

AN ANNOTATED LIST OF THE FISHES KNOWN TO OCCUR IN LAKE CHAMPLAIN AND ITS TRIBUTARY WATERS.

BY BARTON WARREN EVERMANN AND WILLIAM CONVERSE KENDALL.

This paper is based primarily upon observations and collections made in the Lake Champlain basin in July, 1894, by the senior writer of this article and Mr. Barton A. Bean, of the United States National Museum. At that time collections were made at Rouses Point, in Missisquoi Bay, at Alburg Springs, on the west shore of Hog Island, in Saranac River near Plattsburg, and in Scioto Creek near Coopersville, N. Y. Subsequently a small collection was received by the Fish Commission from Mr. A. L. Collins, of Swanton, Vt.; another considerable collection from Mr. John W. Titcomb, of St. Johnsbury, Vt., made by him in Caspian Lake, at the headwaters of Lamoille River, November 10, 1898, and a few specimens have been received from various other sources, among them a small collection made by Dr. Evermann in Upper Saranac Lake, in 1901.

To make the list complete and more useful as a faunal catalogue, we have included all species known to us to inhabit Lake Champlain or its tributary waters. We have aimed to include all references of which we have found any definite record and a bibliography of the papers in which they occur. The titles are arranged chronologically. Under each is given a list of the species mentioned in it, the page upon which the record occurs, and our identification of each species in current nomenclature. In the formal list of species reference is made to the authority for the record.

The total number of species known to inhabit the Lake Champlain basin is only 54. Doubtless this list will be considerably enlarged whenever its waters are more thoroughly studied. As a matter of fact only the most desultory collecting has been done either in the lake or its tributaries. Practically nothing has ever been published concerning the fishes of the great multitude of small lakes and streams in the Adirondaeks, many of which are tributary to Lake Champlain; and, Zadock Thompson's list excepted, but little has been published even of the fishes inhabiting the lake itself. In 1896 the present writers published a list of the fishes known from the State of Vermont.* The total number of species included was 53, 45 of which were from the Lake Champlain basin. The present paper adds 9 species to the Champlain list.

*An annotated list of the fishes known from the State of Vermont. <Report U. S. Fish Commission for 1894 (1896), 579-604.

BIBLIOGRAPHY.

1817. RAFINESQUE, C. S.—Museum of Natural Sciences; first decade of new North American fishes. <American Monthly Magazine and Critical Review, 1817, 118-121.

Page.	Nominal species.	Identification.
120	<i>Anguilla chrysypa</i> *.....	<i>Anguilla chrysypa</i> .
120	<i>Salmo pallidus</i> *.....	<i>Cristivomer namaycush</i> .
121	<i>Cyprinus hemiplus</i> *.....	<i>Abramis crysoleucas</i> .

1817. LE SUEUR, C. A.—A new genus of fishes, of the order *Abdominales*, proposed under the name of *Catostomus*; and the characters of the genus, with those of its species, indicated. <Journal Academy of Natural Sciences Philadelphia 1817, 102-111.

Page.	Nominal species.	Identification.
102	<i>Catostomus</i> * <i>longirostrum</i> *.....	<i>Catostomus catostomus</i> .

1818. RAFINESQUE, C. S.—Description of three new genera of fluviatile fish, *Pomoxis*, *Sarchirus*, and *Exoglossum*. <Journal of the Academy of Natural Sciences Philadelphia 1818, 417-422.

Page.	Nominal species.	Identification.
422	<i>Exoglossum</i> * <i>nigrescens</i> *.....	<i>Exoglossum maxillingua</i> .

1820. RAFINESQUE, C. S.—Annals of Nature, or annual synopsis of new genera and species of animals, plants, etc., discovered in North America. 1, 1820, 1-16.

Page.	Nominal species.	Identification.
6	<i>Hemiplus lacustris</i> *	<i>Abramis crysoleucas</i> .

1842. DE KAY, JAMES E.—Natural History of New York: Fishes. i-xv and 1-415, pls. 1-79, 1842.

Page.	Nominal species.	Identification.
209	<i>Leuciscus nitidus</i> *	<i>Semotilus corporalis</i> .
220	<i>Hydrargyra atricauda</i> *	<i>Umbra limi</i> .
883	<i>Ammocetes unicolor</i> *	<i>Ichthyomyzon concolor</i> .

*New genera and species are indicated by *.

1842. THOMPSON, ZADOCK.—History of Vermont, natural, civil, and statistical, in three parts, with a new map of the State, and 200 engravings, iv+648, 1842. Part I is entitled "Natural History of Vermont," and comprises pages 1 to 224, pages 1 to 151 being devoted to the fishes.

Page.	Nominal species.	Identification.
129	<i>Perca serrato-granulata</i>	<i>Perca flavescens.</i>
130	<i>Lucio-Perca americana</i>	<i>Stizostedion vitreum.</i>
130	<i>Pomotis vulgaris</i>	<i>Eupomotis gibbosus.</i>
131	<i>Centrarchus aeneus</i>	<i>Ambloplites rupestris.</i>
132	<i>Etheostoma caprodes</i>	<i>Percina caprodes.</i>
133	<i>Corvina oscula</i>	<i>Aplodinotus grunniens.</i>
133	<i>Catostomus cyprinus</i>	<i>Carpiodes thompsoni.</i>
134	<i>Catostomus oblongus</i>	<i>Moxostoma aureolum.</i>
134	<i>Catostomus teres</i>	<i>Catostomus commersonii.</i>
135	<i>Leuciscus pulchellus</i>	<i>Semotilus corporalis.</i>
136	<i>Leuciscus crysoleucas</i>	<i>Abramis crysoleucas.</i>
136	<i>Leuciscus atronasus</i>	<i>Rhinichthys atronasus.</i>
137	<i>Hydrargyra fusca</i> *.....	<i>Umbra limi.</i>
137	<i>Esox estor</i>	<i>Esox lucius.</i>
138	<i>Pimelodus vulgaris</i> *.....	<i>Ameiurus vulgaris.</i>
139	<i>Pimelodus, sp</i>	<i>Ameiurus lacustris.</i>
140	<i>Salmo salar</i>	<i>Salmo salar.</i>
140	<i>Salmo namaycush</i>	<i>Cristivomer namaycush.</i>
142	<i>Osmerus eperlanus</i>	<i>Osmerus mordax.</i>
143	<i>Coregonus albus</i>	<i>Coregonus clupeiiformis.</i>
144	<i>Hiodon clodulus</i>	<i>Hiodon tergisus.</i>
146	<i>Lepisosteus oxyurus</i>	<i>Lepisosteus osseus.</i>
145	<i>Lepisosteus lineatus</i> *.....	<i>Lepisosteus osseus (young).</i>
146	<i>Lota maculosa</i>	<i>Lota maculosa.</i>
149	<i>Acipenser rubicundus</i>	<i>Acipenser rubicundus.</i>
149	<i>Acipenser oxyrhynchus</i>	<i>Do.</i>
150	<i>Ammocetes concolor</i>	<i>Ichthyomyzon concolor.</i>

1849. THOMPSON, ZADOCK.—Notes on certain Vermont fishes. <Proceedings of the Boston Society of Natural History, III, 1848-1851 (July 18, 1849), 1851, 163-165.

In this communication Mr. Thompson described the supposed new species *Esox nobilior*, which is identical with *Esox masquinongy*, and another species which he supposed to be new, under the name *Percopsis pellucida*, and suggested that this last might represent a new genus, for which he would propose the name *Salmoperca*.

1850. BAIRD, SPENCER F.—A small collection of fishes was made by Professor Baird at Westport, N. Y., in Lake Champlain, in 1850, which are catalogued in the record books of the department of fishes of the U. S. National Museum, referred to in this paper as "Baird coll. 1850."

Cat. No.	Species as recorded.	Identification.
1487	<i>Pimelodus atrarius</i>	<i>Ameiurus nebulosus.</i>
1488	<i>Ameiurus nebulosus</i>	<i>Do.</i>
1489 do	<i>Do.</i>
1490 do	<i>Do.</i>
3229	<i>Amia</i>	<i>Amia calva.</i>
5131	<i>Exoglossum</i>	<i>Exoglossum maxillingua.</i>
5421	<i>Percopsis</i>	<i>Percopsis guttatus.</i>
5939	<i>Corvina oscula</i>	<i>Aplodinotus grunniens.</i>
7088	<i>Perca flavescens</i>	<i>Perca flavescens.</i>
7759	<i>Ambloplites rupestris</i>	<i>Ambloplites rupestris.</i>
8236	<i>Semotilus corporalis</i>	<i>Semotilus corporalis.</i>
8461 do	<i>Do.</i>
8499	<i>Luxilus cornutus</i>	<i>Notropis cornutus.</i>
8961	<i>Photogenis spllopterus</i>	<i>Notropis whipplii.</i>
9087	<i>Micropterus dolomieu</i>	<i>Micropterus dolomieu.</i>
9202	<i>Catostomus teres</i>	<i>Catostomus commersonii.</i>
9238	<i>Semotilus corporalis</i>	<i>Semotilus corporalis.</i>

1853. THOMPSON, ZADOCK.—History of Vermont, natural, civil, and statistical, in three parts, with an appendix. Part I, Natural History, pp. 1 to 224; Appendix, Natural History, pp. 5 to 58, 1853.

Besides the list given in the edition of 1842 Mr. Thompson appends in the present volume an additional list of eight species.

Page.	Nominal species.	Identification.
30	<i>Lucio-Perca canadensis</i>	<i>Stizostedion canadense</i> .
31	<i>Boleosoma tassellatum</i>	<i>Cottogaster copelandi</i> .
31	<i>Cottus gobioides</i>	<i>Uranidea gracilis</i> .
32	<i>Leuciscus atromaculatus</i>	<i>Semotilus atromaculatus</i> .
32	<i>Esox nobilior</i> *	<i>Esox masquinongy</i> .
33	<i>Salmo perca pellucida</i>	<i>Percopsis guttatus</i> .
34	<i>Coregonus clupeaformis</i>	<i>Argyrosomus artedi</i> .
35	<i>Amia ocellifera</i>	<i>Amia calva</i> .

* Although the name *Esox nobilior* was first used by Thompson in 1849 (see ante), the first description of the supposed new species appeared in this place.

1872. DUMÉRIL, AUGUST.—Histoire Naturelle des Poissons, II, 1870, 1-608.

Page.	Nominal species.	Identification.
185	<i>Acipenser (Huso) megalaspis</i> *	<i>Acipenser rubicundus</i> .
419	<i>Amia thompsonii</i> *	<i>Amia calva</i> .

1855. AGASSIZ, L.—Synopsis of the ichthyological fauna of the Pacific slope of North America, chiefly from the collection made by the United States expedition under the command of Capt. C. Wilkes, with recent additions and comparisons with eastern types. < American Journal of Sciences and Arts, 1855, 71-99.

Page.	Nominal species.	Identification.
76	<i>Carpilodes thompsoni</i> *	<i>Carpilodes thompsoni</i> .

1877. HALLOCK, CHARLES.—Game Fish of North America. The Sportsman's Gazetteer and General Guide. The game animals, birds, and fishes of North America: Their habits and various methods of capture. Copious instructions in shooting, fishing, taxidermy, woodcraft, etc., together with a directory of the principal game resorts of the country; illustrated with maps, 1877, 239-407 (1-688 and 1-208).

Page.	Nominal species.	Identification.
273	<i>Centrarchus æneus</i>	<i>Ambloplites rupestris</i> .
292	<i>Esox reticulatus</i>	<i>Esox reticulatus</i> .
804	<i>Salmo confinis</i>	} <i>Cristivomer namaycush</i> .
805	<i>Salmo adirondacus</i>	
308	<i>Coregonus labradoricus</i>	<i>Coregonus labradoricus</i> .
310	<i>Osmerus mordax</i>	<i>Osmerus mordax</i> .

1883. JORDAN, DAVID S., and GILBERT, CHARLES H.—Synopsis of the Fishes of North America, Bull. 16, U. S. Nat. Mus. LVI + 1018, 1883.

On page 498, specimen No. 1314, U. S. Nat. Mus., collected in Westport Brook, Essex County, New York, is described as *Cottogaster putnami*, which proves to be a synonym of *C. copelandi*.

1894. EVERMANN, B. W., AND BEAN, B. A.—A collection made in Lake Champlain and tributary waters by the senior author and Mr. B. A. Bean in 1894, is referred to in this paper as "Evermann & Bean coll. 1894." It consists of twenty-one species, which is about 40 per cent of all the species recorded from Lake Champlain and tributaries.

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| 1. <i>Lepisosteus osseus</i> . | 8. <i>Notropis whipplii</i> . | 15. <i>Eucalia inconstans</i> . |
| 2. <i>Catostomus commersonii</i> . | 9. <i>Notropis cornutus</i> . | 16. <i>Esox reticulatus</i> . |
| 3. <i>Pimephales notatus</i> . | 10. <i>Notropis atherinoides</i> . | 17. <i>Ambloplites rupestris</i> . |
| 4. <i>Semotilus corporalis</i> . | 11. <i>Notropis rubrifrons</i> . | 18. <i>Micropterus dolomieu</i> . |
| 5. <i>Abramis crysoleucas</i> . | 12. <i>Rhinichthys cataractae</i> . | 19. <i>Perca flavescens</i> . |
| 6. <i>Notropis blennioides</i> . | 13. <i>Rhinichthys atronasus</i> . | 20. <i>Percina caprodes</i> . |
| 7. <i>Notropis hudsonius</i> . | 14. <i>Exoglossum maxillingua</i> . | 21. <i>Boleosoma nigrum olmstedii</i> . |

1894. EVERMANN, B. W., and KENDALL, W. C.—An annotated list of the fishes known from the State of Vermont. <Report of U. S. Fish Commission 1894 (1896), 579-604.

Page.	Nominal species.	Identification.
584	<i>Acipenser rubicundus</i>	<i>Acipenser rubicundus</i> .
584	<i>Lepisosteus osseus</i>	<i>Lepisosteus osseus</i> .
585	<i>Amelurus lacustris</i>	<i>Amelurus lacustris</i> .
585	<i>Amelurus nebulosus</i>	<i>Amelurus nebulosus</i> .
586	<i>Carpiodes thompsoni</i>	<i>Carpiodes thompsoni</i> .
586	<i>Catostomus commersonii</i>	<i>Catostomus commersonii</i> .
586	<i>Moxostoma aureolum</i>	<i>Moxostoma aureolum</i> .
587	<i>Pimephales notatus</i>	<i>Pimephales notatus</i> .
587	<i>Semotilus corporalis</i>	<i>Semotilus corporalis</i> .
587	<i>Notropis hudsonius</i>	<i>Notropis hudsonius</i> .
588	<i>Exoglossum maxillingua</i>	<i>Exoglossum maxillingua</i> .
589	<i>Coregonus clupeiformis</i>	<i>Coregonus clupeiformis</i> .
590	<i>Coregonus labradoricus</i>	<i>Coregonus labradoricus</i> .
591	<i>Argyrosomus artedi</i>	<i>Argyrosomus artedi</i> .
593	<i>Osmerus mordax</i>	<i>Osmerus mordax</i> .
597	<i>Lucius reticulatus</i>	<i>Esox reticulatus</i> .
597	<i>Lucius lucius</i>	<i>Esox lucius</i> .
598	<i>Lucius masquinongy</i>	<i>Esox masquinongy</i> .
599	<i>Eucalia inconstans</i>	<i>Eucalia inconstans</i> .
600	<i>Ambloplites rupestris</i>	<i>Ambloplites rupestris</i> .
600	<i>Eupomotis gibbosus</i>	<i>Eupomotis gibbosus</i> .
600	<i>Micropterus dolomieu</i>	<i>Micropterus dolomieu</i> .
601	<i>Stizostedion vitreum</i>	<i>Stizostedion vitreum</i> .
601	<i>Stizostedion canadense</i>	<i>Stizostedion canadense</i> .
602	<i>Perca flavescens</i>	<i>Perca flavescens</i> .
602	<i>Percina caprodes</i>	<i>Percina caprodes</i> .
603	<i>Boleosoma nigrum olmstedii</i>	<i>Boleosoma nigrum olmstedii</i> .
603	<i>Aplodinotus grunniens</i>	<i>Aplodinotus grunniens</i> .
603	<i>Lota maculosa</i>	<i>Lota maculosa</i> .

1897. RATHBUN, RICHARD, and WAKEHAM, WILLIAM.—Report of the Joint Commission relative to the preservation of the fisheries in waters contiguous to Canada and the United States. House Document No. 315, Fifty-fourth Congress, second session, 1897, 14-178.

Page.	Nominal species.	Identification.
42	<i>Stizostedion vitreum</i>	<i>Stizostedion vitreum</i> .
43	<i>Coregonus labradoricus</i>	<i>Coregonus labradoricus</i> .
43	<i>Coregonus clupeiformis</i>	<i>Coregonus clupeiformis</i> .
44	Black bass.....	<i>Micropterus dolomieu</i> .
44	Lake trout.....	<i>Cristivomer namaycush</i> .
45	Yellow perch.....	<i>Perca flavescens</i> .

1897. MONTPETIT, A. N.—Les poissons d'eau douce du Canada, 1897, xiv+1-583.

Page.	Nominal species.	Identification.
445	<i>Le namaycush</i>	<i>Cristivomer namaycush</i> .

1898. **TITCOMB, JOHN W.**—On November 10, 1898, Mr. John W. Titcomb made a considerable collection of fishes in Caspian Lake. These were sent to the Fish Commission for identification, and represent the following species: *Catostomus catostomus*, *Catostomus commersonii*, *Semotilus atromaculatus*, *Notropis cornutus*, *Couesius plumbeus*, *Salmo sebago*, *Cristivomer namaycush*, *Salvelinus fontinalis*, and *Osmerus mordax*. Of these the Sebago salmon, lake trout, and the smelt were introduced.

LIST OF SPECIES.

1. **Ichthyomyzon concolor** (Kirtland). *Silver Lamprey*; "Mud-eel"; "Blind-eel." Lake Champlain (De Kay 1842) and Winooski River (Thompson 1842). Not seen by us, but common according to Thompson.
2. **Acipenser rubicundus** Le Sueur. *Lake Sturgeon*. Lake Champlain (Thompson 1842, Duméril 1870, and Evermann & Kendall 1894). Not uncommon. Mr. J. W. Titcomb informs us that examples weighing as much as 75 pounds are often taken.
3. **Lepisosteus osseus** (Linnæus). *Gar-pike*. Lake Champlain and Winooski River at Burlington (Thompson 1842); Lake Champlain (Evermann & Kendall 1894), and Lake Champlain at Rouses Point (Evermann & Bean coll. 1894). Common.
4. **Amia calva** Linnæus. "Bowfin"; "Mud-fish"; "Scaled Ling." Lake Champlain at Westport, N. Y. (Baird coll. 1850); Lake Champlain at Whitehall, and Winooski River (Thompson 1853); and Lake Champlain (Duméril 1872). Common; reaching a weight of several pounds.
5. **Ameiurus lacustris** (Walbaum). *Great Lakes Cat-fish*; "Cat-fish." Lake Champlain and Winooski River (Thompson 1842); Missisquoi Bay (Evermann & Kendall 1894). A female received April 25, from Missisquoi Bay, was 25 inches long and weighed 7.25 pounds.
6. **Ameiurus vulgaris** (Thompson). "Bullpout." Lake Champlain (Thompson 1842). Said by Thompson to be plentiful.
7. **Ameiurus nebulosus** (Le Sueur). "Hornpout." Lake Champlain at Westport, N. Y. (Baird coll. 1850); Lake Champlain (Evermann & Kendall 1894); and Upper Saranac Lake (Evermann coll. 1901). Doubtless abundant.
8. **Carpiodes thompsoni** Agassiz. "Carp Sucker"; "Drum"; "Buffalo." Lake Champlain (Agassiz 1855, and Evermann & Kendall 1894). A nearly ripe female 21 inches long and weighing 7 pounds was received April 25. The ovaries alone weighed 2.5 pounds.
9. **Catostomus catostomus** (Forster). *Long-nosed Sucker*. State of Vermont (Le Sueur 1817), Caspian Lake (Titcomb coll. 1898), and Little Clear Pond near Saranac Inn (Evermann coll. 1901). This sucker is abundant in Sleeper River, in the eastern part of Vermont. Though not definitely recorded from Lake Champlain since Le Sueur's time, it is doubtless not rare there. It is common in Little Clear Pond at the Saranac State fish-hatchery.
10. **Catostomus commersonii** (Lacépède). *Common Sucker*; "Black Sucker"; "Black-fin Sucker." Lake Champlain (Thompson 1842, Baird coll. 1850); Missisquoi Bay (Evermann & Kendall 1894); Saranac River, Plattsburg, N. Y. (Evermann & Bean coll. 1894); Caspian Lake (Titcomb coll. 1898); and Little Clear Pond near Saranac Inn (Evermann coll. 1901). Doubtless common. A nearly ripe female weighing 3 pounds was received April 25 from Missisquoi Bay. The species apparently spawns here early in May.
11. **Moxostoma aureolum** (Le Sueur). *Redhorse*; "Mullet." Lake Champlain (Thompson 1842), and Missisquoi Bay (Evermann & Kendall 1894). A nearly ripe male 15 inches long, weighing 1.5 pounds, and a nearly ripe female 25.5 inches long, weighing 7.25 pounds, were received April 25 from Missisquoi Bay.

12. *Pimephales notatus* (Rafinesque). *Blunt-nosed Minnow*. Missisquoi Bay (Evermann & Kendall 1894); Scioto Creek, Coopersville, N. Y. (Evermann & Bean coll. 1894). Common throughout the lake.
13. *Semotilus corporalis* (Mitchill). *Silver Chub*. Lake Champlain (Thompson 1842, DeKay 1842, and Evermann & Kendall 1894); Lake Champlain, Westport, N. Y. (Baird coll. 1850); and Scioto Creek, Coopersville, N. Y., and Saranac River, Plattsburg, N. Y. (Evermann & Bean coll. 1894). Common.
14. *Semotilus atromaculatus* (Mitchill). *Horned Dace*; *Creek Chub*. Thompson (1853) says: "This is one of the most common fishes of this genus in the western part of Vermont. It abounds almost everywhere, both in the rivers and small streams." Caspian Lake (Titcomb coll. 1898).
15. *Abramis crysoleucas* (Mitchill). *Roach*. Lake George (Rafinesque 1817 and 1820); Lake Champlain (Thompson 1842); Rouses Point and Scioto Creek, Coopersville, N. Y. (Evermann & Bean coll. 1894). Probably common.
16. *Notropis blennioides* (Girard). *Straw-colored Minnow*. Scioto Creek, Coopersville, N. Y. (Evermann & Bean coll. 1894). Several specimens (12) were obtained of a species of *Notropis* which we provisionally identified with this species, but they were unfortunately lost before the identification could be verified. They were each 2 to 2.75 inches long, and one example examined gave the following characters: Head 4; depth 5; eye large, 3; scales 6-36-3, 13 rows before dorsal; teeth 4-4; D. 8; A. 7.
17. *Notropis hudsonius* (Clinton). *Spot-tail Minnow*. Missisquoi Bay (Evermann & Kendall 1894); Scioto Creek, Coopersville, N. Y., and Rouses Point, N. Y. (Evermann & Bean coll. 1894). Doubtless common in the lake.
18. *Notropis whipplii* (Girard). *Silver-fin*. Lake Champlain at Westport, N. Y. (Baird coll. 1850); Scioto Creek, Coopersville, N. Y. (Evermann & Bean coll. 1894). Apparently not common.
19. *Notropis cornutus* (Mitchill). *Red-fin*. Lake Champlain at Westport, N. Y. (Baird coll. 1850); Saranac River, Plattsburg, N. Y., and Scioto Creek, Coopersville, N. Y. (Evermann & Bean coll. 1894); and Caspian Lake, (Titcomb coll. 1898). One of the most abundant creek minnows.
20. *Notropis atherinoides* Rafinesque. *Silverside Minnow*. Scioto Creek, Coopersville, N. Y. (Evermann & Bean coll. 1894). Not common; only one specimen obtained.
21. *Notropis rubifrons* (Cope). *Rosy-front Minnow*. Scioto Creek, Coopersville, N. Y. (Evermann & Bean coll. 1894). Probably common in the streams.
22. *Rhinichthys cataractæ* (Cuvier & Valenciennes). *Long-nosed Dace*. Saranac River, Plattsburg, N. Y. (Evermann & Bean coll. 1894). Common; 50 specimens obtained, each 2 to 3.5 inches long.
23. *Rhinichthys atronaseus* (Mitchill). *Black-nosed Dace*. Lake Champlain tributaries (Thompson 1842); Saranac River, Plattsburg, N. Y. (Evermann & Bean coll. 1894). Apparently less common than the preceding species; only 8 examples obtained.
24. *Coesius plumbeus* (Agassiz). Caspian Lake (Titcomb coll. 1898).
25. *Exoglossum maxillingua* (Le Sueur). *Cullip*. Lake Champlain (Rafinesque 1818); Saranac Lake (Baird coll. 1850); Plattsburg, N. Y. (Evermann & Kendall 1894); Scioto Creek, Coopersville, N. Y., and Saranac River, Plattsburg, N. Y. (Evermann & Bean coll. 1894). Probably not abundant; only one specimen obtained in Scioto Creek and 7 in the Saranac River.
26. *Anguilla chrysypa* Rafinesque. *Common Eel*. Lake George, Lake Champlain, etc. (Rafinesque 1817).
27. *Hiodon tergisus* Le Sueur. *Moon-eye*; "White Shad." Lake Champlain (Thompson 1842). Not common.
28. *Coregonus quadrilateralis* Richardson. *Round White-fish*; "Frost-fish"; *Menominee White-fish*. Lake Champlain (Evermann & Kendall 1894).

29. *Coregonus clupeiformis* (Mitchill). *Common White-fish*. Lake Champlain (Thompson 1842, Rathbun & Wakeham 1897, and Evermann & Kendall 1894).
30. *Coregonus labradoricus* (Richardson). "*Shad-waiter*"; "*Shad*." Lake Champlain (Hallock 1877); Missisquoi Bay (Evermann & Kendall 1894 and Rathbun & Wakeham 1897); Butler Island and Maquam (Rathbun & Wakeham 1897). This is the most abundant species of white-fish occurring in this lake.
31. *Argyrosomus artedi* (Le Sueur). *Cisco*. Lake Champlain (Thompson 1853). There are specimens in the U. S. National Museum from Lake Champlain as follows: No. 17000 from Vergennes; Nos. 35348, 35350, and 7307 from Lake Champlain; No. 35351, Ticonderoga.
32. *Salmo salar* Linnæus. *Salmon*. Lake Champlain (Thompson 1842). Formerly very plentiful in the lake, but we have seen no recent references. [*Salmo sebago* Girard. Introduced into Caspian Lake (Titcomb coll. 1898)].
33. *Salvelinus fontinalis* (Mitchill). *Brook Trout*. Caspian Lake (Titcomb coll. 1898) and Upper Saranac Lake (Evermann coll. 1901). Doubtless common in most of the Adirondack waters tributary to the lake.
34. *Cristivomer namaycush* (Walbaum). *Lake Trout*; "*Longe*." Lake George (Rafinesque 1817); Lake Champlain (Rafinesque 1817, Thompson 1842, Rathbun & Wakeham 1897, and Montpetit 1897); Lower Saranac Lake (Hallock 1877); Caspian Lake (Titcomb coll. 1898). Formerly not rare, but now not often taken.
35. *Osmerus mordax* (Mitchill). *Smelt*; "*Ice-fish*." Lake Champlain (Thompson 1842, Hallock 1877, and Evermann & Kendall 1894); Caspian Lake (Titcomb coll. 1898). Common; caught through ice in February and March.
36. *Umbra limi* (Kirtland). *Mud Minnow*. Lake Champlain (Thompson 1842). Apparently rare.
37. *Esox reticulatus* Le Sueur. *Pickereel*. Lake Champlain (Hallock 1877); Missisquoi Bay (Evermann & Kendall 1894). Rather common.
38. *Esox lucius* Linnæus. *Pike*. Lake Champlain (Thompson 1842 and Evermann & Kendall 1894). Common.
39. *Esox masquinongy* Mitchill. *Muskallunge*. River Lamoille (Thompson 1849 and 1853); Lake Champlain (Evermann & Kendall 1894). Taken only occasionally.
40. *Eucalia inconstans* (Kirtland). *Brook Stickleback*. Tributary brook of Pike River, which flows into Missisquoi Bay (Evermann & Kendall 1894); Saranac River, Plattsburg, N. Y. (Evermann & Bean coll. 1894). Common locally.
41. *Percopsis guttatus* Agassiz. *Trout Perch*. Lake Champlain at Burlington and Winooski River (Thompson 1849 and 1853); Lake Champlain at Westport, N. Y. (Baird coll. 1850). Not common.
42. *Ambloplites rupestris* (Rafinesque). *Rock Bass*. Lake Champlain (Thompson 1842 and Hallock 1877); Lake George (Baird coll. 1850); Missisquoi Bay (Evermann & Kendall 1894); Scioto Creek, Coopersville, N. Y. (Evermann & Bean coll. 1894). Quite common.
43. *Eupomotis gibbosus* (Linnæus). *Common Sun-fish*; "*Pond Perch*." Lake Champlain (Thompson 1842.) Common.
44. *Micropterus dolomieu* Lacépède. *Small-mouth Black Bass*. Lake Champlain (Baird coll. 1850); Missisquoi Bay (Evermann & Kendall 1894); Lake Champlain (Rathbun & Wakeham 1897); Scioto Creek, Coopersville, N. Y. (Evermann & Bean coll. 1894.) Common.
45. *Micropterus salmoides* (Lacépède). *Large-mouth Black Bass*. No specimens obtained by us, but Mr. John W. Titcomb informs us that it is quite common in Lake Champlain and in several ponds in Vermont.

46. *Stizostedion vitreum* (Mitchill). *Wall-eyed Pike*. Lake Champlain (Thompson 1842); Lake Champlain, Winoski and Lamoille rivers (Evermann & Kendall 1894); Missisquoi Bay, Hog Island, and Alburg shore (Rathbun & Wakeham 1897). A common and important food fish. An unripe male 25 inches long, weighing 5.5 pounds, and an unripe female 18.25 inches long, weighing 2.5 pounds, were received April 25 from Missisquoi Bay. Their condition indicated that their spawning time would be some time in May.
47. *Stizostedion canadense* (Smith). *Sauger*; "*Rock Pike*." Lake Champlain (Thompson 1842 and Evermann & Kendall 1894). Probably not very common. A nearly ripe female, 14.5 inches long and weighing three-fourths of a pound, and an unripe male 15 inches long, of the same weight, were received April 25. These indicated a spawning time for the species a little earlier than for the wall-eyed pike.
48. *Perca flavescens* (Mitchill). *Yellow Perch*. Lake Champlain basin (Thompson 1842; Baird coll. 1850); Missisquoi Bay (Evermann & Kendall 1894); Scioto Creek, Coopersville, N. Y. (Evermann & Bean coll. 1894); Lake Champlain (Rathbun & Wakeham 1897); Upper Saranac Lake at Rustic Lodge (Evermann coll. 1900 and 1901). Very abundant everywhere.
49. *Percina caprodes* (Rafinesque). *Log Perch*. Lake Champlain basin (Thompson 1842); Missisquoi Bay and Lake Champlain at Rouses Point and Plattsburg (Evermann & Kendall 1894); and Scioto Creek, Coopersville, N. Y. (Evermann & Bean coll. 1894). Apparently not common.
50. *Cottogaster copelandi* (Jordan). *Copeland's Darter*. Lake Champlain? (Thompson 1853); Westport Brook, Essex County, N. Y. (Jordan & Gilbert 1883).
51. *Boleosoma nigrum olmstedii* (Storer). *Tesselated Darter*. Missisquoi Bay (Evermann & Kendall 1894); Scioto Creek, Coopersville, N. Y., and Saranac River, Plattsburg, N. Y. (Evermann & Bean coll. 1894). Quite common in all suitable places.
52. *Aplodinotus grunniens* (Rafinesque). *Fresh-water Drum*; "*Sheepshead*." Lake Champlain (Thompson 1842 and Baird coll. 1850); and Missisquoi Bay (Evermann & Kendall 1894). Said to be quite common. An unripe male 28 inches long, weighing 12.5 pounds, and a nearly ripe male 19 inches long, weighing 3.75 pounds, were received from Missisquoi Bay April 25.
53. *Lota maculosa* (Le Sueur). *Ling*; "*Methy*." Lake Champlain basin (Thompson 1842); Missisquoi Bay (Evermann & Kendall 1894). Probably common.
54. *Uranidea gracilis* (Heckel). "*Chucklehead*." River Lamoille, Johnson, Vt. (Thompson 1853). Apparently not common.