarding the killing of certain small birds near Boston, I made application to the Chief of the District Police, who furnished me with two officers in order to make investigations, but no evidence of sufficient strength to convict was obtained.

“In my last report I referred to a colony of Terns on Penikese Island, Massachusetts, which were in need of protection. I am happy to state that the owners of the island granted me all the authority asked for, and by the time the birds had commenced laying I had, in conjunction with Capt. W. H. Proctor of the Buzzard’s Bay police boat, prepared and put up a number of signs on the island giving warning notices, printed in Portuguese and English, in parallel columns, against the taking of eggs, killing of birds, and trespassing on the island, Capt. Proctor having the island under surveillance during the breeding season. The result has been satisfactory; no eggs in quantity were taken, as has been the custom heretofore. The following letter from Mr. H. A. Homer, one of the two owners of the island, may prove of interest.

“I know of no attempts to gather eggs in quantities. Several parties have been to the island for a few eggs for curiosities, and some for scientific purposes, and they have taken them for such purposes, but only a few by each party. My man at the island lodged one gentleman who had spent a day at Gull Island and on Penikese Island investigating the Gulls: he was up until 11 o’clock that night making notes. I did not learn his name. He reported many dead Gulls, young and old, on the island, but I have failed to see many. A few have been killed by Hawks:

the sheep have trodden a few to death, and some have been crippled. These latter I have put to death, as they never could fly.

“I should judge, taking the number of old Gulls, that there was a greater percentage of young than for years. Old residents of Cutyhunk and the local fishermen say there are more Gulls than ever. Of course their judgment has little weight with me, but having given the matter some attention, I am willing to state that there are more old and many more young Gulls than last year.

“Two weeks ago, before the young could fly, I saw ten in a space about a yard square, and I counted 500 of the young, large and small, on the northern part of the island in a space of about five acres.

“These Gulls, when they begin to move about, walk in the sheep tracks and rest there and will not stir without being kicked out; they are consequently trodden upon by the sheep, and many get crippled in the wings. I made way with fifteen, last Saturday and Sunday, maimed in this way, and I saw more that I could not get, as they made for the water and swam away out of my reach.

“I have no means of estimating the number of young Gulls already on the wing, but there are enough to satisfy any lover of the creature. . . .

“A few Summer Yellow-legs came into the island Sunday but were driven off again by the Gulls, who pursued them in multitudes. Hawks are now also driven away, so that I think there will be a large increase in the Gulls, large enough to suit the desires of their best friends.’

“No decision having been handed down by the Supreme Court of Massachusetts regarding the status of the town of Nantucket and the owners of an undivided part of Muskeget Island, Massachusetts, until Sept 10, 1897, I found myself at the commencement of the breeding season in quite a quandary, especially as at the last moment the former warden was incapacitated for the situation, and another man (a fisherman), without consulting with me, had himself appointed without remuneration. Being somewhat doubtful of the results of such an appointment,



with the aid of a friend in Washington, I had the matter brought to the attention of the Hon. Secretary of the Treasury, as also of the General Superintendent of the Life Saving Service, who considerably granted permission to the Captain of the Life Saving Station on Muskeget Island to serve in the capacity of warden during the two months of June and July (the breeding season of the Terns and Laughing Gulls), when the life saving crew were off duty. In order that the Captain might have the necessary authority to arrest without warrant in this State, I made application that he be appointed a Deputy Fish and Game Commissioner, which application was most considerably granted by the Hon. E. A. Brackett, Chairman of the Commissioners on Island Fisheries and Game. Under this arrangement the birds breeding there have been cared for during the past season. I personally visited and remained in Muskeget and adjoining islands July 3, 4, and 5, 1897, and made, as has been my custom heretofore, a detailed examination of all the breeding ground. I found to my regret that great changes had taken place, especially on Muskeget Island. All the Laughing Gulls had abandoned their old breeding haunt, as had also pretty nearly all the Ternn; of the latter's eggs I did not observe over 100, where on July 8, 1895, I checked off 1280, and where in 1896 I found them too numerous to check off alone. On Gravelly Island, formerly the home of the beautiful Roseates, my especial pleasure and care, I am now compelled to write that this season they are only to be observed in greatly diminished numbers, this island, their particular resort, having been usurped to a large extent by the Common Tern. I find by actual count that the total nests and eggs noted here on July 3, 1897, are below what they were on July 26, 1896. On South Point Island, on July 4, 1897, there were 20 per cent. less nests, and 50 per cent. less eggs than on June 26, 1896. I found about 15 pairs of Laughing Gulls breeding here, and six or eight pairs breeding on Gravelly Island, which are all there are in this neighborhood at the present time.

“Last autumn the United States Government built a new life saving station (the former one having been burned a number of years ago) in the centre of the breeding resort of the Terns and Laughing Gulls on Muskeget Island proper. The occupants of

this station were on duty prior to, and for one month after the arrival of the birds, and probably as a consequence prevented them from using their old haunt for breeding purposes. An interesting question is, Where have these Muskeget birds gone? The figures show a decrease this season for all the other breeding grounds in Muskeget waters. I have not before noted fewer birds since the first few years when private protection was extended to them.

“The coming winter in Massachusetts promises to be as prolific of legislative schemes, good, bad and indifferent, as was last winter, and it requires experienced persons to give their time and attention to the same. I would respectfully suggest that whoever represents your Committee should be empowered by vote at the coming meeting of the American Ornithologists' Union to act for and represent absolutely the society in New England in all matters relating to bird protection and bird legislation. It is clearly impossible to present each matter in detail to the Committee for consideration, for the conditions are constantly changing. I see no other course for the American Ornithologists' Union, if it desires to maintain its present, and advance its future influence.

“In Massachusetts there has been heretofore two powerful factors in bird legislation, especially that affecting game birds, viz., the Fish and Game Protection Association, and the marketmen and cold storage interests. It seems to be acknowledged that a third interest has been added, viz., the American Ornithologists' Union.

“Since spring shooting was prohibited in Massachusetts, Black-bellied Plovers, or Beetle Heads, as the young are called, have continued to increase in numbers, both in spring and autumn. This gain was noticeable in 1890, since which time large gains have been observed. I wish to call the attention of our western associates living in the States of Nebraska, Missouri (St. Louis), and Texas (Fort Worth), that parties there have been for a number of years killing and shipping thousands of Golden Plovers, Eskimo Curlews, and Bartramian Sandpipers in the spring, at the period when these birds are passing northward to their breeding grounds, many of them having eggs in the

ovaries at the time. For over two years I have been endeavoring to get our State law repealed which gives the right to sell the above birds during our close season. I have thus far been unsuccessful, one of the arguments of my opponents being that they will be shipped just the same to other States, and that unless the killing and shipping can be stopped it will prove of no avail.

“ I called attention to this state of affairs several years ago; from that time to the present we have had none of these birds to speak of in New England, for the best of reasons, as it is unreasonable to expect the old birds and their increase to pass by our shore in the autumn on their return migration, going south, if you kill the old birds on the way north to breed. These birds have long since passed the danger mark, and if anything is ever to be done in their behalf, it should be done now.”

Mr. Forbush, of the Committee, joined Mr. Mackay in urging the adoption by the legislature of his bill for the protection of birds, and has also given a large amount of information to speakers who have addressed Women's Clubs and other organizations in behalf of the protection of birds; he has also mailed reports and ornithological matter for use in school work. His own work as Ornithologist to the Massachusetts Board of Agriculture lies principally with the agricultural population, and he has spoken at farmers' meetings on the subject of the usefulness of birds, and has always advocated their protection; he also reports that the Massachusetts Fish and Game Committee has supplied him with notices warning against wild bird shooting, and these have been posted on the land of people who have been troubled by boys and gunners; he also reports that the Metropolitan Park Commissioner of Massachusetts has taken several tracts of woodland and set them aside as public parks, in which no gunning is allowed, and for the past three years the birds have been increasing in these parks. In the Middlesex Fells region, comprising thousands of acres, a large part of which has been seized by the Commissioner, Grouse, Quail, Crows, and Jays have greatly increased. The results of the protection of birds in these forest parks will be watched with interest.

## NEW YORK.

Miss Emma H. Lockwood, Secretary of the Audubon Society of the State of New York, reports as follows :

“The Audubon Society of the State of New York for the protection of birds was organized February 23, 1897, and works in co-operation with the American Museum of Natural History, the President of the Museum, Mr. Morris K. Jesup, being also President of the Audubon Society.

“The Executive Committee believes that the work is essentially an educative work; therefore, to have any permanent result, the establishment of Bird Day in the schools throughout the State of New York, was made a primary principle of the organization. To attain this end the aid of Mr. Chas. R. Skinner, State Superintendent of Public Instruction was enlisted. He wrote a letter, addressed to the principals and teachers of the State, endorsing the work and aims of the Society; this letter was sent, together with a letter from the Chairman of the Executive Committee, and copies of the Society’s prospectus, to 1167 superintendents and principals of schools throughout the rural districts of the State. Circular No. 10, a ‘poster,’ giving the law of New York on bird protection enacted May 22, 1897, was sent to 3611 postmasters in the State, enclosed with a letter from the Chairman requesting that the ‘poster’ be hung in the post-offices under their charge.

“Circular No. 4, ‘The Wearing of Heron’s Plumes or Aigrettes,’ has been widely distributed by other State Audubon Societies, the Massachusetts society ordering over 1200 copies, and subsequently having 1000 additional copies printed under their own seal and heading. This circular has also been used by the Audubon Societies of New Jersey, the District of Columbia, Wisconsin and Iowa.

“The general literature of the New York Society has also been furnished on order from St. Louis, Baltimore, St. Paul, Tacoma (Wash.) and Redlands (Cal.).

“The Society has at present 241 members. The work of the past few months has been aimed directly at the cause of bird protection rather than towards the mere increase of member-

ship; it is hoped, however, that with the help of an efficient local secretary at all the important cities and towns of the State that this Society may soon be placed in the prosperous condition the work demands and deserves.

“The Society has issued the following circulars and leaflets :

- No. 1. Prospectus of the Society, giving its objects and principles.
- No. 2. A circular letter to 150 editors of newspapers in the State. By William Dutcher.
- No. 3. ‘An Appeal to Boys.’ By Mrs. J. A. Allen.
- No. 4. ‘The Wearing of Heron’s Plumes or Aigrettes.’ By Frank M. Chapman.
- No. 5. ‘An Artist’s Appeal.’ By Abbot H. Thayer.
- No. 6. ‘Bird Day in the School.’ Republished from Circular No. 17, of the United States Department of Agriculture, by permission.
- No. 7. ‘Economic Value of Birds.’ By Frank M. Chapman. Reprinted from ‘Bird Life.’
- No. 8. Circular letter of Charles R. Skinner to Principals and Teachers of New York State.
- No. 9. Circular letter of the Chairman, sent with No. 8.
- No. 10. Poster—Extracts from the Law on Bird Protection.
- No. 11. Circular letter of Chairman to Editors, sent with No. 12.
- No. 12. Notice of Work and Aims of the Society, sent to Editors by the Chairman.
- No. 13. Circular letter of Chairman to the Postmasters of the State, sent with No. 10.
- No. 14. ‘Elsie in Birdland,—An Appeal to Girls.’ By Mrs. J. A. Allen  
Of the above circulars 26,767 copies have been distributed.”

In addition to the work done in the State of New York by the Audubon Society, the American Museum of Natural History conducts a department of educational work under the direct charge of Prof. A. S. Bickmore; this is devoted exclusively to the education of teachers in various branches, including the economic and æsthetic value of birds. Large numbers of accurately-colored lantern slides of birds have been prepared for distribution to the public schools throughout the State, thus bringing to the attention of the teachers and scholars, in a most satisfactory and beautiful way, this interesting and popular subject.

The Chairman regrets to report that the large colony of Terns on Great Gull Island, New York, that has been so carefully protected for a number of years, has, during the past season,

been entirely broken up, as the United States Government is now building upon that island extensive fortifications. While no adult birds, so far as learned, have been shot, yet no young birds have been hatched on that island during the past season.

The Chairman, accompanied by the State Game Protector for this district, visited a number of bird dealers in New York City during the past summer to ascertain whether wild birds were being caught and caged; they found a very few in the possession of dealers. Their attention was called to the new law and they were warned that any infraction of the same would be prosecuted.

#### RHODE ISLAND.

In October an Audubon Society was organized, with Dr. Hermon C. Bumpus of Brown University as President, and Mrs. H. T. Grant, Jr., 187 Bowen St., Providence, R. I., as Secretary. It has about 75 members. While they have thought best not to require any pledge from members, nor to especially mention their objection to the use of birds for millinery purposes, yet they feel that the subject is amply covered in Articles II and III of their By-Laws, which are as follows: "The purposes of the Society are declared to be the promotion of interest in bird life, the encouragement of the study of Ornithology, and the protection of wild birds and their eggs against unnecessary destruction. A declaration of sympathy with the objects of the Society shall be a sufficient requisite for membership therein.

#### CONNECTICUT.

Up to the time of making this report, an Audubon Society has not been organized, although considerable correspondence has been had on the subject by your Chairman, and there is every probability of one soon being formed.

#### PENNSYLVANIA.

Mr. Witmer Stone, of our Committee, reports as follows:

"A new game law was passed by the last legislature, which prohibits market gunning or the sale of game shot in the State,

and limits the number of game birds shot by one man in a single day.

“It also forbids the killing, selling, or having in possession any song or wild birds (except English Sparrow, Kingfisher, and some Hawks, Owls, and Herons) as heretofore. In the main, the law is excellent, but as no wardens are provided for, it cannot be as well enforced as it should be.

“The age at which permits for scientific collecting is granted is very properly reduced to 15 years, but the annual fee for the license is raised from one to five dollars, which is a very bad alteration, as many persons who cannot pay this high fee will be induced to collect without a license.

“The Pennsylvania Audubon Society has been active throughout the year, and has enrolled a membership of 2000, besides distributing about 20,000 circulars and pamphlets. The press throughout the State has given the Society cordial support, and has done much to spread its influence.

“Acting upon the suggestion of the United States Department of Agriculture, a bill providing for a Bird Day in the schools was introduced in the last legislature and was passed, only to be vetoed by the Governor.”

#### NEW JERSEY.

Early in the year your Chairman visited Plainfield, N. J., at the invitation of some of its leading citizens, and lectured on the subject of bird protection before a large audience. On the 8th of May, 1897, the Audubon Society of the State of New Jersey was organized, with Alexander Gilbert of Plainfield, N. J., as President, and Miss Mary Abigail Mellick of the same place as Secretary; among its large number of Honorary Vice-Presidents is Governor John W. Griggs and Bishop Scarborough, also the President of the New Jersey Fish and Game Association.

Mr. Witmer Stone, of our Committee, who is also much interested in bird protection in lower New Jersey, reports as follows:

“In New Jersey, where no provision whatever is made for scientific collecting, a new bill was introduced during the year with the object of making such provision, and providing protec-

tion for certain birds not now protected. So many amendments were proposed, however, that it was thought, if passed, it would be worse than the present law, and it was dropped.

“The game wardens of New Jersey, under the direction of Mr. Charles A. Shriner, have done excellent work and have made so many arrests that very little illegal gunning is done, and many birds which are not really protected by the law are unmolested from fear that arrest may follow if they are harmed.

“The Gulls and Terns remain in about the same numbers as last year, but the Clapper Rails show clearly the effects of the enormous slaughter of September, 1896, and the high tides at the nesting season last summer, and have been very scarce.”

#### MICHIGAN.

Mr. L. Whitney Watkins reports as follows: “I am pleased to state that a general feeling of enthusiasm prevails among the ornithologists of Michigan in the observance and enforcement of the laws protecting our native birds from wanton slaughter, and women wear birds upon their hats less than formerly; but here as elsewhere they are the last to think that the poor birds suffer on account of their own selfish vanity. The Michigan Academy of Sciences has appointed Prof. Walter B. Barrows of Lansing, Prof. Dean C. Worcester of Ann Arbor, and L. Whitney Watkins of Manchester, a Committee to advise and formulate better means for the protection of our song and insectivorous birds.

“The Michigan Ornithological Club, through its official quarterly bulletin, to which I have the honor of serving as editor-in-chief, has fearlessly and persistently stood for the protection of birds, and at the next annual meeting of our club we shall, I trust, start a branch of the Audubon Society, regarding which you have already heard from me.

“State Game and Fish Warden, Chas. S. Osborne of Sault Ste. Marie, who, like myself, is a member of both the above-mentioned societies, as well as of the American Ornithologists' Union, has done great good for the cause in the enforcement of the statute respecting our song and insectivorous birds, and in the great



care with which he issues permits for scientific collectors, and bars those who make skins to sell. These permits are usually limited to one or two counties, and to one pair of each species. They run from one month to a year. The Michigan statute reads: 'No person or persons shall at any time or in any manner whatever injure, kill or destroy or attempt to injure, kill or destroy any robin, night hawk, whipporwill, finch, thrush, lark, swallow, yellow bird, blue bird, brown thrasher, cat bird, wren, martin, oriole, sea gull, woodpecker, bobolink or any song or insectivorous bird excepting blackbird, bluejay, English sparrow and butcher bird.' Their nests and eggs are also protected.

"I wish we could get an ornithologist in the legislature., You may depend upon me for anything possible."

#### DISTRICT OF COLUMBIA.

On May 18, 1897, an Audubon Society was organized, with Surgeon-General Geo. M. Sternberg, U. S. Army, as President and Mrs. John Dewhurst Patten as Secretary. In its prospectus particular emphasis is laid upon the fact that if women could only realize the cruelty necessary to obtain wild birds' feathers they would find it impossible to wear any feather to obtain which a bird has been killed; at the present time they have 74 members. The Secretary reports: "We have now in press two good leaflets, and it is proposed to have a circular letter from the Principal of the Public Schools, commending the objects of the Society, and to have a general meeting of the teachers, with a view of arousing their interest in the Society. We desire, if possible, to establish a normal course of ornithology similar to that in botany. I believe there is a growing sentiment in favor of bird protection, and I do not think there is as general use in millinery of wild birds' feathers as there was last season. We have one milliner on our list who has promised not to keep such feathers in stock; the others say they must supply what is demanded. We propose to have a pin for the Society as an especial attraction for children, with whom we feel the greatest work can be done for the future, especially if we succeed in getting a course of bird study in the schools. We do not feel at all discouraged but realize fully that all reforms are very slow."

## ILLINOIS.

Mr. Ruthven Deane, of the Committee, reports as follows: "Since my last report, a year ago, affairs with regard to bird protection have assumed, in most particulars, an encouraging aspect, yet a few statements will show that our Committee and Audubon Societies still have plenty of work to accomplish. One of the most important features since my last report has been the organization of the Illinois Audubon Society on April 1, 1897. While the intervening summer months have scattered many of the officers and working committee, yet much good work has been accomplished. Several leaflets have been distributed, schools have been visited, and some already have adopted a Bird Day, and copies of the game laws have been posted in conspicuous places. At the present date the Society has a membership of 500 adults and 2500 children in the public schools, and has established 14 branch societies. On October 28, the first public meeting was held and was well attended. In the past few weeks I have carefully observed the present style of ornamentation for hats and bonnets; I find that not less than 75 per cent. are trimmed with feathers, but only 25 per cent. are those of wild birds, and in no instance did I detect a song bird. The fall fashions here call eagerly for feathers of our game birds and of several species of our Hawks and Owls, yet there are hundreds of styles made up from the feathers of our domestic fowls and pigeons dyed in all colors of the rainbow. Now as to the aigrette, — I am informed by the proprietor of one of our largest wholesale millinery establishments that the demand for these plumes has been greater this fall than for several years, and that the supply was fully equal to the demand, their aigrette sales this fall amounting to \$5,000. It is very discouraging to learn this fact, as more stress has been laid upon this species than any on the list. The general influence of Audubon Societies is, I am sure, having its effect upon the small boy, and many cases are cited where he now loves and respects the bird, when a short time ago, with blow-gun and sling shot, he persecuted them. The heronries on the Kankakee River, which I reported upon last year, have been unmolested the past season, and the birds have been unusually abundant there. Since

bird protection has been so thoroughly brought before the general public, it has awakened an interest in hundreds who previously were but casual observers, but are now true bird lovers, and look at nature's gifts in a different light than ever before. From my correspondence with the secretaries of your various eastern societies, it is delightful to see what extensive progress they are all making. We must all work to increase our memberships, for the more we can enroll, the greater will be the scope of our work."

In addition to the work done by Mr. Deane and the Illinois Audubon Society, I wish to call particular attention to the excellent individual work done by one of the members of the Union, the Rev. George B. Pratt of Chicago; his example could be followed to great advantage by the members of the Union in other portions of the country. He says in a recent letter: "I addressed 75 women and 50 children the other day on bird protection, and next week I go for four days to a girls' school at Kenosha, Wisconsin, to take classes out for observation; I have done this for three years past, and have reaped splendid results in awakening interest. In connection with my sacred church, God gives me magnificent blessings among the kingdom of the blessed birds.

#### WISCONSIN.

The work in this State has progressed very rapidly and systematically, and is in a more advanced condition than in many of the other States.

Prof. H. Nehrling, an Active member of the Union, reports as follows: "An Audubon Society was founded April 20, 1897, with Mrs. Mary Gifford Peckham of Milwaukee as President, and Miss Madge Anderson of the same city as Secretary. Mrs. Henry F. Whitcomb, one of the Directors, has given bird lectures for three or four years, making protection her main plea, and it is due to her good work, that an Audubon Society could be founded. Like societies have been created in four cities in Wisconsin.

"To Mrs. J. J. Upham, the wife of a former governor, is due the passage of a law for Bird Day, now celebrated in our State, together with Arbor Day.

"The bad small boy still continues to kill birds with his sling shot, and as a rule the police do not stop it; several letters have been written to the Chief of Police in reference to the matter, and also to the Game Warden, asking protection for the birds, but so far without any result.

"A few weeks since the Audubon Society had an exhibition of millinery without birds, except feathers of ostriches and game birds; shortly after this display one of the largest firms in the city announced that they would sell only feathers that were not objectionable. Several of our clergymen have complied with the wishes of our Society and have spoken on the subject of Bird Protection.

"Since my taking charge of the Public Museum, I have made it my special object to interest the schools in our birds and in bird protection; the teachers call upon me frequently in order to obtain information about our more common species. During the last few years 50 sets of birds, comprising nine familiar species, have been mounted and are now used in nature study in the public schools.

"Our present Superintendent of schools is especially interested in this bird work, and he does all he can to make it valuable and pleasant to the children."

A law establishing a Bird Day was passed in 1889, and was amended in 1897, authorizing the Governor to designate and set apart a day each year for its observance. In conformity with the law, Governor Edward Scofield issued the following proclamation:

"I do hereby designate and set apart Friday, April 30 next, as Arbor and Bird Day, and recommend that all public schools, colleges and other educational institutions of the State and citizens generally do observe the same in a proper manner.

"I recommend that the day be devoted to the planting of trees, shrubs and flowers in school grounds and public parks, to the end that these public grounds may be permanently beautified; and I also recommend that in all school and other public exercises held upon that day special attention be paid to our native birds, in order that the children of the State may learn to find pleasure in a knowledge of the habits and characteristics especially of the various song birds, and that there may be cultivated a higher regard for bird life.

" *In Testimony Whereof*, I have hereunto set my hand and caused the Great Seal of the State of Wisconsin to be affixed. Done at the Capitol, in the City of Madison; this 24th day of March, in the year of our Lord one Thousand Eight Hundred and Ninety-seven.

[Seal]

EDWARD SCOFIELD.

By the Governor:

HENRY CASSON, Secretary of State,"

Mr. George A. Morrison, of Fox Lake, gives a very interesting account of the influence of Bird Day on the boys of his town: "Bird Day was observed here this year April 30, in connection with Arbor Day. This was in compliance with an act passed by our last legislature, setting aside a day for the special study of birds and trees in the schools of the State.

"The exercises were held in the college chapel, and all departments of the public school participated. At the close of the program I gave a little talk on birds, their habits, and need of protection.

"For some time previous there had seemed to be a growing interest manifested on the part of a number of the boys in the characteristics and habits of several of our more common birds. This program seemed to awaken them still more, for, in the succeeding weeks, during the spring migration, they often came to my store, asking about the song of some bird they had undoubtedly frequently heard before, but now it was heard in a different way; it had a meaning, and they learned to recognize the songs of several birds. One species with which they became acquainted last winter was the Evening Grosbeak, a little flock of which remained with us from February 13 to April 20, so the boys had ample opportunity to observe the habits of this winter visitor.

"During the nesting season I think there were but few nests robbed, and fewer birds killed just for fun, which goes to show that the small boy, however malicious, can be taught to respect and love the friends of the air, if the right course be taken.

"In the near future I hope to see a society formed here for the study and protection of our birds. This may be accomplished this winter, as several have indicated a willingness to lend their assistance in this movement. I hope to be able to give you a more complete report next year."

## MINNESOTA.

Mr. T. A. Abbott, Secretary of the Minnesota Society for the Prevention of Cruelty, writes: "An Audubon Society has been started and partly organized here, but a full list of officers has not as yet been named, but will be chosen at the November meeting.

"The Local Society for the Prevention of Cruelty has about 400 members, and has had printed and posted in conspicuous places throughout the city and suburbs notices warning all persons against killing wild birds. The study of birds has been taken up in some of the schools in connection with humane societies established among the children, but this is the work of individual teachers and has not as yet been generally taken up, though I hope it will be. No formal or organized effort has been made towards establishing Bird Day in the schools, though certain teachers have attempted to add something in the way of instruction in the exercises of Arbor Day."

Miss Bertha L. Wilson, Supervisor of Nature lessons in Minneapolis, writes: "During the past year we have introduced the study of birds into our public school system; indeed, the primary grades have studied them for several years. Although we have no regular Bird Day, I may say that all the spring days, from Easter on, are Bird Day; then also in the fall. Although we pay more attention to insects, we refer to the migration of birds and speak of them often. I can safely say that many of the teachers, as well as the children, are really interested in this subject. The State law is generally enforced in regard to game birds on their breeding ground, but I think very little attention is paid to the protection of small birds, and I think many useful ones with their nests are destroyed by boys and would-be collectors."

## IOWA.

A great deal of good work has been done in Iowa, principally, however, by individuals, as no State Audubon Society has as yet been formed. Mr. M. H. Leitner of Sioux City, Iowa, wrote in August for the literature of the Audubon Societies, and said: "I am very much interested in the bird questions of to-day. I am

teaching in the schools of Sioux City, and at a meeting of the N. W. Iowa Teachers' Association I will be able to reach one-fourth of the entire State; there were over 1000 teachers in attendance last year. Through the public schools on Bird Day we ought to be able to turn public opinion against the wearing of feathers, wherein death or cruelty is necessary to obtain them."

One of the members of the Union, Mr. Wm. E. Praeger of Keokuk, has done a large amount of excellent work, especially in lecturing in his locality, and also in contributing matter on bird protection to the public press of Iowa. He summarizes the work as follows: "I do not know that an Audubon Society has been started, but I have heard that the subject of bird protection is being agitated in a number of large cities in the State. Fort Madison has the honor of being the first city in Iowa to establish a Bird Day in its public schools; this was in 1896; last May an afternoon was devoted to birds in our Keokuk schools; the observance was a success, and Bird Day will probably be an annual institution here and in other cities of our State. I had the pleasure of speaking twice in public on the subject of bird protection last spring, and I am glad to know that my efforts have been rewarded, not only by the observance of Bird Day, but by the awakening of considerable interest in and sympathy for the birds. This shows itself in many ways. I may mention that a few days since a leading milliner in the town told me that the reduction in the demand for feathers was very noticeable in his business, many ladies refusing to wear them. He also said that if he could only get rid of his present stock he would not be sorry for this, as ribbons and flowers were more easily and profitably handled than feathers."

Miss J. E. Hamand, a member of our Union, of Schaller, Iowa, has also done excellent individual work; she writes: "A local Audubon Society was founded in June of the present year; we have had four regular meetings, and have a membership of 104; we have secured the co-operation of our teachers, who are taking up the work in our schools. *Our milliners gave no bird orders this fall.* I have talked at two County teachers' meetings when 60 or 70 were present; also distributed the United States Department of Agriculture Circular No. 17, with bird leaflets.

“At a District Convention, representing 32 clubs, held at Cherokee, a paper prepared by our President was read and discussed. I then made a plea for our fellow citizens of the air and told of the work of our Society; this was followed by the reading of a poem — ‘A Robin Pie,’ the story was called, as this prompted the poem — and it was found it would make an excellent leaflet, which will soon be published. The following resolution was unanimously carried: ‘Resolved: That this Association is in thorough sympathy with the work of the Audubon Society, discouraging the use of aigrettes and birds for ornamentation, and condemning the cruel destruction of bird life to supply the demands of fashion.’

“Several ladies expressed their determination to organize Audubon Societies in their various towns.

“Permission was obtained from the Superintendent of the Northern Iowa Division of the Chicago and Northwestern R. R. to post the literature of the Audubon Society in the depot; the Chapman aigrette leaflet was framed, and a large number of other leaflets were hung from corners like almanacs. We hope to get a bill through the legislature this coming winter establishing Bird Day in the schools. I also hope to address the County Farmers’ Institute in January, realizing that many farmers have destroyed, through ignorance, their best friends, Hawks and Owls. At that time we hope to have enough of Miss Merriam’s pamphlets to distribute with the Circular No. 54 of the Agricultural Department. We have had cards printed, with sections of the bird laws on them, which were posted in our parks and elsewhere. I am hoping another year we will have a State Society. We feel greatly indebted to the secretaries of the various State Societies for their timely and prompt responses, their suggestions and leaflets and their many encouraging words.”

#### ARKANSAS.

Mrs. Louise McGowen Stephenson of Helena, a member of our Committee, has by her own unaided efforts, aroused a sentiment for bird protection, by her continuous and emphatic appeals through the public press, sufficiently strong to carry successfully



through the legislature a bill which was subsequently signed by the Governor and made a statute March 12, 1897. It is as follows :

“It shall be unlawful for any person within the State of Arkansas to kill, wound or injure any wild bird other than the game birds, or to destroy, disturb or rob the nest of any such bird, or to sell or expose for sale, either dead or alive, any such bird, and it shall be unlawful for any railroad company, express company, steamboat company or other company or corporation, or private person, their agents, employes or servants to have in possession or receive for transportation or carriage or for any other purpose whatever, any such birds or eggs; but this section shall not only apply to English sparrows, crows, blackbirds, hawks, owls, eagles and other bird of prey, nor shall it prohibit any person from killing any such birds on his own premises, when in the act of destroying fruit or other crop.”

In justice to Mrs. Stephenson's excellent work I cannot do better than to give in full the two reports she has made to your Committee. She writes: “How to protect the birds has been with me the subject of grave consideration for many years, and although willing and anxious to render service, I did not see how to go about it until Circular 17, U. S. Agricultural Department, came to me. The plan there suggested seemed a feasible method of popularizing bird protection. Fifty-six of them were sent out September, 1896, with the following circular of my own :

“DEAR SIR:— I enclose a circular with the plea that its subject matter be given careful attention.

“If you recall the fact that there are very few Mockingbirds left in this country to day, you will not only agree something should be done to protect this small remnant, but that the surest way to accomplish that something is to teach the young people to spare the lives of all birds.

“Believing that with your aid, and that of other progressive teachers, we can make Arkansas the Banner State in this line, I beg you will permit me to add your name to the list of those willing to cooperate with Messrs. Palmer and Babcock in their noble work.’

“But two replies were received to these, so from that date personal letters were enclosed, and more circulars were asked for

from time to time. Altogether 114 letters have been sent to residents of 65 Counties on the subject of Bird Day in schools. In about half of these it was announced that an effort would be made to secure favorable legislation during the winter, and those addressed were asked to interest the members from their district in the subject of bird protection. As a result of the interest awakened, in March, 1897, the amendment to the game law was passed. Since that time I have been in communication with the Hunters' Clubs in Arkansas, urging them to join with other friends of the song birds in having the law printed in large type and posted in every post office in the State. Thus far polite answers have been received promising cooperation.

"As to Bird Day in the schools, much interest has been aroused and I trust will result in good. The State Superintendent of Public Instruction called attention to the matter through the public print, and also arranged interesting programs for five consecutive Fridays, beginning with March 26 and ending April 23, which, at my request, he designated Bird Day proper.

"So far as the legislation is concerned, I am aware that little can be hoped for in the way of bird protection unless the law is reinforced by healthy public sentiment. This, in my opinion, can be aroused in no better way than through the medium of schools."

Later Mrs. Stephenson writes: "There are some experiences which are so hopeful in their promise for the future that I venture to send them. Late in September I received a letter from a friend who is the principal of a female seminary in Tacoma, Washington, which ran thus: 'I see in the last report of the National Science Club that you have succeeded in getting Bird Day inaugurated as a regular thing in the public schools in Arkansas. Is it asking too much for you to tell me just what is done on this day and just how it is carried out? I am down for a paper on birds in our club, and as I have no personal observations to report I am trying to get what information I can on the subject that may be of interest?'

"You would smile if you could see the list of questions which she added, since they covered two pages of her letter, but the above is all that seems pertinent. Of course, I answered at once,

and made as many suggestions as I could, as well as enclosing a very comprehensive plan suggested by our State Superintendent.

“The next experience had to do with the articles I am preparing every week, and as you already have copies up to date of the papers which contain them, you will be able to judge how very effectual my clippings may prove. After the first article I met an acquaintance who did not wait to greet me, but exclaimed impulsively: ‘Oh, Mrs. Stephenson, I read your article, and am so glad you wrote it. I never felt like wearing a bird, but did not realize how cruel it was before.’

“The past week, after the appearance of ‘The Cruel Through Ignorance’ article, a fashionable acquaintance said: ‘Those articles you are writing are doing a great deal of good, I know. Why, I took out my last winter’s hat, with its aigrettes and birds, and I could not think of wearing it again after the “As Others See Us” appeared.’

“A friend in a neighboring village told of his boy’s reading it at their Friday exercises in their schools, and that as soon as they had finished, the principal gave the school a genuinely fine lecture on the subject of cruelty toward birds.

“These are little straws, but they help to show how small a wind sets them in motion, do they not?

“These last quotations from a letter would not be made if it were not that the position of the writer makes its promise mean very much; she is a wealthy young lady who supports, as well as teaches in, a Kindergarten in Leavenworth, Kansas, among the poorest class of miners; she knew nothing whatever of birds, but in her anxiety to instill her poor little barbarians with some ideas of mercy, sought to learn about the birds so that she might interest them through her personal observations. She sent for Chapman’s ‘Hand-Book’ and, with opera glasses to aid us, we had many a lovely day with the birds. She said, ‘How I did enjoy my summer, and how much you did for me. But your reward will not come here, unless you count it reward to enthuse one more to bird study.’

“These are all the crumbs which have come back, but I know there must be more, and shall do all I can in every way possible. My efforts to unite with the Hunters’ Clubs for the enforcing of

the law have not resulted in anything save some promises of aid and have helped in interesting other clubs; that was last spring. After a few weeks I shall begin again to claim their attention."

#### MISSOURI.

In Missouri no organized effort has been made, although some individual work has been done. Mr. O. Widmann, of our Committee, reports: "No Bird Day has been established in Missouri, neither do I think that, unassisted by regular teaching, it would be of much more good than creating another half-holiday for the teachers and pupils, something like Arbor Day. Mr. Baskettt made some effort in its behalf in the Missouri 'School Journal' last June, and he says that the press of the State took it up for a little while, but nothing came of it. The introduction of the study of birds in schools has never been discussed anywhere in our State, which does not yet seem to be ripe for such accomplishments. There is no zoölogy taught in our schools, not even in the high schools.

"No attempt has been made toward establishing an Audubon Society, but in the show-windows of the St. Louis milliners, more birds are to be seen on the hats than ever before, and in their advertisements they boast of an immense stock and very low prices. We have certainly bird laws in the State of Missouri, but who ever heard of them? They are good enough as far as they go, though they make bad blunders, as for instance placing the Meadow-larks among the game birds. These bird laws have never been enforced, and nobody pays the least attention to them. In some Counties they try to stop Sabbath shooting; that is about as far as they can hope to get. The hunting itself, and the slaughtering of innocent birds, is such a sacred privilege of the son of this 'land of the free' that nobody dares to interfere. Our colored brothers are especially prominent in the enjoyment of this privilege, and with many of our white as well as colored citizens the right to slaughter is the ideal prerogative of the American and the true exponent of liberty. The acknowledgment of this right to hunt and shoot seems to be universal. Only a few weeks ago a five year old girl was killed by

a negro shooting Meadow-larks on a vacant lot in the city of Kirkwood, a suburb of St. Louis. Nobody thought of prosecuting the negro; it was simply an accident. The negro saw the children, but his excuse was, that he did not know his gun would carry that far.

“What will you do with Bird Days and Audubon Societies among a population which allows negroes to shoot Meadow-larks on city lots, and does not even think of punishing those who carelessly destroy precious human life.

“Finally you ask for suggestions: here is one of a radical nature. Get Congress to put enough taxes on the manufacture and sale of gunpowder to raise its price to at least two dollars a pound, and put a revenue stamp on every shell and cartridge. If the government can control the liquor traffic why not also gunpowder? The one is as bad as the other.”

#### COLORADO.

Early in the year the Chairman addressed a letter to the President of the Woman's Club, Denver, Colorado, asking for the cooperation of that Club to create a sentiment against the use of feathers of all wild birds for millinery purpose. The matter seems to have been taken up by the Colorado Humane Society.

Mrs. Francis B. Hill, the Secretary of the El Paso branch, writes: “The subject of Mr. Dutcher's letter is one that has engaged the earnest attention of this society for several years past; literature on the subject has been generously distributed, and the sympathy of the local press enlisted, which has helped the cause by frequent articles. It has been brought to the notice of the superintendents of all the schools, and this year our society was instrumental in organizing an Audubon Society, of which Mr. F. O. Wood of Colorado Springs is President.”

Mr. Whitehead, the General Secretary of the State Society, writes: “In Denver we have done about what has been done in Colorado Springs except that we have no organized Audubon Society. Two ordinances, copies of which are attached, we had passed last spring, and they are read occasionally in all the city schools with remarkable results.

“ Ordinance No. 29. Series of 1897.

“ Be it enacted by the City Council of the City of Denver :

*Section 1.*—It shall be unlawful for any person within the corporate limits of the city of Denver to have in possession or to make, use, sell or offer for sale, any instrument, toy or weapon commonly known as a pea-shooter, sling or beany, made for the purpose of throwing projectiles by means of elastic rubber cords or bands, or other india rubber parts, by means of springs, or any air gun, whether such instrument is called by any name above set forth or by any other name; and every person convicted of a violation of this ordinance shall be fined in a sum not less than one dollar nor more than twenty dollars for each offense.

“ Ordinance No. 30. Series of 1897.

“ Be it enacted by the City Council of the City of Denver :

*Section 1.*—It shall be unlawful for any person at any time within the corporate limits of the city of Denver to frighten, shoot at, wound, kill, capture, ensnare, net, trap, or in any other manner molest or injure any robin, lark, whip-poor-will, finch, sparrow, thrush, wren, martin, swallow, snow-bird, bobolink, red-winged blackbird, crow, raven, oriole, kingbird, mocking bird, song sparrow, or other song or insectivorous bird; or in any manner molest or injure the nest, eggs, or young of any such bird, or to have in possession the nest, eggs, young, or body of any such bird.

*Section 2.*—Any person violating the provisions of Section 1 of this ordinance, upon conviction, shall be fined in a sum not less than one dollar nor more than fifty dollars for each offense.

“ The daily press will publish anything asked relative to bird protection which is furnished them.”

CALIFORNIA.

In this State we have two members of the Committee, Mr. A. W. Anthony and Mr. Leverett M. Loomis. Mr. Anthony reports as follows: “ A few shipments of plumes have been sent to this port (San Diego), from western Mexico, but I have been unable to learn the extent or nature of the consignment. The milliner who received them denies that any were received; nearly all who handle plumes seem ashamed of the business and anxious to cover their guilt.

“ I did not visit the region of any Heron rookeries last summer,

so I could not learn of any parties who might be killing plume birds. One boat with two men has been in the Gulf of California for two seasons ; I cannot learn the full extent of their slaughter until their return."

Mr. Loomis reports : " The California Academy of Sciences's bill for the protection of birds, before the last legislature, did not reach the stage of final consideration. I was absent at the East, and therefore could not press the matter ; the bill will be introduced again at the next session, over a year hence. Some protection, however, was secured through another bill that was in advance of the Academy's. Fewer Murre's eggs were offered for sale last season than usual ; one large dealer in poultry and eggs, in the Union Square market, told me that he had ceased to handle Gulls' eggs since the Government had prohibited their collection on South Farallon Island, for those obtained from other localities were generally stale when they reached the market. With the passage of a State law prohibiting the sale of wild birds' eggs, the sea birds on this coast will be comparatively free from molestation, except where rookeries are easy of access. I am not aware that any special effort is being made to introduce the study of birds into the schools, or that there is any movement towards forming Audubon Societies other than the one at Redlands."

Your Chairman, in his report of 1896, referred to an appeal that had been made to the Lighthouse Board to prohibit the collection of eggs on the South Farallon Islands by the lighthouse keepers stationed there. I am pleased to state that the Board, in response to our appeal, prohibited in the most positive manner the collecting of eggs by the following order : " The Board directs that all egg and bird business of the kind in question on the Farallon Islands, California, so far as outside parties are concerned, be prohibited ; as to the collection of eggs and birds by the lighthouse employes, you are also directed to take steps for the proper regulation of this matter, subject to the Boards' approval." Signed, Geo. F. F. Wilde, Commander, U. S. Navy, Naval Secretary.

By a further order, dated December 10, 1896, directed to Commander Frank Courtis, U. S. Navy, Inspector, 12th Lighthouse District, the lighthouse keepers themselves were debarred from

collecting eggs under the following order: "The Board desires that the lighthouse keepers shall be prohibited from engaging in the business of collecting or selling wild birds' eggs on these islands, in any form." Signed, Geo. F. F. Wilde, Commander, etc.

At the suggestion of Mr. Anthony, your Chairman addressed a letter to Porfirio Diaz, President of the Republic of Mexico, calling his attention to the fact that white and Indian hunters from the United States were visiting Mexico for the purpose of plume hunting. It was called particularly to his attention that Mexico derived no benefit from the traffic, but suffered a direct loss. No response to this appeal was received, but as it was quite detailed, it no doubt had its effect.

#### NORTH CAROLINA.

Mr. T. K. Bruner, Secretary of the North Carolina Department of Agriculture, attempted in the last session of the legislature to have an act for the preservation of birds passed. The penalties were a little too severe for the temper of the people, so the passage was lost. The next session of the legislature is not held until January, 1899.

In its report for 1896 your Committee stated that it firmly believed that the true solution of the problem would be the education of the children of our schools in every grade from the kindergarten to the college, not only in the æsthetic but the economic value of our birds. They are more firmly convinced that this is the true solution than ever before. Everything points to it as the only means through which the desired end may be attained. It is found to be extremely difficult to convince the great bulk of the adults of the present day of the economic value of birds, and that they should not be destroyed. In a generation it will be possible to so change this sentiment that every adult will recognize the importance of birds as aids in preserving the economic balance of nature.

Miss Merriam, of our Committee, who unfortunately is not able to be present at this meeting, very forcibly expressed her sentiments on this subject in the following letter; it is so earnestly and clearly expressed that I submit it in detail:



“In the days of the old original Audubon Society, I did quite a little work up here [Lewis Co., N. Y.], and got two or three local secretaries for the neighboring villages who secured goodly membership lists.

“With the revival of the work I have tried to bring the people back into line, and in that attempt have had my eyes opened to the value of local work such as we did in those days. In our village nearly *all the members have broken their pledges* and are so utterly indifferent to the matter that the former secretary thinks she could not get them back on the membership list even if the fee were only twenty-five cents. She says they were *never* very much interested, and now care nothing about the subject.

“Now we don't want to repeat this history, and as Chairman of the Protection Committee I look to you to warn our workers from the past and help them to work more wisely in this new movement that promises to go from coast to coast.

“We do not want it to be a passing enthusiasm, but a vital growth. Bird protection must be the outgrowth of *public intelligence* rather than sentiment; this intelligence can be secured by lectures and the wide distribution of *economic* statistics such as the New York Society is sending out, and such as every society should disseminate; and it can also be secured by teaching the school children the interest and value of birds. Make the adults intelligent; interest the children in birds. Bird protection should be like vaccination; as soon as people understood the value of that there was no further question. When people are taught the economic value of birds — that bird destruction is a matter of dollars and cents to them — bird protection will be assured; and when children are interested in birds they will not want to shoot them with sling shots.

“Just here we have a mission, an opportunity which I hope very earnestly you will point out to all the newly formed and forming societies — an opportunity to make our movement *Audubon* work in very fact as in name — to spread the true spirit of Audubon, to implant the love of nature in our children's hearts. Let our Audubon societies be not only for the Protection, but the *Study of Birds*. *Let us work to introduce bird study into the schools along with botany.*

“There is a new and wide-spread interest in Nature Study as a means of observation, etc., in our schools, and in our country schools at least there is every opportunity for bird work. But while bird songs are coming in through the windows, the children’s attention is concentrated upon a *crab*, which inland children may know only through books.

“Country children are peculiarly in need of this bird work. Boys need the guidance of a teacher to give names and point to their own discoveries, to change their egg collecting interest to a *naturalist’s* interest. And girls need the teaching to give them an out-door interest in Nature: they are our future farmers’ wives; more farmers’ wives go insane than any other class — from dearth of interests. Here we have an opportunity to give them something that will lend value and meaning to woods and fields — that will widen their horizons and lighten their drudgery.

“A man was lecturing in Albany this summer on nature work, going from place to place in the State with the avowed purpose of interesting country people in the life about them in order to prevent their exodus to the cities. This is certainly a wise sociological movement, and we have it in our power to help enormously.

“In fact, this Audubon movement in the United States may be an ephemeral enthusiasm, or it may do most important humanitarian work. It may mean nothing, or it may mean great things.

“I would urge wise, broad, philanthropic work by every society that is formed. Specifically, I would say: 1. Let us disseminate economic literature. 2. Let us establish bird work in the schools on a footing with botany.

“To make this bird work possible, we must teach the teachers, and so must aim to establish bird courses in the normal and high schools, have bird examinations part of the Regent’s examinations; every teacher who gets a certificate should have enough knowledge of the subject to teach the children the common birds; field work, of course, should be the basis in every possible case.”

Your Committee has the following recommendations to make to the members of the American Ornithologists’ Union:

1. — That it is the duty of each member to instruct himself as to the economic value of birds by reading all the publications on

the subject, that he or she may be prepared to instruct and interest anyone with whom they may be thrown in contact.

2. — Members should also be prepared and willing at all times to address farmers' institutes, women's clubs, and any other gathering of people where the subject of bird protection and the value of birds to the people can be urged.

3. — Another duty is for members of the Union to urge upon their representatives in their State legislatures the advisability of passing proper laws for the protection of birds, including the so-called birds of prey; this can be done on the ground of their economic value to the agricultural districts if for no other reason.

4. — Members should take every opportunity to talk to educators urging them to teach the children about bird life, and to that end should prevail upon as many teachers as possible to join this society. Could the Union have four or five thousand members scattered throughout the country, largely among the teachers, it would be financially able to have a department devoted exclusively to the furthering of this special work.

5. — Your committee find that the bird laws of the various States are so unlike in their provisions, and in most cases so worthless, that it urgently recommends that it would be advisable to have made a complete compilation of the laws relative to birds throughout the United States.

6. — After such compilation, the Committee further recommends that a draft of a uniform law be made that can be safely recommended for enacting in all portions of North America. This law should, if possible, prevent the transportation by public carriers or individuals from one State to another.

7. — It is further recommended that a uniform law establishing Bird Day in conjunction with Arbor Day be urged for passage in all the States where such a law does not now exist. The very simple but clear law now on the statute books of Wisconsin is recommended as a model. It has been urged that two holidays are objectionable, therefore, as Arbor Day and Bird Day are allied in purpose a law making both observable on the same day is advisable. The following is recommended.

## ARBOR AND BIRD DAY LAW.

*Section 1.* The governor is hereby authorized to set apart each year by proclamation, one day, to be designated an Arbor and Bird Day, and to request its observance by all public schools, private schools, colleges and other institutions, by the planting of trees, the adornment of school and public grounds, and by suitable exercises having for their object the advancement of the study of arboriculture, the promotion of a spirit of protection to birds and trees, and the cultivation of an appreciative sentiment concerning them.

*Section 2.* This act shall take effect and be in force from and after its passage and publication.

8. — Your Committee further recommends that as far as possible uniform circulars and leaflets should be issued by the Audubon Societies; to that end a clearing house should be established and the leaflets and circulars be printed from stereotyped plates, thus securing published matter at the minimum of cost.

9. — Your Committee further recommends that an Audubon badge be adopted and issued instead of certificates of membership. These might be worn and thus serve to remind the Audubon member of his or her pledge, and they would also excite interest in others and thus spread the good influence of the work.

10. — Your Committee further urgently recommends that all permits issued by the proper authorities for collecting birds and their eggs should be absolutely confined to scientific purposes, and that in no sense should they be construed to permit collecting for commercial purposes. And further, it is the duty of all members of the American Ornithologists' Union and members of Audubon Societies to urge this matter upon the authorities issuing such licenses.

Finally, your Committee finds itself in great need of aid in many parts of the United States and calls for volunteers for the work from members of the Union. Such members would be expected to assume the direction of the work in the manner outlined above in territory assigned to them.

Very respectfully submitted,

WILLIAM DUTCHER,  
*Chairman.*

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WITH BOB-WHITE IN MEXICO.

BY E. W. NELSON.

*Plate II.*

WHILE traveling in Mexico a few seasons ago, I arrived at a small town near the southern end of the tableland in the State of Puebla. The first business in hand was to secure suitable quarters for myself and assistant. Having accomplished this I was ready at an early hour the following morning for a tramp into the surrounding country. It chanced to be market day, and passing the outskirts of the town I met a straggling procession of Indians, in picturesque costumes, some driving heavily loaded donkeys, others carrying on their own backs crates of fruits, vegetables, handmade pottery, and other simple wares. All were pushing forward eager to take part in the keenly relished pleasures of petty chaffering, which would enable them to return home with a few *decimos* knotted in the ends of their sashes. Some of the men saluted me with a polite "bueños dias señor," but I noted that their conversation was carried on in the Aztec tongue, as spoken by their fathers centuries ago.

Once free of the last houses a convenient opening in the fence was soon found, and I crossed into a great field which reached for miles down the broad, open valley. Areas covered with wheat and corn stubble indicated the character of the last crops,

while farther away broad belts of brilliant green sugar cane were in vivid contrast to the dry browns and yellows of the general surface. The sun was shining brightly, and the fresh balmy air seemed full of life-giving power. The musical notes of Meadowlarks were heard at intervals, and on one side of the valley flocks of Red-winged Blackbirds were swirling back and forth over some small marshy spots grown up with tules. Through the valley bottom flowed a little stream of clear, sparkling water, which, before reaching the distant shore of the Pacific, runs a wild course through the mountain gorges of Guerrero. Behind me arose the mysterious pyramid of Cholula, crowned by a white walled chapel, which now occupies the place of ancient sacrifice. Over to my right stood the gigantic form of the Smoking Mountain—hoary old Popocatepetl—with the gleaming robe of the White Lady—Iztaccihuatl—shining over his shoulder. In front a sweeping plain descended for many miles through a district of great sugar estates to the far horizon, where it was walled in by the blue front of distant mountains.

Turning to one side I approached some scrubby bushes which appeared to offer shelter for birds or other game. Suddenly the familiar accents of my mother tongue fell on my ear. I listened with bated breath. Again arose in clear, round tones, the calls so familiar in my boyhood days, 'Bob White,' 'Bob White.' With eager steps I hastened forward to a small group of acacias, and there, quietly perched on top of a bush, was an old friend, the author of the notes. It is difficult to describe the mingled pleasure and exultation caused by this unexpected meeting. It proved to be the Puebla Bob-white (*Colinus graysoni nigripectus* Nelson) and during the following days a number of others were seen, and it became evident that my friend of the first morning was one of a colony located in the neighborhood.

Afterwards, during my Mexican travels, I learned that the Bob-whites are widely spread in that country and although many of them have changed the color of their dress more or less, yet their customs and tricks of speech remain much the same as in their northern home.

At a later date during this same season, while working down the eastern slope of the Cordillera in Vera Cruz, near the City of

Orizaba, we found others of the family, known as the Black-breasted Bob-white [*Colinus pectoralis* (Gould)]. They were living in brush-grown and weedy old fields—sometimes straying about the coffee plantations—and were on friendly terms with most of their tropical neighbors. Fortunately, in these parts guns and dogs are few, and mostly harmless, so that Bob's days were generally peaceful and contented. But even here life was not without its cares, for the spotted tiger cats and woolly-haired opossums, with sad lack of consideration, were given to nocturnal raids that filled them with terror and sometimes lessened their numbers.

From Orizaba our wanderings led far away over plains and mountains to the City of Tehuantepec, on the hot lowlands bordering the Pacific coast. There we found our friends again but known as the Coyolcos Bob-white [*Colinus coyolcos* (Müll.)]. They were common, and although their garb had changed considerably, yet their voices and mode of life remained true to the family traditions. Indeed, so fixed are old habits among them that even long association with the suave and politic Mexican has failed to cure Bob of one custom that I often deplored during my youthful days, when, gun in hand, I sought to make his acquaintance. I refer to that abruptness of manner which is shown in such a disconcerting way when one comes upon him in his favorite haunts.

Near Tehuantepec their home is on the partly wooded and partly grassy plains. Old fields and grassy prairies, that extend irregularly amid the scrubby forests of that district, are their favorite haunts. Here the mesquites, mimosas, acacias, cassias, Brazil wood, ebony, mahogany, Spanish cedar, and other tropical trees and bushes, give the landscape quite a different aspect from that which Bob is accustomed to see in his northern home. Old cornfields and weedy indigo plantations are popular resorts and furnish an abundance of food. Brush fences of thorny scrub are built about these fields and serve as fine places of shelter in times of danger. The Quails do not penetrate heavily wooded bottoms along streams, where the moisture causes a vigorous tropical forest growth, unless some farmer hews out a clearing for his cornfields. In these forest belts the Motmots, Trogons, Red-

and-Yellow Macaws, several species of Parrots and other tropical birds abound, and a little farther south troops of spider monkeys are encountered. In many places it is but a few steps from the dense shade of the bottoms, where the harsh screams of the Macaws dominate all other woodland notes, to the borders of grassy prairies where our friends pass their sedate lives associated with Meadowlarks and Sparrows. Throughout this region where deer, peccaries, Tree Pheasants and other game is plentiful, smaller birds are considered unworthy of powder and shot, all of which conduces greatly to peace of mind among the Bob-whites.

While traveling down the coast from Tehuantepec into Chiapas we found them numerous most of the way, and they were a constant source of interest and pleasure. Their cheerful notes were frequently heard from the scrubby bushes near the trail, and the neat, trimly built little fellows carried on their small affairs with little regard for our presence. While riding at the head of the pack train I frequently found them scratching in the sandy trails, dusting themselves or searching for food. At such times it was amusing to note the pretty air of doubt and hesitation with which they awaited my approach before finally moving rather deliberately a few yards to one side, when I came too near. Now and then the male could be heard uttering little querulous notes as if in subdued protest at being disturbed. After entering Chiapas, the coast was left behind and we passed into the interior through a series of beautiful open valleys ornamented with scattered bushes and belts of trees. It was during the rainy season and the vegetation was growing luxuriantly; everywhere were myriads of flowers, and the innumerable plume-like heads of tall grasses nodded gracefully in the passing breezes. In these valleys the Bob-whites were very common. It generally rained during the night, but the clouds broke away at dawn leaving a brilliantly clear sky. We were up and on our way at sunrise, amid the invigorating freshness of early morning, when every leaf and twig bore a pendant water-drop that sent out quivering rays of light with the first touch of the sun. On every hand were new flowers and strange birds. Now and then the Central American Mockingbird, in full-throated ecstasy, poured out its rich song, and over it all, at short intervals, the clear call of 'Bob White'



arose from a bush or low tree. At an altitude of about 3000 feet we passed out of their range and did not find them again until we reached the valley of Comitán, on the Guatemalan border, where their notes were heard. A few miles farther on, just after entering Guatemala, a single female, which proved to be quite different from those taken in Mexico, was brought me by an Indian. This specimen served as the type of the Guatemala Bob-white (*Colinus insignis* Nelson). Beyond this nothing was learned of them in these remote parts.

From Comitán valley we made a long circuit over the Guatemalan highlands and reached the Pacific coast again on the border of Chiapas. There, on some grassy prairies in the midst of the forested coast plain, a few miles back from the sea, we found many Bob-whites of a previously unknown branch of the family.<sup>1</sup> In this vicinity an attempt was made many years ago to establish a large colony of Americans. They came with great flourish of trumpets and large expectations, but the climate did its silent work so effectually that two or three stranded relics were all that remained. Over the desolate sun-scorched flats near by, the same cheery call of the Quail sounded in the ears of the Mexican ox-drivers and muleteers as they carried their cargoes of coffee and cacao to the coast, that I had heard from many a field and thicket over thousands of miles of varied country to the north. Among these sturdy little Americans there appeared no sign of degeneration, and it was pleasanter to meet them than some of my countrymen of a larger growth. So many failures at colonizing people from the north in these hot southern lands had come to my notice that I had become skeptical of its successful accomplishment in any instance; yet here in the tropics were the Bob-whites, essentially a group of the temperate regions, living as cheerfully as possible and upsetting my preconceived ideas.

After passing some time in this district we hired an ox cart one evening and were trundled across the plains to the coast during the cool hours of the night. There, on the sandy shore, we waited ten days for a steamer which finally carried us back to

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<sup>1</sup> *Colinus salvini* Nelson.

Tehuantepec. From this place a railroad crosses the Isthmus to the port of Coatzacoalcos on the Gulf of Mexico, and we took advantage of it to reach the eastern coast. Coatzacoalcos is a curious little town destined to play an important part in the development of southern Mexico and western Guatemala. It is one of the few places in Mexico where small frame houses are the prevailing style and reminds one more of some small mining camp in the Far West than of a seaport on the Gulf of Mexico. Here where yellow fever, malaria, and other ills stalk about according to the season, we heard of howling monkeys, jaguars, tapirs and other tropical creatures with which we still desired to become more familiar. For this purpose we ascended the Coatzacoalcos River about twenty miles to the town of Minatitlan, a place once noted for its enormous trade in Spanish cedar and dye woods. We remained here some days in the midst of the coast lowlands where the tropical forest is interrupted by grassy prairies of considerable extent. In visiting these prairies we were surprised and delighted to find another of the Bob-whites that had not been previously known even to those most familiar with the ramifications of this good old stock.<sup>1</sup> Afterwards we found them a few miles out of Coatzacoalcos, and they were seen a little farther north in the open country about the shores of beautiful lake Catemaco. This latter point is probably near their limit in that direction. The handsome appearance of this unexpected species is shown in the accompanying drawing (Plate II) by Mr. J. L. Ridgway.

The distribution of the Mexican Bob-whites is curious and shows that the family has been long in the land. They range over parts of the cool tableland and extend down to the tropical lowlands of both coasts, but are unaccountably absent from many apparently suitable places.

Many changes have taken place in their garb owing to the influences and requirements peculiar to such varied situations, but the general style is retained so that their relationship cannot be mistaken.

A representative of this group lives in Yucatan which, it is said

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<sup>1</sup> Godman's Bob-white, *Colinus godmani* Nelson.

by some, belongs to the family proper, but if this is so, there must be a bar sinister on its escutcheon to account for some of its peculiarities.

At present eleven branches of Bob-whites are known to live in various parts of Mexico, and our work has enabled us to introduce four of them to the friends of the family. Wherever they were encountered over this great area it was interesting to observe how closely they continue to resemble one another in notes and habits. From the border of Canada to Guatemala they hold true to a general style of speech and manners that always betrays their connection; with the possible exception of the Yucatan branch, of which I am unable to give any definite information.

For the charming qualities and pretty ways of these little friends of the field, I trust their days may be many and their numbers never grow less.

As it is quite possible that some of our mutual friends may have the opportunity to call upon these Mexican connections of 'our Bob,' I have taken some trouble to secure their names and addresses which are given below. The directory is complete, I believe, up to date.

1. *Colinus ridgwayi* Brewster. Ridgway's Bob-white. Sonora; ranging south from the Arizona border. (Between 1000 and 2500 feet above sea level.)

2. *Colinus virginianus texanus* (Lawr.). Texas Bob-white. Northeastern Mexico; Nuevo Leon and Tamaulipas. (From near sea level up to 2500 feet.)

3. *Colinus graysoni* (Lawr.). Grayson's Bob-white. Southern part of tableland; from San Luis Potosi and northern Jalisco to Valley of Mexico. (3000-7500 feet.)

4. *Colinus graysoni nigripectus* Nelson. Puebla Bob-white. Tableland of southern Puebla. (3000-6000 feet.)

5. *Colinus pectoralis* (Gould). Black-breasted Bob-white. Eastern base of Cordillera in Vera Cruz; from Jalapa to Isthmus of Tehuantepec. (500 to 5000 feet.)

6. *Colinus godmani* Nelson. Godman's Bob-white. Lowlands of southern Vera Cruz; probably also ranging into Tabasco. (From sea level to 1500 feet.)

7. *Colinus coyolcos* (Müll.). Coyolcos Bob-white. Pacific coast of Oaxaca and Chiapas; from City of Tehuantepec to Tonala. (From sea level to 3000 feet.)

8. *Colinus atriceps* (Ogilvie-Grant). Black-headed Bob-white. Putla, western Oaxaca. (About 4000 feet.)

9. *Colinus salvini* Nelson. Salvin's Bob-white. Coast plains of southern Chiapas, near Guatemalan border. (Sea level to 500 feet.)

10. *Colinus insignis* Nelson. Guatemala Bob-white. Valley of Comitán in Chiapas, into adjacent border of western Guatemala. (3000-6000 feet.)

11. *Colinus nigrogularis* (Gould). Yucatan Bob-white. Yucatan. (Sea level to 500 feet.)

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## SUMMER BIRDS OF SITKA, ALASKA.

BY JOSEPH GRINNELL.

THE WELL-KNOWN humidity of the Northwest Coast apparently reaches its extreme in the region about Sitka. The temperature is moderate throughout the year, and this, together with the excessive moisture, favors the growth of the heavy coniferous forests which cover almost every bit of land from the sea-level up to the lower limit of the summer snows on the mountains. Every one of the hundreds of small islands which convert Sitka Bay into an intricate network of narrow channels, is densely timbered, even to the water's edge.

However, along the shores, especially at the heads of the numerous inlets where the streams enter the ocean, are narrow strips of shorter vegetation, such as alders and salmonberry bushes. These small tracts of deciduous growth, together with the taller timber immediately adjoining, are the localities most frequented by the smaller land birds. In fact, the dark mossy forests but a few rods back from the coast are almost destitute of bird life.

For the most part the shores are rocky and the land rises directly out of the water, so there are few beaches. Indian River is a swift mountain stream which rises among the snow-capped peaks scarcely ten miles to the northward, and enters the sea a half mile east of Sitka. At its mouth are rather extensive sandy tideflats and bars, which are about the only ones in the vicinity and so form an important attraction to the Waders.

A few of the smaller islands farthest out to sea, are inhabited by water birds. St. Lazaria Island is twenty miles southwest of Sitka, and is the one in this region chosen by thousands of sea-birds as a breeding-ground. It is irregularly shaped, about a quarter of a mile in length by three hundred yards in its broadest part. The rocky sides are broken and precipitous, and are the resorts of the Murres, Guillemots and Cormorants. The island is mostly crowned by a heavy growth of large firs and hemlocks, but around the margins sloping down to the brink of the cliffs there is a rank growth of tall grasses. The Gulls and Puffins prefer these grassy banks as nesting places, while the Petrels' burrows are most numerous within the timbered portion.

My observations in the vicinity of Sitka were continuous from June 8 to August 24, 1896. During that time I collected many birds nearly all of which were summer residents, a few early migrants being taken during the last few weeks of my stay. The present list is the result of these collections and observations, and its value principally lies in the fact that the known geographical and breeding range of several of the species is more or less extended.

No birds are included of which specimens were not taken, so that the identity is correct, so far as I am aware. Pigeon Hawks, presumably *Falco columbarius suckleyi*, were observed on several occasions but were not secured. Also a Duck Hawk was noted. Ptarmigan and Grouse were reported as being common, the former breeding at the snow line on the mountains immediately back of Sitka. All my efforts to obtain specimens, either personally or from the Indians, were unsuccessful. The 'Siwashes' always brought them in with their necks wrung and most of the feathers plucked.

Unless otherwise noted, all specimens were taken in the vicinity of Sitka.

Professor H. H. Hindshaw of the University of Washington, Seattle, who was at Sitka during part of the summer, collected many birds and he has kindly allowed me to use his notes. Credit is duly given him for such as are included in this list.

I here have an opportunity to express my thanks to Mr. Fred Frobese of Sitka for his aid and friendship during my residence

there, and I would recommend him to anyone visiting Sitka as a most hospitable gentleman, and one who will give heartily any needed information or assistance.

Finally, to Mr. Robert Ridgway and Mr. William Palmer of the National Museum, I am greatly indebted for the identification of specimens, and for suggestions in regard to this paper.

1. *Gavia imber*. LOON.—Several seen; the Indians brought them in frequently.

2. *Gavia pacificus*. PACIFIC LOON.—One specimen, a female, was shot June 26, by Dr. Wilber, of the Mission Hospital. It is in full adult plumage.

3. *Gavia lumme*. RED-THROATED LOON.—Prof. Hindshaw took a fine pair of these Loons, together with a single downy young, on a grass-margined pond a few rods back of Sitka. No nest was seen, and the young bird, though apparently only a few days old, was able to dive in the most energetic style. Previously there had been no sign of the Loons about the lake during the day, but every morning and evening one of them would be seen flying to or from the lake, circling high overhead, and uttering its lunatic laugh.

4. *Lunda cirrhata*. TUFTED PUFFIN.—Swarming by the thousands and breeding on St. Lazaria Island. Every grassy bank on the sides of the island were riddled with their burrows. On June 17, these burrows contained fresh eggs, and on July 7, the eggs contained large embryos.

5. *Fratercula corniculata*. HORNED PUFFIN.—Not at all common; 12 were taken at St. Lazaria Island, and but a few others seen. I saw them enter crevices in the cliffs, and in one instance a burrow in a steep bank, among those of the Tufted Puffin. So they were probably breeding.

6. *Cerorhinca monocerata*. RHINOCEROS AUKLET.—Two pairs of these Auks were taken out in the bay on July 21, by my Indian, and several more were seen. The state of the reproductive organs and the bare area on the breast indicated that these birds were incubating, though where, I did not ascertain.

7. *Cyclorhynchus psittaculus*. PAROQUET AUKLET.—A single adult male was taken June 8, by Mr. Frobese, and presented to me. It was the only one seen.

8. *Brachyramphus marmoratus*. MARBLED MURRELET.—Very common about the numerous inlets and bays, and a large series was taken, including several in immature plumage. They were evidently breeding, though, as I learned afterwards, on some islands over thirty miles distant. (See 'Osprey,' May, 1897.)

9. *Cephus columba*. PIGEON GUILLEMOT.—Very common along the rocky shores of the outlying islands. On August 4, these birds seemed about to begin nidification, as they were carrying grasses to nests in

niches under boulders and on the sides of the cliffs. I found no eggs, although many nests were examined.

10. *Uria troile californica*. CALIFORNIA MURRE.—Numerous among the outlying islands. Many nearly fresh eggs were secured on July 28.

11. *Rissa tridactyla pollicaris*. PACIFIC KITTIWAKE.—Common about the inland bays and narrows; although many specimens were taken, not only in immature plumage, but in full adult, none showed any signs of breeding.

12. *Larus glaucescens*. GLAUCOUS-WINGED GULL.—The common Gull of Sitka Bay, and the only one found breeding. The nests were slight hollows in the ground among the tall grass on the higher parts of the islands. These nest-hollows contained a slight lining of dry grasses. Two or three eggs constituted a set. Fresh eggs were found from June 16 to August 4.

13. *Larus philadelphia*. BONAPARTE'S GULL.—One specimen, an immature male, was brought in by my Indian July 21. It was shot out in the open bay and was the only one seen. These small Gulls were very numerous on some parts of the steamer passage from Killisnoo and Juneau, south to Queen Charlotte Sound, August 25-27.

14. *Puffinus griseus*. DARK-BODIED SHEARWATER.—A female was brought in by the Indian on July 15, and another, July 21. He reported seeing several others. They were in the open bay. As far as I am aware, this is the first recorded instance for Alaska.

15. *Oceanodroma furcata*. FORK-TAILED PETREL.—Breeding in considerable numbers on St. Lazaria Island, where on June 17, most of the eggs were badly incubated, and several young were taken. (See 'Nidologist,' March, 1897.)

16. *Oceanodroma leucorhoa*. LEACH'S PETREL.—Breeding in immense numbers on St. Lazaria Island, where the eggs were fresh on

MEASUREMENTS OF *O. leucorhoa* FROM ST. LAZARIA ISLAND.

No. Coll. J. G.	Sex.	Date.	Wing.	Tail.	Forking of Tail.	Tarsus.
1138	♂	June 17	5.70	3.00	.75	.92
1307		July 7	5.75	3.10	.80	.84
1309		July 7	5.85	3.10	.70	.87
1310		July 7	5.85	3.10	.70	.90
1437		August 5	6.10	3.30	.90	.95
1440		August 5	5.90	3.10	.80	.87
1441		August 5	6.00	3.20	.70	.92
1438		August 5	5.75	3.10	.70	.90
1439		August 5	6.10	3.30	.90	.93
1311		July 7	5.60	2.95	.65	.89
Average.....			5.86	3.12	.76	.90

June 17. This Petrel outnumbered the last approximately 5 to 1. (See 'Nidologist,' March, 1897.)

Mr. Palmer, on comparing my Sitka birds with Atlantic specimens, finds the former averaging smaller, but otherwise similar. About half have considerable dusky white at the base of the rectrices.

17. *Phalacrocorax pelagicus robustus*. VIOLET-GREEN CORMORANT. — Breeding abundantly on the more exposed outlying islands. The immature birds and others not breeding remained in flocks about the rocks and reefs further inland. The nests were usually situated on the shelves of rock on the perpendicular sides of the islands. I noted a row of 15 nests in a single transverse crevice on the face of a promontory. The nests are deeply saucer-shaped and compactly made of grass and turf. The eggs are 2 to 4 in number, oftener 3, and resemble other Cormorants' eggs except in size, being on an average considerably smaller. Six selected sets containing the extremes measure:  $2.20 \times 1.38$ ,  $2.08 \times 1.41$ ,  $2.19 \times 1.50$ ,  $2.26 \times 1.46$ ; —  $2.05 \times 1.40$ ,  $2.09 \times 1.39$ ,  $2.17 \times 1.44$ ,  $2.15 \times 1.46$ ; —  $2.13 \times 1.37$ ,  $2.07 \times 1.38$ ,  $2.10 \times 1.37$ ; —  $2.22 \times 1.49$ ,  $2.28 \times 1.43$ ,  $2.23 \times 1.48$ ; —  $2.42 \times 1.47$ ,  $2.43 \times 1.40$ ,  $2.37 \times 1.45$ ; —  $2.52 \times 1.44$ ,  $2.11 \times 1.40$ ,  $2.07 \times 1.42$ . The average of fifty eggs is  $2.19 \times 1.42$ . This Cormorant nests late; a few fresh eggs were taken on July 8, and many slightly incubated, on July 28.

18. *Merganser serrator*. RED-BREASTED MERGANSER. — One shot on August 18, by Professor Hindshaw, and others seen. Young in down were brought in by the Indians early in July.

19. *Aythya marila nearctica*. AMERICAN SCAUP DUCK. — Large numbers in flocks remained all summer among the inside islands. Apparently but a few bred. A juvenile nearly fledged was brought in on July 15.

20. *Histrionicus histrionicus*. HARLEQUIN DUCK. Quite numerous on the most exposed outlying reefs about which large flocks of nearly fledged young appeared by August 5, when many were shot. I saw an adult in June, two or three miles up Indian River, where it was probably nesting.

21. *Oidemia deglandi*. WHITE-WINGED SCOTER. — Common among the outlying islands in flocks of six to a dozen. No young seen.

22. *Oidemia perspicillata*. SURF SCOTER. — An adult male, taken July 28, was the only one observed.

23. *Ardea herodias*. GREAT BLUE HERON. — Frequent along the secluded inland shores. Nearly fledged young brought in July 2.

24. *Phalaropus lobatus*. NORTHERN PHALAROPE. — Arrived August 3, after which it became very numerous about the kelp-beds and tidedrifts out in the bay.

25. *Tringa bairdii*. BAIRD'S SANDPIPER. — Prof. Hindshaw took a specimen August 16, the only one observed.

26. *Tringa minutilla*. LEAST SANDPIPER. — First specimen taken July 2, after which it became common in small flocks on the sandbar at the mouth of Indian River.

27. *Ereunetes occidentalis*. WESTERN SANDPIPER. — First specimens



taken July 6. Soon afterwards common on the sandbars at Indian River.

28. *Heteractitis incanus*. WANDERING TATTLER.—A pair taken on an exposed rocky islet 28 miles south of Sitka on August 4, and two others seen.

29. *Charadrius dominicus*.—AMERICAN GOLDEN PLOVER. An immature male, taken by Prof. Hindshaw on August 16, was the only one observed.

30. *Ægialitis semipalmata*. SEMIPALMATED PLOVER.—Common after July 25, in company with *Ereunetes occidentalis*, on the sand-bar at Indian River.

31. *Aphriza virgata*. SURF BIRD.—Sixteen taken from a flock on a rocky islet on July 21. These were all apparently immature birds, that is, non-breeders of the second year.

32. *Arenaria melanocephala*. BLACK TURNSTONE.—Several taken July 21, and a few others noted occasionally afterwards on the bar at Indian River. Single individuals were quite frequently flushed from the rocky reefs at low tide. The specimens obtained are in slightly worn adult plumage.

33. *Hæmatopus bachmani*. BLACK OYSTER-CATCHER.—Companies of from three to a dozen or more were common on all the exposed reefs and rocks. Broken egg-shells were found in a depression among the pebbles on an islet on June 16.

34. *Accipiter velox*. SHARP-SHINNED HAWK.—Noted on several occasions on the wooded mountain sides. Noisy young were following their parents on August 5.

35. *Accipiter cooperi*. COOPER'S HAWK.—Several seen during the second and third weeks of August. A badly decomposed specimen, the wings and feet of which are saved, was found on the beach August 20.

36. *Accipiter atricapillus striatulus*. WESTERN GOSHAWK.—Mr. Frobese shot an immature male on August 5, and others were seen after that date.

37. *Haliaeetus leucocephalus alascesis*. ALASKAN BALD EAGLE.—Common along the coasts throughout the Sitkan District. The nests were to be seen built in tall fir-trees on nearly every promontory. The young had not left their nests on August 5.

38. *Ceryle alcyon*. BELTED KINGFISHER.—Tolerably common along the coasts after its first appearance, July 28.

39. *Dryobates villosus harrisii*. HARRIS'S WOODPECKER.—A few seen in the scattering timber in the immediate vicinity of Sitka, where they doubtless breed. The only specimen secured was an adult male, on July 4.

40. *Colaptes cafer saturator*. NORTHWESTERN FLICKER.—Noted occasionally about Sitka in the dense forest a mile or more back from the beach. I was informed that both this form and *Colaptes auratus* became quite numerous in the fall. The fancy dance costumes of the Indians were often ornamented with the tail-feathers and wings of both species.

41. *Selasphorus rufus*. RUFIOUS HUMMINGBIRD. — Tolerably common in the more open clearings about Sitka, and along the quiet shores of secluded inlets. A nest containing eggs nearly hatched was found on June 10. It was 5 feet above the ground on the horizontal branch of a small fir.

42. *Empidonax difficilis*. WESTERN FLYCATCHER. — Common throughout the deep forests which border the streams. They remained for the most part in the upper foliage of the tall trees, and consequently were not easily seen, but their characteristic notes nearly always betrayed their presence. A female was taken June 30 which contained an egg ready to be laid. By the first of August the young with their parents appeared about Sitka in the clearings, and were then easily observed. The habits and notes of *E. difficilis* in Alaska seemed to be substantially the same as those of our Southern California birds.

43. *Cyanocitta stelleri*. STELLER'S JAY. — Common along the edge of the timber near the shore wherever I landed. By concealing one's self and imitating their callnote, their curiosity seemingly overcomes them, and they quietly come within a few feet to investigate. In this way I succeeded in collecting a series of 30 birds which are usually very wary and difficult to approach. The first young were taken on July 4.

44. *Corvus corax principalis*. NORTHERN RAVEN. — An abundant and well-known scavenger. It congregates about the streets of Sitka and along the beaches with as much familiarity as Black Vultures are said to do in the South. Although apparently so tame they are extremely cautious and wary, and the mere sight of a gun is sufficient to send every Raven flopping off with loud calls of alarm. I did not learn of its breeding anywhere about Sitka.

45. *Corvus caurinus*. NORTHWEST CROW. — Common on the small islands in the bay, especially so on St. Lazaria Island where the young and eggs of the Sea-birds constituted its staple articles of food. Nearly fledged young were observed on June 17, on that island.

46. *Loxia curvirostra minor*. AMERICAN CROSSBILL. — Flocks of these birds frequented the tops of the tallest firs, where on account of their quietness that may easily escape notice. The six specimens taken are of the small Northwest Coast form.

47. *Junco hyemalis oregonus*. — OREGON JUNCO. — Numerous in the open brushy localities. First juveniles, just out of the nest, taken June 11. This Junco was one of the commonest land-birds about Sitka, and by the first of August had gathered into small flocks which came into town and foraged familiarly about the streets.

48. *Melospiza fasciata rufina*. SOOTY SONG SPARROW. — Tolerably common in the brushy or grassy margins of the forests along the beaches. They were most numerous on St. Lazaria Island in the tall grass which grows so luxuriantly on portions of the island. Fully fledged young were taken on July 7.

49. *Melospiza lincolni*. LINCOLN'S SPARROW. — Two or three pairs

bred in the grassy margins of the pond back of Sitka. A juvenile about one third grown was taken on June 25. It was hidden in the matted grass, and was discovered by following the call-note, which was a ventriloquial, insect-like chirp, hard to locate. A single adult bird was secured, a female, on June 25. In a letter to Mr. Palmer, Mr. William Brewster writes concerning this specimen:—

“Your Lincoln’s Sparrow from Sitka, Alaska, agrees closely with my types of *M. c. striata* in respect to the streaking of the upper parts, but it is less olivaceous and the buffy is less rich and deep. Making due allowance for seasonal and individual variation, I should think it not improbable that it may represent the breeding plumage of *striata*, but it would be of course unsafe to assume this positively on the strength of a single specimen.”

50. *Passerella iliaca unalascensis*. TOWNSEND’S SPARROW.—Common in tall grass on St. Lazaria Island, where half-fledged young were observed on June 16. The song of this Sparrow is very musical, being loud and full like that of a Grosbeak, and yet with the intonation of a Song Sparrow.

51. *Chelidon erythrogastra*. BARN SWALLOW.—Breeding abundantly about town under the eaves of buildings; a few pairs found nesting on cliffs on the islands out in the bay.

52. *Tachycineta bicolor*. TREE SWALLOW.—Breeding commonly in old woodpecker holes in the tall dead firs at the foot of the mountains back of Sitka. Full-grown young with their parents appeared along the beaches by July 15. Soon after, they gathered in small flocks and were not seen after August 1, having evidently migrated.

53. *Helminthophila celata lutescens*. LUTESCENT WARBLER.—Tolerably common about clearings, and in the low growths of firs which border the beaches at the mouths of the streams. The males were in full song until the last of July. Full grown young observed on August 17.

54. *Dendroica æstiva rubiginosa*. ALASKAN YELLOW WARBLER.—A single adult male taken June 23, and a few others heard previously in the dense firs along Indian River.

55. *Dendroica townsendi*. TOWNSEND’S WARBLER. A single adult female taken August 14, and two others seen at the same time. They were in company with a flock of Chickadees and were rapidly hunting insects towards the extremities of fir boughs. They were probably migrants.

56. *Sylvania pusilla pileolata*. PILEOLATED WARBLER.—An adult male was taken on August 18, and several others, including juveniles, seen on August 21. They were in low brush along the shores of a secluded bay where they had probably bred.

57. *Anthus pensilvanicus*. AMERICAN PIPIT. A pair seen on a grassy tideflat beyond Indian River on June 10, and the female secured. From the condition of the ovaries, I judged that it would have laid eggs within a week.

58. *Troglodytes hiemalis pacificus*. WESTERN WINTER WREN.—Tolerably common in the more open forests, particularly where there was much recently-fallen timber. Especially numerous on St. Lazaria Island where their clear sprightly songs constantly uttered, seemed scarcely in accord with the harsh cries of the thousands of Sea-fowl.

59. *Certhia familiaris occidentalis*. CALIFORNIAN CREEPER.—Seen only in the tall timber along Indian River where I secured six specimens and saw several others. On July 2 took two scarcely fledged juveniles, apparently just out of the nest.

60. *Parus rufescens*. CHESTNUT-BACKED CHICKADEE.—Common everywhere, especially in the younger firs at the heads of the bays and inlets. First young fully fledged, taken June 26.

61. *Regulus satrapa olivaceus*. WESTERN GOLDEN-CROWNED KINGLET.—Common everywhere, particularly in the dense fir thickets along the streams. On June 22, I observed the first young. On that date, as I was carefully picking my way through a clump of firs, I chanced upon six of these mites of birds sitting in a row close together on a twig; but when one of the parents appeared and discovered me, her single sharp note scattered them in all directions with a chorus of squeaks, and then in a moment all was quiet and not one to be seen, although all were probably watching me intently within a radius of ten feet. The call-notes of these Golden-crests resemble closely those of the Creepers.

62. *Regulus calendula grinnelli*.<sup>1</sup> SITKAN KINGLET.—This Kinglet was not very common, and I only observed it along Indian River in the tract of tall firs. Their beautiful song could frequently be heard during June and the first part of July from the upper foliage of the dense fir-trees, where the birds were exceedingly hard to locate. I saw them in pairs on two occasions, but I secured no young. This Kinglet doubtless breeds, though not in abundance. Three adult males were secured.

63. *Turdus ustulatus*. RUSSET-BACKED THRUSH.—Tolerably common along Indian River and on some of the small islands in the bay. No young were obtained but they certainly breed. Their beautiful songs were heard until the middle of July.

64. *Turdus aonalaschæ*. DWARF HERMIT THRUSH.—Very common everywhere, especially on the small wooded islands. At low tide they were frequently to be seen feeding among the kelp and rock-weed along the shores. The first young were taken July 2, and young only half-fledged were taken on August 15. The song of this Thrush is most exquisite. Mr. Palmer informs me that one of my specimens approaches *T. a. auduboni* quite closely.

65. *Merula migratoria propinqua*. WESTERN ROBIN.—A few adults were observed throughout the summer among the more open parks three or four miles inland from Sitka along Indian River. Several large flocks of juveniles appeared on July 25, and were thenceforth common.

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<sup>1</sup> Wm. Palmer, Auk, XIV, Oct. 1897, p 399.

66. *Hesperocichla nœvia*. VARIED THRUSH. — Tolerably common in the deeper woods; first young, scarcely feathered, taken on July 2. By August 1, the young began to gather in considerable numbers and together with the Robins and other Thrushes were feeding on the blueberries.

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## THE SUMMER BIRDS OF THE WEST VIRGINIA SPRUCE BELT.

BY WILLIAM C. RIVES, M. D.

THE portion of the mountain region of the Virginias to which the present paper relates, is spoken of in the following terms in an amusing sketch in 'Harper's Magazine' for December, 1853 (Vol. VII, p. 18). "In Randolph county, Virginia, there is a tract of country containing from seven to nine hundred square miles, entirely uninhabited, and so inaccessible that it has rarely been penetrated even by the most adventurous. The settlers on its borders speak of it with dread, as an ill-omened region, filled with bears, panthers, impassable laurel brakes and dangerous precipices. Stories are told of hunters having ventured too far, becoming entangled, and perishing in its intricate labyrinths." Its features are also depicted in a volume called 'The Blackwater Chronicle' (New York, 1853), which treats of a hunting trip to the locality in question, and a brief allusion will be found in 'Picturesque America,' Vol. I, pp. 390, 391. It is now partly within the limits of Tucker County, and forms, or we shall soon be obliged to say formed, a part of the black spruce belt of West Virginia. "It is probable," says Major Hotchkiss, an authority on the natural resources of the Virginias, "that nowhere in the United States are now existing denser forests than those of black spruce in the belt of country, more than 100 miles in length and from 10 to 20 in breadth, that extends through Greenbrier, Pocahontas, Randolph and Tucker Counties. Only the northern end of this vast spruce forest has been penetrated by railways, the

West Virginia Central and Pittsburgh R. R. being the only one that has yet really entered into it."

The region of spruce thus described, consists of a lofty plateau lying almost exclusively to the west of the main Alleghany range, varying in altitude from 2500 to 3000 feet and traversed in a general northerly and southerly direction by various mountain ridges five to fifteen hundred feet higher, the maximum elevation above sea level being about 4700 feet. It contains in its northern portion the sources of the Cheat and North Branch of the Potomac Rivers and in its southern, the head waters of the Greenbrier, a branch of the New River.

The area of which in particular I speak is drained by the Blackwater River with its tributaries, which rising in the so-called Canaan valley flows tranquilly at an unusually high altitude for nearly a dozen miles, with a fall of probably not more than one hundred and fifty feet in that distance, until reaching the steep western edge of the plateau it plunges swiftly downwards to enter the Dry Fork of Cheat River. The sources of the Blackwater and of the North Branch of the Potomac, it may be remarked, are separated by an almost imperceptible difference of level. This section of the country maintained its primitive wildness until about fifteen years ago, when the West Virginia Central and Pittsburgh R. R. penetrated its forests and the town of Davis was established at the junction of Beaver Creek with the Blackwater, not far from the picturesque falls of the latter stream. In company with Mr. Bancel LaFarge I spent the period from June 4 to June 12, 1891, at Davis, finding the general aspect similar to that of Maine or northern Wisconsin, rather than in accordance with one's preconceived ideas of a southern State, and the avifauna, as might have been anticipated, markedly Canadian and Alleghanian in character, whereas in most other parts of the Virginia mountains, where the above faunæ exist, we usually find them overlapped by the Carolinian. No one, however, who now visits the Blackwater country will find a region of exclusively virgin forests such as is described in the writings to which I have referred. Saw-mills, tanneries, pulp mills and lumber camps stand where the timid deer formerly came to slake its thirst and the ponderous and unwieldy bear found an unmolested abode,

and it is for the most part requisite to travel for many miles from the railway to find a place to which the wood cutter has not yet penetrated.

With Dr. William C. Braislin, I revisited Davis last summer, staying from June 9 to June 15. The destruction of timber which had already begun before the time of my first visit had progressed with startling rapidity, during the six years that had elapsed, and instead of the more or less unbroken sea of green tree tops formerly visible, the eye now rested upon a country disfigured by prostrate logs stripped of their bark, misshapen and unsightly stumps, and dead trees blackened and destroyed by fire. Railways for getting out the timber, or tramways as they are locally designated, have been forced into the heart of the woods in several places and the spruce cut down for many miles. The Beaver Creek Railway starting from Davis has now, I believe, been constructed for as much as eighteen miles, and a wide belt of timber on each side removed. In a few directions, however, it is still possible to reach the forest from Davis without great difficulty, the nearest point being about a mile and a half. These forests which are being thus so rapidly removed, consist principally of black spruce, hemlock and birch, the spruce being valued for its timber and the hemlock mainly for its bark. They are very dense and contain trees of magnificent proportions, while they are rendered practically impassable wherever it occurs, by the laurel (*Rhododendron maximum*), which covers abundantly the extremely rough and uneven surface of the ground and forms continuous 'brakes' of great extent. The earth beneath is often carpeted with moss and lycopodiums, but with the exception of the *Oxalis acetosella* and an occasional trillium, no great variety of flowering plants was observed. The forests of evergreens do not, however, appear to occupy the country exclusively. A half mile or so to the north or northwest of Davis, the spruce seems to end and deciduous trees to be found, and we were told of the existence of beech woods, mention being also made of 'glades' comparatively open, in a south-easterly direction towards the Canaan valley. In the streams of this region, trout are to be taken in numbers, but the various mills at Davis have destroyed the fishing in the Blackwater below the town, and it is necessary to go some dis-

tance to its head waters, to catch them. Among the mammals showing the northern character of the fauna, the Red Squirrel (*S. hudsonicus*) is commonly found. As the timber is being cut out, a corresponding change is taking place in the avifauna; many of the Warblers and other Canadian birds have naturally disappeared and the cleared land has been occupied in their stead by Towhees, Song Sparrows, Catbirds, House Wrens and other birds of the more open country, while the dead timber is very congenial to Woodpeckers, so that there was a marked alteration in the distribution of the birds in the vicinity of the town, between my first and second visits. The Snow Birds, however, were evidently little affected by the changes and were as abundant in the cleared land as in the forests.

In exploring the country in search of birds, particular attention was devoted to the spruce forests, as likely to be the special home of the Canadian fauna, and time employed in searching the other woods would doubtless have been rewarded by finding there some additional species. Almost all of the birds were excessively shy; the song of the Winter Wren constantly trilled forth from the depths of the rhododendron thickets, but the tiny songster himself was seldom seen, and though the notes of the Magnolia and other Warblers were frequently heard, it was often a most difficult achievement and necessitated straining one's neck to the utmost, to get a sight of these interesting little birds, as they flitted from one lofty tree top to another. I append a list with brief notes, of the different species observed.

1. *Aythya affinis*. LESSER SCAUP DUCK.—On June 11, Dr. Braislin obtained a Duck from a young man who told us it had just been shot on the Blackwater River. It proved to be a Lesser Scaup, female. In this connection it is of interest, as Dr. Braislin has pointed out to me, that Mr. W. E. Clyde Todd has found this species in the breeding season in Western Pennsylvania.

2. *Actitis macularia*. SPOTTED SANDPIPER.—One or two noticed along the Blackwater.

3. *Bonasa umbellus*. RUFFED GROUSE.—Said to occur in the neighborhood. Reported to have been seen during our stay last summer.

4. *Cathartes aura*. TURKEY BUZZARD.—Two were seen June 10, 1897, if we were not mistaken, in the distance high in air. The rarity of this bird was especially noticeable.

5. *Dryobates villosus*. HAIRY WOODPECKER.—Not uncommon.



6. *Dryobates pubescens*. DOWNY WOODPECKER.— Only observed once or twice.

7. *Sphyrapicus varius*. YELLOW-BELLIED WOODPECKER.— A fine male specimen was taken by Dr. Braislin, June 12, 1897.

8. *Ceophlæus pileatus*. PILEATED WOODPECKER.— Known to the residents of the region under the name of Woodcock. None, however, were seen during either of my visits.

9. *Melanerpes erythrocephalus*. RED-HEADED WOODPECKER.— Apparently not uncommon in the clearings.

10. *Colaptes auratus*. GOLDEN-WINGED WOODPECKER.— One or two noted.

11. *Chordeiles virginianus*. NIGHTHAWK.— A few seen at evening.

12. *Chætura pelagica*. CHIMNEY SWIFT.— Occasionally observed.

13. *Sayornis phæbe*. PEWEE.— Only once or twice noted.

14. *Contopus borealis*. OLIVE-SIDED FLYCATCHER.— One or two pairs were observed along the Blackwater River in June, 1891, apparently breeding. None seen last year.

15. *Contopus virens*. WOOD PEWEE.— The notes of this species were heard on one or more occasions.

16. *Cyanocitta cristata*. BLUE JAY.— Occasionally to be met with. Not uncommon.

17. *Corvus corax principalis*. NORTHERN RAVEN.— We saw on several occasions, last June, and heard the hoarse notes of birds which we had little hesitation in referring to this species, and though, as far as they were concerned, we may perhaps be said like Mr. Torrey, who has lately described<sup>1</sup> so pleasantly his experiences 'In Quest of Ravens,' to have brought back with us, strictly speaking, only interrogation points, yet I think our identification was undoubtedly correct. The bird, moreover, seemed to be well known to the dwellers in those parts, who informed us that there were no Crows in the region. This agrees with Mr. Brewster's observation that the two species do not occur together in the North Carolina mountains. The Ravens, we were told, came to the slaughter houses morning and evening for food, but as we were not quite so confident of the regularity of this habit as our informant, we did not test the accuracy of his knowledge, in the short time at our disposal. I think that I also saw Ravens on my former visit in 1891.

Mr. Kirkwood, in his 'List of the Birds of Maryland,' mentions, on the authority of J. H. Fisher, Jr., that during Christmas week, 1892, about 20 were seen at Bayard, W. Va., but that they could not be approached within rifle shot. On Dec. 6, 1893, several were seen at the same place. Bayard is a comparatively short distance north of Davis, at a somewhat lower elevation.

18. *Quiscalus quiscula æneus*. BRONZED GRACKLE.— Three observed together on June 12, 1897, one of which was taken by Dr. Braislin, and

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<sup>1</sup> Atlantic Monthly, June, 1897.

proves on further examination to be, in some degree, an intermediate and not quite typical.

19. *Spinus tristis*. AMERICAN GOLDFINCH.—Several were seen in the open on June 12, 1897.

20. *Passer domesticus*. ENGLISH SPARROW.—Common about the town of Davis.

21. *Spizella socialis*. CHIPPING SPARROW.—Not uncommon.

22. *Spizella pusilla*. FIELD SPARROW.—The notes of this bird were recognized by Dr. Braislin.

23. *Junco hyemalis carolinensis*. CAROLINA JUNCO.—Abundant everywhere; this and the Song Sparrow were the most numerous species observed. Birds from this locality approach the southern form of Junco more nearly than some of Dr. Dwight's Pennsylvania specimens, which he kindly showed me, and in fact appear to be decidedly *carolinensis*.

24. *Melospiza fasciata*. SONG SPARROW.—Abundant throughout the cleared land, in the underbrush.

25. *Pipilo erythrophthalmus*. TOWHEE.—Rather common in the clearings.

26. *Progne subis*. PURPLE MARTIN.—Last season, three or four pairs occupied Martin boxes in the town. Also seen on my previous visit.

27. *Chelidon erythrogastra*. BARN SWALLOW.—A few individuals noted on the edge of the town by the river.

28. *Ampelis cedrorum*. CEDAR BIRD.—Not uncommon. Observed to be apparently nesting in 1891.

29. *Vireo solitarius*. SOLITARY VIREO.—Very shy. Certainly once identified in 1891. Notes attributed to this species not infrequently heard.

30. *Dendroica cærulescens*. BLACK-THROATED BLUE WARBLER.—Rather common in the forest. These Warblers usually had black on the back, but varied in the amount, some being almost typical *cairnsi*, and others having little or no trace of it.

31. *Dendroica maculosa*. MAGNOLIA WARBLER.—The commonest of the Warblers in the spruce forests.

32. *Dendroica virens*. BLACK-THROATED GREEN WARBLER.—Apparently the least common Warbler; extremely shy.

33. *Dendroica pensylvanica*. CHESTNUT-SIDED WARBLER.—Rather common in the half cleared land. Not found in the spruce forests. Not observed in 1891.

34. *Seiurus noveboracensis*. NORTHERN WATER THRUSH.—Very retiring but rather common along the streams.

35. *Geothlypis philadelphia*. MOURNING WARBLER.—Seemingly not rare in the clearings among the bushes. Individual males were singing within certain limited areas. The females kept themselves well concealed, for none were detected. This, I believe, is the furthest southern record for this species in summer.

36. *Geothlypis trichas*. MARYLAND YELLOW-THROAT. — The notes of this bird were heard by both of us on June 10, 1897, and one was seen by Dr. Braislin. Not recorded in 1891.

37. *Sylvania canadensis*. CANADA WARBLER. — Not uncommon in the forest, sometimes occurring in pairs, which were doubtless, from their actions, breeding.

38. *Galeoscoptes carolinensis*. CATBIRD. — Not uncommon.

39. *Troglodytes aëdon*. HOUSE WREN. — Unusually abundant among the stumps and half burnt trees of the cleared land, where its song was frequently heard. Dr. Braislin discovered a nest containing seven eggs, in a cavity at the end of a fallen partially burnt tree, on June 10, 1897.

40. *Troglodytes hiemalis*. WINTER WREN. — Abundant in the forest, finding a most congenial home among the rhododendrons, which for the most part effectually concealed its presence, until its proximity was disclosed by its beautiful song.

41. *Certhia familiaris americana*. BROWN CREEPER. — Not uncommon. Frequents the hemlocks.

42. *Sitta canadensis*. RED-BREASTED NUTHATCH. — Not uncommon. The drawling character of its notes distinguish it readily from the White-breasted, which was not observed.

43. *Parus atricapillus*. BLACK-CAPPED CHICKADEE. — Rather common.

44. *Turdus ustulatus swainsonii*. OLIVE-BACKED THRUSH. — A male specimen was taken by Dr. Braislin, June 14, and others were heard. This is, so far, the furthest southern record of the species in summer. Owing to their excessive shyness and the very rough character of the country, it was almost impossible to obtain a sight of these birds, but I am inclined to consider them not uncommon. The measurements of the one secured are as follows: Wing, 3.98; tail, 3.12; tarsus, 1.06; culmen, .50.

45. *Merula migratoria*. AMERICAN ROBIN. — Not very abundant; seen in suitable localities.

46. *Sialia sialis*. BLUEBIRD. — A few seen in the cleared land.

During our stay at Davis, Dr. Braislin and I also saw one or two small Hawks, of what species we were not quite certain, and were shown a Hawk's nest in a lofty tree, but did not see either of the pair to which it belonged. On June 13, we noticed a small bird on a telegraph wire in the town, apparently a Wren with rather a long tail. Its song which we did not recognize, differed from that of any Wren we were familiar with. After a few moments, it flew to the top of one of the houses, and we were unable to observe it further. We were disposed to regard it as Bewick's Wren.

## NESTING HABITS OF ANTHONY'S VIREO.

BY C. W. AND J. H. BOWLES.

IN THE vicinity of Tacoma, Washington, this Vireo, *Vireo huttoni obscurus*, can scarcely be described as either rare or common, for the probability is that they are much more abundant than a casual, or even close, observer would be led to suppose. While we have noticed comparatively few birds, we have found several last year Vireos' nests so much resembling, in every detail, the identified nest described below that we feel little hesitation in thinking them the work of these birds. This, of course, cannot be considered a positive proof, for jumping at conclusions of this nature is extremely bad policy, but the theory seems all the more tenable for the two following reasons: First, this is the most unassuming and least noisy of any of the Vireos frequenting this locality; in fact, we have never heard it sing a note or make a noise of any kind whatsoever. This causes one to feel positive that many of these birds must have been overlooked. The second reason is that the nest taken by us does not resemble in the smallest degree the nests of either the Warbling Vireo (*Vireo gilvus*) or the Cassin's Vireo (*Vireo solitarius cassinii*), which are the only other Vireos known to breed in this section of the country.

The nest under discussion is, we are given to understand, the only one known to science where the identity is clear and indisputable. The situation from which it was taken is some eight miles from the city of Tacoma, in a thin fringe of small firs that border a rather extensive prairie. On this prairie are located the links of the Tacoma Golf Club, and, as these links are visited daily by large numbers of the players, it is fair to presume that the bird is not unsociably inclined towards mankind, as is its shy cousin, the Cassin's Vireo.

Like other Vireos' nests it was hanging, though in a somewhat peculiar way, being suspended, not from the usual crotch, but from two green twigs that grew from a small limb at an interval

of an inch and a half. It was placed nine feet up in a young fir, and five feet from the trunk of the tree.

Its composition is, as above mentioned, altogether different from that used by any other Vireo that has come under our notice. The outside material consists entirely of a long, hanging moss, which must be very closely allied to the *Usnea* of the Eastern States, very thickly and closely interwoven. The first point that strikes one, on looking at it, is the absence of outside patch-work of any kind, such as is almost invariably found on the nests of other Vireos. In fact, at first sight, there is a very striking similarity to many nests of the Parula Warbler (*Compsothlypis americana*). Its entire lining is composed of fine, dried grasses, thickly and neatly interwoven. The extreme outer dimensions in inches are: length  $4\frac{1}{2}$ , width  $3\frac{1}{2}$ , depth  $2\frac{3}{4}$ . The inside dimensions in inches are: length  $2\frac{1}{2}$ , width  $1\frac{1}{2}$ , depth 2.

The eggs, of which there were only two, resemble more closely certain specimens of eggs of the Red-eyed Vireo (*Vireo olivaceus*) than those of any other species in our collection that we have used in comparison. The ground color of both is a lustreless, milky white. In markings, No. I has a ring of dark brown dots, verging often into black, scattered sparingly around the larger end. Also one fine, hair-like line three eighths of an inch long, running between the dots like the lines on an Oriole's egg. No. II is simply and very sparingly marked all over the larger end with dots of the same color. Their measurements in inches are: No. I,  $.76 \times .56$ ; No. II,  $.74 \times .55$ .

Incubation was about one half advanced at this date, June 21, 1897, which, if the date is not unusual, makes this bird breed later than either *cassinii* or *gilvus*, which commence incubation four and two weeks earlier respectively.

The female bird was on the nest when first seen and, unlike the majority of our Vireos, flushed the instant the ascent of the tree was attempted. From the nest, she flew about twenty feet into a neighboring fir, where she looked down on our operations with apparently no concern whatever. Beyond rearranging her feathers from time to time, there was nothing to indicate that she had a nest anywhere in the vicinity, as she made no sound or complaint of any kind. Neither was there any of the nervous

hopping from twig to twig in the manner by which so many of the smaller birds as clearly display their anxiety as they do by their notes of distress.

The male bird did not appear at all and, after waiting for him some three-quarters of an hour, we collected the female together with the nest and eggs.

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## PETRELS OF SOUTHERN CALIFORNIA.

BY A. W. ANTHONY.

FROM the day that I saw my first Petrel dancing over the waves of the Pacific none of the birds of southern California so thoroughly interested me or so completely baffled all attempts at a more intimate acquaintance. Several species were often common off shore and during such times dozens would pass and re-pass a sailing vessel but always keeping just out of gunshot. All of the coast islands were examined for breeding colonies but owing to my lack of experience and knowledge of their breeding habits, several years passed before any clue was found to their very restricted nesting grounds. In May, 1895, a small colony of Socorro Petrels was found on one of the Coronado Islands, but it was too early for eggs, and I was unable to revisit the island again at the proper season. Armed with the knowledge gained in 1895 I visited the island April 21, 1896, and camped five days, thoroughly exploring the northern and two middle islands of the group. On the first night of my sojourn I had scarcely fallen asleep, curled up on a rocky shelf just above the water, when I was suddenly recalled to my senses by a loud *Tuc-a-roo, tuc-tuc-a-roo* within two feet of my head. The call was repeated from half a dozen directions and as many bat-like forms were seen flitting back and forth in the moonlight along the cliffs and hillside. One or two attempts to shoot them proved utter failures and the black forms soon moved out to sea, returning at intervals of an hour or so all night. The next afternoon I

located one of the birds in a burrow under an immense rock, as I passed on my way to camp. It several times uttered a clicking note which I felt sure was that of a Petrel. During the evening I watched the hillside and discovered several burrows by following the direction of the call notes and watching the birds as they entered the holes, which were all under very large bowlders or in cracks in the ledges where it was impossible to secure eggs had there been any. From the large size of the Petrels I was reasonably sure that they were *Oceanodroma melania*, and marking several of the most likely burrows I returned the following day with a shovel and undermined the bowlders, letting them roll down the hill, hoping to uncover the nests, but all were so far back in the rocks that I secured neither eggs nor birds, nor could I determine whether they were nesting. From what I afterward learned I now know that they were mating and I was much too early for eggs.

On the 24th of April I visited the colony of Socorro Petrels discovered in 1895 and found a number of nearly finished burrows and one bird. I visited the same colony on June 12 and in each burrow found two Petrels, male and female, but no eggs. It was not until July 10 that I had an opportunity to again visit the island when I found both eggs and birds. Most of the eggs were more or less incubated, and two young ones were found not over two or three days old. They were mere little bunches of sooty down of uniform color, winking and blinking when brought to the light like little owls. In the same colony I found two Black Petrels with fresh eggs, confirming my identification of the birds seen on April 12. The eggs of *Oceanodroma socorroensis* were usually freckled with reddish spots in a more or less complete ring about the larger end, but those of *O. melania* were unmarked, as have been all that I have subsequently handled.

From the data I have accumulated I find that both of the preceding species inhabit the burrows for nearly three months before the egg is laid, usually both birds being found in the burrow until incubation begins. After the chick is a day or two old the parent is seldom if ever found in the burrow in the day time. On Guadalupe Island a colony of *O. macrodactyla* were found breeding among the pines and oaks at about 2500 feet above the sea. Well incubated eggs were taken March 24, and

well grown young the middle of May. The range of variation in breeding in these three species of *Oceanodroma* presents an interesting study. The Guadalupe Petrel, with a breeding season early in March, leaves the colony altogether by June 10, by which time *O. socorroensis* has not begun to lay, and *O. melania* is still later. I have found the last species incubating as late as September 8. I am quite sure that only one young is raised each year, though each species seems to have a rather long nesting season.

Little attempt is made at nest building by either the Socorro or Black Petrel, though a few sticks are often dragged into the burrow with an evident desire to construct something resembling a nest. The Guadalupe Petrel, however, nearly always has a few dry oak leaves or pine needles at the end of the burrows I have opened, it making a much better attempt at nest building, owing perhaps to the fact that the burrows are dug among the trees where this class of nesting material is abundant, whereas the other species nest on barren islands and cannot so readily obtain desirable material.

In early June I have found the Least Petrel migrating along the coast of Lower California in company with the Socorro and Black Petrels, and in late July have found them nesting on the small rocky San Benito Island, fifty miles off the coast of the peninsula. So far I have never found the Least Petrel nesting in burrows. They have always been taken from the crevices in rocky ledges or among the loose stones. The pearly white egg is laid on the bare rock. Usually several are found within a few feet if desirable crevices are numerous. Young were taken as late as September 7 or 8 that were but a few days old. They were like the young of the three species of *Oceanodroma* I have mentioned, except for size. All are covered with sooty or slaty black down, through which the feathers appear when the bird is nearly or quite fully grown.

For the past ten years I have at times seen a small white-rumped Petrel at sea as far north as southern California but more common perhaps about Guadalupe and Cerros Islands. They were quite common in April and May about Socorro Island and a few were seen off Clarion but, like veritable will-o'-the-wisps, they were always just out of reach and all attempts to identify



the species were unsatisfactory. No nesting colonies were found on the southern islands, — Socorro and Clarion, — all the birds seen at sea seeming to be migrants. July 15 found us becalmed in a fog not far from Guadaloupe Island. Black and Socorro Petrels were seen at a short distance from the schooner, passing and repassing, pausing for a moment at times to investigate objects thrown from the vessel. Several of the rare white-rumped form came and went with the rest but none ventured near the schooner. In hopes of getting at least a nearer view a skiff was launched and with my assistant, Mr. H. B. Kaeding, I spent two hours or more in drifting about a quarter of a mile or so from the vessel. In place of frightening the Petrels the smaller craft seemed to excite their curiosity and they often turned aside from their course to examine us. Several of the white-rumped birds were secured which have since formed the basis for a new species<sup>1</sup> named in honor of Mr. Kaeding as a slight recognition of his valuable services.

The breeding grounds of Kaeding's Petrel are at present unknown, but I have reason for supposing that they nest on Guadaloupe, in July. Those which were taken on the 25th of that month showed enlarged ovaries and the nesting season was but little if any passed. The wing of a small Petrel was picked up on Guadaloupe in September, 1896, and direct comparison made with specimens of *O. homochroa*, to which species I assigned the fragment after much hesitation. I am now reasonably sure it belonged to the new species. All of the species mentioned in the present paper depend almost entirely upon the young of the spiny lobster for food while on our coast, both adults and young having their stomachs filled with the larval stage of that crustacean, which is extremely abundant about all of our outlying islands during the spring and summer months.

In August and September Petrels are more abundant off our southwestern coast than during the rest of the year. The birds that have finished nesting congregate in regions where food is abundant, often following vessels for long distances to pick up what scraps of suitable food may be thrown over. I have on

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<sup>1</sup> Auk, XV, Jan. 1898, p. 37.

several occasions hooked *O. melania* with a small hook baited with a piece of seal blubber, but as a rule they decline to be taken in by any such means. Both *O. melania* and *O. socorroensis* will at times dive a foot or more below the surface for a piece of meat that is sinking if they are hungry, but diving seems to be out of their usual line of business and is only resorted to when food is scarce. They seem to be unable to get below the surface of the water without first rising two or three feet and plunging or dropping, exactly as I have seen the Black-footed and Short-tailed Albatrosses dive under similar circumstances.

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## THE ECONOMIC VALUE OF THE WHITE-BELLIED NUTHATCH AND BLACK-CAPPED CHICKADEE.<sup>1</sup>

BY E. DWIGHT SANDERSON.

THE value of our common birds as insect-destroyers has of late years come to be recognized as an important field of investigation for the ornithologist and a large item in rural economy. Much valuable work has been done in determining their economic relations, but there has also been a large amount of assumption by various writers based on insufficient data. It is my purpose in this thesis to determine the character and amount of food and the economic relations of two of our most common residents, the White-bellied Nuthatch (*Sitta carolinensis* Lath.) and the Black-capped Chickadee (*Parus atricapillus* Linn.) from the analysis of the stomachs of 34 specimens of the former, and 28 of the latter, notes taken while collecting them, and incidentally from as much reliable data as could be found elsewhere.

### METHOD OF ANALYSIS.

In no instance was any food found in the true stomach, mouth, or gullet, and the only part containing food was that ordinarily

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<sup>1</sup> A Thesis submitted to the Faculty of the Michigan Agricultural College.

called the gizzard. This was removed and the contents carefully washed into a glass dish, in which it was spread out and examined under a dissecting microscope. The per cent of matter was determined by dividing the whole contents into various equal parts of the different components, as accurately as possible. In many instances the food was so finely divided that only its most general nature could be ascertained, and hence a stomach was often tabulated as containing only one insect of a certain order when it doubtless contained the parts of many more, which were indistinguishable. Prof. E. H. Forbush states that Chickadees frequently pick out only the internal organs of larvæ, and as these are easily digested and not individually recognizable, such work would escape observation. The seeds were kindly determined, as far as their mutilated condition would permit, by Prof. C. F. Wheeler and Prof. W. B. Barrows, while many of the eggs were identified by Prof. Th. Pergande of the Division of Entomology, U. S. Department of Agriculture, to all of whom I wish to express my indebtedness. Very little of the insect food could be named further than given, with any degree of accuracy, and often it was impossible to determine anything below the order.

The specimens were all collected within a radius of five miles from the college. Record was kept of the sex, but no difference in the feeding habits was noticed, although most of the Nuthatches were secured in pairs. Notes upon the weather were also kept, but specimens were secured under all conditions,—both during a bright February thaw and a March snow-storm, and except as caused by the ground being covered with snow, no difference could be seen, save as noted between different periods. Neither did the time of day seem to cause any variation.

#### WHITE-BELLIED NUTHATCH. (*Sitta carolinensis* Lath.).

Thirty-four stomachs were secured, of which 23 were collected during the winter season (Jan. 14 to Feb. 24), snow covering the ground much of the time; while the last eleven were secured during the spring (April 10-17), before the foliage was out. The contents were tabulated and two totals made, showing the difference in seasons. I had wished to secure specimens during the

early summer for further comparison along this line, but as the birds were becoming very scarce near the college and little time was available for the work, I was unable to do so. Such a series would doubtless give some interesting data.

#### *Vegetable Food.*

Misled by the name, it has always been stated that Nuthatches feed on the kernels of nuts which they break open. I was fortunate enough to secure one specimen while 'hatching' an acorn, which was done at the apex, and secured the fruit. It had been cracked in two, and was quite wormy. Careful analysis of the vegetable matter found in the stomachs — even by microscopical sections — failed to reveal a trace of any acorn meat (but showed that supposedly acorn to be Indian corn), and furthermore it would seem that if that was desired, a sound specimen would have been selected by the bird. In view of these considerations, I am led to believe that the nuts — such as acorns and beechnuts — are sought merely for the insects which they contain.

During the winter the larger portion of the food was composed of seeds, which gradually decreased as insect life became more abundant. Those determined were: *Zea mays* in twelve stomachs, *Ambrosia artemesiaefolia* in eight, and two *Helianthus* sp? Numerous other seeds were so badly broken as to be undeterminable. All were digested, and none, whether of noxious or beneficial plants, were consumed in quantities of any economic importance.

#### *Insect Food.*

A remarkable increase in the per cent of insect food is seen in the second series over the first, it forming 79.5 per cent in the spring, while only 25.7 during the winter. Seeds, on the other hand, were just the reverse, forming 67.4 during the winter and only 13.5 in the spring. The proportion of gravel remained comparatively constant at 6.2 and 7, as did also the amount of food at an average of .8 c.c. and .84 c.c. for the respective periods. In the latter series all the insects were adult, while in the former almost one-third were eggs or larvæ.

Hemiptera, largely *Piesma cineria*, were the most important insects in the first series; with Coleoptera next. These two orders made up the bulk of insect food during this period with the exception of a single stomach which contained some 25 Myrmicidæ. During the second period, Hymenoptera were found in considerable numbers, all being beneficial, and with about equal parts of Perlidæ and Coleoptera constituted the greater part of the insect food.

In the latter period there seemed to be a tendency to take larger insects, as evidenced by several good sized moths, which of course would lessen the number of individuals. Though the number of the insect forms eaten by the Nuthatches is comparatively small to that of those eaten by the Chickadees, yet it is no doubt due to the fact that their insect food is much more rapidly digested by the aid of the gravel, than in the Chickadees, which have none.

The following list gives in detail the insect matter found in the individual stomachs: Numbers 1, 7 and 8 were collected on Jan. 19; 9, 10, 11 and 14 on Feb. 2; 20 on Feb. 10; 21, 22, 23, 24, 25 and 26, on Feb. 16; 29, 30, 31, 32, 33, 34 and 35 on Feb. 20; 43 on Feb. 22; 41 on Feb. 24. (It will be noticed that the numbers are not consecutive.) 44 to 52 inclusive on April 10; 56 and 57 on Apr. 17. Only those partially or completely identified are listed, while the totals include the whole contents.

*List of Insects Found in 34 Stomachs of the White-bellied Nuthatch.*

Hymenoptera: Evaniidæ, 1 in No. 45; Braconidæ, 6 in Nos. 46, 47, and 48; Tenthredinidæ, 1 in No. 47; Formicidæ — *Myrmica* sp? — 25 in No. 22. Winter, 27 adults; spring, 14 adults. Total Hymenoptera — 51 adults in 7 stomachs.

Lepidoptera: Tineidæ — *Bucculatrix* sp? — 1 pupa in No. 22. Winter, 1 pupa; spring, 4 adults. Total Lepidoptera — adults, 4; pupæ; 1, in 5 stomachs.

Diptera: Muscidæ, 2 in No. 7; Syrphidæ, 1 in No. 49. Winter, 2 adults; spring, 4 adults. Total Diptera, 6 adults in 4 stomachs.

Coleoptera: Carabidæ, 3 in Nos. 56 and 42 — *Harpalus* sp? — 4 in Nos. 7 and 8; — *Pterostichus* sp? — 2 in No. 32; Elateridæ, 1 larva in No. 7; Buprestidæ, 1 adult in No. 41; Scarabidæ, 1 adult in No. 48. Winter, 17 adults, 22 larvæ; spring, 12 adults. Total Coleoptera — adults, 29; larvæ, 22; in 25 stomachs.

Neuroptera: Perlidæ, 23 in Nos. 32, 31, 43, 51 and 52; Libellulidæ, 1 in No. 45. Winter, 9 adults; spring, 17 adults. Total Neuroptera — 26 in 7 stomachs.

Hemiptera: Tingitidæ. *Piesma cineria*. — 37 adults in 8 stomachs; Reduviidæ, 22 eggs in Nos. 11 and 24; Coreidæ, 2 adults in No. 10; Jassidæ, 7 adults in Nos. 14 and 45. Winter—46 adults, 21 eggs; spring, 5 adults. Total Hemiptera — adults, 51; eggs, 21; in 13 stomachs.

Orthoptera: 4 in Nos. 8 and 10 (winter), Nos. 45 and 48 (spring.)

Total Insect Forms—Winter, 101 adults, 1 pupa, 22 larvæ, 21 eggs; spring, 60 adults. Adults, 161; pupæ, 1; larvæ, 22; eggs, 21; = 215. Arachnida, 7. Winter, 4; spring, 3.

A glance at the list will show that almost no well known injurious insects were found, the most common noxious form being *Piesma cineria*, which never does any considerable injury. As mentioned, one stomach contained a *Myrmica* sp? which possibly may be considered noxious. On the other hand, a large number of beneficial forms, such as Braconids, Reduviids and Carabids were found, and many that may be considered neutral as Perlidæ—and even those might be considered as valuable in the larval stage for fish food.

Thus it is seen that the insect food is taken more or less indiscriminately and that the beneficial forms fully equal those more or less injurious, while there were none found feeding upon any insect pest.

### *Habits.*

The birds are invariably found in pairs; in only one instance did I find half a dozen together on a river bank, which doubtless were several pairs. The timber in this neighborhood consists of small lots of a few acres and each of these will ordinarily be occupied by only one pair of Nuthatches. They invariably feed upon rough barked trees; half of my specimens being taken on elms, with almost equal parts of the majority of the remainder on ash and oak. Three specimens were secured in an old apple orchard quite distant from any dwellings, and no others were found around fruit trees, possibly on account of the aforesaid preference for rough barked trees.

*Abundance.*

The abundance of the individuals or aggregate number per square mile is very difficult to determine. I generally secured about three for every two miles travelled. As I generally covered a radius of a quarter-mile each way from the straight line over the country travelled, I should think about five per square mile would be a fair average for this portion of the State. This would also, without doubt, be a fair sample of the greater part of the State, as there is only a moderate amount of bird life in this section. At Ithaca, N. Y., Mr. F. H. King found one for every two miles travelled.

It is to be regretted that I have been unable to secure any specimens from any infested orchard, so as to ascertain whether or not they will eat the most abundant food offered them.

*Partial Domestication.*

They have become very tame upon the campus and frequent the doors of the boarding-clubs; where they feed upon the refuse scraps. A pair of these have frequently been seen upon a porch-roof below my window, where they were feeding on the meat left in walnut shells, fruit, parings, and other refuse dropped there, and they would often come up and perch on the window sill. This would go to show that where protected, they would become permanent residents, quite soon, as they are not naturally of a timid disposition. Many authorities consider them highly beneficial, in fact class them with the Chickadees, but with the exception of their being found eating *Mytalaspis pomorum* by Professor Forbush in Massachusetts, there seem to be no satisfactory notes or data upon which to base this assumption.

*Value.*

Though, in view of these facts, I should desire to experiment somewhat with them in an infested orchard, before declaring them to be merely neutral, yet from all the data secured there would

seem to be but little doubt that the Nuthatch, both from its food and habits, is either absolutely neutral or of comparatively small economic importance.

BLACK-CAPPED CHICKADEE. (*Parus atricapillus* Linn.).

Twenty-eight stomachs were secured; the first nineteen during the winter, and the last nine in the spring, being the same periods in which the Nuthatches were collected. The contents were tabulated as for the Nuthatches.

*Vegetable Food.*

During the winter 39.3 per cent of the food was vegetable, though one-third of the stomachs contained no seeds whatever, while in the spring the food was wholly insect. The seeds identified were one *Avena sativa*, and one *Ambrosia artemesifolia*, being practically the same as those upon which the Nuthatch fed.

*Difference in Food as Affected by Season.*

The same increase of insect food in the spring over that in the winter is seen as for the Nuthatch. During the winter 70.7 per cent of the food was animal, while in the spring no vegetable matter whatever was eaten. No trace of gravel was found in any of the stomachs. This is doubtless due to the small amount of vegetable food eaten, removing the necessity of a large amount of grinding to bring the food into a digestible condition. The total amount of food also remained nearly constant, being .48 c.c. in the winter and .53 c.c. in the spring. Even more markedly than in the Nuthatches, it is seen that in the spring far more adults, in comparison with the number of eggs and larvæ, were eaten than in winter. Whereas in the winter about  $\frac{2}{3}$  of the insect forms were adult,  $\frac{3}{13}$  larvæ, and  $\frac{7}{13}$  eggs; in the spring,  $\frac{4}{5}$  were adult,  $\frac{1}{30}$  larvæ, and  $\frac{1}{6}$  eggs. While the total bulk of the food in the spring was  $\frac{1}{10}$  larger than that of the winter, yet there were over sixty times more forms eaten in the winter than in the spring, which was largely due to the enormous number of Reduviid eggs then



consumed. The fact that the spring larvæ had not yet emerged to any extent and that the adults were becoming active must also be carefully considered.

#### *Character of Food.*

Hemiptera, eggs and adults, formed by far the greater part of the food of the first period, with Coleoptera and Lepidoptera next, or possibly from an economic standpoint of equal importance. During the second period, the greater part of the food was adult beetles, with a large portion of adult Lepidoptera. In two stomachs, parasitic worms of considerable size were found. One was of a small, white and cylindrical form, while the other was white, but more flattened, with longer segments, and a true tapeworm.

Several well known insect pests were found in considerable numbers. Among them, four — *Bucculatrix* sp? — pupæ in two stomachs; 62 Noctuid larvæ in five; 105 Coleopterous boring larvæ in two; 15 *Aphis mali* eggs in 28; and 77 *Mytilaspis pomorum* scales in four stomachs. (Each of the latter doubtless covered fifty to seventy-five eggs.) The only beneficial forms found were nine adult Carabidæ in four stomachs and possibly the 450 Reduviid eggs secured from twelve stomachs may also be so considered, but the amount of their value is very uncertain. Thus it is seen, that injury done by eating beneficial insects is very small and of doubtful amount, while almost the entire food is composed of more or less noxious forms. The injurious forms were also eaten in large numbers, showing that the bird would be of considerable value toward their removal when placed among a large number of them, and undoubtedly would be especially useful in destroying a pest during the winter season. In fact, Prof. Forbush has shown by actual experiment (Mass. Crop Report, July, 1895, Ser. '95, Bulletin No. 3. Noticed in Auk Vol. XII, p. 383, 1895) that when these birds are present in the winter the destruction of the eggs at that time rendered it possible for the summer birds to destroy all the larvæ during a severe attack of the canker-worm, and the orchard thus produced a good yield, whereas elsewhere the trees were largely defoliated. The

following list gives the contents in detail: Numbers 2 and 3 were secured on Jan. 19; 4, 5 and 6 on Jan. 20; 12, 13, 15, 16, 17 and 18 on Feb. 21; 27 and 28 on Feb. 16; 36, 37, 38, 39 and 40 on Feb. 24; 42, Feb. 25; 53, 54, 55, 58, 59, 60, 61, 62 and 63 on Apr. 17.

*List of Insects Found in 28 Stomachs of the Black-capped Chickadee.*

Lepidoptera: Tineidæ—*Bucculatrix* sp?—4 pupæ in Nos. 28 and 40; Ennomidæ—*Ennomos magnarius*,—27 eggs in Nos. 27 and 39; Noctuidæ—1 *Catocala* (?)—egg in No. 27, 62 larvæ in Nos. 2, 16, 27, 28 and 38. Winter, 6 pupæ, 66 larvæ, and 26 eggs; spring, 6 adults and 1 larva. Total Lepidoptera: adults, 6; pupæ, 6; larvæ, 67; eggs, 26; in 9 stomachs.

Diptera: Adults, 1; larvæ, 7; in 4 stomachs. All in winter.

Coleoptera: Carabidæ.—9 adults in Nos. 6, 15, 40, and 43; Scarabidæ, 3 adults in Nos. 53 and 60; Cerambicidæ, 2 pupæ in No. 39; boring larvæ, 105 in Nos. 27 and 28. Winter, 29 adults, 2 pupæ, and 118 larvæ; spring, 18 adults. Total Coleoptera—adults, 7; pupæ, 2; larvæ, 118; in 16 stomachs.

Orthoptera: 3 eggs in No. 12. (Winter.)

Hemiptera: Tingitidæ—*Piesma cineria*—3 adults in Nos. 27 and 42; Reduviidæ, 450 eggs of two species in 12 stomachs; Pentatomidæ—*Stiretrus anchorago*—7 eggs in No. 5; Aphidæ—*Aphis mali*—15 eggs in No. 28; Coccidæ—*Mytilaspis pomorum* scales, 77 in Nos. 15, 18, 27, and 39. Winter, 108 adults and 461 eggs; spring, 5 adults. Total Hemiptera—adults, 93; eggs, 466; in 15 stomachs.

Total winter, 125 adults, 8 pupæ, 193 larvæ, and 504 eggs; spring, 24 adults, 1 larva, 5 eggs; in 15 stomachs. Total Insect Forms—adults, 149; pupæ, 8; larvæ, 194; eggs, 494 = 845. Arachnida, 25.

*Habits.*

The Chickadee's habits of life also commend them as being beneficial. They are usually found in small flocks of from six to a dozen, of which the larger number are females. These often mix with those of Goldfinches and Tree Sparrows, or are found in company with a pair of Nuthatches, during the winter, but become more independent as spring advances and there is an abundance of bird life all about them. Over half of my specimens were secured in bushes on low, damp, marshy ground, or along a creek or roadside. They often descend to the ground in marsh land

and scratch among the dead rushes for any insects there. I am inclined to think that most of the Reduviid eggs were secured on such marshy ground. Tamarack was a favorite resort with many. About one-fourth were taken from oak trees, but on these they searched for insects upon the tips of the smooth branches, rather than on the rough trunk as do the Nuthatches. Two were secured in an apple orchard, while five others were seen coming from one. Many times they were seen in orchards near dwellings, where I was unable to secure them by use of the gun. When feeding on heavy timber, they frequent only the edges, where the injurious insects are invariably the most plentiful.

#### *Abundance.*

Owing to the fact that they go in flocks and are therefore not so evenly distributed as the Nuthatches, it is more difficult to determine their abundance. Although, on the average, about two were secured for every mile travelled, yet as they go in small flocks several were generally secured in an immediate vicinity. A flock of seven Chickadees is doubtless a fair average for each square mile, and in some parts of the State, especially the southeastern, I am sure that they are much more abundant in orchards than here.

#### *Ability to Check Insect Pests.*

If fifty-five insects were consumed per day by each bird, as will be shown to be the case, 385 would be consumed per day, and about 137,500 per year in each square mile. Thus upon the land surface of Michigan there will annually be about 8,000,000,000 insects destroyed by the Chickadees alone. Surely no mean number.

During the summer after the young have been reared, the number of individuals should be for some time at least tripled, giving us 20 to 25 per square mile. The census of 1890 shows that there are about 8,500,000 apple trees planted in Michigan, and of the fruit trees, apple orchards are the Chickadee's favorite haunt. This would give an average of about 150 trees per square

mile—enough for four ordinary sized orchards—or the average conditions existing in the better part of the State. As the worst period of insect attack is during and after the breeding season, this would allow six birds to each orchard.

Nineteen Chickadees contained a total of 830 insect forms, a large majority of which were noxious, and the remainder of a doubtful character as regards their value. Thus the Chickadees which it would be possible to secure in a fair sized orchard, a half-dozen, would consume at least 275 forms a day, but probably 350 would be a much fairer estimate, as the larvæ are quite rapidly digested and many were so finely divided as to render numerous individuals wholly indistinguishable. Now if these birds could be persuaded to nest here and rear their young, which would probably average five in number, 1200 insects would be required per day to feed the young and old birds. Professor Forbush states that 5000 canker-worms will strip a *large* apple tree. Thus the number of insects eaten would be sufficient to prevent the defoliation of a *large* tree every four days, and young trees in proportion, with no expense whatever to the farmer for labor or insecticides. Of course these compilations are largely of a speculative character, as unfortunately we have but few experiments and little accurate data, but they cannot but be highly suggestive.

#### *Value of Winter Residence.*

But this fails to take into account the large number of eggs eaten in the winter, from which the larvæ, when hatched, might be impossible to destroy—as shown by the observations of Prof. Forbush cited above. Again, the destruction of adult insects and larvæ during the winter is far more valuable than later, because they are mostly the ones which lay the eggs in the spring and thus keep up the life cycle. There are but few other birds present here in winter to perform this work, and these two birds also secure their food from places where no other birds present at that time of year would search for it. In this they form a well balanced couple, the Nuthatch securing his food from the rough bark of the main trunk while the Chickadee pecks away at

the small buds and joints, loose bark, etc., of the smaller, smooth limbs. In addition, it can be said in favor of both these birds that they are inclined to remain in one vicinity and do not wander far from it, but steadily and thoroughly work over one feeding ground.

*Possibility and Desirableness of Partial Domestication.*

Both these birds are very easily approached, and may readily be lured to orchards or shade trees,—they are quite common upon the shade trees of Lansing and, as stated before, are very tame on the campus.

It is, then, self-evident, that by every means they should be encouraged, by placing food for them till they become at home, by erecting suitable nesting sites, and by careful protection, to feed and nest in the orchards. It might be interesting to try the experiment of destroying as many old Woodpecker holes as possible and by placing suitable nesting sites in the orchard to thus entice them. Yet, in general, the old holes in which they nest should not be all cut out when securing fire wood, but a sufficient number be allowed to remain. If the farmer will take a very little time now and then in thus attracting these feathered insect-destroyers to his orchard, he will soon find very little if any need for insecticides except for extraordinary attacks. "An ounce of prevention is worth a pound of cure" is truly more applicable to the destruction of insect life than to almost any other phenomena.

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NOTES ON CERTAIN SPECIES OF MEXICAN BIRDS.

BY E. W. NELSON.

THE WORK done on Mexican birds for the Biological Survey of the U. S. Department of Agriculture has added to the previously known range of many species and furnishes material for elucidating the relationships of others.

In order to render some of this information available to those interested I have prepared the following notes. In connection with the extension of the range of various species previously unknown north of Guatemala it may be stated that the highlands of Chiapas are a continuation of the elevated interior of the former country. The climate and vegetation of the two districts are essentially the same, and they are so much alike in general character that an equally close similarity is to be expected in the bird life.

*Oreophasis derbianus* Gray.—We found this magnificent bird in the heavy forest on the west base of the Volcano of Santa Maria, near Quezaltenango, Guatemala, and again in the similar forests below Pinabete, Chiapas. Previously it has been recorded, I believe, only from the Volcano de Fuego, Guatemala.

*Penelopina nigra* (Fras.).—This beautiful species was not uncommon in the dense forest at Tumbala, Chiapas. Like the preceding species it was known previously only from Guatemala.

*Pharomacrus mocinno* De La Llave.—A pair of Quetzals was seen near Tumbala, in eastern Chiapas, where they were reported to be resident in small numbers. I heard of them again in the mountain forests east of Tuxtla, Chiapas.

*Sittasomus sylvioides* Lafr.—A single specimen was taken on March 17, 1897, at San Sebastian in western Jalisco, where it was very uncommon. This is its first record for northwestern Mexico.

*Pachyrhamphus major* (Cab.).—A single specimen was obtained by us at Plomosas, Sinaloa, July 14, 1897, and adds the species to the fauna of this part of Mexico.

*Pyrgisoma rubricatum xantusi* (Lawr.).—*Pyrgisoma xantusi* was described by Mr. Lawrence (Ann. Lyc. N. Y., VIII, 480, 1866) from a specimen taken by Xantus in the mountains of Colima. The type is in the National Museum and agrees with a large series of specimens from various localities between Colima and Mazatlan in western Mexico. These birds are distinguished from those found in southern Puebla, supposed to be typical, by their decidedly larger size and much browner colors. The difference is sufficient to distinguish them from the typical form as a well marked geographical race. I have specimens of *P. r. xantusi* before me from the States of Colima, Jalisco, Sinaloa and the Territory of Tepic.

The general resemblance is so close between the figure of *Pyrgisoma kieneri* Bp., in the 'Exotic Ornithology' (p. 130, pl. 65), and some of the larger specimens of *Pyrgisoma rubricatum xantusi* that it leads me to have a strong suspicion of their identity. *Pyrgisoma kieneri* was published in a signature of the 'Conspectus Avium' (I, p. 486), dated July 20,

1850, and thus has priority over *Atlapetes rubricatus* Cabanis, published in a signature of the 'Museum Heineanum' (I, p. 140) dated May, 1851. Should my surmise regarding the identity of these birds prove to be well founded then *P. rubricatum* becomes a geographical race of *P. kieneri* and *P. rubricatum xantusi* is a pure synonym of *P. kieneri*. In his description of the latter bird Bonaparte gives its habitat as western America.

*Pipilo maculatus* Sw. — In our collection from Mt. Orizaba, Puebla, and the surrounding region are numerous specimens representing both sexes of *Pipilo maculatus* Sw. The females in this series are typical representatives of *Pipilo orizabæ* Cox (Auk, 1894, p. 161), which was described from a summer bird in worn plumage erroneously labeled male. The evidence furnished by a careful comparison of the type with our series is conclusive that *P. orizabæ* is based upon a wrongly sexed specimen of *P. maculatus* and it becomes, in consequence, a synonym of the last named species.

*Arremonops rufivirgata sumichrasti* (Sharpe). — *Embernagra sumichrasti* Sharpe, Cat. Bds. Brit. Mus., XII, p. 762 (in text), 1888.

Specimens before me from the west coast of Mexico show that Sharpe's bird is a well marked geographical race of *Arremonops rufivirgata*. It ranges from the border of Chiapas north along the west coast of Mexico to the State of Colima.

*Arremonops chloronota* Salvin. — We obtained this species at Yajalon in eastern Chiapas, thus adding it to the fauna of Mexico.

*Chlorospingus postocularis* Cab. — The type of this species came from Guatemala, and I find that my *C. atriceps* (Auk, Jan. 1897, p. 65), from Pinabete, Chiapas, is too closely related to it to be separated. The latter becomes in consequence a synonym of *C. postocularis*, the range of which extends through the mountains of southwestern Guatemala and Chiapas.

*Chlorospingus olivaceus* (Bp). — Not uncommon in the dense forest at Tumbala, Chiapas.

*Piranga bidentata* Swainson, and *Piranga sanguinolenta* Lafresnaye. — Recent writers agree in considering Lafresnaye's *Piranga sanguinolenta* a synonym of Swainson's *Piranga bidentata*. But the collections of birds made in Mexico for the United States Department of Agriculture, contain material which, studied in connection with the specimens in the U. S. National Museum, appears to prove the specific distinctness of these birds. The misapprehension of their true relationship appears to have arisen from the rarity of *P. bidentata* in collections, whereas specimens of *P. sanguinolenta* have been common. The two species once confounded, the error has been perpetuated through lack of material for their proper discrimination.

*Piranga bidentata* was described by Swainson in the 'Philosophical Magazine' for 1827 (p. 428) from a specimen taken by Bullock at Temascaltepec, Mexico. It was said to be "golden on head, neck and under-

parts," and this description applies to the Tanagers inhabiting the arid tropical mountain slopes of southwestern Mexico only including the Tres Marias Islands. Temascaltepec is situated southwest of the City of Mexico, on the Pacific slope of the main Cordillera.

*Piranga sanguinolenta* was described by Lafresnaye in the 'Revue Zoologique' for 1839 (p. 97) as coming from 'Mexico.' It was said to have the head and neck blood red with the lower surface of body cinnabar red. Tanagers with this style of coloration inhabit the humid tropical region of Vera Cruz and range thence south through tropical Guatemala and other parts of Central America to Chiriqui. During my field work in Mexico I have found each of these birds restricted to a definite faunal region, and apparently without intergrading, although further work may prove them to be geographical races of the same species.

The most striking difference between the males is the distinctly orange shade of *bidentata* contrasted with the rosy-scarlet or red shade of *sanguinolenta*. The two may be distinguished by the following descriptions:

*Piranga bidentata*.—Adult male: Head, neck and lower parts, including under tail-coverts, rich cadmium orange, with a richer or more reddish shade on crown, throat and breast; flanks duller or more brownish; feathers of back blackish brown edged with dark orange, and sometimes greenish yellow; rump ochraceous brown; wings and tail blackish brown; greater and lesser wing-coverts tipped with white spots, forming two well defined white wing-bands; outer pair of tail-feathers tipped with white for about one-third of length, mainly along inner web. Three adult males from Jalisco and Sinaloa average as follows: Wing, 98; tail, 79.3; culmen, 17.3; tarsus, 21.1.<sup>1</sup>

Adult female: The cadmium orange area of male is replaced by greenish yellow with a faint orange wash on breast. Back, wings and tail grayish brown; rump brown, washed with dark greenish yellow; outer tail-feathers with white tips much smaller than on males, occupying only about the terminal fifth of inner web.

*Piranga sanguinolenta*.—Adult male: Head, neck and lower part orange vermilion, becoming intense, flaming rosy scarlet on many specimens; back and rump brownish, heavily shaded with the general red color; wings and tail blackish brown; two conspicuous white wing-bands formed by white tips to greater and lesser wing-coverts; outer web of tertials white-spotted at tips; outer pair of tail-feathers tipped with white spots about as in *P. bidentata flammea*. Four adult males average as follows: Wing, 97.2; tail, 79.7; culmen, 16.2; tarsus, 21.4.

Comparing the measurements of the two species it will be noted that *sanguinolenta* has a smaller bill and proportionately longer tarsus. The females of the two species are more nearly alike than the males, but those of *sanguinolenta* may be distinguished by their more intense coloration and the small amount of white on the outer tail-feathers.

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<sup>1</sup>All measurements are in millimeters.



The synonymy of *Piranga bidentata* should stand as follows:

*Pyrranga bidentata* Sw. Phil. Mag. 1827, p. 428; SCL. P. Z. S. 1856, p. 126 (part); 1857, p. 205 (part); 1859, p. 364 (part); *Ibid.* Syn. Av. Tan. p. 50 (part); *Ibid.* Cat. Am. Bds. p. 82 (part); SCL. and SALVIN, Nomencl. p. 82 (part); FINSCH, Abh. Nat. Ver. z. Bremen, II, p. 388 (N. W. Mexico); RIDGW. Man. N. Am. Bds. 1887, p. 456 (part).

The synonymy of *Piranga sanguinolenta* is as follows:

*Pyrranga sanguinolenta* LAFR. Rev. Zool. 1839, p. 97; BP. Consp. I, p. 241 (1850).

*Pyrranga bidentata* SCL. P. Z. S. 1856, p. 126 (part—Jalapa); 1857, p. 205; 1859, p. 364; *Ibid.* Syn. Av. Tan. p. 50 (part); *Ibid.* Cat. Am. Bds. p. 82, (part); SCL. and SALVIN, Ibis, 1860, p. 32 (Guatemala); *Ibid.* Nomencl. p. 82 (part); CASSIN, Proc. Ac. Sci. Phil. 1865, p. 171 (Costa Rica); SALVIN, P. Z. S. 1870, p. 187 (Chiriqui); LAWR. Ann. Lyc. N. Y. IX, p. 99 (Costa Rica); SUMICHR. Mem. Boston Soc. N. H., I, p. 549 (Vera Cruz); FRANTZIUS, Journ. f. Orn. 1869, p. 299 (Costa Rica); SALVIN and GODMAN, Biol. Cent.-Am. Aves, I, p. 296 (part— all east Mexican and Central American references); RIDGWAY, Man. N. Am. Birds, p. 456 1887. (part); CHAPM. Bull. Am. Mus. Nat. Hist. X, p. 27 (Feb. 1898.)

*Ph [ænicosoma] bidentata* CABANIS, Mus. Hein. I, p. 24. (1850?)

**Compsothlypis inornatus** (Bd.).—Common in the high forests of eastern Chiapas, near Tuxtla Gutierrez.

**Dendroica decora** (Ridgw.).—Specimens were taken by us near Tonala, Chiapas, and at Santo Domingo, Oaxaca, on the Isthmus of Tehuantepec.

**Setophaga miniata flammea** (Kaup).—Common in the highland forests of Chiapas.

**Setophaga picta guatemalæ** Sharpe.—Not uncommon in pine forests of interior Chiapas.

**Ergaticus versicolor** Salv.—Common on the highlands of central Chiapas.

**Basileuterus culicivorus** (Licht.).—Not uncommon in the mountains of western Jalisco where we took specimens near San Sebastian. We found it also at Pluma in western Oaxaca.

**Basileuterus belli** (Gir.).—Common in the mountains of western Mexico. We took specimens near Chilpancingo, Guerrero, and at San Sebastian, Jalisco. These records add the two last named species to the fauna of western Mexico.

**Mimus gracilis lawrencei** (Ridgw.).—We found *Mimus gracilis* ranging over all the open parts of the interior of Chiapas and thence down to the Pacific coast, where in the region about the Isthmus of Tehuantepec, it merges into *Mimus lawrencei*. *M. gracilis* also ranges along the east

coast of Mexico from Yucatan to the Isthmus. Specimens from the vicinity of Coatzacoalcos, Vera Cruz, are intermediate between *gracilis* and *lawrencei*. From the foregoing it becomes evident that *M. lawrencei* is merely a geographical race of *M. gracilis*.

*Heleodytes gularis* (Scl.).—The collection made by us during 1897 contains several specimens of this bird from the mountains of southern Sinaloa and the western slope of the Nayarit Mts. in the Territory of Tepic. The surmise of the authors of 'Biologia,' based on the make up of the skin, that the type came from Floresi probably gives the true source of this specimen. Floresi lived for years at Bolaños, Jalisco, on the eastern side of the Nayarit range, whence he obtained various species of birds, and Bolaños is, no doubt, the type locality of the present species.

On comparing the type of my *Heleodytes occidentalis* with the specimens taken in Sinaloa and Tepic I find that it is the same bird and must stand as a synonym of *H. gularis*. As the type of *H. occidentalis* came from the Sierra Nevada de Colima, Jalisco, and Salvin and Godman have recorded the capture of *H. gularis* in the mountains of Sonora it gives this species a wide range in northwestern Mexico.

*Catherpes mexicanus albifrons* (Gir.). *Certhia albifrons* Giraud, Sixteen Sp. Tex. Bds. t. 18, 1841.

The Cañon Wrens of the lower Rio Grande Valley and northeastern Mexico are readily separable from typical *C. mexicanus* which occupies the Mexican tableland. As Giraud's *Certhia albifrons* was presumably from the southern part of Texas his name becomes applicable to distinguish the bird of this region subspecifically from typical *mexicanus*. *C. mexicanus albifrons* is found along the lower Rio Grande, in Texas, and in the States of Nuevo Leon and Tamaulipas, Mexico. Thence southward over the tableland, to the Isthmus of Tehuantepec, typical *mexicanus* is the resident form.

*Parus sclateri* Kleins. (J. f. O. XLV, 133 (in text) 1897).—The specific term *meridionalis* being preoccupied for an Old World species, as noted by Kleinschmidt (loc. cit.) the latter author proposes the name *sclateri* to replace it for the Mexican Chickadee.

*Regulus satrapa olivaceus* Bd. *Regulus satrapa aztecus* RIDG. (ex Lawr. Mss.) Man. Bds. N. Am. p. 612 (appendix) 1887.

An examination of the material at hand proves that Mr. Lawrence's '*R. s. aztecus*' was based on a winter specimen of *R. s. olivaceus*.

*Poliioptila cœrulea mexicana* (Bp.). LITTLE BLUE GRAY GNATCATCHER. *Culicivora mexicana* Bp. Consp. Av. I, p. 315 (1850).

In 1850 Bonaparte named a Gnatcatcher from Mexico which he described as being similar to *cœrulea* but smaller. This name has been treated as a synonym of the latter species by all recent writers. Our work in the lowlands of Vera Cruz, during the spring of 1894, revealed the presence of a small resident race of *P. cœrulea* which is undoubtedly Bonaparte's bird and worthy of recognition with subspecific rank.

*Distribution.* — Coast lowlands of Vera Cruz, south to eastern Chiapas and perhaps Yucatan.

*Description.* — Similar to *P. carulea* from which it differs in generally smaller size, proportionately longer bill, and the tendency to obsolescence of black border to forehead in breeding male. An autumnal male from eastern Chiapas lacks the black on forehead and has a large white tip on 4th pair of rectrices. The breeding birds from Vera Cruz have the white confined to the first 3 pairs of rectrices.

*Average measurements* of *P. carulea* from the eastern United States :

Ad. ♂ (5 specimens): wing, 53.4; tail, 50.2; culmen, 10.7; tarsus, 17.5.

Ad. ♀ (5 specimens): wing, 51.6; tail, 51; culmen, 10.3; tarsus, 17.8.

*Averages* of *P. c. mexicana* from lowlands of Vera Cruz and Yajalon, Chiapas.

Ad. ♂ (5 specimens): wing, 49.8; tail, 47.2; culmen, 10.6; tarsus, 16.6

Ad. ♀ (2 specimens): wing, 47.5; tail, 45; culmen, 10.5; tarsus, 16.5.

*Catharus frantzii alticola* (SALV. & GODM.) — The specimens before me appear to prove that *Catharus alticola* is entitled to rank as a geographical race only and its relationship is expressed in the name given above. We took specimens of it on the Volcano of Santa Maria, Guatemala, and at Pinabete, Chiapas, thus adding it to the fauna of Mexico.

*Merula leucauchen* SCL. — This bird occurs northward from Guatemala at least to the Isthmus of Tehuantepec. In this latter district we obtained specimens near Santo Domingo, Oaxaca. Although recent authors have treated *M. leucauchen* as a synonym of *M. tristis* the bird is certainly distinct. It may be only a subspecies of *tristis* but the specimens at hand appear to indicate its specific distinctness.

*Merula plebeius* (Cab.). — We took specimens of this species at Pinabete, Chiapas, where it was rather common. Until we obtained the present specimens it was unknown north of Costa Rica. The birds from Chiapas are not typical and may represent a geographical race of the Costa Rican bird.

*Sialia sialis guatemalæ* Ridgw. — Common on the highlands of Chiapas.

BREEDING HABITS OF THE AMERICAN ROBIN  
(*MERULA MIGRATORIA*) IN EASTERN  
MASSACHUSETTS.

BY REGINALD HEBER HOWE, JR.

ARRIVAL AND DATES OF NESTING.

THE arrival of migrant male Robins in Eastern Massachusetts occurs early in March, the females about a week later and generally by the fifteenth of the month they are to be seen in fair numbers in their old haunts. By the tenth of April nests are to be found under construction—these early builders as often, I think, choosing the bare crotch of a maple, as the more protected, both from weather and sight, branches of a spruce or pine. Throughout the rest of April and fully two thirds of May we may find nests under construction that are to hold the first brood. I am inclined to believe that the first arrivals are the early builders and that the birds that arrive in late March and early April are the birds we find nest constructing in early or mid May.

MATING.

For the same reason that I believe individual Crows and Blue Jays are resident in a locality, I believe that a pair of Robins that have nested in a certain tree or in a certain area are the identical birds that have done so for years. In other words, an ornithologist continually in the field in one bit of country year after year comes to know the general habits of certain common birds, their special ways and traits, and with a degree of certainty can assert that they are the same birds he sees the year round or that come to his locality yearly. For instance, I know of a pair of Robins that nested in a friend's garden three years in succession. Food was placed outside the dining room window during their first spring, of which they partook regularly. Each successive year they returned to the garden to breed, and on arrival would come to be fed at the window as they had been accustomed to do. The young were also brought by their parents

to be fed, but I have every reason to believe that it was the parent birds that returned each year and not a pair of which either the male or female were one of the young of the previous year. (See Auk, Vol. II, p. 304.) Thus I feel confident that a pair of Robins once mated remain so for a number of years until separated by injury or death. I can well imagine it to be within the range of possibility, that a pair of birds leaving their summer home could keep together, joining some flock made up of other pairs, and migrate and winter in company; in fact, I think for a pair to separate, whose love for each other is as strong as we know it to be, and to wander apart never to meet again, seems harder to believe than disbelieve.

The arrival of the males before the females can be explained by the male birds of the winter flock starting in advance of their less hardy mates (for winter records in the north of various species are almost always of male birds), to be followed by the females a week or so later when the weather is less severe; and it is probable that the more pronounced Robin courtships we see going on about us in the spring are the birds who lost their mates during the previous winter, remating, and the young of the year being wooed for the first time.

#### THE CHOOSING OF THE NEST SITE.

In my careful observing of Robins at the breeding season I have only once seen a pair choose a nest site. I chanced to be looking at a female Robin one day (1897) sitting in a crotch of a wild cherry tree when she flew to the ground and began chasing about a male, evidently her mate. In a minute they both flew to the crotch that she had just left and stood peering about; the male flew to the ground again in a few seconds and the female also flew, returning in a minute with the first few twigs that were to form the foundation of the nest. I believe the female chooses the site, as it is she who does the greater part of the building.

#### THE NEST SITE.

The Robin's nest is too common an object to every observer of bird life to waste space in describing its various situations. Suf-

fice it to say, I have found the nest from two to fifty feet elevation, and in almost every growth of tree common to this locality, as well as on buildings, and others in such places as old carriages, wood piles, etc.

#### CONSTRUCTION OF NEST.

Having watched a number of nests during construction, I have been able to determine a fair average of the time required, and other interesting points.

After the site has been chosen the building of a substantial foundation of twigs, grasses, string, etc., is begun; this finished, finer grasses are brought and the bird standing in the centre of the foundation draws them round. After the sides of the nest have been fairly well made the bird by turning around in the nest shapes it to the exact contour of its body, and by pushing its breast far down into the nest and raising the primaries, it presses the nest with the wrist of the wing into a compact and perfect mass. The next work is the plastering with mud; a rainy day is generally chosen for this work; the bird brings the mud in its bill and, placing it on the inside of the nest, flattens it into shape by exactly the methods just described. All that remains now is the lining, which is made of fine grasses and which adheres to the mud, making a substantial though not a particularly beautiful nest.

The average measurements of nest are; depth, outside, 3 inches; depth, inside,  $2\frac{1}{2}$  inches; breadth, outside,  $6\frac{1}{2}$  inches; breadth, inside, 4 inches.

The average period for construction is about six days—the longest period, fifteen days and the shortest, three days. The weather and whether the female is pressed to drop her eggs seem to be the chief explanation of the variation in time. Both sexes build, but the bulk of the work is done by the female. After a nest has been finished, there is often, in fact generally, a delay of from one to four days before laying.

#### LAYING AND INCUBATION.

As far as my observations go, one egg is laid each twenty-four hours until the complete set is finished which consists of from

two to four eggs (very rarely five in this locality); and if the weather is cold the bird often at once begins to set, that is, with the laying of the first egg. Otherwise, if the weather is mild, setting does not commence until the complete clutch is laid. The eggs are generally laid, I believe, between the hours of eleven P. M. and four A. M., but this is at least not always so. The average period of incubation is thirteen days, but a variation of nearly twenty-four hours is not very uncommon. The female incubates almost unassisted: the male, however, I have observed in a number of cases, upon the female leaving the nest, takes her place, sometimes on the edge of the nest, while at other times he settles himself upon the nest, somewhat awkwardly, but in no case have I ever seen a male sit for more than three minutes in succession. The female does not leave the nest at noon to feed, when the heat of the sun is the strongest, as one would suppose, but leaves the nest generally about nine to ten A. M. and five to six P. M. I have never observed the male feed the female while incubating.

#### CARE AND GROWTH OF THE YOUNG.

The young may all be hatched inside of twenty-four hours or during a space of three days; this is governed by whether the female begins to incubate at the completion of the clutch or, by reason of cold weather, at the laying of the first or second egg. As soon as the young are hatched both birds commence to supply them with food, the male doing his full share. For the first few days the young apparently do not need much nourishment only warmth, for the female leaves the nest but rarely during this period. The eyes of the young open on the sixth day, and from the third day on, the rapidity of feather growth is astounding. The parents are now kept busy from morn till eve supplying the wants of the young, the birds bringing food to the nest nearly twenty times per hour.

The method of keeping the nest clean from the excrement of the young is interesting. Each time the female comes to the nest with food she stands, after delivering the morsel, until one of the young, having elevated its hinder parts, excretes on the edge of the nest, when she stoops forward and apparently *swal-*

TABLE OF GROWTH OF YOUNG.<sup>1</sup>

No. of Bird	Days	1	2	3	4	5	6	7	8	9	10	11
1	Weight of young per day.		$\frac{4}{16}$ oz.	$\frac{8}{16}$ oz.	$\frac{3}{4}$ oz.	$1\frac{1}{4}$ oz.	$1\frac{5}{16}$ oz.	$1\frac{11}{16}$ oz.	2 oz.	2 oz.	$2\frac{1}{16}$ oz.	2 oz.
	Growth of wing per day.		.20			.90	1.10	1.70	2.18	2.50	2.60	2.75
2	Weight of young per day.		$\frac{4}{16}$ oz.	$\frac{8}{16}$ oz.	$\frac{3}{4}$ oz.	1 oz.	$1\frac{3}{16}$ oz.	$1\frac{11}{16}$ oz.	$2\frac{1}{16}$ oz.	$2\frac{1}{4}$ oz.	$2\frac{1}{4}$ oz.	$2\frac{5}{16}$ oz.
	Growth of wing per day.		.20			.90	1.10	1.82	2.04	2.10	2.25	2.34
3	Weight of young per day.		$\frac{4}{16}$ oz.	$\frac{8}{16}$ oz.	$\frac{3}{4}$ oz.	$1\frac{1}{8}$ oz.	$1\frac{5}{16}$ oz.	$1\frac{11}{16}$ oz.	2 oz.	2 oz.	$2\frac{1}{16}$ oz.	2 oz.
	Growth of wing per day.		.20			.90	1.10	1.78	2.12	2.25	2.55	2.72
	Weight of adult bird 3 oz.											
	Length of wing of adult bird 5.30 hundredths.											
			Naked except for a few tufts of down.	Down appearing.			Eyes open, pin feathers appearing on tracts.		Fairly well feathered except on abdomen.	Marked increase in feather development.	Marked increase in feather development.	Body entirely feathered.

<sup>1</sup> Young not weighed or measured after eleventh day for fear of driving from nest.



loves<sup>1</sup> the excrement. I have also observed that at times she would not swallow the excrement but carry it in her bill from the nest. During the last few days the young are in the nest they spend most of their time preening themselves.

During the period the young are in the nest I have never observed the male to sit, but I know of a reported instance where a male was known to do so. The young rarely all leave the nest at once, under natural conditions, but the nest is empty generally about fourteen days after the young hatch; they remain, however, for over a week in the immediate neighborhood of the nest, cared for by their parents. Young birds in this locality may be seen on wing as early as May 15.

### SECOND BROODS.

The second brood is never, as far as my observations go, raised from the same nest but from another constructed in the immediate vicinity of the former one. I have no evidence and do not believe that a third brood is ever raised, but not uncommonly, fresh eggs are to be found late in July and young birds late in August.

Nest No.	Period of Construction.	No. of Eggs.	Period of Incubation.	Period Young remain in Nest.	Entire Nesting Period.	Species of Tree Nest in.	Elevation of Nest.
1	15 days.	4	12 days 20 hrs.	15 days.	45 days.	Spruce.	20 feet.
2	3 "	deserted.	—	—	—	{ Woodbine, piazza.	8 "
3	3 "	2	13 days.	16 days.	38 days.	Spruce.	15 "
4	6 "	4	blown down.	—	—	Spruce.	12 "
5	8 "	3	13 days 5 hrs.	11 days.	36 days.	Cedar.	10 "
6	3 "	4	13 days.	15 "	35 "	Wild cherry.	22 "
7	—	3	13 days.	12 "	{ approx. 30 days.	Spruce.	13 "
8	—	1	taken.	—	—	Apple.	18 "
9	deserted.	—	—	—	—	Oak.	19 "
10	"	—	—	—	—	Elm.	20 "
11	4 days.	4	taken.	—	—	Oak.	18 "
Average.	6 days.	3	13 days.	14 days.	37 days.	—	16 feet.

<sup>1</sup> The bird may eject the excrement after flying to some distance from the nest.

THE TERNS OF MUSKEGET ISLAND, MASSACHUSETTS. PART IV.<sup>1</sup>

BY GEORGE H. MACKAY.

ALTHOUGH the readers of 'The Auk' may be by this time familiar with my subject, I am nevertheless tempted to risk being thought monotonous in again presenting for their perusal further matter similar in character to some of my previous articles. I do this for the reason that the occupants of the breeding resorts to which my data relate may at any time transfer themselves to other places where perhaps such observations cannot be easily taken. Civilization is continually encroaching upon and appropriating such places along the coast until there remain at the present time few localities adapted for such breeding resorts. My desire to record what observations I have made in view of the possibility of the birds leaving us, is my excuse for the present contribution.

The Muskeget Island Terns, *Sterna hirundo*, *Sterna paradisæa*, and *Sterna dougalli*, and the Laughing Gulls, *Larus atricilla*, under the protection extended to them by a few individuals for a series of years, have increased from small numbers at the beginning to colonies of magnificent proportions in 1896, at which time the Terns, *S. hirundo* and *S. dougalli*, were beyond estimate, while the Laughing Gulls had increased to a fairly good sized colony, after having virtually abandoned these waters. The Terns of Penikese Island had never until 1897 enjoyed an *entire* undisturbed breeding season, when I interested myself in their behalf. As a result the increase has been a subject of remark among people living in the vicinity. At both Muskeget and Penikese Islands the situation is precarious, inasmuch as the birds may be compelled at any time to seek new breeding grounds elsewhere. Life saving stations, fortifications, etc., located in their midst, are likely to prove disturbing factors.

I visited and remained on Muskeget Island July 3-5, 1897, and while there made, as has heretofore been my custom, an exhaus-

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<sup>1</sup> Read before the Nuttall Ornithological Club, October 18, 1897.

tive examination of all the breeding grounds of the Terns and Laughing Gulls. I found on visiting Gravelly Island a considerable falling off from the status of June 26, 1896, in both nests and eggs; the occupants were also different, being now almost entirely Common Terns (*S. hirundo*), its former possessors, the Roseate Tern (*S. dougalli*) having to a large extent abandoned it, there being, by my estimate, not more than ten per cent. of the latter now nesting there. I endeavored for over an hour to procure a few specimens of Roseates having the basal half of the bill of a dark orange red, with legs and feet carmine. I have noted such flying about in numbers during former years, they being noticeably abundant July 29, 1895; some of these birds had slaty, while others had white underparts. I failed in securing any, obtaining only one bird with the bill partially so colored.

I subjoin the following statement of nests and eggs noted here:

## GRAVELLY ISLAND. JULY 3, 1897.

*Terns.*

128 nests with 1 egg each	128		5 nests with 1 egg and 1 chick
232 " " 2 eggs "	464		2 " " 1 " " 2 chicks
51 " " 3 " "	153		4 " " 2 eggs " 1 chick
7 " " 4 " "	28		
0 " " 5 " "			82 live chicks
<hr/> 418	<hr/> 773		53 dead "

*Laughing Gulls.*

5 nests with 1 egg and 1 chick in down,	10
4 " " 2 eggs " 1 " " "	12
2 " " 1 egg " 2 chicks " "	6
<hr/> 11	<hr/> 28

I have not before noted Laughing Gulls breeding here, although I have heard that they did so formerly. This year their nests were placed in the longest and thickest lodged beach grass, *Ammophila arundinacea*, and were consequently well concealed. These birds undoubtedly came from their former haunt, Muskeget Island proper, which place they abandoned this season.

On leaving Gravelly Island I rowed over and examined the

adjacent shoals, or more correctly speaking, pieces of the old south beach, which are now all that remains of the northwestern half, and which formerly served as a barrier on this side and protected Muskeget and contiguous islands from the fury of the ocean. It will be seen that the conditions here are constantly changing to a greater or less extent, and I would refer those of my readers who may be interested to know how this locality looked, as also Penikese Island, at the time of the American Revolution, to the 'Atlantic Neptune,' an atlas published for the use of the Royal Navy of Great Britain, by Samuel Holland, Esq., London, 1777, Vol. II, Part 2. I found no birds nesting, nor chicks, nor eggs on these pieces of beach. Attempts at incubation had been made, as shown by the remains of egg shells, some nearly whole, with a good sized hole towards the larger end. This orifice had the appearance of having been gnawed or pecked to obtain the contents. Everything indicated that these places had been abandoned by the birds.

My next stopping place was at South Point Island. Changes were also noticeable here, my check-list of eggs and nests showing five hundred less eggs, and nearly a hundred less nests than on June 26, 1896. I again tried, without success, to procure some of the Roseates with a deep orange colored bill. There was only a small number of Roseates nesting here, intermingled with the Common Terns and Laughing Gulls. These latter, about fifteen pairs, probably came from their old nesting place on Muskeget proper, they nesting here for the first time, in the thickest and tallest beach grass. This place was, until 1897, one of the strongholds of the Roseates, but this year these beautiful birds are not in evidence as formerly, a large part of the colony heretofore domiciled here having apparently abandoned these waters. I think there are more Common Terns breeding on South Point Island than in 1896, they having come, like their neighbors, the Laughing Gulls, from Muskeget proper, having, like them, also abandoned it. I also found here some empty egg shells of the Terns and one of a Laughing Gull which had holes apparently gnawed or pecked in them. The nests and eggs noted are as follows:

## SOUTH POINT ISLAND, JULY 3, 1897.

*Terns.*

144 nests with 1 egg each, 144	5 nests with 1 egg & 1 chick in down
342 " " 2 eggs " 684	3 " " 1 " 2 chicks "
68 " " 3 " " 204	1 nest with 2 eggs and 1 chick "
9 " " 4 " " 36	1 " " no " 2 chicks "
0 " " 5 " "	103 live chicks in the down
<u>563</u>	<u>67 dead " " "</u>
1068	

*Laughing Gulls.*

1 nest with 1 egg each, 1
4 nests " 2 eggs " 8
<u>7 " " 3 " " 21</u>
12
30

On South Point (of Muskeget Island proper), now united to South Point Island, I found very few eggs although the Terns used it as a nesting place. I observed no eggs this season but what were normal.

I visited Adams Island but, as heretofore, found no birds nesting on it. This island has been considerably reduced in size since the washing away of the south beach.

I surveyed Muskeget Island proper on July 4 and 5, 1897, with feelings of concern and regret, for great changes had taken place regarding the domiciled birds since last season, as I found that this great breeding resort of the Terns and Laughing Gulls had been practically abandoned, there being only a few Terns still nesting at the westernmost part of the island. The cause of this abandonment I attribute to the building of a new life saving station in the midst of their former breeding grounds on the northern side of the island, together with some minor causes. This particular area has been the stronghold of the Common Terns, where they congregated in thousands, as well as of the Laughing Gulls. I am of the opinion that a portion of these birds have re-located on some of the small adjoining islands, while others have apparently abandoned these waters. The comparatively small number of the Roseates remaining, in comparison with 1895 and 1896, together with the diminished aggregate of

Laughing Gulls, indicate that they must have departed elsewhere.

For the first time to my knowledge, or so far as I can learn from others, a small colony of Terns nested this season on the Dry Shoal (without vegetation) located about half a mile from the northwestern end of Nantucket Island: about one hundred eggs were noted there, but unfortunately a high course of tides swept over this shoal and carried away the eggs.

This season the Terns arrived at Muskeget in large flocks, thousands dropping from the sky when they were first observed, similar arrivals as I am informed, not having been before noted. Up to the night of May 2, 1897, no Terns or Laughing Gulls had been seen in the locality. Early on the morning of May 3, the Terns were in evidence in large numbers, estimated at one thousand: the wind had been easterly during the night. This is the earliest date of their arrival in Massachusetts of which I have any knowledge. At Penikese Island, the greater portion of the Terns left the island on September 1, 1897, the wind being southwest and the weather fine. On the 4th and 5th a total of one hundred and twenty-five Terns, nearly all of them young birds and not strong on the wing, were counted at three different points on the island. These continued to decrease until the 24th, and on the 25th not a Tern was visible in the neighborhood. The body of birds which departed on migration September 1 resembled a great cloud as they mounted into the air. The number of young birds was unusually large this season, larger than has been before noticed by Mr. Fred A. Homer, one of the owners of the island. This result is probably due to the protection which has been extended to them *throughout* the breeding season, a condition they have not before enjoyed, as far as I am aware. The writer avails of the present opportunity to express his acknowledgments of the considerate co-operation of the Messrs. Homer in bringing about such satisfactory results.

SOME NEW RACES OF BIRDS FROM EASTERN  
NORTH AMERICA.

BY OUTRAM BANGS.

A GREAT many of the common or conspicuous birds of eastern North America were for the first time brought to the light of science through Catesby's fine plates and careful descriptions, and a little later received binomial names from Linnæus, often based solely upon Catesby's magnificent work. The type locality of all these is southern South Carolina. It is with such species that I have principally to deal in the present paper, and it becomes often a matter of difficulty to determine whether the original name shall be restricted to the northern or the southern subspecies, as southern South Carolina is in many instances neutral ground; the greater differentiation of the species taking place both to the north and to the south,—that is in peninsular Florida, and again north of the lower Austral zone.

In nearly every instance a bird whose breeding range along the Atlantic tier of States extends over two or more of the principal faunal zones separates off into tenable subspecies in accordance with the zones which it covers. In a few cases three subspecies are recognized, as with the Hairy Woodpecker and the Purple Grackle; but usually the breeding range of a species is not extensive enough to admit of more than two valid geographical races.

The three life areas potent in modifying the birds of eastern North America are the Boreal, the Austral, and the Floridian,<sup>1</sup> though the minor divisions of these more important faunal areas often have an effect, though lesser, upon a species.

In studying the races of our eastern birds one must of course be sure one has breeding individuals, as migrants of many of the northern forms are found in winter associated with the southern

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<sup>1</sup> I use this name for the Tropical belt of south Florida and lower part of lower Austral zone in Florida, as the range of the peninsular forms peculiar to Florida usually extends north beyond tropical limits.

forms in Florida and Georgia. Thus Bluebirds taken in northern Florida in winter are often individuals of the northern form, as are most of the Great-crested Flycatchers, and Kingbirds found there in early spring. With birds that are non-migratory, or whose wanderings extend over a limited area, one need be less careful in this particular; but even then it is better to compare only breeders. A rather interesting case in point was one I noticed at St. Mary's, Georgia, where, on the great salt marsh in early April, there were two lots of Seaside Finches. One was the dark colored breeding bird of the region, conspicuous in the drier short grassed parts of the marsh and the patches of rush, in full song and worn breeding plumage. The other consisted of northern birds, in winter plumage, songless, and skulking about the long grass at the edges of the creeks. The two lots kept as much removed as if they bore each other no relationship.

There are more races of eastern birds worthy of separation than are included in the present batch, but those I deal with here are such as have been particularly brought to my notice in work that I have done in the field during the last few years.

I have had ample material to work with and have been able to examine skins from nearly every place I have wished to see them from. Besides the comparatively small but carefully chosen collections Mr. W. W. Brown, Jr., and I have made in Georgia and Florida, in the last few years, I have had access to the private collection of William Brewster, Esq., and that of the Museum of Comparative Zoölogy, both containing enormous series of eastern birds from very many important localities. Gerrit S. Miller, Jr., Esq., has also sent me specimens from his collection that I particularly desired to see.

All measurements are in millimeters and were taken with dividers.

***Haliaeetus leucocephalus washingtoni* (Aud.), subsp. rest.**

WASHINGTON'S EAGLE.

*Type locality*, Henderson, Kentucky. *Subspecific characters*. Size much larger than *H. leucocephalus leucocephalus*; bill proportionately more slender; upper mandible more abruptly curved downwards at tip.



## COMPARATIVE MEASUREMENTS.

Name.	Locality.	No.	Sex.	Wing.	Tail.	Tarsus.	Exposed culmen.
<i>H. washingtoni.</i>	South Hancock, Maine.	19,805 <sup>1</sup>	♀ ad.	606.3	279.4	94	70
<i>H. leucocephalus.</i>	Fort Myers, Fla.	44,245 <sup>1</sup>	♀ ad.	541.5	238.3	91	66.6

(These measurements give but a faint idea of the actual differences in bulk of the two Eagles.)

REMARKS. — The Washington Eagle occupies the whole of northeastern North America north of the lower Austral zone. The southern Bald Eagle occurs only in the lower Austral zone (Fla., Ga., S. Car., La., etc.).

The two eastern races of the Bald Eagle were clearly seen by Baird, who, however, supposed *washingtoni* to be the more southern, while in reality it is the northern form. Since Baird's time *washingtoni* has sunk, wholly without cause, into synonymy. The peculiar scaling of the tarsus and foot of Audubon's figure was either an accident in drawing or was abnormal. Audubon's figure shows the character of bill of *washingtoni* admirably as does Catesby's that of the southern form, true *leucocephalus*.

No one familiar with these two birds in life can have failed to notice the great difference in size between them. The little fellows that breed in Florida and Georgia are often scarcely larger than Red-tailed Hawks and hardly need comparison with the magnificent Eagle of the north. There is also a difference in habits. The Florida Eagle is a noted Duck catcher, pouncing upon them in the water, and the appearance of an Eagle on the wing is enough to drive all the Ducks scuttling in every direction from a bay or creek that he is approaching.

The Washington Eagle never, so far as I know, attempts to catch a Duck, contenting himself with fish or carrion. The Ducks know this and allow him to pass over them as unnoticed as a

<sup>1</sup> Coll. of Wm. Brewster, Cambridge, Mass.

Fish Hawk. Mr. C. H. Townsend<sup>1</sup> has lately described the Sea Eagle of Alaska as a new subspecies. He made his comparisons wholly with true *leucocephalus*, entirely ignoring *washingtoni*. His bird is but slightly larger than *washingtoni*, though it may differ in some other characters enough to entitle it to stand as a subspecies.

**Ceophlæus pileatus abieticola**, subsp. nov. NORTHERN PILEATED WOODPECKER.

*Type* from Greenville, Maine, ♀ adult, No. 3008. Coll. of E. A. and O. Bangs, collected Nov. 7, 1895, by C. H. Goldthwaite.

*Subspecific characters.* Much larger than *Ceophlæus pileatus pileatus*; bill longer, of about the same breadth; tarsus longer; all the white markings more extensive; black color less sooty, more brownish or grayish black, feathers of sides more extensively tipped and barred with white.

COMPARATIVE MEASUREMENTS.

Name.	Locality.	No.	Sex.	Wing.	Tail.	Tarsus.	Exposed culmen.	Breadth of bill at nostril.
<i>C. pileatus.</i>	Fort Myers, Florida.	44,155 <sup>3</sup>	♂ ad.	224	149	32.8	48	16
" "	" " "	44,154	♀ ad.	221	144	33	42.6	15
<i>C. abieticola.</i>	Greenville, Maine.	(Type) 3,008 <sup>2</sup>	♂ ad.	232	159.4	31	52.2	16
" "	Lake Umbagog, Maine.	11,986 <sup>3</sup>	♀ ad.	228	161	32.2	52	14.8

REMARKS. — Linnæus based his *Picus pileatus* on Catesby and Kalm. Taking Catesby as the best authority, southern South Carolina must be considered the type locality of the species, and birds from this region are as extreme of the southern race as those from Florida. *C. pileatus abieticola* is still to be found in

<sup>1</sup> Proc. Biol. Soc. of Washington, Vol. XI, pp. 145-146, June 9, 1897.

<sup>2</sup> Coll. of Wm. Brewster.

<sup>3</sup> Coll. of E. A. and O. Bangs.

considerable numbers in the primeval forests of northeastern North America, from Massachusetts north, but is of course extirpated over much of its former habitat. I think it still, however, meets the range of *C. pileatus pileatus*, and specimens from the mountains of Virginia and West Virginia are very good intermediates, though nearer *abieticola* than typical *pileatus*.

**Colaptes auratus luteus**, subsp. nov. NORTHERN FLICKER.

*Type* from Watertown, Mass., ♂ adult, No. 830, Coll. of E. A. and O. Bangs. Collected May 2, 1879, by E. A. and O. Bangs.

*Subspecific characters.* Size larger than *C. auratus auratus*; bill proportionally shorter, straighter, less curved. Colors much paler throughout; the brown of back and gray of top of head several shades lighter; black bands on back narrower and less conspicuous; under parts more washed with yellow—much less black and white; shafts, etc., a much brighter yellow.

COMPARATIVE MEASUREMENTS.

Name.	Locality.	No.	Sex.	Wing.	Tail.	Tarsus.	Exposed culmen.	Breadth of bill at nostril.
<i>C. auratus.</i>	Enterprise, Fla.	30,017 <sup>2</sup>	♂ ad.	145.	92.	27	35.	9.
" "	East Peninsula, opp. Micco, Fla.	3,014 <sup>1</sup>	♂ ad.	142.2	97.4	26	34.	8.6
" "	" " " "	3,017	♂ ad.	148.	98.8	26	35.	9.
<i>C. luteus.</i>	Chatham, Canada.	41,835 <sup>2</sup>	♂ ad.	156.	104.	29	34.6	9.4
" "	" " " "	41,834	♂ ad.	154.	101.	28	32.	9.
" "	Watertown, Mass.	830 (Type)	♂ ad.	159.	105.	29	35.2	9.4

REMARKS. — Linnæus based his *Cuculus auratus* wholly upon Catesby. The bird from southern South Carolina I have not seen, but birds from McIntosh Co., Georgia, differ but little from Florida specimens. Specimens from northern North Carolina and Virginia are referable to subspecies *luteus*, which extends from thence northward to Canada.

The differences between the two eastern races of the Flicker were very clearly pointed out by Dr. Merriam as long ago as

<sup>1</sup> Coll. of E. A. and O. Bangs.

<sup>2</sup> Coll. of Wm. Brewster.

1874,<sup>1</sup> and it is the greatest wonder they have never been recognized by name till now.

**Tyrannus tyrannus vexator**, subsp. nov. FLORIDA KING-BIRD.

*Type* from Merrit's Island, Indian River, Florida, ♀ ad., No. 1780, Coll. of G. S. Miller, Jr., collected May 13, 1886, by C. J. Maynard.

*Subspecific characters.* Size of *T. tyrannus tyrannus*, bill very much broader; tarsus slightly shorter and stouter; color of back usually darker and not so gray. In *T. tyr. tyrannus* the top of head is black and back is dark gray. In *T. tyr. vexator* the whole back is but little lighter in color than the head, and there never is the marked contrast in the colors of head and back seen in *T. tyr. tyrannus*.

Name.	Locality.	No.	Sex.	Wing.	Tail.	Tarsus.	Exposed culmen.	Breadth of bill at nostril.
<i>T. tyrannus.</i>	Wayland, Mass.	705 <sup>2</sup>	♀ ad.	112.	83.2	18.	17.4	8.
<i>T. vexator.</i>	Merrit's Island, Fla.	1,780 <sup>3</sup>	♀ ad.	112.4	79.	17.4	17.6	9.8

REMARKS. — The name of the eastern Kingbird is considered to date from Linnæus's Xth Edition. Linnæus, however, based his bird principally upon "The Tyrant" of Catesby. Catesby, while he may have included the eastern Kingbird in his account of "The Tyrant," figured under that name another species.

The first author who gave the eastern Kingbird unconfused with other species is, as far as I can ascertain, Pennant, where in his 'Arctic Zoology,' on page 384, the "Place" is given as in New York and the date of arrival is said to be April. Pennant mentions the white-tipped tail and his description is clear and free from confusion with any other species.

<sup>1</sup> American Naturalist, Vol. VIII, p. 88, 1874.

<sup>2</sup> Coll. of E. A. and O. Bangs.

<sup>3</sup> Coll. of Gerrit S. Miller, Jr.

Gmelin, under *Lanius tyrannus*, refers to Pennant, but all his other references relate to either composite or underterminable species. It is therefore best to consider the type locality of the Kingbird to be New York.

The Florida form is easily recognized by its large bill, and is abundant in the breeding season throughout peninsular Florida. The northern bird, however, is extremely common in Florida in April, as it passes through on its spring migration, and one must wait till these northern migrants have gone and the birds that breed in Florida have begun nesting in order to be sure to get there only specimens of *T. tyrannus vexator*.

The birds that breed on Cumberland Island, Georgia, are extremes of the Florida form as are also breeding birds from other parts of Georgia. I have seen no surely breeding birds from South Carolina, but undoubtedly *vexator* is the form that does breed there.

**Myiarchus crinitus boreus**, subsp. nov. NORTHERN CRESTED  
FLYCATCHER.

*Type* from Scituate, Mass., ♂ ad. (one of a breeding pair), No. 713, Coll. of E. A. and O. Bangs, collected June 28, 1883, by E. A. and O. Bangs.

*Subspecific characters.* Size larger than *M. crinitus crinitus*; bill very much smaller; colors about the same.

COMPARATIVE MEASUREMENTS.

Name.	Locality.	No.	Sex.	Wing.	Tail.	Tarsus.	Exposed culmen.	Breadth of bill at middle of nostril.
<i>M. crinitus.</i>	New Berlin, Fla.	3,001 <sup>1</sup>	♂ ad.	106	91	21	20	10.4
" "	Miami, Fla.	14,324 <sup>2</sup>	♂ ad.	101	90	22	20	10.2
<i>M. boreus.</i>	Scituate, Mass.	(Type) 713 <sup>1</sup>	♂ ad.	109	94	22	18.6	8.6

<sup>1</sup> Coll. of E. A. and O. Bangs.

<sup>2</sup> Coll. Museum of Comparative Zoölogy.

REMARKS.—Linnæus's *Turdus crinitus* is based wholly upon Catesby, and the type locality of the species is therefore southern South Carolina.

Breeding Crested Flycatchers from South Carolina and Georgia, though intergrades, are much nearer the southern extreme, and the northern form is the one to properly receive a new subspecific name.

In the north *M. crinitus boreus* is rare or of local distribution, although it reaches southern Canada. A good many pairs breed every year in the neighborhood of the town of Scituate, Massachusetts, for which reason I have selected that place for the type locality of the subspecies. It is also a regular, though somewhat local breeder in other parts of Massachusetts.

The principal character that separates *M. crinitus crinitus* and *M. crinitus boreus* is the different bill. This, however, is alone sufficient to always distinguish the two races, the enormous swollen bill of the birds that breed in Florida and Georgia being in marked contrast to the small slender bill of the bird of the north-eastern United States.

***Sitta pusilla caniceps*, subsp. nov. FLORIDA BROWN-HEADED NUTHATCH.**

*Type* from Clear Water, Hillsboro Co., Fla., ♀ ad., No. 3021, Coll. of E. A. and O. Bangs, collected March 25, 1874, by C. J. Maynard.

*Subspecific characters.* Size smaller than *S. pusilla pusilla*; bill larger; top of head much lighter brown, the feathers tipped and edged still

MEASUREMENTS.

Name.	Locality.	No.	Sex.	Wing.	Tail.	Tarsus.	Exposed culmen.	Breadth of bill.
<i>S. pusilla.</i>	Statesville, N. C.	3,019 <sup>1</sup>	♀	64.	30.	13.4	13.	3.8
" "	" "	3,020	♀	66.8	32.	13.6	13.2	3.8
<i>S. caniceps.</i>	Clear Water, Fla.	3,021	♀	60.	27.4	13.	13.4	4.
" "	" " "	318	♀	61.	30.	12.6	13.6	4.

<sup>1</sup> Coll. of E. A. and O. Bangs.

lighter—often grayish;<sup>1</sup> loreal and post-ocular streak dark brown, in marked contrast to color of top of head; white spot on nape usually less extensive; underparts slightly darker, more plumbeous.

REMARKS. — *Sitta pusilla caniceps* is wholly confined to peninsular Florida. Specimens from St. Mary's, Ga., are rather nearer the more northern subspecies, true *pusilla*, while the one skin I have examined from Screven Co., Ga., is true *pusilla*. The Florida form, though widely distributed over lower Florida, is not a very common bird anywhere, not nearly so common as true *pusilla* is in the Carolinas. I have examined a large number of skins from many localities, the southernmost of which are Miami on the east side and Clear Water on the west side of the peninsula.

**Parus (Lophophanes) bicolor floridanus**, subsp. nov.  
FLORIDA TUFTED TITMOUSE.

*Type* from Clear Water, Hillsboro Co., Fla., ♂ adult, No. 3021, Coll. of E. A. and O. Bangs, collected March 29, 1874, by C. J. Maynard.

*Subspecific characters.* Size smaller than *P. bicolor bicolor*; tail shorter; bill larger; color of top of head and upper parts of neck duller—less ashy; crest much shorter.

COMPARATIVE MEASUREMENTS.

Name.	Locality.	No.	Sex.	Wing.	Tail.	Tarsus.	Exposed Culmen.	Breadth of bill.
<i>P. bicolor.</i>	Salt Sulpher Springs, W. V.	344 <sup>2</sup>	♂	82	70.6	20.4	10.8	4.6
" "	Statesville, N. C.	315	♂	82.2	71	21	10.4	4.4
" "	" "	317	♀	81.4	70	19.8	10.4	4.6
<i>P. floridanus.</i>	Clear Water, Fla.	3,021	♂	75	64.2	19.4	11.4	4.6
" "	Enterprise, Fla.	5,248 <sup>3</sup>	♂	77	65	20.4	11.2	4.8

<sup>1</sup> This lighter tipping and edging to the feathers is apparently not due to fading or wearing; it gives a pale variegated appearance to top of head, very different from the clear brown seen in *S. pusilla pusilla*.

<sup>2</sup> Coll. of E. A. and O. Bangs.

<sup>3</sup> Coll. of Museum of Comparative Zoölogy.

REMARKS.—The geographic ranges of the two races of the Tufted Titmouse are the same as those of the Brown-headed Nuthatch. The Florida form is confined to the peninsula and intergrades with true *bicolor* in southeastern Georgia. Like the Nuthatch, it is not a very common bird.

***Sialia sialis grata*, subsp. nov. FLORIDA BLUEBIRD.**

*Type* from Miami, Dade Co., Florida. No. 14258, ♂ ad., Coll. Museum of Comparative Zoölogy, Cambridge, Mass. Collected March 9, 1871, by Maynard & Henshaw.

*Subspecific characters.*—Size of *S. sialis sialis*; bill larger and stouter; tarsus and foot larger; color of upper parts clearer blue, less purple. In *Siala sialis sialis* about small blue, and in *S. sialis grata* about French blue.<sup>1</sup>

COMPARATIVE MEASUREMENTS.

Name.	Locality.	No.	Sex.	Wing.	Tail.	Tarsus.	Exposed culmen.	Breadth of bill at middle of nostril.
<i>S. sialis.</i>	Belmont, Mass.	226 <sup>2</sup>	♂ ad.	101.	63	20.2	11.4	5.
" "	Brookline, Mass.	3,006	♂ ad.	101.2	65	20.6	11.6	5.
" "	" "	3,007	♂ ad.	98.	58	20.8	11.	4.6
<i>S. grata.</i>	Miami, Fla.	14,258 <sup>3</sup>	♂ ad.	100.6	66	21.6	12.2	5.
" "	" "	14,247	♂ ad.	99.4	64	22.	12.4	5.4
" "	" "	14,265	♂ ad.	98.2	61	22.	13.	5.6

REMARKS.—Linnæus based his *Motacilla sialis* on Catesby and Edwards. Although Catesby mentions seeing Bluebirds in several places, Bermuda, Maryland, etc., we must of course assume that the bird he figured came from southern South Carolina.<sup>4</sup> The birds of this region, as also those that breed in east-

<sup>1</sup> These blues are hard to define exactly owing to the sheen of the feathers, and to the varying shades of the color when the skin is turned in different lights.

<sup>2</sup> Coll. of E. A. and O. Bangs.

<sup>3</sup> Coll. of Museum of Comparative Zoölogy.

<sup>4</sup> It is evident that Linnæus took his description wholly from Catesby's plate, perpetuating the error of coloring of Catesby's figure, in his discription.



ern Georgia, are intergrades, but those that I have seen are rather nearer the northern extreme than the Florida extreme, and I have therefore given the new name to the form inhabiting South Florida. Another reason that has induced me to do this is that the northern form never gets so far south as Miami in its winter migration while it is extremely common in winter in South Carolina; therefore the northern extreme can easily be got at the type locality of the species, while the Florida form stands apart by itself. The Museum of Comparative Zoölogy is fortunate in possessing a fine series, including both breeding and winter specimens of the Florida Bluebird, collected in 1871 by Messrs. Maynard and Henshaw, mostly at Miami — a point so far south that it represents the form in its extreme.

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### GENERAL NOTES.

**Brünnich's Murre (*Uria lomvia*) at Ottawa, Canada.** — On the 12th December, 1897, large numbers of this bird passed the city on the way South. The flight continued nearly the whole day. Quite a number of the birds were shot. — G. R. WHITE, *Ottawa, Ontario, Canada.*

**Ross's Gull (*Rhodostethia rosea*) on Bering Island.** — In my 'Ornith. Expl. Comm. Isls. and Kamtsch.' (1885), p. 315, I enumerated Ross's Gull among the birds of Kamchatka with some hesitation and without giving it a number since Saunders had queried the statement of Verreaux that the two specimens in the museum at Mayence actually came from that country. At the same time I pointed out that there was no improbability *per se* in the alleged locality being correct. I am now in position to affirm that this species occasionally straggles as far south on the Asiatic coast as Bering Island off the coast of Kamchatka. Last summer Mr. N. Grebnitski kindly presented me with a fully adult female of Ross's Gull obtained on Bering Island December 10, 1895. It is now in the U. S. National Museum, No. 162785. This is a very interesting addition to the avifauna of the Commander Islands. — LEONHARD STEJNEGER, *U. S. National Museum, Washington, D. C.*

**The Scarlet Ibis — A Correction.** — In 'The Auk,' XIV, 1897, p. 316, is a record by the present writer of the Scarlet Ibis taken in 1897 in the Arkansas Valley in Colorado. This was given on the authority of the

local taxidermist who mounted the birds. Further investigation shows that they are really the White-faced Glossy Ibis. — W. W. COOKE, *Ft. Collins, Col.*

**Colinus virginianus in Peculiar Plumage.** — A Bobwhite recently killed in the vicinity of Washington, and now in the possession of Mr. Blair Lee of this city, presents such an unusual appearance as to seem worthy of permanent record. All the dark rufous tints of the normal plumage are replaced by pale fawn color, the buffy shades by white or grayish white. The ground color of the rump and tail is almost pure gray, and the bird is very much paler and more grayish throughout than even *Colinus v. texanus*. None of the black markings, however, seem to have undergone change; and especially on the lower surface, scapulars and innermost secondaries, they are brought out in conspicuous contrast by the lightening of the background. The pattern of coloration appears to be perfectly preserved, the black jugular band being, however, somewhat broader and the black markings on the breast more numerous than in ordinary specimens. — HARRY C. OBERHOLSER, *Washington, D. C.*

**The Passenger Pigeon (*Ectopistes migratorius*) in Wisconsin and Nebraska.** — Our records of this species during the past few years have referred, in most instances, to very small flocks and generally to pairs or individuals. In 'The Auk' for July, 1897, I recorded a flock of some fifty Pigeons from southern Missouri, but such a number has been very unusual. It is now very gratifying to be able to record still larger numbers and I am indebted to Mr. A. Fugleberg of Oshkosh, Wis., for the following letter of information, under date of Sept. 1, 1897: "I live on the west shore of Lake Winnebago, Wis. About six o'clock on the morning of August 14, 1897, I saw a flock of Wild Pigeons flying over the bay from Fisherman's Point to Stony Beach, and I assure you it reminded me of old times, from 1855 to 1880, when Pigeons were plentiful every day. So I dropped my work and stood watching them. This flock was followed by six more flocks, each containing about thirty-five to eighty Pigeons, except the last which only contained seven. All these flocks passed over within half an hour. One flock of some fifty birds flew within gun shot of me, the others all the way from one hundred to three hundred yards from where I stood." Mr. Fugleberg is an old hunter and has had much experience with the Wild Pigeon. In a later letter dated Sept. 4, 1897, he writes: "On Sept. 2, 1897, I was hunting Prairie Chickens near Lake Butte des Morts, Wis., where I met a friend who told me that a few days previous he had seen a flock of some twenty-five Wild Pigeons and that they were the first he had seen for years." — This would appear as though these birds were instinctively working back to their old haunts, as the Winnebago region was once a favorite locality. We hope that Wisconsin will follow Michigan in making a close season on Wild

Pigeons for ten years, and thus give them a chance to multiply and perhaps regain, in a measure, their former abundance.

In 'Forest and Stream,' of Sept. 25, 1897, is a short notice of 'Wild Pigeons in Nebraska,' by 'W. F. R.' Through the kindness of the editor he placed me in correspondence with the observer, W. F. Rightmire, to whom I am indebted for the following details given in his letter of Nov. 5, 1897: "I was driving along the highway north of Cook, Johnson County, Nebraska, on August 17, 1897. I came to the timber skirting the head stream of the Nemaha River, a tract of some forty acres of woodland lying along the course of the stream, upon both banks of the same, and there feeding on the ground or perched upon the trees were the Passenger Pigeons I wrote the note about. The flock contained seventy-five to one hundred birds. I did not frighten them, but as I drove along the road the feeding birds flew up and joined the others, and as soon as I had passed by they returned to the ground and continued feeding. While I revisited the same locality, I failed to find the Pigeons. I am a native of Tompkins County, N. Y., and have often killed Wild Pigeons in their flights while a boy on the farm, helped to net them, and have hunted them in Pennsylvania, so that I readily knew the birds in question the moment I saw them." I will here take occasion to state that in my record of the Missouri flock (Auk, July, 1897, p. 316) the date on which they were seen (December 17, 1896) was, through error, omitted.—RUTHVEN DEANE, *Chicago, Ill.*

**Geotrygon chrysis again at Key West.**—The last record of the occurrence of the Key West Quail Dove in Florida was that by Mr. Scott (Auk, VII, No. 1, Jan., 1890, p. 90), of a male (now in my collection) taken by Mr. Atkins at Key West, September 15, 1889. During the past autumn Mr. Atkins secured two more specimens, which have also come into my possession. Both are females and both were taken on Key West, one by Thomas Moore, at Salt Pond Hammock, near the east end of the island, October 20, 1897, the other by James Moore, "quite near the town," November 12, 1897. They were shot on the ground in rather dense woods. Mr. Atkins received them in the flesh and skinned and sexed them.—WILLIAM BREWSTER, *Cambridge, Mass.*

**The California Vulture in Santa Barbara Co., Cal.**—On Feb. 21, 1898, the Zoölogical Department of Leland Stanford University received a specimen of *Pseudogryphus californianus*, in the flesh. It was presented by the collector, Mr. Holton Webb, who secured it at Lampoc, a small town near the coast, between the Santa Ynes Mts. and the Santa Ynes River, in Santa Barbara Co. The specimen is in excellent condition, and will make a fine specimen, though apparently not full grown, as it measures but 7 ft. 8 in. in extent.—ROBERT B. McLAIN, *Stanford University, Cal.*

**Occurrence of the Spotted Screech Owl (*Megascops aspersus*) in Arizona.**—Mr. C. K. Worthen has sent me a pair of small Screech Owls which were taken in the Huachuca Mountains, Arizona, the male by Mr. R. Lusk August 10, 1891, the female (probably by the same collector) June 20, 1895. Both birds are adults, the female being in slightly worn breeding plumage while the male had nearly completed the midsummer moult, excepting about the head where the feathers are old, faded and very much worn.

These birds do not belong to any form which is known to have been hitherto found within the United States, but on comparing them with my type of *Megascops aspersus*<sup>1</sup> (female, Chihuahua, Mexico, May 6, 1884), I find that they resemble it very closely in general color and markings as well as in the presence of a well-marked fringe of bristles on the sides of the head. The ground coloring, however, is slightly grayer, especially on the upper parts, and the dark markings are rather less coarse and numerous. The Arizona birds are also smaller, the male having the wing 5.18 inches in length and the female 5.27, whereas the wing of the type measures 5.66 inches. These peculiarities may prove to be characteristic of all the birds which inhabit the Huachuca range, but for the present, at least, it seems safest to regard them as representing mere individual variation and to refer the Arizona specimens to *M. aspersus* which, as has been just implied, is quite new to our fauna.—WILLIAM BREWSTER, *Cambridge, Mass.*

**Great Gray Owl (*Scotiaptex cinerea*) in Minnesota.**—During the winter of 1896–97 I secured not less than five specimens of this immense Owl and know of one other capture, all in this (Aitkin) County.

The winter just past, 1897–98, was not so cold, nor was there much snow as in the previous winter; in fact, it was a remarkably open winter, with only occasional cold spells. This open season may account for the scarcity of the Owl, for I secured but one and know of two others captured.

My friend, Mr. G. G. Cantwell, in his 'List of Birds of Minnesota' (O. and O., Sept., 1890) records this species as a "rare winter visitor," but it may be seen from my records that this Owl may be considered as a fairly common winter visitor, at least in the wooded parts of the central and northern sections of the State.

It is interesting to note how small a body this species has in proportion to its length of body and extent of wing, compared with other large Owls, as may be seen by the following data, from a series of four specimens in my collection :

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<sup>1</sup>Originally described in 'The Auk,' Vol. V, No. 1, January, 1888, pp. 87 and 88 and figured in Vol. VIII, No. 4, October, 1891, of the same journal.

Coll. Albert Lano, ♀, length, 26.75; extent, 58.00; wing, 21.00; tail, 12.00; weight, 2 lbs. 14½ oz. Collected at Aitkin, Minn., Jan. 5, 1897.

Coll. Albert Lano, ♂, length, 26.00; extent, 57.00; wing, 21.00; tail, 12.50; weight, 2 lbs. 11 oz. Collected at Aitkin, Minn., Jan. 27, 1897.

Coll. Albert Lano, ♂, length, 25.00; extent, 55.00; wing, 21.00; tail, 12.00; weight, 1 lb. 15 oz. Testicles active, size of beans. Collected at Aitkin, Minn., March 3, 1897.

Coll. Albert Lano, ♀, length, 25.25; extent, 58.75; wing, 20.75; tail, 12.50; weight, 2 lbs. 14 oz. Ovaries active, size of No. 4 shot. Collected at Aitkin, Minn., Jan. 19, 1898. — ALBERT LANO, *Aitkin, Minn.*

**Note on *Speotyto cunicularia obscura* Stephens.**—Mr. Stephens described this subspecies of Burrowing Owl (*S. c. obscura*, Auk, XII, Oct. 1895, p. 372), from a single male from Upper Lake, Lake Co., California. This has since stood as a doubtful form. Through the kindness of Mr. A. W. Johnson I have been able to examine two male birds from the type locality. In coloration I cannot see that these birds differ from other Ground Owls from San Diego and Palo Alto Counties, California, and Washington. The measurements are fully as great as for birds from other localities. A table of measurements is here given. Mr. Richmond

Number.	Sex.	Locality.	Date.	Wing.	Tail.	Tarsus.
151,022	♀	Upper Lake, Lake Co.	May 29, 1894.	6.20	3.10	1.65
162,706	♂	“ “ “	Feb. 10, 1897.	6.96	3.64	1.92
162,707	♂	“ “ “	Mar. 27, 1897.	6.96	3.70	1.97
162,708	♂	Long Beach.	Aug. 15, 1894.	6.90	3.54	1.80
1	♂	Tiburon.	Sept. 26, 1897.	6.80	3.50	1.90
2	♂	Amador Co.	Jan. 26, 1896.	7.10	3.56	1.87
162,709	♀	Palo Alto.	Oct. 15, 1897.	6.78	3.44	1.60
3,155	♀	Pullman, Wash.	Apr. 7, 1894.	6.58	3.28	1.62

has kindly compared these birds with the type and says: “Two Owls from Upper Lake, Calif., the type locality of Mr. Stephens’s *obscura*, differ in no way from the ordinary *Speotyto* of the West. The original specimen of *obscura*, obtained by Mr. Stephens, is a very small bird, differing in color, when compared with western specimens, only in the dusky face and head, where the feathers are apparently stained. The measurements of the type of *obscura*, taken by Mr. Stephens, are added to the table below. The specimen from Palo Alto is fully as dark as some specimens of *floridana*, but lacks the bars on the under wing-coverts peculiar to that and the West Indian forms.”—R. C. MCGREGOR, *Palo Alto, Cal.*

<sup>1</sup>Coll. of H. B. Kaeding.

<sup>2</sup>Coll. of Leland Stanford Jr. University. The others belong to U. S. Nat. Mus.

**Amazilia cerviniventris chalconota**— A Correction.— The description of this new race, in the January number of 'The Auk,' contains an error, to which Dr. C. W. Richmond has kindly directed my attention. The type locality should have been given as *Brownsville*, Texas, instead of *Beeville*, Texas. Then on page 32, second line of 'Habitat' for *Bee County* read *Corpus Christi*; page 34, line 23, for *four* read *three*; line 25, same page, insert *and* before *Corpus Christi*, and omit *and Beeville*, together with all of the following sentence. An inadvertence may also be here corrected: on page 34, line 28, for *the State of*, read *central or southern*; since the statement in its present condition is contradictory to what has already been said on the previous page.—HARRY C. OBERHOLSER, *Washington, D. C.*

**Lewis's Woodpecker Storing Acorns.**— An interesting account has been furnished me by Mr. Manly Hardy of the storing of acorns by Lewis's Woodpecker, *Melanerpes torquatus*. The substance of Mr. Hardy's communication is as follows:

Sidney French, a relative of his, a lad of some sixteen years of age, while paying a visit in November, 1897, to Happy Cañon, about twenty miles southeast of Denver, Colorado, amused himself by watching the Woodpeckers. Seeing one enter a hole in a big cotton-wood tree, he climbed up to see why it did so, when he found in the hole a lot of acorns. He then examined several other holes in trees near by, the names of which were not familiar to him, and found these, too, stored with acorns. Some of the holes were half the length and about the diameter of his finger, and contained five or six acorns each, tightly wedged in; while others, three inches across and extending downward for six or eight inches, held much larger stores. It was evident that the birds brought the acorns to the holes and shelled them there before storing them, for the ground beneath was piled with the empty shells and the kernels that were packed away were mostly in quarters, some of them, however, being in halves. The acorns belonged to the scrub oak of that region and were small and rather sweet.

The boy's careful description of the birds indicated pretty clearly that they were Lewis's Woodpecker but this important point was definitely settled when he sent the head and some of the breast feathers of that species to Mr. Hardy.

Major Bendire in his 'Life Histories of North American Birds' (Part II, p. 119) says that Lewis's Woodpecker has been seen sticking mayflies in crevices of pines, but I can find no record of its storing acorns, while the fact that the acorns were shelled lends additional interest to the story.—WILLIAM BREWSTER, *Cambridge, Mass.*

**Occurrence of Leconte's Sparrow (*Ammodramus leconteii*) at Ithaca, N. Y.**— While searching the large marsh at the head of Cayuga Lake

for fall migrants, I succeeded in securing a specimen of Leconte's Sparrow. The bird was taken at the edge of the marsh, where a stream had washed up the mud, making a higher and drier bank, and where, in consequence, the grasses were thicker and less aquatic in character. The specimen I obtained was a young bird, in the first plumage after the nestling plumage, thus, in all probability, showing that it had been bred at no very great distance from where it was taken. The date of its capture was October 11, 1897. Further careful search, both on the same day, and for many days thereafter, failed to reveal any more of the species. — LOUIS AGASSIZ FUERTES, *Ithaca, N. Y.*

**The Sea-side Sparrow on Cape Cod in Winter, and other Notes.** — I have been asked to report the following interesting records. Mr. Henry B. Bigelow and Mr. George C. Shattuck while walking over the salt marsh on Sandy Neck, Barnstable, Mass., on February 9, 1898, started from the grass a single Sea-side Sparrow (*Ammodramus maritimus*). Mr. Bigelow shot the bird at once and found it to be apparently in perfect health and without any marks of any old injuries. The sexual regions being badly torn by the shot, determination of the sex was impossible.

This is the first record of the wintering of this species in New England to my knowledge, for the bird probably wintered, and the capture also suggests the idea that the bird probably bred during the past season. Besides Mr. E. Sturtevant's records of the occurrence of this species at Middletown, R. I. (*Auk*, Vol. XIV, pp. 219 and 322) in May and July, 1889, 1896, 1897, we have Mr. J. A. Farley's record of its breeding at Westport, Mass. (*Auk*, Vol. XIV, pp. 322). Do these records signify the increasing number of competent observers in the field or the movement northward of the species's range from southern Rhode Island to Massachusetts?

On the same day, February 7, two Scaup Ducks (*Aythya marila nearctica?*) came in to the decoys put in the harbor of Barnstable, and although neither of the birds were taken, Mr. Shattuck feels confident of their identity as he knows the bird well. The usual northern limit of the Scaup Duck's winter range is Long Island, N. Y. Mr. R. W. Hall, Assistant in Zoölogy at Harvard University, tells me that he saw in Roxbury (Boston), Mass., on December 27, 1895, on the banks of Jamaica Pond in the shrubbery, a female Chewink (*Pipilo erythrophthalmus*). This is the third winter record for Massachusetts for this species and the fourth for New England. — REGINALD HEBER HOWE, JR., *Longwood, Mass.*

**Lincoln's Sparrow in New Brunswick.** — On June 18, 1897, at Bright, York County, New Brunswick, my attention was attracted by a bird's song which reminded me both of the song of the Grass Finch and that of the American Goldfinch yet was different from either. The following day I returned to the same place with my gun and secured the singer,

which was later identified for me by Mr. Frank M. Chapman, to whom I sent it, as *Melospiza lincolni*.

This, I believe, is the first known instance of the occurrence of the species in New Brunswick. — WILLIE H. MOORE, *Scotch Lake, N. B.*

**Rank of the Sage Sparrow.** — On page 58 of the current volume of 'The Auk,' Mr. Joseph Grinnell states that he found *Amphispiza belli* and *Amphispiza belli nevadensis* inhabiting the same locality at the head of the Little Tujunga Cañon, Los Angeles County, California, in July, 1897. This area is on the western slope of the divide, though not more than ten miles from the Mohave Desert. Mr. Grinnell further states that he has never learned of any intermediate specimens between the two forms, and consequently argues that they are specifically distinct.

On the Death Valley Expedition in 1891, Mr. Frank Stephens collected a number of specimens on the eastern slope of the Sierras, opposite the south end of Owens Lake, which I reported as being intermediate in color and size (N. Am. Fauna, No. 7, p. 98).

Taking this into consideration and the fact that *Amphispiza b. nevadensis* had evidently wandered from their desert home, as Mr. Grinnell writes me they were fully fledged, I cannot agree with him that there is any reason for considering the two forms more than subspecifically distinct. — A. K. FISHER, *Washington, D. C.*

**Wintering of the Towhee (*Pipilo erythrophthalmus*) at Rockaway Beach, L. I.** — On the 29th of January, 1898, I made a collecting trip to Rockaway Beach in the hope of seeing some winter birds, as the weather had been very cold for several days, and on the day in question the air was full of flying snow. While passing through a small thicket of brambles I felt sure I heard the Towhee's note, and started in to investigate. Although he was exceedingly wild, I at length caught a glimpse of him, and by remaining quiet for some time eventually secured him. Later in the day, I found three more, all males, as was the one I shot. It is quite evident that this bird occasionally winters much further north than is generally supposed, as there are also records from Longwood, Mass., on Christmas, and Bedford, Mass., on Jan. 2 (Auk, July, 1896).

Mr. L. S. Foster informs me that he secured a specimen on Feb. 22, near Oradell, N. J. — HARRY WEBB FLOYD, *New York City.*

**The Rose-breasted Grosbeak in California.** — During a collecting trip last summer in northern California, Dr. C. H. Gilbert and a party of students secured some birds that were new to the fauna of the State. While at Meyer's, Humboldt Co., Cal., July 1, 1897, the attention of the party was attracted by a string of strange birds that had been shot some time before and were already in the early stages of decomposition. Not being able to decide what the birds were, several heads were cut off,



brought back, and are now in the collection of the University. The heads are male and female of the well-known eastern species, *Zamelodia ludoviciana*. How they came here is unknown. The farmer upon whose place the specimens were found declared they were quite common about his orchard in spring and did considerable damage to cherries and other fruit. He has promised to send specimens to Dr. Gilbert this spring.—  
ROBERT B. McLAIN, *Stanford University, Cal.*

**The Philadelphia Vireo (*Vireo philadelphicus*).**—I read with much interest the article on the Philadelphia Vireo by Dr. Jonathan Dwight, Jr., published recently in 'The Auk' (Vol. XIV, No. 3). It may interest many who have perused that article to know that I met with a pair of these birds and secured their nest within a short distance of Lansdowne Station, Ontario. This happened in June, 1895. I had never met with the species before, but knew of it as being an occasional summer visitant to the vicinity of Ottawa, Ont. The place where I met with the birds was a rough pasture with here and there a clump of young poplar trees on the drier ground, elsewhere there were wet boggy places of small extent grown up with alders, an occasional tamarack, and a great deal of the well known plant, *Spiræa salisifolia*; some of this latter growing to the unusual height of four or even five feet. It was in a spray of the latter that I discovered the nest on the 14th of June, 1895. In it were two Cowbird's eggs, and one of the Vireo's. I removed the Vireo's egg and one of the Cowbird's, which had the effect of causing the birds to desert, for I visited the place a few days later and saw nothing of them.

With regard to the nest (which I gave to Professor Jno. McCoun of Ottawa), it was scarcely so finished a structure as is the Red-eyed Vireo's. The outside was a little ragged, a few stalks of dried grass protruding. Though pensile, it was not so carefully finished off; the straggling nature of the shrub perhaps preventing this. A quantity of spider's webs, etc., completed the structure.

With regard to the egg, it was marked exactly like that of the Red-eye, Vireo but was smaller, and according to its size was rather more globular in shape.

My observation of the birds and their location agreed very nearly with Dr. Dwight's experience, and had he searched and watched the place persistently where on the 10th July, 1893, he noticed what he took to be a female scolding and ruffling her feathers, he would probably have found the nest. I was attracted to the nest I found by the anxiety of the birds; they scolded and were quite tame. I have not noticed the Red-eye act thus. They hopped from branch to branch of the neighboring alders incessantly; there were no high trees near by. I observed them through strong field glasses, and in describing the birds should say that

they were *decidedly* smaller than the Red-eye, more bulky in shape, with a somewhat shorter tail proportionately. The yellow shading of the breast was not very evident, but there was a tendency to a lighter shade, without being a definite mark, on the wings. The persistent scolding seems to be a marked characteristic, to which Dr. Dwight refers.

The nest was located near the extremity of a stem of spiræa, about four feet from the ground, in a place that is always wet, except in very dry seasons. In searching for another nest, like Dr. Dwight, I should not think of looking in large trees or even moderate sized ones. After locating the bird, I should search in damp places among willows (where Mr. Thompson found the nest in Manitoba), among growths of alders, and as in the case of the nest I found, among straggling growths of spiræa, etc. I do not think they will ever be found to build high up in maples or hickories like the Warbling Vireo, nor yet on high ground among second growth maples and birches as the Red-eye very frequently does, at least in this neighborhood, or even in dense woods.—C. J. YOUNG, *Lansdowne, Ont.*

**Cairns's Warbler** (*Dendroica cærulescens cairnsi*) in Georgia on Migration.—So little is known of the Alleghaney Mountains Black-throated Blue Warbler away from its breeding ground that it seems worth while to record its capture in spring upon Cumberland Island, Georgia. The bird (No. 3013, Coll. of E. A. and O. Bangs) was taken by W. W. Brown, Jr., April 9, 1897, at the northern end of Cumberland Island. It is an extreme example of subspecies *cairnsi*, a male in unworn newly acquired spring plumage. The back is nearly wholly black. It shows a character not mentioned by Dr. Coues, but which seems on examination of the type in Mr. Brewster's collection to be a mark of the race—a very much greater amount of white upon the outer pair of tail-feathers.—OUTRAM BANGS, *Boston, Mass.*

**Carolina Wren at Lyme, Conn., in Winter.**—On the morning of Dec. 17, 1897, I was surprised to see and hear a Carolina Wren (*Thryothorus ludovicianus*) sing his pleasing notes. As this is the first time I have seen the bird in Connecticut, this record may be of interest to readers of 'The Auk.'—ARTHUR W. BROCKWAY, *Lyme, Conn.*

**Long-billed Marsh Wren in New Brunswick.**—A specimen of this bird (*Cistothorus palustris*) was taken by me on October 3, 1895, in a marsh near Fairville, a suburb of St. Johns, New Brunswick. This specimen was presented to Mr. John Brittain of the Provincial Normal School, who confirms my identification. Correspondence with members of the Natural History Society of St. John, develops the fact that there is no previous record of the capture of this species in New Brunswick.—WILLIE H. MOORE, *Scotch Lake, N. B.*

**Birds Nesting under Electric Arc-light Hoods.**—The fact of the arc-light hoods being utilized for nesting purposes is common to most every city or town where this type of lamp is used. The House Sparrow (*Passer domesticus*) was no doubt the first bird to adopt them, and subsequently the Purple Martin (*Progne subis*); this is quite a common occurrence through southern New Jersey. But there yet remains another species, the fact of which may be new to ornithologists, which I observed at Atlantic City, N. J., about July, 1892.

The Friends' Meeting House, corner of South Carolina and Pacific Avenues, has been used as a breeding place by a colony of Barn Swallows (*Chelidon erythrogastra*) for a number of years, building their nests on top of the caps of the pilasters around the outside of the building. While watching their movements from the veranda of a cottage on the opposite side of the street, I noticed a Swallow fly out from under an arc-light hood which stood above the sidewalk. From the frequent trips to and fro, the nest I thus discovered no doubt contained young.—J. HARRIS REED, *Beverly, N. J.*

**The Use of Hornets' Nests by Birds.**—Miss Elizabeth A. Simons of East Clifton, Delaware Co., Penn., has in her possession a large hornet's nest, which was taken from a pear tree, in the vicinity, by her brother. A neat hole had been excavated in its side, directly under the comb, about two and one half inches in diameter, with quite a good-sized cavity inside, which was bedded with slender fall-grasses and lined with body feathers from fowls. Upon inquiry they were not certain of its true occupants, but from a careful examination I would judge it to be a freshly built nest of the House Sparrow (*Passer domesticus*). It is to be regretted that it had not been found by a more careful observer.

This is the second occurrence of the use of hornets' nests by birds, which has come under the writer's notice, the other instance being a House Wren (*Auk*, Vol. VI, p. 339).—J. HARRIS REED, *Beverly, N. J.*

**Some Corrections.**—In 'The Auk,' Vol. XII, pages 191 and 192, are some notes on Upper Peninsula Michigan Birds by the writer, which are here corrected.

The specimens of supposed Yellow-headed Blackbirds taken by me, have later been identified as "heavily marked fall specimens of the Rusty Blackbird, *Scolecophagus carolinus*," by Prof. W. B. Barrows. This does not affect the specimen taken by E. E. Brewster of Iron Mountain, Mich., which is a true *Xanthocephalus xanthocephalus*.

Also the Connecticut Warblers have been identified by Dr. C. Hart Merriam as *Geothlypis trichas*, which they very closely resembled in this the first fall plumage.—OSCAR B. WARREN, *Hibbing, St. Louis Co., Minn.*

**Revival of the Sexual Passion in Birds in Autumn.** — Under the above heading two short notes have already appeared in 'The Auk,' for January, 1886. The first (pp. 141, 142) is by Bradford Torrey who, on October 12, 1885, saw a pair of Bluebirds "toying with each other affectionately" and "once certainly . . . in the attitude, if not in the act, of copulation," and he queries whether this may not account for the second period of song which many birds have. The other note (p. 286) is from Charles Keeler who noticed similar actions among some English Sparrows, which, in November and December, 1885, were even engaged in nest-building, the weather at the time being very mild.

To these observations it seems worth while to add the following account of an experience which I had at Lakeside, Coos County, New Hampshire (at the southern end of Lake Umbagog), a little more than a year ago. I quote from my journal of August 22, 1896.

At about sunrise this morning there were fully three hundred and fifty Swallows strung along on the wires of the fence in front of the hotel. I watched this flock for more than an hour (7 to 8 A. M.) and was amply repaid for the trouble. There had been a heavy rain during the night and the road was very muddy. The birds alighted about the edges of one of the larger puddles in great numbers and walked slowly about fluttering or quivering their half-opened wings like so many big butterflies. At first I supposed that they were drinking or picking up insects, but what was my astonishment to find that the Eave Swallows were filling their bills with mud, and the White-bellied and Bank Swallows gathering pieces of hay or straw. The Barn Swallows did not visit the pool in any numbers, and I did not happen to see them pick up anything. Each bird, on obtaining a satisfactory load of mud or grass, flew with it to the fence and after shifting it about in its bill for a few moments, finally dropped it and at once returned to the road for a fresh supply. From fifty to a hundred Swallows were thus constantly engaged for half-an-hour or more. Not one of them took its burden elsewhere than to the wire fence or retained it for more than two or three minutes after reaching its perch. What did it all mean? Two facts which remain to be recorded will, perhaps, explain.

The first is that, while the birds were clustered about the mud-puddle, scarce a minute passed when one or two pairs were not engaged in copulation. Perhaps I should say in attempted, rather than actual, copulation, for, as nearly as I could see, the sexual commerce was in no instance fully and successfully accomplished. The females (or at least the birds that acted that part) submitted willingly enough to, and in some instances, as I thought, actually solicited, the attentions of the males; the latter, however, displayed but mild sexual ardor and were very clumsy in their attempts at indulging it. Once I saw an Eave Swallow and a White-bellied Swallow in sexual contact.

The second fact apparently supplies the key to the whole mystery. It is simply that every one of the Swallows which visited the mud-puddle

and engaged in collecting mud and straw or in attempted copulation, *was a young bird!* Of this I made sure by the most careful scrutiny with a glass at a distance of only 15 or 20 feet. There were a few old birds in the flock, but they remained constantly on the fence.

It seems evident, therefore, that the remarkable behavior of the birds which alighted in the road was simply an expression of premature development, in the young, of the instincts and passions of nest-building and procreation. It is, however, the only instance of this kind that has ever come under my observation. — WILLIAM BREWSTER, *Cambridge, Mass.*

**Remarkable Ornithological Occurrences in Nova Scotia.** — **LEAST BITTERN (*Botaurus exilis*).** — On March 16, 1896, an adult male in full plumage was shot at Upper Prospect, Halifax County, N. S., and was brought to me for identification. This species has never before been taken in Nova Scotia and its occurrence is remarkable, particularly when we consider the early period of the year in which it was taken. It usually ranges only as far north as Massachusetts in the East, but stragglers have been taken in Maine and New Brunswick. In the latter Province some five individuals were killed between 1877 and 1881 on the Bay of Fundy coast.

**LITTLE BLUE HERON (*Ardea cærulea*).** — A male in adult plumage was killed at Lawrencetown, Halifax County, on March 18, 1896 — two days after the Least Bittern was shot. The bird was very thin. Another specimen, also an adult, was taken at Shut Harbour, N. S., on April 10, 1897. Only once previously has the species been collected in this Province. In the summer of 1884 an immature specimen was taken at Cole Harbour, near Halifax.

**PURPLE GALLINULE (*Ionornis martinica*).** — This species is an accidental visitor. In 1896 I saw an adult female which had been captured alive on Devil's Island, Halifax Harbour, about January 16 of that year. It had probably been injured by striking the lighthouse upon that island. After being kept alive for about twenty-five days, it died and was mounted. I am told that another of the same species was found dead at Chezzetcook, Halifax County, in the same week as that in which the before-mentioned specimen was taken. Previous to this, two specimens had been taken in the Province. One of these was shot near Halifax on January 30, 1870 (Jones, *American Naturalist*, IV, 253), and the other was captured alive in April, 1889, and was kept for some time in an aviary by the late Mr. Andrew Downs (*vide Transactions N. S. Inst. Nat. Sc.*, VII, 468). It has been reported as casual in the neighboring Province of New Brunswick.

**WILSON'S SNIPE (*Gallinago delicata*).** — A partial albino was shot about October 11, 1894, at Canning, King's County.

**LAPWING (*Vanellus vanellus*).** — On March 17, 1897, one of these birds was found, dead, on the sandy shore of Ketch Harbour, near

Halifax. I examined the bird before it was skinned. Death had evidently been largely caused by starvation, as the body was very thin. The occurrence of this European bird upon our coast is most remarkable. It is perhaps doubtful if there is another well-authenticated record of the capture of the bird in temperate America, for Mr. Ridgway queries "Long Island" in the list of localities given in his 'Manual.' There cannot be the slightest doubt about the identification of the present specimen.

**BLACK VULTURE (*Catharista atrata*).**—A Black Vulture was shot at Pugwash, Cumberland County, N. S., on January 12, 1896, and was brought to Halifax where I identified it. Mr. Chamberlain (Nuttall's Ornithology, 1891) states that it has been killed on Grand Manan in the Bay of Fundy. I think it has not been elsewhere met with in the Dominion of Canada. As in the case of the Least Bittern, the Little Blue Heron, the Gallinule, and the Lapwing, it will be observed that the present bird was taken at a very early period of the year.

**AMERICAN CROW (*Corvus americanus*).**—An albinistic Crow was killed near Halifax on October 6, 1896. Its general colour was brown, darker on the throat, cheeks and belly; scapulars and feathers of back margined obscurely with whitish; primaries mostly whitish; tertials white; tail-feathers light reddish brown margined with whitish on outer edge; legs, bill and iris, brown.

**WINTER WREN (*Troglodytes hiemalis*).**—My brother and myself found a nest of this species, containing a number of young, at Spryfield, near Halifax, on June 11, 1894. It was simply a cavity in moss, *in situ* upon the face of a rock close to the shore of a small lake. This moss *was constantly saturated with water* which trickled from a bank above and slowly flowed over the stone on which the moss grew. There is not the least doubt as to identification, for one of the parent birds was seen entering and leaving the exit several times. We were close alongside and could distinctly see the bird. In May, 1891, we found a nest of the same species only a couple of feet from the site of the one just mentioned. It precisely resembled the latter in form, construction and materials, as well as in being saturated with moisture. A full description of the nest of 1891, which contained a number of eggs, will be found in the 'Transactions' of the N. S. Institute of Science, VIII, 203.—HARRY PIERS, *Halifax, N. S.*

**Occasional Visitants at San Geronimo (Nicasio Township), Marin Co., California.**—**Dryobates nuttallii.** NUTTALL'S WOODPECKER.—This bird is a common resident, though never numerous, about thirty miles north of this place, but only one specimen has been seen in this locality. This was a female taken Feb. 14, 1884.

**Sphyrapicus varius nuchalis.** RED-NAPED SAPSUCKER.—Two specimens taken in 1894 and one in 1897—all three shot in the family orchard adjoining the house.

**Melanerpes torquatus.** LEWIS'S WOODPECKER. — This is an occasional visitor in the fall or winter. Some years two or three will appear, and other years none at all.

**Dendroica nigrescens.** BLACK-THROATED GRAY WARBLER. — One taken, a male, Sept. 18, 1897. Had never heard of one in Marin County before, and have seen none since.

**Dendroica townsendii.** TOWNSEND'S WARBLER. — The bird is of rare occurrence in this neighborhood, but almost every year two or three are taken.

**Mimus polyglottos.** MOCKINGBIRD. — One specimen, a male, was taken here by Mr. C. A. Allen on Dec. 30, 1894, and is now in our collection. There was no evidence of its having at any time been a caged bird.

**Myadestes townsendii.** — TOWNSEND'S SOLITAIRE. — On Feb. 14, 1880, while on top of our chaparral hills with Mr. C. A. Allen five or six of these birds were observed flying among some cedar trees. Three specimens were shot. Since then I have seen no more, although constantly on the lookout for them, until Dec. 20, 1897. Long-continued cold weather had led me to believe that there was a liability of a visit from some of these birds, and on this date I caught sight of one flying across a cañon. I was fortunate enough to locate it on top of a Douglas fir and to make the capture. It proved to be a male. Those shot in 1880 were 2 males and 1 female. — JOSEPH MAILLIARD, *San Geronimo, Marin Co., Cal.*

**California Bird Notes.** — On looking over my records for the past few years I find some items that may be of service in indicating the geographical distribution of the species mentioned.

**Synthliboramphus antiquus.** ANCIENT MURRELET. — In December, 1895, I obtained three females of this species on Monterey Bay, off Pacific Grove, and in January, 1896, three males and two females in the same locality. In the California Academy of Sciences there is a fine series of these birds from Monterey Bay, taken by Mr. L. M. Loomis in December, 1894, and January, 1895 (Proc. Cal. Acad. Nat. Sci. (2), VI, 1896, pp. 17-19.)

**Brachyramphus hypoleucus.** XANTUS'S MURRELET. — On Dec. 2, 1895, I obtained a male of this species on Monterey Bay, and on Jan. 17, 1896, a female. Also one, taken on this bay by Mr. L. M. Loomis, is in the California Academy of Sciences. (Proc. Cal. Acad. Sci. (2), V, 1895, p. 211.)

**Puffinus tenuirostris.** SLENDER-BILLED SHEARWATER. — On Dec. 17, 18, and 19, 1895, large bands of Shearwaters were feeding on Monterey Bay and out of the number that were taken fifteen proved to be of the above species. An immense flock of, presumably, *P. griseus* and *P. tenuirostris* followed a school of sardines close into shore on Dec. 20, contrary to their usual habits, but unfortunately the necessity of returning to my business affairs by the early train the following morning prevented me from taking advantage of this flight. Had I realized at

the moment their extreme rarity on this coast business matters would have been cast aside. Mr. A. W. Anthony of San Diego, on being notified by letter of the presence of this species succeeded in shooting several specimens off San Diego Bay. Since then Mr. L. M. Loomis has taken one specimen on Monterey Bay, and I believe this completes the record for this coast.

**Cyanocephalus cyanocephalus.** PIÑON JAY.—In December, 1895, a large flock of these birds located in the vicinity of Pacific Grove, Monterey Co., Cal. This flock made a tour of the town nearly every day that I was there, flying from one pine tree to another and sometimes alighting on the ground, but never staying in one spot more than a minute or two. The oldest inhabitants could not remember having seen these birds before nor having heard their peculiar cries. I succeeded in securing six specimens, all females. From what observations I could make during their restless movements I should say that the majority, if not all, of this flock were females.

**Larus canus.** MEW GULL.—There is in our collection an adult of this species taken upon San Francisco Bay, Cal., some years ago. Unfortunately, however, the label was accidentally torn off in moving the collection, and at that time no systematic record of specimens was kept.—JOSEPH MAILLIARD, *San Geronimo, Marin Co., Cal.*

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## RECENT LITERATURE.

‘Audubon and His Journals.’<sup>1</sup>—In the brief space of 73 pages Miss Audubon has given the public for the first time a trustworthy biography of her illustrious grandfather, John James Laforest Audubon.<sup>2</sup> ‘The Life of Audubon the Naturalist, edited by Mr. Robert Buchanan from

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<sup>1</sup> Audubon and his | Journals | By | Maria R. Audubon | With Zoölogical and other Notes | by | Elliott Coues | Volume I [-II] | New York | Charles Scribner’s Sons | 1897. — Two vols. 8vo, illustrated. Vol. I, pp. i–xiv, 1–532, 22 ill., mostly full-page photogravure; Vol. II, pp. i–viii, 1–554, 15 photogravure ill. and 9 facsimiles of diplomas. (Price, \$7.50.)

<sup>2</sup> Doubtless the name Laforest is little known as a part of Audubon’s name but in a footnote to p. 5 of the biography Miss Audubon gives the following quotation from a letter of Audubon to Mrs. Rathbone, written in 1827, and adds that all Mrs. Audubon’s letters to her husband address him as Laforest: “My name is John James Laforest Audubon. The name Laforest I never sign except when writing to my wife, and she is the only being, since my father’s death, who calls me by it.”



material supplied by his *Widow*,<sup>1</sup> published in London in 1868 and republished in New York in 1869, with additions, and the omission of some objectionable passages, has been heretofore our principal authority on the life of the great artist-naturalist, but it is said to contain many errors in dates and names, and is otherwise very unsatisfactory.

Audubon was born in Mandeville, Parish of St. Tammany, Louisiana. The date of his birth remains in obscurity; it is usually given as May 5, 1780, though believed to be somewhat earlier. It was, however, during the time Louisiana was a Spanish colony, some twenty to twenty-five years before it became a part of the United States. Yet Audubon, in so often referring to himself in his *European Journals* as the American woodsman, is literally within the truth as regards the locality of his birthplace; and throughout his life all his interests and sympathies were centered in the United States, which eventually came to include the land of his birth, his "beloved Louisiana."

At an early age he, with his mother, went with his father to Santo Domingo, where the elder Audubon owned a large estate. Here his mother was soon after killed in a negro insurrection; the father and young Audubon, still a very young child, and some servants, escaped to New Orleans and thence went to France. Here Audubon lived for some years at Nantes, in the care of a fond stepmother, and later was put to school. He was not, however, especially studious. He says, "My father being mostly absent on duty [as a naval officer], my mother suffered me to do much as I pleased; it was therefore not to be wondered at that, instead of applying closely to my studies, I preferred associating with boys of my own age and disposition, who were more fond of going in search of birds' nests, fishing, or shooting, than of better studies." Again, speaking of his school days, he says: "During all these years there existed within me a tendency to follow Nature in her walks. Perhaps not an hour of leisure was spent elsewhere than in woods and fields and to examine either the eggs, nest, young, or parents of any species of birds constituted my delight." When he was about eighteen years old his father found it necessary to send him back to his "own beloved country, the United States of America," and, he adds, "I came with intense and indescribable pleasure."

From this time, with the exception of a business trip to France while still a youth, and his later visits to Great Britain and the continent, he lived in the United States, for which, in all his wanderings, he manifested the greatest attachment.

The history of the first forty years of Audubon's life, as here given (pp. 7-38), is autobiographical, being from one of his journals;<sup>1</sup> it brings the account down to 1819, when he left Henderson, Kentucky. This is

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<sup>1</sup> Reprinted from 'Scribner's Magazine,' for March, 1893, with some corrections.

supplemented (pp. 39-48) by extracts and much other information derived from some of his early journals, only two of which have escaped the ravages of fire.<sup>1</sup> The following thirty pages conclude this fascinating and all too briefly-told history of a career unusually varied and picturesque. This brevity is in large measure, however, compensated by the 'Journals' that compose the chief part of these two large volumes, through which Audubon's charming personal character is revealed in all its simplicity and loveliness. His many struggles with adverse conditions, his mercurial temperament and versatility, his womanly tenderness and kind regard for others, as well as his intense love of nature, stand forth prominently in the almost daily entries of passing events. The 'Journals,' besides giving an insight into the motives and character of the man, possess the charm of personal reminiscence and great historic interest, whether they relate to his sojourn in Edinburgh, London, and Paris, or to his various expeditions into then almost unexplored parts of this continent. The European Journals (I, pp. 79-342) cover the critical period (1826-29) of Audubon's visit to Edinburgh and London in search of subscribers to and a publisher for 'The Birds of America,' and introduce to the reader persons then prominent, not only in literature and art, but as naturalists and natural history publishers. Audubon was received everywhere with great cordiality, and formed many life-long friendships. The names of Lord Stanley (later Earl of Derby), the Rathbones, Traill, Roscoe, Jameson, Bewick, Children, Selby, Vigors, Sabine, Swainson, Nuttall, and others in England, and Cuvier in France, have either been given by Audubon to American birds, or are otherwise associated with their literary history. The Rathbones were his especial friends and greatly aided him in his canvass for subscribers and in securing the publication of his work. This portion of the 'Journals' abounds especially in passages it is hard to refrain from quoting, either from their revealing characteristic traits of Audubon himself, or as giving glimpses of many naturalists prominent in England during the first half of the present century.

The following brief extracts will serve to illustrate the cordiality of his reception and the general character of his Journals. He thus relates for example, his first meeting with Lord Stanley: "In the afternoon I drove with Mr. Hodgson to his cottage, and while chatting with his amiable wife the door opened to admit Lord Stanley. I have not the least doubt that if my head had been looked at, it would have been thought to be the body, globularly closed, of one of our largest porcupines; all my hair — and I have enough — stood straight on end, I am sure. He is tall, well formed, made for activity, simply but well dressed; he came to me at once, bowing to Mrs. Hodgson as he did so, and taking my hand in his, he said: 'Sir, I am glad to see you.' Not the words only, but his

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<sup>1</sup> Destroyed in the 'Great Fire' that devastated New York city in 1835.

manner put me at once at my ease. My drawings were soon brought out. Lord Stanley is a great naturalist, and in an instant he was exclaiming over my work, 'Fine!' 'Beautiful!' and when I saw him on his knees, having spread my drawings on the floor, the better to compare them, I forgot he was Lord Stanley, I knew only he too loved Nature. . . . He cordially invited me to call on him in Grosvenor street in *town* (thus he called London), shook hands with me again, and mounting a splendid hunter rode off. . . . Oh! that I had been flogged out of this miserable shyness and *mauvaise honte* when I was a youth."

He says again, "When I arrived in this city [Liverpool] I felt dejected, miserably so; the uncertainty as to my reception, my doubts as to how my work would be received, all conspired to depress me. Now, how different are my sensations! I am well received everywhere, my works praised and admired, and my poor heart is at last relieved from the great anxiety that has for so many years agitated it, for I know now that I have not worked in vain."

Under the same date he writes: "I have letters given me to Baron Humboldt, General La Fayette, Sir Walter Scott, Sir Humphry Davy, Miss Hannah More, Miss Edgeworth, Sir Thomas Lawrence, etc., etc. How I wish Victor could be with me; what an opportunity to see the best of this island; few ordinary individuals ever enjoyed the same reception. Many persons of distinction have begged drawing lessons of me at a guinea an hour." Although entertained so constantly, his expenses were heavy, to defray which he spent much time painting pictures on orders, and also for presentation to the Royal and other scientific societies as a token of his appreciation of the aid rendered him in making known his work to the educated, the elite, and the titled of England. Thus, under August 21, 1826, he says: "I painted many hours this day, finished my Otter; . . . I was again invited to remove to Green Bank [to the Rathbones], but declined until I have painted the Wild Turkey cock for the Royal Institution [of Liverpool], say three days more."

Under date of Dec. 13, 1826, he says: "I have spent the greater portion of this day in the company of Mr. Selby, the ornithologist. . . . We were together some hours at the Institution,—he was greatly pleased with my drawings,—and we then dined at Mr. Lizars' in company with Dr. Lizars, and we all talked ornithology. I wish I possessed the scientific knowledge of the subject that Mr. Selby does. He wished to hear my paper on the 'Buzzard,' and after doing so, took it with him to read to Sir Wm. Jardine, to whom he goes to-morrow, but will return on Monday. Later Dr. Brewster came to my room with the proof of the paper on the 'Carriion Crow.' He read it, and we both corrected. He told me it was a question whether or no I could be made a member of the Royal Academy [of Edinburgh], for only *thirty* foreigners were allowed by law, and the number was already complete; still he hoped an exception would be made in my case. He thanked me very cordially for my paper, and said Sir

Walter Scott wished to meet me, and would do so on Monday at the Royal Academy."

One more extract may here be given, to show the incentive that inspired Audubon's efforts: "We [referring to his engraver, Mr. Lizars] then talked of the engraving of the Hawks, and it seems that it will be done. Perhaps even yet fame may be mine, and enable me to provide all that is needful for my Lucy [his wife] and my children. Wealth I do not crave, but comfort; and for my boys I have the most ardent desire that they may receive the best of education, far above any that I possess; and day by day science advances, new thoughts and new ideas crowd onward, there is always fresh food for enjoyment, study, improvement, and I must place them where all this may be a possession to them."

His real feeling toward Alexander Wilson, at this period of Audubon's life, is shown by his reference to "a new work on the Birds of England." He says, "I did not like it as well as I had hoped; I much prefer Thomas Bewick. Bewick is the Wilson of England."

The fascinating pages of the 'European Journals' must now be left to the enjoyment of the reader, while we pass to a brief notice of the 'Labrador Journal' (1833), and the 'Yellowstone Journal' (1843). These have a different interest, being narratives of exploration, and hence, from the period when they were made, are of special interest for the historian and the naturalist. The voyage to Labrador was made in the schooner 'Ripley,' in command of Captain Emery, which sailed from Eastport, Me., June 6, to which port Audubon and his party returned August 31. He had with him as companions and assistants his son John, and four young men from Boston — Messrs. George Shattuck, Thomas Lincoln, William Ingalls, and Joseph Coolidge. Since the time of Audubon's Labrador expedition great changes have taken place in the bird fauna of the islands of the Gulf of St. Lawrence and the Labrador coast. This, for example, is his description of the Bird Rocks, north of the Magdalene Islands: "About ten a speck rose on the horizon, which I was told was the Rock; we sailed well, the breeze increased fast, and we neared this object apace. At eleven I could distinguish its top plainly from the deck, and thought it covered with snow to the depth of several feet; this appearance existed on every portion of the flat, projecting shelves. Godwin said, with the coolness of a man who had visited this Rock for ten successive seasons, that what we saw was not snow — but Gannets! I rubbed my eyes, took my spy-glass, and in an instant the strangest picture stood before me. They were birds we saw, — a mass of birds of such a size as I never before cast my eyes on. The whole of my party stood astounded and amazed, and all came to the conclusion that such a sight was of itself sufficient to invite any one to come across the Gulf to view it at this season. The nearer we approached, the greater our surprise at the enormous number of these birds, all calmly seated on their eggs or newly hatched brood, their heads all turned to windward, and towards us. The air above for a hundred yards, and

for some distance around the whole rock, was filled with Gannets on the wing, which from our position made it appear as if a heavy fall of snow was directly above us. . . . The whole surface is perfectly covered with nests, placed about two feet apart, in such regular order that you may look through the lines as you would look through those of a planted patch of sweet potatoes or cabbages. The fishermen who kill these birds to get their flesh for codfish bait, ascend in parties of six or eight, armed with clubs; sometimes, indeed, the party comprises the crews of several vessels. As they reach the top, the birds, alarmed, rise with a noise like thunder, and fly off in such hurried, fearful confusion as to throw each other down, often falling on each other till there is a bank of them many feet high. The men strike them down and kill them until fatigued or satisfied. Five hundred and forty have been thus murdered in one hour by six men. The birds are skinned with little care, and the flesh cut off in chunks; it will keep fresh about a fortnight."

At another place they found two eggers collecting eggs of the Foolish Guillemot, their take for the season being estimated at about 2,000 dozen. With such inroads annually for almost a century upon the Sea Fowl, the wonder is that any are left!

On the coast of Labrador Audubon found the Pied or Labrador Duck (*Camptolaimus labradorius*) breeding on the top of low bushes, and among other noteworthy discoveries was the Finch, which he named for his young companion, 'Thomas Lincoln.

The Labrador trip was undertaken for the purpose of making drawings for the continuation of the 'Birds of America,' and although the journey was one of hardship, owing to almost continuous tempestuous weather, it was exceedingly profitable in results, despite the many unfavorable conditions for work.

The Missouri River expedition was undertaken solely in the interest of the 'Quadrupeds of North America,' in which Audubon and his two sons, John and Victor, were then engaged, in conjunction with Dr. Bachman. As Miss Audubon tells us, "The journey has been only briefly touched upon in former publications, and the entire record from August 16 until the return home was lost in the back of an old secretary from the time of Audubon's return in November, 1843, until August, 1896, when two of his granddaughters found it. Mrs. Audubon states in her narrative that no record of this part of the trip was known to exist, and none of the family now living had ever seen it until the date mentioned." Its discovery was most fortunate, as its publication makes available a diary of the highest value, not only to the naturalist but to the historian. As here printed it occupies about 270 pages (Vol. I, pp. 447-532, Vol. II, pp. 1-195), and every page is replete with interest. Audubon left New York March 11, and reached St. Louis March 28; delayed here by the unfavorable weather of a late spring, final departure on the long journey up the Missouri was made April 25, on the steamer

'Omega.' Fort Union was reached June 12. Of this slow, tedious journey, with the most primitive facilities for navigation, Audubon writes: "Our trip to this place has been the quickest on record, though our boat is the slowest that ever undertook to reach the Yellowstone. Including all stoppages and detentions, we have made the trip in forty-eight days and seven hours from St. Louis. We left St. Louis April 25th, at noon; reaching Fort Union June 12th, at seven in the evening." On the return journey the start was made August 16 from Fort Union, and St. Louis was reached Oct. 19, Audubon arriving at his home in New York Nov. 6.

On this journey Audubon took with him as assistants and companions his friend Edward Harris of Philadelphia, John G. Bell, the well-known New York taxidermist, the botanical artist Isaac Sprague, and Lewis Squires. Bell, Harris and Sprague are each commemorated in the names of new birds discovered during the journey—in Bell's Vireo, Harris's Finch, and Sprague's Lark. The narrative of the expedition gives a vivid picture of frontier life a half a century ago, with much valuable information respecting the character and habits of the Indians and half-breeds met with, in addition to the natural history notes and hunting episodes, of which the journal is largely composed. This was in the early days when Parrakeets were common as far north as Nebraska, and were met with by Audubon as far up the Missouri as Great Bend, South Dakota; wolves, elk, deer, antelope and bison abounded. Valuable observations are recorded on the general character of the country, as well as on the birds and mammals.

Volume II concludes with the 'Episodes,' fifty-eight in number. All but one were published in the first three volumes of the 'Ornithological Biographies,' but as they were not republished in the later 'Birds of America,' nor elsewhere till now, they will prove of special interest, as well to the general reader as to the naturalist. They treat of a great variety of subjects, including incidents of personal adventure, and often show Audubon at his best as a strong and versatile writer, and reveal, quite as much as his 'Journals,' his kind-heartedness and keen appreciation of the fancies and foibles of his fellowmen.

Audubon was blessed with a strong constitution and remarkable physical vigor and endurance. As early, however, as the Labrador journey he speaks of realizing that he was no longer young, and that he could not draw steadily for fourteen hours a day, as was formerly his custom. Yet ten years later, at the age of seventy, he undertook the arduous journey to the Yellowstone, and returned apparently none the worse for its incidents. In his younger days and till long after his return from England, his usual allowance of sleep was four hours per day; he was an early riser, and seemed rarely to experience fatigue. After a life of great activity and varied experiences, his later days were spent in the quiet of his family in New York. To the last, says his biographer, "his enthusiasm, freshness, and keenness of enjoyment and pain were never blunted. His

ease and grace of speech and movement were as noticeable in the aged man as they had been in the happy youth of Mill Grove. His courteous manners to all, high and low, were always the same; his chivalry, generosity, and honor were never dimmed, and his great personal beauty never failed to attract attention; always he was handsome." At last, "after a few days of increasing feebleness, for there was no illness," Audubon quietly passed away January 27, 1851. An appropriate monument, erected by the New York Academy of Sciences, marks his last resting place in Trinity Church Cemetery, near the place of his New York home.

The two volumes, 'Audubon and His Journals,' are beautifully printed and attractively illustrated, the illustrations including about a dozen portraits of Audubon, one of his wife, and several of each of his sons John Woodhouse and Victor Gifford. Also 'Mill Grove Mansion,' 'Flatland Ford Mansion,' and Audubon's 'Old Mill' in Pennsylvania: the monument that marks his grave, and several sketches of birds and camp scenes not previously published. There are also facsimiles of several entries in his journals, and of diplomas received from various foreign and American scientific societies. The publishers have thus done their share to give these memoirs a fitting dress.

Great praise is due Miss Audubon for her labor in preparing the manuscripts for the press, and for her admirable biography of her eminent grandfather, in which she has displayed rare good taste and judgment. The Missouri River Journals are enriched by footnotes giving extracts from the writings of contemporary travellers, confirmatory or explanatory of the text, and the European Journals by biographical notes respecting the eminent persons mentioned in the narrative. Further value and interest is added by the annotations — zoölogical, geographical and biographical in character — furnished by Dr. Coues, — a task for which his special lines of research have given him eminent fitness. Miss Audubon also acknowledges indebtedness to him for other material aid and advice. She also refers feelingly to the encouragement and assistance rendered by her sisters and other friends, and says, among her other acknowledgments: "Next to the memory of my father, Mr. Ruthven Deane has been the motive power which has caused this volume to be written." She is to be congratulated on thus having raised not only an enduring monument to the memory of an admirable man, but on having given to the world a fund of information so varied and welcome that it is hard to say to what class of readers it most strongly appeals. It must, however, especially awaken an answering chord of sympathy in the 'born naturalist,' endowed with feelings and aspirations such as inspired the great 'painter-naturalist,' whose life and works are here so fittingly set forth. — J. A. A.

Miss Merriam's 'Birds of Village and Field.'<sup>1</sup>—Miss Merriam's handsome volume is well designated 'A Bird Book for Beginners.' It treats of 145 of the more common species of the birds of eastern North America, which are grouped in various categories on the basis of coloration, in conformity with a 'Field Color Key.' This plan is of course no longer novel, it having been previously introduced in other similar bird books, and its efficiency well tested as an aid in identifying birds in the field. In addition to the distinctive color markings, reference is also made in the key to characteristic traits of habit and habitat, and cuts are given illustrative of form, structural details, and special markings, with a cross-reference in the key to the place in the book where the bird is described. The 'Introduction' contains, besides the key, directions for its use, under 'How to find a Bird's Name,' and tells 'Where to find Birds,' 'How to watch Birds,' 'How Birds affect Village Trees, Gardens and Farms,' and 'How to keep Birds about our Homes.' The 'Appendix' gives instruction about keeping migration records, and 'Migration Lists' are given of the land birds occurring in spring at (1) St. Louis, Mo. (based on Mr. Otto Widmann's observations), (2) Washington, D. C. (made by Mr. William Palmer), and (3) Portland, Conn. (by Mr. John H. Sage). There is also a similar set of lists for the winter birds, based on the contributions of the same observers. This is followed by 'Outline for Field Observation,' giving hints to assist beginners in field identification, relating not only to size, color and markings, but to movements and flight; to which is added a list of 'Points to note to add to knowledge of life histories.' The Appendix concludes with a classified list of books of reference.

The main text (pp. 1-363) gives a very attractively written account of the habits of each bird treated, preceded by a brief statement of its diagnostic features, and geographic distribution, with generally a full length figure of the species, and frequently other appropriate illustrations, as of bill, wing, head, tail or feet, or of insects of which the bird is a special enemy.

A special feature of Miss Merriam's book is the particular emphasis with which she urges the utility of birds to agriculture, and hence the extreme importance of their preservation, aside from any motive of humanity or sentiment. For the most part her biographies are written with much feeling and evidently from the heart; there are lapses here and there into the perfunctory style of the book maker, but they are rare, for the author knows her birds and loves them.

In this age of popular bird books, it must be becoming hard to introduce any novelties of treatment, or originality of expression, but Miss

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<sup>1</sup> Birds | of Village and Field | A Bird Book for Beginners | By | Florence A. Merriam | Illustrated | [Vignette] | Boston and New York | Houghton, Mifflin and Company | The Riverside Press, Cambridge | 1898—12mo. pp. i-xlix, 1-406, 18 half-tone plates and 220 text cuts. (Price, \$2.00.)



Merriam shows that there are still possibilities in both lines, and that her book is not without *raison d'être*. It is admirably adapted as 'A Bird Book for Beginners,' and we trust it will achieve the success it so well merits. — J. A. A.

**Hair and Feathers.**<sup>1</sup>—Professor Kingsley here reviews recent investigations regarding the development and structure of hair and feathers, notably those published in Germany, of which he presents a brief summary. He makes special acknowledgment to the recent able review of the subject by Professor Keibel, in Merkel and Bonnet's 'Ergebnisse der Anatomie und Entwicklungsgeschichte,' 1896. As is now well known, hair and feathers are not only unlike in structure and appearance, but in method of origin and growth. "According to Davies all contour feathers are preceded by down-feathers," or, in other words, "the germ of the definitive feather is a direct derivative of the germ of the down-feather." The process of formation is described at some length, concluding as follows: "With the withdrawal of the pulp from the feather there is no longer any nerve or blood supply to the parts of the feather. The cells of which it is composed are dead and dry so that it seems impossible that any change can take place in it. The whole question of change in color of the fully formed feather was recently reopened by Mr. J. A. Allen who maintained that, once formed, the feathers do not change in their markings. The whole history of development seems to afford him full support. Yet this year [1897] the attempt has been made to show that feathers do change in their markings. In this, as the matter now stands, the burden of proof is upon those who support the possibility of change."

Regarding the origin of hair and feathers, reference is made to the old view that they were of homologous origin; and that both were derived from the reptilian scale. "It may be said, however," says Kingsley, "that Davies, to whom we owe the most accurate account of the development of the feather declines to regard pin-feathers [filoplumes?] as the simplest type of the avian tegumentary covering but rather as a retrograde condition; and farther, that he regards the scales upon the tarsal and digital regions of birds as secondary formations, agreeing in this with Jeffries." Again, "Maurer maintains that hair and feathers are not homologous structures. The feather, according to his view has been derived from the Reptilian scale while hair has arisen from the dermal sense organs of the Ichthyopsida as a result of a change in habits and conditions of life." A brief statement is given of Maurer's investigations and conclusions, and the reader is further advised to refer to Keibel's summary, "with its bibliography of over one hundred titles."—J. A. A.

**Baur on the Birds of the Galapagos Archipelago.**—Dr. Baur reiterates

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<sup>1</sup> Hair and Feathers. By J. S. Kingsley. Amer. Naturalist, Vol. XXXI, Sept. 1897, pp. 767-777, figs. 1-14.

here<sup>1</sup> his belief that *Cactornis* is generically separable from *Geospiza*, contrary to the view of Mr. Ridgway, and claims that "the *Cactornis propinqua* Ridgway from Tower Island in the north and *Geospiza conirostris* Ridgway from Hood Island in the south of the Archipelago have no relationship whatever." He believes that "all the plastic genera, which are represented only by a single species on each island, as *Nesomimus*, *Certhidia*, *Pyrocephalus* and *Cactornis*, show peculiar species on nearly every island," while there are genera, "like *Geospiza* and *Cactornis*, which have more than one species on one island,—two or three, perhaps four." In explanation of this he says we "simply have to imagine that already, before the splitting up of the Galapagos land area into distinct islands, there existed at least three species of *Geospiza* and *Camarhynchus*, each of which became differentiated on the different islands. This shows at once that we can not arrange these species in one series, [as done by Mr. Ridgway] but in three parallel series," etc.

Dr. Baur makes a few remarks about the birds from Charles, Hood, Barrington, and South Albemarle Islands, and explains that the disappearance of the box of specimens at Guayaquil was not so serious a loss as supposed, only three species being lost instead of the much larger number stated by Mr. Ridgway. Of the others alcoholic specimens were preserved. Dr. Baur also makes some additions to the lists of species given by Mr. Ridgway from some of the islands.—J. A. A.

Bulletin of the B. O. C.—No. XLIX of this periodical, Dec. 29, 1897, contains among other novelties *Phaëton americanus* sp. n., the North American bird being distinguished from *P. flavirostris* by having the black on outer web of 1st primary extending within 0.50 of the end, that on 2d and 4th primaries reaching almost to the tip, the whole outer web of the 3d black, and the bill entirely black, except above the nasal opening.—E. C.

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<sup>1</sup> Birds of the Galapagos Archipelago: a Criticism of Mr. Robert Ridgway's Paper. By G. Baur, University of Chicago. Amer. Naturalist, Vol. XXXI, Sept., 1897, pp. 777-784.

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## CORRESPONDENCE.

## The Fauna of Muskeget Island—A Reply.

EDITORS OF 'THE AUK':—

*Dear Sirs:*—I take it for granted that I shall be allowed, with your accustomed courtesy, a little space in your Journal for the purpose of replying to the author of a letter entitled, 'The Fauna of Muskeget Island—A Protest,' which appeared in the number for January, 1898. This letter, I am free to confess, has given me a genuine surprise. It is only after some hesitation that I have decided to reply to it. I can but regard this 'Protest,' with its accompanying inferences, as uncalled for by the facts in the case. I therefore beg your indulgence to take up some of the points in the order that they are presented in Mr. Miller's letter.

I have shot but one Short-eared Owl for a number of years. I have had, however, in the Legislature for two years past, and again this winter, a bill in which there is a clause giving this Owl full protection. The above mentioned bird is now in Mr. William Brewster's collection, and is in the dark phase of plumage. It was one of a brood hatched on Muskeget during the summer of 1896. I would have shot the entire family had I been able to accomplish it *at the time*, for the reason that I had the interests of the Terns in view; hence all antagonistic elements, whether developed in man, mammals, or birds, were regarded as enemies and so treated. Bird protection is a complicated and difficult problem at best. I see no occasion for making it harder for those engaged in it. When a gentleman of Mr. Miller's ornithological knowledge expresses such sentiments in print as the following: "But when bird protection results in the destruction of a family of Owls, which, notwithstanding its numerical insignificance, far outweighs in biological interest the largest Tern colony on the entire Atlantic coast," I think that lovers of bird life have a right to 'protest' with more reason than he. When bird protection embraces a remnant of Terns raised from a low ebb through years of tireless protection, as it does in the present case, to colonies, the numbers of which are beyond estimate, I am of the opinion that such a condition outweighs any problematical biological interest likely to arise from Muskeget Island ever becoming a habitat of Short-eared Owls. Mr. Miller states that the vertebrate fauna of Muskeget may be roughly divided into two groups, viz., normal and abnormal. In the latter class he places the Short-eared Owl. From an ornithological standpoint this is surprising, for as far as I know it has no foundation in fact. I was not aware that Muskeget Island had *ever* produced any form of the Short-eared Owl that is different from what is found elsewhere; neither is there much likelihood of such a race occurring in the future on Muskeget. The conditions

of environment, as they at present exist, are against such abnormal development. If, during the past, no such *recognizable* pale race has been produced by the conditions as claimed and presented, what ground or promise is there of *now* establishing such a race amidst a shooting club, a life saving station, and fishermen who have numbers of cats to hold in check the vermin. These vermin are the direct result of those reintroduced on the island by Mr. Miller and associates several years ago.

I fail to appreciate and dissent from the statement near the foot of page 77 that, "by helping to offer direct historical proof of the rapidity at which modification may progress under natural conditions the Terns would be fulfilling a more important end than in gladdening the eye of the visitor to Muskeget, and the heart of the reader of Mr. Mackay's progress report." These beautiful birds are fulfilling at the present time a much more important end than the one suggested, by delighting the eye of every lover of bird life to whom the privilege of enjoying their companionship is given. Refining in their influences, what higher or better end can they serve?

GEORGE H. MACKAY.

*Boston, January 17, 1898.*

#### The Short-eared Owls of Muskeget Island.

EDITORS OF 'THE AUK':—

*Dear Sirs:*—I quite agree with Mr. Miller (*cf.* Auk, XV, No. 1, January, 1898, pp. 75-77) that the killing of the family of Muskeget Owls in 1896, merely because they were preying on the Terns, was ill-judged. If Muskeget were my private property I should encourage and protect the Owls, and they would be made welcome to as many Terns as they chose to eat, for I should feel confident that however fast they might increase the Terns would outstrip them in the race. As Mr. Miller says, bird protection should not be made one sided for if it be so it is certain to lose not only its scientific but much of its aesthetic value, as well as something, even, of its practical usefulness. Bird protectors, whether they be sportsmen or pure bird lovers, would do well to study more closely the balance of nature, for it concerns the success of their enterprises far more closely than they seem to realize. Even the naturalists do not as yet fully understand the complex workings and delicate adjustments of a system which, when not interfered with by man, seems invariably to result in the production and maintenance of the richest possible fauna, of which the predatory and non-predatory forms increase together to the full limits of the capacity for food and shelter which the country furnishes. No one who has ever visited a primitive region, well timbered, well watered and not too cold, can deny the truth of this, but it is certainly difficult to understand or explain how Hawks, Owls, Herons,

Kingfishers and the various carnivorous mammals can exist, as they so often do, in the greatest abundance without exterminating the defenseless creatures on which they prey.

Mr. Miller, however, bases his protest on the assumption that "a recognizable race" of the Short-eared Owl formerly existed on Muskeget, and that the birds which Mr. Mackay caused to be destroyed might have reproduced a similarly interesting form had they been left unmolested. In support of the former assertion he refers to Mr. Maynard's statement (*Birds of Eastern N. Am.*, 1881, p. 264) that some specimens taken there in July, 1870 were so "bleached as to appear nearly white in the distance" adding that "of course, at so early a period in the summer, this bleaching could hardly have been due to a mechanically abraded condition of the plumage, and indeed Mr. Maynard has personally assured me that such was not the case, but that the birds represented a pale, resident race."

I had the pleasure of accompanying Mr. Maynard to Muskeget in 1870, and my notes relating to our mutual experience state that but four Short-eared Owls were seen, and that all of these were shot. Three of the skins fell to my share when the spoils of the trip were divided, and are still in my collection. A male and female killed June 30 are, as Mr. Maynard says, very pale in general coloring but the third bird, a female taken July 2, is much darker. The plumage of all three birds is excessively ragged, many of the feathers having lost, by abrasion, nearly or quite one half of their normal area, while some of them are worn away almost to the shaft. But even the lighter two birds have a number of scapulars and interscapulars which are perfect in outline and which are not only much darker than the worn portions of the plumage, but nearly or quite as dark as corresponding feathers of birds taken in autumn or winter at places hundreds or even thousands of miles distant from Muskeget. These feathers may have been of recent growth at the time when the birds were killed but it is more probable that they were old feathers which had been protected by the overlapping plumage from the bleaching and disintegrating effects of the air and sunlight, for the inner quills, as well as the inner webs of the outer primaries and tail-feathers, are almost equally fresh and perfect, in striking contrast with the frayed and bleached outer portions of some of the wing and tail-feathers.

It is, of course, quite safe to assert that at some time earlier in the season the general coloring of these birds must have been not unlike that which the unworn parts of the plumage now exhibit, and it seems not unreasonable to assume that even these unworn feathers must have lost something of their original depth and richness of tint. If this be granted, and a very slight allowance made for fading, I do not see how it can be maintained that the Short-eared Owls taken by Mr. Maynard and myself on Muskeget Island in 1870 were in any respects peculiar. Even if the allowance for fading be not conceded it is quite possible, as I have already stated, to match the unworn feathers by corresponding feathers

on light-colored birds taken during the migrations in other parts of New England and elsewhere. It follows as a matter of course that there is no evidence, historical or otherwise, that Muskeget has ever harbored a "recognizable local race" of the Short-eared Owl. It would be indeed remarkable had such been the case, for the food resources of the island, excepting during the brief season when the Terns are breeding there, are not sufficient to supply the wants of more than two or three families of Owls, and a local race which at no one period of its existence could have been represented by more than a score of individuals would be something of an anomaly.

In this connection it may be worth remarking (since the fact seems to have been generally overlooked by American ornithologists) that there is a very decided and constant difference in coloring between the sexes of the Short-eared Owl, the males, when in fully adult plumage, being very much lighter-colored than the females. I have several males taken during the migrations at Ipswich, Massachusetts, as well as from the Pacific Coast, which are almost as pale as the Muskeget birds, and there is not a single fully adult male in my large series which is as dark as the average female. Dresser, in his 'Birds of Europe' (V, p. 258), states that the same sexual difference is found in Old World representatives of the Short-eared Owl.

Very truly yours,

WILLIAM BREWSTER.

Cambridge, Mass.

March, 1898.

#### An Untrustworthy Observer.

EDITORS OF 'THE AUK':—

*Dear Sirs:*—Those members of the A. O. U. who were present at the meeting last November will doubtless recall a paper read by Mr. Edwin Irvine Haines entitled 'The Summer Birds of the Catskill Mountains with remarks upon the Faunæ of the Region.' The paper indicated a 'chumminess' on the part of the birds that enabled the writer to fairly rain down records of species that ordinarily, during the summer season, are satisfied to keep out of the Catskills. Several sets of eggs of the Solitary Sandpiper (*Totanus solitarius*), Canada Jay (*Perisoreus canadensis*), and Ipswich Sparrow (*Ammodramus princeps*) had been obtained, while such species as the Hudsonian Chickadee (*Parus hudsonicus*) and White-crowned Sparrow (*Zonotrichia albicollis*) had been found hobnobbing with the equally abundant Dickcissel (*Spiza americana*) and Tufted Titmouse (*Parus bicolor*). A tray full of skins, chiefly without labels and in winter plumage, was exhibited in support of the many extraordinary discoveries of which the above are samples. On asking Mr. Haines for

the loan of his birds, he informed me that a portion of them had been sent to Dr. Merriam in Washington, but the following were submitted to me, viz. : White-crowned Sparrow (*Zonotrichia leucophrys*), Ruby-crowned Kinglet (*Regulus calendula*), Golden-crowned Kinglet (*R. satrapa*), Hermit Thrush (*Turdus aonalaschkae pallasii*), Gray-cheeked Thrush (*T. aliciae*), Bicknell's Thrush (*T. a. bicknelli*), Olive-backed Thrush (*Turdus ustulatus swainsonii*), Tufted Titmouse (*Parus bicolor*), and Pigeon Hawk (*Falco columbarius*). Mr. Haines assured me the Thrushes had all been obtained between the middle of June and the middle of July; the other birds (the Kinglets represented by no less than seven specimens) bore labels indicating capture in the Catskills on various dates between June 10 and June 19, 1897. Suffice it to say, not one of these birds was in breeding plumage! This statement will, I think, be borne out by Messrs. J. A. Allen and D. G. Elliot, who also examined them.

Now the point of all this is that Mr. Haines's ornithological statements are not in accordance with facts, and as he has figured in print a number of times during the past year or two, it is but natural to view all of his work with suspicion. One article, 'The Kinglets and their Distribution,' (*The Osprey*, I, Feb. 1897, pp. 73-75), asserts that he has found both species breeding in the Catskills. As a matter of fact his "June" birds are *not* breeding birds. It is not likely now that his additions to the Catskill fauna will ever be published, nor will the breeding of Brünnich's Murre (*Uria lomvia*) at New Rochelle, N. Y., as announced on a program of the Linnæan Society of New York, become a record, but it is time to put a check to such perverted ambitions, and while I am quite unbiassed by any personal animus, I feel that my fellow members of the A. O. U. should be warned against a person who has shown himself to be so eminently underserving of credence.

Yours very truly,

JONATHAN DWIGHT, JR.

New York, N. Y.,  
Feb. 21, 1898.

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## NOTES AND NEWS.

DR. ANDERS JOHAN MALMGREN, a Corresponding Member of the A. O. U., who died in Helsingfors, April 12, 1897, was born in Kajana, Finland, in 1834. His life was quite eventful and successful in many directions. Thus, in 1869, he became Professor of Zoölogy at the University of Helsingfors; in 1874 he was made Commissioner of Fisheries; and in 1889 he was appointed Governor of the northernmost province of Finland.

As a zoölogist Malmgren paid most attention to the fauna of the boreal regions of Europe, and he made valuable contributions to our knowledge



of the mammals, fishes, and especially of the annulata of the western portion of the Arctic Ocean. To us Malmgren is more particularly interesting because of his ornithological explorations in Spitzbergen. He made no less than three trips to that Ultima Thule viz., in 1861, 1864 and 1868, the ornithological results being published in Cabanis's 'Journal für Ornithologie.' Malmgren clearly understood and distinguished the geographical forms inhabiting that interesting archipelago, and it is important to record that he was a trinomialist long before that form of nomenclature was accepted in this country.—LEONHARD STEJNEGER.

DR. FELIX GEORG HERMAN AUGUST MOJSISOVICS VON MOJSVÁR, a Corresponding Member of the A. O. U., died on August 27, 1897, in the city of Graz, Austria, 48 years old. He was, at the time of his death, professor of Zoölogy and Comparative Anatomy at the Imp. Technical High School; 'Privat Docent' at the University; and Curator of the zoölogical division of the 'Johanneum,' institutions all located at Graz.

Mojsisovics von Mojsvár was particularly interested in the fauna of Europe and the anatomy of vertebrates, but he was not a prolific writer. As an ornithologist he contributed chiefly to the avifauna of Austria-Hungary, particularly that of Styria and of southern Hungary and Slavonia. In 1884 he undertook a trip to the latter provinces, the ornithological report upon which contained a great deal of information interestingly presented.—LEONHARD STEJNEGER.

WE HAVE received the prospectus of 'A Monograph of the Turdidæ, or Family of Thrushes,' by the late Henry Seebohm, edited and completed after his death by Dr. R. Bowdler Sharpe. The work will be published by Henry Sotheran & Co., 37 Piccadilly, London, in 12 parts, at 1£ 16s per part. The work will be in Imperial 4to, and each part will contain 12 colored plates, by Keulemans. The edition will be limited to 250 copies.

D. APPLETON & Co. announce as in press and soon to be issued 'The Art of Taxidermy' by John Rowley, Chief Taxidermist at the American Museum of Natural History. It will be profusely illustrated, and treat the subject from the standpoint of the latest and most approved modern methods.

THE DELAWARE VALLEY ORNITHOLOGICAL CLUB held its eighth annual meeting January 6, 1898, at the Academy of Natural Sciences, Philadelphia, thirty-four members being in attendance. The club is in a more flourishing condition than ever before, the membership numbering seventy-five. During the past year sixteen regular meetings were held and one public meeting.

Among the more important papers read were 'The Genus *Sturnella*' and 'Molting of the Sanderling,' by Witmer Stone; 'Brant Shooting,' by I. N. DeHaven; 'New Jersey Shore Birds,' by Wm. L. Baily; 'Local Reminiscences of Audubon,' by Geo. Spencer Morris; 'Ornithological Photo-

graphy,' by Wm. L. Whitaker; 'Notes on Nests found in Salem Co., N. J.,' by Wm. W. Justin, Jr.; 'The American Barn Owl,' and 'Great Gull Island,' by J. Harris Reed; 'Fossil Birds and their Living Allies,' by S. N. Rhoads.

The officers for the ensuing year are: President, I. Norris DeHaven; Vice-President, Chas. J. Rhoads; Secretary, William A. Shryock; Treasurer, Wm. L. Baily.

A SECTION OF ORNITHOLOGY has been recently formed by the members of the California Academy of Sciences interested in the study of birds, with the following officers: President, Leverett M. Loomis; Vice-President, John W. Mailliard; Secretary and Treasurer, Henry B. Kaeding.

The meetings are held on the first Tuesday of each month for the presentation of papers, informal discussion of matters relating to ornithology and the examination of specimens. The collection and library of the Department of Ornithology have been placed at the disposal of the Section.

THE UNITED ORNITHOLOGISTS OF MAINE held their second annual meeting at the rooms of the Portland Society of Natural History, Portland, Maine, Dec. 31, 1897, and Jan. 1, 1898. Twenty-six new members were elected, and also the following officers for 1898: President, Ora W. Knight; Vice-President, Wm. L. Powers; Secretary-Treasurer, L. W. Robbins; Editor, James Carroll Mead; Councillors, Herbert L. Spinney, and Prof. Asa L. Lane. A plan for work for the ensuing year was adopted and the following papers read. 'How I became an Ornithologist,' by Geo. A. Boardman; 'Talks on Maine Birds,' by Prof. A. L. Lane; 'Loons on our Inland Waters,' by James Carroll Mead; 'Ornithology in our Public Schools,' by Principal Wm. L. Powers; 'Migration of Birds as observed at Seguin Light,' by H. L. Spinney; 'Birds as Home Lovers,' by Ora W. Knight. The recommendation that "the family of Ducks, Geese and Swans (Anatidæ), and the Thrushes (Turdidæ) be the special objects of study," during the ensuing year was adopted. The report of the meeting occupies three pages of the 'Maine Sportsman' for February, 1898 (Vol. V, No. 54, pp. 8, 20, 21), and includes in full the paper on 'Migration of Birds at Seguin Light House,' by Herbert L. Spinney, 2d Assist. Keeper.

The 'Maine Sportsman' is the official organ of the United Ornithologists of Maine, and contains a department of 'Ornithology,' devoted to the work and interests of the Society, and often includes notes and papers of permanent interest and value. In the number for May, 1897, for example, is a 'Twenty Years' Review of the Scoter Duck' (*Oidemia deglandi*), by Herbert L. Spinney. Also in earlier numbers, 'A Visit to Some Maine Heronries' by O. W. Knight (July, 1896); 'Breeding of the Northern Raven on Seguin Island,' by Herbert L. Spinney (Aug., 1896); 'Randon Notes on our Sea Birds,' by J. Merton Swain (Sept., 1896); and 'The Ruffed Grouse of Maine,' by A. H. Norton. The Society also takes an earnest interest in the Protection of Birds.

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# THE AUK:

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THE IMPERIAL IVORY-BILLED WOODPECKER,  
*CAMPEPHILUS IMPERIALIS* (GOULD).

BY E. W. NELSON.

*Plate III.*

At a meeting of the Zoölogical Society of London, held on August 14, 1832, specimens were exhibited of a previously undescribed Woodpecker, remarkable for its extraordinary size. These specimens, the male of which measured two feet in length, were said to have been obtained by Mr. Gould from "that little explored district of California which borders the territory of Mexico"—a statement which serves as a good illustration of the vague ideas of American geography that prevailed among naturalists in those days. Mr. Gould made a felicitous choice of name when he called this bird *Picus imperialis* for it is by far the largest and most striking member of the Woodpecker family in the world. The authors of the 'Biologia Centrali-Americana' say that Gould's original skins are made up like those of Floresi, a mining engineer, who collected birds in the Sierra Madre Mountains near Bolaños, Jalisco, early in the century. My own observations prove that the Imperial Ivory-bill is found near that place, and there is little doubt that it is the type locality. The home of this Woodpecker is in such a remote and rarely visited region that despite the large size and conspicuous plumage of the bird, many years passed after its discovery before any additions

were made to its history and nothing has been published on its habits. In 1890 the British Museum Catalogue enumerated several additional specimens and gave its range as extending from Ciudad in the State of Durango, northward through Chihuahua to within fifty miles of the Arizona border. The latter record, first published in 'The Auk,' was made by Lieut. H. C. Benson, U. S. A., during a scouting expedition after Apache Indians in northern Chihuahua. Afterwards the late Dr. Audley C. Buller secured specimens about 150 miles south of Bolaños, in the Sierra de Juanacatlan, western Jalisco, and Mr. W. B. Richardson took others in the Sierra de Valparaiso in northern Zacatecas.

During my visit to the former locality, in the spring of 1897, the residents told me that Ivory-bills were found sparingly in the surrounding mountains and exhibited the scalp of one that had been killed a few months before. In company with two natives, my assistant and I rode over the undulating mountain summits for an entire day on a fruitless quest for these birds. Several species of pines, oaks and madroños made up the forest, and beautiful little park-like basins open here and there forming ideal spots for the big Woodpeckers, but we failed to see one. The people united in assuring us that the birds live there every summer and it is probable that they lead a more wandering life during the winter months and sometimes absent themselves from their summer haunts; but it is quite certain that they are not in any sense migratory. We found them in the state of Michoacan, considerably farther south than any previous record, and subsequently visited other parts of their range. While collecting in the pine forest near Patzcuaro, Michoacan, during the summer of 1892, a Mexican soldier brought in an Ivory-bill killed a few miles away, but it was not until later in the season that we had the satisfaction of seeing the bird in life. In the autumn of that year three of us left Patzcuaro on horseback to go back twenty-five miles into the forest to the Indian village of Nahuatzin. After leaving the shore of Lake Patzcuaro our trail led through a beautiful upland country of volcanic origin, overgrown with open pine forest, in which grassy parks opened here and there affording charming vistas. We were riding quietly, at an altitude of about 7000 feet, when the flash of bird-wings was noted in the

sunlight. The next instant my listless attitude had vanished, for a pair of Imperial Ivory-bills swung up and alighted near the top of a large dead pine on the border of an Indian cornfield. We stopped at once and after dismounting had no trouble in walking up within easy gunshot. As the male moved out on a large branch a charge of number five shot started him off in an erratic course and the second barrel brought him whirling to the ground. The female was clinging to the trunk near the top of the tree and at the report of the gun flew away over the cornfields and forest as if leaving the neighborhood. The male was only winged and as we approached threw himself over on his tail, with outspread wings, presenting a warlike front of threatening beak and talons. It was impossible not to admire the courage and defiance shown by the fierce glow of his golden-yellow eyes and upraised flaming crest. After stowing the prize carefully away in a saddle-bag we rode on, but chancing to look back saw the female returning at a height of two or three hundred yards looking for her mate. She passed over the tree from which the male was shot and after making a wide circuit again disappeared in the forest.

Soon after sunset we approached Nahuatzin, a picturesque village of steep-roofed houses, situated in a long mountain valley and inhabited by Tarascan Indians. The houses were almost concealed by fruit trees through which rose long, slender columns of smoke that trailed off slowly in the calm evening air and settled in heavy banks in low parts of the valley.

As the shadows of night fell on the bordering wooded hills we scanned with interest the fading outlines of our new field. One of my companions had been here before and his friends received us with much good will and gave us quarters for the night. The following morning our camp was made on the top of a high hill to the west of Nahuatzin, at the border of a little park in the midst of the pines. From the brow of the hill close by was a free outlook across the valley whence a billowy succession of pine covered hills extended away to the blue distance, broken here and there by dull yellow openings of the grassy parks. The first day in camp, just before sunrise, my curiosity was aroused by a succession of queer, nasal, penny-trumpet-like notes from the summit of a rounded hill near by. The notes were new to me and I waited

impatiently for the return of my assistant with the shot-gun so that I might investigate. The calls continued at short intervals until a little after sunrise and were the only sounds audible in the otherwise silent forest. Suddenly a cannon-like roar reverberated from the hillside above camp. A few minutes later my assistant came down the slope and told me that the curious notes were made by Ivory-bills. His attention had been drawn to them as he was coming in, and climbing the hill he found three of the birds close together on the trunk of a pine tree near the summit. In order to make sure of the lot he put two heavy charges in his gun and creeping up close to the base of the tree fired both barrels at once, with the result that the recoil almost kicked him off the hillside and the birds flew away unscathed uttering cries of alarm. A little later we found them again in the same place and several shots were fired without effect. About nine o'clock five of the birds set out from the hill in straggling succession bound for the open pine forest of a neighboring park-like flat where during the day their odd cries were heard at intervals, now distinctly and again barely audible as they moved about among the trees.

During the next few days this entire party fell victims to our guns, but so long as any were left they showed strange persistence in returning to their haunt on the hill. Just at sunrise each morning the notes were heard and between eight and nine o'clock the birds flew out to their feeding ground among the dead pines on the adjacent flat. On the north slope of the hill, near the summit, were several large, prostrate and partly decayed tree trunks with their upper surfaces chipped and dug into for several inches, evidently by the powerful beaks of these Woodpeckers. The birds were surprisingly easy to stalk, even after being hunted and shot at for several days, but were difficult to secure because they are powerful, hard-muscled creatures possessed of remarkable vitality. They showed considerable attachment to one another and when one was shot the other members of the flock remained scattered about on the trees for a short time calling each other at intervals. Wounded birds fought with savage courage. The handsomely contrasted black, white, and scarlet plumage of the male Ivory-bill, with the bright gleam of his golden-yellow eyes make a fit combination for a habitant of one of Nature's wildest

and most secluded regions. They fly from tree to tree with rather slow, heavy wing strokes similar to those of a Crow, and when about to alight, by an added impulse, glide upward along the trunk in a graceful curve and firmly grasp the bark or smooth wood. After a short pause and a glance around, they ascend the trunk in little runs of from one to three feet, with alternating pauses, usually keeping along the main stem of the tree, but when searching for food sometimes traveling out on the larger branches. At such times they were often seen clinging, back down, to the lower side of the branch, chiseling away with powerful blows. Now and then one 'drums' for amusement upon a resonant branch or trunk after the manner of many smaller Woodpeckers, but the strokes are much louder and slower than those of the other species.

For so powerful a bird their notes are weak, and have the peculiar nasal tone that is characteristic of the notes of Sapsuckers, but with a penetrating quality that renders them distinct for a long distance. I am certain they were frequently heard at a distance of a mile; yet when the birds were nearby they did not sound very loud. When we had secured all the birds near camp another party of five or six was found in the hills a mile or so away, and the Indians told us of other places where they were common.

One old Indian led me to a high point overlooking a great expanse of forested country and pointed out a number of park-like openings where he assured me the birds could be found. On the return trip to Patzcuaro, while passing the locality where our first Ivory-bill was taken, the note of another was heard, and riding into the open woods a short distance we came upon a party of eight or ten. My companion winged a fine old male as it flew over and it came down uttering a loud, harsh squall, half in anger and half in fright. Another bird alarmed by the shot flew to a tree near where I stood and alighted about half way up the trunk. After looking at me for a few moments it flew off through the trees.

In this part of the forest we saw a large hole in a dead tree which was evidently an old nesting site of the Ivory-bills. The hole was about forty feet from the ground, in a large Montezuma

pine from which the bark had fallen, and judging from the fresh color of the wood within it could not have been over a year old. The following year one of my companions, Mr. Winton, returned to this district and learned that the Ivory-bills breed there in February. An Indian boy employed by him managed to secure two eggs, one of which he broke descending the tree and the other was placed inside his shirt for safe keeping. On the way home he started to drive some cattle and while running after them fell and thus destroyed the only eggs of this species ever taken. A nest visited the first of March contained newly hatched young, and in April they had flown. One of the striking characteristics of these birds is their general custom of remaining in family parties during the fall and winter. They apparently have strong local attachments as shown by the persistence with which the party near our camp remained in its accustomed haunts although hunted for several days in succession. During our stay in this district these birds passed the middle of the day roaming through thin parts of the forest or about the borders of grassy parks. They seemed particularly partial to the dead trees along the borders of partly cleared cornfields. In the Nahuatzin district we found them only where the forest was almost entirely made up of Montezuma pine (*Pinus montezumæ*) and did not see them alight on any other tree. Their range in this region appears to be restricted to the rather narrow belt along the top of the main central ridge of the Sierra Madre which lies above an altitude of 7000 feet. This belt is more like a rolling and irregular tableland than the summit of a great mountain chain, and its open pine forest, broken by grassy parks, reminds one strongly of the Mogollon plateau of northern Arizona.

While in the northern part of the Territory of Tepic in 1897, we met a trader returning from a trip to the City of Durango who showed us a roughly made skin of a male Ivory-bill which he had secured in the Sierra Madre of Durango and was taking as a great curiosity to his home in the hot country.

The Imperial Ivory-bill is a bird of the pine clad mountains of the Transition life zone and although various naturalists have looked for it without success in the mountains of southern Arizona, there is still a probability of its occurrence there.



Its range, 'so far as known at present, extends from Patzcuaro, Michoacan, north to within fifty miles of the Arizona border in northern Chihuahua. This covers parts of the Territory of Tepic and of the States of Michoacan, Jalisco, Zacatecas, Durango and Chihuahua.

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DESCRIPTIONS OF SUPPOSED NEW GENERA, SPECIES,  
 AND SUBSPECIES OF AMERICAN BIRDS.

I. FRINGILLIDÆ.<sup>1</sup>

BY ROBERT RIDGWAY.

*Curator of the Division of Birds, U. S. National Museum.*

(By permission of the Secretary of the Smithsonian Institution.)

THE present paper is the first of a series intended for the publication of supposed new forms in advance of the larger work on the birds of North and Middle America upon which the author has been engaged for the past four years, the completion of which must necessarily be long delayed. Only brief diagnoses are here given, detailed descriptions being reserved for the larger work referred to.

Several of the genera included here have usually been placed with the so-called Tanagridæ; but I am fully convinced, after long and careful study, that if it should prove practicable to retain a separate family equivalent, in part, to the usually accepted Tanagridæ, it can only be done by materially restricting its limits. At any rate, it is quite certain that the genera *Pitylus* (restricted to *P. grossus* and *P. fuliginosus*), *Pezopetes*, *Buarremon*, *Arremon*, *Lysurus*, and *Pselliophorus* are true Fringillidæ, and very closely related to such unquestionably fringilline genera as *Cardinalis*, *Pipilo*, *Pyrgisoma*, *Atlapetes*, *Arremonops*, etc. Some doubt is attached to such genera as *Stelgidostomus*, *Heterospingus*, *Mitrospingus*, *Rhodothraupis*, and *Hemithraupis*, which certainly are

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[<sup>1</sup>An author's edition of 100 copies of this paper was issued May 13, 1898.  
 —EDD.]

not typically fringilline, at least; but pending a conclusion as to their proper position it is considered best to include them here provisionally.

Genus **Melanospiza.** (Type, *Loxigilla richardsoni* Cory.)

Related to *Eueltheia* Reichenbach, but bill relatively much larger and with the subbasal angle of the mandibular tomium produced into a distinct point.

Genus **Brachyspiza.** (Type, *Fringilla capensis* Müller.)

Related to *Melospiza* Baird, but tail shorter, tarsi longer and stouter, and style of coloration very different.

Genus **Myospiza.** (Type, *Fringilla manimbe* Lichtenstein.)

Similar to *Coturniculus* Bonaparte, but tail rounded or double-rounded, with all the rectrices broad and rounded at tips, and tarsus much longer than middle toe with claw.

Genus **Plagiospiza.** (Type, *Aimophila superciliosa* Swainson.)

Similar to *Aimophila* Swainson, but tail shorter than wing instead of longer, and wing much less rounded, the first primary longer than eighth instead of shorter than tenth, and second to sixth primaries longest and nearly equal.

Genus **Incaspiza.** (Type, *Hæmophila pulchra* Sclater.)

Similar to *Aimophila* Swainson, in much rounded wing and proportions of feet, but with tail decidedly shorter than wing, maxilla narrower (vertically) than mandible, maxillary tomium without any convexity in middle portion and style of coloration very different. *Coloration:* Back and scapulars plain chestnut, rest of upper parts plain gray; face black; chest and sides grayish; belly and under tail-coverts white or buffy; lateral rectrices chiefly white; bill yellow.

Genus **Rhynchospiza.** (Type, *Hæmophila stolzmanni* Taczanowski.)

Similar to the shorter tailed, stouter billed species of *Aimophila* in proportions of toes, form of bill, and much rounded wing, but tail much shorter than wing, nearly even, and nostrils very small, circular, nearly

hidden by latero-frontal feathers. *Coloration:* Head and neck gray with two broad stripes of chestnut on pileum and a narrow postocular stripe of the same; back grayish brown streaked with black; lesser wing-coverts dark chestnut; edge of wing yellow; under parts mostly white.

**Genus Pselliophorus.**<sup>1</sup> (Type, *Tachyphonus tibialis* Lawrence.)

Related to *Buarremon* Bonaparte, but mandibular tomium without distinct subbasal tooth, feathers of forehead and lores stiff and erect, webs of rectrices semi-decomposed terminally, and feathers of tibiæ developed into a conspicuous tuft entirely concealing the tibio-tarsal joint.

**Genus Lysurus.** (Type, *Buarremon crassirostris* Cassin.)

Similar to *Arremon* Vieillot, but nostril broader, more rounded, with superior operculum much less developed; wing much more rounded (first primary very much shorter than secondaries, the second about equal to secondaries or but little longer); tail more rounded, almost graduated, with the rectrices broad, though pointed at the tips, the webs semi-decomposed terminally; middle toe relatively longer, the lateral claw falling much short of base of middle claw. (Includes also *Buarremon castaneiceps* Sclater.)

**Genus Serinopsis.** (Type, *Fringilla arvensis* Kittlitz.)

Resembling *Sicalis* Boie, but bill relatively shorter and deeper at base, more compressed terminally, with straighter outlines and more distinctly ridged culmen; wing much longer and more pointed and claws relatively longer and more slender.

**Genus Heterospingus.** (Type, *Tachyphonus rubrifrons* Lawrence.)

Similar to *Tachyphonus* Vieillot, but nasal fossæ densely feathered, concealing the nostrils; tail relatively much shorter, wing more pointed, tarsus shorter (scarcely exceeding middle toe with claw), and sexes alike in color or nearly so in pattern of coloration.

**Genus Mitrospingus.** (Type, *Tachyphonus cassini* Lawrence.)

Related to *Eucometis* Sclater, but bill much longer (nearly as long as head), nostrils very different, wing more rounded, tarsus relatively longer, claws stronger, occipital feathers very short (instead of the reverse), and style of coloration very different.

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<sup>1</sup> From *Ψελλιοφόρος*; *Ψέλλιον* = *armilla*.

Genus **Rhodothraupis.** (Type, *Fringilla celæno* Lichtenstein.)

Similar to *Caryothraustes* Reichenbach, but tail much longer (nearly as long as wing) and decidedly rounded; first primary not longer than eighth instead of longer than seventh; tarsus decidedly longer than middle toe with claw, and sexes different in color, though similar in pattern of coloration.

Genus **Hemithraupis.** (Type, *Aglaia cyanocephala* Lafresnaye and D'Orbigny.)

Similar to *Tanagra* Linnæus,<sup>1</sup> but tail much longer (equal to length of wing to tip of secondaries), wing more rounded (first primary shorter than seventh instead of longer than sixth), and rectal bristles much stronger.

Genus **Stelgidostomus.** (Type, *Saltator maxillosus* Cabanis.)

Superficially closely resembling *Saltator* Vieillot, but bill very different, being much shorter and more tumid, with maxillary tomia strongly inflected, the mandibular tomia serrated, especially toward the base, and the inferior surface of the maxilla with a lateral series of sharp, transverse file-like ridges or corrugations.

**Aimophila**<sup>2</sup> **ruficeps sororia.** LAGUNA SPARROW.

Similar to *A. ruficeps* in coloration of upper parts, but chestnut of pileum somewhat lighter or clearer, supraloral line whiter, and supra-auricular stripe lighter and grayer; smaller than *A. ruficeps scottii*, with back, etc., less ashy with chestnut streaks darker and much narrower, and the under parts much more strongly tinged with buff; differing from *all* the other northern forms of the species in much thicker and relatively shorter bill. Wing, 2.20-2.48 (2.37); tail, 2.40-2.58 (2.49); exposed culmen, 0.45; depth of bill at base, 0.25-0.27 (0.26); tarsus, 0.80-0.81 (0.80); middle toe, 0.55-0.60 (0.58).

<sup>1</sup>The type of *Tanagra* Linnæus is, according to the "process of elimination," *T. episcopus*.

<sup>2</sup>I am at present unable to discover any characters sufficient to separate *Peucaea* from *Aimophila*, unless the former be restricted to *P. aestivalis*, *P. hotteri*, and *P. cassini*. *Aimophila ruficeps* is connected with the type (*A. ruficauda*) by such intermediate species as *A. mcleodi*, which Mr. Brewster described as an *Aimophila* and Messrs. Salvin and Godman as a *Peucaea* (*P. megarhyncha*).

Southern portion of Lower California, in mountains (Laguna; Victoria Mountains).

Type, No. 90,063, U. S. Nat. Mus., ♀ ad., Victoria Mts., Lower California, Feb. 9, 1883; L. Belding.

### **Aimophila sartorii.** HUATUSCO SPARROW.

Similar to *A. botterii* but very much darker, the ground color of the upper parts sooty grayish or dark smoke-gray with the darker markings very heavy; under parts less buffy, the chest and sides varying from pale smoky buff to light drab-gray. Length (skins), 5.10-6.10 (5.73); wing, 2.35-2.60 (2.42); tail, 2.25-2.52 (2.42); exposed culmen, 0.48-0.52 (0.50); depth of bill at base, 0.27-0.30 (0.28); tarsus, 0.80-0.87 (0.83); middle toe, 0.62-0.68 (0.64).

Eastern slope of Vera Cruz, Mexico (Huatusco, near Mirador), and south to northern Nicaragua (El Volcan, Chinandego).

Type, No. 44,752, U. S. Nat. Mus., ♀ ad., Huatusco, near Mirador, Vera Cruz, Mexico, July 12; Florentin Sartorius.

This form resembles very closely in coloration "*Ammodramus petenicus* Salvin, but is decidedly larger and the wing less rounded. The relationship is exceedingly close, however, and it would not be surprising should the two prove to be local forms of the same species. *A. petenicus* is certainly not an *Ammodramus*, but, should my view of the impracticability of separating *Peucaea* from *Aimophila* prove correct, it should be called *Aimophila petenica*.

Owing to the circumstance that the single Vera Cruz specimen (the type) is in worn plumage, comparison between it and the two Nicaraguan specimens in the Salvin-Godman collection is unsatisfactory. The latter are in fresh plumage, and may be merely winter migrants, though it is very doubtful whether these birds perform more than local migrations.

The Huatusco bird which has been selected as the type is, in part, the *Peucaea aestivalis* var. *botterii* of the 'History of North American Birds' (Vol. II, page 38), and, exclusively, the *P. botterii* of the 'Manual of North American Birds' (page 428). The true *P. botterii*, it may be added, is the same species as that treated by American authors generally as *P. mexicana* or *P. arizonæ*, as I have recently been able to determine by comparison of the types of the three supposed forms.

**Atlapetes pileatus dilutus.** CHIHUAHUAN PILEATED SPARROW.

Similar to *A. pileatus* (Wagler) but averaging smaller, with smaller and more slender bill, grayer upper parts, and yellow of under parts paler and duller. Wing, 2.45-2.65 (2.53); tail, 2.35-2.60 (2.50); exposed culmen, 0.40-0.47 (0.44); depth of bill at base, 0.25-0.30 (0.28); tarsus, 0.90-0.95 (0.92); middle toe, 0.61-0.65 (0.63).

Northwestern portion of Mexican plateau (Bravo and Jesus Maria, Chihuahua).

Type, No. 99962, U. S. Nat. Mus., ♂ ad., Jesus Maria, Chihuahua, April 25, 1884; R. R. McLeod.

**Arremonops venezuelensis.** VENEZUELAN STRIPED-CROWNED SPARROW.

Similar to *A. conirostris* (Bonaparte), but decidedly smaller, bill more slender, and color of upper parts of a duller, more brownish, olive-green. Length (skins), 5.85-6.00 (5.92); wing, 2.77-2.83 (2.80); tail, 2.40-2.47 (2.44); exposed culmen, 0.58-0.60 (0.59); depth of bill at base, 0.30; tarsus, 0.99-1.01 (1.00); middle toe, 0.63-0.65 (0.64).

Venezuela (La Guayra; Puerto Cabello; Carupano; Tachira).

Type, No. 119280, U. S. Nat. Mus., Puerto Cabello, Venezuela; received from Count von Berlepsch.

The synonymy of this form is as follows:—

*Embernagra conirostris* (nec *Arremon conirostris* BONAPARTE), SCLATER & SALVIN, Proc. Zool. Soc. Lond. 1868, 167 (Caripano, Venezuela).

[*Embernagra striaticeps*.] Subsp. d. *Embernagra conirostris* SHARPE, Cat. Birds Brit. Mus. XII, 1888, 763, part (Carupano and Tachira, Venezuela).

**Arremonops richmondi.** RICHMOND'S SPARROW.

Similar to *A. conirostris* (Bonaparte) but much brighter olive-green above, gray of head much deeper, and chest distinctly ash-gray.

Honduras (Segovia River) to Veragua.

Type, No. 126189, U. S. Nat. Mus., ♂ ad., Greytown, Nicaragua, Feb. 16, 1892; C. W. Richmond.

This is the *Embernagra striaticeps* of authors, but not of Lafresnaye, as I have been able to ascertain by examination of the type specimens of the latter, in the collection of the Boston Society of Natural History. The latter clearly are referable to the Colombian form known as *Embernagra conirostris* (Bonaparte), to which Panama examples in the U. S. National Museum

also unquestionably belong. A new name being therefore required for the Central American bird, I take pleasure in naming it after Dr. C. W. Richmond, Assistant Curator of the Division of Birds, U. S. National Museum, who procured a series of beautifully prepared specimens in Nicaragua.

**Cyanocompsa concreta cyanescens.** PANAMA BLUE  
 GROSBEAK.

Similar to *C. concreta* (DuBus) but averaging smaller (the bill especially), the male more decidedly bluish, the adult female and young less rusty brown. Length (skins) 5.60-6.50 (6.00); wing, 2.90-3.28 (3.11); tail, 2.37-2.75 (2.62); culmen, from base, 0.78-0.89 (0.81); depth of bill at base, 0.60-0.70 (0.66); width of mandible at base, 0.49-0.54 (0.51); tarsus, 0.76-0.87 (0.83); middle toe, 0.55-0.62 (0.59).

Colombia (including Isthmus of Panama) to Venezuela and western Ecuador. (Specimens from Veragua, Costa Rica, Nicaragua, and southern Honduras connect the typical Colombian bird with *G. concreta* of southern Mexico, Guatemala, and northern Honduras, the *concreta* type reaching its extreme development in southern Mexico.)

Type, No. 146114, U. S. Nat. Mus., ♂ ad., Panama, 1877; A. Boucard.

This is the *Guiraca cyanooides* of authors, but is not the *Coccyborus cyanooides* of Lafresnaye, as has erroneously been supposed. I have examined the types of the latter, now in the collection of the Boston Society of Natural History. The female type is a young example of *Guiraca cærulea*; but the male type represents a very distinct species, of which I have seen specimens from Venezuela, Guiana, and the lower Amazon Valley (Santarem). *Cyanocompsa cyanooides* (Lafresnaye) is a much more brightly colored bird than *C. concreta cyanescens*, the coloration of the male being far more like that of the smaller South American species, *Cyanocompsa cyanea* (Linnæus). The female, however, is very differently colored, being of a deep bistre-brownish or sepia hue, very different from the tawny color of *C. cyanea*.

**Amphispiza bilineata deserticola.** DESERT SPARROW.

Similar to *A. bilineata* (Cassin) but averaging decidedly larger, with upper parts lighter and browner, and the white spot at tip of inner web of lateral tail-feather much smaller. Length (skins), 4.80-5.45 (5.05); wing, 2.45-2.78 (2.58); tail, 2.32-2.69 (2.45); exposed culmen, 0.36-0.42

(0.40); depth of bill at base, 0.22-0.25 (0.24); tarsus, 0.71-0.78 (0.73); middle toe, 0.49-0.55 (0.51); length of white spot on lateral tail-feather, 0.10-0.45 (0.30).

Arid plains from western Texas (west of 103° W. longitude) to coast of southern California (San Diego County, etc.), north to northern Nevada and Utah, south into Chihuahua and Sonora; Lower California?

Type, No. 98884, U. S. Nat. Mus., ♂ ad., Tuscon, Arizona, May 12, 1884; E. W. Nelson.

### **Amphispiza belli clementeæ.** SAN CLEMENTE SPARROW.

Exactly like *A. belli* (Cassin) in coloration, but larger and with relatively larger bill. Length (skins), 5.20-5.70 (5.50); wing, 2.45-2.72 (2.61); tail, 2.30-2.68 (2.54); exposed culmen, 0.38-0.41 (0.39); depth of bill at base, 0.22-0.23 (0.22); tarsus, 0.79-0.85 (0.80); middle toe, 0.49-0.53 (0.52).

San Clemente Island, southern California.

Type, No. 117612, U. S. Nat. Mus., ♂ ad., San Clemente Island, California, Jan. 25, 1889; C. H. Townsend.

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## NOTES ON THE NESTING OF THE FORK-TAILED PETREL (*OCEANODROMA FURCATA*).

BY JOSEPH MAILLIARD.

AT NINE o'clock on the evening of June 17, 1896, our anchor was dropped at the island of St. Lazaria, a long, narrow rock lying in the mouth of Sitka Bay, Baranoff Island, Alaska. Landing at once, with my two assistants, we found ourselves upon a low bunch of rock between the two higher portions of the island. Here we shot some Glaucous-winged Gulls (*Larus glaucescens*), Violet-green Cormorants (*Phalacrocorax pelagicus robustus*), Black Oyster-catchers (*Hematopus bachmani*), and Tufted Puffins (*Lunda cirrhata*). About ten o'clock we discovered a way of reaching the top of the main portion of the island, and found the summit covered with peat in process of formation, out of which grew a rank sort of coarse grass and salmon-berry bushes, and in some places groves of fir and cedar trees. The highest portion is probably 200 feet above the sea, with perpendicular cliffs almost continuously around



it. As we were following a narrow Indian trail near the top a faint but distinct squeaking was heard directly beneath our feet. It was a foggy, rainy night, and as the light was commencing to fail we had not noticed the small holes which on closer inspection showed themselves under every bush and tuft of grass. Upon falling on our knees to investigate this unusual sound we discovered these holes and at once commenced digging in the soft peat with our fingers. A moment's work unearthed a Petrel, and almost simultaneously my two assistants sang out "I've got a bird." My own catch was a Fork-tailed Petrel (*Oceanodroma furcata*), but one of the men captured a Leach's (*O. leucorhoa*). Being naturally somewhat excited at finding the eggs of the Fork-tailed Petrel we went to work rather wildly and frightened some of the birds from their eggs. As the two species were breeding in the same burrows the result was a feeling of despair about identification. However, we took a few eggs from under the parents, and as by this time it was growing too dark to see very distinctly we returned to the sloop and turned in for two or three hours. My two companions, stretched on the bottom of the boat, were soon sleeping audibly, fatigue having been a stronger factor than their intention to keep watch and watch in case our light rope cable should be cut by the rocky bottom. The uneasy jerking of the little craft and the danger of going ashore if the cable parted prevented me from sleeping.

About twelve o'clock my attention was attracted by the notes of the Petrels on the shore, some hundred and fifty yards distant. It was too dark to see clearly, but there were so many of these birds moving about that it was possible to discern a sort of commotion along the rocks, and I arrived at the conclusion that the birds from the nests were meeting those coming in from the sea to exchange places with them. The twittering noise made on this meeting ground was something prodigious. It does not seem probable that the incubating birds left their nests until their partners came to replace them, but presumably the first ones to leave met and conversed with the later incoming ones. The noise we first heard under our feet was either made by birds getting ready to leave, or, more likely still, due to disagreement between the two species in the burrows.

Mr. J. Grinnell visited this island a day or two later and passed the night upon the summit. He said that it was impossible to keep a fire alight in the middle of the night as the Petrels flew into it in such numbers as to extinguish it. We went ashore again at 3 A. M., but not a Petrel was in sight. Their twittering had ceased about 1.30 or 2 o'clock, as it was getting rather broad daylight by that time. It would be interesting to know in the still higher latitudes, where there is no twilight, at what time this exchange of the duty of incubation takes place.

Sending the men on a tour of investigation around the island, I went at once to work on the Petrels, unfortunately with no implements but fingers. The burrows seemed to run in any and every direction except directly downwards. The area that I worked in was covered with bunch grass and low salmon-berry bushes, the roots of the latter being greatly in the way. The peat was so loose and wet that it was difficult to clearly define the burrows, but it seemed certain that they frequently intersected when on the same level, and also that there were tiers of them on different planes and running diverse ways. I could, however, form no idea of the length of any particular one. Their depth varied from four to eighteen inches from the surface of the ground. The diameter of the burrows was from about  $2\frac{1}{2}$  to  $3\frac{1}{2}$  inches, but frequently they were hollowed out in the interior to a greater size. The nests were merely small hollows in slightly enlarged portions of the galleries, with sometimes a little dry grass on the bottom, and were placed at irregular distances apart,—frequently an *O. furcata* within a foot of a nest of *O. leucorhoa*, and then again perhaps several of one species in succession at varying intervals. It was difficult to discern much removed material at the entrances to the burrows, the same ones being in all probability used year after year, the excavated earth having in the course of time become assimilated with the surrounding surface. It seemed as if one could dig down and strike burrows anywhere, and in fact I gave up looking for the entrances proper, and simply dug up the peat in any spot that seemed likely to be free from roots. Unless violently disturbed each bird would be found sitting upon its egg, or, perhaps it would back away a few inches. In some instances the bird had been frightened, and leaving its egg had run along

the burrow and disappeared, in some of these cases being found on further excavation huddled up to its next neighbor. There was no difficulty in catching any number of the birds in one's hand, and after selecting all that could be used the balance were thrown into the air when they flew away in a dazed manner as if unused to the light. The eggs of *O. furcata* proved on comparison to be a little larger than those of *O. leucorhoa*, and were more spotted at the large end. While those of the latter were fresh or nearly so, the eggs of *O. furcata* were nearly all too far advanced in incubation to be saved.

Besides the inhabited burrows there were a good many old ones, principally in well-defined areas of a few yards across, that were for some reason unused. The minks, of which there must be a large number on the island, judging from the piles of Petrel's wings found in some spots, may have systematically cleaned out these unused areas; but as the mouths of these burrows looked old and neglected this hypothesis is a doubtful one.



## LAND BIRDS OBSERVED IN MID-WINTER ON SANTA CATALINA ISLAND, CALIFORNIA.

BY JOSEPH GRINNELL.

I HAD the good fortune to spend the last eight days of December, 1897, on Santa Catalina Island, which lies about 25 miles off the coast of southern California. My ornithological observations were confined to the east end of the island in the vicinity of Avalon. Catalina Island consists of a range of hills rising 1000 to 3000 feet above the sea and very much resembling in formation some sections of the mainland Coast Range of which system it is evidently a part. These hills are furrowed by innumerable ravines and cañons, and are clothed more or less thickly with low brush and cactus. The shady north slopes generally present a heavy growth of larger bushes, which often reach the size of small trees.

Birds were most numerous in the larger cañons, especially where there was any water. The majority of birds in point of numbers were winter visitants. Out of the 29 species identified, 14 are known to me to be resident on this island. They are: *Callipepla californica vallicola*, *Zenaidura macroura*, *Buteo borealis calurus*, *Haliaeetus leucocephalus*, *Selasphorus alleni*, *Sayornis nigricans*, *Corvus corax sinuatus*, *Carpodacus mexicanus frontalis*, *Pipilo maculatus megalonyx*, *Lanius ludovicianus gambeli*, *Salpinctes obsoletus*, *Helminthophila celata sordida*, *Mimus polyglottos*, and *Thryothorus bewickii spilurus*.

I was surprised not to find several birds which are numerous on San Clemente Island, for Catalina lies almost exactly between that island and the mainland. Song Sparrows and Horned Larks were remarkable by their apparent absence from Catalina, and besides these, the Chipping Sparrow, Meadowlark and Bell's Sparrow were not discovered. Horned Larks and Song Sparrows are also abundant on Santa Barbara Island which lies about 20 miles northwest of Catalina. The following is a briefly annotated list of the birds detected on Santa Catalina Island during my December visit.

**Callipepla californica vallicola.** VALLEY PARTRIDGE. — Very abundant in the brushy cañons. The 'Quail' is not native on the island, but was originally introduced from the mainland.

**Zenaidura macroura.** MOURNING DOVE. — I saw several pairs among the hill-tops toward the interior of the island.

**Buteo borealis calurus.** WESTERN RED-TAIL. — Scarcely a day passed but what two or three of these large Hawks were seen circling among the hills. An immature specimen in very dark plumage was brought in by a local hunter.

**Haliaeetus leucocephalus.** BALD EAGLE. — Common along the precipitous margins of the island.

**Asio accipitrinus.** SHORT-EARED OWL. — I examined a newly-mounted specimen in a taxidermist's shop at Avalon; it had been shot about a week before.

**Speotyto cunicularia hypogæa.** BURROWING OWL. — I saw a single individual on a hill-top in the interior. I was told that this Owl becomes quite numerous at times.

**Ceryle alcyon.** BELTED KINGFISHER. — Tolerably common along rocky shores.

**Colaptes cafer.** BED-SHAFTED FLICKER. — Tolerably common, being

usually flushed from the shady sides of the cañons where they dig in the damp turf for insect larvæ.

**Calypte anna.** ANNA'S HUMMINGBIRD.—An adult female was taken and another seen, in a cañon in the interior.

**Selasphorus alleni.** ALLEN'S HUMMINGBIRD.—Very abundant about the blossoming eucalyptus trees at Avalon, and in small numbers along the cañons and ravines wherever there were flowers. The Allen's Hummingbird is a resident species on this island, as it is found breeding commonly in the spring months. On the adjacent mainland this species is found only during the migrations, and it seems rather strange that it should be so numerous as a permanent resident only thirty miles distant.

**Sayornis saya.** SAY'S PHŒBE.—Tolerably common about the hill-tops.

**Sayornis nigricans.** BLACK PHŒBE.—I saw but three individuals and they were along the steep rocky cliffs near the beaches on each side of Avalon.

**Corvus corax sinuatus.** AMERICAN RAVEN.—Common.

**Carpodacus mexicanus frontalis.** HOUSE FINCH.—Very numerous on the hill-sides in the interior of the island. The Linnets were feeding to a large extent on the cactus fruits, and there was scarcely a cactus thicket that did not harbor a flock of these birds.

**Spinus psaltria.** ARKANSAS GOLDFINCH.—I saw only three pairs, and they were in the immediate vicinity of Avalon.

**Zonotrichia leucophrys intermedia.** INTERMEDIATE SPARROW.—Very common in brushy ravines.

**Zonotrichia coronata.** GOLDEN-CROWNED SPARROW.—Tolerably common in thick brush in the cañon back of Avalon.

**Melospiza lincolni.** LINCOLN'S SPARROW.—I saw an individual on two occasions in a door-yard in Avalon.

**Passerella iliaca unalaschensis.** TOWNSEND'S SPARROW.—Common in brushy cañon-beds.

**Passerella iliaca megarhyncha.** THICK-BILLED SPARROW.—Nearly as common as the last, and associated with it. Many specimens of both forms were secured.

**Pipilo maculatus megalonyx.** SPURRED TOWHEE.—Abundant in brush along dry water-courses. About 40 specimens were secured on Catalina Island. They are readily distinguishable from *P. clemente*, and yet are slightly different from the mainland form. The bill is longer and proportionately slenderer than in the mainland bird, but in the male the upper and anterior parts are fully as jet black. The 'Catbird' call-note of the Catalina bird is very different in quality from that possessed by the mainland bird. When I first heard it, I was positive that a California Jay was on a distant hill-side, although the Towhee was only a few yards from me.

**Lanius ludovicianus gambeli.** CALIFORNIA SHRIKE.—I did not see more than five individuals, and only one specimen was secured.

*Helminthophila celata sordida*. LUTESCENT WARBLER.—Tolerably common but very quiet and secretive. Nearly all the specimens secured had been eating the cactus fruits and their digestive organs and surrounding tissues were colored a bright wine-color. A partial albino specimen was taken.

*Dendroica auduboni*. AUDUBON'S WARBLER.—Probably the most numerous bird on the island and seen everywhere from the pebbly beaches to the highest hills.

*Mimus polyglottos*. MOCKINGBIRD.—Common among the cactus patches from the cañon-beds to the hill-tops. Their faces were in many cases brightly stained with the cactus fruit juice.

*Salpinctes obsoletus*. ROCK WREN.—Tolerably common on the cliffs and steep hill-sides.

*Thryothorus bewickii spilurus*. VIGORS'S WREN.—Tolerably common in the smaller ravines, but very shy. The 10 specimens secured agree in having the bill quite perceptibly longer than the mainland bird.

*Regulus calendula*. RUBY-CROWNED KINGLET.—A very few were observed.

*Turdus aonalaschkæ*. DWARF HERMIT THRUSH.—Tolerably common on the shady hill-sides, and in the deeper cañons. They were feeding on the berries of the California holly.

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## GEOGRAPHICAL RACES OF *HARPORHYNCHUS* *REDIVIVUS*.

BY JOSEPH GRINNELL.

COMPARISON of a series of Thrashers from northern and central California with one from southern California, as might be expected, discloses two slightly differentiated geographical races. This is another instance of the effect of the moist northerly Pacific coast climate in producing a soft brown coloration, as contrasted with the leaden or ashy shades acquired by birds inhabiting the southern coast region where the rainfall is much less. As the type specimens of this species were obtained in the vicinity of Monterey, the name *redivivus* proper may be restricted to the northern race, while the southern form, which I believe to be sufficiently distinct, will require a new name.

**Harporynchus redivivus pasadenensis**, new subspecies.

## SOUTHERN CALIFORNIA THRASHER.

*Type*, ♂ ad., No. 2056, Coll. J. G., Pasadena, California, Feb. 6, 1897. General coloration similar to that of the northern form, but plumage ashier or less distinctly brown. Whole upper parts dark sepia, where in the case of the northern bird there is a well-marked tinge of a brown approximating isabella color; this difference is most noticeable on the top of the head. Lower parts likewise less brightly tinted; pectoral band darker and grayer; throat nearly pure white, this character being quite pronounced.

*Measurements.*—Average of 12 specimens of *H. redivivus*: wing, 3.96; tail, 5.52; bill from nostril, 1.17; tarsus, 1.39.

Average of 17 specimens of *H. r. pasadenensis*: wing, 3.92; tail, 5.30; bill from nostril, 1.21; tarsus, 1.36.

Nearly all my northern specimens have the throat patch strongly suffused with isabella color. Unfortunately, I have not been able to obtain specimens from Monterey, but birds from adjoining counties exhibit the character of true *redivivus*. Specimens from the Sacramento Valley (Amador County, etc.) show the most extreme brown type of coloration. My series of *pasadenensis* is quite large, but there is remarkably little variation. Badly worn specimens of the two races, however, are scarcely distinguishable.

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**THE SAN NICOLAS ROCK WREN.**

BY JOSEPH GRINNELL.

SAN NICOLAS ISLAND lies between sixty and seventy miles from the nearest point of the southern California mainland, and is the most remote of the Santa Barbara Group. It is seven miles long by three wide, and resembles a huge sand-dune. The yellow shifting sands support but very scant vegetation, and consequently insects are few. Yet, in the spring of 1897, I found Rock Wrens to be quite numerous on most parts of the island, frequent-

ing ravines and the many gullies which cross the mesa at the summit of the island. It is not unreasonable, therefore, that a resident species on this isolated desert should become affected by these peculiar conditions, and prove somewhat different from its mainland counterpart.

***Salpinctes obsoletus pulverius*, new subspecies.**

SAN NICOLAS ROCK WREN.

*Type*, ♂ ad., in abraded breeding plumage, No. 2615, Coll. J. G., San Nicolas Island, California, May 19, 1897.

Measurements: length, 6.12; wing, 2.80; tail, 2.20; tarsus, .85; culmen, .75; bill from nostril, .58; depth of bill at nostril, .18.

Pattern of coloration similar to that of the mainland *S. obsoletus*, but entire plumage, especially the upper parts, suffused with ochraceous or dust color, almost identical with the tint of the soil on San Nicolas Island.

Unfortunately no San Nicolas Rock Wrens in fresh fall plumage are available, and this yellowish coloration may be due in part to the bleaching and abrasion of the plumage, but the character is, nevertheless, quite apparent when compared with mainland specimens in correspondingly worn plumage. This is probably an instance of protective coloration, as foxes were found on the island, and small birds must form a good share of their prey.

The best character of *pulverius*, however, is the notably greater size of the bill and feet, the measurements of which approach closely to those of *S. guadeloupensis*. The appended table shows the comparative measurements of specimens from the mainland and interlying islands, as well as the eight adult specimens of *pulverius* obtained on San Nicolas Island during the middle of May, 1897. The specimens from San Clemente and Santa Barbara Islands are intermediate in characters.

Quite a large series of Rock Wrens from Western North America are before me, and very little variation is to be found. Southern California specimens are indistinguishable from those taken in the Rocky Mountain region and eastward into Nebraska, where, I believe, Say's type was taken.



I am indebted to the National Museum officers for the loan of a series of *Salpinctes*.

## MEASUREMENTS.

	Length.	Wing.	Tail.	Tarsus.	Culmen.	Bill from Nostril.	Depth of bill at Nostril.
Average of 8 specimens <i>S. o. pulverius</i> from San Nicolas Island.	6.00	2.75	2.17	.85	.72	.57	.17
Average of 2 specimens (intermediate) from San Clemente Island.	5.93	2.71	2.09	.80	.69	.57	.16
Average of 5 specimens (intermediate) from Santa Barbara Island.	6.05	2.77	2.24	.79	.67	.54	.15
Average of 19 specimens <i>S. obsoletus</i> from the adjacent mainland of Southern California.	5.86	2.75	2.18	.78	.67	.54	.15

## A MONTH WITH THE GOLDFINCHES.

BY MARY EMILY BRUCE.

THE nesting season is nearly over and the air is full of the voices of young birds before the Goldfinches begin to build. In the leisurely golden time of the year, when the fields are yellow with grain and the roadsides gay with golden-rod, the dainty pair, in love with the summer, the sunshine, and each other, plan their home. True to their careless, happy natures they neither hurry nor overwork. A suitable place is chosen, the nest is built, the eggs are laid, and the little dame sits content in the sun, while her mate fills the air with music, as high over woods and fields he takes his undulating flight in search of food. To watch a Goldfinch's home is a privilege that brightens the whole summer, and one would like to write their story with a pen dipped in sunshine.

It was late in July before I reached the farmhouse among the hills of Vermont where I was to spend my vacation, and I found the orchards near the house already full of young birds. Baby

Sapsuckers flopped about in the apple trees, young Vireos were followed here and there by anxious mothers, Catbirds uttered notes of warning by the roadsides, and infant Flycatchers and Thrushes regarded me with large inquiring eyes. A pair of belated Robins, nervous and overworked, were looking after their young ones, who were still in the nest, but for the most part family cares were over, and my only hope of watching the home life of the birds was to find a Goldfinch's nest.

In vain I searched the orchard near the house. Goldfinches flashed in and out among the branches, and sang of summer joys over my head, but they guarded well the secret of their homes. When I had nearly given up in despair, chance favored me, and I happened upon the object of my search in a maple tree in front of a neighboring farmhouse. Blessings never come singly, and just as I was rejoicing in this treasure trove the little daughter of the house pointed out another nest in the orchard. A third nest, also in a maple tree, was discovered a few days later, but this was already full of half fledged birds, and both maple tree dwellings were too high in the branches to be easily watched.

Nothing could be better suited to my purpose than the home in the orchard. The Goldfinches had chosen a tiny pear tree quite close to the house, and the nest was barely four feet from the ground. There was something very charming in the confidence they had shown their human neighbors, and the pair won my heart from the first by their gentle, trustful ways. It was a satisfaction to watch a nest for once where I was not treated like a robber and murderer. I could draw my chair quite near to the little pear tree, and the mother bird would look at me without a shadow of alarm in her bright eyes.

It was marvelous to see how quickly she recognized the voice of her mate in the Goldfinch chorus about her. Her neighbors in the maple tree might come and go, and she never stirred a feather, but a sudden quivering of the wings and a soft twittering response would announce his approach long before I could hear his voice, and as his song became audible to me, louder and more joyful grew her note of welcome. He would alight in a neighboring tree, speak to me first in a mild, questioning tone, like a pet canary talking to his mistress, and then fly down to the nest and feed his

mate. After the dainty meal was finished they would talk together for a moment before he left her for another flight into the big sunshiny world. Life in this miniature home was very sweet and harmonious, and the golden bird in the tiny tree with its treasure of a nest made a charming picture.

For the next four weeks I visited the orchard daily. They were quiet hours I spent there, but there was no lack of entertainment. For music the Field Sparrows sang to me their simple, plaintive songs, and from far up on the hills I could sometimes hear the chant of the Hermit Thrush. A pair of Chipping Sparrows in a neighboring apple tree were bringing up their only child with quite as much solicitude as if they were burdened with a large family. They were a striking contrast to the serene and happy Goldfinches, but, plain little brown folks as they were, I enjoyed watching them. Sometimes young Warblers, looking strangely unlike their parents, visited the orchard, or a bevy of Crows from a maple grove near by, disturbed by a passing Hawk, startled me out of my day dreams. I wondered if the little Goldfinch had as many resources as I, or if the hours seemed long to her. Perhaps she too dreamed day dreams and listened to the music of nature. She seldom left the nest, though I occasionally startled her off by some sudden movement, when she reproached me for my carelessness in the sweetest of voices.

When I first looked into the nest there were six eggs, white, with faintest tinge of blue, and pretty enough to satisfy any bird mother, but my little girl friend had told me that there were but two eggs laid when the bird began to sit, and I was curious to know whether there would not be a marked difference in the age of the young ones. After two week's patient waiting the little mother and I were rewarded by finding among the pretty eggs a very ugly birdling. On my afternoon visit there were three little birds, the next day four, and on the day following I counted five heads. By this time the mother did not sit constantly on the nest, but cunningly tucked the remaining egg under the little birds and went on short excursions into the country. Whether the young ones did not do their duty, or whether it was another instance of the survival of the fittest I cannot tell, but when the oldest nestling was five days old I again counted heads

and there were only four. The youngest child and the sixth egg had both disappeared, and I decided that in the struggle for existence the older birds must have had too great an advantage in point of time. As it was, the nest seemed hardly large enough, and the four had a comical fashion of lying with their long necks stretched out and their heads hanging over the edge, their eyes half closed and their mouths wide open as if gasping for air. Certainly uglier birdlings never gladdened the hearts of deluded parents.

For the first week they showed little intelligence. At the noise of a passing wagon four mouths would open as quickly as at the sound of the mother's voice, and they greeted me in the same ravenous manner. I responded by trying to feed them with crushed plantain seed, but though they opened their bills to receive the morsel, the experiment was not very successful. It would take the eye of faith to see in these atoms of birdhood the potential grace and beauty of a mature Goldfinch, and I sometimes fancied that the mother herself had doubts about them, for she would stand pensively on the edge of the nest in her visits to the home tree and look unutterable things. The little birds were fed very slowly and thoroughly about once an hour, sometimes by the father, sometimes by the mother. Possibly the parents came oftener during my absence, but from the time the sitting was over I saw them less and less frequently, though I was sometimes greeted on my arrival by a note of inquiry from the tree tops. I hope I proved myself worthy of the confidence placed in me. I did not sit too near the nest, and by moving quietly and speaking softly I tried, in my poor human fashion, to become a fit associate for my gentle friends. Though so seldom fed, the little ones seemed to thrive on fresh air and sunshine. Stretching matches and other gymnastics were practised daily, pretty feathers gradually appeared, and by the time they were ten days old they were bonny birdlings resembling their mother. From her they had inherited gentle manners and soft voices, for it was at that early age that they began to talk. They no longer mistook me for a parent bird, but seemed fond of me, trying to swallow the bits of hard-boiled egg I offered them, and showing no fear when I took them out of the nest.

When they were nearly two weeks old I visited the orchard

every morning before breakfast, expecting each day to find my birdlings flown, but it was not until the sixteenth day that the event occurred for which I had been waiting.

On this morning I was more grieved than surprised to find only two little birds left in the nest. I spent the entire morning in the orchard, waiting to see the remaining birdlings take flight. It seemed to be the policy of the parents to induce them to come out for something to eat, for they were not once fed during this time. I offered them morsels of egg, but they paid little heed to me. They were restless, and I saw that the old home and old friends had lost all charm for them. Suddenly while I watched, one of the two birdlings scrambled onto the edge of the nest, balanced himself for a moment, and then flew straight into the nearest apple tree. From this vantage ground he looked down into the tiny pear tree home that had once seemed all the world to him, and called back to his little brother that he had found a larger and greener world than that. The baby in the nest seemed half inclined to follow him, but at each attempt after much fluttering of the wings he would slip back into the old place. Presently the mother came with a morsel of food for the brave little bird in the tree, but no attention was paid to the pleading cry of his lazy brother, and very soon the venturesome young one found the use of his wings so pleasant and the food she offered him so tempting that he followed her across the orchard into the fields beyond.

On my afternoon visit the poor little coward was still in the nest, apparently very hungry and teasing incessantly. He may have thought that he was forgotten, — and I confess that I had fears of this myself, — when late in the afternoon, brighter than a gleam of sunshine, doubtless, to the waiting bird, came the father to the nest. Only this encouragement was needed, the little fellow was not to be left alone again; in a moment he was standing on a tiny twig above the nest, there was another moment of balancing and indecision, and then taking heart he too flew across to the friendly apple tree. He was rewarded by the instant appearance of his mother who had doubtless waited for this evidence of courage on the part of her youngest darling. She first gave him a hearty meal, and then flew from tree to tree towards the fields beyond. My birdling followed her in pretty, undulating, Goldfinch fashion, and I was left alone in the orchard.

## OUR SMALL EASTERN SHRIKES.

BY WILLIAM PALMER.

THREE Shrikes are universally understood to occur in North America east of the Plains. The Northern Shrike (*Lanius borealis*), a winter visitant in our eastern States; the Loggerhead (*L. ludovicianus*), which is considered a fairly common bird over most of the region between Maine and Florida and Ohio and Illinois to Louisiana; and the White-rumped (*L. l. excubitoroides*), which is supposed to inhabit Canada, Michigan, and westwards.

An examination of considerable material, 176 specimens, compels me to relegate *excubitoroides* to the Plains region west of the immediate Mississippi wooded drainage area; *ludovicianus* to the South Atlantic and Gulf coasts, and Florida, and to recognize a new form as occupying much of the remaining region of the East.

*Historical Synopsis.*

The name *Lanius ludovicianus* was first given by Brisson<sup>1</sup> to a bird from the region then known as Louisiana. On his description Linnæus<sup>2</sup> based his binomial name composed of the same words.

Vieillot<sup>3</sup> describes two Shrikes, one *Lanius borealis*, the other *L. ardosiaceus*, whose habitat he gives as Georgia, Florida, and Louisiana.

Wilson knew but two Shrikes, one the northern, which he called *L. excubitor*, thinking it identical with the European bird, and his *Lanius carolinensis*<sup>4</sup> which he found on his visit to South Carolina and Georgia. Of this he says: "This species inhabits the rice plantations of Carolina and Georgia, where it is protected for its usefulness in destroying mice." We may be sure that Wilson

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<sup>1</sup> Orn., II, 1760, 162, pl. 15, fig. 2.

<sup>2</sup> S. N., I, 1766, 134.

<sup>3</sup> Ois. Am. Sept., I, 1807, 81.

<sup>4</sup> Am. Orn., III, 1811, 57, pl. 22, fig. 5.

either knew nothing of a small Shrike occurring north of the Carolinas or that he confused it with the Northern.

Bonaparte seems to have had no special acquaintance with the Loggerhead. In his 'Observations on the Nomenclature of Wilson's Ornithology,' he states,<sup>1</sup> "34. § *L. carolinensis*, vol. iii., p. 57. This species is peculiar to the southern parts of North America. Vieillot's name of '*ardosiaceus*' has the priority, and will, therefore, be adopted." He then gives "*L. ludovicianus*? Linn" as a synonym of "*L. ardosiaceus* Vieill." In later publications he adopts *Lanius ludovicianus* as the correct name for the Loggerhead.

Swainson evidently knew nothing by practical experience of the Loggerhead Shrike. Apparently he had no specimens, but used the descriptions of his predecessors in distinguishing his *Lanius excubitoroides* from *L. ludovicianus*.<sup>2</sup>

Audubon's knowledge of these birds was superior to all others but he fell far short of the real facts. He tells us, "The Loggerhead Shrike is partially migratory in Carolina. A few may be found through the winter; but the number is ten times greater in summer."<sup>3</sup> He also quotes Wilson as above. Audubon appears never to have suspected that his bird bred in Louisiana, for he says, "Seldom reaching farther eastward than North Carolina, or farther inland than the State of Mississippi, in which latter, as well as in Louisiana, it appears only during the winter months. Its chief residence may, therefore, be looked upon as the Floridas, Georgia, and the Carolinas."<sup>4</sup> He also says: "This bird appears in Louisiana only at intervals, and seldom remains more than a few weeks in December or January."<sup>5</sup> The original of Audubon's plate was procured by him in Louisiana.

Professor Baird gave the range of the Loggerhead as "South Atlantic and Gulf States," and of *Lanius excubitoroides* as "Missouri plains and fur countries to Pacific coast. Eastward into Wisconsin, Illinois, and Michigan (?)."<sup>6</sup> This is the first

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<sup>1</sup> Journ. Acad. Nat. Sci. Phila., III, V.

<sup>2</sup> Fauna Poreali Americana, II, 1831, 115, pl. 34.

<sup>3</sup> Birds of America, Vol. IV, 1842, p. 137.

<sup>4</sup> *L. c.*, p. 135.

<sup>5</sup> *L. c.*, 136.

<sup>6</sup> B. N. A., 1358, 325, 326.

appearance of this last name for a bird east of the Mississippi River, a practice only too readily followed afterwards, for its use extended to Maine and Canada and even to the Carolinas. Professor Baird had five specimens of *ludovicianus* from Georgia and an imperfect series from Wisconsin, Illinois and Michigan, besides a number from the West, and necessarily considered his southern specimens as distinct from the others.

Dr. Coues, with all the work of his predecessors before him, and his South Carolina and western experiences, readily fell into the view of considering the Upper Mississippi birds as intermediate between *L. ludovicianus* and *L. excubitoroides*, a conclusion which has since remained unchanged.<sup>1</sup> His work had the effect of broadening the ornithological fieldwork of numerous observers who based their identifications primarily upon his results. Some peculiar Shrike literature was thus encouraged, the effects of which will be noted later.

The only Shrikes mentioned by Dr. Gadow<sup>2</sup> that are probably from the eastern States are two, a "juv. sk." from Louisiana, and an "ad. sk." from "N. America," which may be anything. All the others mentioned are from Mexico and Western America, yet all are placed under one name *L. ludovicianus*, though it is stated that Canadian examples "are very distinct from the extreme southern form, which is confined to the southern States and Mexico (*L. ludovicianus*)."

We now come to a phase of literature due to our increasing knowledge of the range of these birds, for, as the taste for ornithology increased through the middle and northeastern States, so accounts of these birds became numerous. At first they were ascribed to the larger species *L. borealis*, for we find records of this bird breeding in the New England States and Pennsylvania, which were afterwards changed to *ludovicianus* or *excubitoroides*. Then notices of the capture of *L. excubitoroides* became common, though in many cases a wrong identification was later admitted and change made to *ludovicianus*. But the records increased,

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<sup>1</sup> Key to N. A. Birds, 1872, 125; 1890, 338; B. N. W., 1874, 103; B. C. V., 1878, 563.

<sup>2</sup> Cat. Birds Brit. Mus., Vol. VIII, 1883, 246.



both names being variously used, even in one case, both of them, for the birds of a mated pair! until now it is considered that except in Michigan, Wisconsin, Minnesota and Canada, *ludovicianus* is the only form found.

Dr. Wheaton<sup>1</sup> gives *Lanius ludovicianus* as, a "Common summer resident in Middle, less common in Northern and Southern Ohio. . . . First ascertained to occur in Ohio by myself in 1874, a female specimen, taken May 31, 1873, on which my note in Coues' Birds of the Northwest was in part based, proving a nearly typical specimen of this variety. Her mate was an equally well marked individual of var. *excubitoroides*." On page 311, he says of this latter, "Rare in southern and middle Ohio, probably more common in northern Ohio. Summer resident from March to September. Breeds." On page 312 he says of *excubitoroides*: "Thus it appears that this variety has extended its range eastward from the Mississippi Valley mainly along the basin of the Great Lakes."

Raymond W. Smith,<sup>3</sup> speaking of the birds of Warren County, Ohio, gives *L. ludovicianus* as "uncommon summer resident," and of *L. l. excubitoroides* as "resident, probably breeds." He also says: "The Shrikes of this locality are just on the border line between the Loggerhead and the White-rumps, and in many cases it is almost impossible to distinguish the variety."

The A. O. U. Check-List of 1886 gave the range of *ludovicianus* as "Florida, the Carolinas, and the Gulf States east of Texas." In the list of 1895 this became "Eastern United States, west to the Plains; north to northern New England. Breeds from the Gulf States to Virginia and casually north, on the Atlantic Coast to southern New Jersey; in the interior, northward to the Great Lakes, and through western Pennsylvania and New York to New Hampshire, Vermont, and Maine."

It would seem that, generally, the test of whether a particular bird belonged to either *ludovicianus* or *excubitoroides*, depended on the presence of dark, or white (= pale) upper tail-coverts, the

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<sup>1</sup> Birds of Ohio, 1880, 309.

<sup>2</sup> p. 233.

<sup>3</sup> Journ. Am. Soc. N. Hist., 1891, 122.

universal ignorance of the real *excubitoroides* being sufficient to determine the issue. Also, identifications of *excubitoroides* from east of the Plains have been based on breeding birds, usually, sometimes on winter specimens taken at the most northern part of their winter habitat. In no instance do these seem to have been compared with typical specimens of the form whose name they took.

*Taxonomic Differences.*

**Lanius ludovicianus ludovicianus** Linn.

LOGGERHEAD SHRIKE.

*Subspecific characters.*—Adult ♂: Above dark slaty; beneath almost immaculate white; bill large and stout, swollen toward tip; hook large and coarse, gently curved downwards; tail longer than wing.

Adult ♀: Similar, but smaller. Type locality, "Louisiana."

**Lanius ludovicianus migrans**, *subsp. nov.*

MIGRANT SHRIKE.

*Subspecific characters.*—Adult ♂: Above bluish gray; beneath pale slaty; throat white; bill smaller, regularly tapering; hook delicate and sharply bent downwards; tail shorter than wing. Type, No. 163077, ♂, Kingston, Ontario, April 4, 1898; Dr. C. K. Clarke.

Adult ♀: Duller, especially beneath, and smaller.

*Distribution.*

From middle Louisiana eastward along the Gulf Coast and its indentations; throughout Florida, and eastward into North Carolina. Extending from this range to an indeterminate distance up the valleys, though generally confined below the 100-foot contour line.<sup>1</sup> Non-migratory except at its more northern and its higher habitat . . . . *ludovicianus*.

<sup>1</sup> It would seem desirable that the life distribution of forms should be considered in relation to contour lines, altitude and the influences of the various kinds of forest distribution being the principal factors affecting them. The relative quiescent humidity of swamps and dense forests with their very slight interactions resulting from rapid general climate changes, plus the minimum amount of sunlight, produces results different from the dryer and more exposed elevations or depressions. The amount of sunlight, the character of the food, and the influences of a limited habitat seem more important in their results than degrees of temperature. Increase or decrease of the radiating powers of the ground surface destroys or drives out forms and necessarily influence those that remain, or replace them, and this radiating power is determined by influences other than mere temperature.

From Maine, Vermont, and Canada to Minnesota; southwards into North Carolina and the Ohio Valley to the Plains. Absent in winter from its more northern and higher habitats and migrating in the autumn toward the Atlantic Coast and into the Carolinas, Tennessee, and lower Mississippi valley. Breeding almost entirely above the 500-foot contour in the valleys, casually up to about 2000 feet, and to within about 50 miles of the coast in Maine. From Canada and the edges of the plains intergrading into *excubitoroides* . . . . . *migrans*.

From the above it will be seen that *ludovicianus* is a resident of the seaward edge of the coastal plain, ranging up the valleys above the 100-foot contour in suitable places, especially where civilization has prepared a way. On the other hand, *migrans* is a resident of the Transition Zone between the Carolinian and the Canadian, affected in some places by the opening up of suitable breeding places by the agency of man.

In Maine the Migrant Shrike does not seem to be uncommon. Mr. O. W. Knight has recently recorded it from numerous localities<sup>1</sup> and informs me that he can always find them in summer. He is sure of its breeding at Hampden, five miles south of Bangor and about 55 miles from the sea. Most of the records I have are breeding records, but the bird does not seem to winter. In New Hampshire and Vermont the bird is locally distributed in suitable places, nearly all of the ten localities I have being of breeding birds. Except one breeding record in northwestern Massachusetts<sup>2</sup> the records from that State and from Connecticut, Rhode Island and New Jersey are either of winter visitants or of migrants, though Mr. Stone mentions its probable breeding in southern New Jersey,<sup>3</sup> but this may be the southern form. In New York it breeds in most of the middle and western counties, being a migrant or winter resident in the Hudson Valley and on Long Island. In Pennsylvania it breeds in the counties bordering the western boundary, but it is only a migrant or winter visitant in the rest of the State, apparently. I do not know of its breeding in Maryland, though Mr. Kirkwood informs me that in the manu-

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<sup>1</sup> Bull. Univ. Maine, 1897.

<sup>2</sup> Auk, 1887, 180; Am. Nat. 1887, 90.

<sup>3</sup> Birds E. Penn. and N. J., 1894, 125.

scripts left by the late E. A. Small there is a note of its occurrence in Washington County in summer. In Virginia it is a winter visitor and migrant over the whole tidewater region to the foothills of the Blue Ridge. In the valley of Virginia it is a summer resident, wintering in mild winters in the southern portion. It breeds commonly in Nelson County (W. R. Robinson<sup>1</sup>); in Warren County (G. S. Miller, Jr.<sup>2</sup>); in Rappahanock County (Prof. F. E. L. Beal<sup>3</sup>), and in Fanquier County (R. Ridgway<sup>3</sup>). In North Carolina it is confined in summer to the western portion along the foothills. It is entirely absent in summer at Raleigh, though a winter visitor there (Brimley Bros.<sup>4</sup>), but is a common breeder further west at Statesville (R. B. McLaughlin<sup>4</sup>). It doubtless occurs further south, both as a breeder and winter resident, but I have no sure instances. From Montreal (Wintle<sup>4</sup>) to Ottawa (Prof. Macoun<sup>2</sup>), County Perth (Kells), and Kingston, Ontario (Dr. C. K. Clark<sup>4</sup>), it occurs through most of Michigan and Wisconsin to Minneapolis, thence to the Ohio River, almost every record being a breeding one. It has been recorded only as a migrant from Kentucky (Fulton, Warren, and Nelson Counties). I have seen three specimens from Tennessee (Roane County and Nashville), all winter birds. West of the Mississippi it undoubtedly occurs in suitable places to the edge of the Plains, but records are very few and uncertain.

The Loggerhead is abundant throughout Florida and along the Atlantic Coast into North Carolina, and probably into Virginia on the shores of the Chesapeake region. Robinson's record for Chesterfield County<sup>5</sup> may include this bird for the summer resident. It occurs along the coasts of Western Florida and of Alabama, extending up the valleys of the latter State for a considerable distance, probably above the 100-foot contour, Wilcox County (Rev. H. E. Wheeler<sup>6</sup>); Shelby County (C. F. Witherby<sup>6</sup>); and Butler and Antanga Counties (Dr. D. L. Wilkinson<sup>6</sup>). I have

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<sup>1</sup> In letter and specimen.

<sup>2</sup> In person,

<sup>3</sup> In person, and Smith, Pastime, Oct., 1884, 27.

<sup>4</sup> In letters.

<sup>5</sup> Auk, 1889, 195.

<sup>6</sup> In letters.

seen several specimens from Hale County, including young. Dr. Wilkinson took a set of eggs, March 29, 1888, in Gastonbury, Wilcox County, a set of three, and another of four eggs in Hale County, March 30, 1889.<sup>1</sup> In Mississippi and Louisiana it is common along the coast and probably over the greater parts of these States in suitable places along the watercourses, and for some distance up the Mississippi Valley. The Oxford record<sup>2</sup> is almost certainly this bird. It is replaced by another form in Texas.

#### *General Differences.*

In *migrans* the wing is longer than the tail, due to its migratory habit; in *ludovicianus* the tail is longest, thus indicating its fixed habitat. In consequence the third primary feather of the former is usually the longest, or is equal to the fourth; in the latter the fourth is nearly always the longest. The forehead of *ludovicianus* is dark like the top of head, in *migrans* it is nearly always paler. In the southern bird the underparts are usually almost immaculate, in the other the slaty of the sides of the breast extends across, especially in the breeding plumage. Usually a faint trace of reddish is perceptible on the breast of *ludovicianus*, but is stronger in *migrans*, especially in the females and immature. Signs of immaturity disappear quickly in *ludovicianus*, they soon assume adult plumage; the reverse is true of *migrans*, the duller plumage, browner primaries, and paler edgings on the wing-coverts lasting longer. Larger areas of white marking occur on individuals of both forms and are indicative of greater age but some immature are precocious.

From *L. l. excubitoroides*,<sup>3</sup> *migrans* is distinguishable by its darker, duller plumage, especially beneath, by being stouter and longer, and by its larger bill, tarsi and feet.

In *ludovicianus* the upper tail-coverts are almost invariably similar to the back in color, paleness when occurring being due to

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<sup>1</sup> In letters.

<sup>2</sup> Ragsdale, Auk, 1889, 224.

<sup>3</sup> To be treated in another paper.

bleaching and wearing. In *migrans* the male usually has pale upper tail-coverts, bleaching in the breeding season to a dull, dirty whitish. The stronger, duller colors of the females rarely bleaching as much. At the end of the breeding season the plumage usually presents a very ragged, bleached condition with all the colors very much faded. The great difference, usually, between the purer colors of the males and the darker, duller colors of the females, the difference in size and the consequent varying amount of bleaching of the sexes is responsible for the identification, so common, of *excubitoroides* as an eastern bird. The plumage is always paler when fresh but soon darkens, especially in *migrans*, where the contrast is greater. In this also the contrast between the white throat and the darkish breast is nearly always evident, and exceedingly rare in the southern bird.

#### *Intermediates and Variations.*

Specimens from Greensboro, Alabama, in the Tombigbee River Valley, are referable to *ludovicianus*, but represent a tendency toward *migrans*, the bill being slenderer and more hooked. A specimen from Chester, South Carolina, is similar, as are also two in Mr. Kohn's collection from Covington, Louisiana. These last are evidently migrants from a more northern locality, as breeding birds from the same region in Mr. Kohn's collection are typical *ludovicianus*. In Dr. A. K. Fisher's collection are six specimens from St. Helena Island, near Beaufort, South Carolina. These also represent a variation in the direction of *migrans*. Though having the large bill, the hook is more curved and longer.

Certain specimens of *migrans* from Southern Illinois have stouter bills than usual, as have also the birds breeding about Minneapolis, Minnesota. These evidently represent groups of individuals with restricted habitats in the valleys of large rivers. Their having the fourth quill longer than the third, or equal to it, would indicate that their migratory range is not extensive.

#### *Measurements.*

Measurements were made of nearly all the specimens grouped by States. These show that the birds taken at the most north-

ern parts of the range of *migrans* are the largest. The averages include all the specimens measured, no weeding out of the immature or smallest being done. The single measurements will show the usual range of size in fully adult birds.

#### Averages of *ludovicianus*.

Of 24 males, wings, 3.77; tails, 3.89; culmens, .60; tarsi, 1.07.

Of 13 females, wings, 3.69; tails, 3.79; culmens, .58; tarsi, 1.05.

#### Averages of *migrans*.

Of 35 males, wings, 3.88; tails, 3.78; culmens, .54; tarsi, 1.07.

Of 24 females, wings, 3.78; tails, 3.66; culmens, .53; tarsi, 1.08.

#### *General Considerations.*

Shrikes are inhabitants of open, wooded, scrubby country. The mixed prairie, savanna, open pine woods, and hummock lands of the southern coasts afford a congenial habitat for the Loggerhead, which is an abundant bird. Similar conditions but with a greatly different vegetation, prevail about the prairies of the middle States and the farms and open country of the summer habitat of the Migrant Shrike. From the distribution here given it will be noticed that there is a considerable hiatus<sup>1</sup> between the breeding ranges of these two forms. This is evidently caused by the fact that the interval between the 100-foot and the 500-foot contours is a part of the great coastal plain forest region of the south, a region unsuited to Shrikes, and in which they do not breed. It is possible that, as civilization reached the prairies of Indiana and Illinois, a passage eastward was afforded by which these birds extended their range eastward into Maine and south-

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<sup>1</sup> See, Ragsdale, Auk, 1889, 224-226, though his facts were mixed, no hiatus really occurring between *migrans* and *excubitoroides*, but between the former and *ludovicianus*.

MEASUREMENTS OF ADULT *Lanius ludovicianus ludovicianus*.

No.	Locality.	Sex.	Date.	Collector.	Wing.	Tail.	Culmen.	Tarsus.	
150,002	Covington, La.	♂	Nov. 13, 1895	G. Kohn	3.83	4.00	.58	1.09	Kohn Collection
3,825	Kissimmee R. Fla.	♂	Mar. 2, 1895	R. Ridgway	3.75	4.05	.61	1.05	U.S.N.M. "
137,854	" "	♂	Feb. 28, 1895	W. Palmer	3.80	4.15	.67	1.10	Palmer "
137,853	Riceboro, Ga.	♂	Ap. 8, 1893	J. A. Loring	3.90	3.97	.60	1.12	Dept. Agri. "
	Georgetown, S. C.	♂	Ap. 10, 1895	C. P. Drimley	3.75	3.89	.60	1.08	" "
	Covington, La.	♀	Oct. 26, 1889	G. Kohn	3.66	3.90	.57	1.06	Kohn "
150,006	Lake Kissimmee, Fla.	♀	Feb. 26, 1895	R. Ridgway	3.67	3.88	.60	1.04	U.S.N.M. "
150,005	Kissimmee R. Fla.	♀	Mar. 3, 1895	" "	3.78	3.97	.60	1.04	" "
150,130	" "	♀	Mar. 3, 1895	W. Palmer	3.70	3.87	.63	1.04	" "
3,050	Liberty Co., Ga.	♀	1846	W. L. Jones	3.77	3.90	.60	1.11	" "



MEASUREMENTS OF ADULT *Lanius ludovicianus migrans.*

No.	Locality.	Sex.	Date.	Collector.	Wing.	Tail.	Culmen.	Tarsus.
1,810	Minneapolis, Minn.	♂	May 9, 1881	F. Benner	3.99	3.85	.54	1.09
163,077	Kingston, Ont.	♂	Ap. 4, 1898	C. K. Clarke	3.90	3.79	.54	1.08
2,544	Ballston, Va.	♂	Ap. 1, 1890	W. Palmer	3.90	3.73	.53	1.10
	Wingma, "	♂	May 2, 1898	W. R. Robinson	3.75	3.60	.57	1.10
123,019	Syracuse, N. Y.	♂	Ap. 3, 1887	M. M. Green	3.98	3.90	.53	1.12
163,076	Falls Church, Va.	♂	Nov. 27, 1890	W. Palmer	3.87	3.78	.59	1.10
163,078	Kingston, Ont.	♀	Ap. 6, 1898	C. K. Clarke	3.82	3.70	.52	1.10
159,707	Middlebury, Vt.	♀	Ap. , 1897	A. D. Mead	3.80	3.78	.50	1.10
103,853	Rockwood, Tenn.	♀	Mar. 18, 1885	W. H. Fox	3.84	3.74	.53	1.03
123,018	College Park, Md.	♀	Nov. 27, 1890	C. W. Richmond	3.82	3.60	.50	1.06
81,314	Brauder, Va.	♀	Dec. 6, 1880	G. B. Harrison	3.80	3.76	.53	1.08
83,212	Wabash Co., Ill.	♀	Ap. 17, 1878	R. Ridgway	3.88	3.77	.57	1.10

ward into the Carolinas along the foothills of the mountains, the early highways of the pioneers. The many records of the abundance now and former rarity of Shrikes may be thus explained, but the facts are far too few and too recent to be of much value in determining such a question. Dr. Ralph informs me that Shrikes have penetrated into the Adirondack region by means of the roads leading to settlements located in the dense woods at an elevation of 2,600 feet.

The two birds are perfectly distinct and readily separable, but may meet in the lower Mississippi Valley, and in places where civilization has changed the former natural conditions, dense forests giving way to open country, old fields, bushes, etc.

#### *The Molt of the Adult.*

Adults begin to change in July or August, or later, according to summer habitat. Some begin to change before migrating, while in others it is delayed until they reach their winter habitat. An adult male that I took on Smith's Island, Virginia, in fall migration on August 30, 1895, evidently began to molt before it started, but the effects of the journey prevented its completion, though it permitted the new feathers to attain full growth. The four middle feathers of the tail are nearly full grown, while the outer four on each side are the old ones. In the wings the tertials are full grown and new, as are also the inner primaries, but the outer primaries and most of the secondaries are old. Very few growing feathers are to be seen. Another taken in Alexandria County, Virginia, October 3, 1889, is in full molt on the wings; the tertials and inner primaries and some of the secondaries are full grown and the others are of various lengths, the two outer old primaries being still in place. The tail-feathers are in various stages, the outer being the shortest, about an inch, while the central are full grown. The body plumage is nearly complete. Another taken in Maryland, November 1, is further advanced. Specimens taken in January, February, and April show some growing feathers on the throat, and this seems to be the extent of the spring change in the males. I have seen no molting females.

*Molt of the Immature.*

When the flight feathers of the young are full grown new body feathers begin to grow on the back and breast. Those of the back are dullish slaty, faintly barred subterminally with blackish. Beneath they are whitish, tinged with slaty on the sides and very slightly with brownish on the underbody except on the throat, each feather being subterminally crossed with a faint crescent of dusky. As the change continues much of this barring and the dull colors wear off, leaving the white and slaty purer. The last of the nestling plumage to disappear on the body is on the pileum, upper neck, and rump. The progress of the change of the flight feathers I have been unable to determine, specimens being too few. The nestling wing-coverts are retained for a long time and it is probable that, like the flight feathers, they do not change until the next summer's molt. An immature female taken November 11, in King George County, Virginia, has not changed its flight feathers, but many pinfeathers are concealed under the breast feathers and molting is evident on the throat. A series of ten specimens collected in the vicinity of Washington, D. C., by Mr. James Gaut, during the last week of March of this year, are all immature birds. Except two they are in various stages of molting change, both males and females, new feathers appearing on the throat and breast, on the face, and, in a few specimens, on the head and back. The wing-coverts still have the immature light patches at their tips though variously worn. No change in the flight feathers appears, and the primaries are usually considerably weathered.

SPECIMENS EXAMINED.

*L. l. migrans.*

Maine . . . . .	1	Ohio . . . . .	2
Vermont . . . . .	2	Indiana . . . . .	1
New York . . . . .	12	Illinois . . . . .	20
Pennsylvania . . . . .	3	Wisconsin . . . . .	1
Maryland . . . . .	7	Minnesota . . . . .	17
District of Columbia . . . . .	9	Tennessee . . . . .	3
Virginia . . . . .	22	Canada . . . . .	3
North Carolina . . . . .	1		
	Total		104

*L. ludovicianus.*

South Carolina . . . . .	11
Georgia . . . . .	10
Florida . . . . .	38
Alabama . . . . .	3
Mississippi . . . . .	2
Louisiana . . . . .	8
Total . . . . .	72
Total of both forms :	176

I am under special obligations to many friends: To Mr. Ridgway for the use of the National Museum series; to Dr. T. S. Roberts, of Minneapolis, who sent me the entire Minnesota State collection; to Dr. A. K. Fisher for the use of many specimens; to Mr. Gustave Kohn, of New Orleans; Mr. Ora W. Knight, of Maine; Dr. C. K. Clarke, of Kingston, Ontario; Mr. W. R. Robinson, of Wingina, Virginia, and Mr. James Gaut, of Washington, D. C.

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DESCRIPTIONS OF TWO NEW BIRDS FROM THE  
SANTA BARBARA ISLANDS, SOUTHERN  
CALIFORNIA.

BY EDGAR A. MEARNS.

***Carpodacus clementis*, new species.**

SAN CLEMENTE HOUSE FINCH.

*Carpodacus frontalis* TOWNSEND, Proc. U. S. Nat. Mus., XIII, No. 799, 1890, pp. 139 (Santa Barbara Island, California), 140 (San Clemente and Santa Rosa Islands, California).

*Carpodacus mexicanus frontalis* GRINNELL, Rep. on the Birds of Santa Barbara, San Nicolas and San Clemente Islands, Publication No. I of the Pasadena Academy of Sciences, August, 1897, pp. 6 (Santa Barbara Island, California), 10 (San Nicolas Island) 16 and 17 (San Clemente Island.)

*Type* from San Clemente Island, California, adult male, No. 134,784, U. S. National Museum. Collected by the author, August 25, 1894.

(Original number, 11,345.) In somewhat worn and faded breeding plumage.

*Diagnosis.*— Similar to *Carpodacus mexicanus frontalis* (Say), but with larger legs and feet and heavier coloration. The striping of the under surface is much broader than in typical specimens of *frontalis* from the eastern base of the Rocky Mountains. The wings are shorter, the tail perhaps a trifle longer, and the bill much larger and more convex above. It is, in fact, intermediate between the form of *frontalis* inhabiting the neighboring mainland of California and *Carpodacus mcgregori* Anthony,<sup>1</sup> from San Benito Island, about twenty miles west of Cerros (or Cedros) Island, Lower California, which latter (*C. mcgregori*) is but another step towards *Carpodacus amplus* Ridgway of Guadalupe Island.

*C. clementis* requires no comparison with typical *C. mexicanus* or with the subspecies *ruberrimus* from the peninsula of Lower California. The form *rhodocolpus*, of the tableland of southwestern Mexico, is quite similar in coloration, but much larger, with a much smaller and differently shaped bill.

*Measurements.*— Length, 162 mm.; alar expanse, 250; wing, 80; tail, 65; chord of culmen, 13; height of bill, 9; width of maxilla, 8.8; width of mandible, 9; tarsus, 19; middle toe and claw, 20.5.

*Remarks.*— This House Finch was obtained by Mr. Charles H. Townsend, in 1888 and 1889, on San Clemente and Santa Barbara Islands. In August, 1894, Mr. Anthony and myself obtained a good series of them on San Clemente; and, in 1897, Mr. Joseph Grinnell collected specimens on Santa Barbara, San Nicolas, and San Clemente. There are other specimens in the Smithsonian collection, gathered by Drs. Palmer, Henshaw, Cooper, and others from Santa Catalina, Santa Rosa, San Miguel, and Santa Cruz Islands of the Santa Barbara group.

Mr. Grinnell has published (l. c. pp. 16, 17, etc.) the following important notices of this bird: "The most abundant bird of San Clemente Island. Common everywhere, but most numerous in the deep gorges, whose walls are broken by dark caverns and festooned with cactus. In such places, especially in the vicinity of the water 'tanks,' the linnets fairly swarmed, and their full, rollicking songs reverberated incessantly. Their food appeared to be mainly composed of the fleshy cactus fruits, of which there

<sup>1</sup> Auk, XIV, April 1897, p. 165.

was certainly an abundant supply. The nests are built either in cactus, or in niches in the roofs and walls of the caverns. In the latter places the nests vary much in bulk, being fitted to the cavities in which they are built. A large cavity is nearly filled with a mass of fine grasses, weed stems and wool, with only a narrow aperture left at the top. Nests in cactus are built in the center of a clump of spiny stems, from one to three feet above the ground. These can seldom be reached except by breaking down the cactus. They are more compact than those in the rocks, but made of the same materials. Two to five eggs form a full set. They are similar to those of the mainland bird except in size, being decidedly larger. A fresh set taken March 30, measure,  $.84 \times .60$  [inch],  $.80 \times .63$ ,  $.82 \times .62$ ,  $.80 \times .63$ . A partially incubated set of five taken March 31, measure,  $.80 \times .56$ ,  $.80 \times .59$ ,  $.82 \times .57$ ,  $.85 \times .56$ ,  $.86 \times .58$ . The nesting season begins early, as nearly-fledged young were noted on March 28. On June 5, incubated eggs were taken. The House Finches on San Clemente Island average larger and brighter colored than those of the mainland. This case well illustrates the tendency of the insular birds to acquire larger proportions of the bill or feet. In this genus, the extremes are reached further south in *C. mcgregori* and *C. amplus*. The following are the average measurements of the bills of a series each of the San Clemente and mainland House Finches:

	Gonys.	Culmen.	Depth of bill at base.	Width of upper mandible.
San Clemente Is.....	.32	.43	.35	.30
Pasadena.....	.29	.40	.33	.28

“Forty-seven specimens of the House Finch were obtained on this island.

On Santa Barbara Island, Mr. Grinnell found it “common on the eastern part of the island among the patches of cholla cactus, the fruit of which the linnets were eating. Juveniles were plentiful. A nest was found on the side of a ravine, May 17; it was

built between the leaves [joints] of a cactus about eighteen inches above the ground, and composed entirely of fine dry grass-blades. It contained four badly-incubated eggs, three of which measure: .76 × .56, .75 × .59, .83 × .59. Fourteen House Finches were taken on this island."

On San Nicolas Island, Mr. Grinnell notes that "only about twenty were seen during our stay on the island, so this bird is by no means common. Fully fledged juveniles were noted, and a nest found May 25. It was in a hole in the sand-stone bluff above the beach, but could not be reached. The female was seen to leave it on several occasions. Four specimens of the House Finch were taken."

### *Lanius ludovicianus anthonyi*, new subspecies.

#### ISLAND SHRIKE.

*Lanius ludovicianus gambeli* GRINNELL, Rep. on the Birds of Santa Barbara, San Nicolas, and San Clemente Islands, Publication No. I of the Pasadena Academy of Sciences, August, 1897, pp. 19, 20. (San Clemente Island.)

*Type* from Santa Cruz Island, California. Adult female, No. —, U. S. National Museum. Collected by Mr. R. H. Beck, May 6, 1897. (Original number, 131.)

*Adult*.—Upper surface of head and body, dark slate-gray, paler—but usually not whitish—on the scapulars and upper tail-coverts, and darkest on the head, which has the faintest trace of a hoary line behind the black rictus, extending above the eye. Wings and tail black and white, the former gray and white below; white areas on wings and tail much more restricted than in the other forms of the *Lanius ludovicianus* group. The white on the upper surface of the wing is confined to the extreme base of the primaries and the extreme tips of the secondaries. The scapulars are edged externally with light gray—not white. Under surface of wing mostly gray, but white along the bend of the wing and across the base of the quills. Tail-feathers all black at base, tipped with white, with white on terminal two-thirds of outer web of lateral feathers. The terminal white on middle pair of rectrices is confined to a narrow edging which soon disappears with wear. The under surface of body is gray, palest mesially, and becoming white on throat and crissum. Iris brown. Bill plumbeous black. Feet black.

*Young in first plumage*.—Pattern similar to that of adult, but with head and body everywhere vermiculated with dusky and pale fulvous, except on the chin, which is white. Wings and tail with the light areas

increased in size and tinged with clay color; tips of middle rectrices and greater wing-coverts distinctly ferruginous. Bill brownish instead of plumbeous black. Feet and claws grayish instead of jet black. (No. 135, female, collected by Mr. R. H. Beck, on Santa Cruz Island, California, May 6, 1897. Length, 8 inches; alar expanse, 12.)

An older female (No. 134,781, U. S. National Museum) taken by the author, on San Clemente Island, August 27, 1894, was acquiring the adult plumage at the date of capture. The new feathers indicate a very dark coloration, though the upper tail-coverts are white as in *L. l. gambeli*, and its measurements are up to the average.

*Measurements.*—Average of 10 adults (4 males and 6 females): length, 224 mm.; alar expanse, 313; wing, 95; tail, 102; chord of culmen, 16.1; height of bill, 8.8; tarsus, 27.8; middle toe and claw, 24.

*Comparisons.*—Some individuals have no trace of a hoary frontal area. The slate-gray of the upper surface varies somewhat in intensity, being plain slate-gray in some, and dark brownish slate in others. In one or two specimens the white at the base of primaries can scarcely be detected, while in others it forms a distinct patch. In a few individuals the scapulars and upper tail-coverts are bordered with pale gray, almost whitish, and in others these parts are almost uniform with the back. A few (probably youngish) adults have brown vermiculations on the breast.

This Shrike is naturally to be compared with *Lanius ludovicianus gambeli* Ridgway, the form common on the adjacent coast of California, but differs in being very much darker as well as smaller. It is, in fact, darker than the darkest eastern specimens of *L. ludovicianus*.<sup>1</sup> It was next compared with *Lanius robustus* Baird, supposed to have come from California; but, as Mr. Ridgway has stated (Auk, XIV, 323), the type of that species is wholly

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<sup>1</sup> Mr. Robert Ridgway, in a letter dated May 6, 1898, writes me as follows: "The type of *L. l. anthonyi* is a much darker and less brownish gray above than that of *L. l. gambeli*; has the under parts more decidedly grayish laterally and lacks the brownish wash so conspicuous in all typical specimens of *gambeli*; also has less white on wing and tail, though the latter character is quite variable. The type of *gambeli*, furthermore, has white upper tail-coverts, as do most examples of that form, as does also the young San Clemente specimen collected by you. The latter agrees otherwise with the Santa Cruz bird.

"One specimen of a series from Pasadena agrees in every respect with the bird from Santa Cruz Island, and therefore it seems the island bird occasionally straggles to the mainland."



different from any of the American Shrikes, and is apparently closely related to *L. algeriensis*.

*Remarks.*—The Santa Barbara Island Shrike appears to be fairly common on San Clemente and Santa Cruz Islands of this group; but all who have seen it regard it as one of the wildest of birds. On his visits to San Clemente, in 1888 and 1889, Mr. Townsend was unable to obtain a specimen. In 1894, Mr. Anthony and myself procured a single one—with difficulty, although Shrikes were seen daily. At night, when we went out to shoot bats, Shrikes would dash about us, uttering loud, harsh screams, different from the voices of any Shrikes I have heard elsewhere. In the daytime they never permitted us to come within range of them.

Mr. Joseph Grinnell carefully explored Santa Barbara and San Nicolas islands, in the spring of 1897, without finding this species; but, on San Clemente Island, made the following observation:<sup>1</sup> “This bird was without question the shyest and hardest to be secured of any on the island. Indeed it was as shy as any hawk I ever saw. It was tolerably common; that is, two or three could be generally seen during an hour’s walk. There was a pair in the neighborhood of the windmill where we were camping, and nearly every morning a little after daybreak the male would perch either on the windmill or on the topmost twig of a brush pile on the opposite side of the ravine, and utter its defiant shrike notes. The rustle of the tent door or the click of a gun lock, however, was sufficient to send him up over the ridge, not to appear again for hours. On April 2, I found a nest and succeeded, after lying in ambush for a long time, in securing the female bird. The nest was in a small bush growing out from the side of a cañon, and was composed mostly of sheep wool, with an admixture of weed stems and grasses. Five slightly incubated eggs constituted the set. They are not different from eggs of true *L. l. gambeli* of the mainland, and measure:  $.97 \times .72$  [inch],  $.96 \times .72$ ,  $.95 \times .71$ ,  $.95 \times .73$ ,  $.96 \times .72$ . During our last visit, Mr. Horace Gaylord secured another adult female and a juvenile, and I took another juvenile, making four specimens in all obtained.<sup>2</sup> This Shrike is

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<sup>1</sup> Publication I, Pasadena Academy of Sciences, August, 1897, pp. 19, 20.

<sup>2</sup> Mr. Grinnell kindly placed these specimens at my disposal.

not exactly referable to *L. l. gambeli*, but appears to be nearer that than either of the other U. S. forms."

On Santa Cruz Island, May 6 to 11, 1897, Mr. R. H. Beck collected nine adult Shrikes and one young of the year, which were generously placed in my hands for description. These birds are marked as parents, respectively, of sets of 5, 5, 4, and 2 eggs. In forwarding these Shrikes, Mr. Beck writes: "They were the wildest land birds I ever saw by far."

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## YOUNG PLUMAGES OF MEXICAN BIRDS.

BY RICHARD C. MCGREGOR.

### *Pipilo carmani* Lawrence. SOCORRO TOWHEE.

This Towhee was the most abundant land bird on Socorro Island and in contrast to its mainland relatives it was not shy. Its general habits and notes are quite similiar to those of the Spurred Towhee.

But one young bird was taken and it is nearly adult.

No. 1289, ♀ juv., coll. R. C. McG., Socorro Island, Mexico, May 13, 1897. Plumage much as in the adult. Black throat and chin patch wanting; tawny patches on sides pale, indistinct, and small; feathers of other lower parts dirty white with long, dark, central spots; tertials and feathers of mantle edged with tawny. White spot of tail on outer feather only 9.5 mm. long.

### *Ammodramus sanctorum* Coues. SAN BENITO SPARROW.

The nest and eggs of the San Benito Sparrow have been described in the 'Osprey,' II, 42. It remains only to describe the young plumage. The youngest birds have no markings on the lower parts (*v.* Brewster, B. N. O. C., IV, 36) but the breast streaks soon appear. The youngest bird which I have is here described.

No. 1058, ♀ juv., coll. R. C. McG., San Benito Island, Lower California, March 30, 1897. Upper parts like adult in general looks, but somewhat lighter and less olivaceous; feathers of head and neck broccoli brown

with small dark centres; feathers of scapulars and interscapulars centered by clove brown with creamy margins. Lower parts pure white, except traces of faint spots across breast and on flanks; wings and tail resembling those of adult plumage; tertials widely bordered with cinnamon.

**Carpodacus mcgregori** *Anthony.* MCGREGOR'S FINCH.

We found examples of *C. mcgregori* distributed over the two large Benitos, but on account of their extreme shyness they were difficult to obtain. We were at the islands too late to collect eggs, but I secured three young birds about ready to leave the nest. The parents had constructed their nest about two feet above the ground in a century plant (*Agave*). It was made after the fashion of *C. frontalis*, of a miscellaneous lot of bark, twigs, and fibre. The three young are of different sizes, of which the smallest is here described.

No. 1041, ♂ nestling, coll. R. C. McG., San Benito Island, Lower California, March 29, 1897. The young plumage differs in coloration but little from that of the adult female. Upper parts heavily marked with clove brown, edges and tips of feathers cinnamon; lower parts streaked with clove and cinnamon; tertials and rectrices broadly edged and tipped with wood brown.

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DESCRIPTION OF A NEW *AMMODRAMUS* FROM  
 LOWER CALIFORNIA.

BY RICHARD C. MCGREGOR.

**Ammodramus halophilus**,<sup>1</sup> sp. nov.

LAGOON SPARROW.

*Sp. char.*—Most closely related to *A. rostratus guttatus*, but “uniformly larger and much darker; upper parts decidedly olivaceous instead of olive grayish.”<sup>2</sup>

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<sup>1</sup> ἅλς, salt of the sea; φιλέω, to love.

<sup>2</sup> From letter of Mr. R. Ridgway, May 12, 1898.

*Type*, ad. ♂, No. 1001, coll. R. C. McG., Abreojos Point, Lower California, April 19, 1897. Dorsal surface olivaceous; feathers of scapulars, inter-scapulars, occiput, and crown with clove brown centres. A line of chrome yellow extending from nostril over eye as in *A. bryanti*. Forehead and side of head, including auriculars and malar region, tinged with yellow; throat white; feathers of breast with a wash of yellow, centres with deltoid clove brow spots; markings of sides and flanks lighter and more cuneate, edged with wood brown; wings and tail near sepia, edges lighter.

Wing, 68.5 mm.; tail, 55.4 mm.; tarsus, 20.5 mm.; culmen, 13.2 mm.; depth of bill at base, 7 mm.

*Hab.* Salt marshes in the vicinity of Abreojos Point, Lower California.

Mr. Ridgway has kindly compared my series of Abreojos Point birds with the two examples of *A. guttatus* in the National Museum. He has sent me the following table of average measurements:

	Wing.	Tail.	Exposed culmen.	Depth of bill at base.	Tarsus.	Middle toe.
<i>A. halophilus.</i>	2.63	1.92	0.51	0.26	0.84	0.63
<i>A. guttatus.</i>	2.525	1.875	0.44	0.23	0.825	0.605

This Sparrow was found in a salt marsh about five miles long by half a mile wide. The common amphibious plant known as glasswort (*Salicornia ambigua*) covers the moist ground. The entire marsh is cut by tide creeks, which empty into a salt lake or pond lagoon. As this marsh is surrounded by ocean on one side and hot desert on the others, it is probable that *A. halophilus* is confined to this region.

We stopped at Abreojos Point on April 19, when I secured sixteen Lagoon Sparrows, together with a nest and three eggs. Individuals were very abundant, but rather shy, keeping at such long range that my auxiliary barrel was useless. Most of the birds were in perfect spring plumage.

On June 17 we made a second landing at Abreojos, and although we expected to secure young birds not one was taken by any of the party. The adults were in worn plumage, and in the oviducts of several females we found eggs on which the shell was formed.

The three eggs collected April 19, 1897, measure, respectively,  $.79 \times .58$ ;  $.80 \times .58$ ;  $.78 \times .58$ . The ground color is very faint bluish-white, — lighter than in *A. sanctorum*, — heavily marked all over with large blotches of raw umber and smaller spots of lilac; these markings much heavier than in *sanctorum*. A few hairlike lines of blackish run over small end of one egg and about its small diameter. Nest larger than that of San Benito Island species, made of salt grass and lined with fine shreds of grass and a few feathers of *Larus*.

The setting parent was flushed from this nest while I was about fifteen feet distant, and became very uneasy in voice and action. A careful search revealed the rest, sixteen inches from the ground, in a tall bunch of glasswort, the top of which was bent over and in to form a covering. The eggs were concealed from a top view, and entrance to the nest was possible from one side only. The taking of incubated eggs at this date, and of laying females in June, shows that two broods are raised in a year.

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## GENERAL NOTES.

### The Pacific Kittiwake (*Rissa tridactyla pollicaris*) in Lower California.

—On March 17, 1897, I shot a fully adult Pacific Kittiwake, at San Geronimo Island, Lower California, about 200 miles south of the United States boundary line, thus extending the known range of that species to Mexican waters.

For the past three winters I have found the Kittiwakes of regular, though not common occurrence, off San Diego, California, and about the Coronado Islands. — A. W. ANTHONY, *Portland, Oregon*.

**Capture of the Short-tailed Albatross on the Coast of Southern California.** — The Zoölogical Department of Stanford University, California, has been recently presented with a fine specimen in the flesh of *Diomedea albatrus*.

It was taken at San Pedro, Los Angeles Co., Cal., on April 3, 1898, by Mr. Cloudsley Rutler, who shipped it to the Museum of the Department.

This bird being of rather uncommon occurrence on our coast here, I send this notice of its capture. — ROBT. B. McLAIN, *Stanford University, Cal.*

**Wilson's Phalarope** (*Steganopus tricolor*) at Ocean City, N. J.—To the best of my knowledge the published records of Wilson's Phalarope on the New Jersey coast are limited to two specimens recorded by Dr. C. C. Abbott, as taken at Deal Beach, Monmouth Co. (Birds of New Jersey, in Cooke's Geol. of N. J., 1868). I was never able to trace up these specimens, and the many evident errors in the list in which they are mentioned, naturally casts some doubt on the validity of the record. It is with much pleasure, therefore, that I am able to place on record the capture of a fine adult female of this species by Mr. Gilbert H. Moore, at Ocean City, N. J., May 19, 1898. The bird was in company with a flock of the smaller shore birds when shot.

Mr. Moore has presented the specimen to the local collection of the Academy of Natural Sciences of Philadelphia.—WITMER STONE, *Acad. Nat. Science, Philadelphia, Pa.*

**Unusual Nesting Site of Kingbird.**—The following may be of some interest to the readers of 'The Auk.' It is certainly unique in my experience. There is a fence post within 50 feet of the Shady Hill Station, Bedford, Mass., and within 35 feet of the railroad, and immediately beside a road, over which men are travelling back and forth all day long, from the office and packing sheds of the Shady Hill Nursery. This post was made of an abandoned railroad tie, whose end had been somewhat hollowed by decay; and in this hollow, in the summer of 1896, a pair of Kingbirds (*Tyrannus tyrannus*) built their nest and raised four young.

One would imagine, judging from the usual characteristics of the Kingbirds, that this pair might have been in constant trouble; but Messrs. A. H. Kirkland, of the Massachusetts State Board of Agriculture, and E. L. Beard, President of the Shady Hill Nursery, to whom I am indebted for this information, seem to be under the impression that, all things considered, they got on very well. The top of the post was only about four feet above the ground, and being immediately beside the road, was, of course, a matter of some interest to the passers-by; but as orders had been issued by Mr. Beard to his numerous workmen, not to have the nest disturbed, the old ones were able to bring them up.

I have no date except that of June 9, 1896, given me by Mr. Kirkland, at which time, he writes me, the nest "contained four young."

Mr. Beard is responsible for the information that on days of extreme heat, the old birds could often be seen standing over their young, and with vibrating wings, sheltering and cooling them.—FRED H. KENNARD, — *Boston, Mass.*

**Early Arrival of the Kingbird at Cambridge, Mass.**—I saw a Kingbird Saturday, April 16, in my yard. I suppose it is a very unusual date for the arrival of *Tyrannus tyrannus*. It has been seen there eleven other days; from the 23d to the 29th of April it was cold and rainy with north-east winds during which the bird was not seen.

I suppose it is the same Kingbird which, with another, nests near by.—  
THOMAS B. BERGEN, *Cambridge, Mass.*

**Habits of the Blue Jay.**—It may be of interest to the readers of 'The Auk' to learn that I can add, what is to me, a new bird to the list of those making their nests in or about buildings. We have a pair of Blue Jays (*Cyanocitta cristata*) in Brookline, Mass., that have this year built their nest in a most conspicuous place, between the stems of a Wistaria vine and the capitol of a pillar, supporting a piazza roof. This piazza is in almost daily use, and the path leading immediately beside it is also used constantly. At the time of building, and even on June 3, when I saw the nest full of young ones, there were no leaves in the immediate vicinity to hide the nest, thus leaving it in a very conspicuous position.

We all know that certain birds change their habits in accordance with the march of civilization, and I was not very much surprised a few years ago, when I knew of a Blue Jay building its nest in a maple tree, immediately beside our town hall, in the heart of the town; but I was surprised at the above incident, and thought that it might be of interest to others.—  
FRED H. KENNARD, *Boston, Mass.*

**Probable Polygamy of the Great-tailed Grackle** (*Quiscalus macrourus*).—As evidence bearing upon the supposed polygamy of the Great-tailed Grackle, some observations made at Orizaba, Mexico, in March, 1897, seem worthy of record. This species is an abundant bird in many Mexican cities, finding in the plazas or parks suitable feeding and breeding grounds. In the small *Zocalo* or public gardens in the heart of the City of Orizaba, it happened that only one tree, a densely foliaged conifer, was available for nesting sites, and as an apparent result the gardens were inhabited by only one family of Grackles. I watched these birds for some time on March 15 and 16, seeing ten or twelve females, but only one male. The former were building; and on one occasion I saw at least six different females bring nesting materials into the coniferous tree at intervals. This tree contained several nests; how many it was not possible to determine, from the path at its base, and its isolation, in connection with the facts I have mentioned, lead me to believe that it constituted the harem of the male who generally perched in an adjoining araucaria, assuming the ridiculously conscious pose so characteristic of this species.—  
FRANK M. CHAPMAN, *American Museum of Natural History, New York City.*

*McKay's Snowflake* (*Plectrophenax hyperboreus*) at Bethel, Alaska.—Two specimens of this rare bird were recently sent me from Bethel, ninety miles up the Kuskokwim River, in the western part of Alaska. This is probably the farthest inland at which the bird has yet been found. The specimens, both females, in full winter plumage, were taken Jan. 4, 1898.—  
WITMER STONE, *Acad. Nat. Sciences, Philadelphia, Pa.*

**Notes on the Black Seaside Finch (*Ammodramus nigrescens*).**—Doubtless no bird breeding in North America has a briefer history than has the Black Seaside Finch. Discovered in 1872 by Mr. C. J. Maynard at Salt Lake, near Titusville, Florida, and in the marshes of Merritt's Island and south of Dummitt's Grove on the opposite side of the Indian River, it has apparently been met with by no other ornithologist, and the sum of our knowledge concerning this interesting species is contained in Mr. Maynard's 'Birds of Eastern North America.'

In March, 1889, I looked for *Ammodramus nigrescens* very carefully on the evidently favorable marshes near 'Oak Lodge' on the east peninsula of Indian River, some fifty miles south of the point where Mr. Maynard found it, but without success.

Returning to the Indian River in March, 1898, I determined to continue the search for this bird and securing a small sloop sailed from Titusville on March 2, for the mouth of Dummitt's Creek. Two days were passed at this point and *Ammodramus nigrescens* was found to be a very common inhabitant of the adjoining marshes. Heavy rains prevented me from spending more than five hours in the marshes where, nevertheless, under the most unfavorable conditions seventeen specimens were secured, evidencing the abundance of the bird.

The marshes here are covered with well-defined areas of a low branching, matted grass, and a tall, single-stalked reedy grass, while along the shores of the river, creek, and marsh ponds there is a fringe of bushy sedge (*Borrchia frutescens*). The Finches were found in the tall grass and in the sedge. They were not in song and the sexual organs of the specimens secured exhibited but little signs of enlargement, showing that the breeding season was not yet at hand.

Savanna and Swamp Sparrows were also common in these marshes. The paler color and darting, more extended flight of the former at once distinguished them from *nigrescens*, but the Swamp Sparrows were not so easily identified. One soon learned, however, to recognize *nigrescens* by its darker color and by its flight, which was shorter and more hesitating than that of the Swamp Sparrow.

Like the Seaside Finch (*Ammodramus maritimus*), *nigrescens* appears to possess considerable curiosity and could often be made to mount to the grass-tops by 'squeaking.'

Mr. Maynard states that the birds were doubtless breeding in the latter part of April and that he believes them to be migratory, wintering, probably, at some more southern point.

Their abundance, and the fact that they have been found at no other locality, in connection with their occurrence in numbers so long before the breeding season, would tend to disprove this theory, and in my opinion *Ammodramus nigrescens* will be found to be a permanent resident species.

—FRANK M. CHAPMAN, *American Museum of Natural History, New York City.*



**Nesting Instincts of Swallows.**—As supplementing Mr. Brewster's record of the premature exhibition of the nest-building and procreative instincts of Swallows (see *Auk*, XV, April, 1898, p. 194), I may add some observations made on Tree Swallows (*Tachycineta bicolor*), at Leonia, N. J., during August and September, 1897. The extensive salt marshes in which myriads of these birds roost in July, August, and September, are here crossed by a road over which I passed almost daily and rarely without seeing in the road, one or more flocks of Tree Swallows, varying in size from eight or ten to several hundred birds. Without exception, as far as I observed, and I studied them very closely at short range, these birds were in the immature plumage of birds of the year. By far the larger number seemed to have no special object in alighting in the road, they did not move about as though searching for food, indeed for the most part were practically motionless, but occasionally a pair would copulate, as described by Mr. Brewster, and more often a bird would pick up a bit of dried grass and fly up into the air with it, or sometimes it was carried fifty yards or more and dropped from the air; at others the bird would carry it to the telegraph wires bordering the road and drop it after perching a moment.

Additional evidence of inherited knowledge was apparently given by many Tree Swallows which were often seen hovering about a pile driven in a creek which traversed these meadows. I at first supposed these birds to be feeding on insects which presumably had alighted on the pile, but the number of birds, often a dozen or more were seen about the pile, and the persistency with which they remained there, forced me to conclude that in a wholly unreasoning way they were looking for a nesting site.—FRANK M. CHAPMAN, *American Museum of Natural History, New York City.*

**Notes on Generic Names of Certain Swallows.**—In the raid on nomenclature made a few years ago Dr. L. Stejneger seems to have been peculiarly unfortunate. I have not yet trailed him anywhere without finding that either he did not go far enough in the right direction, or else he went in the wrong direction. The A. O. U. is to be commiserated in unwittingly adopting sundry changes Dr. Stejneger proposed and sought to impose on nomenclature. For example, he undertook to upset the established names *Hirundo* and *Cotile* by substituting *Chelidon* for the former, and *Clivicola* for the latter, after Forster, 1817. It appears from Sharpe's introduction to the Monograph of *Hirundinidæ*, p. xxxv, that *Hirundo* Linn. was characterized by Schæffer, *Elem. Orn.* 1774, with *H. rustica* as type. If Dr. Sharpe's method of determining the type of a genus be not at variance with A. O. U. canons, this operation of Schæffer's throws out Forster's later attempt to transpose *Hirundo* and *Chelidon*, and we may happily revert to the *status quo ante bellum*. Again, Dr. Sharpe, p. xlv, shows that *Riparia* Forster, 1817, has that sort of priority over *Clivicola* Forster, 1817, which results from previous

pagination, and I believe we recognize that myth officially; if so, the name of the Bank Swallow becomes the tautonym *Riparia riparia*, or else *R. europaea*, or else *R. cinerea*. It is but justice to Dr. Stejneger to say that he was aware of this (Pr. Nat. Mus. V, 1882, p. 32), only he "preferred to accept the name *Clivicola*," though the reason for his preference is obviously a futile one by our rules. It is also due him to add, that he only "supposed" his generic synonymy of Swallows to be correct (*ibid.* p. 31). But neither supposition nor preference has any place in the A. O. U. Code. I can suppose a good many things that are not canonized in the code, and certainly prefer some things that are not canonized. For example, I "prefer" *Riparia* to *Clivicola*, and I "suppose" Dr. Stejneger wrong about *Hirundo*. The case thus raised by Dr. Sharpe should come up for consideration at the next meeting of the Union.—ELLIOTT COUES, *Washington, D. C.*

**Accidental Death of a Hooded Warbler (*Sylvania mitrata*).**—On May 27, 1898, while wandering along a roadway in the vicinity of Great Timber and Beaver Swamp, Cape May County, New Jersey, in company with Dr. William E. Hughes, a male Hooded Warbler attracted our attention by its uneasiness.

While searching the surroundings for its nest, the Doctor discovered a female Hooded Warbler suspended by a horse hair tightly looped around the lower part of the neck, it having slipped up underneath the feathers, and the other end was tangled among some small twigs and briars, where it no doubt was caught while the bird was carrying the material to line her nest with. She was hanging about two feet above the ground with her head dropped back exposing her throat, the feathers of which were parted by the action of heavy rains of the past few days. The condition of the bird was apparently fresh, and no nests of this species were found containing more than one egg at this time.—J. HARRIS REED, *Beverly, N. J.*

**Notes on the Nesting of Palmer's Thrasher at El Plomo, Sonora, Mexico.**—Palmer's Thrasher (*Harporhynchus curvirostris palmeri*), is one of the most common birds in this region (100 miles southwest of Tucson, Arizona); they may be seen in pairs throughout the year, and seem to remain around the old nest all winter, using it for a roost. The nesting site seems to be in any convenient place. In flat country anywhere, but in hilly country generally at the foot of a hill, seldom over quarter way up on a hill or mountain, unless on the bank of some small arroyo.

Some pairs begin building the latter part of February. The new nest is generally placed near the old one, often in the same cactus, and sometimes on top of the old nest. The nests are large and well made. The body is composed of thorny sticks, three to ten inches in length; then

comes a layer of finer sticks, sometimes bark; then grass for a lining, which has more or less hair and sometimes rags, paper, twine or a few feathers added to it. In a few cases the grass lining is replaced by hair. The nests are externally about ten inches in diameter and eight inches deep, internally about three and one half inches, both in diameter and depth.

In one instance I saw a series of five half completed nests built around the central stalk of a cholla cactus and resting on the branches that grew out from the main stalk; they were all connected, and made a platform two feet in diameter, and only about a foot and a half from the ground. It was built during the winter and was used only for a roosting place. The nest that was used as a breeding place was built five feet away in the top of a small cholla.

The height of nests found containing eggs varied from two to seven feet, but most are built at about three feet. Nests are found in the cholla and sibri cacti, and in palo verde and mesquite trees. Of fifty nests, in the average, forty will be in cholla, seven in sibri, two in palo verde, and one in mesquite.

Fresh eggs may be found on March 1, and later, and the number of eggs in a set varies from one to three,—about two thirds are of three, one third of two, and very few are of one. The time of year has nothing to do with the number of eggs in a set as sometimes the first set is two and the next three; then again it is the reverse. Some birds will lay three sets of three each. The number of broods raised per year is two or three.

If the eggs are taken the birds will build a new nest and use some of the lining of the old one, and will have another set of eggs in twelve days (the shortest time noted); the new nest will be well built and resemble the other in every respect. I have known some pairs to take a month in which to build their first nest of the season. One peculiar thing is that the same pair builds its nests at the same height, if possible, but some build low and others high. In one instance the first nest was five and one half feet, the second was seven feet, the third was six feet from the ground, all in different chollas; and as these were high for the general height of the cholla, the nests were further apart than usual; they were in a straight line, the second fifty feet from first, and the third one hundred feet from second.

Birds desert a new nest very easily, but if it contains eggs it can be moved from one branch to another without their deserting it. When squirrels or snakes take the first egg the bird will often lay the second and third in the same nest.

The eggs vary in shape from oval-oblong to pyriform, and the ground color is generally light bluish green, sometimes light green, or bluish white, minutely speckled or spotted with reddish brown and lavender. The less the number of spots the larger they are. The size of the eggs varies,— $1.28 \times .78$ ,  $1.15 \times .83$ , and  $1.05 \times .77$ ; average,  $1.15 \times .78$ . The eggs are laid one each day; I never knew them to skip a day.

The male assists in incubation, and also in taking care of the young. Palmer's Thrasher is very bold when you are at the nest, and will often come within a few feet, while Bendire's Thrasher will slip off the nest and you may not see it even if you remain by the nest for a half hour or more. — JOSIAH H. CLARK, *Tucson, Arizona*.

**Carolina Wren at Lyme, Conn., in December.** — On the morning of December 17, 1897, I was surprised to see and hear a Carolina Wren (*Thryothorus ludovicianus*) at this place. As it is the first one I have ever seen in New England, it may be of interest to record the occurrence. — ARTHUR W. BROCKWAY, *Lyme, Conn.*

**Nesting Habits of the Robin.** — In Mr. Howe's interesting paper on the 'Breeding Habits of the Robin' I notice (Auk, XV, April, 1898, p. 167) that he has not observed an instance of a second brood being raised in the same nest. So it may be of interest to note that here a slightly different record can be made.

I have under observation at this writing three nests in which second clutches of eggs have been laid and are now being incubated. One is in a window corner of my office, — and in this case the lining was not even changed. The first egg was laid just one week after the young of the first brood left the nest.

Another nest is in the cornice of a stable building, and in this instance the lining was torn out and replaced by fresh material. The third nest is in a young linden tree, and I did not notice the house cleaning after the first brood left.

Last year a Robin built her nest and raised a brood in the transom over the door of the Glen Island Museum. She returned about a week after the flight of the first brood, and laid three eggs, but deserted them, when about half incubated. I think I recognize her as the same one that has built in my office window this year. — S. M. McCORMICK, *Glen Island Museum, Westchester Co., New York*.

**Notes From Ontario.** — The American Magpie (*Pica pica hudsonica*) is recorded as occurring on rare occasions in Algoma, northwestern Ontario. This season several specimens have wandered far east and south. On March 12, 1898, Chas. M. Clarke of Kingston, observed a Magpie near Odessa, and since that date two specimens have been shot and sent to the taxidermist. This is believed to be the first time Magpies have been recorded in Eastern Ontario.

Horned Larks breed regularly in this district. Last year the Rev. C. Young, of Lansdowne, found a nest (eggs slightly incubated) on April 5. This year I found a nest on April 3. The eggs were four in number, incubation almost completed. There is some doubt about the variety of the Horned Lark which breeds here, although I have little hesitation in classifying the eggs found this season as those of *Otocoris alpestris prati*

*cola*, the pale color and small size of the birds, both of which were closely observed for fully twenty minutes, making identification practically certain. Snow is nearly always on the ground at this time of the year, and the birds search for hillocks of bare earth. The nests are beautifully cupped and carefully built of roots of grass.—C. K. CLARKE, M. D., *Kingston, Ontario*.

**An Addition and a Correction to the List of North Carolina Birds.**—**BAY-BREASTED WARBLER** (*Dendroica castanea*).—A female *D. castanea* was taken by myself at Chapel Hill, Oct. 2, 1897, and a male was secured on the 8th of the same month. Both specimens were in the immature plumage. They were identified by Prof. Robert Ridgway. I believe this to be the first record of this bird in North Carolina.

**CLAY-COLORED SPARROW** (*Spizella pallida*).—In part second of the 'Journal of the Elisha Mitchell Scientific Society,' for 1887, published at Chapel Hill, Prof. Geo. F. Atkinson gives a 'Preliminary Catalogue of the Birds of North Carolina.' Under the name of *S. pallida* he says: "Accidental. One taken at Chapel Hill, March 8th, 1886 (Univ. Coll.)" The specimen to which he refers is No. 1050 in the University collection.

In two or more publications since, references have been made to this as the one record of this Sparrow's occurrence in the State. Upon examining the specimen I became convinced that an error had been committed in the identification, and at once sent it to the Smithsonian Institution. Prof. Richmond identified it as being simply *Melospiza georgiana*.—T. GILBERT PEARSON, *Chapel Hill, N. C.*

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## RECENT LITERATURE.

**Two New Popular Bird Books.**—Two more popular bird books have just been added to the long series of hand-books for beginners. Though both are prepared with the same object in view, they differ radically from each other in style of treatment of the subject, and also are quite unlike any of their predecessors. One is the work of an enthusiastic ornithologist of wide experience with birds in life, the other by a schoolmaster and an amateur, who has his subject well in hand, and who knows from practical experience the needs of beginners in attempting nature studies. With points of view and previous experience so unlike, it is not surprising that the method of treating the subject here in hand—the birds of eastern North America—should also widely differ.

Mr. Scott's 'Bird Studies'<sup>1</sup> is a quarto of 375 pages, illustrated with about 170 half-tone reproductions of photographs, about one half of them being full-page plates. As these are paged as part of the text, at least one third of the book is thus made up of pictures. "The object of the treatise," says the author, "is to place before students and others who wish to acquire knowledge on the subject, a means to that end. It is an invitation to a more intimate acquaintance with the Land Birds of Eastern North America. That is all." The area included is "that portion of the continent east of the Mississippi River, Lake Winnipeg, and the western borders of Hudson's Bay, together with Greenland and the islands which naturally group themselves with the mainland of the region." Later a second volume, on the Water Birds, is promised, should the present one meet with a favorable reception.

Few ornithologists have had so favorable opportunities for studying the birds of eastern North America in life as Mr. Scott, who for the last thirty years has devoted a large part of his time to field work and during his long periods of sojourn in various parts of the eastern States, in southern Florida and in Arizona has been able to make the acquaintance in life of most of the species here treated. The accuracy of his text, and his evident familiarity with many birds of rare or local distribution, as well as with those of common occurrence, indicate how well he has improved his advantages and how little he is dependent on outside sources for information. He tells what he has to say of the habits of his birds very pleasantly, but adds, nevertheless, very little in this respect to the general stock of knowledge, and rarely introduces personal incident. This we may readily believe is due to lack of space, since not less than 650 forms must be treated in an actual text space of about 250 pages.

The make up of the book presents several rather strange features for a book intended as a guide to the birds of eastern North America, inasmuch as there are no 'keys' for the determination of the species, no generalities whatever, nor any classification beyond the division of the subject under some half dozen headings of such an indeterminate character as to be of very slight aid as a guide to where any given bird may be found described. These headings,—'About the House,' 'Along the Highway,' 'In the Woods,' 'Across the Fields,' 'In the Marsh and Swamps,' 'By Stream and Field,'—while prettily suggestive, can prove of very little assistance to the beginner in finding his bird. If he knows it already, he can find it by the index, and then read what Mr. Scott has to say of it and enjoy his pictures. If he does not know it, the task of

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<sup>1</sup> Bird Studies | An Account of the Land Birds | of Eastern North America | By | William E. D. Scott | — | With illustrations from original photographs | — | New York and London | G. P. Putman's Sons | The Knickerbocker Press | 1898. — 4to, pp. xii + 363. Profusely illustrated with half-tone reproductions from photographs. \$5.00 net.

hunting for it without some sort of introductory key is increased by these divisions rather than lessened, for if all of the Sparrows and Warblers were in one place instead of in three or four the case would be more hopeful. Yet such great tenderness has the author shown for his readers that he has managed to do without not only keys and diagrams but all technical terms, even banishing such easy every-day expressions as primaries, secondaries, wing-coverts and tail-coverts, substituting therefor such circumlocutions as may seem to best fit the case. The descriptions of the birds are variously interwoven with the general text, all the matter being uniformly in large type. A novel feature has also been introduced into the illustrations, there being many reproductions of photographs of bird skins made up as cabinet specimens and of dead birds laid out in a similar attitude. However such illustrations may strike the reader from the sentimental side, especially the 'how-to-know-birds-without-a-gun' class, it must be confessed that they can be made of very efficient service as an aid in identification. There are many illustrations of young birds and birds' nests from life, but many of the full page plates are from mounted birds placed in natural surroundings. The effect in many cases is excellent, but there is a tale-tale expression about the eyes and head, if not elsewhere, that shows the bird is dead and not alive, however clever the artist's conception.

One of the most valuable parts of the book is the ten pages devoted to the Blue Jay. The full page illustrations give, (1) the nest and eggs, (2 and 3), the nest with young, (4) the 'Blue Jay hammering,' and (5) in repose. There are four other figures of young birds of various ages, from six to fourteen days old. The purpose of this digression is to give some account, "by word and picture, of how young birds grow," and the details of the matter thus presented are especially interesting and instructive. Mr. Scott refers to the exercise of the muscles of the feet by the young birds by constantly grasping, first with one foot and then the other, the twigs and rootlets composing the lining of the nest. As shown by some experiments he relates, this constant exercise of the feet is necessary for the proper development of these members, it being, he believes, the natural function of the nest-lining to afford a grasping surface to the feet.

As a contribution to popular bird literature Mr. Scott's book is excellent so far as it goes, but we believe its efficiency as a help to the student in finding out the name of an unknown bird would have been greatly strengthened by adding 'keys,' and consequently some sort of system in the arrangement of the species. The 'systematic arrangement,' is given, it is true, in the form of a list at the end of the book, including the names and classification, from order to subspecies, from the Gallinæ to the end of the song birds. The book is beautifully printed, and with its wealth of illustrations, presents a very attractive appearance.

Mr. Apgar's 'Birds, of the United States east of the Rocky Moun-

tains'<sup>1</sup> is compact and business-like, having quite the air and appearance of a scientific school manual, with its analytical keys, strictly systematic arrangement, and 'glossary.' The thorny road of technicalities is smoothed, not by omitting the technicalities, but by using them, with proper definitions and explanations, aided by cuts and diagrams when necessary. Its purpose appears to be primarily that of a school manual, and for such use seems well adapted. The subject is reduced to simple terms, and is methodically presented. Even the scientific names are marked for accent. Part I (pp. 9-38) treats of the external parts of birds and the terms needed for their description. The treatment is for the most part brief, but is abundantly illustrated by appropriate outline figures. Under the head of 'Nests and Eggs' some very good advice is given to would-be collectors, both as to the taking of eggs and the manner of the taking. Part II (pp. 39-348) treats systematically of the species, giving first a key to the families, with instructions for its use, and later, in their proper places, keys to the genera and species. About fifty to a hundred words, in large type, give the leading traits of the species, both as to color, markings and habits, the measurements and area of distribution being added in a paragraph of smaller type, to which also the various subspecies are altogether relegated. Each species is usually illustrated with a full-length wash-drawing—generally effective and helpful but rarely artistic and often quite otherwise, some of them' being the worst we have seen in a modern bird book. It is on the whole very carefully compiled, and therefore trustworthy, though the paraphrasing sometimes fails to fully conceal the author's sources of information.

Part III (pp. 349-372) treats of 'The Study of Birds in the Field,' giving brief directions as to how, when and where to find birds, with keys for their identification 'in the bush,' the keys in Part II being for the identification of birds 'in the hand.' Part IV (pp. 373-389) teaches the 'Preparation of bird specimens for display or study.' This includes instructions for skinning and mounting, with illustrations, and the preparation of eggs and nests. A glossary and index conclude this very serviceable little volume, which will doubtless assist much in the introduction of bird study in schools.—J. A. A.

**Cory's Ducks, Geese and Swans.**<sup>2</sup>—Mr. Cory's 'How to know the

<sup>1</sup> Birds | of the United States | east of the Rocky Mountains | A Manual for the identification of species | in hand or in bush | By Austin C. Apgar | Author of "Trees of the Northern United States," etc. | — New York, Cincinnati, Chicago | American Book Company | — No date; copyright, 1898. Sm. 8vo, pp. 415, numerous text illustrations.

<sup>2</sup> How to know | the | Ducks, Geese and Swans | of | North America | all the Species being grouped according to Size and Color | — | By Charles B. Cory | . . . [= 4 lines of titles] . . . [= 5 lines of titles of the Author's previous books] | — | For sale by | Little, Brown & Co. | Boston | 1897 — Sm. quarto, pp. 95, with 5 plates and numerous text figures.



Ducks, Geese and Swans of North America' is modeled on the same plan as his 'How to know the Shore Birds,' noticed in a former number of this journal (Vol. XIV, Oct., 1897, p. 418). It is therefore sufficient to say that by means of keys and a very liberal use of excellent cuts in the text, the matter of identification is apparently so simplified that even the most inexperienced bird student or sportsman can hardly fail to discover the name of any bird of these groups he may chance to have in hand. It is designed especially for sportsmen and others interested in birds who find difficulty in identifying birds by the ordinary 'bird books.' The cuts, executed with great faithfulness of detail, and generally with pleasing artistic effect, can not fail to guide the reader with great ease to the species sought. The text, aside from the elaborate keys, is confined to a brief description of the external characters, with the distinctive features emphasized by special type, and short statements of the birds' distribution and nesting habits. — J. A. A.

**Chapman on Mexican Birds.**<sup>1</sup>—One of the greatest difficulties in the study of Mexican Birds has been the lack of detailed reports on the avifauna of definite regions by competent ornithologists who have visited the localities in person. Most of our knowledge of the birds of this country heretofore has been obtained from collectors' specimens often so meagerly or indefinitely labelled as to leave us in great doubt as to the distribution and consequent relationship of the various species. Mr. Chapman's paper is just such a contribution as we have needed and clears up many puzzling questions relative to the birds of Jalapa—a locality long known in ornithological literature but little understood faunally. The importance of exact localities with specimens from this region can be appreciated when we learn that owing to the steepness of the mountain slopes, a few hours' ride by rail either way from Jalapa will bring us to faunæ as different as those of the northern and southern borders of the United States. "Indeed," says Mr. Chapman, "it makes a material difference in the day's collecting whether you go south or north of the city." It is no wonder then that our 'Jalapa' specimens seemed to indicate a curious mixture of life when, as Mr. Chapman shows, they came from distinct faunal zones, here only a few miles distant from one another.

In the first part of his paper the author treats of the Jalapan birds, of which 107 species are listed, accompanied by interesting annotations on their distribution, habits and songs. The second part deals with the birds of Las Vigas, in the humid alpine zone, nearly 4000 feet above the temperate zone of Jalapa, though only forty miles away in a straight line. Here 48 species were observed and interesting notes are added on the nesting season, which was here found to be much earlier than at Jalapa. — W. S.

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<sup>1</sup>Notes on Birds Observed at Jalapa and Las Vigas, Vera Cruz, Mexico. By Frank M. Chapman. Author's Edition, extracted from Bull. Amer. Mus. Nat. Hist. Vol. X, p. 15-43, Feb. 24, 1898.

Hornaday on the Destruction of our Birds and Mammals.<sup>1</sup>—In this report Mr. Hornaday has furnished us with a mass of information relative to the destruction of our wild birds and mammals which should demand the earnest consideration of every ornithologist and sportsman throughout the country, and which cannot fail to prove an important factor in encouraging the sentiment for bird protection which is beginning to make itself apparent.

The bird report is based upon replies from correspondents in all parts of the country relative to the destruction of birds, the most potent agencies in effecting destruction, species which are becoming extinct, and the number of birds to-day as compared with fifteen years ago.

The most serious causes of the decrease of bird life seem to be: (1) the great increase in sportsmen or rather "so-called sportsmen"; (2) pot hunters; (3) plume hunters; (4) egg collectors; (5) English sparrow; (6) clearing away of timber, and (7) Italians, who kill all sorts of birds for food.

The decrease of all kinds of game birds as evidenced by all the reports is startling, as is also the growing tendency in the South to regard various song and insectivorous birds as game, when the real game birds become scarce. As Mr. Hornaday truly says, "the protection of migratory birds must be general," we cannot protect our summer birds in the North if they are to be shot in winter in the South.

In regard to the destruction of bird life in general, the figures given by Mr. Hornaday (Connecticut, 75% destroyed; New York, 48%; Indiana, 60%, etc.) will hardly be accepted by those who have had experience in estimating the numbers of individual birds in the field.

It is not possible to compare the birds of fifteen years ago with those of to-day and say with any degree of accuracy that the decrease is one-half or two-thirds, relying solely on memory. As a matter of fact how many of the persons quoted can state the number of birds breeding in a definite area in their vicinity last year, not to speak of fifteen years ago? It is one thing to guess and quite another to make an accurate census, and without definite figures we are practically stating the ratio between two unknown quantities which we can only compare in memory.

So many things have to be taken into consideration in estimating the abundance of our small birds that it is exceedingly difficult to hazard a comparison even between two successive years unless a person has been constantly afield and is conversant with the vagaries of migration, etc.

It is significant that scarcely any of the more prominent field orni-

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<sup>1</sup>The Destruction of our Birds and Mammals. By William T. Hornaday, Director of the New York Zoölogical Park. Extracted from the Second Annual Report of the New York Zoölogical Society, pp. 77-126, March 15, 1898.

thologists, whose names appear in the report, give the remarkable figures which influence Mr. Hornaday's estimates.

Game and plume birds are unquestionably on the high road to extermination, and certain species of our small birds are decreasing, but the general destruction in the latter class is probably not nearly so great as Mr. Hornaday's figures imply.

This side of the question is of such especial importance to ornithologists that it seems desirable to emphasize the difficulty of reaching accurate results from such data, — especially as sentiment often unconsciously leads us to make extreme statements.

The estimates on page 95 to which we take exception do not, however, detract from the importance and beneficial effect of this valuable report, and it is earnestly to be hoped that Mr. Hornaday's closing suggestions, both as to birds and mammals, may be seriously considered by our legislators, especially as to the suppression of promiscuous egg collecting and traffic in eggs, birds, and game. — W. S.

**Sketches of Some Common Birds.**<sup>1</sup>—The author has here brought together a series of bird biographies most of which have been published previously in periodicals. They treat at considerable length of fifty-five species and, issued in book form, make a valuable contribution to our knowledge of the life-histories of our more common birds.

They are based on observations apparently all made in central Illinois and evidently extending over a considerable term of years. Mr. Silloway writes with the enthusiasm of a bird-lover and the care of a discriminating bird-student. He presents facts which we do not recall having seen before in print, but to our mind is rather further from the mark than most authors when he writes of birds' notes. Thus he states that the Boblinks of his region are not superior as songsters to the Horned Larks or Dickcissels, the American Bittern's booming cry suggests to him the syllables "boo-hoo," and while his biography of the Least Bittern shows that he has had excellent opportunities to study this interesting species, he seems unfamiliar with its *coo, qua,* and *tut-tut-tut* notes, saying that he has "never heard an individual utter a call or cry of any kind."

The book deserves an index and in supplying it we trust that the author will also give a prefatory note stating where and when his observations were made.

The illustrations are half-tone reproductions of interesting photographs of birds and nests from nature. — F. M. C.

**Oölogical Abnormalities.**<sup>2</sup>—Having devoted much time to securing sets

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<sup>1</sup> Sketches of | Some Common Birds | By | P. M. Silloway | Cincinnati, Ohio | The Editor Publishing Company | No. 327 Pike Building | 1897. 8vo. pp. 331, pll. 17.

<sup>2</sup> Gleanings from Nature, No. 1. Oölogical Abnormalities. By J. Warren Jacobs. Published by the Author, Waynesburg, Pa. 1898. 8vo, pp. 36, half-tone pll. iv.

of birds' eggs exhibiting some abnormalism, Mr. Jacobs presents us with the results of his studies of one hundred and ten sets of eggs varying in whole or part from the normal in size, shape, or color. The four hundred and thirty-three eggs included in the one hundred and ten sets are tabulated in such manner as best to illustrate their departure from the normal, and under the heads of 'Time of Deposition,' 'Age of Females,' and 'Fertility of Contents' the author discusses the probable causes of abnormalism, giving much interesting and suggestive information. The paper is to be welcomed as an effort to raise the standard of contributions to oölogical literature, which too often consist of mere enumeration of sets and tables of measurements.—F. M. C.

Rowley's 'Art of Taxidermy.'<sup>1</sup>—The origin of the art of taxidermy in this country could doubtless be traced to the establishment of Henry A. Ward of Rochester. Having among his customers museums, colleges, and other scientific institutions, which both demanded and could afford to pay for high-class material, the specimens leaving his shops were prepared after the latest and most approved methods. The house of H. A. Ward & Co. consequently became a school for taxidermists and when our museums first added taxidermists to their corps of assistants the positions were often filled with Ward's pupils. Thus W. T. Hornaday at the United States National Museum, and through him the late Jenness Richardson at the American Museum of Natural History, secured posts where, unhampered by commercial considerations, they could give free rein to their ambition as taxidermic artists. With the results of their work as it is displayed in their respective museums, the interested public is fully acquainted. In Hornaday's case there resulted not only series of beautifully mounted animals but a work on taxidermy<sup>2</sup> which adequately represented the development of the subject treated at the time of its publication.

About these two centers of activity in museum taxidermy there was gathered a force of assistants who were given every opportunity for study and experimentation. Among these was Mr. John Rowley who, as one of Richardson's aids at the American Museum of Natural History, developed such marked talent for his chosen calling that on the lamented death of his chief, in 1893, Rowley was called on to fill his position.

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<sup>1</sup>The Art | of Taxidermy | By | John Rowley | Chief of the Department of Taxidermy in the | American Museum of Natural History, New York City; | Member of the New York Zoölogical Society, etc. | [quotation, seal] | Illustrated with twenty full-page plates | and fifty-nine drawings in the text | New York | D. Appleton and Company | 1898. 12 mo. pp. xi + 244, pll. xx, cuts 59. \$2.00.

<sup>2</sup>Taxidermy and Zoölogical Collecting. Scribner's Sons.

Since that time Mr. Rowley, assisted by a trained staff, has added many noteworthy examples of taxidermic art to the museum collections, the most effective of which is the group of moose, doubtless one of the finest pieces of taxidermy in this country.

In its preparation Mr. Rowley visited the region represented, and the bounds of his experience include many such expeditions to the lands of the animal afterward to be mounted in his laboratory. The book he has written reflects the wide scope of his training. It is arranged in eight chapters. The first treats of field-work, the outfit, hunting, trapping, etc; the second, of tools and materials; the third, of casting; the fourth, of birds; the fifth, of mammals; the sixth, of fish, reptiles, and crustaceans; the seventh, of skeletons; the eighth, of the reproduction of foliage for use as accessories in groups; and an appendix gives the names of reliable firms from whom taxidermists' supplies may be purchased.

Mr. Rowley's distinguishing characteristics as a taxidermist are patience and originality. His methods are for the most part his own. Instead of the excelsior, clay-covered mannikin, described by Hornaday, he makes a model of gauze-wire covered with plaster composition, practically as hard and dry as marble. Over it he places, not a pickle-soaked, and often discolored skin, but a tanned hide whose colors have not been subjected to the action of chemicals. Thus shrinking, split-seams, and cracking are things of the past. Photographers should note Mr. Rowley's suggestion to use formalin in hardening gelatin films, while his chapter on artificial foliage describes satisfactorily for the first time the manner in which the accessories of our modern groups are produced. In short, this book fully presents the unequalled advance which has been made in the art of taxidermy during the last decade, and as such it must at once replace all other works relating to the subject.—F. M. C.

**Birds of Los Angeles Co., Calif.**<sup>1</sup>—In his introduction the author states that the "present list, with the accompanying notes, is the result mainly of observations made by members of the Southern Division of the Cooper Ornithological Club, and cover little more than the past six or eight years." He is commendably conservative, entering only those species whose occurrence is beyond doubt, and submitting all difficult questions of identification for expert opinion. The list is therefore authoritative. It includes 300 species and subspecies, all being concisely annotated.—F. M. C.

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<sup>1</sup> Birds of the Pacific Slope of Los Angeles County [Calif.], A List with Brief Notes. By Joseph Grinnell, A. B., Assistant Instructor in Biology, Throop Polytechnic Institute. Publication No. 2, Pasadena Academy of Sciences. 8vo. pp. 52. Press of G. A. Sweedfeger, Pasadena, California. March, 1898.

**Sage's List of Portland, Conn., Birds.**<sup>1</sup>—The interest in the study of birds aroused by the exhibition of the Dr. William Wood collection of Connecticut birds in the rooms of the Hartford Historical Society has induced Mr. Sage, who is in charge of the collection, to print this list of birds as the most practical way of answering the frequently asked question "What birds can we find around our houses?" It is based on thirty years' observation and, as stated in a prefatory note, includes only the "birds seen to alight within the fenced enclosure about my house in the thickly settled portion of the town of Portland, Connecticut." No less than ninety-one species are given, each being briefly annotated as to the time and manner of its occurrence, twenty species having been found to breed. An additional list of ten species seen flying over is given.

The notes here recorded forcibly illustrate the unexpected results which may follow careful observations under apparently very unfavorable conditions, and show that even the restrictions of town-life need not debar one from the pleasures of bird study.—F. M. C.

**Worcester and Bourns's Contributions to Philippine Ornithology.**<sup>2</sup>—This paper consists of (1) 'A List of the Birds known to inhabit the Philippine and Palawan Islands, showing their distribution within the limits of the two Groups,' and (2) 'Notes on the Distribution of Philippine Birds,' the latter by Dr. Worcester alone. The first is a tabular list showing the distribution of the species among the islands. In the second paper the zoölogical affinities of the Palawan group are discussed, the conclusion being reached that their affinities are with Borneo rather than with the Philippines. The Philippines are then considered, each member of the group being passed in review, in respect to our knowledge of its ornithological fauna and its zoölogical affinities. A summary of conclusions is given, consisting of fifteen propositions. It is found that a "close relationship exists between the degree of difference in the avifaunæ of any two groups [of islands] and their present and past geographical relationship, those islands which have been longest and most completely cut off from their neighbors showing the highest degree of differentiation."

Steere's 'law of distribution' that "the genus is represented by but a single species in a place," is discussed at length, with a reëxamination of the facts now available, including many data Dr. Steere did not have. The result is a disagreement with Dr. Steere on a number of minor

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<sup>1</sup> List of Birds found about my house at Portland, Conn. By John H. Sage, published by the Author. Pamphlet, 12mo. pp. 16.

<sup>2</sup> Contributions to Philippine Ornithology. By Dean C. Worcester, A. B., Assistant Professor of Zoölogy, University of Michigan, and Frank S. Bourns, M. D., Ann Arbor, Mich. Proc. U. S. Nat. Mus. Vol. XX, No. 1143, 1898, pp. 549-625.

points. Lack of space forbids a statement of the problems, which, however, are of great interest to students of geographical distribution. The paper is illustrated with a map, and a series of charts showing the distribution of certain genera and species in the Philippines with special reference to 'Steere's Law.'—J. A. A.

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## NOTES AND NEWS.

MR. OSBERT SALVIN, an Honorary Member of the A. O. U., died at his residence, Hawksfold, near Haslemere, England, June 1, 1898, at the age of 63 years. In his death ornithology has sustained a great loss, and the A. O. U. one of its most eminent Honorary Members. A sketch of Mr. Salvin's life and scientific labors will be presented in a later number of this journal.

DR. GEORGE BAUR, an Associate Member of the A. O. U., died at Munich, Germany, June 24, 1898. Dr. Baur was born in Germany, but had lived many years in this country, and at the time of his death was Associate Professor of Comparative Osteology and Palæontology at the



University of Chicago, and was on a visit to his native land for recuperation and study. Dr. Baur is well known for his researches on various groups of recent and fossil reptiles, and in his special lines was an authority of high standing. His ornithological work was mainly incidental to other lines of research. His name, however, will ever be associated with the fauna of the Galapagos Archipelago, not only through his exploration of its reptilian life but of its bird life as well. His extensive ornithological collections made there in 1892, in conjunction with the late Mr. Charles F. Adams, formed the principal basis of Mr. Ridgway's recent 'Birds of the Galapagos Archipelago' to which Dr. Baur has contributed some further information and criticism (see *Auk*, XV, 1898, p. 207). He has also written various papers on the origin of the Galapagos Archipelago and its fauna.

MR. AND MRS. HERBERT H. SMITH, well known as expert natural history collectors through their labors in Brazil, the West Indies, and Mexico, are now in northern Colombia, with several assistants, working under the joint auspices of the Carnegie Museum of Pittsburgh, Pa., and the American Museum of Natural History of New York City. Mr. Smith and his party will give special attention to insects, birds, and mammals, and will probably remain for a long time in the field, visiting other portions of northern South America after completing their work in Colombia.

MESSRS. OUTRAM AND E. A. BANGS have also an experienced collector, Mr. W. W. Brown, Jr., in the Santa Marta region of Colombia, from whom they have recently received considerable consignments of birds and mammals, preliminary notices of which have already begun to appear.

MR. GEORGE K. CHERRIE, well known to readers of 'The Auk,' for his successful work in Costa Rica and San Domingo, has been for some months engaged collecting birds and other specimens for the Hon. Walter Rothschild for the Tring Museum, in the Orinoco districts of Venezuela, where also the brothers Samuel N. and Edward Klages, of Crafton, Pa., have recently established themselves for natural history exploration, partly under the auspices of the American Museum of Natural History. While they will give their attention primarily to insects, a portion of their time will be devoted to birds and mammals.

THE HON. WALTER RÖTHSCHILD has recently announced the successful return of the Frank Blake Webster expedition from the Galapagos Islands, sent out at Mr. Rothschild's suggestion. He states (*Bull. Br. Orn. Club*, No. LIV, p. li) that "the collection is the largest and finest yet made in that group. The collectors stayed one day at Clarion Island and procured 85 birds, among which was a fine series of the new *Sula* [*Sula websteri*] described hereafter. Of the 105 species enumerated by

Ridgway as occurring in the Galapagos Islands, good series of nearly all were obtained. . . . In addition to nearly all the species known to inhabit the Archipelago, examples of several more were obtained, some seven or eight of which are new to science." Six of these are here described, and include a flightless Cormorant (*Phalacrocorax harrisi*), "the largest known Cormorant," with "wings of about the same size as those of the Great Auk."

THE first annual meeting of the Connecticut Audubon Society was held at Fairfield, Conn., June 4, 1898. The president, Mrs. Mabel Osgood Wright, presided, and the meeting was addressed by Messrs. John H. Sage, Frank M. Chapman, and Rev. Mr. Backus of Westport.

Although the youngest of the dozen or more Audubon Societies now existing, the Connecticut organization has already reached a membership of over 300, while its financial condition will permit it to vigorously prosecute the objects for which it was formed. In awakening an interest in birds and extending popular knowledge concerning their value to man, this Society purposes to adopt a plan as yet untried by its sister Societies. Instead of expending its funds in printing and distributing leaflets, it purposes to secure a stereopticon and set of colored slides of birds, which, with lectures suitable for different audiences, will be loaned to teachers and other responsible parties throughout the State at the mere cost of transportation charges.

THE fifth edition of Chapman's 'Handbook of Birds of Eastern North America' has just been issued by its publishers D. Appleton & Co. It is printed from the same plates as the preceding edition except that the table of nesting dates on page 19 has been rewritten on the basis of additional data.

IN THE 'Report of the A. O. U. Committee on Protection of North American Birds,' printed in the January Auk, I failed to mention that the Wisconsin Bird Day law was introduced in and successfully carried through the Legislature of 1897 by Mr. John E. Morgan, member from Sauk County. Although Mr. Morgan informs me that the bill "encountered no opposition worth mentioning," yet he is entitled to the honor and credit of having placed upon the statute books of Wisconsin a most desirable law, one which I again urge upon members of the Union to have passed in all States where such a law does not now exist.—WM. DUTCHER, *N. Y. City.*

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# THE AUK:

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KIRTLAND'S WARBLER (*DENDROICA KIRTLANDI*).

BY FRANK M. CHAPMAN.

*Plate IV.*

THE activity of field ornithologists during the past fifteen years has deprived most North American birds of the distinction of being termed rare. Species which a score of years since were known from only two or three specimens are now represented in collections by large series, continued research showing that their supposed rarity was due to our ignorance of their true range. Particularly is this true of the Warblers, birds whose habits make them especially difficult to observe; but one by one enthusiastic collectors have discovered their habitat, nests and eggs, until of all the North American members of this family, with the exception of several Mexican species just reaching our border, we can now write 'rare; nest and eggs unknown,' only of Kirtland's Warbler.

Forty-six years have passed since Kirtland's Warbler was made known to science. During this time nineteen specimens have been recorded from the United States and fifteen from the Bahamas. In addition to these specimens there exist thirty-three Bahaman specimens collected by C. J. Maynard making, as far as I can ascertain, a total of sixty-seven examples. A study

of the data attached to these birds fixes with considerable certainty the winter distribution of this species and throws some light on its routes of migration and probable breeding range.

Thus during the winter Kirtland's Warbler apparently ranges throughout the Bahamas, having been found from Caicos to Abaco, though it has not as yet been recorded from Inagua. Its northward migration begins in April, South Carolina being reached toward the end of the month, either by direct flight from the Bahamas, or, what is more probable, by advancing northward along the Southeast Atlantic Coast (St. Helena, April 29, Worthington).

This is the most northern, spring cis-Alleghanian record, the migratory route of the species now leading it northwestward into the Mississippi Valley.

It is reported from Missouri, May 8 (St. Louis, Widmann); from Illinois, May 7 (Glen Ellyn, Gault); from Indiana, May 4 and 7 (Wabash, Wallace); from Ohio, May 12 and 13 (Cleveland, Pease and Chubb; four other Ohio specimens without exact date); from Minnesota, May 13 (Minneapolis, Guilford), and from Michigan, May 11 (Battle Creek, Green), May 15, 16 (Ann Arbor, Covert; also one specimen about May 1, Knapp), and May 21 (Mackinac, Marshall). This last is not only the latest spring record but also the most northern record we have of the species. The specimen on which it is based was killed by striking the lighthouse situated at the Straits of Mackinac and, as I have before suggested, was doubtless *en route* to a more northern breeding ground in the Hudson Bay region.

In the fall we have only two records for Kirtland's Warbler (Ft. Myer, Va., Sept. 25, Palmer, and Chester, So. Car., Oct. 11, Loomis), suggesting that the species returns to its winter quarters over much the same route it selects for its northwestward journey in spring.

Few of the ornithologists who have been so fortunate as to secure specimens of this rare Warbler have given us any account of its habits. Mr. Cory, however, states of a specimen he secured on Andros Island: "Its actions much resembled those of *D. coronata*, and it seemed to prefer thick brush." Mr. Widmann compares it to *D. palmarum* and says that it has the

wagging motion of the tail, so characteristic of that species, that it appears to be terrestrial, and in the carriage of its body and manner of evading discovery by skilfully alighting behind a protecting object, it resembles *Geothlypis agilis*. Messrs. Smith and Palmer also mention the bird's habit of tail-wagging. Mr. W. O. Wallace states that the specimen secured at Wabash, Ind., May 4, was an active flycatcher, while the song of a second specimen consisted of "a loud, ringing note, repeated three times in quick succession. . . . It is loud and rather musical."

In addition to these records of collectors of the species we have several others by ornithologists who have observed but not secured it. Mr. Walter Hoxie states<sup>1</sup> that on St. Helena Island, South Carolina, May 3, when without his gun, he saw three Kirtland's Warblers, and gives his observations on their song and actions, as follows: "They were quite familiar, allowing me to approach cautiously within less than a rod. . . . The notes are of two distinct characters. The first, a song, was uttered with the head held forward and body quite erect. It bore a striking resemblance to the song of the Yellow-throated Warbler. The second was a loud chipping, uttered while moving about among the bushes, and was kept up for a space of one or two minutes at a time. Resting a few seconds the bird would begin again, creeping about the branches and 'swapping ends' with a quick jerking movement all the time. Arriving near the top of the bush or the end of the branch he would settle himself and sing two or three times before fluttering to the next bush. All these specimens were in low bushes and seemed to prefer them to trees. . . . neither did I see any of them alight on the ground."

Mr. L. S. Keyser, who observed a specimen of Kirtland's Warbler "one day in early spring" (locality not stated, but presumably in Ohio), describes its song as "a blithe, liquid melody," the tones being "full, clear and bubbling." (Bird-Dom, p. 63).

These brief notes constitute our sole knowledge of the habits of this species, whose nest and eggs, owing to its rarity and the remoteness of its probable breeding range, will doubtless long remain unknown.

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<sup>1</sup>Auk, III, 1886, 412.

## LIST OF RECORDED CAPTURES OF KIRTLAND'S WARBLER.

1852. BAIRD S. F. *Ann. Lyc. Nat. Hist. N. Y.* V, 1852, 216, pl. vi.—Male, collected by Charles Pease, May 13, 1851, near Cleveland, Ohio.  
Original description, wherein Prof. Baird dedicated the bird to J. P. Kirtland of Cleveland, not because he collected it, as has been uniformly but incorrectly stated, but because to him "we are indebted for a knowledge of the Natural History of the Mississippi Valley."
1860. KIRKPATRICK, J. [?]. *Ohio Farmer*, IX, 1860, 179.—Collected by—Darby, May (?), 1860, Cleveland, Ohio. A specimen is also said to have been shot by Wm. Case but to have been too badly injured to be preserved. (See Wheaton, *Birds of Ohio*, 264).
1865. BAIRD, S. F. *Rev. N. A. Birds*, 206.—Collected by S. Cabot, Jr., at sea, near Abaco, Bahamas.  
This specimen was doubtless in existence ten years before the discovery of the type, having probably been secured by Cabot on his voyage to Yucatan about 1840.
1877. LANGDON, F. W. *Cat. Birds Vicinity Cincinnati, O.* (Salem, Mass.) 6.—Male, collected by C. Dury, May 1872, Avondale, O.
1879. WHEATON, J. M. *Bull. Nutt. Orn. Club*, IV, 1879, 58.—Two specimens collected at Rockport, Cuyahoga Co., O., "during past season," by W. and J. Hall.
1879. CORY, C. B. *Bull. Nutt. Orn. Club*, IX, 1879, 118.—Female collected on Andros Island, Bahamas, Jan. 9 (1879?).
1879. PURDIE, H. A. *Bull. Nutt. Orn. Club*, IV, 1879, 185.—Two females collected by A. B. Covert, Ann Arbor, Michigan, May 15, 1875, and May 16, 1879, respectively.
1880. LANGDON, F. W. *Fourn. Cin. Soc. Nat. Hist.* 1880, 123.—Female, collected by H. E. Chubb, Cleveland, Ohio, May 12, 1880.
1884. RIDGWAY, R. *Auk*, I, 1884, 389.—Male, collected by N. Y. Green, Battle Creek, Michigan, May 11, 1883.
1885. MERRIAM, C. H. *Auk*, II, 1885, 376.—Male, collected by Wm. Marshall, Straits of Mackinac, Michigan, May 21, 1885.  
This is the most northern record for the species. The bird was killed by striking the lighthouse on Spectacle Reef, and was doubtless therefore *en route* to a more northern locality.
1885. WIDMANN, O. *Auk*, II, 1885, 382.—Male, collected at St. Louis, Missouri, May 8, 1885.
1886. HOXIE, W. *Auk*, III, 1886, 412.—Male, collected by W. W. Worthington, St. Helena, South Carolina, April 27. Also mentions 3 individuals observed by himself, May 3, but not secured.

1888. SMITH, H. M., and PALMER, W. *Auk*, V, 1888, 148.—Collected by Wm. Palmer at Ft. Myer, Virginia, September 25, 1887, where a second example was seen but not secured one week later.
1888. JENNINGS, A. H. *Johns Hopkins University Circular*, Vol. VII, No. 63.—Male, collected at New Providence, Bahamas, April 18, 1887.
1889. LOOMIS, L. M., *Auk*, VI, 1889, 74.—Collected at Chester, South Carolina, Oct. 11, 1888.
1889. WASHBURN, F. L. *Auk*, VI, 1889, 279.—Female, collected by — Knapp, at Ann Arbor, Michigan, about May 1, 1888.
1891. CORY, C. B. *Auk*, VIII, 1891, 295, 297, 298.—Three specimens, collected on Berry Islands, Bahamas, April, 1891; two specimens collected by C. L. Winch in January or February on Caicos Island, Bahamas; also recorded as collected by C. L. Winch on Abaco, Bahamas, in March.
1891. RIDGWAY, R. *Auk*, VIII, 1891, 337, 338. Four specimens, collected by naturalists of the Fish Commission S. S. 'Albatross,' on Watling's Island, Bahamas, March 4-9, and two by same collectors on Green Cay, Bahamas, April 12.
1893. GUILFORD, H. M. *Auk*, X, 1893, 86.—Male, collected at Minneapolis, Minnesota, May 13, 1892.
1894. GAULT, B. T. *Auk*, XI, 1894, 258.—Male, collected at Glen Ellyn, Illinois, May 7, 1894.
1897. BUTLER, A. W. *Birds of Indiana, Report of State Geologist*, 1897, 1070.—Two specimens, collected by W. O. Wallace at Wabash, Indiana, May 4, 1892 and May 7, 1895, respectively.

In addition to the 18 or more<sup>1</sup> specimens herein recorded from the Bahamas, I have received a list of 33 specimens of this species collected in these islands by Mr. C. J. Maynard, which I append: Nassau, N. P., 1884, Feb. 1, one; 12, two; 13, two; 20, one; 27, two; March 1, one; 11, one; 13, one; 15, two; 17, two; 22, two; 24, one; 26, three; 29, one; 1893, March 25, one; April 2, one; 1897, March, one; 4, one; April 5, one; 6, two.

Eleuthera Island, April 20, two; 22, one.

Athels Island, May 5, one.

NOTE.—Since this paper was put in type we have received from Mr. C. B. Cory a note recording the occurrence of Kirtland's Warbler at West Jupiter, Florida, in April, 1897, one example being seen on the 19th and one captured on the 27th of that month. See 'General Notes,' this issue of 'The Auk.'

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<sup>1</sup> One record indefinite.

## CANON XL, A. O. U. CODE.

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

THE CODE formulated by its Committee, and adopted by the American Ornithologists' Union has deservedly received the general approval of naturalists, not only of those devoted to the particular science for which it was prepared, but also of those whose attention has been directed to other lines of zoölogical research. And while all zoölogists may without reserve and with great profit to themselves cheerfully adopt and assist in maintaining the general doctrine and special precepts embodied in the Code, yet unhappily we find, like all human productions, it has its element of weakness which, in the opinion of a considerable number of naturalists, seriously impairs the general effectiveness of its armor of proof. Amid so much that is excellent and conceived in judicial equity upon the broadest and fairest foundations, it is somewhat amazing to find that in one of its most important articles a premium is offered as a reward to ignorance, carelessness, and a general lack of ability to perceive that which alone is proper and right. To spell correctly is the first qualification of any one claiming to have received an education, and one who is unable to do this should not be encouraged to commit errors by the assurance of a committee of a scientific society that his faults should be made perpetual, and that all the efforts of those competent to correct his blunders should be resisted to the utmost by the fulmination of this extraordinary Canon XL of an otherwise excellent codification of rules. The writer imputes to those responsible for this Canon, only the best and purest motives, an honest effort to establish a fixity of nomenclature, and if in the course of this paper his remarks may appear almost too earnest in his criticism of a proposition which he regards as a huge mistake and one apt to create more instability in scientific nomenclature than any injury the abuse !!! of all the purists and classicists in the world could effect, yet he believes at the time this article was formed the majority of the committee considered they were acting in the true



line of advancement and scientific progress. This acknowledgment, however, only emphasizes the fact that even good men can go very widely astray.

Let us look at this Canon XL and see what are the reasons adduced why errors should be permanent and all efforts to correct them and in many cases cause terms that are simply gibberish to assume shapes possessed of intelligent meanings, be frustrated. The great and only evil feared is "the abuse on the part of the purists and classicists who look with disfavor upon anything nomenclatural which is in the least degree unclassical in form" and therefore, it continues, as may be naturally inferred from the rule that follows, let us place the results of ignorance and carelessness beyond the reach of such learned marplots, so that no blunders may ever again be corrected, and in this way we will achieve an eternal stability in our nomenclature! And so, if when the genus *Somateria* was first proposed, some printer's devil with a catarrhal affliction had caused it to appear as 'Sobaberia,' under the dictum of this enlightened and highly classical Canon that extraordinary combination must remain forever as the author's idea of expressing a downy or woolly body! Of course refuge might be taken in the provision afforded in Canon XL that typographical errors had been committed and therefore the spelling might be corrected; but this opens a very wide door for the exercise of individual opinion, and unless an author's original MS. was accessible, proof for or against this fact could not be produced. And in reference to this point so little has the Committee believed in the fact that typographical errors exist, that the writer is able to recall very few instances where on this account any word has been corrected by it. No doubt every one who has any knowledge of the matter, whether or not he belongs to the reprehensible and excommunicated bodies of purists and classicists, is convinced that *σωμα* and *ἔριον* never could properly compose 'sobaberia' neither could *πεδιον* and *οικέτης* be correctly compounded into *Pediocætes*, two blunders in one word; yet the latter is solemnly adjudged by this wise and strictly educational Article to be the only proper way of spelling the generic term for the Sharp-tailed Grouse!

Is not this terror of the amount of damage these dreadful pur-

ists and classicists may commit, who in the timid minds of the majority of this Committee, as originally composed, are rightly enough ever ready to overthrow nonsense words, and bring to the fold in their proper shapes, ungrammatical terms, rather strained and manufactured for the occasion? Is there such a preponderance of ill-spelled words, and ill-formed compounds in ornithological nomenclature as would overthrow it if corrected? Is it such a dreadful misfortune to be put right when one has gone astray? And would chaos and confusion arise if occasionally a 'purist' or a 'classicist' should have the temerity to point out to an erring brother the faults that he in his happy unconsciousness of evil had committed? Did the authors of this article stop to consider what effect it would have upon those same purists and classicists? Did they for a moment suppose that these malevolent creatures, imbued, as the gentlemen of this Committee rightly supposed, with a settled antagonism to wrongdoing wherever it might exist, would meekly surrender their opinions and renounce their conviction that right is right and error is error wherever found, and become advocates of the holiness of blunders at the command or teachings of this article? And if they did not do this, where is the stability of nomenclature so much desired? For the writer is happy to think there are more 'purists and classicists,' that is to say, educated men, to-day devoted to scientific ornithology, than there are of that class, who, in good faith but in all ignorance, commit the blunders that so sorely need correcting.

For only one cause may an error be made right under the Canon introducing this rule, viz. :—when "a typographical error is evident." Who is to determine this? Must all such apparent faults be submitted to this committee for their decision as to whether the error is a typographical one or an author's misspelling? And suppose one has the audacity to form his own opinion from as good evidence as that at the disposal of the Committee, who is likely to be right if they disagree, and what is to be done with the obdurate (of course not with the Committee, Oh, no!) if he persists in his wilful way? It is amazing in these days of public schools and general knowledge that a committee of a scientific society should solemnly announce as it does in this Canon that "correctness of structure or philological propriety be

held as of minor importance and yield place to the two cardinal principles of priority and fixity," or in other words that the ability to spell properly or to write grammatically is of no consequence beside a Utopian effort to maintain a stability that is not stable and never can be under the teachings this article would inculcate. The writer understands perfectly well that Canon XL, as well as all the others in the Code, is not mandatory, the Committee would not for a moment consider them as presented to ornithologists in that spirit, but offered for their consideration as the best it was able to do in its judgment under the circumstance. All philological emendations are rejected, especial stress being placed on the change of the initial letter of a name, as when the Greek aspirate has been omitted, so that if it was English the Cockney pronunciation of 'Energy' instead of Henry would be preferred if it only was first printed. And here perhaps it may be well to say something about the law of propriety in reference to this subject. It is very difficult to see in what way it could possibly be affected. The misspelt word or ungrammatical phrase when corrected would still be accredited to the original author. It is yet his child, even if its clothes do fit it better and give it a more respectable appearance, and no one else is likely to pose as its father, even if he had a hand in tidying it up a bit.

Now let us come to the conclusion of the whole matter: This rule has been in *print*, it cannot be said in *force*, for nearly fifteen years. Has it accomplished the result contemplated or desired? Is nomenclature by its assertions a greater fixity to-day than when this rule was promulgated? Do those who know better accept bad spelling and employ ungrammatical phrases, because it advises them so to do? We know they do not. Has it made any converts among educated men, or has it been of any assistance to those not educated save to encourage them to continue in the valley and shadow of ignorance? The doctrine it teaches is unworthy this age and the source from which it had its being. It has utterly failed to accomplish its purpose, and should be dropped from the Code. It is satisfactory to know that one at least of the Committee that assisted at the advent of its unlovely offspring, born out of due season, did not at the time, although an accomplished accoucheur, regard with favor this result of combined

efforts, and Dr. Coues of late both with tongue and pen has expressed his disapproval of this article and advocated its suppression. Let it therefore be eliminated from the Code. Let us instead of listening to its baneful teachings, advocate the beauties of grammatical construction, and the propriety of correct spelling and we will do more towards the stability of ornithological nomenclature than any number of Canons XL, which teach the rightfulness of wrongdoing. The writer has always repudiated this Canon. He will always spell as well as he knows how, and will be as grammatical in his writings as he is able and will always reject misshaped compounds and ill-spelt words, and when he errs and blunders he is thankful to the kind friend who sets him right upon his way, and he would strongly advise all young ornithologists, beginning the study of the most attractive of earth's creatures, to reject entirely this Canon XL and its advocacy of illiteracy, and when uncertain of any portion of their writings consult some one who can aid them, but in all cases, adopt only that which is grammatically, typographically and philologically correct.

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## A DEFENSE OF CANON XL OF THE A. O. U. CODE.

BY J. A. ALLEN.

IN THE foregoing article Mr. Elliot has, let us say unwittingly, given a very unfair representation of the purpose and results of Canon XL of the A. O. U. Code of Nomenclature. The members of the A. O. U. Committee who formulated Canon XL, instead of deliberately offering "a reward to ignorance, carelessness, and a general lack of ability to perceive that which alone is proper and right," are probably as much shocked by misspelled or wrongly constructed names in scientific nomenclature as is Mr. Elliot, and did not adopt Canon XL without careful deliberation and consideration as to which of two grave evils is the lesser,—

namely, the emendation of thousands of names, some of them so radically that they retain little resemblance to their original forms, or the retention of a few gross and shocking verbal malformations against which their literary instincts must ever revolt.

In the formation of the A. O. U. Code stability in nomenclature was the primary end sought, which is the avowed purpose of all modern codes of nomenclature; and the authors of this code find themselves in most excellent company in the stand taken on the subject of emendation of names. They include a long list of authors who are eminent as scholars as well as naturalists, and "who know how to spell" in quite as many languages as Mr. Elliot and his few sympathizers in the matter of this "extraordinary" Canon XL. To charge the A. O. U. Committee with placing a premium on illiteracy through the adoption of Canon XL, as Mr. Elliot and Dr. Coues have done, is almost too absurd for serious consideration, as the article itself and the discussion and remarks thereunder abundantly show, to say nothing of the eight pages or more of the Code (pp. 58-66) devoted to 'Recommendations for Zoölogical Nomenclature in the Future,' treating especially of the selection and construction of names. Under Canon XL it is said: "The permanence of a name is of far more importance than its signification or structure, as is freely admitted by the best authorities in both Botany and Zoölogy. Your Committee therefore restrict the emendation of names to the correction of obvious or known typographical errors . . . They would therefore reject emendations of a purely philological character, and especially all such as involve a change of the initial letter of the name, as in cases where the Greek aspirate has been omitted by the original constructor. It therefore follows that hybrid names [anagrams, 'nonsense names,' and barbarous or 'exotic' names] cannot be displaced; although it is to be hoped that they will be strenuously guarded against in future; and that, in general, word-coiners will pay the closest attention to philological proprieties."

Nearly all modern codes of nomenclature agree that "A name is only a name and need have no necessary significance." In other words, while anagrams, hybrid names, nonsense names (many such have been purposely constructed), and barbarous

or indigenous names should be avoided in future, those already in existence are not to be either rejected or emended, but treated as simply "arbitrary combinations of letters."

On the other hand, extremists of the school Mr. Elliot represents will tolerate only words of classical origin, or at least of Latin form, and of correct philological construction. One might infer from Mr. Elliot's remarks that this correct philological form was a very simple matter to attain; that there was but one allowable rule for transliteration from other languages into Latin; that all scholars who "know how to spell" are agreed on the proper methods of compounding names under all circumstances; that philological authorities were never at loggerheads as to the correct construction of names of doubtful etymology (of which there are many); and that emended and re-emended emendations were never heard of. Simple indeed, were all this true, would be this troublesome matter of "knowing how to spell" in a manner to please everybody.

Between the rejection of names on account of their non-classical origin, the emendation of classical terms improperly constructed, even to their complete transformation to practically new words, and the thousand and one slighter changes that do not to any material extent alter the original word, there is no point at which a line can be drawn—the whole field is thrown open to individual predilection, with no arbiter to decide between conflicting authorities, and no prospect of agreement in tastes or preferences, where more constructions than one chance to be allowable. Mr. Elliot may prefer one 'spelling,' Dr. Coues another. The result would be endless emendation and constant instability, each 'good speller' following his own preferences as to whether or not a name is too bad to be tolerated, or whether it may not be accepted after the proper amount of "tidying up." In many cases it is purely a matter of choice, as custom goes, whether a certain word from the Greek shall be spelled with a *c* or a *k*, an *i* or a *y*, an *i* or a *j*, etc.; while the etymology of many terms of questionable meaning and construction is a matter of pure guesswork.

The extent of the breach advocated by Mr. Elliot is probably far greater than he supposes. Mr. Waterhouse's 'Index Generum Avium,' published in 1889, gives a list of about 7000 names

employed as generic or subgeneric terms for birds between this date and 1766. A careful examination of the first 60 pages of the work (about one fourth) shows that about one eighth of the names there entered are merely variants or emendations of other names, while very many other variants have here escaped record. It also appears that some names have received as many as three or four renderings at the hands of as many expert 'spellers'; that in some cases the same author has spelled names of his own coining in two and sometimes in three different ways; in one instance, at least, using the masculine, in another the feminine, and in still another the neuter form of the word; that German and French writers have apparently certain national preferences in respect to the transliteration of Greek into Latin; that some prefer the full or expanded form in compounding names and others an abridged form, for the sake of brevity. Thus we have *Anthreptes*, *Anthorheptes*, *Anthothreptus*, and *Anthothreptes*; *Anodorhynchus* and *Anodontorhynchus*; *Baryphonus* and *Barryphonus*; *Bessornis* and *Bessonornis*; *Bradornis* and *Bradyornis*; *Calornis* and *Calliornis*; *Calurus* and *Calliurus*; *Caliptorhynchus* and *Caliptorrhynchus*; *Calopsitta* and *Callipsittacus*; *Cephalepis* and *Cephallepis*; *Cephus* and *Cepphus*; *Chroicocephalus*, *Chræcocephalus*, and *Croocephalus*, etc. But space cannot be given, nor is it necessary, for the further illustration of this and other cases where custom varies in respect to connective vowels, the doubling of consonants, as *l* and *r*, or the interchange of *ai*, *æ*, and *ω*, of *i*, *y*, and *j*, or of *c* and *k*, or the retention or the omission of the Greek aspirate, etc.

Aside from these simple classes of variants, affecting probably at least an eighth of all the generic and specific names in zoölogy, the 'purist,' like certain German and some other authors that could be named, totally rejects not only hybrid names and names consisting of arbitrary combinations of letters, but all names based on indigenous appellations, as the native names of animals. To show what changes this implies, it may be stated that in the Psittaci alone the names of not less than 15 genera and subgenera out of a total of 72, were rejected not long since by a single author on the ground of faulty construction or barbarous origin, in several cases new names being given in place of the

name rejected, and in other cases the earliest synonym that chanced to meet the author's approval was taken.

It was to avoid this uncertainty and instability that Canon XL was devised, which in reality is only the enforcement of the law of priority, literally as well as in spirit, to its finality, applying it to the *form* of the name as well as to the name itself. There can be no safe line of limitation in the case of emendation, where there are so many who pose as good spellers and yet so often spell the same name differently. In the only exception made—that of “obvious or known typographical errors”—the critics of Canon XL profess to see a great absurdity, although its meaning is sufficiently defined. By ‘obvious’ is of course meant the evident transposition of letters, or their inversion, overlooked in proof-reading; by ‘known’ cases where the error, clerical or typographical, has been corrected by the author himself, either later in the same publication, as in the index or by means of an errata slip, or elsewhere. The exception thus does not open “a very wide door for the exercise of individual opinion,” nor are the known cases of such errors so rare as Mr. Elliot seems to suppose.

Mr. Elliot asks regarding Canon XL: “Has it accomplished the result contemplated or desired? Is nomenclature by its assertions a greater fixity to-day than when this rule was promulgated? Do those who know better accept bad spelling and employ ungrammatical phrases, because it advises them so to do? . . . Has it made any converts among educated men?” etc. In answer it may be said that it has not accomplished all that was desired, but far more in the line of its realization than its most sanguine advocates dared hope. It has practically thus far rendered fixed and permanent the nomenclature of North American ornithology, in North America at least, in so far as the emendation or rejection of names upon purely philological grounds is concerned. It has among its supporters and advocates so nearly all of the leading authorities in vertebrate zoölogy in this country (they must include *some* “educated men”) that the few who reject this rule, like Mr. Elliot and Dr. Coues, are conspicuous by reason of their exceptional position. Not only this, but converts have been made in this country in other departments



of zoölogy, and its adherents include some eminent, and even "educated" naturalists abroad. Neither is it evident that its "baneful teachings" and "advocacy of illiteracy" have had, to any perceptible degree, any demoralizing influence upon the rising generation of naturalists, or perceptibly deteriorated the quality of their spelling when it has fallen to their lot to coin new names for the designation of newly discovered genera and species.

Because the acceptance of Canon XL is not universal among naturalists is no reason for its elimination from the Code; the progress it has made and the good that has already resulted from it is rather something for which we should be grateful. It is of course not compulsory, as no such rule can be arbitrarily enforced; nor can Mr. Elliot ever expect that any rule for even such a simple matter as the transliteration of Greek and other names into Latin, to say nothing of the construction of names according to undeviating methods, will ever be in universal use. It is even "Utopian" to expect all good spellers to spell alike. Therefore we may well rest content to tolerate in our Check-List a few malformations like *Leptotila* and *Pediocates*, and even such an inept name as *cafer* for an American bird, than to open wide the door to the vacillating sway of the horrified emender.

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## DESCRIPTION OF A NEW NORTH AMERICAN THRUSH.

BY HARRY C. OBERHOLSER.

THE OLIVE-BACKED THRUSHES inhabiting the Rocky Mountain region of the United States prove to be subspecifically separable from the eastern race, to which they have heretofore been referred. The name *swainsonii* has undoubted application to the form from eastern North America, since Cabanis states<sup>1</sup> the habitat of the

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<sup>1</sup> Tschudi's Fauna Péruana, 1845-6, 190.

bird named by him to be northeastern North America, casually Peru, and furthermore evidently describes a specimen taken by himself during October, in New Jersey, which place may consequently be taken as the type locality. The *Turdus minimus* of Lafresnaye,<sup>1</sup> if belonging here at all, probably refers to the eastern race, though its status cannot be determined with certainty. Swainson and Richardson's description of their *Merula wilsonii*<sup>2</sup> probably belongs also to the eastern form, though even were such not the case the name would still be unavailable, being merely a misidentification of their bird with the *Turdus wilsonii* of Bonaparte (= *fuscescens* of Stephens). All other synonyms apply unequivocally to the eastern race, and the bird from the Rocky Mountain region being thus without a name, may be called

***Hylocichla*<sup>3</sup> *ustulata almæ*, subsp. nov. ALMA'S THRUSH.**

CHARS. SUBSP.—*Hylocichla H. u. swainsonii persimilis, sed nota eo hypochondriisque canescentioribus.*

*Geographic Distribution.*—Rocky Mountain region of the United States, west to Utah and eastern Nevada; in winter south to Mexico, and east, sporadically, to Indiana.

*Description.*—*Type*, male adult, No. 159053, U. S. National Museum, Biological Survey Collection; East Humboldt Mts., opposite Franklin Lake, Nevada, June 24, 1898; H. C. Oberholser. Upper parts hair brown, with a slight tinge of greenish; just a shade darker and browner on forehead and crown; tail fuscous, the central feathers and external webs of all the rest identical in color with the back; wings fuscous, the lesser and median coverts, with outer edgings of all the other feathers, like the upper surface of the body; basal portion of inner webs of secondaries and innermost primaries buffy. Lores, eye-ring, cheeks, jugulum and sides of neck buff, the lores, cheeks and auriculars much mixed with brownish, the jugulum, sides of neck, and sides of throat with more or less triangular spots of dark brown; a dark brown sub-malar streak; chin and middle of throat buffy white, almost immaculate; remainder of lower parts white, the sides and flanks brownish gray, the breast spotted with same color; under wing-coverts fuscous, edged with buff. Wing, 96 mm.; tail, 74 mm.; exposed culmen, 11.5 mm.; tarsus, 28 mm.

<sup>1</sup> Rev. Zool., XI, 1848, 5.

<sup>2</sup> Fauna Boreali-Americana, II, 1831, 182.

<sup>3</sup> *Hylocichla* seems to be a perfectly good genus. The long tarsi, and broader, more depressed bill distinguish it sufficiently from *Turdus*, which thus becomes restricted to the Old World.

*Young in first plumage, sex unknown, No. 136318, U. S. Nat. Mus., Biological Survey Collection; Thompson Falls, Montana, Aug. 1, 1895; V. Bailey. Above greenish olive, most of the feathers, except on the lower back and rump, with shaft markings of buffy, these smallest on the head; upper tail-coverts broadly tipped with ochraceous; tail and wings fuscous, with edgings of greenish olive, the median coverts with shaft spots of buffy; sides of head buffy mixed with brownish; throat and jugulum pale buff, heavily marked with blackish; rest of lower surface dull white, with transverse markings of dark brown, these larger and darker anteriorly, the sides and flanks washed with brownish.*

The present race differs from the eastern *Hylocichla ustulata swainsonii* in the more grayish, less olivaceous color of the upper surface, this being usually most noticeable on the rump and upper tail-coverts. The sides and flanks also average more grayish. No apparent difference in size exists. No comparison with *H. ustulata* proper is necessary, for *Hylocichla u. almæ*, although geographically intermediate, is even less closely allied to *ustulata* than is *swainsonii*.

Olive-backed Thrushes from western British America and the interior of Alaska, while not perfectly typical, are nearer *swainsonii* than to *almæ*. Montana, Colorado and Texas have both forms during migration, as the specimens at hand attest. Two examples collected by Mr. E. W. Nelson on the Tres Marias Islands, western Mexico, are typical *almæ*; but this form has not been traced farther south than the Isthmus of Tehuantepec, unless an intermediate specimen from Costa Rica be considered sufficient evidence. Two birds from Vincennes, Indiana, with one other from Wheatland, in the same State, apparently must be referred to *almæ*, for they are absolutely indistinguishable from western examples.

Young birds of *H. u. almæ* appear to be usually more greenish olive than those of *swainsonii*, though this is not diagnostic.

Alma's Thrush is a common bird in eastern Nevada, where it inhabits the growth of trees and bushes that fringes the mountain streams. In the Monitor and East Humboldt Mountains, it is apparently the most numerous species of the family.

The following list of localities from which specimens have been examined will give a fair idea of its range, breeding birds being indicated by an asterisk :

Montana.— Flathead Lake \* ; Mystic Lake \* ; Dry Creek \* ; Thompson Falls \* ; Fort Custer.

Colorado.— Clear Creek \* ; Twin Lakes \* ; Denver ; Colorado Springs.

South Dakota.— Hill City.

Wyoming.— Fort Laramie ; Fort Bridger.\*

Utah.— Parley's Park.\*

Nevada.— Mountain City \* ; East Humboldt Mts.\*

Texas.— San Antonio.

Indiana.— Vincennes ; Wheatland.

Mexico.— Maria Madre, Tres Marias Islands ; Japana, Oaxaca.

The writer is indebted to Dr. C. Hart Merriam for use of the collection of the Biological Survey, and to Mr. Robert Ridgway for access to National Museum material.

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## THE SUMMER BIRDS OF SAN MIGUEL COUNTY, NEW MEXICO.

BY WALTON I. MITCHELL.

THE territory covered by this article includes the cities of Las Vegas and East Las Vegas and numerous trips all over the county, in the mountains, far from civilization. The altitude of the country varies from 6,000 to 12,000 feet, and the climatology in the summer months is very similar to that of the Pacific Coast region, the days being warm but not close, the nights cool. The rainy season begins the first of June, lasting through July into August, the rain coming about eleven A. M. and clearing up about one P. M., the remainder of the day being clear and bright, as a rule. The county is watered by the Gallinos and Pecos Rivers and numerous other small streams, none large enough to be called 'creeks' in the East.

The vegetation consists mostly of pine and spruce and scrub oak, also greasewood, cactus, and quaking aspens and cottonwoods in a few localities. Migration is completed by the 15th of May, most summer residents arriving between April 10 and May 1.

I append short notes on species observed from January to the last week in June, 1898.

1. *Colymbus nigricollis californicus*. AMERICAN EARED GREBE.—Rare. One pair breeding on a small alkali lake at an altitude of 7,000 feet. The only pair observed, but I am informed they are occasionally met with throughout the county.

2. *Anas carolinensis*. GREEN-WINGED TEAL.—Tolerably common. Breeds through the eastern part of the county. Common during migration, as is also the Blue-wing, which does not remain to breed.

3. *Plegadis guarauna*. WHITE-FACED GLOSSY IBIS.—Not uncommon on the small lakes in the southern part of the county. More common in the southern part of the territory, but only met with in certain localities in this county.

4. *Botaurus lentiginosus*. AMERICAN BITTERN.—Rare. One specimen, killed on June 7 near Las Vegas, is the only one noted.

5. *Recurvirostra americana*. AMERICAN AVOCET.—Summer resident; common. Breeds commonly up to 8,500 feet. Arrives by the first of April.

6. *Himantopus mexicanus*. BLACK-NECKED STILT.—Tolerably common. Often met with breeding in company with the Avocets. Arrived about the middle of April.

7. *Totanus solitarius*. SOLITARY SANDPIPER.—Fairly common. Breeds up to 8,000 feet.

8. *Actitis macularia*. SPOTTED SANDPIPER.—Common. Breeds throughout the country around small ponds. Arrives by May 1.

9. *Ægialitis vocifera*. KILLDEER.—Common. Breeds in May up to 11,000 feet. Arrives in March.

10. *Ægialitis montana*. MOUNTAIN PLOVER.—Not common. Breeds in the eastern part of the county up to 8,000 feet.

11. *Callipepla gambeli*. GAMBEL'S PARTRIDGE.—Abundant throughout the county. Resident.

12. *Dendragopus obscurus*. DUSKY GROUSE.—Common. A nest was taken with nine fresh eggs on May 16 on the top of Hermit Peak, 10,000 feet altitude.

13. *Meleagris gallopavo mexicana*. MEXICAN TURKEY.—Common in the mountains from 8,000 feet to timber line. Breeds early in April.

14. *Zenaidura macroura*. MOURNING DOVE.—Abundant up to 11,000 feet. Arrives in March; breeds from April until July.

15. *Cathartes aura*. TURKEY VULTURE.—Not common. Occurs up to 12,000 feet. Nests in April.

16. *Circus hudsonius*. MARSH HAWK.—Not uncommon in the lower portion of the eastern part of the county. Breeds up to 8,000 feet.

17. *Accipiter cooperi*. COOPER'S HAWK.—Common. Breeds up to 10,000 feet.

18. *Accipiter atricapillus striatulus*. WESTERN GOSHAWK.—One male shot January 9, and a female, doubtless the mate, in the same spot on March 7.

19. *Buteo borealis calurus*. WESTERN RED-TAIL.—Fairly common. Breeds up to timber line, early in April.

20. *Buteo swainsonii*. SWAINSON'S HAWK.—Common. Breeds up to 10,000 feet.

21. *Aquila chrysaetos*. GOLDEN EAGLE.—Common; breeds up to timber line. Nesting begins early in March, usually in caves very difficult of access.

22. *Falco mexicanus*. PRAIRIE FALCON.—Fairly common in the eastern part of the county. Breeds up to 9,000 feet. Nests in May.

23. *Falco sparverius*. AMERICAN SPARROW HAWK.—Abundant. Breeds to 10,000 feet. Nests early in April.

24. *Asio wilsonianus*. AMERICAN LONG-EARED OWL.—Rare. Have met with but three or four pairs. Breeds up to 10,000 feet, during April.

25. *Syrnium occidentale*. SPOTTED OWL.—Rare. Have seen but two individuals—last December, about twenty miles from Las Vegas, in the pine district at an altitude of 9,500 feet.

26. *Megascops asio trichopsis*. MEXICAN SCREECH OWL.—Common. Breeds up to timber line, early in April.

27. *Speotyto cunicularia hypogæa*. BURROWING OWL.—Abundant locally. Breeds up to 8,000 feet during May and June.

28. *Ceryle alcyon*. BELTED KINGFISHER.—Fairly common. Breeds up to 9,000 feet. Feeds on young mountain trout.

29. *Dryobates villosus harrisii*. HARRIS'S WOODPECKER.—Abundant in the pines up to timber line. Breeds early in May.

30. *Sphyrapicus varius nuchalis*. RED-NAPE SAPSUCKER.—Common but not nearly as numerous as the next. Breeds from 9,000 to 12,000 feet.

31. *Sphyrapicus thyroideus*. WILLIAMSON'S SAPSUCKER.—Abundant. Breeds from 7,000 to 11,000. A nest taken May 30, was built in a live quaking aspen, on a mountain trail, 9,800 feet altitude.

32. *Melanerpes formicivorus bairdi*. CALIFORNIA WOODPECKER.—Common. Breeds from 8,000 to 10,000 feet.

33. *Colaptes cafer*. RED-SHAFTED FLICKER.—Abundant in the pines. Breeds up to timber line during May and June.

34. *Phalænoptilus nuttalli*. POOR-WILL.—Tolerably common. Breeds up to 9,000 feet. Arrives in May; breeding early in June.

35. *Chordeiles virginianus henryi*. WESTERN NIGHTHAWK.—Abundant. Breeds to 10,000 feet. Nests in June.

36. *Aëronautes melanoleucus*. WHITE-THROATED SWIFT.—Not common. Breeds in cliffs during May, from 8,000 feet to timber line.

37. *Trochilus alexandri*. BLACK-CHINNED HUMMINGBIRD.—Common up to 8,000 feet. Breeds late in June.

38. *Selasphorus platycercus*. BROAD-TAILED HUMMINGBIRD.—Common. Arrives in May, breeding most commonly at 9,000 feet.

39. *Tyrannus verticalis*. ARKANSAS KINGBIRD.—Common. Nests in June, up to 9,000 feet.

40. *Sayornis saya*. SAY'S PHEBE.—Common. Arrives the last of March. Breeds early in May. One nest, found May 8, was built in a knot-hole of a hollow oak tree, 30 feet up.

41. *Empidonax difficilis*. WESTERN FLYCATCHER.—Rare. Breeds sparingly up to 10,000 feet.

42. *Empidonax wrightii*. WRIGHT'S FLYCATCHER.—Common. Breeds most commonly at 9,000 feet.

43. *Otocoris alpestris arenicola*. DESERT HORNED LARK.—Abundant. Breeds commonly at from 8,000 feet down.

44. *Pica pica hudsonica*. AMERICAN MAGPIE.—Common from 7,000 feet up. Breeds up to 12,000 feet.

45. *Cyanocitta stelleri macrolopha*. LONG-CRESTED JAY.—The most abundant bird in the county. Breeds up to 10,000 feet.

46. *Aphelocoma woodhousei*. WOODHOUSE'S JAY.—Not nearly as common as the last. Found only up to 8,000 feet, frequenting scrub-oak on hillsides. Breeds in May.

47. *Perisoreus canadensis capitalis*. ROCKY MOUNTAIN JAY.—Common. Found only from 9,000 feet up to timber line, where it breeds in May.

48. *Corvus corax sinuatus*. AMERICAN RAVEN.—Abundant from 8,000 feet up. Breeds in May, most commonly at 8,000 feet.

49. *Nucifraga columbiana*. CLARK'S NUTCRACKER.—Common from 9,000 feet up to timber line.

50. *Cyanocephalus cyanocephalus*. PIÑON JAY.—Common among piñon pines from 8,000 feet up. Nests in April.

51. *Molothrus ater*. COWBIRD.—Abundant. The birds most often imposed on are the Green-tailed Towhee and Stephens's Vireo.

52. *Agelaius phoeniceus*. RED-WINGED BLACKBIRD.—Common. Breeds up to 9,000 feet.

53. *Sturnella magna neglecta*. WESTERN MEADOWLARK.—Abundant. Breeds up to 8,000 feet.

54. *Icterus bullocki*. BULLOCK'S ORIOLE.—Tolerably common. Breeds up to 10,000 feet.

55. *Scolecophagus cyanocephalus*. BREWER'S BLACKBIRD.—Fairly common, breeding from the plains to 8,000 feet.

56. *Carpodacus mexicanus frontalis*. HOUSE FINCH.—Abundant around Las Vegas and vicinity. Have not found it in the mountains to any great extent. In the city the House Finch takes the place of the the English Sparrow, which is conspicuously absent.

57. *Spinus psaltria*. ARKANSAS GOLDFINCH.—Not common. Found breeding up to about 10,000 feet.

58. *Pooecætes gramineus confinis*. WESTERN VESPER SPARROW.—Common up to 8,000 feet.

59. *Chondestes grammacus strigatus*. WESTERN LARK SPARROW.—Abundant from the Plains to 8,000 feet.

60. *Spizella socialis arizonæ*. WESTERN CHIPPING SPARROW.— Abundant up to 9,000 feet, breeding most commonly at 7,000.
61. *Junco phæonotus dorsalis*. RED-BACKED JUNCO.— Abundant. Most common at 8,000 feet, breeding in clumps of scrub-oak on hillsides.
62. *Melospiza fasciata montana*. MOUNTAIN SONG SPARROW.— Common, breeding from 7,000 to 9,000 feet. Song differs considerably from that of the eastern species.
63. *Oreospiza chlorura*. GREEN-TAILED TOWHEE.— Common breeder from 7,000 to 9,000 feet. Nests in pastures and cleared land.
64. *Pipilo fuscus mesoleucus*. CAÑON TOWHEE.— Common. Breeds abundantly in scrub growths along the Gallinas Cañon, the last of April.
65. *Pipilo aberti*. ABERT'S TOWHEE.— Fairly common but not nearly as much so as the two preceding species. Common up to 9,000 feet.
66. *Zamelodia melanocephala*. BLACK-HEADED GROSBEAK.— Only fairly common. Breeds from 8,000 feet down.
67. *Petrochelidon lunifrons*. CLIFF SWALLOW.— Abundant. Nests in cliffs and under eaves of residences in the county. Occurs up to 8,000 feet.
68. *Tachycineta thalassina*. VIOLET-GREEN SWALLOW.— Abundant up to 8,000 feet and occasionally higher, but the bulk breeds at the above altitude. Hollow trees are sometimes resorted to for nesting.
69. *Vireo solitarius plumbeus*. PLUMBEOUS VIREO.— Common in the mountains up to 9,000 feet.
70. *Vireo huttoni stephensi*. STEPHENS'S VIREO.— Fairly common, breeding at 8,000 feet.
71. *Dendroica æstiva*. YELLOW WARBLER.— Fairly common in settled localities but not found in the mountains.
72. *Dendroica graciae*. GRACE'S WARBLER.— Rare. Found a pair, evidently nesting, on June 12 at an altitude of 8,500 feet. Have seen very few and did not succeed in taking the nest.
73. *Cinclus mexicanus*. AMERICAN DIPPER.— Abundant. Most common from 8,000 feet up. Took several sets, from May 3 to May 16, each containing five fresh eggs. Two broods are raised, the second set of eggs being laid about July 1.
- The Dipper is persecuted by the Mexicans who say it destroys young trout.
74. *Salpinctes obsoletus*. ROCK WREN.— Common. Breeds in crevices of boulders and stone walls, most commonly at from about 8,000 feet down.
75. *Catherpes mexicanus conspersus*. CAÑON WREN.— Fairly common, breeding commonly at 8,000 feet.
76. *Thryothorus bewickii leucogaster*. BAIRD'S WREN.— Common. Breeds in dead pine stubs and deserted Woodpecker and Nuthatch holes. The great bulk breed below 8,000 feet.
77. *Troglodytes ædon aztecus*. WESTERN HOUSE WREN.— Abundant up to 10,000 feet. Raises two broods.



78. *Certhia familiaris montana*. ROCKY MOUNTAIN CREEPER.—Fairly common up to 10,000 feet, breeding between 7,000 and 9,000, occasionally up to timber line.

79. *Sitta carolinensis aculeata*. SLENDER-BILLED NUTHATCH.—Abundant. Breeds commonly in pines from 9,000 feet down to 7,000.

80. *Sitta pygmæa*. PIGMY NUTHATCH.—Abundant. The only really common bird during the winter months. They go up to 9,000 feet to breed and come much lower during the winter.

81. *Parus gambeli*. MOUNTAIN CHICKADEE.—Common. Breeds in May and June, from 9,000 feet up to timber line.

82. *Myadestes townsendii*. TOWNSEND'S SOLITAIRE.—Rare. Took a nest with four fresh eggs on June 7, at an altitude of nearly 10,000 feet.

83. *Merula migratoria propinqua*. WESTERN ROBIN.—Abundant. Arrives the latter part of February, breeding in April, May and June, according to altitude. Common up to 10,000 feet.

84. *Sialia mexicana bairdi*. CHESTNUT-BACKED BLUEBIRD.—Fairly common up to 12,000 feet. Breeds up to nearly 10,000 feet during May and June. Nests usually in deserted Woodpecker's holes or in hollow stumps.

85. *Sialia arctica*. MOUNTAIN BLUEBIRD.—Common. Arrives early in February, breeding in May up to 9,000 feet.

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## AVIFAUNA OF THE REVILLAGIGEDO ISLANDS.

BY A. W. ANTHONY.

DURING the past summer (1897) a little over a month was spent in exploring the Revillagigedo Islands, lying to the southwest of Cape St. Lucas, Lower California, and as very little is known of the birds of this region I have thought it worth while to put on record my notes taken while there.

Socorro Island, the largest of the group, lies about 240 miles southwest of Cape St. Lucas and about 285 miles to the westward of Maria Madre, the largest of the Tres Marias group, off San Blas.

Clarion Island lies approximately 200 miles to the westward of Socorro and somewhat further south, while San Benedicte is but 35 miles north of Socorro. Rocca Partida (Divided Rock) is

the fourth of the group and is but a high rock having the appearance of a ship under jury masts, and lies 65 miles northwest of Socorro.

The islands are all volcanic in origin and, in general, extremely rough and broken. On San Benedicte is found a heavy growth of coarse grass, wherever there is sufficient soil. But little other vegetation is found on the island. This grass, growing to the height of a man's head, made travel extremely disagreeable, as the barbed seeds penetrated our clothing by thousands and caused us much more trouble than the cactus thickets which we encountered on Clarion later. San Benedicte is a small island about three miles in length with an average width of half a mile.

Socorro Island was roughly estimated to contain 100 square miles, and to rise to a height of 4000 feet at its center, which is an extinct volcano. The greater part of the island is covered by a very dense growth of underbrush, the weather side (north and northwest exposures) being especially thickly covered, making travel, except in favored spots, well nigh impossible. Trees are abundant on the weather side of the island but on the south and east sides they are mostly confined to the cañons, and were smaller than on the northern slopes. They were nowhere seen over forty or fifty feet in height, though usually covering considerable area with their broad spreading branches. Three anchorages were made at Socorro, one on the north side and two on the south coast of the island.

Clarion Island has little in common with the others of the group, either in flora or fauna. It is only about five miles in greatest length by a mile in width, rising about 1500 feet in altitude. A few low trees or shrubs, the largest not over ten feet in height, are scattered along the main plateau, and in a few places reach the level ground that lies between the mesa and the coast on the south side. Nearly the entire flat between the mesa and the beach is covered with a dense growth of cactus (*Platopuntia*) over which has grown a mass of vines. Passage through this belt is only accomplished with diligent and constant use of the bush knife.

A short distance from the beach were found two small shallow ponds which contain water during the rainy season only, but as

the high tides evidently wash over the barriers and flood them with sea water it is doubtful if they are ever otherwise than brackish. At the time of our visit, in May, they had been dry for some months and no water was found anywhere on the island.

As might be expected, from the position and vegetation of Clarion, its birds are quite different from those of Socorro or Benedicte. The only land bird, in fact, that was common to any two islands was the Raven, which was abundant on Clarion and not uncommon on San Benedicte but, strange to say, was not seen on Socorro.

On the afternoon of April 27 we sailed from Cape St. Lucas for San Benedicte. At the Cape we left the last of the *Larinæ*, the Western Gull being fairly common and one or two Heermann's Gulls being seen.

*Puffinus auricularis* was not rare, and was seen at times all the way across to San Benedicte, becoming abundant on the morning of the 29th when we approached the island. *P. cuneatus* was also seen at the Cape but none were noted after leaving there until they became abundant near San Benedicte. Boobies and Man-o'-War Birds came off to meet us at daybreak while still some 35 miles from the island and escorted us to our anchorage.

The islands are treated separately for sake of comparison.

### *San Benedicte Island.*

1. *Puffinus auricularis*. EARED SHEARWATER.—Small, scattered colonies were found on top of the island, the burrows being generally in the thick grass, and but few—not over a dozen—in a colony. At the time of our visit most of the burrows contained young that were, in many cases, nearly as large as the adults, but still covered with long plumbeous down, lighter (whitish) on the lower parts. Most of the adults were at sea during the daytime, but a few were found with the smallest young, those but a few days hatched. A single egg was found addled, and is now in the U. S. National Museum. It is pure white like the eggs of the other species of the genus that I have seen.

2. *Puffinus cuneatus*. WEDGE-TAILED SHEARWATER.—Seen about San Benedicte and Socorro Islands, but not common at the latter place. None were seen at Clarion or west of Rocca Partida. Both phases were seen, the sooty plumage outnumbering the light-bellied form about two to one. In a series of about 75 specimens all manner of intergrades can

be found, from those with pure white lower parts, including underwing coverts, to those having gray and sooty-brown plumage. In the upper surface there is very little variation. The species was not breeding to any extent at the time of our visit and but a single egg was secured, which is now in the U. S. National Museum. A more complete paper on the Shearwaters of our southwest coast is contemplated, when the present interesting species will be treated more in detail.

3. *Oceanodroma kaedingi*. KAEDING'S PETREL.—A number were seen at sea off the island as late as June 1. We found no evidence of the nesting of small Petrels on any of the islands of the group. It is possibly accounted for by the presence of vast numbers of large land-crabs that inhabit burrows all over the islands and would very likely destroy eggs and young of such species as *Oceanodroma*.

4. *Phaëthon æthereus*. YELLOW-BILLED TROPIC BIRD.—Common about the cliffs, and at sea, between the islands. They were often seen to enter holes in the ledges, and were usually in pairs, chasing each other about with loud cries that have given them the name of 'Bo-son Bird, the note being a good imitation of a boat-swain's whistle. Many holes were examined but no eggs found.

5. *Sula cyanops*. BLUE-FACED BOOBY.—Common. At the time of our arrival most of the birds were paired and were defending hollows in the sand where they contemplated laying. Only two or three sets were found of one egg each.

6. *Sula brewsteri*. BREWSTER'S BOOBY.—About as common as the preceding species, nesting at the same time. The nests of this species were all made of sticks and coarse grass in a hollow in the sand or rocks. Fresh eggs were found on May 17, in nests that were unfinished on the first of the month, when we first called at the island. It is interesting to compare in this connection the dates on which Mr. Goss found eggs of this species in the Gulf of California (Auk, Vol. V, 1888, 243).

7. *Sula websteri*. WEBSTER'S BOOBY.—By far the most abundant species on the island, nesting in the heavy growth of grass all over the island. Fresh eggs were taken the first of May, and on the 17th the same nests had second sets. A few young were found on the latter date. This species often took the liberty of perching on our heads and shoulders or lit on the rail of the skiff as we pulled ashore.

8. *Fregata aquila*. MAN-O'-WAR BIRD.—A considerable colony was found on the top of the island and several nests were also found at the base of the cliff near the beach. Young birds were fully fledged, many of them flying on May 1, and one or two fresh eggs were taken. On our second visit to the island, May 17, four or five sets were taken, evidently a second laying.

At a considerable distance from the colony a bird was found that was unable to fly, and thinking that it had been recently injured, and must necessarily starve, where food was not easily obtained by even the best of flyers, I killed the cripple and made an examination of its injuries.

One wing was withered and useless,—evidently the bird had never enjoyed its use, though it was fat and its stomach was well filled with flying fish. Those who know the feeding habits of *Fregata* need not be told that all their food is obtained on the wing, and a bird deprived of the use of its wings would speedily starve if not fed by its fellows. The precipitous sides of San Benedicte also made it impossible for a Man-o'-War Bird to gain the top of the island if deprived of its wings. So it was quite evident that the pensioner had never left the island, but had been dependent on the bounty of its fellows all of its life. From its excellent condition it was evident that even in that busy community of thousands some of them found time to feed the unfortunate.

9. *Heteractitis incanus*. WANDERING TATLER.—Several Tatlers were seen about the rocky shores of the island.

10. *Corvus corax sinuatus*. AMERICAN RAVEN.—Rather common on San Benedicte. During our two weeks stay at Socorro no Ravens were seen, which is a little strange since sheep are abundant and would furnish more food than can possibly be found on the barren rocks of San Benedicte. The fact of our not meeting with the species does not signify that it never occurs, however, for the islands are but 35 miles apart, and the distance could easily be traversed by a bird of such strong flight.

11. *Salpinctes obsoletus*. ROCK WREN.—Abundant. All of my specimens are in worn plumage and are unsatisfactory for comparison with mainland birds, but with the material at hand I see no reason for considering the island birds different from those of the peninsula.

#### *Socorro Island.*

On May 3 we left San Benedicte, anchoring the same afternoon on the southwest side of Socorro. The time until the 16th, was spent in exploring this island. No land birds were found that have not been recorded. All of the species are generally distributed, and with the exception of *Micropallas* and perhaps *Buteo* all of the species peculiar to the island could be easily taken in an hour and within a hundred yards of the beach. At the time of our visit all of the land birds except the Doves had long since nested and young, fully fledged, were taken as often as adults. From the appearance of the organs I concluded that the Ground Doves were just beginning to lay. With the exception of *Buteo socorroensis* land birds were remarkably tame.

1. *Larus occidentalis*. WESTERN GULL.—The fragments of a Gull were found on the beach at the southwest end of the island and I am

reasonably sure that they represented an immature bird of the present species.

2. *Sterna fuliginosa*. SOOTY TERN.—A large colony was found nesting on a rock a mile off the southwest point of the island. On May 12, we found most of the eggs hatched and many young were half-fledged. The eggs were single and laid on the bare rock. From the series of skins taken it would seem that 'var. *crissalis* Baird' would eventually have to be recognized. The material is insufficient, however, to warrant a definite conclusion.

3. *Anous stolidus ridgwayi*. RIDGWAY'S NODDY.—A large colony were nesting with the preceding species. Most of the eggs were fresh on May 12. They were laid on the bare rock with no attempt at nest building.

Terns were not seen about any of the other islands of the group.

4. *Puffinus cuneatus*.

5. *Puffinus auricularis*.—Both these Shearwaters were seen at sea about the island. No evidence of their nesting was noted, however.

6. *Oceanodroma kaedingi*. KAEDING'S PETREL.—Common at sea near the island. Apparently migrating.

7. *Phaëthon æthereus*. RED-BILLED TROPIC BIRD.—Common at sea and about all outlying rocks.

8. *Sula cyanops*.

9. *Sula brewsteri*.

10. *Sula websteri*.—Boobies were much less abundant about Socorro than at San Benedicte. Quite a colony were gathered about the cliffs on the southwest end of the island, but elsewhere they were only seen in small numbers, as they followed the small fish on which they fed.

11. *Fregata aquila*. MAN-O'-WAR BIRD.—Quite common with the Boobies, following them about the island and robbing them on all occasions.

12. *Ardea herodias*. GREAT BLUE HERON.—Not uncommon. Several were seen at each of our stations.

13. *Nycticorax violaceus*. YELLOW-CROWNED NIGHT HERON.—Quite common all over the island. Fully fledged young were shot May 14. They seemed to be feeding extensively on the land crabs, the shattered remains of which were often seen together with the tracks of this species.

14. *Heteractitis incanus*. WANDERING TATLER.—Occasionally seen all along the shore.

15. *Actitis macularia*. SPOTTED SANDPIPER.—A single bird was seen on the north side of the island May 14.

16. *Zenaidura graysoni*. GRAYSON'S DOVE.—This species did not seem to be at all common, but was perhaps more abundant in the higher parts of the island, which were very difficult of access.

17. *Columbigallina passerina socorroensis*. SOCORRO GROUND DOVE.—Rather common everywhere on the island.

18. *Buteo socorroensis*. SOCORRO RED-TAIL.—Not at all common and very wild.

19. *Micropallas graysoni*. GRAYSON'S ELF OWL.—A single specimen was shot on the south side of the island.

20. *Conurus holochlorus brevipes*. SHORT-FOOTED PAROQUET.—Quite common in several places. None were seen at the west end of the island, but on the north side, as well as near our anchorage on the south coast, we met with several flocks.

21. *Pipilo carmani*. CARMAN'S TOWHEE.—Very common all over the island. They were uniformly confiding and often half a dozen would congregate within a few feet of a person, silently inspecting him with an air of trustful curiosity quite foreign to other species of the genus with which I am familiar.

22. *Compsothlypis graysoni*. GRAYSON'S WARBLER.—Abundant all over the island but especially so in the trees on the north side.

23. *Mimodes graysoni*. GRAYSON'S MIMODES.—More common about the trees, but seen everywhere on the island. Most of our specimens had the feathers of the frontal region and about the bill glued together by some vegetable gum. One shot on May 14, contained in its stomach a large blue lizard over six inches in length. At the time of our visit the season of song was evidently passed, but occasionally a bird would favor us with a short song in the evening or early morning. The notes were soft and full of rich melody, somewhat suggestive of the song of *Harporhynchus rufus* but of superior quality.

24. *Troglodytes insularis*. ISLAND WREN.—Very abundant everywhere, perhaps the most abundant species on the island.

#### ✓ *Clarion Island.*

1. *Diomedea nigripes*. BLACK-FOOTED ALBATROSS.—The only Albatross noted from south of Cape San Lazaro was seen a short distance from Clarion.

A Jaeger was seen at sea near the island May 29, but the species was not determined.

2. *Puffinus auricularis*. EARED SHEARWATER.—Several colonies were found on the island from which well grown young were taken May 27.

3. *Oceanodroma kaedingi*. KAEDING'S PETREL.—Seen at sea near the island.

4. *Phaethon æthereus*. RED-BILLED TROPIC BIRD.—Common.

5. *Sula cyanops*. BLUE-FACED BOOBY.—Much more abundant than at the island further east. Nests were found from the beach to the top of the island.

Brewster's booby was not seen west of Rocca Partida, at which point one or two came off to inspect the schooner.

6. *Sula websteri*. WEBSTER'S BOOBY.—Very abundant. The nests of this species were always placed in branches of low shrubby trees on Clarion. Those nesting on San Benedicte, where no trees were found, were content

with a rock or rank bunch of grass, on top of which the nest was built of twigs and coarse grass.

7. *Fregata aquila*. MAN-O'-WAR BIRD.—Abundant.

8. *Ardea herodias*. GREAT BLUE HERON.—One or two seen.

9. *Heteractitis incanus*. WANDERING TATLER.—Not uncommon.

✓ 10. *Charadrius dominicus*, subsp.? A Golden Plover was shot on a coral reef on the south side of the island. The specimen is inaccessible at the present writing and I am uncertain to which race it should be assigned.

Accompanying this species was a large Plover that escaped me, and though seen on one or two subsequent occasions could not be secured.

✓ 11. *Arenaria interpres*. TURNSTONE.—Three Turnstones were seen in company with the Plovers above mentioned May 21.

12. *Zenaidura clarionensis*. CLARION ISLAND DOVE.—Very common. On May 19, a fully fledged young bird was taken, and on the 23d, a fresh egg was found in a hollow in the ground from which the parent fluttered upon our approach. As Doves were often seen flying along the cliffs and entering the holes in the lava it is very likely many were nesting in such places.

13. *Speotyto rostrata*. CLARION BURROWING OWL.—Abundant all over the island. At the time of our visit they were usually seen in pairs about the burrows which were often in colonies of a dozen, within a radius or fifty yards. Many burrows were opened and found to extend to a distance of from five to ten feet. They were very similar in all respects to the burrows of our ground Owls in western United States. From the burrows examined but a single set of 4 eggs was taken, the rest being empty. The eggs were not to be distinguished from those of *S. c. hypogæa*.

14. *Trochilidæ*.—A Hummingbird was reported by one of our party but as it was not secured, nor others seen during our stay, the species is unknown and it can only be regarded as a wanderer.

15. *Corvus corax sinuatus*. AMERICAN RAVEN.—Abundant.

16. *Chelidon erythrogaster*. BARN SWALLOW.—A number of Barn Swallows were seen on May 26, and one was shot; probably migrants.

17. *Troglodytes tanneri*. TANNER'S WREN.—Not uncommon. Seen all over the island. Many young taken between May 19 and 27 were scarcely to be distinguished from the adults. An old nest was found in a thick thorny bush. It was composed of material such as might have been selected by *T. aëdon* but the shape of the nest as well as its location might have been the design of a Song Sparrow.



## NEW SPECIES, ETC., OF AMERICAN BIRDS.—II.

FRINGILLIDÆ (continued).<sup>1</sup>

BY ROBERT RIDGWAY.

*Curator of the Division of Birds, U. S. National Museum.*

(By permission of the Secretary of the Smithsonian Institution.)

*Pinicola enucleator alascensis.* ALASKAN PINE GROSBEAK.

Similar to *P. e. canadensis* but decidedly larger, with smaller or shorter bill and paler coloration; both sexes with the gray parts distinctly lighter, more ashy. *Male*: Wing, 4.41–5.01 (4.61); tail, 3.34–4.04 (3.65); exposed culmen, 0.55–0.60 (0.57); depth of bill at base, 0.46–0.51 (0.48); width of mandible at base, 0.39–0.41 (0.40); tarsus, 0.87–0.92 (0.90); middle toe, 0.57–0.63 (0.60). *Female*: Wing, 4.49–4.74 (4.57); tail, 3.46–3.84 (3.68); exposed culmen, 0.57–0.61 (0.59); depth of bill at base, 0.46–0.50 (0.48); width of mandible at base, 0.40–0.42 (0.41); tarsus, 0.87–0.92 (0.89); middle toe, 0.58–0.60 (0.59).

*Type*, No. 86510, U. S. Nat. Mus., ♂ ad., Nushagak, Alaska, June 9, 1881; C. L. McKay.

*Range*: Northwestern North America, including wooded portions of Alaska except Kadiak and the southern coast district; south in winter to Montana (Bitterroot Valley), eastern British Columbia, etc.

*Pinicola enucleator montana.* ROCKY MOUNTAIN PINE GROSBEAK.

Similar to *P. e. californica* but decidedly larger and slightly darker, the adult male with the red of a darker, more carmine, hue; wing, 4.50–4.86 (4.71); tail, 3.48–4.00 (3.72); exposed culmen, 0.59–0.68 (0.63); depth of bill at base, 0.45–0.49 (0.47); width of mandible at base, 0.38–0.40 (0.39); tarsus, 0.87–0.95 (0.92); middle toe, 0.64–0.69 (0.66).<sup>2</sup>

*Type*: No. 159689, U. S. Nat. Mus., ♀ ad., Bear Creek, Gallatin Co., Montana, July 28, 1890; F. H. Knowlton.

*Range*: Rocky Mountains, breeding from Montana and Idaho to New Mexico.

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<sup>1</sup> Part I was published in the July Auk, pp. 223–230 under the title 'Descriptions of supposed New Genera, Species, and Subspecies of American Birds. I. Fringillidæ.'

<sup>2</sup> Eight specimens; four ♂, two ♀, and two of undetermined sex.

The remaining North American forms of Pine Grosbeak are the following:

- (1) *Pinicola enucleator canadensis* (*Brehm*).
- (2) *Pinicola enucleator flammula* (*Homeyer*), (= *P. e. kadiaka* Ridgway).
- (3) *Pinicola enucleator californica* *Price*.

*Astragalinus mexicanus jouyi*. YUCATAN GOLDFINCH.

Similar to *A. m. croceus* (Jouy) but smaller; adult male with under wing-coverts mostly white or light yellow, with little if any admixture of black; wing (♂), 2.09–2.30 (2.25); tail, 1.32–1.49 (1.39); exposed culmen, 0.34–0.39 (0.35); depth of bill at base, 0.28; tarsus, 0.45–0.49 (0.48); middle toe, 0.36–0.40 (0.38).

*Type*: No. 106250, U. S. Nat. Mus., ♂ ad., Temax, Yucatan, Dec. 1884; Geo. F. Gaumer.

*Range*: Yucatan.

*Calcarius lapponicus alascensis*. ALASKAN LONGSPUR.

Similar to *C. lapponicus* but decidedly paler, especially in winter plumage; summer adults with ground-color of upper parts light buffy grayish brown, with little if any rusty tinge, even on wings, and the black streaks relatively narrower.

*Type*: No. 118904, U. S. Nat. Mus., ♂ ad., St. Paul's Island, Prybilov group, Alaska, June 5, 1890; Wm. Palmer.

*Range*: The whole of Alaska, including Prybilov and Aleutian Islands, Unalashka, and the Shumagins; east to Ft. Simpson; south in winter to Nevada, eastern Oregon, Colorado, western Kansas, etc.

*Calcarius lapponicus coloratus*. KAMTSCHATKAN LONGSPUR.

Much darker than true *C. lapponicus*, with black prevailing on the back in summer adults, the black of chest usually broadly confluent with that on sides of breast, and the upper parts strongly suffused with rusty (outer webs of tertials and greater wing-coverts bright rusty brown or light chestnut): adult female with a conspicuous collar of rufous-chestnut, pileum uniform black except along median line, and *picturæ* of anterior under parts much more strongly marked than in adult females of true *C. lapponicus*.

*Type*: No. 89167, U. S. Nat. Mus., ♂ ad., Copper Island, Kamtschatka, May 6, 1882; L. Stejneger.

*Range*: Commander Islands, Kamtschatka, in summer; Plover Bay, Siberia, and other parts of northeastern Asia in summer?

**Junco montanus.** MONTANA JUNCO.

Similar to *J. oreganus shufeldti* but much paler; adult male with the head, neck, and chest slate-color or slate-gray instead of black or slate-black; similar also to *J. mearnsi*, but wing and tail decidedly shorter and color of head, neck, and chest much darker.

*Type*: No. 133253, U. S. Nat. Mus., ♂ ad., Columbia Falls, Montana, May 7, 1894; R. S. Williams.

*Range*: Breeding from northwestern Montana (Tobacco Plains, Summit, St. Mary's Lake, Columbia Falls, etc.) and northern Idaho (Thompson's Pass) north to Alberta (Edmonton); in winter south to northern Mexico, Texas, etc., and east, irregularly or casually, to the Mississippi Valley and even to Maryland.

**Brachyospiza capensis insularis.** CURAÇAO SPARROW.

Similar to *B. capensis* but smaller, with larger and proportionally longer bill and clearer coloration; gray stripes of head lighter and purer gray, and white of under parts purer; wing, 2.52-2.65 (2.56); tail, 2.20-2.40 (2.31); exposed culmen, 0.49-0.50; depth of bill at base, 0.29-0.32 (0.30); tarsus, 0.80-0.83 (0.81); middle toe, 0.54-0.60 (0.58).

*Type*. No. 151724, U. S. Nat. Mus., ♂ ad., Curaçao, July 28, 1895.

*Range*: Island of Curaçao.

I have been able to make out the following geographical forms of this widely distributed species:—

- (1) *Brachyospiza capensis* (Miller). (Venezuela to Paraguay and Argentina.)
- (2) *Brachyospiza capensis insularis* Ridgway. (Curaçao.)
- (3) *Brachyospiza capensis peruviana* (Lesson). (Peru to southern Mexico.)
- (4) *Brachyospiza capensis chilensis* (Meyen). (Chili.)
- (5) *Brachyospiza capensis canicapilla* (Gould). (Southern Patagonia.)

*Pyrgita peruviana* Lesson, Rev. Zool. 1839, 45, is apparently the earliest name for the form which Dr. Allen separated under the name *Zonotrichia capensis costaricensis* (Bull. Am. Mus. Nat. Hist. III, 1891, 375). I have carefully compared specimens from the two type localities (Lima, Peru, and San José, Costa Rica), and have been unable to discover any material difference. *Frin-*

*gilla mortonii* Audubon (Orn. Biog. V, 1839, 312; Birds Am. III, 1841, 151, pl. 190) is also most probably the same form.

*Guiraca cærulea lazula* (Lesson). WESTERN BLUE GROSBEAK.

The name *Pitylus lazulus* Lesson (Rev. Zool. V, 1842, 174) has usually been placed, with more or less doubt, in the synonymy of *Cyanocompsa parellina*. The type locality is San Carlos, Nicaragua (Pacific side). *C. parellina* does not range farther south than southern Mexico, which fact alone should render this reference of Lesson's bird most improbable; but Lesson's description removes at once all doubt in the matter, since it shows that the Western Blue Grosbeak is clearly indicated. The locality is also within its ascertained range. *Guiraca cærulea eurhyncha* (Coues), therefore becomes a synonym of *G. c. lazula* (Lesson).

*Euetheia coryi*. CORY'S GRASSQUIT.

Similar to *E. lepida* but smaller, upper parts decidedly more yellowish olive, lateral under parts less grayish olive, and median under parts more yellowish.

*Type*: No. 9107, Field Columbian Museum, ♂ ad., Cayman Brac, March 31, 1888: C. J. Maynard.

*Range*: Island of Cayman Brac, Caribbean Sea.

*Euetheia bryanti*. BRYANT'S GRASSQUIT.

Similar to *E. lepida* but decidedly smaller and color much brighter olive-green above and the under parts more yellowish, the abdomen often light yellow.

*Type*: No. 75351, U. S. Nat. Mus., Porto Rico; Dr. H. Bryant.

*Range*: Island of Porto Rico, Greater Antilles.

*Pyrrhulagra affinis* (Baird).<sup>1</sup> HAITIEN PYRRHULAGRA.

Similar to *P. ruficollis*<sup>2</sup> in coloration, but decidedly smaller. Adult

<sup>1</sup> *Loxigilla affinis* Baird, MS.

<sup>2</sup> [*Tanager*] *ruficollis* Gmelin, Syst. Nat. I, pt. ii, 1788, 894 (Jamaica: based on *Rufous-throated Tanager*, Latham, Synopsis Birds, II, pt. i, 241).

Both the Haitien and Jamaican *Pyrrhulagrae* are sufficiently distinct from the Bahaman form (*P. violacea*), the females and immature males being quite different in color.

male: Wing, 2.86-3.05 (2.97); tail, 2.45-2.80 (2.55); exposed culmen, 0.56-0.60 (0.58); depth of bill at base, 0.45-0.52 (0.48); tarsus, 0.80-0.87 (0.83); middle toe, 0.58-0.62 (0.60). *Adult female*: Wing, 2.61-2.76 (2.69); tail, 2.32-2.38 (2.35); exposed culmen, 0.49-0.50; depth of bill at base, 0.41; tarsus, 0.77-0.80 (0.79); middle toe, 0.52-0.54 (0.53).

*Type*: No. 42465, U. S. Nat. Mus., "♀" (i. e. ♂ ad.?), Port au Prince, Haiti, May 8, 1865; A. C. Younglove.

*Range*: Island of Haiti, Greater Antilles.

#### *Pyrrhulagra dominicana*. DOMINICAN PYRRHULAGRA.

Similar to *P. noctis* (of Martinique), but adult male with under tail coverts usually rufous or with rufous predominating; in the last respect like *P. grenadensis*, but duller black and size greater, the wing averaging 2.88 instead of 2.69, tarsus 0.78 instead of 0.75.

*Type*: No. 77820, U. S. Nat. Mus., ♂ ad., Dominica; F. A. Ober.

*Range*.—Islands of Dominica, Marie Galante, Desiradé, Grand Terre, and Guadeloupe, Lesser Antilles.

#### *Pyrrhulagra crissalis*. ST. VINCENT PYRRHULAGRA.

Similar to *P. grenadensis* but rufous throat-patch extending farther backward (involving upper part of chest).

*Type*: No. 74083, U. S. Nat. Mus., ♂ ad., Cumberland Valley, St. Vincent, Oct. 22; F. A. Ober.

*Range*: Island of St. Vincent, Lesser Antilles.

#### *Pyrrhulagra coryi*. CORY'S PYRRHULAGRA.

Similar to *P. ridgwayi* Cory, but decidedly darker; adult male dull black above and on anterior under parts of body, becoming dull slaty on abdomen and flanks; under tail-coverts usually wholly chestnut-rufous, sometimes intermixed with dusky slate.

*Type*: No. 80965, U. S. Nat. Mus., ♂ ad., St. Eustatius; F. A. Ober.

*Range*: Islands of St. Eustatius, St. Christopher, Saba (?) and Anguilla (?), Lesser Antilles.

#### *Passerina* vs. *Cyanospiza*.

In the 'Bulletin' of the Nuttall Ornithological Club, Vol. V, 1880, p. 96, Dr. Coues formally sets up the name *Passerina* Vieillot, in place of *Cyanospiza* Baird, and gives the following reasons for doing so: "The genus *Cyanospiza* Bd., 1858, is given in Gray's Hand-list, II, p. 97, as synonymous with *Passerina* Vieill., 1816. This is correct. The type of *Passerina* Vieill. as given in the

Analyse, 1816, p. 30, is "Le Ministre" of Buffon," etc. This conclusion has unfortunately been adopted by the A. O. U. Committee, in whose Check-List the type of *Passerina* Vieillot, is said to be "by elimination," *Tanagra cyanea* Linn. That this view of the case is quite wrong, however, I think may easily be shown. After the diagnosis of his genus *Passerina* in the 'Analyse,' Vieillot mentions three species, in the following order: "Ministre [= *Tanagra cyanea* Linn.]. — Ortolan de riz [= *Fringilla oryzivora* Linn.]. — de neige, Buff." [= *Emberiza nivalis* Linn.]. The first of these to be made the type of a new genus was *Fringilla oryzivora* (*Dolichonyx* Swains., 1827); the next, *Tanagra cyanea* (*Cyanospiza* Baird, 1858), *Emberiza nivalis* not having been made the type of a new genus until 1882, when Dr. Stejneger (Proc. U. S. Nat. Mus. V, p. 33), after demonstrating that the type of *Plectrophanes* Meyer, 1815, is *Fringilla lapponica* Linn. and not *Emberiza nivalis*, proposes for the latter the generic name *Plectrophenax*.

The type of *Passerina* Vieill., therefore, is, "by elimination," *Emberiza nivalis* and not *Tanagra cyanea*. If this view of the case is correct, we shall have to restore the unusually appropriate name *Cyanospiza* for the Indigo Bird and its congeners, and use *Passerina* for the Snowflakes, the recognized forms of the two genera being as follows:

#### CYANOSPIZA Baird.

1. *Cyanospiza cyanea* (Linn.) Baird.
2. *Cyanospiza amœna* (Say) Baird.
3. *Cyanospiza ciris* (Linn.) Baird.
4. *Cyanospiza leclancheri* (Lafr.) Dugès.
5. *Cyanospiza versicolor* (Bonap.) Baird.
6. *Cyanospiza versicolor pulchra* (Ridgw.) Ridgw.
7. *Cyanospiza rositæ* Lawr.

#### PASSERINA Vieillot.

1. *Passerina nivalis* (Linn.) Vieill.<sup>1</sup>
2. *Passerina nivalis townsendi* (Ridgw.) Ridgw.
3. *Passerina hyperborea* (Ridgw.) Ridgw.

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<sup>1</sup> Faune Franç. 1820, 86.

DESCRIPTION OF A NEW SPECIES OF HUMMING-  
BIRD FROM ARIZONA.

BY ROBERT RIDGWAY.

(By permission of the Secretary of the Smithsonian Institution.)

***Atthis morcomi*, sp. nov. MORCOM'S HUMMINGBIRD.**

*Adult female* (Type, No. 153886, U. S. Nat. Mus., Huachuca Mts., Arizona, July 2, 1896; H. G. Rising): Above bright bronzy green, duller and inclining to grayish brown on top of head, especially forehead; remiges plain purplish dusky; middle pair of rectrices mainly bronzy green, but much tinged with rufous on basal half, the outer web rather broadly edged with the same nearly to tip; rest of tail-feathers clear cinnamon-rufous for basal half, this succeeded by a narrow bar of metallic green, then uniform black for about .20 of an inch, the tip white; this white tip broadest (about .20 wide) an outermost feather, obsolete on the fourth. Under parts white, except sides and flanks, which are light cinnamon-rufous, the under tail-coverts being very faintly tinged with the same; whole throat marked with small tear-shaped streaks of dull bronze-green or olive-bronze, larger and more spot-like posteriorly. Length (before skinning), 2.95; wing, 1.40; tail, 0.77; exposed culmen 0.50.

Another adult female collected at same time and place differs in entire absence of streaks or spots on throat (though the sides of the neck are somewhat spotted) and in having the under tail-coverts more distinctly tinged with pale cinnamon-rufous. Length (before skinning), 3.02; wing, 1.50; tail, 0.80; exposed culmen, 0.50.

The adult male of this species is unfortunately unknown. The adult female differs from that of *A. heloisa* in being pure bronze-green above instead of almost coppery bronze inclining to greenish only on upper tail-coverts and middle tail-feathers; in having the cinnamon-rufous on basal portion of the tail far more extensive, there being more on the middle rectrices in *A. heloisa*, while on the others it occupies very much less than the basal half, and is entirely hidden by the coverts; the sides and flanks are less deeply, and apparently less extensively, cinnamon-rufous, and the under tail-coverts are white or but very faintly buffy, instead of being deep cinnamon-buff.

This new species is dedicated to Mr. G. Frean Morcom, of Los Angeles, California, to whom I am indebted for the privilege of describing it. The type was presented to the National Museum by Mr. W. B. Judson.

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DESCRIPTION OF A NEW SPECIES OF  
*GYMNOSTINOPS*.<sup>1</sup>

BY CHARLES W. RICHMOND.

AMONG the birds obtained by Lieut. Michler's expedition across the Isthmus of Panama, via the Atrato River, are two specimens of *Gymnostinops*, labeled in Cassin's handwriting "*Ostinops guatimozinus*." One is an adult female of the true *G. guatimozinus*, the other is an adult male of a species more nearly related to *G. montezumæ* but quite distinct, and hitherto unnamed. The male was apparently the only specimen before Cassin when he reported on the Michler collection, as his remarks here quoted indicate: "One specimen, labeled as a male, in the collection of the expedition is distinct from any species in Acad. coll. or that we find described, except as above [*Ostinops guatimozinus* Bonap.]. It is nearly allied to *O. montezumæ* of Mexico and Central America, and *O. bifasciatus* of Northern Brazil, both of which are in the Acad. coll. and are distinct from each other.

"The present bird differs from both of the above species in being larger, darker colored, and having a lengthened almost filiform crest. The bill also is disproportionately longer and wider at base, with a rounded termination in front. It is not without scruples that I apply the name above to this bird; the description by the Prince-Bonaparte, as cited, not being sufficient or the recognition of any species nearly related to another."<sup>2</sup> The collector's notes are then given as follows:

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<sup>1</sup> By permission of the Assistant Secretary, Smithsonian Institution.

<sup>2</sup> Proc. Acad. Nat. Sci. Phil., 1860, 138, 139.



"At Camp Albert, on the Truando, before reaching the Cordilleras, one specimen only seen, which was shot; it was very shy and seemed to be a stranger."<sup>1</sup>

In a later paper Cassin refers to both skins, and writes of the male as the "younger" specimen, differing from the adult [the female] in having the "sides purplish brown" but otherwise like the adult. (Proc. Acad. Nat. Sci. Phil., 1867, 71.)

The Truando bird of Cassin's first paper, which is the basis of the extension of range of *G. guatimozinus* to the Isthmus of Panama, is a new species, in some respects intermediate between that species and *G. montezumæ*, but otherwise quite different. The female of Cassin's second paper is typical *guatimozinus*, and was collected at Turbo, a small village on the Gulf of Uraba, on the Atlantic side of the Isthmus.

The new bird may be briefly described as follows:

#### **Gymnostinops cassini**, new species. CASSIN'S OROPENDOLA.

Type: U. S. Nat. Mus., No. 17847, ♂ adult, "Camp Albert," Truando River, Colombia, Dr. A. Schott.<sup>2</sup> Original No. 162.

Similar to *G. montezumæ*, but chestnut markings darker; crest feathers very much longer and almost filiform; base of culmen much wider. Under parts and thighs dull black; sides of body dark chestnut. Bill black, tip whitish (in dried specimen) for one inch; a line bordering base of culmen and extending half way to nostrils also whitish. The median pair of tail-feathers fall short of the outer ones by about three quarters of an inch, against two inches in *G. montezumæ*.

Wing, 10.60 inches; tail, 7.85; culmen, 3.35; depth of bill at base, 1.30; width of culmen at base, .82 (.55-.60 in *G. montezumæ*); tarsus, 2.40; length of crest a trifle over three inches.

In size, length of crest, extent of light color on bill, and width of culmen at base, *G. cassini* stands first. It is intermediate in general color of plumage, and of thighs, and in the extension of the yellow tail-feathers beyond the black ones.

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<sup>1</sup> Ibid., 139.

<sup>2</sup> Cassin says the collection was made by Wm. S. and J. C. Wood of Philadelphia, but in the museum register and on the labels of specimens the whole series is credited to Dr. A. Schott.

BREEDING HABITS OF THE SOLITARY SANDPIPER  
(*TOTANUS SOLITARIUS*).

BY C. K. CLARKE, M. D.

EARLY this spring I became aware of the fact that at least one pair of Sandpipers, different from the Spotted Sandpipers, which breed commonly on Simcoe Island, had taken up their residence there.

Although the habits of the Bartramian Sandpiper formed the chief subject of investigation, time after time I was attracted by a pair of small Sandpipers, invariably to be found perched on the fence posts in a certain locality. Just what the birds were could not at first be satisfactorily determined, and for a time I was inclined to think that they might prove to be Buff-breasted Sandpipers. As it was evident that they were likely to breed, I returned time and again to the island, generally carrying a gun, so that the birds might be secured if the nest was found. At last, when accompanied by the Rev. C. J. Young, the birds flushed in the usual locality, and a depression in the ground, nicely rounded, was found and marked. I returned in a week's time fully expecting to take a set of eggs, but the birds had evidently deserted the place, and were no where to be seen. It was a disappointment, as by this time it had become tolerably certain that the visitors were Solitary Sandpipers.

On June 10, Mr. Edwin Beaupre and I went for a last look at the birds breeding on the island, but had given up all hope of finding the strange Sandpiper. We flushed a Bartramian Sandpiper, and were examining the nest containing three fresh eggs, when the little stranger rose within four or five feet of us, and there, in plain view not two yards from the Bartramian's nest, were the eggs. The Sandpiper flew a short distance without uttering a sound, and sat on a fence post watching us. Unfortunately the gun had been left at home, but we had two pairs of good marine glasses and were able to examine the bird at close range as it perched on the fence. There was no longer

any doubt about its identity, and it was easily classified as the Solitary Sandpiper. We watched it for some time, as it flew about, but its silence was remarkable, and in marked contrast to the noisy demonstrations of the Bartramian Sandpiper which had been disturbed. A glance at the eggs showed that we had a rarity. In the first place the number, five, in a Sandpiper's nest was a new experience, and the peculiar coloring and markings were interesting. The eggs when collected had the peculiar dark reddish ground color so frequently noticed in fresh specimens of the Bartramian Sandpiper, but like them soon lost this characteristic tint. Faint purple shell markings gave a pleasing contrast, but the grotesque brown figurings, somewhat similar in shape to those found on the eggs of the Purple Grackle, remain as the striking feature. These grotesque markings exist on three of the specimens. A comparison made with a large series of the eggs of the Spotted Sandpiper reveals the following differences: Solitary Sandpiper's differ from them in shape, size, ground color and markings.

In the eggs of the Spotted Sandpiper the markings are generally much thicker at the upper ends; in the eggs of the Solitary Sandpiper the reverse is the case. The variations in shape in the set of the Solitary Sandpiper found, are somewhat remarkable as the measurements show. Incubation was well advanced, thus showing that the Bartramian had not been the first to commence nest building. The location of the nest was in a hilly field probably seventy-five yards from Lake Ontario. The measurements of the eggs are as follows:— $1.39 \times .95$ , inches,  $1.32 \times .94$ ,  $1.30 \times .97$ ,  $1.30 \times .94$ ,  $1.29 \times .95$ .

## GENERAL NOTES.

**Antrostomus carolinensis** Devouring other Birds.—Dr. W. L. Abbott recently presented a specimen of Chuck-will's-widow to the Philadelphia Academy, which he secured on shipboard off Sagua, Cuba, Sept. 4, 1898, and which contained in its stomach a partially digested Yellow Warbler (*Dendroica aestiva*). Dr. Abbott stated that quite a number of small Warblers had been flying about the ship for several days and probably the *Antrostomus* was hard pressed and devoured one of them in lieu of his usual food. Such records seem to be uncommon and worthy of note.—WITMER STONE, *Academy of Natural Sciences, Philadelphia, Pa.*

**Tyrannus magnirostris** d'Orb. Renamed.—The name *Tyrannus magnirostris*, given by d'Orbigny to the Cuban Kingbird in 1839, is antedated by Swainson (*Fauna Boreali-Americana*, 1831, 484), who, for some reason best known to himself, applied this name to *Megarhynchus pitangua* (Linn.), a common bird of the mainland of tropical America. A new name thus being necessary for d'Orbigny's species, it may be called *Tyrannus cubensis*.—CHARLES W. RICHMOND, *U. S. National Museum, Washington, D. C.*

**Nest Building under Difficulties.**—While visiting a farmer living in Bucks County, Pa., I was shown a nest of a Field Sparrow (*Spizella pusilla*), which he accidentally cut down while cradling rye. The nest, which contained fresh eggs, was built about two feet above the ground and was supported between the standing stalks of the rye. The bird evidently experienced some difficulty in starting the structure, as the material kept sliding down loosely on the smooth stalks as fast as it was built. The bird, however, was determined to build it at the original height, which was finally accomplished, and when completed was about one foot deep, having a loose spiral appearance. This was no doubt the result of poor judgment, which is often seen among juvenile birds.—J. HARRIS REED, *Beverly, N. J.*

**Hemithraupis:—A Correction.**—In my paper describing new genera, etc., of Fringillidæ and Tanagridæ in the July Auk, I inadvertently gave the generic name *Hemithraupis* to a genus of Tanagers, with *Aglaiia cyanocephala* Lafr. & D'Orb. as type, forgetting at the time that the same name had been given by Cabanis in 1851 to the group having *Hylophilus ruficeps* Max. as type (*cf. Mus. Hein.* I, p. 21); a strange oversight, since I have of course been long aware of the fact and have the genus elaborate under that name in my manuscript. The genus which I have separated as *Hemithraupis* with *Aglaiia cyanocephala* as type requir-

ing a new name, I therefore propose *Sporathraupis* ( $\sigma\pi\theta\rho\acute{\alpha}$  = *spurius*,  $\delta\rho\alpha\upsilon\pi\iota\sigma$ , *nom. prop.*)—ROBERT RIDGWAY, *U. S. National Museum, Washington, D. C.*

**Kirtland's Warbler** (*Dendroica kirtlandi*) in Florida.—I saw a Kirtland's Warbler on April 19, 1897, at West Jupiter, Florida, and shot another at the same place on April 27,—the only specimen actually killed. Of course I may have been mistaken about the one seen April 19, but I myself have no doubt of its correct identification.—CHARLES B. CORY, *Great Island, Hyannis, Mass.*

**Dendroica kirtlandii in Pennsylvania:—A Correction.**—In my 'Birds of Eastern Pennsylvania and New Jersey' published some years since by the Delaware Valley Ornithological Club, I omitted without comment *Dendroica kirtlandii*, which had been included in Dr. Warren's report on the 'Birds of Pennsylvania,' on the strength of information furnished him by Prof. H. Justin Roddy. My action was based upon a letter from Prof. Roddy in which he states that, owing to an unfortunate blunder, the notes given to Dr. Warren under head of *Dendroica kirtlandii* were intended for another species and that he had never seen or heard of Kirtland's Warbler in the State. Inasmuch as Mr. A. W. Butler has quoted Prof. Roddy's records of this bird in his recent 'Birds of Indiana' and based his remarks on the probable breeding range of the species partly upon them, it seems high time that the error should be corrected, as ought to have been done in my previous publication.—WITMER STONE, *Academy of Natural Sciences, Philadelphia, Pa.*

**The Pine Warbler** (*Dendroica vigorsii*) a Breeder in Ohio.—On August 5 of this year, while out on a short collecting stroll, one of my companions, Prof. W. A. Chesroron of the Waverly High School, shot a Warbler out of a number of others and kindly presented me with the specimen. I identified it as a Pine Warbler and Mr. H. C. Oberholser was so kind as to verify this determination, the bird being a young male still partially in first plumage, so that, as Mr. Oberholser said, "this fact makes it almost certain that it was reared in the neighborhood, for at that age it could not, or at least probably would not, have traveled far." Dr. Wheaton in his 'Birds of Ohio,' states that it is "a not common spring and fall migrant, but that there is no instance of its breeding in the State," and Mr. Oberholser adds that my record "appears to be the first instance of the breeding of this species in Ohio." My bird was shot in tall timber near the Waverly canal. No pine trees are to be found in this vicinity. The entire episode seems to be a circumstance of sufficient interest to be worth recording.—REV. W. F. HENNINGER, *Waverly, Ohio.*

**The Yellow-breasted Chat in Oneida County, N. Y.**—On June 6, 1898, in a pasture, situated on high ground, well filled with second growth

shrubs and bushes, and with a very small spring brook flowing through the centre, I took a nest and four eggs of the Yellow-breasted Chat (*Icteria virens*). Only one pair of birds was found, and I am assured by Mr. Egbert Bagg, of Utica, N. Y., who was the compiler of the list of Oneida County birds, that this is the first known record of the occurrence of the Yellow-breasted Chat in Oneida County.

A Whip-poor-will (*Antrostomus vociferus*) made his first stop here this season, although they are resident in localities twenty miles to the east or west. — W. J. B. WILLIAMS, *Holland Patent, N. Y.*

**Curious Nesting of American Redstart.** — On June 5, 1898, while hunting through a great timber swamp in Yates Co., N. Y., in company with Mr. C. F. Stone, I saw a Vireo's nest and the bird on it appeared to be new to me, but as I drew near it left the nest, dropped to the ground and fluttered away, when I recognized it as a female American Redstart (*Setophaga ruticilla*). Mr. Stone then came up and we examined the nest and found it to be an old Red-eyed Vireo's (*Vireo olivaceus*), newly lined by the Redstart with the fine red bark fiber that it usually uses to line its nests with in this locality, and it contained three fresh eggs of the Redstart. — VERDI BURTCH, *Penn Yan, N. Y.*

**Nesting of the Robin.** — In 'The Auk' for July, 1898 (p. 274) I read Mr. S. M. McCormick's very interesting article on the 'Nesting Habits of the Robin,' and having found a rather unusual place for a nest I would like to report it. In Woodbourne, N. Y., Dr. Munson has a large dwelling with a piazza in front over which a honeysuckle has been trained, and in this vine, about eight feet up, on a branch three quarters of an inch in circumference, with six little runners, the nest was built, it being made doubly secure by the winding of grasses around the branches, covering the bottom entirely. But what struck me as remarkable was the almost perpendicular hanging of the nest, looking very much as a China saucer does on a bracket. The bottom partially rested against some wire that the vine ran on, but it was not fastened to it. Two broods were raised in it without any attempt at house-cleaning. Possibly they found there was no time for such a luxury. I was very sorry not to see the birds in it, but I did not get to the place in time. — A. A. CROLIUS, *New York City.*

**A Note on the Wood Thrush.** — It seems worthy of mention, that on examining a large series of Wood Thrushes (*Turdus mustelinus*) taken throughout their range, the majority of specimens from west of the Appalachian Highlands and the St. Lawrence Valley average much smaller in measurements (bill, culmen .56 in. and depth .18, tarsus 1.08, and wing 4.22), than those from east of the Highlands (bill, culmen, .63+ and depth .21+, tarsus 1.15, and wing 4.31). Typical western

birds having been secured not uncommonly in the East, and vice versa, does not allow, however, the establishment of a western subspecies.—REGINALD HEBER HOWE, JR., *Longwood, Mass.*

**Notes from Chateaugay Lake, New York.**—During a collecting trip to Chateaugay Lake, Northern Adirondacks, last autumn (Aug. 24 to Sept. 7, 1897) I secured with Mr. G. C. Shattuck, a pair of American Three-toed Woodpeckers (*Picoides americanus*), a species not very uncommon about the lake. One specimen of the Wood Thrush (*Turdus mustelinus*) was also taken. Mr. Shattuck had in previous years taken specimens. This bird was generally found in company with Hermits and Swainson's Thrushes behind the camp where the waste food was thrown. Its occurrence there seems to show that it is found along the western as well as eastern shores of Lake Champlain. Early during my stay I was pretty sure I caught a glimpse of a Philadelphia Vireo (*Vireo philadelphicus*), and after I left Mr. Shattuck secured a specimen.—REGINALD HEBER HOWE, JR., *Longwood, Mass.*

**Ectopistes migratorius, Mimus polyglottos, and Sturnella magna neglecta in Bristol Co., Mass.**—In company with a friend and my brother on August 23, 1889, I was shooting on the mud flats around the reservoir at Norton, Mass. In making a detour of a small inlet, I flushed a Passenger Pigeon from among the low blueberry and bayberry bushes among which I was tramping. The bird alighted in a small white birch near at hand, seeming very unsuspecting, and I shot it. On dissection it proved to be a ♀ young-of-year and was in very good plumage. This is the last record I have of this species. The bird is now mounted and in my collection.

April 30, 1896, a Mockingbird appeared and established himself among the shrubbery in a neighbor's grounds. This was no escaped cage-bird, as his perfect, unfrayed feathers evinced. He was in constant song during his stay, frequently singing half the night when the moon was bright. After enjoying a week of Mockingbird music I was disappointed to find the singer gone, owing to a late driving snow storm, and he did not again appear.

On April 9, of this year (1898), a Western Meadowlark made a visit of a few days in the fields not far from my home. The bird was first seen by an acquaintance, who asked "what bird is it that resembles a Meadowlark in form and color, larger and darker possibly than the Meadowlark but with a wonderfully beautiful song." This bird remained in the same locality for four days, showing no signs of fear and offering an excellent opportunity for one to observe its habits. I was unable to shoot the bird, but identity is beyond all doubt, the song alone being sufficient to remove all queries on that score.—BRADFORD ALEXANDER SCUDDER, *Taunton, Mass.*

## RECENT LITERATURE.

**Davie's Nests and Eggs of North American Birds.**<sup>1</sup>—The fifth edition of this useful book contains seventy-nine pages more than the preceding edition,<sup>2</sup> the increase in size being due in part to the addition of new matter and in part to the introduction of many illustrations, some of which appear to have been drawn especially for this work but most of which are borrowed from other publications. They are very unequal in character and some of them might have been omitted to advantage, the attempt to print half-tones on uncalendared paper being particularly unsuccessful.

The text is greatly improved, much that was wanting in the preceding editions being supplied in the present one. In some instances, however, Mr. Davie does not appear to have availed himself of the most recent information concerning the species treated. Thus his remarks in regard to the Labrador Duck, Cory's Bittern, the Heath Hen, Ipswich Sparrow, Philadelphia Vireo, Bachman's Warbler, and Olive Warbler by no means represent our knowledge concerning these species. *Junco hyemalis connectens* is wrongly given as *Junco hyemalis shufeldti* and *Platyptaris alaiæ* [*sic*] is included presumably as a North American bird but on just what authority is not stated.

These errors are obviously not of a serious nature and they detract but little from a book whose value is measured by its marked success.—F. M. C.

**Bird-Nesting with a Camera.**<sup>3</sup>—Since our last notice of this fine work<sup>4</sup> the parts have continued to appear with regularity and we now have before us Part XII, completing the third volume. Many of the plates are fully equal to those of volume I, of which we could not speak too highly, while others have lost in clearness of definition, apparently through too great enlargement, it being presumably the author's desire to make all the plates in the book of the same size without regard to the

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<sup>1</sup> Nests and Eggs | of | North American Birds | By | Oliver Davie | Author of "Methods in the Art of Taxidermy," etc. | — | The Fifth Edition | — | Revised, Augmented and Illustrated | — | Part II. Ornithological and Oölogical Collecting | (The preparation of skins, nests and eggs for the cabinet.) | — | Columbus: | The Landon Press | 1898.—8vo. pp. [i-xi] 1-509, 1-18, i-xxi, numerous text cuts.

<sup>2</sup> Reviewed in 'The Auk', XI, 1889, 328.

<sup>3</sup> Among British Birds in their Nesting Haunts. By Oswin A. J. Lee. Illustrated by the camera.

<sup>4</sup> Auk XIV, 1897, p. 334: see also *ibid.*, pp. 106, 247.



size of the negative from which they are reproduced. The illustrations, therefore, in several instances (*e. g.*, the Gannets on the Bass Rock and Puffins on Lunga) fail to do justice to the exceedingly interesting subjects they represent. However, the difficulties to be encountered in photographic work of this nature are so innumerable that perfection is out of the question, and far from criticising Mr. Lee for a failure to always reach his own high standard, we should remember that his skill and energy has given us the best work of its kind which has thus far appeared. — F. M. C.

Butler's 'Birds of Indiana.'—In 1890 Mr. Butler published an excellent, extensively annotated 'Catalogue of the Birds of Indiana' (See Auk, VIII, 1891, pp. 383, 384), embracing 301 species, with a supplementary 'Hypothetical List' of 79 species. The present 'Birds of Indiana' is a much more comprehensive work, the former enumeration being not only brought down to date, and expanded by the introduction of much new matter relating to the habits and nature of the occurrence of the species in Indiana, but by technical descriptions and keys to the genera and species, and by many additional illustrations. It is thus well adapted to furnish the information demanded by the present greatly increased interest in birds, in the State of Indiana as elsewhere, in reference to their varied economic and other relations. In the present treatise of nearly 650 octavo pages, the number of species recorded as positively known to occur in the State is 321, with a supplemental list of 81, given as of more or less probable occurrence, from their having been taken in adjoining States.

The work opens with an 'Introduction' (pp. 515-531), treating of the position and physiographic features of the State, and of the changes that have taken place in its bird life and their causes, and a comprehensive bibliography (pp. 532-548). While this report is based largely on the notes of the author, "made principally in southeastern Indiana within the past twenty-one years," all other available material bearing on the subject is apparently utilized, for which due acknowledgment is formally made. Most of the 'keys,' for example, are (by permission) from Mr. Ridgway's 'Manual of North American Birds,' and the technical descriptions are in many instances transferred from the same or similar standard sources. Many of the cuts are from Dr. Coues's 'Key to North American Birds,' while those of the publications of the U. S. Department of Agriculture, through the kindness of Dr. Merriam, have been extensively drawn upon, particularly those relating to the Hawks and Owls, the Wood-

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<sup>1</sup> The Birds of Indiana. A Descriptive Catalogue of the Birds that have been observed within the State, with an account of their habits. By Amos W. Butler. Report of the State Geologist of Indiana for 1897, pp. 515-1187. Indianapolis, Ind., 1898. Also separate, same pagination.

peckers, and numerous other species whose economic status has been considered in the various 'Bulletins' and other publications of the Division of Ornithology and Mammalogy. Throughout the treatise the utility and economic status of the species is kept well in view, and the work therefore cannot be otherwise than educational in the best sense to the people of Indiana, whether as an aid in determining the species or as a guide to their proper treatment. It is a hopeful omen of better times, not only for the birds but for the people, that a State legislature proves itself sufficiently far-sighted to place within reach of the public such an admirable aid to a better knowledge of their natural surroundings.

As is usual in recent works on North American birds, strict adherence is given to the nomenclature of the A. O. U. Check-List. — J. A. A.

**Blanford's 'Birds of British India.'**<sup>1</sup>—The first two volumes of the 'Birds of British India,' by Mr. E. W. Oates, were published in 1883, and volume III, by Dr. Blanford, in 1895; the present and fourth volume, also by Dr. Blanford, completes the series, which furnishes us with a most convenient and useful work on the Birds of British India, including Ceylon and Burma. "The number of Indian birds regarded as distinct species in the present work," says Dr. Blanford, "amounts to 1626." "The precise number," he adds "is naturally dependent on a personal factor, some writers being more liberal than others in admitting the claims to specific rank of races which are distinguished by small differences of plumage or measurement, or which are connected by intervening links with the typical form. Such races or subspecies, as they are called, have not, as a rule, been separately numbered and described in the present work, but they have received due notice and their characters have been explained." In other words, subspecies are not formally recognized, and form no part of the 1626 species. And, as said by a friendly reviewer of the work, "modern vagaries in nomenclature are not usually countenanced." Linnæus is taken at 1766, and in other respects the nomenclature is in accord with what this implies.

The present volume treats of 347 species (exclusive of 10 added in the appendix to those enumerated in the first three volumes), beginning with the Columbæ and ending with the Pygopodes. About a page is devoted, in the average, to each species, besides the space given to the higher groups; this suffices to give the principal bibliographical references, an

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<sup>1</sup> The Fauna of British India, | including | Ceylon and Burma, | Published under the authority of the Secretary of | State for India in Council | Edited by W. T. Blanford, | — | Birds.—Vol. IV. | By | W. T. Blanford, F. R. S. | — | London: | Taylor and Francis, Red Lion Court, Fleet Street, | Calcutta: | Thacker, Spink & Co. | Bombay: | Thacker & Co., Limited | Berlin: | R. Friedländer & Sohn, 11 Carlstrasse, | 1898.—8vo, pp. xxi + 500, and 127 figures in text.

adequate description, and a paragraph each on 'Distribution' and 'Habits, etc.' The work is thus in the nature of a 'hand-book,' and will prove invaluable to all interested in Indian ornithology. —J. A. A.

Gurney's 'The Economy of the Cuckoo.'<sup>1</sup>—Although so much has been written about the Common Cuckoo of Europe (*Cuculus canorus*), there are many points in its history, according to Mr. Gurney, still not well known. "Cuckoo's eggs," he says, "and all that appertains to them, is an inexhaustible subject when naturalists meet in conclave, and it is one which has a fascination for every oölogist . . . Cuckoo's eggs often, but by no means always in this country, whatever may be the case on the Continent, bear a curiously protective resemblance to the eggs of the foster-bird. To the late August Baldamus belongs the credit of this discovery, though Professor Newton has pointed out that in the second century Ælian had almost arrived at the truth . . . What is argued, by Baldamus and others since him, is that each individual Cuckoo is parasitic to one or two species, and has power to lay only one type of egg . . . Further it seems reasonable to suppose that any Cuckoo will by preference lay in the nest of the species which brought her up. That each individual Cuckoo lays its own type of egg, season after season, and that in nineteen cases out of twenty it lays that egg on the ground, . . . and taking it in its mouth flies or crawls to a nest already known, is established, and hardly requires any further proof . . . That Cuckoos habitually carry away one or more of the fosterer's eggs is now beyond dispute, and they might be expected to continue watching a fosterer's nest which they had not yet robbed, in the hope of doing so." This is supposed to be their purpose when seen hanging about in the immediate vicinity of a nest they have chosen for the deposition of one of their own eggs, rather than solicitude for its safety.

Much proof is also advanced as to the egg-eating propensity of the Cuckoo, the mashed shells of at least seven eggs having been taken from the stomach of a single Cuckoo. The old Cuckoos are also accused of removing nestlings from the nest of the fosterer, and the charge is sustained by much circumstantial and some very satisfactory evidence, the purpose being apparently to secure more abundant nourishment for their own young.

It is a disputed question whether or not Cuckoos ever feed their own young. Mr. Gurney believes "that this departure from the Cuckoo's ordinary habits does take place under very rare circumstances," and that further verification of it will be forthcoming. Mr. Gurney also refers to the "supposed pouch" or "throat pocket" of the Cuckoo, for carrying

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<sup>1</sup>The Economy of the Cuckoo (*Cuculus canorus*). By J. H. Gurney. F. Z. S. Trans. of the Norfolk and Norwich Naturalists' Society, Vol. VI, pp. 365-384.

its egg, but seems to quite discredit its existence. He also refers to a kind of dimorphism in the plumage of the Cuckoo when young, "for it sometimes has a rufous plumage, and sometimes a very dark plumage." The red phase appears not infrequently to have a bright chestnut collar; "they are then called Hepatic Cuckoos, and are more often females than males."—J. A. A.

**Eastman on 'Struthious Birds.'**<sup>1</sup>—Dr. Eastman's paper consists of two parts, both of unusual interest. The first portion relates to a fossil egg of a Struthious bird found in the loess of northern China. This egg, with another which was broken, was found by a Chinese farmer, some five years ago, who took it to Kalgan and disposed of it to the Rev. William P. Sprague, an American missionary resident there. Last spring the egg was brought to this country by the Rev. James H. Roberts, by whom it was offered for sale in the interest of Mr. Sprague, and was eventually purchased for the Museum of Comparative Zoölogy, where it is now deposited. It has thus a thoroughly authentic history. The egg is about one third larger than the largest Ostrich egg, thus indicating that "the fossil egg must be the legacy of a larger bird than the Ostrich, and very likely one differing in other respects as well as size." As early as 1857 a similar egg was discovered in the Government of Cherson, in South Russia. This egg later fortunately fell into the hands of Professor A. Brandt of Charkow, who described it, under the designation *Struthiolithus chersonensis*, up to the present time a species known only from this fossil egg, and to which Dr. Eastman now refers the present specimen.

Ostrich remains (fragments of bones) have also been found in the Pliocene of the Siwalik Hills of India and in the Lower Pliocene of Samos, indicating a wide distribution of Struthious birds in early times. In commenting on these facts, Dr. Eastman says: "The occurrence of fossil Ostrich remains in the loess of such widely separated regions as Northern China and Russia has a direct bearing upon the distribution of Struthious birds. It enables us to speak positively with regard to the former extension of the Struthionidæ over Eur-Asia and Africa since the Pliocene, and gives rise to some inferences, within duly circumscribed bounds, regarding the past history of Raft-breasted birds in general. It is necessary to distinguish between what can be affirmed of the Ostrich group, properly speaking, and what we can assume with more or less plausibility concerning the rest of the so-called Ratitæ." He notes that "the best modern ornithological opinion holds that the division into Ratitæ and Carinate is unnatural, since the differences between existing

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<sup>1</sup> On Remains of *Struthiolithus chersonensis* from Northern China, with Remarks on the Distribution of Struthious Birds. By C. R. Eastman. Bull. Mus. Comp. Zoöl., Vol. XXXII, No. 7, pp. 127-144 (with plate). August, 1898.

species of Raft-breasted birds are nearly as great as between any of the Ratite and Carinate." He summarizes the views of leading modern authorities on the relationships of the various extinct types of formerly supposed Ratite forms, and adds: "Strong enough arguments, we think, have been put forward to show that the theory of a common origin of the Ratite is untenable, and hence no single hypothesis of distribution is able to account for the facts of their distribution. We cannot imagine a race of Ostriches sprung from *Hesperornis* or anything of like nature in the Cretaceous, spreading over the whole earth in the Tertiary, and then as decay set in, leaving its fragments scattered in remote corners of the globe. . . . To seek the nearest Carinate affinities for the different sections separately; to develop the palæontological history of each more fully; and to inquire into the physical and biological conditions which led to their insulation, perpetuation, and differentiation in various provinces,—these are only a few of the points that invite an extended investigation." His review of the matter in the pages which follow is a suggestive and important contribution to the literature of the subject.—J. A. A.

**Bangs on Birds from Colombia.**—Mr. Bangs has recently published two papers<sup>1</sup> on birds received from Colombia, from his collector, Mr. W. W. Brown, Jr. The first relates to a collection of nearly 700 specimens gathered during the two months from the middle of December, 1897, to the middle of February, 1898, within fifteen miles of Santa Marta, at elevations ranging from 500 to nearly 6000 feet. The number of species and subspecies reported upon in this paper is 126, of which 10 are described as new, as follows: *Galbula ruficauda pallens*, *Melanerpes wagleri sanctæ-martæ*, *Dendrocincla olivacea anguina*, *Sycalis browni*, *Cyanocompsa concreta sanctæ-martæ*, *Arremonops conirostris canens*, *Piranga faceta*, *Cyclarhis flavipectus canticus*, *Dacnis napeæ*, *Merula incompta*.

The second paper relates to a later sending, by the same collector, of birds taken "at the little village of Pueblo Viejo, in the high Sierra Nevada de Santa Marta, Colombia," at about 8000 feet altitude. This collection numbers 28 species, of which 4 are described as new, namely: *Elænia browni*, *Automolus rufipectus*, *Buarremon basilicus*, *Thryothorus latus*.—J. A. A.

**Nelson on New Birds from Mexico.**—Further results of Mr. E. W. Nelson's ornithological work in Mexico have recently appeared. His

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<sup>1</sup> On Some Birds from Santa Marta, Colombia. By Outram Bangs. Proc. Biol. Soc. of Washington, Vol. XII, pp. 131-144. June 3, 1898.

On Some Birds from Pueblo Viejo, Colombia. By Outram Bangs. *Ibid.*, pp. 157-160. Aug. 10, 1898.

first paper<sup>1</sup> is based on his exploration, in company with Mr. E. A. Goldman, of the Tres Marias Islands. After summarizing the work of previous explorers in these islands, he describes the following 11 new subspecies, based on his own collections, made during May, 1897:—*Columba flavirostris madrensis*, *Leptotila capitalis*, *Buteo borealis fumosus*, *Polyborus cheriway pallidus*, *Trogon ambiguus goldmani*, *Nyctidromus albicollis insularis*, *Myiopagis placens minimus*, *Cardinalis cardinalis mariæ*, *Vireo hypochryseus sordidus*, *Melanotis cærulescens longirostris*, *Thryothorus lawrencii magdalenæ*. The bird fauna as a whole will be treated later. In this connection he states that the study of his material in comparison with that from the mainland, shows "that most of the resident land birds of the islands. . . . differ in a more or less marked degree from their nearest mainland relatives. In most cases the island birds cannot be considered more than geographical races. . . . Not a single species has been found on the islands which has not a closely related form on the mainland."

In a second paper<sup>2</sup> Mr. Nelson describes a number of new birds from various parts of Mexico, from the collections made by Mr. Goldman and himself, for the U. S. Biological Survey. In reference to the diversified climatic areas of Mexico, Mr. Nelson states that in addition to the "two main divisions of highland or temperate, and lowland or tropical," "the highlands contain several definite faunal areas, and the same is true of the lower tropical lands." The new forms described are the following: *Heleodytes brunneicapillus obscurus*, from the Mexican tableland; *Vireo nanus*, southern border of the tableland in Michoacan; *Progne sinaloæ*, Plomosas, Sinaloa; *Phænicothraupis rubicoides roseus*, Territory of Tepic; *Amphispiza bilineata grisea*, southern part of tableland; *Guiraca chiapensis*, Chiapas; *Grallaria ochraceiventris*, San Sebastian, Jalisco; *Amazilia cinnamomea saturata*, Chiapas; *Dactylortyx chiapensis*, San Christobal, Chiapas; *Dactylortyx devius*, San Sebastian, Jalisco. The paper also comprises a revision of the genus *Dactylortyx*, in which *D. thoracicus* (Gambel) and *D. thoracicus lineolatus* (Gould) are recognized in addition to the two species here described.—J. A. A.

Cooke's 'Birds of Colorado.'<sup>3</sup>—The publication in March, 1897, of

<sup>1</sup> Descriptions of new Birds from the Tres Marias Islands, Western Mexico. By E. W. Nelson. Proc. Biol. Soc. Washington, Vol. XII, pp. 5-11. Jan. 27, 1898.

<sup>2</sup> Descriptions of new Birds from Mexico, with a revision of the genus *Dactylortyx*. By E. W. Nelson. Proc. Biol. Soc. Washington, Vol. XII, pp. 57-68. March 24, 1898.

<sup>3</sup> Further notes on the Birds of Colorado. Bulletin No. 44, Technical Series No. 4. An appendix to Bulletin No. 37. On the Birds of Colorado. By W. W. Cooke, Fort Collins, Colorado. March, 1898, 8vo. pp. 148-176.

Prof. Cooke's 'Birds of Colorado'<sup>1</sup> having "led to quite an extensive correspondence and in several cases the examination or re-examination of large series of specimens." The new information thus obtained has resulted in increasing the list of Colorado birds from 360, as given in Bulletin 371, to 374, a revised summary allotting the fourteen additional species to the various categories in which they belong. Additions are also made to the 'Bibliography of Colorado Ornithology,' and further notes are given relative to the distribution of species previously treated.—F. M. C.

**Proceedings of the Delaware Valley Ornithological Club.**<sup>2</sup>—This is the second 'Abstract of Proceedings' issued by the Delaware Valley Club, the first having been published in 1892. In the future it is proposed "to issue a yearly number covering the Proceedings with much greater detail." The present 'Abstract' shows an average attendance at the bi-monthly meetings of the Club of about sixteen members, gives the titles of the papers presented with references to their place of publication, if any, and other matters of interest to the Club, which is evidently a flourishing organization.—F. M. C.

**Kearton's 'With Nature and a Camera.'**<sup>3</sup>—This is an unusual book: its author has made a large amount of valuable information readable; its illustrator has accomplished surprising and inspiring achievements with the camera. We do not recall a more satisfactorily illustrated book, although from frontispiece to tailpiece every picture was made through a lens, and they not only furnish a record of facts which the worker with brush or pencil cannot hope to equal, but many of them possess a beauty rivalling the best productions of the natural history artist.

The first three of the eleven chapters of this noteworthy book treat of the human and feathered inhabitants of St. Kilda, the remaining eight are respectively entitled "Gamekeepers: Their Friends and Foes," "Nests, Eggs, and Young," "Where Birds Sleep," "Sea-Birds and their

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<sup>1</sup> See 'The Auk,' XIV, 1897, p. 331.

<sup>2</sup> Abstract of the Proceedings of the Delaware Valley Ornithological Club of Philadelphia. For the years 1892 to 1897. Published by the Club, 1898. 8vo. pp. 1-42.

<sup>3</sup> With | Nature and a Camera | Being the Adventures and Observations | of a Field Naturalist and an | Animal Photographer | By | Richard Kearton, F. Z. S. | Author of 'British Birds' Nests,' 'Birds' Nests, Eggs, and Egg-Collecting,' etc., etc. | Illustrated by 180 Pictures from Photographs | by Cherry Kearton | Third Thousand | Cassell and Company, Limited | London, Paris & Melbourne | 1898 | All Rights Reserved.—8vo. pp. xvi + 368, numerous half-tone illustrations.

Hunts," "How Cage Birds are Caught: A Day on Brighton Downs," "The Art of Duck-Decoying," "People We have Met," and "Our Methods of Photography." There is no padding, nor one poor or uninteresting picture, and while the birds mentioned are for the most part strangers to American readers, we commend the book and its author's and illustrator's methods as stimulating evidences of the results which may be obtained in a previously well-worked field by diligent, careful observation and persistent, patient effort. — F. M. C.

**Publications Received.**— **Bangs**, Outram. On Some Birds from Pueblo Viejo, Colombia. (Proc. Biol. Soc. Wash., XII, 1898, pp. 157-160.)

**Blanford**, W. T. The Fauna of British India. Birds, Vol. IV. 8vo, London, Calcutta, Bombay and Berlin, 1898.

**Butler**, Amos W. The Birds of Indiana. (Rep. State Geologist for 1897, pp. 515-1187.)

**Christie**, Miller. Rockall. (Scottish Geogr. Mag., Aug. 1898, pp. 393-415.)

**Davie**, Oliver. Nests and Eggs of North American Birds. Fifth edition. 8vo, Columbus, 1898.

**Eastman**, C. R. On Remains of *Struthiolithus chersonensis* from Northern China, with Remarks on the Distribution of Struthious Birds. (Bull. Mus. Comp. Zoöl., Vol. XXXII, No. 7, Aug. 1898.)

**Forbush**, E. H. Nature's Foreresters. (Massachusetts Crop Report for the month of May, 1898, pp. 27-40.)

**Gurney**, J. H. (1) The Economy of the Cuckoo (*Cuculus canorus*). (Trans. Norfolk and Norwich Naturalists' Soc., Vol. VI, pp. 365-384.) (2) The New Zealand Owl (*Sceloglaux albigacies* Gray) in captivity. (*Ibid.* pp. 154-158.) (3) The Tendency in Birds to resemble Other Species, (*Ibid.*, pp. 240-244.) (4) Ornithological Record for Norfolk for 1896. (Zoölogist, March, 1897, pp. 121-138.)

**Hose**, Charles. On the Avifauna of Mount Dulit and the Baram District in the Territory of Sarawak. (Ibis, July, 1893, pp. 381-422, pll. x, xi.)

**Kearton**, Richard. With Nature and a Camera. 8vo. London, Paris and Melbourne, 1898.

**Lee**, Oswin A. J. Among British Birds in their Nesting Haunts. Folio, pt. xii, 1898.

**Sharpe**, R. Bowdler. (1) Descriptions of fourteen new Species of Birds discovered by Mr. F. J. Jackson in Eastern Africa. (Ibis, Jan. 1891, pp. 117-122.) (2) Bornean Notes: Nos. II and III. (Ibis, July and Oct. 1894.) (3) On the Birds of Zululand, founded on Collections made by Messrs. R. P. and J. D. S. Woodward. Parts I and II. (Ibis, July and Oct., 1897.) (4) On a Collection of Birds from Witu, British East Africa. By F. J. Jackson, with notes by R. Bowdler Sharpe. (Ibis, Jan., 1898.) (5) On a Collection of Birds made by Dr. A. Donaldson Smith during his recent Expedition in Western Somaliland. (Proc. Zoöl. Soc. Lond. 1895, pp. 457-520, pll. XXVII, XXVIII.)



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**Transactions of the Wisconsin Academy of Science, Arts and Letters** XI, 1896-97.  
**Zoölogist**, The, (4) Nos. 19-21, July-Sept., 1898.

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## NOTES AND NEWS.

THE SIXTEENTH ANNUAL CONGRESS of the American Ornithologists' Union will be held in Washington, D. C., beginning on the evening of November 14, 1898. This evening session will be devoted to the election of officers and members and the transaction of the usual routine business. Tuesday and the following days will be given to public sessions for the reading and discussion of scientific papers. Members intending to present papers are requested to forward the titles of their papers to the Secretary, Mr. John H. Sage, Portland, Conn., prior to November 6, in order to facilitate the preparation of the program of papers to be read before the Congress.

OSBERT SALVIN, an Honorary Member, of the A. O. U., who died at his home, Hawksfold, near Haslemere, England, June 1, 1898, was born at Finchley in 1835. A sketch of Mr. Salvin, published in 'The Zoölogist' for July, 1898, states that he was "the only surviving son of Mr

Anthony Salvin, a well-known architect. Shortly after graduating at Cambridge as Senior Optime in the Mathematical Tripos of 1857, he made a Natural History Expedition to Tunis and Algeria, in the company of Mr. W. H. Hudleston and Mr. (now Canon) Tristram, both of whom survive. In the autumn of the same year he made the first expedition to a country with which his life's work was to be largely associated; this was his visit to Guatemala, where he stayed chiefly in company with the late Mr. G. U. Skinner, the well-known collector of orchids, till the middle of 1858, revisiting the same region in about a year, and for a third time in 1861, in company with his friend and future coadjutor, Mr. F. D. Godman. After his marriage, in 1865, he with his wife made a fourth journey to Central America. . . .

"From the foundation of the Strickland Curatorship in the University of Cambridge, in 1874, Mr. Salvin accepted and held that office until 1883, when he succeeded to the family estate. . . .

"In association with his life-long friend Mr. Godman we see a capacity and love for scientific zoology combined with the accident of wealth which are phenomenal. The publication of the '*Biologia Centrali-Americana*' is an unique event both in project and realization. Its conception not only proclaimed a devotion to zoological labour on the part of its editors, but declared an optimism in the expected assistance of other workers, which was generally seen to be amply justified. The expense of production would have strained the available finances of a small state, and would have required a financial vote — not likely to have been granted — of an enlightened empire. Such amounts are privately wasted every year, but seldom contributed to science, especially to such a sober and non-advertising science as zoology. . . . It is probable that it will be long before such an union occurs again as produced the '*Biologia*,' and made the rooms in Chandos Street [10 Chandos Street, Cavendish Square, London] such a zoological rendezvous."

Mr. Salvin was a lepidopterist of note, as well as an ornithologist, his special field in entomology being the Rhopalocera, which group he elaborated in conjunction with Mr. Godman, for the '*Biologia*.' His contributions to American ornithology appear to have begun in 1859, in joint authorship with Mr. P. L. Sclater, in a series of papers entitled '*On the Ornithology of Central America*,' contributed to the first and second volumes of '*The Ibis*,' the first of which, by an interesting coincidence, formed the first article of the first number of this eminent journal. From this date onward contributions to the ornithology of Central America, and later to that of South America by Mr. Salvin, either alone or jointly with Mr. Sclater, appear with great frequency in '*The Ibis*' and in the '*Proceedings*' of the Zoölogical Society of London, constituting highly important and voluminous additions to the literature of Tropical American ornithology. In 1866-69 was published the magnificent '*Exotic Ornithology*, containing figures and descriptions of new and rare species of American Birds,' a folio volume in thirteen parts, with one hun-

dred colored plates. In 1873 appeared the well-known 'Nomenclator Vvium Neotropicalium,' one volume, folio, by Sclater and Salvin. In 1876 Mr. Salvin published an important paper 'On the Avifauna of the Galapagos Archipelago,' in the 'Transactions' of the Zoölogical Society of London. In the same year appeared a series of papers in 'The Ibis,' on various genera of Hummingbirds, under the joint authorship of Mr. Salvin and D. G. Elliot. Mr. Salvin also later published many papers on Central and South American birds in conjunction with F. DuCane Godman, with whom he shared the editorship of that monumental work, the 'Biologia Centrali-Americana,' already mentioned. In 1876, 'A Revision of the Neotropical Anatidæ, by Sclater and Salvin, appeared in the 'Proceedings' of the Zoölogical Society,—a most valuable contribution to the subject.

Among Mr. Salvin's more important later publications are his contributions to the British Museum 'Catalogue of Birds,' of which his monographs of the suborders Upupæ and Trochili formed part of volume XVI published in 1892 (reviewed in this journal, X, pp. 66, 67), and the Tubinares, forming part of volume XXV, published in 1896 (reviewed in this journal, XIII, pp. 161, 162). The publication of the 'Aves' of the 'Biologia Centrali-Americana,' in joint authorship with Mr. Godman, began in 1879, the first part appearing in April of that year. Volume I<sup>1</sup> (4to, pp. 1-512, pll. i-xxxv) was completed in April, 1887, and Volume II (pp. 1-598, pll. xxxvi-lx) in February, 1889. The first part of Volume III the last that has come to hand, was issued in November, 1897, carrying the subject to the beginning of the Accipitres. It is to be hoped that the completion of this great work will not be greatly retarded by the death of the principal author. In addition to his other scientific labors Mr. Salvin was editor of the third series of 'The Ibis' (1871-76) and joint editor with Mr. Sclater of the fourth series (1877-82).

The unsurpassed collection of Central American and South American birds formed by Messrs. Salvin and Godman during their long period of exploration and study of the Tropical American avifauna was liberally presented by these gentlemen to the British Museum in 1885, where it forms one of most important of the many magnificent gifts by generous Englishmen to the Ornithological Department of this great Museum.

Mr. Salvin, although passing away at the comparatively early age of sixty-three, enjoyed a long period of scientific activity, including, what few ornithologists have enjoyed, an extended field experience in Tropical America, and his name will ever remain among the most prominent of those who have made this rich field the special subject of life-long research.

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<sup>1</sup>Parts I-IX were noticed in Vol. VI (July, 1881, pp. 174-176) of the 'Bulletin' of the Nuttall Ornithological Club, and Volume I as a whole in 'The Auk', VII, April, 1890, pp. 189-195.

OWING to impaired health Mr. W. A. Johnson, editor of the 'Osprey,' announces that he is compelled to abandon the publication of this interesting and popular journal, which we trust may fall into equally competent hands.

WE LEARN through the daily press that Mr. E. A. McIlhenny and his associates have reached Seattle, Washington, homeward bound from their expedition to Point Barrow, Alaska.

MR. HARRY C. OBERHOLSER is at present engaged in a revision of the American Horned Larks, and finding himself in need of further material from Lower California would be glad to receive specimens from there for examination. They may be sent to him, care of the Biological Survey, U. S. Department of Agriculture, Washington, D. C. The specimens will be properly cared for and returned within a reasonable time.

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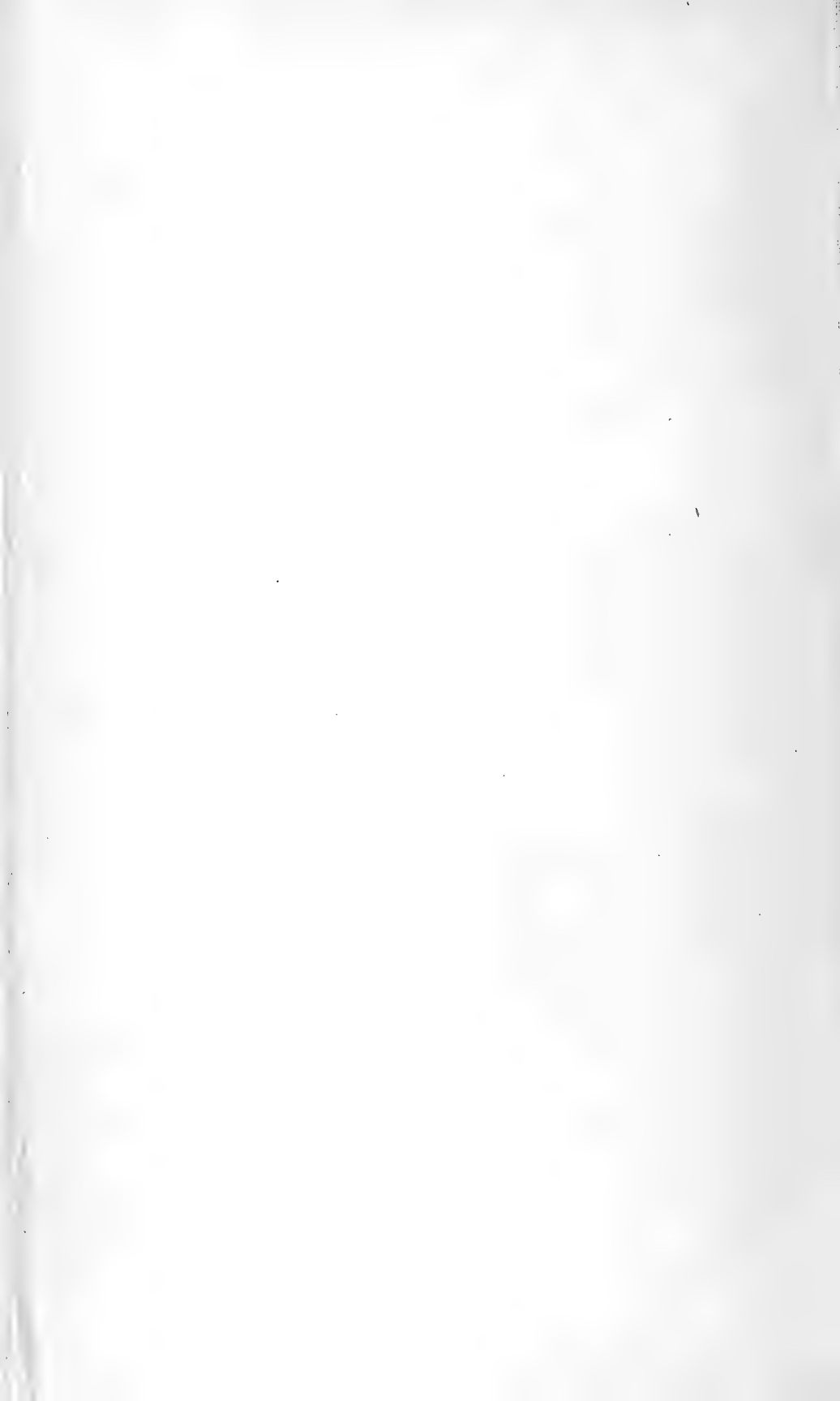
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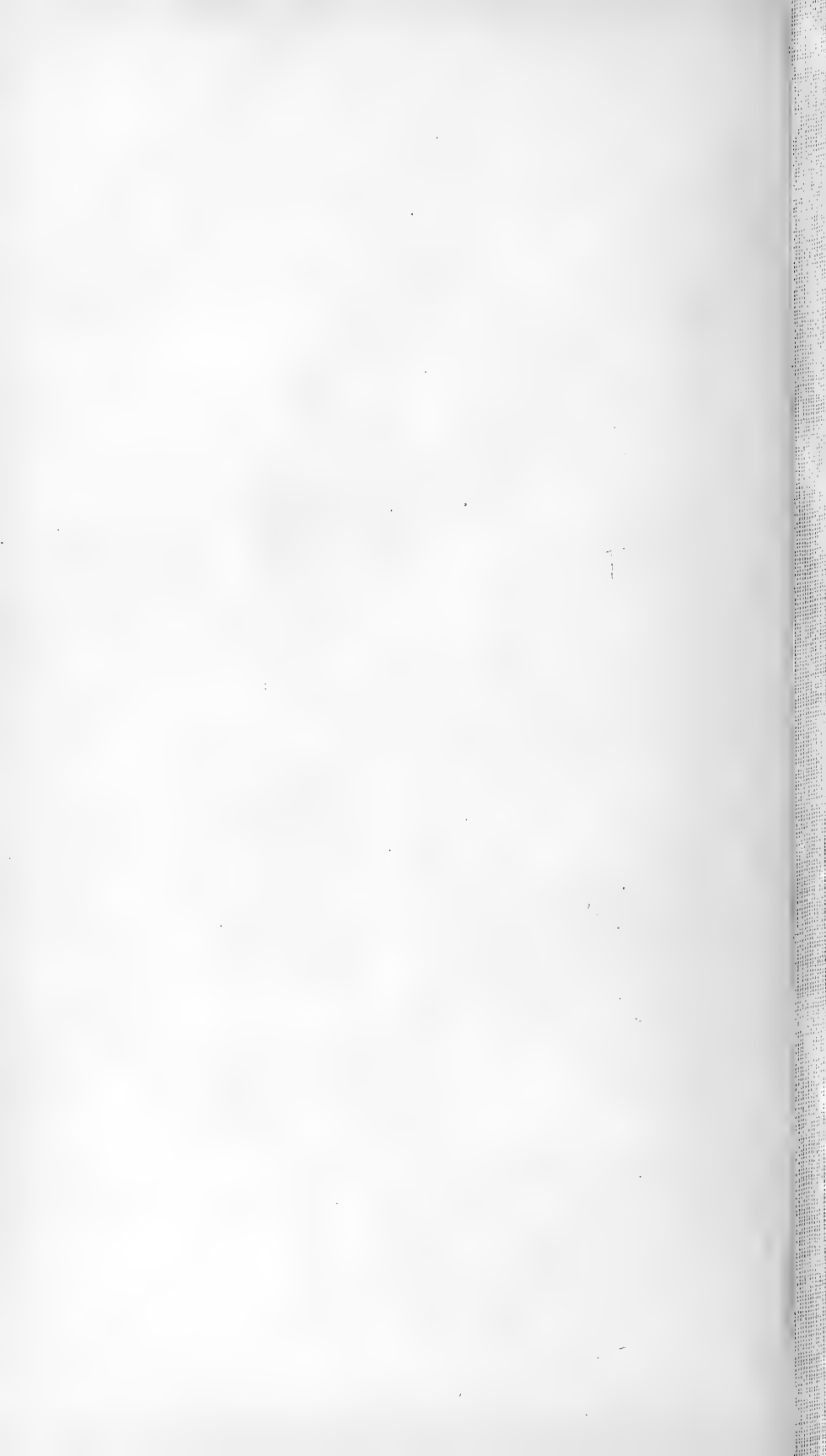


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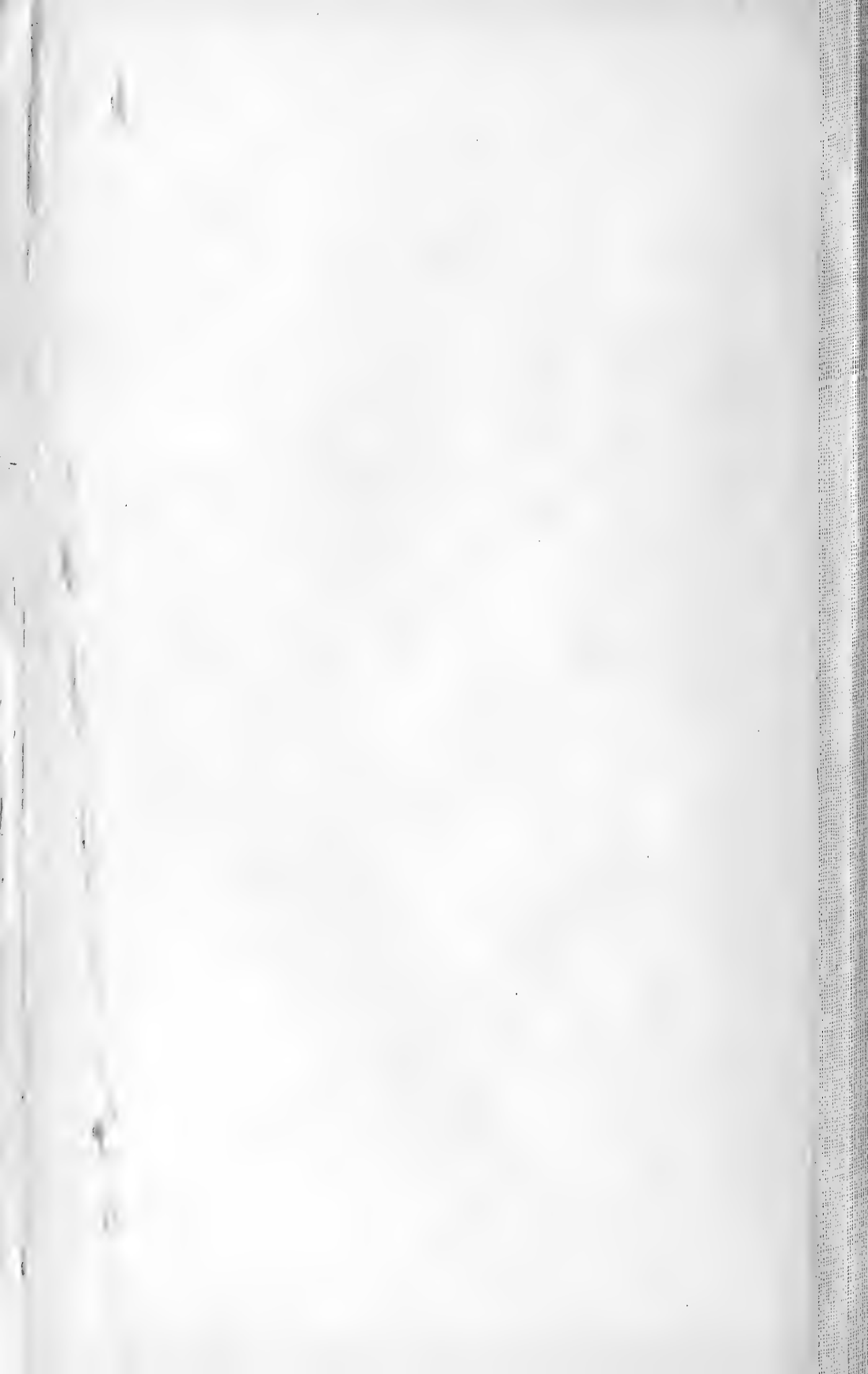
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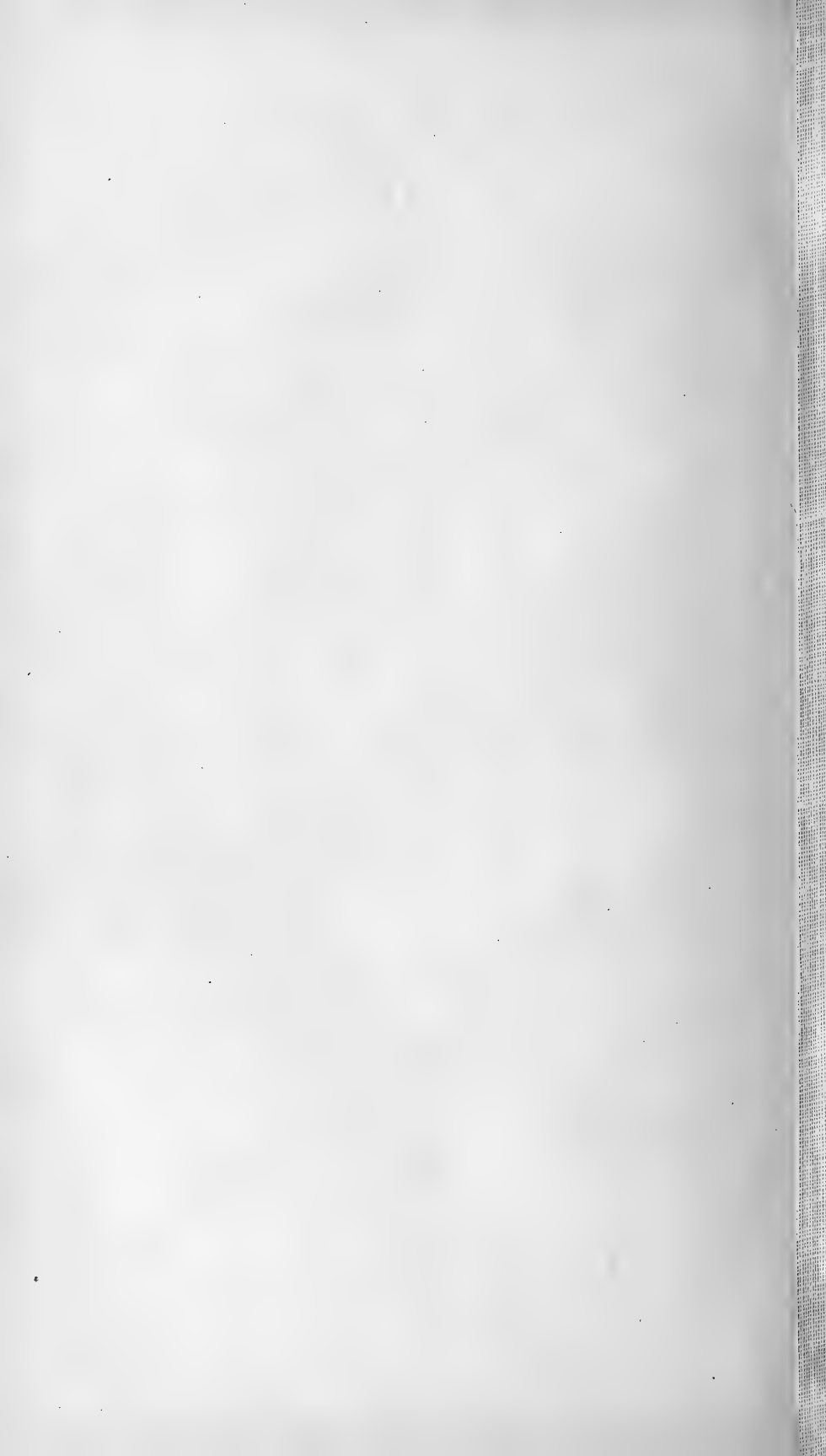


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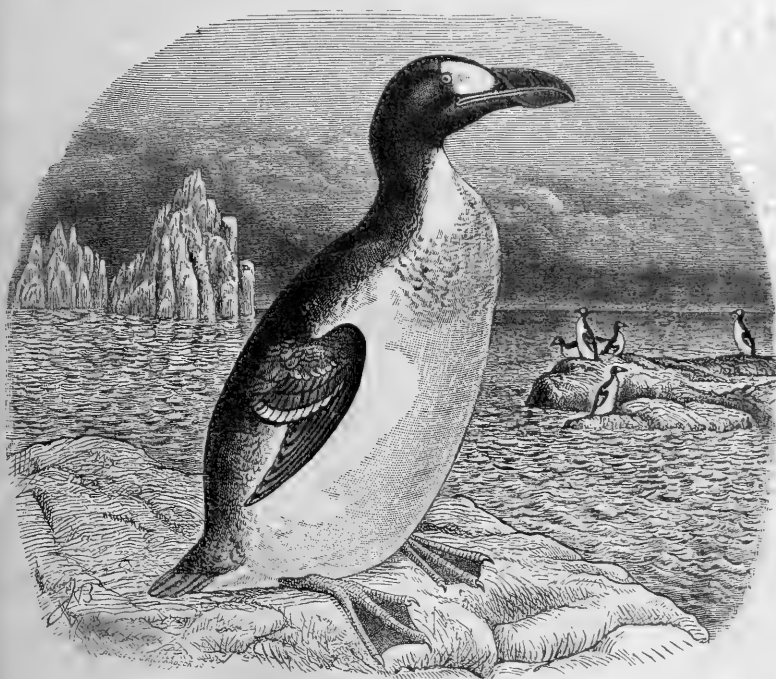
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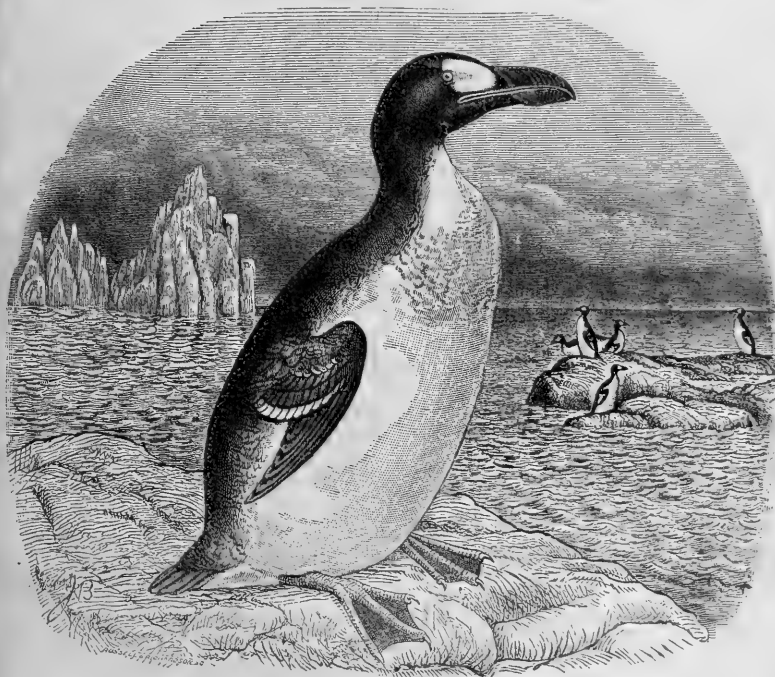
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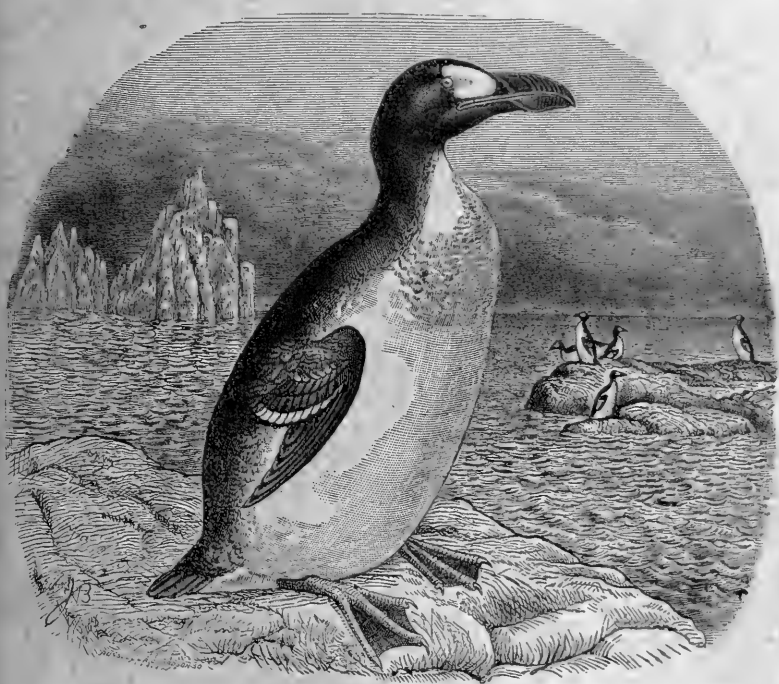
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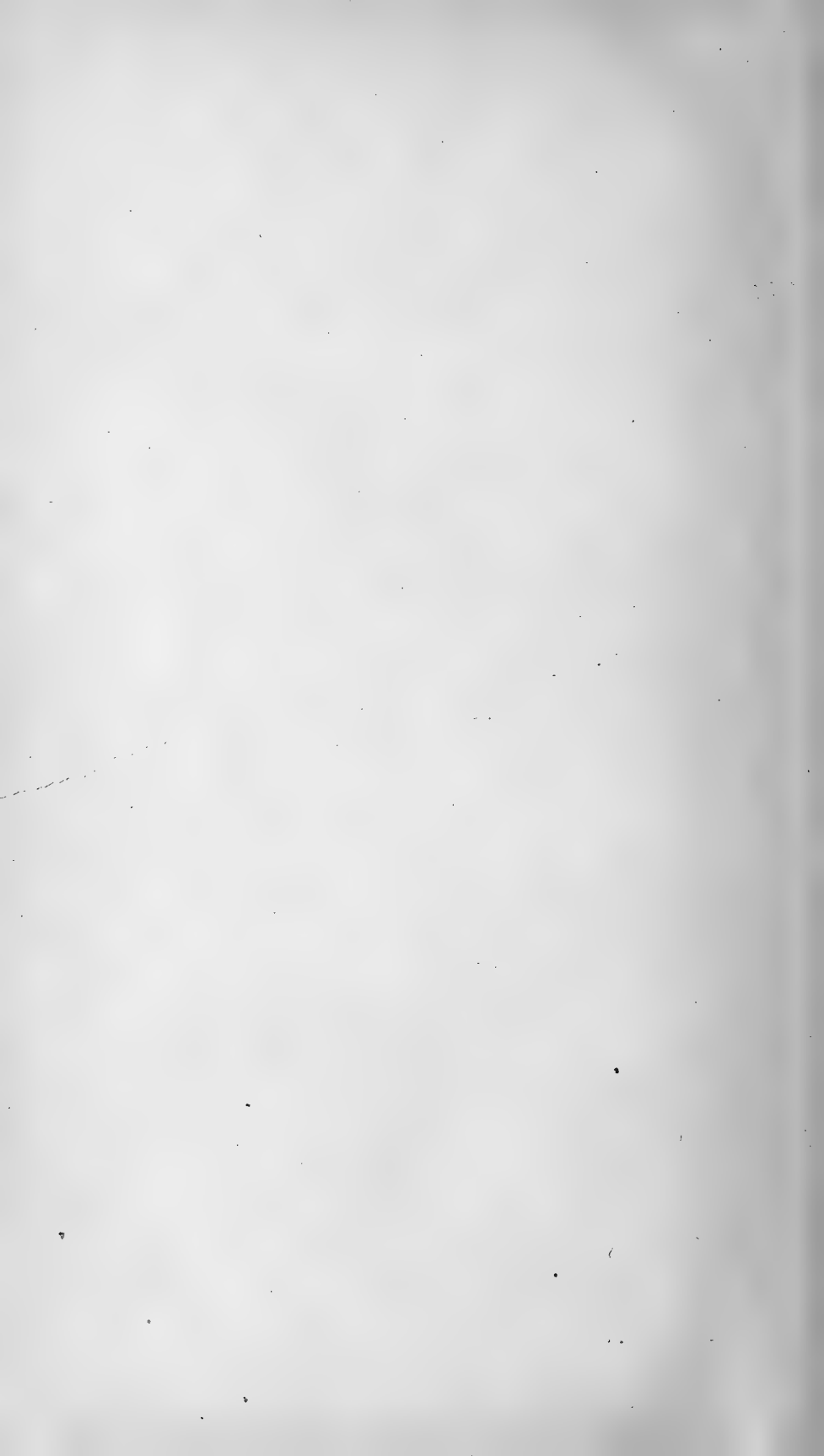
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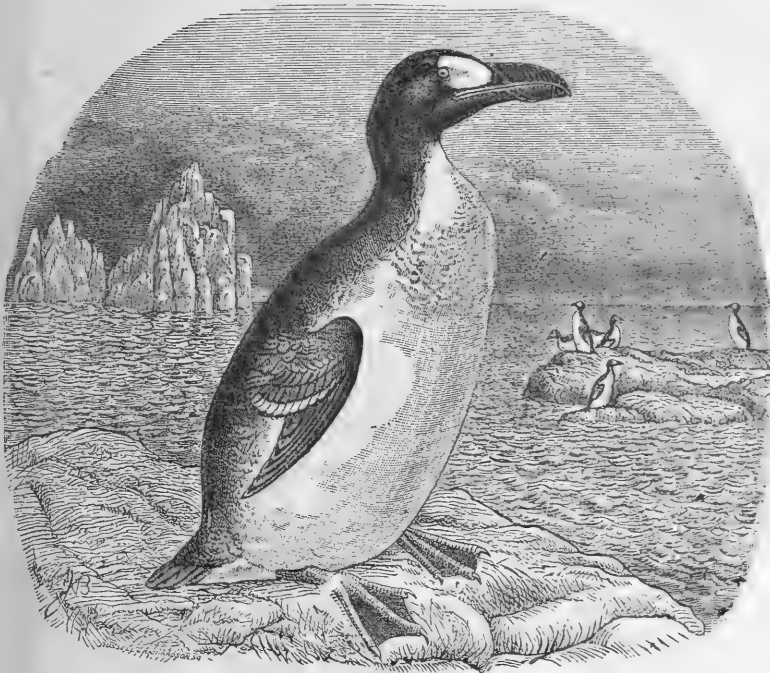
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