

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. *

By CARL H. EIGENMANN AND CHARLES H. BEESON.

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.

UPPER WABASH BASIN.

- Blue, Round, Shriner and Cedar Lakes, Whitley county—Kirsch, 1894.
 Blue River, Columbia City, Whitley county—Jordan, 1892; Kirsch, 1894.
 Eel River, Logansport, Cass county—Jordan, 1891.
 Eel River, throughout its entire course—Kirsch, 1894.
 Tippecanoe Lake, Kosciusko county.
 Tippecanoe River—Jordan, 1877; Evermann and Jenkins, 1888.
 Lake Maxinkuckee, Marshall county—Jenkins, 1888.
 Deer Creeks, Carroll county—Evermann and Jenkins, 1888.
 Wild Cat Creek, Carroll county—Evermann and Jenkins, 1888.
 Honey Creek, Howard county—Evermann and Jenkins, 1888.
 Raccoon Creek, Parke county—I. U. Coll.

LOWER WABASH BASIN.

- West Fork White River, Indianapolis—Jordan, 1877.
 Gosport—Eigenmann.
 Spencer—Jordan, 1889.
 Pike Creek, Madison county—Shannon.
 Bean Blossom Creek, Monroe county—Eigenmann and Fordice, 1885.
 Eel River, Owen county—Jordan 1889.
 Switz City Swamp, Greene county—Gilbert, 1884.
 East Fork White River, Bedford—Gilbert, 1884.
 Blue River, Knightstown—I. U. Coll.
 Flat Rock Creek, Decatur county, and Rushville—Shannon, 1887;
 Rush county, Gilbert, 1884.
 Clifty—Shannon, 1887.
 Sand.
 Little Salt Creek, Franklin county—Evermann and Jenkins, 1888.
 Salt Creek—Gilbert, 1884.
 Clear Creek—Eigenmann.
 Lost River, Orangeville, Orange county—Jordan and Eigenmann.
 Patoka River, Gibson county—Jordan, 1889.
 Black River, Posey county—Jordan, 1889.
 Gresham's Creek, Posey county—Jordan, 1889.
 Big Creek, Posey county—Jordan, 1889.

THE MAUMEE SYSTEM.

- Maumee River—Jordan, Kirsch.
 St. Joseph's River—Kirsch.
 St. Mary's River—Kirsch.

THE ILLINOIS BASIN.

Kankakee River, at Riverside—Bates, 1886; Jordan, 1889.

Yellow River, Plymouth, Marshall county—Jordan, 1889.

LAKE MICHIGAN SYSTEM.

Lake, Michigan City—Bates, 1886; Jordan and Evermann.

Turkey Lake.

St. Joseph's River, Mishawaka—Jordan, 1889.

Trail Creek, LaPorte county—Ridgley, 1892.

Clear and Pine Lakes, LaPorte county—Jordan, 1887.

List of Indiana Fishes and their Distribution.

Class MARSIPOBRANCHII (The Myzonts).

Order HYPEBOARTIA (The Lampreys).

Family *Petromyzontida*.

Ammocetes branchialis (L.). Brook Lamprey, Mud Lamprey.

West Fork White river at Indianapolis, Jordan 1877 as *A. niger*; Bean

Blossom, Eigenmann and Fordice as *A. wpplyterus*.

Ichthyomyzon concolor (Kirkland).

Ohio at New Albany, Jordan; Blue river at Wyandotte Cave, I. U. Coll.;

Wabash at Delphi, Jenkins and Evermann 1888; at New Harmony,

Jordan 1889; Indianapolis, Jordan 1877 as *A. argentatus*.

Class PISCES (The true Fishes).

Order SELACHOSTOMI.

Family *Polyodontidae* (The Paddle-fishes.)

Polyodon spathula (Walbaum). Spoon-bill Cat, Duck-bill Cat.

Ohio at Rockport, Eigenmann; White Water at Brookville, Evermann

1886; Wabash at Delphi, Evermann 1888; at Terre Haute, Jenkins

1886; at New Harmony, Jordan 1889; Lake Manitou, Eigenmann and

Norman 1894; Indianapolis, Jordan 1877 as *P. folium*.

Order CHONDROSTEL.

Family *Acipenseridae* (The Sturgeons).

Scaphirhynchus platyrhynchus (Raf.). Shovel nosed Sturgeon.

Ohio, Rafinesque; Wabash at Delphi, Evermann 1888; at Terre Haute,

Jenkins 1886.

Acipenser rubicundus Le Sueur. Lake Sturgeon, Rock Sturgeon.

Ohio at Louisville, Jordan and Evermann 1887; at Rockport, Eigen-

mann; at Terre Haute, Jenkins 1886; at New Harmony, Jordan 1889;

Lake Michigan at Michigan City, Bates 1886.

Order RHOMBOGANOIDEA.

Family *Lepisosteida* (The Gar-fishes).

Lepisosteus osseus (L.). Common Gar Pike, Long Nosed Gar, Bill-fish.

Ohio at Rockport, Eigenmann; White Water at Brookville, Evermann 1886; Big Pigeon creek at Evansville, Eigenmann; Wabash at Delphi, Evermann and Jenkins 1888; at Terre Haute, Jenkins 1886; at New Harmony, Jordan, 1889; Blue river at Columbia City, Kirsch 1894; Tippecanoe river, Evermann and Jenkins 1888; Lake Maxinkuckee, Jenkins 1888; Loon, Big and Crooked lakes, Kirsch 1894; Indianapolis, Jordan 1877; Gosport, Eigenmann.

Lepisosteus platystomus Rafinesque. Short-nosed Gar-pike.

Wabash at Terre Haute, Jenkins 1886; at Vincennes, New Harmony and Mackey's Ferry, Jordan 1889; Lake Manitou, Eigenmann and Norman 1894.

Lepisosteus tristarchus (Bloch and Schneider). Alligator Gar.

Wabash at New Harmony, Jordan 1889.

Order CYCLOGANOIDEA.

Family *Amiidae* (The Bow-fins).

Amia calva L. Bow-fin, Mud-fish, Dog-fish.

Wabash at Terre Haute, Jenkins 1886; Blue river, Eel river, and in nearly all its upper tributaries, Kirsch 1894; Lake Maxinkuckee, Jenkins 1888; Switz City swamp, Gilbert 1884.

Order NEMATOGNATHI.

Family *Siluridae* (The Cat-fishes).

Ictalurus furcatus (Le Sueur). Chuckle-headed Cat.

Ohio river, Jordan and Evermann 1887.

Ictalurus punctatus (Rafinesque). Channel Cat, White Cat, Silver Cat.

Ohio river, Rafinesque; White Water at Brookville, Evermann 1886; Laughery creek near Milton, Jenkins 1888; Big Pigeon near Evansville, Jordan 1889; Wabash at Delphi, Jenkins 1888; at Terre Haute, Jenkins 1886; at Vincennes, New Harmony and Mackey's Ferry, Jordan 1889; Raccoon creek at Mecca, I. U. Coll.; West Fork White river at Indianapolis, Jordan 1877; at Gosport, Eigenmann; at Spencer, Jordan, 1889; East Fork White river near Bedford, Gilbert 1884; Patoka river, Gibson county, Black river and Big creek, Jordan 1889.

Ameiurus lacustris (Walbaum). Great Cat-fish, Mississippi Cat, Flannel-mouthed Cat.

Wabash at Delphi, Evermann 1888, as *A. nigricans*: Lake Michigan, Jordan and Evermann 1887, as *A. nigricans*.

Ameiurus natalis (Le Sueur). Yellow Cat.

White Water at Brookville, Evermann 1886; Laughery creek near Milton, Ohio county, Jenkins 1888; Lower Wabash, Jordan 1877 as *cupreus*; Eel River basin in all the lakes, Kirsch 1894; Tippecanoe river, Jordan 1877 as *cupreus* and 1889; Lake Manitou, Eigenmann and Norman; Lake Maxinkuckee, Jenkins 1888; Deer creeks, Evermann and Jenkins 1888; West Fork White river at Indianapolis, Jordan 1877 as *cupreus*; Bean Blossom, Eigenmann and Fordice 1885; Flat Rock and Clifty creeks, Decatur county; Flat Rock Creek at Rushville, Shannon 1887; Salt creek near Bedford, Gilbert 1884; Yellow river at Plymouth, Jordan 1889; St. Joseph's river, Jordan 1877 as *cupreus*, and Clear and Pine lakes, La Porte county.

Ameiurus vulgaris (Thompson).

Ohio, Wabash, and Lake Michigan, Jordan and Evermann 1887.

Ameiurus nebulosus (Le Sueur). Common Bullhead, Horned Pout.

Wabash at Terre Haute, Jenkins 1886; Eel river and its tributary lakes and streams, Kirsch 1894; Tippecanoe river, Jordan 1877; Loon, Big and Crooked lakes, Kirsch 1894; West Fork White river at Indianapolis, Jordan 1877; Switz City swamp, Greene county, Gilbert 1884; Trail creek, LaPorte county, Ridgley.

Ameiurus melas (Rafinesque).

Wabash at Terre Haute, Jenkins 1886; Tippecanoe river and Lake Maxinkuckee, Jenkins 1888; Deer creeks, Evermann 1888; Raccoon creek at Mecca, Parke county, I. U. Coll.; West Fork White river at Indianapolis, Jordan 1877 as *xanthocephalus*; Bean Blossom creek, Eigenmann and Fordice 1885; Eel river at Cataract, Owen county, Jordan 1889; Switz City swamp, Gilbert 1884; East Fork White river and Salt creek near Bedford, Gilbert 1884; Gresham's creek at New Harmony, Jordan 1889; Trail creek, LaPorte county, Ridgley.

Leptops olicaris Rafinesque. Mud Cat, Flat-headed Cat, Russian Cat, Bashaw, Goujon.

White Water at Brookville, Evermann 1886; Laughery creek at Milton, Ohio county, Jenkins 1888; Big Pigeon creek at Evansville, Jordan 1889; Wabash river at Terre Haute, Jenkins 1886; Tippecanoe river, Jordan 1877; West Fork White river at Indianapolis, Jordan 1877; Bean Blossom creek, Eigenmann and Fordice 1885; East Fork White river near

Bedford, Gilbert 1884; Patoka river, Gibson county, Jordan 1889.

Noturus flarus Rafinesque.

White Water river at Brookville, Evermann 1886; Laughery creek at Milton, Ohio county, Jenkins 1888; Wabash at Delphi, Evermann and Jenkins 1888; at Vincennes and New Harmony, Jordan 1889; Eel river, Twelve Mile creek, Kirsch 1894; Deer and Little Deer creeks and Wild Cat creek, Evermann and Jenkins 1888; West Fork White river at Indianapolis, Jordan 1877, and at Spencer, Jordan 1889; Bean Blossom creek, Eigenmann and Fordice 1885; Eel river at Cataract, Owen county, Jordan 1889; East Fork White river and Salt creek near Bedford, Gilbert 1884; Flat Rock creek, Decatur county, Shannon 1887; Yellow river at Plymouth, Jordan 1889; St. Joseph's river, Jordan 1877; Clear and Pine lakes, Jordan 1877.

Schilbeodes exilis (Nelson).

Tippecanoe river, Jenkins 1888; Bean Blossom, Eigenmann and Fordice 1885.

Schilbeodes mirus (Jordan).

Laughery creek near Milton, Ohio county, Jenkins 1888; Fourteen Mile creek, Clark county, Jenkins 1888; Wabash at Delphi, Evermann and Jenkins 1888; at Terre Haute, Jenkins 1886; at Vincennes and New Harmony, Jordan 1889; Lower Wabash, Jordan 1877; Eel river, middle course, Meredith creek, Kirsch 1894; Tippecanoe and Lake Maxinkuckee, Jordan 1889; Deer and Wild Cat creeks, Evermann and Jenkins 1888; West Fork White river, at Indianapolis, Jordan, 1877; at Gosport, Eigenmann; at Spencer, Jordan, 1889; Bean Blossom, Eigenmann and Fordice 1885; East Fork White river and Salt creek near Bedford, Gilbert 1884; Flat Rock creek, Decatur county, Shannon 1887; Clear creek, Bloomington, I. U. Coll.; Patoka river, Gibson county Jordan, 1889; Maumee river, Jordan 1877.

Schilbeodes eleutherus (Jordan).

Eel river middle course, Shriner lake, Columbia City, Kirsch 1894; West Fork White river at Gosport, Eigenmann.

Schilbeodes gyrimus (Mitchill).

Wabash at Delphi, Evermann and Jenkins, 1888; Upper Blue river, Kirsch 1894; Lake Maxinkuckee, Jordan, 1889; Little Deer creek, Evermann and Jenkins, 1888; West Fork White river at Indianapolis, Jordan, 1877 as *sialis*; Bean Blossom, Eigenmann and Fordice 1885;

Big creek, Posey county, Jordan 1889; Kankakee river at Riverside, Bates 1886; Trail creek near Michigan City, Ridgley.

Schilbeodes nocturnus (Jordan and Gilbert).

Big Pigeon creek at Evansville, Jordan 1889.

Order PLECTOSPONDYLI (The Carp Fishes).

Family *Catostomidae* (The Suckers).

Ictiobus cyprinella (Cuv. and Val.) Common Buffalo Fish, Red-mouthed Buffalo.

Ohio at Louisville, Jordan and Evermann 1887; Wabash at Delphi, Evermann, 1888; at LaFayette, Jordan and Evermann; at Terre Haute, Jenkins 1886; at Mackey's Ferry, Jordan, 1889.

Ictiobus urus (Agassiz). Razor-backed Buffalo, Mongrel Buffalo.

Ohio, Jordan and Evermann 1887; Wabash at Delphi, Evermann 1888; Wabash at Terre Haute, Jenkins 1886.

Ictiobus bubalus (Rafinesque). Sucker-mouthed Buffalo, Small-mouthed Buffalo.

Big Pigeon creek at Evansville, Jordan 1889; Wabash at Delphi, Evermann 1888; at Terre Haute, Jenkins 1886; Lower Wabash, Jordan 1877; and at Vincennes, New Harmony and Mackey's Ferry, Jordan 1889; Switz City swamp, Greene county, Gilbert 1884.

Carpoides carpio (Rafinesque).

Lower Wabash and West Fork of White river at Indianapolis, Jordan 1877; East Fork White river near Bedford, Gilbert, 1884.

Carpoides difformis Cope.

Big Pigeon creek at Evansville, Jordan 1889; Lower Wabash, Jordan 1877; at Terre Haute, Jenkins 1886; at Vincennes, New Harmony and Mackey's Ferry, Jordan 1889; Eel river at Logansport, Jordan 1889; West Fork White river at Gosport, Eigenmann; East Fork White river, Salt creek, Gilbert 1884; Patoka river, Gibson county, and Big creek, Posey county, Jordan 1889.

Carpoides velifer (Rafinesque). Quill-back, Skim-back, Carp Sucker, River Carp.

White Water river at Brookville, Evermann 1886; Laughery creek near Milton, Ohio county, Jenkins 1888; Wabash at Delphi, Evermann and Jenkins 1888; at Terre Haute, Jenkins 1886; Kintner's creek, Wabash county, Ulrey; Eel river at Logansport, Kirsch 1894; Tippecanoe, Evermann and Jenkins 1888; West Fork White river at Gosport, Eigenmann.

Cypleptus elongatus (Le Sueur). Black Horse, Gourd-seed Sucker, Missouri Sucker.

Ohio, Jordan and Evermann 1887; White Water at Brookville, Evermann 1886; Wabash at Terre Haute, Jenkins 1886.

Catostomus catostomus (Forster). Northern Sucker, Lake Michigan, No authentic specimens from Indiana.

Catostomus commersoni Lacépède. Common Sucker, White Sucker, *Catostomus teres* of Indiana authors.

Wabash at Delphi, Evermann 1888; at Terre Haute, Jenkins 1886; Lower Wabash, Jordan 1877; Eel river and its tributary streams, Round lake, Kirsch 1894; Hellem's creek, Wabash county, Ulrey; Tippecanoe river, Deer creeks, Wild Cat creek and Honey creek, Evermann and Jenkins 1888; Raccoon creek at Mecca, Parke county, I. U. Coll; West Fork White river at Indianapolis, Jordan 1877; Bean Blossom creek, Eigenmann and Fordice 1885; East Fork White river and Salt creek near Bedford, 1884 Gilbert; Flat Rock creek at Rushville, Clifty creek, Decatur county, Shannon 1887; Little Salt creek, Franklin county, Evermann and Jenkins 1888; Clear creek, Monroe county, I. U. Coll; Yellow river at Plymouth, Jordan 1889; St. Joseph's river near Mishawaka, Jordan 1889.

Catostomus nigricans Le Sueur. Hog Sucker, Stone Roller, Stone Lugger, Stone Toter, Hammer Head, Crawl-a-Bottom, Hog Molly, Hog Mullet.

White Water at Brookville, Evermann 1886; Laughery creek near Milton, Ohio county, Jenkins 1888; Fourteen Mile creek, Clark county, Jenkins 1888; Wabash at Delphi, Evermann and Jenkins 1888; at Terre Haute, Jenkins 1886; at Vincennes, Jordan 1889; Eel river and its tributary streams, Kirsch 1894; Blue river at Columbia City, Jordan 1889, and Eel river at Logansport; Tippecanoe river, Deer creeks, Wild Cat creek and Honey creek, Evermann and Jenkins 1888; West Fork White river at Indianapolis, Jordan 1877; at Spencer, Jordan 1889; Bean Blossom creek, Eigenmann and Fordice 1885; East Fork White river and Salt creek near Bedford, Gilbert 1884; Flat Rock creek, Decatur county, Clifty creek, Decatur county, Shannon 1887; Clear creek, Monroe county, I. U. Coll.; Yellow river at Plymouth, Jordan 1889; St. Joseph's at Mishawaka, Jordan 1889.

Erimyzon sucetta oblongus (Mitchill). Chub Sucker, Sweet Sucker, Creek Fish.

Eel river and tributary streams below South Whitley, Round lake, Kirsch 1894; Lake Manitou, Eigenmann and Norman; Tippecanoe river, Jordan 1877; Little Deer creek and Honey creek, Evermann and Jenkins 1888; West Fork White river at Indianapolis, Jordan 1877; Pipe creek, Madison county, Shannon; Switz City swamp, Greene county, Gilbert 1884; Flat Rock creek, and Clifty creek, Decatur county, Shannon, 1887; Salt creek, Gilbert 1884; Gresham's creek at New Harmony, Jordan 1889; Maumee river, Jordan 1877; Kankakee river at Riverside, Bates 1886; Yellow river at Plymouth, Jordan 1889; St. Joseph's river, Jordan 1877; Trail creek, LaPorte county, Ridgley; Clear and Pine lake, LaPorte county, Jordan 1877.

Moxostoma melanops (Rafinesque). Striped Sucker.

Lower Wabash, Jordan 1877; Wabash at New Harmony and Mackey's Ferry, Jordan 1889; Eel river and tributary streams, Blue and Round lakes, Kirsch 1894; West Fork White river at Indianapolis, Jordan 1877; Bean Blossom creek, Eigenmann and Fordice 1885; East Fork White river, Clifty creek, Decatur county, Shannon 1887; Gresham's creek at New Harmony, Jordan 1889; Yellow river at Plymouth, Jordan 1889.

Moxostoma anisurum (Rafinesque). White Nose Sucker.

Lower Wabash, Jordan 1877; Kentner's creek, Wabash county, Ulrey; East Fork White river, Gilbert 1884. as *M. velatum*.

*Moxostoma aureolum** (Le Sueur). Common Red Horse, White Sucker, Mullett.

White Water at Brookville, Evermann 1886; Laughery creek near Milton, Ohio county, and Fourteen Mile creek, Clark county, Jenkins 1888; Big Pigeon creek at Evansville, Jordan 1889; Wabash at Delphi, Evermann and Jenkins 1888; Wabash at Terre Haute, Jenkins 1886; Wabash at Vincennes and New Harmoy, Jordan 1889; Lower Wabash, Jordan 1877; Eel river at Logansport, Jordan 1889; Eel river and tributary streams, Kirsch 1894; Tippecanoe river, Deer creeks, Wild Cat and Honey creeks, Evermann and Jenkins 1888; West Fork White river at Indianapolis, Jordan 1877; at Gosport, Eigenmann; Pipe creek, Madison county, Shannon 1887; Bean Blossom, Eigenmann and Fordice 1885; East Fork White river and Salt creek near Bedford, Gilbert 1884; Flat Rock and Clifty creeks, Decatur county, Shannon 1887; Clear creek at Bloomington, I. U. Coll; Patoka river,

* This species has usually been recorded as *M. duquesnei*.

Gibson county, Jordan 1889; Maumee, Jordan 1877; Yellow river at Plymouth, Jordan 1889.

Moxostoma breviceps (Cope).

Ohio river, Gilbert; Deer creek near Camden, Evermann 1888; West Fork White river at Spencer, Jordan 1889.

Placopharynx duquesnii (Le Sueur).

Wabash at Delphi and Terre Haute, Evermann 1888; Lower Wabash, Jordan 1877; Tippecanoe river, Evermann 1888.

Lagochila lacera Jordan and Brayton. Hare-lip Sucker, Rabbit-mouth Sucker, Pea-lip Sucker, Cut-lips, Split-mouth.

Tippecanoe river west of Delphi, Evermann and Jenkins 1888.

Family *Cyprinidae* (The Minnows).

Compostoma anomalum (Rafinesque). Stone Luger, Stone Roller.

White Water at Brookville, Evermann 1886; Laughery creek near Milton, Ohio county, and Fourteen Mile creek, Clark county, Jenkins 1888; Wabash at Delphi, Evermann and Jenkins 1888; at Terre Haute, Jenkins 1886; Blue river at Columbia City and Eel river at Logansport, Jordan, 1889; Eel river and tributary streams, Kirsch 1894; Tippecanoe river, Jordan 1877; Tippecanoe river, Deer creeks, Wild Cat and Honey creeks, Evermann and Jenkins 1888; West Fork White river at Indianapolis, Jordan 1877; at Spencer, Jordan 1889; Bean Blossom, Eigenmann and Fordice 1885; Eel river at Cataract, Owen county, Jordan 1889; East Fork White river and Salt creek near Bedford, Gilbert 1884; Flat Rock creek at Rushville, and Clifty creek, Decatur county, Shannon 1887, Clear creek Monroe county, I. U. Coll.; Gresham's creek at New Harmony, Jordan 1889; Maumee river, Jordan 1877; Yellow river at Plymouth, Jordan 1889; St. Joseph's river, at Mishawaka, Jordan 1889

Chrosomus erythrogaster Rafinesque. Red-bellied Minnow.

Weasaw creek near Denver, Ind., Kirsch 1894; Honey creek, Howard county, Evermann and Jenkins 1888; West Fork White river at Indianapolis, Jordan 1877; Bean Blossom, Eigenmann and Fordice 1885; Clifty creek, Decatur county, Shannon 1887; Blue river at Knightstown, I. U. Coll.; Little Salt creek Franklin county, Evermann and Jenkins 1888; Salt creek near Bedford, Gilbert 1884; Clear creek Monroe county, I. U. Coll.

Hybognathus nuchalis Agassiz.

Big Pigeon creek at Evansville, Jordan 1889; Wabash at Delphi, Evermann and Jenkins 1888; at Terre Haute, Jenkins 1886; at New Har-

mony and Mackey's Ferry, Jordan 1889; Lower Wabash, Jordan 1877 as *argyritis*; Eel river at Logansport, Kirsch 1894; Wild Cat and Little Deer creek, Evermann and Jenkins 1888; West Fork White river at Indianapolis, Jordan 1877 as *argyritis*; at Gosport, Eigenmann; Bean Blossom, Eigenmann and Fordice 1885; Little Salt creek Franklin county, Evermann and Jenkins 1888; Big creek Posey county, Jordan 1889.

Pimephales promelas Rafinesque.

White Water at Brookville, Evermann 1886.

Pimephales notatus (Rafinesque).

White Water at Brookville, Evermann 1886; Laughery creek near Milton, Ohio county, and Fourteen Mile creek, Clark county, Jenkins 1888; Wabash at Delphi, Evermann and Jenkins 1888; at Terre Haute, Jenkins 1886; Lower Wabash, Jordan 1877, and at Vincennes and New Harmony 1889; Eel river and its tributary streams and lakes except Hull and Blue lakes, Kirsch 1894, and Logansport, Jordan 1889; Tippecanoe river, Jordan 1877; Loon lake and Big lake, Kirsch 1894; Lake Manitou, Eigenmann and Norman; Tippecanoe river, Deer creeks, Wild Cat and Honey creeks, Evermann and Jenkins 1888; Lake-Maxinkuckee, Jenkins 1888; Raccoon creek at Mecca, Parke county, I. U. Coll.; West Fork White river at Indianapolis, Jordan 1877; at Gosport, Eigenmann; Pipe creek, Decatur county, Shannon 1887; East Fork White river and Salt creek near Bedford, Gilbert 1884; Blue river at Knightstown, I. U. Coll.; Flat Rock creek at Rushville, Shannon 1887; Clear creek, Monroe county, I. U. Coll.; Lost river at Orangeville, I. U. Coll.; Patoka river, Gibson county, Gresham's and Big creeks, Posey county, Jordan 1889; Yellow river at Plymouth, Jordan 1889; Kankakee, Jordan 1877; St. Joseph's, Jordan 1877; at Mishawaka, Jordan 1889; Clear and Pine lakes, La Porte county, Jordan 1877.

Chiola vigilax (Baird and Girard). Bull-head Minnow.

Wabash at Delphi, Evermann and Jenkins 1888; at Terre Haute, Jenkins 1886; at Vincennes, New Harmony and Mackey's Ferry, Jordan 1889; Raccoon creek at Mecca, I. U. Coll.; West Fork White river at Gosport, Eigenmann; East Fork White river near Bedford, Gilbert 1884 as *Hypargyrus tulitanus*; Black creek at New Harmony, Jordan 1889; Big creek, Posey county, Jordan 1889.

Notropis cayuga Meek.

Round and Shriner lakes; Loon lake, Kirsch 1894.

Notropis anogenus Forbes.

Blue lake and Blue river, Whitley county, Kirsch 1894.

Notropis heterodon Cope.

Wabash at Vincennes, Jordan 1889; Round, Cedar and Shriner lakes, Whitley county, Kirsch 1894; Tippecanoe river, Jordan 1877; Loon lake, Kirsch 1894; Lake Maxinkuckee, Scovell; Switz City swamp, Greene county, Gilbert 1884; Yellow river at Plymouth, Jordan 1889; Kankakee at Riverside, Bates 1886; Trail creek, LaPorte county, Ridgley.

Notropis microstomus Rafinesque.

White Water at Brookville, Evermann 1886 as *deliciosus*; Wabash at Delphi, Evermann and Jenkins 1888 as *deliciosus*, at New Harmony, Jordan 1889; Eel river at Logansport, Jordan 1889; Eel river from South Whitley to its mouth, Kirsch 1894; Tippecanoe, Evermann and Jenkins 1888 as *deliciosus*; West Fork White river at Indianapolis, Jordan 1877 as *stramineus*; at Gosport, Eigenmann at Spencer, Jordan 1889; East Fork White river near Bedford, Gilbert 1884 as *deliciosus*; Yellow river at Plymouth, Jordan 1889; Kankakee, Jordan 1877 as *stramineus*; at Riverside, Bates 1886; St. Joseph's at Mishawaka. Jordan 1889.

Notropis boops Gilbert.

Wabash at Delphi, Evermann 1888; West Fork White river at Indianapolis, Jordan 1877 as *E. scabriceps* not of Cope; East Fork White river, Clifty and Flat Rock creeks, Decatur county, Shannon 1887; Flat Rock creek, Rush county, and Salt creek, Brown county, Gilbert 1884.

Notropis hudsonius (Clinton). Spawn-eater, Smelt.

Kankakee at Riverside, and Lake Michigan at Michigan City, Bates 1886; Clear and Pine lakes, LaPorte county, Jordan 1877 as *H. storerianus*.

Notropis whipplei Girard. Silver-Fin.

Laughery creek near Milton, Ohio county, and Fourteen Mile creek, Clark county, Jenkins 1888; Big Pigeon creek at Evansville, Jordan 1889; Wabash at Delphi, Evermann and Jenkins 1888; at Terre Haute, Jenkins 1886; at Vincennes, New Harmony and Mackey's Ferry, Jordan 1889; Lower Wabash, Jordan 1877 as *C. anulostona*;

Kentner's creek, Wabash county, Ulrey; Eel river at Logansport, Jordan 1889; from Liberty Mills to its mouth and in all the tributaries, Kirsch 1894; Lake Manitou, Eigenmann and Norman; Tippecanoe river, Jordan 1877 as *C. analostona*; Deer creeks, Wild Cat creek, Evermann and Jenkins, 1888; West Fork White river at Indianapolis, Jordan 1877 as *C. analostona*; at Gosport, Eigenmann; at Spencer, Jordan 1889; Bean Blossom, Eigenmann and Fordice 1885; Eel river at Cataract, Owen county, Jordan, 1889; East Fork White river and Salt creek near Bedford, Gilbert 1884 as *N. analostanus*; Flat Rock creek and Clifty creek, Decatur county, Shannon 1887; Little Salt creek, Franklin county, Evermann and Jenkins, 1888; Clear creek at Bloomington, I. U. Coll.; Patoka river, Gibson county, Black river and Big creek, Posey county, Jordan 1889; Maumee, Jordan 1877 as *C. analostona*; Yellow river at Plymouth, Jordan 1889.

Notropis megalops (Rafinesque). Common Shiner, Red-Fin, Dace.

White Water at Brookville, Evermann 1886; Fourteen Mile creek, Clarke county, Jenkins 1888; Big Pigeon creek at Evansville, Jordan 1889; Wabash at Delphi, Evermann and Jenkins 1888; at Terre Haute, Jenkins 1886; at Vincennes, New Harmony, and Mackey's Ferry, Jordan 1889; Kentner's creek, Wabash county, Ulrey; Blue river at Columbia City, Jordan 1889; Eel river and all its tributary streams, Cedar lake, Round lake, Kirsch 1894; at Logansport, Jordan 1889; Tippecanoe, Jordan 1877 as *plumbeolus L. cornutus*; Tippecanoe river, Deer creeks, Wild Cat and Honey creeks, Evermann and Jenkins, 1888; West Fork White river at Indianapolis as *L. cornutus*, Jordan 1877; at Spencer, Jordan 1889; Pipe creek, Madison county, Shannon 1887; Bean Blossom, Eigenmann and Fordice 1885; Eel river at Cataract, Owen county, Jordan, 1889; East Fork White river and Salt creek near Bedford, Gilbert, 1884; Flat Rock creek at Rushville, and Clifty creek, Decatur county, Shannon, 1887; Blue river at Knightstown, and Clear creek at Bloomington, I. U. Coll.; Patoka river, Gibson county, Black river and Big creek, Posey county, Jordan, 1889; Maumee, Jordan 1877; Kankakee river at Riverside, Bates, 1886; Yellow river at Plymouth Jordan's 1889; St. Joseph's river at Mishawaka, Jordan, 1889; Trail creek, LaPorte county, Ridgley; Clear and Pine lakes, LaPorte county, Jordan 1877 as *L. cornutus*.

Notropis jejunus (Forbes).

Eel river at Logansport, Kirsch 1894.

Notropis ariommus (Cope).

West Fork White river at Indianapolis, Jordan 1877; Raccoon creek, at Mecca, I. U. Coll.

Notropis ardens (Cope). Red-fin.

White Water at Brookville, Evermann 1886; Laughery creek at Milton, Ohio county, and Fourteen Mile creek, Clark county, Jenkins 1888; Wabash at Delphi, Evermann and Jenkins 1888; at Terre Haute, Jenkins 1886; Kentner's creek, Wabash county, Urey; Deer creeks, Wild Cat and Honey creeks, Evermann and Jenkins 1888; Raccoon creek, at Mecca, I. U. Coll.; West Fork White river at Indianapolis, Jordan 1877 as *L. diplemius*; at Spencer, Jordan 1889; Bean Blossom, Eigenmann and Fordice 1885; East Fork White river and Salt creek near Bedford, Gilbert 1884 as *diplemius*; Flat Rock, at Rushville, Clifty creek, Decatur county, Shannon 1887; Blue river at Knightstown, I. U. Coll.; Little Salt creek, Franklin county, Evermann and Jenkins 1888; Lost river at Orangeville; Clear creek at Bloomington, I. U. Coll.

Notropis atherinoides (Rafinesque).

Fourteen Mile creek, Clark county, Jenkins 1888; Wabash at Delphi, Evermann and Jenkins 1888; at Terre Haute, Jenkins 1886; at Vincennes and New Harmony, Jordan 1889; Lower Wabash, Jordan 1877 as *N. rubellus*; Eel river at Logansport, Jordan 1889; Tippecanoe river, Big Deer creek, Wild Cat creek, Evermann and Jenkins 1888; Raccoon creek, Mecca, I. U. Coll.; West Fork White river at Indianapolis, Jordan 1877 as *N. rubellus*; at Gosport, Eigenmann; Pipe creek, Madison county; Flat Rock creek at Rushville, Shannon 1887; Little Salt creek, Franklin county, Evermann and Jenkins 1888; Patoka river, Gibson county, Jordan 1889.

Notropis arge (Cope).

Eel river from North Manchester to mouth and at Pawpaw, Flowers and Twelve Mile creeks, Kirsch 1894; Wild Cat creek and Deer creek, Evermann and Jenkins 1888.

Notropis dilectus (Girard).

Big Pigeon creek at Evansville, Wabash at New Harmony and Mackey's Ferry, Jordan 1889; Eel river from South Whitley to mouth, Blue river, Kirsch 1894; West Fork White river at Indianapolis, Jordan 1877 as *N. dinemus*; at Gosport, Eigenmann; Big creek and Gresham's creek, Posey county, Jordan 1889.

Notropis rubrifrons (Cope).

White Water at Brookville, Evermann 1886; Fourteen Mile creek, Clark

county, Jenkins 1888; Wabash at Delphi, Evermann and Jenkins 1888; at Terre Haute, Jenkins 1886; Eel river at Logansport, Jordan 1889; Tippecanoe river, Jordan 1877; Tippecanoe river, Wild Cat creek, Deer creek, Evermann and Jenkins 1888; West Fork White river at Indianapolis, Jordan 1877; at Gosport, Eigenmann; East Fork White river near Bedford, Gilbert 1884; Clifty and Flat Rock creeks, Decatur county, Shannon 1887; Clear creek Bloomington, I. U. Coll.; Yellow river at Plymouth, Jordan 1889; St. Joseph's at Mishawaka, Jordan 1889.

Ericymba buccata Cope.

Laughery creek, near Milton, Ohio county, Fourteen-mile creek, Clark county, Jenkins 1888; Wabash at Delphi, Evermann and Jenkins 1888; at Terre Haute, Jenkins 1886; Kentner's creek, Wabash county, Ulrey; Eel river in its lower six miles, Twelve-mile creek, Kirsch 1894; Tippecanoe river, Deer creek, Wild Cat and Honey creeks, Evermann and Jenkins 1888; Raccoon creek at Mecca, I. U. Coll.; West Fork White river at Indianapolis, Jordan 1877; at Gosport, Eigenmann; at Spencer, Jordan 1889; Pipe creek, Madison county, Shannon 1887; East Fork White river and Salt creek, near Bedford, Gilbert, 1884; Flat Rock creek at Rushville; Flat Rock creek and Clifty creek, Decatur county, Shannon 1887; Blue river at Knightstown, I. U. Coll.; Little Salt creek, Franklin county, Evermann and Jenkins 1888; Clear creek at Bloomington, I. U. Coll.; Gresham's creek at New Harmony, Jordan 1889.

Ethinichthys atronasus (Mitchill).

Kintner's creek, Wabash county, Ulrey; Little Weasaw creek near Denver, Cunningham; Honey creek, Evermann and Jenkins 1888; West Fork White river at Indianapolis, Jordan 1877 as *obtusus*; Bean Blossom creek, Eigenmann and Fordice 1885; East Fork near Bedford, Gilbert 1884; Clifty and Flat Rock creeks, Decatur county, Flat Rock creek at Rushville, Shannon 1887; Little Salt creek, Franklin county, Evermann and Jenkins 1888; Clear creek, Bloomington, I. U. Coll.; Kankakee river, Jordan 1877.

Hypopsis dissimilis (Kirtland).

Wabash at Delphi, Evermann and Jenkins 1888; at Vincennes and New Harmony, Jordan 1889; Tippecanoe river, Evermann and Jenkins 1888; West Fork White river, at Indianapolis, Jordan 1877; at Gosport, Eigenmann; at Spencer, Jordan 1889.

Hybopsis amblops (Rafinesque).

Wabash at Delphi, Evermann and Jenkins 1888; Kentner's creek, Wabash county, Ulrey; Eel river at Logansport, Jordan 1889; lower course of Eel river and tributaries; Cedar and Shriner lakes, Kirsch 1894; Tippecanoe river and Deer and Wild Cat creeks, Evermann and Jenkins 1888; West Fork White river at Indianapolis, Jordan 1877; at Gosport, Eigenmann; Pipe creek, Madison county, Shannon 1887; Bean Blossom creek, Eigenmann and Fordice 1885; East Fork and Salt creek near Bedford, Gilbert 1884; Flat Rock, Decatur county, Shannon; Trail creek, La Porte county, Ridgley.

Hybopsis storevianus (Kirtland).

Wabash at Vincennes, New Harmony and Mackey's Ferry, Jordan 1889; Eel river at Logansport, Kirsch 1894; West Fork White river at Gosport, Eigenmann; at Spencer; Big Creek Posey county, Jordan 1889.

Hybopsis watauga Jordan and Evermann.

Wabash at Terre Haute, Jenkins 1886; Eel river at Logansport, Kirsch 1894; Tippecanoe river, Jordan 1889.

Hybopsis kentuckiensis (Rafinesque). Horny Head, River Chub, Jerker.

White Water river at Brookville, Evermann 1886; Wabash river at Delphi, Evermann and Jenkins 1888; Kentner's creek, Wabash county, Ulrey; Blue river at Columbia City and Eel river at Logansport, Jordan 1889; whole of Eel river, Kirsch 1894; Lake Manitou, Eigenmann and Norman; Tippecanoe river, Jordan 1877 as *N. biguttatus*; Tippecanoe river, Deer creeks, Wild Cat and Honey creeks, Evermann and Jenkins 1888; West Fork White river at Indianapolis, Jordan 1877 as *N. biguttatus*; at Spencer, Jordan 1889; Pipe creek Madison county, Shannon 1887; Bean Blossom, Eigenmann and Fordice 1885; Eel river at Cataract, Owen county, Jordan 1889; East Fork White river near Bedford, Gilbert 1884 as *N. biguttatus*; Flat Rock at Rushville, Flat Rock creek and Clifty creek Decatur county, Shannon 1887; Maumee river; Kankakee river, Jordan 1877 as *N. biguttatus*; Yellow river at Plymouth, Jordan 1889; St. Joseph's river at Mishawaka, Jordan 1889 and 1877 as *N. biguttatus*; Lake Michigan at Michigan City, Bates 1886; Clear and Pine lakes, Jordan 1877 as *N. biguttatus*.

Hybopsis hyostomus Gilbert.

Wabash at Delphi, Evermann and Jenkins 1888; at Vincennes and New Harmony, Jordan 1889; Eel river at Logansport, Kirsch 1894; West

Fork White river at Gosport, Eigenmann; East Fork White river near Bedford, Gilbert 1884.

Semotilus atromaculatus (Mitchill). Horned Dace, Creek Chub.

Laughery creek near Milton, Ohio county, and Fourteen Mile creek, Clark county, Jenkins 1888; Wabash at Delphi, Evermann and Jenkins 1888; at Terre Haute, Jenkins 1886; Kentner's creek, Wabash county, Ulrey; Eel river and its tributaries, Kirsch 1894; Tippecanoe river, Jordan 1877 as *S. corporalis*; Deer creeks and Honey creek, Evermann and Jenkins 1888; Lake Maxinkuckee, Jenkins 1888; Raccoon creek at Mecca, I. U. Coll.; West Fork White river at Indianapolis, Jordan 1877 as *S. corporalis*; Bean Blossom creek, Eigenmann and Fordice 1885; Eel river at Cataract, Owen county, Jordan 1889; East Fork White river near Bedford, Gilbert 1884; Flat Rock creek Rushville and Clifty creek Decatur county, Shannon 1887; Blue river at Knightstown, I. U. Coll.; Little Salt creek Franklin county, Evermann and Jenkins 1888; Clear creek at Bloomington, I. U. Coll.; Gresham's creek at New Harmony, Jordan 1889; Maumee, Jordan 1877 as *corporalis*; Kankakee river, Jordan 1877 as *S. corporalis*; St. Joseph's, Jordan 1877 as *S. corporalis*; St. Joseph's river at Mishawaka, Jordan 1889; Trail creek, LaPorte county, Ridgley.

Pliocinclus elongatus Kirtland.

Penn. to Minn. No authentic specimens from Indiana.

Opsopodus emiliv Hay.

Wabash at New Harmony and Mackey's Ferry and Big Creek and Cypress swamp, Posey county, Jordan 1889.

Notemigonus chrysoleucus (Mitchill.)

White Water at Brookville, Evermann 1886; Wabash at Terre Haute, Jenkins 1886; at New Harmony and Mackey's Ferry, Jordan 1889; Lower Wabash, Jordan 1877 as *N. americanus*; Hellem's creek, Wabash county, Ulrey; Blue river, Blue lake; Eel river, Blue Babe and Mud creeks, Kirsch 1894; Tippecanoe river, Jordan 1877 as *N. americanus*; Deer creek, Evermann and Jenkins 1888; Raccoon creek at Mecca, I. U. Coll.; West Fork White river at Indianapolis, Jordan 1877 as *N. americanus*; Pipe creek, Decatur county, Shannon 1887; East Fork White River, near Bedford, Gilbert 1884; Flat Rock creek at Rushville, Shannon 1887; Gresham's and Big creeks, Posey county, Jordan 1889; Maumee, Jordan 1877 as *N. americanus*; Kankakee river,

Jordan 1877 as *N. americanus*; at Riverside, Bates 1886; Clear and Pine lakes, La Porte county, Jordan as *N. americanus*.

Order ISOSPONDYLI (The Salmon Herring &c.).

Family *Hiodontidae* (The Moon-eyes).

Hiodon alosoides (Rafinesque).

Wabash at Terre Haute, Jenkins 1886; at New Harmony, Jordan 1889; West Fork White river at Gosport, Eigenmann.

Hiodon tergisus Le Sueur. Moon-eye, Silver Bass, Toothed Herring.

Tippecanoe river, Evermann 1888; Switz City swamp, Greene county, Gilbert 1884.

Family *Clupeidae* (The Herrings).

Clupea chrysochloris Rafinesque. Skip-jack.

Big Pigeon creek at Evansville, Jordan 1889; Wabash at Delphi, Evermann and Jenkins 1888; at Mackey's Ferry, Jordan 1889.

Dorosoma cepedianum (Le Sueur). Gizzard Shad, Hickory Shad, Mud Shad, White-eyed Shad, Hairy-back.

Laughery creek near Milton, Ohio county, Jenkins 1888, and Fourteen Mile creek, Clark county; Blue river Wyandotte Cave, I. U. Coll.; Big Pigeon creek at Evansville, Jordan 1889; Wabash at Delphi, Evermann and Jenkins 1888; at Terre Haute, Jenkins 1886; at New Harmony and Mackey's Ferry, Jordan 1889; Lower Wabash, Jordan 1877; Eel river at Logansport, Kirsch 1894; West Fork White river at Gosport, Eigenmann; Patoka river, Gibson county, Jordan, 1889.

Family *Salmonidae* (The White Fishes and Trout).

Coregonus quadrilateralis Richardson. Round-fish, Pilot-fish, Shad-waiter, Menomonee White-fish.

Lake Michigan, Jordan and Evermann 1887.

Coregonus clupeiformis (Mitchill). Common White-fish.

Lake Michigan, Jordan and Evermann 1887.

Coregonus labradoricus Richardson. Sault White-fish, Musquaw river White fish, "Whiting."

Lake Michigan, Jordan and Evermann 1887.

Coregonus hoyi (Gill). Lake Moon-eye, Cisco of Lake Michigan.

Lake Michigan, Jordan and Evermann 1887.

Coregonus artedii Le Sueur. Lake Herring, Cisco Michigan Herring.

Lake Michigan, Jordan and Evermann 1887.

Coregonus artedii sisco Jordan.

Shriner and Cedar lakes, Whitley county, Kirsch 1894; Eagle lake, Kos-

ciusko county, and Lake Maxinkuckee, Jordan 1877; Tippecanoe river, Jordan 1877; Crooked and Big lake, Kirsch 1894.

Salvelinus namaycush (Walbaum). Great Lake Trout, Mackinaw Trout, Salmon Trout. Longe, Togue.

Lake Michigan, Jordan and Evermann 1887.

Family *Percopsidae* (The Trout Perches).

Percopsis guttatus Agassiz. Trout Perch.

Ohio river; Lake Michigan.

Order HAPLOMI (The Pike-like Fishes).

Family *Amblyopsidae* (The Cave Fishes).

Amblyopsis spelaeus (De Kay). Blind Fish of the Mammoth Cave, Indiana, Jordan.

Typhlichthys subterraneus (Girard).

Corydon, I. U. Coll.

Family *Cyprinodontida* (The Killi-fishes).

Fundulus diaphanus meiona (Jordan and Copeland).

Lake Maxinkuckee, Jenkins 1888; Clear and Pine lakes, La Porte county, and St. Joseph's river, Jordan 1877.

Zygonectes notatus (Rafinesque). Top Minnow.

Fourteen-mile creek, Clark county, Jenkins 1888; Big Pigeon creek at Evansville, Jordan 1889; Cypress swamp, Posey county, Jordan 1889; Wabash, at Terre Haute, Jenkins 1886; at Vincennes, New Harmony and Mackey's Ferry, Jordan 1889; Lower Wabash, Jordan 1877; Eel river and its tributary streams, Blue, Shriner, Cedar lakes; Loon, Big lakes, Kirsch 1894; Wild Cat and Deer creeks, Evermann and Jenkins 1888; Raccoon creek at Mecca, I. U. Coll.; West Fork White river at Indianapolis, Jordan 1877; Clifty creek, Decatur county, Shannon, 1887; Clear creek, Monroe county, I. U. Coll.; Patoka river, Gibson county, Black river, Gresham's creek and Big creek, Posey county, Jordan 1889; Maumee river, Jordan 1877; Kankakee river at Riverside, Bates 1886; St. Joseph's river, Jordan 1877.

Zygonectes dispar Agassiz.

Cypress swamp, Posey county, Jordan 1889; Wabash at Vincennes and Mackey's Ferry, Jordan 1889; Lake Manitou, Eigenmann and Norman; Tippecanoe river, Jordan 1877; Lake Maxinkuckee, Jordan 1889; Switz City swamp, Greene county, Gilbert 1884; St. Joseph's river, Jordan 1877.

Gambusia patrucis (Baird and Girard). Top Minnow.

Mackey's Ferry, Black river and Gresham's creek, Posey county, Jordan 1889.

Family *Umbridae* (The Mud-minnows).

Umbrina limi (Kirkland). Mud-minnow, Dog-fish.

Wabash at Terre Haute, Jenkins 1886; Blue river at Columbia City, Jordan 1889; Eel river, upper course, Thorn and Blue Babe creeks, Kirsch 1894; Lake Manitou, Eigenmann and Norman; Tippecanoe river, Jordan 1877; Little and Big Deer creeks and Honey creek, Evermann 1888; Raccoon creek at Mecca, I. U. Coll.; West Fork White river at Indianapolis, Jordan 1877; Salt creek near Bedford, Gilbert 1884; Maumee, Jordan 1877; Kankakee at Riverside, Bates 1886; St. Joseph's river, Jordan 1877; Clear and Pine lakes, LaPorte county, Jordan 1877.

Family *Luciida* (The Pikes).

Lucius vermiculatus (Le Sueur). Little Pickerel.

Ohio river; Wabash at New Harmony, Le Sueur; Wabash valley, Cuv. and Val. 1846; Lower Wabash, Jordan 1877 as *E. salmoneus*; Wabash at Terre Haute, Jenkins 1886; Blue river at Columbia City, Jordan 1889; Eel river and all its tributary streams and lakes, Kirsch 1894; Tippecanoe river, Jordan 1877 as *E. salmoneus*; Lake Maxinkuckee and Loon and Big lakes, Kirsch 1894; Lake Manitou, Eigenmann and Norman; Deer creeks and Wild Cat creek, Evermann and Jenkins 1888; Raccoon creek Mecca at I. U. Coll.; West Fork Whiteriver at Indianapolis, Jordan 1877 as *E. salmoneus*; Pipe creek, Madison county, Shannon 1887; Bean Blossom, Eigenmann and Fordice 1885; Eel river at Cataract, Owen county, Jordan 1889; Switz Cityswamp, Greene county, Gilbert 1884; East Fork White river at Bedford, and Salt creek, Gilbert 1884; Maumee river, Jordan 1877 as *E. salmoneus*; Kankakee at Riverside, Bates 1886; Yellow river at Plymouth, Jordan 1889; St. Joseph's river, Jordan 1877 as *E. salmoneus*; Trail creek, La Porte county, Ridgley; Clear and Pine lakes, La Porte county, Jordan 1877 as *E. salmoneus*.

Lucius lucius (L). Pike, Northern Pickerel.

Wabash at New Harmony, Le Sueur as *Esoc. deprandus*; Eel river, Stoney Creek, Kirsch 1894; Paw Paw creek, Wabash county, Ulrey; St. Joseph's river, Jordan 1877.

Lucius masquinongy (Mitchill). Muskallunge, Maskinongy.

Ohio river, Meek and Newland, 1885; Lake Michigan, Jordan 1877; English lake.

Order APODES (The Eels).

Family *Anguillidae* (The True Eels).

Anguilla anguilla *rostrata* Le Sueur. Eel.

White Water river at Brookville, Evermann 1886; Wabash at Delphi, Evermann 1888; at Terre Haute, Jenkins 1886; Eel river at Collamer as *A. chrysypha*, Kirsch 1894; Wild Cat and Deer creeks, Evermann 1888; Flat Rock and Sand creeks, Decatur county, Shannon 1887.

Order HEMIBRANCHII (The Half-gilled Fishes).

Family *Gasterosteida* (The Sticklebacks).

Pygosteus pungitius (L.). Nine-spined Stickleback.

Lake Michigan.

Eucalia inconstans (Kirtland). Brook Stickleback.

Kentner's creek, Wabash county, Ulrey; Ponds tributary to Flat Rock and Clifty creeks Decatur county, Shannon 1887.

Order PERCISOSES.

Family *Atherinidae* (The Silversides).

Labidesthes sicculus Cope. Brook Silverside.

Wabash river at Delphi, Evermann and Jenkins 1888; at Terre Haute, Jenkins 1886; Lower Wabash, Jordan 1877; at New Harmony and Mackey's Ferry Posey county, Jordan 1889; Eel river and all tributaries, Kirsch 1894; at Logansport, Jordan 1889; Tippecanoe river, Jordan 1877; Lake Maxinkuckee, Jenkins 1888; Loon lake, Kirsch 1894, Lake Manitou, Eigenmann and Norman; Deer creeks and Wild Cat creek, Evermann and Jenkins 1888; West Fork White river at Indianapolis, Jordan 1877; at Gosport, Eigenmann; Bean Blossom, Eigenmann and Fordice 1885; East Fork and Salt creek near Bedford, Gilbert 1884; Flat Rock creek Decatur county, Shannon 1887; Patoka river, Gibson county, Jordan 1889; Maumee river, Jordan 1877; Clear and Pine lakes, La Porte county, Jordan 1877.

Order ACANTHOPTERI (The Spiny-rayed Fishes).

Family *Aphredoderidae* (The Pirate Perches).

Aphredoderus sayanus (Gilliams). Pirate Perch.

Wabash river at New Harmony, Blue river at Columbia City, Jordan 1889; Upper course of Eel river, Thorn creek, Kirsch 1894; Raccoon creek, at Mecca, I. U. Coll.; Pipe creek, Decatur county, Shannon 1887; Bean

Blossom, Eigenmann and Fordice 1885; Salt creek near Bedford, Gilbert 1884; Big Creek, Posey county, Jordan 1889; Maumee, Jordan 1877 as *A. cookianns*; Kankakee river at Riverside, Bates 1886; Yellow river at Plymouth, Jordan 1889.

Family *Centrarchidæ* (The Sun-fishes).

Centrarchus macropterus (Lacépède).

North Carolina to Illinois. No authentic specimens from Indiana.

Pomoxis sparoides (Lacépède). Calico Bass, Grass Bass, Bar-fish, Strawberry Bass.

Fourteen-mile creek, Clark county, Jenkins 1888; Cypress swamp at Mount Vernon, Posey county, Jordan 1889; Wabash at Delphi, Evermann and Jenkins 1888; at Terre Haute, Jenkins 1886; at Vincennes and New Harmony, Jordan 1889; Eel river basin in all waters, Kirsch 1894; Tippecanoe river, Jordan 1887, as *hexacanthus*; Lake Manitou, Eigenmann and Norman; Lake Maxinkuckee, Jordan 1889; Crooked lake, Kirsch 1894; West Fork White river at Indianapolis, Jordan 1877, as *hexacanthus*; at Gosport, Eigenmann; Bean Blossom, Eigenmann and Fordice 1885; Switz City swamp, Greene county, Gilbert 1884; Clifty creek, Decatur county, Shannon 1887; Patoka river, Gibson county, Jordan 1889.

Pomoxis amularis Rafinesque. Crappie, Bachelor, New Light, Campbellite, Sac-a-lai.

Falls of the Ohio, Rafinesque 1818; White Water at Brookville, Evermann 1886; Fourteen Mile creek, Clark county, Jenkins 1888; Big Pigeon at Evansville, Jordan, 1889; Wabash at Terre Haute, Jenkins 1886; at New Harmony and Mackey's Ferry, Jordan 1889; Lower Wabash, Jordan 1877; Eel river, Blue river, Meredith creek, Kirsch, 1894; West Fork White river at Indianapolis, Jordan 1877; at Gosport, Eigenmann; Bean Blossom, Eigenmann and Fordice 1885; Salt creek, Bedford, Gilbert 1884

Ambloplites rupestris (Rafinesque). Rock Bass, Red Eye, Goggle Eye.

White Water river at Brookville, Evermann 1886; Fourteen Mile creek, Clarke county, Jenkins 1888; Wabash at Delphi, Evermann and Jenkins 1888; at Terre Haute, Jenkins 1886; Lower Wabash, Jordan 1877; Blue river at Columbia City, Jordan 1889; Eel river and tributary streams, Kirsch 1894; Eel river at Logansport, Jordan 1889; Tippecanoe river, Jordan 1877; Tippecanoe river, Evermann and Jenkins 1888; Wild Cat and Deer creeks; Lake Maxinkuckee, Jenkins 1888;

West Fork White river at Indianapolis, Jordan 1877; Pipe creek, Madison county, Shannon 1887; Bean Blossom, Eigenmann and Fordice 1885; East Fork White river at Bedford and Salt creek, Gilbert 1884; Flat Rock at Rushville; Flat Rock and Clifty creeks, Madison county, Shannon 1887; Yellow river at Plymouth, Jordan 1889; St. Joseph's, Jordan, 1877; at Mishawaka, Jordan 1889; Trail creek, LaPorte county, Ridgley.

Chaenobryttus gulosus (Cuv. and Val.) War Mouth. Red-eyed Bream.

Cypress swamp, Posey county and Wabash at Vincennes, New Harmony and Mackey's Ferry, Jordan 1889; Lower Wabash, Jordan, 1877; Eel river and tributaries; Loon and Big lakes, Kirsch 1894; West Fork White river at Indianapolis, Jordan 1877; Switz City swamp, Greene county, Gilbert 1884; Yellow river at Plymouth, Jordan 1889; Clear and Pine lakes, LaPorte county, Jordan 1877; Trail Creek and LaPorte county, Ridgley.

Lepomis cyanellus (Rafinesque). Green Sun-fish.

Ohio, Rafinesque; White Water at Brookville, Evermann 1886; Laughery creek near Milton, Ohio county, Jenkins 1888, and Fourteen Mile creek, Clark county; Wabash at Delphi, Evermann and Jenkins 1888; at Terre Haute, Jenkins 1886; at Vincennes, Jordan 1889; Eel river and all its large tributary streams and lakes, Kirsch 1894; Tippecanoe river, Deer creeks and Wild Cat Creek, Evermann and Jenkins 1888; Lake Maxinkuckee, Jenkins 1888; West Fork White river at Indianapolis, Jordan 1877; Pipe creek, Madison county, Shannon 1887; Bean Blossom, Eigenmann and Fordice 1885; Eel river at Cataract, Owen county, Jordan 1889; East Fork White river and Salt creek near Bedford, Gilbert 1884; Flat Rock creek at Rushville, and Clifty creek, Madison county, Shannon 1887; Lost river at Orangeville; Clear creek, Monroe county, I. U. Coll.; Gresham's creek at New Harmony, Jordan 1889; Kankakee river, Jordan 1877; Clear and Pine lakes, LaPorte county, Jordan 1877.

Lepomis macrochirus Rafinesque.

West Fork White river at Indianapolis, Jordan 1877.

Lepomis humilis (Girard).

Big creek at New Harmony, Jordan 1889.

Lepomis pallidus (Mitchill). Blue Sun-fish, Copper-nosed Bream, Dollardee.

Wabash at Terre Haute, Jenkins 1886; at Vincennes, New Harmony and Mackey's Ferry, Jordan 1889; Lower Wabash, Jordan 1877 as *L. incis-*

or; Eel river and all its tributaries, Kirsch 1894; Tippecanoe river, Jordan 1877 as *L. incisor*; Lake Manitou, Eigenmann and Norman; Lake Maxinkuckee, Jenkins 1888; Loon, Big and Crooked lakes, Kirsch 1894; West Fork White river at Indianapolis, Jordan 1877 as *L. incisor*; at Gosport, Eigenmann; Switz City Swamp, Greene county, Gilbert 1884; Maumee, Jordan 1877 as *L. incisor*; St. Joseph's, Jordan 1877 as *L. incisor*; Clear and Pine lakes, LaPorte county, Jordan 1877 as *L. incisor*. Trail creek, LaPorte county, Ridgley.

Lepomis megalotis (Rafinesque).

Ohio river, Rafinesque; White Water at Brookville, Evermann, 1886; Laughery creek near Milton, Ohio county, and Fourteen Mile creek, Clark county, Jenkins, 1888; Wabash at Delphi, Evermann and Jenkins, 1888; at Terre Haute, Jenkins, 1886; at New Harmony and Mackey's Ferry, Jordan, 1889; Kentner's creek, Wabash county, Ulrey; Eel river and its tributary streams, Hull lake, Kirsch, 1894; at Logansport, Jordan, 1889; Tippecanoe, Deer creeks and Wild Cat creek, Evermann and Jenkins, 1888; Lake Maxinkuckee, Jenkins, 1888; Loon lake, Kirsch 1894; West Fork White river, at Indianapolis, Jordan, 1877, as *L. peltastes*; at Gosport, Eigenmann; Bean Blossom, Eigenmann and Fordice, 1885; East Fork White river and Salt creek near Bedford, Gilbert, 1884; Clifty creek, Decatur county, Shannon, 1887; Clear creek, Monroe county, I. U. Coll.; Patoka river, Gibson county, Jordan, 1889; Kankakee river, Jordan, 1877, as *L. peltastes*; Yellow river, at Plymouth, Jordan, 1889; St. Joseph's at Mishawaka, Jordan 1889.

Lepomis garmani Forbes.

Mackey's Ferry, Jordan 1889.

Lepomis euryurus McKay.

Cedar and Shriner lakes and upper Eel river, Whitley county, Kirsch 1894.

Lepomis heros (B. and G.) McKay.

Round lake, Whitley county, Kirsch 1894; Lake Manitou, Eigenmann and Norman.

Lepomis notatus (Agass.) McKay.

Mackey's Ferry, Jordan 1889.

Lepomis gibbosus (L). Common Sun-fish, Bream, Pond-fish, Pumpkinseed, Sunny.

Wabash at Terre Haute, Jenkins 1886; Eel river at South Whitley,

Cedar, Shriener, Round, Hull and Wilson lakes, Kirsch 1894; Paw Paw creek, Wabash county, Ulrey; Tippecanoe river, Jordan 1877; Loon lake, Kirsch 1894; Lake Manitou, Eigenmann and Norman; Lake Maxinkuckee, Jordan 1889; Maumee, Jordan 1877; Kankakee, Jordan 1877; at River side, Bates 1886; St. Joseph's, Jordan 1877; at Mishawaka, Jordan 1889; Clear and Pine lakes, Laporte county, Jordan 1877.

Micropterus dolomieu (Lacépède). Small-mouthed Black Bass.

White Water at Brookville, Evermann 1886; Laughery creek, near Milton, Ohio county, Jenkins 1888; Fourteen-mile creek, Clark county, Jenkins 1888; Wabash at Delphi, Evermann and Jenkins 1888; at Terre Haute, Jenkins 1886; Lower Wabash, Jordan 1877, as *floridanus*; Eel river at Logansport, Jordan 1889; Eel river and all tributaries, Kirsch 1894; Tippecanoe river, Jordan 1877, as *floridanus*; Tippecanoe river, Deer creeks and Wild Cat creek, Evermann and Jenkins 1888; Lake Maxinkuckee, Jenkins 1888; West Fork White river, at Indianapolis, Jordan 1877, as *floridanus*; at Gosport, Eigenmann; Bean Blossom, Eigenmann and Fordice 1885; Eel river, at Cataract, Owen county, Jordan 1889; Flat Rock and Clifty creeks, Decatur county, Shannon 1887; Blue river, at Knightstown, Clear creek, Monroe county, I. U. Coll.; Maumee river, Jordan 1877, as *floridanus*; Kankakee river, Jordan 1877, as *floridanus*; Yellow river, at Plymouth, Jordan 1889; St. Joseph's river, Jordan 1877, as *floridanus*; at Mishawaka, Jordan 1889; Clear and Pine lakes, La Porte county, Jordan 1877, as *floridanus*.

Micropterus salmoides (Lacépède). Large mouthed Black Bass, Green Bass, Oswego Bass, Bayou Bass

White Water river, at Brookville, Evermann 1886; Fourteen-mile creek, Clark county, Jenkins 1888; Big Pigeon creek at Evansville, Jordan 1889; Wabash at Dephi, Evermann and Jenkins 1888; at Terre Haute, Jenkins 1886; at Vincennes, New Harmony and Mackey's Ferry, Jordan 1889; Lower Wabash, Jordan 1877; Blue river at Columbia City, Jordan 1889; Eel river and large tributaries, and all the lakes, Kirsch 1894; Tippecanoe river, Jordan 1877; Tippecanoe river, Deer creeks and Wild Cat creek, Evermann and Jenkins 1888; Lake Manitou, Eigenmann and Norman; Lake Maxinkuckee, Jenkins 1888; Loon, Big and Crooked lakes, Kirsch 1894; West Fork White river at Indianapolis, Jordan 1877; at Gosport, Eigenmann; Switz City swamp,

Greene county, Gilbert 1884; East Fork White river and Salt creek, near Bedford, Gilbert 1884; Patoka river, Gibson county, and Black river, Posey county, Jordan 1889; Yellow river at Plymouth, Jordan 1889; St. Joseph's river, Jordan 1877; Trail creek, La Porte county, Ridgley.

Family *Percidae* (The Perches).

Etheostoma pellucidum Baird. Sand Darter.

Wabash at Delphi, Evermann and Jenkins 1888; at Terre Haute, Jenkins 1886; at New Harmony and Mackey's Ferry, Jordan 1889; Eel river from Collamer to Logansport, Kirsch 1894; at Logansport, Jordan 1889; Tippecanoe river, Wild Cat and Deer creeks, Evermann and Jenkins 1888; Raccoon creek at Mecca, I. U. Coll; West Fork White River at Indianapolis, Jordan 1877; at Gosport, Eigenmann; Bean Blossom, Eigenmann and Fordice 1885; East Fork near Bedford, Gilbert 1884.

Etheostoma asprellus (Jordan).

Rising Sun, Ohio county, Jenkins 1888; Wabash at Vincennes and New Harmony, Jordan 1889.

Etheostoma nigrum Rafinesque. "Johnny."

White Water river at Brookville, Evermann 1886; Laughery creek near Milton, Ohio county, and Fourteen Mile Creek, Clark county, Jenkins 1888; Wabash river at Delphi, Evermann and Jenkins 1888; at Terre Haute, Jenkins 1886; at Vincennes, New Harmony and Mackey's Ferry, Jordan 1889; Kentner's creek, Wabash county, Ulrey; Blue river at Columbia City, Jordan 1889; Eel river at Logansport and tributary streams, Cedar and Round lakes, Kirsch 1894; Tippecanoe river, Wild Cat and Honey creeks and Deer creeks, Evermann and Jenkins 1888; Lake Maxinkuckee, Jenkins 1888; Raccoon creek at Mecca, Parke county, I. U. Coll.; West Fork White river at Indianapolis, Jordan 1877 as *Boleostoma maculatum*; at Gosport, Eigenmann; at Spencer, Jordan 1889; Bean Blossom creek, Eigenmann and Fordice 1885; East Fork White river and Salt creek near Bedford, Gilbert 1884 as *B. maculatum*; Flat Rock and Clifty creeks, Decatur county, Shannon 1887; Blue river at Knightstown; Lost river at Orangeville; Clear creek, Monroe county, I. U. Coll.; Patoka river Gibson county, Black river, Gresham's and Big creeks, Posey county, Jordan 1889; Kankakee river at Riverside, Bates 1886; Yellow river at Plymouth, Jordan 1889; St. Joseph's at Mishawaka, Jordan 1889; Trail

creek, LaPorte county, Ridgley.

Etheostoma chlorosoma (Hay).

Cypress swamp, Posey county, Wabash at New Harmony and Mackey's Ferry and Big creek, Posey county, Jordan 1889.

Etheostoma blennioides Rafinesque. Green-sided Darter.

White Water river at Brookville, Evermann 1886; Laughery creek near Milton, Ohio county, and Fourteen Mile creek, Clark county, Jenkins 1888; Wabash river at Delphi, Evermann and Jenkins 1888; at Terre Haute, Jenkins 1886; Lower Wabash, Jordan 1877; Blue river at Columbia City, Jordan 1889; Eel river at Logansport, Jordan 1889; Eel river and its tributary streams, Kirsch 1894; Lake Manitou, Eigenmann and Norman; Tippecanoe river, Deer creeks, Wild Cat creek, Evermann and Jenkins 1888; Raccoon creek at Mecca, I. U. Coll.; West Fork White river at Indianapolis, Jordan 1877; at Spencer, Jordan 1889; Bean Blossom, Eigenmann and Fordice 1885; East Fork White river and Salt creek near Bedford, Gilbert 1884; Flat Rock and Clifty creeks, Decatur county, Shannon 1887; Blue river at Knightstown, I. U. Coll.

Etheostoma coplandi (Jordan).

Wabash at Delphi, Evermann and Jenkins 1888; at Terre Haute, Jenkins 1886; at Vincennes and New Harmony, Jordan 1889; West Fork White river at Indianapolis, Jordan 1877; at Gosport, Eigenmann.

Etheostoma histrio Jordan and Gilbert.

Patoka river, Gibson county, Jordan 1889.

Etheostoma shumardi (Girard).

Wabash at Delphi, Evermann and Jenkins 1888; at Terre Haute, Jenkins 1886; at Hutsonville, Ill., Vincennes and New Harmony, Jordan, 1889; Lower Wabash, Jordan 1877; West Fork White river at Indianapolis, Jordan 1877.

Etheostoma uranidea (Jordan and Gilbert).

Wabash at Vincennes and New Harmony, Jordan 1889.

Etheostoma caprodes Rafinesque. Log Perch, Hog-fish, Crawl-a-bottom.

White Water river at Brookville, Evermann 1886; Fourteen Mile creek Clark county, Jenkins 1888; Wabash river at Delphi, Evermann and Jenkins 1888; at Terre Haute, Jenkins 1886; at Vincennes, New Harmony and Mackey's Ferry, Jordan 1889; Lower Wabash, Jordan 1877; Lower course of Eel river, Pawpaw creek, Flowers, Twelve Mile creeks, Kirsch 1894; Eel at Logansport, Jordan 1889; Tippecanoe river, Wild

Cat and Deer creeks, Evermann and Jenkins 1888; Loon lake, Kirsch 1894; Raccoon creek at Mecca, I. U. Coll., West Fork White river at Indianapolis, Jordan 1877; at Gosport, Eigenmann; at Spencer, Jordan 1889; Bean Blossom, Eigenmann and Fordice 1885; Clifty and Flat Rock creeks, Decatur county, and Flat Rock river at Rushville, Shannon 1887; Salt creek near Bedford, Gilbert 1884; Patoka river, Gibson county, and Big creek Posey county, Jordan 1889; St. Joseph's river, Jordan 1877.

Etheostoma macrocephalum Cope.

Ohio valley. No authentic specimens from Indiana.

Etheostoma ouachite (Jordan and Gilbert).

Patoka river, Gibson county, Jordan 1889.

Etheostoma aspro (Cope and Jordan).

White Water river at Brookville, Evermann 1886; Wabash at Delphi, Evermann and Jenkins, 1888; at Terre Haute, Jenkins 1886; at New Harmony, Jordan 1889; Blue river at Columbia City, Jordan 1889; Eel river at Logansport, Jordan 1889; Eel river and all its tributary streams, Kirsch 1894; Tippecanoe river, Deer creeks and Wild Cat creek, Evermann and Jenkins 1888; Raccoon creek at Mecca, I. U. Coll.; West Fork White river at Indianapolis, Jordan 1877; Bean Blossom, Eigenmann and Fordice 1885; East Fork White river and Salt creek near Bedford, Gilbert 1884; Flat Rock and Sand creeks, Decatur county, Shannon 1887; Big creek, Posey county, Jordan, 1889; Kankakee at Riverside, Bates 1886; Yellow river at Plymouth, Jordan 1889; St. Joseph's at Mishawaka, Jordan 1889.

Etheostoma phoxocephalum Nelson.

Blue river at Wyandotte Cave, I. U. Coll.; Wabash river at Delphi, Evermann and Jenkins 1888; at Terre Haute, Evermann 1888; at Vincennes and New Harmony, Jordan 1889; Lower Wabash, Jordan 1877; Eel river at Logansport, Jordan 1889; West Fork White river at Gosport, Eigenmann; at Spencer, Jordan 1889; Bean Blossom, Eigenmann and Fordice 1885; East Fork and Salt creek near Bedford, Gilbert 1884; Patoka river, Gibson county and Big creek, Posey county, Jordan 1889.

Etheostoma scierum (Swain).

Wabash at Vincennes and New Harmony, Jordan, 1889; Tippecanoe river, Jenkins 1888; West Fork White river at Gosport, Eigenmann; at Spencer, Jordan 1889; Bean Blossom, Monroe county, Swain; Salt

creek near Bedford, Gilbert 1884; Patoka river, Gibson county, Jordan 1889.

Etheostoma evides (Jordan and Copeland).

Wabash river at Delphi, Evermann and Jenkins 1888; at Vincennes and New Harmony, Jordan 1889; Lower Wabash, Jordan 1877; Eel river at Logansport, Jordan 1889; Tippecanoe river, Evermann and Jenkins 1888; West Fork White river at Indianapolis, Jordan 1877; at Gosport, Gilbert and Swain; St. Joseph's river, Jordan 1877.

Etheostoma variatum Kirtland.

White Water at Brookville, Jordan 1885, Evermann 1886.

Etheostoma zonale (Cope).

White Water at Brookville, Evermann 1886; Blue river at Wyandotte Cave, I. U. Coll.; Yellow river at Plymouth, Jordan 1889.

Etheostoma camurum (Cope). Blue-breasted Darter.

Eel River, between South Whitley and North Manchester, Kirsch, 1894; Tippecanoe river, Jenkins 1888; West Fork White river at Indianapolis, Jordan 1877.

Etheostoma maculatum Kirtland.

Tippecanoe river, Jordan 1877; Deer creek, Jordan 1889; West Fork White river at Indianapolis, Jordan 1877; Maumee river Jordan 1877; Kankakee river, Jordan 1877; Yellow river at Plymouth, Jordan 1889; St. Joseph's river, Jordan 1877.

Etheostoma flabellare Rafinesque.

White Water at Brookville, Evermann 1886; Laughery creek near Milton, Ohio county, Jenkins 1888; Big Pigeon creek at Evansville, Jordan 1889; Wabash at Delphi, Evermann and Jenkins 1888; at Terre Haute, Jenkins 1886; Blue river at Columbia City, Jordan 1889; Eel river between South Whitley and North Manchester, Kirsch 1894; Tippecanoe river, Wild Cat creek and Deer creeks, Evermann and Jenkins 1888; Raccoon creek at Mecca, I. U. Coll.; West Fork White river at Indianapolis, Jordan 1877; Bean Blossom, Eigenmann and Fordice 1885; Eel river at Cataract, Owen county, Jordan 1889; Salt creek near Bedford, Gilbert 1884; Flat Rock and Clifty creeks, Decatur county, Shannon 1887; Clear creek, Monroe county, I. U. Coll.

Etheostoma squamiceps Jordan.

Gresham's creek and Big creek, Posey county, Jordan 1889.

Etheostoma tippecanoe Jordan and Evermann.

Tippecanoe river, Jordan 1889.

Etheostoma coruleum Storer. Rainbow Darter, Soldier-fish.

White Water river at Brookville, Evermann 1886; Laughery creek near Milton, Ohio county, and Fourteen Mile creek, Clark county, Jenkins 1888; Wabash at Delphi, Evermann and Jenkins 1888; at Terre Haute, Jenkins 1886; at Vincennes and New Harmony, Jordan 1889; Kentner's creek, Wabash county, Ulrey; Blue river at Columbia City, Jordan 1889; Eel river and tributary streams, Kirsch 1894; at Logansport, Jordan, 1889; Tippecanoe river, Wild Cat creek, Deer creeks, Evermann and Jenkins 1888; Lake Maxinkuckee, Jenkins 1888; Raccoon creek at Mecca I. U. Coll.; West Fork White river at Indianapolis, Jordan 1877 as *Pacilichthys variatus*; at Gosport, Eigenmann; at Spencer, Jordan 1889; Bean Blossom, Eigenmann and Fordice 1885; East Fork White river and Salt creek near Bedford, Gilbert 1884; Flat Rock and Clifty creeks, Decatur county, Shannon 1887; Blue river at Knightstown, Clear creek, Monroe county, I. U. Coll.; Yellow river at Plymouth, Jordan 1889; St. Joseph's at Mishawaka, Jordan 1889.

Etheostoma ceruleum spectabile Agassiz.

Lakes drained by Eel river, Kirsch 1894; West Fork White river at Indianapolis, Jordan 1877; Kankakee river, Jordan 1877; St. Joseph's river, Jordan 1877.

Etheostoma jessie (Jordan and Brayton).

Wabash at Delphi, Evermann and Jenkins 1888; at Vincennes and New Harmony, Jordan 1889; Big Creek, Posey county, Jordan 1889.

Etheostoma fusiforme (Girard).

Cypress swamp, Posey county, Jordan 1889; Wabash at Terre Haute and New Harmony, Jordan 1889; Switz City swamp, Greene county, Gilbert 1884 as *B. palustris*; Big creek, Posey county, Jordan 1889.

Etheostoma eos (Jordan and Copeland).

Wabash at Terre Haute, Jenkins 1886; Blue, Cedar, Round and Shriner lakes, Whitley county, Kirsch 1894; Tippecanoe river, Jordan 1877; Lake Maxinkuckee, Jenkins 1888; Maumee river and St. Joseph's river, Jordan 1877; Clear and Pine lakes, La Porte county, Jordan 1877.

Etheostoma microperca Jordan and Gilbert. Least Darter.

Blue lake, Round lake, Kirsch 1894; West Fork White river at Indianapolis, Jordan 1877 as *M. punctulata*; Maumee river, Jordan 1877; Kankakee river at Riverside, Bates 1886; St. Joseph's river, Jordan 1877; Clear and Pine lakes, La Porte county, Jordan 1877.

Perca flavescens (Mitchill). Yellow Perch, Ringed Perch.

Upper courses of Eel river and Blue river, lakes drained by Blue river, Kirsch 1894; Wabash at Terre Haute, Jenkins 1886; Lake Manitou, Eigenmann and Norman; Tippecanoe river, Jordan 1877; Lake Maxinkuckee, Jenkins 1888; Loon, Big, Crooked lakes, Kirsch 1894; St. Joseph's river, Turkey lake, Jordan 1877; Lake Michigan at Michigan City, Bates 1886; Clear and Pine lakes, La Porte county, Jordan 1877.

Stizostedion vitreum (Mitchill). Wall-eye, Glass-eye, Pike-Perch, Jack Salmon.

Wabash at Terre Haute; Jenkins 1886.

Stizostedion canadense (C. H. Smith). Sauger, Sand Pike, Gray Pike, Hornfish.

White Water at Brookville, Evermann 1886; Wabash at Terre Haute, Jenkins 1886.

Family *Serranidæ* (The Sea Bass).

Roccus lineatus (Bloch). Striped Bass, Rock-fish, Rock.

No authentic Indiana specimens.

Roccus chrysops (Rafinesque). White Bass.

No authentic Indiana specimens.

Morone interrupta (Gill). Yellow Bass.

Wabash, at Terre Haute, Jenkins 1886.

Family *Sciaenidæ* (The Drums).

Aplodinotus grunniens (Rafinesque). Fresh Water Drum, Gaspergou, "Sheep's-head," White Perch, Croaker, Thunder pumper.

Ohio river; White Water, at Brookville, Evermann 1886; Big Pigeon creek at Evansville, Jordan 1889; Wabash at Terre Haute, Jenkins 1886; at New Harmony and Mackey's Ferry, Jordan 1889; West Fork White river at Indianapolis, Jordan 1877; Patoka river, Gibson county, Jordan 1889.

Family *Cottidæ* (The Sculpins).

Cottus ricei (Nelson).

Lake Michigan. No authentic Indiana specimens.

Cottus bairdi (Girard). Miller's Thumb, Blob, Muffle-jaw.

White Water river at Brookville, Evermann 1886; Kentner's creek, Wabash county, Ulrey; Blue river at Columbia City, Jordan 1889; Eel river and large tributaries, Kirsch 1894; Lake Manitou, Eigenmann and Norman; Honey creek and Deer creeks, Evermann and Jenkins 1888, as *richardsoni*; West Fork White river, at Indianapo-

lis, Jordan 1877, as *wilsonii* and *carolinæ*; at Spencer, Jordan 1889; Bean Blossom creek, Eigenmann and Fordice 1885; Clifty and Flat Rock creeks, Decatur county, Flat Rock river at Rushville; Shannon 1887; Lost river at Orangeville; Yellow river at Plymouth, Jordan, 1889; Trail creek, La Porte county, Ridgley.

Cottus pollicaris (J. and G.).

Lake Michigan. No authentic Indiana specimens.

Cottus hoyi (Putnam).

Lake Michigan. No authentic Indiana specimens.

Family *Gadidæ* (The Cod-fishes).

Lota lota maculosa (Le Sueur). Burbot, Lawyer, Ling.

New Albany, Jordan 1888.

Summary of Families of Fishes found in Indiana, with their numbers of genera and species:

	No. of Genera.	No. of Species.
1 Petromyzontidæ	2	2
2 Polyodontidæ	1	1
3 Acipenseridæ	2	2
4 Lepisosteidæ	1	3
5 Amiidæ	1	1
6 Siluridæ	5	14
7 Catostomidæ	8	17
8 Cyprinidæ	13	33
9 Hiodontidæ	1	2
10 Clupeidæ	2	2
11 Salmonidæ	2	7
12 Percopsidæ	1	1
13 Amblyopsidæ	2	2
14 Cyprinodontidæ	3	4
15 Umbridæ	1	1
16 Luciidæ	1	3
17 Anguillidæ	1	1
18 Gasterosteidæ	2	2
19 Atherinidæ	1	1
20 Aphredoderidæ	1	1
21 Centrarchidæ	6	17
22 Percidæ	3	32
23 Serranidæ	2	3
24 Sciaenidæ	1	1
25 Cottidæ	1	4
26 Gadidæ	1	1
	65	158

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: Siluridae, Catostomidae, Cyprinidae, Centrarchidae, Etheostomidae. About one fifth of the species are minnows, another fifth are darters, cat-fish and suckers together form a third fifth, the sunfishes, salmon and trout, and Cyprinodontidae 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. **Croghan, 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