

No. 1. — *List of the Fishes sent by the Museum to different Institutions, in exchange for other Specimens, with Annotations.*
By F. W. PUTNAM.

[Authentic labels accompany the specimens, having numbers on the left corresponding to those attached to the specimens. The figures on the right margin designate the number of specimens forwarded of each species.]

From the Fresh Waters of North America.

Lepidosteus osseus LACÉPÈDE, Hist. Nat. Poiss. V. p. 333. 1803.

Lepidosteus oxyurus RAFINESQUE, Ichth. Ohien. p. 73. 1820.

Cylindrosteus platostomus RAFINESQUE, Ichth. Ohien. p. 72. 1820.

The synonymy of the species of the genera *Lepidosteus* and *Cylindrosteus* is very complicated. The specimens included under the name of *Lepidosteus osseus* LACÉPÈDE are from South Carolina, the locality of Linnæus's *Esox osseus*, which LaCépède has confounded with the *Lepidosteus ferox* of authors, from the Mississippi River, under the name of *Lepidosteus spatula*.

Polyodon folium LACÉPÈDE, Hist. Nat. Poiss. I. p. 403. 1798.

Amia calva LINNÆUS, Syst. Nat. (12 ed.) I. p. 500. 1766.

Pimelodus atrarius DEKAY, Fishes N. York, p. 185. 1842.

The specimens of *Pimelodus* forwarded are undoubtedly identical with the species described by DeKay under this name, but it remains to be proved that DeKay's species is not synonymous with some one of Rafinesque's.

Petromyzon americanus LESUEUR, Trans. Am. Phil. Soc. (New Series,) I. p. 332. 1818.

Ichthyomyzon argenteus GIRARD, Pac. R. R. Surv. X. p. 381. 1859.

SYN. *Petromyzon argenteus* KIRTLAND, 1838.

Anguilla bostoniensis LESUEUR, Jour. Philad. Acad. Nat. Sci. I. p. 82. 1817.

We question the validity of the several species of *Anguilla* that are described from our sea-coast and fresh waters.

Uranidea gracilis PUTNAM, MS. 1856.

SYN. *Cottus gracilis* HECKEL, Ann. Wien. Mus. II. p. 148, 1837; *Uranidea quiescens* DEKAY, 1842.

We do not see the necessity of the name *Acanthocottus*, proposed by Girard for the marine species of the old genus *Cottus*, when DeKay, many years before, by giving the name of *Uranidea* to one of our fresh-

water species, recognized the two genera. It may be that DeKay did not have the *Cottus gobio* in view when he proposed the name of *Uranidea*, but his *U. quiescens* is the American representative of the *Cottus gobio* of Europe; and therefore, as he was the first to distinguish the two genera included under the name of *Cottus*, his name should be retained for the fluviatile species, and that of *Cottus* for the marine, called by Girard *Acanthocottus*. If the principle adopted by Girard were followed, it would involve the change of such a large number of generic names as to create the greatest confusion in nomenclature.

Catonotus lineolatus AGASSIZ, Am. Journ. Sci. Arts, (2^e) XVII. p. 304. 1854.

Catonotus flabellatus PUTNAM, MS. 1860.

SYN. *Etheostoma flabellatum* RAFINESQUE, Ichth. Ohien. p. 36, 1820; *Etheostoma Linsleyi* H. R. STORER, 1851; *Oligocephalus humeralis* GIRARD, 1859; *Oligocephalus Linsleyi* GIRARD, 1859; *Catonotus fasciatus* GIRARD, 1859.

Catonotus Kennicotti PUTNAM, MS. 1860. (Nov. sp.)

We have dedicated this species to Mr. R. Kennicott, who has collected a number of fine specimens in "a rocky brook in Southern Illinois." It is closely allied to *C. lineolatus* AGASSIZ, but the scales are larger, and there are no distinct longitudinal stripes as in that species. The males have the scales of the upper portion of the tail spotted; the first dorsal fin is black, with a white base; the second dorsal, black, with spots of white upon the rays. Females, of a light brown color, with mottlings of a darker shade; no transverse bars, as in the females of the other species of the genus; with eggs in April and May.

Nothonotus AGASSIZ, MS. 1860. (Nov. gen.)

This genus differs from *Catonotus* by having the body more compressed, by the smaller and more numerous scales, and by the longer and higher first dorsal fin. *Nothonotus maculatus* AGASSIZ, MS. (*Etheostoma maculatum* KIRTLAND) and the following species are the only known representatives of the genus.

Nothonotus punctulatus AGASSIZ, MS. 1860.

SYN. *Pæcilichthys punctulatus* AGASSIZ, Am. Journ. Sci. Arts, (2^e) XVII. p. 304, 1854; *Pæcilichthys mirabilis* GIRARD, MS. 1859; *Boleichthys Whipplei* GIRARD, 1859.

Pæcilichthys cæruleus AGASSIZ, MS. 1860.

SYN. *Etheostoma cæruleum* STORER, Proc. Bost. Soc. N. H. II. p. 47, 1845; *Pæcilosoma erythrogastrum* KIRTLAND, 1854; *Pæcilichthys erythrogaster* AGASSIZ, 1854; *Pæcilichthys versicolor* AGASSIZ, 1854; *Pileoma cy-matogramma* ABBOTT, 1860.

Pœcilichthys spectabilis AGASSIZ, Am. Journ. Sci. Arts, (2^e) XVII p. 304, 1854.

Microperca PUTNAM, MS. 1860. (Nov. gen.)

Body much compressed; tail long and broad; scales very large; no lateral line; first dorsal fin composed of six to seven rays; anal fin deep; pectorals and ventrals long; caudal slightly rounded.

Microperca punctulata PUTNAM, MS. 1860. (Nov. sp.)

This is the only known species of the genus, and is the smallest one in the family; the average length of the specimens being only an inch and a half. The color is buff, with dark brown zigzag markings. All the fins spotted, except the ventrals. Pectorals, and ventrals, reaching the commencement of second dorsal. We have received specimens from various points in Michigan, Wisconsin, Illinois, and Alabama.

Hololepis AGASSIZ, MS. 1860. (Nov. gen.)

Body much compressed; lateral line strongly arched over the pectorals; dorsal fins of nearly equal size; caudal fin slightly rounded; head covered with small scales. Only two species known.

Hololepis Barratti AGASSIZ, MS. 1860.

SYN. *Boleosoma tenue* AGASSIZ, 1850, without description; *Boleosoma Barratti* HOLBROOK, Journ. Philad. Acad. Nat. Sci. (New Series,) III. p. 56, 1855.

Hololepis fusiformis PUTNAM, MS. 1860.

SYN. *Boleosoma fusiforme* GIRARD, Proc. Bost. Soc. N. H. V. p. 41, 1854.

Boleichthys exilis GIRARD, Proc. Philad. Acad. Nat. Sci. XI. p. 103. 1859.

Boleichthys Warreni GIRARD, Proc. Philad. Acad. Nat. Sci. XI. p. 104 1859.

Etheostoma blennioides RAFINESQUE, Ichth. Ohien. p. 37. 1820.

SYN. *Dipleston blennioides* GIRARD, 1859.

Hadropterus nigrofasciatus AGASSIZ, Am. Journ. Sci. Arts, (2^e) XVII. p. 303. 1854.

Hadropterus variatus AGASSIZ, MS. 1860.

SYN. *Etheostoma variatum* KIRTLAND, Zool. Ohio, pp. 168, 192, 1838; *Etheostoma notatum* AGASSIZ, 1850; *Pœcilosoma variatum* AGASSIZ, 1850; *Pœcilichthys variatus*, AGASSIZ, 1854.

Hadropterus maculatus GIRARD, Proc. Philad. Acad. Nat. Sci. XI. p. 100 1859.

SYN. *Alvordius maculatus* GIRARD, 1859.

Cottogaster PUTNAM, MS. 1860. (Nov. gen.)

General form of body, and position of mouth, as in *Boleosoma*; lateral line, straight; first dorsal fin with ten rays, lower than the second, which is of the same size and coterminous with the anal; caudal fin slightly forked.

Cottogaster tessellatus PUTNAM, MS. 1860.

SYN. *Boleosoma tessellatum* THOMPSON, App. Hist. Vt. p. 31, 1853.
(Not of DeKay.)

Boleosoma Olmstedii AGASSIZ, Lake Sup. pp. 299, 304. 1850.

SYN. *Etheostoma Olmstedii* STORER, 1842; *Perca* (*Percina*) *minima* HALDEMAN, 1842; *Boleosoma tessellatum* DEKAY, 1842; *Boleosoma tessellatum* AGASSIZ, 1850; *Boleosoma maculatum* AGASSIZ, 1850; *Boleosoma Olmstedii* STORER, 1853; *Arlina effulgens* GIRARD, 1859; *Estrella atromaculata* GIRARD, 1859.

Hyostoma transversum PUTNAM, MS. 1860.

SYN. *Pæcilosoma transversum* ABBOTT, Proc. Philad. Acad. Nat. Sci. XII. p. 326. 1860.

Percina caprodes GIRARD, Proc. Philad. Acad. Nat. Sci. XI. p. 66. 1859.

SYN. *Sciæna caprodes* RAFINESQUE, 1818; *Etheostoma caprodes* RAFINESQUE, 1820; *Perca* (*Percina*) *nebulosa* HALDEMAN, 1842; *Pileoma semifasciatum* DEKAY, 1842; *Percina bimaculata* HALDEMAN, 1843; *Etheostoma nebulosum* STORER, 1846; *Etheostoma semifasciatum* STORER, 1846; *Etheostoma bimaculatum* STORER, 1846; *Pileoma caprodes* AGASSIZ, 1850; *Pileoma Zebra* AGASSIZ, 1850; *Etheostoma Zebra* AGASSIZ, 1850; *Percina nebulosa* GIRARD, 1859; *Percina semifasciata* GIRARD, 1859; *Percina Zebra* GIRARD, 1859.

Pleurolepis AGASSIZ, MS. 1860. (Nov. gen.)

Body cylindrical, flattened above, and slightly tapering to the base of the caudal. Mouth terminal. Dorsal fins distinctly separated, of equal height, first longer than the second. Anal fin as large as the second dorsal, and placed opposite. Caudal slightly emarginate. Pectorals and ventrals long and pointed. Scales deeply imbedded and placed wide apart. The row containing the lateral line and the one each side of it are the most conspicuous. Cheeks and operculum covered with scales. Lateral line straight. The following is the only known species:—

Pleurolepis pellucidus AGASSIZ, MS. 1860. (Nov. sp.)

SYN. *Etheostoma pellucidum* BAIRD, MS. 1853.

From ten to fourteen small square olive blotches on the back and on each side, the rest of the body of a light cream-color; fins unicolorous.

The last twenty species mentioned belong to the ETHEOSTOMATA, a family of small fishes inhabiting the fresh waters of North America east of the Rocky Mountains, no species of which has thus far been discovered elsewhere. This family was first characterized by Professor Agassiz, in 1850, in "Lake Superior," p. 298.

Amblodon grunniens RAFINESQUE, Ichth. Ohien. p. 24. 1820.

Ambloodon lineatus AGASSIZ, Am. Journ. Sci. Arts, (2°) XVII. p. 307. 1854.

Perca flavescens CUV. & VAL. Hist. Nat. Poiss. (4° ed.) II. p. 33. 1828.

Merone americana GILL, Proc. Philad. Acad. Nat. Sci. XI. p. 115. 1860.

SYN. *Perca americana* GMELIN, 1788; *Merone rufa* MITCHILL, 1814; *Bodianus rufus* MITCHILL, 1814; *Labrax mucronatus* CUV. & VAL. 1828; *Labrax rufus* DEKAY, 1842; *Labrax americanus* HOLBROOK, 1855.

Grystes nobilis AGASSIZ, Am. Journ. Sci. Arts, (2°) XVII. p. 298. 1854.

Pomoxis hexacanthus AGASSIZ, Am. Journ. Sci. Arts, (2°) XVII. p. 299. 1854.

Centrarchus irideus CUV. & VAL. Hist. Nat. Poiss. III. (4° ed.) p. 66. 1829.

Calliurus gulosus AGASSIZ, Am. Journ. Sci. Arts, (2°) XVII. p. 300. 1854.

Ichthelis incisor HOLBROOK, Ichth. S. Car. I. p. 12. 1860.

Ichthelis rubricauda HOLBROOK, Ichth. S. Car. I. p. 15. 1860.

Bryttus obesus GIRARD, Proc. Philad. Acad. Nat. Sci. XI. p. 64. 1859.

Pomotis auritus RAFINESQUE, Ichth. Ohien. p. 29. 1820.

SYN. *Perca fluviatilis gibbosa* CATESBY, II. Pl. 8, f. 3, 1742; *Labrus auritus* LINNÆUS, 1766; ? *Merone maculata* MITCHILL, 1814; *Ichthelis* (*Pomotis*) *aurita* RAFINESQUE, 1820; *Pomotis Catesbei* CUV. & VAL. 1831; *Pomotis vulgaris* of all authors except CUV. & VAL.

There seems to have been such a general misunderstanding in regard to this, our most common species of the genus, that a few words of explanation are necessary to show the reason for restoring the specific name of *auritus* to the species in question.

In the tenth edition of the "Systema Naturæ," Linnæus mentions a fish from Philadelphia under the name of *Labrus auritus*. This fish is undoubtedly a *Pomotis*; but from the short description given it would be impossible to refer the species with precision to any of the many that inhabit our fresh waters, were it not for the reference in the twelfth edition of the "Systema Naturæ" to the figure of Catesby, which unquestionably represents our common "Bream," or "Pond-fish," — thus settling the species which Linnæus had in mind, though we think he confounded with it some other species sent him by Dr. Garden from South Carolina, probably the *Ichthelis rubricauda* of Holbrook.

In 1820, Rafinesque described the species in question under the specific name given by Linnæus, referring it to his sub-genus *Pomotis*.

In the third volume of the "Histoire Naturelle des Poissons," the authors, overlooking the description by Rafinesque, describe and figure a species of the genus under the name of *Pomotis vulgaris*, referring the *Labrus auritus* of Linnæus to it. This species is very different from the one figured by Catesby, and is probably identical with the *Labrus appendix* of Mitchill (*Pomotis appendix* DEKAY), though in the second edition of the "Règne

Animal" Cuvier refers the figure of Catesby to it. In this mistake Cuvier and Valenciennes have been followed by all subsequent authors, who seem to have taken it for granted that the species bearing the name of *vulgaris* must be the common one, or, omitting to look up the authority of the specific name *auritus*, have considered that name as obsolete. In the seventh volume of the "Histoire Naturelle des Poissons," referring to the figure in Catesby, the authors have again described the *Labrus auritus* under the name of *Pomotis Catesbei*. In the illustrated edition of the "Règne Animal," the *Pomotis auritus* is very well figured under the name of *Pomotis vulgaris*.

Percopsis guttatus AGASSIZ, Lake Sup. p. 286. 1850.

SYN. *Salmoperca pellucida* THOMPSON, 1853.

Esox reticulatus LESUEUR, Journ. Philad. Acad. Nat. Sci. I. p. 414. 1818.

Esox fasciatus DEKAY, Fishes of N. York, p. 224. 1842.

SYN. *Esox ornatus* GIRARD, 1854.

Amblyopsis spelæus DEKAY, Fishes of N. York, p. 187. 1842.

This is the well-known "Blind-fish" of the Mammoth Cave, Kentucky.

Fundulus multifasciatus CUV. & VAL. Hist. Nat. Poiss. (4^e ed.) XVIII. p. 150. 1846.

Hydrargyra catenata AGASSIZ, Am. Journ. Sci. Arts, (2^e) XVII. p. 353. 1854.

Plargyrus americanus PUTNAM, MS. 1861.

SYN. *Cyprinus americanus* LINNÆUS, 1766 (not of the 10th ed. Syst. Nat.); *Cyprinus americanus* LACÉPÈDE, 1803; *Cyprinus chrysoleucus* MITCHILL, 1815; (*Rutilus*) *Plargyrus chrysoleucus* RAFINESQUE, 1820; (*Cyprinus*) *Leuciscus chrysoleucus* RICHARDSON, 1837; *Leuciscus chrysoleucus* STORER, 1839; *Stilbe chrysoleucus* DEKAY, 1842; *Abramis versicolor* DEKAY, 1842; *Leuciscus Boscii* CUV. & VAL. 1844; *Leuciscus americanus* STORER, 1846; *Leucosomus americanus* GIRARD, 1853; *Luxilus americanus* GIRARD, 1856.

Hypsolepis cornutus AGASSIZ, Am. Journ. Sci. Arts, (2^e) XVII. p. 359. 1854.

SYN. *Cyprinus cornutus* MITCHILL, 1817; *Leuciscus cornutus* STORER, 1842; *Plargyrus cornutus* GIRARD, 1856.

Hypsolepis frontalis AGASSIZ, Am. Journ. Sci. Arts, (2^e) XVII. p. 356. 1854.

SYN. *Leuciscus frontalis* AGASSIZ, (male,) 1850; *Leuciscus gracilis* AGASSIZ, (female,) 1850; *Plargyrus frontalis* GIRARD, 1856; *Plargyrus gracilis* GIRARD, 1856.

Hypsolepis diplemius PUTNAM, MS. 1861.

SYN. *Semotilus diplemius* RAFINESQUE, Ichth. Ohien. p. 50, 1820; *Leuciscus diplemius* KIRTLAND, 1845.

Semotilus argenteus PUTNAM, MS. 1861.

SYN. *Leuciscus argenteus* STORER, (young,) Rep. Fishes of Mass. p. 90, 1839; *Leuciscus pulchellus* STORER, (adult,) 1839; ? *Leucosomus argenteus* HECKEL, 1841; ? *Leucosomus chrysoleucus* HECKEL, 1841; ? *Leuciscus nitidus* DEKAY, 1842 (young?); *Leuciscus Storeri* CUV. & VAL. 1844; *Cheilomenus pulchellus* GIRARD (in STORER), 1855; *Leucosomus pulchellus* GIRARD, 1856; ? *Hybognathus nitidus* GIRARD, 1856 (young?).

Semotilus corporalis ABBOTT, Proc. Philad. Acad. Nat. Sci. XIII. p. 154. 1861.

SYN. *Cyprinus corporalis* MITCHILL, 1817; *Cyprinus atromaculatus* MITCHILL, 1817; *Semotilus dorsalis* RAFINESQUE, 1820; *Semotilus cephalus* RAFINESQUE, 1820; *Leuciscus atromaculatus* DEKAY, 1842; *Leuciscus iris* CUV. & VAL. 1844; *Semotilus atromaculatus* GIRARD, 1856; *Semotilus corporalis* PUTNAM, MS. 1861; *Semotilus corporalis* ABBOTT, 1861; *Semotilus atromaculatus* ABBOTT, 1861; *Leucosomus rhotheus* COPE, 1861; *Leucosomus atromaculatus* COPE, 1861.

Gobio plumbeus AGASSIZ, Lake Sup. p. 366. 1850.

SYN. *Leucosomus plumbeus* GIRARD, 1856.

As Professor Agassiz has stated in "Lake Superior," this species differs generically from the true genus *Gobio*; but as it has not yet been referred to its proper genus, we send it under the original name of the describer.

Ceraticthys biguttatus BAIRD; GIRARD, Proc. Philad. Acad. Nat. Sci. VII. p. 112. 1856.

SYN. *Semotilus biguttatus* KIRTLAND, 1840; *Leuciscus biguttatus* DEKAY, 1842.

Chrosomus erythrogaster RAFINESQUE, Ichth. Ohien. p. 47. 1820.

SYN. ? *Rutilus ruber* RAFINESQUE, 1820; *Luxilus erythrogaster* KIRTLAND, 1842; *Leuciscus erythrogaster* STORER, 1846.

Pimephales promelas RAFINESQUE, Ichth. Ohien. p. 53. 1820.

SYN. ? *Pimephales maculosus* GIRARD, 1856; *Pimephales fasciatus* GIRARD, 1856; *Plargyrus melanocephalus* ABBOTT, 1860.

Exoglossum maxilllingua HALDEMAN, in RUPP., Hist. Lanc. Co. Pa. p. 474. 1844.

SYN. *Cyprinus maxilllingua* LESUEUR, 1817; *Exoglossum LeSueurianum* RAFINESQUE, 1818; *Catostomus maxilllingua* DEKAY, 1842.

Campostoma anomalum AGASSIZ, Am. Journ. Sci. Arts, (2^e) XIX. p. 219. 1855.

SYN. *Rutilus anomalus* RAFINESQUE, 1820; *Exoglossum dubium* KIRTLAND, 1838; *Exoglossum spinicephalum* CUV. & VAL. 1844; *Leuciscus prolixus* STORER, 1845; *Chondrostoma prolixum* AGASSIZ, 1854; *Chondrostoma pullum* AGASSIZ, 1854.

Hybognathus nuchalis AGASSIZ, Am. Journ. Sci. Arts, (2^e) XIX. p. 224 1855.

Clinostomus elongatus GIRARD, Proc. Philad. Acad. Nat. Sci. VII. p. 112. 1856.

SYN. *Luxilus elongatus* KIRTLAND, 1838; *Leuciscus elongatus* DEKAY, 1842; ? *Leuciscus productus* STORER, 1846; *Alburnus pleuriticus* AGASSIZ, MS. 1854.

Hybopsis Storerianus AGASSIZ, Am. Journ. Sci. Arts, (2^e) XVII. p. 358. 1854.

SYN. *Rutilus Storerianus* KIRTLAND, 1842; *Leuciscus Storerianus* KIRTLAND, 1845.

Hybopsis dorsalis AGASSIZ, Am. Journ. Sci. Arts, (2^e) XVII. p. 358. 1854.

Hybopsis hudsonius PUTNAM, MS. 1861.

SYN. *Clupea hudsonia* CLINTON, Ann. Lyc. Nat. Hist. N. Y. I. p. 49, 1824; *Leuciscus hudsonius* DEKAY, 1842; *Hudsonius fluviatilis* GIRARD, 1856.

Alburnus rubellus AGASSIZ, Lake Sup. p. 364. 1850.

Alburnus lineolatus AGASSIZ, MS. 1854. (Nov. sp.)

Body light brown with a broad silvery band having dark points, extending from the head to the caudal fin. Average length, two and a half inches. From the Osage River. Collected by Mr. G. Stolley.

Alburnus zonatus AGASSIZ, MS. 1854. (Nov. sp.)

Brown upon the back; a silvery band from the nose across the eye to the caudal fin, beneath this a slightly broader dark band, which extends from the snout to the tip of the central rays of the caudal fin; silvery below the dark band. Head large and rounded. Average length of specimens, three inches. Osage River, Mr. Stolley.

Alburnus formosus PUTNAM, MS. 1861. (Nov. sp.)

Specimens of this species were collected near Mobile, Alabama, by Judge LeSene and Albert Stein, Esq. The body is more arched, the scales are larger, and the anal fin is longer and deeper, than in any other species of the genus with which we are acquainted. Color brown above, with a lighter shade bordering the broad chocolate band on the side; light brown below. Average length, two inches.

Rhinichthys atronasmus AGASSIZ, Lake Sup. p. 354. 1850.

SYN. *Cyprinus atronasmus* MITCHILL, 1815; *Argyreus atronasmus* HECKEL, 1841; ? *Argyreus rubripinnis* HECKEL, 1841; *Leuciscus atronasmus* CUV. & VAL. 1844.

Rhinichthys nasutus AGASSIZ, Lake Sup. p. 354. 1850.

SYN. *Leuciscus nasutus* AYRES, 1843; *Argyreus nasutus* GIRARD; STORER, 1855.

Rhinichthys obtusus AGASSIZ, Am. Journ. Sci. Arts, (2^e) XVII. p. 357. 1854.

SYN. *Argyreus obtusus* GIRARD, 1856.

Rhinichthys marmoratus AGASSIZ, Lake Sup. p. 354. 1850.

SYN. *Argyreus marmoratus* GIRARD, 1856.

Bubalichthys Urus AGASSIZ, Am. Journ. Sci. Arts, (2^e) XIX. p. 194. 1855

Ichthyobus Rauchii AGASSIZ, Am. Journ. Sci. Arts, (2^e) XIX. p. 197. 1855.

Ptychostomus aureolus AGASSIZ, Am. Journ. Sci. Arts, (2^e) XIX. p. 205. 1855.

Hylomyzon nigricans AGASSIZ, Am. Journ. Sci. Arts, (2^e) XIX. p. 207. 1855.

Moxostoma oblongum AGASSIZ, Am. Journ. Sci. Arts, (2^e) XIX. p. 203. 1855.

Moxostoma tenue AGASSIZ, Am. Journ. Sci. Arts, (2^e) XIX. p. 203. 1855.

Moxostoma Sucetta AGASSIZ, Am. Journ. Sci. Arts, (2^e) XIX. p. 203. 1855.

Catostomus bostoniensis LESUEUR, Journ. Philad. Acad. Nat. Sci. I. p. 106 1817.

Catostomus Fosterianus AGASSIZ, Lake Sup. p. 358. 1850.

Catostomus aurora AGASSIZ, Lake Sup. p. 360. 1850.

From the Atlantic Coast of North America and the West Indies.

Myxine limosa GIRARD, Proc. Philad. Acad. Nat. Sci. X. p. 223. 1858.

This Myzont is very abundant, at certain seasons, on the coast of Grand Menan. It has never been compared, as far as we are aware, with *Myxine glutinosa* LINNÆUS, and as we are doubtful of its being distinct, specimens from the Old World, or at least the results of a comparison, would be very acceptable to the Museum.

Mustelus Canis DEKAY, Fishes of New York, p. 355. 1842.

Acanthias americanus STORER, Synop. Fishes N. A. p. 254. 1846.

This species is viviparous. We send young taken from the mother.

Raja lævis MITCHILL, Am. Month. Mag. II. p. 327. 1817.

The synonymy of the genus *Raja* is in such a confused state, that we are not certain about the identification of a single species found on our coast.

Cyclopterus lumpus LINNÆUS, Syst. Nat. (12 ed.) I. p. 414. 1766.

We have not been able to compare this with the species of the same name on the European coast, and therefore cannot answer for its identity. We should be happy to receive specimens from Europe.

Muraenoides mucronatus GILL, Proc. Philad. Acad. Nat. Sci. XIII. App. p. 45. 1861.

SYN. *Gunnellus mucronatus* CUV. & VAL. 1836.

Anarrhichas vomerinus AGASSIZ; STORER, Mem. Am. Acad. (2^e) V. p. 265. 1855.

Zoarces anguillaris STORER, Rep. Fishes of Mass. p. 66. 1839.

Gasterosteus biaculeatus MITCHILL, Trans. Lit. Phil. Soc. N. Y. I. p. 430. 1815.

The specimens included under this name are undoubtedly representatives of Mitchill's *Gasterosteus biaculeatus*, but it remains to be proved that the *G. biaculeatus* of Shaw and Mitchill are identical. There are two, if not three species, of two-spined *Gasterostei* inhabiting the Atlantic coast of North America.

Pygosteus DeKayi BREVOORT; GILL, Proc. Philad. Acad. Nat. Sci. XIII. App. p. 45. 1861.

SYN. *Gasterosteus occidentalis* DEKAY, 1842 (not of Cuv. & Val.); *Gasterosteus DeKayi* AGASSIZ, 1850.

Cryptacanthodes maculatus STORER, Rep. Fishes of Mass. p. 28. 1839.

Cottus grænlandicus CUV. & VAL. Hist. Nat. Poiss. (4^e ed.) IV. p. 135. 1829.

SYN. *Acanthocottus grænlandicus* GIRARD, 1850.

We doubt the distinction of *Cottus variabilis* AYRES.

Cottus octodecimspinosus MITCHILL, Trans. Lit. Phil. Soc. N. Y. I. p. 380. 1815.

SYN. *Cottus virginianus* STORER, 1839; *Acanthocottus virginianus* GIRARD, 1850.

Hemitripterus acadianus STORER, Mem. Am. Acad. (2^e) V. p. 83. 1855.

Sebastes norvegicus CUV. & VAL. Hist. Nat. Poiss. (4^e ed.) IV. p. 240. 1829.

Prionotus palmipes STORER, Mem. Am. Acad. (2^e) V. p. 66. 1855.

? *Trigla carolina* LINNÆUS.

Ephippus faber CUVIER, Règne An. II. p. 190. 1829.

Holacanthus ciliaris LACÉPÈDE, Hist. Nat. Poiss. IV. p. 367. 1802.

Chætodon striatus LINNÆUS, Syst. Nat. (10 ed.) I. p. 275. 1758.

Mesoprion chrysurus CUV. & VAL. Hist. Nat. Poiss. (4^e ed.) II. p. 347. 1828.

Mesoprion uninotatus CUV. & VAL. Hist. Nat. Poiss. (4^e ed.) II. p. 339. 1828.

Diplectrum fasciculare HOLBROOK, Ichth. S. Car. I. p. 32. 1855.

Holocentrum longipinne CUV. & VAL. Hist. Nat. Poiss. (4^e ed.) III. p. 138. 1829.

The *Holocentrus sogho* BLOCH is a distinct species.

Centropristes nigricans CUV. & VAL. Hist. Nat. Poiss. (4^e ed.) III. p. 28. 1829.

Centropristes atrarius HOLBROOK, Ichth. S. Car. I. p. 42. 1855.

Centropristes trifurcus CUV. & VAL. Hist. Nat. Poiss. (4^e ed.) III. p. 32
1829.

Homoprion xanthurus HOLBROOK, Ichth. S. Car. I. p. 170. 1855.

? *Perca punctatus* LINNÆUS, 1766. (Sic!!)

Considerable confusion exists in regard to this species. We send it under the name given by Dr. Holbrook, though he may be wrong in considering it as identical with LaCépède's *Liostomus xanthurus*.

Liostomus obliquus DEKAY, Fishes of N. Y. p. 69. 1842.

Johnius ocellatus GIRARD, Ichth. Mex. Bound. II. p. 14. 1859.

SYN. *Corvina ocellata* CUV. & VAL. 1830.

Otolithus carolinensis CUV. & VAL. Hist. Nat. Poiss. (4^e ed.) IX. p. 351.
1833.

Otolithus regalis CUV. & VAL. Hist. Nat. Poiss. (4^e ed.) V. p. 50. 1830.

Pogonias fasciatus LACÉPÈDE, Hist. Nat. Poiss. III. p. 138. 1802.

Umbrina alburnus CUV. & VAL. Hist. Nat. Poiss. (4^e ed.) V. p. 133. 1830.

Umbrina littoralis HOLBROOK, Ichth. S. Car. I. p. 142. 1855.

Micropogon undulatus CUV. & VAL. Hist. Nat. Poiss. (4^e ed.) V. p. 163.
1830.

Larimus fasciatus HOLBROOK, Ichth. S. Car. I. p. 153. 1855.

Orthopristis duplex GIRARD, Ichth. Mex. Bound. II. p. 15. 1859.

Orthopristis fulvomaculatus GILL, Proc. Philad. Acad. Nat. Sci. XIII. App.
p. 32. 1861.

Hæmylum formosum CUV. & VAL. Hist. Nat. Poiss. (4^e ed.) V. p. 174. 1830.

In accordance with its etymology, the name *Hæmulon* is changed to *Hæmylum*, as stated in the "Nomenclator Zoölogicus."

Hæmylum elegans CUV. & VAL. Hist. Nat. Poiss. (4^e ed.) V. p. 169. 1830.

Hæmylum Arara POEY, Mém. de Cuba, II. p. 177. 1860.

Diabasis albus SCUDDER, MS. Apr. 1862.

SYN. *Hæmulon album* CUV. & VAL. Hist. Nat. Poiss. (4^e ed.) V. p. 179,
1830.

Anarmostus flavolineatus SCUDDER, MS. Apr. 1862.

SYN. *Diabasis flavolineatus* DESMAREST, Decade Ichth. p. 35, 1823;
Hæmulon heterodon CUV. & VAL. 1829.

Anarmostus serratus SCUDDER, MS. Apr. 1862.

SYN. ? *Hæmulon serratus* POEY, Mém. de Cuba, II. p. 181, 1860.

Bathystoma melanurum SCUDDER, MS. Apr. 1862.

SYN. *Perca melanura* LINNÆUS, Syst. Nat. (10 ed.) I. p. 292, 1758

Bathystoma Jeniguarno SCUDDER, MS. Apr. 1862.

SYN. *Hæmulon Jeniguarno* POEY, Mém. de Cuba, II. p. 183, 1860.

Bathystoma chrysopterum SCUDDER, MS. Apr. 1862.

SYN. *Hæmulon chrysopteron* CUV. & VAL. Hist. Nat. Poiss. (4° ed.) V. p. 179, 1830.

Ctenolabrus Burgall CUV. & VAL. Hist. Nat. Poiss. (4° ed.) XIII. p. 172. 1839.

SYN. *Ctenolabrus cæruleus* DEKAY, 1842.

Pleuronectes maculatus MITCHILL, Rep. Fishes of N. Y. p. 9. 1814.

Platessa oblonga DEKAY, Fishes of N. York, p. 299. 1842.

Platessa plana STORER, Rep. Fishes of Mass. p. 140. 1839.

Achirus mollis CUVIER, Règne An. II. p. 343. 1829.

Scomber vernalis MITCHILL, Trans. Lit. Phil. Soc. N. Y. I. p. 423. 1815.

Peprilus triacanthus STORER, Rep. Fishes of Mass. p. 60. 1839.

Temnodon Saltator CUVIER, Règne An. II. p. 207. 1829.

Atherina notata MITCHILL, Trans. Lit. Phil. Soc. N. Y. I. p. 446. 1815.

Ammodytes americanus DEKAY, Fishes of N. York, p. 317. 1842.

Phycis americanus STORER, Rep. Fishes of Mass. p. 138. 1839.

Phycis filamentosus STORER, Mem. Am. Acad. VI. p. 367. 1859.

Merluccius albidus DEKAY, Fishes of N. York, p. 280. 1842.

Merlangus purpureus STORER, Rep. Fishes of Mass. p. 130. 1839.

Morrhua americana, STORER, Rep. Fishes of Mass. p. 120. 1839.

Gadus Æglefinus LINNÆUS, Syst. Nat. (10 ed.) I. p. 251. 1758.

Clupea elongata LESUEUR, Journ. Philad. Acad. Nat. Sci. I. p. 234. 1818.

Alausa Menhaden STORER, Rep. Fishes of Mass. p. 117. 1839.

Osmerus viridescens LESUEUR, Journ. Philad. Acad. Nat. Sci. I. p. 230. 1818.

Mallotus villosus CUVIER, Règne An. II. p. 306. 1829.

Fundulus pisculentus CUV. & VAL. Hist. Nat. Poiss. (4° ed.) XVIII. p. 143. 1846.

Fundulus heteroclitus CUVIER, Règne An. II. p. 280. 1829.

SYN. *Cobitis heteroclita* LINNÆUS, 1766; *Fundulus cænicolus* CUV. & VAL. 1846.

Fundulus spilotos HOLBROOK, (MS. ?) 1854.

SYN. *Fundulus guttatus* AGASSIZ, MS. 1854 (female).

Hydrargyra majalis CUV. & VAL. Hist. Nat. Poiss. (4° ed.) XVIII. p. 155. 1846.

SYN. *Hydrargyra flavula* STORER, 1839.

Hydrargyra similis BAIRD & GIRARD, Proc. Philad. Acad. Nat. Sci. VI. p. 389. 1853.

Zygonectes chrysotus AGASSIZ, MS. 1861.

SYN. *Fundulus chrysotus* AGASSIZ; HOLBROOK, 1853 (MS.?).

Cyprinodon variegatus LACÉPÈDE, Hist. Nat. Poiss. V. p. 487. 1803.

Pæcilia latipinna AGASSIZ, MS. 1858.

SYN. *Mollinesia latipinna* LESUEUR, (male); *Pæcilia multilineata* LESUEUR, (female,) Journ. Philad. Acad. Nat. Sci. II. pp. 3, 4, 1821.

Gambusia Holbrookii GIRARD, Proc. Philad. Acad. Nat. Sci. XI. p. 61. 1859.

SYN. *Heterandria Holbrookii* AGASSIZ, 1853.

Girardinus formosus GIRARD, Proc. Philad. Acad. Nat. Sci. XI. p. 62. 1859.

SYN. *Heterandria formosa* AGASSIZ, 1853.

These last three species are viviparous. *G. formosus* is the smallest known Vertebrate.

From the Pacific Coast of North America.

Triacis semifasciata GIRARD, Proc. Philad. Acad. Nat. Sci. VII. p. 196. 1854.

SYN. *Mustelus Felis* AYRES, 1854.

Triacis Henlei PUTNAM.

SYN. *Isoplagiodon* sp. GILL, 1862; *Rhinotriacis Henlei* GILL, Proc. Philad. Acad. Nat. Sci. XIV. p. 486, 1862.

The characters given by Mr. Gill to the genus *Rhinotriacis* are, in our estimation, only of specific value. Mr. Gill's specimen being immature probably accounts for the apparent difference between the teeth of this species and those of *T. semifasciata*, for in our numerous examinations we have found teeth on both jaws having two distinct notches on each side of the central point, although these five-lobed teeth are more numerous in the lower than in the upper jaw. *T. Henlei* differs principally from *T. semifasciata* in its longer, flattened, and pointed snout; in its scales not being so strongly tri-lobed, and in the color, which is of a uniform brownish gray above, becoming lighter below. In young individuals the color is redder above and white below. In all specimens the two dorsals and the caudal are tipped with black. *T. Henlei* is more slender than *T. semifasciata*, but attains about the same length.

Acanthias Suckleyi GIRARD, Proc. Philad. Acad. Nat. Sci. VII. p. 196. 1854.

Porichthys notatus GIRARD, Proc. Philad. Acad. Nat. Sci. VII. p. 141. 1854.

Leptocottus armatus GIRARD, Proc. Philad. Acad. Nat. Sci. VII. p. 131. 1854.

Scorpænichthys marmoratus GIRARD, Proc. Philad. Acad. Nat. Sci. VII. p. 131. 1854.

Ambloplites interruptus GIRARD, Proc. Philad. Acad. Nat. Sci. VII. p. 129. 1854.

Genyonemus lineatus GILL, Proc. Philad. Acad. Nat. Sci. XIII. p. 87. 1861.
 SYN. *Leiostomus lineatus* AYRES, 1855.

Embiotoca Jacksoni AGASSIZ, Am. Journ. Sci. Arts, (2^e) XVI. p. 387. 1853.
 SYN. *Holconotus fuliginosus* GIBBONS, 1854; *Embiotoca Cassidy* GIRARD, 1854; *Embiotoca Webb* GIRARD, 1855.

Hypsurus Caryi A. AGASSIZ, Proc. Boston Soc. Nat. Hist. VIII. p. 133. 1861.
 SYN. *Embiotoca Caryi* AGASSIZ, 1853; *Holconotus Gibbonsii* Cal. Acad. Nat. Sci. 1854.

Tæniotoca lateralis A. AGASSIZ, Proc. Boston Soc. Nat. Hist. VIII. p. 133. 1861.
 SYN. *Embiotoca lateralis* AGASSIZ, 1854; *Holconotus Agassizi* GIBBONS, 1854; *Embiotoca lineata* GIRARD, 1854; *Embiotoca ornata* GIRARD, 1855; *Embiotoca perspicabilis* GIRARD, 1855; *Damalichthys lateralis* GILL, 1862.

This species is, without doubt, congeneric with *DITREMA* of the "Fauna Japonica."

Damalichthys Vacca GIRARD, Proc. Philad. Acad. Nat. Sci. VII. p. 321. 1855.

Cymatogaster aggregatus GIBBONS, Proc. Cal. Acad. Nat. Sci. May 18, 1854.
 SYN. *Micrometrus aggregatus* GIBBONS, 1854; *Holconotus rhodoterus* GIRARD, 1854 (not of AGASSIZ); *Metrogaster lineolatus* AGASSIZ, MS.

Micrometrus minimus GIBBONS, Proc. Cal. Acad. Nat. Sci. May 30, 1854.
 SYN. *Cymatogaster minimus* GIBBONS, 1854; *Holconotus Trowbridgii* GIRARD, 1854; *Abeona Trowbridgii* GIRARD, 1855; *Abeona minima* GILL, 1862.

Rhacochilus toxotes AGASSIZ, Am. Journ. Sci. Arts, (2^e) XVII. p. 367. 1854.
 SYN. *Pachylabrus variegatus* GIBBONS, 1854.

Amphistichus argenteus AGASSIZ, Am. Journ. Sci. Arts, (2^e) XVII. p. 367. 1854.
 SYN. *Mytilophagus fasciatus* GIBBONS, 1854; *Amphistichus similis* GIRARD, 1854.

Holconotus rhodoterus AGASSIZ, Am. Journ. Sci. Arts, (2^e) XVII. p. 368. 1854 (not of GIRARD).
 SYN. *Cymatogaster Larkinsii* GIBBONS, 1854; ? *Cymatogaster ellipticus* GIBBONS, 1854; *Amphistichus Hermann* GIRARD, 1854; *Ennichthys Hermann* GIRARD, 1855.

Hyperprosopon argenteum GIBBONS, Proc. Cal. Acad. Nat. Sci. May 18, 1854.

SYN. *Holconotus megalops* GIRARD, 1854; *Ennichthys megalops* GIRARD, 1855; *Bramopsis Mento* AGASSIZ, MS.

Hyperprosopon arcuatum GIBBONS, Proc. Cal. Acad. Nat. Sci. May 30, 1854.

SYN. *Hyperprosopon argenteum* VAR. *punctatum* GIBBONS, 1854; *Hyperprosopon Agassizi* GILL, 1862.

For a full revision of the Synonymy of the Holconoti, see *Notes on the Described Species of Holconoti found on the Western Coast of North America*, by A. AGASSIZ, in the Proc. Boston Soc. Nat. Hist. Vol. VIII. p. 122. 1861.

Platichthys rugosus GIRARD, Proc. Philad. Acad. Nat. Sci. VII. p. 139. 1854.

We send both natural and reversed specimens of this species.

From the East Indies.

Pegasus natans LINNÆUS, Syst. Nat. (12 ed.) I. p. 418. 1766.

Scatophagus Argus CUV. & VAL. Hist. Nat. Poiss. VII. p. 103. 1831.

From Europe.

Trachinus Vipera CUV. & VAL. Hist. Nat. Poiss. (4^e ed.) III. p. 189. 1829.

Agonus cataphractus BLOCH, Syst. Ichth. ed. SCHN. p. 104. 1801.

Tinea vulgaris CUVIER, Règne An. II. p. 193. 1817.

Gobio fluviatilis AGASSIZ, Mem. Soc. Neuch. I. p. 36. 1834.

Leuciscus rodens AGASSIZ, Mem. Soc. Neuch. I. p. 39. 1834.

Leuciscus prasinus AGASSIZ, Mem. Soc. Neuch. I. p. 46. 1834.

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