Not more than one-third of these have been found at any one locality.

The largest number recorded from any one locality is the forty-two species enumerated for Bean Blossom creek in about one mile of its course.

Over half of the genera (34), and more than two-thirds of the species belong to the following five families: Siluridæ, Catostomidæ, Cyprinidæ, Centrarchidæ, Etheostomidæ. About one fifth of the species are minnows, another fifth are durters, cat fish and suckers together form a third fifth, the sunfishes, salmon and trout, and Cyprinodontidæ complete the fourth fifth and the last fifth is made up of nineteen other families.

BIBLIOGRAPHY OF INDIANA ORNITHOLOGY.

BY A. W. BUTLER.

The following bibliographical notes, while far from complete, indicate many of the publications relating to Indiana birds, most of which were at hand for reference. Most of the more general works have been omitted, although several of them refer to Indiana birds.

- 1827-49. Audubon, J. J. Birds of America. 4 v. doub. elephant folio. London. 435 colored plates. Original edition colored plates.
- 1831-49. ——Ornithological Biography, or an account of the habits of the birds of the United States of America: accompanied by descriptions of the objects represented in the work entitled the Birds of America. 5 vols., royal 8 vo. Edinburgh, 1831-49.
 - The original edition of the text to Audubon's great work, "The Birds of America," Very valuable. A copy at the Larking sale, May, 1892, brought €345. A copy is quoted in Quaritch's last catalogue, May, 1894, at €350.
- 1831. Oroghen, Col. George. Journal of Col. Croghan, Monthly American Journal of Geology and Natural Science. Philadelphia, December, 1831.

Mentions the occurrence of some birds in Indiana.

1834. Butler, Mann. History of Kentucky. Louisville, 1834.

- Contains a copy of the Journal of Col. Croghan down the Ohio in 1765. Refers to Indiana birds.
- 1840-44. Audubon, J. J. The Birds of America. From drawings made in the United States and their Territories. By John James Audubon. Philadelphia: J. B. Chevalier, 1840-44. 7 vols.
- 1846. Croghan, George. Journal of George Croghan. The Olden

Time, a monthly publication devoted to the preservation of documents and other authentic information in relation to the early explorations and the settlement and improvement of the country around the head of the Ohio. Edited by Neville S. Craig, Esq. Two vols., small 4to. Pittsburg, 1846-48.

- 1856. Haymond, Rufus, M. D. Birds of South-eastern Indiana. Proc. Academy of Natural Science, Philadelphia, vol. VIII, 1856, pp. 286-298. A list of birds observed in the Whitewater valley.
- 1868. Allen, J. A. Notes on birds observed in Western Iowa, in the months of July, August and September; also on birds observed in Northern Illinois in May and June, and at Richmond, Wayne county, Indiana, between June 3d and 10th. Memoirs Boston Soc. Natural History, vol. I, pt. IV, Art. XII, December 1868, pp. 488-526. Also issued separately. Mentions 72 Indiana species.
- 1869. Haymond, Rufus. Birds of Franklin county, Indiana. First Annual Report of the Geological Survey of Indiana, made during the year 1869, by E. T. Cox, State Geologist, 1869, pp. 209-335.
- Also issued bound with Agricultural Report of the same year, entitled Indiana Agricultural and Geological Report 1869, etc.
- 1874. Kirtland, J. P. Letter from, dated 1857, mentioning various Indiana birds. Proc. Cleveland Acad. Nat. Science, 1874, pp. 131-132.
- 1874. Ridgway, R. The Wabash valley and its avian fauna. Proc. Boston Soc. Nat. Hist., vol. XVI, pp. 303-332.

- 1874. Coues, Elliott. Birds of the Northwest, a handbook of the Ornithology of the region drained by the Missouri river and its tributaries. Dept. of the Interior, U. S. Geol. Survey of the territories, Miscellaneous Publications, No. 3, 1874.
- 1876. Jordan, David Starr. Manual of the vertebrates of the Northern United States, including the district east of the Mississippi river and north of North Carolina and Tennessee, exclusive of marine species, by David Starr Jordan, Ph. D., M. D., Professor of Natural History in N. W. C. University, and in Indiana State Medical College. Chicago, Jansen, McClurg & Co., 1876.

Refers to a number of Indiana birds. A second edition, dated 1878; a third, 1880; a fourth in 1888.

- 1876. Smith, G. Aug. Birds of Ft. Wayne, Indiana. Forest and Steam, vol. XI, 1876, pp. 148. Fifty species mentioned, some by error.
- 1876. Coues, Elliott. Peculiar nesting site of Bank Swallow, (i. e., Stelaidopterux serripennis), Bull. Nuttall Orn. Club, vol. I. 1876, p. 96.
- 1876. Haymond, R. Notes on the Bank Swaliow, (i. e., Stelgidopteryx serripennis). Field and Forest, vol. I, 1876, No. 11, p. 88.
- 1876. Coues, Elliott. Notable change of habit of the Bank Swallow, (i. e., Stelgidopteryx serripennis). American Naturalist, vol. X, 1876, pp. 493-492.
- 1876. Nelson, E. W. Additions to the avi-fauna of Illinois, with notes on other species of Illinois birds. Bull. Nuttall Orn. Club, vol. I, 1876, pp. 39-44.

Notes some observations on the Wabash river.

Some observations noted about the southern end of Lake Michigan along the Indiana and Illinois line.

————Notes upon birds observed in Southern Illinois between July 17 and September 4, 1875. Bull. of the Essex Institute, vol. IX, 1877, pp. 32-65.

Part of the observations made on the Wabash river and part on the White river.

1877. Oologist (A. W. Butler). The nesting of the Wood Pewee. The Oologist, vol. III, 1877, p. 37.

1877. Langdon, Frank W. A catalogue of the birds in the vicinity of Cincinnati, Frank W. Langdon, Salem, Mass. Naturalists' Agency, 1877, pp. 18.

Mentions several observations on Indiana birds.

1878. Ridgway, Robert. A review of the American species of the genus Scops Sarigny. Proc. U. S. National Museum, vol. I, 1878, pp. 85-117.

Notes the results of observations on the dichromatic phrases of Scops asio. In part made in Indiana.

1878. Brewster, William. The Prothonotary Warbler. Bull. Nuttall Orn. Club, vol. 111, 1878, pp. 153-162.

Based on observations made in Knox and Gibson counties, Indiana.

1878. Ridgway, Robert. Notes on birds observed at Mt. Carmel,

Southern Illinois, in the spring of 1878. Bull. Nuttall Orn. Club, vol. III, 1878, pp. 162-166.

Based in part upon observations in the Cypress swamp in Indiana.

- 1878. Allen, J. A. Early nesting of the Shore Lark near Indianapolis. Bull. Nuttall Orn. Club, vol. 11I, 1878, p. 189.
- 1878. Cones, Elliott. Birds of the Colorado valley. Dept. of the Interior U. S. Geol. Survey of the territories. Miscellaneous Publications, No. 11. Part First, Passeres to Laniidæ. 1878.
- 1879. Langdon, Frank W. A revised list of Cincinnati birds. Journal Cincinnati Soc. Nat. Hist., vol. II, 1879, pp. 1-27. Mentions several Indiana birds.
- 1880. Ridgway. Robert. On six species of birds new to the fauna of Illinois, with notes on other rare Illinois birds. Bull. Nuttall Orn. Club, vol. V, 1880, pp. 30-32.

Notes the occurrence of Ibis alba at Mt. Carmel, Illinois.

- 1880. Brayton, Alembert W. A catalogue of the birds of Indiana, with keys and descriptions of the groups of the greatest interest to the Horticulturist, by Alembert W. Brayton, B. S., M. D. Transactions Indiana State Horticultural Society for 1879, pp. 87-165.
- 1880. Allen, J. A. Review of Brayton's catalogue of the birds of Indiana. Bull. Nuttall Orn. Club, vol. V, 1881, pp. 174-175.
- 1880. Langdon, Frank W. Ornithological field notes, with five additions to the Cincinnati avi-fauna. Journ. Cincinnati Soc. of Nat. Hist., vol. III, 1880, pp. 121–127.

Contains several notes on birds of Franklin county, Indiana.

1881. Quick, E. R. Catharista atrata Less. Journ. Cincinnati Soc. Nat. Hist., vol. IV, 1881, p. 340-341.

Two specimens noted near Brookville, Indiana.

Specimens taken near Brookville, Indiana.

1881. Langdon, F. W. Zoological Miscellany—Ornithology. Journ. Cincinnati Soc. Nat. Hist., vol. IV, 1881, pp. 337-341.

Contains several Notes from Brookville, Indiana.

1881. Ridgway, Robert. A catalogue of the birds of Illinois. Bull. No. 4, Illinois State Laboratory of Nat. Hist., May 1881, pp. 163-208. Mentions the occurrence of the Louisiana Heron (*A tricolor ruficellis Gosse*) in Indiana,

etc.

------Notes on some of the birds observed near Wheatland, Knox county, Indiana, in the spring of 1881. Bull. Nuttall Orn. Club, vol. VII, 1882, pp. 15-33.

⁻⁻⁻⁻⁻ Chen hyperboreus Boie. Journ. Cincinnati Soc. Nat. Hist., vol. IV, 1881, p. 341,

- 1882. Langdon, F. W. Dichromatism in the Screech Owl (Scops asio Bp). Journ. Cincinnati Soc. Nat. Hist., vol. V, 1882, pp. 52-53. Refers to several Indiana specimens.
- 1882. Langdon, F. W. A synopsis of the Cincinnati fauna. Zoological Miscellany, Journ. Cin. Soc. Nat. Hist., Vol. V, No. 3, pp. 185–194. Includes birds.
- 1882. Quick, E. R. Winter Birds of 1880 and 1881 on the White Water. Journ. Cincinnati Soc. Nat. Hist., yol. V., 1882, pp. 54-56.
- ------Ornithological Notes from Brookville, Indiana. Journ. Cincinnati Soc. Nat. Hist., vol. V., 1882, p. 192.
- 1882. Butler, A. W. The Birds of Franklin county, Indiana. Atlas of Franklin county, Indiana, etc., J. H. Beers & Co., Chicago, 1882, pp. 11-12.

------Ornithological Notes from Brookville, Indiana. Journ. Cincinnati Soc. Nat. Hist., vol. V, 1882, pp. 192–193.

1882. Quick, E. R. Brookville (Indiana) Notes. Journ. Cincinnate Soc. Nat. Hist., vol. V, pp. 93-95.

Appears under the caption "Ornithology" under "Zoological Miscellany."

- 1882. Wheaton, J. M., M. D. Report on the birds of Ohio. Report of the Geological Survey of Ohio, vol. IV; Zoology and Botany, Part I; Zoology, Section II, Columbus, Ohio, 1882, pp. 187-628. Notes several observations on Indiana birds.
- 1883. Langdon, F. W., M. D. Bibliography of the Cincinnati fauna. Journ. Cincinnati Soc. Nat. Hist., vol. VI, 1883, pp. 5–53. Mentions several publications on Indiana birds.
- 1883. Evermann, B. W. Notes from Bloomington, Indiana. Vol. VIII, pp. 27-28.
- 1884. Butler, A. W. Local Weather Lore. The Meteorological Journal, Dec. 1884, pp. 313-316.

Abstract from above.

- 1884. Evermann, B. W. Arrivals of birds at Camden, Indiana, 1894. Ornithologist and Oologist, vol. IX, 1884, p. 74.
- 1884. Noe, Fletcher M. Chimney Swallows. Ornithologist and Oologist, vol. IX, 1884, p. 104.

Relating to birds.

Local Weather Lore. Proc. A. A. A. S., vol. XXXIII, 1884, pp. 609-603.

- 1884. Evermann, B. W. Bird Migration. Am. Field, vol. XXI, pp. 544-545.
- 1884. Noe, Fletcher M. Are Owls beneficial to the Farmer; also notes on the species in Indiana. Indiana Farmer, July 5, 1884.
- 1885. Sharpe, R. Bowdler. Catalogue of the Passeriformes or Perching birds in the collection of the British Museum, etc., vol. N., London, 1885.

Contains a number of Indiana references, including *Geothlypis macgillirrayi* (?) from Woif lake, Indiana. This series of publications, which began to be issued in 1874, and is still being published, contains a number of references to Indiana birds.

- 1885. Noe, Fletcher M. Red Crossbill in Indiana. Ornithologist and Oulogist, vol. X., 1885, p. 32.
- - Includes note on birds which were republished in Ornithologist and Oologist, vol. X., 1885, pp. 98-99.

Reprint of last

- 1885. Noe, Fletcher M. The value of birds as insect destroyers. Indiana Farmer, Jan. 17, 1885.
- 1885. Evermann, Barton W. A day with the birds of a Hoosier swamp. Ornithologist and Oologist, vol. XI, 1886, p. 99.
- 1886. Butler, Amos W. A list of birds observed in Franklin county, Indiana. Bull. Brookville, Soc. Nat. Hist. No. 2, 1886, pp. 12-39.
- 1886. Blatchley, W. S. Winter birds of the vicinity of Bloomington Indiana. Hoosier Naturalist, 1, pp. 169-171.
- 1886. Evermann, B. W. White eggs of the Bluebird. Ornithologist and O logist, vol II, 1886, p. 124.
- 1886. Noe, Fletcher M. Notes on the destruction of Indiana birds for millinery purposes. Indianapolis News, Feb. 22, 1886.

------Notes on Indiana birds, Indianapolis News, Feb. 27, 1886.

1886. A. O. U. Check list.

The code of nomenclature and check list of North American birds, adopted by the American Ornithologists' reunion New York, 1886.
Bregg, J. C. Letter. Hoosier Naturalist, Vol. I, p. 155.

1886 Butler, A. W. The periodical cicada in Southeastern Indiana.

U. S. Dep't of Agriculture, Division of Entomology, Bulletin No. 12, pp. 24-31.

Refers to birds known to eat cicadas.

- 1887. Evermann, B. W. Birds of Monroe county, Indiana. The Hoosier Naturalist, vol. II, 1887, pp. 137-145.
- 1887. Evermann, B. W. Some rare Indiana birds. American Naturalist, Vol. XXI, 1887, pp. 290-291.
 - -----Bird migration. Popular Science Monthly, April 1887.

- 1887. Ridgway, Robert. A manual of North American birds. Philadelphia. 1887.
- 1888. Butler, A. W. Tropical Sojourners. The Agassiz Companion, vol. III.

- 1888. Evermann, Barton W. Birds of Carroll county, Indiana. The Auk, vol. V, 1888, pp. 344-351; continued in vol. VI, 1889, pp. 22-30.
- 1888. Butler, Amos W. Notes concerning albinism among birds. Journ. Cincinnati Soc. Nat. Hist. Jan. 1, 1888, pp. 214-216.
- 1888. Noe, Fletcher M. Do English Sparrows protect trees from insect ravages? Indianapolis, News, June 15, 1888.
- 1889. Langdon, F. W., M. D. On the occurrence of large numbers of sixteen species of birds. Journ. Cincinnati Soc. Nat. Hist., vol. XII, 1889, pp. 57-63.
 - Notes the unusual abundance of the Rose-breasted Grosbeak at Brookville, Indiana, in the spring of 1885.
- 1889. Evermann, B. W. The Wood Ibis of Indiana. The Auk, vol. VI, 1889, pp. 186-187.
- 1889. Ridgway, Robert. The Ornithology of Illinois. Natural History Survey of Illinois. State Laboratory of Natural History, S. A. Forbes, Director. Part 1, Descriptive Catalogue, by Robert Ridgway, vol. I, Springfield, Ill., 1889, pp. 520-VIII, pls. XXXII.

The present volume ends with Columbie. Contains many references to Indiana birds.

1889. Barrows, Walter B. The English Sparrow (*Passer domesticus*) in North America, especially in its relations to agriculture. Prepared under the directions of Dr. C. Hart Merriam, Ornithologist, by Walter B. Barrows, Assistant Ornithologist. Bulletin No. 1, U. S. Department of Agriculture, Division of Economic Ornithology and Mammalogy. Washington, 1899, pp. 405 and map.

A number of Indiana observations noted.

- 1889. Dwight, Jonathan, Jr. The horned Larks of North America. The Auk, vol. VII, 1890, pp. 138-158 and map. Notes specimens from Indianapolis, Indiana.
- 1889. Thompson, Maurice. Preliminary sketch of the Aquatic and shore birds of the Kankakee region. Rept. Ind. Geol. Survey 1888, pp. 102-164.
- 1889. Davie, Oliver. Nests and eggs of North American Birds. 4th Ed. 1892, pp. 455+12+11. Three previous editions.
- 1890. Noe, Fletcher M. Wood Ibis in Indiana. Ornithologist and Oologist, vol. XV, p. 167.
- 1891. Butler, Amos W. A catalogue of the birds of Indiana. Trans. Indiana Hort. Soc. 1890, p. 1–135.

Apendix C. Also seperately printed.

- 1891. Butler, Amos W. Our Birds and what they do for the farmer. Rept. State Board of Agl. Ind. 1890, pp. 113-125. Also issued separately in pamphlet form.
- 1891. Hasbrouck, Edwin M. The Carolina Parquet (Conurits carolinensis). The Auk, vol. VIII, 1891, pp. 369-379.
- 1891. Allen, J. A. Butler's Birds of Indiana. Review. The Auk, vol. VIII, p. 383.
- 1891. Hasbrouck, Edwin M. The present status of the Ivory-billed Woodpecker (*Campephilus principalis*). The Auk, 1891, vol. VIII, pp. 174–186.
- 1892. Butler, Amos W. Notes on Indiana birds. Proc. Ind. Acad. Sci. 1891.

- 1892. McBride, R. Wes. Some notes on the birds of Indiana. Proc. Ind. Acad. Sci. 1891, pp. 166-169.
- 1892. Butler, Amos W. Some notes concerning the Evening Grosbeak. The Auk, vol. IX, pp. 238-247.
- 1892. Noe, Fletcher M. Note on White Pelican. New Castle, Ind. O. and O., vol. VI, p. 123.
- 1892. Ulrey, A. B. Notes on the American Bittern (Botaurus lentiginosus). O. and O., vol. XVII, pp. 76-77.

- 1892. Gould, James E. Note on nesting of Bald Eagle at English Lake Ind. O. and O., vol. XVII, p. 64.
- 1892. Kindle, E. M. Arrivals of some migratory birds of Johnson county Indiana, Ornithologist and Oologist, Vol. XVII, p. 44.
- 1892. Bendire, Charles, Capt. U. S A. Life Histories of North American Birds, Smithsonian Institution, United States National Museum; Special Bulletin No. 1, 1892.
- 1893. Butler, Amos W. Further notes on the Evening Grosbeak. The Auk, vol. N, 1893, pp. 155-157.
- 1893. Cook, A. J. Birds of Michigan. Bull. 94 Mich. Agl. College, pp. 1–148 lst Edition.
- 1893. Butler, Amos W. Range of the Crossbill (*Loxia*) in the Ohio valley with notes on their unusual occurrence in summer. Proc. Ind. Acad. Sci. 1892, pp. 63–72.
- 1893. Cook, A. J. Birds of Michigan. Bull. 94 Mich. Agl. College, pp. 1–168, 2d Edition.
- 1893. Fisher, A. K., M. D. The Hawks and Owls of the United States in their relation to agriculture. Bull. No. 3, Div. Orn. and Mam. U. S. Dept. Agriculture. 1893, 210 pp.
- 1893. Cox, Ulysses O. A list of the birds of Randolph county, Ind. with some notes on the mammals of the same county. O. and O., vol. XVIII, 1893, p. 2-3.
- 1893. McBride, Herbert W. Letter. Notes on Rose-breasted Grosbeak in Michigan and Indiana. O. and O., vol. XVIII, p. 47.
- 1893. Butler, Amos W. On the migration of birds. Indiana Farmer, Oct. 21, 1893.

NOTES ON INDIANA BIRDS.

BY A. W. BUTLER.

The following observations are supplementary to the paper on the Birds of Indiana published in the Transactions of the Indiana Horticultural Society 1890:

Ammodramus leconteii (Aud.). Le Conte's Sparrow.

Mr. J. E. Beesley took a specimen of this species from a flock of three or four sparrows, possibly of the same kind at Lebanon, Ind., March 30, 1892. This is the third record for the state.