

Teachers and others of this county formed an association similar to that of the Academy of Sciences. Some one interested in a particular branch was made curator of that branch and all specimens referred to him. As a result we have a very fair collection of the fishes of this county with exact locality labels, a complete set of the birds, including several not known to occur elsewhere in the state, (*Dendroca kirtlandi*) and a similar list of the plants. Work as well done as this in every county of the state would rapidly advance our knowledge of the habits and distribution of the organisms in the state.

Those counties in which academies, colleges or universities are situated ought to lead in this respect. It is certainly the duty of the biological departments of such institutions to make a survey of the surrounding country and *display its fauna and flora*. While I deprecate the miscellaneous collections of odds and ends from nowhere and the ends of the world, a systematic collection of the organisms displayed with proper labels showing the geographical distribution would have a definite, scientific and educational value. The data for the geographical distribution of Indiana animals will be furnished in the reports of the survey.

BIBLIOGRAPHY OF INDIANA FISHES.

Indiana has had more than her share of American Ichthyologists; in fact, she has harbored at one time or another nearly as many as all the other states put together.

These have come in two widely separate periods. Rafinesque, the author of the *Ichthyologia Ohiensis*, and Le Sueur, both of whom were for a time at New Harmony, published between 1814 and 1820. While works of a general nature had an indirect bearing on the fishes of Indiana, nothing appeared on the fishes of Indiana between 1820 and 1875. All the more recent work has been due to the presence in Indiana of David Starr Jordan. It may be noted here that Jordan's first Ichthyological venture was the publication of a description of the Sisco of Lake Tippecanoe, in 1875, and his last Indiana effort the description of a new fish from the Tippecanoe river, 1890.

About Jordan there arose a group of his pupils, all of whom have added something to the knowledge of the fishes of the state.

The names of these which owed their inspiration directly or indirectly to Jordan are Copeland, Brayton, Gilbert, Hay, McKay, Rosa Smith

Swain, Evermann, Eigenmann, Fordice, Blatchley, Jenkins, Bollman Kirsch, Shannon and Woolman.

The following is a list of the papers which have appeared :

1814. **Rafinesque, Constantine Samuel.** "Precis des découvertes Somiologique."
1817. ————First decade of new North American fishes. *Am. Monthly Mag. and Crit. Review*, Dec.
1817. **Le Sueur, Charles A.** A new genus of fishes, of the order abdominales proposed, under the name of *Catostomus*; and the characters of this genus, with those of its species, indicated. *Journ. of the Acad. Nat. Sci. Philad.* I, 1817, pp. 88-96 and 102-111.
1818. **Rafinesque.** Description of two new genera of North Am. fishes. *Am. Monthly Magazine, etc.* Jan. 1818.
- Second decade of new North American fishes, l. c. Jan. 1818.
- Discoveries in Natural History made during a journey through the western region of the United State by Constantine Samuel Rafinesque. *Am. Monthly Magazine, etc.*, Sept. 1818. Dated Falls of Ohio, 20th July, 1813.
1818. **Le Sueur.** In *Trans. Am. Philos. Soc.* I., 388.
1818. **Rafinesque.** Further discoveries in Natural History, made during a journey through the western region of the United States, by Constantine Samuel Rafinesque. *Am. Monthly Magazine, etc.*, Oct. 1818.
- Further account of discoveries in Natural History in the western states by Constantine Samuel Rafinesque. l. c., Oct. 1818.
- Description of three new genera of fluviatile fish, *Pomoxis*, *Sarchirus*, and *Exoglossum*. *Journ. Philad. Acad. Sc.*, Nov. 1818.
1819. **Le Sueur.** De Quelques Poissons decouverts dans les Sacs de Haute Canada. *Mem. Mus.* v.
1819. **Rafinesque.** Prodrome de 70 nouveaux Genres d'Animaux decouverts dans l'interieur des Etats-Unis d'Amerique durant l'année 1818, *Journal de Physique, de Chymie et d'Histoire Naturelle*, June, 1819.
- 1819-1820. **Rafinesque.** *Ichthyologia Ohiensis.* *Western Review and Miscellaneous Magazine*, Dec. 1819-Nov. 1820.
1820. **Rafinesque.** Description of the Silures or Cat-fishes of the river Ohio. *Quart. Journ. Sci. Lit. and Arts*, Royal Institution, London. 1820.
- 1840-44. **Kirtland, Jared Potter.** Description of the fishes of the Ohio river and its tributaries. *Bost. Journ. Nat. Hist.*, vols. III-V 1840-1844.

1846. **Storer, David Humphreys.** A synopsis of the fishes of North America. 1846.
- 1859-1870. **Gunther, Albert.** A catalogue of the fishes of the British Museum.
1875. **Jordan, David S.** The Sisco of Lake Tippecanoe. *Am. Nat.*, March 1877, pp. 135-138.
- The Sisco of Lake Tippecanoe and its relatives. Sixth Ann. Rept. of the Geol. Survey of Indiana. 1875.
- Synopsis of the genera of fishes to be looked for in Indiana l. c.
1876. **Jordan.** Manual of the vertebrates of the Northern United States, etc. 1876. Second Ed. 1878. Third Ed. 1880. Fourth Ed. 1885. Fifth Ed. 1888.
- Concerning the fishes of the Ichthyology Ohiensis. *Bull Buffalo Soc. Nat. Hist.*, 1876, pp. 91-97.
1876. **Jordan and Copeland, Ernest.** Check list of the fishes of the fresh waters of North America. *Bull Buffalo Soc. Nat. Hist.*, II, 1876, pp. 133-164.
- Johnny Darters. *Amer. Nat.*, June, 1876, pp. 335-341.
1877. **Jordan and Gilbert, Charles H.** List of fishes of Indiana. *Indiana Farmer*, Jan. 17, 1877.
1877. **Jordan and Copeland.** The Sand Darter. *Amer. Nat.*, February, 1877, pp. 86-88.
1877. **Jordan.** Review of Rafinesque's Memoirs on North American fishes. *Bull. U. S. Nat. Mus.* 10, 1877.
- Contributions to North American Ichthyology I.
- Notes on *Cottidae*, *Etheostomatidae*, *Percidae*, *Centrarchidae*, *Aphoderidae*, *Dorosomatida*, and *Cyprinidae*, with revisions of the genera and descriptions of new or little known species. *Bull. U. S. Nat. Mus.* 10, 1877.
- Contributions to North American Ichthyology II.
- Synopsis of the Siluridae of the fresh waters of North America. *Bull. U. S. Nat. Mus.* 10, 1877.
- A partial synopsis of the fishes of upper Georgia, with supplementary papers on fishes of Tennessee, Kentucky and Indiana. *Ann. N. Y. Lyc. Nat. Hist.* XI, 1877.
- On the fishes of Northern Indiana. *Proc. Acad. Nat. Sci. Philadelphia*, 1877.

1877. **Jordan and Gilbert, Charles H.** On the genera of North American fresh water fishes. Proc. Acad. Nat. Sci. Philadelphia, 1877, pp. 83-104.
1878. **Jordan.** Catalogue of the fishes of Indiana, in article Pisciculture (by Alexander Heron). Twenty-seventh annual report of the Indiana State Board of Agriculture, 1878.
1878. **Jordan and Brayton, Alembert B.** On the distribution of the fishes of the Alleghany region of South Carolina, Georgia, and Tennessee, with descriptions of new or little known species. Bull. U. S. Nat. Mus. 12, 1878.
Contributions to North American Ichthyology III.
1878. **Jordan.** A synopsis of the family Catostomidae. Bull. U. S. Nat. Mus. 12, 1878.
1879. **Jordan.** Description of new species of North American fishes. Proc. U. S. Nat. Mus. 1879, pp. 235-244.
1881. **McKay, Charles L.** A review of the genera and species of the family Centrarchidae, with a description of one new species. Proc. U. S. Nat. Mus. 1881, pp. 87-93.
1882. **Jordan and Gilbert.** Description of a new species of *Uranidea* (*Uranidea pollicaris*) from Lake Michigan. Proc. U. S. Nat. Mus. 1882, pp. 222-223.
1882. **Swain, Joseph and Kalb, George.** A review of the genus *Noturus*, with a description of one new species. Proc. U. S. Nat. Mus. 1882, pp. 638-644.
1883. **Jordan and Gilbert.** Synopsis of the fishes of North America. Bull. U. S. Nat. Mus. No. 16.
1883. **Jordan.** Notes on the nomenclature of certain North American fishes. Proc. U. S. Nat. Mus. 1883, pp. 110-111.
1883. **Swain, Joseph.** A description of a new species of *Hadropterus* (*Hadropterus scierus*) from Southern Indiana. Proc. U. S. Nat. Mus. 1883, p. 252.
1884. **Gilbert.** A list of fishes collected in the East Fork of White river, Indiana, with descriptions of two new species. Proc. U. S. Nat. Mus. 1884, pp. 199-205.
———Notes on the fishes of Switz City swamp, Greene county, Indiana. Proc. U. S. Nat. Mus. 1884, pp. 206-210.
1884. **Jordan.** A catalogue of the fishes known to inhabit the waters of North America. Rept. Comm. Fish and Fisheries 1884.

1885. **Blatchley, Willis S.** On the American species of the genus *Umbra*. Proc. Acad. Nat. Sci., Philad. 1885, 12.
1885. **Bicknell, Ernest P., and Dresslar, Fletcher B.** A review of the species of the genus *Semotilus*. Proc. Acad. Nat. Sci. Phila. 1885, 14.
 ————A review of the species of the genus *Pimephales*. l. c. 63.
1885. **Jordan and Eigenmann, Carl H.** Notes on skeletons of Etheostomatinae. Proc. U. S. Nat. Mus. 1885, pp. 68-72.
1885. **Jordan.** Notes on the scientific name of the yellow perch, the striped bass, and the American fishes. Proc. U. S. Nat. Mus. 1885, pp. 72-73.
 ————On the *Etheostoma variatum* of Kirtland. Proc. U. S. Nat. Mus. 1885, pp. 163-165.
- Meek, Seth E. and Newland, Robert.** A review of the species of the genus *Esox*. Proc. Acad. Nat. Sci. Phila. 1885, 367.
- Eigenmann, Carl H. and Fordice, Morton W.** A catalogue of the fishes of Bean Blossom creek, Monroe county, Ind. Proc. Acad. Nat. Sci. Phila. 1885, 410.
1886. **Evermann, B. W.** A list of the fishes observed in the vicinity of Brookville, Franklin county, Ind. Bull. No. 2 Brookville Soc. Nat. Hist. 1886.
1886. **Jenkins, O. P.** List of the fishes collected in Vigo county in 1885 and 1886. Hoosier Naturalist.
1887. **Gilbert.** Description of new and little known Etheostomoids. Proc. U. S. Nat. Mus. 1887, pp. 47-64.
1887. **Jordan and Evermann.** The food-fishes of Indiana. Report Dept. Agr. Ind. for 1886, August 1887.
1887. **Jordan and Eigenmann.** A review of the Sciænoïd fishes of America and Europe. Rept. U. S. Fish Comm. for 1886, September 1887.
1888. **Evermann and Jenkins.** Notes on Indiana fishes. Proc. U. S. Nat. Mus. 1888, pp. 43-57.
1889. **Jordan.** Report of explorations made during 1888 in the Alleghany region of Virginia, North Carolina and Tennessee, and in western Indiana, with an account of the fishes found in each of the river basins of those regions. Bull. U. S. Fish Com. VIII, pp. 97-168, pls. XIII-XV, 1889.
1890. **Jordan and Evermann.** Description of a new species of fish from Tippecanoe river, Ind. Proc. U. S. Nat. Mus. 1890, pp. 3 and 4.

1891. **Jordan**. Relations of temperature to vertebræ among fishes. Proc. U. S. Nat. Mus. 1891, pp. 107-120.
1891. **Bollman, Charles Harvey**. Review of the Centrarchidæ, or fresh water sun-fishes of North America. Rept. Comm. Fish and Fisheries 1888.
1884. **Kirsch**. Bull. U. S. Fish Comm. 1894.
1894. **Eigenmann**. The Fishes of Indiana. Proc. Ind. Acad. Sci. III.
1894. **Ulrey, A. B.** The Fishes of Wabash County. Proc. Ind. Acad. Sci. III,

THE FISHES OF INDIANA. *

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We have compiled a list of the species of fishes so far found in Indiana. After the names, scientific and common, we give a list of all the Indiana localities and authority for the locality. The dates with the authority taken with the bibliography of Indiana fishes will probably be sufficient to enable anyone to look up any of the citations. In a few cases no date is given with the authority. This indicates that no account has been published of the collections made. I. U. Coll. indicates that specimens from that locality are in the collections of the Indiana University.

The localities are arranged in the same order observed in the list of streams which precedes the list of fishes. We give only those streams in which collections have been made. Following the name of the stream we give the name and date of the recorder for the given stream.

List of Localities Explored.

THE OHIO RIVER.

- White Water River, Brookville, Franklin county—Evermann, 1886.
- Laughery Creek, Milton, Ohio county—Jenkins, 1888.
- Fourteen Mile Creek, Clark county—Jenkins, 1888.
- Big Pigeon Creek, Evansville, Vanderburg county—Jordan, 1889.
- Cypress Swamp, Posey county—Jordan, 1889.

THE WABASH RIVER.

- At Delphi, Carroll county—Evermann and Jenkins, 1888.
- At Terre Haute, Vigo county—Jenkins, 1886.
- At Vincennes, Knox county—Jordan, 1889.
- At New Harmony, Posey county—Jordan, 1889.
- At Mackey's Ferry, Posey county—Jordan, 1889.

* Contributions from the Zoological Department of the Indiana University, No. 9.