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Compilation and Revision of the Fish Records Published for Iowa

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COMPILATION AND REVISION OF THE FISH
RECORDS PUBLISHED FOR IOWA

GEORGE E. POTTER AND DAVID T. JONES

For some time the writers have been very much interested in a study of the fishes of Iowa. On investigating the matter of fish lists of the state, it was found that they were very scattered and that no attempt had been made in the last thirty-five years to make them more compact. The nomenclature, in the meantime, had become quite confused and somewhat antiquated. The need for work on synonymy was very much in evidence also.

This article is an attempt to bring together into a compact form and revise all of the available published records for Iowa fish. The 1923 edition of Pratt's Manual of Vertebrates has been followed all the way through for the nomenclature. In the case of each species listed, there is given: name as in Pratt; common name, where known; each separate record of the fish with the date, scientific name as originally published, localities in which the species was found and the reference; the synonymy, if there be such and interpretations of any irregularities. Besides the actual recorded list there is included an hypothetical list of those species which might possibly occur in the state.

The method for collecting the information and preparing the material for such a list must be quite systematic and painstaking. First there was prepared a list of the species with a possible range over Iowa as given by Pratt. Then each of the known lists for the various parts of the state was carefully checked and recorded on the above list. A complete bibliography was prepared with all publication and page references. Locality records were laboriously searched out for each record of a species and listed with it. The species lists, locality records and bibliography were all transferred and kept in order on index cards in a file, thus becoming quite adaptable to any further additions or changes that might be found. Two identical card indexes were kept. On copying for this article, the two records were checked against each other, and against the original where necessary.

Any synonymy that is given has been traced through all of the available sources and given as found with the reference or refer-

ences. Interpretations which have been placed along with the handling of certain cases in the lists, include where possible, the references to show the logic of the procedure.

The recognized species and subspecies listed as actually recorded from Iowa, numbers one hundred twenty-seven. The hypothetical list as given includes twenty-one species and subspecies. There are, no doubt, other species in the state at the present and in all probability a number of those listed have ceased to exist here. A check on this point can be made only by collections and the preparation of up-to-date lists.

It can hardly be hoped that this list will prove to be entirely free from error, but many mistakes have been checked up and corrected from the existing lists. The writers feel that this effort has at least brought the records into a more useable form.

The authors wish to thank Prof. H. F. Wickham for the use of his personal copy of Osborn's article, which was otherwise unavailable, and Dr. F. A. Stromsten for the use of his personal library and for helpful suggestions concerning tabulating and condensing data.

The authors will appreciate constructive criticism from users of these lists. Reports of mistakes discovered in these lists, unrecorded published records with name of library or source from which records can be secured, new records published after the appearance of this article, and published records of introduction of exotic fish into Iowa waters, will be helpful in keeping our card indexes up to date. We can use no unpublished records of the occurrence of fish. Except in exceptional cases, only records where the scientific name is given can be used, as the common names vary with locality. Meek in 1894 reports that the log perch, *Percina caprodes*, was called "stickleback" in the vicinity of Waterloo, — a common name ordinarily accorded to *Eucalia inconstans*. Likewise Osborn reports the wall-eyed pike or pike-perch, *Stizostedion vitreum*, as the common "pike" of Spirit Lake, whereas *Esox lucius* is commonly regarded as entitled to that name. "Bullhead" might mean any one of the three species of *Ameiurus* found in the state or might be applied indiscriminately to the young of some of our catfish. The above information may be sent to Geo. E. Potter, Zoology Dept., University of Iowa, Iowa City, Iowa, or to David T. Jones, 818 E. Fifth St., Vinton, Iowa.

The reader will find that each reference in the list proper is given as a bibliographic number. Under the corresponding num-

ber in the bibliography, there is given the record of the date, man's name, title of the paper, publication, and page. By combining the list and the bibliography the reader may readily get the complete information from the original sources for any species listed. An attempt has been made to take the specific rather than the general localities where both are given, e.g. Mississippi River at Davenport, would be listed simply as Davenport. However, there still remains some overlapping of localities. Duplication of localities in different articles was avoided by listing the locality only where it was earliest reported, e.g., if a certain fish were listed in an 1890 report from Cedar Rapids, and in 1894 were listed from the same locality, the locality would be given only under the date 1890, although the 1894 reference without locality or with additional localities would be given. Austin, Minn., Sioux Falls, S. D., some Missouri border records, and one Mississippi River record from the Illinois side have been considered as worthy to rank as Iowa records.

The following abbreviations have been used in the lists.

Bibl.—bibliographic reference	p.—page
Cr.—creek	pp.—pages
Miss.—Mississippi	R.—river
Mo.—Missouri	

The following may help to clear up some doubtful localities. Parentheses are ours.

- Bear Cr.—a tributary of the Turkey R. (Probably the one near Elkport.)
 Beaver Cr.—a small stream near Des Moines.
 Brook R.—(not located).
 Clear Lake—situated near the source of the Cedar and Iowa rivers, its outlet is a tributary of the Shellrock R.
 College Cr.—a small creek near Ames.
 Dry Cr.—a small tributary of the Cedar R. near Palo.
 Delhi Cr.—(not found).
 Four-Mile Cr.—a tributary of the Des Moines R.
 Hickory Cr.—a southern tributary of the Yellow R. arising near Postville.
 Indian Cr.—an eastern tributary to the Cedar (Linn Co.).
 Lizard Cr.—a small stream near Ft. Dodge.
 Mad Cr.—a small stream flowing through Muscatine and emptying into the Mississippi R.
 Middle R.—a western tributary of the Des Moines.
 Mill Cr.—a tributary of the Little Sioux and outlet of the Spirit Lake group.
 Minnow Cr.—a small brook, flowing into Buffalo Cr., Wapsipinicon R. System, near Anamosa.
 North R.—a western tributary of the Des Moines.
 Prairie Cr.—a western tributary to the Cedar.
 Silver Lake—one of the sources of the Little Sioux R.

- Springbrook—(Spring Branch near Manchester, Bibl. 19, pp. 218, 241; Spring Creek at Delhi, Bibl. 19, p. 240; "Bear Creek is a spring brook," Bibl. 19, p. 241; the above are possibilities; locality not found).
 Squaw Cr.—a tributary to the Skunk R.
 Village Cr.—a small brook southwest of Ottumwa.
 Walnut Cr.—a small stream near Des Moines.
 Yader Cr.—a small creek in the Des Moines River system. (Not located.)
 Yellow R.—a small stream of northeastern Iowa.

LIST OF FISHES RECORDED FROM IOWA

Petromyzonidae

- Ichthyomyzon concolor* (Kirtland)—Silver lamprey.
 1888-90 As *Petromyzon concolor* Kirt.; Bibl. 17.
 1890 As *P. concolor* (Kirt.); Miss R., Des Moines R., Iowa R. (S. U. I. Museum), Cedar R. (Coe College Museum); Bibl. 19.
 1890-91 As *P. concolor* Kirt.; Des Moines; Bibl. 2.
 1892 As *P. concolor* (Kirt.); Cedar R.; Bibl. 20.
 1892 As *P. castaneus* (Girard); Bibl. 23.
I. concolor (Kirt.) = *P. castaneus* (Gir.) and *P. concolor* (Kirt.); Bibl. 6, p. 9; Bibl. 15, pp. 10 and 11.
Entosphenus appendix (DeKay)—Brook lamprey, small black lamprey.
 1888-90 As *Ammocoetes branchialis* Linnæus; Cedar Rapids; Bibl. 17.
 1890 As *A. branchialis* (L.); Skunk R., Iowa R. (S. U. I. Museum); Bibl. 19.
 1892 As *A. branchialis* (L.); Bibl. 20.
 1892 As *A. niger* (Rafinesque) Jordan; Iowa City; Bibl. 22.
 1892 As *A. branchialis* (L.); Ames, Lawler; Bibl. 23.
A. branchialis L. = *A. niger* (Raf.) = *Lamptera wilderi* J. and E. = *Entosphenus appendix* (DeK.); Bibl. 15, p. 10; Bibl. 6, p. 11.

Polyodontidae

- Polyodon spathula* (Walbaum)—Spoonbill, paddlefish.
 1888-90 As *P. spathula* Walb.; Bibl. 17.
 1889 As *P. spathula* Walb.; Cedar R., Iowa R., Mo. R., Miss. R.; Bibl. 18.
 1890 As *P. spathula* (Walb.); Cedar Rapids (Coe College Museum), Sioux City, Mo. R., in Harrison Co.; Bibl. 19.
 1892 As *P. spathula* (Walb.); Bibl. 20.
 1892 As *P. spathula* (Walb.); Bibl. 23.

Acipenseridae

- Acipenser rubicundus* Le Sueur—Lake sturgeon, rock sturgeon, red sturgeon.
 1888-90 As *A. rubicundus* Le S.; Miss. R.; Bibl. 17.
 1889 As *A. rubicundus* Le S.; Bibl. 18.
 1890 As *A. rubicundus* Le S.; Bibl. 19.
 1892 As *A. rubicundus* (Le S.); Iowa City; Bibl. 20.
 1892 As *Acipenser rubicundus*; Bibl. 23.
Scaphirhynchus platorhynchus (Rafinesque)—Shovel-nosed sturgeon.
 1888-90 As *S. platorhynchus* Raf.; Bibl. 17.
 1890 As *S. platorhynchus* (Raf.); Miss. R., Cedar R., Mo. R.; Bibl. 19.
 1892 As *S. platyrhynchus* (Raf.); Bibl. 20.

1892 As *S. platyrhynchus* (Raf.); Bibl. 23.

Lepisosteidae

Lepisosteus osseus (Linnæus)—Long-nosed garpike, billfish.

1888-90 As *Lepidosteus osseus* L.; Larger streams; Bibl. 17.

1890 As *Lepisosteus osseus* (L.); Muscatine, Davenport, Raccoon R., Des Moines, Adel, Iowa City (S. U. I. Museum), Cedar Rapids, Wheatland, Wapsipinicon R.; Bibl. 19.

1890-91 As *Lepidosteus osseus* L.; Bibl. 2.

1892 As *Lepidosteus osseus* (L.); Bibl. 20.

1892 As *Lepidosteus osseus* (L.); Bibl. 23.

1894 As *Lepisosteus osseus* L.; Spirit Lake; Bibl. 21.

Lepisosteus Lacépède = *Lepidosteus Agassiz*; Bibl. 26, p. 32.

Lepisosteus platostomus Rafinesque—Short-nosed garpike.

1888-90 As *Lepidosteus platystomus* Raf.; Miss. Valley; Bibl. 17.

1890 As *Lepisosteus platystomus* Raf.; Miss R.; Bibl. 19.

1892 As *Lepidosteus platystomus* (Raf.); Cedar Rapids; Bibl. 20.

1892 As *Lepidosteus platystomus* Raf.; Southwest Iowa; Bibl. 23.

1926 As *Lepidosteus platystomus*; Okoboji Lakes Dickinson Co.; Bibl. 25.

Amiidae

Amia calva Linnæus—dogfish, bowfin, mudfish, grindle.

1888-90 As *A. calva* L.; Bibl. 17.

1890 As *A. calva* L.; Miss. R., Iowa City, Amana, Cedar R.; Bibl. 19.

1892 As *A. calva* (L.); Bibl. 20.

1892 As *A. calva* L.; Bibl. 23.

Hiodontidae

Hiodon alosoides (Rafinesque)—Northern mooneye.

1890 As *H. alosoides* (Raf.); Sioux City; Bibl. 19.

1892 As *H. alosoides* (Raf.); Bibl. 20.

1894 As *H. alosoides* (Raf.); Bibl. 21.

Hiodon tergisus Le Sueur—Mooneye, silver bass, toothed herring.

1890 As *H. tergisus* Le S.; Cedar Rapids; Bibl. 19.

1892 As *H. tergisus* (Le S.); Bibl. 20.

1892 As *H. tergisus* Le S.; Bibl. 23.

Dorosomidae

Dorosoma cepedianum (Le Sueur)—Gizzard shad, mud shad, hickory shad.

1890 As *D. cepedianum* (Le S.); Miss. R., Davenport, Palo (Cedar R.), Sioux City; Bibl. 19.

1892 As *D. cepedianum* (Le S.); Bibl. 20.

1892 As *D. cepedianum* (Le S.); Bibl. 23.

1894 As *D. cepedianum* (Le S.); Bibl. 21.

Clupeidae

Pomolobus chrysochloris Rafinesque—Skipjack, golden shad, blue herring.

1890 As *Clupea chrysochloris* Raf.; Muscatine, Davenport; Bibl. 19.

1892 As *C. chrysochloris* (Raf.); Cedar Rapids; Bibl. 20.

1892 As *C. chrysochloris* Raf.; Bibl. 23.

Salmonidae

Salvelinus fontinalis (Mitchill)—Brook trout, speckled trout.

- 1889 As *S. fontinalis* Mit.; Mad Cr., Muscatine, Mt. Vernon (Cedar R.);
Bibl. 18.
1890 As *S. fontinalis* (Mit.); McCloud Run, Cedar Rapids; Bibl. 19.
1892 As *S. fontinalis* (Mit.); (Introduced by State Commissioner Shaw);
Bibl. 20.
1892 As *S. fontinalis* (Mit.); Spring Brook; Bibl. 23.

Anguillidae

- Anguilla chrysypa* Rafinesque—Freshwater eel.
1889 As *Anguilla rostrata* Le Sueur; Bibl. 18.
1890 As *A. chrysypa* (Raf.); Raccoon R., Des Moines R., Adel, Iowa R.,
Cedar R., Cedar Rapids, Waterloo, (Some introduced at Cedar Rap-
ids); Bibl. 19.
1890-91 As *A. anguilla* var. *rostrata* Le S.; Des Moines; Bibl. 2.
1892 As *A. caryspha* (Raf.); Bibl. 20.
1892 As *A. anguilla* Linnæus; Shell Rock; Bibl. 23.
Anguilla chrysypa Raf. = *A. rostrata* Le S.; Bibl. 26, p. 51.

Catostomidae

- Ictiobus cyprinella* (Cuvier and Valenciennes)—Buffalo, big-mouth buffalo.
1888-90 As *I. cyprinella* C. & V.; Miss. Valley; Bibl. 17.
1889 As *I. cyprinella* C. & V.; Bibl. 18.
1890 As *I. cyprinella* (C. & V.); Miss. R., Squaw Cr., Wheatland, Inde-
pendence, Anamosa; Bibl. 19.
1892 As *I. cyprinella* (C. & V.); Bibl. 20.
1892 As *I. cyprinella* (C. & V.); Bibl. 23.
1913 As *Amblyodon* (= *Ictiobus* Raf. See p. 45 in the article) *cyprinella*
(Valenciennes); Bibl. 9.
Ictiobus urus (Agassiz)—Black buffalo, mongrel, buffalo, round buffalo.
1888-90 As *I. urus* Ag.; Miss. Valley; Bibl. 17.
1889 As *I. urus* Ag.; Bibl. 18.
1890 As *I. urus* (Ag.); Miss. R.; Bibl. 19.
1892 As *I. urus* (Ag.); Bibl. 20.
1892 As *I. urus* (Ag.); Bibl. 23.
Ictiobus bubalus (Rafinesque)—Small-mouthed buffalo, quillback buffalo,
razor-backed buffalo.
1888-90 As *I. bubalus* Raf.; Miss. Valley; Bibl. 17.
1889 As *I. bubalus* Raf.; Miss. R.; Bibl. 18.
1890 As *I. bubalus* (Raf.); Bibl. 19.
1892 As *I. bubalus* (Raf.); Doubtful identity in Cedar R.; Bibl. 20, p.
108 footnote.
1892 As *I. bubalus* (Raf.); Bibl. 23.
1894 As *I. bubalus* (Raf.); Sioux City, East Okoboji Lake; Bibl. 21.
Carpionides difformis Cope—Blunt-nosed river carp.
1890-91 As *I. difformis* Cope questioned occurrence; Middle R., Warren
Co.; Bibl. 2.
Carpionides velifer (Rafinesque)—Quillback, Silver carp.
1885 As *Ictiobus velifer* Raf.; Ottumwa, Hundred and Two R.; Bibl. 14.
1888-90 As *I. velifer* Raf.; Cedar R., Iowa R., Skunk R.; Bibl. 17.
1890 As *C. velifer* (Raf.); Muscatine, Davenport, Lizard Cr., Des Moines,
Perry, Ft. Dodge, Beaver Cr., Walnut Cr., Adel, Squaw Cr., Iowa City,

- Amana, Cedar Rapids, Prairie Cr., Austin (Minn.), Dumont, Indian Cr., West Liberty, Waverly, Wheatland, Independence, Anamosa, Sioux City; Bibl. 19.
- 1890-91 As *I. velifer* Raf.; Middle R., North R.; Bibl. 2.
- 1892 As *C. velifer* (Raf.); Bibl. 20.
- 1892 As *I. velifer* Raf.; Bibl. 23.
- Cycleptus elongatus* (Le Sueur)—Blackhorse, Missouri sucker.
- 1888-90 As *C. elongatus* Le S.; Miss. Valley; Bibl. 17.
- 1889 As *C. elongatus* Le S.; Bibl. 18.
- 1890 As *C. elongatus* (Le S.); Miss. R.; Bibl. 19.
- 1892 As *C. elongatus* (Le S.); Bibl. 20, p. 108 footnote.
- 1892 As *Cyclaptus elongatus*; Bibl. 23.
- Catostomus commersoni* (Lacépède)—Sucker, fine-scaled sucker.
- 1885 As *C. teres* Mitchill; Chariton, Hundred and Two R.; Bibl. 14.
- 1888-90 As *C. teres* Mit.; Bibl. 17.
- 1889 As *C. teres* Mit.; Bibl. 18.
- 1890 As *C. teres* Mit.; Miss. R., Des Moines, Raccoon R., Ft. Dodge, Estherville, Walnut Cr., Beaver Cr., Lizard Cr., Perry, Middle R., Adel, North R., Squaw Cr., Skunk R., Belmond, Amana, Iowa City, Dry Cr., Prairie Cr., Cedar Rapids, Waverly, Dumont, Austin (Minn.), Indian Cr., West Liberty, Cedar R. at Palo, Wheatland, Anamosa, Hopkinton, Worthington, Delhi, Manchester, Elkport, Bear Cr., Ft. Atkinson, Upper Iowa R., Sioux City, Boyer R.; Bibl. 19.
- 1890-91 As *C. teres* Mitchell; Bibl. 2.
- 1892 As *C. teres* Mitchell; Bibl. 20.
- 1892 As *C. teres* Mitchill; Bibl. 23.
- 1894 As *C. teres* Mit.; Lemars, Sioux City; Bibl. 21.
- 1913 As *C. commersonii* (Lac.); Brook R., Fayette; Bibl. 9.
- C. teres* (Mit.) = *C. commersoni* (Lac.); Bibl. 6, p. 85, and Bibl. 15, p. 46.
- Catostomus nigricans* Le Sueur—Hog sucker, hogmolly.
- 1888-90 As *C. nigricans* Le S.; Bibl. 17.
- 1890 As *C. nigricans* Le S.; Perry, Ft. Dodge, Beaver Cr., Des Moines, Raccoon R., Adel, Middle R., Skunk R., Squaw Cr., Belmond, Dry Cr. at Palo, Dumont, Austin (Minn.), Waverly, Cedar Rapids, Prairie Cr., Indian Cr., Mt. Vernon, Independence, Anamosa, Hopkinton, Manchester, Elkport, Bear Cr., Ft. Atkinson, Fayette; Bibl. 19.
- 1890-91 As *C. nigricans* Le S.; Bibl. 2.
- 1892 As *C. nigricans* (Le S.); Cedar R.; Bibl. 20.
- 1892 As *C. nigricans* Le S.; Bibl. 23.
- 1894 As *C. nigricans* Le S.; Waterloo; Bibl. 21.
- 1913 As *C. nigricans* Le S.; Brook R.; Bibl. 9.
- Erimyzon sucetta* (Lacépède)—Chub sucker.
- 1888-90 As *E. sucetta* Lac.; Bibl. 17.
- 1889 As *E. sucetta* Lac.; Bibl. 18.
- 1890 As *E. sucetta* Lac.; West Liberty; Bibl. 19.
- 1892 As *E. sucetta* (Lac.); Bibl. 20.
- 1892 As *E. succeta* Lac.; Bibl. 23.
- Minytrema melanops* (Rafinesque)—Spotted sucker, striped sucker.
- 1888-90 As *M. melanops* Raf.; Squaw Cr., Miss. R., Ames; Bibl. 17.

- 1889 As *M. melanops* Jordan (Probably should have been Rafinesque); Muscatine; Bibl. 18.
- 1890 As *M. melanops* (Raf.); Skunk R., Amana, Cedar R.; Bibl. 19.
- 1892 As *Minytremia melanops* (Raf.); Bibl. 20.
- 1892 As *Minytrema melanops* Raf.; Cedar Rapids; Bibl. 23.
- Moxostoma anisurum* (Rafinesque)—Whitenose.
- 1890 As *M. anisurum* (Le Sueur) (Probably should have been Rafinesque); Lizard Cr., Ft. Dodge; Bibl. 19.
- 1892 As *M. anisurum* (Raf.); Bibl. 23.
- Moxostoma aureolum* (Le Sueur)—Redhorse.
- 1885 As *M. anisurum* (Raf.); Cedar R. from Austin (Minn.) to Waverly; Bibl. 20.
- 1892 As *M. anisurum* (Raf.) (?); Bibl. 23.
- Moxostoma aureolum* (Le Sueur)—Redhorse.
- 1885 As *M. macrolepidotum duquesnei* Le S.; Des Moines R., Ottumwa; Bibl. 14.
- 1890 As *M. aureolum* (Le S.); Skunk R.; Bibl. 19.
- 1890-91 As *M. aureolum* Le S.; Lizard Cr.; Ft. Dodge; Bibl. 2.
- 1892 As *M. aureolum* (Le S.); Bibl. 20, p. 108 footnote.
- 1892 As *M. aureolum* (Le S.); Ames; Bibl. 23.
- 1913 As *M. erythrurum* (Raf.); (Most specimens previously recorded as *M. aureolum*); Bibl. 9. See also under *Placopharynx duquesnei* (Le Sueur).
- M. macrolepidotum duquesnii* = *M. aureolum* in this article; Bibl. 3, p. 362.
- Placopharynx duquesnei* (Le Sueur)—Big-jawed sucker.
- 1888-90 As *Moxostoma duquesnei* Le S.; Bibl. 17.
- 1889 As *M. duquesnei* Le S.; Bibl. 18.
- 1890 As *M. duquesnei* (Le S.); Miss. R., Lizard Cr., Perry, Des Moines, Estherville, Raccoon R., Ft. Dodge, Beaver Cr., Middle R., Adel, Squaw Cr., Skunk R., Belmont, Iowa City, Amana, West Liberty, Cedar Rapids, Prairie Cr., Palo, Waverly, Dumont, Austin (Minn.), Wheatland, Independence, Anamosa, Hopkinton, Worthington, Manchester, Elkport, Ft. Atkinson, Fayette, Chester, Sioux City, Sioux Falls (S. D.); Bibl. 19.
- 1890 As *Placopharynx carinatus* Cope; Bibl. 19.
- 1890-91 As *Moxostoma duquesnei* Le S.; Bibl. 2.
- 1890-91 As *Placopharynx carinatus* Cope; Bibl. 2.
- 1892 As *P. carinatus* (Cope); Bibl. 20, p. 108 footnote.
- 1892 As *Moxostoma duquesnei* Le S.; Cedar R.; Bibl. 20.
- 1892 As [*M. microlepidota* (Le S.) Jordan]; Bibl. 22. We place this form under *P. duquesnei* as suggested in the author's footnote; Bibl. 22, p. 42.
- 1892 As *M. duquesnei* Le S.; Bibl. 23.
- 1892 As *P. carinatus* Cope; Bibl. 23.
- 1894 As *Moxostoma macrolepidotum duquesnei* (Le S.); Lemars, Waterloo; Bibl. 21.
- 1894 As *P. carinatus* Cope; Bibl. 21.
- 1913 As *P. carinatus* Cope; Cherokee; Bibl. 9.
- Placopharynx carinatus* Cope = *Placopharynx duquesnei* (Le S.); Bibl. 6, p. 93 and Bibl. 15, p. 48. There has been some confusion and apparently mixing *Moxostoma aureolum* (Le S.) and *Placopharynx du-*

quesnei (Le S.). For purpose of record we do not attempt to relash the questions of synonymy, but list as originally published.

Cyprinidae

Campostoma anomalum (Rafinesque) — Stone roller, dough-belly.

1854 As *Chondrostoma pullum* Agassiz; Burlington; Bibl. 1, p. 357 footnote. [Placed here by authority of Bibl. 16.]

1885 As *Campostoma anomalum* Raf.; Village Cr., Ottumwa; Bibl. 14.

1890 As *C. anomalum* (Raf.); Raccoon R., Lizard Cr., Beaver Cr., Walnut Cr., Des Moines, Ft. Dodge, Perry, Four-mile Cr., Adel, North R., Middle R., Skunk R., Squaw Cr., Iowa City, Amana, Belmont, West Liberty, Prairie Cr., Indian Cr., Palo, Waverly, Dumont, Austin (Minn.), Hopkinton, Delhi, Worthington, Manchester, Elkport, Bear Cr., Ft. Atkinson, Fayette, Yellow R., Hickory Cr., Upper Iowa R.; Bibl. 19.

1890-91 As *C. anomalum* Raf.; Bibl. 2.

1892 As *C. anomalum* (Raf.); Cedar R.; Bibl. 20.

1892 As *C. anomalum* Raf.; Bibl. 23.

1894 As *C. anomalum* (Raf.); Sioux City, Ames, Waterloo; Bibl. 21.

1919 As *C. anomalum* Raf.; Cedar Falls; Bibl. 24.

Chrosomus erythrogaster Rafinesque — Red-bellied dace.

1890 As *C. erythrogaster* Raf.; Walnut Cr., Ames, Belmont, Mt. Vernon, Palo, Dry Cr., Waverly, Austin (Minn.), Worthington, Delhi, Manchester (Spring brook), Bear Cr., Yellow R., Hickory Cr.; Bibl. 19.

1890-91 As *C. erythrogaster* Raf.; Bibl. 2.

1892 As *C. erythrogaster* (Raf.); Cedar R.; Bibl. 20.

1892 As *C. erythrogaster* Raf.; Bibl. 23.

Hybognathus nuchalis Agassiz — Silvery minnow.

1885 As *H. nuchalis* Ag.; Ottumwa, Hundred and Two R.; Bibl. 14.

1890 As *H. nuchalis* Ag.; Raccoon R., Perry, Beaver Cr., Walnut Cr., Des Moines, Ft. Dodge, Lizard Cr., Adel, Squaw Cr., Skunk R., Amana, Prairie Cr., Indian Cr., Dumont, Waverly, Wheatland, Independence, Delhi, Sioux City, Soldier R.; Bibl. 19.

1890 As *H. nuchalis placita* (Girard); Adel, Raccoon R.; Bibl. 19.

1890-91 As *H. nuchalis* Ag.; Ames; Bibl. 2.

1892 As *H. nuchalis* Ag.; Cedar R.; Bibl. 20.

1892 As *H. nuchalis placita* Girard; Des Moines R.; Bibl. 20, p. 109 footnote.

1892 As *H. nuchalis* Ag.; Bibl. 23.

1892 As *H. nuchalis placita* Girard; Bibl. 23.

1894 As *H. nuchalis* Ag.; Lemars; Bibl. 21.

Hybognathus nubila (Forbes).

1890 As *H. nubila* (Forbes); Waverly, Belmont, Austin (Minn.), Anamosa, Fayette; Bibl. 19.

1892 As *H. nubila* (Forbes); Bibl. 20.

1892 As *H. nubila* (Forbes); Bibl. 23.

Pimephales promelas Rafinesque — Fathead.

1885 As *P. promelas* Raf.; Village Cr. at Ottumwa, Chariton, Hundred and Two R.; Bibl. 14.

1890 As *P. promelas* Raf.; Beaver Cr., Raccoon R., Walnut Cr., Des

- Moines, Lizard Cr., Ft. Dodge, Perry, Four-mile Cr., North R., Adel, Skunk R., Squaw Cr., Cedar Rapids, Indian Cr., Palo, Dry Cr., West Liberty, Prairie Cr., Waverly, Dumont, Austin (Minn.), Wheatland, Independence, Hopkinton, Worthington, Delhi, Manchester, Ft. Atkinson, Yellow R., Upper Iowa R., Silver Lake, Soldier R., Boyer R.; Bibl. 19.
- 1890-91 As *P. promelas* Raf.; Bibl. 2.
- 1892 As *P. promelas* Raf.; Cedar R.; Bibl. 20.
- 1892 As *P. promelas* Raf.; Bibl. 23.
- 1894 As *P. promelas* Raf.; Sioux City, Lemars, College Cr. at Ames, Storm Lake; Bibl. 21.
- 1919 As *P. promelas* Raf.; Cedar Falls; Bibl. 24.
- Pimephales notatus* (Rafinesque) — Blunt nose.
- 1885 As *P. notatus* Raf.; Ottumwa, Hundred and Two R.; Bibl. 14.
- 1890 As *P. notatus* (Raf.); Miss R., Beaver Cr., Ft. Dodge, Des Moines, Estherville, Perry, Raccoon R., Lizard Cr., Walnut Cr., Adel, Middle R., Four-mile Cr., North R., Skunk R., Squaw Cr., Amana, Iowa City, Belmont, Indian Cr., West Liberty, Cedar Rapids, Prairie Cr., Palo, Dry Cr., Waverly, Dumont, Austin (Minn.), Cedar R. at Palo, Clear Lake, Anamosa, Wheatland, Independence, Hopkinton, Worthington, Delhi, Manchester, Yellow R., Elkport, Ft. Atkinson, Fayette, Bear Cr., Upper Iowa R., Sioux City, Sioux Falls (S. D.), Silver Lake; Bibl. 19.
- 1890-91 As *P. notatus* Raf.; Bibl. 2.
- 1892 As *P. notatus* (Raf.); Bibl. 20.
- 1892 As *P. notatus* Raf.; Bibl. 23.
- 1894 As *P. notatus* (Raf.); Lemars, Ames, Storm Lake; Bibl. 21.
- 1919 As *P. notatus* Raf.; Cedar Falls; Bibl. 24.
- Semotilus atromaculatus* (Mitchill) — Horned dace, chub.
- 1885 As *S. atromaculatus* Mit.; Chariton, Hundred and Two R.; Bibl. 14.
- 1890 As *S. atromaculatus* (Mit.); Miss. R., Raccoon R., Beaver Cr., Walnut Cr., Des Moines, Estherville, Perry, Adel, Lizard Cr., North R., Ames, Indian Cr., West Liberty, Palo, Dumont, Mt. Vernon, Cedar Rapids, Hopkinton, Worthington, Delhi, Manchester, Bear Cr., Ft. Atkinson, Fayette, Hickory Cr., Yellow R., Soldier R., Boyer R.; Bibl. 19.
- 1890-91 As *S. atromaculatus* Mit.; Bibl. 2.
- 1892 As *S. atromaculatus* (Mit.); Bibl. 20.
- 1892 As *S. atromaculatus* Mit.; Bibl. 23.
- 1894 As *S. atromaculatus* (Mit.); Sioux City; Bibl. 21.
- 1896 As *S. atromaculatus* (Mit.); Bibl. 3.
- 1919 As *S. atromaculatus* Mit.; Cedar Falls; Bibl. 24.
- 1924 As *S. atromaculatus* (Mit.); Delhi Cr.; Ottumwa; Bibl. 12.
- Leuciscus elongatus* (Kirtland) — Shiner.
- 1890 As *L. elongatus* (Kirt.); (Doubtful identification), Palo, Yellow R.; Bibl. 19.
- 1892 As *Phoxinus elongatus* (Kirt.); (Doubtful identification); Bibl. 20.
- 1892 As *Phocinus elongatus* (Kirt.); northeastern Iowa; Bibl. 23.
- Abramis crysoleucas* (Mitchill) — Golden shiner, roach, bream.
- 1890 As *Notemigonus chrysoleucas* (Mit.); Davenport, Estherville, Des

- Moines, Perry, Beaver Cr., Skunk R., Squaw Cr., Indian Cr., West Liberty, Waverly, Palo, Dumont, Cedar Rapids, Wheatland, Independence, Anamosa, Hopkinton, Manchester, Sioux City, Silver Lake; Bibl. 19.
- 1890-91 As *N. chrysoleucus* Mit.; Bibl. 2.
- 1892 As *N. chrysolucus* (Mit.); Cedar R.; Bibl. 20.
- 1892 As *Notemigenus chrysoleucus* (Mit.); Bibl. 23.
- 1894 As *Notemigenus chrysoleucus* (Mit.); Ames, Storm Lake, Spirit Lake; Bibl. 21.
- 1924 As *Abramis chrysoleucas* (Mit.); Maquoketa; Bibl. 12.
- Cliola vigilax* (Baird and Girard) — Bullhead minnow.
- 1885 As *C. vigilax* B. and G.; Ottumwa; Bibl. 14.
- 1890 As *C. vigilax* (B. and G.); Mad Cr., Davenport, Walnut Cr., Des Moines, Perry, Raccoon R., Beaver Cr., Estherville, Middle R., Adel, Skunk R., Iowa City, Palo, Cedar Rapids, Wheatland, Upper Iowa R.; Bibl. 19.
- 1890-91 As *C. vigilax* (B. and G.); Bibl. 2.
- 1892 As *C. vigilax* (B. and G.); Bibl. 20.
- 1892 As *C. vigilax* (B. and G.); Bibl. 23.
- 1894 As *C. vigilax* B. and G.; Waterloo; Bibl. 21.
- 1924 As *Ceraticthys vigilax* (B. and G.); Amana; Bibl. 12.
- [*Cliola forbesi* Jordan]. See note under *Notropis lutrensis*.
- Notropis anogenus* Forbes.
- 1892 As *N. anogenus* Forbes; Eastern Iowa; Bibl. 23.
- [1890 As *N. anogenus* Forbes; Austin (Minn.); Bibl. 19.]
- [1892 As *N. anogenus* (Forbes); Bibl. 20.]
- Notropis cayuga* Meek.
- 1890 As *N. cayuga* Meek; Estherville, Beaver Cr., Lizard Cr., Adel, Skunk R., Squaw Cr., Belmont, Indian Cr., Waverly, Austin (Minn.), Dumont, Prairie Cr., West Liberty, Wheatland, Hopkinton, Sioux City; Bibl. 19.
- 1890-91 As *N. cayuga* Meek; Raccoon R.; Bibl. 2.
- 1892 As *N. cayuga* (Meek); Cedar R.; Bibl. 20.
- 1892 As *N. cayuga* Meek; Bibl. 23.
- 1894 As *N. cayuga* Meek; Storm Lake, Ames, Lemars; Bibl. 21.
- 1896 As *N. cayuga* Meek; Bibl. 3.
- 1910 As *N. cayuga* Meek; Silver Lake, Brook R.; Bibl. 8.
- Notropis heterodon* (Cope).
- 1890 As *N. heterodon* (Cope); Estherville, Skunk R., Iowa R., West Liberty, Cedar Rapids, Dumont, Waverly, Manchester, Bear Cr., Fayette, Silver Lake; Bibl. 19.
- 1892 As *N. heterodon* (Cope); Cedar R.; Bibl. 20.
- 1892 As *N. heterodon* Cope; Bibl. 23.
- 1894 As *N. heterodon* (Cope); Storm Lake, Ames; Bibl. 21.
- Notropis blennius* (Girard) — Straw-colored minnow.
- 1854 As (?) *Hybopsis dorsalis* Agassiz; Burlington (unidentifiable); Bibl. 1, p. 358 footnote and Bibl. 16, part I, p. 262 footnote.
- 1885 As *N. deliciosus* Gir.; Hundred and Two R., Ottumwa, Chariton; Bibl. 14.
- 1890 As *N. deliciosus* (Gir.); Mad Cr.; Iowa City, Amana, Indian Cr.,

- Cedar Rapids, Dumont, Waverly, West Liberty, Prairie Cr., Palo, Independence, Anamosa, Worthington, Manchester, Hopkinton, Elkport, Fayette, Ft. Atkinson, Decorah, Big Sioux R., Boyer R.; Bibl. 19.
- 1890-91 As *N. deliciosus* Gir.; Des Moines, Ft. Dodge, Raccoon R., Adel, Perry, Beaver Cr., Walnut Cr., Squaw Cr., Middle R.; Bibl. 2.
- 1892 As *N. deliciosus* (Gir.); Cedar R.; Bibl. 20.
- 1894 As *N. deliciosus* (Gir.); Sioux City, Lemars; Bibl. 21.
- 1896 As *N. blennius* (Gir.); Bibl. 3.
- N. deliciosus* (Gir.) = *N. blennius* (Gir.); Bibl. 6, p. 137 and Bibl. 15, p. 56.
- Notropis topeka* Gilbert.
- 1885 As *N. topeka* Gilb.; Bedford; Bibl. 14.
- 1890 As *N. topeka* Gilb.; Beaver Cr., Estherville, Lizard Cr.; Amana, Waverly, Shellrock, Sioux City, Boyer R.; Bibl. 19.
- 1892 As *N. topeka* (Gilb.); Bibl. 20.
- 1892 As *N. topeka* Gilb.; Bibl. 23.
- 1894 As *N. topeka* Gilb.; Lemars; Bibl. 21.
- Notropis gilberti* Jordan and Meek.
- 1885 As *N. gilberti* sp. nov.; Village Cr., Chariton; Bibl. 14.
- 1890 As *N. gilberti* (J. and M.); Mad Cr., Raccoon R., Beaver Cr., Walnut Cr., Des Moines, Lizard Cr., Ft. Dodge, Perry, Middle R., Adel, Four-mile Cr., North R., Skunk R., Squaw Cr., Iowa City, Belmond, Amana, Palo, Waverly, Dumont, Cedar Rapids, Prairie Cr., West Liberty, Wheatland, Independence, Anamosa, Hopkinton, Worthington, Delhi, Manchester, Elkport, Ft. Atkinson, Fayette, Soldier R., Boyer R.; Bibl. 19.
- 1890-91 As *N. gilberti* J. and M.; Bibl. 2.
- 1892 As *N. gilberti* (J. and M.); Cedar R.; Bibl. 20.
- 1892 As *N. gilberti* J. and M.; Bibl. 23.
- 1894 As *N. gilberti* J. and M.; Sioux City, Lemars; Bibl. 21.
- 1919 As *N. gilberti* J. and M.; Cedar Falls; Bibl. 24.
- Notropis shumardi* (Girard).
- 1892 As *N. boops* (Gilbert); Southwest Iowa; Bibl. 20, p. 109 footnote.
- 1892 As *N. boops* Gilbert; Southern Iowa; Bibl. 23.
- N. boops* Gilb. = *N. shumardi* (Gir.) = *N. illecebrosus* (Gir.); Bibl. 6, p. 140; Bibl. 3, p. 373 and Bibl. 15, p. 57.
- The old *N. boops* Gilb. is split up and *N. illecebrosus* (Gir.) and *N. shumardi* (Gir.) seem to have become heirs to its former possessions.
- Notropis hudsonius* (Dewitt Clinton) — Spot-tail shiner.
- 1890 As *N. hudsonius* (De. C.); Clear Lake, Spirit Lake, Okoboji Lakes, Sioux City; Bibl. 19.
- 1892 As *N. hudsonius* (Dewitt C.); Bibl. 20, p. 109 footnote.
- 1892 As *N. hudsonius* (Dewitt C.); Little Sioux R.; Bibl. 23.
- 1894 As *N. hudsonius* (Dewitt C.); Bibl. 21.
- N. lutrensis* (Baird and Girard) — Redfn.
- 1885 As *N. lutrensis* B. and G.; Chariton, Hundred and Two R.; Bibl. 14.
- 1890 As *N. lutrensis* (B. and G.); Des Moines R., Boyer R.; Bibl. 19.
- 1892 As *N. lutrensis* (B. and G.); Bibl. 20, p. 109 footnote.
- 1892 As *Cliola forbesii* Jordan; (S. U. I. Museum); Bibl. 22.
- 1892 As *N. lutrensis* (B. and G.); Bibl. 23.

- 1894 As *N. lutrensis* B. and G.; Sioux City, Lemars, (Des Moines supposed by Meek to be its eastern limit); Bibl. 21.
N. lutrensis (B. and G.) previously listed as *Cliola forbesi*; Bibl. 6, p. 143.
N. lutrensis (B. and G.) = *Cyprinella forbesi* Jordan; Bibl. 14, p. 9 under *N. lutrensis*; Bibl. 13, p. 406 and Bibl. 16, part I, p. 272.
- Notropis whipplii* (Girard) — Silver-fin, lemon-fin.
- 1885 As *N. whipplei* Gir.; Ottumwa; Bibl. 14.
- 1890 As *N. whipplei* (Gir.); Miss. R., Estherville, Lizard Cr., Ft. Dodge, Raccoon R., Beaver Cr., Walnut Cr., Des Moines, Perry, Middle R., Adel, North R., Yader Cr., Skunk R., Squaw Cr., Amana, Iowa City, West Liberty, Prairie Cr., Cedar Rapids, Waverly, Dumont, Wheatland, Independence, Anamosa, Hopkinton, Manchester, Elkport, Decorah, Sioux City; Bibl. 19.
- 1890-91 As *N. whipplei* (Gir.); Bibl. 2.
- 1892 As *N. whipplei* Gir.; Cedar R.; Bibl. 20.
- 1892 As *N. whipplei* (Gir.); Bibl. 23.
- 1894 As *N. whipplei* (Gir.); Storm Lake, Waterloo; Bibl. 21.
- Notropis cornutus* (Mitchill) — Shiner, redbin, dace.
- 1885 As *N. megalops* Raf.; Village Cr., Chariton R., Hundred and Two R.; Bibl. 14.
- 1890 As *N. megalops* (Raf.); Beaver Cr., Walnut Cr., Lizard Cr., Perry, Des Moines, Raccoon R., Estherville, Ft. Dodge, Four-mile Cr., Adel, North R., Middle R., Skunk R., Squaw Cr., West Liberty, Waverly, Palo, Dumont, Indian Cr., Prairie Cr., Cedar Rapids, Anamosa, Hopkinton, Worthington, Delhi, Manchester, Upper Iowa R., Big Sioux R., Silver Lake; Bibl. 19.
- 1890-91 As *N. megalops* Raf.; Bibl. 2.
- 1892 As *N. megalops* (Raf.); Bibl. 20.
- 1892 As *N. megalops* (Raf.); Bibl. 23.
- 1894 As *N. megalops* (Raf.); Ames, Lemars, Sioux City; Bibl. 21.
- N. megalops* (Raf.) = *N. cornutus* (Mit.); Bibl. 6, p. 147 and Bibl. 15, p. 58.
- Notropis jejunus* (Forbes).
- 1890 As *N. jejunus* (Forbes); Davenport, Elkport, Cedar Rapids, Fayette; Bibl. 19.
- 1892 As *N. jejunus* (Forbes); Bibl. 20.
- 1892 As *N. jejunus* (Forbes); Bibl. 23.
- Notropis atherinoides* Rafinesque — Shiner.
- 1890 As *N. atherinoides* (Raf.); Iowa City, Waverly, Indian Cr., Cedar Rapids, Sioux City; Bibl. 19.
- 1892 As *N. atherinoides* (Raf.); Cedar R.; Bibl. 20.
- 1892 As *N. atherinoides* (Raf.); Bibl. 23.
- Notropis dilectus* (Girard) — Emerald minnow.
- 1890 As *N. dilectus* (Gir.); Mad Cr., Davenport, Des Moines, Ft. Dodge, Lizard Cr., Beaver Cr., Estherville, Perry, Walnut Cr., Raccoon R., North R., Adel, Skunk R., Squaw Cr., Amana, Waverly, Austin (Minn.), Indian Cr., West Liberty, Dumont, Cedar Rapids, Wheatland, Independence, Anamosa, Hopkinton, Worthington, Elkport, Ft. Atkinson, Yellow R., Upper Iowa R., Sioux City, Sioux Falls (S. D.); Bibl. 19.

- 1890-91 *As N. dilectus* (Gir.); Middle R.; Bibl. 2.
 1892 *As N. dilectus* (Gir.); Bibl. 20.
 1892 *As N. dilectus* (Gir.); Bibl. 23.
 1894 *As N. dilectus* (Gir.); Bibl. 21.
 1910 *As N. dilectus* (Gir.); Chester; Bibl. 8.
Notropis rubrifrons (Cope) — Rosy-faced minnow.
 1885 *As N. rubrifrons* Cope; Ottumwa, Chariton R., Bibl. 14.
 1890-91 *As N. rubrifrons* Cope; Squaw Cr.; Bibl. 2.
 Call states that *N. rubrifrons* (Cope) is to be placed in the synonymy of
N. ardens Cope; Bibl. 2.
Notropis umbratilis (Girard) — Redfin.
 1885 *As N. umbratilis* Gir.; Hundred and Two R.; Bibl. 14.
 1890-91 *As N. umbratilis* Gir.; North R., Racoon R., Adel, Des Moines,
 Perry, Middle R., Walnut Cr., Beaver Cr.; Bibl. 2.
Notropis umbratilis umbratilis (Girard).
 1896 *As N. umbratilis umbratilis* Gir.; Southwestern Iowa; Bibl. 16.
Notropis umbratilis atripes (Jordan) — Blackfin.
 1890 *As N. ardens* (Cope); Ft. Dodge, Beaver Cr., Des Moines, Rac-
 coon R., Perry, Walnut Cr., Middle R., North R., Skunk R., Squaw Cr.,
 Belmont, Indian Cr., Prairie Cr., Waverly, Palo, Austin (Minn.),
 Wheatland, Anamosa, Hopkinton, Worthington, Delhi, Manchester,
 Elkport, Ft. Atkinson, Upper Iowa R.; Bibl. 19.
 1890-91 *As N. ardens* Cope; Bibl. 2.
 1892 *As N. ardens* (Cope); Cedar R.; Bibl. 20.
 1892 *As N. ardens* (Cope); *N. umbratilis* Jordan. [Records seem to be
 confused]; Bibl. 23.
N. ardens Cope probably is equivalent to *N. umbratilis atripes* (Jordan)
 for Iowa. The old species seemed to have three varieties; *atripes*,
lythrurus and *cyanocephalus*. In splitting up the species, Pratt carries
 these over as subspecies of *N. umbratilis*. Bibl. 26, p. 84; Bibl. 6, p.
 154 and Bibl. 15, p. 60.
 Since *N. ardens* is split into three varieties and placed under *N. umbra-*
tilis, we follow Bibl. 6 (Forbes and Richardson) in making it equiva-
 lent to *N. umbratilis atripes* (Jord.).
Phenacobius mirabilis (Girard) — Sucker-mouthed minnow.
 1885 *As P. mirabilis* Gir.; Ottumwa, Hundred and Two R.; Bibl. 14.
 1890 *As P. mirabilis* (Gir.); Des Moines, Racoon R., Walnut Cr., Beaver
 Cr., Perry, Middle R., North R., Four-mile Cr., Amana, Iowa City,
 Indian Cr., West Liberty, Palo, Cedar Rapids, Boyer R.; Bibl. 19.
 1890-91 *As P. mirabilis* Gir.; Squaw Cr.; Bibl. 2.
 1892 *As P. mirabilis* (Gir.); Bibl. 20.
 1892 *As P. mirabilis* (Gir.); Bibl. 23.
Rhinichthys cataractae (Cuvier and Valenciennes) — Long-nosed dace.
 1890 *As R. cataractae* (C. and V.); Decorah; Bibl. 19.
 1892 *As R. cataractae* (C. and V.); Upper Iowa R.; Bibl. 20, p. 109 foot-
 note.
 1892 *As R. cataractae* (C. and V.); Bibl. 23.
Rhinichthys atronasus (Mitchill) — Black-nosed dace.
 1890 *As R. atronasus* (Mit.); Lizard Cr., Ft. Dodge, Walnut Cr., Beaver

- Cr., Palo, Mt. Vernon, Worthington, Delhi, Spring Branch, Bear Cr. of Turkey R., Hickory Cr., Upper Iowa R.; Bibl. 19.
- 1890-91 As *Rhynchichthys atronasmus* (Mit.); Bibl. 2.
- 1892 As *Rhynchichthys atronasmus* (Mit.); Bibl. 20.
- 1892 As *Rhynchichthys atronasmus* (Mit.); Bibl. 23.
- [*Rhynchichthys atronasmus meleagris* (Agassiz)]
- 1854 As *R. Meleagris* Ag.; Burlington; Bibl. 1, p. 357 footnote.
- Not recognized as a separate subspecies by Pratt. Distribution "Illinois and Iowa, perhaps indistinguishable from *lunatus*," Bibl. 16, p. 308. *R. atronasmus lunatus* Cope is recognized by Pratt.
- Hybopsis hyostomus* (Gilbert).
- 1885 As *H. hyostomus* Gilb.; Ottumwa; Bibl. 14.
- 1892 As *H. hyostomus* Gilb.; Southwestern Iowa; Bibl. 20, p. 109 footnote.
- 1892 As *Hybopsi hyostomus* (Gilb.); Bibl. 23.
- Hybopsis geldius* (Girard).
- 1890 As *H. gelidus* (Gir.); Mo. R.; Bibl. 19.
- 1892 As *H. gelidus* (Gir.); Bibl. 20.
- 1892 As *Hybopsi gelidus* (Gir.); Bibl. 23.
- Hybopsis dissimilis* (Kirtland) — Spotted shiner.
- 1885 As *H. dissimilis* (Kirt.); Ottumwa; Bibl. 14.
- 1890 As *H. dissimilis* (Kirt.); Cedar Rapids, Waverly, Independence, Elkport; Bibl. 19.
- 1892 As *Hybopsi dissimilis* Kirt.; Bibl. 23.
- Hybopsis storerianus* (Kirtland) — Storer's chub.
- 1885 As *H. storerianus* Kirt.; Ottumwa; Bibl. 14.
- 1890 As *H. storerianus* (Kirt.); Mouth of Mad Cr., Davenport, Raccoon R., Des Moines, Perry, Middle R., Adel, Walnut Cr., Amana, Iowa City, Prairie Cr., Wheatland, Elkport; Bibl. 19.
- 1890-91 As *H. storerianus* (Kirt.); Bibl. 2.
- 1892 As *H. storerianus* (Kirt.); Cedar R.; Bibl. 20.
- 1892 As *Hybopsi storerianus* (Kirt.); Bibl. 23.
- 1894 As *H. storerianus* (Kirt.); Sioux City; Bibl. 21.
- Hybopsis kentuckiensis* (Rafinesque) — Horny head river chub, jerker.
- 1885 As *H. biguttatus* Kirtland; Ottumwa, Hundred and Two R.; Bibl. 14.
- 1890 As *H. kentuckiensis* (Raf.); Estherville, Walnut Cr., Beaver Cr., Raccoon R., Des Moines, Ft. Dodge, Lizard Cr., Perry, Adel, North R., Skunk R., Squaw Cr., Belmond, Iowa City, Waverly, Palo, Indian Cr., West Liberty, Dumont, Cedar Rapids, Anamosa, Worthington, Manchester, Elkport, Yellow R., Upper Iowa R., Sioux Falls (S. D.); Bibl. 19.
- 1890-91 As *H. kentuckiensis* Raf.; Bibl. 2.
- 1892 As *H. kentuckiensis* (Raf.); Cedar R.; Bibl. 20.
- 1892 As *Hybopsi kentuckiensis* (Raf.); Bibl. 23.
- H. biguttatus* Kirt. = *H. kentuckiensis* (Raf.); Bibl. 3, p. 361 and Bibl. 26, p. 90.
- Couesius dissimilis* (Girard).
- 1890 As *C. dissimilis* (Gir.); Belmond; Bibl. 19.
- 1892 As *C. dissimilis* (Gir.); Cedar R.; Bibl. 20.
- 1892 As *C. dissimilis* (Gir.); Bibl. 23.

- Platygobio gracilis* (Richardson) — Flatheaded chub.
 1890 As *P. gracilis* (Rich.); Mo. R.; Bibl. 19.
 1892 As *Platygobia gracilis* (Rich.); Bibl. 20, p. 109 footnote.
 1892 As *Platygobia gracilis* (Rich.); Bibl. 23.

Siluridae

- Ictalurus furcatus* (Le Sueur) — Great forked-tail cat, blue cat, fulton cat.
 1888-90 As *I. furcatus* Cuvier and Valenciennes; Miss. Valley; Bibl. 17.
 1889 As *I. furcatus* (C. and V.); Bibl. 18.
 1890 As *I. furcatus* (C. and V.); Mo. R.; Bibl. 19.
 1892 As *Ameiurus nigricans*, doubtful occurrence; Cedar R.; Miss. R.;
 Bibl. 20, p. 108.
 1892 As *I. furcatus* (C. and V.); Bibl. 20, p. 107, footnote.
 1892 As *I. furcatus* (C. and V.); Western Iowa; Bibl. 23.
 1892 As *Ameiurus nigricans* (Le S.); Bibl. 23.
I. furcatus (Le S.) = *Ichthaelurus furcatus* (C. and V.) = *Ameiurus ni-*
gricans [part] (Le S.); Bibl. 6, p. 178 and Bibl. 13, p. 328, 329. *A.*
nigricans Le S. probably is *I. furcatus* (Le S.); Bibl. 6, p. 184 footnote.
Ictalurus punctatus (Rafinesque) — Channel cat, spotted cat, fiddler.
 1885 As *I. punctatus* Raf.; Ottumwa, Hundred and Two R.; Bibl. 14.
 1888-90 As *I. punctatus* Raf.; Bibl. 17.
 1889 As *I. punctatus* Raf.; Bibl. 18.
 1890 As *I. punctatus* (Raf.); Muscatine, Davenport, Des Moines, Middle
 R., Raccoon R., Adel, Ft. Dodge, Lizard Cr., Perry, North R., Walnut
 Cr., Beaver Cr., Skunk R., Amana, Iowa City, Cedar Rapids, Palo,
 Wheatland, Mo. R., Sioux City; Bibl. 19.
 1890-91 As *I. punctatus* Raf.; Bibl. 2.
 1892 As *I. punctatus* (Raf.); Cedar R.; Bibl. 20.
 1892 As *I. punctatus* (Raf.); Bibl. 23.
 1915 As *I. punctatus* (Raf.); Hornick, Ottumwa; Bibl. 10.
Ameiurus natalis (Le Sueur) — Yellow cat.
 1888-90 As *A. natalis* Le S.; Indian Cr.; Bibl. 17.
 1889 As *A. natalis* Le S.; Marion; Bibl. 18.
 1890 As *A. natalis* (Le S.); Bibl. 19.
 1892 As *A. natalis* (Le S.); Cedar R.; Bibl. 20.
 1892 As *A. natalis* Le S.; Bibl. 23.
 1915 As *A. natalis* (Le S.); Brook R.; Bibl. 10.
Ameiurus nebulosus (Le Sueur) — Bullhead, horned pout.
 1885 As *A. nebulosus* (Le S.); Ottumwa; Bibl. 14.
 1888-90 As *A. nebulosus* Le S.; Bibl. 17.
 1889 As *A. nebulosus* Le S.; Bibl. 18.
 1890 As *A. nebulosus* (Le S.); Miss. R., Dry Cr., Palo, Dumont, Indian
 Cr., Austin (Minn.), Independence, Skunk R. (Ia. Agri. College
 Museum); Bibl. 19.
 1892 As *A. nebulosus* (Le S.); Cedar R.; Bibl. 20.
 1892 As *A. nebulosus* (Le S.); Bibl. 23.
Ameiurus melas (Rafinesque) — Black bullhead.
 1885 As *A. melas* Raf.; Chariton, Hundred and Two R.; Bibl. 14.
 1888-90 As *A. melas* Raf.; Bibl. 17.
 1889 As *A. melas* Raf.; Bibl. 18.

- 1890 As *A. melas* (Raf.); Muscatine, Davenport, Raccoon R., Des Moines, Ft. Dodge, Walnut Cr., Estherville, Perry, North R., Adel, Beaver Cr., Skunk R., Squaw Cr., Garner, Belmond, Cedar Rapids, Indian Cr., Dumont, Dry Cr., Waverly, Prairie Cr., Mt. Vernon, Clear Lake, Wheatland, Independence, Anamosa, Worthington, Manchester, Ft. Atkinson, Decorah, Silver Lake, Soldier R., Boyer R.; Bibl. 19.
- 1890-91 As *A. melas* Raf.; Bibl. 2.
- 1892 As *A. melas* (Raf.); Cedar R.; Bibl. 20.
- 1892 As *A. melas* Raf.; Bibl. 23.
- 1894 As *A. melas* (Raf.); Lemars, Storm Lake, Spirit Lake; Bibl. 21.
- 1915 As *A. melas* (Raf.); Ottumwa, Silver Lake; Bibl. 10.
- Leptops olivaris* (Rafinesque) — Mud cat, goujon.
- 1888-90 As *L. olivaris* Raf.; Bibl. 17.
- 1889 As *L. olivaris* Raf.; Bibl. 18.
- 1890 As *L. olivaris* (Raf.); Miss. R., Cedar R.; Bibl. 19.
- 1892 As *L. olivaris* (Raf.); Bibl. 20.
- 1892 As *L. olivaris* (Raf.); Bibl. 23.
- Noturus flavus* Rafinesque — Stone cat.
- 1885 As *N. flavus* Raf.; Ottumwa, Hundred and Two R.; Bibl. 14.
- 1888-90 As *N. flavus* Raf.; Bibl. 17.
- 1890 As *N. flavus* (Raf.); Cedar Rapids, Mo. R., Sioux City, Sioux Falls (S. D.); Bibl. 19.
- 1892 As *N. flavus* (Raf.); Bibl. 20.
- 1892 As *N. flavus* (Raf.); Bibl. 23.
- 1915 As *N. flavus* Raf.; Chariton and Brook R.; Bibl. 10.
- Schilbeodes gyrinus* (Mitchill) — Mad-tom.
- 1885 As *Noturus gyrinus* Raf. (Probably mistake as to author); Chariton; Bibl. 14.
- 1888-90 As *N. gyrinus* Mit.; Bibl. 17.
- 1890 As *N. gyrinus* (Mit.); Miss. R., Estherville, Raccoon R., Ft. Dodge, Des Moines, Skunk R., Squaw Cr., Belmond, Amana, West Liberty, Waverly, Dumont, Dry Cr., Indian Cr., Big Sioux R.; Bibl. 19.
- 1890-91 As *N. gyrinus* Mit.; Bibl. 2.
- 1892 As *N. gyrinus* (Mit.); Cedar R.; Bibl. 20.
- 1892 As *N. Gyrinus* (Mitchell); Bibl. 23.
- 1894 As *N. gyrinus* (Mitchill); Lemars, Sioux City, Storm Lake; Bibl. 21.
- 1915 As *S. gyrinus* (Mit.); Brook R.; Bibl. 10.
- Schilbeodes exilis* (E. W. Nelson).
- 1888-90 As *Noturus exilis* Nel.; Bibl. 17.
- 1890 As *N. exilis* Nel.; Skunk R. (Ia. Agri. College Museum), Perry; Bibl. 19.
- 1890-91 As *N. exilis* Nel.; Raccoon R.; Bibl. 2.
- 1892 As *N. exilis* (Nel.); Des Moines R.; Bibl. 20.
- 1892 As *N. exilis* Nel.; Ames; Bibl. 23.
- 1915 As *S. exilis* (Nel.); Brook R.; Bibl. 10.
- [*Schilbeodes miurus* (Jordan) (Doubtful record)].
- 1892 As *Noturus miurus* Jordan; Iowa (Not taken); Bibl. 23.

Umbridae

Umbra lima (Kirtland).

- 1890 As *U. lima* (Kirt.); Garner, Dumont; Bibl. 19.

- 1892 As *U. lima* (Kirt.); Ponds along Cedar R.; Bibl. 20.
 1892 As *Umbrilimi* (Kirt.); Bibl. 23.

Esocidae

- Esox lucius* Linnæus — Pike.
 1889 As *E. lucius* L.; Iowa Lakes; Bibl. 18.
 1890 As *Lucius lucius* (L.); Miss. R., Ft. Dodge, Perry, Raccoon R.,
 Adel, Des Moines, Skunk R., Belmond, Amana, Waverly, Dumont,
 Cedar Rapids, Clear Lake, Independence, Boyer R.; Bibl. 19.
 1890-91 As *E. lucius* L.; Bibl. 2.
 1892 As *L. lucius* (L.); Cedar R.; Bibl. 20.
 1892 As *E. lucius* L.; Bibl. 23.
 1894 As *L. lucius* (L.); Lemars, Sioux City, Storm Lake, East and West
 Okoboji Lakes, Spirit Lake; Bibl. 21.
 1916 As *E. lucius* L.; Hornick, Brook R.; Bibl. 11.
Esox masquinongy Mitchill — Muscalonge, muskallunge.
 1889 As *E. nobilior* Thompson; Miss. R., Skunk R.; Bibl. 18.
 1890 As *Lucius masquinongy* (Mit.); Bibl. 19.
 1890-91 As *E. masquinongy* Mit.; Skunk R. near Ames; Bibl. 2.
 1892 As *L. masquinongy* (Mit.); Bibl. 20.
 1892 As *E. masquinongy* (Mit.); Ames; Bibl. 23.
Esox masquinongy Mit. = *Esox nobilior* Th.; Bibl. 16, part 1, p. 629;
 Bibl. 4 and Bibl. 2, p. 52.
Esox vermiculatus Le Sueur — Grass pike, little pickerel.
 1889 As *E. vermiculatus* Le S.; Bibl. 18.
 1890 As *Lucius vermiculatus* (Le S.); Miss. R., Beaver Cr., Yader Cr.,
 West Liberty, Palo, Cedar Rapids; Bibl. 19.
 1890-91 As *E. vermiculatus* Le S.; Bibl. 2.
 1892 As *L. vermiculatus* (Le S.); Bibl. 20.
 1892 As *E. vermiculatus* Le S.; Bibl. 23.

Poeciliidae

- Fundulus zebrinus* Jordan and Gilbert.
 1890 As *F. zebrinus* J. and G.; Ft. Dodge, Belmond, Dumont, Clear Lake,
 Sioux City, Silver Lake; Bibl. 19.
 1892 As *F. zebrinus* (J. and G.); Cedar basin; Bibl. 20.
 1892 As *F. zebrinus* J. and G.; Bibl. 23.
 1894 As *F. zebrinus* J. and G.; Storm Lake and East Okoboji Lake; Bibl.
 21.
Fundulus macdonaldi (Meek).
 1892 As *Zygonectes macdonaldi* Meek; Western Iowa; Bibl. 23.
Fundulus sciadicus Cope.
 1892 As *Zygonectes sciadicus* (Cope); Le Mars; Bibl. 20, p. 110 footnote.
 1894 As *Z. sciadicus* (Cope); Bibl. 21.
Fundulus dispar (Agassiz).
 1890 As *Zygonectes dispar* Ag.; West Liberty; Bibl. 19.
 1892 As *Z. dispar* (Ag.); bayou at West Liberty; Bibl. 20.
 1892 As *Z. dispar* Ag.; Bibl. 23.
Fundulus notatus (Rafinesque) — Top minnow.
 1890 As *Zygonectes notatus* (Raf.); Raccoon R., Skunk R., Squaw Cr.,
 Iowa City, Indian Cr., Cedar Rapids, Wheatland; Bibl. 19.

- 1890-91 As *Z. notatus* Raf.; Des Moines; Bibl. 2.
 1892 As *Z. notatus* (Raf.); Bibl. 20.
 1892 As *Z. notatus* (Raf.); Bibl. 23.

Gasterosteidae

- Eucalia inconstans* (Kirtland) — Brook stickleback.
 1890 As *E. inconstans* (Kirt.); Waverly, Mt. Vernon, Hopkinton, Worth-
 ington, Manchester, Delhi, Ft. Atkinson, Hickory Cr., Chester; Bibl. 19.
 1892 As *E. inconstans* (Kirt.); Small brooks of Cedar basin; Bibl. 20.
 1892 As *E. inconstans* (Kirt.); Bibl. 23.
 Some of those from Hickory Cr. are reported to be black.

Percopsidae

- Percopsis guttatus* Agassiz — Trout perch.
 1890 As *P. guttatus* Ag.; Sioux City, Boyer R.; Bibl. 19.
 1892 As *P. guttatus* (Ag.); tributaries of the Mo. R.; Bibl. 20, p. 110
 footnote.
 1892 As *P. guttatus* Ag.; Okoboji lakes, Cherokee; Bibl. 23.
 1894 As *P. guttatus* Ag.; Lemars, East Okoboji, Mill Cr.; Bibl. 21.

Atherinidae

- Labidesthes sicculus* (Cope) — Brook silversides.
 1890 As *L. sicculus* Cope; Mouth of Mad Cr., Davenport, Ft. Dodge,
 Raccoon R., Skunk R., Squaw Cr., West Liberty, Cedar Rapids, Wav-
 erly, Mt. Vernon, Indian Cr., Wheatland; Bibl. 19.
 1890-91 As *L. sicculus* Cope; Des Moines, Adel; Bibl. 2.
 1892 As *L. sicculus* (Cope); Bibl. 20.
 1892 As *L. sicculus* Cope; Bibl. 23.

Centrarchidae

- Pomoxis annularis* Rafinesque — Crappie.
 1885 As *Pomoxys annularis* Raf.; Ottumwa; Bibl. 14.
 1889 As *Pomoxis annularis* Raf.; Bibl. 18.
 1890 As *P. annularis* Raf.; Miss. R., Davenport, Raccoon R., Middle R.,
 Amana, Cedar Rapids, Waverly, Des Moines, Wheatland; Bibl. 19.
 1890-91 As *Pomoxys annularis* Raf.; Bibl. 2.
 1892 As *Pomoxys annularis* (Raf.); Bibl. 20.
 1892 As *Pomoxis annularis* Raf.; Southern Iowa; Bibl. 23.
Pomoxis sparoides (Lacépède) — Calico bass.
 1889 As *P. sparoides* Lac.; near Muscatine; Bibl. 18.
 1890 As *P. sparoides* (Lac.); Miss. R., Skunk R., Amana, Iowa City,
 West Liberty, Waverly, Cedar Rapids, Dumont, Palo, Indian Cr.,
 Wheatland, Independence, Anamosa; Bibl. 19.
 1892 As *Pomoxys sparoides* (Lac.); Bibl. 20.
 1892 As *Pomoxis sparoides* (Lac.); Bibl. 23.
 1894 As *P. sparoides* (Lac.); East Okoboji Lake; Bibl. 21.
 [*Acantharchus pomotis* (Baird)] — Mud sunfish. A species restricted to
 Atlantic costal streams according to Pratt.
 1892 As *A. pomotis* (Baird); Iowa City (S. U. I. Museum); Bibl. 22.
Ambloplites rupestris (Rafinesque) — Rock bass.
 1889 As *A. rupestris* Raf.; Bibl. 18.

- 1890 As *A. rupestris* (Raf.); Miss. R., Ft. Dodge, Estherville, Raccoon R., Lizard Cr., Perry, Adel, Ames (Ia. Agri. College Museum), Cedar Rapids, Dumont, Waverly, Wheatland, Sioux Falls (S. D.), Sioux City; Bibl. 19.
- 1890-91 As *A. rupestris* Raf.; Adel, Des Moines, Perry, Ft. Dodge, Estherville; Bibl. 2.
- 1892 As *A. rupestris* (Raf.); Bibl. 20.
- 1892 As *A. rupestris* Raf.; Bibl. 23.
- 1894 As *A. rupestris* (Raf.); Bibl. 21.
- Chaenobryttus gulosus* (Cuvier and Valenciennes) — Warmouth.
- 1889 As *C. gulosus* (C. and V.); Bibl. 18.
- 1890 As *C. gulosus* (C. and V.); Davenport, Amana, West Liberty, Cedar Rapids; Bibl. 19.
- 1892 As *C. gulosus* (C. and V.); Cedar R.; Bibl. 20.
- 1892 As *C. gulosus* (C. and V.); Southern Iowa; Bibl. 23.
- Lepomis cyanellus* Rafinesque — Green sunfish.
- 1885 As *L. cyanellus* Raf.; Ottumwa, Chariton, Hundred and Two R.; Bibl. 14.
- 1889 As *L. cyanellus* Raf.; Bibl. 18.
- 1890 As *L. cyanellus* (Raf.); Muscatine, Davenport, Beaver Cr., Perry, Raccoon R., Des Moines, Ft. Dodge, Estherville, North R., Middle R., Walnut Cr., Adel, Skunk R., Squaw Cr., Belmond, Iowa City, Prairie Cr., West Liberty, Palo, Dumont, Cedar Rapids, Indian Cr., Waverly, Wheatland, Independence, Anamosa, Hopkinton, Worthington, Delhi, Manchester, Ft. Atkinson, Fayette, Sioux Falls (S. D.), Sioux City, Soldier R., Boyer R.; Bibl. 19.
- 1890-91 As *L. cyanellus* Raf.; Bibl. 2.
- 1892 As *L. cyanellus* (Raf.); Bibl. 20.
- 1892 As *L. cyanellus* (Raf.); Bibl. 23.
- 1894 As *L. cyanellus* (Raf.); Lemars, Storm Lake; Bibl. 21.
- Lepomis megalotis* (Rafinesque) — Long-eared sunfish.
- 1889 As *L. megalotis* Raf.; Bibl. 18.
- 1890 As *L. megalotis* (Raf.); Miss. R., Estherville, Raccoon R., Beaver Cr.; Belmond, Dumont, Hopkinton, Chester, Silver Lake; Bibl. 19.
- 1890-91 As *L. megalotis* Raf.; Des Moines R.; Bibl. 2.
- 1892 As *L. megalotis* (Raf.); Cedar R.; Bibl. 20.
- 1892 As *L. megalotis* (Raf.); Bibl. 23.
- 1906 As *L. megalotis* (Raf.); Brook R. (E. D. Cope); Bibl. 7.
- Lepomis humilis* (Girard) — Orange-spotted sunfish, spotted sunfish.
- 1885 As *L. humilis* Gir.; Ottumwa, Hundred and Two R.; Bibl. 14.
- 1890 As *L. humilis* (Gir.); Davenport, Raccoon R., Perry, Ft. Dodge, Middle R., Des Moines, Beaver Cr., Walnut Cr., North R., Adel, Skunk R., Cedar Rapids, Sioux Falls (S. D.), Sioux City, Boyer R.; Bibl. 19.
- 1890-91 As *L. humilis* Gir.; Squaw Cr.; Bibl. 2.
- 1892 As *L. humilis* (Gir.); Bibl. 20.
- 1892 As *L. numilis* (Gir.); Southwestern Iowa; Bibl. 23.
- 1894 As *L. humilis* (Gir.); Lemars, Sioux City, Storm Lake; Bibl. 21.
- Lepomis macrochirus* Rafinesque.
- 1890 As *L. macrochirus* Raf.; Waverly, Dumont; Bibl. 19.
- 1892 As *L. macrochirus* (Raf.); Bibl. 20.

- 1892 As *L. macrochirus* (Raf.); Bibl. 23.
Lepomis pallidus (Mitchill) — Bluegill.
- 1889 As *L. pallidus* Mit.; Bibl. 18.
- 1890 As *L. pallidus* (Mit.); Davenport, Des Moines, Raccoon R., Adel, Squaw Cr., Amana, Iowa City, Indian Cr., West Liberty, Waverly, Palo, Cedar Rapids, Clear Lake, Wheatland, Independence, Anamosa, Worthington; Bibl. 19.
- 1890-91 As *L. pallidus* Mit.; Bibl. 2.
- 1892 As *L. pallidus* (Mit.); Bibl. 20.
- 1892 As *L. pallidus* (Mit.); Bibl. 23.
- 1894 As *L. pallidus* (Mit.); Spirit Lake; Bibl. 21.
- 1925 As *L. pallidus* (Mitchill); West Okoboji and adjacent lakes; Potter — Scales of the Bluegill; Trans. Amer. Micro. Soc., Jan., 1925, Vol. 44, p. 31.
- [*Eupomotis holbrooki* (Cuvier and Valenciennes)] Probably *E. heros* (Baird and Girard). *Lepomis holbrooki* (C. and V.) = *Eupomotis holbrooki* C. and V., however it seems that Iowa specimens so listed are possibly *E. heros* (B. and G.). *Lepomis holbrooki* var. *notatus* Agassiz = *E. heros* (B. and G.); Bibl. 15, p. 119; Bibl. 26, p. 120 and Bibl. 6, p. 259.
- 1890 As *L. holbrooki* (C. and V.); Amana, Cedar Rapids, West Liberty; Bibl. 19.
- 1892 As *L. holbrooki* (C. and V.); Bibl. 20.
- 1892 As *L. holbrooki* (C. and V.); Bibl. 23.
- Eupomotis gibbosus* (Linnaeus) — Pumpkinseed sunfish.
- 1889 As *Lepomis gibbosus* L.; Bibl. 18.
- 1890 As *L. gibbosus* (L.); Miss R., Indian Cr., Waverly, Cedar Rapids, Wheatland; Bibl. 19.
- 1892 As *L. gibbosus* (L.); Bibl. 20.
- 1892 As *L. gibbosus* (L.); Bibl. 23.
- 1894 As *L. gibbosus* (L.); Spirit Lake; Bibl. 21.
- Micropterus dolomieu* Lacépède — Small-mouthed black bass.
- 1885 As *M. dolomieu* Lac.; Ottumwa; Bibl. 14.
- 1889 As *M. dolomieu* Lac.; Bibl. 18.
- 1890 As *M. dolomieu* Lac.; Muscatine, Davenport, Ft. Dodge, Des Moines R., Raccoon R., Lizard Cr., Perry, Beaver Cr., Estherville, Adel, Middle R., Squaw Cr., Skunk R., Cedar Rapids, Indian Cr., Dumont, Waverly, Palo, Clear Lake, Wheatland, Independence, Anamosa, Manchester, Ft. Atkinson, Fayette; Bibl. 19.
- 1890-91 As *M. dolomieu* Lac.; Des Moines; Bibl. 2.
- 1892 As *Macropterus dolomieu* (Lac.); Bibl. 20.
- 1892 As *Micropterus dolomieu* Lac.; Bibl. 23.
- 1894 As *M. dolomieu* (Lac.); Spirit Lake; Bibl. 21.
- Micropterus salmoides* (Lacépède) — Large-mouthed black bass.
- 1889 As *M. salmoides* Lac.; Bibl. 18.
- 1890 As *M. salmoides* (Lac.); opposite Muscatine, Davenport, Raccoon R., Perry, Beaver Cr., Adel, Des Moines, Skunk R., Squaw Cr., Iowa City, Palo, Cedar Rapids, Waverly, West Liberty, Indian Cr., Wheatland, Independence, Anamosa; Bibl. 19.
- 1890-91 As *M. salmoides* Lac.; Bibl. 2.

- 1892 As *Macropterus salmoides* (Lac.); Bibl. 20.
 1892 As *Micropterus salmoides* Lac.; Bibl. 23.
 1894 As *M. salmoides* (Lac.); Lemars, Sioux City, Spirit Lake; Bibl. 21.

Percidae

- Perca flavescens* (Mitchill) — Yellow Perch.
 1889 As *P. flavescens* Mit.; In northern lakes; Bibl. 18.
 1890 As *P. flavescens* (Mit.); Miss. R., Estherville, Perry, Belmont, Dumont, Cedar Rapids, Clear Lake, Sioux Falls (S. D.); Sioux City, Silver Lake; Bibl. 19.
 1892 As *P. lutea* (Rafinesque); Bibl. 20. No synonymy was found, hence listed under *P. flavescens* which Meek evidently meant.
 1892 As *P. flavescens* (Mit.); Bibl. 23.
 1894 As *P. flavescens* (Mit.); Storm Lake, East Okoboji Lake, Spirit Lake; Bibl. 21.
Stizotiedion vitreum (Mitchill) — Wall-eyed pike, pike-perch, jack-salmon.
 1889 As *S. vitreum*; Spirit Lake and larger streams; Bibl. 18.
 1890 As *S. vitreum* (Mit.); Miss. R., Iowa State University Museum, Cedar R., Clear Lake, Big Sioux R.; Bibl. 19
 1892 As *S. vitreum* (Mit.); Bibl. 20.
 1892 As *S. vitreum* (Mit.); Bibl. 23.
 1894 As *S. vitreum* (Mit.); W. Okoboji Lake; Bibl. 21.
Stizostedion canadense (C. H. Smith) — Sauger, sand pike.
 1889 As *S. canadense* Smith; Bibl. 18.
 1890 As *S. canadense* (Smith); Miss. R., Cedar R., Big Sioux R.; Bibl. 19.
 1892 As *S. canadense* (Smith); Bibl. 20.
 1892 As *S. canadense* (Smith); Bibl. 23.
 1894 As *S. canadense* (Smith); Lemars, Sioux City, Spirit Lake; Bibl. 21.
Stizostedion canadense boreum (Girard).
 1906 As *S. c. boreum* (Gir.); Battle Creek, Ia. (E. D. Cope); Bibl. 7.
Percina caprodes (Rafinesque) — Log perch.
 1890 As *Etheostoma caprodes* (Raf.); Estherville, Ft. Dodge, Des Moines, Waverly; Bibl. 19.
 1890-91 As *E. caprodes* Raf.; Bibl. 2.
 1892 As *E. caprodes* (Raf.); Cedar R.; Bibl. 20.
 1892 As *E. caprodes* Raf.; Bibl. 23.
 1894 As *E. caprodes* (Raf.); Waterloo; Bibl. 21.
Hadropterus phoxocephalus (Nelson).
 1885 As *H. phoxocephalus* Nel.; Ottumwa; Bibl. 14.
 1890 As *Etheostoma phoxocephalum* Nel.; Miss. R., Estherville, Perry, Palo, Cedar Rapids; Bibl. 19.
 1890-91 As *E. phoxocephalum* Nel.; Adel; Bibl. 2.
 1892 As *E. phoxocephalum* (Nel.); Bibl. 20.
 1892 As *E. phoxocephalum* Nel.; Southern Iowa; Bibl. 23.
Hadropterus aspro (Cope and Jordan) — Black-sided darter.
 1890 As *Etheostoma aspro* (C. and J.); Estherville, Des Moines, Lizard Cr., Ft. Dodge, Perry, Beaver Cr., North R., Adel, Skunk R., Squaw Cr., Belmont, Iowa City, Indian Cr., West Liberty, Waverly, Dumont, Prairie Cr., Cedar Rapids, Anamosa, Hopkinton, Manchester, Ft. Atkinson; Bibl. 19.

- 1890-91 As *E. aspro* C. and J.; Bibl. 2.
 1892 As *E. aspro* (C. and J.); Bibl. 20.
 1892 As *E. aspro* C. and J.; Bibl. 23.
 1894 As *E. aspro* (C. and J.); Sioux City; Bibl. 21.
Hadropterus evides (Jordan and Copeland).
 1885 As *H. evides* J. and C.; Ottumwa; Bibl. 14.
 1890 As *Etheostoma evides* J. and C.; Cedar Rapids; Bibl. 19.
 1892 As *E. evides* (J. and C.); Bibl. 20.
 1892 As *E. evides* (J. and C.); Southern Iowa; Bibl. 23.
 1894 As *E. evides* (J. and C.); Waterloo; Bibl. 21.
Cottogaster shumardi (Girard).
 1890 As *Etheostoma shumardi* (Gir.); Miss. R.; Bibl. 19.
 1892 As *E. shumardi* (Gir.); Muscatine; Bibl. 20.
 1892 As *E. shumardi* Gir.; Bibl. 23.
Diplesion blennoides (Rafinesque) — Green sided darter.
 1892 As *Etheostoma blennoides* (Raf.); A doubtful resident; Bibl. 20, p. 111 footnote.
 1892 As *E. blennoides* Raf.; Southern Iowa; Bibl. 23.
Boleosoma nigrum (Rafinesque) — Johnny darter.
 1890 As *Etheostoma nigrum* (Raf.); Beaver Cr., Walnut Cr., Raccoon R., Des Moines, Ft. Dodge, Perry, Lizard Cr., North R., Adel, Squaw Cr., Skunk R., Belmont, Iowa City, Amana, Indian Cr., West Liberty, Waverly, Palo, Dumont, Prairie Cr., Cedar Rapids, Clear Lake, Wheatland, Independence, Anamosa, Hopkinton, Worthington, Delhi, Manchester, Elkport, Bear Cr., Fayette, Ft. Atkinson, Yellow R., Decorah, Sioux City, Sioux Falls (S. D.), Boyer R.; Bibl. 19.
 1890-91 As *E. nigrum* Raf.; Bibl. 2.
 1892 As *E. nigrum* (Raf.); Bibl. 20.
 1892 As *E. nigrum* Raf.; Bibl. 23.
 1894 As *E. nigrum* Raf.; Lemars, Sioux City, Ames, Storm Lake, East Okoboji, Spirit Lakes; Bibl. 21.
 1919 As *B. nigrum* Raf.; Cedar Falls; Bibl. 24.
 [*Boleosoma nigrum olmstedii* Storer] Probably *Boleosoma nigrum* (Raf.), since *B. n. olmstedii* is confined to the Atlantic coast according to Bibl. 26.
 1885 As *Boleosoma olmstedii maculatum* Agassiz; Ottumwa, Chariton; Bibl. 14.
B. o. maculatum Ag = *B. n. olmstedii* St.; Bibl. 26, p. 130; Bibl. 3, p. 361; Bibl. 15, pp. 123, 124 and Bibl. 6, p. 294.
Crystallaria asprella (Jordan).
 1908 As *C. asprella* (J.); Taken from Miss. R. at E. Dubuque (Ill.); Bibl. 6, pp. 300-301.
Ammocrypta pellucida (Baird) — Sand darter.
 1890-91 As *Etheostoma pellucidum* Baird; Des Moines, Adel, Ft. Dodge; Bibl. 2.
Ammocrypta pellucida clara Jordan and Meek.
 1885 As *A. clara* sp. nov.; Ottumwa; Bibl. 14.
 1890 As *Etheostoma pellucidum clarum* (J. and M.); Davenport, Raccoon R., Ft. Dodge, Perry, Adel, Cedar R., Wheatland, Independence; Bibl. 19.

- 1892 As *E. clarum* (J. and M.); Bibl. 20.
 1892 As *E. p. clarum* J. and M.; Bibl. 23.
Etheostoma zonale (Cope) — Banded darter.
 1890 As *E. zonale* (Cope); Beaver Cr., Estherville, Ft. Dodge, Skunk R., Indian Cr., Cedar Rapids, Waverly, Dumont, Manchester, Elkport, Ft. Atkinson, Sioux City; Bibl. 19.
 1892 As *E. zonale* (Cope); Bibl. 20.
 1892 As *E. zonale* (Cope); Bibl. 23.
Etheostoma iowae Jordan and Meek — Iowa darter.
 1885 As *E. iowae* sp. nov.; Chariton; Bibl. 14.
 1890 As *E. iowae* J. and M.; Ft. Dodge, Perry, Skunk R., Iowa R., Indian Cr., Shellrock R., Waverly, Dumont, Silver Lake; Bibl. 19.
 1892 As *E. iowae* (J. and M.); Cedar R.; Bibl. 20.
 1892 As *E. iowae* J. and M.; Bibl. 23.
 1894 As *E. iowae* J. and M.; Lemars, Sioux City, College Cr. at Ames, Storm Lake, Spirit Lake; Bibl. 21.
Etheostoma jessiae (Jordan and Brayton).
 1890 As *E. jessiae* (J. and B.); Beaver Cr., Squaw Cr., Indian Cr., Cedar Rapids; Bibl. 19.
 1890-91 As *E. jessiae* (J. and B.); Bibl. 2.
 1892 As *E. jessiae* (J. and B.); Bibl. 20.
 1892 As *E. jessiae* (J. and B.); Bibl. 23.
Etheostoma coeruleum Storer — Rainbow darter.
 1890 As *E. coeruleum* St.; Skunk R., Squaw Cr., Indian Cr., Cedar Rapids, Waverly, Minnow Cr., Anamosa, Yellow R.; Bibl. 19.
 1892 As *E. coeruleum* (St.); Bibl. 20.
 1892 As *E. coeruleum* St.; Bibl. 23.
 1894 As *E. coeruleum* St.; Storm Lake; Bibl. 21.
Etheostoma flabellare Rafinesque — Fan-tailed darter.
 1890 As *E. flabellare* Raf.; Ft. Dodge, Beaver Cr., Estherville, Perry, Raccoon R., Belmond, Iowa City, Indian Cr., Palo, Cedar Rapids, Clear Lake, Anamosa, Worthington, Delhi, Bear Cr., Fayette, Yellow R.; Bibl. 19.
 1890-91 As *E. flabellare* Raf.; Des Moines; Bibl. 2.
 1892 As *E. flabellare* (Raf.); Bibl. 20.
 1906 As *E. flabellare* (Raf.); Postville (Dr. S. E. Meek); Bibl. 7.
Etheostoma flabellare lineolatum Agassiz.
 1892 As *E. f. lineolatum* Ag.; Bibl. 23.
Microperca punctulata Putnam — Least darter.
 1890 As *Etheostoma microperca* (Jordan and Gilbert); West Liberty, Delhi, Manchester; Bibl. 19.
 1892 As *E. microperca* (J. and G.); Cedar R.; Bibl. 20.
 1892 As *E. microperca* (J. and G.); Bibl. 23.
Etheostoma microperca (J. and G.) = *Microperca punctulata* Putnam; Bibl. 6, p. 317 and Bibl. 15, p. 134.

Serranidae

- Roccus chrysops* (Rafinesque) — White bass.
 1889 As *R. chrysops* Raf.; Bibl. 18.

- 1890 As *R. chrysops* Raf.; Muscatine, Davenport, Sioux City, Silver Lake; Bibl. 19.
 1892 As *R. charysops* (Raf.); Cedar R.; Bibl. 20.
 1892 As *R. chrysops* (Raf.); Clear Lake; Bibl. 23.
 1894 As *R. chrysops* (Raf.); Storm Lake; Bibl. 21.
 Meek reports that this species is introduced into the larger lakes of Iowa, Bibl. 23, p. 15.
Morone interrupta Gill — Yellow bass.
 1890 As *M. interrupta* Gill; Miss. R.; Bibl. 19.
 1892 As *Murone interrupta* Gill; Cedar R.; Bibl. 20.
 1892 As *Morone interrupta* Gill; Bibl. 23.

Sciaenidae

- Aplodinotus grunniens* Raf. — Sheepshead, fresh-water drum, croaker, white perch.
 1889 As *Aplodonotus grunniens* Raf.; Bibl. 18.
 1890 As *Aplodinotus grunniens* Raf.; Muscatine, Davenport, Cedar Rapids, Sioux City; Bibl. 19.
 1892 As *Aplodonotus grunniens* (Raf.); Bibl. 20.
 1892 As *Aplodinotus grunniens* (Raf.); Bibl. 23.

Cottidae

- Cottus ictalops* (Rafinesque) — Miller's thumb.
 1890 As *C. bairdi* (Girard); Bear Cr., Hickory Cr.; Bibl. 19.
 1892 As *C. bairdi* (Ag.); Cedar R.; Bibl. 20. (No synonymy found with regard to author.)
 1892 As *C. bairdi*; Bibl. 23.
C. ictalops (Raf.) = *C. bairdi* Gir.; Bibl. 16 part 2, p. 1951.

Gadidae

- Lota maculosa* (Le Sueur) — Burbot, lawyer, ling.
 1890 As *Lota lota maculosa* (Le S.); Miss. R.; Bibl. 19.
 1892 As *Lota lota* Linnæus; Bibl. 20.
 1892 As *L. 1. maculosa* Le S.; Bibl. 23.
Lota maculosa Le S. in our early records was regarded as identical with *Lota lota* L., the northern European species; Bibl. 15, p. 162; Bibl. 6, p. 331 and Bibl. 16, part 3, p. 2551.

HYPOTHETICAL LIST

Acipenseridae

- Parascaphirhynchus albus* Forbes & Richardson — White sturgeon.
 1904-09 Described from Grafton and Alton Illinois, Mississippi River by Forbes and Richardson. Bibl. 5, p. 37.

Salmonidae

- Leucichthys nigripinnis* (Gill) — Bluefish, blackfn.
 Listed in small lakes of Wisconsin and Minnesota. Bibl. 26, p. 41.
Leucichthys tullibee (Richardson) — Tullibee.
 Listed in small lakes of Minnesota and Wisconsin. Bibl. 26, p. 42.
Salmo shasta Jordan — Rainbow trout.
 Possible as an introduction. Bibl. 26, p. 46.

Catostomidae

Carpiodes carpio (Rafinesque) — Carp sucker, river carp.
 Bibl. 26, p. 54; Bibl. 6, p. 76.

Cyprinidae

Cyprinus carpio Linnæus — European carp, German carp.

Bibl. 26, p. 64; Bibl. 6, p. 105. No printed report found for Iowa.

Chrosomus dakotensis Evermann & Cox.

Listed from Missouri River basin in Nebraska and South Dakota;
 Bibl. 26, p. 66.

Leuciscus neogaeus (Cope).

Recorded from Baraboo, Wisconsin, and Black Hills, South Dakota;
 Bibl. 26, p. 71; Bibl. 16, part 1, p. 240.

Opsopaeodus emiliae Hay.

Northern Mississippi Valley; Bibl. 26, p. 73; Bibl. 6, p. 124.

Notropis scylla (Cope).

See Bibl. 26, p. 77 and Bibl. 6, p. 139 under *N. pheracobius* Forbes.

Notropis illecebrosus (Girard).

Bibl. 6, p. 141; Bibl. 26, p. 79; Bibl. 15, p. 57. See explanation under
N. shumardi (Girard).

Notropis umbratilis lythrurus (Jordan).

Reported as in basin of Ohio River. Bibl. 26. However, as a component
 of the old species *N. ardens* Cope, it should be watched for.
 See explanation under *N. umbratilis atripes* (Jordan).

Notropis umbratilis cyanocephalus (Copeland).

A component of the old species *N. ardens* Cope and should be watched
 for. See explanation under *N. umbratilis atripes* (Jordan). Reported
 from southern Wisconsin; Bibl. 26, p. 84.

Hybopsis amblops (Rafinesque) — Silver chub.

See Bibl. 26, p. 89; Bibl. 6, p. 166.

Siluridae

Ameiurus vulgaris (Thompson).

See Bibl. 26, p. 94.

Poeciliidae

Fundulus diaphanus (Le Sueur).

Bibl. 26, p. 102; Bibl. 6, p. 211. *F. diaphanus* (Le S.) not recorded
 from Iowa, evidently belongs to her fauna; Bibl. 20, p. 110, footnote.

Fundulus diaphanus menona Jordan and Copeland.

See Bibl. 26, p. 102; Bibl. 6, p. 211.

Aphredoderidae

Aphredoderus sayanus (Gilliams) — Pirate perch.

Bibl. 26, p. 113; Bibl. 6, p. 230.

1892 As *A. sayanus* (Gilliams); Doubtful inhabitant; Bibl. 23, p. 13.

Centrarchidae

Eupomotis heros (Baird & Girard).

Probably the form meant in the old lists when *Lepomis holbrooki*
 (Cuvier & Valenciennes) was listed. *L. holbrooki* had a western form
 (var. *notatus* Agassiz) which is regarded as equivalent now to *E.*

heros (B. & G.) Bibl. 15, p. 119; Bibl. 6, p. 259. *L. holbrooki* is now regarded by Pratt as an Atlantic coast species. Bibl. 26, p. 120.

Percidae

Stizostedion canadense griseum (De Kay).

Bibl. 26, p. 123; Bibl. 6, p. 274.

Boleichthys fusiformis (Girard).

Bibl. 26, p. 136.

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